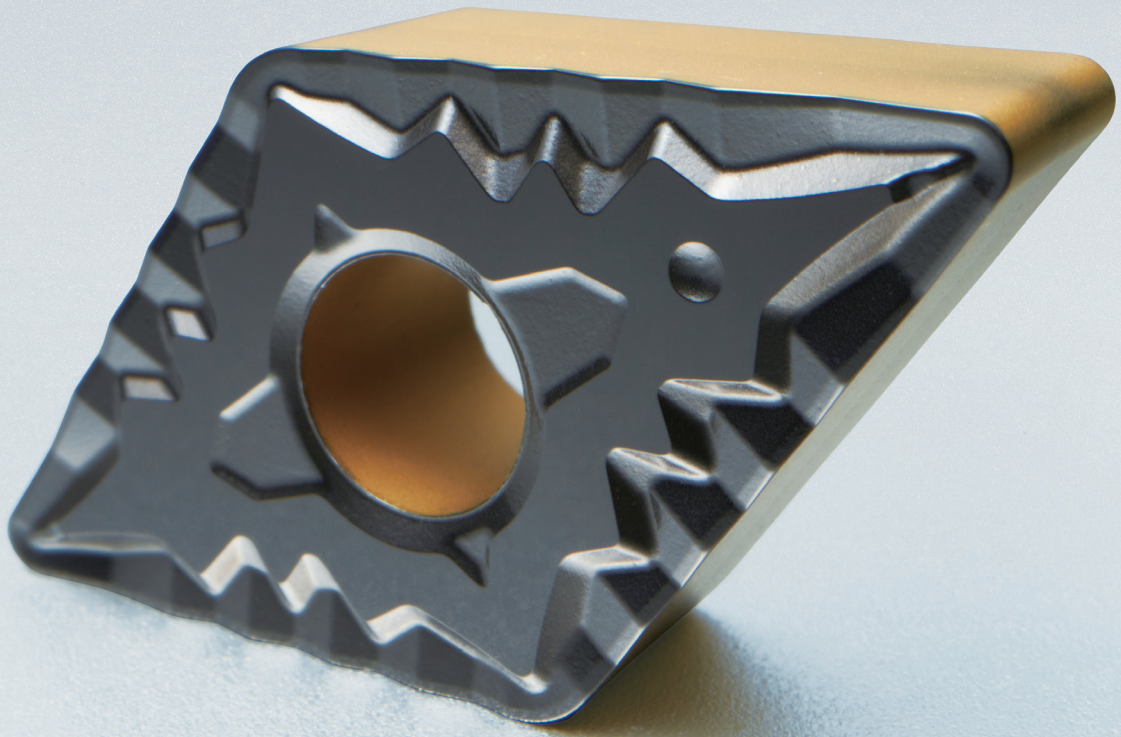
Cutting Tools





2025 TURNING 2026

TURNING / ROTATING / SOLID

KORLOY

2025▸2026
KORLOY TURNING TOOLS

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MULTI FUNCTIONAL TOOLS

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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), Alluninyum (Al), Silicon (Si), Tantalum (Ta), Boron (B) etc.
and metal component like Cobalt (Co), Nickel (Ni), Chrom (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, appreance 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 extremly 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 catalouge 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 immeditely with continously 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 extremly high or low temperatures compare with the melting point of brazing materials may cause loosening or breakage.
8) Overheating a oil base coolant may cause a fire or flames, thus be prepared for fire prevention.

5 METALCUTTING SAFETY

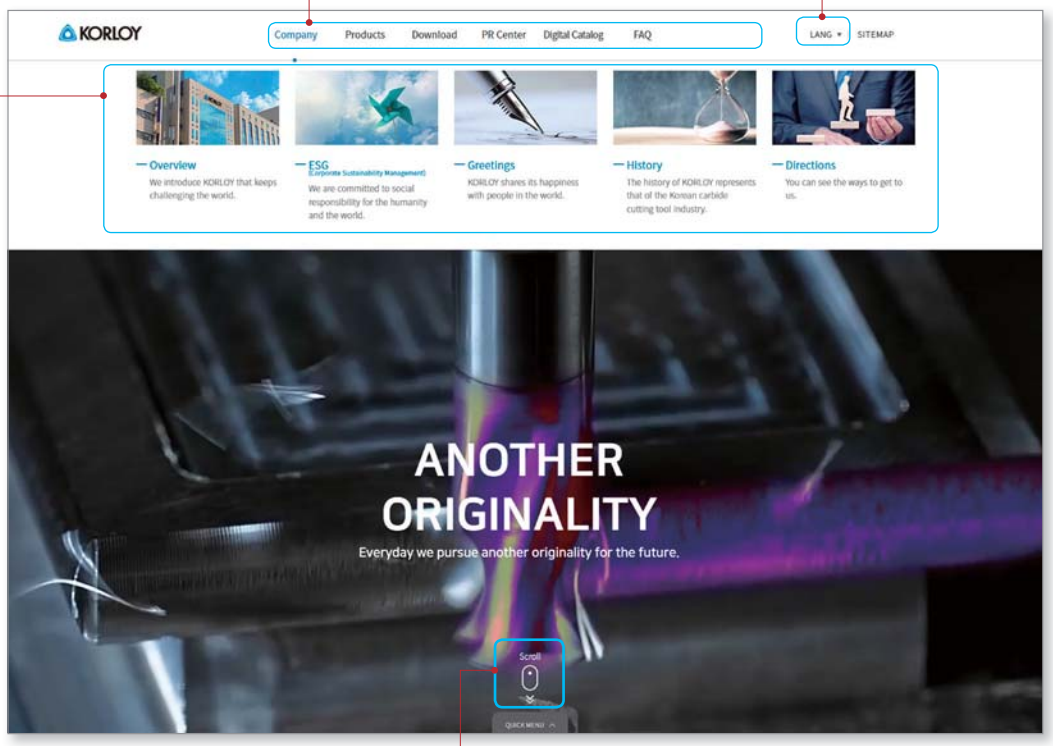
DANGEROUS FACTOR	
Cutting tools	• Sharp cutting edge of cutting tools may cut your bare-hand
	• Inappropriate conditions or usage may cause fragmentation and expel parts of tools which may cause injury
	• Severe load on tool and premature wear of cutting edge may bring excessive cutting force on tool, causing fracture of the tool and may cause injury
	• Chips evacuated during cutting are hot and sharp and maycause 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 tool to fracture and result in damage to the cutter body and possible injury
	• Tools are operated to right-hand direction normally • Left-hand 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's a possibility of breaking the carbide tip after several brazing
	• 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 catalogue 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 controled 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.
   » **http://www.korloy.com** (KORLOY Homepage)
2) Choose a category and click that.

Main screen guide



Searching whole categories
Searchable wanted items

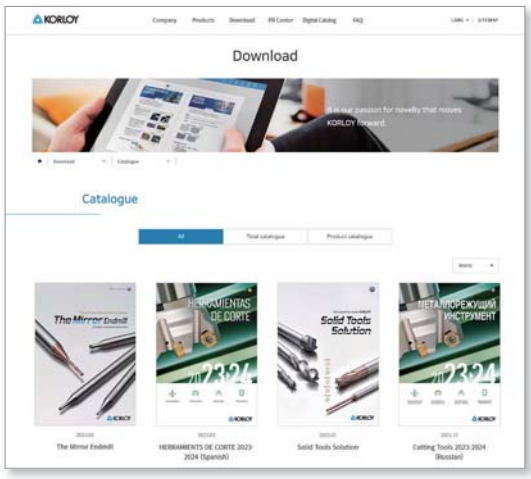
Selection by each language
Moving on to the site in each language

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



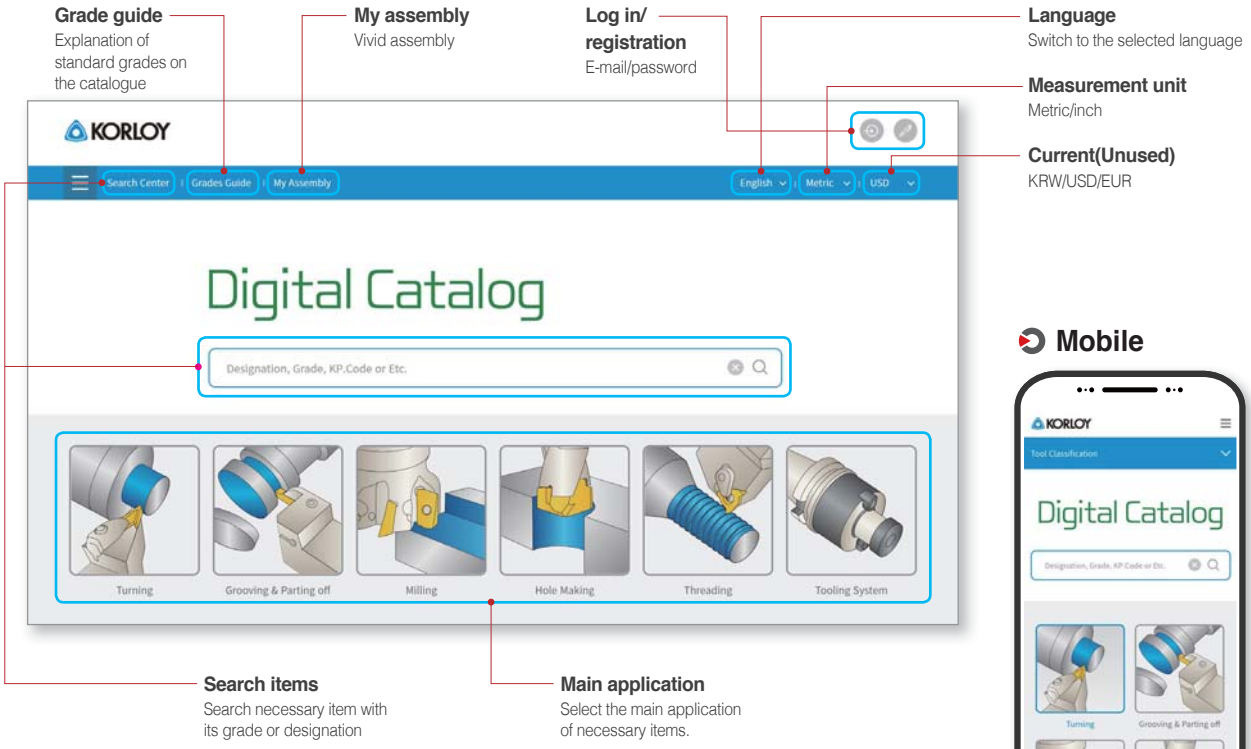
» Shortcut to genuine product certification



INTRODUCTION OF DIGITAL CATALOG

1) Connect to the digital catalogue on PC or mobile
   » **https://catalog.korloy.com**
2) Guideline for main screen

PC

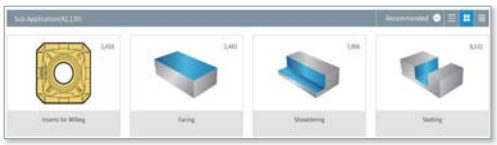


Mobile



Details

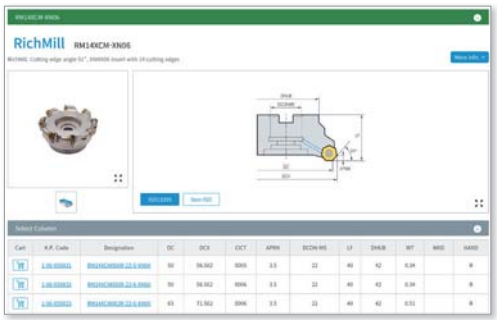
» Sub application



» 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 I** Move the wanted hall

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

③ **Side menu I** Searchable wanted sections

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

⑤ **Video I** Item promotion video

⑥ **Tech news I** Checking tech news

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

⑧ **3D modeling I** 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



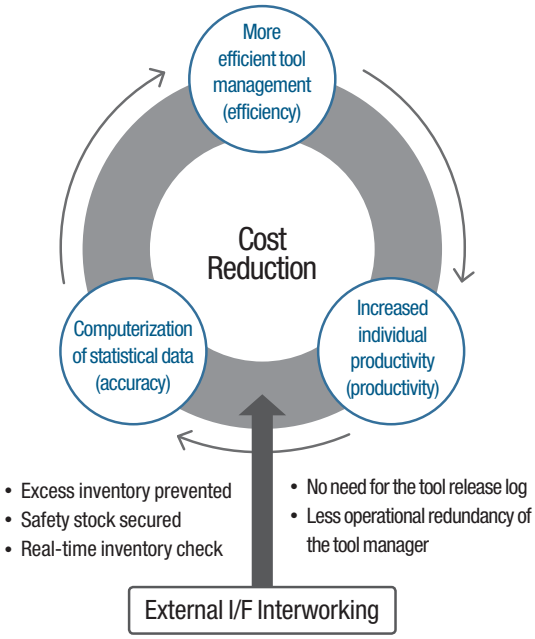
- Storage CAPA: Coils (81 types) + Lockers (21 types)
- Transparent Shipping (Packaging Units)
- Easy Tool Selection/Shipping with Touch Monitor

[Option] L Type



- Storage CAPA: 59 types
- Maximum Length: Up to 14.96 inch
- Can Add Up to: 10 units

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

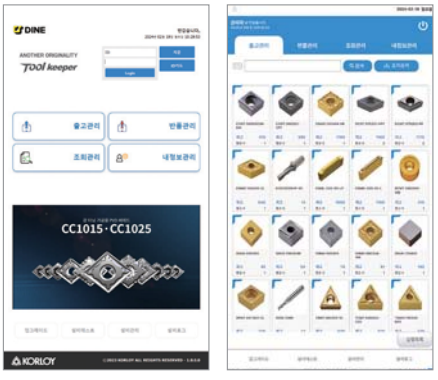


Software Configuration: Administrator Program + User Program

» Administrator Program



» User Program

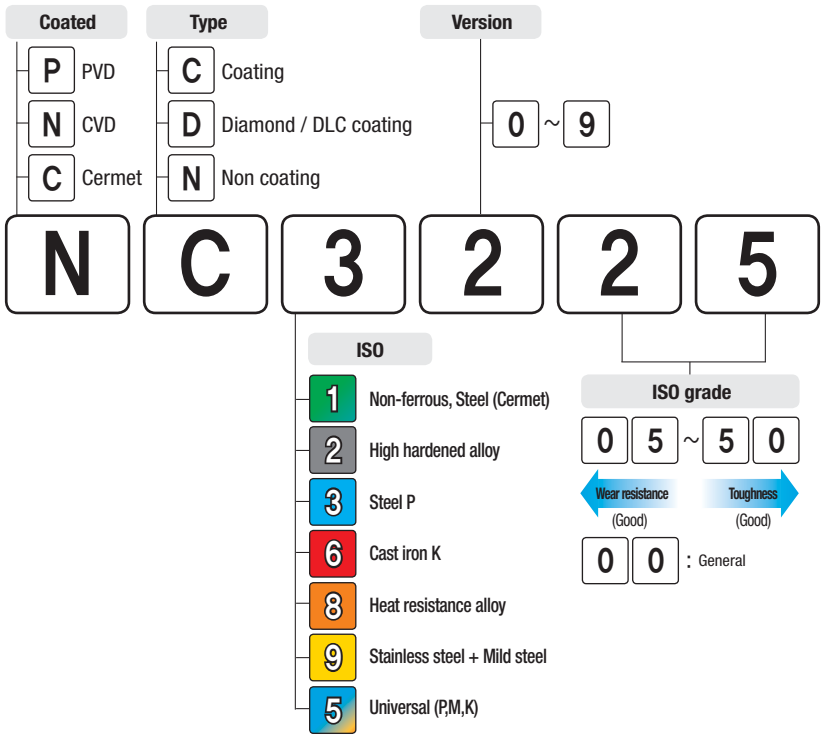


Key features

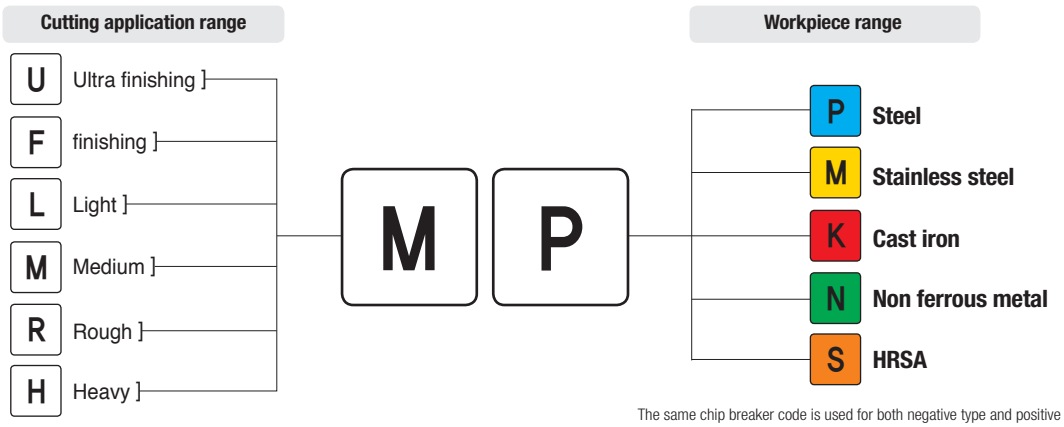
1. Safety Stock Alert Management (Automatic Email/SMS Notifications)
2. Multilingual Language Settings/Remote Diagnosis/SW
3. Automatic Updates Monthly Tool Usage(Average)/Expenditure/Inbound Quantity Management

KORLOY INC. CODE SYSTEM

1 Grade name for coated carbide



2 Chip breaker



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

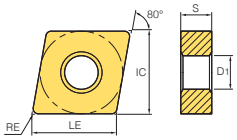
3 Terminology of tool formula

TERM	CODE	UNIT
Tool diameter	DC	inch
Cutting speed	vc	sfm
Revolution per minute	n	min^{-1}
Feed per minute	vf	ipm
Feed per revolution	fn	ipr
Feed per tooth	fz	ipt
Tooth	z	-
Axial depth of cut	APMX	inch
Radial depth of cut	APMXEFW	inch
Peak feed	pf	inch

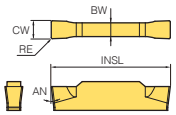
TERM	CODE	UNIT
Horse power requirement	Pc	kW
Specific cutting resistance	kc	MPa
Torque	Mc	N·m
Thrust	Tc	N
Cycle time	tc	min
Tool life	T	min
Flank wear	V_B	inch
Crater wear	Kt	inch
Nose radius	RE	inch

ISO13399 GLOSSARY

Insert



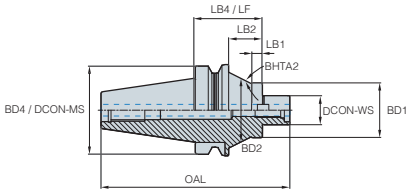
ex 1



ex 2 (Grooving)

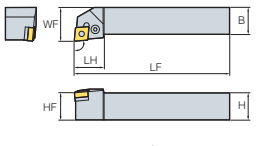
ISO13399 Property Symbols	Property Name
AN	Clearance Angle Major
APMX	Depth of Cut Maximum
BW	Insert Body Width
CBMD	Chip Breaker Manufacturers Designation
CDX	Cutting Depth Maximum
CEDC	Cutting Edge Count
CUTDIA	Work Piece Parting Diameter Maximum
CW	Cutting Width
D1	Fixing Hole Diameter
DCON-MS	Connection 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

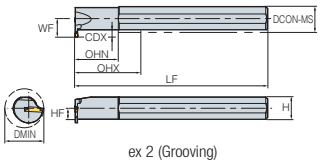


ISO13399 Property Symbols	Property Name
ADJ	Adjust Screw
BD	Body Diameter
CCKZ	Cutter Connecter Key Size
CRKS	Connection Retention Knob Thread Size
DC	Cutting Diameter
DCON-WS	Connection Diameter Workpiece Side
DCX	Cutting Diameter Maximum
H	Shank Height
HF	Functional Height
LB	Body Length
LF	Functional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

Holder

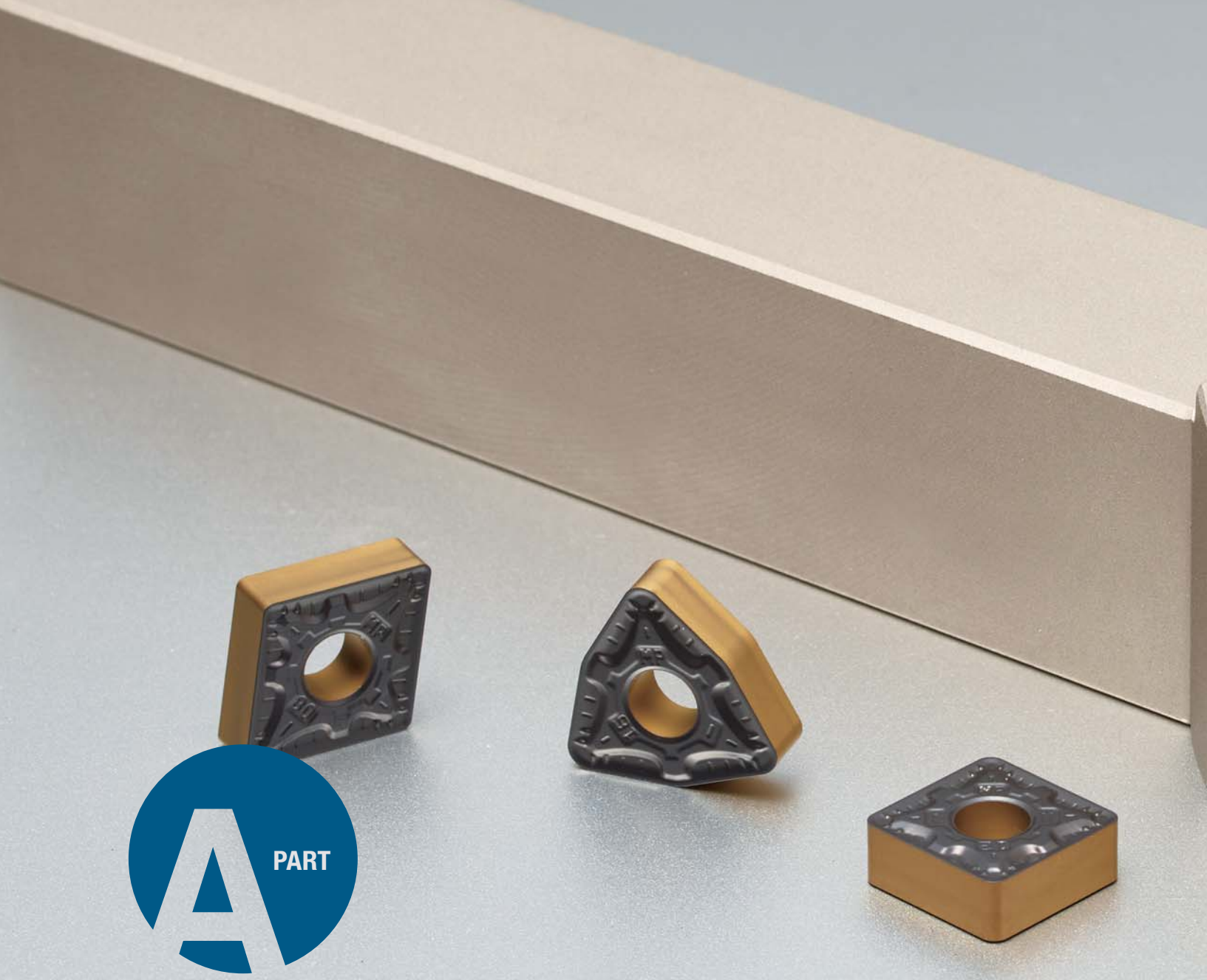


ex 1



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

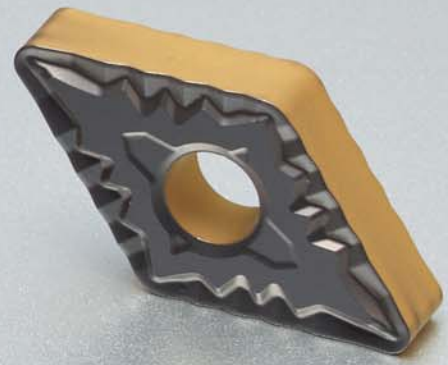


A PART

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 tempeure 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

Grades

A2 KORLOY grade index
A3 Grade system

Turning Grades

A4 Turning grade selections
A5 CVD coated grades
A9 PVD coated selections
A13 Uncoated carbide grades
A14 Cermet grades
A15 Coated cermet grades
A16 Diamond coated grades
A17 DLC coated grades
A18 cBN insert grades
A23 PCD insert grades
A24 Chip breakers for turning
A30 Application range of KORLOY main chip breakers
A34 Negative insert
A45 Positive insert
A50 Heavy insert
A52 Wiper insert
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	P20~P25						•	•	
		NC3030	P25~P35	M25~M35					•	•	
		NC3235	P30~P40	M30~M40					•		
		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												

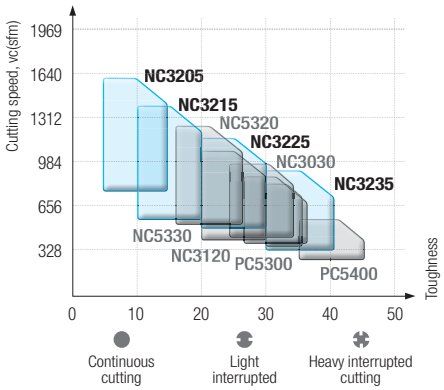
Turning grade selections

Selection system

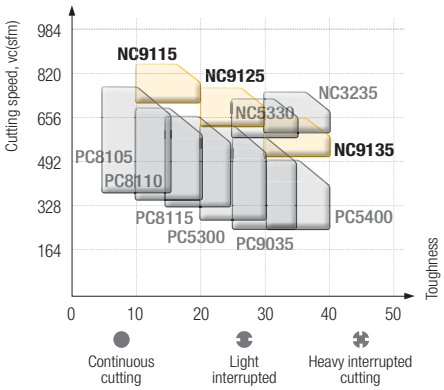
Workpiece	P	Steel					M	Stainless steel				K	Cast iron			S	HRSA			N	Non-ferrous			H	Hardened		
ISO	P01	P10	P20	P30	P40	P50	M01	M10	M20	M30	M40	K01	K10	K20	K30	S01	S10	S20	S30	N01	N10	N20	N30	H01	H10	H20	H30
Coated carbide		NC3205 NC3215 NC3225 NC3120 NC3030 NC3235 NC5320 NC5330 PC5300 PC5400						PC8105 PC8110 PC8115 NC9115 NC9125 NC5330 NC9135 NC3235 PC5300 PC9030 PC9035 PC5400						NC6310 NC6315 NC5320 NC5330 PC8110 PC5300 PC5400			PC8105 PC8110 PC8115 NC9125 NC9135 PC5300 PC9035 PC5400				ND3000 PD1005 PD1010			PC8105 PC8110 PC8115		
Cermet		CC1015 CC1025 CN1500 CN2500											CC1015 CC1025 CN1500 CN2500														
cBN / PCD													DBN700A				DBN700A				DP90 DP150 DP200				DNC100 DNC250 DNC300 DNC350		
Uncoated carbide				ST30A									H01 H05 G10				H01 H05				H01 H05 G10			H01			

Application range of turning grades

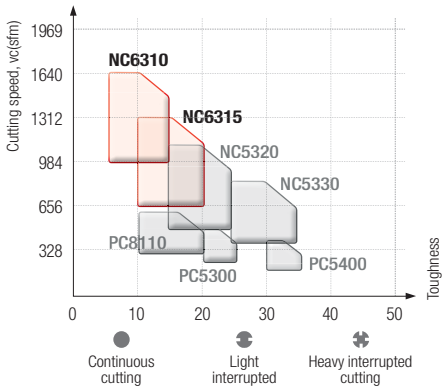
P Steel



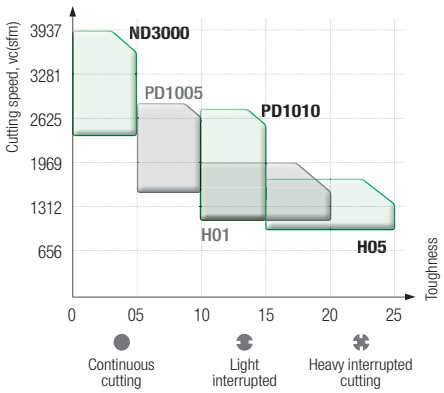
M Stainless steel



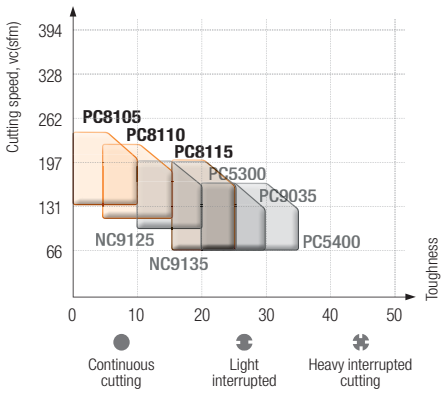
K Cast iron



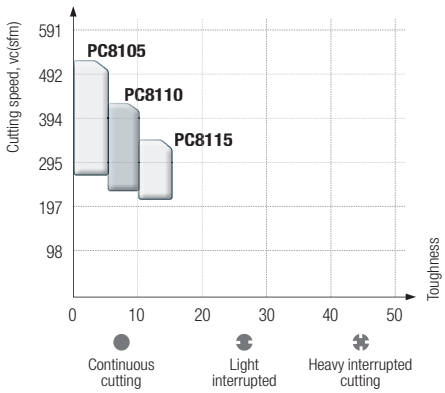
N Non-ferrous metal



S Heat resistant alloy



H Hardened steel



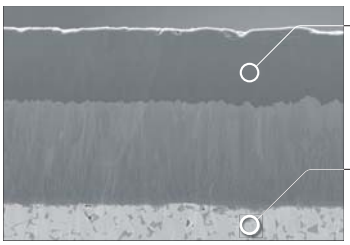
CVD coated grades

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

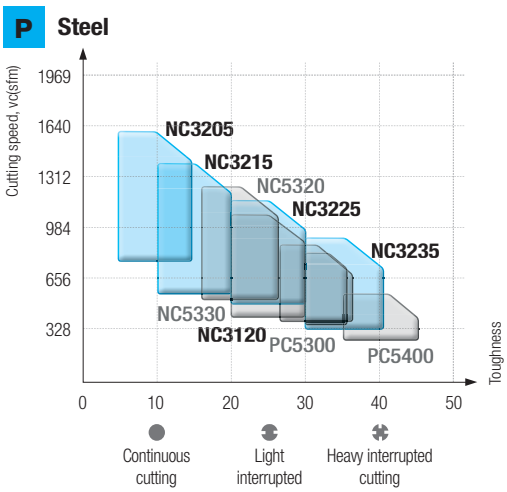
Features



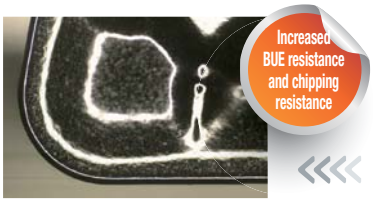
[NC3200 Series]

- 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

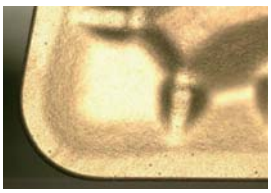
Application range



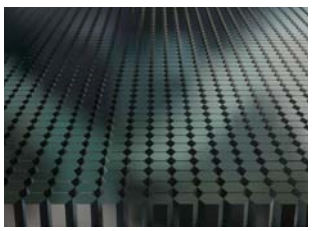
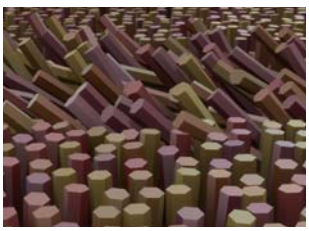
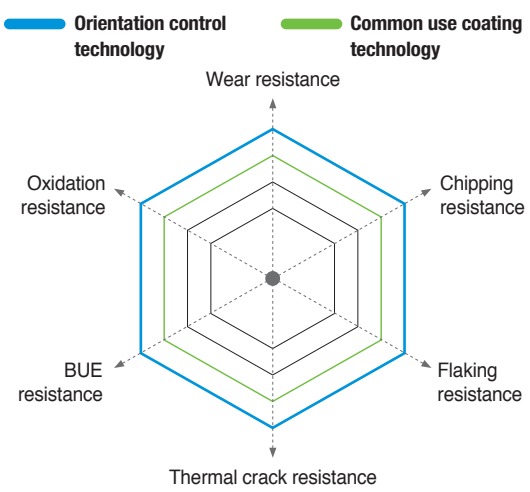
• Highly lubricative coating with fine surface finish application



[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	

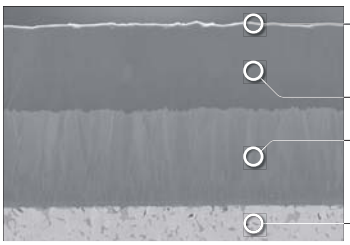
CVD coated grades

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

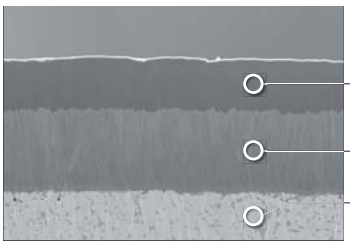
NC6310/NC6315

- 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



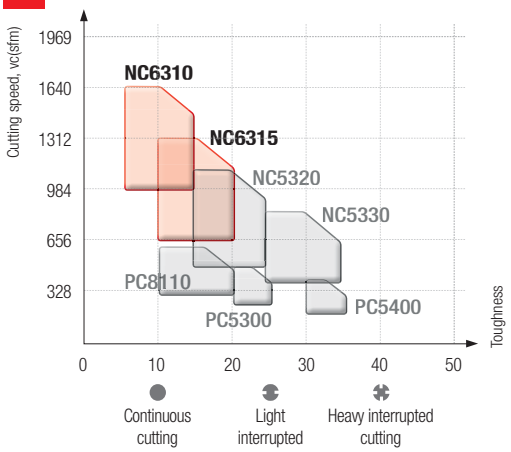
[NC6310]



[NC6315]

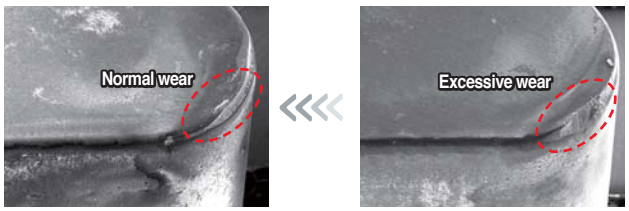
Application range

K Cast iron

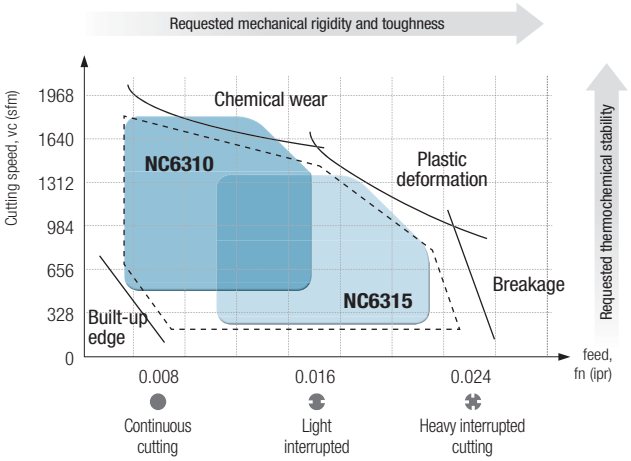


Features of NC6310

Normal wear on rake surface and nose radius

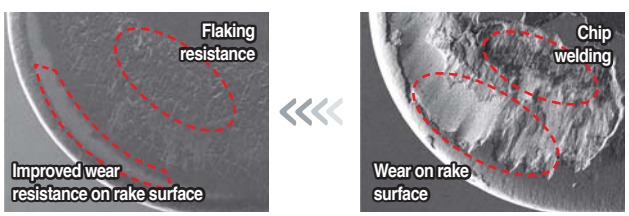


[NC6310] [Existing grade (K10)]



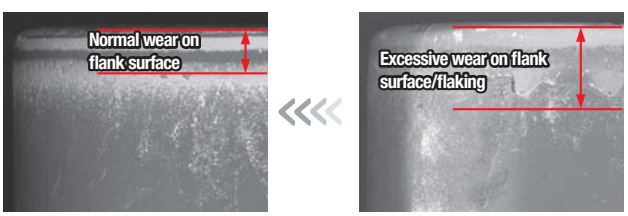
Features of NC6315

Improved flaking resistance and wear resistance on rake surface



[NC6315] [Existing grade (K15)]

Normal wear on flank surfacenose radius



[NC6315] [Existing grade (K15)]

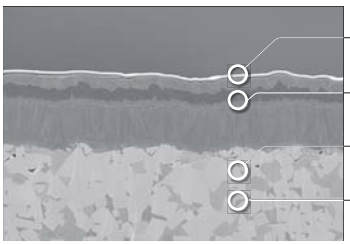
CVD coated grades

CVD insert series for stainless turning

NC9115/NC9125/NC9135

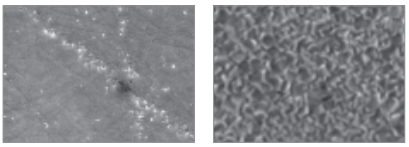
- Solutions for most common issues in stainless steel machining → Prevents built-up edge, notch wear, plastic deformation, and burr creation
- Machining of various workpieces such as austenitic, martensitic and ferritic stainless steel
- Stable tool life at high speeds, feeds, and depths of cut

Features



[NC9100 Series]

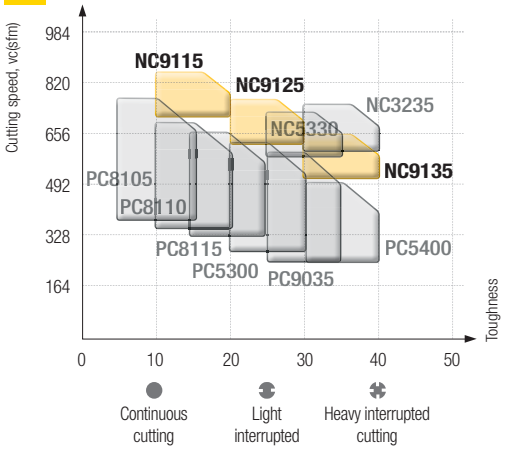
Lubricative coating layer to prevent built-up edge



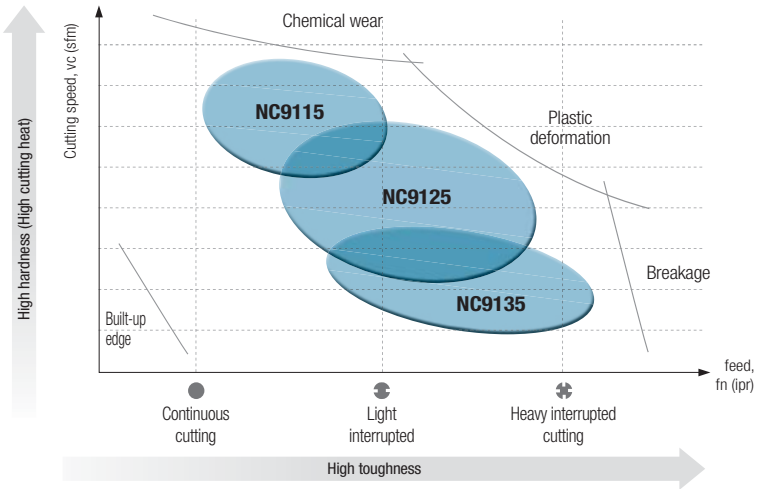
[NC9100 Series] [Existing coating]

Application range

M Stainless steel



Grades line-up



Recommended grade and chip breaker per stainless steel type

[Austenitic stainless steel]

Grade	Cutting speed (sfm)				
	164	328	492	656	820
NC9115			525	722	
NC9125			492	656	
NC9135		328	492		

[Duplex stainless steel]

Grade	Cutting speed (sfm)				
	164	328	492	656	820
NC9115			394	525	
NC9125		328	459		
NC9135	197	328			

[Ferritic / Martensitic stainless steel]

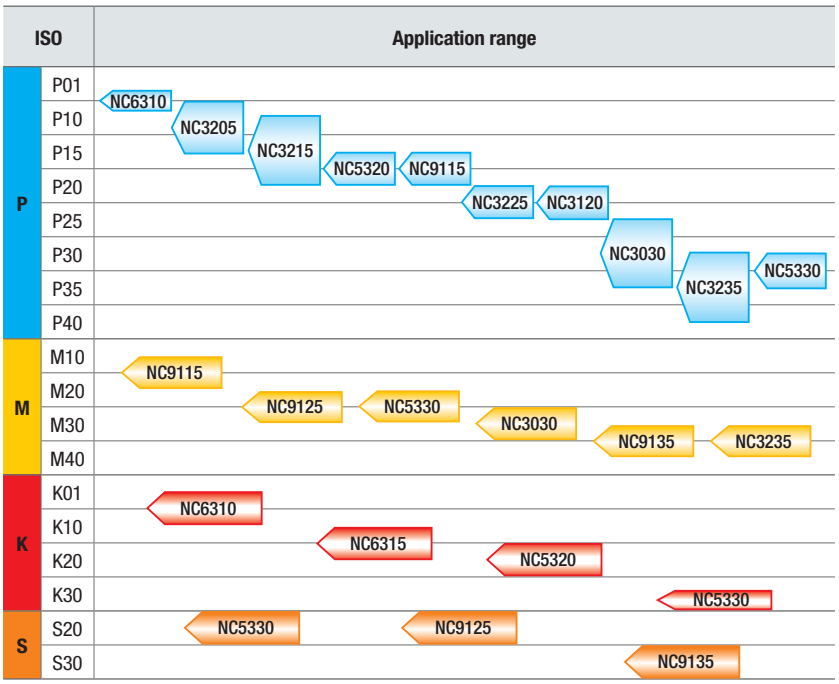
Grade	Cutting speed (sfm)				
	164	328	492	656	820
NC9115			492		820
NC9125		394		722	
NC9135		328	492		

[Precipitation hardened (PH) stainless steel]

Grade	Cutting speed (sfm)				
	164	328	492	656	820
NC9115	164	361			
NC9125	131	361			
NC9135	98	328			

Selection system of CVD coated grade

ISO		Machining types	Recommended grade	Recommended cutting speed (sfm)
P	Steel	Continuous cutting	NC3205	984 (689~1280)
			NC3215	853 (591~1115)
		General cutting	NC5320	787 (558~1017)
			NC3225	755 (525~984)
			NC3120	755 (525~984)
		Interrupted cutting	NC3030	623 (427~820)
			NC3235	591 (410~771)
			NC5330	574 (394~755)
M	Stainless steel	Continuous cutting	NC9115	591 (525~656)
		General cutting	NC9125	574 (509~640)
			NC5330	574 (509~640)
		Interrupted cutting	NC3235	558 (509~607)
			NC9135	525 (476~574)
K	Cast iron	Continuous cutting	NC6310	1115 (837~1394)
		General cutting	NC6315	919 (689~1148)
			NC5320	722 (541~902)
		Interrupted cutting	NC5330	492 (361~623)
S	HRSA	Continuous cutting	NC9125	131 (98~164)
		Interrupted cutting	NC9135	115 (82~148)



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

- Increased wear resistance and chipping resistance with the use of ultra fine substrate
- PVD coating technology with high hardness and oxidation resistance at high temperature
- Excellent tool life when finishing heat resistant alloys and stainless steels at high speeds

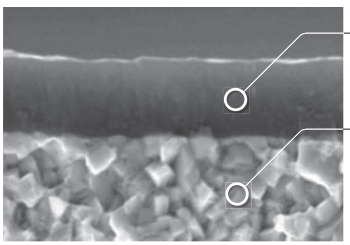
PC8110

- 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

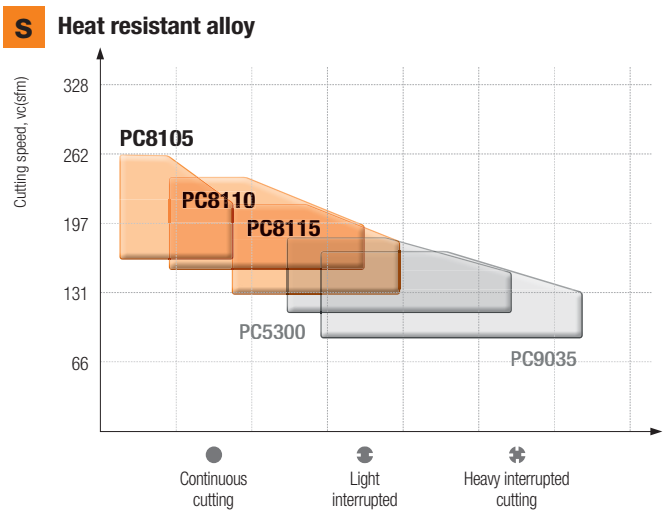


It prevents wear at a high temperature to apply excellent surface roughness and coating with oxidation resistance and high hardness

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

[PC8100 series]

Application range



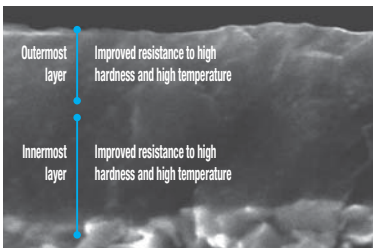
PVD coated grades

Universal PVD grade

PC5300

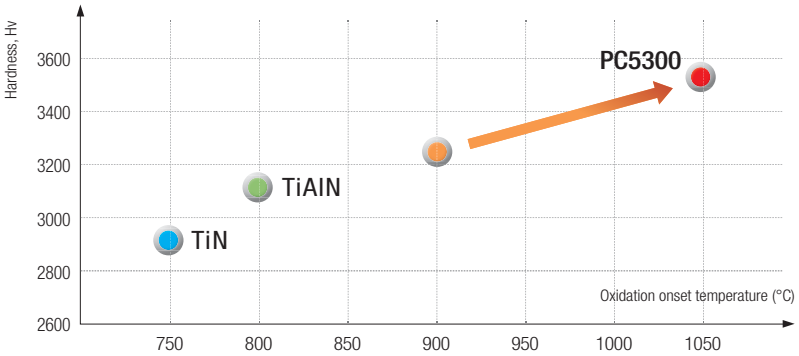
- Advanced PVD coating with high hardness and high temperature stability
- High tough substrate and coating films produce excellent surface finish
- Universal tooling capability covering P, M, K, S with this single grade, PC5300
- Stable machining resulting from excellent edge hardness and chipping resistance

Features



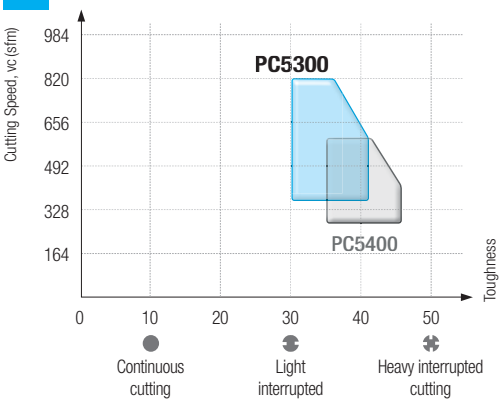
- Latest PVD coating technology developed by KORLOY
- New concept of coating equipped with high temperature oxidation resistance and high hardness

High temp properties

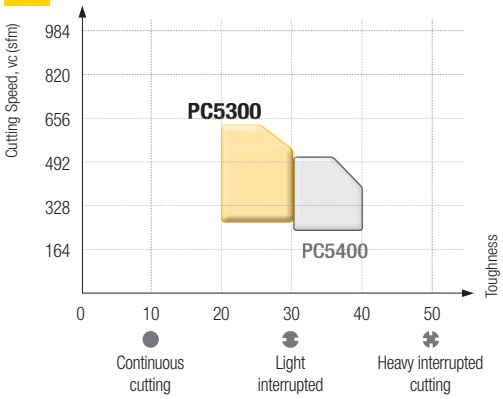


Application range

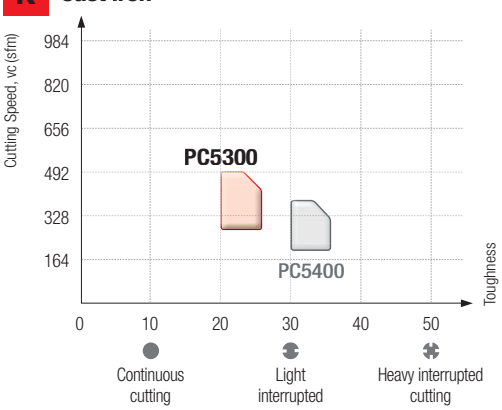
P Steel



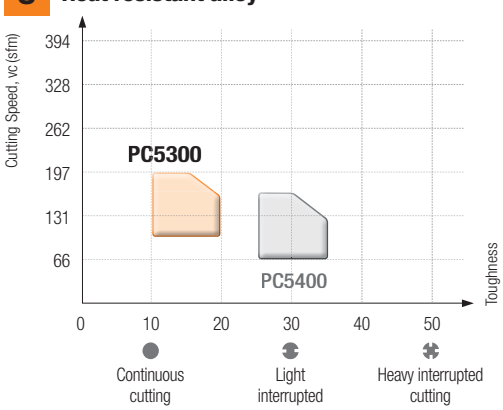
M Stainless steel



K Cast iron



S Heat resistant alloy



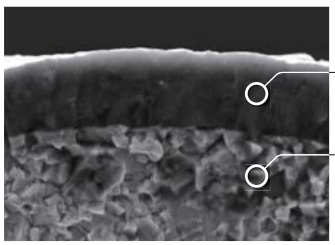
PVD coated grades

PVD grade for stainless steel turning

PC9030

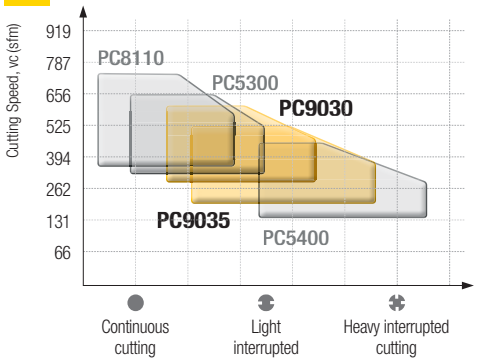
- The optimal PVD grade for intermediate finishing and continuous cutting of stainless steel turning
- Applied high welding resistance coating layer technology
- Applied high wear resistance materials

Features

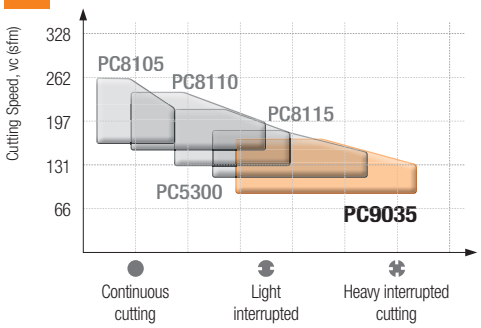


Application range

M Stainless steel



S Heat resistant alloy

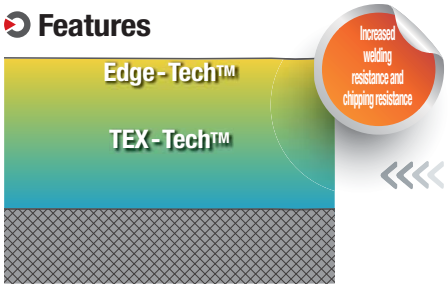


Stainless steel turning insert

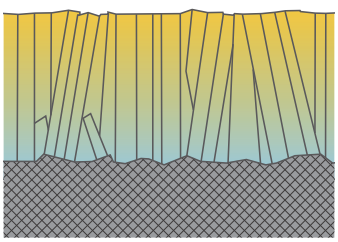
PC9035

- 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 (sfm)
P	Steel	Continuous cutting	PC5300	459 (344~574)
		Interrupted cutting	PC5400	410 (295~525)
M	Stainless steel	Continuous cutting	PC8105	574 (427~722)
			PC8110	525 (394~656)
			PC8115	476 (361~591)
		Interrupted cutting	PC5300	427 (312~541)
			PC9030	394 (295~492)
			PC9035	394 (295~492)
			PC5400	361 (262~459)
K	Cast iron	Continuous cutting	PC8110	443 (328~558)
		Interrupted cutting	PC5300	344 (262~427)
			PC5400	279 (213~344)
S	HRSA	Continuous cutting	PC8105	180 (131~230)
			PC8110	164 (115~213)
			PC8115	148 (115~180)
		Interrupted cutting	PC5300	131 (98~164)
			PC9035	125 (82~164)
			PC5400	115 (82~148)
H	Hardened	Interrupted cutting	PC8105	361 (262~459)
			PC8110	328 (246~410)
			PC8115	295 (213~377)

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

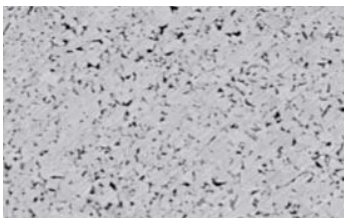
The features of PVD coated grades

PVD Coated grades	ISO	Features
PC5300	P30 ~ P40 M20 ~ M30 K20 ~ K25 S15 ~ S25	• Universal grade for stainless, hard-to-cut materials, steel and interrupted cast iron machining • High chipping and welding resistance for longer tool life • New TiAlN coating and ultra fine grain substrate with high toughness
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 TiAlCrN Coating
PC8105	S01 ~ S10 M05 ~ M15 H01 ~ H05	• For high speed and continuous finishing of hard-to-cut materials and stainless steel • 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 continuous, medium and high speed cutting of hard-to-cut materials and stainless steel • 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 stainless steel • Excellent tool life with high wear resistance and chipping resistance • Ultra fine substrate and the new TiAlN coating layer
PC9030	M25 ~ M35	• Medium, roughing and heavy interrupted cutting for STS • TiAlN coating and fine grain substrate with high toughness • 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

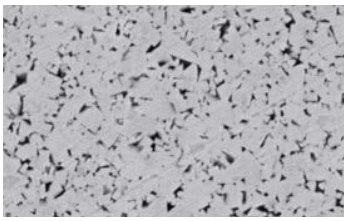
Uncoated carbide grades for turning application of titanium

H01



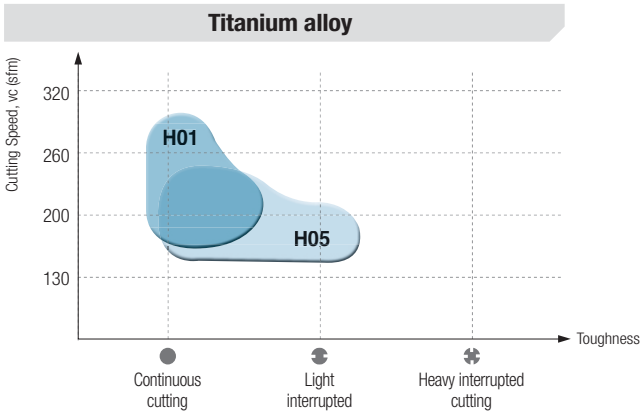
- Increased wear resistance and chipping resistance with the use of ultra fine substrate
- Improved welding resistance and chipping resistance with the use of special surface treatment and sharp cutting edge of VP chip breaker
- Excellent tool life when finishing titanium alloy at high speed

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

Grade line up



Selection system

Workpiece		Recommended grade	Recommended cutting speed (sfm)	ISO	Application range
P	Steel	ST30A	262(197~328)	P30	ST30A
K	Cast iron	H01	394(295~492)	K01	H01
		H05	344(262~427)	K10	H05
		G10	295(213~377)	K20	G10
N	Aluminum alloy	H01	1444(722~2165)	N10	H01
	Copper alloys	H05	1296(640~1952)	N20	H05
		G10	1148(558~1739)	N30	G10
S	Titanium alloy	H01	115(82~148)	S01	H01
		H05	108(82~135)	S10	H05
H	High hardness steel	H01	262(180~344)	H10	H01

Main composition and application range

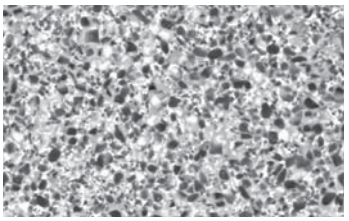
Workpiece	Composition	Composition	Workpiece
P	WC-TiC-TaC-Co	Heat resistance, excellent plastic deformation resistance	Carbon steel, alloy steel, stainless steel
M	WC-TiC-TaC-Co	General tools stable heat resistance with strength	Carbon steel, alloy steel, stainless steel
K	WC-Co	High strength and superior 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



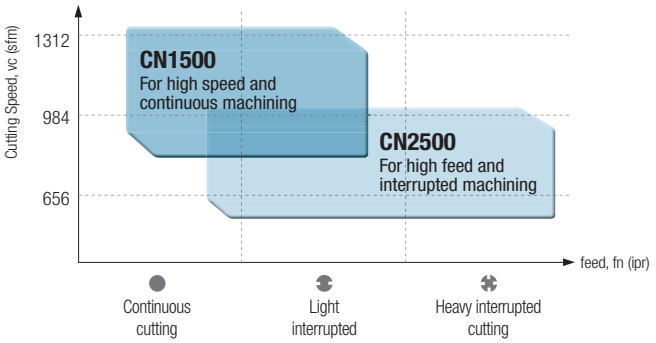
CN2500

- 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

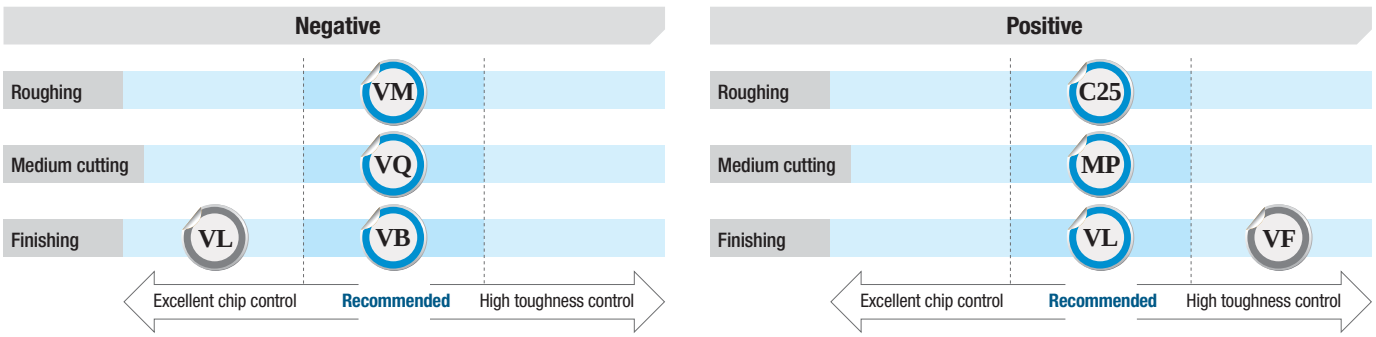
Recommended cutting conditions

Division	Workpiece	Grade	Recommended cutting speed (sfm)		
			Minimum	Recommended	Maximum
Turning	1010 (AISI) C10E (DIN)	CN1500	492	**886**	1312
		CN2500	427	**787**	1148
	1045 (AISI) C45 (DIN)	CN1500	492	**820**	1148
		CN2500	427	**722**	984
	4140(H)(AISI) 42CrM04	CN1500	394	**722**	984
		CN2500	328	**656**	820

Grades line-up



Chip breakers line-up



Selection system

Workpiece		Machining types	Recommended grade	Recommended cutting speed (sfm)	ISO	Application range
P	Steel	Continuous cutting	CN1500	820 (492 ~ 1148)	P10	CN1500
		Interrupted cutting	CN2500	722 (427 ~ 984)	P20	CN2500
					P30	
K	Cast iron	Continuous cutting	CN1500	656 (328 ~ 984)	K10	CN1500
		Interrupted cutting	CN2500	541 (262 ~ 820)	K20	CN2500

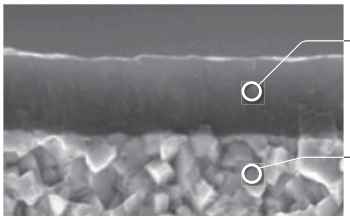
Coated cermet grades

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



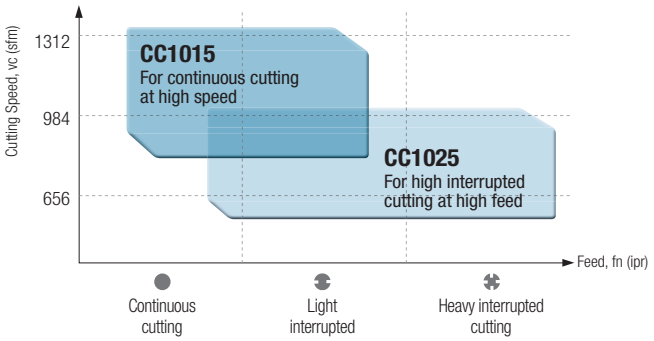
CC1025

- 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

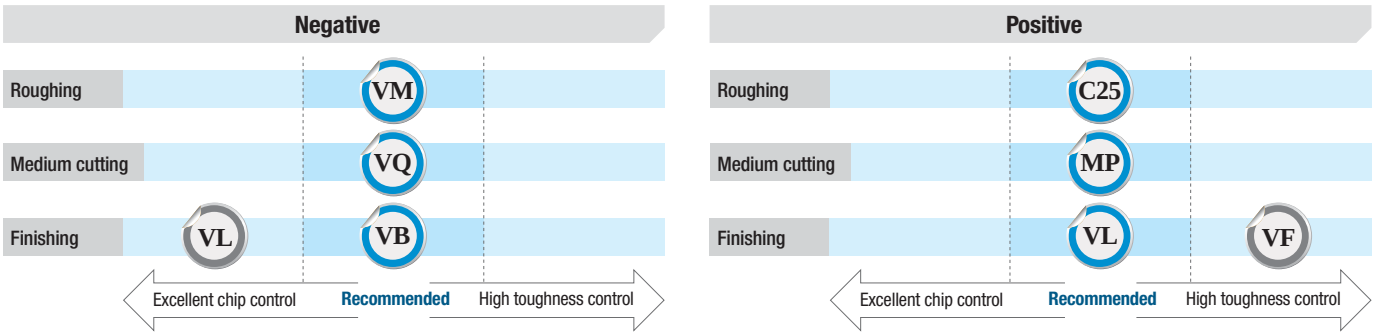
Recommended cutting conditions

Division	Workpiece	Grade	Recommended cutting speed (sfm)		
			Minimum	Recommended	Maximum
Turning	1010 A36	CC1015	656	**1148**	1476
		CC1025	591	**951**	1312
	1045	CC1015	656	**984**	1312
		CC1025	591	**886**	1148
	4140	CC1015	591	**886**	1148
		CC1025	492	**820**	984

Grades line-up



Chip breakers line-up



Selection system

Workpiece		Machining types	Recommended grade	Recommended cutting speed (sfm)	ISO	Application range
P	Steel	Continuous cutting	CC1015	1066 (656 ~ 1476)	P10	CC1015
					P20	CC1025
		Interrupted cutting	CC1025	869 (591 ~ 1148)	P30	
K	Cast iron	Continuous cutting	CC1015	886 (591 ~ 1148)	K10	CC1015
		Interrupted cutting	CC1025	820 (492 ~ 984)	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

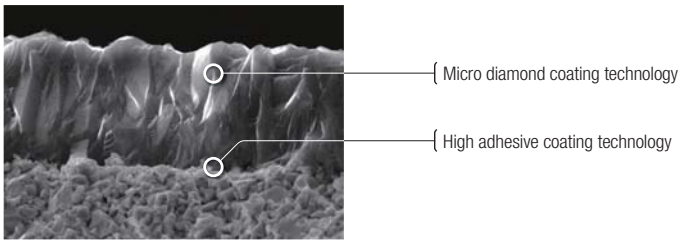
- SP3-crystalline diamond coatings of high purity and high hardness
- Improved adhesion between coated layers and the substrate that is specialized for diamond coatings
- Excellent tool life when machining graphite and ceramic

Features

ND3000

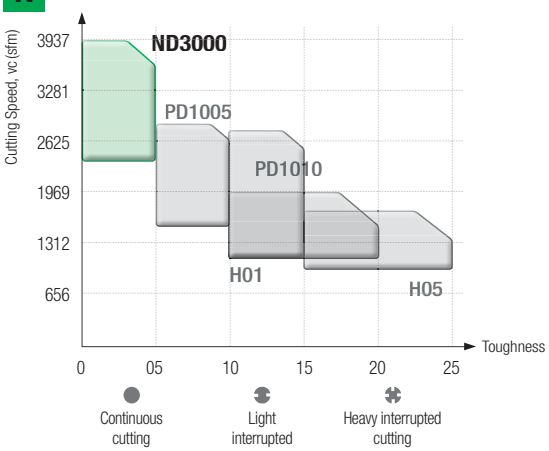


Cross section of ND3000's coated layers



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

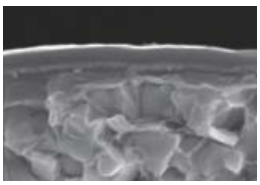
PD1005/PD1010

- High hardness and low friction DLC (Diamond Like Carbon) 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

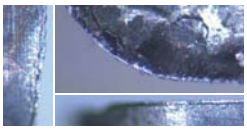
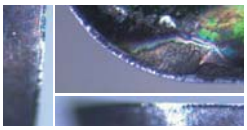
Features



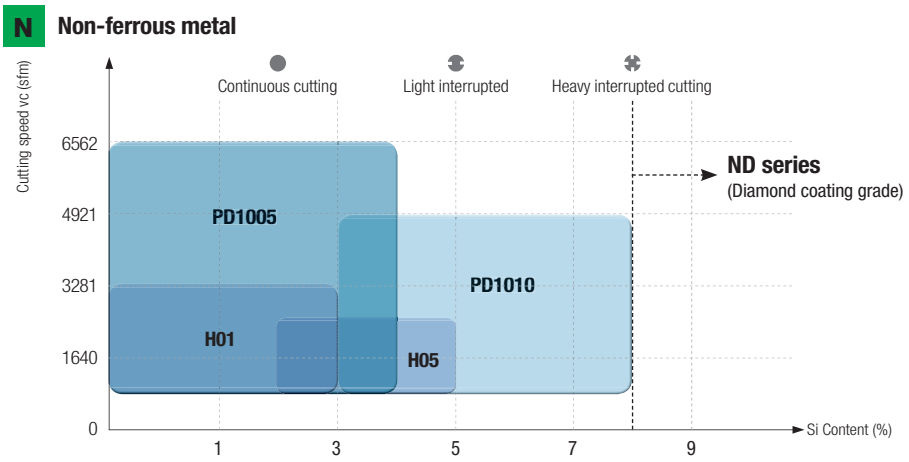
Smooth coating surface



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	PD1010
		Al-Si alloy (Hardened non-ferrous metals)	PD1010	N15	

The features of DLC coating grades

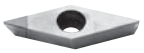
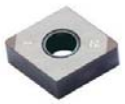
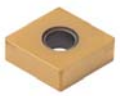
Grade	ISO	Features
PD1005	N05 ~ N10	• For high speed and continuous machining of aluminum and copper • High wear and welding resistance realize good machinability • High performance of DLC coating with high hardness and low friction
PD1010	N10 ~ N15	• For medium to high and interrupted machining of aluminum 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

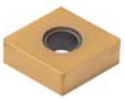
▸ Insert type

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



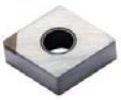


2NU-CNGA120408

- Easy handling of corners
- Strong Brazing
- Excellent tool life compared to non-coated inserts

One use type



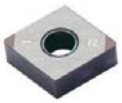


NU-CNGA120408

- 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



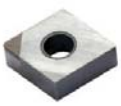


2NU-CNGA120408

- 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

Regrinding type

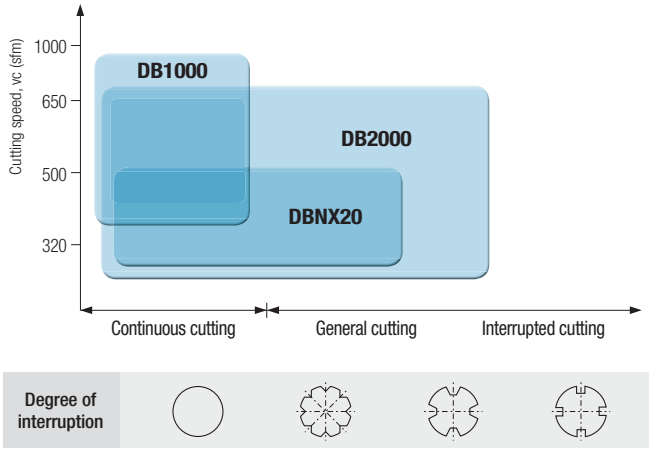




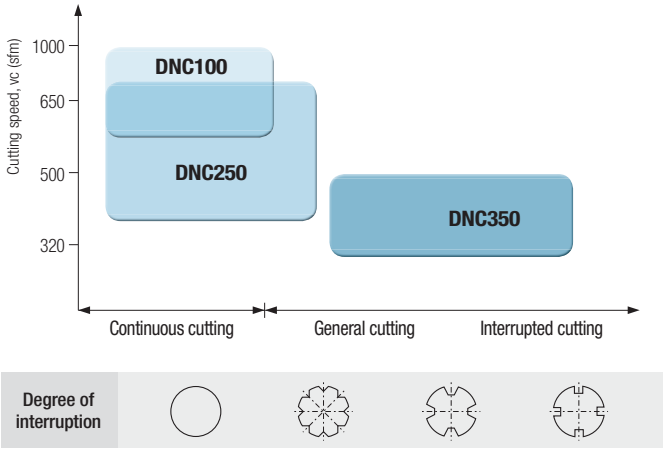
CNMA120408

- 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

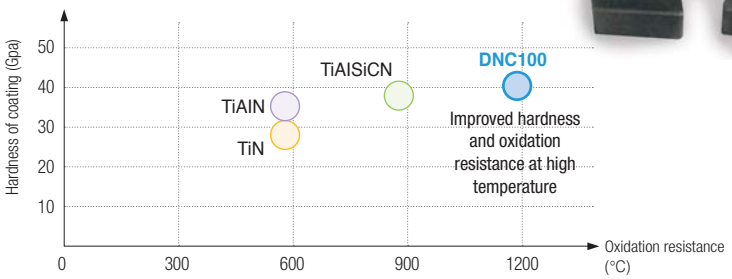
ISO		Grades		Insert color	Application	Cutting speed, vc (sfm)	Feed, fn (ipr)	Depth of cut, ap (inch)
H	High hardness steel	Coated	DNC100		Continuous cutting at high speed	591 – 984	0.001 ~ 0.012	0.001 ~ 0.012
			DNC250		Continuous and low interrupted cutting at high speed	394 – 722	0.002 ~ 0.012	0.002 ~ 0.012
			DNC300		Low and medium interrupted cutting	295 – 820	0.002 ~ 0.008	0.002 ~ 0.008
			DNC350		Medium and high interrupted cutting	295 – 492	0.002 ~ 0.012	0.002 ~ 0.012
		Non coated	DB1000		Continuous cutting at high speed	427 – 820	0.001 ~ 0.006	0.001 ~ 0.008
			DB2000		Low and medium interrupted cutting	262 – 656	0.001 ~ 0.008	0.001 ~ 0.012
			DBNX20		Highly efficient cutting	394 – 492	0.001 ~ 0.012	0.001 ~ 0.020
			DBN250		Medium and high interrupted cutting	262 – 394	0.001 ~ 0.008	0.001 ~ 0.012
			DBN350		High interrupted cutting	394 – 722	0.001 ~ 0.008	0.001 ~ 0.012
S	HRSA		DB7000		Continuous cutting at high speed	328 – 984	0.002 ~ 0.008	0.004 ~ 0.039
K	Cast iron		DBN700A		Continuous cutting at high speed	1640 – 6562	0.004 ~ 0.016	0.004 ~ 0.016

Coated cBN

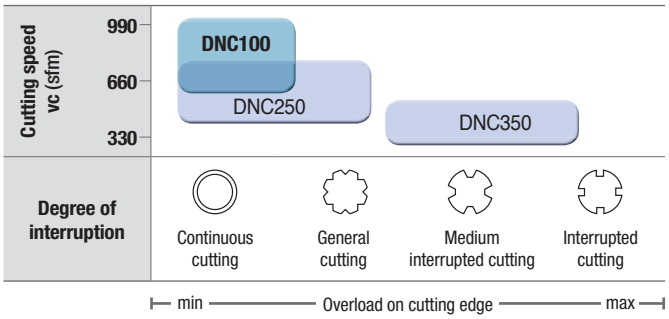
DNC100

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





Application range



Recommended cutting conditions

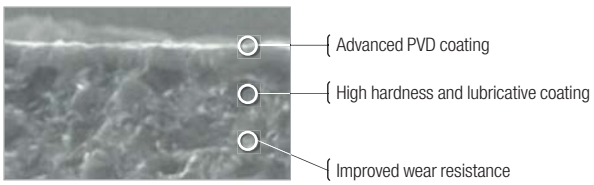
Cutting speed vc (sfm)	591 — 984
Feed fn (ipr)	0.001 — 0.012
Depth of cut ap (inch)	0.001 — 0.012

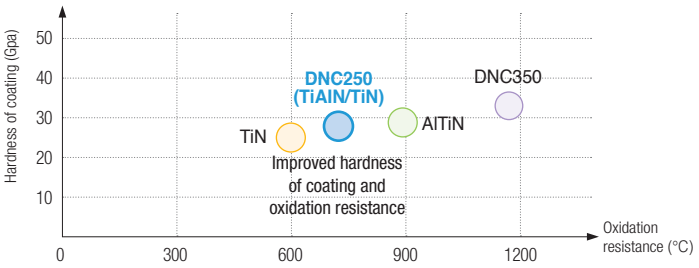
- Increased oxidation resistance and wear resistance due to high hardness coating layer
- Dramatically improved fracture resistance and chipping resistance

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

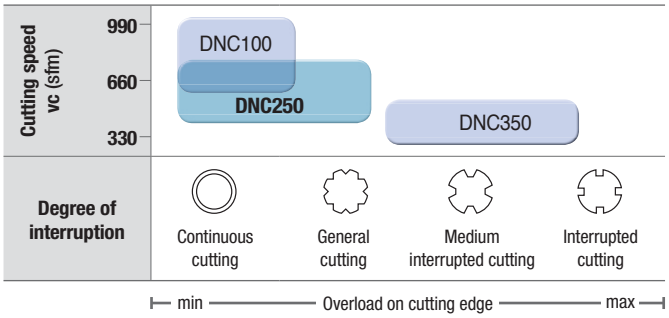
DNC250

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





Application range



Recommended cutting conditions

Cutting speed vc (sfm)	394 — 722
Feed fn (ipr)	0.002 — 0.012
Depth of cut ap (inch)	0.002 — 0.012

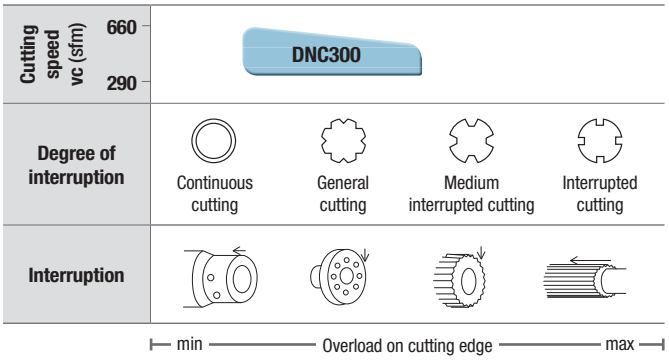
Coated cBN

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 (sfm)	300 – 660
Feed fn (ipr)	0.002 – 0.012
Depth of cut ap (inch)	0.002 – 0.010

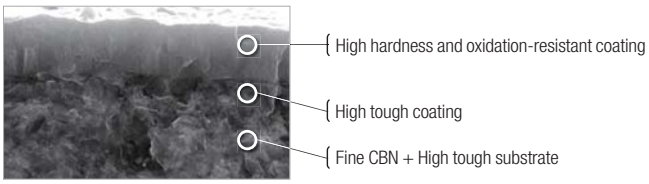
- Enhanced oxidation resistance and wear resistance due to high hardness layer
- Highly increased chipping resistance, fracture resistance and wear resistance

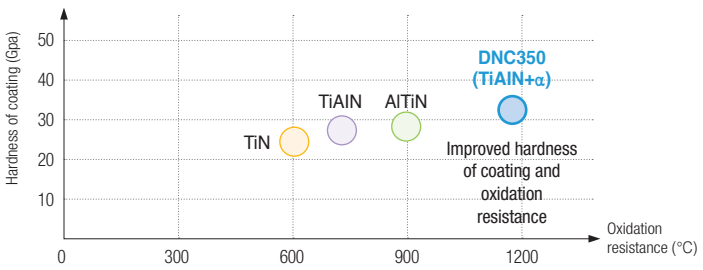
Coated cBN for high interrupted cutting

DNC350

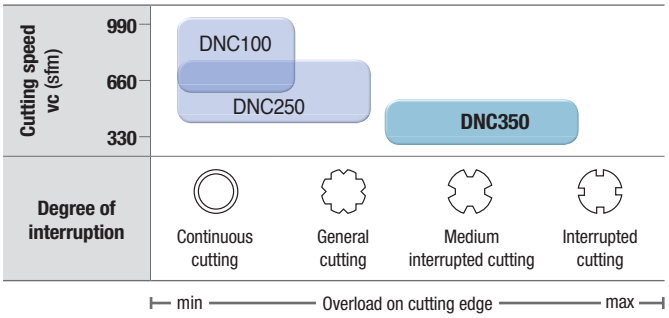


- Excellent tool life and productivity in interrupted cutting
- New PVD coating applied with high hardness and oxidation resistance





Application range



Recommended cutting conditions

Cutting speed vc (sfm)	295 – 492
Feed fn (ipr)	0.002 – 0.012
Depth of cut ap (inch)	0.002 – 0.012

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

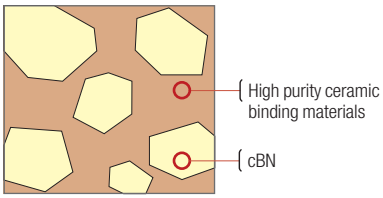
DB2000



- 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

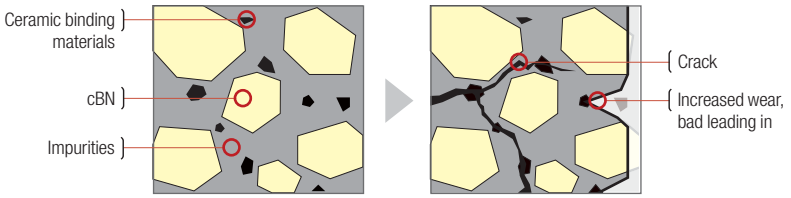
New technology of high purity ceramic binding materials

DB1000/DB2000



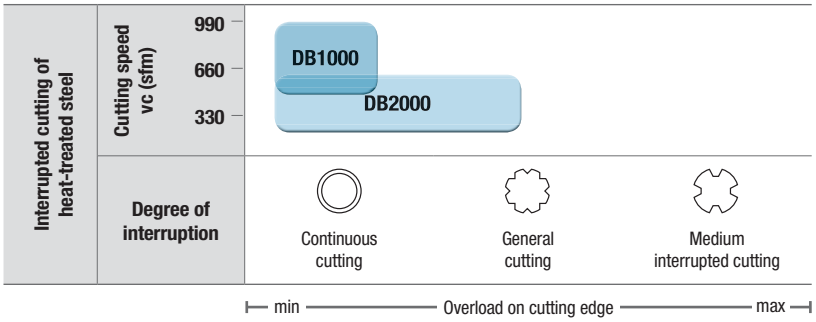
DB2000 dramatically minimizes impurities with the use of high purity ceramic binding materials and enhances thermal resistance and toughness.

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 (sfm)	427 – 820
Feed fn (ipr)	0.001 – 0.006
Depth of cut ap (inch)	0.001 – 0.008

Recommended cutting conditions (DB2000)

Cutting speed vc (sfm)	262 – 656
Feed fn (ipr)	0.001 – 0.008
Depth of cut ap (inch)	0.001 – 0.012

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.

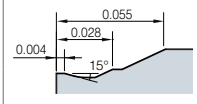
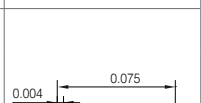
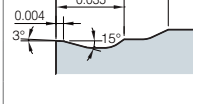
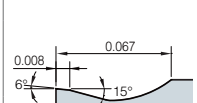
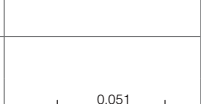
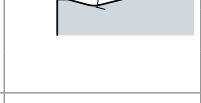
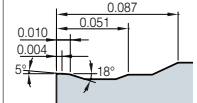
PCD grade

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

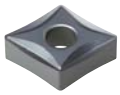
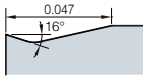
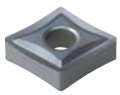
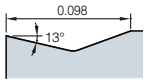
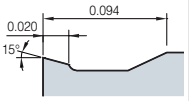
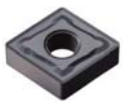
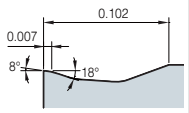
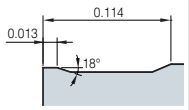
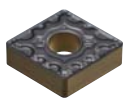
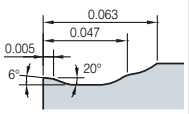
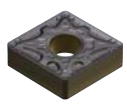
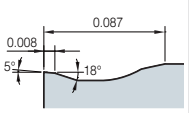
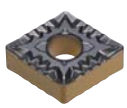
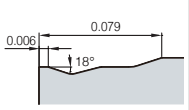
Workpiece	Cutting speed (sfm)	Feed Turning (ipr), Milling (ipt)	Depth of cut (inch)	Recommended grade	
				1st	2nd
Aluminum alloy (4%~8%Si)	3281 ~ 9843	0.004 ~ 0.024	~ 0.118	DP150	DP200
Aluminum alloy (9%~14%Si)	1969 ~ 8202	0.004 ~ 0.020	~ 0.118	DP150	DP200
Aluminum alloy (15%~18%Si)	984 ~ 2297	0.004 ~ 0.016	~ 0.118	DP150	DP200
Copper, Bronze alloy	~ 3281	0.002 ~ 0.008	~ 0.118	DP150	DP200
Reinforced plastic	~ 3281	0.004 ~ 0.012	~ 0.08	DP150	DP200
Wood	~ 13123	0.004 ~ 0.016	-	DP150	DP200
Cemented carbide	33 ~ 98	~ 0.008	~ 0.02	DP90	DP150

Chip breakers for turning

Picture	Cutting edge	Application range Feed rate fn (ipr) 0.002 0.003 0.004 0.006 0.010 0.016 0.025 0.039 0.063 0.098 0.157 0.248 Depth of cut ap (inch) 0.004 0.006 0.010 0.016 0.025 0.039 0.063 0.098 0.157 0.248 0.394 0.457 ~0.512	Features
V series **VL**		0.004~0.014 0.008~0.059	**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		0.006~0.018 0.020~0.079	**For Finishing** • Improved chip control for smaller depth of cuts • Excellent chip control in copying, corner R machining
VF		0.002~0.014 0.020~0.059	**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		0.005~0.018 0.020~0.138	**For Medium to finish cutting** • Stable chip control in copying and internal machining with various depths of cut
VQ		0.004~0.016 0.039~0.118	**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		0.004~0.020 0.039~0.197	**For Medium cutting** • Wide available chip control range from medium-finishing to medium-roughing • Suitable chip breaker for CNC machining
VH		0.028 ~0.055 0.236~0.591	**For Heavy duty cutting** • Designed specifically for heavy machining • Specialized chip breaker for the heavy industries like Ship building, Power plant industry
VT		0.030~0.063 0.276~0.669	**For Heavy duty cutting** • Designed specifically for heavy machining • Specialized chip breaker for the heavy industries like Ship building, Power plant industry

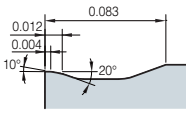
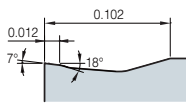
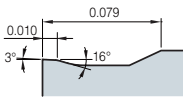
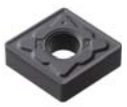
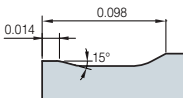
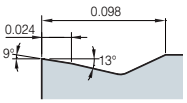
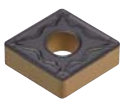
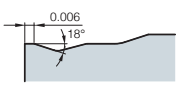
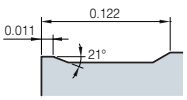
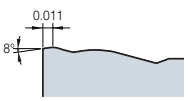
Notice: Application ranges are based on main cutting material

Chip breakers for turning

		Picture	Cutting edge	Application range	Features
				Feed rate fn (ipr): 0.002 0.003 0.004 0.006 0.010 0.016 0.025 0.039 0.063 0.098 0.157 0.248 Depth of cut ap (inch): 0.004 0.006 0.010 0.016 0.025 0.039 0.063 0.098 0.157 0.248 0.394 0.457 ~0.512	
V series	VP1			0.002~0.008 0.004~0.059	**For Finishing** • High positive cutting edge • Reduced contact chip with rake face minimizes temperature to improve tool life
V series	VP2			0.002~0.016 0.020~0.157	**For Medium to finish cutting** • Stable chip control and high machinability in copying with various depths of cut
V series	VP3			0.002~0.018 0.020~0.177	**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			0.006~0.018 0.039~0.177	**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			0.010 ~0.022 0.047~0.276	**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			0.004~0.016 0.020~0.098	**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			0.006~0.018 0.020~0.177	**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			0.005~0.014 0.020~0.138	**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

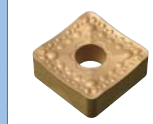
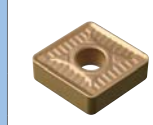
Notice: Application ranges are based on main cutting material

Chip breakers for turning

		Picture	Cutting edge	Application range Feed rate fn (ipr) 0.002 0.003 0.004 0.006 0.010 0.016 0.025 0.039 0.063 0.098 0.157 0.248 Depth of cut ap (inch) 0.004 0.006 0.010 0.016 0.025 0.039 0.063 0.098 0.157 0.248 0.394 0.457 ~0.512	Features
-M series	MM			0.005~0.018 0.020~0.217	**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			0.006~0.022 0.079~0.236	**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			0.004~0.020 0.039~0.197	**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			0.008~0.024 0.059~0.236	**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			0.001~0.012 0.020~0.098	**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			0.008~0.022 0.039~0.197	**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			0.012~0.031 0.118~0.315	**For Roughing** • Suitable for deep depth of cut and high feed cutting of steel and cast iron • Suitable for intermittent cutting
	GH			0.012~0.051 0.118~0.433	**For Heavy duty cutting** • Suitable for heavy duty cutting due to strong cutting edge • Wide chip control range with low cutting force

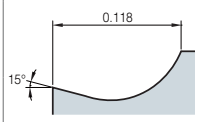
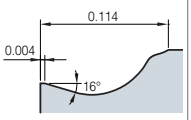
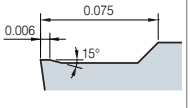
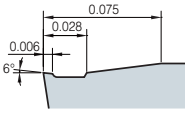
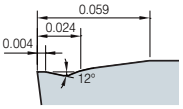
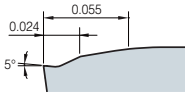
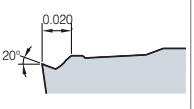
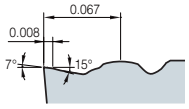
Notice: Application ranges are based on main cutting material

Chip breakers for turning

	Picture	Cutting edge	Application range Feed rate fn (ipr) 0.002 0.003 0.004 0.006 0.010 0.016 0.025 0.039 0.063 0.098 0.157 0.248 Depth of cut ap (inch) 0.004 0.006 0.010 0.016 0.025 0.039 0.063 0.098 0.157 0.248 0.394 0.457 ~0.512 0.709	Features
G series	**B25**		0.020 ~0.039 0.157 ~0.394	**For General cutting** • Suitable for general cutting condition
Heavy series	**HP**		0.016 ~0.039 0.098~0.472	**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		0.016 ~0.039 0.098~0.472	**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		0.016~0.047 0.118~0.512	**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		0.020~0.055 0.157~0.512	**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		0.024 ~0.059 0.177~0.709	**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**		0.006~0.024 0.039~0.197	**For Medium to finish cutting** • Guarantees excellent surface roughness and good chip controls at high feed machining
	VW		0.006~0.020 0.020~0.138	**For Medium to finish cutting** • Improved surface roughness at shallow depth of cut and high feed due to strong cutting edge

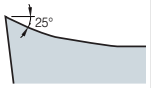
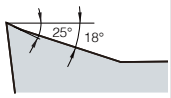
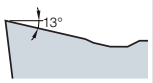
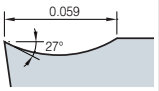
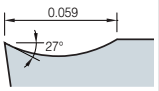
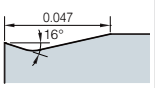
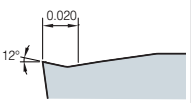
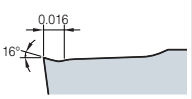
Notice: Application ranges are based on main cutting material

Chip breakers for turning

	Picture	Cutting edge	Application range Feed rate fn (ipr) 0.002 0.003 0.004 0.006 0.010 0.016 0.025 0.039 0.063 0.098 0.157 0.248 Depth of cut ap (inch) 0.004 0.006 0.010 0.016 0.025 0.039 0.063 0.098 0.157 0.248 0.394 0.457 ~0.512	Features
Shaft series	SR		0.005~0.018 0.039~0.177	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
Shaft series	SH		0.006~0.020 0.059~0.197	For Medium cutting • Good chip flow increases tool life and machinability.
Posi-C series	C25		0.004~0.014 0.039~0.118	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		0.003~0.016 0.020~0.138	For Medium cutting • Excellent chip control at wide range of cutting conditions • Machining versatility over a wide range of materials
Posi-V series	VF		0.002~0.010 0.004~0.059	For Finishing • Improved surface finish and size accuracy due to stable inner boring
Posi-V series	VL		0.002~0.008 0.004~0.039	For Finishing • Superior chip control in low carbon steel, pipes and steel plates
Posi-P series	FP		0.001~0.008 0.004~0.039	For Finishing • For chip control in low depth of cut mild cutting • Enhanced surface finish and reduced cutting load
Posi-P series	MP		0.002~0.012 0.012~0.118	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

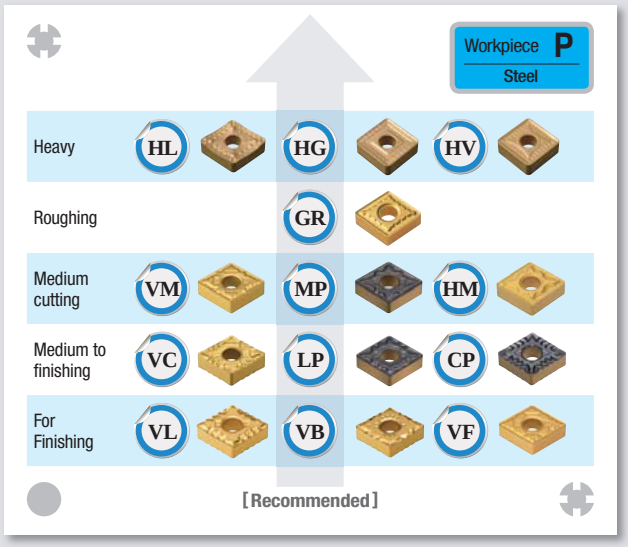
Chip breakers for turning

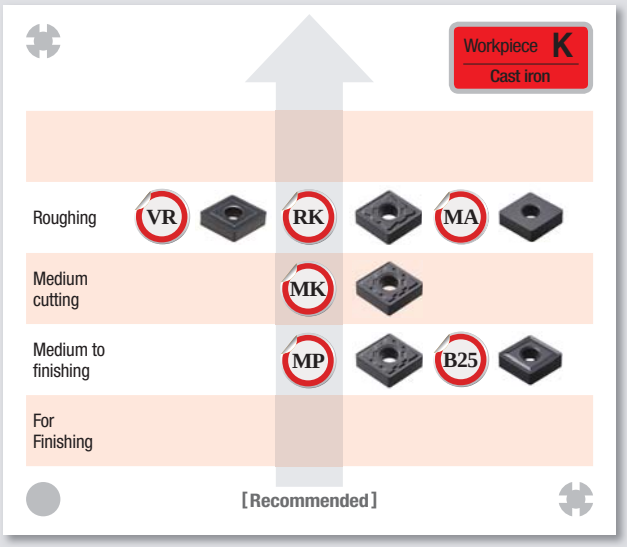
	Picture	Cutting edge	Application range Feed rate fn (ipr) 0.002 0.003 0.004 0.006 0.010 0.016 0.025 0.039 0.063 0.098 0.157 0.248 Depth of cut ap (inch) 0.004 0.006 0.010 0.016 0.025 0.039 0.063 0.098 0.157 0.248 0.394 0.457 ~0.512	Features
AL series	AK		0.001~0.016 0.004~0.157	**For Medium to finish cutting** • Exclusive chip breaker for aluminum and aluminum alloy cutting
	AM		0.001~0.018 0.012~0.157	**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
	AR		0.002~0.020 0.020~0.157	**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		0.001~0.005 0.001~0.039	**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
	KM		0.002~0.006 0.002~0.059	**For Medium to finish cutting** • Improved chip control makes tool life long and better machining
	VP1		0.002~0.012 0.020~0.157	**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
	MS		0.001~0.010 0.012~0.118	**For medium cutting (for surface roughness)** • Reduced welding and cutting heat by sharp cutting edge • Enhanced chip evacuation in low to high feed cutting
	FS		0.001~0.008 0.004~0.079	**For Finishing** • For various workpiece (P, M, S) cutting • Good surface finish and low cutting load due to sharp cutting edge

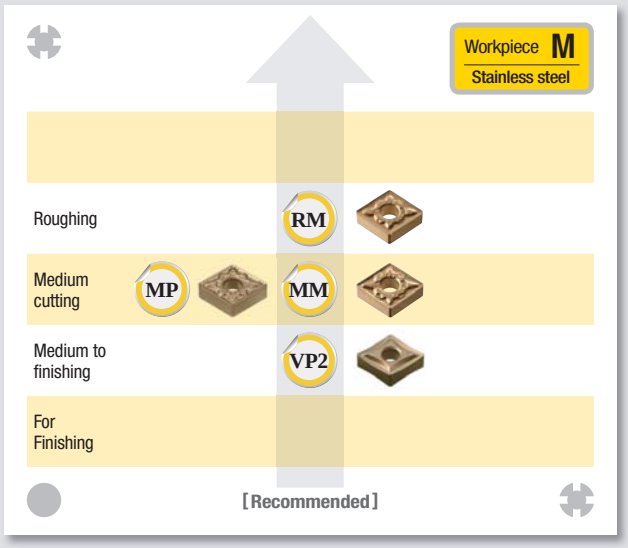
Notice: Application ranges are based on main cutting material

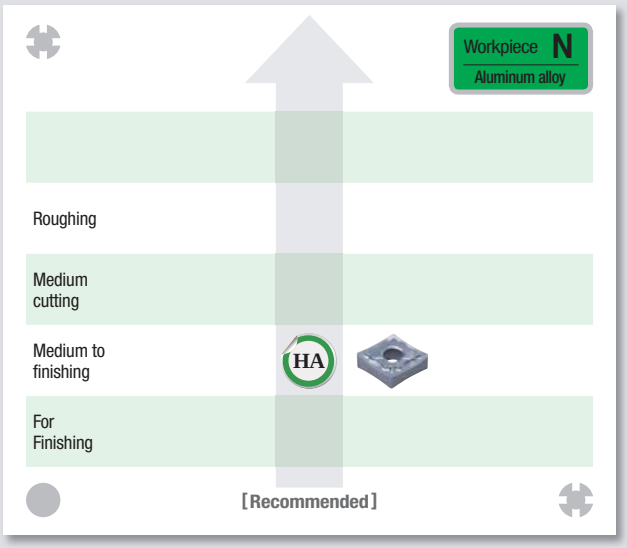
Application range of KORLOY main chip breakers

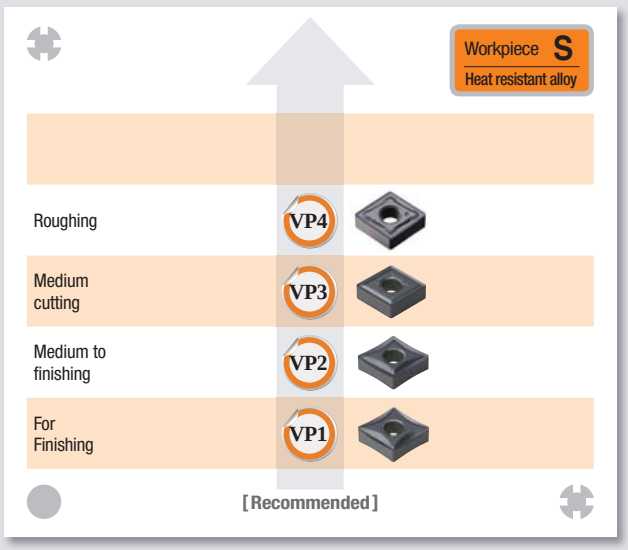
Negative inserts





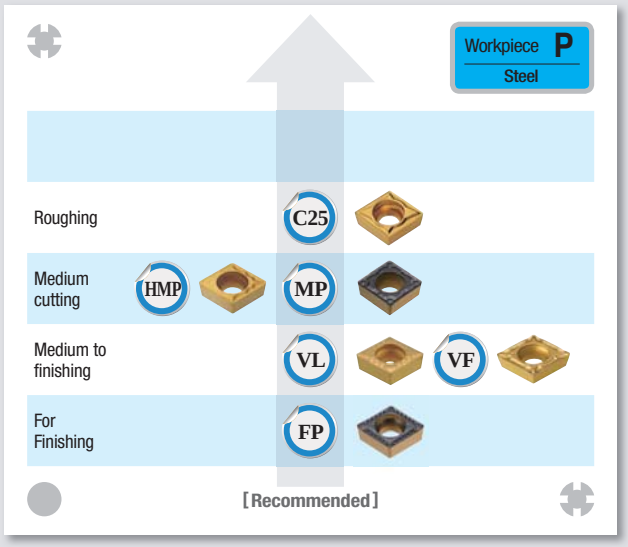


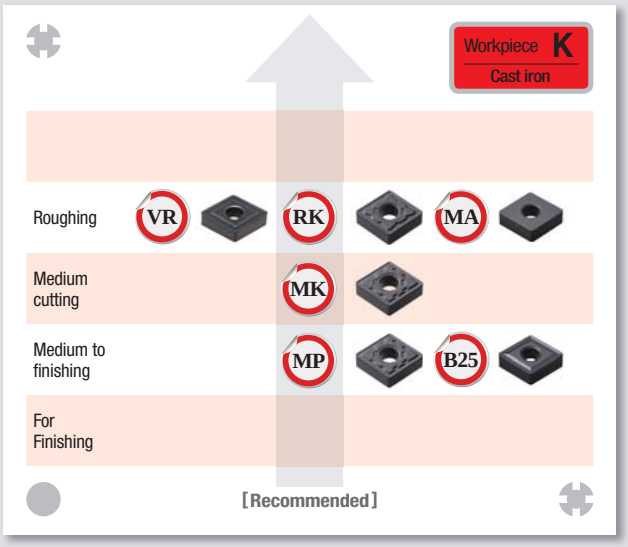


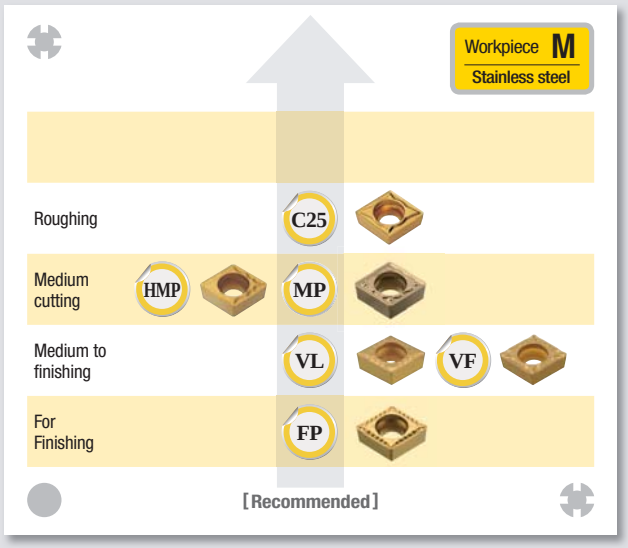


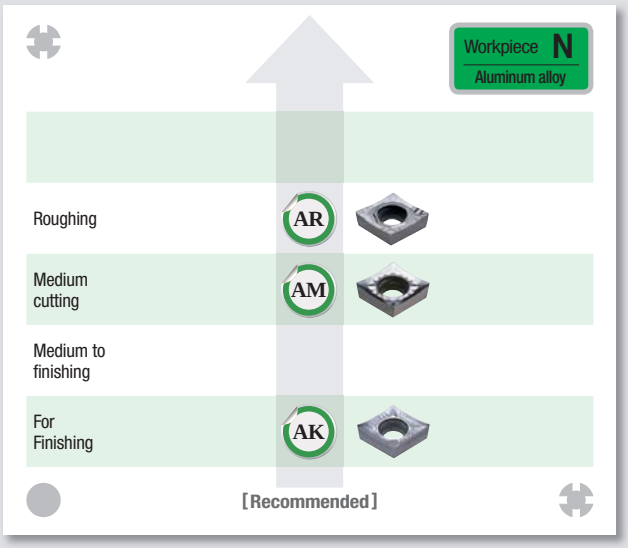
Application range of KORLOY main chip breakers

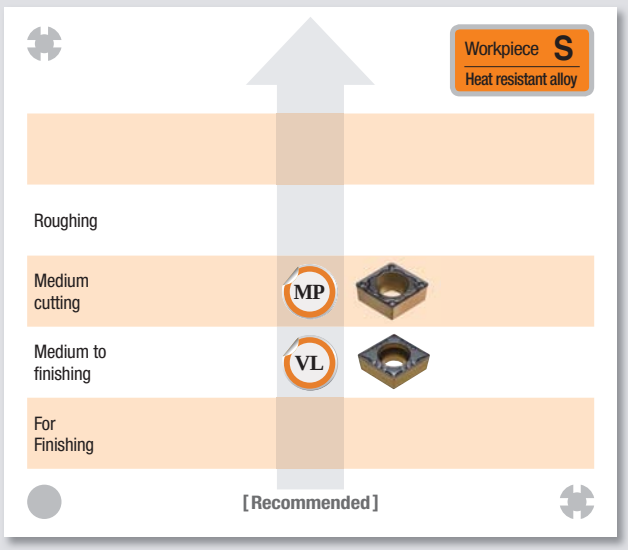
Positive inserts

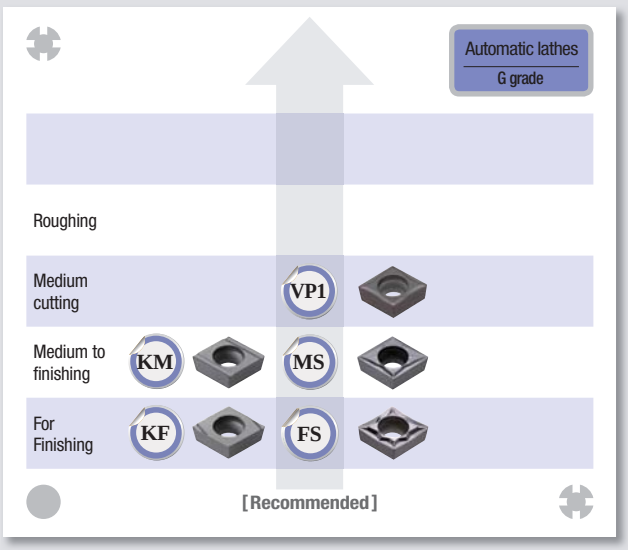






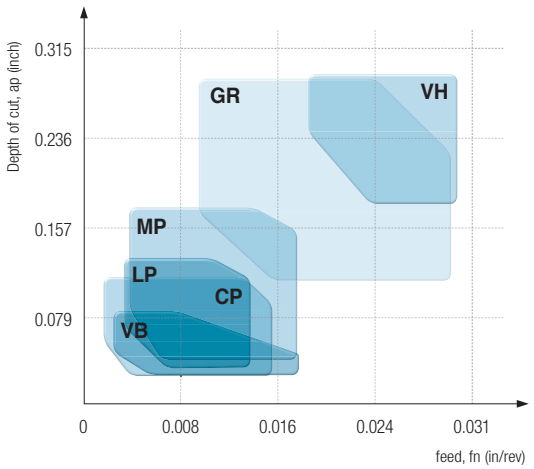
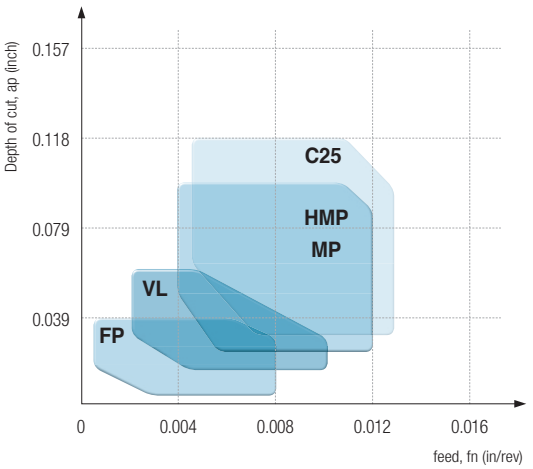
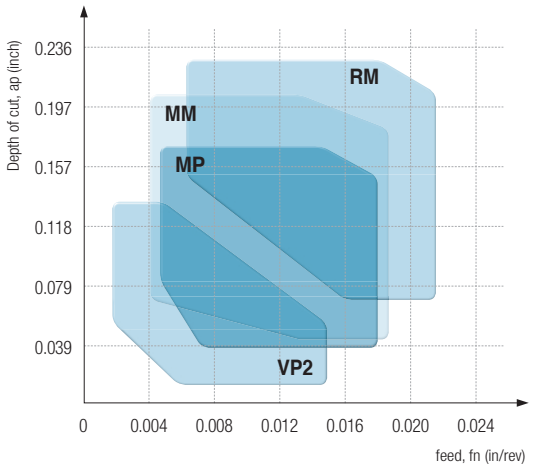
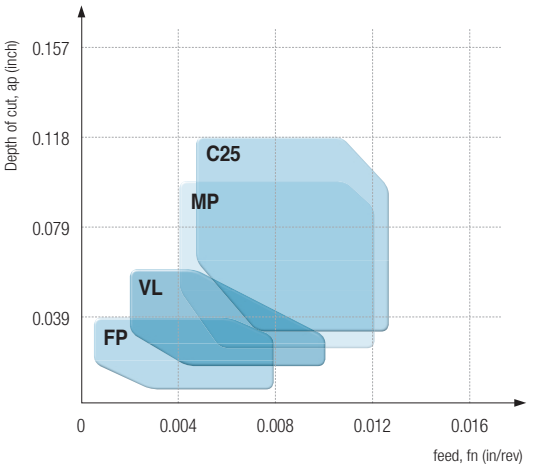
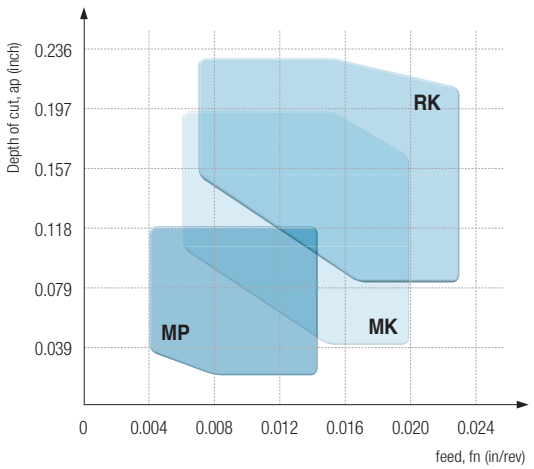
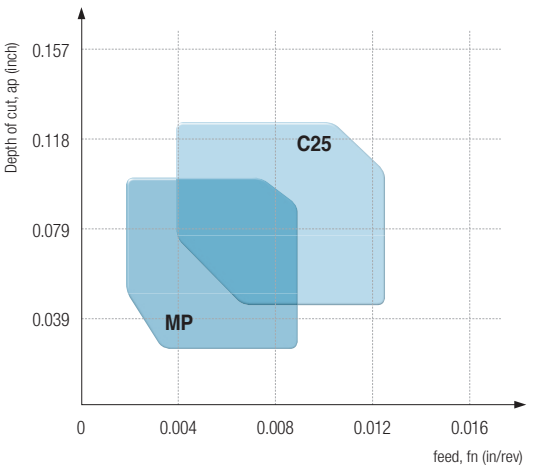






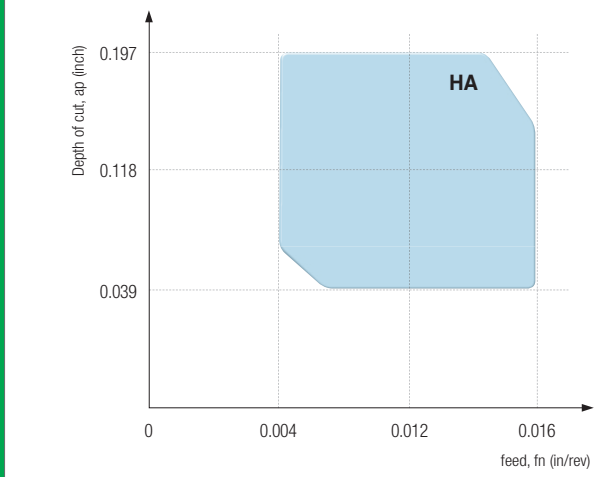
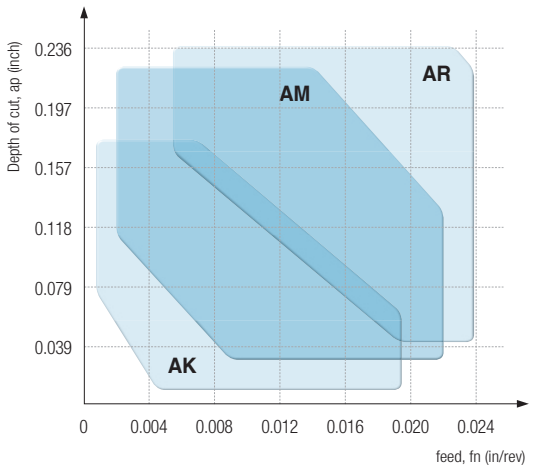
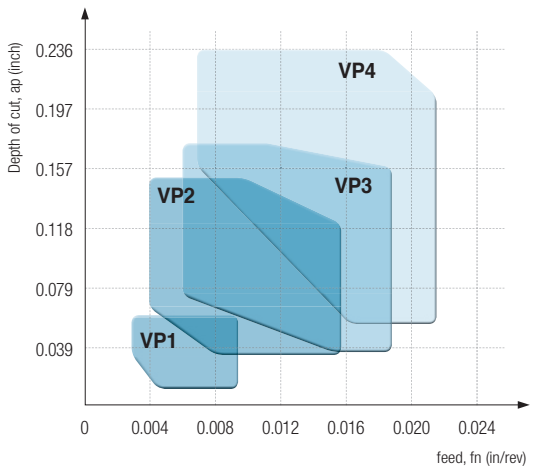
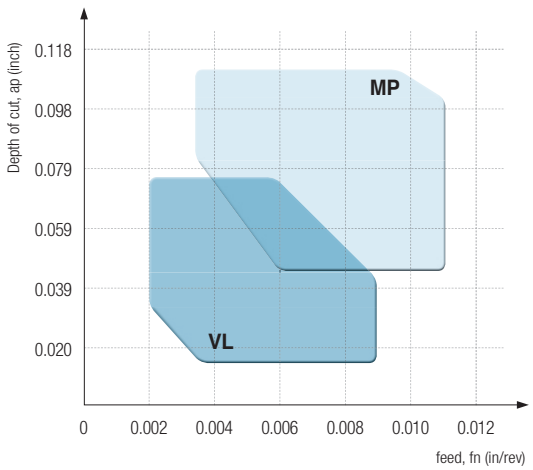
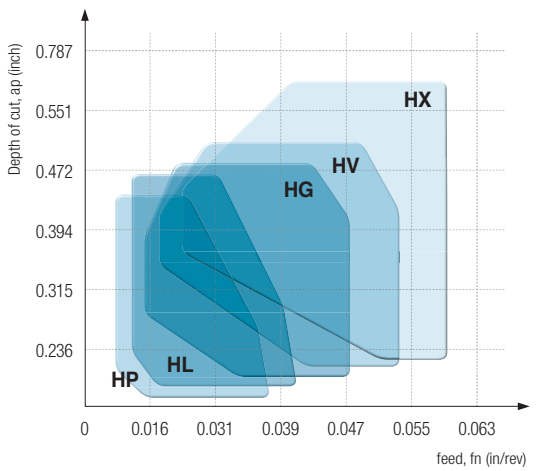
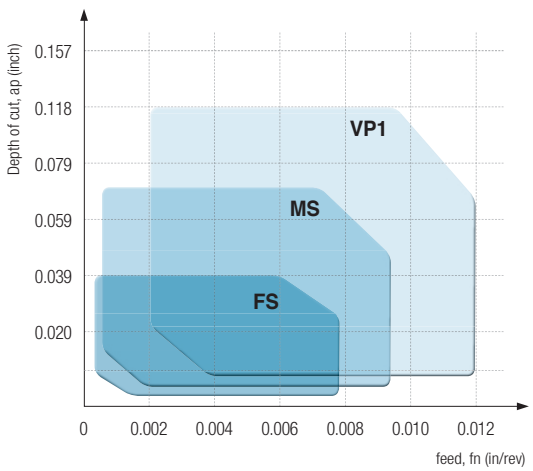
Application range of KORLOY main chip breakers

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]



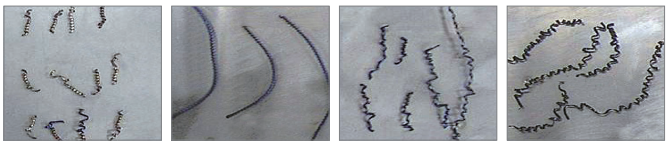
- Improved chip control for machining material that have high toughness such as low carbon steel, pipe, steel plate etc.
- Improved chip control and decreased cutting load on external, facing, and copying applications
- Improved strength of the cutting edge for measurable efficiency in automated production

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

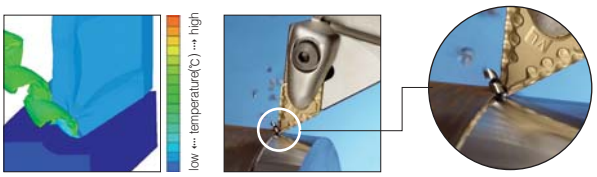
Workpiece	AISI1020
Cutting conditions	vc(sfm) = 830, ap(inch) = 0.02, fn(ipr) = 0.008 (Side), dry
Tools	DNMG432-VL(NC3225)



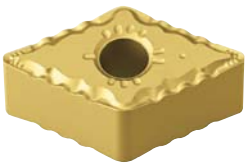
[VL Chip Breakers] [Competitor A] [Competitor B] [Competitor C]

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



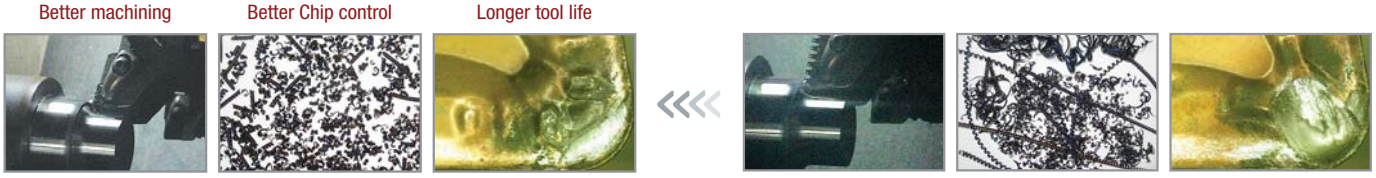
VB Chip Breaker [For finishing]



- 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

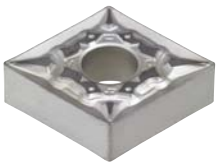
- **4 bumps on the insert corner** - Excellent chip control in various depths of cut and superb chip cutting in external, internal, copy machining and facing

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

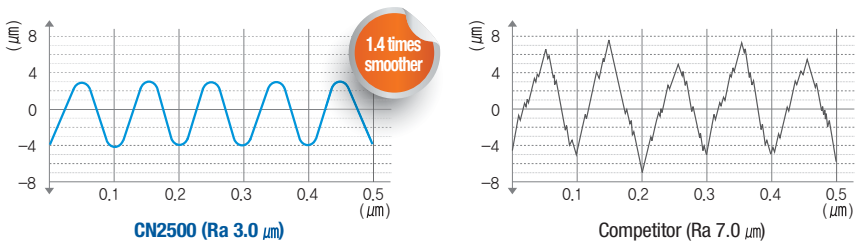
Workpiece	4140 (Alloy steel), Ø3.937 (inch), External diameter turning
Cutting conditions	vc (sfm) = 919, ap (inch) = 0.059, fn (ipr) = 0.010
Tools	CNMG432-VQ (CN2500)

Wear comparison



[CN2500-VQ] [Competitor]

Surface roughness comparison



CN2500 (Ra 3.0 μm) Competitor (Ra 7.0 μm)

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

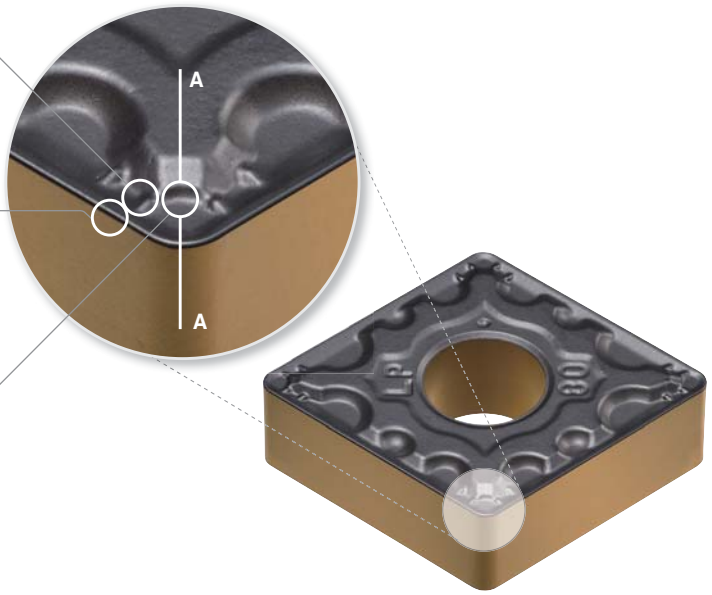
- Higher stability of chip curls at high feed
- Excellent chip control when copying
- Lower cutting force at low depth of cut and high feed

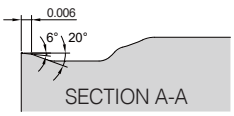
Variable land

- Less crater wear
- Prevents chipping on minor cutting edge

Flat zone

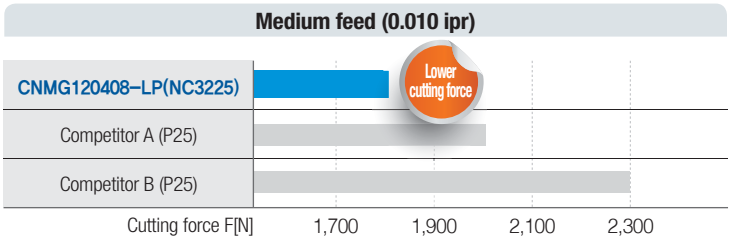
- Larger chip pocket for better chip evacuation at high feed
- Reduced cutting force with larger contact surface of chips

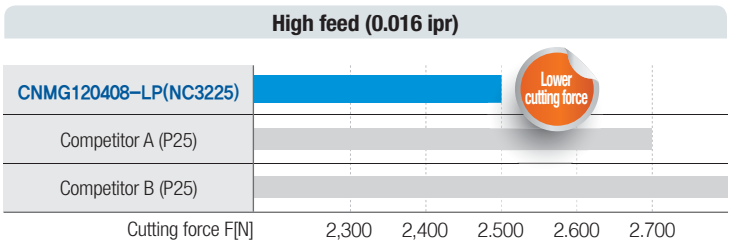




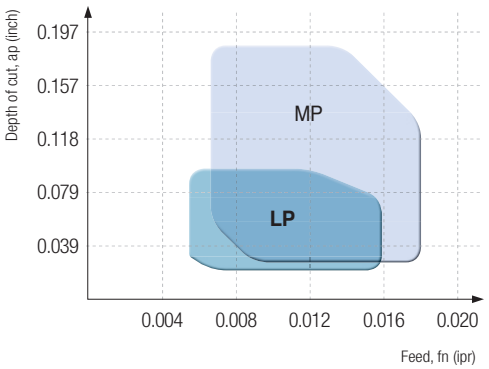
Performance evaluation

Workpiece	1045 (Carbon steal), Ø3.937 (inch), External machining
Cutting conditions	vc (sfm) = 820, ap (inch) = 0.039, fn (ipr) = 0.010/0.016, wet
Tools	CNMG432-LP





Application range



Negative insert

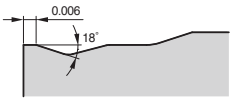
CP Chip Breaker [For medium to finishing]

- 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

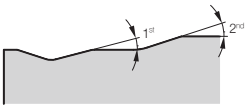
Flat land

- 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

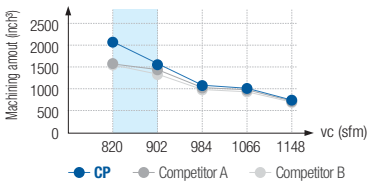
Performance evaluation

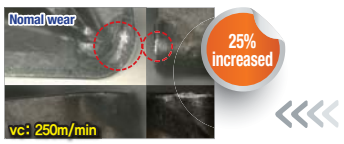
V-T (Vc-Tool life)

Workpiece Alloy steel(1522), External machining

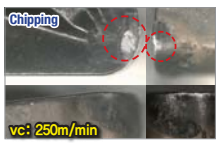
Cutting conditions vc(sfm) = 820, 984, 1148, fn(ipr) = 0.012, ap(inch) = 0.020, wet

Tools **Insert:** CNMG432-CP(NC3215P)
Holder: PCLNL16-4D

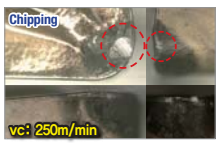




[CP]



[Competitor A]



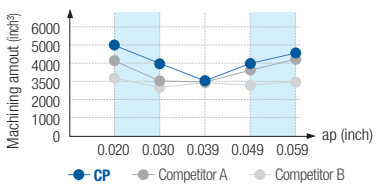
[Competitor B]

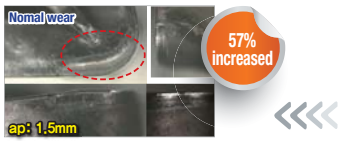
D-T (Depth of cut-Tool life)

Workpiece Alloy steel(1522), External machining

Cutting conditions vc(sfm) = 820, fn(ipr) = 0.008, ap(inch) = 0.020, 0.030, 0.039, 0.049, 0.059, wet

Tools **Insert:** CNMG432-CP(NC3215P)
Holder: PCLNL16-4D





[CP]

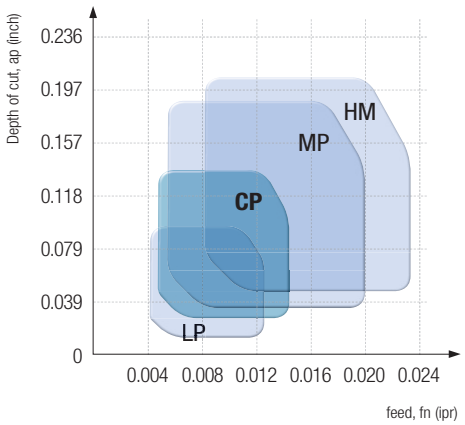


[Competitor A]



[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

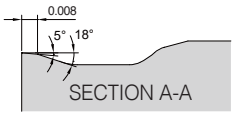
- Higher stability of chip curls at high feed
- Excellent chip control when copying
- Lower cutting force at high depth of cut

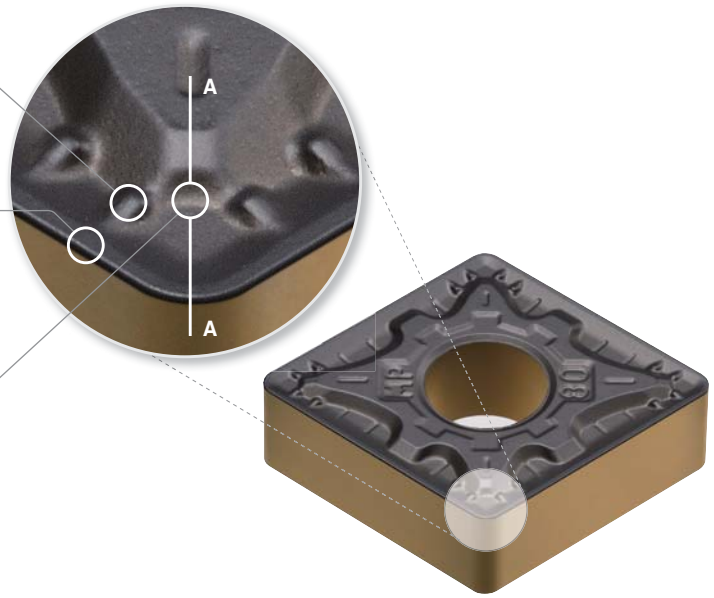
Variable land

- 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

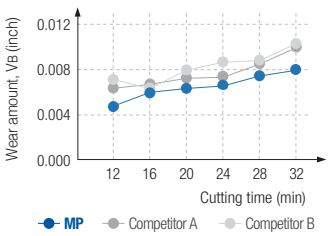


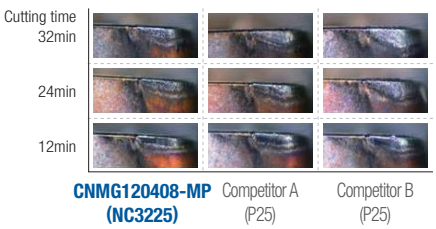


Performance evaluation

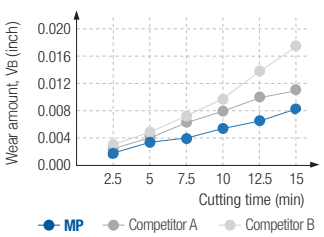
Workpiece	4140 (Alloy steel), Ø3.937 (inch), External machining
Cutting conditions	vc (sfm) = 919, ap (inch) = 0.059, fn (ipr) = 0.010/0.016, wet
Tools	CNMG432MG-MP

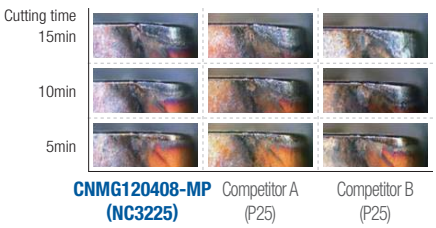
Medium feed (0.010 ipr)



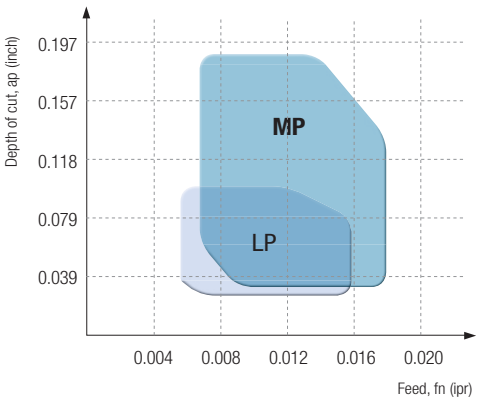


High feed (0.016 ipr)





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

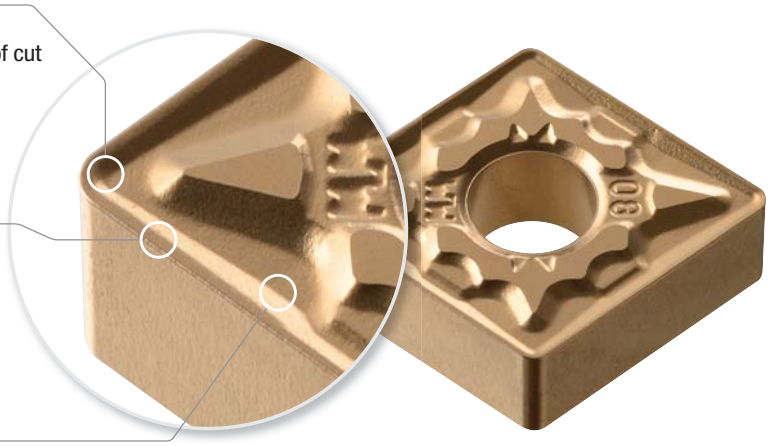
- Excellent chip control and sharp cutting at low depths of cut
- Delays crater wear
- Prevents plastic deformation

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



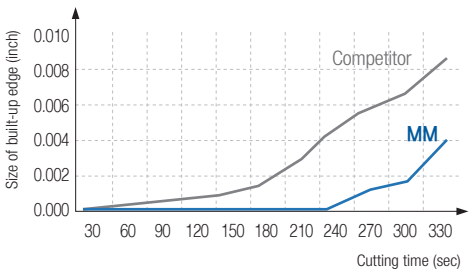
Performance evaluation

Built-up edge

Workpiece	405 (Ferrite)
Cutting conditions	vc (sfm) = 590, fn (ipr) = 0.012, ap (inch) = 0.12, wet
Tools	**Insert:** CNMG432-MM (NC9125)
	Holder: PCLNL16-4D

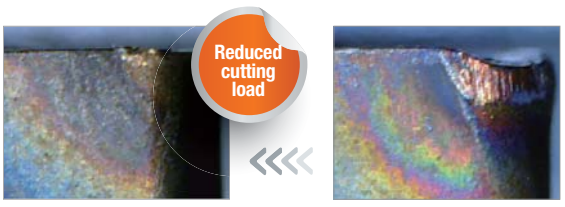


[MM(NC9135)] [Competitor]

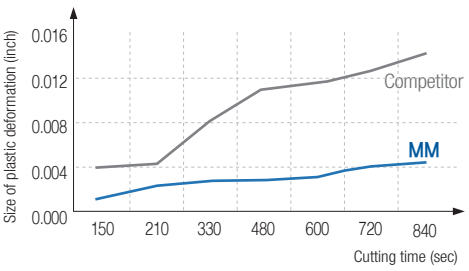


Plastic deformation

Workpiece	316 (Austenite)
Cutting conditions	vc (sfm) = 656, fn (ipr) = 0.014, ap (inch) = 0.08, dry
Tools	**Insert:** CNMG432-MM (NC9135)
	Holder: PCLNL16-4D



[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

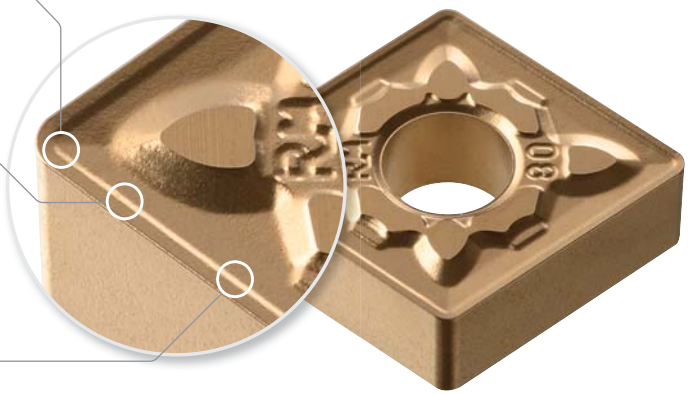
- Excellent chip control and sharp cutting at low depths of cut
- Delays crater wear
- Prevents plastic deformation

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



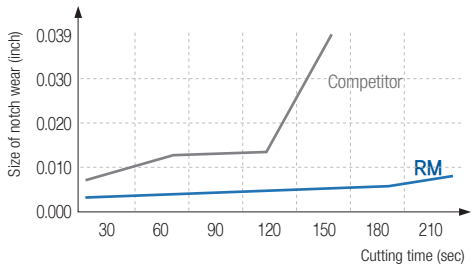
Performance evaluation

Notch wear

Workpiece 410 (Martensite)
Cutting conditions vc (sfm) = 492, fn (ipr) = 0.01, ap (inch) = 0.12, wet
Tools **Insert:** CNMG432-RM (NC9115)
Holder: PCLNL16-4D

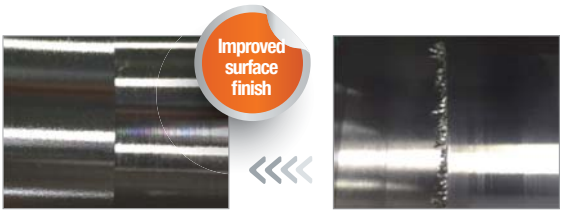


[RM(NC9125)] [Competitor]

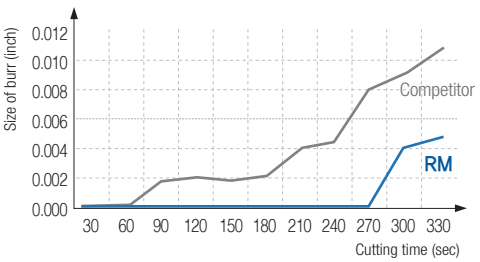


Burr

Workpiece Duplex
Cutting conditions vc (sfm) = 394, fn (ipr) = 0.008, ap (inch) = 0.08, dry
Tools **Insert:** CNMG432-RM (NC9125)
Holder: PCLNL16-4D



[RM(NC9125)] [Competitor]



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



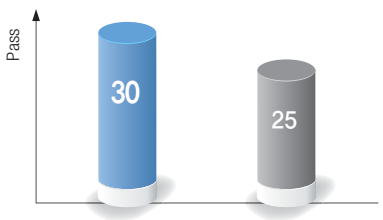
Performance evaluation

Wear resistance

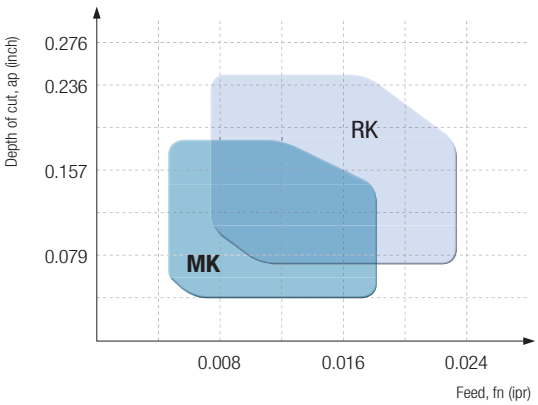
Workpiece	80-55-06 (AISI), Ø3.543 (Spherical tube) → Ø1.181 machining
Cutting conditions	vc (sfm) = 1312, fn (ipr) = 0.014, ap (inch) = 0.098, wet
Cutting time	30 passes with results of normal wear on rake/flank surface
Tools	Insert: CNMG432-MK (NC6315) Holder: DCLNR16-4D



[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

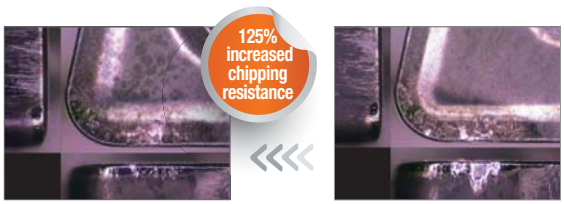
- Higher clamping stability
- Minimizes vibration and chipping.



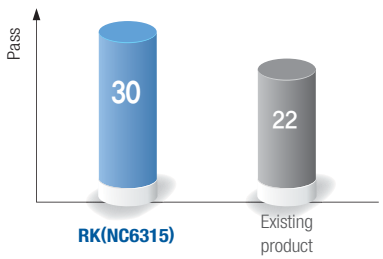
Performance evaluation

Impact resistance

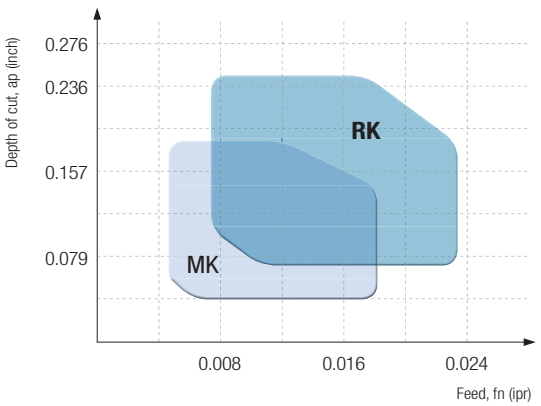
Workpiece	80-55-06 (AISI), Ø3.543 (Triangular tube) → Ø1.181 machining
Cutting conditions	vc (sfm) = 1246, fn (ipr) = 0.014, ap (inch) = 0.079, wet
Cutting time	15 passes with results of normal rake surface wear and good chipping resistance
Tools	**Insert:** CNMG432-RK (NC6315) **Holder:** DCLNR16-4D



[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(ipr) = 0.002~0.008, ap(inch) = 0.004~0.060

Features of VP1 chip breaker

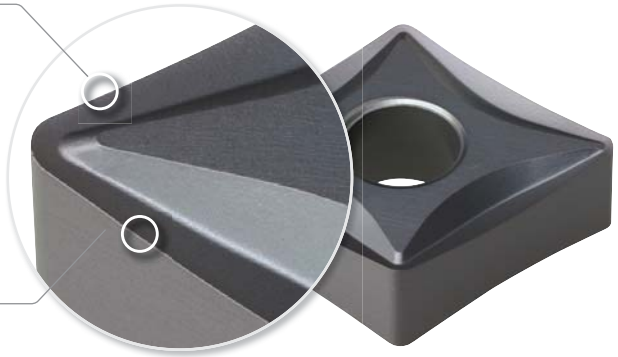
Optimized design for finishing

- 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



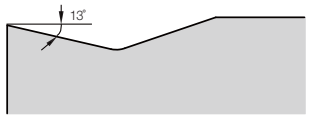
VP2 Chip Breaker [For medium to finishing]

- 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(ipr) = 0.004~0.016, ap(inch) = 0.020~0.177

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

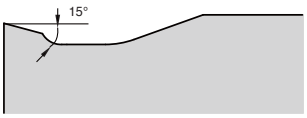
VP3 Chip Breaker [For medium cutting]

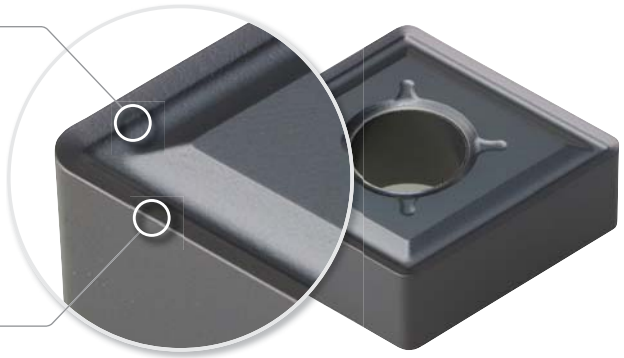
- High-positive cutting edge design/Wide land applied
  - Improved stability at interrupted cutting when toughness is required. Stable chip control and machinability at high depth of cut
- **Recommended cutting conditions:** fn(ipr) = 0.004~0.018, ap(inch) = 0.020~0.197

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

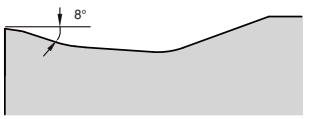
VP4 Chip Breaker [For roughing]

- 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

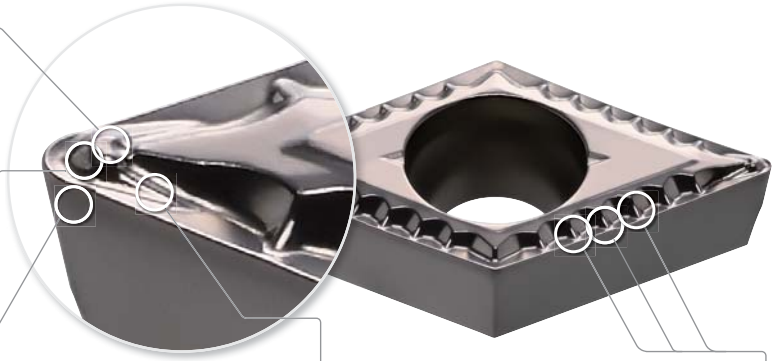
- Reduce cutting loads and improve stability even at high depth of cut in roughing

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

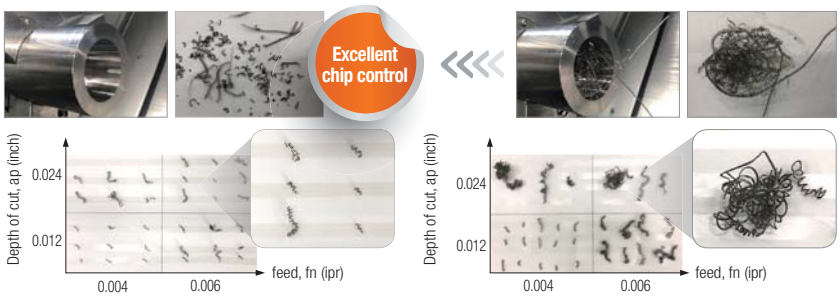
Continuous bump on flank surface

- Cutting long chip

Performance evaluation

Chip control

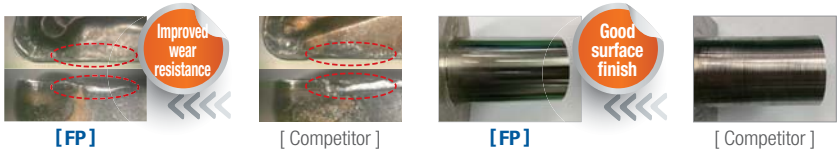
Workpiece	Mild steel (1020), Ø1.575 Internal machining
Cutting conditions	vc (sfm) = 656, n (rpm) = 1,600, fn (ipr) = 0.0012, ap (inch) = 0.0197, wet
Tools	**Insert:** CCMT32.51-FP (NC3215) **Holder:** S10M-SCLCR3



[FP] [Competitor]

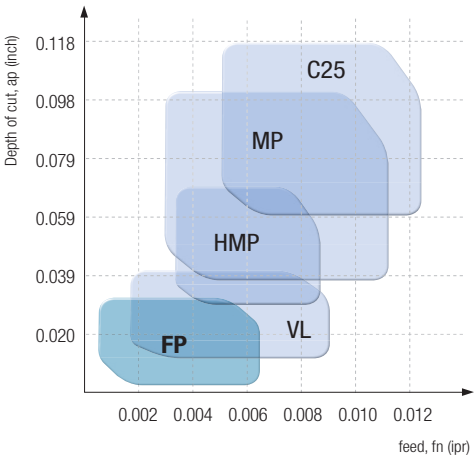
Surface finish

Workpiece	Mild steel (1020), Ø1.181 External machining
Cutting conditions	vc (sfm) = 656, n (rpm) = 2,000, fn (ipr) = 0.0031, ap (inch) = 0.0315, wet
Tools	**Insert:** CCMT32.51-FP (NC3215) **Holder:** SCLCR10-3A



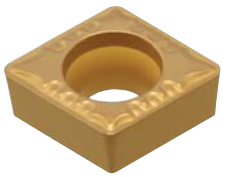
[FP] [Competitor] [FP] [Competitor]

Application range



Positive insert

VL Chip Breaker [For finishing]



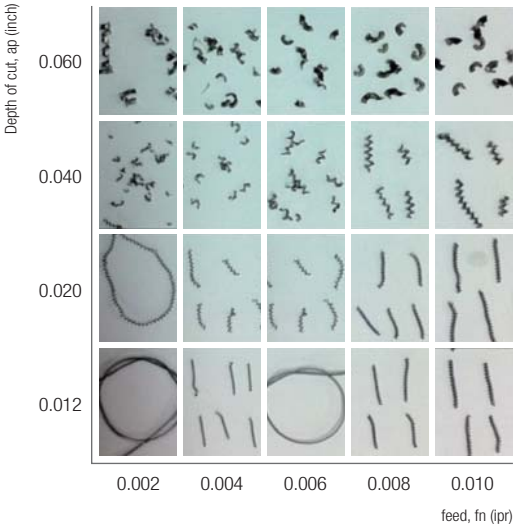
- The sharp flank surface and the chip breaker design significantly improve chip control when machining tough materials such as low carbon steel, pipe steel, and iron plates
- Sharp cutting edges reduce cutting resistance and provide excellent chip control at low depth of cuts, leading to stable machining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

Features of VL chip breaker

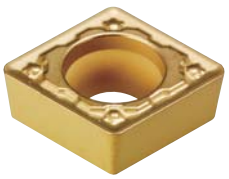
- **Sharp cutting edges**
  - High rake cutting edges provide improved surface finishes
  - Low cutting resistance reduces cutting heat
- **Step rear rake angle**
  - Stable chip control regardless of varying feed rates
  - Excellent machinability even when machining mild workpieces

Chip control test

Workpiece	4140 (Alloy steel), Ø1.968, Internal diameter turning
Cutting conditions	vc (sfm) = 820, ap (inch) = 0.012~0.059, fn (ipr) = 0.002~0.010
Tools	CCMT21.52-VL (NC3225)



MP Chip Breaker [For medium to finishing]



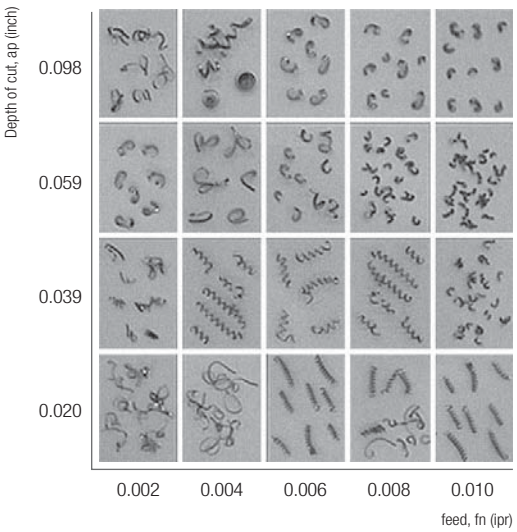
- For continuous cutting of forged steel at high feed
- Turning insert for internal Turning insert for machining internal components of automobile

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	4140 (Alloy steel)
Cutting conditions	vc (sfm) = 656 , ap (inch) = 0.020~0.098, fn (ipr) = 0.002~0.010
Tools	CCMT32.51-MP (NC3225)



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

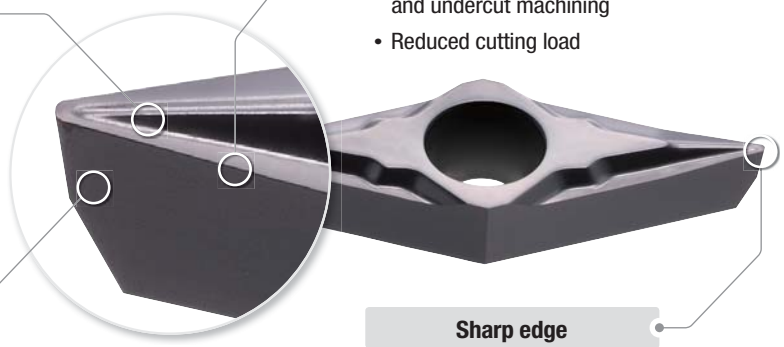
Features of FS chip breaker

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

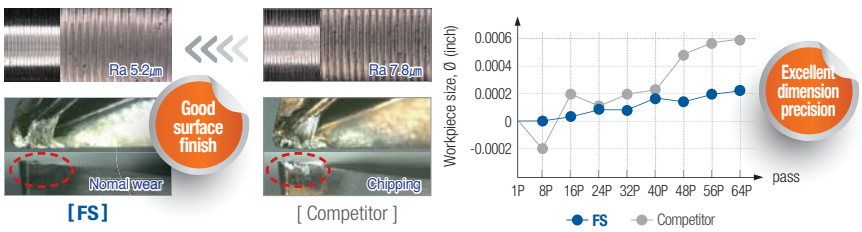
- Reduced cutting resistance
- Improved chip control



Performance evaluation

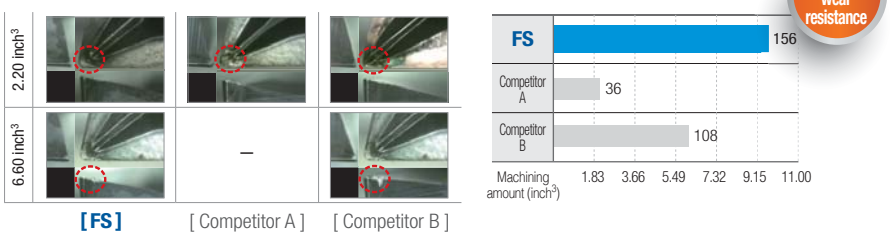
Workpiece size and surface finish

Workpiece	Stainless steel (416)
Cutting conditions	vc (sfm) = 262, n (rpm) = 1,000, fn (ipr) = 0.0020, ap (inch) = 0.004, wet
Tools	**Insert:** VCGT220.2-FS (PC8110) **Holder:** SVJCR08-X11A

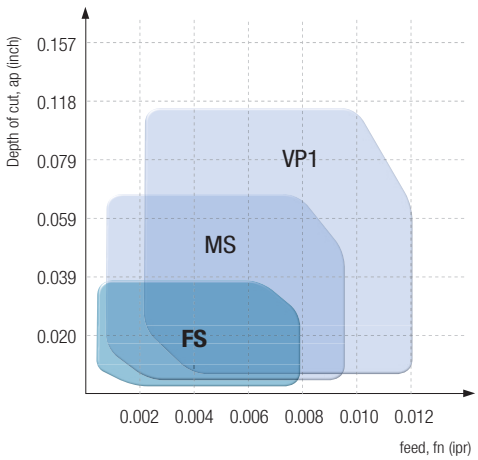


Wear resistance

Workpiece	Alloy steel (4140)
Cutting conditions	vc (sfm) = 328, n (rpm) = 1,000, fn (ipr) = 0.0020, ap (inch) = 0.020, wet
Tools	**Insert:** CCGT32.51-FS (PC8110) **Holder:** SCLCR08-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

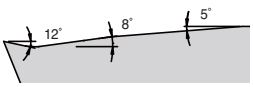
Features of MS chip breaker

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







MS Competitor

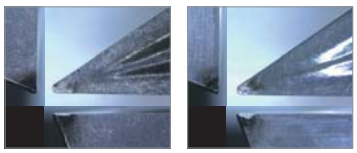
Flank surface grinding

- G grade of periphery grinding
- Precise grinding

Performance evaluation

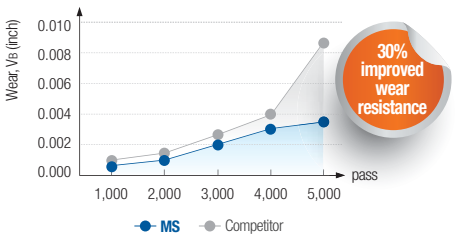
Wear resistance

Workpiece	Pure titanium (R50700)
Cutting conditions	vc (sfm) = 328, n (rpm) = 3,500, fn (ipr) = 0.0012, ap (inch) = 0.0197, wet
Tools	Insert: VCGT1203008FN-MS (PC8110) Holder: SVJCR08-X12A

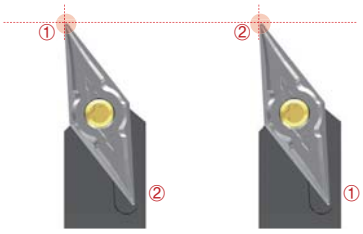


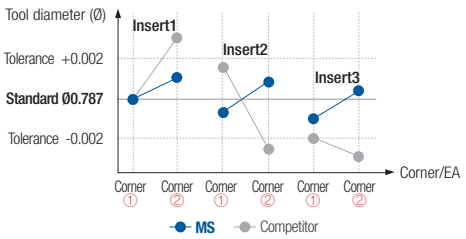
[MS] [Competitor]

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



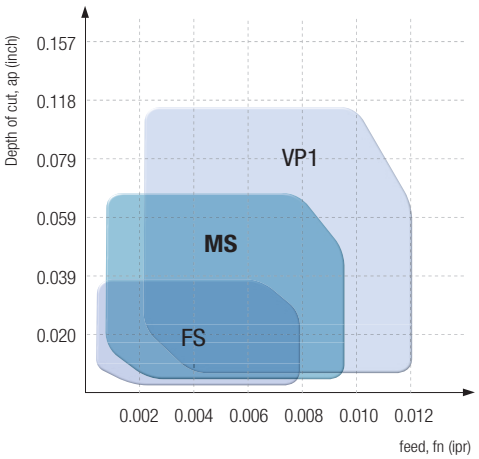
Dimension precision





▶ 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

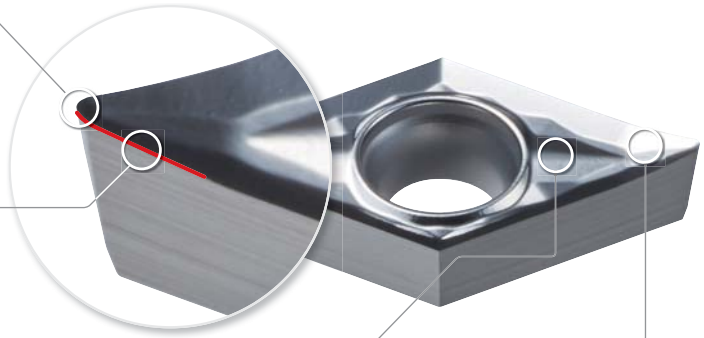
Features of AM chip breaker

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

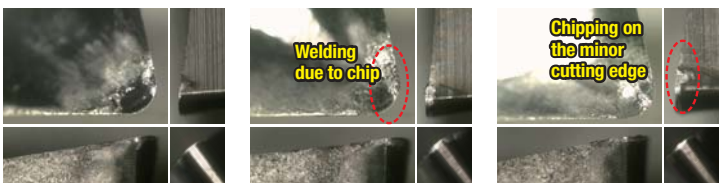
Internal bridge

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

Performance evaluation

Welding and wear resistance

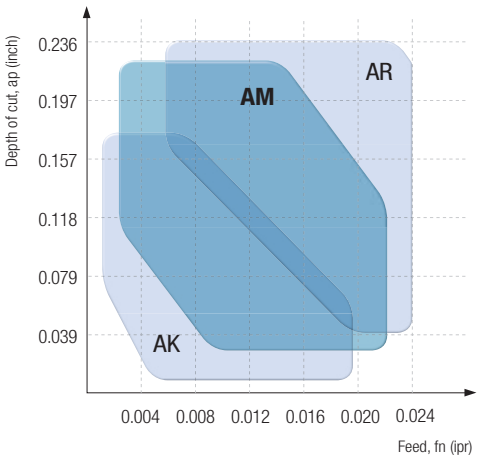
Workpiece	Aluminum (7075)
Cutting conditions	vc (sfm) = 1640, fn (ipr) = 0.01, ap (inch) = 0.02, wet
Tools	Insert: CCGT32.51-AM (H05) Holder: SCLCR12-4B



[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



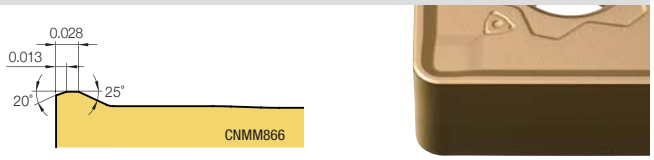
Heavy insert

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

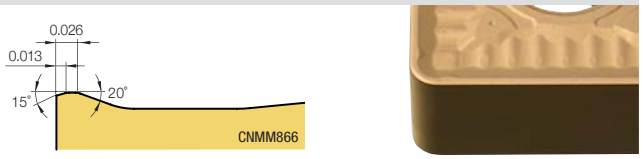
Features of Heavy chip breaker

HX



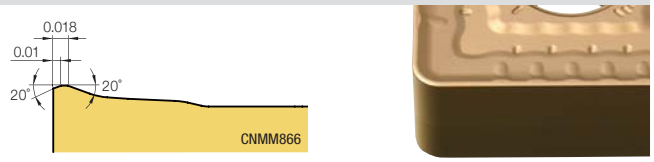
- Suitable for high interrupted machining due to strong cutting edge
- Increased tool life by smooth chip evacuation in high cutting condition

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



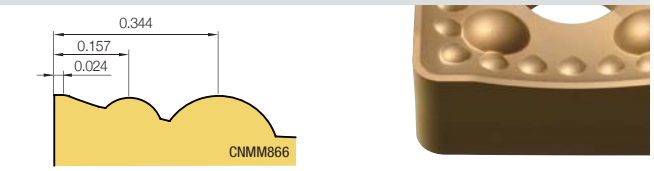
- Suitable for general horizontal lathe machining due to nicked cutting edge and low cutting resistance
- Good chip evacuation from chip flow in high feed condition

HL

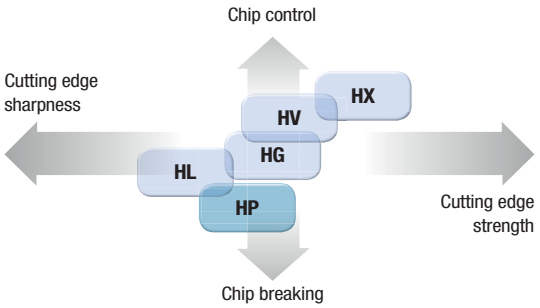


- For Stainless steel and low carbon steel machining with low cutting resistance and cutting edge
- Lower cutting resistance and good chip control in various cutting conditions

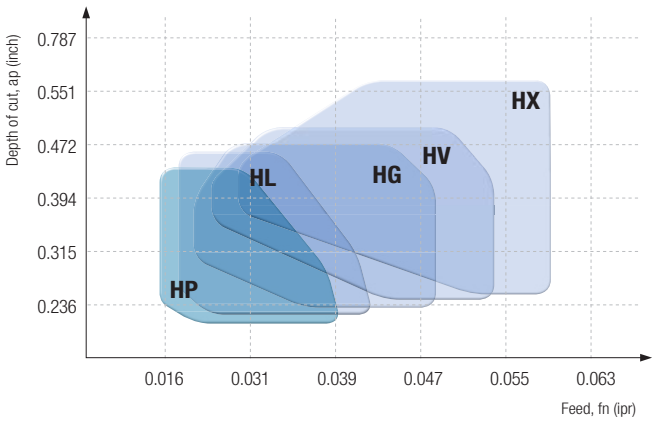
HP



- 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



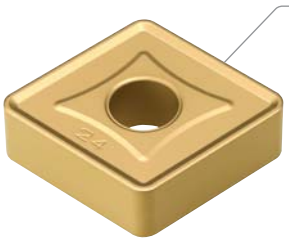
Application range	Chip breaker	ap(inch)	fn(ipr)
High interrupted roughing	HX	0.177 ~ 0.709	0.024 ~ 0.059
Vertical lathe flange roughing	HV	0.157 ~ 0.512	0.020 ~ 0.055
Horizontal lathe shaft roughing	HG	0.118 ~ 0.512	0.016 ~ 0.047
Medium cutting for surface finish	HL	0.098 ~ 0.472	0.016 ~ 0.043
Good chip evacuation medium cutting and roughing	HP	0.098 ~ 0.433	0.016 ~ 0.039

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

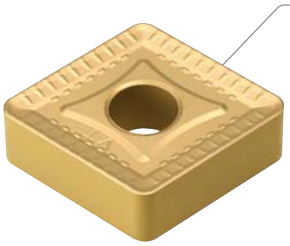


[General]

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

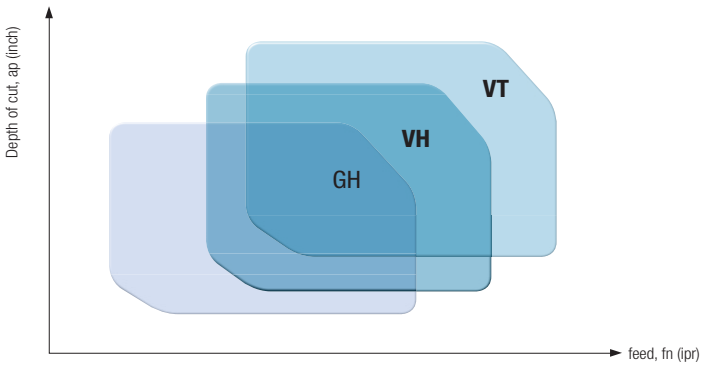


[Big depth, high feed]

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

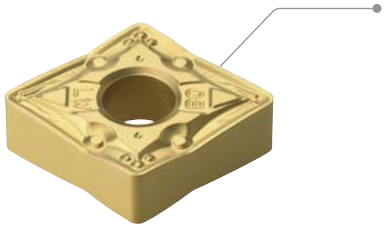


Wiper insert

LW/VW Chip Breaker [For high feed cutting]

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

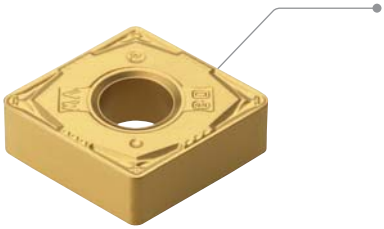
Features of LW chip breaker



[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

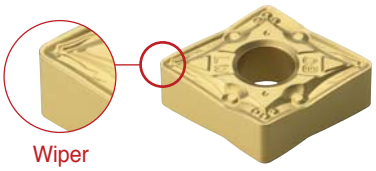


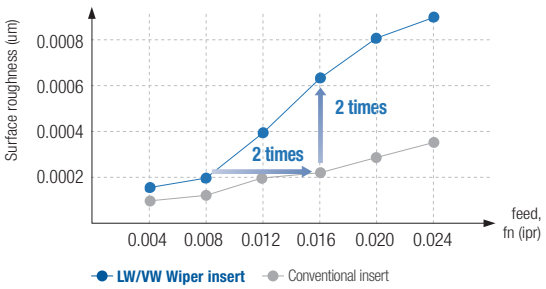
[Medium to finishing]

- **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

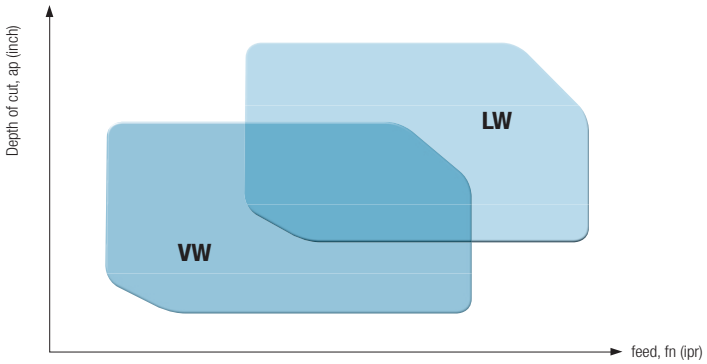
Wiper insert

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





Applications range

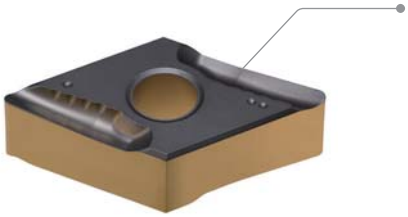


Surface insert

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

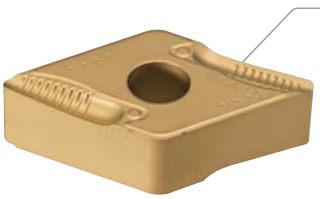
Features of SR chip breaker



[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

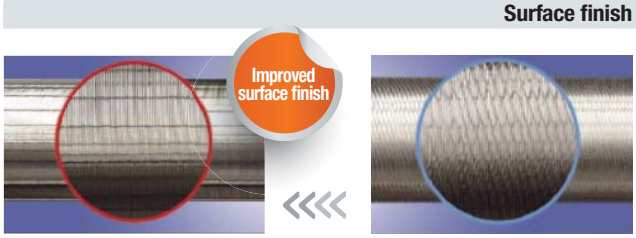
Features of SH chip breaker



[For medium cutting]

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

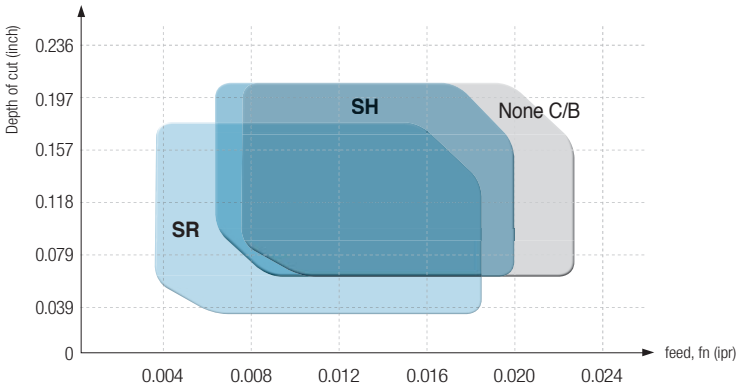
Surface finish evaluation



[SR chip breaker] [Competitor]

Machining	C/B	ap(inch)	fn(ipr)
Medium to rough cutting	None	0.059~0.197	0.008~0.022
Medium cutting	SH	0.059~0.197	0.006~0.020
Finish cutting	SR	0.039~0.177	0.005~0.018

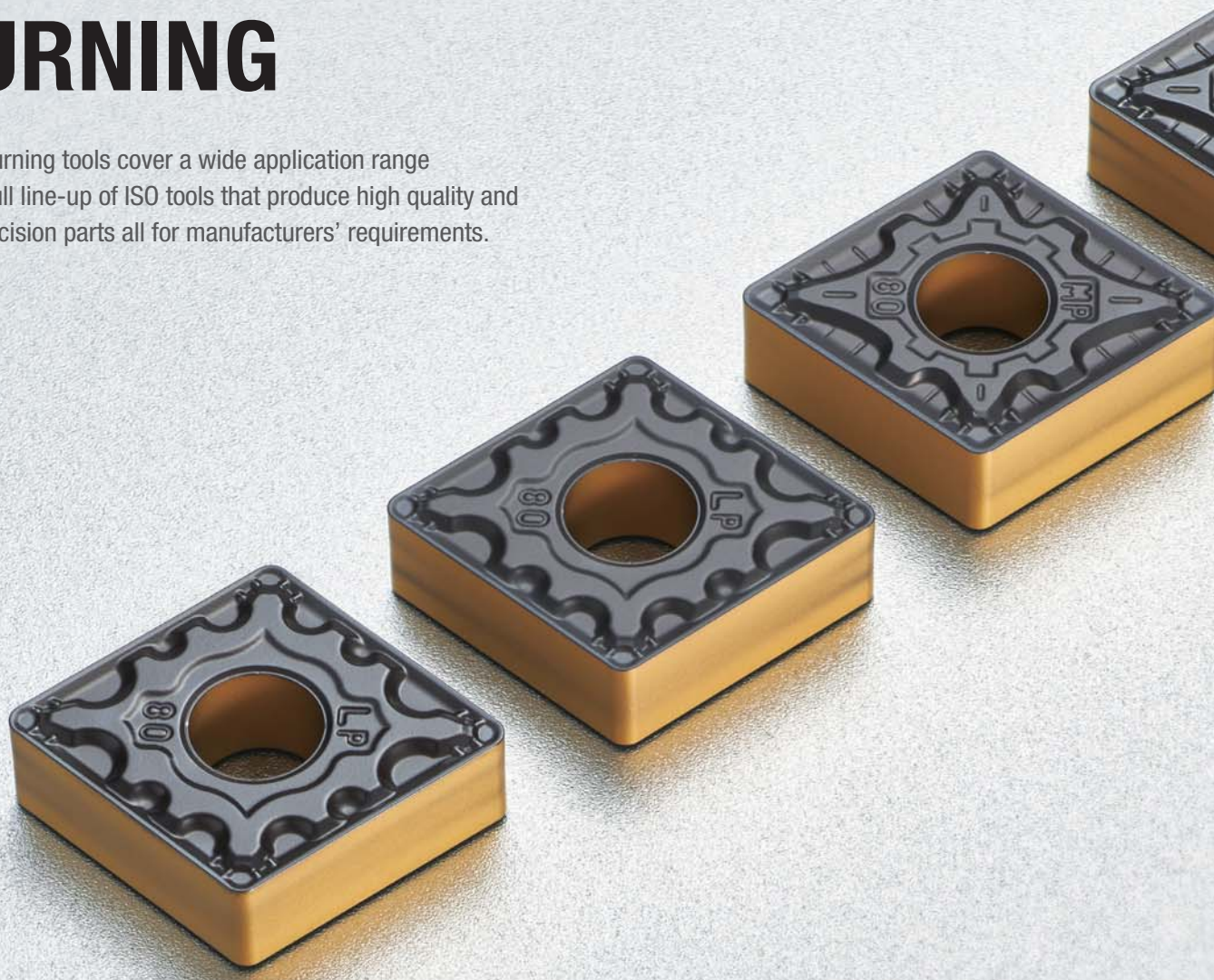
Applications range



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 Code System
B5 Turning Inserts (Negative)
B44 Turning Inserts (Positive)
B73 Technical Information for Aluminum
B75 Aluminum Insert (Positive)
B82 cBN Inserts
B85 PCD Inserts

External Tool Holder

B86 External Tool Holder Code System (ISO)
B87 Index for External Holders
B90 Instructions of External Holder Assembly
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

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 Technical Information for Auto Tools
B162 Auto Tools (ISO)
B168 Auto Tools (ISO) Holder
B172 Technical information for Auto Tools (KHP)
B174 Auto Tools (KHP)
B175 Technical Information for Auto Tools (Blade)
B176 Auto Tools (Blade) Inserts
B177 Auto Tools (Blade)
B179 Auto Tools (Multi utility)
B181 Technical Information for Auto Tools (KGT/MGT)
B182 Auto Tools (KGT) Inserts
B183 Auto Tools (KGT) Holder
B184 Auto Tools (MGT Plus/MGT) Inserts/Holder
B185 Technical Information for Auto Tools (MSB Plus)
B187 Auto Tools (MSB Plus)
B203 Technical Information for Auto Tools (MSB Tool)
B205 Auto Tools (MSB Tool)

Bearing Solutions

B210 Technical Information for Bearing Solutions
B211 Bearing Solutions
B217 Special Order Form for Bearing Inserts

Cartridge

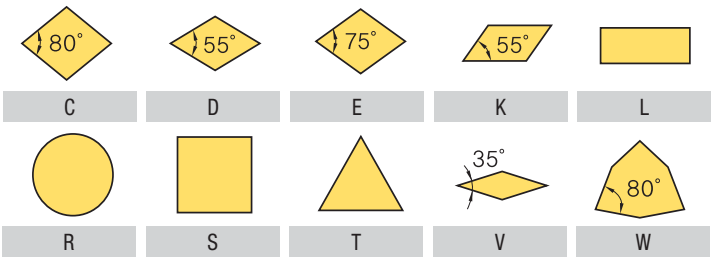
B218 Cartridge Code System (ISO)
B219 Index for Cartridges
B220 Clamp on System
B222 Screw on System

Turning Insert Code System

C	N	M	G
1	2	3	4
Insert Shape	Relief Angle	Tolerance	Cross Section Type

1 Insert Shape

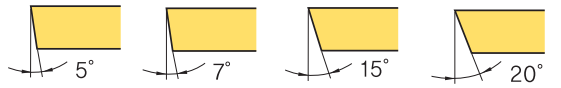
C N M G 3 3 2 - MP



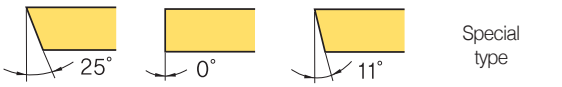
C	D	E	K	L
R	S	T	V	W

2 Relief Angle

C N M G 3 3 2 - MP



B	C	D	E

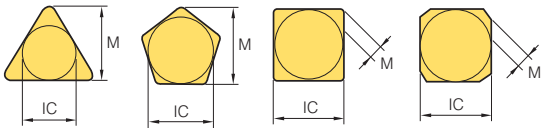


F	N	P	O
			Special type

3 Tolerance

C N M G 3 3 2 - MP

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



(inch)

Class	IC	M	S
A	±0.0010	±0.0002	±0.0010
C	±0.0010	±0.0005	±0.0010
H	±0.0005	±0.0005	±0.0010
E	±0.0010	±0.0010	±0.0010
G	±0.0010	±0.0010	±0.0051
J *	±0.0020~±0.0059	±0.0002	±0.0010
K *	±0.0020~±0.0059	±0.0005	±0.0010
L *	±0.0020~±0.0059	±0.0010	±0.0010
M *	±0.0020~±0.0059	±0.003~±0.008	±0.0051
N *	±0.0032~±0.0071	±0.003~±0.007	±0.0010
U *	±0.0032~±0.01	±0.005~±0.015	±0.0051

* Sides are based on unground insert

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

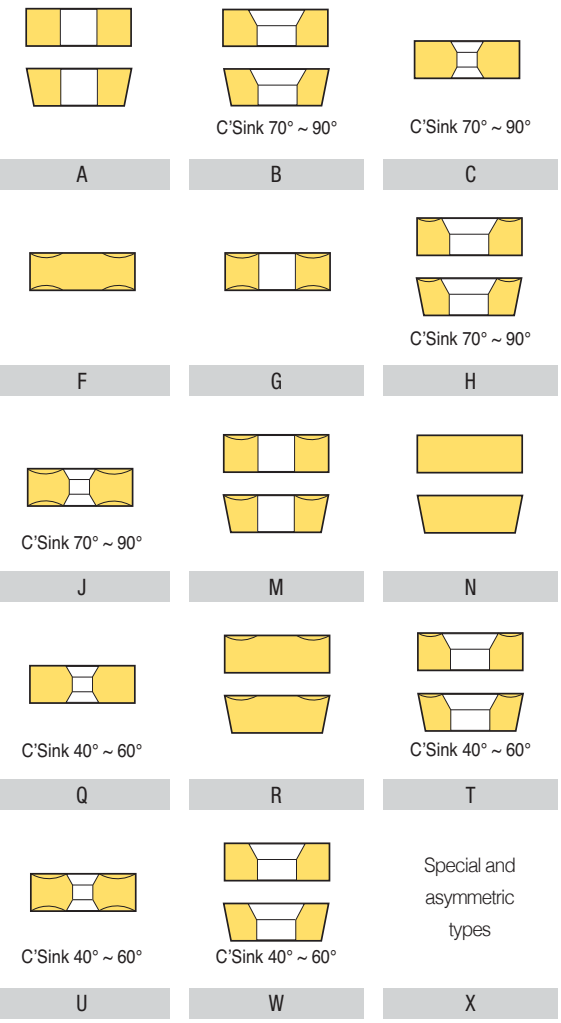
IC	Tolerance on IC		Tolerance on M	
	J, K, L, M, N	U	M, N	U
1/4	±0.0020	±0.0032	±0.0032	±0.0051
3/8	±0.0020	±0.0032	±0.0032	±0.0051
1/2	±0.0032	±0.0051	±0.0051	±0.0079
5/8	±0.0040	±0.0070	±0.0059	±0.0106
3/4	±0.0040	±0.0070	±0.0059	±0.0106
1	±0.0051	±0.01	±0.0070	±0.0150

Tolerance on D Insert Shape (Exceptional case)

IC	Tolerance on IC	Tolerance on M
1/4	±0.0020	±0.0043
3/8	±0.0020	±0.0043
1/2	±0.0032	±0.0059
5/8	±0.0040	±0.0070
3/4	±0.0040	±0.0070

4 Cross Section Type

C N M G 3 3 2 - MP



A	B	C	F	G	H	J	M	N	Q	R	T	U	W	X
														Special and asymmetric types

3	3	2	- MP
5	6	7	8
Cutting Edge Length, Diameter of Inscribed Circle	Height of Cutting Edge	Nose "r"	Chip Breaker for Turning

5 Cutting Edge Length, Diameter of Inscribed Circle

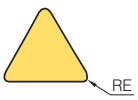
C N M G **3** 3 2 - MP

Symbol							Inch	IC
C	D	S	T	R	V	W		
Metric								IC (inch)
03	04	03	06	03	-	02	1.2 (5)	5/32
04	05	04	08	04	08	S3	1.5 (6)	3/16
05	06	05	09	05	09	03	1.8 (7)	7/32
-	-	-	-	06	-	-	-	0.236
06	07	06	11	06	11	04	2	1/4
08	09	07	13	07	13	05	2.5	5/16
-	-	-	-	08	-	-	-	0.315
09	11	09	16	09	16	06	3	3/8
-	-	-	-	10	-	-	-	0.394
11	13	11	19	11	19	07	3.5	7/16
-	-	-	-	12	-	-	-	0.472
12	15	12	22	12	22	08	4	1/2
14	17	14	24	14	24	09	4.5	9/16
16	19	15	27	15	27	10	5	5/8
-	-	-	-	16	-	-	-	0.630
17	21	17	30	17	30	11	5.5	11/16
19	23	19	33	19	33	13	6	3/4
-	-	-	-	20	-	-	-	0.787
22	27	22	38	22	38	15	7	7/8
-	-	-	-	25	-	-	-	0.984
25	31	25	44	25	44	17	8	1
32	38	31	54	31	54	21	10	1 1/4
-	-	-	-	32	-	-	-	1.260

( ) Symbol for small size insert

7 Nose "r"

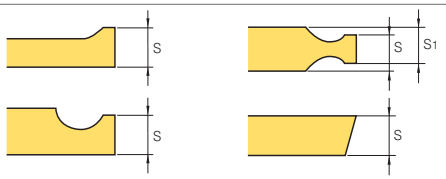
C N M G 3 3 **2** - MP



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 3 **3** 2 - 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 3 3 2 - **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

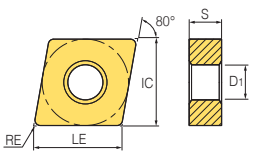


FP VL HMP MP C25 AK AM



AR FS MS VP1

CN○○



Dimensions (inch)					
Size	IC	RE	S	LE	D1
32	3/8	1/64~1/32	1/8	0.381	5/32
33	3/8	1/64~1/32	1/8~3/16	0.381	5/32
43	1/2	1/64~3/64	3/16	0.508	13/64
54	5/8	1/32~3/64	1/4	0.635	1/4

Rhombic 80° Negative

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 (ipr)	ap (inch)
Finishing	VB	CNMG	431-VB	●	●	●	●		●		●						●													0.006~0.024	0.040~0.200
			432-VB	●	●	●	●	●	●		●					●	●												0.008~0.028	0.040~0.240
			433-VB						●		●					●	●												0.008~0.020	0.040~0.240
Finishing	VF	CNMG	321-VF								●		●																	0.003~0.012	0.020~0.059
			322-VF																											0.005~0.006	0.020~0.059
			431-VF		●								●				●													0.003~0.012	0.020~0.059
			432-VF														●													0.004~0.016	0.020~0.059
			433-VF																											0.004~0.020	0.024~0.059
Finishing	VL	CNMG	431-VL	●	●												●													0.002~0.010	0.004~0.040
			432-VL	●				●	●		●						●													0.004~0.014	0.008~0.060
			433-VL						●																					0.004~0.014	0.008~0.060
Medium to finishing	LP	CNMG	321-LP																											0.003~0.012	0.012~0.059
			322-LP								●																			0.004~0.012	0.012~0.059
			431-LP						●		●						●													0.004~0.014	0.012~0.079
			432-LP						●		●						●													0.004~0.016	0.020~0.098
			433-LP						●		●																			0.005~0.028	0.031~0.118
Medium to finishing	CP	CNMG	321-CP																											0.003~0.012	0.016~0.118
			322-CP																											0.004~0.012	0.016~0.118
			331-CP																											0.003~0.012	0.016~0.118
			332-CP																											0.004~0.012	0.016~0.118
			431-CP					●	●	●		●																		0.004~0.014	0.020~0.138
			432-CP					●	●	●		●				●														0.005~0.014	0.020~0.138
			433-CP					●	●	●		●				●														0.005~0.014	0.031~0.138
			542-CP					●	●	●		●																		0.006~0.016	0.031~0.177
			543-CP					●	●	●		●																		0.007~0.016	0.039~0.177
Medium to finishing	VC	CNMG	431-VC					●	●		●						●													0.004~0.014	0.012~0.079
			432-VC					●	●		●					●	●													0.006~0.016	0.020~0.118
			433-VC						●		●					●														0.008~0.018	0.020~0.118

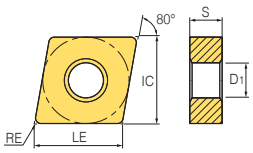
● : Stock item

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○○



Dimensions (inch)					
Size	IC	RE	S	LE	D_1
32	3/8	1/64~3/64	1/8	0.381	5/32
33	3/8	1/64~3/64	1/8~3/16	0.381	5/32
43	1/2	1/64~1/16	3/16	0.508	13/64
54	5/8	1/32~1/16	1/4	0.635	1/4
64	3/4	1/32~1/16	1/4	0.762	5/16

Rhombic 80° Negative

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 (ipr)	ap (inch)
Medium cutting	HM	CNMG	321-HM																										0.005~0.016	0.020~0.150
			322-HM																										0.006~0.016	0.031~0.150
			431-HM							●	●	●														●			0.002~0.012	0.035~0.197
			432-HM							●	●	●									●					●			0.004~0.020	0.039~0.197
			433-HM						●																	●			0.007~0.020	0.039~0.197
			643-HM								●																		0.005~0.024	0.051~0.276
Medium cutting	MP	CNMG	321-MP						●	●					●				●										0.004~0.016	0.016~0.150
			322-MP						●	●					●				●										0.006~0.016	0.020~0.157
			323-MP																										0.006~0.020	0.032~0.165
			331-MP																										0.004~0.016	0.016~0.150
			332-MP																										0.006~0.016	0.020~0.157
			333-MP																										0.006~0.020	0.031~0.165
			431-MP					●	●	●			●		●	●		●	●	●				●	●				0.004~0.016	0.016~0.150
			432-MP					●	●	●		●	●	●	●	●		●	●	●			●	●	●				0.006~0.016	0.020~0.157
			433-MP					●	●	●				●	●				●	●			●	●						0.006~0.020	0.032~0.165
			434-MP					●	●	●				●																0.011~0.022	0.039~0.197
			542-MP						●	●					●					●										0.006~0.020	0.020~0.276
			543-MP						●	●					●				●	●										0.007~0.024	0.032~0.276
			544-MP						●	●					●															0.006~0.024	0.031~0.276
			642-MP								●																			0.006~0.024	0.020~0.335
			643-MP								●																			0.004~0.016	0.016~0.150
			644-MP															●	●											0.006~0.016	0.020~0.157
Medium cutting	VM	CNMG	321-VM																											0.002~0.012	0.036~0.138
			322-VM								●	●																		0.004~0.018	0.039~0.138
			431-VM	●	●						●	●			●						●	●				●				0.002~0.012	0.036~0.197
			432-VM	●	●					●	●	●			●						●	●		●		●				0.004~0.020	0.039~0.197
			433-VM								●	●			●						●			●						0.005~0.024	0.051~0.197
			434-VM												●															0.008~0.024	0.059~0.217
			542-VM												●															0.004~0.020	0.039~0.264
			543-VM																											0.005~0.024	0.051~0.264
			642-VM									●																		0.005~0.026	0.051~0.276
			643-VM												●															0.006~0.028	0.059~0.276
			644-VM																											0.007~0.030	0.071~0.276

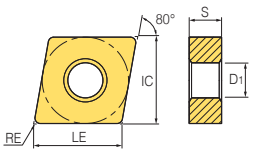
● : Stock item

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○○



Dimensions (inch)					
Size	IC	RE	S	LE	D1
32	3/8	1/64~3/64	1/8	0.381	5/32
33	3/8	1/64~3/64	1/8~3/16	0.381	5/32
43	1/2	1/64~3/64	3/16	0.508	13/64
54	5/8	1/32~3/64	1/4	0.635	1/4
64	3/4	1/64~3/32	1/4	0.762	5/16
85	1	3/32	5/16	1.015	23/64
86	1	3/32	3/8	1.015	23/64

Rhombic 80° Negative

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 (ipr)	ap (inch)
Medium to roughing	B25	CNMG	431-B25		●					●		●			●						●								0.007~0.018	0.039~0.197
			432-B25	●	●				●	●	●	●	●		●						●			●		●			0.009~0.024	0.059~0.197
			433-B25						●	●		●			●														0.010~0.024	0.079~0.197
			542-B25						●	●		●			●														0.010~0.024	0.079~0.256
			543-B25						●	●					●														0.011~0.024	0.079~0.256
			544-B25						●	●					●														0.011~0.024	0.079~0.256
			641-B25									●			●														0.008~0.018	0.118~0.315
			642-B25						●	●	●	●			●														0.010~0.024	0.118~0.315
			643-B25						●	●	●	●			●						●	●		●					0.012~0.024	0.118~0.315
			644-B25						●	●																			0.009~0.028	0.118~0.315
Roughing	GR	CNMG	432-GR						●	●	●	●	●	●	●	●	●													0.008~0.020	0.039~0.276
			433-GR							●	●	●	●	●	●	●	●													0.010~0.020	0.051~0.276
			434-GR											●																0.010~0.024	0.071~0.236
			542-GR						●	●	●	●	●																	0.008~0.028	0.039~0.315
			543-GR						●	●	●	●	●		●	●	●													0.010~0.028	0.051~0.315
			544-GR						●	●	●	●	●																	0.010~0.030	0.071~0.315
			642-GR								●	●	●		●															0.008~0.028	0.067~0.394
			643-GR						●	●	●	●	●		●	●														0.012~0.030	0.067~0.394
			644-GR						●	●	●	●	●		●															0.012~0.031	0.071~0.394
			646-GR								●	●	●		●															0.014~0.033	0.079~0.472
			856-GR																											0.016~0.039	0.091~0.591
			866-GR								●	●	●		●															0.016~0.039	0.091~0.591
Medium to finishing	VQ	CNMG	321-VQ																											0.002~0.012	0.020~0.138
			322-VQ																											0.003~0.012	0.031~0.157
			332-VQ												●															0.002~0.012	0.020~0.138
			333-VQ																											0.003~0.012	0.031~0.157
			431-VQ	●	●	●	●																							0.002~0.012	0.031~0.157
			432-VQ	●	●	●	●																							0.003~0.016	0.031~0.157
			433-VQ																											0.004~0.016	0.039~0.157
Medium cutting	MK	CNMG	431-MK											●		●	●													0.002~0.012	0.035~0.157
			432-MK											●		●	●													0.004~0.020	0.039~0.197
			433-MK											●		●	●													0.005~0.024	0.051~0.197
			434-MK											●																0.006~0.024	0.051~0.197
			542-MK																											0.011~0.028	0.071~0.276
			543-MK																											0.011~0.028	0.078~0.315
			544-MK																											0.011~0.029	0.078~0.315
			642-MK														●													0.013~0.031	0.098~0.354
			643-MK														●													0.014~0.031	0.102~0.374
			644-MK																											0.014~0.031	0.102~0.394

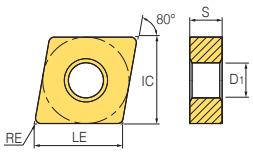
● : Stock item

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

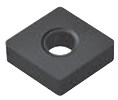
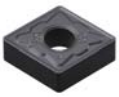
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Dimensions (inch)					
Size	IC	RE	S	LE	D_1
32	3/8	1/32	1/8	0.381	5/32
33	3/8	1/32	1/8~3/16	0.381	5/32
43	1/2	1/64~1/16	3/16	0.508	13/64
54	5/8	1/32~1/16	1/4	0.635	1/4
64	3/4	1/32~1/16	1/4	0.762	5/16

Rhombic 80° Negative

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 (ipr)	ap (inch)
Roughing		CNMA	332																									0.004~0.012	0.020~0.118
			431														●										●	0.006~0.024	0.008~0.197
			432													●	●										●	0.006~0.025	0.008~0.315
			433													●	●											0.006~0.028	0.012~0.315
			434													●	●											0.008~0.039	0.012~0.394
			542																									0.006~0.031	0.012~0.394
			543														●											0.006~0.031	0.012~0.394
			544														●											0.008~0.039	0.012~0.394
			642														●											0.006~0.024	0.008~0.472
			643														●											0.008~0.031	0.008~0.472
			644													●	●											0.008~0.039	0.008~0.472
Roughing	RK 	CNMG	431-RK														●											0.008~0.019	0.051~0.236
			432-RK													●	●											0.008~0.020	0.059~0.236
			433-RK													●	●											0.011~0.021	0.071~0.236
			434-RK														●											0.011~0.025	0.078~0.236
			542-RK														●											0.011~0.028	0.071~0.276
			543-RK													●	●											0.011~0.028	0.078~0.315
			544-RK														●											0.011~0.029	0.078~0.315
			643-RK														●											0.014~0.031	0.102~0.374
			644-RK														●											0.014~0.031	0.102~0.394
Roughing	VR 	CNMG	431-VR																									0.008~0.020	0.039~0.256
			432-VR																									0.010~0.022	0.047~0.276
			433-VR																									0.012~0.024	0.059~0.276
			434-VR																									0.014~0.026	0.067~0.276
			43.52-VR																									0.010~0.022	0.047~0.276
			43.53-VR																									0.012~0.024	0.059~0.276
			543-VR																									0.014~0.028	0.078~0.315
			544-VR																									0.014~0.030	0.087~0.315
			643-VR						●	●																		0.014~0.028	0.078~0.394
			644-VR						●	●																		0.014~0.030	0.087~0.394

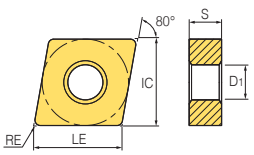
● : Stock item

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○○



Dimensions (inch)					
Size	IC	RE	S	LE	D_1
32	3/8	1/64~3/64	1/8	0.381	5/32
33	3/8	1/64~3/64	1/8~3/16	0.381	5/32
43	1/2	1/64~1/16	3/16	0.508	13/64
54	5/8	1/32~1/16	1/4	0.635	1/4
64	3/4	1/32~3/32	1/4	0.762	5/16
86	1	3/32	3/8	1.015	23/64

Rhombic 80° Negative

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 (ipr)	ap (inch)
Medium cutting	MM	CNMG	321-MM																									0.003~0.014	0.020~0.197
			322-MM															●	●						●			0.004~0.016	0.020~0.197
			323-MM																									0.005~0.018	0.020~0.197
			331-MM																									0.003~0.014	0.020~0.197
			332-MM																									0.004~0.016	0.020~0.197
			333-MM																									0.005~0.018	0.020~0.197
			431-MM																●	●	●			●	●	●			0.004~0.016	0.020~0.217
			432-MM															●	●	●	●			●	●	●			0.005~0.018	0.020~0.217
			433-MM															●	●	●	●			●	●	●			0.006~0.024	0.020~0.217
			434-MM																						●					0.008~0.026	0.020~0.217
			542-MM																●	●	●				●					0.005~0.018	0.020~0.276
			543-MM																●	●	●				●	●				0.006~0.024	0.020~0.276
			544-MM																●	●	●				●	●				0.007~0.026	0.020~0.276
			642-MM																●	●	●				●					0.005~0.018	0.020~0.335
			643-MM																●	●	●			●	●	●				0.006~0.024	0.020~0.335
			644-MM																●	●	●				●	●				0.007~0.026	0.020~0.335
Roughing	RM	CNMG	431-RM																●	●	●				●	●				0.004~0.020	0.078~0.236
			432-RM															●	●	●	●			●	●	●				0.006~0.022	0.078~0.236
			433-RM															●	●	●	●			●	●					0.008~0.024	0.078~0.236
			434-RM																●	●	●									0.010~0.028	0.078~0.236
			542-RM																●		●				●					0.006~0.022	0.078~0.315
			543-RM																●	●	●				●					0.008~0.024	0.078~0.315
			544-RM																	●					●					0.010~0.028	0.078~0.315
			642-RM																●	●	●				●					0.006~0.022	0.078~0.394
			643-RM																●	●	●				●					0.008~0.024	0.078~0.394
			644-RM																●	●	●				●					0.010~0.028	0.078~0.394
			866-RM																											0.016~0.047	0.157~0.551
Finishing	VP1	CNMG	431-VP1																				●	●						0.002~0.006	0.004~0.059
			432-VP1																				●	●						0.003~0.008	0.004~0.059
Finishing	VP1	CNGG	430.5-VP1																					●						0.001~0.004	0.004~0.039
			431-VP1																					●						0.002~0.006	0.004~0.059
			432-VP1																											0.003~0.008	0.004~0.059

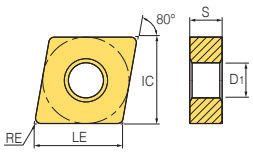
● : Stock item

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○○



Dimensions (inch)					
Size	IC	RE	S	LE	D_1
43	1/2	1/64~1/16	3/16	0.508	13/64
54	5/8	1/32~1/16	1/4	0.635	1/4
64	3/4	1/32~1/16	1/4	0.762	5/16

Rhombic 80° Negative

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 (ipr)	ap (inch)
Medium to finishing	VP2	CNMG	431-VP2							●											●	●	●	●	●		●	●		0.002~0.012	0.004~0.118
			432-VP2																		●	●	●	●	●		●	●		0.004~0.016	0.020~0.177
			542-VP2																											0.005~0.018	0.031~0.197
			642-VP2																											0.005~0.020	0.039~0.205
			643-VP2																											0.006~0.020	0.047~0.217
			644-VP2																											0.007~0.020	0.059~0.217
Medium cutting	VP3	CNMG	431-VP3																		●	●	●	●	●		●			0.002~0.012	0.004~0.118
			432-VP3																		●	●	●	●	●		●	●	●	0.004~0.016	0.020~0.177
			433-VP3																		●	●		●	●			●		0.005~0.020	0.020~0.197
			434-VP3																											0.010~0.018	0.039~0.157
			542-VP3																											0.006~0.014	0.031~0.236
			543-VP3																											0.008~0.016	0.039~0.236
			544-VP3																											0.008~0.016	0.039~0.236
			642-VP3																											0.008~0.020	0.039~0.276
			643-VP3																											0.010~0.022	0.039~0.315
			644-VP3																											0.012~0.024	0.039~0.315
Medium cutting	VP3	CNGG	431-VP3																								●			0.002~0.012	0.004~0.018
			432-VP3																					●			●			0.004~0.016	0.020~0.177
			433-VP3																											0.005~0.020	0.020~0.197
Roughing	VP4	CNMG	431-VP4																								●			0.006~0.014	0.039~0.157
			432-VP4																						●		●			0.006~0.014	0.039~0.157
			433-VP4																						●					0.008~0.016	0.039~0.157
			542-VP4																											0.008~0.018	0.039~0.256
			543-VP4																											0.010~0.020	0.059~0.256
			642-VP4																						●					0.006~0.018	0.039~0.315
			643-VP4																						●					0.008~0.020	0.047~0.335
Medium to finishing	HA	CNMG	431-HA																		●			●		●		●		0.002~0.008	0.031~0.138
			432-HA																		●			●		●		●		0.004~0.016	0.031~0.138
			433-HA																							●				0.005~0.022	0.031~0.138
Finishing	VW	CNMG	431-VW																											0.004~0.012	0.020~0.118
			432-VW						●																					0.006~0.020	0.020~0.157
			433-VW																											0.008~0.020	0.031~0.157

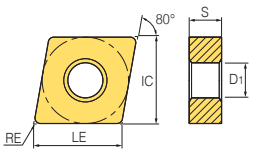
● : Stock item

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○○



Dimensions (inch)					
Size	IC	RE	S	LE	D1
33	3/8	1/64~3/64	1/8~3/16	0.381	5/32
43	1/2	1/64~3/64	3/16	0.508	13/64
53	1/2	3/64~3/32	3/16	0.635	13/64
54	5/8	3/64~3/32	1/4	0.635	1/4
64	3/4	1/32~3/32	1/4	0.762	5/16
85	1	1/16~1/8	5/16	1.015	23/64
86	1	1/16~1/8	3/8	1.015	23/64

Rhombic 80° Negative

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	NC515H	NC520H	NC525H	PC5300	PC5400	PC8105	PC8110	PC8115	PC9030	PC9035	H01	H05	fn (ipr)	ap (inch)
Medium cutting	LW [Wiper]	CNMG	432-LW						●	●					●														0.006~0.024	0.040~0.200
			433-LW							●																			0.008~0.028	0.040~0.240
Medium cutting	GR	CNMM	432-GR																										0.008~0.020	0.039~0.276
			433-GR																										0.010~0.020	0.051~0.276
			643-GR									●	●																0.012~0.030	0.067~0.394
			644-GR																										0.012~0.031	0.071~0.394
Heavy	HP	CNMM	643-HP																										0.012~0.031	0.098~0.354
			644-HP																	●									0.014~0.033	0.098~0.354
			646-HP															●											0.016~0.035	0.098~0.354
			866-HP																										0.016~0.039	0.098~0.433
	HL	CNMM	643-HL										●																0.012~0.033	0.012~0.394
			644-HL																	●									0.014~0.354	0.012~0.394
			646-HL																										0.016~0.039	0.012~0.394
			866-HL																										0.016~0.043	0.098~0.472
	GH	CNMM	432-GH							●		●			●														0.012~0.024	0.098~0.315
			433-GH							●	●	●																	0.012~0.028	0.098~0.315
			533-GH																										0.012~0.028	0.098~0.315
			536-GH																										0.012~0.047	0.098~0.315
			543-GH									●																	0.012~0.035	0.098~0.315
			544-GH																										0.012~0.047	0.098~0.315
			546-GH																										0.012~0.059	0.098~0.315
			642-GH												●														0.012~0.024	0.098~0.315
			643-GH						●		●	●	●		●														0.012~0.028	0.118~0.315
			644-GH						●		●	●	●		●														0.018~0.035	0.118~0.315
			646-GH						●		●				●														0.022~0.047	0.157~0.354
			854-GH																										0.020~0.039	0.177~0.394
			856-GH								●																		0.022~0.047	0.197~0.472
			866-GH						●		●	●	●		●														0.022~0.047	0.197~0.472
			8612.5-GH																										0.026~0.051	0.236~0.472

● : Stock item

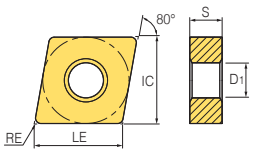
External Tool Holder					
Double Clamp	Page	Lever Lock	Page	Multi Lock	Page
DCBNR/L	B91	PCBNR/L	B96	MCKNR/L	B107
DCKNR/L	B91	PCKNR/L	B96	MCLNR/L	B107
DCLNR/L	B91	PCLNR/L	B97	MCMNN	B107
				MCRNR/L	B108

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 (inch)					
Size	IC	RE	S	LE	D_1
33	3/8	1/64~3/64	1/8~3/16	0.381	5/32
43	1/2	1/64~3/64	3/16	0.508	13/64
53	1/2	3/64~3/32	3/16	0.635	13/64
54	5/8	3/64~3/32	1/4	0.635	1/4
64	3/4	1/32~3/32	1/4	0.762	5/16
85	1	1/16~1/8	5/16	1.015	23/64
86	1	1/16~1/8	3/8	1.015	23/64

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 (ipr)	ap (inch)
Heavy	HG	CNMM	643-HG										●															0.012~0.035	0.118~0.394
			644-HG															●										0.014~0.037	0.118~0.394
			646-HG									●																0.016~0.039	0.118~0.394
			866-HG									●						●	●	●								0.016~0.047	0.138~0.512
			868-HG																									0.020~0.047	0.138~0.512
	VT	CNMM	643-VT						●			●																	0.024~0.040	0.240~0.520
			644-VT						●																			0.024~0.044	0.200~0.400
			646-VT						●																			0.024~0.064	0.280~0.520
			856-VT																									0.030~0.064	0.280~0.680
			866-VT						●																			0.030~0.064	0.280~0.680
	HV	CNMM	644-HV																									0.018~0.041	0.157~0.433
			646-HV																									0.020~0.043	0.157~0.433
			866-HV										●															0.020~0.055	0.157~0.591
	VH	CNMM	643-VH						●																			0.020~0.036	0.200~0.400
			644-VH						●																			0.020~0.044	0.200~0.400
			646-VH						●																			0.024~0.048	0.240~0.480
			856-VH																									0.028~0.056	0.240~0.600
			866-VH						●																			0.028~0.056	0.240~0.600
	HX	CNMM	644-HX																									0.022~0.043	0.177~0.591
			646-HX										●															0.024~0.047	0.177~0.591
			866-HX																	●								0.024~0.059	0.177~0.709

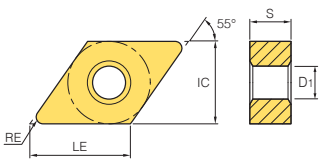
● : Stock item

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○○



Dimensions (inch)					
Size	IC	RE	S	LE	D1
33	3/8	0.008~1/32	1/8~3/16	0.458	5/32
43	1/2	1/64~3/64	3/16	0.610	13/64
44	1/2	1/64~3/64	1/4	0.610	13/64

Rhombic 55° Negative

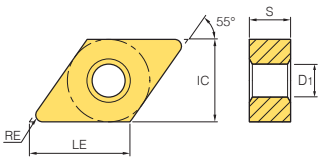
Workpiece			Machining types
Steel	P		● Continuous cutting
Stainless steel	M		⬌ General cutting
Cast iron	K		✱ Interrupted cutting
Non-ferrous metal	N		
Heat resistant alloy, Titanium alloy	S		
Hardened steel	H		

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 (ipr)	ap (inch)
Finishing	VB	DNMG	331-VB						●	●																		0.002~0.010	0.012~0.079
			431-VB	●	●	●	●		●	●																		0.004~0.014	0.012~0.078
			432-VB	●		●	●		●	●				●	●									●					0.006~0.018	0.020~0.078
			433-VB						●	●				●															0.006~0.018	0.020~0.078
			441-VB	●	●	●			●	●					●														0.004~0.014	0.012~0.078
			442-VB	●		●	●	●	●	●				●	●						●								0.006~0.018	0.020~0.078
			443-VB							●				●															0.008~0.020	0.020~0.098
Finishing	VF	DNMG	330.5-VF																										0.002~0.008	0.008~0.039
			331-VF		●										●														0.003~0.012	0.020~0.059
			332-VF																										0.004~0.016	0.020~0.059
			431-VF																										0.003~0.012	0.020~0.059
			432-VF																										0.004~0.016	0.020~0.059
			433-VF																										0.006~0.020	0.024~0.059
			441-VF								●				●														0.005~0.012	0.020~0.059
			442-VF								●				●														0.004~0.016	0.020~0.059
			443-VF																										0.006~0.020	0.024~0.059
Finishing	VL	DNMG	332-VL																										0.002~0.008	0.004~0.040
			431-VL							●					●														0.002~0.010	0.004~0.060
			432-VL						●	●					●														0.002~0.012	0.008~0.060
			433-VL																										0.004~0.012	0.010~0.060
			441-VL	●				●																					0.002~0.010	0.004~0.060
			442-VL	●				●	●	●																			0.002~0.012	0.008~0.060
			443-VL																										0.004~0.012	0.010~0.060
Medium to finishing	LP	DNMG	330.5-LP																										0.002~0.012	0.010~0.047
			331-LP						●	●																			0.002~0.012	0.012~0.059
			332-LP																										0.004~0.016	0.012~0.059
			33.51-LP																										0.003~0.012	0.012~0.059
			33.52-LP																										0.004~0.016	0.012~0.059
			431-LP						●	●																			0.004~0.014	0.012~0.078
			432-LP						●	●																			0.004~0.016	0.020~0.098
			433-LP																										0.005~0.018	0.032~0.118
			441-LP						●	●					●														0.004~0.014	0.012~0.078
			442-LP						●	●					●														0.004~0.016	0.020~0.098
			443-LP						●	●																			0.005~0.018	0.032~0.118

● : Stock item

External Tool Holder						KHP Coolant		Boring Bar					
Double Clamp	Page	Lever Lock	Page	Multi Lock	Page	TH	Page	Double Clamp	Page	Lever Lock	Page	Multi Lock	Page
DDJNR/L	B92	PDJNR/L	B97	MDJNR/L	B108	PDJNR/L	B148	DDUNR/L	B125	PDSNR/L	B127	MDUNR/L	B130
		PDNNR/L	B98	MDNNN	B108					PDUNR/L	B127		
				MDQNR/L	B109								

DN○○



Dimensions (inch)					
Size	IC	RE	S	LE	D1
33	3/8	1/64~3/64	1/8~3/16	0.458	5/32
43	1/2	1/64~1/16	3/16	0.610	13/64
44	1/2	1/64~1/16	1/4	0.610	13/64

Rhombic 55° Negative

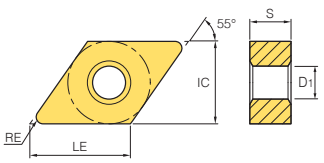
Workpiece			Machining types
Steel	P		● Continuous cutting
Stainless steel	M		⧓ General cutting
Cast iron	K		✱ Interrupted cutting
Non-ferrous metal	N		
Heat resistant alloy, Titanium alloy	S		
Hardened steel	H		

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 (ipr)	ap (inch)
Medium to finishing	CP	DNMG	331-CP							●		●																0.003~0.012	0.016~0.118
			332-CP							●		●				●												0.004~0.012	0.016~0.118
			33.51-CP																									0.003~0.012	0.016~0.118
			33.52-CP																									0.004~0.012	0.016~0.118
			431-CP							●		●																0.004~0.014	0.020~0.138
			432-CP							●		●				●												0.005~0.014	0.020~0.138
			433-CP							●		●				●												0.005~0.014	0.031~0.138
			441-CP							●		●																0.004~0.014	0.020~0.138
			442-CP							●		●				●												0.005~0.014	0.020~0.138
			443-CP							●		●				●												0.005~0.014	0.031~0.138
Medium to finishing	VC	DNMG	431-VC						●																			0.004~0.014	0.012~0.079
			432-VC						●		●					●												0.006~0.016	0.020~0.118
			433-VC						●		●					●												0.006~0.018	0.020~0.118
			441-VC						●		●																	0.004~0.014	0.012~0.079
			442-VC						●		●					●	●											0.006~0.016	0.020~0.118
			443-VC						●		●					●												0.006~0.018	0.020~0.118
Medium cutting	HM	DNMG	331-HM											●												●		0.002~0.020	0.031~0.157
			332-HM																							●		0.004~0.020	0.039~0.157
			431-HM								●																	0.002~0.012	0.035~0.197
			432-HM										●															0.004~0.020	0.039~0.197
			441-HM										●	●					●							●		0.002~0.012	0.035~0.197
			442-HM								●		●	●												●		0.004~0.020	0.039~0.197
			443-HM											●														0.007~0.020	0.039~0.197
Medium cutting	MP	DNMG	331-MP						●		●						●				●	●						0.004~0.016	0.016~0.150
			332-MP						●		●						●				●							0.006~0.016	0.020~0.157
			333-MP																									0.006~0.020	0.032~0.165
			33.51-MP																									0.004~0.016	0.016~0.150
			33.52-MP																									0.006~0.016	0.020~0.157
			33.53-MP																									0.006~0.020	0.031~0.165
			431-MP						●		●						●				●	●		●				0.004~0.016	0.016~0.157
			432-MP					●	●		●					●	●				●	●		●				0.006~0.018	0.020~0.177
			433-MP					●	●		●					●												0.006~0.020	0.032~0.197
			434-MP													●												0.006~0.020	0.033~0.197
			441-MP					●	●		●				●		●	●		●	●	●		●				0.004~0.016	0.016~0.157
			442-MP					●	●		●				●	●	●	●		●	●	●	●	●				0.006~0.018	0.020~0.177
			443-MP					●	●		●					●	●				●			●				0.006~0.020	0.032~0.197
			444-MP													●												0.006~0.022	0.033~0.197

● : Stock item

External Tool Holder						KHP Coolant		Boring Bar					
Double Clamp	Page	Lever Lock	Page	Multi Lock	Page	TH	Page	Double Clamp	Page	Lever Lock	Page	Multi Lock	Page
DDJNR/L	B92	PDJNR/L	B97	MDJNR/L	B108	PDJNR/L	B148	DDUNR/L	B125	PDSNR/L	B127	MDUNR/L	B130
		PDNNR/L	B98	MDNNN	B108					PDUNR/L	B127		
				MDQNR/L	B109								

DN○○



Dimensions (inch)					
Size	IC	RE	S	LE	D_1
33	3/8	1/64~3/64	1/8~3/16	0.458	5/32
43	1/2	1/64~1/16	3/16	0.610	13/64
44	1/2	1/64~1/16	1/4	0.610	13/64

Rhombic 55° Negative

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

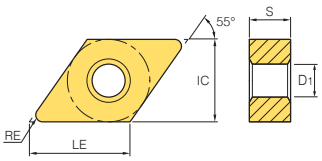
Machining types
● Continuous cutting
⇕ General cutting
⇕ Interrupted cutting

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 (ipr)	Cutting Condition ap (inch)
Medium cutting	VM	DNMG	331-VM								●				●														0.002~0.012	0.035~0.157
			332-VM																										0.004~0.020	0.039~0.157
			333-VM																										0.005~0.020	0.051~0.157
			431-VM												●						●	●							0.002~0.012	0.035~0.197
			432-VM		●							●			●						●	●							0.004~0.020	0.039~0.197
			433-VM												●														0.005~0.024	0.051~0.197
			441-VM	●	●						●	●			●						●					●			0.002~0.012	0.035~0.197
			442-VM	●						●	●	●			●						●	●				●			0.004~0.020	0.039~0.197
			443-VM												●						●								0.005~0.024	0.051~0.197
Medium to roughing	B25	DNMG	431-B25												●														0.007~0.018	0.039~0.157
			432-B25							●					●														0.007~0.022	0.059~0.157
			433-B25												●														0.010~0.022	0.059~0.157
			441-B25	●					●	●		●			●														0.007~0.022	0.059~0.157
			442-B25	●					●	●		●			●											●			0.007~0.022	0.059~0.157
			443-B25						●	●					●														0.010~0.022	0.059~0.157
Roughing	GR	DNMG	432-GR						●			●		●															0.008~0.020	0.039~0.276
			433-GR																										0.010~0.035	0.051~0.276
			434-GR																										0.012~0.030	0.071~0.276
			442-GR							●	●	●	●	●	●	●													0.008~0.020	0.039~0.276
			443-GR							●		●	●	●															0.010~0.028	0.051~0.276
			444-GR												●														0.008~0.030	0.071~0.276
Medium to finishing	VQ [Cermet]	DNMG	331-VQ	●	●																								0.002~0.012	0.020~0.138
			332-VQ		●																								0.003~0.016	0.031~0.157
			333-VQ																										0.004~0.016	0.039~0.157
			33.52-VQ																										0.003~0.016	0.031~0.157
			33.53-VQ																										0.004~0.016	0.039~0.157
			431-VQ	●	●	●																							0.002~0.012	0.031~0.138
			432-VQ	●		●	●																						0.003~0.016	0.031~0.157
			433-VQ																										0.004~0.016	0.020~0.165
			441-VQ	●	●	●	●																						0.002~0.012	0.031~0.157
			442-VQ	●	●	●																							0.003~0.016	0.031~0.157
			443-VQ																										0.004~0.016	0.020~0.165

● : Stock item

External Tool Holder						KHP Coolant		Boring Bar					
Double Clamp	Page	Lever Lock	Page	Multi Lock	Page	TH	Page	Double Clamp	Page	Lever Lock	Page	Multi Lock	Page
DDJNR/L	B92	PDJNR/L	B97	MDJNR/L	B108	PDJNR/L	B148	DDUNR/L	B125	PDSNR/L	B127	MDUNR/L	B130
		PDNNR/L	B98	MDNNN	B108					PDUNR/L	B127		
				MDQNR/L	B109								

DN○○



Dimensions (inch)					
Size	IC	RE	S	LE	D1
32	3/8	1/64~3/64	1/8~3/16	0.458	5/32
43	1/2	1/64~1/16	3/16	0.610	13/64
44	1/2	1/64~1/16	1/4	0.610	13/64
64	3/4	1/32	1/4	0.763	5/16

Rhombic 55° Negative

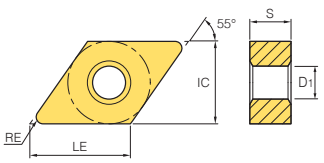
Workpiece			Machining types
Steel	P		● Continuous cutting
Stainless steel	M		⇕ General cutting
Cast iron	K		✱ Interrupted cutting
Non-ferrous metal	N		
Heat resistant alloy, Titanium alloy	S		
Hardened steel	H		

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 (ipr)	ap (inch)
Medium cutting	MK	DNMG	431-MK											●			●													0.002~0.012	0.036~0.197
			432-MK											●			●													0.004~0.020	0.039~0.197
			433-MK																											0.005~0.024	0.051~0.197
			441-MK											●		●	●													0.002~0.012	0.036~0.197
			442-MK											●		●	●													0.004~0.020	0.039~0.197
			443-MK											●			●													0.005~0.024	0.051~0.197
Medium cutting		DNMA	332																											0.007~0.018	0.031~0.118
			431																											0.007~0.022	0.016~0.157
			432																											0.010~0.022	0.031~0.157
			433														●													0.010~0.026	0.059~0.157
			441																											0.007~0.022	0.016~0.157
			442														●													0.010~0.022	0.031~0.157
			443														●													0.010~0.026	0.047~0.157
			642																											0.012~0.031	0.098~0.512
Medium cutting	RK	DNMG	432-RK														●													0.006~0.020	0.059~0.197
			433-RK														●													0.008~0.024	0.071~0.197
			442-RK													●	●													0.006~0.020	0.059~0.197
			443-RK														●													0.008~0.024	0.071~0.197
Medium cutting	VR	DNMG	432-VR																											0.010~0.022	0.047~0.276
			433-VR																											0.012~0.024	0.059~0.276
			442-VR																											0.010~0.022	0.047~0.276
			443-VR																											0.012~0.024	0.059~0.276
Medium cutting	MM	DNMG	331-MM																							●				0.003~0.014	0.020~0.197
			332-MM																●	●						●				0.004~0.016	0.020~0.197
			333-MM																											0.005~0.018	0.020~0.197
			33.51-MM																											0.003~0.014	0.020~0.197
			33.52-MM																											0.004~0.016	0.020~0.197
			33.53-MM																											0.005~0.018	0.020~0.197
			431-MM																●		●				●					0.004~0.016	0.020~0.252
			432-MM																●	●	●				●	●				0.005~0.018	0.020~0.252
			433-MM																●											0.006~0.024	0.020~0.252
			434-MM																											0.006~0.024	0.020~0.236
			441-MM																●	●	●				●					0.004~0.016	0.020~0.252
			442-MM															●	●	●	●			●	●	●				0.005~0.018	0.020~0.252
			443-MM																●		●				●	●				0.006~0.024	0.020~0.252
			444-MM																											0.007~0.026	0.020~0.315

● : Stock item

External Tool Holder						KHP Coolant		Boring Bar					
Double Clamp	Page	Lever Lock	Page	Multi Lock	Page	TH	Page	Double Clamp	Page	Lever Lock	Page	Multi Lock	Page
DDJNR/L	B92	PDJNR/L	B97	MDJNR/L	B108	PDJNR/L	B148	DDUNR/L	B125	PDSNR/L	B127	MDUNR/L	B130
		PDNNR/L	B98	MDNNN	B108					PDUNR/L	B127		
				MDQNR/L	B109								

DN○○



Dimensions (inch)					
Size	IC	RE	S	LE	D1
43	1/2	1/64~1/16	3/16	0.610	13/64
44	1/2	1/64~1/16	1/4	0.610	13/64

Rhombic 55° Negative

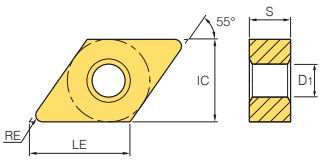
Workpiece			Machining types
Steel	P	● ⇔ ● ⇔ ● ⇔ ⇔ ⇔ ⇔ ⇔ ⇔ ⇔ ⇔ ⇔ ⇔ ⇔	● Continuous cutting
Stainless steel	M	⇔ ⇔ ⇔ ⇔ ⇔ ⇔ ● ⇔ ⇔ ⇔ ⇔ ⇔ ⇔ ⇔ ⇔ ⇔	⇔ General cutting
Cast iron	K	● ⇔ ● ⇔ ⇔ ⇔ ⇔ ⇔ ● ⇔ ⇔ ⇔ ⇔ ⇔ ⇔ ⇔ ⇔ ⇔	⇔ Interrupted cutting
Non-ferrous metal	N	⇔ ⇔ ⇔ ⇔ ⇔ ⇔ ⇔ ⇔ ⇔ ⇔ ⇔ ⇔ ⇔ ⇔ ⇔ ⇔ ⇔	
Heat resistant alloy, 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 (ipr)	ap (inch)
Roughing	RM	DNMG	431-RM																		●								0.004~0.020	0.078~0.236
			432-RM															●	●		●				●				0.006~0.022	0.078~0.236
			433-RM																										0.008~0.024	0.078~0.236
			434-RM																										0.010~0.028	0.079~0.236
			441-RM																●						●				0.004~0.020	0.078~0.236
			442-RM															●	●	●				●					0.006~0.022	0.078~0.236
			443-RM																										0.008~0.024	0.078~0.236
			444-RM																										0.010~0.028	0.079~0.236
Finishing	VP1	DNMG	431-VP1																					●	●			●	0.002~0.006	0.004~0.059
			432-VP1																					●	●				0.002~0.008	0.004~0.059
			441-VP1																					●	●				0.002~0.006	0.004~0.059
			442-VP1																					●	●				0.002~0.008	0.004~0.059
Finishing	VP1	DNGG	431-VP1																										0.003~0.008	0.004~0.059
			432-VP1																										0.003~0.008	0.004~0.059
			441-VP1																										0.003~0.008	0.004~0.059
			442-VP1																										0.003~0.008	0.004~0.059
Medium to finishing	VP2	DNMG	431-VP2																		●	●		●	●				0.002~0.012	0.004~0.118
			432-VP2																		●	●	●	●	●				0.004~0.016	0.020~0.177
			441-VP2																		●		●	●	●			●	0.002~0.012	0.004~0.118
			442-VP2							●											●	●	●	●	●				0.004~0.016	0.020~0.177
Medium to finishing	VP3	DNMG	431-VP3																					●					0.002~0.012	0.004~0.118
			432-VP3																		●			●	●				0.004~0.018	0.020~0.197
			433-VP3																						●				0.005~0.020	0.020~0.197
			441-VP3																		●	●		●	●				0.002~0.012	0.004~0.118
			442-VP3																		●	●	●	●	●			●	0.004~0.018	0.020~0.197
			443-VP3																		●			●	●				0.005~0.020	0.020~0.197
Medium cutting	VP3	DNGG	431-VP3																				●						0.002~0.012	0.004~0.118
			432-VP3																										0.004~0.018	0.020~0.197
			433-VP3																										0.005~0.020	0.020~0.197
			441-VP3																						●				0.002~0.012	0.004~0.118
			442-VP3																					●					0.004~0.018	0.020~0.197
			443-VP3																										0.005~0.020	0.020~0.197

● : Stock item

External Tool Holder						KHP Coolant		Boring Bar					
Double Clamp	Page	Lever Lock	Page	Multi Lock	Page	TH	Page	Double Clamp	Page	Lever Lock	Page	Multi Lock	Page
DDJNR/L	B92	PDJNR/L	B97	MDJNR/L	B108	PDJNR/L	B148	DDUNR/L	B125	PDSNR/L	B127	MDUNR/L	B130
		PDNNR/L	B98	MDNNN	B108					PDUNR/L	B127		
				MDQNR/L	B109								

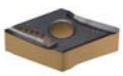
DN○○



Dimensions (inch)					
Size	IC	RE	S	LE	D1
43	1/2	1/64~3/64	3/16	0.610	13/64
44	1/2	1/64~3/64	1/4	0.610	13/64

Rhombic 55° Negative

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 (ipr)	ap (inch)
Roughing	VP4 	DNMG	432-VP4																										0.006~0.014	0.039~0.157
			433-VP4																										0.008~0.016	0.039~0.157
			442-VP4																					●					0.006~0.014	0.039~0.157
			443-VP4																										0.008~0.016	0.039~0.157
Medium to finishing	HA 	DNMG	431-HA																						●		●		0.002~0.012	0.031~0.138
			432-HA																						●		●		0.004~0.016	0.031~0.138
			441-HA																					●	●		●		0.002~0.012	0.031~0.138
			442-HA																						●		●		0.004~0.016	0.031~0.138
Finishing	VW  [Wiper]	DNMG	431-VW																										0.004~0.014	0.012~0.118
			432-VW																										0.004~0.016	0.012~0.118
			441-VW																										0.004~0.014	0.012~0.118
			442-VW																										0.004~0.016	0.012~0.118
Medium cutting	LW  [Wiper]	DNMG	432-LW																										0.006~0.020	0.028~0.177
			433-LW																										0.008~0.024	0.039~0.197
			442-LW						●																				0.006~0.020	0.028~0.177
			443-LW																										0.008~0.024	0.039~0.197
Medium to finishing	SR  [Shaft]	DNMX	431R-SR																										0.004~0.016	0.028~0.177
			432R-SR																										0.005~0.018	0.039~0.177
			441R-SR																										0.004~0.016	0.028~0.177
			442R-SR																										0.005~0.018	0.039~0.177
			431L-SR																										0.004~0.016	0.028~0.177
			432L-SR																										0.005~0.018	0.039~0.177
			441L-SR																										0.004~0.016	0.028~0.177
			442L-SR																										0.005~0.018	0.039~0.177
Medium cutting	SH  [Shaft]	DNMX	431R-SH		●																								0.006~0.012	0.039~0.157
			432R-SH																										0.006~0.020	0.059~0.197
			441R-SH						●	●																			0.006~0.012	0.039~0.157
			442R-SH						●	●																			0.006~0.020	0.059~0.197
			431L-SH																										0.006~0.012	0.039~0.157
			432L-SH																										0.006~0.020	0.059~0.197
			441L-SH						●	●																			0.006~0.012	0.039~0.157
			442L-SH						●	●																			0.006~0.020	0.059~0.197

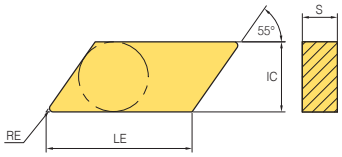
● : Stock item

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○○



Dimensions (inch)				
Size	IC	RE	S	LE
16	3/8	0.020~0.039	3/16	0.630

Parallelogram 55° Negative

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	● ● ● ●	

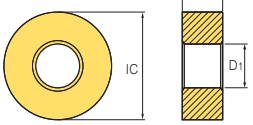
Application	Picture	Designation		Cermet		Coated		Coated																				Uncoated		Cutting Condition	
				CN1500	CN2500	CC1015	CC1025	NC3205	NC3215	NC3225	NC3120	NC3030	NC3235	NC5320	NC5330	NC6310	NC6315	NC9115	NC9125	NC9135	PC5300	PC5400	PC8105	PC8110	PC8115	PC9030	PC9035	H01	H05	fn (ipr)	ap (inch)
Medium cutting	11 	KNUX	160405R11					●	●	●	●	●		●		●										●				0.008~0.014	0.039~0.236
			160410R11					●	●		●	●		●																0.012~0.024	0.059~0.236
			160405L11					●	●	●	●	●		●																0.008~0.014	0.039~0.236
			160410L11					●	●		●			●																0.012~0.024	0.059~0.236
Roughing	12 	KNUX	160405R12					●	●		●			●																0.008~0.014	0.039~0.236
			160410R12					●	●		●			●																0.012~0.024	0.059~0.236
			160405L12																											0.008~0.014	0.039~0.236
			160410L12									●																		0.012~0.024	0.059~0.236

● : Stock item

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

Boring Bar	
Clamp On	Page
CKUNR/L	B129

RN○○



Dimensions (inch)			
Size	IC	S	D1
32	3/8	1/8	5/32
43	1/2	3/16	13/64
54	5/8	1/4	1/4
64	3/4	1/4	5/16
84	1	1/4	23/64
86	1	3/8	23/64
106	1.25	3/8	1/2

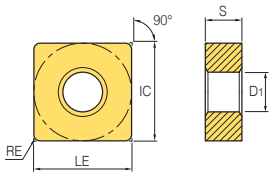
Round Negative

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 (ipr)	ap (inch)
General	B25 	RNMG	32-B25																											0.004~0.035	0.036~0.177
			43-B25									●																		0.005~0.047	0.047~0.189
			54-B25									●																		0.006~0.059	0.059~0.295
			64-B25																											0.007~0.075	0.075~0.299
			84-B25																											0.010~0.098	0.098~0.394
			86-B25									●																		0.010~0.098	0.098~0.394
			106-B25																											0.012~0.098	0.138~0.512

● : Stock item

SN○○



Dimensions (inch)					
Size	IC	RE	S	LE	D1
32	3/8	1/64~1/32	1/8	3/8	5/32
33	3/8	1/64~1/32	1/8~3/16	3/8	5/32
43	1/2	1/64~3/64	3/16	1/2	13/64

○ Square **90° Negative**

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 (ipr)	ap (inch)
Finishing	VB	SNMG	431-VB			●			●																				0.006~0.014	0.012~0.078
			432-VB			●			●		●																		0.006~0.016	0.022~0.078
Finishing	VF	SNMG	321-VF																										0.003~0.012	0.020~0.059
			322-VF																										0.003~0.012	0.020~0.059
			431-VF																										0.003~0.012	0.020~0.059
			432-VF														●												0.004~0.016	0.020~0.059
			433-VF																										0.008~0.020	0.020~0.059
Finishing	VL	SNMG	432-VL																							●			0.004~0.014	0.008~0.060
Medium to finishing	LP	SNMG	322-LP																										0.004~0.012	0.012~0.059
			332-LP																										0.004~0.012	0.012~0.059
			431-LP								●						●												0.004~0.014	0.012~0.078
			432-LP						●		●																		0.004~0.016	0.022~0.098
			433-LP						●		●																		0.005~0.018	0.032~0.118
Medium to finishing	CP	SNMG	321-CP																										0.003~0.012	0.016~0.118
			322-CP																										0.004~0.012	0.016~0.118
			331-CP																										0.003~0.012	0.016~0.118
			332-CP																										0.004~0.012	0.016~0.118
			431-CP							●		●																	0.004~0.014	0.020~0.138
			432-CP							●		●				●													0.005~0.014	0.020~0.138
			433-CP							●		●				●													0.005~0.014	0.031~0.138
Medium to finishing	VC	SNMG	432-VC								●						●												0.006~0.016	0.020~0.157

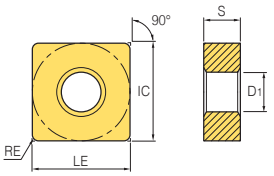
● : Stock item

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○○

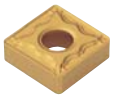


Dimensions (inch)					
Size	IC	RE	S	LE	D1
32	3/8	1/64~3/64	1/8	3/8	5/32
33	3/8	1/64~3/64	1/8~3/16	3/8	5/32
43	1/2	1/64~1/16	3/16	1/2	13/64
54	5/8	1/32~3/64	1/4	5/8	1/4
64	3/4	1/32~1/16	3/16~1/4	3/4	5/16

○ Square **90° Negative**

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 (ipr)	ap (inch)
Medium cutting	HM 	SNMG	431-HM																							●			0.006~0.017	0.024~0.165
			432-HM						●		●	●				●										●			0.004~0.020	0.039~0.197
			433-HM						●				●													●			0.007~0.020	0.039~0.197
Medium cutting	MP 	SNMG	321-MP						●	●					●														0.004~0.016	0.016~0.150
			322-MP						●	●					●														0.006~0.016	0.020~0.157
			323-MP																										0.006~0.020	0.031~0.165
			331-MP																										0.004~0.016	0.016~0.150
			332-MP																										0.006~0.016	0.020~0.157
			333-MP																										0.006~0.020	0.031~0.165
			431-MP						●	●					●				●	●			●	●					0.004~0.016	0.016~0.157
			432-MP					●	●	●			●	●	●			●	●				●	●					0.006~0.018	0.020~0.177
			433-MP					●	●	●				●	●			●	●											0.006~0.020	0.032~0.197
			434-MP						●	●					●														0.007~0.024	0.032~0.276
			542-MP																										0.006~0.020	0.020~0.276
			543-MP																										0.007~0.024	0.031~0.335
			642-MP																										0.006~0.020	0.020~0.335
			643-MP																										0.007~0.024	0.031~0.335
Medium cutting	VM 	SNMG	321-VM																										0.002~0.012	0.035~0.138
			322-VM																										0.004~0.197	0.039~0.138
			431-VM												●						●								0.002~0.012	0.035~0.197
			432-VM	●							●	●			●						●	●		●		●			0.004~0.020	0.039~0.197
			433-VM												●						●								0.005~0.024	0.051~0.197
			643-VM																										0.010~0.024	0.098~0.295
			644-VM																										0.010~0.024	0.098~0.295

● : Stock item

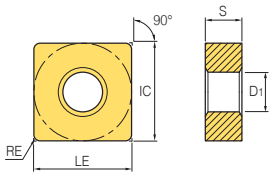
External Tool Holder					
Double Clamp	Page	Lever Lock	Page	Multi Lock	Page
DSBNR/L	B92	PSBNR/L	B99	MSBNR/L	B109
DSDNN	B93	PSDNN	B100	MSDNN	B109
DSKNR/L	B93	PSKNR/L	B100	MSKNR/L	B110
DSSNR/L	B93	PSSNR/L	B101	MSRNR/L	B110
				MSSNR/L	B111

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 (inch)					
Size	IC	RE	S	LE	D1
32	3/8	1/64~3/64	1/8	3/8	5/32
43	1/2	1/64~3/64	3/16	1/2	13/64
54	5/8	1/32~1/16	1/4	5/8	1/4
64	3/4	1/32~3/32	3/16~1/4	3/4	5/16
85	1	1/16~3/32	5/16	1	23/64
86	1	1/16~3/32	3/8	1	23/64

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 (ipr)	ap (inch)
Medium to roughing	B25	SNMG	322-B25																									0.007~0.018	0.031~0.138
			431-B25	●						●		●	●		●													0.007~0.018	0.039~0.138
			432-B25	●	●				●	●		●	●		●						●	●				●			0.009~0.024	0.059~0.197
			433-B25		●				●	●		●	●		●														0.010~0.024	0.079~0.197
			434-B25						●	●		●	●		●														0.014~0.028	0.098~0.197
			435-B25																											0.016~0.028	0.118~0.197
			542-B25									●	●																	0.010~0.024	0.059~0.236
			543-B25																											0.010~0.024	0.079~0.236
			544-B25							●																				0.014~0.028	0.079~0.236
			642-B25						●	●		●																		0.010~0.024	0.118~0.315
			643-B25						●	●		●			●															0.014~0.028	0.118~0.315
			644-B25						●	●		●												●						0.014~0.028	0.157~0.472
			854-B25																											0.014~0.028	0.157~0.472
			856-B25						●						●															0.020~0.039	0.197~0.472
			866-B25																											0.020~0.039	0.217~0.472
Roughing	GR	SNMG	431-GR																											0.006~0.018	0.003~0.236
			432-GR									●	●	●	●	●	●													0.008~0.020	0.039~0.276
			433-GR									●	●	●																0.008~0.020	0.039~0.276
			542-GR									●	●																	0.010~0.024	0.039~0.276
			543-GR						●	●	●	●	●																	0.011~0.030	0.055~0.276
			642-GR									●																		0.012~0.031	0.067~0.354
			643-GR							●	●	●	●		●															0.012~0.031	0.067~0.354
			644-GR						●	●	●	●	●		●															0.012~0.032	0.075~0.484
			646-GR																											0.014~0.032	0.079~0.492
			856-GR									●																		0.018~0.047	0.102~0.551
			866-GR								●	●																		0.020~0.047	0.102~0.551
Medium to finishing	VQ [Cermet]	SNMG	321-VQ																											0.002~0.012	0.002~0.138
			322-VQ												●															0.003~0.012	0.003~0.157
			323-VQ																											0.004~0.012	0.039~0.157
			431-VQ	●	●																									0.002~0.012	0.031~0.157
			432-VQ	●																										0.003~0.016	0.031~0.157

● : Stock item

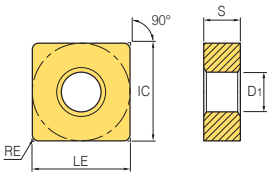
External Tool Holder					
Double Clamp	Page	Lever Lock	Page	Multi Lock	Page
DSBNR/L	B92	PSBNR/L	B99	MSBNR/L	B109
DSDNN	B93	PSDNN	B100	MSDNN	B109
DSKNR/L	B93	PSKNR/L	B100	MSKNR/L	B110
DSSNR/L	B93	PSSNR/L	B101	MSRNR/L	B110
				MSSNR/L	B111

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

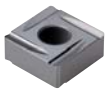
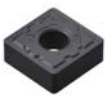
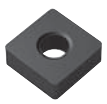
SN○○

○ Square 90° Negative



Dimensions (inch)					
Size	IC	RE	S	LE	D1
32	3/8	1/64~3/64	1/8	3/8	5/32
43	1/2	1/64~5/64	3/16	1/2	13/64
54	5/8	1/32~1/16	1/4	5/8	1/4
64	3/4	1/32~3/32	3/16~1/4	3/4	5/16
85	1	3/32	5/16	1	23/64
86	1	3/32	3/8	1	23/64

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 (ipr)	ap (inch)
Medium cutting		SNGG	321R																									0.005~0.014	0.039~0.118
			322R																									0.006~0.014	0.039~0.118
			431R	●	●																							0.006~0.014	0.039~0.157
			432R																									0.006~0.014	0.039~0.157
			433R																									0.006~0.014	0.039~0.157
			321L																									0.005~0.014	0.039~0.118
			322L																									0.006~0.014	0.039~0.118
			431L																									0.006~0.014	0.039~0.157
			432L																									0.006~0.014	0.039~0.157
			433L																									0.006~0.014	0.039~0.157
Medium cutting	MK 	SNMG	322-MK																									0.006~0.018	0.031~0.138
			431-MK																									0.003~0.018	0.031~0.157
			432-MK											●			●											0.004~0.020	0.039~0.197
			433-MK											●			●											0.005~0.024	0.051~0.197
			434-MK																									0.006~0.025	0.059~0.236
			542-MK																									0.010~0.024	0.071~0.236
			543-MK																									0.008~0.028	0.071~0.276
			544-MK																									0.009~0.028	0.078~0.295
			642-MK																									0.012~0.030	0.091~0.374
			643-MK														●											0.013~0.031	0.098~0.394
			644-MK																									0.014~0.031	0.106~0.394
Roughing		SNMA	321																									0.004~0.018	0.020~0.177
			322																									0.006~0.020	0.020~0.177
			323																									0.008~0.020	0.020~0.177
			430.5																									0.004~0.020	0.039~0.177
			431																									0.006~0.024	0.039~0.197
			432														●											0.006~0.028	0.039~0.236
			433														●											0.008~0.032	0.059~0.236
			434																									0.012~0.039	0.078~0.236
			435																									0.012~0.028	0.098~0.197
			543																									0.008~0.032	0.078~0.315
			544														●											0.010~0.034	0.098~0.394
			642																									0.008~0.032	0.078~0.394
			643														●											0.008~0.032	0.078~0.394
			644													●	●											0.010~0.034	0.098~0.394
			646																									0.014~0.036	0.118~0.394
			856																									0.016~0.039	0.118~0.512
			866																									0.016~0.039	0.118~0.512

● : Stock item

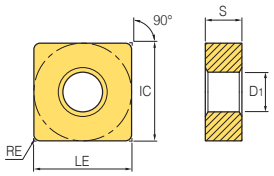
External Tool Holder					
Double Clamp	Page	Lever Lock	Page	Multi Lock	Page
DSBNR/L	B92	PSBNR/L	B99	MSBNR/L	B109
DSDNN	B93	PSDNN	B100	MSDNN	B109
DSKNR/L	B93	PSKNR/L	B100	MSKNR/L	B110
DSSNR/L	B93	PSSNR/L	B101	MSRNR/L	B110
				MSSNR/L	B111

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 (inch)					
Size	IC	RE	S	LE	D_1
32	3/8	1/64~3/64	1/8	3/8	5/32
33	3/8	1/64~3/64	1/8~3/16	3/8	5/32
43	1/2	1/64~1/16	3/16	1/2	13/64
54	5/8	1/32~1/16	1/4	5/8	1/4
64	3/4	1/32~1/16	3/16~1/4	3/4	5/16
85	1	3/32	5/16	1	23/64
86	1	3/32	3/8	1	23/64

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		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 (ipr)	ap (inch)
Roughing		SNGA	321																											0.007~0.020	0.020~0.177
			322																											0.007~0.020	0.020~0.177
			431																											0.006~0.024	0.059~0.315
			432																											0.006~0.024	0.059~0.315
			433																											0.008~0.031	0.059~0.315
			542																											0.008~0.031	0.079~0.394
			543																											0.008~0.035	0.079~0.394
			642																											0.006~0.024	0.118~0.472
			643																											0.008~0.031	0.118~0.472
Roughing	RK	SNMG	431-RK																											0.006~0.020	0.047~0.236
			432-RK													●	●													0.009~0.021	0.059~0.236
			433-RK													●	●													0.011~0.021	0.071~0.236
			434-RK														●													0.011~0.021	0.078~0.236
			543-RK																											0.008~0.028	0.071~0.276
			544-RK																											0.009~0.028	0.078~0.295
			643-RK																											0.013~0.031	0.098~0.394
			644-RK																											0.014~0.031	0.106~0.394
Roughing	VR	SNMG	432-VR																											0.010~0.022	0.047~0.276
			433-VR																											0.012~0.024	0.059~0.276
			434-VR																											0.014~0.024	0.079~0.276
			643-VR						●	●																				0.014~0.028	0.078~0.394
			644-VR						●	●																				0.014~0.030	0.087~0.394
Medium cutting	MM	SNMG	321-MM																											0.003~0.014	0.020~0.197
			322-MM																											0.004~0.016	0.020~0.197
			323-MM																											0.005~0.018	0.020~0.197
			331-MM																											0.003~0.014	0.020~0.197
			332-MM																											0.004~0.016	0.020~0.197
			431-MM															●	●	●	●			●						0.004~0.016	0.020~0.252
			432-MM																●	●	●			●	●	●				0.005~0.018	0.020~0.252
			433-MM																●	●	●				●	●				0.006~0.024	0.020~0.252
			434-MM																											0.007~0.026	0.020~0.252
			542-MM																											0.005~0.018	0.020~0.315
			543-MM																●	●	●				●	●				0.006~0.024	0.020~0.315
			544-MM																●	●										0.007~0.026	0.020~0.315
			642-MM																●	●	●				●					0.005~0.018	0.020~0.374
			643-MM																●	●	●				●	●				0.006~0.024	0.020~0.374
			644-MM																●	●						●				0.007~0.026	0.020~0.374
			866-MM																	●										0.008~0.031	0.039~0.394

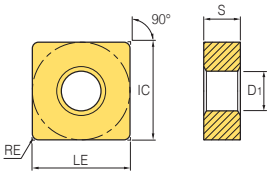
● : Stock item

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○○



Dimensions (inch)					
Size	IC	RE	S	LE	D1
43	1/2	1/64~1/16	3/16	1/2	13/64
54	5/8	1/32~1/16	1/4	5/8	1/4
64	3/4	1/32~3/32	3/16~1/4	3/4	5/16
86	1	3/32	3/8	1	23/64

○ Square 90° Negative

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 (ipr)	ap (inch)
Roughing	RM	SNMG	431-RM																●	●	●			●	●				0.004~0.020	0.078~0.236
			432-RM																●	●	●			●	●				0.006~0.022	0.078~0.236
			433-RM																●	●	●				●				0.008~0.024	0.078~0.236
			434-RM																										0.010~0.028	0.078~0.236
			542-RM																										0.008~0.024	0.008~0.236
			543-RM																		●				●				0.008~0.024	0.078~0.315
			544-RM																										0.010~0.028	0.078~0.315
			642-RM																		●				●				0.008~0.024	0.078~0.394
			643-RM																●	●	●				●				0.010~0.028	0.078~0.394
			644-RM																●	●									0.009~0.028	0.078~0.394
			646-RM																										0.012~0.030	0.118~0.394
			866-RM																										0.016~0.047	0.157~0.551
Medium to finishing	VP2	SNMG	431-VP2																		●	●		●					0.002~0.014	0.004~0.118
			432-VP2							●											●	●	●	●	●			●	0.004~0.018	0.020~0.177
			433-VP2																		●		●	●	●				0.004~0.020	0.020~0.197
Medium cutting	VP3	SNMG	431-VP3																		●	●	●					●	0.002~0.012	0.004~0.118
			432-VP3																		●	●	●	●	●			●	0.004~0.018	0.039~0.197
			433-VP3																		●	●	●	●	●				0.005~0.020	0.039~0.197
			434-VP3																										0.010~0.018	0.020~0.157
			542-VP3																										0.006~0.014	0.031~0.236
			543-VP3																										0.008~0.016	0.039~0.236
			544-VP3																										0.008~0.016	0.039~0.236
			642-VP3																										0.006~0.014	0.031~0.276
			643-VP3																										0.008~0.016	0.039~0.276
			644-VP3																										0.010~0.018	0.039~0.276
Medium cutting	VP3	SNGG	431-VP3																										0.002~0.012	0.016~0.157
			432-VP3																										0.004~0.018	0.020~0.157
			433-VP3																										0.005~0.020	0.020~0.157
Roughing	VP4	SNMG	432-VP4																					●					0.006~0.014	0.039~0.157
			433-VP4																					●					0.008~0.016	0.039~0.157
			543-VP4																					●					0.008~0.018	0.039~0.197
			642-VP4																										0.008~0.020	0.039~0.354
			643-VP4																					●					0.009~0.022	0.039~0.354
			644-VP4																										0.010~0.024	0.039~0.354

● : Stock item

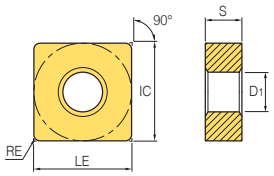
External Tool Holder					
Double Clamp	Page	Lever Lock	Page	Multi Lock	Page
DSBNR/L	B92	PSBNR/L	B99	MSBNR/L	B109
DSDNN	B93	PSDNN	B100	MSDNN	B109
DSKNR/L	B93	PSKNR/L	B100	MSKNR/L	B110
DSSNR/L	B93	PSSNR/L	B101	MSRNR/L	B110
				MSSNR/L	B111

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 (inch)					
Size	IC	RE	S	LE	D1
32	3/8	0.008~1/32	1/8	3/8	5/32
42	1/2	1/64~3/32	1/8	1/2	13/64
43	1/2	1/64~3/32	3/16	1/2	13/64
53	5/8	0.008~1/16	3/16	5/8	1/4
63	3/4	0.008~1/16	3/16	3/4	-
84	1	1/64~3/32	1/4	1	23/64
86	1	1/64~3/32	3/8	1	23/64

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 (ipr)	ap (inch)
Medium to finishing	HA	SNMG	431-HA																						●		●	0.004~0.014	0.031~0.138
			432-HA																						●		●	0.004~0.016	0.031~0.138
			433-HA																									0.005~0.022	0.031~0.138
Roughing		SNGN	320.5																									0.002~0.012	0.020~0.157
			321																									0.004~0.014	0.020~0.157
			322																									0.004~0.016	0.039~0.157
			421																									0.005~0.020	0.051~0.197
			422																									0.006~0.024	0.059~0.236
			423																									0.007~0.024	0.067~0.236
			430.5																									0.004~0.018	0.039~0.197
			431																									0.005~0.020	0.051~0.197
			432																									0.006~0.024	0.059~0.236
			433																									0.007~0.024	0.067~0.236
			436																									0.008~0.026	0.079~0.236
			530.5																									0.004~0.020	0.020~0.236
			532																									0.006~0.024	0.059~0.315
			533																									0.007~0.024	0.079~0.315
			534																									0.008~0.026	0.098~0.335
			630.5																									0.004~0.024	0.079~0.335
			633																									0.007~0.028	0.098~0.394
			634																									0.008~0.030	0.098~0.394
			841																									0.012~0.031	0.118~0.472
			844																									0.014~0.039	0.157~0.472
Medium to roughing		SNUN	432																									0.009~0.024	0.059~0.197
			433																									0.010~0.024	0.079~0.197
			633																									0.012~0.039	0.118~0.394
			433TN																									0.010~0.024	0.079~0.197
			866TN																									0.012~0.047	0.118~0.472
Medium cutting		SNMX	432R																									0.006~0.014	0.039~0.157

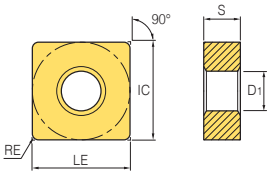
● : Stock item

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○○



Dimensions (inch)					
Size	IC	RE	S	LE	D_1
43	1/2	1/32~3/64	3/16	1/2	13/64
54	5/8	3/64	1/4	5/8	1/4
64	3/4	3/64~3/32	3/16~1/4	3/4	5/16
85	1	3/32~1/8	5/16	1	23/64
86	1	3/32~1/8	3/8	1	23/64

○ Square **90° Negative**

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 (ipr)	ap (inch)
Medium cutting		SNGX	**432R**																									0.039~0.157	0.006~0.014
Roughing	GR	SNMM	**432-GR**																									0.008~0.020	0.039~0.276
			433-GR									●	●															0.010~0.026	0.051~0.276
			643-GR									●																0.010~0.026	0.051~0.453
			644-GR																									0.013~0.033	0.071~0.453
Heavy	HP	SNMM	**643-HP**																									0.012~0.031	0.098~0.354
			644-HP																									0.014~0.033	0.098~0.354
			646-HP																									0.016~0.035	0.098~0.354
			866-HP																									0.016~0.039	0.098~0.433
	HL	SNMM	**643-HL**																									0.012~0.033	0.118~0.394
			644-HL																									0.014~0.035	0.118~0.394
			646-HL																									0.016~0.039	0.118~0.394
			866-HL																									0.016~0.043	0.098~0.472
	GH	SNMM	**432-GH**									●	●		●													0.012~0.024	0.000~0.001
			433-GH							●		●																0.012~0.028	0.000~0.001
			543-GH									●																0.012~0.028	0.098~0.315
			643-GH						●		●	●	●		●													0.012~0.028	0.118~0.315
			644-GH						●		●	●	●		●													0.018~0.039	0.157~0.354
			646-GH						●		●	●			●													0.022~0.047	0.157~0.354
			856-GH						●		●	●	●		●													0.022~0.047	0.197~0.472
			866-GH						●		●	●	●		●													0.022~0.047	0.197~0.472

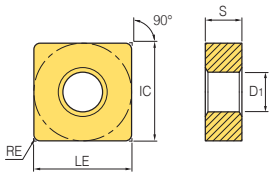
● : Stock item

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○○



Dimensions (inch)					
Size	IC	RE	S	LE	D1
43	1/2	1/32~3/64	3/16	1/2	13/64
54	5/8	3/64	1/4	5/8	1/4
64	3/4	3/64~3/32	3/16~1/4	3/4	5/16
85	1	3/32~1/8	5/16	1	23/64
86	1	3/32~1/8	3/8	1	23/64

○ Square **90° Negative**

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	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 (ipr)	Cutting Condition ap (inch)
Heavy	HG	SNMM	643-HG																	●										0.012~0.035	0.118~0.394
			644-HG																											0.014~0.037	0.118~0.394
			646-HG																											0.016~0.039	0.118~0.394
			866-HG										●					●	●	●										0.016~0.047	0.138~0.512
			868-HG																											0.020~0.047	0.138~0.512
	VT	SNMM	643-VT						●						●															0.020~0.036	0.197~0.394
			644-VT						●																					0.020~0.043	0.197~0.394
			646-VT						●																					0.024~0.047	0.236~0.472
			854-VT																											0.028~0.055	0.236~0.551
			856-VT						●			●																		0.028~0.055	0.236~0.591
			866-VT						●			●																		0.028~0.055	0.236~0.591
	HV	SNMM	644-HV																											0.018~0.041	0.157~0.433
			646-HV																											0.020~0.043	0.157~0.433
			858-HV																	●										0.020~0.055	0.157~0.591
			868-HV										●							●										0.020~0.055	0.157~0.591
	VH	SNMM	643-VH																											0.020~0.036	0.197~0.394
			644-VH						●																					0.020~0.043	0.197~0.394
			646-VH						●																					0.024~0.047	0.236~0.472
			854-VH																											0.028~0.055	0.236~0.551
			856-VH																											0.028~0.055	0.236~0.591
			865-VH																											0.028~0.055	0.236~0.591
			866-VH						●																					0.028~0.055	0.236~0.591
	HX	SNMM	644-HX																											0.022~0.043	0.177~0.591
			646-HX																											0.024~0.047	0.177~0.591
			868-HX																											0.024~0.059	0.177~0.709

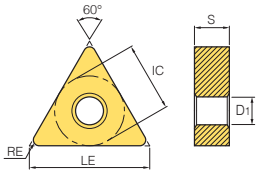
● : Stock item

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○○



Dimensions (inch)					
Size	IC	RE	S	LE	D1
22	1/4	1/64~1/32	1/8~3/16	0.433	3/32
33	1/2	1/64~3/64	3/16	0.650	5/32
43	1/2	1/64~3/64	3/16	0.866	13/64

Triangular **60° Negative**

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	● ⇕ ⇕ ⇕ ⇕ ⇕ ⇕ ⇕ ⇕	

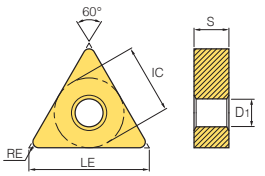
Application	Picture	Designation		Cermet		Coated		Coated																Uncoated		Cutting Condition	
				CN1500	CN2500	CC1015	CC1025	NC3205	NC3215	NC3215P	NC3225	NC3225P	NC3120	NC3030	NC3235	NC5320	NC5330	NC6310	NC6315	NC9115	NC9125	NC9135	PC8105	PC8110	PC8115	PC9030	PC9035	H01	H05	fn (ipr)	ap (inch)
Finishing	VB	TNMG	331-VB	●	●	●	●		●		●																			0.004~0.014	0.012~0.059
			332-VB	●	●	●	●		●		●						●													0.006~0.018	0.020~0.276
			333-VB								●																			0.007~0.018	0.031~0.118
			432-VB																											0.006~0.018	0.020~0.098
			433-VB																											0.008~0.020	0.039~0.276
Finishing	VL	TNMG	331-VL	●	●				●																					0.002~0.010	0.004~0.039
			332-VL	●					●		●						●													0.004~0.014	0.008~0.059
			333-VL						●																					0.006~0.016	0.008~0.059
			432-VL																											0.004~0.014	0.008~0.059
			433-VL																											0.004~0.014	0.020~0.078
Finishing	VF	TNMG	221-VF	●	●												●													0.002~0.079	0.008~0.039
			331-VF	●		●	●						●				●							●						0.003~0.012	0.020~0.059
			332-VF		●		●		●				●				●													0.004~0.016	0.020~0.059
			333-VF																											0.006~0.020	0.020~0.059
			431-VF														●									●				0.004~0.016	0.020~0.059
			432-VF																											0.004~0.016	0.020~0.059
Medium to finishing	LP	TNMG	221-LP																											0.003~0.012	0.012~0.059
			222-LP																											0.004~0.012	0.012~0.059
			331-LP						●		●						●													0.004~0.014	0.012~0.078
			332-LP						●		●																			0.004~0.016	0.020~0.098
			333-LP						●		●																			0.005~0.018	0.032~0.118
Medium to finishing	CP	TNMG	3.521-CP																											0.003~0.010	0.016~0.098
			3.522-CP																											0.004~0.010	0.016~0.098
			331-CP							●		●																		0.004~0.014	0.020~0.118
			332-CP							●		●				●														0.005~0.012	0.020~0.118
			333-CP							●		●				●														0.005~0.012	0.031~0.118
			432-CP							●		●																		0.006~0.014	0.031~0.157
			433-CP							●		●																		0.007~0.014	0.039~0.157

● : 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○○



Dimensions (inch)					
Size	IC	RE	S	LE	D1
22	1/4	1/32	1/8~3/16	0.433	3/32
33	1/2	1/64~1/16	3/16	0.650	5/32
43	1/2	1/64~1/16	3/16	0.866	13/64
54	5/8	3/64	1/4	1.083	1/4

Triangular 60° Negative

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

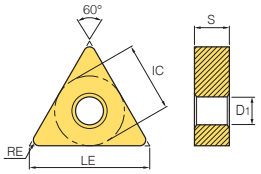
Application	Picture	Designation		Cermet		Coated		Coated																				Uncoated		Cutting Condition	
				CN1500	CN2500	CC1015	CC1025	NC3205	NC3215	NC3225	NC3120	NC3030	NC3235	NC5320	NC5330	NC6310	NC6315	NC9115	NC9125	NC9135	PC5300	PC5400	PC8105	PC8110	PC8115	PC9030	PC9035	H01	H05	fn (ipr)	ap (inch)
Medium to finishing	VC	TNMG	331-VC						●	●					●														0.004~0.014	0.012~0.079
			332-VC					●	●	●					●														0.006~0.016	0.020~0.118
			333-VC						●	●					●														0.006~0.018	0.020~0.118
			432-VC						●	●																			0.006~0.016	0.020~0.118
			433-VC																										0.006~0.018	0.020~0.118
Medium cutting	HM	TNMG	222-HM								●																		0.007~0.016	0.059~0.118
			331-HM		●					●	●	●									●					●			0.002~0.012	0.035~0.157
			332-HM						●	●	●	●														●			0.004~0.020	0.039~0.157
			333-HM																							●			0.005~0.024	0.051~0.157
			431-HM							●																			0.006~0.018	0.024~0.197
			432-HM							●	●	●																	0.007~0.019	0.031~0.228
Medium cutting	MP	TNMG	222-MP							●																			0.006~0.017	0.020~0.138
			331-MP					●	●	●					●	●		●	●	●			●	●					0.004~0.016	0.016~0.138
			332-MP					●	●	●				●	●				●	●			●	●					0.006~0.018	0.020~0.157
			333-MP					●	●	●				●	●			●	●				●	●					0.006~0.020	0.032~0.177
			334-MP																										0.007~0.020	0.039~0.177
			431-MP						●	●					●			●	●										0.004~0.014	0.016~0.197
			432-MP						●	●					●														0.006~0.018	0.020~0.217
			433-MP						●	●								●		●									0.006~0.020	0.032~0.236
			434-MP						●	●					●														0.008~0.022	0.039~0.236
			543-MP																										0.011~0.024	0.047~0.315
Medium cutting	VM	TNMG	222-VM																										0.002~0.012	0.031~0.157
			331-VM	●	●						●	●		●							●	●							0.002~0.012	0.035~0.197
			332-VM	●	●				●	●	●	●		●							●	●				●			0.004~0.020	0.039~0.197
			333-VM						●		●										●								0.005~0.024	0.051~0.197
			431-VM																		●	●							0.002~0.012	0.035~0.260
			432-VM								●			●							●			●					0.004~0.020	0.039~0.260
			433-VM																										0.005~0.024	0.051~0.260

● : 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

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Dimensions (inch)					
Size	IC	RE	S	LE	D1
22	1/4	1/32	1/8~3/16	0.433	3/32
32	3/8	0.008~1/16	1/8	0.650	5/32
33	1/2	0.008~1/16	3/16	0.650	5/32
43	1/2	1/64~1/16	3/16	0.866	13/64
54	5/8	1/32~1/16	1/4	1.083	1/4
65	3/4	1/16~3/32	5/16	1.299	5/16
66	3/4	1/16~3/32	3/8	1.299	5/16

Triangular **60° Negative**

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	● ⇔ ⇔ ⇔ ⇔ ● ⇔

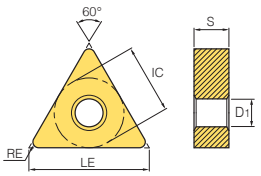
Application	Picture	Designation		Cermet		Coated		Coated																		Uncoated		Cutting Condition	
				CN1500	CN2500	CC1015	CC1025	NC3205	NC3215	NC3225	NC3120	NC3030	NC3235	NC5320	NC5330	NC6310	NC6315	NC9115	NC9125	NC9135	PC5300	PC5400	PC8105	PC8110	PC8115	PC9030	PC9035	H01	H05	fn (ipr)	ap (inch)
Medium to roughing	B25	TNMG	222-B25						●	●		●																	0.007~0.016	0.059~0.118
			331-B25		●				●	●		●																	0.007~0.018	0.079~0.138
			332-B25	●					●	●		●	●		●											●			0.007~0.022	0.079~0.138
			333-B25							●																			0.010~0.022	0.079~0.138
			334-B25																											0.012~0.024	0.098~0.118
			431-B25						●	●		●			●															0.007~0.018	0.059~0.197
			432-B25						●	●		●			●															0.007~0.022	0.079~0.197
			433-B25						●	●		●			●															0.010~0.022	0.079~0.197
			434-B25							●					●															0.012~0.024	0.079~0.197
			542-B25									●																		0.007~0.022	0.079~0.197
			543-B25							●		●			●															0.010~0.022	0.118~0.276
			544-B25																											0.012~0.024	0.118~0.276
			654-B25						●	●																				0.014~0.028	0.118~0.354
			666-B25																											0.016~0.031	0.118~0.354
Roughing	GR	TNMG	322-GR							●		●			●															0.008~0.020	0.039~0.276
			333-GR							●					●															0.009~0.021	0.047~0.315
			432-GR							●	●	●	●	●	●															0.009~0.024	0.043~0.307
			433-GR						●	●	●	●	●	●																0.011~0.031	0.047~0.307
			434-GR									●		●																0.012~0.030	0.059~0.307
			542-GR									●																		0.012~0.030	0.059~0.307
			543-GR							●	●	●	●																	0.012~0.030	0.059~0.307
			544-GR									●																		0.014~0.039	0.063~0.307
			666-GR									●																		0.016~0.039	0.079~0.354
Finishing	SC	TNGG	330.5R-SC	●	●																									0.001~0.008	0.004~0.059
			331R-SC	●	●																									0.002~0.010	0.012~0.079
			330.5L-SC																											0.001~0.008	0.004~0.059
			331L-SC																											0.002~0.010	0.012~0.079
Medium to finishing	VQ	TNMG	221-VQ																											0.002~0.012	0.020~0.138
			331-VQ	●	●	●	●																							0.002~0.014	0.020~0.138
			332-VQ	●	●	●	●																							0.003~0.016	0.031~0.157
			333-VQ																											0.004~0.016	0.032~0.138
			431-VQ																											0.002~0.014	0.020~0.157

● : 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

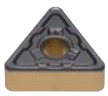
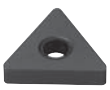
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Dimensions (inch)					
Size	IC	RE	S	LE	D_1
22	1/4	1/64~1/32	1/8~3/16	0.433	3/32
33	1/2	0.008~1/16	3/16	0.650	5/32
43	1/2	1/64~1/16	3/16	0.866	13/64
54	5/8	1/32~1/16	1/4	1.083	1/4
66	3/4	3/32	3/8	1.299	5/16

Triangular 60° Negative

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		

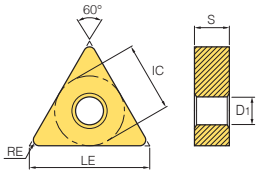
Application	Picture	Designation		Cermet		Coated		Coated																	Uncoated		Cutting Condition	
				CN1500	CN2500	CC1015	CC1025	NC3205	NC3215	NC3225	NC3120	NC3030	NC3235	NC5320	NC5330	NC6310	NC6315	NC9115	NC9125	NC9135	PC5300	PC5400	PC8105	PC8110	PC8115	PC9030	PC9035	H01	H05	fn (ipr)	ap (inch)
Medium cutting		TNGG	221R																									0.002~0.012	0.002~0.010
			330.5R	●	●																							0.003~0.012	0.020~0.138
			331R	●	●																							0.005~0.012	0.039~0.138
			332R	●	●																							0.006~0.014	0.051~0.138
			431R	●	●																							0.005~0.012	0.039~0.197
			432R	●	●																							0.006~0.014	0.051~0.197
			433R																									0.007~0.016	0.059~0.197
			221L																									0.002~0.012	0.002~0.010
			330.5L																									0.003~0.012	0.020~0.138
			331L	●	●																							0.005~0.012	0.039~0.138
			332L	●	●																							0.006~0.014	0.051~0.138
			431L																									0.005~0.012	0.039~0.197
			432L																									0.006~0.014	0.051~0.197
			433L																									0.007~0.016	0.059~0.197
Medium cutting	MK 	TNMG	331-MK											●		●	●											0.002~0.012	0.036~0.138
			332-MK											●			●											0.004~0.020	0.039~0.157
			333-MK											●			●											0.005~0.024	0.047~0.177
			334-MK																									0.005~0.024	0.047~0.177
			431-MK																									0.006~0.018	0.059~0.197
			432-MK																									0.008~0.020	0.051~0.217
			433-MK																									0.009~0.020	0.055~0.217
			434-MK																									0.010~0.021	0.063~0.236
			543-MK																									0.010~0.022	0.118~0.276
Roughing		TNMA	222																									0.002~0.012	0.020~0.118
			331													●	●											0.004~0.012	0.039~0.157
			332													●	●											0.004~0.016	0.039~0.157
			333														●											0.004~0.020	0.059~0.177
			334														●											0.006~0.022	0.059~0.177
			431																									0.004~0.014	0.039~0.157
			432														●											0.006~0.016	0.059~0.197
			433														●											0.008~0.020	0.059~0.197
			434														●											0.010~0.022	0.059~0.197
			435																									0.012~0.026	0.079~0.197
			438																									0.014~0.028	0.079~0.197
			542																									0.008~0.018	0.079~0.276
			543																									0.010~0.022	0.118~0.276
			544																									0.012~0.026	0.118~0.276
			666																									0.014~0.030	0.118~0.354

● : 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

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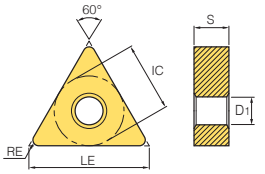


Dimensions (inch)					
Size	IC	RE	S	LE	D_1
22	1/4	0.008~1/64	1/8~3/16	0.433	3/32
33	1/2	1/64~1/16	3/16	0.650	5/32
42	1/2	1/64~1/16	1/8	0.866	13/64
43	1/2	1/64~1/16	3/16	0.866	13/64
54	5/8	3/64~3/32	1/4	1.083	1/4

Triangular **60° Negative**

| Workpiece | | | | |

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Dimensions (inch)					
Size	IC	RE	S	LE	D_1
33	1/2	1/64~3/64	3/16	0.650	5/32
43	1/2	1/64~1/16	3/16	0.866	13/64

Triangular 60° Negative

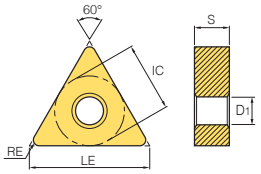
Workpiece			Machining types
	Steel	P	● Continuous cutting
	Stainless steel	M	⬌ General cutting
	Cast iron	K	✱ Interrupted cutting
	Non-ferrous metal	N	
	Heat resistant alloy, Titanium alloy	S	
	Hardened steel	H	

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 (ipr)	ap (inch)
Roughing	RM	TNMG	331-RM																	●								0.004~0.020	0.078~0.217
			332-RM																●	●	●					●			0.006~0.022	0.078~0.217
			333-RM																	●									0.008~0.024	0.078~0.217
			432-RM																	●	●				●				0.004~0.020	0.078~0.295
			433-RM																●	●	●				●				0.006~0.022	0.078~0.295
			434-RM																										0.010~0.028	0.079~0.295
Medium to finishing	VP2	TNMG	331-VP2																		●	●	●	●	●		●			0.002~0.012	0.004~0.118
			332-VP2																		●	●	●	●	●		●			0.004~0.018	0.020~0.197
			333-VP2																											0.005~0.022	0.032~0.130
			431-VP2																		●			●						0.002~0.012	0.032~0.197
			432-VP2																		●			●						0.004~0.016	0.032~0.197
Medium cutting	VP3	TNMG	331-VP3																		●	●	●	●	●		●			0.002~0.012	0.004~0.118
			332-VP3																		●	●	●	●	●		●			0.004~0.018	0.020~0.197
			333-VP3																											0.008~0.016	0.020~0.138
			431-VP3																											0.008~0.012	0.031~0.157
			432-VP3																											0.010~0.014	0.031~0.197
			433-VP3																											0.012~0.016	0.039~0.197
			434-VP3																											0.012~0.016	0.039~0.197
Medium cutting	VP3	TNGG	331-VP3																				●	●	●			●		0.002~0.012	0.004~0.118
			332-VP3																				●	●	●			●		0.004~0.018	0.020~0.197
Roughing	VP4	TNMG	332-VP4																						●		●			0.006~0.014	0.039~0.157
			333-VP4																						●					0.008~0.016	0.039~0.157
Medium to finishing	HA	TNMG	331-HA																					●		●		●		0.002~0.012	0.031~0.138
			332-HA																					●		●		●		0.004~0.016	0.031~0.138
			333-HA																											0.005~0.022	0.031~0.138
			432-HA																							●				0.004~0.016	0.031~0.209

● : Stock item

External Tool Holder								Boring Bar					
Double Clamp	Page	Lever Lock	Page	Wedge Clamp	Page	Multi Lock	Page	Double Clamp	Page	Lever Lock	Page	Multi Lock	Page
DTFNR/L	B94	PTFNR/L	B101	WTENN	B103	MTENN	B111	DTFNR/L	B126	PTFNR/L	B128	MTFNR/L	B131
DTGNR/L	B94	PTGNR/L	B102	WTJNR/L	B103	MTFNR/L	B111						
		PTTNR/L	B102	WTXNR/L	B103	MTGNR/L	B112						
						MTJNR/L	B112						

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Dimensions (inch)					
Size	IC	RE	S	LE	D_1
22	1/4	0.008~1/32	1/8~3/16	0.433	3/32
32	3/8	1/64~3/64	1/8	0.650	5/32
33	1/2	1/64~3/64	3/16	0.650	5/32
43	1/2	1/64~1/16	3/16	0.866	13/64
54	5/8	0.118	1/4	1.083	1/4

Triangular 60° Negative

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		

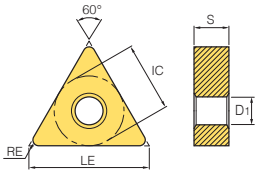
Application	Picture	Designation		Cermet		Coated		Coated																Uncoated		Cutting Condition	
				CN1500	CN2500	CC1015	CC1025	NC3205	NC3215	NC3225	NC3120	NC3030	NC3235	NC5320	NC5330	NC6310	NC6315	NC9115	NC9125	NC9135	PC5300	PC5400	PC8105	PC8110	PC8115	PC9030	PC9035	H01	H05	fn (ipr)	ap (inch)
Finishing	VW [Wiper]	TNMG	331-VW																									0.004~0.014	0.012~0.118
			332-VW																									0.004~0.016	0.012~0.118
Medium cutting	LW [Wiper]	TNMG	332-LW																									0.006~0.020	0.028~0.177
			333-LW																									0.008~0.024	0.039~0.197
Medium cutting		TNGN	220.5																									0.002~0.010	0.008~0.098
			221																									0.004~0.012	0.020~0.098
			222																									0.004~0.012	0.031~0.098
			320.5																									0.002~0.012	0.008~0.118
			321																									0.004~0.012	0.020~0.157
			322																									0.004~0.016	0.031~0.157
			331																									0.004~0.016	0.020~0.157
			332																									0.004~0.016	0.039~0.157
			333																									0.004~0.020	0.059~0.177
			431																									0.004~0.014	0.039~0.157
			432																									0.006~0.016	0.059~0.197
			433																									0.008~0.020	0.059~0.197
			434																									0.010~0.022	0.059~0.197
			436																									0.012~0.026	0.079~0.197
			547.5																									0.014~0.028	0.079~0.197
Medium to finishing	SR [Shaft]	TNMX	331R-SR																									0.004~0.014	0.028~0.138
			332R-SR																									0.005~0.016	0.039~0.138
			331L-SR																									0.004~0.014	0.028~0.138
			332L-SR																									0.005~0.016	0.039~0.138
Medium cutting	SH	TNMX	331R-SH		●				●	●	●	●			●						●							0.006~0.012	0.020~0.157
			332R-SH						●	●	●	●									●							0.006~0.018	0.039~0.157
			331L-SH						●	●	●	●																0.006~0.012	0.020~0.157
			332L-SH						●	●	●	●																0.006~0.018	0.039~0.157

● : 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○○



Dimensions (inch)					
Size	IC	RE	S	LE	D_1
33	1/2	0.008~1/32	3/16	0.650	5/32
43	1/2	1/64~1/16	3/16	0.866	13/64
54	5/8	1/16~3/32	1/4	1.083	1/4
66	3/4	3/32	3/8	1.299	5/16

Triangular 60° Negative

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	● ⇕ ⇕ ● ⇕

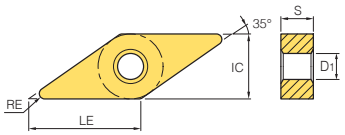
Application	Picture	Designation		Cermet		Coated		Coated																	Uncoated		Cutting Condition	
				CN1500	CN2500	CC1015	CC1025	NC3205	NC3215	NC3225	NC3120	NC3030	NC3235	NC5320	NC5330	NC6310	NC6315	NC9115	NC9125	NC9135	PC5300	PC5400	PC8105	PC8110	PC8115	PC9030	PC9035	H01	H05	fn (ipr)	ap (inch)
Medium to roughing		TNMX	330.5R		●																							0.004~0.012	0.020~0.118
			331R		●				●	●	●	●			●						●								0.005~0.012	0.039~0.138
			332R						●	●	●	●									●								0.006~0.014	0.051~0.134
			431R																										0.005~0.012	0.039~0.197
			432R																										0.006~0.014	0.051~0.197
			331L						●	●	●	●																	0.005~0.012	0.039~0.138
			332L						●	●	●	●																	0.006~0.014	0.051~0.134
Roughing	GR 	TNMM	432-GR																										0.009~0.024	0.043~0.307
			433-GR																										0.011~0.031	0.047~0.307
			434-GR																										0.012~0.030	0.059~0.307
Heavy	GH 	TNMM	332-GH																										0.008~0.020	0.039~0.276
			432-GH																										0.010~0.024	0.051~0.276
			433-GH							●																			0.008~0.020	0.039~0.315
			434-GH																										0.010~0.024	0.051~0.315
			544-GH																										0.013~0.028	0.071~0.315
			546-GH																										0.014~0.020	0.071~0.512
			666-GH																										0.014~0.028	0.091~0.512

● : 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○○



Dimensions (inch)					
Size	IC	RE	S	LE	D1
33	3/8	1/64~1/16	3/16	0.654	5/32

Rhombic 35° Negative

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	

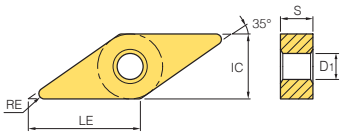
Application	Picture	Designation		Cermet		Coated		Coated																	Uncoated		Cutting Condition	
				CN1500	CN2500	CC1015	CC1025	NC3205	NC3215	NC3215P	NC3225	NC3225P	NC3120	NC3030	NC3235	NC5320	NC5330	NC6310	NC6315	NC9115	NC9125	NC9135	PC5300	PC8105	PC8110	PC8115	PC9030	H01	H05	fn (ipr)	ap (inch)
Finishing	VB	VNMG	331-VB	●	●	●	●	●	●		●					●	●													0.004~0.014	0.012~0.039
			332-VB	●	●	●	●	●	●		●					●	●													0.006~0.018	0.020~0.079
			333-VB						●		●																			0.008~0.018	0.032~0.098
Finishing	VF	VNMG	330.5-VF		●								●										●							0.002~0.008	0.012~0.039
			331-VF	●	●								●				●								●					0.003~0.012	0.020~0.059
			332-VF	●	●						●		●				●													0.004~0.016	0.020~0.059
			333-VF																											0.006~0.020	0.020~0.059
Finishing	VL	VNMG	331-VL	●	●			●	●		●						●													0.002~0.008	0.004~0.040
			332-VL	●	●			●	●		●						●													0.004~0.010	0.008~0.059
			333-VL					●	●																					0.006~0.012	0.020~0.078
Medium to finishing	LP	VNMG	331-LP						●		●																			0.004~0.014	0.012~0.059
			332-LP						●		●																			0.004~0.016	0.020~0.078
			333-LP						●																					0.004~0.018	0.032~0.098
Medium to finishing	CP	VNMG	331-CP							●		●				●														0.004~0.014	0.020~0.118
			332-CP							●		●				●														0.005~0.012	0.020~0.118
			333-CP							●		●																		0.005~0.012	0.031~0.118
Medium to finishing	VC	VNMG	331-VC	●		●	●		●		●					●														0.004~0.014	0.012~0.079
			332-VC	●					●		●					●														0.006~0.016	0.020~0.118
			333-VC						●		●																			0.006~0.016	0.032~0.118
Medium cutting	HM	VNMG	331-HM										●	●													●			0.005~0.016	0.031~0.150
			332-HM								●		●	●													●			0.008~0.018	0.031~0.177
			333-HM								●																			0.004~0.024	0.039~0.157
Medium cutting	MP	VNMG	331-MP					●	●		●					●	●			●	●	●		●	●					0.004~0.016	0.016~0.138
			332-MP					●	●		●					●	●	●		●	●	●		●	●					0.006~0.018	0.020~0.157
			333-MP						●		●						●													0.006~0.020	0.032~0.177
			334-MP																											0.007~0.020	0.039~0.177

● : 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

VN○○



Dimensions (inch)					
Size	IC	RE	S	LE	D_1
33	3/8	1/64~3/64	3/16	0.654	5/32
43	1/2	1/64~1/32	3/16	0.872	5/32

Rhombic 35° Negative

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	● ⬌ ⬌ ● ⬌

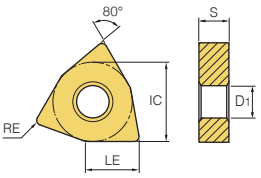
Application	Picture	Designation		Cermet		Coated		Coated																Uncoated		Cutting Condition	
				CN1500	CN2500	CC1015	CC1025	NC3205	NC3215	NC3225	NC3120	NC3030	NC3235	NC5320	NC5330	NC6310	NC6315	NC9115	NC9125	NC9135	PC5300	PC5400	PC8105	PC8110	PC8115	PC9030	PC9035	H01	H05	fn (ipr)	ap (inch)
Medium cutting	VM	VNMG	331-VM	●								●			●						●								0.003~0.018	0.020~0.138
			332-VM	●						●	●	●			●						●	●		●		●			0.004~0.020	0.039~0.157
			333-VM																											0.008~0.020	0.059~0.157
			431-VM																											0.003~0.018	0.039~0.197
			432-VM																											0.004~0.020	0.059~0.197
Medium to finishing	VQ [Cermet]	VNMG	331-VQ	●	●	●	●																							0.004~0.016	0.020~0.138
			332-VQ	●	●	●	●																							0.005~0.018	0.020~0.138
			333-VQ																											0.006~0.018	0.032~0.138
Medium cutting	MK	VNMG	331-MK											●			●													0.003~0.018	0.020~0.118
			332-MK											●		●	●													0.004~0.020	0.039~0.138
			333-MK														●													0.008~0.020	0.059~0.157
Medium cutting	MM	VNMG	331-MM																●	●	●				●	●				0.004~0.016	0.020~0.189
			332-MM																●	●	●				●					0.005~0.018	0.020~0.189
			333-MM																											0.006~0.024	0.020~0.157
Medium cutting	RM	VNMG	331-RM																											0.004~0.020	0.078~0.197
			332-RM																											0.006~0.022	0.078~0.197
			333-RM																											0.008~0.024	0.078~0.197
Medium cutting	VP3	VNMG	331-VP3																		●	●	●	●	●				●	0.002~0.012	0.004~0.118
			332-VP3																		●	●	●	●	●			●		0.004~0.018	0.020~0.197
			333-VP3																											0.008~0.016	0.020~0.138
Medium cutting	VP3	VNGG	331-VP3																											0.002~0.012	0.004~0.118
			332-VP3																											0.004~0.018	0.020~0.197
Medium to finishing	HA	VNGG	332-HA																					●						0.004~0.016	0.031~0.138

● : 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○○



Dimensions (inch)					
Size	IC	RE	S	LE	D_1
32	3/8	1/64~1/32	1/8	0.256	5/32
33	3/8	1/64~1/32	3/16	0.256	5/32
43	1/2	1/64~1/16	3/16	0.342	5/32

Trigon 80° Negative

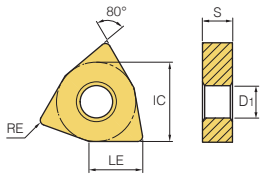
Workpiece			Machining types
Steel	P	● ⇕ ● ⇕ ● ⇕ ✱ ✱ ✱ ✱ ✱ ✱ ✱ ✱ ✱ ✱	● Continuous cutting
Stainless steel	M	✱ ✱ ✱ ✱ ✱ ✱ ✱ ✱ ● ⇕ ✱ ✱ ● ⇕ ✱ ✱ ● ⇕ ✱ ✱	⇕ General cutting
Cast iron	K	● ⇕ ● ⇕ ✱ ✱ ✱ ✱ ✱ ✱ ● ⇕ ✱ ✱ ● ⇕	✱ Interrupted cutting
Non-ferrous metal	N	● ⇕
Heat resistant alloy, Titanium alloy	S	● ✱ ✱ ● ⇕ ⇕ ✱ ● ⇕
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 (ipr)	ap (inch)
Finishing	VB	WNMG	431-VB						●	●																			0.004~0.014	0.012~0.059
			432-VB						●	●				●	●														0.006~0.018	0.020~0.079
			433-VB						●					●															0.007~0.018	0.032~0.098
Finishing	VF	WNMG	331-VF		●										●														0.003~0.012	0.020~0.059
			332-VF		●																								0.004~0.016	0.020~0.059
			431-VF								●				●														0.003~0.012	0.020~0.059
			432-VF												●														0.004~0.016	0.020~0.059
			433-VF																										0.008~0.020	0.020~0.059
Finishing	VL	WNMG	331-VL																										0.002~0.010	0.008~0.059
			431-VL																										0.002~0.010	0.004~0.040
			432-VL							●																			0.004~0.014	0.008~0.060
Medium to finishing	LP	WNMG	331-LP																										0.003~0.012	0.012~0.059
			332-LP						●	●																			0.004~0.012	0.012~0.059
			431-LP						●	●					●														0.004~0.014	0.012~0.078
			432-LP						●	●					●														0.004~0.016	0.020~0.098
			433-LP						●	●																			0.005~0.018	0.032~0.118
Medium to finishing	CP	WNMG	331-CP																										0.003~0.012	0.016~0.118
			332-CP																										0.004~0.012	0.016~0.118
			431-CP					●	●																				0.004~0.014	0.020~0.138
			432-CP					●	●					●															0.005~0.014	0.020~0.138
			433-CP					●	●					●															0.005~0.014	0.031~0.138
			434-CP					●	●					●															0.006~0.014	0.031~0.138
Medium to finishing	VC	WNMG	431-VC						●																				0.006~0.016	0.006~0.157
			432-VC					●	●	●				●															0.006~0.018	0.006~0.177
			433-VC						●	●				●															0.006~0.018	0.006~0.177

● : Stock item

External Tool Holder								KHP Coolant		Boring Bar					
Double Clamp	Page	Lever Lock	Page	Wedge Clamp	Page	Multi Lock	Page	TH	Page	Double Clamp	Page	Lever Lock	Page	Multi Lock	Page
DWLNR/L	B95	PWLNR/L	B102	WWLNR/L	B104	MWLNR/L	B113	PWLNR/L	B149	DWLNR/L	B126	PWLNR/L	B128	MWLNR/L	B131

WN○○



Dimensions (inch)					
Size	IC	RE	S	LE	D1
32	3/8	1/64~3/64	1/8	0.256	5/32
33	3/8	1/64~3/64	3/16	0.256	5/32
43	1/2	1/64~1/16	3/16	0.342	5/32

Trigon 80° Negative

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 (ipr)	ap (inch)
Medium cutting	HM	WNMG	331-HM														●												0.006~0.017	0.017~0.118
			332-HM								●	●														●			0.004~0.020	0.039~0.157
			431-HM								●	●														●			0.006~0.017	0.020~0.165
			432-HM						●	●	●	●			●											●			0.004~0.020	0.039~0.197
			433-HM																							●			0.004~0.020	0.039~0.197
Medium cutting	MP	WNMG	331-MP						●	●					●				●										0.004~0.016	0.016~0.110
			332-MP						●	●					●	●			●										0.006~0.018	0.020~0.118
			333-MP																										0.006~0.020	0.032~0.126
			431-MP					●	●	●					●			●	●	●			●	●	●				0.004~0.016	0.016~0.157
			432-MP					●	●	●			●	●	●			●	●	●			●	●	●				0.006~0.018	0.020~0.177
			433-MP					●	●	●				●	●			●	●	●				●						0.006~0.020	0.032~0.197
			434-MP					●	●	●				●																0.007~0.022	0.039~0.197
Medium cutting	VM	WNMG	330.5-VM												●						●	●								0.002~0.012	0.035~0.138
			331-VM							●	●				●						●	●								0.004~0.018	0.039~0.138
			332-VM																											0.004~0.020	0.039~0.157
			333-VM								●				●						●	●								0.005~0.024	0.051~0.157
			431-VM							●	●	●			●						●	●		●		●				0.002~0.012	0.035~0.197
			432-VM								●				●						●									0.004~0.020	0.039~0.197
			433-VM																											0.004~0.020	0.039~0.197
Medium to roughing	B25	WNMG	431-B25							●																				0.007~0.018	0.039~0.197
			432-B25						●	●		●			●															0.009~0.024	0.059~0.197
			433-B25						●	●																				0.010~0.024	0.079~0.197
Roughing	GR	WNMG	431-GR																											0.006~0.020	0.003~0.236
			432-GR							●	●	●	●	●	●	●														0.008~0.020	0.039~0.276
			433-GR						●	●	●	●		●	●	●														0.010~0.020	0.051~0.276
			434-GR											●																0.010~0.024	0.071~0.236

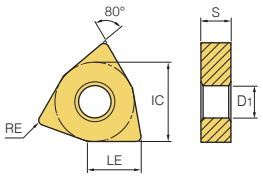
● : Stock item

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○○



Dimensions (inch)					
Size	IC	RE	S	LE	D_1
33	3/8	1/64~3/64	3/16	0.256	5/32
43	1/2	1/64~1/16	3/16	0.342	5/32

Trigon 80° Negative

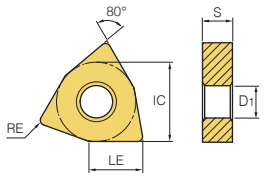
Workpiece			Machining types
Steel	P		● Continuous cutting
Stainless steel	M		⬌ General cutting
Cast iron	K		✱ Interrupted cutting
Non-ferrous metal	N		
Heat resistant alloy, Titanium alloy	S		
Hardened steel	H		

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 (ipr)	ap (inch)
Medium to finishing	VQ [Cermet]	WNMG	331-VQ																									0.002~0.012	0.020~0.157
			332-VQ		●																							0.003~0.012	0.032~0.157
			333-VQ																									0.004~0.012	0.012~0.157
			431-VQ	●	●																							0.002~0.012	0.020~0.157
			432-VQ	●	●	●																						0.003~0.016	0.032~0.157
			433-VQ																									0.004~0.014	0.032~0.138
Medium cutting	MK	WNMG	332-MK											●		●	●											0.003~0.012	0.032~0.098
			431-MK											●			●											0.004~0.018	0.039~0.118
			432-MK														●											0.004~0.020	0.039~0.138
			433-MK											●			●											0.004~0.020	0.039~0.157
			434-MK																									0.006~0.020	0.047~0.165
Roughing		WNMA	331																									0.004~0.012	0.020~0.118
			332														●											0.004~0.012	0.020~0.118
			333																									0.004~0.012	0.039~0.118
			431														●											0.006~0.024	0.039~0.197
			432														●											0.006~0.024	0.039~0.236
			433														●											0.006~0.028	0.059~0.236
			434																									0.006~0.028	0.059~0.236
Roughing	RK	WNMG	332-RK																									0.004~0.016	0.039~0.138
			333-RK																									0.009~0.016	0.059~0.197
			431-RK														●											0.009~0.020	0.059~0.236
			432-RK													●	●											0.009~0.021	0.059~0.236
			433-RK													●	●											0.011~0.021	0.071~0.236
			434-RK														●											0.010~0.024	0.078~0.236
Roughing	VR	WNMG	332-VR																									0.008~0.016	0.039~0.236
			431-VR																									0.008~0.020	0.031~0.276
			432-VR																									0.010~0.022	0.047~0.276
			433-VR																									0.012~0.024	0.059~0.276
			434-VR																									0.016~0.024	0.059~0.157

● : Stock item

External Tool Holder								KHP Coolant		Boring Bar					
Double Clamp	Page	Lever Lock	Page	Wedge Clamp	Page	Multi Lock	Page	TH	Page	Double Clamp	Page	Lever Lock	Page	Multi Lock	Page
DWLNR/L	B95	PWLNR/L	B102	WWLNR/L	B104	MWLNR/L	B113	PWLNR/L	B149	DWLNR/L	B126	PWLNR/L	B128	MWLNR/L	B131

WN○○

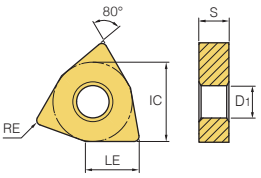


Dimensions (inch)					
Size	IC	RE	S	LE	D1
32	3/8	1/64~3/64	1/8	0.256	5/32
33	3/8	1/64~3/64	3/16	0.256	5/32
43	1/2	1/64~3/64	3/16	0.342	5/32
64	3/4	3/64	1/4	0.513	5/16

Trigon 80° Negative

Workpiece			Machining types
Steel	P	● ⧓ ● ⧓ ● ⧓ ✱ ✱ ✱

WN○○



Dimensions (inch)					
Size	IC	RE	S	LE	D_1
33	3/8	1/64~3/64	3/16	0.256	5/32
43	1/2	1/64~3/64	3/16	0.342	5/32
54	5/8	1/32	1/4	0.428	1/4
64	3/4	3/64	1/4	0.513	5/16

Rhombic **80° Positive**
Relief Angle: 7°

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 (ipr)	ap (inch)
Medium to finishing	HA	WNMG	331-HA																						●	●	●	0.002~0.012	0.031~0.098
			332-HA																						●	●		0.004~0.016	0.031~0.098
			431-HA																						●	●		0.002~0.012	0.031~0.138
			432-HA																						●	●		0.004~0.016	0.031~0.138
			433-HA																									0.005~0.022	0.031~0.138
Finishing	VW [Wiper]	WNMG	331-VW																									0.002~0.012	0.016~0.118
			332-VW																									0.003~0.012	0.016~0.138
			431-VW																									0.004~0.012	0.020~0.118
			432-VW																									0.006~0.020	0.020~0.157
			433-VW																									0.007~0.020	0.039~0.157
Medium cutting	LW [Wiper]	WNMG	332-LW																									0.006~0.024	0.020~0.138
			333-LW																									0.008~0.028	0.031~0.138
			432-LW																									0.006~0.024	0.039~0.197
			433-LW																									0.008~0.028	0.039~0.236
Medium to finishing	SR [Shaft]	WNMX	431R-SR																									0.004~0.014	0.028~0.118
			432R-SR																									0.005~0.016	0.039~0.118
			431L-SR																									0.004~0.014	0.028~0.118
			432L-SR																									0.005~0.016	0.039~0.118
Medium cutting	SH [Shaft]	WNMX	431R-SH																									0.006~0.012	0.039~0.157
			432R-SH																									0.006~0.020	0.059~0.197
			431L-SH																									0.006~0.012	0.039~0.157
			432L-SH																									0.006~0.020	0.059~0.197
Medium to roughing	B25	WNMM	542-B25									●																0.012~0.031	0.118~0.315
			643-B25																									0.016~0.035	0.157~0.394

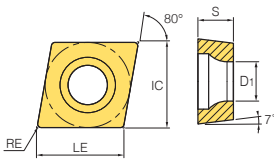
● : Stock item

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○○



Dimensions (inch)					
Size	IC	RE	S	LE	D1
21.5	1/4	0.008~1/32	3/32	0.254	7/64
32.5	3/8	0.008~1/32	5/32	0.381	11/64
43	1/2	1/64~3/64	3/16	0.508	7/32

Rhombic 80° Positive
Relief Angle: 7°

Workpiece			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 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 (ipr)	Cutting Condition ap (inch)
Finishing	FP [Mild steel]	CCMT	21.50.5-FP		●				●																				0.0004~0.0039	0.0020~0.0031
			21.51-FP	●	●	●	●		●	●								●					●					0.0004~0.0039	0.0039~0.0354
			32.50.5-FP		●				●																				0.0004~0.0039	0.0020~0.0394
			32.51-FP	●	●	●	●		●	●								●										0.0004~0.0039	0.0039~0.0394
			32.52-FP	●					●	●													●						0.0016~0.0047	0.0039~0.0394
Finishing	VF	CCMT	21.50.5-VF			●				●											●			●					0.002~0.008	0.001~0.040
			21.51-VF	●	●					●											●			●					0.004~0.010	0.001~0.040
			32.50.5-VF							●																			0.002~0.006	0.003~0.060
			32.51-VF	●	●					●											●			●					0.002~0.008	0.012~0.060
			32.52-VF		●					●				●							●								0.004~0.010	0.012~0.060
			431-VF							●																			0.003~0.009	0.004~0.080
Finishing	VL	CCMT	21.50.5-VL																										0.002~0.007	0.008~0.055
			21.51-VL	●	●	●	●	●	●	●					●			●	●	●	●		●	●	●				0.002~0.004	0.003~0.036
			21.52-VL					●	●	●								●											0.002~0.005	0.004~0.039
			32.51-VL	●	●	●	●		●	●							●	●		●				●	●			●	●	0.002~0.004	0.004~0.039
			32.52-VL	●		●	●		●	●								●		●	●	●	●	●				●	●	0.003~0.006	0.004~0.039
			431-VL																										0.002~0.005	0.012~0.059
			432-VL																										0.003~0.006	0.012~0.059
			433-VL																										0.003~0.006	0.012~0.059
Medium to finishing	HMP	CCMT	21.50.5-HMP	●	●																●			●		●				0.001~0.005	0.004~0.059
			21.51-HMP		●						●	●			●						●			●		●				0.002~0.007	0.008~0.094
			21.52-HMP		●						●	●			●						●			●		●				0.003~0.009	0.016~0.094
			32.50.5-HMP		●																			●		●				0.003~0.009	0.004~0.079
			32.51-HMP		●					●	●	●			●		●				●			●		●				0.003~0.009	0.012~0.118
			32.52-HMP		●						●	●			●						●			●		●				0.004~0.012	0.020~0.118
			431-HMP		●					●	●	●									●					●				0.004~0.011	0.012~0.142
			432-HMP								●	●			●						●					●				0.009~0.014	0.020~0.142
			433-HMP																											0.006~0.017	0.028~0.142
Medium to finishing	MP	CCMT	21.50.5-MP	●	●	●	●		●	●					●			●	●	●	●			●	●					0.002~0.005	0.008~0.059
			21.51-MP	●	●	●	●	●	●	●				●	●		●	●	●	●	●	●	●	●		●				0.002~0.006	0.012~0.059
			21.52-MP					●						●			●													0.003~0.006	0.020~0.078
			32.50.5-MP	●	●		●		●	●					●				●	●	●	●	●	●	●					0.003~0.006	0.012~0.078
			32.51-MP	●	●	●	●	●	●	●			●	●	●	●	●	●	●	●	●	●	●	●		●				0.003~0.010	0.020~0.098
			32.52-MP	●	●	●	●	●	●	●			●		●	●	●	●	●	●	●	●	●	●		●				0.004~0.012	0.020~0.098
			431-MP							●				●			●		●	●										0.004~0.012	0.020~0.138
			432-MP							●				●		●	●		●	●										0.006~0.014	0.031~0.138
			433-MP											●					●											0.010~0.016	0.039~0.138

● : Stock item

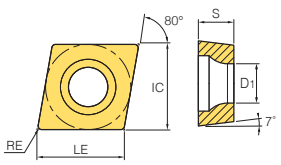
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Screw on	Page
SCACR/L	B114
SCLCR/L	B114

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○○



Dimensions (inch)					
Size	IC	RE	S	LE	D1
21.5	1/4	0.008~1/32	3/32	0.254	7/64
32.5	3/8	0.008~1/32	5/32	0.381	11/64
43	1/2	1/64~3/64	3/16	0.508	7/32

Rhombic 80° Positive
Relief Angle: 7°

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 (ipr)	ap (inch)
Medium cutting	C25	CCMT	21.50.5-C25	●	●		●		●	●		●			●						●			●					0.001~0.005	0.016~0.079
			21.51-C25	●	●	●	●		●	●	●	●	●	●	●	●	●				●	●		●		●			0.002~0.006	0.024~0.091
			21.52-C25	●	●	●	●		●	●		●	●	●	●		●				●	●		●					0.003~0.008	0.031~0.091
			32.50.5-C25																										0.002~0.008	0.020~0.098
			32.51-C25	●	●	●			●	●	●	●	●	●	●	●	●				●	●		●		●			0.003~0.010	0.031~0.118
			32.52-C25	●	●	●	●		●	●	●	●	●	●	●	●	●				●	●		●		●			0.004~0.012	0.039~0.118
			431-C25						●	●		●	●	●	●	●	●				●	●		●					0.004~0.013	0.031~0.118
			432-C25		●	●	●		●	●	●	●	●	●	●	●	●				●	●		●					0.005~0.014	0.047~0.138
			433-C25						●	●				●	●		●												0.006~0.016	0.055~0.138
Finishing	VP1	CCMT	21.51-VP1																										0.002~0.005	0.004~0.059
			32.51-VP1																										0.002~0.008	0.004~0.059
			32.52-VP1																										0.003~0.008	0.020~0.078
			431-VP1																										0.003~0.008	0.008~0.078
			432-VP1																										0.004~0.010	0.020~0.078
			433-VP1																										0.004~0.012	0.032~0.098
Finishing	FS [High precision]	CCGT	21.50.2-FS																		●			●					0.0004~0.0071	0.0012~0.0630
			21.50.5-FS																		●			●					0.0008~0.0079	0.0016~0.0669
			21.51-FS																		●			●					0.0016~0.0083	0.0024~0.0709
			32.50.2-FS																		●			●					0.0004~0.0079	0.0016~0.0709
			32.50.5-FS																		●			●					0.0008~0.0091	0.0020~0.0787
			32.51-FS																		●			●					0.0016~0.0091	0.0031~0.0787
			32.52-FS																		●			●					0.0024~0.0098	0.0039~0.0866
Finishing	FS [Ultra high precision]	CCGT	21.50.2MFN-FS																										0.0004~0.0071	0.0012~0.0630
			21.50.5MFN-FS																										0.0008~0.0079	0.0016~0.0669
			21.51MFN-FS																										0.0016~0.0083	0.0024~0.0709
			32.50.2MFN-FS																										0.0004~0.0079	0.0016~0.0709
			32.50.5MFN-FS																										0.0008~0.0091	0.0020~0.0787
			32.51MFN-FS																										0.0016~0.0091	0.0031~0.0787
			32.52MFN-FS																										0.0024~.0098	0.0039~0.0866
Medium cutting	MS [High precision]	CCGT	32.50.2-MS																		●			●					0.0008~0.0091	0.0020~0.0787
			32.50.5-MS																		●			●					0.0012~0.0098	0.0028~0.0984
			32.51-MS																		●			●					0.0020~0.0098	0.0035~0.0984
Medium cutting	MS [Ultra high precision]	CCGT	32.50.2MFN-MS																										0.0008~0.0091	0.0020~0.0787
			32.50.5MFN-MS																										0.0012~0.0098	0.0028~0.0984
			32.51MFN-MS																					●					0.0020~0.0098	0.0035~0.0984

● : Stock item

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

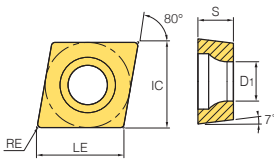
Auto Tool	
TH	Page
SCACR/L	B168
SCLCR/L	B168

Boring Bar	
Screw on	Page
SCLCR/L	B132

Compact Mini	
TH	Page
SCLCR/L	B142

CC○○

Rhombic 80° Positive
Relief Angle: 7°



Dimensions (inch)					
Size	IC	RE	S	LE	D1
*1.2	9/64	0.002~1/64	7/128	0.140	5/64
*1.5	11/64	0.002~1/64	9/128	0.172	3/32
21.5	1/4	0.004~1/64	3/32	0.254	7/64
32.5	3/8	0.004~1/64	5/32	0.381	11/64

★ : 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 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 (ipr)	Cutting Condition ap (inch)
Finishing	VP1 [High precision]	CCGT	21.50.2-VP1																		●		●	●	●			●		0.002~0.003	0.002~0.039
			21.50.5-VP1																		●		●	●	●					0.001~0.004	0.003~0.059
			21.51-VP1																		●		●	●	●			●		0.002~0.005	0.004~0.059
			32.50.2-VP1																		●		●	●	●			●		0.001~0.005	0.002~0.039
			32.50.5-VP1																		●		●	●	●					0.002~0.008	0.004~0.059
			32.51-VP1																		●		●	●	●			●		0.002~0.006	0.003~0.059
Finishing	VP1 [Ultra high precision]	CCGT	21.50.2MFN-VP1																					●						~0.002	0.002~0.051
			21.50.5MFN-VP1																		●			●						0.002~0.003	0.002~0.039
			21.51MFN-VP1																					●						0.002~0.004	0.003~0.059
			32.50.2MFN-VP1																		●			●						0.005~0.005	0.004~0.059
			32.50.5MFN-VP1																		●			●						0.002~0.006	0.003~0.059
			32.51MFN-VP1																		●			●						0.005~0.008	0.004~0.059
Finishing		* CCET	1.210.13R																											0.001~0.002	0.004~0.012
			1.210.2R																											0.001~0.002	0.004~0.012
			1.210.5R																											0.001~0.002	0.004~0.012
			1.211R																											0.001~0.002	0.004~0.012
			1.510.13R																											0.001~0.004	0.004~0.020
			1.510.2R																											0.001~0.004	0.004~0.020
			1.510.5R																											0.001~0.004	0.004~0.020
			1.511R																											0.001~0.004	0.004~0.020
			1.210.13L																											0.001~0.002	0.004~0.012
			1.210.2L																											0.001~0.002	0.004~0.012
			1.210.5L	●	●																					●		●		0.001~0.002	0.004~0.012
			1.211L		●																					●				0.001~0.002	0.004~0.012
			1.510.13L																											0.001~0.004	0.004~0.020
			1.510.2R																											0.001~0.004	0.004~0.020
			1.510.5L	●	●																					●		●		0.001~0.004	0.004~0.020
			1.511L		●																					●				0.001~0.004	0.004~0.020

● : Stock item

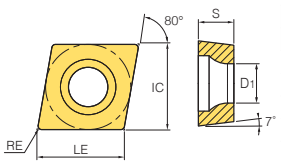
External Tool Holder	
Screw on	Page
SCACR/L	B114
SCLCR/L	B114

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○○



Dimensions (inch)					
Size	IC	RE	S	LE	D1
*1.2	9/64	0.0012~1/64	7/128	0.140	5/64
*1.5	11/64	0.0012~1/64	9/128	0.172	3/32
21.5	1/4	0.0012~0.008	3/32	0.254	7/64
32.5	3/8	0.0012~0.008	5/32	0.381	11/64

★ : The IC and S are special dimensions.

Rhombic 80° Positive
Relief Angle: 7°

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 (ipr)	ap (inch)
Finishing	* KF [High precision]	CCGT	1.210.1R-KF																		●			●					0.0004~0.002	0.004~0.012
			1.210.2R-KF																		●			●					0.0004~0.002	0.004~0.012
			1.210.5R-KF																		●			●					0.0004~0.002	0.004~0.012
			1.211R-KF																		●			●					0.0004~0.002	0.004~0.012
			1.510.1R-KF																		●			●					0.0004~0.004	0.004~0.020
			1.510.2R-KF																		●			●					0.0004~0.004	0.004~0.020
			1.510.5R-KF																		●			●					0.0004~0.004	0.004~0.020
			1.511R-KF																		●			●					0.0004~0.004	0.004~0.020
			21.50.1R-KF																										~0.002	0.002~0.051
			21.50.2R-KF																										0.001~0.003	0.002~0.059
			21.50.5R-KF																										0.001~0.004	0.002~0.067
			32.50.1R-KF																										0.001~0.003	0.002~0.059
			32.50.2R-KF																										0.001~0.004	0.002~0.067
			32.50.5R-KF																										0.002~0.006	0.003~0.079
			1.210.1L-KF																		●			●					0.0004~0.002	0.004~0.012
			1.210.2L-KF																		●			●					0.0004~0.002	0.004~0.012
			1.210.5L-KF																		●			●					0.0004~0.002	0.004~0.012
			1.211L-KF																		●			●					0.0004~0.002	0.004~0.012
			1.510.1L-KF																		●			●					0.0004~0.004	0.004~0.020
			1.510.2L-KF																		●			●					0.0004~0.004	0.004~0.020
			1.510.5L-KF																		●			●					0.0004~0.004	0.004~0.020
			1.511L-KF																		●			●					0.0004~0.004	0.004~0.020
			21.50.1L-KF																										~0.002	0.002~0.051
			21.50.2L-KF																										0.001~0.003	0.002~0.059
			21.50.5L-KF																										0.001~0.004	0.002~0.067
			32.50.1L-KF																										0.001~0.003	0.002~0.059
			32.50.2L-KF																										0.001~0.004	0.002~0.067
			32.50.5L-KF																										0.002~0.006	0.003~0.079
Finishing	KF [Ultra high precision]	CCET	21.50.13MFR-KF																										~0.002	0.002~0.051
			21.50.2MFR-KF																					●					0.001~0.003	0.002~0.059
			21.50.5MFR-KF																		●			●					0.001~0.004	0.002~0.067
			32.50.13MFR-KF																										0.001~0.003	0.002~0.059
			32.50.2MFR-KF																		●			●					0.001~0.004	0.002~0.067
			32.50.5MFR-KF																		●								0.002~0.006	0.003~0.079
			21.50.13MFL-KF																										~0.002	0.002~0.051
			21.50.2MFL-KF																					●					0.001~0.003	0.002~0.059
			21.50.5MFL-KF																		●			●					0.001~0.004	0.002~0.067
			32.50.13MFL-KF																										0.001~0.003	0.002~0.059
			32.50.2MFL-KF																		●								0.001~0.004	0.002~0.067
			32.50.5MFL-KF																		●			●					0.002~0.006	0.003~0.079

● : Stock item

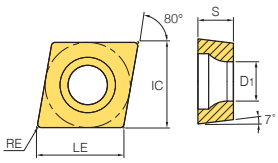
External Tool Holder	
Screw on	Page
SCACR/L	B114
SCLCR/L	B114

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 ○○



Dimensions (inch)					
Size	IC	RE	S	LE	D1
21.5	1/4	0.0012~1/64	3/32	0.254	7/64
32.5	3/8	0.0012~1/64	5/32	0.381	11/64

Rhombic 80° Positive
Relief Angle: 7°

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 (ipr)	ap (inch)
Medium to finishing	KM [High precision]	CCGT	21.50.1R-KF																		●			●					~0.002	0.002~0.051
			21.50.2R-KF																		●			●					0.001~0.003	0.002~0.059
			21.50.5R-KF																		●			●		●			0.001~0.004	0.002~0.067
			21.51R-KM																		●			●					0.002~0.005	0.002~0.067
			32.50.1R-KF																		●			●					0.001~0.003	0.002~0.059
			32.50.2R-KF																		●			●					0.001~0.004	0.002~0.067
			32.50.5R-KF																		●			●					0.002~0.006	0.003~0.079
			32.51R-KM																		●			●					0.002~0.006	0.002~0.079
			21.50.1L-KF																		●			●					~0.002	0.002~0.051
			21.50.2L-KF																		●								0.001~0.003	0.002~0.059
			21.50.5L-KF																		●			●					0.001~0.004	0.002~0.067
			21.51L-KM																		●			●					0.002~0.005	0.002~0.067
			32.50.1L-KF																		●			●					0.001~0.003	0.002~0.059
			32.50.2L-KF																		●								0.001~0.004	0.002~0.067
			32.50.5L-KF																		●			●					0.002~0.006	0.003~0.079
			32.51L-KM																		●			●					0.002~0.006	0.002~0.079
Medium to finishing	KM [Ultra high precision]	CCET	21.50.13MFR-KM																		●								~0.002	0.002~0.051
			21.50.2MFR-KM																		●			●					0.001~0.003	0.002~0.059
			21.50.5MFR-KM																		●			●					0.001~0.004	0.002~0.067
			32.50.13MFR-KM																										0.001~0.003	0.002~0.059
			32.50.2MFR-KM																		●			●					0.001~0.004	0.002~0.067
			32.50.5MFR-KM																		●			●					0.002~0.006	0.003~0.079
			21.50.13MFL-KM																		●								~0.002	0.002~0.051
			21.50.2MFL-KM																										0.001~0.003	0.002~0.059
			21.50.5MFL-KM																		●			●					0.001~0.004	0.002~0.067
			32.50.13MFL-KM																					●					0.001~0.003	0.002~0.059
			32.50.2MFL-KM																					●					0.001~0.004	0.002~0.067
			32.50.5MFL-KM																		●			●					0.002~0.006	0.003~0.079

● : Stock item

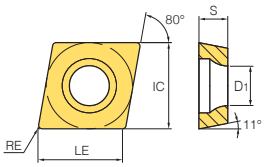
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Screw on	Page
SCACR/L	B114
SCLCR/L	B114

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○○



Dimensions (inch)					
Size	IC	RE	S	LE	D1
2.5	5/16	1/64	3/32	0.254	9/64
21.5	1/4	1/64~1/32	3/32	0.317	7/64
32	3/8	1/64~1/32	1/8	0.381	11/64

Rhombic **80° Positive**
Relief Angle: 11°

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

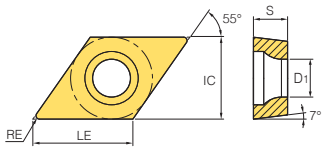
Machining types
- ● Continuous cutting
- ⬌ General cutting
- ✱ Interrupted cutting

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 (ipr)	Cutting Condition ap (inch)
Finishing	VF	CPMT	2.51.51-VF																										0.002~0.008	0.012~0.047
			2.51.52-VF																										0.004~0.008	0.012~0.047
			321-VF												●														0.002~0.008	0.012~0.059
			322-VF				●								●														0.004~0.008	0.012~0.059
Finishing	VL	CPMT	2.51.51-VL																										0.001~0.003	0.003~0.039
			2.51.52-VL																										0.001~0.005	0.004~0.039
			321-VL																										0.002~0.004	0.004~0.039
			322-VL																										0.003~0.006	0.004~0.039
Medium to finishing	HMP	CPGT	322-HMP																										0.002~0.008	0.028~0.079
Medium cutting	C25	CPMT	21.51-C25																										0.002~0.006	0.024~0.091
Finishing		CPGT	2.5150.5	●	●																								0.002~0.008	0.004~0.079
			2.51.51	●	●					●																			0.003~0.008	0.012~0.079
			2.51.52																										0.004~0.010	0.020~0.079
			320.5																										0.002~0.008	0.012~0.059
			321	●	●																								0.002~0.010	0.020~0.079
			322																										0.003~0.012	0.028~0.098

● : Stock item

Boring Bar	
Screw on	Page
SCLPR/L	B133

DC○○



Dimensions (inch)					
Size	IC	RE	S	LE	D1
21.5	1/4	0.008~1/32	3/32	0.305	7/64
32.5	3/8	0.008~3/64	5/32	0.458	11/64

Rhombic 55° Positive
Relief Angle: 7°

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 (ipr)	ap (inch)
Finishing	FP	DCMT	21.50.5-FP						●																				0.0004~0.0039	0.0020~0.0031
			21.51-FP	●	●	●			●	●									●					●					0.0004~0.0039	0.0039~0.0354
			21.52-FP																										0.0004~0.0039	0.0039~0.0394
			32.50.5-FP		●				●																				0.0004~0.0039	0.0020~0.0394
			32.51-FP	●	●	●	●		●	●									●					●					0.0004~0.0039	0.0039~0.0394
	[Mild steel]		32.52-FP	●	●				●	●														●					0.0016~0.0047	0.0039~0.0394
Finishing	VF	DCMT	21.50.5-VF							●														●					0.001~0.004	0.002~0.040
			21.51-VF		●					●											●			●					0.002~0.008	0.012~0.047
			32.50.5-VF	●						●																			0.002~0.006	0.003~0.059
			32.51-VF	●	●					●											●			●					0.002~0.008	0.012~0.059
			32.52-VF	●	●																●			●					0.004~0.010	0.012~0.059
Finishing	VL	DCMT	21.50.5-VL																											0.002~0.004	0.003~0.036
			21.51-VL	●	●	●	●		●	●					●			●	●	●	●			●	●		●		0.002~0.004	0.003~0.036
			21.52-VL						●	●					●						●								0.002~0.005	0.004~0.039
			32.50.5-VL																										0.001~0.004	0.003~0.032
			32.51-VL	●	●	●	●	●	●	●					●			●	●	●	●	●		●				●	0.002~0.004	0.004~0.039
			32.52-VL	●	●	●	●	●	●	●					●				●		●			●	●				0.003~0.006	0.004~0.039
			32.53-VL																											0.003~0.006	0.012~0.059
Medium to finishing	HMP	DCMT	21.50.5-HMP									●														●				0.001~0.005	0.004~0.059
			21.51-HMP		●						●	●			●						●			●		●				0.002~0.007	0.008~0.091
			21.52-HMP								●	●														●				0.003~0.009	0.016~0.091
			32.50.5-HMP									●									●			●		●				0.002~0.009	0.004~0.079
			32.51-HMP		●						●	●	●		●						●			●		●				0.003~0.009	0.012~0.118
			32.52-HMP		●						●	●			●						●			●		●				0.004~0.012	0.020~0.118
Medium to finishing	MP	DCMT	21.50.5-MP		●	●	●		●	●					●				●	●	●			●	●					0.002~0.005	0.005~0.071
			21.51-MP	●	●	●	●	●	●	●					●			●	●	●	●	●	●	●	●					0.002~0.006	0.012~0.071
			21.52-MP	●	●	●	●		●	●					●				●	●	●	●	●	●	●					0.003~0.009	0.012~0.071
			32.50.5-MP	●	●	●	●		●	●					●			●	●	●	●		●	●	●					0.002~0.006	0.012~0.078
			32.51-MP	●	●	●	●	●	●	●			●		●	●	●	●	●	●	●	●	●	●	●					0.002~0.008	0.020~0.091
			32.52-MP	●	●	●	●	●	●	●			●		●	●	●	●	●	●	●	●		●	●					0.003~0.012	0.020~0.091
			32.53-MP																											0.010~0.014	0.031~0.118

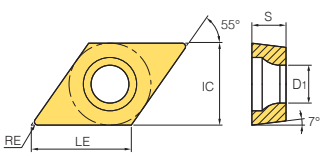
● : Stock item

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○○



Dimensions (inch)					
Size	IC	RE	S	LE	D_1
21.5	1/4	0.008~1/32	3/32	0.305	7/64
32.5	3/8	0.008~1/32	5/32	0.458	11/64

Rhombic 55° Positive
Relief Angle: 7°

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 (ipr)	ap (inch)
Medium cutting	C25	DCMT	21.50.5-C25	●	●	●	●			●					●						●									0.001~0.006	0.012~0.079
			21.51-C25	●	●	●	●		●	●		●	●		●		●			●	●		●		●				0.002~0.008	0.020~0.098
			21.52-C25						●	●		●					●			●	●		●						0.002~0.010	0.031~0.098
			32.50.5-C25	●	●	●	●		●	●										●				●					0.002~0.010	0.020~0.098
			32.51-C25	●	●	●			●	●	●	●	●		●	●	●			●				●		●			0.003~0.012	0.031~0.118
			32.52-C25		●	●			●	●	●	●	●		●	●	●			●	●			●		●			0.004~0.012	0.039~0.118
Finishing	VP1	DCMT	21.51-VP1																										0.002~0.005	0.004~0.059
			32.51-VP1																										0.002~0.008	0.004~0.059
			32.52-VP1																										0.003~0.009	0.004~0.059
Finishing	FS [High precision]	DCGT	20.50.2-FS																		●			●						0.0004~0.0071	0.0012~0.0630
			20.50.5-FS																		●			●						0.0008~0.0079	0.0016~0.0669
			32.50.2-FS																		●			●						0.0004~0.0079	0.0016~0.0709
			32.50.5-FS																		●			●						0.0008~0.0091	0.0020~0.0787
			32.51-FS																		●			●						0.0016~0.0091	0.0031~0.0787
			32.52-FS																		●			●						0.0024~0.0098	0.0039~0.0866
Finishing	FS [Ultra high precision]	DCGT	20.50.2MFN-FS																											0.0004~0.0071	0.0012~0.0630
			20.50.5MFN-FS																											0.0008~0.0079	0.0016~0.0669
			32.50.2MFN-FS																											0.0004~0.0079	0.0016~0.0709
			32.50.5MFN-FS																											0.0008~0.0091	0.0020~0.0787
			32.51MFN-FS																											0.0016~0.0091	0.0031~0.0787
			32.52MFN-FS																											0.0024~0.0098	0.0039~0.0866
Medium cutting	MS [High precision]	DCGT	32.50.2-MS																		●			●						0.0008~0.0091	0.0020~0.0787
			32.50.5-MS																		●			●						0.0012~0.0098	0.0028~0.0984
			32.51-MS																		●			●						0.0020~0.0098	0.0035~0.0984
Medium cutting	MS [Ultra high precision]	DCGT	32.50.2MFN-MS																		●			●						0.0008~0.0091	0.0020~0.0787
			32.50.5MFN-MS																											0.0012~0.0098	0.0028~0.0984
			32.51MFN-MS																		●			●						0.0020~0.0098	0.0035~0.0984

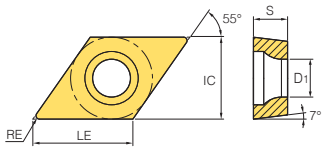
● : Stock item

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○○

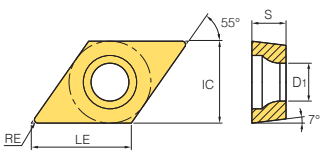


Dimensions (inch)					
Size	IC	RE	S	LE	D1
21.5	1/4	0.0012~1/64	3/32	0.305	7/64
32.5	3/8	0.0012~1/64	5/32	0.458	11/64

Rhombic 55° Positive
Relief Angle: 7°

Workpiece			Machining types
Steel	P	● ✱ ● ⇕ ● ⇕ ✱ ✱ ✱

DC○○



Dimensions (inch)					
Size	IC	RE	S	LE	D1
21.5	1/4	0.0012~1/64	3/32	0.305	7/64
32.5	3/8	0.0012~1/64	5/32	0.458	11/64

Rhombic 55° Positive
Relief Angle: 7°

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 (ipr)	ap (inch)
Medium to finishing	KM [High precision]	DCGT	21.50.1R-KM																		●			●					~0.002	0.002~0.051
			21.50.2R-KM																		●			●					0.001~0.003	0.002~0.059
			21.50.5R-KM																		●			●					0.001~0.004	0.002~0.059
			21.51R-KM																		●			●					0.002~0.005	0.002~0.067
			32.50.1R-KM																		●			●					0.001~0.003	0.002~0.059
			32.50.2R-KM																		●			●					0.001~0.004	0.002~0.067
			32.50.5R-KM																		●			●					0.002~0.006	0.003~0.079
			32.51R-KM																		●			●					0.002~0.006	0.002~0.079
			21.50.1L-KM																		●			●					~0.002	0.002~0.051
			21.50.2L-KM																		●								0.001~0.003	0.002~0.059
			21.50.5L-KM																		●								0.001~0.004	0.002~0.059
			21.51L-KM																		●								0.002~0.005	0.002~0.067
			32.50.1L-KM																		●								0.001~0.003	0.002~0.059
			32.50.2L-KM																		●								0.001~0.004	0.002~0.067
			32.50.5L-KM																		●			●					0.002~0.006	0.003~0.079
			32.51L-KM																		●								0.002~0.006	0.002~0.079
Medium to finishing	KM [Ultra high precision]	DCET	21.50.13MFR-KM																											~0.002	0.002~0.051
			21.50.2MFR-KM																		●			●					0.001~0.003	0.002~0.059
			21.50.5MFR-KM																		●			●					0.001~0.004	0.002~0.067
			32.50.13MFR-KM																											0.001~0.003	0.002~0.059
			32.50.2MFR-KM																		●			●					0.001~0.004	0.002~0.067
			32.50.5MFR-KM																		●			●					0.002~0.006	0.003~0.079
			21.50.13MFL-KM																					●						~0.002	0.002~0.051
			21.50.2MFL-KM																		●									0.001~0.003	0.002~0.059
			21.50.5MFL-KM																		●			●						0.001~0.004	0.002~0.067
			32.50.13MFL-KM																											0.001~0.003	0.002~0.059
			32.50.2MFL-KM																		●			●						0.001~0.004	0.002~0.067
			32.50.5MFL-KM																		●									0.002~0.006	0.003~0.079

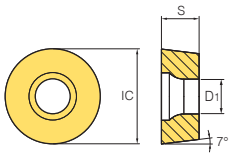
● : Stock item

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○○



Dimensions (inch)			
Size	IC	S	D1
8	0.315	1/8	9/64
10	0.394	1/8~5/32	9/64
12	0.472	3/16	11/67
16	0.63	1/4	13/64
2	0.787	1/4	25/97
25	0.984	5/16	9/32
32	1.26	3/8	3/8

Round **R° Positive**
Relief Angle: 7°

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	● ⇕ ⇕ ● ⇕	

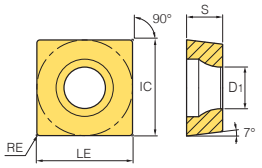
Application	Picture	Designation		Cermet		Coated		Coated																	Uncoated		Cutting Condition	
				CN1500	CN2500	CC1015	CC1025	NC3205	NC3215	NC3225	NC3120	NC3030	NC3235	NC5320	NC5330	NC6310	NC6315	NC9115	NC9125	NC9135	PC5300	PC5400	PC8105	PC8110	PC8115	PC9030	PC9035	H01	H05	fn (ipr)	ap (inch)
Medium cutting	VM 	RCMT	0803M0-VM																									0.002~0.012	0.031~0.098
			10T3M0-VM																									0.002~0.014	0.036~0.118
			1204M0-VM																									0.004~0.020	0.039~0.138
			1606M0-VM																									0.005~0.024	0.051~0.256
Medium cutting		RCMX	1003M0							●		●			●		●											0.010~0.020	0.059~0.157
			1204M0							●	●	●	●		●		●											0.012~0.024	0.098~0.197
			1606M0							●		●			●		●											0.016~0.028	0.118~0.276
			2006M0									●					●											0.019~0.035	0.138~0.354
			2507M0									●					●											0.022~0.047	0.157~0.472
			3209M0									●					●											0.026~0.059	0.197~0.591

● : 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○○



Dimensions (inch)					
Size	IC	RE	S	LE	D1
21.5	1/4	1/64	3/32	1/4	7/64
32.5	3/8	1/64~1/32	5/32	3/8	11/64
43	1/2	1/64~3/64	3/16	1/2	7/32

Square **90° Positive**
Relief Angle: 7°

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 (ipr)	ap (inch)
Finishing	FP [Mild steel]	SCMT	32.51-FP		●				●																				0.0004~0.0039	0.0039~0.0394
			32.52-FP	●	●				●	●									●					●					0.0016~0.0047	0.0039~0.0394
Finishing	VF	SCMT	32.51-VF																		●									0.002~0.008	0.012~0.059
Finishing	VL	SCMT	32.51-VL	●	●														●		●			●						0.002~0.004	0.004~0.039
			32.52-VL		●					●					●						●	●		●						0.003~0.006	0.004~0.039
Medium to finishing	HMP	SCMT	32.51-HMP								●	●									●					●				0.003~0.009	0.012~0.118
			32.52-HMP								●	●									●					●				0.004~0.012	0.020~0.118
			431-HMP																											0.004~0.011	0.012~0.142
			432-HMP									●									●					●					0.005~0.014	0.024~0.142
Medium to finishing	MP	SCMT	32.51-MP						●	●				●			●		●	●	●			●						0.002~0.010	0.012~0.110
			32.52-MP					●	●	●				●	●		●				●			●						0.004~0.012	0.020~0.110
			431-MP						●	●				●					●		●									0.004~0.012	0.020~0.110
			432-MP						●	●				●				●		●	●			●						0.006~0.014	0.032~0.138
			433-MP																											0.010~0.016	0.039~0.138
Medium to finishing	C25	SCMT	21.51-C25									●	●	●																0.003~0.010	0.016~0.098
			32.51-C25	●	●		●		●	●		●	●	●	●		●				●	●		●						0.003~0.010	0.024~0.118
			32.52-C25	●	●		●		●	●	●	●	●	●	●	●	●				●	●		●						0.004~0.012	0.039~0.118
			431-C25		●				●	●				●	●						●	●		●		●				0.004~0.012	0.031~0.150
			432-C25				●		●	●	●	●	●	●	●	●	●				●	●		●		●				0.005~0.015	0.047~0.150

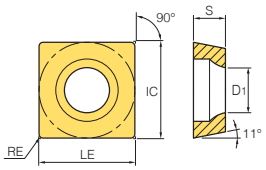
● : Stock item

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 (inch)					
Size	IC	RE	S	LE	D_1
32	3/8	1/64~1/32	1/8	3/8	11/64
32.5	3/8	1/64~1/32	5/32	3/8	11/64
42	1/2	1/64~3/64	1/8	1/2	-
53	5/8	3/64	3/16	5/8	-
63	3/4	3/64~1/16	3/16	3/4	-
84	1	5/64	1/4	1	-

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

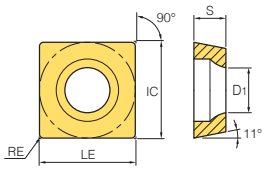
Application	Picture	Designation		Cermet		Coated		Coated																		Uncoated		Cutting Condition	
				CN1500	CN2500	CC1015	CC1025	NC3205	NC3215	NC3225	NC3120	NC3030	NC3235	NC5320	NC5330	NC6310	NC6315	NC9115	NC9125	NC9135	PC5300	PC5400	PC8105	PC8110	PC8115	PC9030	PC9035	H01	H05	fn (ipr)	ap (inch)
Finishing	VL	SPMT	32.51-VL																									0.002~0.007	0.008~0.055
			32.52-VL																									0.003~0.009	0.008~0.055
Finishing	VF	SPMT	321-VF																									0.002~0.008	0.012~0.059
			322-VF																									0.004~0.010	0.012~0.059
Finishing	F	SPMR	321-F																									0.002~0.008	0.012~0.079
			421-F							●		●																0.004~0.010	0.020~0.079
Finishing	F	SPGR	321-F																									0.004~0.010	0.012~0.079
			421-F																									0.006~0.010	0.020~0.079
Medium cutting	M	SPMR	322-M							●		●																0.004~0.016	0.039~0.138
			422-M							●		●	●															0.004~0.016	0.059~0.157
			423-M									●	●															0.008~0.016	0.059~0.157
Medium cutting	M	SPGR	322-M																									0.004~0.016	0.039~0.138
			422-M																									0.008~0.016	0.059~0.157
Medium to finishing		SPUN	421																									0.004~0.012	0.039~0.197
			422																									0.006~0.016	0.039~0.197
			422SN																									0.006~0.016	0.039~0.197
			533																									0.008~0.020	0.039~0.197
			633									●																0.008~0.020	0.059~0.276
			634																									0.010~0.024	0.079~0.276
			845																									0.012~0.031	0.118~0.394

● : 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

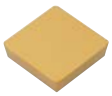
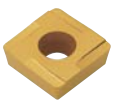
SP○○



Dimensions (inch)					
Size	IC	RE	S	LE	D1
2.5	5/16	1/64	3/32	5/16	7/64
21.5	1/4	1/64	3/32	1/4	7/64
32	3/8	0.008~1/32	1/8	3/8	11/64
42	1/2	0.008~1/16	1/8	1/2	-
43	1/2	0.008~5/32	3/16	1/2	-
53	5/8	1/64~5/64	3/16	5/8	-
63	3/4	1/64~3/32	3/16	3/4	-

Square **90° Positive**
Relief Angle: 11°

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	● ●

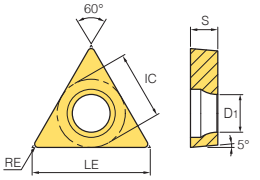
Application	Picture	Designation		Cermet		Coated		Coated																		Uncoated		Cutting Condition	
				CN1500	CN2500	CC1015	CC1025	NC3205	NC3215	NC3225	NC3120	NC3030	NC3235	NC5320	NC5330	NC6310	NC6315	NC9115	NC9125	NC9135	PC5300	PC5400	PC8105	PC8110	PC8115	PC9030	PC9035	H01	H05	fn (ipr)	ap (inch)
Medium to finishing		SPGN	2.51.50.5																									0.001~0.004	0.020~0.079
			2.51.52																									0.004~0.010	0.028~0.118
			320.5																									0.001~0.004	0.020~0.118
			321																									0.003~0.008	0.028~0.138
			322																									0.004~0.010	0.028~0.138
			420.5																									0.001~0.008	0.020~0.118
			421																									0.003~0.008	0.039~0.197
			422									●																0.004~0.010	0.039~0.197
			423																									0.006~0.012	0.039~0.197
			424																									0.007~0.013	0.039~0.197
			430.5																									0.001~0.008	0.020~0.118
			431																									0.003~0.008	0.039~0.197
			432																									0.004~0.010	0.039~0.197
			433																									0.006~0.012	0.039~0.197
			434																									0.007~0.013	0.039~0.197
			437.5																									0.008~0.024	0.079~0.197
			4310																									0.010~0.028	0.118~0.197
			531																									0.003~0.008	0.059~0.276
			532																									0.004~0.010	0.059~0.276
			533																									0.006~0.012	0.059~0.276
			534																									0.007~0.013	0.059~0.276
			535																									0.008~0.018	0.059~0.276
			631																									0.003~0.008	0.059~0.354
			632																									0.004~0.010	0.059~0.354
			633																									0.006~0.018	0.059~0.354
			634																									0.007~0.024	0.059~0.354
			636																									0.010~0.028	0.098~0.354
Medium to finishing		SPGA	21.51																									0.002~0.010	0.020~0.079
			322T	●	●																							0.004~0.010	0.028~0.118
			322T-Z		●																							0.004~0.010	0.028~0.118
		* Note: 08T: corner C0.8 08T-Z: corner R0.8																											
Medium to finishing		SPGT	321R																									0.003~0.009	0.012~0.118
			322R																									0.004~0.012	0.020~0.118
			321L		●																							0.003~0.009	0.012~0.118
			322L																									0.004~0.012	0.020~0.118

● : 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○○



Dimensions (inch)					
Size	IC	RE	S	LE	D1
52	5/32	0.008~1/64	1/16	0.271	11/128

Triangular **60° Positive**
Relief Angle: 5°

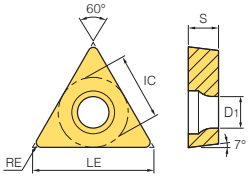
Workpiece			Machining types
	Steel	P	● Continuous cutting
	Stainless steel	M	⧓ General cutting
	Cast iron	K	✱ Interrupted cutting
	Non-ferrous metal	N	
	Heat resistant alloy, Titanium alloy	S	
	Hardened steel	H	

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 (ipr)	ap (inch)
Finishing	VL	TBMT	**520.5-VL**																									0.001~0.002	0.002~0.024
Finishing		TBGT	**520.5**	●	●																				●		●	0.002~0.008	0.004~0.051
			521	●	●																							0.003~0.008	0.004~0.051

● : Stock item

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

TC ○○



Dimensions (inch)					
Size	IC	RE	S	LE	D1
1.2	0.156	0.004	3/32	0.271	11/128
1.8	0.219	1/64~1/32	3/32	0.379	13/128
21.5	1/4	0.008~1/32	3/32	0.433	7/64
32.5	3/8	0.008~3/64	5/32	0.65	11/64
43	1/2	1/32	3/16	0.866	-

Triangular **60° Positive**
Relief Angle: 7°

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 (ipr)	ap (inch)
Finishing	FP [Mild steel]	TCMT	21.50.5FP		●				●																				0.0004~0.0039	0.0020~0.0031
			21.51-FP		●				●																				0.0004~0.0039	0.0039~0.0354
Finishing	VF	TCMT	21.50.5-VF																										0.001~0.005	0.002~0.028
			21.51-VF			●															●								0.002~0.008	0.012~0.047
			21.52-VF																		●								0.004~0.010	0.012~0.047
			32.50.5-VF																										0.002~0.006	0.004~0.051
			32.51-VF							●											●								0.002~0.006	0.012~0.059
Finishing	VL	TCMT	1.81.52-VL																										0.003~0.008	0.004~0.047
			21.51-VL			●	●																						0.002~0.006	0.004~0.051
			21.52-VL				●																						0.003~0.008	0.004~0.051
			32.51-VL		●	●	●		●									●	●	●	●			●					0.002~0.006	0.012~0.059
			32.52-VL					●	●	●								●			●	●		●					0.002~0.006	0.012~0.059
Medium to finishing	HMP	TCMT	1.81.51-HMP								●															●			0.002~0.007	0.008~0.091
			1.81.52-HMP																										0.003~0.009	0.016~0.091
			21.50.5-HMP																										0.001~0.006	0.004~0.059
			21.51-HMP		●					●	●	●			●						●			●		●			0.002~0.007	0.008~0.098
			21.52-HMP		●							●									●					●			0.004~0.010	0.016~0.098
			32.51-HMP		●						●	●									●			●		●			0.003~0.009	0.012~0.118
			32.52-HMP								●	●			●						●					●			0.004~0.012	0.020~0.138
Medium to finishing	MP	TCMT	1.81.51-MP					●										●	●										0.002~0.007	0.004~0.039
			1.81.52-MP															●	●										0.003~0.008	0.004~0.047
			21.50.5-MP						●	●					●								●	●					0.001~0.005	0.008~0.059
			21.51-MP					●	●	●					●			●	●	●			●	●					0.002~0.006	0.008~0.059
			21.52-MP						●	●					●						●		●	●					0.004~0.011	0.010~0.078
			32.50.5-MP																										0.003~0.010	0.008~0.059
			32.51-MP	●	●			●	●	●					●		●	●	●	●	●	●	●	●	●				0.003~0.008	0.012~0.098
			32.52-MP		●	●	●	●	●	●					●	●	●	●	●	●	●		●	●					0.004~0.012	0.020~0.098
			32.53-MP						●	●					●										●				0.008~0.016	0.020~0.098
			432-MP																										0.008~0.016	0.020~0.138

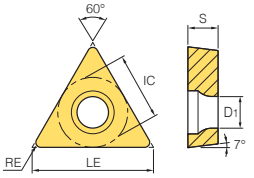
● : Stock item

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

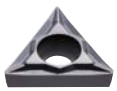
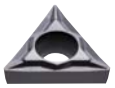
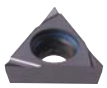
TC ○○



Dimensions (inch)					
Size	IC	RE	S	LE	D1
1.5	3/16	0.0012~0.008	3/32	0.325	3/32
1.8	7/32~3/8	1/64~1/32	3/32~5/32	0.379	13/128
21.5	1/4	0.004~1/32	3/32	0.433	7/64
32.5	3/8	1/64~1/32	5/32	0.65	11/64

Triangular **60° Positive**
Relief Angle: 7°

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 (ipr)	ap (inch)
Medium cutting	C25 	TCMT	1.81.51-C25	●	●	●	●		●	●		●	●		●		●				●	●		●						0.002~0.007	0.016~0.098
			1.81.52-C25	●			●		●	●							●				●			●						0.003~0.010	0.031~0.098
			21.50.5-C25	●						●					●						●			●						0.002~0.005	0.016~0.079
			21.51-C25	●	●	●	●		●	●		●	●		●		●				●	●		●						0.002~0.008	0.024~0.098
			21.52-C25	●	●		●		●	●		●	●		●		●				●	●		●		●				0.003~0.010	0.031~0.098
			32.51-C25	●	●	●	●	●	●	●	●	●	●		●		●				●	●		●		●				0.003~0.011	0.031~0.118
			32.52-C25	●	●		●		●	●	●	●	●		●		●				●	●		●		●				0.004~0.012	0.039~0.118
Finishing	VP1 	TCMT	32.51-VP1																											0.002~0.008	0.004~0.059
			32.52-VP1																											0.003~0.009	0.004~0.059
Finishing	FS  [High precision]	TCGT	21.50.2-FS																		●			●						0.0004~0.0063	0.0012~0.0551
			21.50.5-FS																		●			●						0.0008~0.0071	0.0016~0.0591
			21.51-FS																		●			●						0.0016~0.0075	0.0024~0.0630
Finishing	FS  [Ultra high precision]	TCGT	21.50.2MFN-FS																											0.0004~0.0063	0.0012~0.0551
			21.50.5MFN-FS																											0.0008~0.0071	0.0016~0.0591
			21.51MFN-FS																											0.0016~0.0075	0.0024~0.0630
Finishing	VP1 	TCGT	1.81.51-VP1																											0.002~0.007	0.004~0.039
			32.51-VP1																											0.002~0.008	0.004~0.059
			32.52-VP1																											0.003~0.009	0.004~0.059
Finishing	KF  [High precision]	TCGT	1.51.50.1R-KF																											~0.002	0.002~0.051
			1.51.50.2R-KF																											0.001~0.003	0.002~0.059
			1.51.50.5R-KF																											0.001~0.004	0.002~0.067
			1.51.50.1L-KF																											~0.002	0.002~0.051
			1.51.50.2L-KF																											0.001~0.003	0.002~0.059
			1.51.50.5L-KF																											0.001~0.004	0.002~0.067

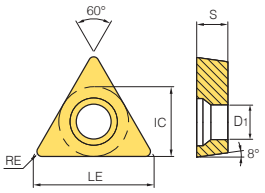
● : Stock item

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 ○○

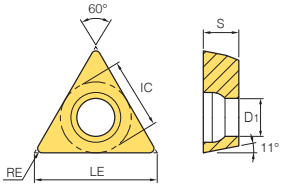


Dimensions (inch)					
Size	IC	RE	S	LE	D1
1.2	5/32	0.008	1/16	0.273	11/128
1.8	7/32	1/64	3/32	0.382	7/64
2.52	10/31	1/64	15/128	0.559	5/32

Triangular **60° Positive**
Relief Angle: 8°

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

TP ○○



Dimensions (inch)					
Size	IC	RE	S	LE	D1
1.8	7/32	0.008~1/64	3/32	0.379	1/128~1/64
22	1/4	1/64~1/32	3/32~1/8	0.433	9/64
32	3/8	1/64~3/64	1/8	0.650	-
33	3/8	1/64~1/32	3/16	0.650	-
43	1/2	1/32	3/16	0.866	-

Triangular **60° Positive**
Relief Angle: 11°

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 (ipr)	ap (inch)
Finishing	VF	TPMT	221-VF		●					●					●						●			●					0.002~0.008	0.012~0.059
			222-VF							●					●									●					0.004~0.010	0.012~0.059
			331-VF																											0.002~0.008	0.012~0.079
			332-VF																											0.004~0.010	0.012~0.079
Finishing	VL	TPMT	1.81.51-VL																											0.002~0.004	0.004~0.036
			1.81.52-VL																											0.002~0.005	0.004~0.039
			221-VL	●	●	●	●		●										●		●		●	●						0.002~0.006	0.004~0.051
			222-VL																											0.003~0.008	0.004~0.051
			331-VL																											0.002~0.008	0.012~0.059
			332-VL																											0.002~0.008	0.012~0.059
Medium to finishing	MP	TPMT	1.81.50.5-MP																											0.001~0.006	0.004~0.039
			1.81.51-MP																											0.002~0.007	0.004~0.039
			220.5-MP																											0.001~0.005	0.008~0.059
			221-MP	●	●	●	●		●	●									●	●	●	●								0.002~0.008	0.008~0.059
			222-MP						●	●									●											0.004~0.011	0.012~0.078
			330.5-MP																											0.002~0.008	0.012~0.098
			331-MP						●	●																				0.003~0.008	0.012~0.098
			332-MP						●	●																				0.004~0.012	0.020~0.098
Finishing	F	TPMR	1.81.50.5F																											0.002~0.006	0.004~0.039
			1.81.51F																											0.002~0.006	0.004~0.039
			220.5-F																											0.002~0.006	0.004~0.059
			221-F							●	●	●	●													●				0.002~0.008	0.012~0.059
			222-F																											0.002~0.010	0.012~0.059
			321-F							●	●	●	●		●									●		●				0.003~0.010	0.020~0.079
			322-F																											0.003~0.010	0.020~0.118
Finishing	F	TPGR	220.5-F																											0.002~0.006	0.004~0.059
			221-F																											0.002~0.008	0.012~0.098
			321-F																											0.003~0.010	0.012~0.098
Medium cutting	M	TPMR	221-M																											0.004~0.010	0.028~0.118
			222-M									●					●													0.005~0.012	0.039~0.118
			321-M									●					●													0.004~0.010	0.039~0.197
			322-M							●	●	●	●				●													0.005~0.012	0.039~0.197
			323-M									●	●																	0.006~0.014	0.039~0.197
			432-M							●																				0.005~0.012	0.059~0.276

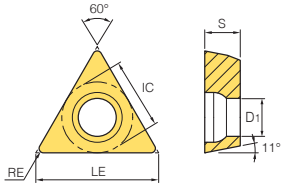
● : Stock item

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 ○○



Dimensions (inch)					
Size	IC	RE	S	LE	D1
1.8	7/32	1/64~1/32	1/8	0.379	-
21.5	1/4	1/32	3/32	0.433	-
22	1/4	0.008~1/32	3/32~1/8	0.433	9/64
32	3/8	0.008~1/16	1/8	0.650	-
43	1/2	1/64~5/32	3/16	0.866	-
53	5/8	1/32	3/16	1.083	-
54	5/8	1/32	1/4	1.083	-
64	3/4	5/64	1/4	1.299	-

Triangular **60° Positive**
Relief Angle: 11°

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 (ipr)	ap (inch)
Medium cutting	M	TPGR	222-M																									0.005~0.012	0.039~0.118
			322-M																									0.005~0.012	0.039~0.197
Medium to finishing		TPUN	1.81.52																									0.004~0.012	0.020~0.079
			21.52																									0.006~0.016	0.039~0.118
			221																									0.004~0.012	0.039~0.118
			222																									0.006~0.016	0.039~0.118
			321									●																0.004~0.012	0.039~0.197
			322									●								●								0.006~0.016	0.039~0.197
			322TN																									0.006~0.016	0.039~0.197
			323																									0.008~0.020	0.059~0.197
			323TN																									0.008~0.020	0.059~0.197
			431																									0.004~0.012	0.059~0.276
			432									●																0.006~0.016	0.059~0.276
			433																									0.008~0.020	0.059~0.276
			433TN																									0.008~0.020	0.059~0.276
			645																									0.012~0.028	0.118~0.394
Medium to finishing		TPGN	1.81.51																									0.003~0.008	0.028~0.079
			220.5																									0.002~0.006	0.020~0.079
			221									●															●	0.003~0.008	0.028~0.118
			222									●															●	0.004~0.010	0.039~0.118
			320.5																									0.002~0.007	0.039~0.197
			321							●		●															●	0.003~0.008	0.039~0.197
			322							●		●															●	0.004~0.010	0.039~0.197
			322.5																									0.004~0.010	0.039~0.197
			323																									0.006~0.012	0.039~0.197
			324																									0.006~0.012	0.039~0.197
			331																									0.003~0.008	0.039~0.197
			431									●																0.003~0.008	0.059~0.276
			432									●																0.004~0.010	0.059~0.276
			433									●																0.006~0.012	0.059~0.276
			437.5																									0.012~0.018	0.059~0.276
			4310																									0.012~0.020	0.059~0.276
			532																									0.006~0.010	0.118~0.315
			542																									0.006~0.010	0.118~0.315

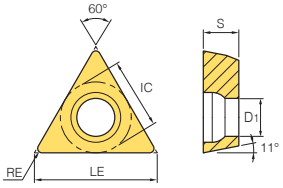
● : Stock item

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

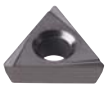
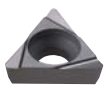
TP ○○



Dimensions (inch)					
Size	IC	RE	S	LE	D_1
1.5	3/16	0.008	3/32	0.325	3/32
1.8	7/32	0.008~1/32	3/32	0.379	0.118
22	1/4	0.008~1/32	1/8	0.433	9/64
23	1/4	0.008~1/64	3/32	0.433	9/64
33	3/8	1/64~1/32	3/16	0.650	11/64

Triangular **60° Positive**
Relief Angle: 11°

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 (ipr)	ap (inch)
Finishing		TPGH	1.51.50.5L	●	●																								0.001~0.005	0.002~0.067
			1.51.51L	●	●																								0.001~0.006	0.003~0.067
			230.5L																										0.002~0.006	0.002~0.079
			231L																										0.003~0.008	0.003~0.118
Medium to finishing		TPGT	1.51.50.5R																										0.002~0.008	0.012~0.059
			1.51.51R																										0.002~0.008	0.012~0.059
			221.5R																										0.002~0.008	0.012~0.059
			221R		●																								0.002~0.008	0.020~0.079
			222R																										0.003~0.010	0.020~0.079
			331R	●	●																								0.002~0.008	0.028~0.118
			332R		●																								0.002~0.008	0.028~0.118
			1.51.50.5L	●	●																				●		●		0.002~0.008	0.012~0.059
			1.51.51L		●																								0.002~0.008	0.012~0.059
			221.5L																										0.002~0.008	0.012~0.059
			221L	●	●																								0.002~0.008	0.020~0.079
			222R																										0.003~0.010	0.020~0.079
			331R	●	●																								0.002~0.008	0.028~0.118
			332R																										0.002~0.008	0.028~0.118
Medium to finishing		TPGX	1.81.50.5L		●																								0.004~0.008	0.012~0.039
			1.81.51L		●																								0.004~0.010	0.020~0.039
			1.81.52L																										0.004~0.012	0.039~0.039
			221L		●																								0.004~0.010	0.020~0.047

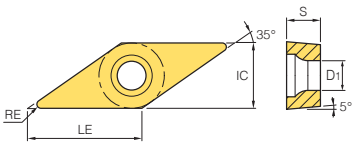
● : Stock item

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○○

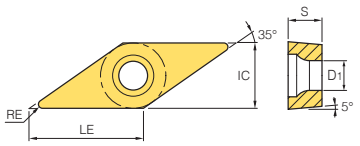


Dimensions (inch)					
Size	IC	RE	S	LE	D_1
22	1/4	0.008~1/32	1/8	0.436	7/64~1/9
33	3/8	1/64~3/64	3/16	0.654	11/64

Rhombic 35° Positive
Relief Angle: 5°

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

VB○○



Dimensions (inch)					
Size	IC	RE	S	LE	D1
22	1/4	0.004~1/64	1/8	0.436	7/64~1/9
33	3/8	0.004~1/32	3/16	0.654	11/64

Rhombic 35° Positive
Relief Angle: 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 (ipr)	ap (inch)
Medium to finishing		VBMT	331		●						●	●				●										●			0.003~0.008	0.020~0.059
			332							●	●						●									●			0.006~0.010	0.028~0.079
Medium to finishing		VBGT	331																										0.003~0.008	0.020~0.059
			332																										0.006~0.010	0.028~0.079
Finishing	VP1 	VBMT	330.5-VP1																				●						0.002~0.008	0.006~0.059
			331-VP1																										0.002~0.008	0.007~0.071
			332-VP1																										0.002~0.008	0.008~0.071
Finishing	FS  [High precision]	VBGT	220.2-FS																		●		●						0.0004~0.0063	0.0012~0.0551
			220.5-FS																		●		●						0.0008~0.0071	0.0016~0.0591
			221-FS																		●		●						0.0016~0.0075	0.0024~0.0630
			330.2-FS																		●		●						0.0004~0.0063	0.0016~0.0709
			330.5-FS																		●		●						0.0008~0.0071	0.0020~0.0787
			331-FS																		●		●						0.0016~0.0075	0.0031~0.0787
Finishing	FS  [Ultra high precision]	VBGT	220.2MFN-FS																										0.0004~0.0063	0.0012~0.0551
			220.5MFN-FS																										0.0008~0.0071	0.0016~0.0591
			221MFN-FS																										0.0016~0.0075	0.0024~0.0630
			330.2MFN-FS																										0.0004~0.0063	0.0016~0.0709
			330.5MFN-FS																										0.0008~0.0071	0.0020~0.0787
			331MFN-FS																										0.0016~0.0075	0.0031~0.0787
Finishing	VP1 	VBGT	220.5-VP1																										0.001~0.004	0.003~0.059
			330.5-VP1																										0.002~0.008	0.006~0.059
			331-VP1																										0.002~0.008	0.007~0.071

● : Stock item

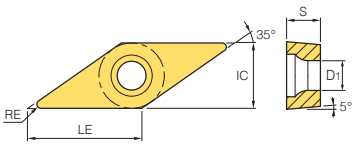
External Tool Holder	
Screw on	Page
SVVBN	B120
SVABR/L	B119
SVHBR/L	B119
SVJBR/L	B119

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○○

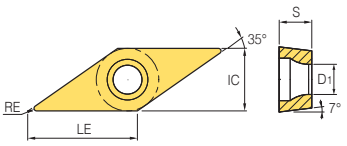


Dimensions (inch)					
Size	IC	RE	S	LE	D_1
22	1/4	0~0.008	1/8	0.436	7/64~1/9

Rhombic 35° Positive
Relief Angle: 5°

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

VC○○



Dimensions (inch)					
Size	IC	RE	S	LE	D1
1.5	3/16	0.008~1/32	3/32	0.327	3/32
22	1/4	0.008~1/64	1/8	0.436	7/64~9/64
33	3/8	1/64~3/64	3/16	0.654	11/64

Rhombic 35° Positive
Relief Angle: 7°

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 (ipr)	ap (inch)
Finishing	FP [Mild steel]	VCMT	1.51.50.5-FP				●		●																				0.0004~0.0039	0.0020~0.0031
			1.51.51-FP		●				●																				0.0004~0.0039	0.0039~0.0354
			1.532-FP		●		●		●																				0.0016~0.0394	0.0039~0.0394
			331-FP		●				●																				0.0004~0.0039	0.0039~0.0394
			332-FP	●	●				●	●									●					●					0.0016~0.0047	0.0039~0.0394
Finishing	VF	VCMT	1.51.50.5-VF																										0.002~0.008	0.012~0.039
			1.51.51-VF												●														0.004~0.010	0.012~0.039
			221-VF							●																			0.001~0.007	0.006~0.047
			331-VF		●					●					●									●					0.002~0.008	0.006~0.060
Finishing	VL	VCMT	1.51.50.5-VL						●	●					●						●								0.001~0.003	0.004~0.032
			1.51.51-VL						●	●					●						●								0.002~0.004	0.004~0.036
			331-VL						●	●									●					●					0.002~0.008	0.012~0.059
			332-VL						●	●										●				●					0.002~0.008	0.012~0.059
			333-VL																										0.004~0.010	0.012~0.059
Medium to finishing	HMP	VCMT	331-HMP		●		●				●	●									●			●		●			0.002~0.008	0.012~0.106
			332-HMP		●						●	●									●			●		●			0.004~0.014	0.020~0.138
Medium to finishing	MP	VCMT	1.51.50.5-MP						●	●																			0.001~0.006	0.004~0.039
			1.51.51-MP						●	●																			0.002~0.007	0.004~0.039
			220.5-MP																										0.002~0.007	0.008~0.071
			221-MP																										0.002~0.007	0.008~0.071
			331-MP						●	●							●	●	●	●			●	●					0.002~0.007	0.012~0.078
			332-MP						●	●							●		●	●	●			●					0.004~0.009	0.020~0.091
			333-MP																					●					0.004~0.013	0.020~0.091
Finishing	VP1	VCMT	331-VP1																										0.002~0.008	0.007~0.071
			332-VP1																										0.002~0.008	0.008~0.071

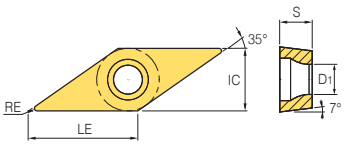
● : Stock item

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○○



Dimensions (inch)					
Size	IC	RE	S	LE	D1
22	1/4	0.004~1/64	1/8	0.436	7/64~9/64
12 (Metric)	0.295	0.008~04	1/8	0.872	7/64
33	3/8	0.004~1/32	3/16	0.654	11/64

Rhombic **35° Positive**
Relief Angle: 7°

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		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 (ipr)	ap (inch)
Finishing	FS [High precision]	VCGT	220.2-FS																		●			●						0.0004~0.0063	0.0012~0.0551
			220.5-FS																		●			●						0.0008~0.0071	0.0016~0.0591
			221-FS																		●			●						0.0016~0.0075	0.0024~0.0630
			330.2-FS																		●			●						0.0004~0.0063	0.0016~0.0709
			330.5-FS																		●			●						0.0008~0.0071	0.0020~0.0787
			331-FS																		●			●						0.0016~0.0075	0.0031~0.0787
Finishing	FS [Ultra high precision]	VCGT	220.2MFN-FS																											0.0004~0.0063	0.0012~0.0551
			220.5MFN-FS																											0.0008~0.0071	0.0016~0.0591
			221MFN-FS																											0.0016~0.0075	0.0024~0.0630
			330.2FN-FS																											0.0004~0.0063	0.0016~0.0709
			330.5MFN-FS																											0.0008~0.0071	0.0020~0.0787
			331MFN-FS																											0.0016~0.0075	0.0031~0.0787
Medium cutting	MS [High precision]	VCGT	110301-MS																		●			●						0.0008~0.0091	0.0020~0.0787
			110302-MS																		●			●						0.0012~0.0098	0.0028~0.0984
			110304-MS																		●			●						0.0020~0.0098	0.0035~0.0984
Medium cutting	MS [Ultra high precision]	VCGT	220.2MFN-MS																		●			●						0.0008~0.0091	0.0020~0.0787
			220.5MFN-MS																		●			●						0.0012~0.0098	0.0028~0.0984
			221MFN-MS																		●			●						0.0020~0.0098	0.0035~0.0984
Medium cutting	MS [Ultra high precision]	VCGT	1203008FN-MS																		●			●						0.0008~0.0079	0.0020~0.0787
			120301FN-MS																		●			●						0.0012~0.0102	0.0028~0.0984
			120302FN-MS																		●									0.0020~0.0110	0.0035~0.0984
			120304FN-MS																		●			●						0.0024~0.0118	0.0039~0.1102
Finishing	VP1 [High precision]	VCGT	220.2-VP1																		●		●	●	●			●		0.001~0.006	0.002~0.006
			220.5-VP1																		●		●	●	●			●		0.001~0.007	0.004~0.039
			221-VP1																		●		●	●	●			●		0.001~0.007	0.006~0.047
			331-VP1							●																				0.002~0.008	0.007~0.071
			332-VP1						●																					0.002~0.008	0.008~0.071

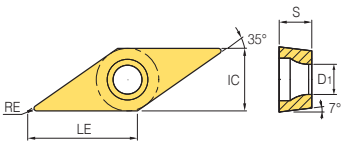
● : Stock item

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○○



Dimensions (inch)					
Size	IC	RE	S	LE	D1
22	1/4	0.0012~0.008	1/8	0.436	7/64~9/64
12 (Metric)	0.295	0~08	1/8	0.872	7/64

Rhombic 35° Positive
Relief Angle: 7°

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 (ipr)	ap (inch)
Finishing	VP1 [Ultra high precision]	VCGT	220.2MFN-VP1																		●			●					0.001~0.006	0.002~0.006
			220.5MFN-VP1																		●			●					0.001~0.007	0.004~0.039
			221MFN-VP1																		●			●					0.001~0.007	0.006~0.047
			1203008FN-VP1																											0.001~0.005	0.002~0.047
			120301FN-VP1																											0.002~0.005	0.003~0.047
			120302FN-VP1																											0.002~0.006	0.003~0.047
			120304FN-VP1																											0.002~0.008	0.004~0.059
Finishing	VP1 [Ultra high precision]	VCGX	120300MFR-VP1																		●			●						0.001~0.004	0.002~0.020
			120301MFR-VP1																					●						0.001~0.006	0.002~0.020
			120302MFR-VP1																					●						0.001~0.007	0.004~0.039
			120304MFR-VP1																											0.001~0.008	0.005~0.047
			120308MFR-VP1																											0.002~0.008	0.006~0.047
Finishing	KF [High precision]	VCGT	220.1R-KF																											0.001 ~0.002	0.002~0.051
			220.2R-KF																											0.001~0.003	0.002~0.059
			220.5R-KF																							●	●			0.001~0.005	0.002~0.067
			220.1L-KF																											0.001~0.002	0.002~0.051
			220.2L-KF																											0.001~0.003	0.002~0.059
			220.5L-KF																											0.001~0.005	0.002~0.067
Finishing	KF [Ultra high precision]	VCET	220.13MFR-KF																		●			●						0.001~0.002	0.002~0.051
			220.2MFR-KF																					●						0.001~0.003	0.002~0.059
			220.5MFR-KF																											0.001~0.005	0.002~0.067
			220.13MFL-KF																											0.001~0.002	0.002~0.051
			220.2MFL-KF																		●									0.001~0.003	0.002~0.059
			220.5MFL-KF																					●						0.001~0.005	0.002~0.067
Finishing	KM [High precision]	VCGT	220.1R-KM																											0.001~0.002	0.002~0.051
			220.2R-KM																											0.001~0.003	0.002~0.059
			220.5R-KM																							●				0.001~0.005	0.002~0.067
			220.1L-KM																											0.001~0.002	0.002~0.051
			220.2L-KM																											0.001~0.003	0.002~0.059
			220.5L-KM																											0.001~0.005	0.002~0.067
Medium to finishing	KM [Ultra high precision]	VCET	220.13MFR-KM																					●						0.001~0.002	0.002~0.051
			220.2MFR-KM																					●						0.001~0.003	0.002~0.059
			220.5MFR-KM																		●			●						0.001~0.005	0.002~0.067
			220.13MFL-KM																											0.001~0.002	0.002~0.051
			220.2MFL-KM																											0.001~0.003	0.002~0.059
			220.5MFL-KM																		●			●						0.001~0.005	0.002~0.067

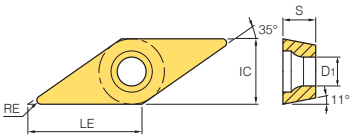
● : Stock item

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 ○○

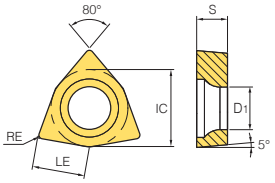


Dimensions (inch)					
Size	IC	RE	S	LE	D1
1.5	3/16	0.002~0.008	3/32	0.327	6/64
22	1/4	0.004~1/64	1/8	0.436	7/64

Rhombic 35° Positive
Relief Angle: 11°

Workpiece			Machining types
Steel	P	● ⧓ ● ⧔ ● ⧔ ⧓ ⧓ ⧓

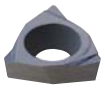
WB○○



Dimensions (inch)					
Size	IC	RE	S	LE	D_1
1.2	5/32	0.008	1/16	0.107	11/128
1.5	3/16	0.008~1/64	3/32	0.128	3/32

Trigon 80° Positive
Relief Angle: 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 (ipr)	ap (inch)
Medium to finishing		WBGT	1.210.5R																									~0.002	0.004~0.012
			1.51.51R																									~0.004	0.004~0.020
			1.210.5L	●	●																				●		●	~0.003	0.004~0.016
			1.51.50.5L																									~0.003	0.004~0.016
			1.51.51L																									~0.004	0.004~0.020

● : Stock item

Compact Mini	
TH	Page
SWUBR/L	B144

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

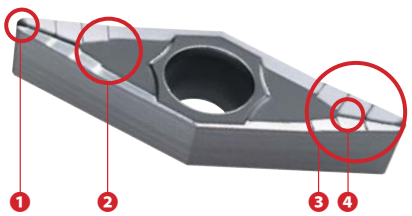
- Preventing welding and chip jam with internal bridge structure enhancing smooth chip flow
- Balanced surface finish and toughness from nose R and 2 step side rake angle
- Preventing minor cutting edge fracture with divided bridge structure on the top surface bottom part blocks chips over minor cutting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

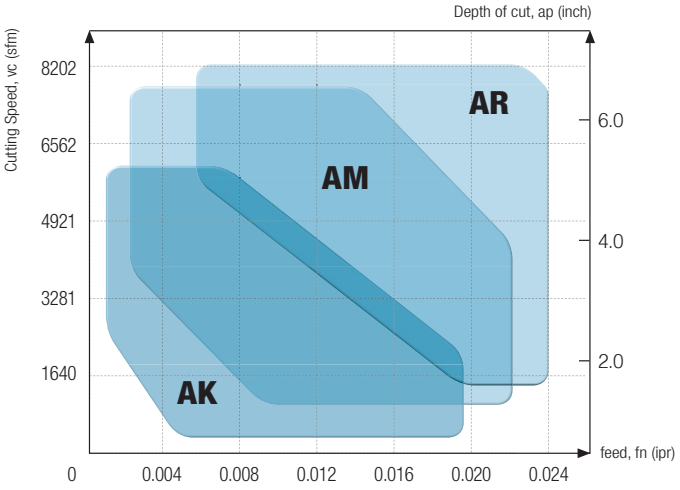
AR special chip breaker for aluminum

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



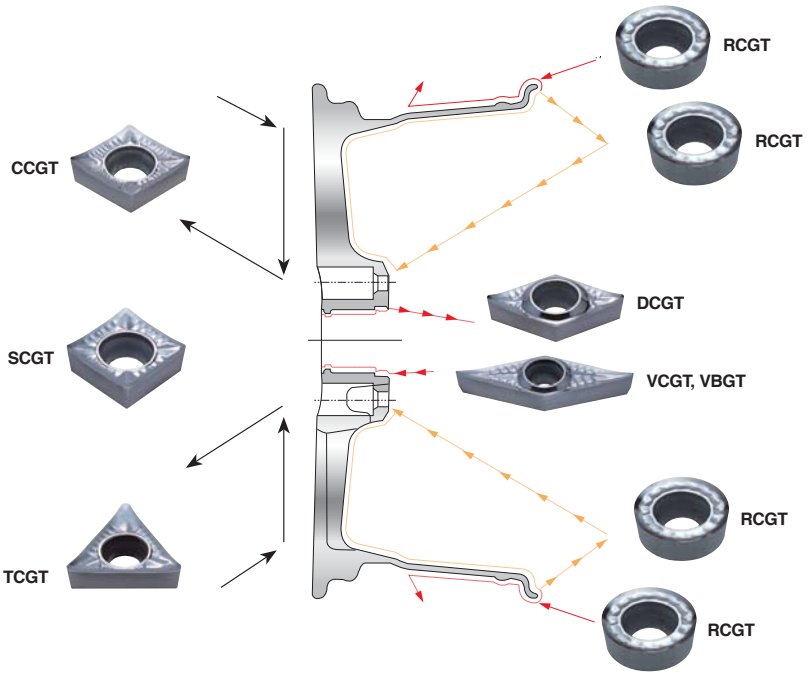
1. Flat corner cutting edge improved productivity at high feed machining and ensures good surface roughness and reliability owing to strong cutting edge
2. Specially buffed on top face controls chip flow reducing built-up edge
3. KORLOY's own technology applied for cutting edge and corner shape controlling 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 = 0.004~0.20 inch fn = 0.001~0.020 ipr	H01 (Uncoated cemented carbides N10~N20) ND3000 (Diamond coating) PD1010 (DLC coating)
AM	ap = 0.012~0.217 inch fn = 0.002~0.022 ipr	H05 (Uncoated cemented carbides N10~N20)
AK	ap = 0.004~0.20 inch fn = 0.001~0.020 ipr	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

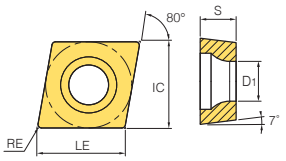


Features of H01 and cutting conditions

- 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 (sfm)	fn (ipr)
Aluminum alloy (forged)	before heat treatment	50 ~ 70	500 ~ 600	3300~8250	0.004~0.024
	after heat treatment	90 ~ 110	700 ~ 900	990~3300	0.004~0.020
Aluminum alloy (cast)	before heat treatment	70 ~ 80	700 ~ 800	990~3300	0.004~0.024
	after heat treatment	80 ~ 100	800 ~ 950	660~1980	0.004~0.016
Copper alloy	-	90 ~ 110	700	820~1980	0.004~0.020
Non-ferrous metal, etc.	-	100	1700	490~990	0.004~0.024

CC ○○

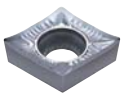
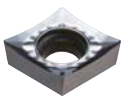
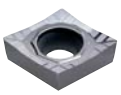


Dimensions (inch)					
Size	IC	RE	S	LE	D1
21.5	1/4	0.008~1/32	3/32	0.254	7/64
32.5	3/8	0.008~1/32	5/32	0.381	11/64
43	1/2	0.008~3/64	3/16	0.508	7/32

Rhombic 80° Positive
Relief Angle: 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

Picture	Designation		Coated				Uncoated		Cutting Conditions	
			ND3000	PC5040	PD1005	PD1010	H01	H05	fn (ipr)	ap (inch)
AK 	CCGT	**21.50.5-AK**		●			●		0.001~0.005	0.002~0.118
		21.51-AK		●			●	●	0.001~0.006	0.004~0.118
		21.52-AK					●		0.001~0.008	0.004~0.157
		32.50.5-AK		●			●		0.001~0.008	0.002~0.118
		32.51-AK		●			●		0.001~0.012	0.004~0.197
		32.52-AK		●			●		0.001~0.020	0.004~0.197
		430.5-AK					●		0.001~0.012	0.002~0.157
		431-AK		●			●		0.001~0.020	0.004~0.197
		432-AK					●	●	0.002~0.031	0.004~0.217
AM 	CCGT	**32.50.5-AM**						●	0.001~0.010	0.002~0.138
		32.51-AM						●	0.001~0.014	0.004~0.205
		32.52-AM						●	0.001~0.022	0.004~0.217
AR 	CCGT	**21.50.5-AR**					●		0.001~0.012	0.012~0.157
		21.51-AR							0.001~0.014	0.020~0.177
		21.52-AR							0.002~0.020	0.020~0.177
		32.50.5-AR					●		0.001~0.018	0.012~0.157
		32.51-AR					●		0.002~0.020	0.020~0.177
		32.52-AR					●		0.002~0.024	0.020~0.236
		430.5-AR							0.002~0.020	0.012~0.197
		431-AR					●		0.002~0.024	0.020~0.236
		432-AR					●	●	0.002~0.026	0.020~0.236
		433-AR							0.003~0.028	0.020~0.256

● : Stock item

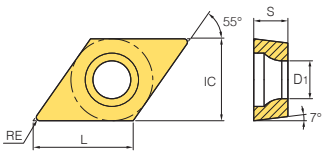
External Tool Holder	
Screw on	Page
SCACR/L	B114
SCLCR/L	B114

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 ○○



Dimensions (inch)					
Size	IC	RE	S	LE	D_1
21.5	1/4	0.008~1/32	3/32	0.305	7/64
32.5	3/8	0.008~3/64	5/32	0.458	11/64

Rhombic 55° Positive
Relief Angle: 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

Picture	Designation		Coated				Uncoated		Cutting Conditions	
			ND3000	PC5040	PD1005	PD1010	H01	H05	fn (ipr)	ap (inch)
AK 	DCGT	21.50.5-AK		●			●		0.001~0.008	0.002~0.118
		21.51-AK		●			●		0.001~0.012	0.004~0.157
		21.52-AK		●			●		0.001~0.016	0.004~0.157
		32.50.5-AK		●			●	●	0.001~0.012	0.002~0.157
		32.51-AK		●			●	●	0.001~0.020	0.004~0.197
		32.52-AK		●			●	●	0.001~0.020	0.004~0.197
		32.53-AK					●	●	0.002~0.024	0.006~0.197
AM 	DCGT	11T302-AM						●	0.001~0.010	0.002~0.138
		11T304-AM						●	0.001~0.014	0.004~0.205
		11T308-AM						●	0.001~0.022	0.004~0.217
AR 	DCGT	21.50.5-AR					●		0.001~0.012	0.012~0.157
		21.51-AR					●		0.001~0.016	0.020~0.197
		21.52-AR					●		0.002~0.020	0.020~0.197
		32.50.5-AR							0.001~0.018	0.012~0.236
		32.51-AR					●		0.002~0.020	0.020~0.236
		32.52-AR					●		0.002~0.024	0.020~0.236
		32.53-AR					●		0.003~0.026	0.020~0.256

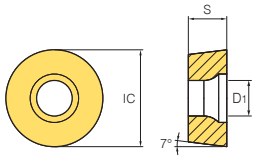
● : Stock item

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 ○○



Dimensions (inch)					
Size	IC	RE	S	LE	D1
06	0.237	-	3/32	-	7/64
08	0.315	-	1/8	-	9/94
10	0.394	-	1/8~5/32	-	11/64
12	0.472	-	3/16	-	11/64

Round **R° Positive**
Relief Angle: 7°

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

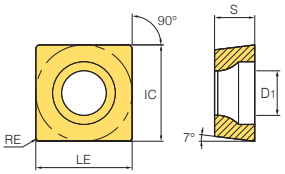
Picture	Designation		Coated				Uncoated		Cutting Conditions	
			ND3000	PC5040	PD1005	PD1010	H01	H05	fn (ipr)	ap (inch)
AK 	RCGT	**0602M0-AK**					●		0.002~0.008	0.020~0.079
		0803M0-AK					●	●	0.002~0.010	0.020~0.098
		1003M0-AK					●	●	0.004~0.012	0.039~0.118
		1204M0-AK					●		0.004~0.014	0.039~0.138
AR 	RCGT	**0602M0-AR**							0.002~0.008	0.020~0.079
		0803M0-AR							0.002~0.010	0.020~0.098
		1003M0-AR					●	●	0.004~0.012	0.039~0.118
		10T3M0-AR							0.004~0.012	0.039~0.118
		1204M0-AR							0.004~0.014	0.039~0.138

● : 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

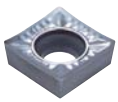
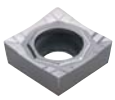
SC ○○



Dimensions (inch)					
Size	IC	RE	S	LE	D_1
32.5	8/3	0.008~1/32	5/32	0.375	11/64
43	1/2	1/64~1/16	3/16	0.5	7/32

Square **90° Positive**
Relief Angle: 7°

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

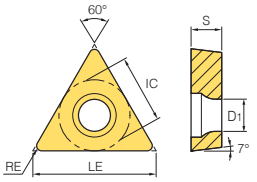
Picture	Designation		Coated				Uncoated		Cutting Conditions	
			ND3000	PC5040	PD1005	PD1010	H01	H05	fn (ipr)	ap (inch)
AK 	SCGT	**32.50.5-AK**							0.001~0.012	0.004~0.157
		32.51-AK		●			●	●	0.002~0.016	0.004~0.197
		32.52-AK					●		0.001~0.016	0.004~0.197
		431-AK					●		0.001~0.020	0.004~0.197
		432-AK					●		0.002~0.024	0.004~0.217
		434-AK							0.002~0.024	0.004~0.217
AR 	SCGT	**32.50.5-AR**							0.001~0.016	0.020~0.197
		32.51-AR					●	●	0.002~0.020	0.020~0.236
		32.52-AR							0.002~0.020	0.020~0.256
		431-AR					●	●	0.002~0.024	0.020~0.256
		432-AR							0.002~0.024	0.020~0.276
		434-AR							0.002~0.024	0.020~0.276

● : 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

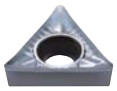
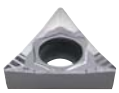
TC ○○



Dimensions (inch)					
Size	IC	RE	S	LE	D_1
1.8	7/32	0.008~1/64	3/32	0.379	13/128
21.5	1/4	0.008~1/32	3/32	0.433	7/64
32.5	3/8	0.008~6.3/64	5/32	0.650	11/64

Triangular 60° Positive
Relief Angle: 7°

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 (ipr)	ap (inch)
AK 	TCGT	1.81.50.5-AK					●		0.000~0.005	0.002~0.118
		1.81.51-AK					●		0.001~0.006	0.004~0.157
		21.50.5-AK		●			●		0.001~0.008	0.002~0.157
		21.51-AK		●			●	●	0.001~0.012	0.004~0.157
		21.52-AK					●	●	0.001~0.016	0.004~0.197
		32.50.5-AK					●		0.001~0.012	0.002~0.197
		32.51-AK					●		0.001~0.016	0.004~0.217
		32.52-AK					●	●	0.001~0.020	0.004~0.217
		32.53-AK					●		0.002~0.024	0.006~0.217
		32.54-AK					●	●	0.002~0.031	0.006~0.217
		32.56.3-AK							0.002~0.035	0.008~0.276
AR 	TCGT	1.81.50.5-AR							0.001~0.007	0.012~0.118
		1.81.51-AR					●		0.001~0.010	0.012~0.197
		21.50.5-AR							0.001~0.012	0.012~0.157
		21.51-AR					●		0.001~0.016	0.012~0.197
		21.52-AR							0.002~0.018	0.020~0.236
		32.50.5-AR							0.001~0.018	0.012~0.197
		32.51-AR					●		0.002~0.020	0.020~0.236
		32.52-AR					●		0.002~0.024	0.020~0.236
		32.53-AR							0.002~0.026	0.020~0.236
		32.54-AR							0.003~0.028	0.020~0.256
		32.56.3-AR							0.004~0.039	0.031~0.276

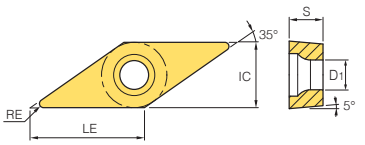
● : Stock item

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 ○○



Dimensions (inch)					
Size	IC	RE	S	LE	D_1
22	1/4	0.008~1/32	1/8	0.436	7/64
33	3/8	0.008~3/64	3/16	0.654	11/64

Rhombic **35° Positive**
Relief Angle: 5°

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

Picture	Designation		Coated				Uncoated		Cutting Conditions	
			ND3000	PC5040	PD1005	PD1010	H01	H05	fn (ipr)	ap (inch)
AK 	VBGT	**220.5-AK**					●		0.001~0.006	0.002~0.118
		221-AK					●	●	0.001~0.006	0.004~0.157
		222-AK						●	0.001~0.007	0.004~0.197
		330.5-AK							0.001~0.012	0.002~0.157
		331-AK					●	●	0.001~0.016	0.004~0.197
		332-AK					●		0.001~0.020	0.004~0.197
		333-AK							0.002~0.024	0.004~0.217
AR 	VBGT	**220.5-AR**							0.001~0.014	0.012~0.118
		221-AR							0.001~0.018	0.012~0.157
		222-AR							0.001~0.020	0.020~0.236
		330.5-AR							0.002~0.018	0.012~0.197
		331-AR					●		0.002~0.020	0.020~0.236
		332-AR					●		0.002~0.024	0.020~0.236
		333-AR							0.002~0.028	0.020~0.256

● : Stock item

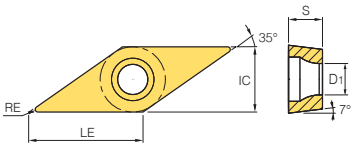
External Tool Holder	
Screw on	Page
SVVBN	B120
SVABR/L	B119
SVHBR/L	B119
SVJBR/L	B119

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

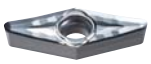
VC ○○



Dimensions (inch)					
Size	IC	RE	S	LE	D1
2.5	5/16	0.008~1/32	1/8	0.436	7/64~9/64
22	1/4	0.008~1/32	1/8	0.436	7/64
33	3/8	1/64~3/64	3/16	0.654	11/64
43.5	1/2	1/16~7.5/64	7/32	0.872	7/32

Rhombic 35° Positive
Relief Angle: 5°

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

Picture	Designation		Coated				Uncoated		Cutting Conditions	
			ND3000	PC5040	PD1005	PD1010	H01	H05	fn (ipr)	ap (inch)
AK 	VCGT	**220.2-AK**					●		0.001~0.006	0.002~0.118
		220.5-AK		●			●		0.001~0.008	0.002~0.118
		221-AK		●			●	●	0.001~0.010	0.004~0.157
		222-AK					●	●	0.001~0.012	0.004~0.197
		2.520.5-AK		●			●		0.001~0.014	0.004~0.197
		2.521-AK		●			●		0.001~0.014	0.004~0.197
		2.522-AK							0.002~0.016	0.004~0.197
		330.5-AK	●				●		0.001~0.012	0.002~0.197
		331-AK	●				●		0.001~0.016	0.004~0.197
		332-AK	●				●	●	0.001~0.020	0.004~0.197
		333-AK					●	●	0.001~0.020	0.004~0.197
		43.54-AK					●		0.001~0.024	0.004~0.276
		43.56.3-AK						●	0.002~0.028	0.004~0.276
		43.57.5-AK					●	●	0.003~0.039	0.004~0.276
AM 	VCGT	**330.5-AM**						●	0.001~0.010	0.002~0.138
		331-AM						●	0.001~0.014	0.004~0.205
		332-AM						●	0.001~0.022	0.004~0.217
		43.55-AM						●	0.005~0.039	0.047~0.276
		43.57.5-AM						●	0.006~0.039	0.047~0.295
AR 	VCGT	**220.2-AR**							0.001~0.008	0.004~0.118
		220.5-AR					●		0.001~0.010	0.012~0.118
		221-AR					●		0.001~0.014	0.012~0.157
		222-AR							0.002~0.018	0.020~0.236
		2.520.5-AR							0.001~0.016	0.020~0.118
		2.521-AR							0.001~0.018	0.020~0.157
		2.522-AR							0.002~0.020	0.020~0.197
		330.5-AR					●	●	0.001~0.016	0.012~0.197
		331-AR					●	●	0.002~0.020	0.020~0.236
		332-AR					●	●	0.002~0.024	0.020~0.236
		333-AR							0.002~0.026	0.020~0.256
		43.54-AR							0.004~0.026	0.031~0.256
		43.56.3-AR							0.004~0.028	0.031~0.276
		43.57.5-AR					●	●	0.005~0.030	0.039~0.276

● : Stock item

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

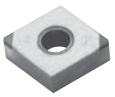
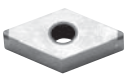
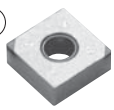
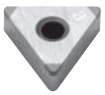
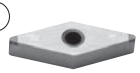
Auto Tool	
TH	Page
SVACR/L	B169

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

cBN

Multi-Corner Type (Negative)

Dimensions (inch)					
Size	IC	RE	S	LE	D_1
33	3/8	1/64~3/64	3/16	0.650~0.654	5/32
43	1/2	1/64~3/64	3/16	0.5~0.611	13/64
44	1/2	1/32~3/64	1/4	0.5~0.611	13/64

Picture	Designation		Coated				Uncoated						Available tool holders	
			DNC100	DNC250	DNC300	DNC350	DB1000	DB2000	DBN250	DBN350	DBN700A	DBNX20	Designation	Page
CN○○ 80° Nega 	2NU-CNGA	**431**	●	●	●	●	●				●		DCBNR/L	B91
		431F		●		●							DCLNR/L	B91
		431T		●		●	●						MCKNR/L	B107
		431W		●									MCLNR/L	B107
		431WF		●									MCMNN	B107
		432	●	●	●	●	●	●			●		PCBNR/L	B96
		432F		●		●							PCLNR/L	B97
		432T		●		●	●							
		432W		●		●	●				●			
		432WF						●						
		433	●	●	●	●								
		433F		●		●								
		433T		●		●								
		433W		●							●			
		433WT					●							
	T-2NU-CNGA	**431**		●										
		432		●		●								
	4NU-CNGA	**431**		●										
		432		●		●								
		433		●										
DN○○ 55° Nega 	2NU-DNGA	**431**		●	●	●		●	●				DDJNR/L	B92
		431F		●		●							MDJNR/L	B108
		431T		●		●							MDNNN	B108
		432		●	●	●	●	●	●				MDQNR/L	B109
		432F		●		●							MDUNR/L	B130
		432T		●		●	●	●					PDJNR/L	B97
		433		●		●							PDNNR/L	B98
		433F		●		●							PDSNR/L	B127
		433T		●		●							PDUNR/L	B127
		441	●	●		●								
		442	●	●		●								
	4NU-DNGA	**431**		●		●								
		432		●		●								
		433		●		●								
		442		●										
SN○○ 90° Nega 	4NU-SNGA	**431**		●									DSBNR/L MSBNR/L	B92 B109
		432		●							●		MSDNN MSKNR/L	B109 B110
													MSRNR/L MSSNR/L	B110 B111
													PSBNR/L PSDNN	B99 B100
													PSKNR/L	B100
TN○○ 60° Nega 	3NU-TNGA	**331**		●		●	●	●	●		●		MTENN MTFNR/L	B111 B111
		331T		●									MTGNR/L MTJNR/L	B112 B112
		332		●		●					●		PTFNR/L PTGNR/L	B101 B102
		332F		●									PTTNR/L WTENN	B102 B103
		332T		●									WTJNR/L WTXNR/L	B103 B103
		333				●								
VN○○ 35° Nega 	2NU-VNGA	**331**	●	●	●	●			●		●		MVJNR/L	B112
		331F		●		●							MVQNR/L	B113
		331T		●		●							MVUNR/L	B131
		332	●	●	●	●	●	●	●		●		MVVNN	B113
		332F		●		●								
		332T		●		●		●						
	T-2NU-VNGA	**332**		●			●							

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

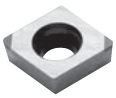
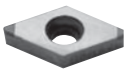
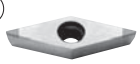
● : Stock item

cBN

Multi-Corner Type (Positive)

Dimensions (inch)					
Size	IC	RE	S	LE	D_1
1.81.5	7/32	1/64	3/32	0.379	7/64
21.5	1/4	0.008~1/32	3/32	0.254~0.305	7/64
22	1/4	1/64~1/32	1/8	0.433	7/64

Dimensions (inch)					
Size	IC	RE	S	LE	D_1
32.5	3/8	1/64~1/32	5/32	0.381~0.458	11/64
33	3/8	0.008~1/32	3/16	0.650~0.654	11/64

Picture	Designation		Coated				Uncoated						Available tool holders	
			DNC100	DNC250	DNC300	DNC350	DB1000	DB2000	DBN250	DBN350	DBN700A	DBNX20	Designation	Page
CC○○ 80° Posi 	2NU-CCGW	21.50.5		●									SCACR/L	B114
		21.50.5T		●									SCLCR/L	B114
		21.51		●				●						
		21.51F		●										
		21.51T		●										
		21.52					●							
		32.50.5		●										
		32.51	●	●		●	●		●		●			
		32.51T		●										
		32.52	●	●		●		●	●		●			
		32.52T		●										
		32.52W		●										
DC○○ 55° Posi 	2NU-DCGW	21.51		●			●						SDACR/L	B114
		21.52		●									SDJCR/L	B115
		21.52T					●						SDNCN	B115
		32.50.5		●									SDQCR/L	B134
		32.51	●	●		●	●		●				SDUCR/L	B135
		32.51F		●									SDZCR/L	B136
		32.51T		●										
		32.52	●	●		●			●		●			
		32.52T		●										
	T-2NU-DCGW	32.51		●										
		32.52		●		●								
TC○○ 60° Posi 	3NU-TCGW	1.81.51		●									STACR/L	B117
		1.81.51F		●									STFCR/L	B118
		1.81.51T		●									STGCR/L	B118
													STTCR/L	B118
TP○○ 60° Posi 	3NU-TPGW	221		●		●	●	●			●		CTFPR/L	B129
		221F		●										
		221T		●										
		222		●		●	●	●			●			
		222F		●										
		222T		●										
	3NU-TPGN	222					●	●					CTFPR/L	B106
		331		●									CTGPR/L	B106
		332		●										
	3NU-TPGB	221											CTFPR/L	B106
		222F											CTGPR/L	B106
		222T												
VB○○ 35° Posi 	2NU-VBGW	330.5		●									SVABR/L	B119
		331	●	●		●	●		●		●		SVHBR/L	B119
		331F		●									SVJBR/L	B119
		331T		●									SVQBR/L	B139
		332	●	●		●		●	●				SVUBR/L	B140
		332F		●										
		332T		●										
	T-2NU-VBGW	332				●								
VC○○ 35° Posi 	2NU-VCGW	331		●		●							SVVCN	B120
		331F		●									SVJCR/L	B120
		331T		●									SVQCR/L	B140
		332		●									SVUCR/L	B140
		332F		●										
		332T		●				●						
	T-2NU-VCGW	331		●										
		332		●										

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

● : Stock item

cBN

Regrinding Type (Negative/Positive)

Dimensions (inch)					
Size	IC	RE	S	LE	D_1
22	1/4	1/64~1/32	1/8	0.433	-
32.5	3/8	1/64~1/32	5/32	0.458	11/64

Dimensions (inch)					
Size	IC	RE	S	LE	D_1
33	3/8	1/64~1/32	3/16	0.650~0.654	5/32
43	1/2	1/64~1/32	3/16	0.508~0.611	13/64

Picture	Designation		Coated				Uncoated						Available tool holders			
			DNC100	DNC250	DNC300	DNC350	DB1000	DB2000	DBN250	DBN350	DBN700A	DBNX20	Designation		Page	
CN○○ 80° Nega	CNMA	**431**							●				DCBNR/L	MCKNR/L	B91	B107
		432							●			●	DCLNR/L	MCLNR/L	B91	B107
	T-CNMA	**432**							●				PCBNR/L	MCMNN	B96	B107
													PCLNR/L		B97	
DN○○ 55° Nega	DNMA	**431**							●				DDJNR/L	MDJNR/L	B92	B108
		432							●				MDNNN	MDQNR/L	B108	B109
													MDUNR/L	PDJNR/L	B130	B97
													PDNNR/L	PDSNR/L	B98	B127
													PDUNR/L		B127	
TN○○ 60° Nega	TNMA	**331**							●				MTENN	MTFNR/L	B111	B111
		332							●				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	**331**							●				MVJNR/L		B112	
	VNMA	**331**							●				MVQNR/L		B113	
		332							●				MVUNR/L		B131	
													MVVNN		B113	
CC○○ 80° Posi	CCMW	**32.51**							●				SCACR/L		B114	
													SCLCR/L		B114	
DC○○ 55° Posi	DCGW	**32.52**							●				SDACR/L		B114	
	T-DCGW	**32.52**							●				SDJCR/L		B115	
													SDNCN		B115	
VB○○ 35° Posi	VBMW	**331**							●				SVABR/L		B119	
		332							●				SVHBR/L		B119	
													SVJBR/L		B119	
													SVQBR/L		B139	
													SVUBR/L		B140	
TP○○ 60° Posi	T-TPGB	**221**											CTFPR/L		B106	
	TPGB	**221**							●				CTGPR/L		B106	
		222							●							

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

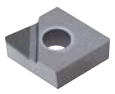
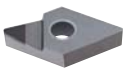
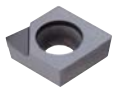
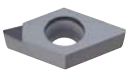
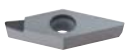
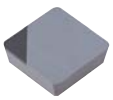
● : Stock item

PCD

Insert (Negative/Positive)

Dimensions (inch)					
Size	IC	RE	S	LE	D_1
21.5	1/4	0.008~1/64	3/32	0.254	7/64
32	3/8	1/64	1/8	0.375	11/64
32.5	3/8	0.008~1/32	5/32	0.458	11/64
33	3/8	1/64~1/32	3/16	0.654	5/32

Dimensions (inch)					
Size	IC	RE	S	LE	D_1
43	1/2	1/64~1/32	3/16	0.508	13/64
63	3/4	1/64	3/16	1.299	13/64
73	0.875	1/64~1/32	3/16	1.516	13/64

Picture	Designation		PCD			Available tool holders			
			DP90	DP150	DP200	Designation		Page	
CN○○ 80° Nega 	CNMM	**431**		●		DCBNR/L	DCLNR/L	B91	B91
		432		●		MCKNR/L	MCLNR/L	B107	B107
						MCMNN	PCBNR/L	B107	B96
						PCLNR/L		B97	
DN○○ 55° Nega 	DNMM	**431**		●		DDJNR/L	MDJNR/L	B92	B108
		432		●		MDNNN	MDQNR/L	B108	B109
						MDUNR/L	PDJNR/L	B130	B97
						PDNNR/L	PDSNR/L	B98	B127
						PDUNR/L		B127	
CC○○ 80° Posi 	CCMW	**431**		●		SCACR/L		B114	
	CCMT	**21.50.5**		●		SCLCR/L		B114	
		21.51		●					
		32.51		●					
		32.52		●					
DC○○ 55° Posi 	DCMT	**21.50.5**		●		SDACR/L		B114	
		21.51		●		SDJCR/L		B115	
		32.50.5		●		SDNCN		B115	
		32.51		●		SDQCR/L		B134	
		32.52		●		SDUCR/L		B135	
	DCGT	**32.51**		●		SDZCR/L		B136	
TP○○ 60° Posi 	TPGW	**1.51.51**		●		STUPR/L		B143	
		1.81.51		●		STFPR/L		B138	
		221		●					
		222		●					
VB○○ VC○○ 35° Posi 	VBGW	**331**		●					
	VBMT	**221**		●		SVHBR/L		B119	
		222		●		SVJBR/L		B119	
		331		●		SVUBR/L		B140	
		332		●					
	VCMT	**331**		●		SVVCN		B120	
		332		●					
TP○○ 60° Posi 	TPGN	**221**		●		CTFPR/L		B129	
		222		●					
SP○○ 90° Posi 	SPGN	**321**		●		CSDPN		B105	
						CSKPR/L		B106	

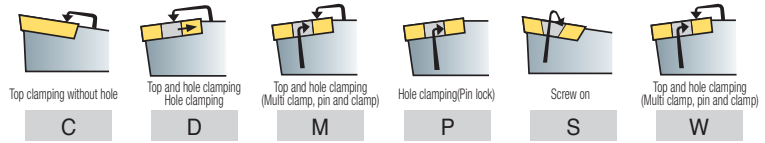
● : Stock item

P S K N R 16 - 4 D

1	2	3	4	5	6	7	8
Clamping method of insert	Insert shape	Holder style	Clearance angle of insert	Hand	Insert size	Length of insert cutting edge	Length of holder

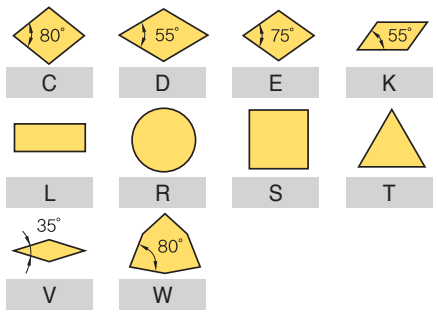
1 Clamping method of insert

P S K N R 16 - 4 D



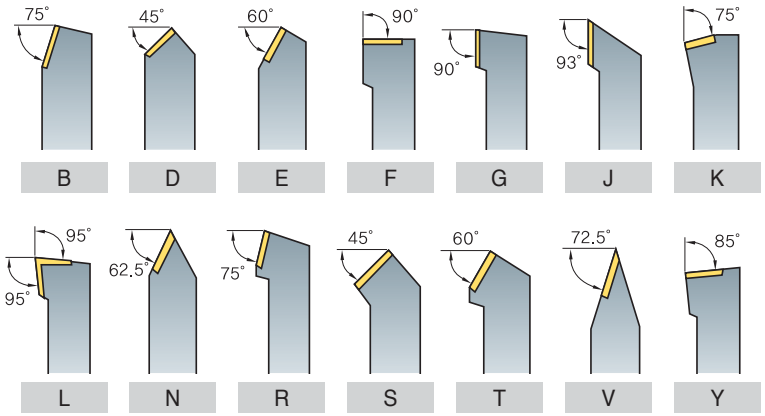
2 Insert shape

P S K N R 16 - 4 D



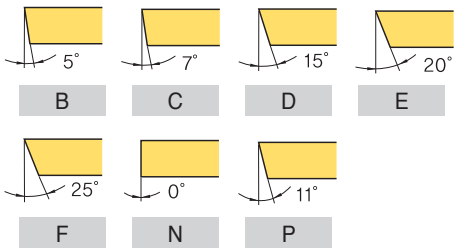
3 Holder style

P S K N R 16 - 4 D



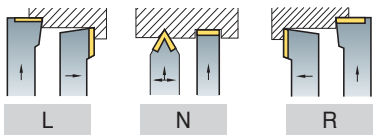
4 Clearance angle of insert

P S K N R 16 - 4 D



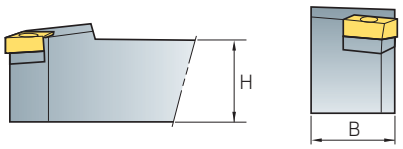
5 Hand

P S K N R 16 - 4 D



6 Height of shank

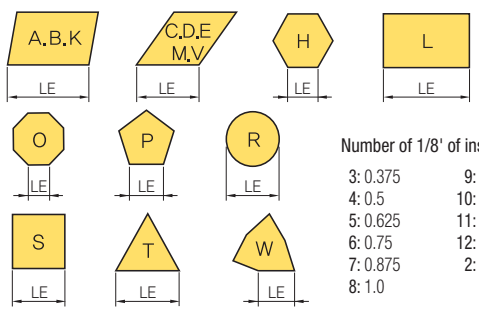
P S K N R 16 - 4 D



No.	width	Height	No.	width	Height
10	0.625	0.625	06	0.375	0.375
12	0.75	0.75	05	0.3125	0.3125
16	1.00	1.00	64	0.75	1.00
20	1.25	1.25	66	1.75	1.50
24	1.50	1.50	85	1.00	1.25
32	2.00	2.00	86	1.00	1.50
08	0.50	0.50	91	1.25	1.50

7 Length of insert cutting edge

P S K N R 16 - 4 D

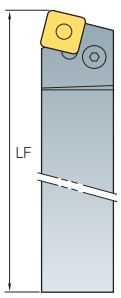


Number of 1/8" of inscribed circle

3: 0.375	9: 1.125
4: 0.5	10: 1.250
5: 0.625	11: 1.375
6: 0.75	12: 1.50
7: 0.875	2: 0.25
8: 1.0	

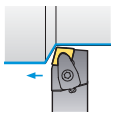
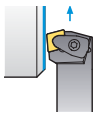
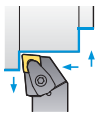
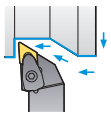
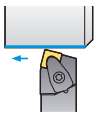
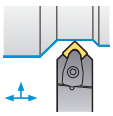
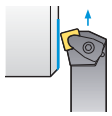
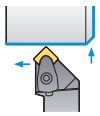
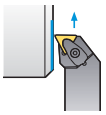
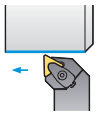
8 Length of holder

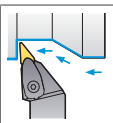
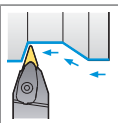
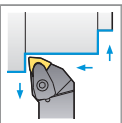
P S K N R 16 - 4 D



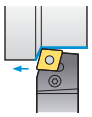
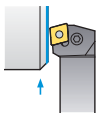
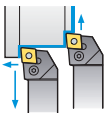
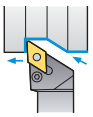
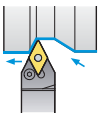
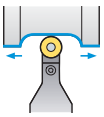
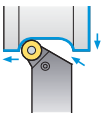
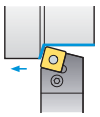
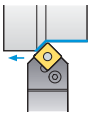
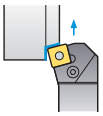
A: Qualified back and end 4' long
B: Qualified back and end 4.5' long
C: Qualified back and end 5' long
D: Qualified back and end 6' long
E: Qualified back and end 7' long
F: Qualified back and end 8' long
M: Qualified back and end 4' long
N: Qualified back and end 4.5' long
P: Qualified back and end 5' long
R: Qualified back and end 6' long
S: Qualified back and end 7' long
T: Qualified back and end 8' long
G: Qualified back and end 10' long
H: Qualified back and end 12' long
I: Qualified back and end 2.5' long
J: Qualified back and end 2.75' long
K: Qualified back and end 3.15' long
x: Special

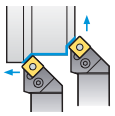
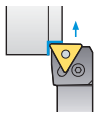
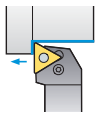
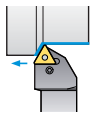
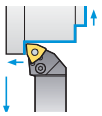
Double clamp system

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			●	●						

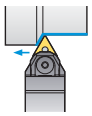
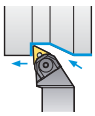
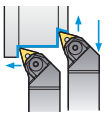
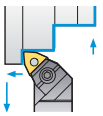
Cutting shape			
Designation	**DVJNR/L**	**DVVNN**	**DWLNR/L**
Tool cutting edge angle	93°	72.5°	95°
Page	B94	B95	B95
Turning	●	●	●
Copying	●	●	
Facing			●
Chamfering			
Back turning	●		●

Lever lock system

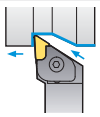
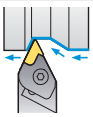
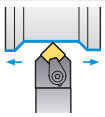
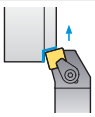
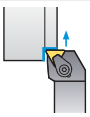
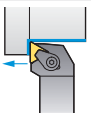
Cutting shape										
Designation	**PCBNR/L**	**PCKNR/L**	**PCLNR/L**	**PDJNR/L**	**PDNNR/L**	**PRDCN**	**PRGCR/L**	**PSBNR/L**	**PSDNN**	**PSKNR/L**
Tool cutting edge angle	75°	75°	95°	93°	62.5°	-	-	75°	45°	75°
Page	B96	B96	B97	B97	B98	B98	B99	B99	B100	B100
Turning	●	●	●	●	●	●	●	●	●	
Copying				●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

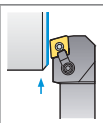
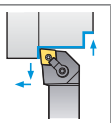
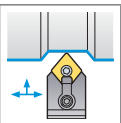
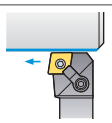
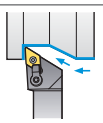
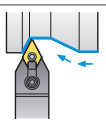
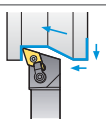
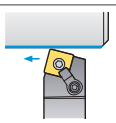
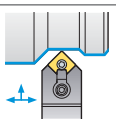
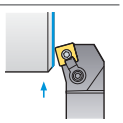
Wedge clamp system

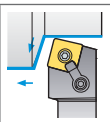
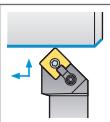
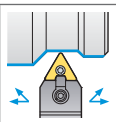
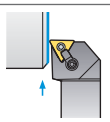
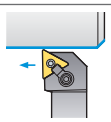
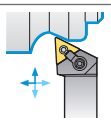
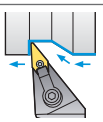
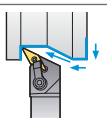
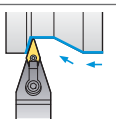
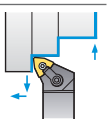
Cutting shape										
Designation	**WTENN**	**WTJNR/L**	**WTXNR/L**	**WWLNR/L**						
Tool cutting edge angle	60°	93°	105°	95°						
Page	B103	B103	B103	B104						
Turning	●	●	●	●						
Copying	●	●	●							
Facing				●						
Chamfering										
Back turning		●	●	●						

Clamp on system

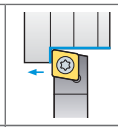
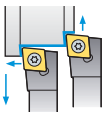
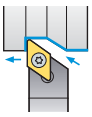
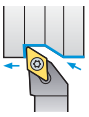
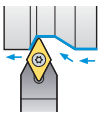
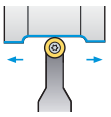
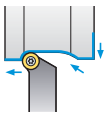
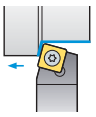
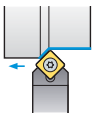
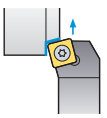
Cutting shape										
Designation	**CKJNR/L**	**CKNNR/L**	**CSDPN**	**CSKPR/L**	**CTFPR/L**	**CTGPR/L**				
Tool cutting edge angle	93°	62.5°	45°	75°	90°	90°				
Page	B105	B105	B105	B106	B106	B106				
Turning	●	●	●			●				
Copying	●	●								
Facing				●	●					
Chamfering										
Back turning	●									

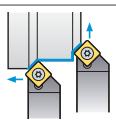
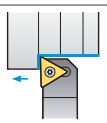
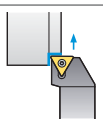
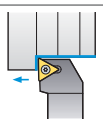
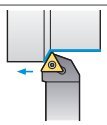
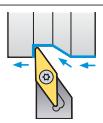
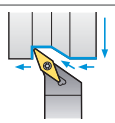
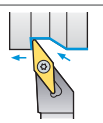
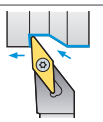
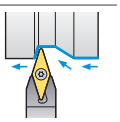
Multi lock system

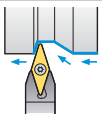
Cutting shape										
Designation	**MCKNR/L**	**MCLNR/L**	**MCMNN**	**MCRNR/L**	**MDJNR/L**	**MDNNN**	**MDQNR/L**	**MSBNR/L**	**MSDNN**	**MSKNR/L**
Tool cutting edge angle	75°	95°	50°	75°	93°	62.5°	107.5°	75°	45°	75°
Page	B107	B107	B107	B108	B108	B108	B109	B109	B109	B110
Turning		●	●	●	●	●	●	●	●	
Copying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

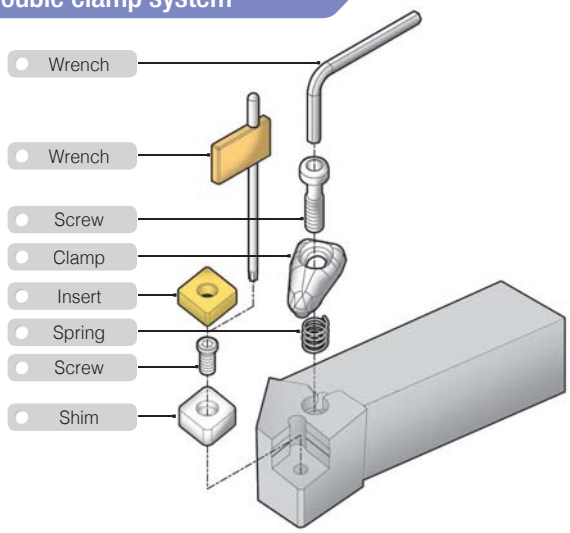
Cutting shape										
Designation	**SCACR/L**	**SCLCR/L**	**SDACR/L**	**SDJCR/L**	**SDNCN**	**SRDCN**	**SRGCR/L**	**SSBCR/L**	**SSDCN**	**SSKCR/L**
Tool cutting edge angle	90°	95°	90°	93°	62.5°	-	-	75°	45°	75°
Page	B114	B114	B114	B115	B115	B115	B116	B116	B116	B117
Turning	●	●	●	●	●	●	●	●	●	
Copying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

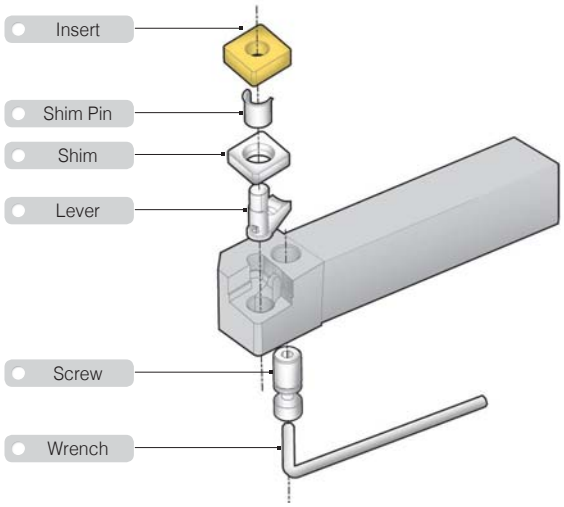
Cutting shape										
Designation	**SVVCN**									
Tool cutting edge angle	72.5°									
Page	B120									
Turning	●									
Copying	●									
Facing										
Chamfering										
Back turning										

Instructions of external holder assembly

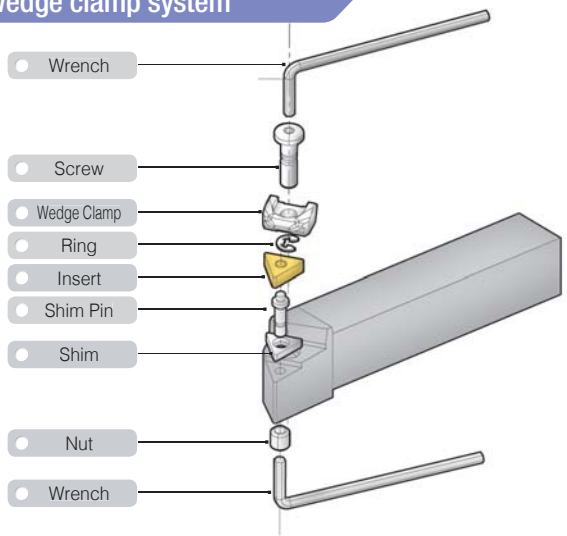
Double clamp system



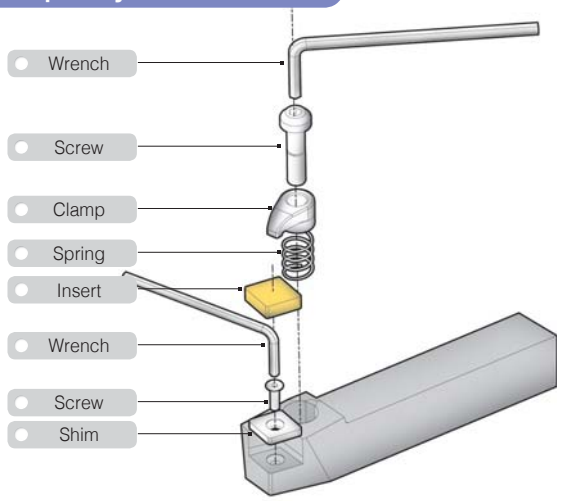
Lever lock system



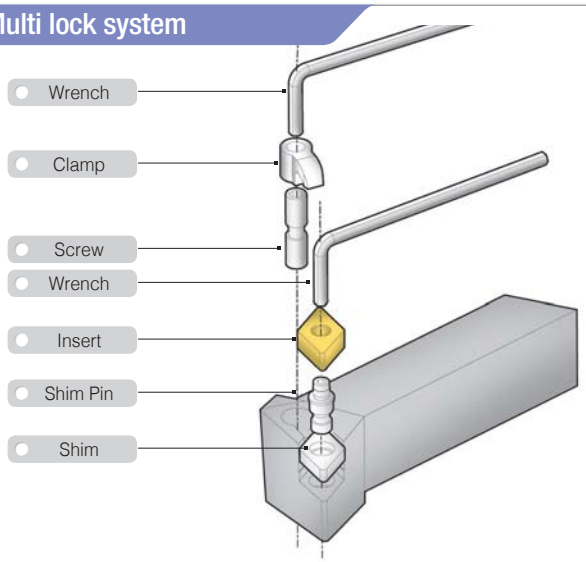
Wedge clamp system



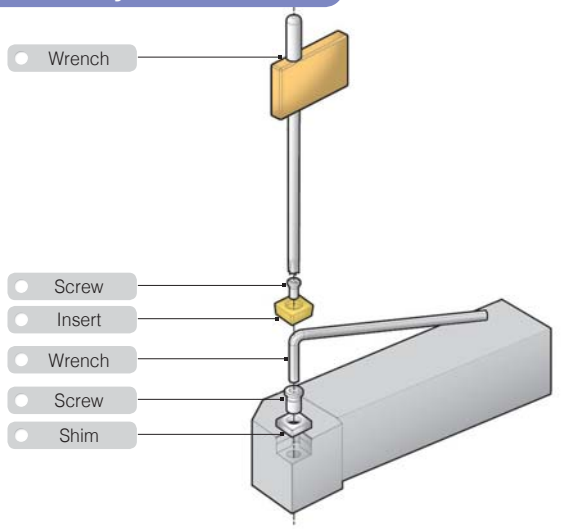
Clamp on system



Multi lock system



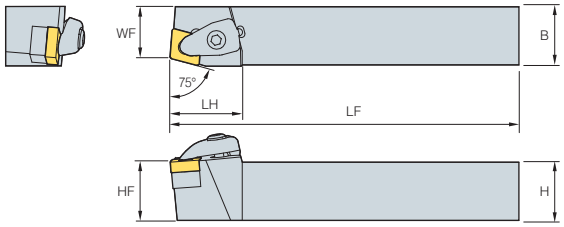
Screw on system

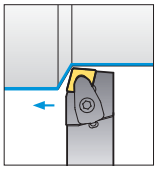


DCBNR/L



CN□□





75°
• R type holder

(inch)

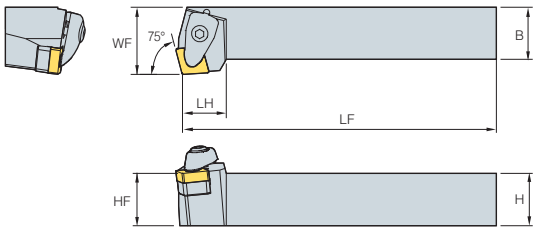
Designation		LH	LF	WF	HF	B	H	HAND	Applicable insert	Clamp	Clamp Screw	Shim	Shim Screw	Spring	Wrench
DCBNR/L	12-4B	1.22	4 1/2	0.6	3/4	3/4	0.75	R/L	CN□□43□	CVH4	CHX0518	SC44V	FTKA0410	SPR0714	HW30P
	16-4D	1.22	6	0.79	1	1	0.79	R/L							
	85-4D	1 2/9	6	1.25	1 1/4	1	1.063	R/L							
	16-5D	1.417	6	0.79	1	1	1	R/L	CN□□54□	CVH5	CHX0622	SC54V	FTNA0511	SPR0811	HW40L
	20-5D	1.417	6	0.99	1 1/4	1 1/4	1.25	R/L							
	20-6D	1.574	6	0.99	1 1/4	1 1/4	1.25	R/L	CN□□64□	CVH6	CHX0622	SC63V	FTNA0511	SPR0811	HW40L
	24-6E	1.574	7	1.186	1 1/2	1 1/2	1.5	R/L							

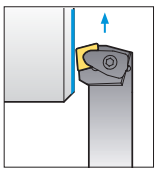
Applicable inserts **B5 ~ B12**

DCKNR/L



CN□□





75°
• R type holder

(inch)

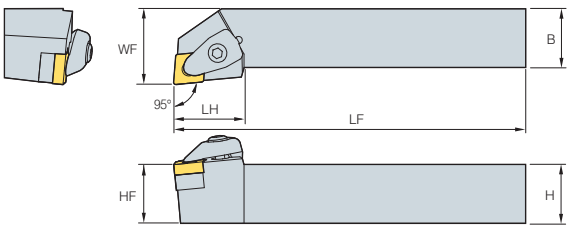
Designation		LH	LF	WF	HF	B	H	HAND	Applicable insert	Clamp	Clamp Screw	Shim	Shim Screw	Spring	Wrench
DCKNR/L	12-4B	0.827	4 1/2	0.790	3/4	3/4	0.750	R/L	CN□□43□	CVH4	CHX0518	SC44V	FTKA0410	SPR0714	HW30P
	16-4D	0.827	6	1.063	1	1	0.790	R/L							
	85-4D	0.827	6	1.063	1 1/4	1	1.063	R/L							
	20-5D	1.024	6	1.500	1 1/4	1 1/4	1.063	R/L	CN□□54□	CVH5	CHX0622	SC54V	FTNA0511	SPR0811	HW40L
	24-5D	1.024	6	2	1 1/2	1 1/2	1.500	R/L							

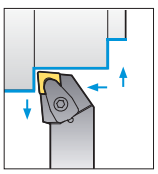
Applicable inserts **B5 ~ B12**

DCLNR/L



CN□□





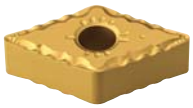
95°
• R type holder

(inch)

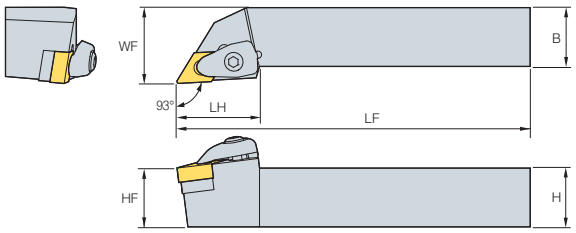
Designation		LH	LF	WF	HF	B	H	HAND	Applicable insert	Clamp	Clamp Screw	Shim	Shim Screw	Spring	Wrench
DCLNR/L	12-3B	0.964	4 1/2	1	3/4	3/4	0.750	R/L	CN□□32□	CVH3	CHX0415	SC32V	FTKA0307	SPR0510	HW25P
	16-3D	0.964	6	1.250	1	1	1	R/L							
	12-4B	1.181	4 1/2	1.250	3/4	3/4	1	R/L	CN□□43□	CVH4	CHX0518	SC44V	FTKA0410	SPR0714	HW30P
	16-4D	1.181	6	1.250	1	1	1.250	R/L							
	85-4D	1.181	6	1.500	1 1/4	1	1.250	R/L							
	20-4D	1.181	6	1.500	1 1/4	1 1/4	1.250	R/L							
	16-5D	1.417	6	1.250	1	1	1	R/L	CN□□54□	CVH5	CHX0622	SC54V	FTNA0511	SPR0811	HW40L
	85-5D	1.417	6	1.250	1 1/4	1	1.250	R/L							
	20-5D	1.417	6	1.500	1 1/4	1 1/4	1.250	R/L							
	16-6D	1.575	6	1.250	1	1	1	R/L	CN□□64□	CVH6	CHX0622	SC63V	FTNA0511	SPR0811	HW40L
	85-6D	1.575	6	1.250	1 1/4	1	1.250	R/L							
	20-6D	1.575	6	1.500	1 1/4	1 1/4	1.250	R/L							
	24-6D	1.575	6	2	1 1/2	1 1/2	1.250	R/L							

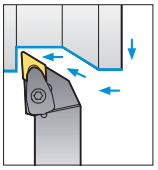
Applicable inserts **B5 ~ B12**

DDJNR/L



DN□□





93°

• R type holder

(inch)

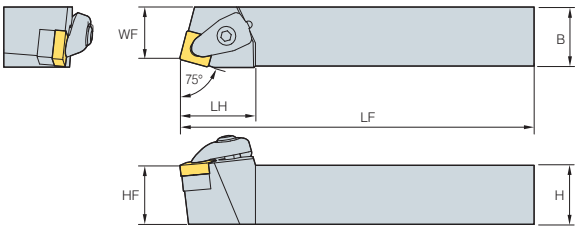
Designation		LH	LF	WF	HF	B	H	HAND	Applicable insert	Clamp	Clamp Screw	Shim	Shim Screw	Spring	Wrench
DDJNR/L	12-3B	1.181	4 1/2	1	3/4	3/4	0.750	R/L	DN□□33□	CVH3	CHX0415	SD32V	FTKA0307	SPR0510	HW25P
	16-3D	1.181	6	1.250	1	1	1	R/L							
	85-3D	1.181	6	1.250	1 1/4	1	1.250	R/L							
	20-3D	1.181	6	1.500	1 1/4	1 1/4	1.250	R/L							
	12-4B	1.378	4 1/2	1	3/4	3/4	0.750	R/L	DN□□44□	CVH4	CHX0518	SD43V	FTKA0410	SPR0714	HW30P
	16-4D-4	1.378	6	1.250	1	1	1	R/L							
	85-4D-4	1.378	6	1.250	1 1/4	1	1.250	R/L							
	20-4D-4	1.378	6	1.500	1 1/4	1 1/4	1.250	R/L							
	12-4B-3	1.378	4 1/2	1	3/4	3/4	0.750	R/L	DN□□43□	CVH4	CHX0518	SD44V	FTKA0410	SPR0714	HW30P
	16-4D-3	1.378	6	1.250	1	1	1	R/L							
	20-4D-3	1.378	6	1.500	1 1/4	1 1/4	1.250	R/L							

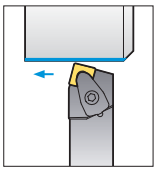
Applicable inserts **B13 ~ B18**

DSBNR/L



SN□□





75°

• R type holder

(inch)

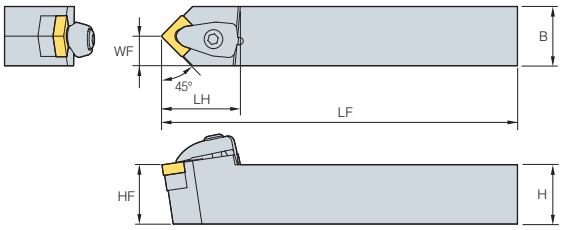
Designation		LH	LF	WF	HF	B	H	HAND	Applicable insert	Clamp	Clamp Screw	Shim	Shim Screw	Spring	Wrench
DSBNR/L	12-3B	0.984	4 1/2	0.600	3/4	3/4	0.75	R/L	SN□□32□	CVH3	CHX0415	SS32V	FTKA0307	SPR0510	HW25P
	16-3B	0.984	4 1/2	0.790	1	1	1	R/L							
	12-4B	1.260	4 1/2	0.600	3/4	3/4	0.75	R/L	SN□□43□	CVH4	CHX0518	SS44V	FTKA0410	SPR0714	HW30P
	16-4D	1.260	6	0.790	1	1	1	R/L							
	85-4D	1.260	6	0.790	1 1/4	1	1.25	R/L							
	20-4D	1.260	6	0.990	1 1/4	1 1/4	1.25	R/L							
	16-5D	1.496	6	0.790	1	1	1	R/L	SN□□54□	CVH5	CHX0622	SS54V	FTNA0511	SPR0811	HW40L
	85-5D	1.496	6	0.790	1 1/4	1	1.25	R/L							
	20-5D	1.496	6	0.990	1 1/4	1 1/4	1.25	R/L							
	20-6D	1.693	6	0.990	1 1/4	1 1/4	1.25	R/L	SN□□64□	CVH6	CHX0622	SS64V	FTNA0511	SPR0811	HW40L
	24-6E	1.693	7	1.186	1 1/2	1 1/2	1.5	R/L							

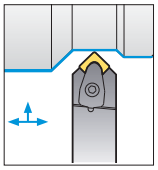
Applicable inserts **B20 ~ B28**

DSDNN



SN□□





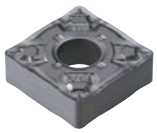
45°

(inch)

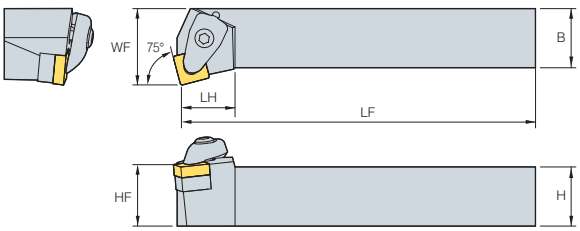
Designation		LH	LF	WF	HF	B	H	HAND	Applicable insert	Clamp	Clamp Screw	Shim	Shim Screw	Spring	Wrench
DSDNN	12-3B	1.043	4 1/2	0.375	3/4	3/4	0.750	N	SN□□32□	CVH3	CHX0415	SS32V	FTKA0307	SPR0510	HW25P
	12-4B	1.299	4 1/2	0.375	3/4	3/4	0.750	N	SN□□43□	CVH4	CHX0518	SS44V	FTKA0410	SPR0714	HW30P
	16-4D	1.299	6	0.500	1	1	1	N							
	85-4D	1.299	6	0.500	1 1/4	1	1	N							
	20-4D	1.299	6	0.625	1 1/4	1 1/4	1.250	N							
	16-5D	1.551	6	0.500	1	1	1	N	SN□□54□	CVH5	CHX0622	SS54V	FTNA0511	SPR0811	HW25P
	20-5D	1.496	6	0.625	1 1/4	1 1/4	1.250	N							
	20-6D	1.693	6	0.625	1 1/4	1 1/4	1.250	N	SN□□64□	CVH6	CHX0622	SS64V	FTNA0511	SPR0811	HW40L
	24-6E	1.771	7	0.750	1 1/2	1 1/2	1.500	N							

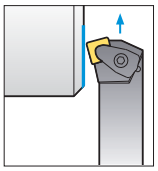
Applicable inserts **B20 ~ B28**

DSKNR/L



SN□□





75°

• R type holder

(inch)

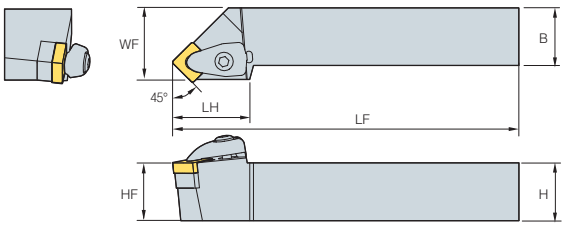
Designation		LH	LF	WF	HF	B	H	HAND	Applicable insert	Clamp	Clamp Screw	Shim	Shim Screw	Spring	Wrench
DSKNR/L	12-3B	0.787	4 1/2	1	3/4	3/4	0.750	R/L	SN□□32□	CVH3	CHX0415	SS32V	FTKA0307	SPR0510	HW25P
	12-4B	0.906	4 1/2	1	3/4	3/4	0.750	R/L	SN□□43□	CVH4	CHX0518	SS44V	FTKA0410	SPR0714	HW30P
	16-4D	0.906	6	1.25	1	1	1	R/L							
	20-4D	0.906	6	1.5	1 1/4	1 1/4	1.250	R/L							
	20-5D	1.102	6	1.5	1 1/4	1 1/4	1.250	R/L	SN□□54□	CVH5	CHX0622	SS54V	FTNA0511	SPR0811	HW40L
	20-6D	1.378	6	1.5	1 1/4	1 1/4	1.250	R/L	SN□□64□	CVH6	CHX0622	SC64V	FTNA0511	SPR0811	HW40L
	24-6E	1.693	7	2	1 1/2	1 1/2	1.500	R/L							

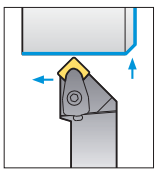
Applicable inserts **B20 ~ B28**

DSSNR/L



SN□□





45°

• R type holder

(inch)

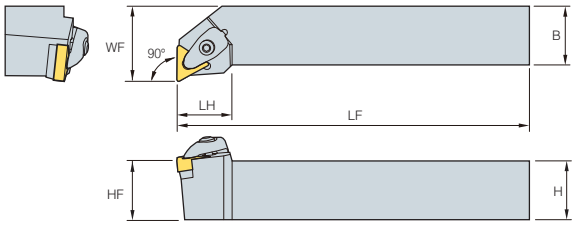
Designation		LH	LF	WF	HF	B	H	HAND	Applicable insert	Clamp	Clamp Screw	Shim	Shim Screw	Spring	Wrench
DSSNR/L	12-3B	1.22	4 1/2	0.600	3/4	3/4	0.750	R/L	SN□□32□	CVH3	CHX0415	SS32V	FTKA0307	SPR0510	HW25P
	12-4B	1.378	4 1/2	0.600	3/4	3/4	0.750	R/L	SN□□43□	CVH4	CHX0518	SS44V	FTKA0410	SPR0714	HW30P
	16-4D	1.378	6	0.790	1	1	1	R/L							
	85-4D	1.378	6	0.790	1 1/4	1	1.250	R/L							
	20-4D	1.378	6	0.990	1 1/4	1 1/4	1.250	R/L							
	16-5D	1.516	6	0.790	1	1	1	R/L	SN□□54□	CVH5	CHX0622	SS54V	FTNA0511	SPR0811	HW40L
	20-5D	1.516	6	0.990	1 1/4	1 1/4	1.250	R/L							
	20-6D	1.811	6	0.990	1 1/4	1 1/4	1.250	R/L	SN□□64□	CVH6	CHX0622	SS64V	FTNA0511	SPR0811	HW40L
	24-6E	1.811	7	1.186	1 1/2	1 1/2	1.500	R/L							

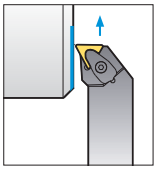
Applicable inserts **B20 ~ B28**

DTFNR/L



TN□□





90°

• R type holder

(inch)

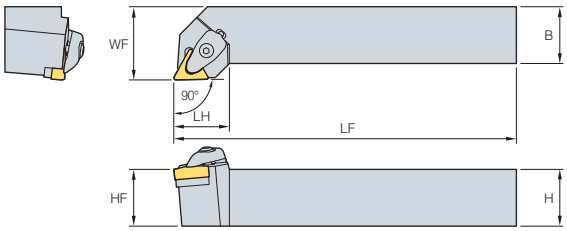
Designation		LH	LF	WF	HF	B	H	HAND	Applicable insert	Clamp	Clamp Screw	Shim	Shim Screw	Spring	Wrench
DTFNR/L	12-3B	0.965	4 1/2	0.600	3/4	3/4	0.750	R/L	TN□□33□	CVH3	CHX0415	ST32V	FTKA0307	SPR0510	HW25P
	16-3D	0.965	6	0.790	1	1	1.000	R/L							
	20-3D	0.965	6	0.990	1 1/4	1 1/4	1.250	R/L							
	16-4D	1.299	6	0.790	1	1	1.000	R/L	TN□□43□	CVH4	CHX0518	ST44V	FTKA0410	SPR0714	HW30P
	85-4D	1.299	6	0.790	1 1/4	1	1.250	R/L							
	20-4D	1.299	6	0.990	1 1/4	1 1/4	1.250	R/L							

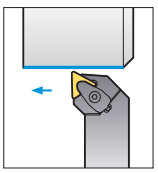
Applicable inserts **B29 ~ B36**

DTGNR/L



TN□□





90°

• R type holder

(inch)

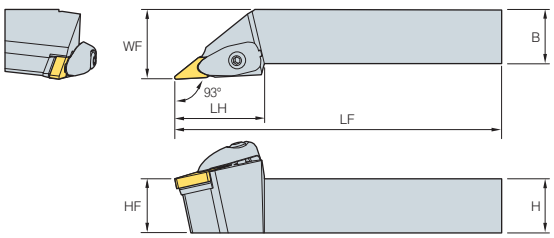
Designation		LH	LF	WF	HF	B	H	HAND	Applicable insert	Clamp	Clamp Screw	Shim	Shim Screw	Spring	Wrench
DTGNR/L	12-3B	0.965	4 1/2	0.600	3/4	3/4	0.750	R/L	TN□□33□	CVH3	CHX0415	ST32V	FTKA0307	SPR0510	HW25P
	16-3D	0.965	6	0.790	1	1	1.000	R/L							
	20-3D	0.965	6	0.990	1 1/4	1 1/4	1.250	R/L							
	16-4D	1.283	6	0.790	1	1	1.000	R/L	TN□□43□	CVH4	CHX0518	ST44V	FTKA0410	SPR0714	HW30P
	85-4D	1.283	6	0.790	1 1/4	1	1.250	R/L							
	20-4D	1.283	6	0.990	1 1/4	1 1/4	1.250	R/L							

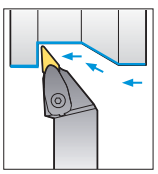
Applicable inserts **B29 ~ B36**

DVJNR/L



VN□□





93°

• R type holder

(inch)

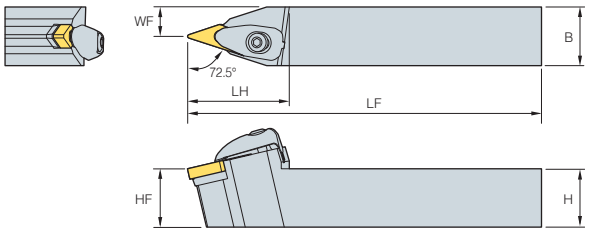
Designation		LH	LF	WF	HF	B	H	HAND	Applicable insert	Clamp	Clamp Screw	Shim	Shim Screw	Spring	Wrench
DVJNR/L	12-3B	1.634	4 1/2	0.600	3/4	3/4	0.750	R/L	VN□□33□	CVH3V	CHX0518	SV32V	FTNA03508	SPR0714	HW30P
	16-3D	1.634	6	0.790	1	1	1.000	R/L							
	20-3D	1.634	6	0.990	1 1/4	1 1/4	1.250	R/L							

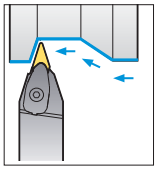
Applicable inserts **B37 ~ B38**

DVVNN



VN□□





72.5°

(inch)

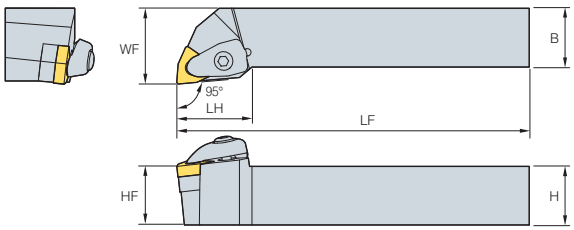
Designation		LH	LF	WF	HF	B	H	HAND	Applicable insert	Clamp	Clamp Screw	Shim	Shim Screw	Spring	Wrench
DVVNN	12-3B	1.575	4 1/2	0.375	3/4	3/4	0.750	N	VN□□33□	CVH3V	CHX0518	SV32V	FTNA03508	SPR0714	HW30P
	16-3D	1.575	6	0.500	1	1	1.000	N							
	20-3D	1.575	6	0.625	1 1/4	1 1/4	1.250	N							

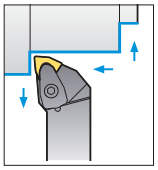
Applicable inserts **B37 ~ B38**

DWLNR/L



WN□□





95°

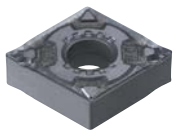
• R type holder

(inch)

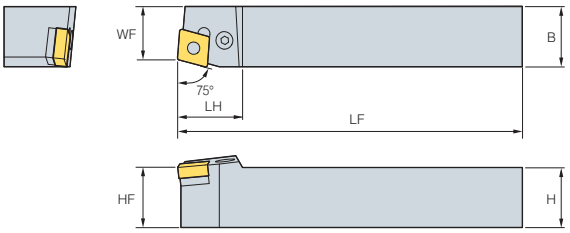
Designation		LH	LF	WF	HF	B	H	HAND	Applicable insert	Clamp	Clamp Screw	Shim	Shim Screw	Spring	Wrench
DWLNR/L	12-3B	1.024	4 1/2	0.600	3/4	3/4	0.750	R/L	WN□□ 33□	CVH3	CHX0415	SW32V	FTKA0307	SPR0510	HW25P
	16-3D	1.024	6	0.790	1	1	1.000	R/L							
	12-4B	1.260	4 1/2	0.600	3/4	3/4	0.750	R/L	WN□□ 43□	CVH4	CHX0518	SW44V	FTKA0410	SPR0714	HW30P
	16-4D	1.260	6	0.790	1	1	1.000	R/L							

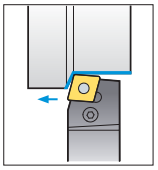
Applicable inserts **B39 ~ B43**

PCBNR/L



CN□□





75°

• R type holder

(inch)

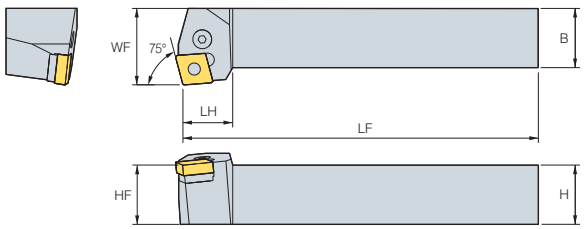
Designation		LH	LF	WF	HF	B	H	HAND	Applicable insert	Lever	Screw	Shim	Shim Pin	Wrench	Shim Pin Punch
PCBNR/L	12-4B	1.063	4 1/2	0.600	3/4	3/4	0.750	R/L	CN□□ 43□	LV4	VHX0821	SC42	SP4	HW30L	LSPS4
	16-4D	1	6	0.790	1	1	0.790	R/L							
	85-4D	1.063	6	1.250	1 1/4	1	1.063	R/L							
	16-5D	1.299	6	0.790	1	1	1.000	R/L	CN□□ 54□	LV5	VHX0825	SC53	SP5	HW30L	LSPS6
	20-5D	1.299	6	0.990	1 1/4	1 1/4	1.250	R/L							
	20-6D	1.496	6	0.990	1 1/4	1 1/4	1.250	R/L	CN□□ 64□	LV6N	VHX1027N	SC63N	SP6N	HW40L	LSPS6
	24-6E	1.496	7	1.186	1 1/2	1 1/2	1.500	R/L							
	24-8E	1.772	7	1.186	1 1/2	1 1/2	1.500	R/L	CN□□ 86□	LV8N	VHX1236N	SC84N	SP8N	HW50L	LSPS8
	24-8E-5	1.772	7	1.186	1 1/2	1 1/2	1.500	R/L	CN□□ 85□						
	32-8G	1.772	10	1.693	2	2	2.000	R/L	CN□□ 86□	LV8N	VHX1236N	SC84N	SP8N	HW50L	LSPS8

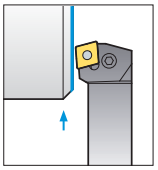
Applicable inserts **B5 ~ B12**

PCKNR/L



CN□□





75°

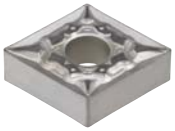
• R type holder

(inch)

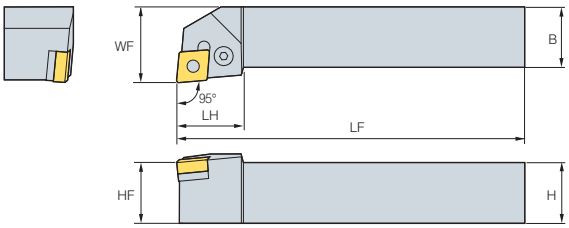
Designation		LH	LF	WF	HF	B	H	HAND	Applicable insert	Lever	Screw	Shim	Shim Pin	Wrench	Shim Pin Punch
PCKNR/L	12-4B	1.063	4 1/2	0.984	3/4	3/4	0.787	R/L	CN□□ 43□	LV4	VHX0821	SC42	SP4	HW30L	LSPS4
	16-4D	1.063	6	1.260	1	1	0.984	R/L							
	85-4D	1.181	6	1.500	1 1/4	1	1.260	R/L							
	20-5D	1.023	6	1.500	1 1/4	1 1/4	1.260	R/L	CN□□ 54□	LV5	VHX0825	SC53	SP5	HW30L	HW30L
	24-5E	0.984	7	2.000	1 1/2	1 1/2	1.500	R/L							

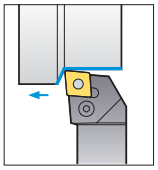
Applicable inserts **B5 ~ B12**

PCLNR/L



CN□□





95°

• R type holder

(inch)

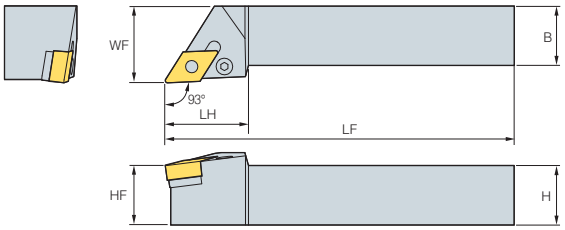
Designation		LH	LF	WF	HF	B	H	HAND	Applicable insert	Lever	Screw	Shim	Shim Pin	Wrench	Shim Pin Punch
PCLNR/L	10-3A	0.787	4	1.000	5/8	5/8	0.625	R/L	CN□□32□	LV3	VHX0617	SC32	SP3	HW25L	LSPS3
	12-3B	0.866	4 1/2	1.000	3/4	3/4	0.750	R/L							
	16-3D	0.866	6	1.250	1	1	1.000	R/L							
	10-4A	1.102	4	1.000	5/8	5/8	0.625	R/L	CN□□43□	LV4	VHX0821	SC42	SP4	HW30L	LSPS4
	12-4B	1.102	4 1/2	1.000	3/4	3/4	0.750	R/L							
	16-4D	1.102	6	1.250	1	1	1.000	R/L							
	85-4D	1.102	6	1.250	1 1/4	1	1.250	R/L							
	20-4D	1.102	6	1.500	1 1/4	1 1/4	1.250	R/L							
	16-5D	1.299	6	1.250	1	1	1.000	R/L	CN□□54□	LV5	VHX0825	SC53	SP5	HW30L	LSPS5
	20-5D	1.299	6	1.500	1 1/4	1 1/4	1.250	R/L							
	16-6D	1.496	6	1.250	1	1	1.000	R/L	CN□□64□	LV6N	VHX1027N	SC63N	SP6N	HW40L	LSPS6
	85-6D	1.496	6	1.250	1 1/4	1	1.250	R/L							
	20-6D	1.496	6	1.500	1 1/4	1 1/4	1.250	R/L							
	24-6D	1.496	6	2.000	1 1/2	1 1/2	1.500	R/L							
	24-6E	1.496	7	2.000	1 1/2	1 1/2	1.500	R/L							
	24-8E	1.772	7	2.000	1 1/2	1 1/2	1.500	R/L	CN□□86□	LV8N	VHX1236N	SC84N	SP8N	HW50L	LSPS8
	32-8G	1.772	10	2.500	2	2	2.000	R/L							
	24-8E-5	1.772	7	2.000	1 1/2	1 1/2	1.500	R/L	CN□□85□	LV8N	VHX1236N	SC84N	SP8N	HW50L	LSPS8
	32-8G-5	1.772	10	2.500	2	2	2.000	R/L							

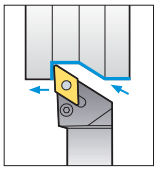
Applicable inserts **B5 ~ B12**

PDJNR/L



DN□□





93°

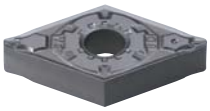
• R type holder

(inch)

Designation		LH	LF	WF	HF	B	H	HAND	Applicable insert	Lever	Screw	Shim	Shim Pin	Wrench	Shim Pin Punch
PDJNR/L	10-3A	0.984	4	0.875	5/8	5/8	0.625	R/L	DN□□33□	LV3	VHX0617	SD317	SP4	HW30L	LSPS4
	12-3B	0.984	4 1/2	1	3/4	3/4	0.75	R/L							
	16-3D	1.181	6	1.25	1	1	1	R/L							
	12-4B-4	1.378	4 1/2	1	3/4	3/4	0.75	R/L	DN□□44□	LV4B	VHX0821	SD42	SP4	HW30L	LSPS4
	16-4D-4	0.984	6	1.25	1	1	1	R/L							
	85-4D-4	1.378	6	1.25	1 1/4	1	1.25	R/L							
	20-4D-4	1.378	6	1.5	1 1/4	1 1/4	1.25	R/L							
	12-4B-3	1.378	4 1/2	1	3/4	3/4	0.75	R/L	DN□□43□	LV4	VHX0821	SD42	SP4	HW30L	LSPS4
	16-4D-3	1.378	6	1.25	1	1	1	R/L							
	20-4D-3	1.378	6	1.5	1 1/4	1 1/4	1.25	R/L							

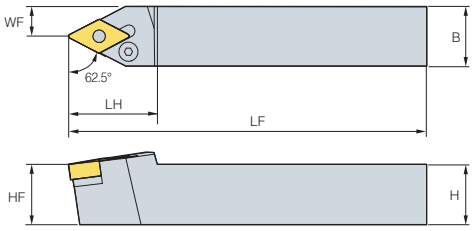
Applicable inserts **B13 ~ B18**

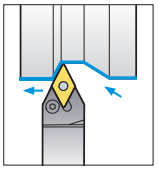
PDNNR/L



DN□□







62.5°

• R type holder

(inch)

Designation		LH	LF	WF	HF	B	H	HAND	Applicable insert	Lever	Screw	Shim	Shim Pin	Wrench	Shim Pin Punch
PDNNR/L	12-4B-4	1.457	4 1/2	0.320	3/4	3/4	0.750	R/L	DN□□ 44□	LV4B	VHX0821	SD42	SP4	HW30L	LSPS4
	16-4D-4	1.457	6	0.500	1	1	1.000	R/L							
	86-4D-4	1.457	6	0.500	1 1/2	1	1.500	R/L							
	20-4D-4	1.457	6	0.625	1 1/4	1 1/4	1.250	R/L							
	16-4D-3	1.457	6	0.500	1	1	1.000	R/L	DN□□ 43□	LV4	VHX0821	SD42	SP4	HW30L	LSPS4
	86-4D-3	1.457	6	0.500	1 1/2	1	1.500	R/L							

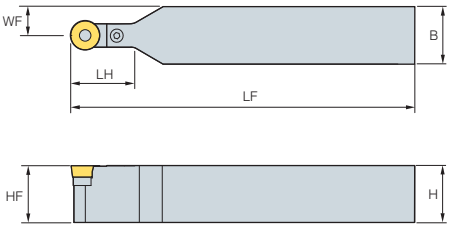
Applicable inserts **B13 ~ B18**

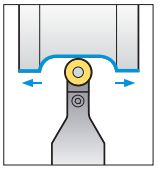
PRDCN



RCMX







(inch)

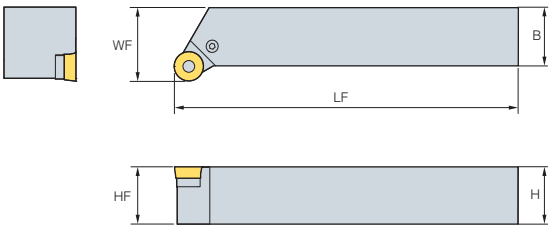
Designation		LH	LF	WF	HF	B	H	HAND	Applicable insert	Lever	Screw	Shim	Shim Pin	Wrench	Shim Pin Punch
PRDCN	12-10D	0.866	6	0.375	3/4	3/4	0.750	N	RCMX1003M0	LR10	VHX0514	SR10	SP3	HW20L	LSPS3
	16-10D	0.945	6	0.689	1	1	1.000	N							
	16-12D	0.945	6	0.500	1	1	1.000	N	RCMX1204M0	LR12	VHX0617	SR12	SP3	HW25L	LSPS3
	12-12C	0.945	5	0.630	3/4	3/4	0.750	N							
	85-12E	0.945	7	0.728	1 1/4	1	1.250	N							
	16-16E	1.181	7	0.807	1	1	1.000	N	RCMX1606M0	LR16	VHX0621	SR16	SP4	HW25L	LSPS4
	85-16E	1.181	7	0.708	1 1/4	1	1.250	N							
	20-16E	1.378	7	0.945	1 1/4	1 1/4	1.250	N							
	20-20E	1.500	7	1.024	1 1/4	1 1/4	1.250	N	RCMX2006M0	LR20	VHX0823	SR20	SP20	HW30L	LSPS5
	24-25E	1.653	7	1.250	1 1/2	1 1/2	1.500	N	RCMX2507M0	LR25	VHX1030	SR25	SP6N	HW40L	LSPS6
	24-25H	1.653	12	1.250	1 1/2	1 1/2	1.500	N							
	32-32H	2.047	12	1.500	2	2	2.000	N	RCMX3209M0	LR32	VHX1236	SR32	SP8N	HW50L	LSPS8

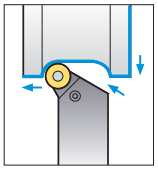
Applicable inserts **B54, B77**

PRGCR/L



RCMX





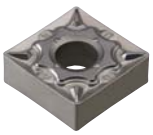
• R type holder

(inch)

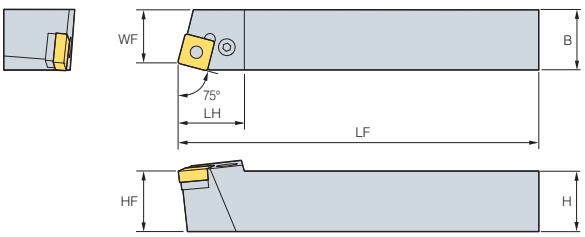
Designation		LH	LF	WF	HF	B	H	HAND	Applicable insert	Lever	Screw	Shim	Shim Pin	Wrench	Shim Pin Punch
PRGCR/L	12-10B	-	4 1/2	1	3/4	3/4	0.750	R/L	RCMX1003M0	LR10	VHX0514	SR10	SP3	HW20L	LSPS3
	16-10D	-	6	1.25	1	1	1.000	R/L							
	12-12B	-	4 1/2	1	3/4	3/4	0.750	R/L	RCMX1204M0	LR12	VHX0617	SR12	SP3	HW25L	LSPS3
	16-12D	-	6	1.25	1	1	1.000	R/L							
	85-12D	-	6	1.25	1 1/4	1	1.250	R/L							
	16-16D	-	6	1.25	1	1	1.000	R/L	RCMX1606M0	LR16	VHX0621	SR16	SP4	HW25L	LSPS4
	85-16D	-	6	1.25	1 1/4	1	1.250	R/L							
	20-20D	-	6	1.5	1 1/4	1 1/4	1.250	R/L	RCMX2006M0	LR20	VHX0823	SR20	SP5-1	HW30L	LSPS5
	24-25D	-	6	2	1 1/2	1 1/2	1.500	R/L	RCMX2507M0	LR25	VHX1030	SR25	SP6N	HW40L	LSPS6

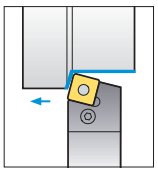
Applicable inserts **B54, B77**

PSBNR/L



SN□□





75°

• R type holder

(inch)

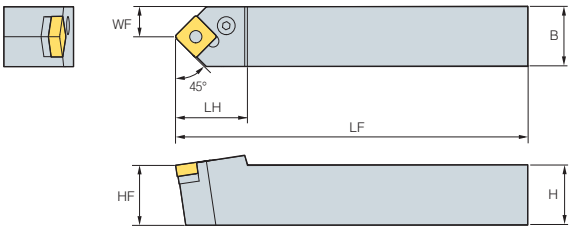
Designation		LH	LF	WF	HF	B	H	HAND	Applicable insert	Lever	Screw	Shim	Shim Pin	Wrench	Shim Pin Punch
PSBNR/L	10-3A	0.827	4	0.500	5/8	5/8	0.625	R/L	SN□□54□	LV3	VHX0617	SS32	SP3	HW25L	LSPS3
	12-3B	0.906	4 1/2	0.600	3/4	3/4	0.750	R/L							
	12-4B	1.102	4 1/2	0.600	3/4	3/4	0.750	R/L	SN□□54□	LV4	VHX0821	SS42	SP4	HW30L	LSPS4
	16-4D	1.102	6	0.790	1	1	1.000	R/L							
	85-4D	1.102	6	0.790	1 1/4	1	1.250	R/L							
	20-4D	1.102	6	0.990	1 1/4	1 1/4	1.250	R/L							
	16-5D	1.378	6	0.790	1	1	1.000	R/L	SN□□64□	LV5	VHX0825	SS53	SP5	HW30L	LSPS5
	20-5D	1.378	6	0.990	1 1/4	1 1/4	1.250	R/L							
	20-6D	1.575	6	0.990	1 1/4	1 1/4	1.250	R/L	SN□□64□	LV6N	VHX1027N	SS63N	SP6N	HW40L	LSPS6
	24-6E	1.575	7	1.186	1 1/2	1 1/2	1.500	R/L							
	24-8E	2.000	7	1.186	1 1/2	1 1/2	1.500	R/L	SN□□85□	LV8N	VHX1236N	SS84N	SP8N	HW50L	LSPS8
	24-8E-6	2.000	7	1.186	1 1/2	1 1/2	1.500	R/L	SN□□86□						
	32-8E	2.000	7	1.382	2	2	2.000	R/L	SN□□85□						
	32-8E-6	2.000	7	1.382	2	2	2.000	R/L	SN□□86□						

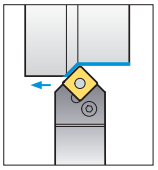
Applicable inserts **B20 ~ B28**

PSDNN



SN□□





45°

(inch)

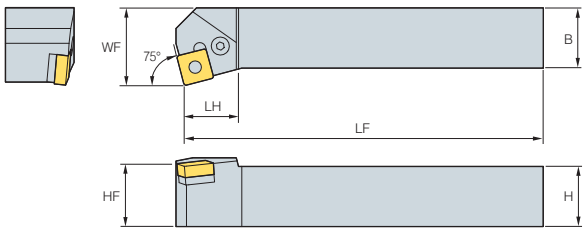
Designation		LH	LF	WF	HF	B	H	HAND	Applicable insert	Lever	Screw	Shim	Shim Pin	Wrench	Shim Pin Punch
PSDNN	10-3A	0.906	4	0.313	5/8	5/8	0.625	N	SN□□32□□	LV3	VHX0617	SS32	SP3	HW25L	LSPS3
	12-4B	1.181	4 1/2	0.375	3/4	3/4	0.750	N	SN□□43□□	LV4	VHX0821	SS42	SP4	HW30L	LSPS4
	16-4D	1.181	6	0.500	1	1	1.000	N							
	85-4D	1.181	6	0.500	1 1/4	1	1.250	N							
	20-4D	1.575	6	0.625	1 1/4	1 1/4	1.250	N							
	16-5D	1.575	6	0.500	1	1	1.000	N	SN□□54□□	LV5	VHX0825	SS53	SP5	HW30L	LSPS5
	20-5D	1.575	6	0.625	1 1/4	1 1/4	1.250	N							
	85-6D	1.575	6	0.500	1 1/4	1	1.250	N	SN□□64□□	LV6N	VHX1027N	SS63N	SP6N	HW40L	LSPS6
	20-6D	1.575	6	0.625	1 1/4	1 1/4	1.250	N							
	24-6E	1.575	7	0.750	1 1/2	1 1/2	1.500	N							
	24-8E	1.969	7	0.750	1 1/2	1 1/2	1.500	N	SN□□85□□	LV8N	VHX1236N	SS84N	SP8N	HW50L	LSPS8
	32-8E	1.969	7	1.000	2	2	2.000	N							
	24-8E-6	1.969	7	0.750	1 1/2	1 1/2	1.500	N	SN□□86□□	LV8N	VHX1236N	SS84N	SP8N	HW50L	LSPS8
	32-8E-6	1.969	7	1.000	2	2	2.000	N							

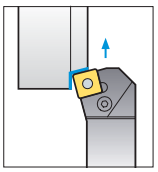
Applicable inserts **B20 ~ B28**

PSKNR/L



SN□□





75°

• R type holder

(inch)

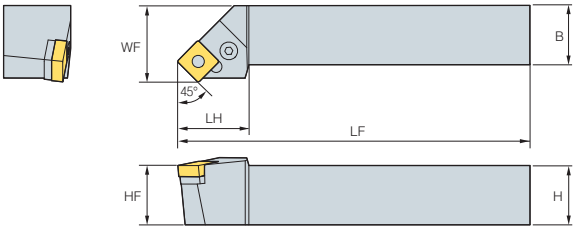
Designation		LH	LF	WF	HF	B	H	HAND	Applicable insert	Lever	Screw	Shim	Shim Pin	Wrench	Shim Pin Punch
PSKNR/L	10-3A	0.669	4	0.750	5/8	5/8	0.625	R/L	SN□□32□□	LV3	VHX0617	SS32	SP3	HW25L	LSPS3
	12-3B	0.787	4 1/2	1.000	3/4	3/4	0.750	R/L							
	12-4B	1.024	4 1/2	1.000	3/4	3/4	0.750	R/L	SN□□43□□	LV4	VHX0821	SS42	SP4	HW30L	LSPS4
	16-4D	1.024	6	1.250	1	1	1.000	R/L							
	20-4D	1.024	6	1.500	1 1/4	1 1/4	1.250	R/L							
	16-5D	1.260	6	1.250	1	1	1.000	R/L	SN□□54□□	LV5	VHX0825	SS53	SP5	HW30L	LSPS5
	20-5D	1.260	6	1.500	1 1/4	1 1/4	1.250	R/L							
	20-6D	1.417	6	1.500	1 1/4	1 1/4	1.250	R/L	SN□□64□□	LV6N	VHX1027N	SS63N	SP6N	HW40L	LSPS6
	24-6E	1.575	7	2.000	1 1/2	1 1/2	1.500	R/L							
	24-8E	1.732	7	2.000	1 1/2	1 1/2	1.500	R/L	SN□□85□□	LV8N	VHX1236N	SS84N	SP8N	HW50L	LSPS8
	24-8E-6	1.732	7	2.000	1 1/2	1 1/2	1.500	R/L	SN□□86□□						
	32-8E-6	1.476	7	2.000	2	2	2.000	R/L	SN□□86□□						

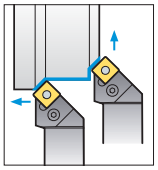
Applicable inserts **B20 ~ B28**

PSSNR/L



SN□□





45°

• R type holder

(inch)

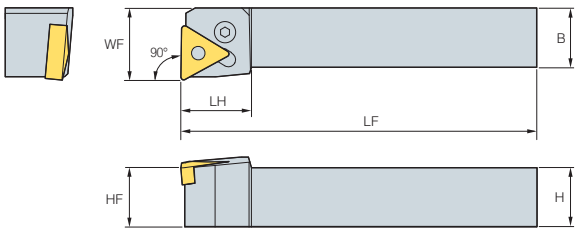
Designation		LH	LF	WF	HF	B	H	HAND	Applicable insert	Lever	Screw	Shim	Shim Pin	Wrench	Shim Pin Punch
PSSNR/L	10-3A	0.984	4	0.750	5/8	5/8	0.625	R/L	SN□□32□	LV3	VHX0617	SS32	SP3	HW25L	LSPS3
	12-4B	1.181	4 1/2	1.000	3/4	3/4	0.750	R/L	SN□□43□	LV4	VHX0821	SS42	SP4	HW30L	LSPS4
	16-4D	1.417	6	1.250	1	1	1.000	R/L							
	85-4D	1.417	6	1.250	1 1/4	1	1.250	R/L							
	20-4D	1.575	6	1.500	1 1/4	1 1/4	1.250	R/L							
	16-5D	1.417	6	1.250	1	1	1.000	R/L	SN□□54□	LV5	VHX0825	SS53	SP5	HW30L	LSPS5
	20-5D	1.772	6	1.500	1 1/4	1 1/4	1.250	R/L							
	20-6D	1.772	6	1.500	1 1/4	1 1/4	1.250	R/L	SN□□64□	LV6N	VHX1027N	SS63N	SP6N	HW40L	LSPS6
	24-6F	1.772	8	2.000	1 1/2	1 1/2	1.500	R/L							
	24-6E	1.772	7	2.000	1 1/2	1 1/2	1.500	R/L							
	24-8E	1.969	7	2.000	1 1/2	1 1/2	1.500	R/L	SN□□85□	LV8N	VHX1236N	SS84N	SP8N	HW50L	LSPS8
	24-8E-6	1.969	7	2.000	1 1/2	1 1/2	1.500	R/L	SN□□86□						

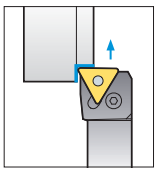
Applicable inserts **B20 ~ B28**

PTFNR/L



TN□□





90°

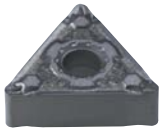
• R type holder

(inch)

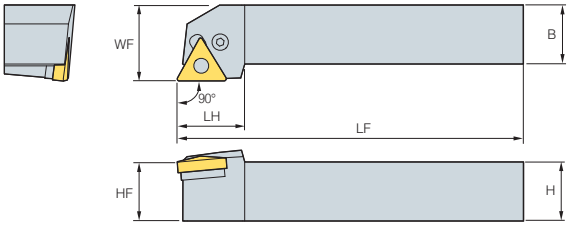
Designation		LH	LF	WF	HF	B	H	HAND	Applicable insert	Lever	Screw	Shim	Shim Pin	Wrench	Shim Pin Punch
PTFNR/L	10-3A	0.787	4	0.750	5/8	5/8	0.625	R/L	TN□□33□	LV3	VHX0617	ST317	SP3	HW25L	LSPS3
	12-3B	0.787	4 1/2	1.000	3/4	3/4	0.750	R/L							
	16-3D	0.787	6	1.250	1	1	1.000	R/L							
	16-4D	0.984	6	1.250	1	1	1.000	R/L	TN□□43□	LV4	VHX0821	ST42	SP4	HW30L	LSPS4
	20-4D	0.984	6	1.500	1 1/4	1 1/4	1.250	R/L							
	20-5D	1.339	6	1.500	1 1/4	1 1/4	1.250	R/L	TN□□54□	LV5	VHX0825	ST53	SP5	HW30L	LSPS5
	24-5E	1.339	7	2.000	1 1/2	1 1/2	1.500	R/L							

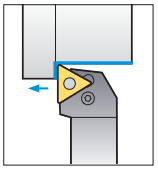
Applicable inserts **B29 ~ B36**

PTGNR/L



TN□□





90°

• R type holder

(inch)

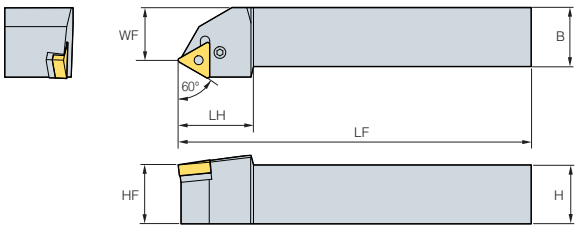
Designation		LH	LF	WF	HF	B	H	HAND	Applicable insert	Lever	Screw	Shim	Shim Pin	Wrench	Shim Pin Punch
PTGNR/L	08-2K	0.630	3 3/20	0.625	1/2	1/2	0.500	R/L	TN□□21.5□	LV2	VHX0509B	-	-	HW20L	-
	10-2A	0.709	4	0.750	5/8	5/8	0.625	R/L							
	12-2B	0.748	4 1/2	0.100	3/4	3/4	0.750	R/L							
	16-2D	0.787	6	1.250	1	1	1.000	R/L							
	10-3A	0.787	4	0.750	5/8	5/8	0.625	R/L	TN□□33□	LV3	VHX0617	ST317	SP3	HW25L	LSPS3
	12-3B	0.787	4 1/2	1.000	3/4	3/4	0.750	R/L							
	16-3D	0.787	6	1.200	1	1	1.000	R/L							
	20-3D	0.787	6	1.500	1 1/4	1 1/4	1.250	R/L							
	16-4D	1.102	6	1.250	1	1	1.000	R/L	TN□□43□	LV4	VHX0821	ST42	SP4	HW30L	LSPS4
	20-4D	1.102	6	1.500	1 1/4	1 1/4	1.250	R/L							
	20-5D	1.299	6	1.500	1 1/4	1 1/4	1.250	R/L	TN□□54□	LV5	VHX0825	ST53	SP5	HW30L	LSPS5
	24-5E	1.299	7	2.000	1 1/2	1 1/2	1.500	R/L							

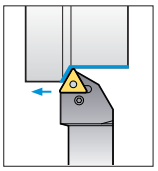
Applicable inserts **B29 ~ B36**

PTTNR/L



TN□□





60°

• R type holder

(inch)

Designation		LH	LF	WF	HF	B	H	HAND	Applicable insert	Lever	Screw	Shim	Shim Pin	Wrench	Shim Pin Punch
PTTNR/L	10-3A	0.984	4	0.511	5/8	5/8	0.625	R/L	TN□□33□	LV3	VHX0617	ST317	SP3	HW25L	LSPS3
	12-3B	0.984	4 1/2	0.669	3/4	3/4	0.750	R/L							
	16-3D	1.26	6	0.866	1	1	1.000	R/L							
	16-4D	1.26	6	0.866	1	1	1.000	R/L	TN□□43□	LV4	VHX0821	ST42	SP4	HW30L	LSPS4

Applicable inserts **B29 ~ B36**

PWLNR/L



WN□□

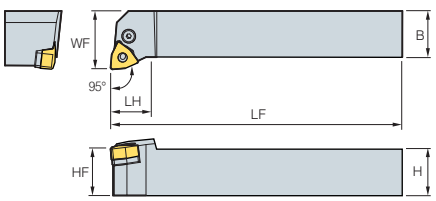


Fig. 1

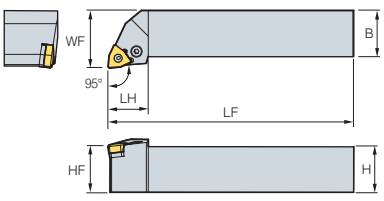
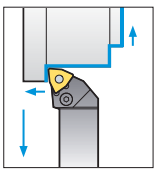


Fig. 2



95°

• R type holder

(inch)

Designation		LH	LF	WF	HF	B	H	HAND	Applicable insert	Lever	Screw	Shim	Shim Pin	Wrench	Shim Pin Punch	Fig.
PWLNR/L	10-3A	0.787	4	0.750	5/8	5/8	0.625	R/L	WN□□33□	LV3	VHX0617	SW317	SP3	HW25L	LSPS3	1
	12-3B	0.787	4 1/2	1.000	3/4	3/4	0.750	R/L								
	16-3D	0.787	6	1.250	1	1	1.000	R/L								
	12-4B	1.024	4 1/2	1.000	3/4	3/4	0.750	R/L	WN□□43□	LV4	VHX0821	SW42	SP4	HW30L	LSPS4	2
	16-4D	1.024	6	1.250	1	1	1.000	R/L								

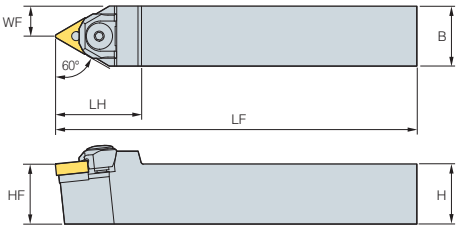
Applicable inserts **B39 ~ B43**

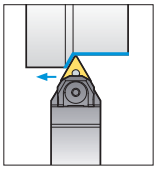
WTENN



TN□□







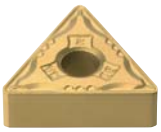
60°

(inch)

Designation		LH	LF	WF	HF	B	H	HAND	Applicable insert	Wedge Clamp	Screw	Stopper Ring	Shim	Shim Pin	Nut	Wrench
WTENN	**12-3C**	1.417	5	0.375	3/4	3/4	0.750	N	TN□□33□	CMH6R6	MHX0626	ER04	ST32M	SP3M-1 / SP3M	N0407	HW30L
	16-3D	1.417	6	0.500	1	1	1.000	N								
	16-4D	1.654	6	0.500	1	1	1.000	N	TN□□43□	CMH6R1	MHX0626	ER04	ST43M	SP4M	N0508	HW30L
	20-4E	1.654	7	0.625	1 1/4	1 1/4	1.250	N								

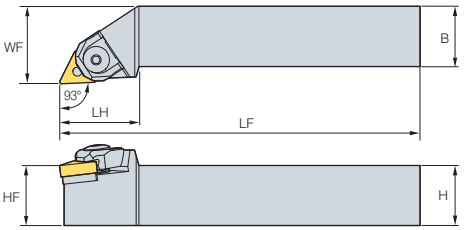
Applicable inserts **B29 ~ B36**

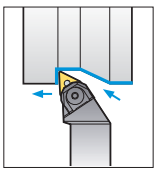
WTJNR/L



TN□□







93°

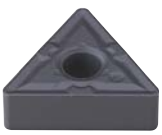
• R type holder

(inch)

Designation		LH	LF	WF	HF	B	H	HAND	Applicable insert	Wedge Clamp	Screw	Stopper Ring	Shim	Shim Pin	Nut	Wrench
WTJNR/L	**12-3B**	1.299	4 1/2	1.000	3/4	3/4	0.750	R/L	TN□□33□	CMH6R6	MHX0626	ER04	ST32M	SP3M-1 / SP3M	N0407	HW30L
	16-3D	1.299	6	1.250	1	1	1.000	R/L								
	20-3D	1.299	6	1.500	1 1/4	1 1/4	1.250	R/L								
	16-4D	1.387	6	1.250	1	1	1.000	R/L	TN□□43□	CMH6R1	MHX0626	ER04	ST43M	SP4M	N0508	HW30L
	20-4D	1.387	6	1.500	1 1/4	1 1/4	1.250	R/L								

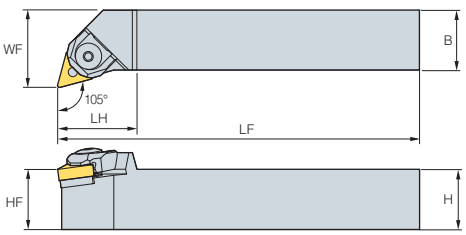
Applicable inserts **B29 ~ B36**

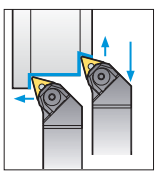
WTXNR/L



TN□□







105°

• R type holder

(inch)

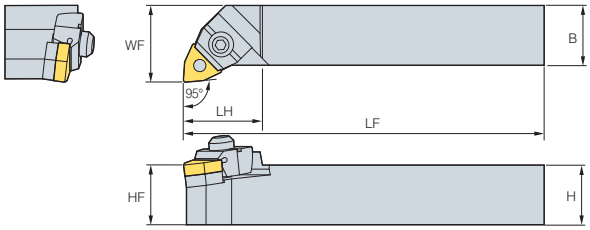
Designation		LH	LF	WF	HF	B	H	HAND	Applicable insert	Wedge Clamp	Screw	Stopper Ring	Shim	Shim Pin	Nut	Wrench
WTXNR/L	**12-3B**	1.181	4 1/2	1.000	3/4	3/4	0.750	R/L	TN□□33□	CMH6R6	MHX0626	ER04	ST32M	SP3M-1 / SP3M	N0407	HW30L
	16-3D	1.299	6	1.250	1	1	1.000	R/L								
	20-3D	1.299	6	1.500	1 1/4	1 1/4	1.250	R/L								

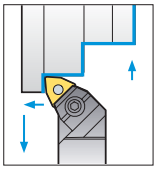
Applicable inserts **B29 ~ B36**

WWLNR/L



WN□□





95°

• R type holder

(inch)

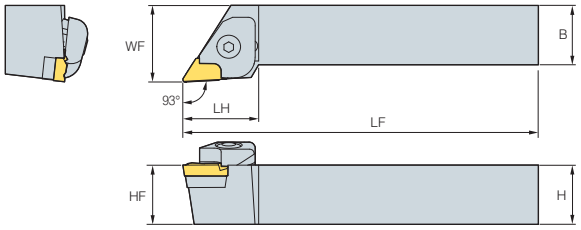
Designation		LH	LF	WF	HF	B	H	HAND	Applicable insert	Wedge Clamp	Screw	Stopper Ring	Shim	Shim Pin	Nut	Wrench
WWLNR/L	12-4B	1.260	4 1/2	1.000	3/4	3/4	0.750	R/L	WN□□43□	CMH6R/L3	MHX0630	CR05	SW43M	SP2M	N0508	HW30L
	16-4D	1.299	6	1.250	1	1	1.000	R/L		CMH6R2				SP4M		HW40L
	20-4F	1.299	8	1.500	1 1/4	1 1/4	1.250	R/L		CMH6R2						

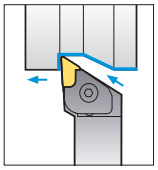
Applicable inserts **B39 ~ B43**

CKJNR/L



KN□□





93°

• R type holder

(inch)

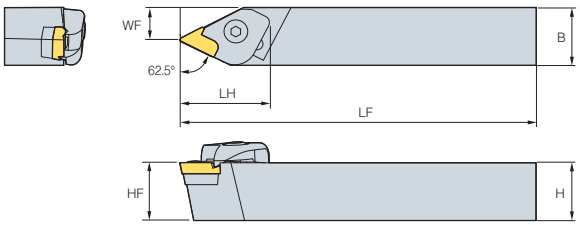
Designation		LH	LF	WF	HF	B	H	HAND	Applicable insert	Clamp	Clamp Screw	Spring	Shim	Pin + Spring	Shim Screw	Wrench
CKJNR	12-3B	1.260	4 1/2	1.120	3/4	3/4	0.750	R	KN□□1604□□R	CTH6R1	CHX0625	SR3	SK33C	PN0515 SR4	SHX0310	HW20L HW40L
	16-3D	1.260	6	1.250	1	1	1.000	R								
	85-3D	1.260	6	1.250	1 1/4	1	1.250	R								
	85-3E	1.260	7	1.250	1 1/4	1	1.250	R								
	20-3D	1.260	6	1.500	1 1/4	1 1/4	1.250	R								
	24-3E	1.260	7	2.000	1 1/2	1 1/2	1.500	R								
CKJNL	12-3B	1.260	4 1/2	1.000	3/4	3/4	0.750	L	KN□□1604□□L	CTH6L1	CHX0625	SR3	SK33CL	PN0515 SR4	SHX0310	HW20L HW40L
	16-3D	1.260	6	1.250	1	1	1.000	L								
	20-3D	1.260	6	1.500	1 1/4	1 1/4	1.250	L								
	24-3E	1.260	7	2.000	1 1/2	1 1/2	1.500	L								

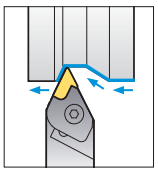
Applicable inserts **B19**

CKNNR/L



KN□□





62.5°

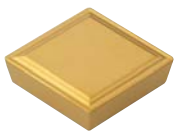
• R type holder

(inch)

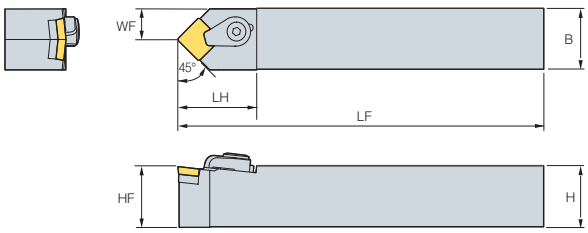
Designation		LH	LF	WF	HF	B	H	HAND	Applicable insert	Clamp	Clamp Screw	Spring	Shim	Pin + Spring	Shim Screw	Wrench
CKNNR	16-3D	1.457	6	0.570	1	1	1.000	R	KN□□1604□□R	CTH6R1	CHX0625	SR3	SK33C	PN0515 SR4	SHX0310	HW20L HW40L
	20-3D	1.457	6	0.660	1 1/4	1 1/4	1.250	R								
CKNNL	16-3D	1.457	6	0.570	1	1	1.000	L	KN□□1604□□L	CTH6L1	CHX0625	SR3	SK33CL	PN0515 SR4	SHX0310	HW20L HW40L
	20-3D	1.457	6	0.660	1 1/4	1 1/4	1.250	L								

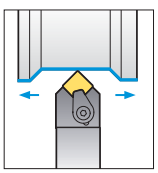
Applicable inserts **B19**

CSDPN



SP□R





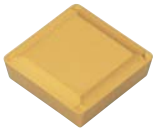
45°

(inch)

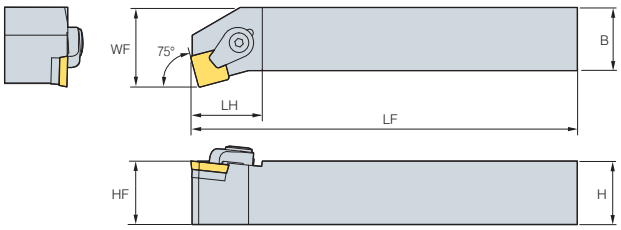
Designation		LH	LF	WF	HF	B	H	HAND	Applicable insert	Clamp	Clamp Screw	Shim	Shim Pin	C-Ring	Wrench
CSDPN	10-3A	1.181	4	0.313	5/8	5/8	0.625	N	SP□R32□	CH53R1	CH0515C	SS32C	SP3C	CR03C	HW25L
	16-4D	1.378	6	0.500	1	1	1.000	N	SP□R42□	CH6R5	CHX0622C	SS42C	SP3C	CR04C	HW30L

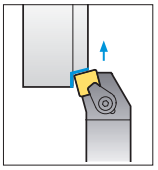
Applicable inserts **B56 ~ B57**

CSKPR/L



SP□R





75°

• R type holder

(inch)

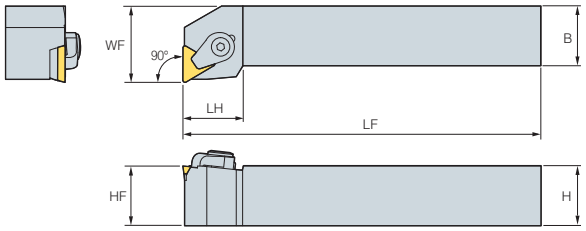
Designation		LH	LF	WF	HF	B	H	HAND	Applicable insert	Clamp	Clamp Screw	Shim	Shim Pin	C-Ring	Wrench
CSKPR/L	**16-4D**	1.260	6	1.250	1	1	0.750	R/L	SP□R42□	CH6R5	CHX0622C	SS42C	SP3C	CR04C	HW30L

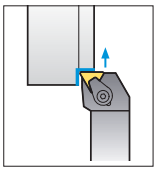
Applicable inserts **B56 ~ B57**

CTFPR/L



TP□R





90°

• R type holder

(inch)

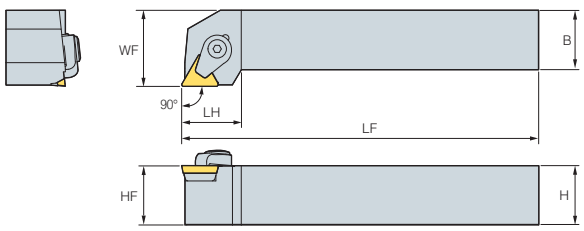
Designation		LH	LF	WF	HF	B	H	HAND	Applicable insert	Clamp	Clamp Screw	Shim	Shim Pin	C-Ring	Wrench
CTFPR/L	**12-4B**	1.260	4 1/2	1.000	3/4	3/4	0.750	R/L	TP□R32□	CH6R5	CHX0622C	ST32C	SP3C	CR04C	HW30L
	16-4D	1.260	6	1.250	1	1	1.000	R/L							

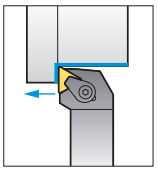
Applicable inserts **B61 ~ B64**

CTGPR/L



TP□R





90°

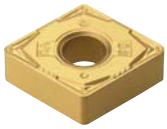
• R type holder

(inch)

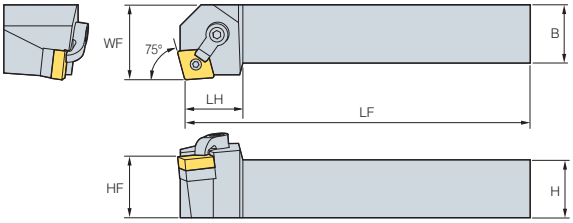
Designation		LH	LF	WF	HF	B	H	HAND	Applicable insert	Clamp	Clamp Screw	Shim	Shim Pin	C-Ring	Wrench
CTGPR/L	**08-2K**	0.787	3 3/20	0.625	1/2	1/2	0.500	R/L	TP□R22□	CH53R1	CHX0515C	-	-	CR03C	HW25L
	10-2K	0.787	3 1/8	0.750	5/8	5/8	0.625	R/L							
	12-2B	0.787	4 1/2	0.750	3/4	3/4	0.625	R/L							
	12-3B	0.984	4 1/2	1.000	3/4	3/4	0.750	R/L	TP□R32□	CH6R5	CHX0622C	ST32C	SP3C	CR04C	HW30L
	16-3D	0.984	6	1.250	1	1	1.000	R/L							
	16-4D	1.260	6	1.250	1	1	1.000	R/L	TP□R43□	CH83R1	CHX0823C	ST43C	SP4C	CR05C	HW40L
	20-4D	1.260	6	1.500	1 1/4	1 1/4	1.250	R/L							

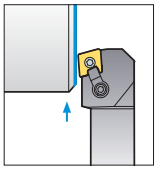
Applicable inserts **B61 ~ B64**

MCKNR/L



CN□□





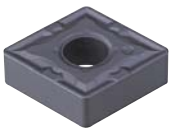
75°
• R type holder

(inch)

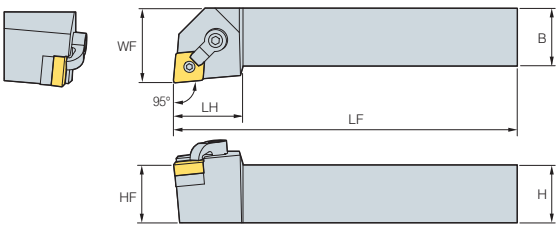
Designation		LH	LF	WF	HF	B	H	HAND	Applicable insert	Clamp	Clamp Screw	Shim	Shim Pin	Wrench
MCKNR/L	12-4B	1.250	4 1/2	1.000	3/4	3/4	0.750	R/L	CN□□R42□	CDH6N	DHA1/4-25	SC43D	SP4D	HW31.8L HW23.8L
	16-4D	1.250	6	1.250	1	1	1.000	R/L						
	20-4D	1.250	6	1.400	1 1/4	1 1/4	1.250	R/L						

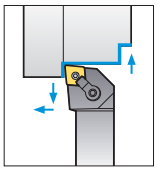
Applicable inserts **B5 ~ B12**

MCLNR/L



CN□□





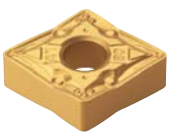
95°
• R type holder

(inch)

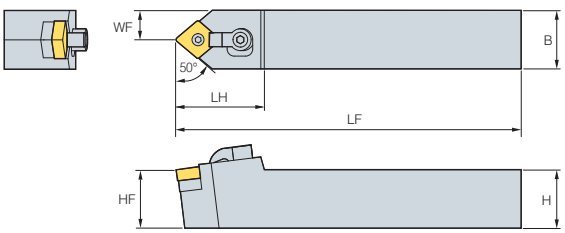
Designation		LH	LF	WF	HF	B	H	HAND	Applicable insert	Clamp	Clamp Screw	Shim	Shim Pin	Wrench
MCLNR/L	10-3A	1.000	4	0.875	5/8	5/8	0.625	R/L	CN□□32□	CDH7N	DHA10-32-19	SC32D	SP3DS	HW23.8L HW19.8L
	12-3B	1.000	4 1/2	1.000	3/4	3/4	0.750	R/L						
	16-3C	1.000	5	1.250	1	1	1.000	R/L						
	12-4B	1.250	4 1/2	1.000	3/4	3/4	0.750	R/L	CN□□43□	CDH6N	DHA1/4-25	SC43D	SP4D	HW31.8L HW23.8L
	16-4D	1.250	6	1.250	1	1	1.000	R/L						
	85-4D	1.250	6	1.250	1 1/2	1	1.250	R/L						
	20-4D	1.250	6	1.500	1 1/4	1 1/4	1.250	R/L						
	16-5D	1.299	6	1.250	1	1	1.000	R/L	CN□□54□	CDH8N	DHA5/16-32	SC53D	SP5D	HW39.7L HW31.8L
	20-5D	1.299	6	1.500	1 1/4	1 1/4	1.250	R/L						
	24-5E	1.299	7	2.000	1 1/2	1 1/2	1.500	R/L						
	16-6D	1.102	6	1.250	1	1	1.000	R/L	CN□□64□	CDH8N	DHA5/16-32	SC63D	SP6D	HW39.7L HW35.7L
	20-6D	1.102	6	1.500	1 1/4	1 1/4	1.250	R/L						
	24-6E	1.102	7	2.000	1 1/2	1 1/2	1.500	R/L						
	26-8E	1.102	7	2.000	1 1/2	1 1/2	1.500	R/L	CN□□85□	CDH8N3	DHA3/8-35	SC84D	SP8D	HW39.7L HW47.6L

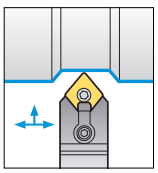
Applicable inserts **B5 ~ B12**

MCMNN



CN□□





50°

(inch)

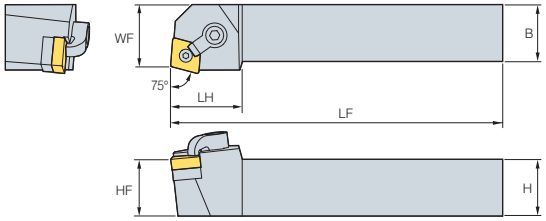
Designation		LH	LF	WF	HF	B	H	HAND	Applicable insert	Clamp	Clamp Screw	Shim	Shim Pin	Wrench
MCMNN	12-4B	1.250	4 1/2	0.375	3/4	3/4	0.750	N	CN□□43□	CDH6N	DHA1/4-25	SC43D	SP4D	HW31.8L HW23.8L
	16-4D	1.250	6	0.500	1	1	1.000	N						
	20-4D	1.250	6	0.625	1 1/4	1 1/4	1.250	N						
	16-5D	1.500	6	0.500	1	1	1.000	N	CN□□54□	CDH8N	DHA5/16-32	SC53D	SP5D	HW39.7L HW31.8L
	20-5D	1.500	6	0.625	1 1/4	1 1/4	1.250	N						
	20-6D	1.500	6	0.625	1 1/4	1 1/4	1.250	N	CN□□64□	CDH8N	DHA5/16-32	SD63D	SP6D	HW39.7L HW35.7L
	24-6E	1.728	7	0.750	1 1/2	1 1/2	1.500	N						

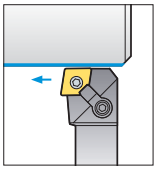
Applicable inserts **B5 ~ B12**

MCRNR/L



CN□□





75°

• R type holder

(inch)

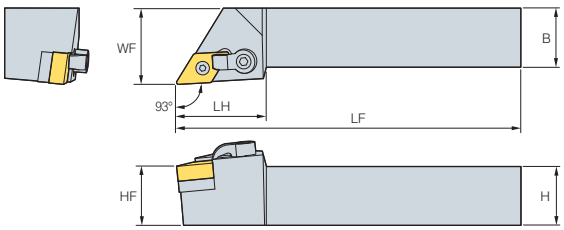
Designation		LH	LF	WF	HF	B	H	HAND	Applicable insert	Clamp	Clamp Screw	Shim	Shim Pin	Wrench
MCRNR/L	12-4B	1.250	4 1/2	0.751	3/4	3/4	0.750	R/L	CN□□43□	CDH8N1	DHA5/16-32	SC43D	SP4D	HW39.7L HW23.8L
	16-4D	1.250	6	1.251	1	1	1.000	R/L						
	16-5D	1.299	6	1.251	1	1	1.000	R/L	CN□□54□	CDH8N1	DHA5/16-32	SC53D	SP5D	HW39.7L HW31.8L
	20-5D	1.299	6	1.500	1 1/4	1 1/4	1.250	R/L						
	20-6D	1.514	6	1.501	1 1/4	1 1/4	1.250	R/L	CN□□64□	CDH8N1	DHA5/16-32	SC63D	SP6D	HW39.7L HW35.7L
	24-6E	1.514	7	2.001	1 1/2	1 1/2	1.500	R/L						

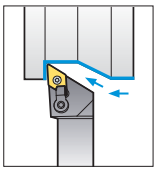
Applicable inserts **B5 ~ B12**

MDJNR/L



DN□□





93°

• R type holder

(inch)

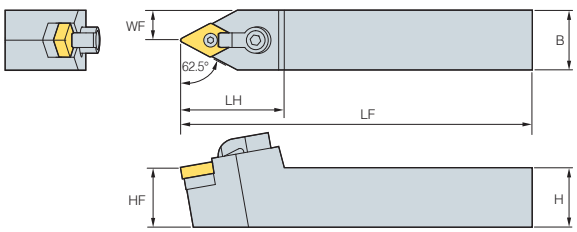
Designation		LH	LF	WF	HF	B	H	HAND	Applicable insert	Clamp	Clamp Screw	Shim	Shim Pin	Wrench
MDJNR/L	12-3B	1.250	4 1/2	1.000	3/4	3/4	0.750	R/L	DN□□33□	CDH6N	DHA1/4-19	SD32D	SP3D	HW31.8L HW19.8L
	16-3D	1.250	6	1.250	1	1	1.000	R/L						
	12-4B-3	1.420	4 1/2	1.000	3/4	3/4	0.750	R/L	DN□□43□	CDH6N	DHA1/4-25	SD43D	SP4D	HW31.8L HW23.8L
	16-4D-3	1.420	6	1.250	1	1	1.000	R/L						
	20-4D-3	1.420	6	1.500	1 1/4	1 1/4	1.250	R/L						
	12-4B-4	1.420	4 1/2	1.000	3/4	3/4	0.750	R/L	DN□□44□	CDH6N	DHA1/4-25	SD43D	SP4DL	HW31.8L HW23.8L
	16-4D-4	1.420	6	1.250	1	1	1.000	R/L						
	20-4D-4	1.420	6	1.500	1 1/4	1 1/4	1.250	R/L						

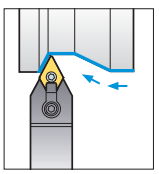
Applicable inserts **B13 ~ B18**

MDNNN



DN□□





62.5°

(inch)

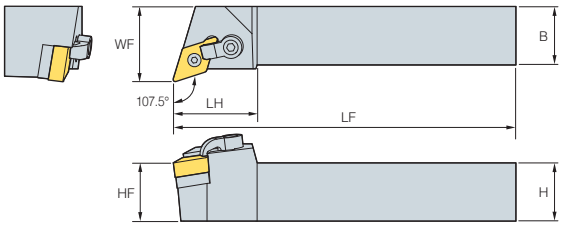
Designation		LH	LF	WF	HF	B	H	HAND	Applicable insert	Clamp	Clamp Screw	Shim	Shim Pin	Wrench
MDNNN	16-4D-3	1.614	6	0.500	1	1	1.000	N	DN□□43□	CDH8N	DHA5/16-32	SD43D	SP4D	HW39.7L HW23.8L
	16-4D-4	1.614	6	0.500	1	1	1.000	N	DN□□44□	CDH8N	DHA5/16-32	SD43D	SP4DL	HW39.7L HW23.8L

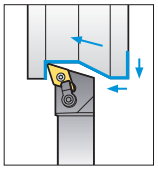
Applicable inserts **B13 ~ B18**

MDQNR/L



DN□□





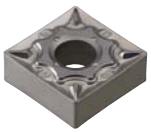
107.5°
• R type holder

(inch)

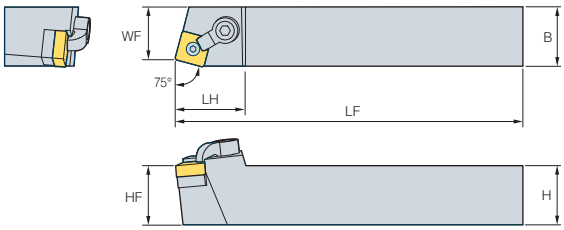
Designation		LH	LF	WF	HF	B	H	HAND	Applicable insert	Clamp	Clamp Screw	Shim	Shim Pin	Wrench
MDQNR/L	16-4D-4	1.614	6	1.250	1	1	0.750	R/L	DN□□44□	CDH6N	DHA1/4-25	SD43D	SP4D	HW31.8L HW23.8L
	20-4D-4	1.614	6	1.500	1 1/4	1 1/4	1.000	R/L						
	16-4D-3	1.614	6	1.250	1	1	0.750	R/L	DN□□43□	CDH6N	DHA1/4-25	SD43D	SP4DL	HW31.8L HW23.8L
	20-4D-3	1.614	6	1.500	1 1/4	1 1/4	1.000	R/L						

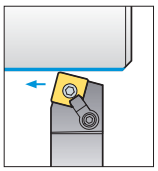
Applicable inserts **B13 ~ B18**

MSBNR/L



SN□□





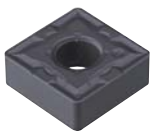
75°
• R type holder

(inch)

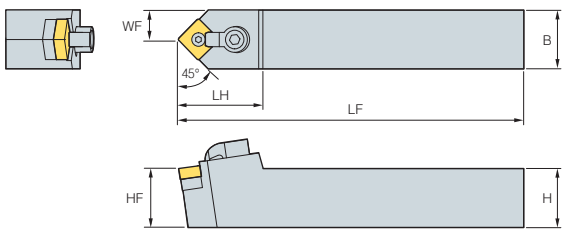
Designation		LH	LF	WF	HF	B	H	HAND	Applicable insert	Clamp	Clamp Screw	Shim	Shim Pin	Wrench
MSBNR/L	12-4B	1.250	4 1/2	0.669	3/4	3/4	0.750	R/L	SN□□43□	CDH8N1	DHA5/16-32	SS43D	SP4D	HW39.7L HW23.8L
	16-4D	1.250	6	0.866	1	1	1.000	R/L						
	16-5D	1.378	6	0.866	1	1	1.000	R/L	SN□□54□	CDH8N	DHA5/16-32	SS53D	SP5D	HW39.7L HW31.8L
	20-5D	1.378	6	0.866	1 1/4	1 1/4	1.250	R/L						
	20-6D	1.500	6	1.063	1 1/4	1 1/4	1.250	R/L	SN□□64□	CDH8N	DHA5/16-32	SS63D	SP6D	HW39.7L HW35.7L
	24-6E	1.500	7	1.378	1 1/2	1 1/2	1.500	R/L						

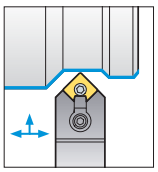
Applicable inserts **B20 ~ B28**

MSDNN



SN□□





45°

(inch)

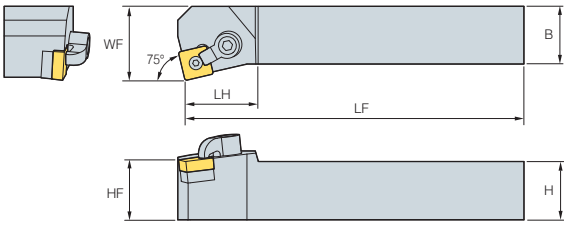
Designation		LH	LF	WF	HF	B	H	HAND	Applicable insert	Clamp	Clamp Screw	Shim	Shim Pin	Wrench
MSDNN	10-3A	1.102	4	0.313	5/8	5/8	0.625	N	SN□□32□	CDH7N	DHA10-32-19	SS32D	SP3DS	HW19.8L HW23.8L
	12-3B	1.102	4 1/2	0.375	3/4	3/4	0.750	N						
	12-4B	1.250	4 1/2	0.375	3/4	3/4	0.750	N	SN□□43□	CDH8N1	DHA5/16-32	SS43D	SP4D	HW39.7L HW23.8L
	16-4D	1.250	6	0.500	1	1	1.000	N						
	85-4D	1.250	6	0.500	1 1/4	1	1.250	N						
	16-5D	1.378	6	0.500	1	1	1.000	N	SN□□54□	CDH8N	DHA5/16-32	SS53D	SP5D	HW39.7L HW31.8L
	85-5D	1.378	6	0.500	1 1/4	1	1.250	N						
	20-5D	1.378	6	0.625	1 1/4	1 1/4	1.250	N						
	24-5E	1.378	7	0.750	1 1/2	1 1/2	1.500	N						
	20-6D	1.728	6	0.625	1 1/4	1 1/4	1.250	N	SN□□64□	CDH8N	DHA5/16-32	SS63D	SP6D	HW39.7L HW35.7L
	24-6E	1.728	7	0.750	1 1/2	1 1/2	1.500	N						

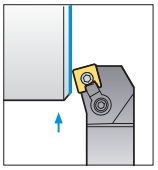
Applicable inserts **B20 ~ B28**

MSKNR/L



SN□□





75°

• R type holder

(inch)

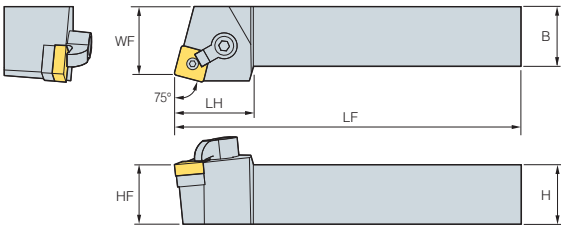
Designation		LH	LF	WF	HF	B	H	HAND	Applicable insert	Clamp	Clamp Screw	Shim	Shim Pin	Wrench
MSKNR/L	10-3A	1.102	4	0.875	5/8	5/8	0.625	R/L	SN□□32□	CDH7N	DHA10-32-19	SS32D	SP3DS	HW19.8L HW23.8L
	12-3B	1.102	4 1/2	1.000	3/4	3/4	0.750	R/L						
	12-4D	1.250	6	1.000	3/4	3/4	0.750	R/L	SN□□43□	CDH8N1	DHA5/16-32	SS43D	SP4D	HW39.7L HW23.8L
	16-4D	1.250	6	1.250	1	1	1.000	R/L						
	85-4D	1.250	6	1.250	1 1/4	1	1.250	R/L						
	16-5D	1.378	6	1.250	1	1	1.000	R/L	SN□□54□	CDH8N	DHA5/16-32	SS53D	SP5D	HW39.7L HW31.8L
	20-5D	1.378	6	1.250	1 1/4	1 1/4	1.250	R/L						
	20-6D	1.500	6	1.250	1 1/4	1 1/4	1.250	R/L	SN□□64□	CDH8N	DHA5/16-32	SS63D	SP6D	HW39.7L HW35.7L
	24-6E	1.500	7	2.000	1 1/2	1 1/2	1.500	R/L						
	24-8E	1.500	7	2.000	1 1/2	1 1/2	1.500	R/L	SN□□85□	CDH8N3	DHA3/8-35	SS84D	SP8D	HW47.6L HW39.7L

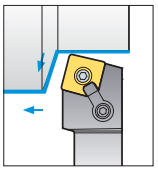
Applicable inserts **B20 ~ B28**

MSRNR/L



SN□□





75°

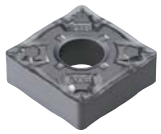
• R type holder

(inch)

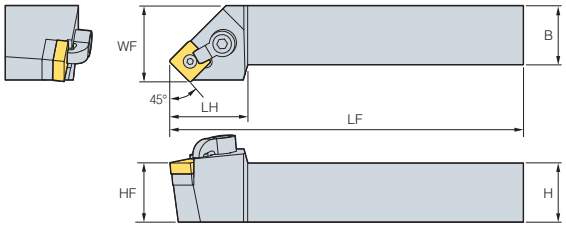
Designation		LH	LF	WF	HF	B	H	HAND	Applicable insert	Clamp	Clamp Screw	Shim	Shim Pin	Wrench
MSRNR/L	10-3A	1.102	4	0.738	5/8	5/8	0.625	R/L	SN□□32□	CDH7N	DHA10-32-19	SS32D	SP3DS	HW19.8L HW23.8L
	12-3B	1.102	4 1/2	0.878	3/4	3/4	0.750	R/L						
	12-4B	1.250	4 1/2	0.878	3/4	3/4	0.750	R/L	SN□□43□	CDH8N1	DHA5/16-32	SS43D	SP4D	HW39.7L HW23.8L
	16-4D	1.250	6	1.128	1	1	1.000	R/L						
	16-5D	1.378	6	1.100	1	1	1.000	R/L	SN□□54□	CDH8N	DHA5/16-32	SS53D	SP5D	HW39.7L HW31.8L
	20-5D	1.378	6	1.350	1 1/4	1 1/4	1.250	R/L						
	85-6D	1.500	6	1.068	1 1/4	1	1.250	R/L	SN□□64□	CDH8N	DHA5/16-32	SS63D	SP6D	HW39.7L HW35.7L
	20-6D	1.500	6	1.318	1 1/4	1 1/4	1.250	R/L						
	24-6E	1.500	7	1.818	1 1/2	1 1/2	1.500	R/L						
	24-8E	1.500	7	1.762	1 1/2	1 1/2	1.500	R/L	SN□□85□	CDH8N3	DHA3/8-35	SS84D	SP8D	HW47.6L HW39.7L

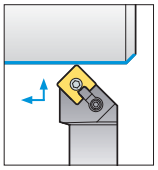
Applicable inserts **B20 ~ B28**

MSSNR/L



SN□□





45°

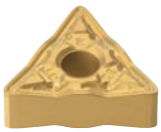
• R type holder

(inch)

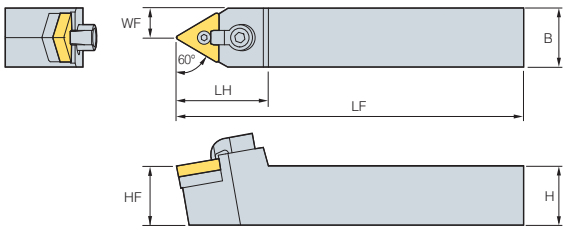
Designation		LH	LF	WF	HF	B	H	HAND	Applicable insert	Clamp	Clamp Screw	Shim	Shim Pin	Wrench
MSSNR/L	10-3A	1.102	4	0.516	5/8	5/8	0.625	R/L	SN□□32□	CDH7N	DHA10-32-19	SS32D	SP3DS	HW19.8L HW23.8L
	12-3B	1.102	4 1/2	0.641	3/4	3/4	0.750	R/L						
	12-4B	1.250	4 1/2	0.662	3/4	3/4	0.750	R/L	SN□□43□	CDH8N1	DHA5/16-32	SS43D	SP4D	HW39.7L HW23.8L
	16-4D	1.250	6	0.912	1	1	1.000	R/L						
	16-5D	1.378	6	0.828	1	1	1.000	R/L	SN□□54□	CDH8N1	DHA5/16-32	SS53D	SP5D	HW39.7L HW31.8L
	20-5D	1.378	6	1.078	1 1/4	1 1/4	1.250	R/L						
	20-6D	1.500	6	0.992	1 1/4	1 1/4	1.250	R/L	SN□□64□	CDH8N1	DHA5/16-32	SS63D	SP6D	HW39.7L HW35.7L
	24.6E	1.500	7	1.492	1 1/2	1 1/2	1.500	R/L						

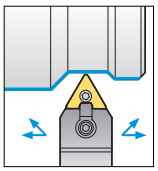
Applicable inserts **B20 ~ B28**

MTENN



TN□□





60°

(inch)

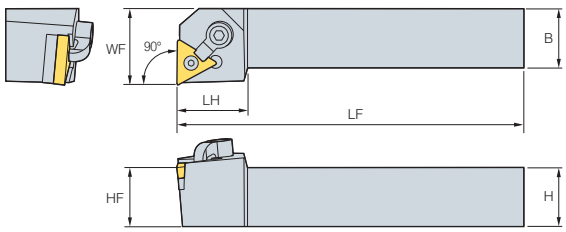
Designation		LH	LF	WF	HF	B	H	HAND	Applicable insert	Clamp	Clamp Screw	Shim	Shim Pin	Wrench
MTENN	12-3B	1.250	4 1/2	0.375	3/4	3/4	0.750	N	TN□□33□	CDH7N	DHA10-32-19	ST32D	SP3D	HW23.8L HW19.8L
	16-3D	1.250	6	0.500	1	1	1.000	N						
	16-4D	1.378	6	0.500	1	1	1.000	N	TN□□43□	CDH8N1	DHA5/16-32	ST43D	SP4D	HW39.7L HW23.8L
	20-5D	1.378	6	0.625	1 1/4	1 1/4	1.250	N	TN□□54□	CDH8N1	DHA5/16-32	ST53D	SP5D	HW39.7L HW31.8L
	24-6E	1.500	7	0.750	1 1/2	1 1/2	1.500	N	TN□□65□	CDH8N	DHA5/16-32	ST63D	SP6DL	HW39.7L HW35.7L

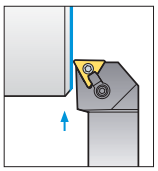
Applicable inserts **B29 ~ B36**

MTFNR/L



TN□□





90°

• R type holder

(inch)

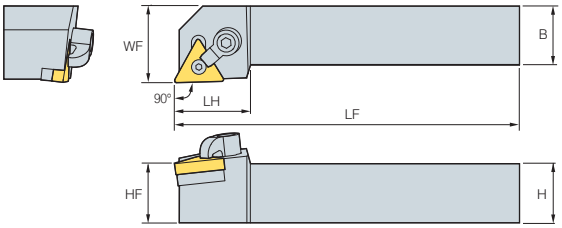
Designation		LH	LF	WF	HF	B	H	HAND	Applicable insert	Clamp	Clamp Screw	Shim	Shim Pin	Wrench
MTFNR/L	10-3A	1.250	4	0.875	5/8	5/8	0.625	R/L	TN□□33□	CDH7N	DHA10-32-19	ST32D	SP3D	HW23.8L HW19.8L
	12-3B	1.250	4 1/2	1.000	3/4	3/4	0.750	R/L						
	16-3D	1.250	6	1.250	1	1	1.000	R/L						
	16-4D	1.250	6	1.250	1	1	1.000	R/L	TN□□43□	CDH8N1	DHA5/16-32	ST43D	SP4D	HW39.7L HW23.8L
	20-4D	1.250	6	1.500	1 1/4	1 1/4	1.250	R/L						
	24-4E	1.250	7	2.000	1 1/2	1 1/2	1.500	R/L						
	20-5D	1.378	6	1.500	1 1/4	1 1/4	1.250	R/L	TN□□54□	CDH8N1	DHA5/16-32	ST53D	SP5D	HW39.7L HW31.8L
	24-5E	1.378	7	2.000	1 1/2	1 1/2	1.500	R/L						
	24-6E	1.500	7	2.000	1 1/2	1 1/2	1.500	R/L	TN□□65□	CDH8N	DHA5/16-32	ST63D	SP6DL	HW39.7L HW35.7L

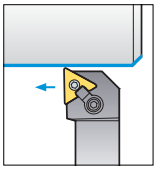
Applicable inserts **B29 ~ B36**

MTGNR/L



TN□□





90°

• R type holder

(inch)

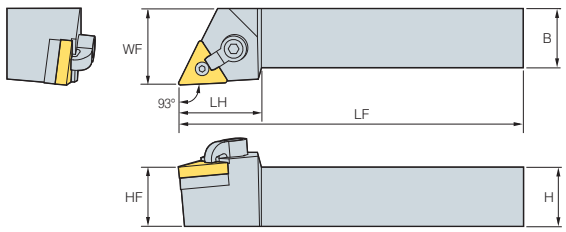
Designation		LH	LF	WF	HF	B	H	HAND	Applicable insert	Clamp	Clamp Screw	Shim	Shim Pin	Wrench
MTGNR/L	10-3A	1.250	4	0.875	5/8	5/8	0.625	R/L	TN□□33□	CDH7N	DHA10-32-19	ST32D	SP3D	HW23.8L HW19.8L
	12-3B	1.250	4 1/2	1.000	3/4	3/4	0.750	R/L						
	16-3D	1.250	6	1.250	1	1	1.000	R/L						
	16-4D	1.250	6	1.250	1	1	1.000	R/L	TN□□43□	CDH8N1	DHA5/16-32	ST43D	SP4D	HW39.7L HW23.8L
	20-4D	1.250	6	1.500	1 1/4	1 1/4	1.250	R/L						
	20-5D	1.378	6	1.500	1 1/4	1 1/4	1.250	R/L	TN□□54□	CDH8N1	DHA5/16-32	ST53D	SP5D	HW39.7L HW31.8L
	24-5E	1.378	7	2.000	1 1/2	1 1/2	1.500	R/L						
	24-6E	1.500	7	2.000	1 1/2	1 1/2	1.500	R/L	TN□□65□	CDH8N	DHA5/16-32	ST63D	SP6DL	HW39.7L HW35.7L

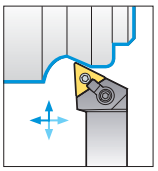
Applicable inserts **B29 ~ B36**

MTJNR/L



TN□□





93°

• R type holder

(inch)

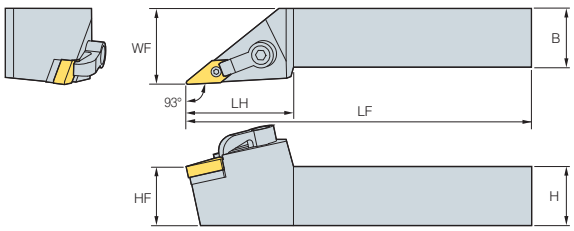
Designation		LH	LF	WF	HF	B	H	HAND	Applicable insert	Clamp	Clamp Screw	Shim	Shim Pin	Wrench
MTJNR/L	12-3B	1.250	4 1/2	1.000	3/4	3/4	0.750	R/L	TN□□33□	CDH7N	DHA10-32-19	ST32D	SP3D	HW23.8L HW19.8L
	16-3D	1.250	6	1.250	1	1	1.000	R/L						
	16-4D	1.250	6	1.250	1	1	1.000	R/L	TN□□43□	CDH8N1	DHA5/16-32	ST43D	SP4D	HW39.7L HW23.8L
	20-4D	1.250	6	1.500	1 1/4	1 1/4	1.250	R/L						
	20-5D	1.378	6	1.500	1 1/4	1 1/4	1.250	R/L	TN□□54□	CDH8N1	DHA5/16-32	ST53D	SP5D	HW39.7L HW31.8L
	24-5E	1.378	7	2.000	1 1/2	1 1/2	1.250	R/L						
	24-6E	1.500	7	2.000	1 1/2	1 1/2	1.500	R/L	TN□□65□	CDH8N	DHA5/16-32	ST63D	SP6DL	HW39.7L HW35.7L

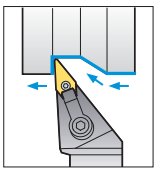
Applicable inserts **B29 ~ B36**

MVJNR/L



VN□□





93°

• R type holder

(inch)

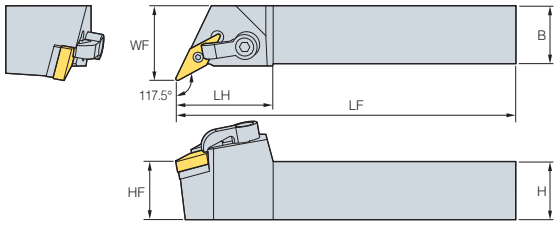
Designation		LH	LF	WF	HF	B	H	HAND	Applicable insert	Clamp	Clamp Screw	Shim	Shim Pin	Wrench
MVJNR/L	12-3B	1.732	4 1/2	1.000	3/4	3/4	0.750	R/L	VN□□33□□	CDH8N2	DHA5/16-32	SV32D	SP3D	HW39.7L HW19.8L
	16-3D	1.791	6	1.250	1	1	1.000	R/L						
	20-3D	2.185	6	1.500	1 1/4	1 1/4	1.250	R/L						
	16-4D	2.205	6	1.250	1	1	1.000	R/L	VN□□43□□	CDH8N2	DHA5/16-32	SV43D	SP4D	HW39.7L HW23.8L
	20-4D	2.165	6	1.500	1 1/4	1 1/4	1.250	R/L						
	24-4E	2.559	7	2.000	1 1/2	1 1/2	1.500	R/L						

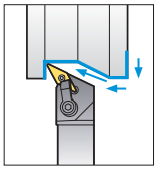
Applicable inserts **B37 ~ B38**

MVQNR/L



VN□□





117.5°
• R type holder

(inch)

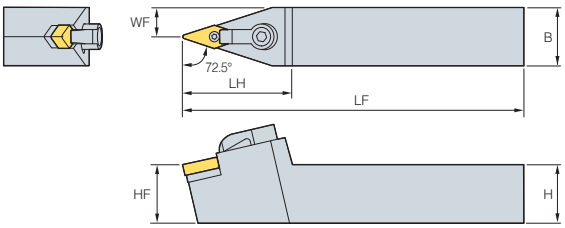
Designation		LH	LF	WF	HF	B	H	HAND	Applicable insert	Clamp	Clamp Screw	Shim	Shim Pin	Wrench
MVQNR/L	12-3B	1.467	4 1/2	1.000	3/4	3/4	0.750	R/L	VN□□33□	CDH8N2	DHA5/16-32	SV32D	SP3D	HW39.7L HW19.8L
	16-3D	1.467	6	1.250	1	1	1.000	R/L						
	20-3D	1.467	6	1.500	1 1/4	1 1/4	1.500	R/L						

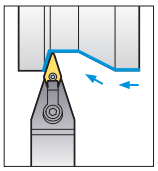
Applicable inserts **B37 ~ B38**

MVVNN



VN□□





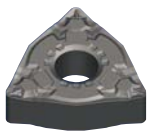
72.5°

(inch)

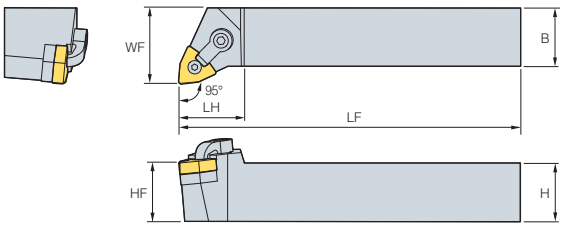
Designation		LH	LF	WF	HF	B	H	HAND	Applicable insert	Clamp	Clamp Screw	Shim	Shim Pin	Wrench
MVVNN	12-3B	1.728	4 1/2	1.000	3/4	3/4	0.750	N	VN□□33□	CDH8N2	DHA5/16-32	SV32D	SP3D	HW39.7L HW19.8L
	16-3D	1.728	6	1.250	1	1	1.000	N						

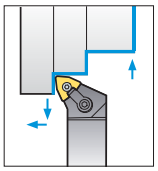
Applicable inserts **B37 ~ B38**

MWLNR/L



WN□□





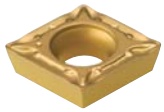
95°
• R type holder

(inch)

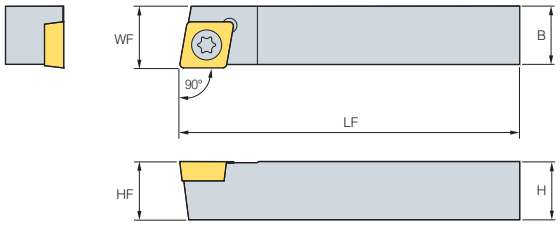
Designation		LH	LF	WF	HF	B	H	HAND	Applicable insert	Clamp	Clamp Screw	Shim	Shim Pin	Wrench
MWLNR/L	12-3B	1.250	4 1/2	1.000	3/4	3/4	0.750	R/L	WN□□33□	CDH7N	DHA10-32-19	SW32D	SP3D	HW19.8L HW23.8L
	16-3D	1.250	6	1.250	1	1	1.000	R/L						
	20-3D	1.250	6	1.500	1 1/4	1 1/4	1.250	R/L						
	12-4B	1.250	4 1/2	1.000	3/4	3/4	0.750	R/L	WN□□43□	CDH6N	DHA1/4-21	SW43D	SP4D	HW31.8L HW23.8L
	16-4D	1.250	6	1.250	1	1	1.000	R/L						
	20-4D	1.250	6	1.500	1 1/4	1 1/4	1.250	R/L						

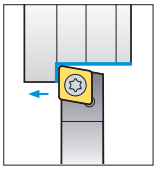
Applicable inserts **B39 ~ B43**

SCACR/L



CC□T





90°

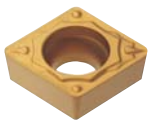
• R type holder

(inch)

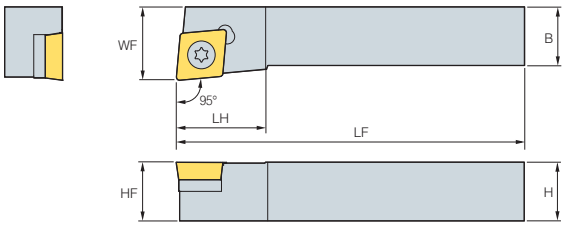
Designation		LH	LF	WF	HF	B	H	HAND	Applicable insert	Screw	Shim	Shim Screw	Wrench
SCACR/L	06-2J	0.394	1 1/2	0.375	3/8	3/8	0.375	R/L	CC□T21.5□	FTKA02565	-	-	TW07P
	08-3K	0.623	3 3/20	0.520	1/2	1/2	0.500	R/L	CC□T32.5□	FTGA03508	-	-	TW15P

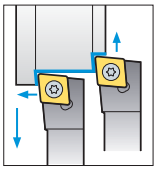
Applicable inserts **B44 ~ B48, B75**

SCLCR/L



CC□T





95°

• R type holder

(inch)

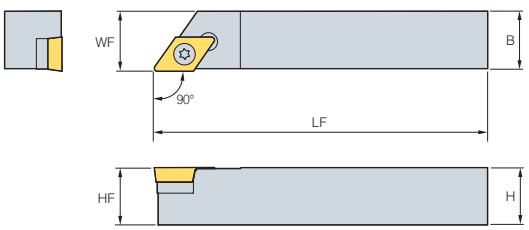
Designation		LH	LF	WF	HF	B	H	HAND	Applicable insert	Screw	Shim	Shim Screw	Wrench
SCLCR/L	05-2I	0.394	2 1/2	0.375	. 5/16	. 5/16	0.313	R/L	CC□T21.5□□	FTKA02565	-	-	TW07P
	06-2J	0.394	2 3/4	0.500	3/8	3/8	0.375	R/L					
	08-3K	0.630	3 3/20	0.625	1/2	1/2	0.500	R/L	CC□T32.5□□	FTGA03508	-	-	TW15P
	10-3A	0.630	4	0.875	5/8	5/8	0.625	R/L					
	12-3C	0.630	5	1.000	3/4	3/4	0.750	R/L					
	16-3D	0.787	6	1.250	1	1	1.000	R/L					
	12-4B	0.984	4 1/2	1.000	3/4	3/4	0.750	R/L	CC□T43□□	FTGA0411F	SC42S	SHXN0610F	TW15P, HW40L
	16-4D	1.024	6	1.250	1	1	1.000	R/L					

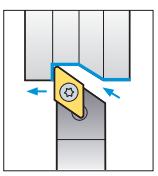
Applicable inserts **B44 ~ B48, B75**

SDACR/L



DC□T





90°

• R type holder

(inch)

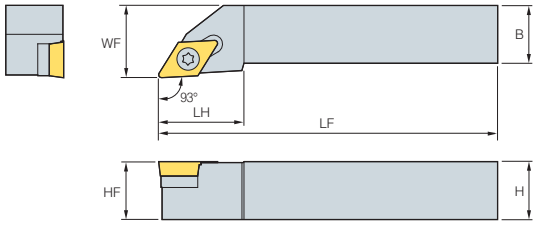
Designation		LH	LF	WF	HF	B	H	HAND	Applicable insert	Screw	Shim	Shim Screw	Wrench
SDACR/L	08-3K	0.787	3 3/20	0.520	1/2	1/2	0.500	R/L	DC□T32.5□□	FTGA03508	-	-	TW15P
	10-3A	0.945	4	0.645	5/8	5/8	0.625	R/L		FTGA03512	SD32S	SHXN0509F	TW15P, HW35L

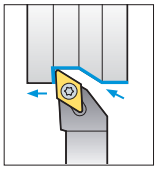
Applicable inserts **B50 ~ B53, B77**

SDJCR/L



DC□T





93°

• R type holder

(inch)

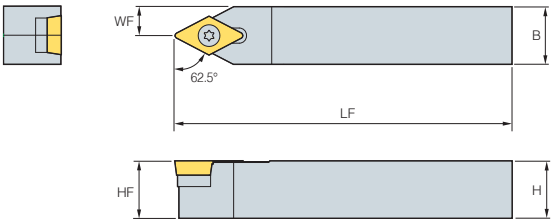
Designation		LH	LF	WF	HF	B	H	HAND	Applicable insert	Screw	Shim	Shim Screw	Wrench
SDJCR/L	06-2J	0.591	2 3/4	0.500	3/8	3/8	0.375	R	DC□T21.5□	FTKA02565	-	-	TW07P
	08-2K	0.591	3 3/20	0.625	1/2	1/2	0.500	R					
	10-2A	0.709	4	0.750	5/8	5/8	0.625	R					
	12-2B	0.787	4 1/2	1.000	3/4	3/4	0.750	R					
	08-3K	0.591	3 3/20	0.625	1/2	1/2	0.500	R	DC□T32.5□	FTGA03512	SD32S	SHXN0509F	TW15P, HW35L
	10-3A	0.945	4	0.750	5/8	5/8	0.625	R					
	12-3B	0.945	4 1/2	1.000	3/4	3/4	0.750	R					
	16-3D	1.142	6	1.250	1	1	1.000	R					

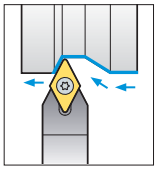
Applicable inserts **B50 ~ B53, B76**

SDNCN



DC□T





62.5°

(inch)

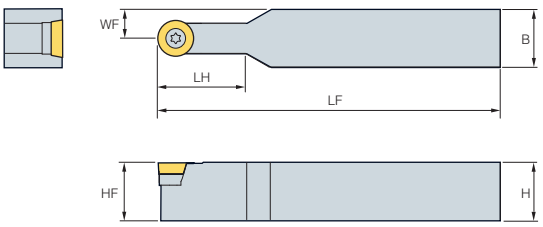
Designation		LH	LF	WF	HF	B	H	HAND	Applicable insert	Screw	Shim	Shim Screw	Wrench
SDNCN	06-2J	0.787	2 3/4	0.185	3/8	3/8	0.375	N	DC□T21.5□	FTKA02565	-	-	TW07P
	08-2K	0.866	3 1/8	0.250	1/2	1/2	0.500	N					
	08-3A	0.866	4	0.250	1/2	1/2	0.500	N	DC□T32.5□	FTGA03508	-	-	TW15P
	10-3A	1.181	4	0.313	5/8	5/8	0.625	N	DC□T32.5□	FTGA03512	SD32S	SHXN0509F	TW15P, HW35L
	12-3B	1.181	4 1/2	0.375	3/4	3/4	0.750	N					
	12-3D	1.181	6	0.492	3/4	3/4	0.984	N	DC□T32.5□	FTGA03512	SD32S	SHXN0509F	TW25P, HW35L

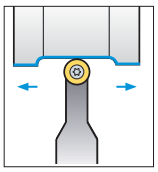
Applicable inserts **B50 ~ B53, B76**

SRDCN



RC□T





(inch)

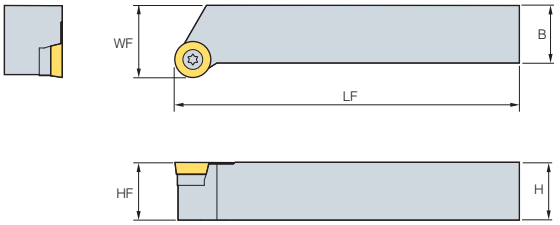
Designation		LH	LF	WF	HF	B	H	HAND	Applicable insert	Screw	Shim	Shim Screw	Wrench
SRDCN	06-06J	0.394	2 3/4	0.200	3/8	3/8	0.375	N	RC□T21.5M0	FTKA02565	-	-	TW07P
	08-06K	0.472	3 1/8	0.236	1/2	1/2	0.500	N					
	10-06A	0.472	4	0.315	5/8	5/8	0.625	N					
	16-06D	0.787	6	0.500	1	1	0.984	N					
	10-08A	0.63	4	0.315	5/8	5/8	0.630	N	RC□T2.52M0	FTNA0307	-	-	TW09P
	12-08B	0.787	4 1/2	0.375	3/4	3/4	0.787	N					
	16-08D	0.787	6	0.500	1	1	0.984	N					
	10-10A	0.984	4	0.315	5/8	5/8	0.630	N	RC□T32M0	FTKA03511A	SR10S	SHXN0509F	TW15P HW35L
	12-10B	0.984	4 1/2	0.375	3/4	3/4	0.787	N					
	16-10D	0.984	6	0.500	1	1	0.984	N					
	12-12B	1.102	4 1/2	0.375	3/4	3/4	0.787	N	RC□T43M0	FTGA03512	SR12S	SHXN0509F	TW15P HW35L
	16-12D	1.102	6	0.500	1	1	0.984	N					

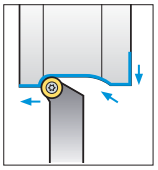
Applicable inserts **B54, B77**

SRGCR/L



RC□T





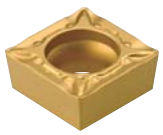
• R type holder

(inch)

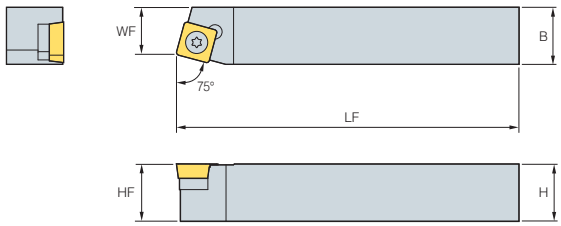
Designation		LH	LF	WF	HF	B	H	HAND	Applicable insert	Screw	Shim	Shim Screw	Wrench
SRGCR/L	**06-06J**	-	2 3/4	0.500	3/8	3/8	0.375	R/L	RC□T21.5M0	FTKA02565	-	-	TW07P
	08-06K	-	3 7/8	0.625	1/2	1/2	0.500	R/L					
	10-06A	-	4	0.750	5/8	5/8	0.625	R/L					
	10-08A	-	4	0.750	5/8	5/8	0.630	R/L	RC□T2.52M0	FTNA0307	-	-	TW09P
	12-08B	-	4 1/2	1.000	3/4	3/4	0.787	R/L					
	16-08D	-	6	1.250	1	1	0.984	R/L					
	10-10A	-	4	0.750	5/8	5/8	0.630	R/L	RC□T32M0	FTKA03511A	SR10S	SHXN0509F	TW15P HW35L
	12-10B	-	4 1/2	1.000	3/4	3/4	0.787	R/L					
	16-10D	-	6	1.250	1	1	0.984	R/L					
	12-12B	-	4 1/2	1.000	3/4	3/4	0.787	R/L	RC□T43M0	FTGA03512	SR12S	SHXN0509F	TW15P HW35L
	16-12D	-	6	1.250	1	1	0.984	R/L					

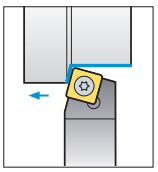
Applicable inserts **B54, B77**

SSBCR/L



SC□T





75°

• R type holder

(inch)

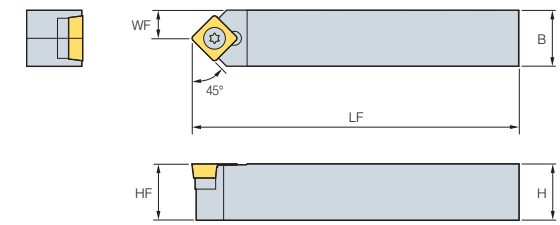
Designation		LH	LF	WF	HF	B	H	HAND	Applicable insert	Screw	Shim	Shim Screw	Wrench
SSBCR/L	**08-3K**	0.630	3 7/8	0.450	1/2	1/2	0.500	R/L	SC□T32.5□	FTGA03508	-	-	TW15P
	10-3A	0.551	4	0.500	5/8	5/8	0.625	R/L		FTGA03512	SS32S	SHXN0509F	TW15P, HW35L
	12-4B	0.984	4 1/2	0.600	3/4	3/4	0.750	R/L	SC□T43□	FTGA0411F	SS42S	SHXN0610F	TW15P, HW40L

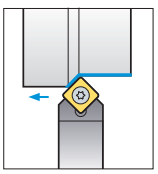
Applicable inserts **B55, B78**

SSDCN



SC□T





45°

(inch)

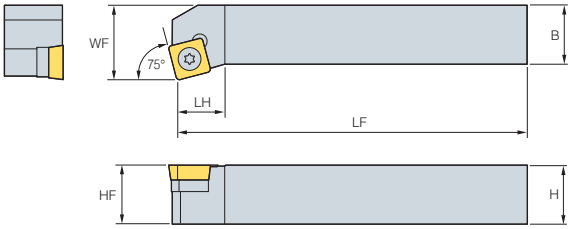
Designation		LH	LF	WF	HF	B	H	HAND	Applicable insert	Screw	Shim	Shim Screw	Wrench
SSDCN	**08-3K**	0.610	3 3/20	0.250	1/2	1/2	0.500	N	SC□T32.5□	FTGA03508	-	-	TW15P
	10-3A	0.610	4	0.313	5/8	5/8	0.625	N		FTGA03512	SS32S	SHXN0509F	TW15P, HW35L

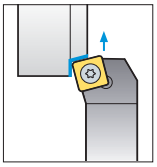
Applicable inserts **B55, B78**

SSKCR/L



SC□T





75°
• R type holder

(inch)

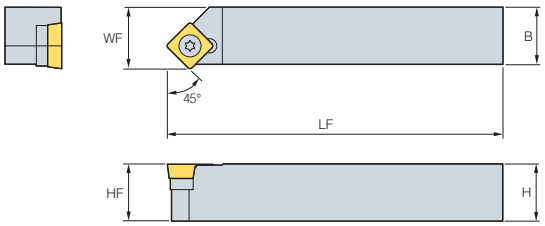
Designation	LH	LF	WF	HF	B	H	HAND	Applicable insert	Screw	Shim	Shim Screw	Wrench
SSKCR/L 10-3A	0.512	4	0.750	5/8	5/8	0.625	R/L	SC□T32.5□	FTGA03512	SS32S	SHXN0509F	TW15P, HW35L

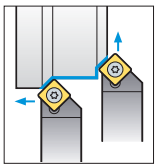
Applicable inserts **B55, B78**

SSSCR/L



SC□T





45°
• R type holder

(inch)

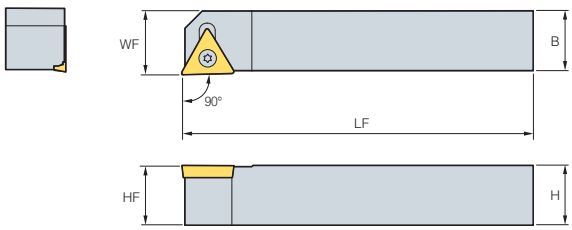
Designation	LH	LF	WF	HF	B	H	HAND	Applicable insert	Screw	Shim	Shim Screw	Wrench
SSSCR/L 10-3A	0.669	4	0.670	5/8	5/8	0.625	R/L	SC□T32.5□	FTGA03512	SS32S	SHXN0509F	TW15P, HW35L
12-4B	0.945	4 1/2	0.827	3/4	3/4	0.750	R/L	SC□T43□	FTGA0411F	SS42S	SHXN0610F	TW15P, HW40L
16-4D	1.102	6	1.024	1	1	0.984	R/L	SC□T43□	FTGA0411F	SS42S	SHXN0610F	TW15P, HW40L

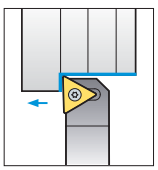
Applicable inserts **B55, B78**

STACR/L



TC□T





90°
• R type holder

(inch)

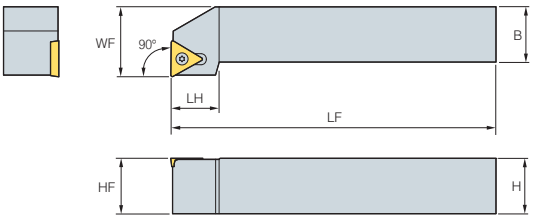
Designation	LH	LF	WF	HF	B	H	HAND	Applicable insert	Screw	Shim	Shim Screw	Wrench
STACR/L 06-1.8J	0.472	2 3/4	0.375	3/8	3/8	0.375	R/L	TC□T1.81.5□	FTKA02206	-	-	TW06P
08-2K	0.551	3 3/20	0.500	1/2	1/2	0.500	R/L	TC□T21.5□	FTKA02565	-	-	TW07P

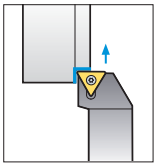
Applicable inserts **B59 ~ B60, B79**

STFCR/L



TC□T





90°
• R type holder

(inch)

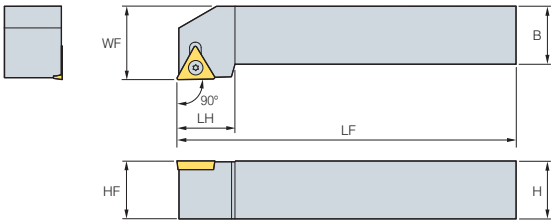
Designation		LH	LF	WF	HF	B	H	HAND	Applicable insert	Screw	Shim	Shim Screw	Wrench
STFCR/L	06-1.8J	0.394	2 3/4	0.500	3/8	3/8	0.375	R/L	TC□T1.81.5□	FTKA02206	-	-	TW06P
	08-2K	0.551	3 3/20	0.625	1/2	1/2	0.500	R/L	TC□T21.5□	FTKA02565	-	-	TW07P
	10-2A	0.551	4	0.750	5/8	5/8	0.625	R/L					
	10-3A	0.748	4	0.750	5/8	5/8	0.625	R/L	TC□T32.5□	FTGA03512	ST32S	SHXN0509F	TW15P, HW35L
	12-3B	0.748	4 1/2	1.000	3/4	3/4	0.750	R/L					
	16-3D	0.992	6	1.250	1	1	1.000	R/L	TC□T32.5□	FTGA03512	ST32S	SHXN0509F	TW15P, HW35L

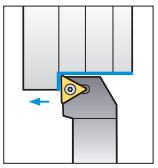
Applicable inserts **B59 ~ B60, B79**

STGCR/L



TC□T





90°
• R type holder

(inch)

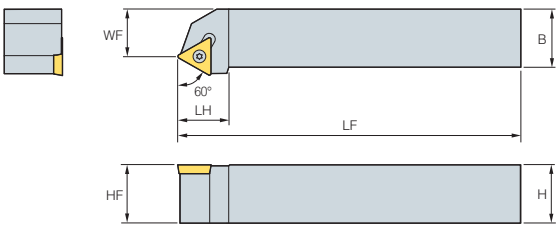
Designation		LH	LF	WF	HF	B	H	HAND	Applicable insert	Screw	Shim	Shim Screw	Wrench
STGCR/L	05-1.8I	0.433	2 1/2	0.370	.5/16	.5/16	0.313	R/L	TC□T1.81.5□	FTKA02206	-	-	TW06P
	06-1.8J	0.433	2 3/4	0.500	3/8	3/8	0.375	R/L					
	08-2K	0.551	3 3/20	0.625	1/2	1/2	0.500	R/L	TC□T21.5□	FTKA02565	-	-	TW07P
	10-2A	0.630	4	0.750	5/8	5/8	0.625	R/L					
	10-3A	0.827	4	0.750	5/8	5/8	0.625	R/L	TC□T32.5□	FTGA03512	ST32S	SHXN0509F	TW15P, HW35L
	12-3B	0.827	4 1/2	1.000	3/4	3/4	0.750	R/L					
	16-3D	0.827	6	1.250	1	1	1.000	R/L					

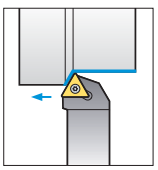
Applicable inserts **B59 ~ B60, B79**

STTCR/L



TC□T





60°
• R type holder

(inch)

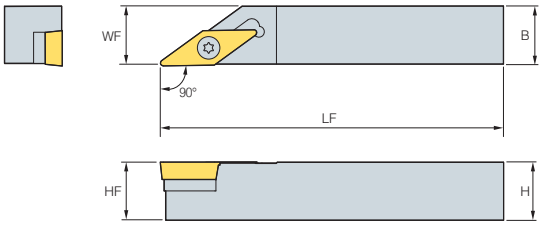
Designation		LH	LF	WF	HF	B	H	HAND	Applicable insert	Screw	Shim	Shim Screw	Wrench
STTCR/L	10-2A	0.551	4	0.500	5/8	5/8	0.625	R/L	TC□T21.5□	FTKA02565	-	-	TW07P
	10-3A	0.748	4	0.500	5/8	5/8	0.625	R/L	TC□T32.5□	FTGA03512	ST32S	SHXN0509F	TW15P, HW35L
	12-3B	0.748	4 1/2	0.670	3/4	3/4	0.750	R/L					

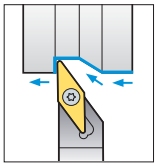
Applicable inserts **B59 ~ B60, B79**

SVABR/L



VB□T





90°
• R type holder

(inch)

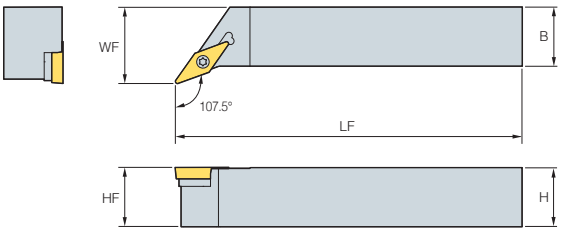
Designation		LH	LF	WF	HF	B	H	HAND	Applicable insert	Screw	Shim	Shim Screw	Wrench
SVABR/L	**10-3A**	1.102	4	0.630	5/8	5/8	0.625	R/L	VB□T33□	FTGA03512	SV32S	SHXN0509F	TW15P, HW35L
	12-3B	1.102	4 1/2	0.755	3/4	3/4	0.750	R/L					

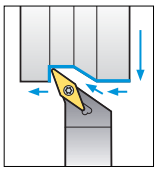
Applicable inserts **B65 ~ B67, B80**

SVHBR/L



VB□T





107.5°
• R type holder

(inch)

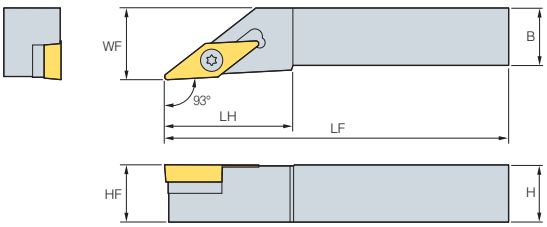
Designation		LH	LF	WF	HF	B	H	HAND	Applicable insert	Screw	Shim	Shim Screw	Wrench
SVHBR/L	**16-3D**	1.240	6	1.250	1	1	1.000	R/L	VB□T33□	FTGA03512	SV32S	SHXN0509F	TW15P, HW35L
	20-3D	1.240	6	1.250	1 1/4	1 1/4	1.250	R/L					

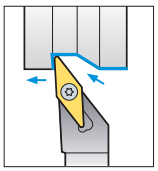
Applicable inserts **B65 ~ B67, B80**

SVJBR/L



VB□T





93°
• R type holder

(inch)

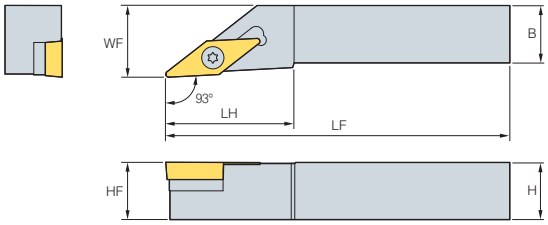
Designation		LH	LF	WF	HF	B	H	HAND	Applicable insert	Screw	Shim	Shim Screw	Wrench
SVJBR/L	**08-2K**	1.063	3 3/20	0.625	1/2	1/2	0.500	R/L	VB□T21.5□	FTKA02565	-	-	TW07P
	10-2A	1.063	4	0.750	5/8	5/8	0.625	R/L					
	12-2B	1.063	4 1/2	1.000	3/4	3/4	0.750	R/L					
	10-3A	1.417	4	0.750	5/8	5/8	0.625	R/L	VB□T33□	FTGA03512	SV32S	SHXN0509F	TW15P, HW35L
	12-3B	1.614	4 1/2	1.000	3/4	3/4	0.750	R/L					
	16-3D	1.614	6	1.250	1	1	1.000	R/L	VB□T33□	FTGA03512	SV32S	SHXN0509F	TW15P, HW35L
	20-3D	2.165	6	1.250	1 1/4	1 1/4	1.250	R/L					
	85-3D	2.165	6	1.575	1 1/4	1	1.299	R/L					

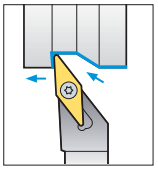
Applicable inserts **B65 ~ B67, B80**

SVJCR/L



VC□T





93°

• R type holder

(inch)

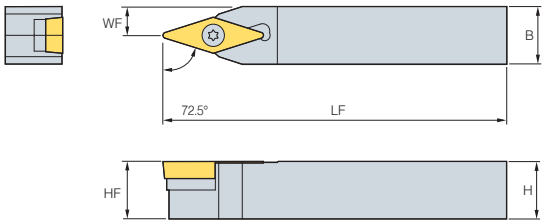
Designation		LH	LF	WF	HF	B	H	HAND	Applicable insert	Screw	Shim	Shim Screw	Wrench
SVJCR/L	08-2K	0.984	3 3/20	0.625	1/2	1/2	0.500	R/L	VC□T22□□	FTKA02565	-	-	TW07P
	10-2A	0.984	4	0.750	5/8	5/8	0.625	R/L					
	12-2B	0.984	4 1/2	1.000	3/4	3/4	0.750	R/L					
	08-2.5K	1.260	3 3/20	0.625	1/2	1/2	0.500	R/L	VC□T2.52□□	FTKA0307	-	-	TW09P
	10-2.5A	1.260	4	0.750	5/8	5/8	0.625	R/L					
	12-2.5B	1.260	4 1/2	1.000	3/4	3/4	0.750	R/L					
	10-3A	1.575	4	0.750	5/8	5/8	0.625	R/L	VC□T33□□	FTGA03512	SV32S	SHXN0509F	TW15P, HW35L
	12-3B	1.575	4 1/2	1.000	3/4	3/4	0.750	R/L					
	16-3D	1.575	6	1.250	1	1	1.000	R/L					

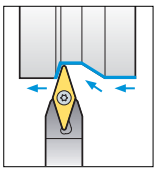
Applicable inserts **B68 ~ B70, B81**

SVVBN



VB□T





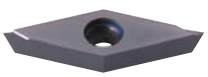
72.5°

(inch)

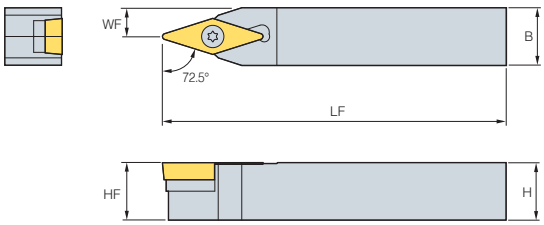
Designation		LH	LF	WF	HF	B	H	HAND	Applicable insert	Screw	Shim	Shim Screw	Wrench
SVVBN	08-2K	0.106	3 3/20	0.250	1/2	1/2	0.500	N	VB□T21.5□	FTKA02565	-	-	TW07P
	10-2A	0.106	4	0.313	5/8	5/8	0.625	N					
	12-2B	0.130	4 1/2	0.375	3/4	3/4	0.750	N					
	10-3A	0.106	4	0.313	5/8	5/8	0.625	N	VB□T33□	FTGA03512	SV32S	SHXN0509F	TW15P, HW35L
	12-3B	0.126	4 1/2	0.375	3/4	3/4	0.750	N					
	16-3D	0.126	6	0.500	1	1	1.000	N					
	85-3D	0.126	6	0.500	1 1/4	1	1.250	N					

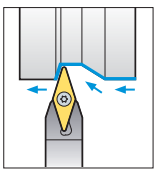
Applicable inserts **B65 ~ B67, B80**

SVVCN



VC□T





72.5°

(inch)

Designation		LH	LF	WF	HF	B	H	HAND	Applicable insert	Screw	Shim	Shim Screw	Wrench
SVVCN	08-2K	0.098	3 3/20	0.250	1/2	1/2	0.500	N	VC□T21.5□	FTKA02565	-	-	TW07P
	10-2A	0.126	4	0.313	5/8	5/8	0.625	N					
	12-2B	0.098	4 1/2	0.375	3/4	3/4	0.750	N					
	08-2.5K	0.126	3 3/20	0.250	1/2	1/2	0.500	N	VC□T2.51.5□	FTNA0307	-	-	TW09P
	10-2.5A	0.126	4	0.313	5/8	5/8	0.625	N					
	12-2.5B	0.098	4 1/2	0.375	3/4	3/4	0.750	N					
	10-3A	0.126	4	0.313	5/8	5/8	0.625	N	VC□T33□	FTGA03512	SV32S	SHXN0509F	TW15P, HW35L
	12-3B	0.126	4 1/2	0.375	3/4	3/4	0.750	N					
	16-3D	0.126	6	0.500	1	1	1.000	N					

Applicable inserts **B68 ~ B70, B81**

S 24 U - M C L N R 4 □

1	2	3	4	5	6	7	8	9	10
Type of bar	Bar diameter	Bar length	Method of mounting Insert	Insert shape	Lead angle of boring bar	Relief angle of insert	Hand of bar	Length of cutting edge	Manufacturing option

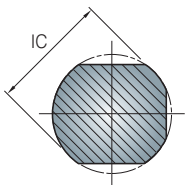
1 Type of bar

S 24 U - M C L N R 4 □

- A : Soild steel with coolant hole
- B : Soild steel with anti-vibration
- C : Carbide bar with fixed steel head
- D : Soild steel bar with anti-vibration device and coolant hole
- E : Carbide bar with fixed steel head and coolant hole
- G : Carbide bar with fixed steel head and anti-vibration device and coolant hole
- H : Solid heavy metal with coolant
- J : Solid heavy metal with coolant
- S : Soild steel bar
- X : Special bar

2 Bar diameter

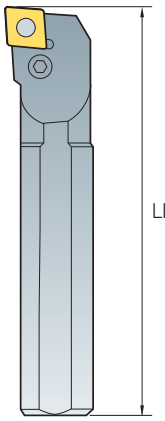
S 24 U - M C L N R 4 □



03: 0.1875	16: 1.000
04: 0.2500	20: 1.250
05: 0.3125	24: 1.500
06: 0.3700	28: 1.750
08: 0.5000	32: 2.000
10: 0.6250	36: 2.250
12: 0.7500	40: 2.500

3 Bar length

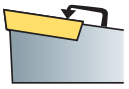
S 24 U - M C L N R 4 □

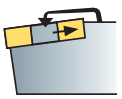


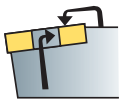
length(L)	(inch)
F	3
G	3.5
H	4
J	4.5
K	5.0
L	5.5
M	6
N	6.5
P	6.75
Q	7.0
R	8.0
S	10.0
T	12.0
U	14.0
V	16.0
W	18.0
Y	20.0
X	Special length

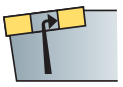
4 Method of mounting insert

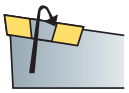
S 24 U - M C L N R 4 □


Top clamping
C


Top and hole clamping
D

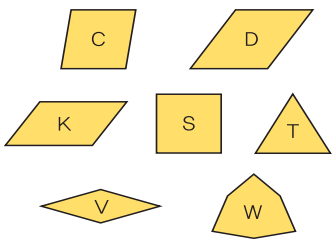

Top and hole clamping
M


Hole clamping
P


Screw on
S

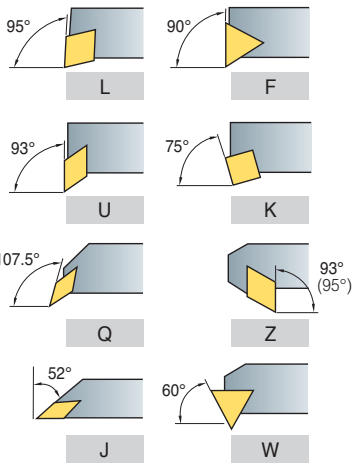
5 Insert shape

S 24 U - M C L N R 4 □



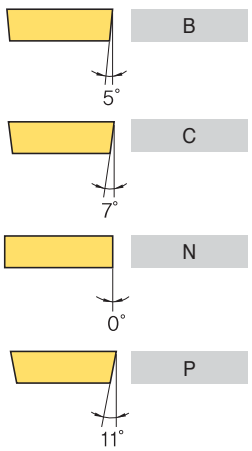
6 Lead angle of boring bar

S 24 U - M C L N R 4 □



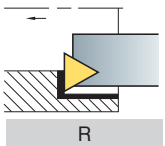
7 Relief angle of insert

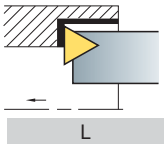
S 24 U - M C L N R 4 □



8 Hand of bar

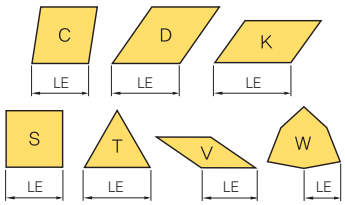
S 24 U - M C L N R 4 □


R


L

9 Length of cutting edge

S 24 U - M C L N R 4 □

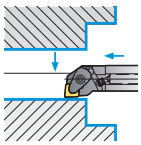
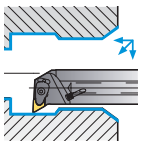
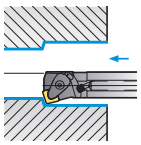
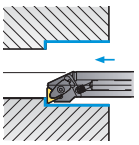
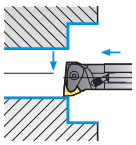


10 Manufacturing option

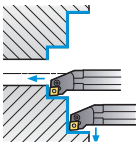
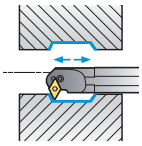
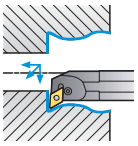
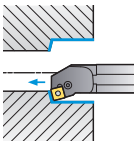
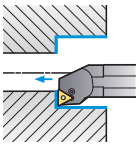
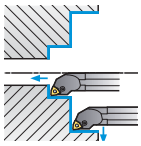
S 24 U - M C L N R 4 □

Manufacturing option

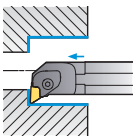
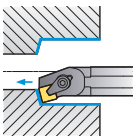
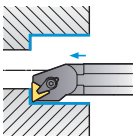
Double clamp system

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	●	●	●	●	●			

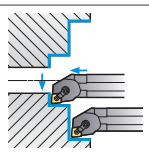
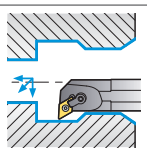
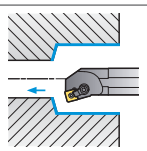
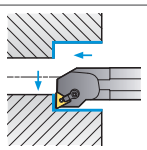
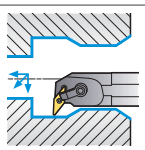
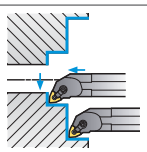
Lever lock system

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	●	●	●	●	●	●		

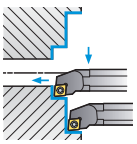
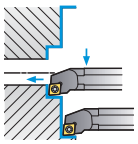
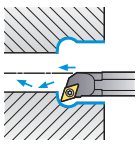
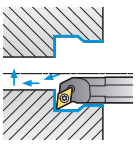
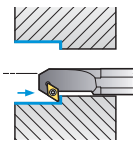
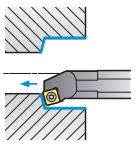
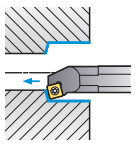
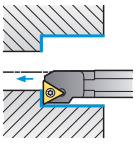
Clamp on system

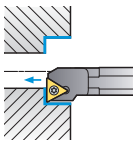
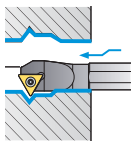
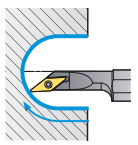
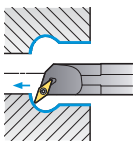
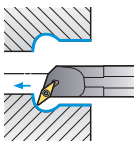
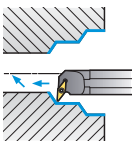
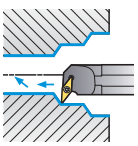
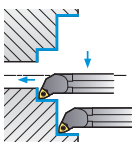
Cutting shape								
Designation	**CKUNR/L**	**CSKPR/L**	**CTFPR/L**					
Tool cutting edge angle	93°	75°	90°					
Page	B129	B129	B129					
Copying								
Facing								
Back turning	●							
Turning	●	●	●					

Multi lock system

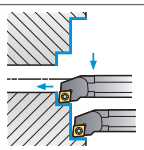
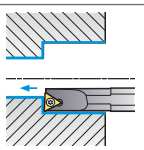
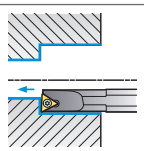
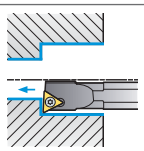
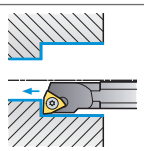
Cutting shape								
Designation	**MCLNR/L**	**MDUNR/L**	**MSKNR/L**	**MTFNR/L**	**MVUNR/L**	**MWLNR/L**		
Tool cutting edge angle	95°	93°	75°	90°	93°	95°		
Page	B130	B130	B130	B131	B131	B131		
Copying		●			●			
Facing	●					●		
Back turning		●			●			
Turning	●	●	●	●	●	●		

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

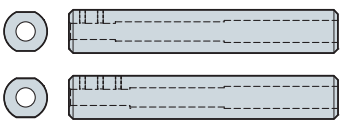
Cutting shape								
Designation	**SCLCR/L**	**STUBR/L**	**STLBR/L**	**STUPR/L**	**SWUBR/L**			
Tool cutting edge angle	95°	93°	95°	93°	93°			
Page	B142	B142	B142	B143	B144			
Copying								
Facing	●	●	●					
Back turning				●				
Turning	●	●	●	●	●			

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

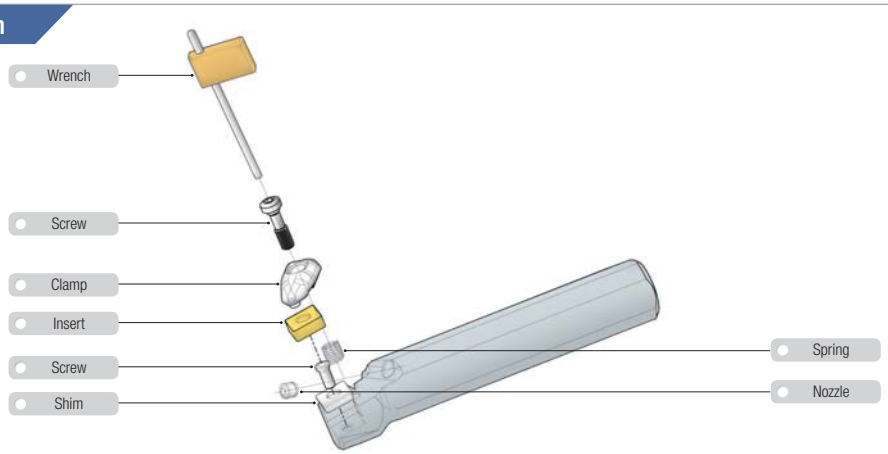
Designation	STFPR/L	STUBR/L	STUPR/L	SWUBR/L	-
Tool cutting edge angle	90°	93°	93°	93°	-
Page	B138	B142	B143	B144	-

Sleeve

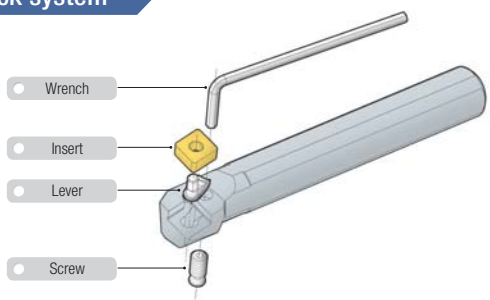
Shape	
Designation	**SL**
Page	B144

Instructions of boring bar assembly

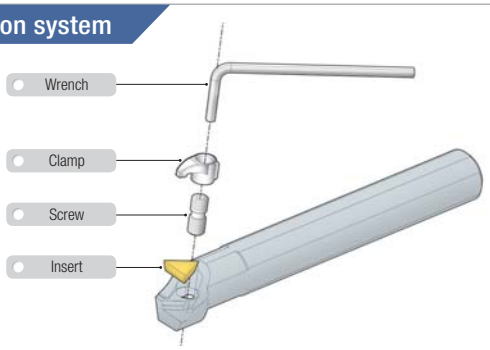
Double clamp system



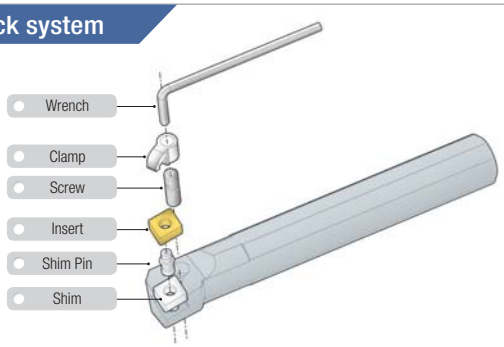
Lever lock system



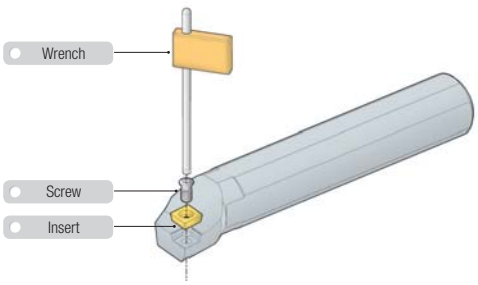
Clamp on system



Multi lock system



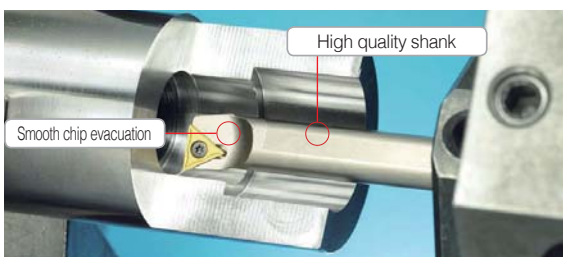
Screw on system



Carbide shank boring bar

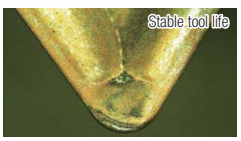
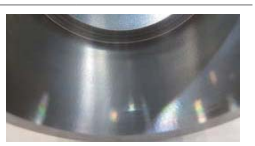
- Excellent cutting performance even in internal machining with chattering
- Available for various workpieces such as steel, stainless steel, cast iron, etc.
- Improved tool life and surface roughness

Features



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

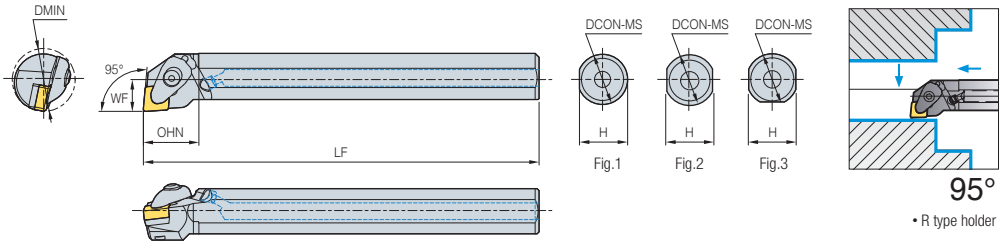
Comparison of chipping

Specifications	Steel boring bar			Carbide boring bar		
• AISI 4140 • vc (sfm) = 656 • ap (inch) = 0.016 • fn (ipr) = 0.006 • Cutting depth: 5D						
						
	Rmax	Rz	Ra	Rmax	Rz	Ra
	4.67	3.68	0.62	3.07	2.76	0.53

DCLNR/L



CN□□



(inch)

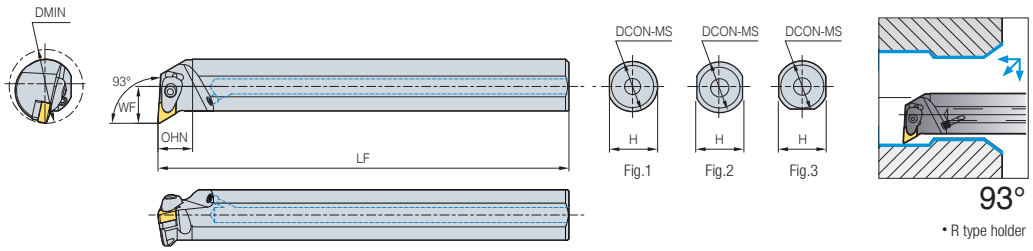
Designation	DMIN	OHN	LF	WF	H	DCON-MS	HAND	Applicable insert	Clamp	Clamp Screw	Shim	Shim Screw	Spring	Nozzle	Wrench	Fig.
A16R/L-DCLNR/L-3	1.2	1.063	8	0.640	0.921	1	R/L	CN□□33□	CVH3	CHX0415	SC32V	FTKA0307	SPR0510	CN0605	HW25P	1
A16R/L-DCLNR/L-4	1.2	1.102	8	0.640	0.921	1	R/L	CN□□43□	CVH4	CHX0518	SC42V	FTKA0410	SPR0714	CN0605	HW30P	1
A20S-DCLNR/L-4	1.47	1.063	10	0.765	1.171	1 1/4	R/L									3
A24T-DCLNR/L-4	1.76	1.181	12	0.890	1.382	1 1/4	R/L									
A32U-DCLNR/L-5	2.4	1.575	14	1.281	1.882	2	R/L	CN□□54□	CVH5	CHX0622	SC54V	FTNA0511	SPR0811	CN0605	HW40L	3

Applicable inserts **B5 ~ B12**

DDUNR/L



DN□□



(inch)

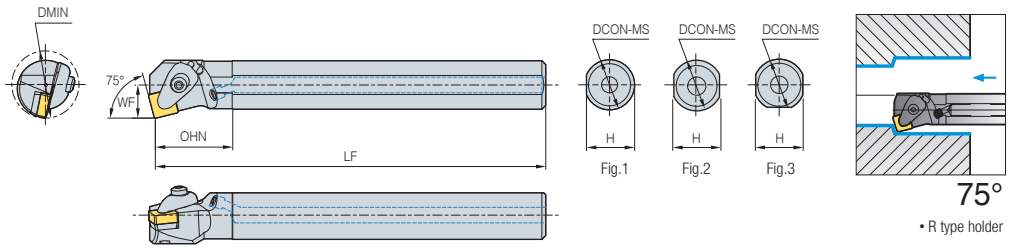
Designation	DMIN	OHN	LF	WF	H	DCON-MS	HAND	Applicable insert	Clamp	Clamp Screw	Shim	Shim Screw	Spring	Nozzle	Wrench	Fig.
A24T-DDUNR/L-4-4	2	0.984	12	1.125	1.382	1 1/2	R/L	DN□□44□□	CVH4	CHX0518	SD43V	FTKA0410	SPR0714	CN0605	HW30P	3
A32U-DDUNR/L-4-4	2.4	1.181	14	1.281	1.882	2	R/L									
A24T-DDUNR/L-4-3	2	0.984	12	1.125	1.382	1 1/2	R/L	DN□□43□□	CVH4	CHX0518	SD44V	FTKA0410	SPR0714	CN0605	HW30P	3
A32U-DDUNR/L-4-3	2.4	1.181	14	1.281	1.882	2	R/L									

Applicable inserts **B13 ~ B18**

DSKNR/L



SN□□



(inch)

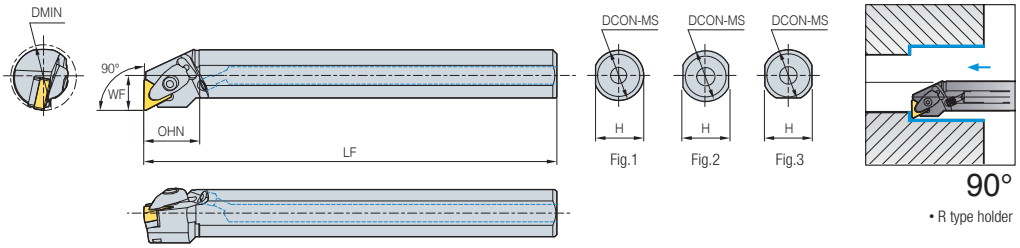
Designation	DMIN	OHN	LF	WF	H	DCON-MS	HAND	Applicable insert	Clamp	Clamp Screw	Shim	Shim Screw	Spring	Nozzle	Wrench	Fig.
A16R/L-DSKNR/L-3	1.2	1.063	8	0.640	0.921	1	R/L	SN□□0903□□	CVH3	CHX0415	SS32V	FTKA0307	SPR0510	CN0605	HW25P	1
A16R/L-DSKNR/L-4	1.2	1.102	8	0.640	0.921	1	R/L	SN□□1204□□	CVH4	CHX0518	SS42V	FTKA0410	SPR0714	CN0605	HW30P	1
A20S-DSKNR/L-4	1.47	1.102	10	0.765	1.171	1 1/4	R/L									3
A24T-DSKNR/L-4	1.76	1.102	12	0.890	1.382	1 1/2	R/L									

Applicable inserts **B20 ~ B28**

DTFNR/L



TN□□



(inch)

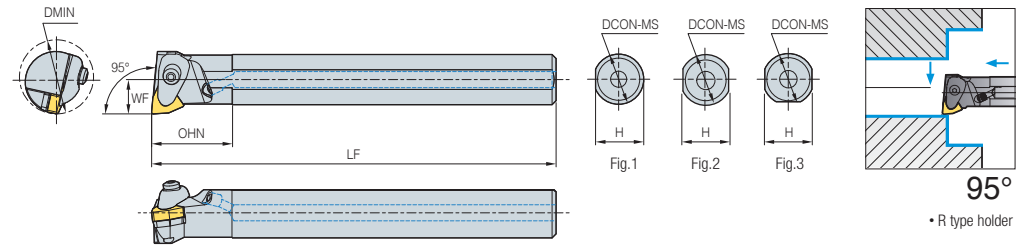
Designation	DMIN	OHN	LF	WF	H	DCON-MS	HAND	Applicable insert	Clamp	Clamp Screw	Shim	Shim Screw	Spring	Nozzle	Wrench	Fig.
A16R-DTFNR/L-3	1.2	1.063	8	0.640	0.961	1	R/L	TN□□33□	CVH3	CHX0415	ST32V	FTKA0307	SPR0510	CN0605	HW25P	1
A20S-DTFNR/L-3	1.47	1.063	10	0.765	1.211	1 1/4	R/L									3
A24T-DTFNR/L-4	1.76	1.299	12	0.890	1.382	1 1/2	R/L	TN□□43□	CVH4	CHX0518	ST44V	FTKA0410	SPR0714	CN0605	HW30P	3
A32U-DTFNR/L-4	2.4	1.299	14	1.281	1.882	2	R/L									

Applicable inserts **B29 ~ B36**

DWLNR/L



WN□□



(inch)

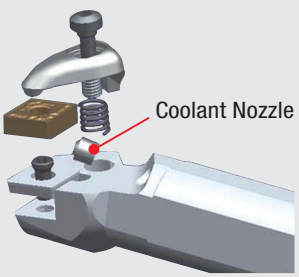
Designation	DMIN	OHN	LF	WF	H	DCON-MS	HAND	Applicable insert	Clamp	Clamp Screw	Shim	Shim Screw	Spring	Nozzle	Wrench	Fig.
A16R-DWLNR/L-3	1.2	0.748	8	0.640	0.921	1	R/L	WN□□33□	CVH3	CHX0415	SW32V	FTKA0307	SPR0510	CN0605	HW25P	1
A20S-DWLNR/L-3	1.47	0.787	10	0.765	1.171	1 1/4	R/L									3
A24T-DWLNR/L-3	1.76	0.984	12	0.890	1.382	1 1/2	R/L									
A16R-DWLNR/L-4	1.2	0.787	8	0.640	0.921	1	R/L	WN□□43□	CVH4	CHX0518	SW42V	FTKA0410	SPR0714	CN0605	HW30P	1
A20S-DWLNR/L-4	1.47	0.945	10	0.765	1.171	1 1/4	R/L									3
A24T-DWLNR/L-4	1.76	0.984	12	0.890	1.382	1 1/2	R/L									
A32U-DWLNR/L-4	2.4	1.260	14	1.281	1.882	2	R/L									

Applicable inserts **B39 ~ B43**



Features of Double Clamp (Boring bar)

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

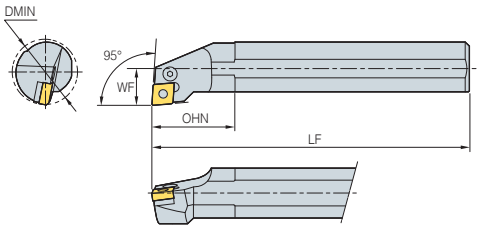


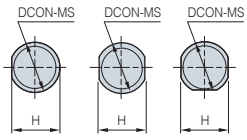


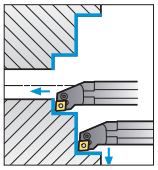
PCLNR/L



CN□□







95°

• R type holder

(inch)

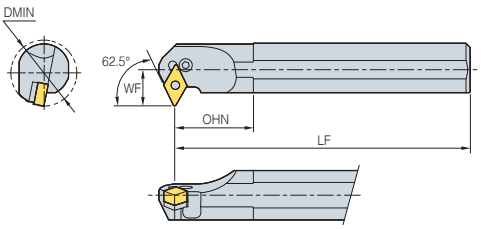
Designation	DMIN	OHN	LF	WF	H	DCON-MS	HAND	Applicable insert	Lever	Screw	Shim	Shim Pin	Shim Pin Punch	Wrench	Fig.
S10R-PCLNR/L-3	0.770	1.102	8	0.406	0.586	5/8	R/L	CN□□33□	LV3C	VHX0509B	-	-	-	HW20L	2
S12S-PCLNR/L-3	0.930	1.260	10	0.500	0.671	3/4	R/L								
S16R-PCLNR/L-3	1.200	1.417	8	0.640	0.921	1	R/L								3
S16R-PCLNR/L-4	1.200	1.575	8	0.640	0.921	1	R/L	CN□□43□	LV4A	VHX0613A	-	-	-	HW25L	3
S25R-PCLNR/L-4	1.200	1.575	8	0.640	0.921	1	R/L								
S20S-PCLNR/L-4	1.470	1.969	10	0.765	0.171	1 1/4	R/L		LV4	VHX0821	SC42B	SP4	LSPS4	HW30L	
S32R-PCLNR/L-4	2.400	2.205	8	1.281	1.382	2	R/L		LV4	VHX0821	SC43B	SP4	-	HW30L	
S24T-PCLNR/L-4	1.760	2.165	12	0.890	1.382	1 1/2	R/L		LV4	VHX0821	SC42B	SP4	LSPS4	HW30L	
S32U-PCLNR/L-4	2.400	2.205	14	1.281	1.882	2	R/L								
S32U-PCLNR/L-6	2.400	2.480	14	1.281	1.882	2	R/L	CN□□64□	LV6	VHX1027	SC63	SP6	LSPS6	HW40L	3
A16R-PCLNR/L-4	1.200	1.575	8	0.640	0.961	1	R/L	CN□□43□	LV4A	VHX0613A	-	-	-	HW25L	1
A20S-PCLNR/L-4	1.470	1.969	10	0.765	1.211	1 1/4	R/L		LV4	VHX0821	SC42B	SP4	LSPS4	HW30L	3
A24T-PCLNR/L-4	1.760	2.362	12	0.890	1.882	1 1/2	R/L								

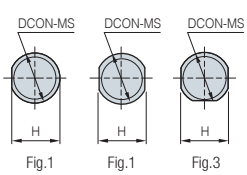
Applicable inserts **B5 ~ B12**

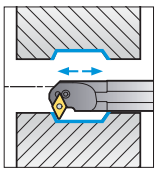
PDSNR/L



DN□□







62.5°

• R type holder

(inch)

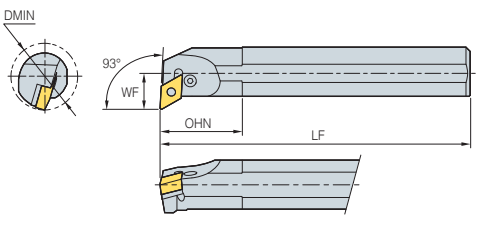
Designation	DMIN	OHN	LF	WF	H	DCON-MS	HAND	Applicable insert	Lever	Screw	Shim	Shim Pin	Shim Pin Punch	Wrench	Fig.
S20S-PDSNR/L-4-4	1.705	1.772	10	1.000	1.171	1 1/4	R/L	DN□□44□	LV4B	VHX0821	SD42	SP4	LSPS4	HW30L	3
S24T-PDSNR/L-4-4	2.000	1.693	12	1.125	1.320	1 1/2	R/L								
S20S-PDSNR/L-4-3	1.705	1.772	10	1.000	1.171	1 1/4	R/L	DN□□43□	LV4	VHX0821	SD42	SP4	LSPS4	HW30L	
S24T-PDSNR/L-4-3	2.000	1.693	12	1.125	1.382	1 1/2	R/L								
A20S-PDSNR/L-4-4	1.705	1.772	10	1.000	1.211	1 1/4	R/L	DN□□44□	LV4B	VHX0821	SD42	SP4	LSPS4	HW30L	
A20S-PDSNR/L-4-3	1.705	1.772	10	1.000	1.211	1 1/4	R/L	DN□□43□	LV4	VHX0821	SD42	SP4	LSPS4	HW30L	

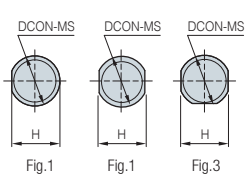
Applicable inserts **B13 ~ B18**

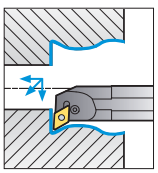
PDUNR/L



DN□□







93°

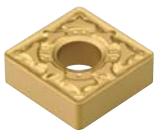
• R type holder

(inch)

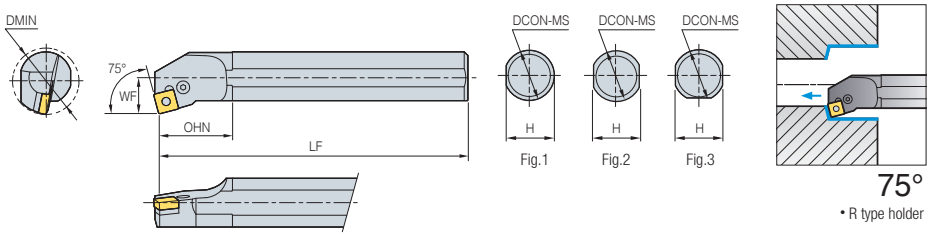
Designation	DMIN	OHN	LF	WF	H	DCON-MS	HAND	Applicable insert	Lever	Screw	Shim	Shim Pin	Shim Pin Punch	Wrench	Fig.
S12S-PDUNR/L3	0.930	1.181	10	0.562	0.671	3/4	R/L	DN□□33□	LV3DN	VHX0512B	-	-	-	HW20L	2
S16R-PDUNR/L3	1.200	1.378	8	0.750	0.921	1	R/L		LV3DN	VHX0512B	-	-	-	HW20L	3
S20S-PDUNR/L3	1.470	1.575	10	1.000	1.171	1 1/4	R/L		LV3	VHX0617	SD317	SP3	LSPS3	HW25L	
S20S-PDUNR/L4-4	1.705	1.969	10	1.000	1.171	1 1/4	R/L	DN□□44□	LV4B	VHX0821	SD42	SP4	LSPS4	HW30L	3
S24T-PDUNR/L4-4	2.000	1.969	12	1.125	1.382	1 1/2	R/L								
S32U-PDUNR/L4-4	2.400	2.480	14	1.325	1.882	2	R/L								
S20S-PDUNR/L4-3	1.705	1.969	10	1.000	1.171	1 1/4	R/L	DN□□43□	LV4	VHX0821	SD42	SP4	LSPS4	HW30L	3
S24T-PDUNR/L4-3	2.000	1.969	12	1.125	1.382	1 1/2	R/L								
A20S-PDUNR/L4-4	1.705	1.969	10	1.000	1.211	1 1/4	R/L	DN□□44□	LV4B	VHX0821	SD42	SP4	LSPS4	HW30L	3
A20S-PDUNR/L4-3	1.705	1.969	10	1.000	1.211	1 1/4	R/L	DN□□43□	LV4	VHX0821	SD42	SP4	LSPS4	HW30L	3

Applicable inserts **B13 ~ B18**

PSKNR/L



SN□□



(inch)

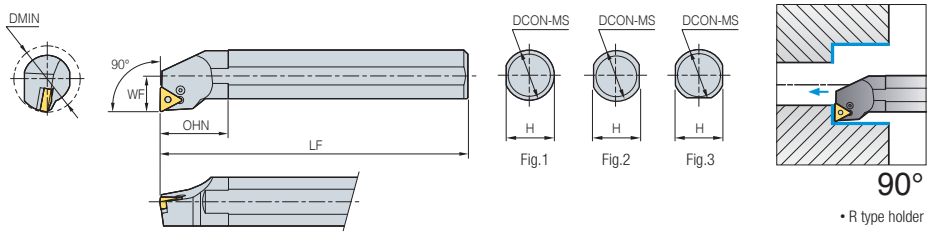
Designation	DMIN	OHN	LF	WF	H	DCON-MS	HAND	Applicable insert	Lever	Screw	Shim	Shim Pin	Shim Pin Punch	Wrench	Fig.
S16T-PSKNR/L4	1.200	1.654	12	0.640	0.921	1	R/L	SN□□43□	LV4A	VHX0613A	-	-	-	HW30L	3
S20U-PSKNR/L4	1.470	1.772	14	0.765	1.171	1 1/4	R/L		LV4	VHX0821	SS42B	SP4	LSPS4	HW30L	
S24V-PSKNR/L4	1.760	1.969	16	0.890	1.382	1 1/2	R/L								
A16T-PSKNR/L4	1.200	1.654	12	0.640	0.961	1	R/L	SN□□43□	LV4A	VHX0613A	-	-	-	HW25L	1
A20U-PSKNR/L4	1.470	1.969	14	0.765	1.211	1 1/4	R/L		LV4	VHX0821	SS42B	SP4	LSPS4	HW30L	3

Applicable inserts **B20 ~ B28**

PTFNR/L



TN□□



(inch)

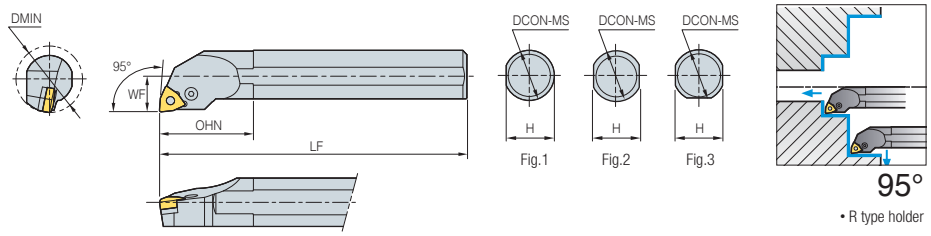
Designation	DMIN	OHN	LF	WF	H	DCON-MS	HAND	Applicable insert	Lever	Screw	Shim	Shim Pin	Shim Pin Punch	Wrench	Fig.
S10R-PTFNR/L2	0.770	1.102	8	0.406	0.586	5/8	R/L	TN□□32□	LV2	VHX0509B	-	-	-	HW25L	2
S12S-PTFNR/L2	0.930	1.299	10	0.500	0.671	3/4	R/L								
S16T-PTFNR/L2	1.200	1.417	12	0.640	0.921	1	R/L								3
S16T-PTFNR/L3N	1.200	1.654	12	0.640	0.921	1	R/L	TN□□33□	LV3B	VHX0512B	-	-	-	HW20L	3
S20R-PTFNR/L3N	1.470	1.969	14	0.765	1.171	1 1/4	R/L		LV3	VHX0617	ST317B	SP3	LSPS3	HW25L	
S24S-PTNFR3N	1.760	2.165	16	0.890	1.382	1 1/2	R/L								
A16T-PTFNR/L3N	1.200	1.575	12	0.640	0.961	1	R/L		LV3	VHX0617	-	-	-	HW25L	1
A20R-PTFNR/L3N	1.470	1.969	14	0.765	1.211	1 1/4	R/L		LV3	VHX0617	ST317B	SP3	LSPS3	HW25L	3
S16S-PTFNR/L3N	1.200	1.575	16	0.640	0.921	1	R/L	TN□□33□	LV3B	VHX0512B	-	-	-	HW20L	3
S20R-PTFNR/L3N	1.470	1.969	14	0.765	1.171	1 1/4	R/L		LV3N	VHX0617N	ST317N	SP3N	LSPS3	HW25L	
S24S-PTNFR/L3N	1.760	2.165	16	0.890	1.382	1 1/2	R/L								

Applicable inserts **B29 ~ B36**

PWLNR/L



WN□□



(inch)

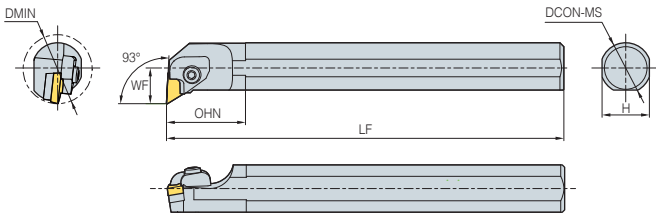
Designation	DMIN	OHN	LF	WF	H	DCON-MS	HAND	Applicable insert	Lever	Screw	Shim	Shim Pin	Shim Pin Punch	Wrench	Fig.
S16R-PWLNR/L3	0.787	0.984	12	0.433	0.551	1	R/L	WN□□33□	LV3B	VHX0512B	-	-	-	HW20L	2
S12S-PWLNR/L3	0.930	1.574	10	0.500	0.671	3/4	R/L	WN□□33□	LV3B	VHX0512B	-	-	-	HW20L	2
S16T-PWLNR/L3	1.200	1.575	12	0.640	0.921	1	R/L								3
S20U-PWLNR/L3	1.470	1.772	14	0.765	1.171	1 1/4	R/L		LV3	VHX0617	SW317	SP3	LSPS3	HW25L	
S16T-PWLNR/L4	1.200	1.772	12	0.640	0.921	1	R/L	WN□□43□	LV4A	VHX0613A	-	-	-	HW25L	3
S20U-PWLNR/L4	1.470	1.969	14	0.765	1.171	1 1/4	R/L		LV4	VHX0821	SW42	SP4	LSPS3	HW30L	

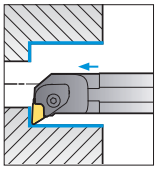
Applicable inserts **B39 ~ B43**

CKUNR/L



KN□□





93°

• R type holder

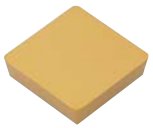
(inch)

Designation	DMIN	OHN	LF	WF	H	DCON-MS	HAND	Applicable insert	Clamp	Clamp Screw	Spring	Shim	Pin+Spring	Shim Screw	Wrench
S20S-CKUNR3	1.705	2.756	10	1.000	1.171	1 1/4	R	KN□□33□L	CTH6LI	CHX0625	SR3	SK33CL	PN0515 / SR4	SHX0310	HW40L HW20L
S24T-CKUNR3	2.000	2.362	12	1.125	1.382	1 1/2	R								
S32U-CKUNR3	2.500	2.165	14	1.377	1.693	2	R								
S20S-CKUNL3	1.705	2.756	10	1.000	1.171	1 1/4	L	KN□□33□R	CTH6RI	CHX0625	SR3	SK33C	PN0515 / SR4	SHX0310	HW40L HW20L
S24T-CKUNL3	2.000	2.362	12	1.125	1.382	1 1/2	L								
S32U-CKUNL3	2.500	2.165	14	1.377	1.693	2	L								

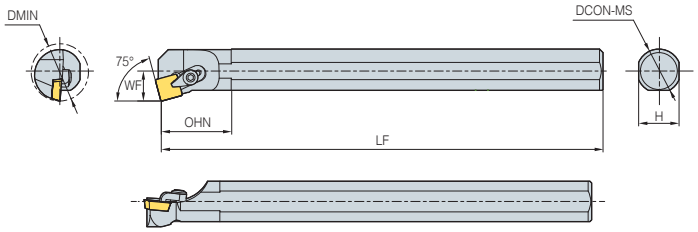
Applicable inserts **B19**

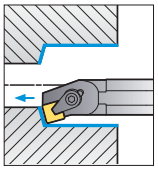
* Use left handed insert for right handed holder

CSKPR/L



SP□□





75°

• R type holder

(inch)

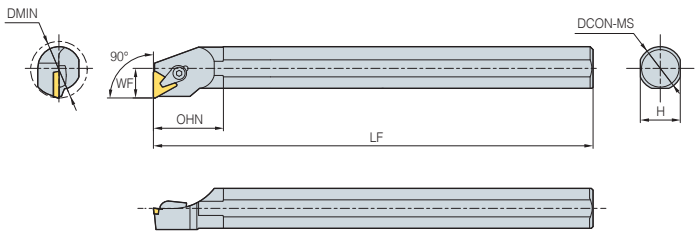
Designation	DMIN	OHN	LF	WF	H	DCON-MS	HAND	Applicable insert	Clamp	Clamp Screw	C-ring	Wrench
S10R-CSKPR3	0.770	1.181	8	0.406	0.586	5/8	R/L	SP□□R32□	CH4R1C	CHX0414C	CR02C	HW25L
S12S-CSKPR3	0.930	1.417	10	0.500	0.671	3/4	R/L		CH5R5C	CHX0519C	CR03C	HW30L
S12S-CSKPR4	0.930	1.102	10	0.500	0.671	3/4	R/L	SP□□R42□	CH6R5	CH0616	CR04C	HW30L
S16R-CSKPR4	1.260	1.575	12	0.670	0.905	1	R/L					

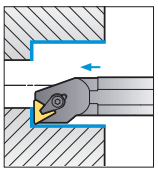
Applicable inserts **B56 ~ B57**

CTFPR/L



TP□□





90°

• R type holder

(inch)

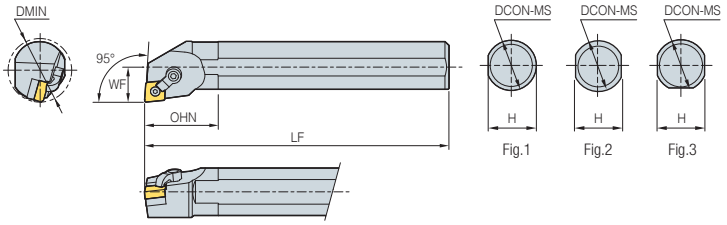
Designation	DMIN	OHN	LF	WF	H	DCON-MS	HAND	Applicable insert	Clamp	Clamp Screw	C-ring	Shim	Shim Pin	Wrench
S08M-CTFPR/L2	0.600	1.024	6	0.312	0.461	1/2	R/L	TP□□22□	CH4R1C	CHX0414C	CR02C	-	-	HW25L
S10R-CTFPR/L2	0.770	1.575	8	0.406	0.586	5/8	R/L							
S12S-CTFPR/L2	0.930	1.575	10	0.500	0.671	3/4	R/L							
S10R-CTFPR/L3	0.770	1.575	8	0.406	0.586	5/8	R/L	TP□□32□	CH5R5C	CHX0519C	CR03C	-	-	HW30L
S12S-CTFPR/L3	0.930	1.575	10	0.500	0.671	3/4	R/L							
S16R-CTFPR/L3	1.200	1.575	8	0.640	0.921	1	R/L		CH6R5	CHX0622C	CR04C	ST32C	SP3C	
S20S-CTFPR/L3	1.470	1.772	10	0.765	1.171	1 1/4	R/L							
S24T-CTFPR/L3	1.760	2.362	12	0.890	1.382	1 1/2	R/L							
S24T-CTFPR/L4	0.760	2.362	12	0.890	1.382	1 1/2	R/L	TP□□43□	CH83R1	CH0823C	CR05C	ST43C	SP4C	HW40L

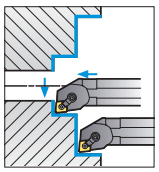
Applicable inserts **B61 ~ B64**

MCLNR/L



CN□□





95°

• R type holder

(inch)

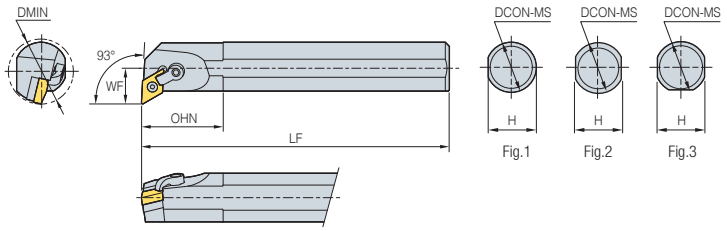
Designation	DMIN	OHN	LF	WF	H	DCON-MS	HAND	Applicable insert	Clamp	Clamp Screw	Shim	Shim Pin	Wrench	Fig.
S12S-MCLNR/L3	0.930	1.417	10	0.500	0.671	3/4	R/L	CN□□32□	CDH7N	DHA10/32-19	-	SP3D3	HW19.8L HW23.8L	2
S16R-MCLNR/L3	1.200	1.417	8	0.640	0.921	1	R/L							3
S16R-MCLNR/L4	1.200	1.417	8	0.640	0.921	1	R/L	CN□□43□	CDH6N	DHA1/4-21	-	SP4DS	HW31.8L HW23.8L	3
S20S-MCLNR/L4	1.705	1.969	10	0.765	1.171	1 1/4	R/L				SC43D	SP4D		
S24T-MCLNR/L4	2.000	2.362	12	0.890	1.382	1 1/2	R/L							
A16R-MCLNR/L4	1.200	1.575	8	0.640	0.921	1	R/L	CN□□43□	CDH6N	DHA1/4-21	-	SP4DS	HW31.8L HW23.8L	1
A20S-MCLNR/L4	1.705	1.969	10	0.765	1.171	1 1/4	R/L				SC43D	SP4D		3

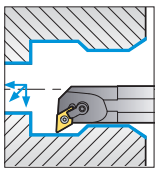
Applicable inserts **B5 ~ B12**

MDUNR/L



DN□□





93°

• R type holder

(inch)

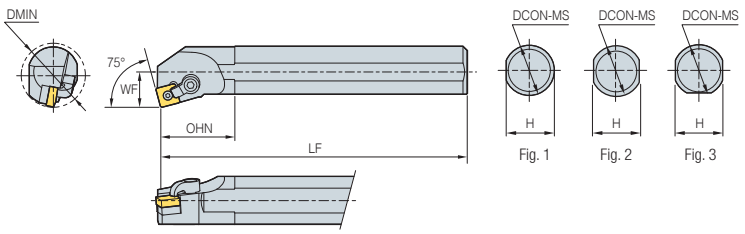
Designation	DMIN	OHN	LF	WF	H	DCON-MS	HAND	Applicable insert	Clamp	Clamp Screw	Shim	Shim Pin	Wrench	Fig.
S20S-MDUNR/L4-3	1.705	1.969	10	0.765	1.171	1 1/4	R/L	DN□□43□	CDH6N	DHA1/4-21	SD43D	SP4D	HW31.8L HW23.8L	3
S24T-MDUNR/L4-3	2.000	2.362	12	0.890	1.382	1 1/2	R/L							
A20S-MDUNR/L4-3	1.705	1.969	10	0.765	1.171	1 1/4	R/L							

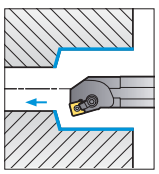
Applicable inserts **B13 ~ B18**

MSKNR/L



SN□□





75°

• R type holder

(inch)

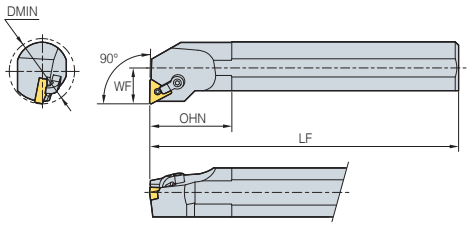
Designation	DMIN	OHN	LF	WF	H	DCON-MS	HAND	Applicable insert	Clamp	Clamp Screw	Shim	Shim Pin	Wrench	Fig.
S16R-MSKNR/L4	1.200	1.417	8	0.640	0.921	1	R/L	SN□□43□	CDH8N1	DHA5/16-28	-	SP4DS	HW39.7L HW23.8L	3
S20S-MSKNR/L4	1.705	1.969	10	0.765	1.171	1 1/4	R/L				SS43D	SP4D		
S24T-MSKNR/L4	2.000	2.362	12	0.890	1.382	1 1/2	R/L							
A16R-MSKNR/L4	1.200	1.575	8	0.640	0.921	1	R/L	SN□□43□	CDH8N1	DHA5/16-28	-	SP4DS	HW39.7L HW23.8L	1
A20S-MSKNR/L4	1.705	1.969	10	0.765	1.171	1 1/4	R/L				SS43D	SP4D		3
A24T-MSKNR/L4	2.000	2.362	12	0.890	1.382	1 1/2	R/L							

Applicable inserts **B20 ~ B28**

MTFNR/L



TN□□



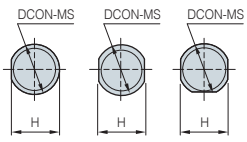
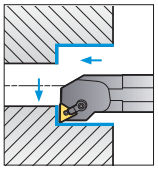


Fig. 1 Fig. 2 Fig. 3



90°

• R type holder

(inch)

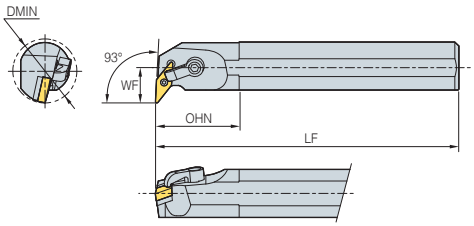
Designation	DMIN	OHN	LF	WF	H	DCON-MS	HAND	Applicable insert	Clamp	Clamp Screw	Shim	Shim Pin	Wrench	Fig.
S16R-MTFNR/L3	1.200	1.417	8	0.640	0.921	1	R/L	TN□□33□	CDH7N1	DHA10-32-19	-	SP3D3	HW23.8L	3
S20S-MTFNR/L3	1.705	1.969	10	0.765	1.171	1 1/4	R/L		CDH7N1	DHA10-32-19	ST32D	SP3D	HW19.8L	
S24T-MTFNR/L3	2.000	2.362	12	0.890	1.382	1 1/2	R/L							
A16R-MTFNR/L3	1.200	1.575	8	0.640	0.921	1	R/L	TN□□33□	CDH7N1	DHA10-32-19	-	SP3D3	HW23.8L	1
A20S-MTFNR/L3	1.705	1.969	10	0.765	1.171	1 1/4	R/L		CDH7N1	DHA10-32-19	ST32D	SP3D	HW19.8L	3

Applicable inserts **B29 ~ B36**

MVUNR/L



VN□□



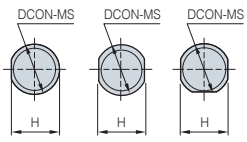
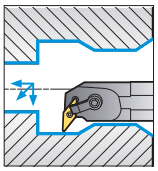


Fig. 1 Fig. 2 Fig. 3



93°

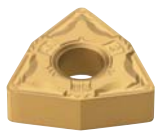
• R type holder

(inch)

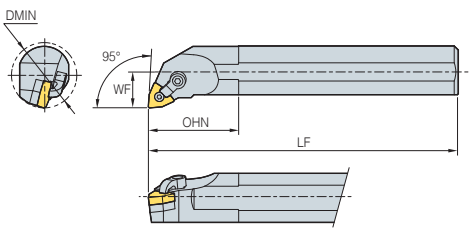
Designation	DMIN	OHN	LF	WF	H	DCON-MS	HAND	Applicable insert	Clamp	Clamp Screw	Shim	Shim Pin	Wrench	Fig.
S20S-MVUNR/L3	1.705	1.969	10	0.765	1.171	1 1/4	R/L	VN□□33□	CDH8N2	DHA5/16-28	SV32D	SP3D	HW39.7L HW19.8L	3
S24T-MVUNR/L3	2.000	2.362	12	0.890	1.382	1 1/2	R/L							
A20S-MVUNR/L3	1.705	1.969	10	0.765	1.171	1 1/4	R/L							
A24T-MVUNR/L3	2.000	2.362	12	0.890	1.382	1 1/2	R/L							

Applicable inserts **B37 ~ B38**

MWLNR/L



WN□□



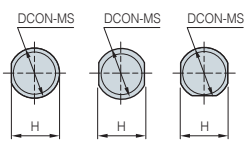
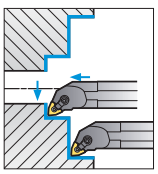


Fig. 1 Fig. 2 Fig. 3



95°

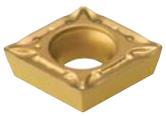
• R type holder

(inch)

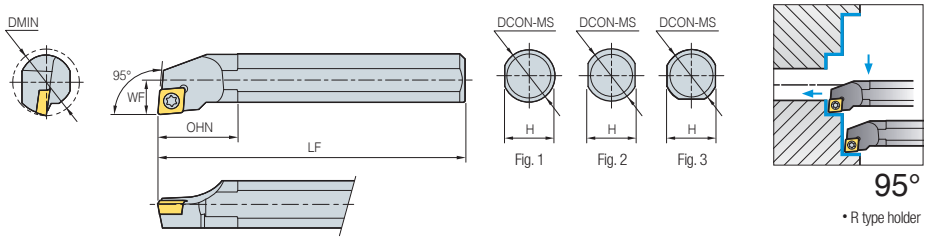
Designation	DMIN	OHN	LF	WF	H	DCON-MS	HAND	Applicable insert	Clamp	Clamp Screw	Shim	Shim Pin	Wrench	Fig.
S16R-MWLNR/L3	1.200	1.417	8	0.640	0.921	1	R/L	WN□□33□	CDH7N	DHA10/32-19	-	SP3D3	HW23.8L HW19.8L	3
S20S-MWLNR/L3	1.705	1.969	10	0.765	1.171	1 1/4	R/L				SW32D	SP3D		
S24T-MWLNR/L3	2.000	2.362	12	0.890	1.382	1 1/2	R/L							
S16R-MWLNR/L4	1.200	1.417	8	0.640	0.921	1	R/L	WN□□43□	CDH6N	DHA1/4-21	-	SP4DS	HW31.8L HW23.8L	3
S20S-MWLNR/L4	1.705	1.969	10	0.765	1.171	1 1/4	R/L				SW43D	SP4D		
S24T-MWLNR/L4	2.000	2.362	12	0.890	1.382	1 1/2	R/L							
A16R-MWLNR/L3	1.200	1.575	8	0.640	0.921	1	R/L	WN□□33□	CDH7N	DHA10/32-19	-	SP3D3	HW31.8L HW19.8L	1
A20S-MWLNR/L3	1.705	1.969	10	0.765	1.171	1 1/4	R/L				SW32D	SP3D		3
A16R-MWLNR/L4	1.200	1.575	8	0.640	0.921	1	R/L	WN□□43□	CDH6N	DHA1/4-21	-	SP4DS	HW31.8L HW23.8L	1
A20S-MWLNR/L4	1.705	1.969	10	0.765	1.171	1 1/4	R/L				SW43D	SP4D		3

Applicable inserts **B39 ~ B43**

SCLCR/L



CC□T



Steel shank type

(inch)

Designation	DMIN	OHN	LF	WF	H	DCON-MS	HAND	Applicable insert	Screw	Shim	Shim Screw	Wrench	Fig.
S05K-SCLCR/L2	0.415	0.551	5	0.219	0.273	5/16	R/L	CC□T21.5□	FTKA02555			TW07	2
S06K-SCLCR/L2	0.480	0.551	5	0.250	0.336	3/8	R/L		FTKA02565	-	-	TW07P	
S06M-SCLCR/L2	0.480	0.551	6	0.250	0.336	3/8	R/L						
S08M-SCLCR/L2	0.600	0.984	6	0.312	0.461	1/2	R/L						
S10R-SCLCR/L2	0.770	1.260	8	0.406	0.586	5/8	R/L						
S08M-SCLCR/L3	0.600	0.984	6	0.312	0.461	1/2	R/L	CC□T32.5□	FTGA03508	-	-	TW15P	2
S10R-SCLCR/L3	0.770	1.280	8	0.406	0.586	5/8	R/L						
S12S-SCLCR/L3	0.930	1.496	10	0.500	0.671	3/4	R/L						
S16R-SCLCR/L3	1.200	1.772	8	0.640	0.921	1	R/L		FTGA03510			TW15P	3
S16R-SCLCR/L4	1.200	1.772	8	0.640	0.921	1	R/L	CC□T43□	FTGA0411F	-	-	TW15P	3
S20S-SCLCR/L4	1.470	1.969	10	0.765	1.171	1 1/4	R/L		FTGA0411F	SC42S	SHXN0610F	HW40L TW15P	
S24T-SCLCR/L4	1.760	2.362	12	0.890	1.382	1 1/2	R/L						
A05F-SCLCR/L2	0.415	0.551	3	0.219	0.293	5/16	R/L	CC□T21.5□	FTKA02555	-	-	TW07P	1
A06H-SCLCR/L2	0.480	0.551	4	0.250	0.355	3/8	R/L		FTKA02565	-	-	TW07P	
A08K-SCLCR/L2	0.600	0.984	5	0.312	0.480	1/2	R/L						
A08K-SCLCR/L3	0.600	0.984	5	0.312	0.480	1/2	R/L	CC□T32.5□	FTGA03508	-	-	TW15P	1
A10M-SCLCR/L3	0.770	1.280	6	0.406	0.605	5/8	R/L						
A12Q-SCLCR/L3	0.930	1.496	7	0.500	0.711	3/4	R/L						
A16R-SCLCR/L3	1.200	1.772	8	0.640	0.961	1	R/L		FTGA03510	-	-	TW15P	
A16R-SCLCR/L4	1.200	1.772	8	0.640	0.961	1	R/L	CC□T43□	FTGA0411F	-	-	TW15P	1
A20S-SCLCR/L4	1.470	1.969	10	0.765	1.211	1 1/4	R/L		FTGA0411F	SC42S	SHXN0610F	HW40L,TW15P	3

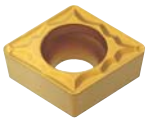
Carbide shank type

(inch)

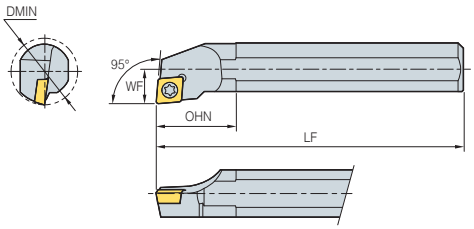
Designation	DMIN	OHN	LF	WF	H	DCON-MS	HAND	Applicable insert	Screw	Wrench	Fig.
C025G-SCLCR/L1.2	0.197	-	3.5	0.98	0.15	5/32	R/L	CC□T1.21□	FTNA01633	TW06P	1
C03H-SCLCR/L1.2	0.260	-	4	0.126	0.168	3/16	R/L				
C04H-SCLCR/L1.5	0.293	-	4	0.156	0.23	1/4	R/L	CC□T1.51□	FTNA0238	TW06P	
C045H-SCLCR/L1.5	0.313	-	4	0.158	0.252	9/32	R/L				
C05K-SCLCR/L2	0.415	-	5	0.219	0.273	5/16	R/L	CC□T2.15□	FTKA02555	TW07P	2
C06K-SCLCR/L2	0.480	-	5	0.250	0.336	3/8	R/L		FTKA02565	TW07P	
C06M-SCLCR/L2	0.480	-	6	0.250	0.336	3/8	R/L				
C08M-SCLCR/L-2	0.551	-	6	0.312	0.461	1/2	R/L				
C08Q-SCLCR/L2	0.551	-	7	0.312	0.461	1/2	R/L				
C08M-SCLCR/L3	0.590	-	6	0.312	0.461	1/2	R/L	CC□T32.5□	FTGA03508	TW15P	
C08Q-SCLCR/L3	0.590	-	7	0.312	0.461	1/2	R/L				
C10R-SCLCR/L3	0.770	-	8	0.406	0.586	5/8	R/L				
C10S-SCLCR/L3	0.770	-	10	0.406	0.586	5/8	R/L				
C12R-SCLCR/L3	0.930	-	8	0.500	0.671	3/4	R/L				
C12S-SCLCR/L3	0.930	-	10	0.500	0.671	3/4	R/L				
C16T-SCLCR/L4	1.200	-	12	0.640	0.921	1	R/L	CC□T43□	FTGA0411F	TW15P	
E04H-SCLCR/L1.5	0.321	-	4	0.156	0.23	1/4	R/L	CC□T1.51□	FTNA0238	TW06P	1
E045K-SCLCR/L1.5	0.315	-	5	0.158	0.252	9/32	R/L				
E05K-SCLCR/L2	0.415	-	5	0.219	0.273	5/16	R/L	CC□T2.15□	FTKA02555	TW07P	2
E06K-SCLCR/L2	0.480	-	5	0.250	0.336	3/8	R/L		FTKA02565	TW07P	
E06M-SCLCR/L2	0.480	-	6	0.250	0.336	3/8	R/L				
E08M-SCLCR/L2	0.551	-	6	0.312	0.461	1/2	R/L				
E08Q-SCLCR/L2	0.551	-	7	0.312	0.461	1/2	R/L				
E08M-SCLCR/L3	0.590	-	6	0.132	0.461	1/2	R/L	CC□T32.5□	FTGA03508	TW15P	
E08Q-SCLCR/L3	0.590	-	7	0.132	0.461	1/2	R/L				
E10R-SCLCR/L3	0.770	-	8	0.406	0.586	5/8	R/L				
E10S-SCLCR/L3	0.770	-	10	0.406	0.586	5/8	R/L				
E12R-SCLCR/L3	0.930	-	8	0.500	0.671	3/4	R/L				
E12S-SCLCR/L3	0.930	-	10	0.500	0.671	3/4	R/L				
E16T-SCLCR/L4	1.200	-	12	0.640	0.921	1	R/L	CC□□T43□	FTGA0411F	TW15P	

Applicable inserts **B44 ~ B48, B75**

SCLPR/L



CP□T



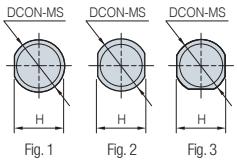
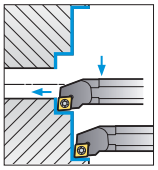


Fig. 1 Fig. 2 Fig. 3



95°

• R type holder

Steel shank type

(inch)

Designation	DMIN	OHN	LF	WF	H	DCON-MS	HAND	Applicable insert	Screw	Wrench	Fig.
S06M-SCLPR/L2.5	0.480	-	6	0.250	0.336	3/8	R/L	CP□T2.51.5□	FTNA0305	TW09P	2
S08M-SCLPR/L2.5	0.600	0.591	6	0.312	0.461	1/2	R/L		FTNA0307	TW09P	
S10N-SCLPR/L3	0.770	0.591	6.5	0.406	0.586	5/8	R/L	CP□T32□	FTNA0408	TW15P	2
S10R-SCLPR/L3	0.770	0.591	8	0.406	0.586	5/8	R/L				
S12N-SCLPR/L3	0.930	0.787	6.5	0.500	0.671	3/4	R/L				
S12S-SCLPR/L3	0.930	0.787	10	0.500	0.671	3/4	R/L				3
A06H-SCLPR/L2.5	0.480	-	4	0.250	0.355	3/8	R/L	CP□R2.51.5□	FTNA0305	TW09P	1
A08K-SCLPR/L2.5	0.600	0.787	5	0.312	0.48	1/2	R/L		FTNA0307	TW09P	
A10M-SCLPR/L3	0.770	0.591	6	0.406	0.605	5/8	R/L	CP□T32□	FTNA0408	TW15P	1
A12Q-SCLPR/L3	0.930	0.787	7	0.500	0.711	3/4	R/L				3

Carbide shank type

(inch)

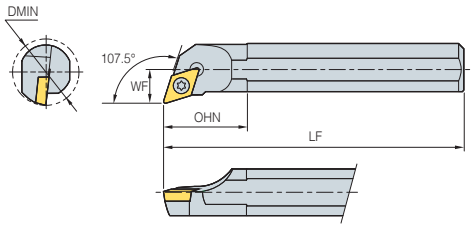
Designation	DMIN	OHN	LF	WF	H	DCON-MS	HAND	Applicable insert	Screw	Wrench	Fig.
C60K-SCLPR/L2.5	0.480	0.571	5	0.250	0.336	3/8	R/L	CP□T2.51.5□	FTNA0305	TW09P	2
C06M-SCLPR/L2.5	0.480	0.571	6	0.250	0.336	3/8	R/L				
C08M-SCLPR/L2.5	0.590	0.579	6	0.312	0.461	1/2	R/L		FTNA0306	TW09P	
C08Q-SCLPR/L2.5	0.590	0.579	7	0.312	0.461	1/2	R/L				
C08M-SCLPR/L3	0.590	0.567	6	0.312	0.461	1/2	R/L	CP□T32□	FTNA0408	TW15P	
C08Q-SCLPR/L3	0.590	0.567	7	0.312	0.461	1/2	R/L				
C10R-SCLPR/L3	0.770	0.882	8	0.406	0.586	5/8	R/L				
C10S-SCLPR/L3	0.770	0.882	10	0.406	0.586	5/8	R/L				
C12R-SCLPR/L3	0.930	0.886	8	0.500	0.471	3/4	R/L				
C12S-SCLPR/L3	0.930	0.886	10	0.500	0.471	3/4	R/L				
E06K-SCLPR/L2.5	0.480	0.571	5	0.250	0.336	3/8	R/L	CP□T2.51.5□	FTNA0305	TW09P	
E06M-SCLPR/L2.5	0.480	0.571	6	0.250	0.336	3/8	R/L				
E08M-SCLPR/L2.5	0.590	0.579	6	0.312	0.461	1/2	R/L				
E08Q-SCLPR/L2.5	0.590	0.579	7	0.312	0.461	1/2	R/L				
E08M-SCLPR/L3	0.590	0.567	6	0.312	0.461	1/2	R/L		FTNA0407	TW09P	2
E08Q-SCLPR/L3	0.590	0.567	7	0.312	0.461	1/2	R/L				
E10R-SCLPR/L3	0.770	0.882	8	0.406	0.586	5/8	R/L	CP□T32□	FTNA0408	TW15P	
E10S-SCLPR/L3	0.770	0.882	10	0.406	0.586	5/8	R/L				
E12R-SCLPR/L3	0.930	0.886	8	0.500	0.471	3/4	R/L				
E12S-SCLPR/L3	0.930	0.886	10	0.500	0.471	3/4	R/L				

Applicable inserts **B49**

SDQCR/L



DC□T



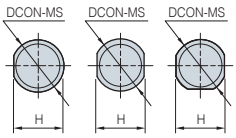
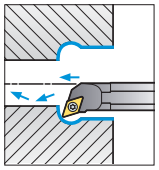


Fig. 1 Fig. 2 Fig. 3



107.5°
• R type holder

Steel shank type

(inch)

Designation	DMIN	OHN	LF	WF	H	DCON-MS	HAND	Applicable insert	Screw	Wrench	Fig.
S06M-SDQCR/L2	0.600	0.787	6	0.375	0.336	3/8	R/L	DC□T21.5□	FTKA02555	TW07P	2
S08M-SDQCR/L2	0.730	0.866	6	0.437	0.461	1/2	R/L		FTKA02565	TW07P	
S10R-SDQCR/L2	0.850	1.063	8	0.500	0.586	5/8	R/L				
S10R-SDQCR/L3	0.850	1.260	8	0.500	0.586	5/8	R/L	DC□T32.5□	FTGA03508	TW15P	2
S12S-SDQCR/L3	0.980	1.260	10	0.562	0.671	3/4	R/L				
S16R-SDQCR/L3	1.300	1.260	8	0.640	0.921	1	R/L		FTGA03510	TW15P	3
A06H-SDQCR/L2	0.600	0.787	4	0.375	0.355	3/8	R/L	DC□T21.5□	FTKA02555	TW07P	1
A08K-SDQCR/L2	0.730	0.866	5	0.437	0.480	1/2	R/L		FTKA02565	TW07P	1
A10M-SDQCR/L3	0.850	1.063	6	0.500	0.605	5/8	R/L	DC□T32.5□	FTGA03508	TW15P	1
A12Q-SDQCR/L3	0.980	1.260	7	0.562	0.711	3/4	R/L				
A16R-SDQCR/L3	1.300	1.260	8	0.640	0.961	1	R/L		FTGA03510	TW15P	1

Carbide shank type

(inch)

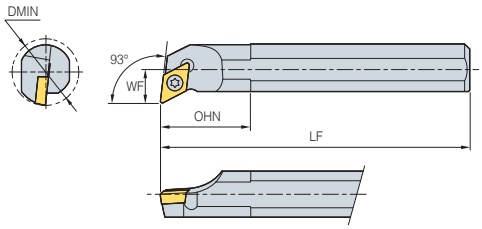
Designation	DMIN	OHN	LF	WF	H	DCON-MS	HAND	Applicable insert	Screw	Wrench	Fig.
C05K-SDQCR/L2	0.393	-	5	0.219	0.273	5/16	R/L	DC□T2.15□□	FTKA02555	TW07P	2
C06K-SDQCR/L2	0.600	0.551	5	0.375	0.336	3/8	R/L				
C08M-SDQCR/L2	0.730	0.551	6	0.437	0.461	1/2	R/L		FTKA02565	TW07P	
C10R-SDQCR/L2	0.850	-	8	0.500	0.586	5/8	R/L				
C10R-SDQCR/L3	0.850	0.839	8	0.500	0.586	5/8	R/L	DC□T32.5□□	FTGA03508	TW15P	
C12R-SDQCR/L3	0.980	0.945	8	0.562	0.671	3/4	R/L				
C12S-SDQCR/L3	0.980	0.945	10	0.562	0.671	3/4	R/L				
E05K-SDQCR/L2	0.393	-	5	0.219	0.273	5/16	R/L	DC□T2.15□□	FTKA02555	TW07P	2
E06K-SDQCR/L2	0.600	0.551	5	0.375	0.336	3/8	R/L				
E08M-SDQCR/L2	0.730	0.551	6	0.437	0.461	1/2	R/L		FTKA02565	TW07P	
E10R-SDQCR/L2	0.850	-	8	0.500	0.586	5/8	R/L				
E10R-SDQCR/L3	0.850	0.839	8	0.500	0.586	5/8	R/L	DC□T32.5□□	FTGA03508	TW15P	
E12R-SDQCR/L3	0.980	0.945	8	0.562	0.671	3/4	R/L				
E12S-SDQCR/L3	0.980	0.945	10	0.562	0.671	3/4	R/L				

Applicable inserts **B50 ~ B53, B76**

SDUCR/L



DC□T



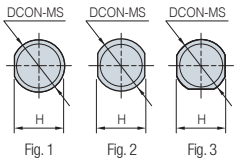
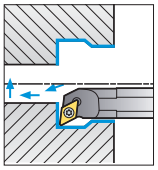


Fig. 1 Fig. 2 Fig. 3



93°
• R type holder

Steel shank type

(inch)

Designation	DMIN	OHN	LF	WF	H	DCON-MS	HAND	Applicable insert	Screw	Wrench	Fig.
S06M-SDUCR/L2	0.600	-	6	0.375	0.336	3/8	R/L	DC□T21.5□	FTKA02555	TW07P	2
S08M-SDUCR/L2	0.730	0.866	6	0.437	0.461	1/2	R/L		FTKA02565	TW07P	2
S10R-SDUCR/L2	0.850	1.063	8	0.500	0.586	5/8	R/L				
S10R-SDUCR/L3	0.850	1.063	8	0.500	0.586	5/8	R/L	DC□T32.5□	FTGA03508	TW15P	2
S12S-SDUCR/L3	0.980	0.575	10	0.562	0.671	3/4	R/L				
S16R-SDUCR/L3	1.300	1.811	8	0.640	0.921	1	R/L		FTGA03510	TW15P	3
S20S-SDUCR/L3	1.470	1.969	10	0.765	1.171	1 1/4	R/L				
A06H-SDUCR/L2	0.600	-	6	0.375	0.355	3/8	R/L	DC□T21.5□	FTKA02555	TW07P	1
A08K-SDUCR/L2	0.730	0.866	5	0.437	0.48	1/2	R/L		FTKA02565	TW07P	1
A10M-SDUCR/L2	0.850	1.063	6	0.500	0.605	5/8	R/L				
A12Q-SDUCR/L3	0.980	1.378	7	0.562	0.711	3/4	R/L	DC□T32.5□	FTGA03508	TW15P	1
A16R-SDUCR/L3	1.300	1.811	8	0.640	0.961	1	R/L		FTGA03510	TW15P	

Carbide shank type

(inch)

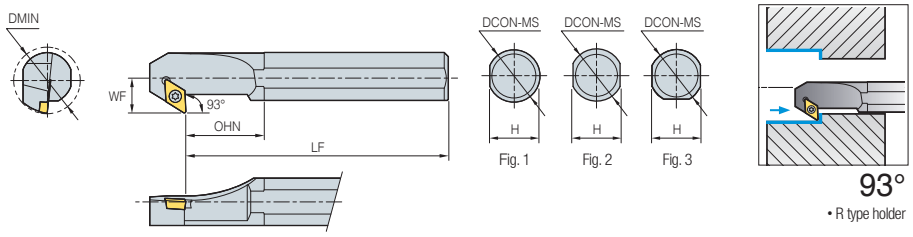
Designation	DMIN	OHN	LF	WF	H	DCON-MS	HAND	Applicable insert	Screw	Wrench	Fig.
C06K-SDUCR/L2	0.600	0.386	5	0.375	0.336	3/8	R/L	DC□T21.5□□	FTKA02555	TW07P	2
C06M-SDUCR/L2	0.600	0.386	6	0.375	0.336	3/8	R/L				
C08M-SDUCR/L2	0.730	0.433	6	0.437	0.461	1/2	R/L		FTKA02565	TW07P	
C08Q-SDUCR/L2	0.730	0.433	7	0.437	0.461	1/2	R/L				
C10R-SDUCR/L2	0.850	-	8	0.500	0.586	5/8	R/L				
C10S-SDUCR/L2	0.850	-	10	0.500	0.586	5/8	R/L				
C10R-SDUCR/L3	0.850	-	8	0.500	0.586	5/8	R/L	DC□T32.5□	FTGA03508	TW15P	
C10S-SDUCR/L3	0.850	-	10	0.500	0.586	5/8	R/L				
C12R-SDUCR/L3	0.980	-	8	0.562	0.671	3/4	R/L				
C12S-SDUCR/L3	0.980	-	10	0.562	0.671	3/4	R/L				
C16T-SDUCR/L3	1.300	-	12	0.640	0.921	1	R/L		FTGA03510	TW15P	
E06K-SDUCR/L2	0.600	0.386	5	0.350	0.336	3/8	R/L	DC□T21.5□□	FTKA02555	TW07P	2
E06M-SDUCR/L2	0.600	0.386	6	0.375	0.336	3/8	R/L				
E08M-SDUCR/L2	0.730	0.433	6	0.437	0.461	1/2	R/L		FTKA02565	TW07P	
E08Q-SDUCR/L2	0.730	0.433	7	0.437	0.461	1/2	R/L				
E10R-SDUCR/L2	0.850	-	8	0.500	0.586	5/8	R/L				
E10S-SDUCR/L2	0.850	-	10	0.500	0.586	5/8	R/L				
E10R-SDUCR/L3	0.850	-	8	0.500	0.586	5/8	R/L	DC□T32.5□	FTGA03508	TW15P	
E10S-SDUCR/L3	0.850	-	10	0.500	0.586	5/8	R/L				
E12R-SDUCR/L3	0.980	-	8	0.562	0.671	3/4	R/L				
E12S-SDUCR/L3	0.980	-	10	0.562	0.671	3/4	R/L				
E16T-SDUCR/L3	1.300	-	12	0.640	0.921	1	R/L		FTGA03510	TW15P	

Applicable inserts **B50 ~ B53, B76**

SDZCR/L



DC□T



(inch)

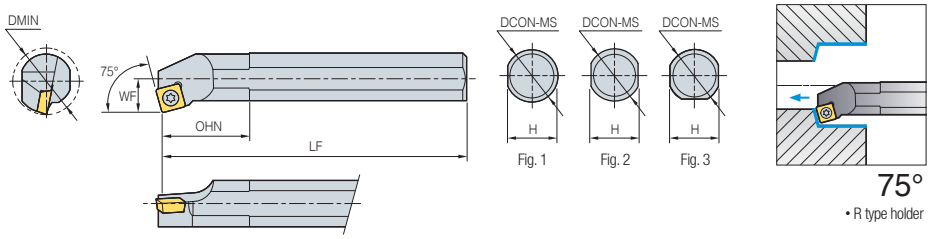
Designation	DMIN	OHN	LF	WF	H	DCON-MS	HAND	Applicable insert	Screw	Shim	Shim Screw	Wrench	Fig.
S10R-SDZCR/L2	0.850	0.787	8	0.500	0.586	5/8	R/L	DC□T21.5□	FTKA02565	-	-	TW07P	2
S12S-SDZCR/L2	0.980	0.984	10	0.562	0.671	3/4	R/L						
S16R-SDZCR/L3	1.200	1.181	8	0.640	0.921	1	R/L	DC□T32.5□	FTGA03510	-	-	TW15P	3
S20S-SDZCR/L3	1.470	1.535	10	0.765	1.171	1 1/4	R/L		FTGA03512	SD32S	SHXN0509F	TW15P, HW35L	
S24T-SDZCR/L3	1.760	1.850	12	0.890	1.382	1 1/2	R/L						
A16R-SDZCR/L3	1.200	1.181	8	0.640	0.961	1	R/L		FTGA03510	-	-	TW15P	1
A20S-SDZCR/L3	1.470	1.535	10	0.765	1.211	1 1/4	R/L		FTGA03512	SD32S	SHXN0509F	TW15P, HW35L	3

Applicable inserts **B50 ~ B53, B76**

SSKCR/L



SC□T

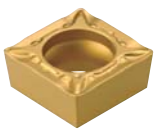


(inch)

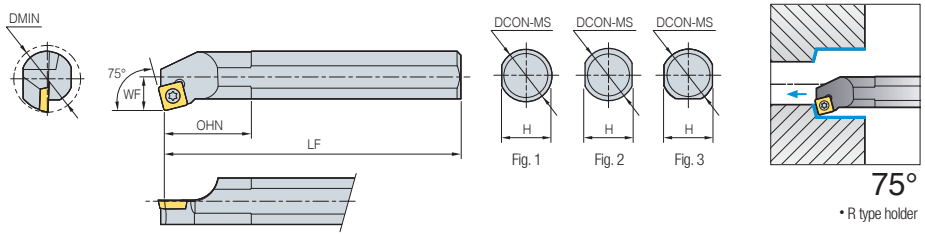
Designation	DMIN	OHN	LF	WF	H	DCON-MS	HAND	Applicable insert	Screw	Shim	Shim Screw	Wrench	Fig.
S08M-SSKCR/L3	0.600	1.024	6	0.312	0.461	1/2	R/L	SC□T32.5□	FTGA03507	-	-	TW15P	2
S10R-SSKCR/L3	0.770	1.260	8	0.406	0.945	5/8	R/L		FTGA03508	-	-	TW15P	
S12S-SSKCR/L3	0.930	1.339	10	0.500	0.671	3/4	R/L						
S16R-SSKCR/L4	1.200	1.417	8	0.640	0.921	1	R/L	SC□T43□□	FTGA0411F	-	-	TW15P	3
S20S-SSKCR/L4	1.470	1.693	10	0.765	1.171	1 1/4	R/L		FTGA0411F	SS42S	SHXN0610F	TW15P, HW40L	
A08K-SSKCR/L3	0.600	1.024	5	0.312	0.480	1/2	R/L	SC□T32.5□	FTGA03507	-	-	TW15P	1
A10M-SSKCR/L3	0.770	1.260	6	0.406	0.605	5/8	R/L		FTGA03508	-	-	TW15P	
A12Q-SSKCR/L3	0.960	1.339	7	0.500	0.711	3/4	R/L						
A16R-SSKCR/L4	1.200	1.417	8	0.640	0.961	1	R/L	SC□T43□	FTGA0411F	-	-	TW15P	
A20S-SSKCR/L4	1.470	1.693	10	0.765	1.211	1 1/4	R/L		FTGA0411F	SS42S	SFXN0610F	TW15P, HW40L	3

Applicable inserts **B55, B78**

SSKPR/L



SP□T



(inch)

Designation	DMIN	OHN	LF	WF	H	DCON-MS	HAND	Applicable insert	Screw	Wrench	Fig.
S08M-SSKPR/L3	0.600	0.709	6	0.312	0.461	1/2	R/L	SP□T32□	FTNA0307	TW09P	2
S10N-SSKPR/L3	0.770	1.181	6.5	0.406	0.586	5/8	R/L				
S10R-SSKPR/L3	0.770	1.260	8	0.406	0.586	5/8	R/L				
S12N-SSKPR/L3	0.930	1.280	6.5	0.500	0.671	3/4	R/L				
S12S-SSKPR/L3	0.930	1.378	10	0.500	0.671	3/4	R/L				
A08K-SSKPR/L3	0.600	0.827	5	0.312	0.480	1/2	R/L	SP□T32□	FTNA0307	TW09P	1
A10M-SSKPR/L3	0.770	1.181	6	0.408	0.605	5/8	R/L				
A12Q-SSKPR/L3	0.930	1.260	7	0.500	0.711	3/4	R/L				

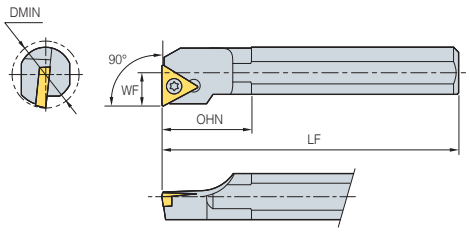
Applicable inserts **B56 ~ B57**

• Use left handed insert for right handed holder

STFCR/L



TC□T



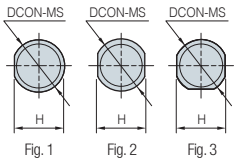
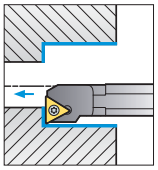


Fig. 1 Fig. 2 Fig. 3



90°

• R type holder

Steel shank type

(inch)

Designation	DMIN	OHN	LF	WF	H	DCON-MS	HAND	Applicable insert	Screw	Shim	Shim Screw	Wrench	Fig.
S06M-STFCR/L1.8	0.480	0.906	6	0.500	0.336	3/8	R/L	TC□T81.5□	FTKA02206	-	-	TW06P	2
S08M-STFCR/L1.8	0.600	1.102	6	0.312	0.461	1/2	R/L						
S08M-STFCR/L2	0.600	1.181	6	0.312	0.461	1/2	R/L	TC□T21.5□	FTKA02565	-	-	TW07P	2
S10R-STFCR/L2	0.770	1.378	8	0.406	0.586	5/8	R/L						
S12S-STFCR/L2	0.930	1.417	10	0.500	0.671	3/4	R/L						
S12S-STFCR/L3	0.930	1.575	10	0.500	0.671	3/4	R/L	TC□T32.5□	FTGA03510	-	-	TW15P	2
S16R-STFCR/L3	1.200	1.929	8	0.640	0.921	1	R/L						3
S20S-STFCR/L3	1.470	1.969	10	0.765	1.171	1 1/4	R/L	TC□T32.5□	FTGA03512	ST32S	SHXN0509F	TW15P, HW35L	3
S24T-STFCR/L3	1.760	2.362	12	0.890	1.382	1 1/2	R/L						
A06H-STFCR/L1.8	0.480	0.906	4	0.250	0.355	3/8	R/L	TC□T1.81.5□	FTKA02206	-	-	TW06P	1
A08K-STFCR/L1.8	0.600	1.102	5	0.312	0.480	1/2	R/L						
A08K-STFCR/L2	0.000	1.181	5	0.312	0.480	1/2	R/L						
A10M-STFCR/L2	0.770	1.378	6	0.406	0.605	5/8	R/L	TC□T21.5□	FTKA02565	-	-	TW07P	1
A12Q-STFCR/L2	0.930	1.417	7	0.500	0.711	3/4	R/L						
A16R-STFCR/L3	1.200	1.929	8	0.640	0.961	1	R/L	TC□T32.5□	FTKA03510	-	-	TW15P	1
A20S-STFCR/L3	1.470	1.969	10	0.765	1.211	1 1/4	R/L		FTGA03512	ST32S	SHXN0509F	TW15P, HW35L	3

Carbide shank type

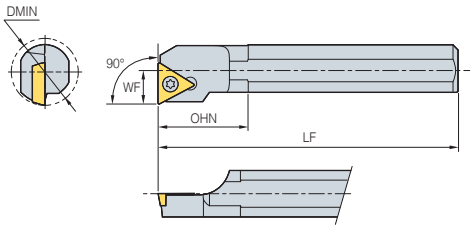
Designation	DMIN	OHN	LF	WF	H	DCON-MS	HAND	Applicable insert	Screw	Wrench	Fig.
C05K-STFCR/L1.8	0.415	-	5	0.219	0.273	5/16	R/L	TC□T1.81.5□□	FTKA02206	TW06P	2
C06K-STFCR/L1.8	0.480	0.551	5	0.250	0.336	3/8	R/L				
C06K-STFCR/L2	0.480	0.492	5	0.250	0.336	3/8	R/L	TC□T21.5□□	FTKA02555	TW07P	
C08M-STFCR/L2	0.600	-	6	0.312	0.461	1/2	R/L				
C10R-STFCR/L2	0.770	-	8	0.406	0.586	5/8	R/L		FTKA02565	TW07P	
C12R-STFCR/L2	0.930	0.906	8	0.500	0.671	3/4	R/L				
C12S-STFCR/L2	0.930	0.906	10	0.500	0.671	3/4	R/L				
C12R-STFCR/L3	0.930	-	8	0.500	0.671	3/4	R/L	TC□T32.5□□	FTGA03510	TW15P	
C12S-STFCR/L3	0.930	-	10	0.500	0.671	3/4	R/L				
E05K-STFCR/L1.8	0.415	-	5	0.219	0.273	5/16	R/L	TC□T1.81.5□□	FTKA02206	TW06P	
E06K-STFCR/L1.8	0.480	0.551	5	0.250	0.336	3/8	R/L				
E06K-STFCR/L2	0.480	0.492	5	0.250	0.336	3/8	R/L	TC□T21.5□□	FTKA02555	TW07P	2
E08M-STFCR/L2	0.600	-	6	0.312	0.461	1/2	R/L				
E10R-STFCR/L2	0.770	-	8	0.406	0.586	5/8	R/L		FTKA02565	TW07P	
E12R-STFCR/L2	0.930	0.906	8	0.500	0.671	3/4	R/L				
E12S-STFCR/L2	0.930	0.906	10	0.500	0.671	3/4	R/L				
E12R-STFCR/L3	0.930	-	8	0.500	0.671	3/4	R/L	TC□T32.5□□	FTGA03510	TW15P	
E12S-STFCR/L3	0.930	-	10	0.500	0.671	3/4	R/L				

Applicable inserts **B59 ~ B60, B79**

STFPR/L



TP□T



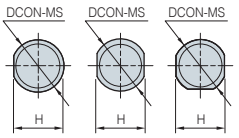
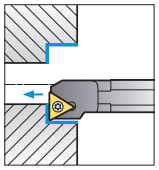


Fig. 1 Fig. 2 Fig. 3



90°
• R type holder

Steel shank type

(inch)

Designation	DMIN	OHN	LF	WF	H	DCON-MS	HAND	Applicable insert	Screw	Wrench	Fig.
S06M-STFPR/L2	0.480	-	6	0.250	0.336	3/8	R/L	TP□T22□	FTNA0306	TW09P	2
S08M-STFPR/L2	0.600	0.394	6	0.312	0.461	1/2	R/L		FTNA0307	TW09P	2
S10N-STFPR/L2	0.770	0.474	6.5	0.406	0.586	5/8	R/L				
S10R-STFPR/L2	0.770	0.474	8	0.406	0.586	5/8	R/L				
S12N-STFPR/L3	0.930	0.551	6.5	0.500	0.671	3/4	R/L	TP□T33□	FTNA0408	TW15P	2
S12S-STFPR/L3	0.930	0.551	10	0.500	0.671	1/4	R/L				
A06H-STFPR/L2	0.480	-	4	0.250	0.355	3/8	R/L	TP□T22□	FTNA0306	TW09P	1
A08K-STFPR/L2	0.600	0.394	5	0.312	0.480	1/2	R/L		FTNA0307	TW09P	1
A10M-STFPR/L2	0.770	0.474	6	0.406	0.605	5/8	R/L				
A12Q-STFPR/L3	0.930	0.551	7	0.500	0.711	3/4	R/L	TP□T33□	FTNA0408	TW15P	1

Carbide shank type

Designation	DMIN	OHN	LF	WF	H	DCON-MS	HAND	Applicable insert	Screw	Wrench	Fig.
C05K-STFPR/L1.5	0.393	0.539	5	0.219	0.273	5/16	R/L	TP□T1.51.5□□	FTNA02205	TW06P	2
C06K-STFPR/L2	0.480	0.551	5	0.25	0.336	3/8	R/L	TP□T22□□	FTNA0305	TW09P	
C06M-STFPR/L2	0.480	0.551	6	0.25	0.336	3/8	R/L				
C08M-STFPR/L2	0.590	-	6	0.312	0.461	1/2	R/L		FTNA0307	TW09P	
C08Q-STFPR/L2	0.590	-	7	0.312	0.461	1/2	R/L				
C10R-STFPR/L2	0.850	-	8	0.5	0.586	5/8	R/L				
C10S-STFPR/L2	0.850	-	10	0.5	0.586	5/8	R/L				
C12R-STFPR/L2	0.930	-	8	0.5	0.671	3/4	R/L				
C12S-STFPR/L2	0.930	-	10	0.5	0.671	3/4	R/L				
C12R-STFPR/L3	0.930	-	8	0.5	0.671	3/4	R/L	TP□T33□□	FTNA0408	TW15P	
C12S-STFPR/L3	0.930	-	10	0.5	0.671	3/4	R/L				
C16T-STFPR/L3	1.300	0.925	12	0.64	0.921	1	R/L				
E05K-STFPR/L1.5	0.393	0.539	5	0.219	0.273	5/16	R/L	TP□T1.51.5□□	FTNA02205	TW06P	2
E06K-STFPR/L2	0.480	0.551	5	0.25	0.336	3/8	R/L	TP□T22□□	FTNA0305	TW09P	
E06M-STFPR/L2	0.480	0.551	6	0.25	0.336	3/8	R/L				
E08M-STFPR/L2	0.590	-	6	0.312	0.461	1/2	R/L		FTNA0307	TW09P	
E08Q-STFPR/L2	0.590	-	7	0.312	0.461	1/2	R/L				
E10R-STFPR/L2	0.850	-	8	0.5	0.586	5/8	R/L				
E10S-STFPR/L2	0.850	-	10	0.5	0.586	5/8	R/L				
E12R-STFPR/L2	0.930	-	8	0.5	0.671	3/4	R/L				
E12S-STFPR/L2	0.930	-	10	0.5	0.671	3/4	R/L				
E12R-STFPR/L3	0.930	-	8	0.5	0.671	3/4	R/L	TP□T33□□	FTNA0408	TW15P	
E12S-STFPR/L3	0.930	-	10	0.5	0.671	3/4	R/L				
E16T-STFPR/L3	1.300	0.925	12	0.64	0.921	1	R/L				

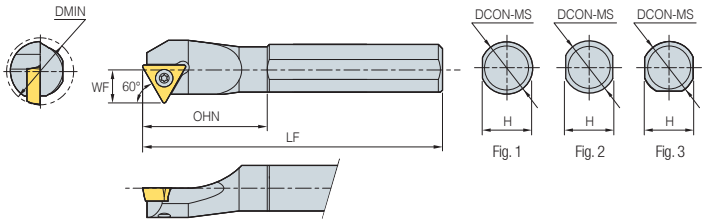
Applicable inserts **B61 ~ B64**

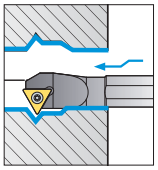
• Use left handed insert for right handed holder

STWPR/L



TP□□





60°
• R type holder

(inch)

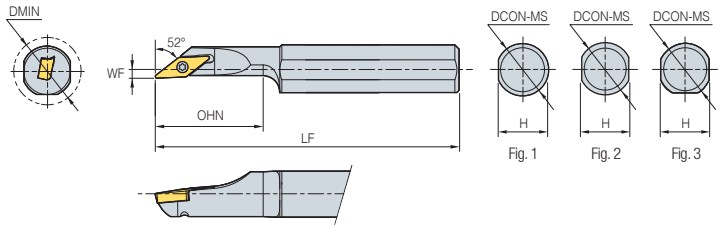
Designation	DMIN	OHN	LF	WF	H	DCON-MS	HAND	Applicable insert	Screw	Wrench	Fig.
S06M-STWPR/L2	0.480	0.905	6	0.250	0.336	3/8	R/L	TPGH21.5□	FTNA0305	TW09P	2
S08M-STWPR/L2	0.600	1.181	6	0.312	0.461	1/2	R/L	TPGH22□ TPMT22□	FTNA0306	TW09P	
S10R-STWPR/L2	0.770	1.378	8	0.406	0.586	5/8	R/L				
S12R-STWPR/L2	0.930	1.575	8	0.492	0.748	3/4	R/L				

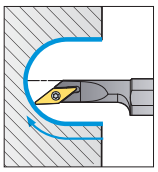
Applicable inserts **B61 ~ B64**

SVJCR/L



VC□□





52°
• R type holder

(inch)

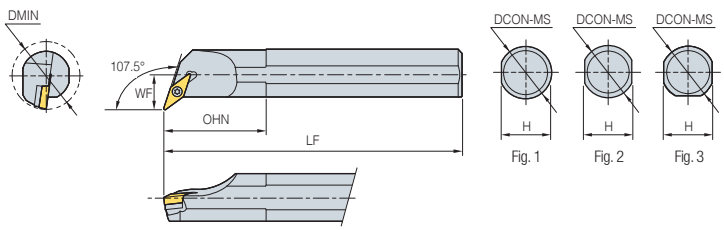
Designation	DMIN	OHN	LF	WF	H	DCON-MS	HAND	Applicable insert	Screw	Wrench	Fig.
S8M-SVJCR/L1.5	0.600	1.024	6	0.079	0.461	1/2	R/L	VCMT1.5□□	FTNA0204	TW06P	2
S10Q-SVJCR/L1.5	0.770	1.417	7	0.079	0.586	5/8	R/L				

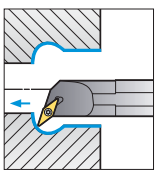
Applicable inserts **B65 ~ B70, B81**

SVQBR/L



VB□T





107.5°
• R type holder

(inch)

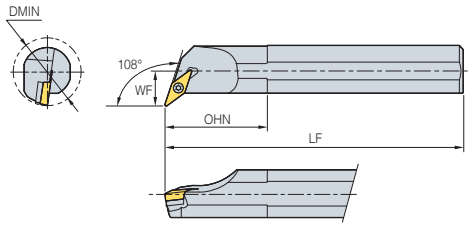
Designation	DMIN	OHN	LF	WF	H	DCON-MS	HAND	Applicable insert	Screw	Shim	Shim Screw	Wrench	Fig.
S20S-SVQBR/L3	1.705	0.331	10	1.000	1.171	1 1/4	R/L	VB□T33□	FTGA03512	SV32S	SHXN0509F	TW15P HW35L	3
S24T-SVQBR/L3	2.000	0.370	12	1.125	1.382	1 1/2	R/L						
A20S-SVQBR/L3	1.705	0.331	10	1.000	1.211	1 1/4	R/L						

Applicable inserts **B65 ~ B67, B80**

SVQCR/L



VC□T



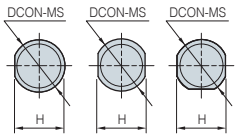
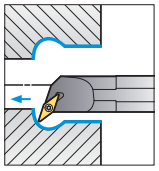


Fig. 1 Fig. 2 Fig. 3



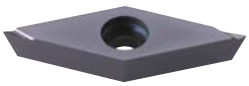
108°
• R type holder

(inch)

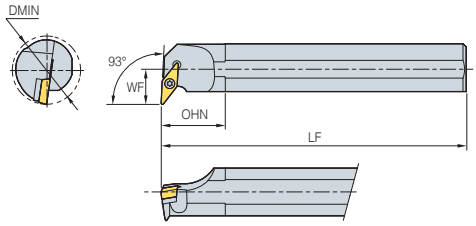
Designation	DMIN	OHN	LF	WF	H	DCON-MS	HAND	Applicable insert	Screw	Shim	Shim Screw	Wrench	Fig.
S10R-SVQCR/L2	0.850	1.378	8	0.500	0.586	5/8	R/L	VC□T22□	FTKA02565	-	-	TW07P	2
S12S-SVQCR/L2	0.980	1.496	10	0.562	0.671	3/4	R/L						
S16R-SVQCR/L2	1.300	1.654	8	0.640	0.921	1	R/L						3
S12S-SVQCR/L2.5	0.980	1.654	10	0.562	0.671	3/4	R/L	VC□T2.52□	FTKA0307	-	-	TW07P	2
S16R-SVQCR/L2.5	1.300	1.772	8	0.640	0.921	1	R/L						3
S16R-SVQCR/L3	1.300	1.960	8	0.640	0.921	1	R/L	VC□T33□	FTGA03510	-	-	TW15P	3
S20S-SVQCR/L3	1.705	2.205	10	1.000	1.171	1 1/4	R/L		FTGA03512	SV32S	SHXN0509F	TW15P HW35L	
S24T-SVQCR/L3	2.000	2.520	12	1.125	1.382	1 1/2	R/L						

Applicable inserts **B65 ~ B67, B81**

SVUBR/L



VB□T



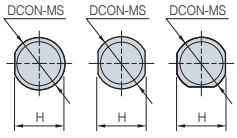
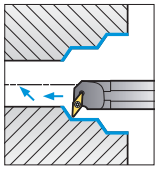


Fig. 1 Fig. 2 Fig. 3



93°
• R type holder

(inch)

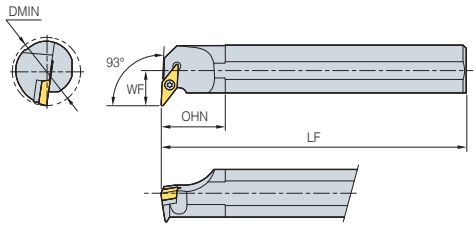
Designation	DMIN	OHN	LF	WF	H	DCON-MS	HAND	Applicable insert	Screw	Shim	Shim Screw	Wrench	Fig.
S20S-SVUBR/L3	1.705	1.929	10	1.000	1.171	1 1/4	R/L	VB□T33□	FTGA03512	SV32S	SHXN0509F	TW15P HW35L	3
S24T-SVUBR/L3	2.000	2.205	12	1.125	1.382	1 1/2	R/L						
A20S-SVUBR/L3	1.705	1.929	10	1.000	1.211	1 1/4	R/L						

Applicable inserts **B65 ~ B67, B80**

SVUCR/L



VC□T



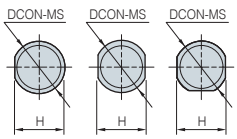
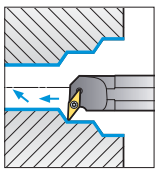


Fig. 1 Fig. 2 Fig. 3



93°
• R type holder

(inch)

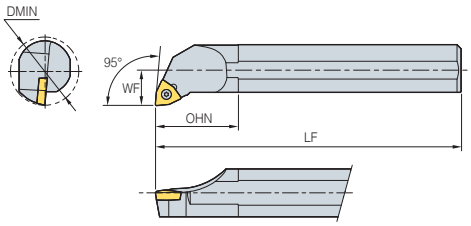
Designation	DMIN	OHN	LF	WF	H	DCON-MS	HAND	Applicable insert	Screw	Shim	Shim Screw	Wrench	Fig.
S10R-SVUCR/L2	0.850	1.181	8	0.500	0.586	5/8	R/L	VC□T22□	FTKA02565	-	-	TW07P	2
S12S-SVUCR/L2	0.980	1.299	10	0.562	0.671	3/5	R/L						
S16T-SVUCR/L2	1.300	1.496	12	0.640	0.921	1	R/L						3
S12S-SVUCR/L2.5	0.980	1.378	10	0.562	0.671	3/4	R/L	VC□T2.52□	FTKA0307	-	-	TW09P	2
S16R-SVUCR/L2.5	1.300	1.575	8	0.640	0.921	1	R/L						3
S16R-SVUCR/L3	1.300	1.969	8	0.640	0.921	1	R/L	VC□T33□	FTGA03510	-	-	TW15P	3
S20S-SVUCR/L3	1.705	2.205	10	1.000	1.171	1 1/4	R/L		FTGA03512	SV32S	SHXN0509F	TW15P HW35L	
S24T-SVUCR/L3	2.000	2.520	12	1.125	1.382	1 1/2	R/L						

Applicable inserts **B65 ~ B67, B81**

SWLCR/L



WC□T



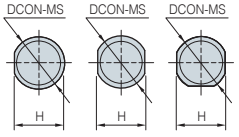
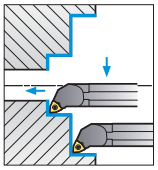


Fig. 1 Fig. 2 Fig. 3



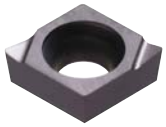
95°

• R type holder

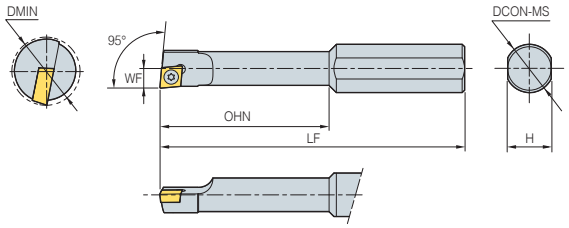
(inch)

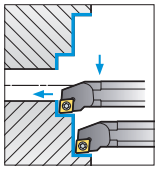
Designation	DMIN	OHN	LF	WF	H	DCON-MS	HAND	Applicable insert	Screw	Wrench	Fig.
S16R-SWLCR/L4	1.200	1.811	8	0.640	0.921	1	R/L	WC□T43□	FTGA0411F	TW15P	3
S20S-SWLCR/L4	1.470	2.008	10	0.765	1.171	1 1/4	R/L				
A16R-SWLCR/L4	1.200	1.811	8	0.640	0.921	1	R/L	WC□T43□	FTGA0411F	TW15P	1
A20S-SWLCR/L4	1.470	2.008	10	0.765	1.171	1 1/4	R/L				3

SCLCR/L



CCET





95°
• R type holder

(inch)

Designation	DMIN	OHN	LF	WF	H	DCON-MS	HAND	Applicable insert	Screw	Wrench
S06H-SCLCR/L1202	0.219	0.984	4	0.098	0.336	3/8	R/L	CCET1.21□□	FTNA01633	TW06P
S06H-SCLCR/L1203	0.250	0.984	4	0.118	0.336	3/8	R/L			
S06J-SCLCR/L1504	0.293	1.181	4.5	0.138	0.336	3/8	R/L	CCET1.51□□	FTNA0238	TW06P
S06J-SCLCR/L1505	0.313	1.181	4.5	0.157	0.336	3/8	R/L			

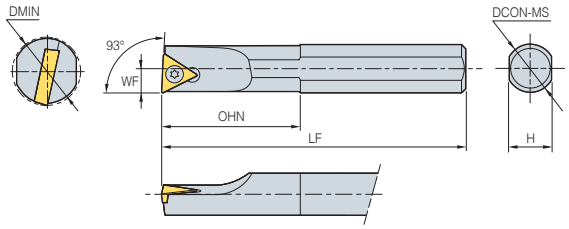
Applicable inserts **B44 ~ B48, B75**

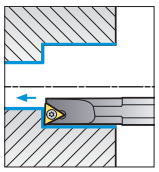
- Use left handed insert for right handed holder
- It is not an ISO type holder, and the last two digits of the model number are not related to the tool specifications.

STUBR/L



TB□□





93°
• R type holder

Steel shank type

(inch)

Designation	DMIN	OHN	LF	WF	H	DCON-MS	HAND	Applicable insert	Screw	Wrench
S05K-STUBR/L1.2	0.415	1.181	5	0.219	0.273	5/16	R/L	TB□□1.21□R/L	FTNA0204	TW06P
A05F-STUBR/L1.2	0.415	1.181	3	0.219	0.293	5/16	R/L			

Carbide shank type

(inch)

Designation	DMIN	OHN	LF	WF	H	DCON-MS	HAND	Applicable insert	Screw	Wrench
C05K-STUBR/L1.2	0.393	-	5	0.219	0.273	5/16	R/L	TB□T1.21□	FTNA0204	TW06P
C06K-STUBR/L1.2	0.480	-	5	0.250	0.336	3/8	R/L			
E05K-STUBR/L1.2	0.393	-	5	0.219	0.273	5/19	R/L	TB□T1.21□	FTNA0204	TW06P
E06K-STUBR/L1.2	0.480	-	5	0.250	0.336	3/8	R/L			

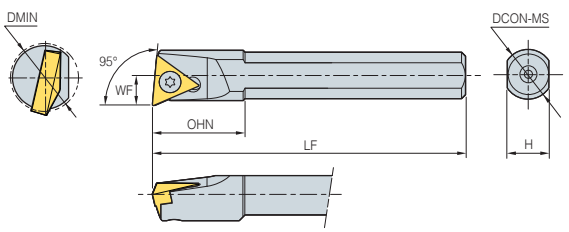
Applicable inserts **B58**

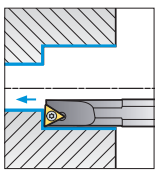
- Use left handed insert for right handed holder

STLBR/L



TB□□





95°
• R type holder

Steel shank type

(inch)

Designation	DMIN	OHN	LF	WF	H	DCON-MS	HAND	Applicable insert	Screw	Wrench
S06H-STLBR/L1.2	0.315	0.472	4	0.150	0.197	3/8	R/L	TB□□1.21	FTNA0204	TW06P

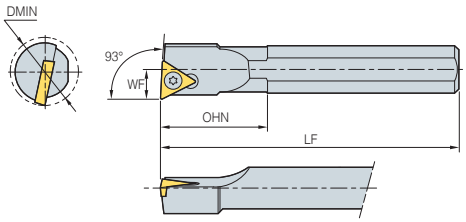
Applicable inserts **B58**

- Use left handed insert for right handed holder

STUPR/L



TP□□



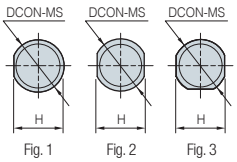
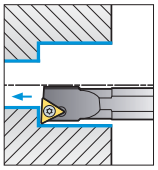


Fig. 1 Fig. 2 Fig. 3



93°

• R type holder

Steel shank type

(inch)

Designation	DMIN	OHN	LF	WF	H	DCON-MS	HAND	Applicable insert	Screw	Wrench	Fig.
S05K-STUPR/L1.5	0.415	0.709	5	0.219	0.273	5/16	R/L	TP□□1.51.5□R/L	FTNA02205	TW06P	2
A05F-STUPR/L1.5	0.415	0.709	3	0.219	0.293	5/16	R/L				

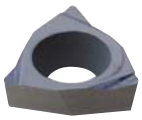
Carbide shank type

Designation	DMIN	OHN	LF	WF	H	DCON-MS	HAND	Applicable insert	Screw	Wrench	Fig.
C05K-STUPR/L1.5	0.415	-	5	0.219	0.273	5/16	R/L	TP□T1.51.5□	FTNA02205	TW06P	
C06K-STUPR/L2	0.480	-	5	0.250	0.336	3/8	R/L	TP□T22□	FTNA0305	TW09P	
C06M-STUPR/L2	0.480	-	6	0.250	0.336	3/8	R/L				
C08M-STUPR/L2	0.600	-	6	0.312	0.461	1/2	R/L		FTNA0307	TW09P	2
C08Q-STUPR/L2	0.600	-	7	0.312	0.461	1/2	R/L				
C10R-STUPR/L2	0.850	-	8	0.500	0.586	5/8	R/L				
C10S-STUPR/L2	0.850	-	10	0.500	0.586	5/8	R/L				
C12R-STUPR/L2	0.930	-	8	0.500	0.671	3/4	R/L				
C12S-STUPR/L2	0.930	-	10	0.500	0.671	3/4	R/L				
C12R-STUPR/L3	0.930	-	8	0.500	0.671	3/4	R/L	TP□T33□	FTNA0408	TW15P	
C12S-STUPR/L3	0.930	-	10	0.500	0.671	3/4	R/L				
C16T-STUPR/L3	1.300	-	12	0.640	0.921	1	R/L				
E05K-STUPR/L1.5	0.415	-	5	0.219	0.273	5/16	R/L	TP□T1.51.5□	FTNA02205	TW06P	
E06K-STUPR/L2	0.480	-	5	0.250	0.336	3/8	R/L	TP□T22□	FTNA0305	TW09P	
E06M-STUPR/L2	0.480	-	6	0.250	0.336	3/8	R/L				
E08M-STUPR/L2	0.600	-	6	0.312	0.461	1/2	R/L		FTNA0307	TW09P	2
E08Q-STUPR/L2	0.600	-	7	0.312	0.461	1/2	R/L				
E10R-STUPR/L2	0.850	-	8	0.500	0.586	5/8	R/L				
E10S-STUPR/L2	0.850	-	10	0.500	0.586	5/8	R/L				
E12R-STUPR/L2	0.930	-	8	0.500	0.671	3/4	R/L				
E12S-STUPR/L2	0.930	-	10	0.500	0.671	3/4	R/L				
E12R-STUPR/L3	0.930	-	8	0.500	0.671	3/4	R/L	TP□T33□	FTNA0408	TW15P	
E12S-STUPR/L3	0.930	-	10	0.500	0.671	3/4	R/L				
E16T-STUPR/L3	1.300	-	12	0.640	0.921	1	R/L				

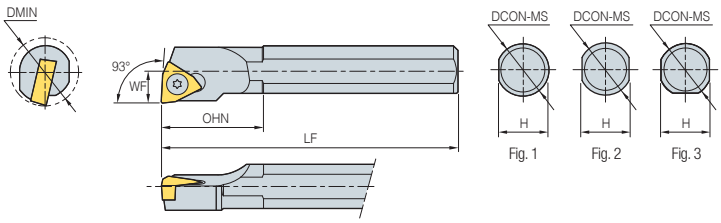
Applicable inserts **B61 ~ B64**

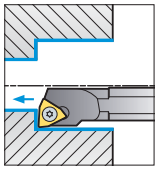
* Use left handed insert for right handed holder

SWUBR/L



WB□T





93°
• R type holder

Steel shank type

(inch)

Designation	DMIN	OHN	LF	WF	H	DCON-MS	HAND	Applicable insert	Screw	Wrench	Fig.
S03H-SWUBR/L1.2	0.260	-	4	0.126	0.177	3/16	R/L	WBGT1.21□R/L	FTNA0203	TW06P	2
S05K-SWUBR/L1.2	0.415	1.181	5	0.219	0.273	5/16	R/L		FTNA02033		
S05K-SWUBR/L1.5	0.415	0.709	5	0.219	0.273	5/16	R/L	WBGT1.51.5□R/L	FTNA02205	TW06P	
A05F-SWUBR/L1.2	0.415	1.181	3	0.219	0.273	5/16	R/L	WBGT1.21□R/L	FTNA0203	TW06P	
A05F-SWUBR/L1.5	0.415	0.630	3	0.219	0.273	5/16	R/L	WBGT1.51.5□R/L	FTNA02205	TW06P	

Carbide shank type

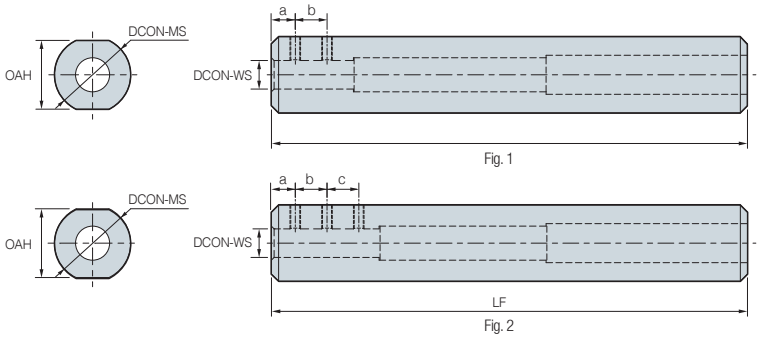
Designation	DMIN	OHN	LF	WF	H	DCON-MS	HAND	Applicable insert	Screw	Wrench	Fig.
C03H-SWUBR/L1.2	0.260	-	4	0.126	0.173	3/16	R/L	WB□T1.21□	FTNA0203	TW06P	1
C04H-SWUBR/L1.2	0.321	-	4	0.156	0.213	1/4	R/L				
C05K-SWUBR/L1.2	0.415	-	5	0.219	0.273	5/16	R/L		FTNA02033	TW06P	2
C05K-SWUBR/L1.5	0.415	-	5	0.219	0.273	5/16	R/L	WB□T1.51.5□	FTNA02205	TW06P	
E04H-SWUBR/L1.2	0.321	-	4	0.156	0.213	1/4	R/L	WB□T1.21□	FTNA0203	TW06P	1
E05K-SWUBR/L1.2	0.415	-	5	0.219	0.273	5/16	R/L		FTNA02033	TW06P	2
E05K-SWUBR/L1.5	0.415	-	5	0.219	0.273	5/16	R/L	WB□T1.51.5□	FTNA02205	TW06P	

Applicable inserts **B72**

• Use left handed insert for right handed holder

Sleeve

SL (Sleeve)



(mm)

Designation	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	

M This is metric size. We can also provide in inch type

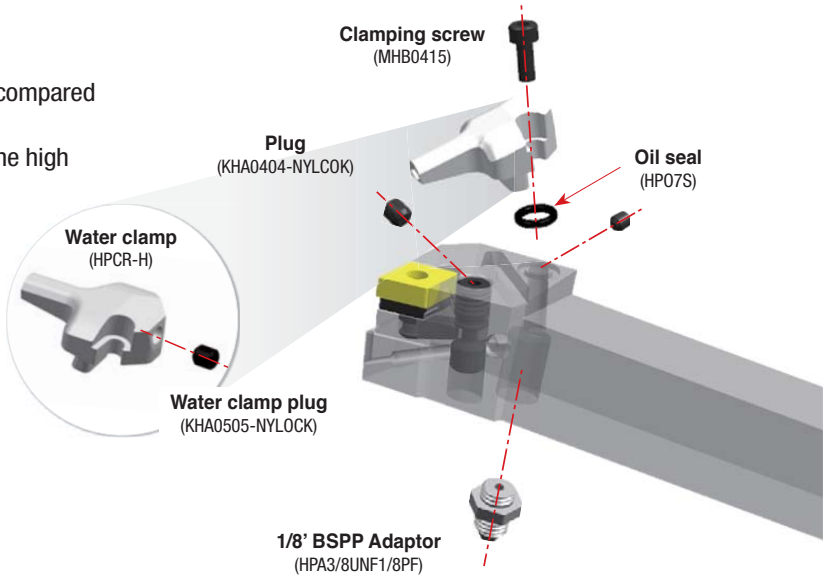
※ Fine tolerance and surface roughness

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.

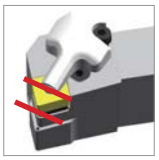
Features

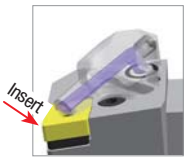
- The optimal distance between the insert and the jet orifice and the ideal place of the jet orifice
- Minimized coolant pressure loss due to streamlined design of internal path
- Easy to clamp an insert with the sliding clamp system


The original position of water clamp



The position of placing insert

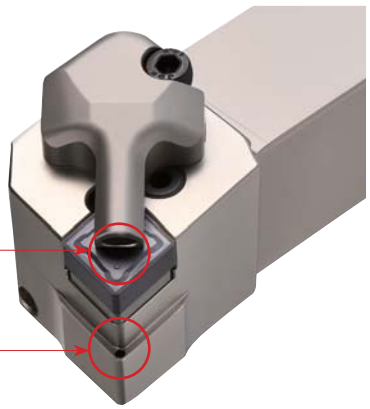

Optimal position and distance of spraying

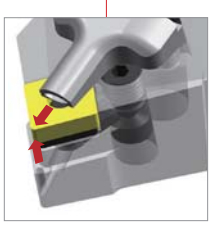


Oval direct spray

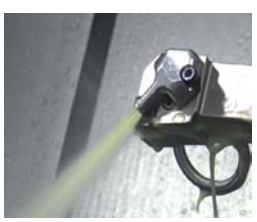
Max 300 bar		
Workpiece	The minimum pressure	The maximum pressure
P	50	300
M	70	
K	60	
N	50	
S	70	

Water clamp with a hole

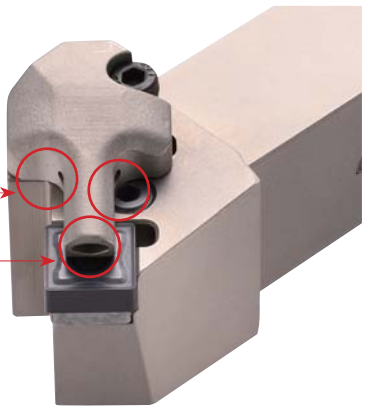



Spray to the upper surface of insert

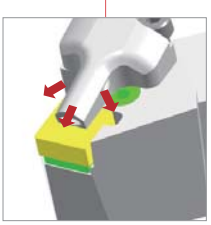
Spray to the bottom surface of insert



Water clamp with three holes



Injection through three holes on the rake surface



Injection on the bottom surface



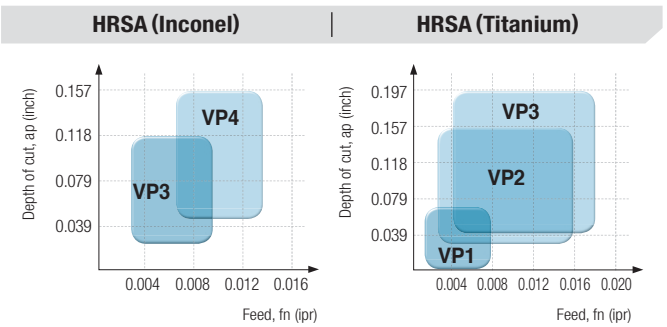
※ Clamp is sold seperately

How to use the water clamp

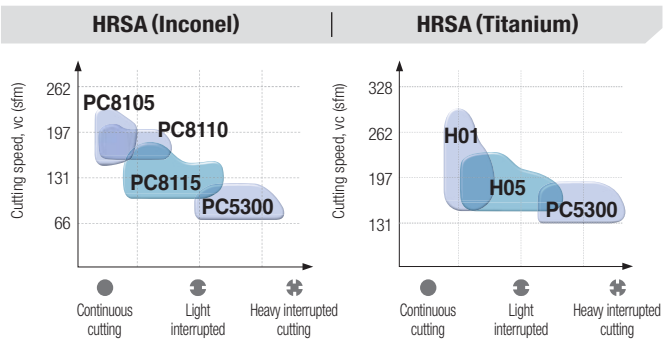


Unscrew the clamping screw | Move the water clamp to the edge of the holderscrew | Put an insert to the tip and seat the clamping screw | Move the water clamp back to its original position | Screw the clamping screw

Application range



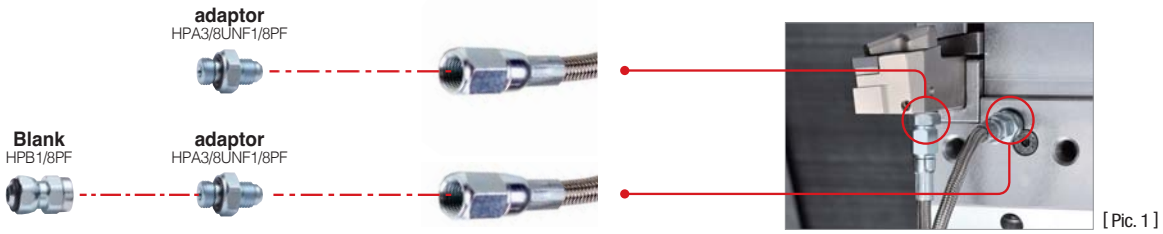
Grade Line-up



How to clamp the KHP

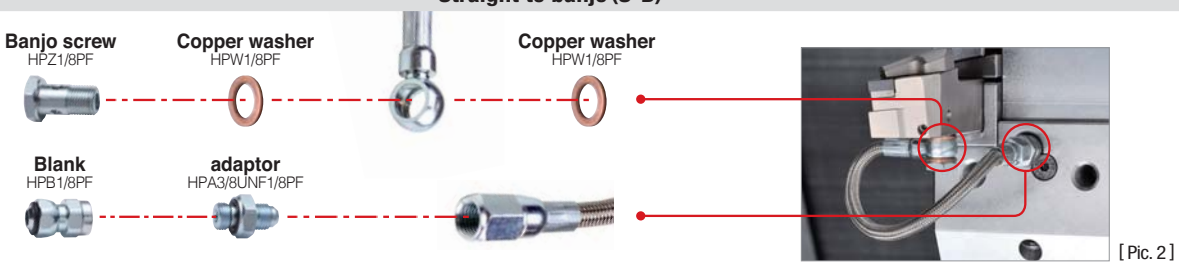
- 3 types of installation systems makes clamping easy
- The banjo type hose provides wider area for machining than other types

Straight to straight (S-S)



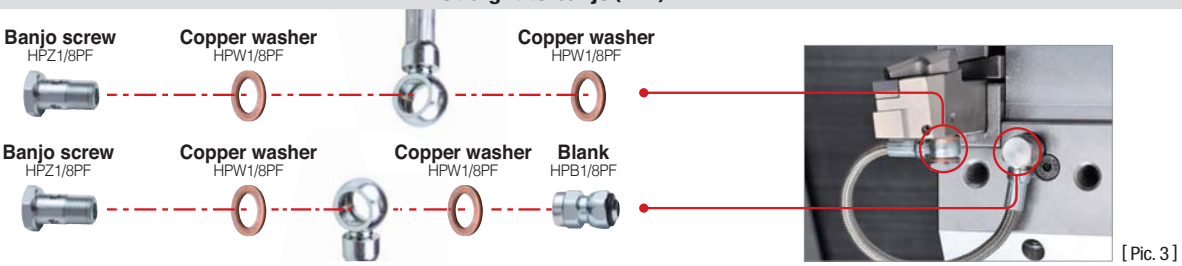
[Pic. 1]

Straight to banjo (S-S)



[Pic. 2]

Straight to banjo (B-B)



[Pic. 3]

※ Blank including a fixed oil seal provides easy clamping

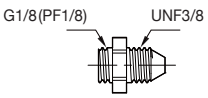
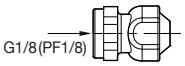
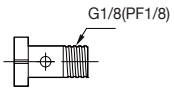
※ Banjo screws provide easy clamping and clamping a holder to the turning machine with various types of blanks

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		7.87 inch	1 EA	1 EA	2 EA	-	-	1
HPH3/8UNF-250-SET		9.84 inch						
HPH3/8UNF1/8PF-200-SET		7.87 inch			1 EA	1 EA	3 EA	2
HPH3/8UNF1/8PF-250-SET		9.84 inch						
HPH1/8PF-200-SET		7.87 inch			-	2 EA	5 EA	3
HPH1/8PF-250-SET		9.84 inch						

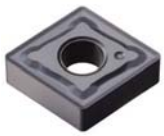
KHP coolant parts

Division	Designation	Shape	
Adaptor	HPA3/8UNF1/8PF		
Blank	HPB1/8PF		
Banjo screw	HPZ1/8PF		
Copper washer	HPW1/8PF		

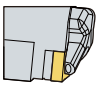
KHP coolant high pressure hose

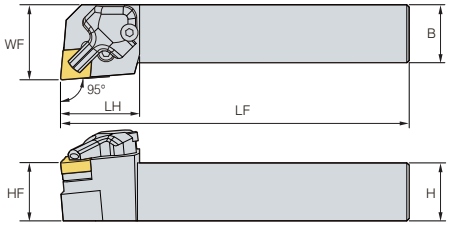
High pressure hose shape		Length	S	B
Straight to straight (HPH3/8UNF)		7.87 inch	UNF3/8	-
		9.84 inch		
Straight to banjo (HPH3/8UNF1/8PF)		7.87 inch	UNF3/8	Internal Ø0.394
		9.84 inch		
Banjo to banjo (HPH1/8PF)		7.87 inch	-	Internal Ø0.394
		9.84 inch		

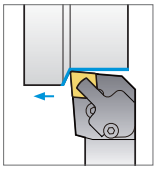
PCLNR/L



CN□□







95°

• R type holder

(inch)

	Designation	LH	LF	WF	HF	B	H	HAND	Applicable insert
PCLNR/L	16-4D-KHP	1.34	5	1.26	1	1	1	R/L	CN□□43□
	20-4E-KHP	1.34	5	1.57	1.25	1.25	1.25	R/L	

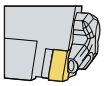
	Part	Lever	Screw	Shim	Ship pin	Shim Pin Punch	Clamp	Clamping screw	Oil seal	Plug	Wrench
PCLNR/L	16-4D-KHP 20-4E-KHP	LV4N	VHX0820N	SC42N	SP4N	LSPS4	HPCR/L-H	MHB0415	HPO7S	KHA0404-NYLOCK	HW20L HW30L

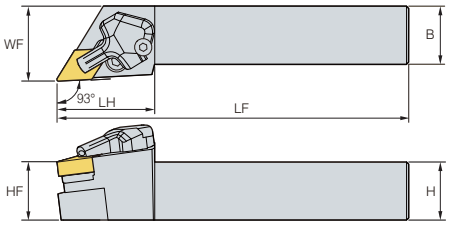
Applicable inserts **B5 ~ B12**

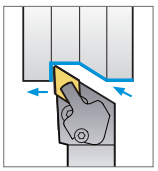
PDJNR/L



DN□□







93°

• R type holder

(inch)

	Designation	LH	LF	WF	HF	B	H	HAND	Applicable insert
PDJNR/L	16-3D-KHP	1.65	5	1.27	1	1	1	R/L	DN□□33□
	16-4D-3-KHP	1.65	5	1.27	1	1	1	R/L	DN□□43□
	16-4D-4-KHP	1.65	5	1.27	1	1	1	R/L	DN□□44□

	Part	Lever	Screw	Shim	Ship pin	Shim Pin Punch	Clamp	Clamping screw	Oil seal	Plug	Wrench
PDJNR/L	16-3D-KHP	LV3AN	VHX0617N	SD32N	SP3	LSPS3	HPCR/L-H	MHB0415	HPO7S	KHA0404-NYLOCK	HW20L, HW25L, HW30L
	16-4D-3-KHP	LV4BN	VHX0821N	SD43N	SP4N	LSPS4	HPCR/L-H	MHB0415	HPO7S	KHA0404-NYLOCK	HW20L, HW30L
	16-4D-4-KHP	LV4BN	VHX0821N	SD42N	SP4N	LSPS4	HPCR/L-H	MHB0415	HPO7S	KHA0404-NYLOCK	HW20L, HW30L

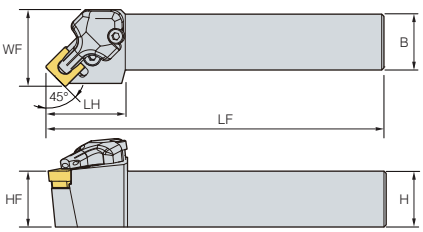
Applicable inserts **B13 ~ B18**

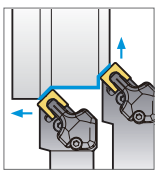
PSSNR/L



SN□□







45°

• R type holder

(inch)

	Designation	LH	LF	WF	HF	B	H	HAND	Applicable insert
PSSNR/L	16-4D-KHP	1.4	5	1.35	1	1	1	R/L	SN□□43□

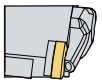
	Part	Lever	Screw	Shim	Ship pin	Shim Pin Punch	Clamp	Clamping screw	Oil seal	Plug	Wrench
PSSNR/L	16-4D-KHP	LV4N	VHX0821	SS42N	SP4N	LSPS4	HPCR/L-3H	MHB0415	HPO7S	KHA0404-NYLOCK	HW20L, HW30L

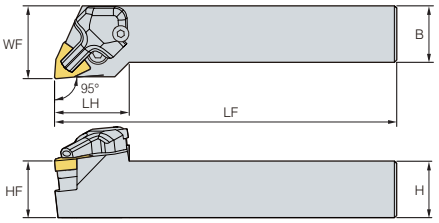
Applicable inserts **B20 ~ B28**

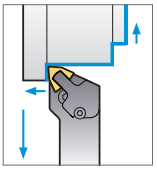
PWLNR/L



WN□□







95°

• R type holder

(inch)

Designation		LH	LF	WF	HF	B	H	HAND	Applicable insert
PWLNR/L	16-4D-KHP	1.3	5	1.27	1	1	1	R/L	WN□□43□
	20-4E-KHP	1.3	5	1.55	1.25	1.25	1.25	R/L	

Part		Lever	Screw	Shim	Ship pin	Shim Pin Punch	Clamp	Clamping screw	Oil seal	Plug	Wrench
PWLNR/L	16-4D-KHP	LV4N	VHX0820N	SW42N	SP4N	LSPS4	HPCR/L-H	MHB0415	HP07S	KHA0404-NYLOCK	HW20L HW30L
	20-4E-KHP										

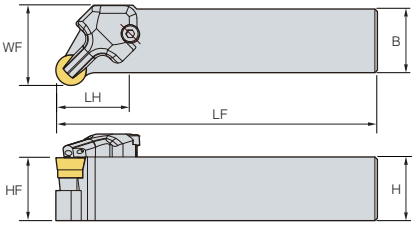
Applicable inserts **B39 ~ B46**

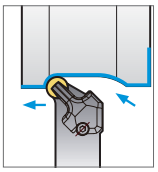
SRGCR/L



RCGT







• R type holder

(inch)

Designation		LH	LF	WF	HF	B	H	HAND	Applicable insert
SRGCR/L	16-4D-KHP	-	5	1.24	1	1	1	R/L	RCGT43M0

Part		Screw	Shim	Shim Screw	Clamp	Clamping screw	Oil seal	Wrench
SRGCR/L	16-4D-KHP	FTGA03512	SR12S	SHXN0509F	HPCR/L-3H	MHB0415	HP07S	HW15P, HW30L, HW35L

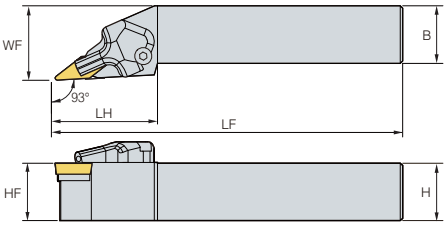
Applicable inserts **B54, B77**

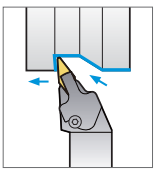
SVJBR/L



VB□□







93°

• R type holder

(inch)

Designation		LH	LF	WF	HF	B	H	HAND	Applicable insert
SVJBR/L	16-3D-KHP	1.83	5	1.28	1	1	1	R/L	VB□□33□

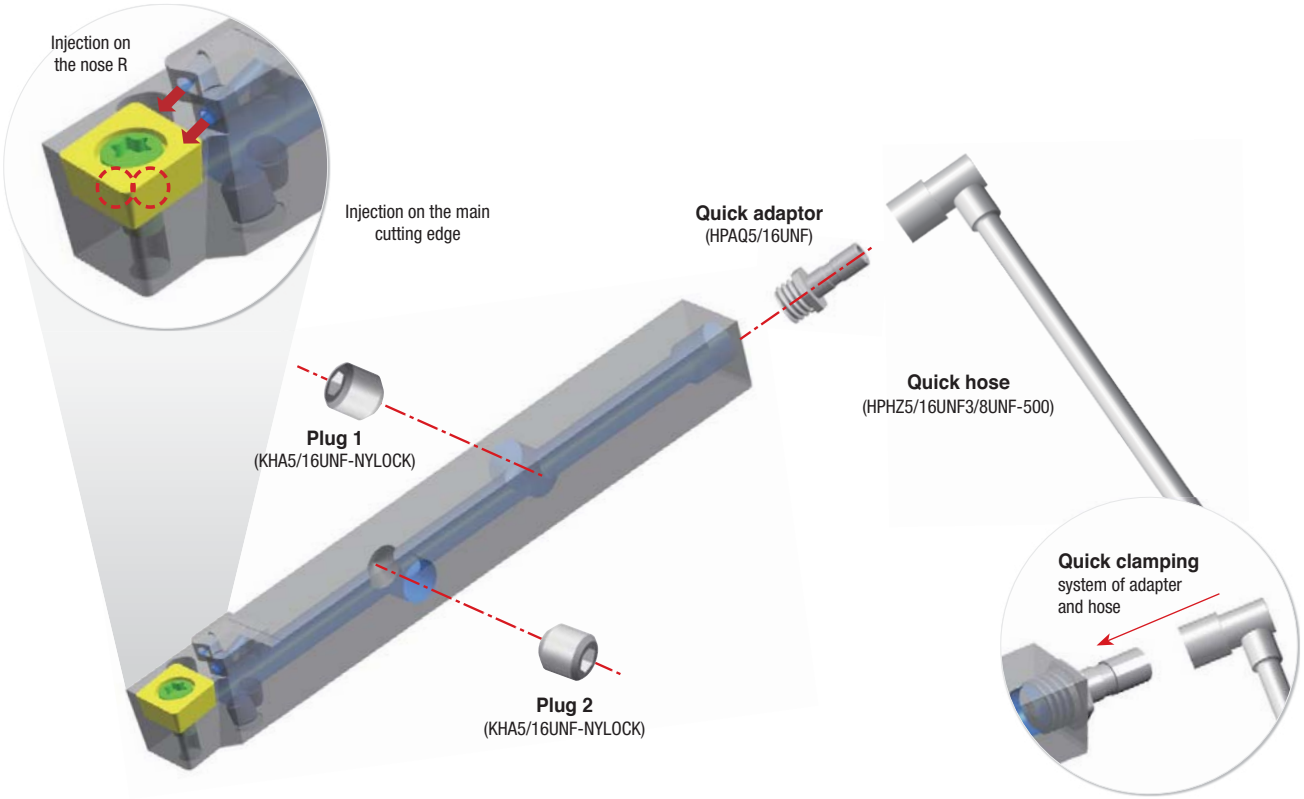
Part		Screw	Shim	Shim Screw	Clamp	Clamping screw	Oil seal	Wrench
SVJBR/L	16-3D-KHP	FTGA03512	SV32S	SHXN0509F	HPCR/L-H	MHB0415	HP07S	HW15P, HW30L, HW35L

Applicable inserts **B65 ~ B67, B80**

Auto tools (KHP)

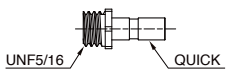
- High-pressure coolant holder for high productivity in precision machining on automatic lathes
- Cooling and chip control improved by concentrically injecting coolant through two holes to the main cutting edge and nose R
- Two holes with different injection angles increase chip control
- Convenient use due to the easy clamping system of the quick hose adapter and quick hose

Structure of holder



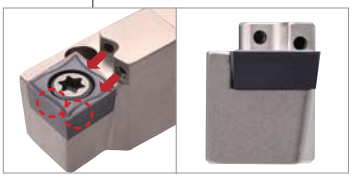
※ Quick adapter and quick hose are sold separately

Parts

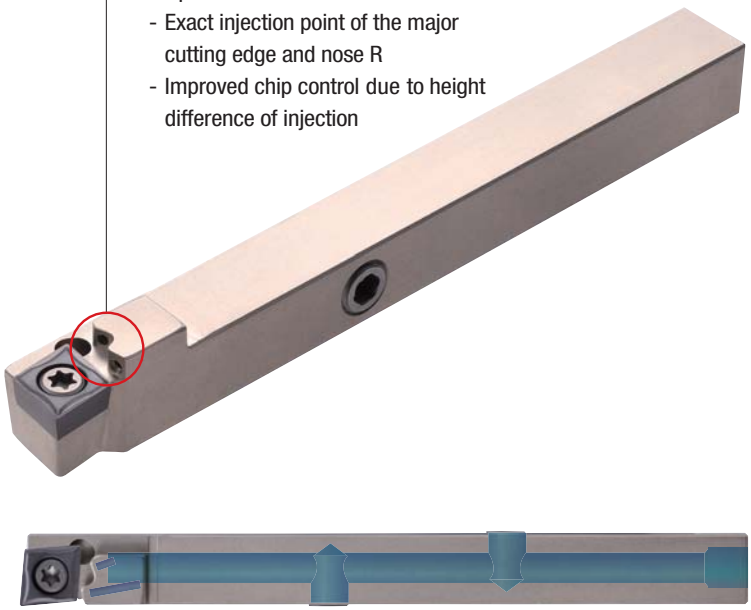
Shape		Configuration	Length	Q clamping dimensions	S clamping dimensions
Quick to straight	HPHZ5/16UNF3/8UNF-500 	Q  S	19.7 inch	UNF5/16	-
Quick adaptor	HPAQ5/16UNF 		0.7 inch	UNF5/16	

Features

2 pointed injection with different angles

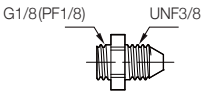
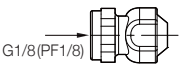
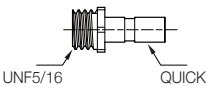


Injection nozzle
- Optimal coolant nozzle size
- Exact injection point of the major cutting edge and nose R
- Improved chip control due to height difference of injection



Max 300 bar		
Workpiece	The minimum pressure	The maximum pressure
P	100	300
M	120	
K	110	
N	100	
S	120	

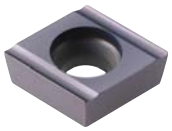
Parts

Division	Designation	Shape	
Adaptor	HPA3/8UNF1/8PF		
Blank	HPB1/8PF		
Quick adaptor	HPAQ5/16UNF		

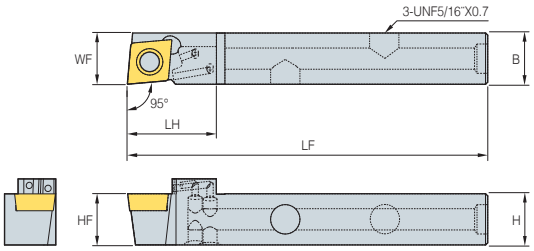
High pressure hose

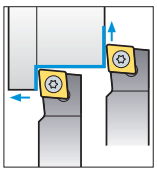
Shape		length	Q clamping dimensions	S clamping dimensions
Quick to straight (HPHZ5/16UNF3/8UNF-500)		19.7 inch	UNF5/16	-

SCLCR/L



CC□T





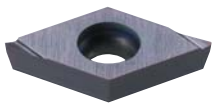
95°
• R type holder

(inch)

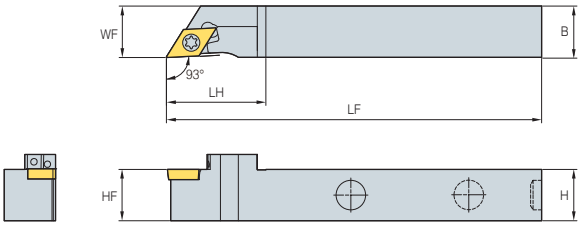
Designation		LH	LF	WF	HF	B	H	HAND	Applicable insert	Screw	Plug	Wrench
SCLCR/L	**08-X3A-KHP**	0.827	4 1/2	0.500	0.500	1/2	1/2	R/L	CC□T32.5□	FTKA0410	KHA0404-NYLOCK	TW15P

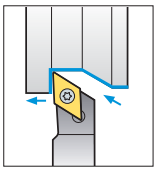
Applicable inserts **B44 ~ B48, B75**

SDJCR/L



DC□T





93°
• R type holder

(inch)

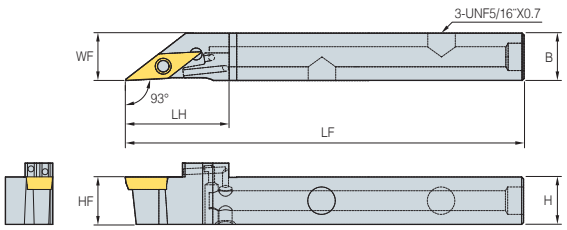
Designation		LH	LF	WF	HF	B	H	HAND	Applicable insert	Screw	Plug	Wrench
SDJCR/L	**08-X2A-KHP**	0.827	4 1/2	0.500	0.500	1/2	1/2	R/L	DC□T21.5□	FTKA02565	KHA0404-NYLOCK	TW07P
	08-X3A-KHP	1.173	4 1/2	0.551	0.500	1/2	1/2	R/L	DC□T32.5□	FTKA0408	KHA0404-NYLOCK	TW15P

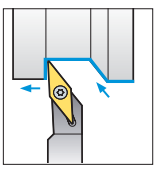
Applicable inserts **B50 ~ B53, B76**

SVJCR/L



VC□□





93°
• R type holder

(inch)

Designation		LH	LF	WF	HF	B	H	HAND	Applicable insert	Screw	Plug	Wrench
SVJCR/L	**08-X2A-KHP**	1.024	4 1/2	0.500	0.500	1/2	1/2	R/L	VC□T22□	FTKA02565	KHA0404-NYLOCK	TW07P
	08-X12A-KHP	1.024	4 1/2	0.500	0.500	1/2	1/2	R/L	VC□□1203□□	FTKA02565	KHA0404-NYLOCK	TW07P

Applicable inserts **B68 ~ B70, B81**

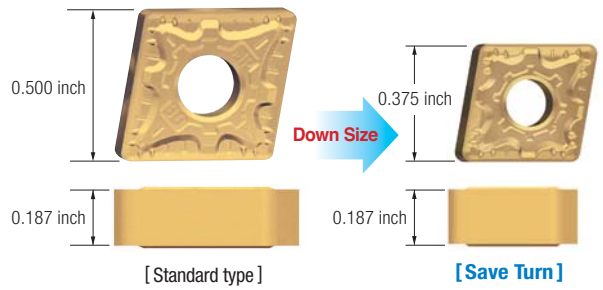
Economical small insert with powerful cutting performance

Save Turn

- Strongly recommended turning insert for machining smaller diameter than Ø3.937 inch
- Small but powerful and economical insert which performs the same like standard-sized inserts under the depth of cut of 0.118 inch

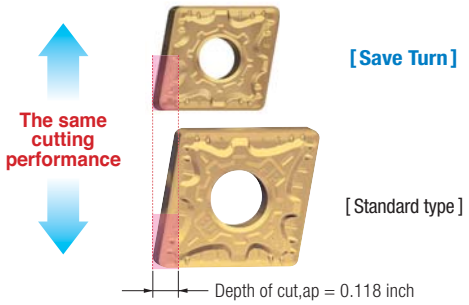
Features

Comparison of insert sizes



▶ Optimized size of the same performance like the standard type

Comparison of cutting performance

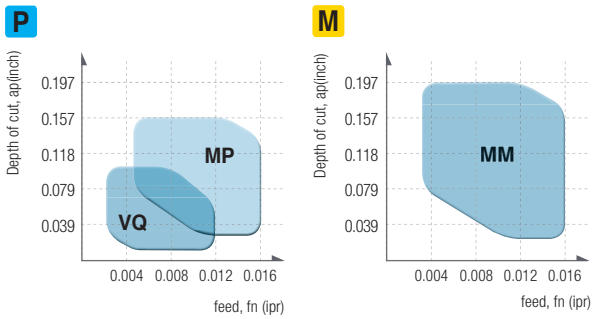


▶ Performs the same like standard type inserts under the depth of cut of 0.118 inch

Features of chip breaker

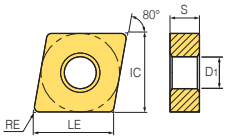
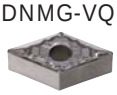
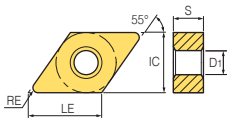
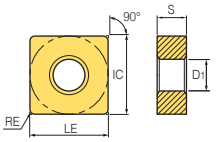
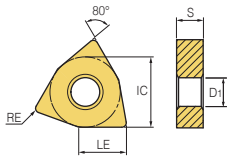
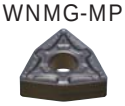
Insert shape	Cutting edge	Features
VQ 		• For finishing steel • Efficient chip breaking and low cutting resistance • Various application available at low depth of cut • Recommended depth of cut: 0.020~0.098 inch
MP 		• For medium cutting of steel • 4dots for improved chip control in medium cutting to finishing • Stable chip evacuation at high depth of cut • Stable tool life due to lower cutting loads at high feed • Recommended depth of cut: 0.020~0.157 inch
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: 0.020~0.197 inch

Application area of chip breaker



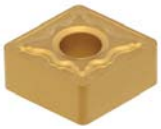
VQ : Depth of cut, ap = 0.020~0.098 inch / feed, fn = 0.002~0.012 ipr
MP : Depth of cut, ap = 0.020~0.157 inch / feed, fn = 0.006~0.016 ipr
MM : Depth of cut, ap = 0.020~0.197 inch / feed, fn = 0.004~0.016 ipr

Insert

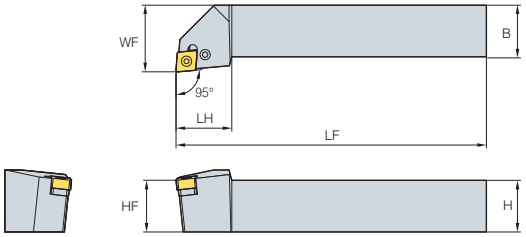
Type	Inserts	Designation		Coated						Dimensions (inch)						Cutting condition		Configuration
				NC3215	NC3225	NC5330	NC6310	NC9125	NC9135	PC9030	IC	RE	S	LE	D1	HAND	ap (inch)	fn (ipr)	
C type	CNMG-VQ 	CNMG	332-VQ			●					0.375	1/32	3/16	0.381	1/8	N	0.020~0.098	0.003~0.012	
			333-VQ								0.375	3/64	3/16	0.381	1/8	N	0.020~0.098	0.004~0.012	
	CNMG-MP 	CNMG	331-MP								0.375	1/64	3/16	0.381	1/8	N	0.020~0.157	0.004~0.016	
			332-MP								0.375	1/32	3/16	0.381	1/8	N	0.020~0.157	0.006~0.016	
			333-MP								0.375	3/64	3/16	0.381	1/8	N	0.020~0.157	0.006~0.018	
	CNMG-MM 	CNMG	331-MM								0.375	1/64	3/16	0.381	1/8	N	0.020~0.197	0.003~0.012	
			332-MM								0.375	1/32	3/16	0.381	1/8	N	0.020~0.197	0.004~0.016	
			333-MM								0.375	3/64	3/16	0.381	1/8	N	0.020~0.197	0.005~0.018	
D type	DNMG-VQ 	DNMG	33.52-VQ								0.375	1/32	7/32	0.458	1/8	N	0.020~0.098	0.003~0.012	
			33.53-VQ								0.375	3/64	7/32	0.458	1/8	N	0.020~0.098	0.004~0.012	
	DNMG-MP 	DNMG	33.51-MP								0.375	1/64	7/32	0.458	1/8	N	0.020~0.157	0.004~0.016	
			33.52-MP								0.375	1/32	7/32	0.458	1/8	N	0.020~0.157	0.006~0.016	
			33.53-MP								0.375	3/64	7/32	0.458	1/8	N	0.020~0.157	0.006~0.018	
	DNMG-MM 	DNMG	33.51-MM								0.375	1/64	7/32	0.458	1/8	N	0.020~0.197	0.003~0.012	
			33.52-MM								0.375	1/32	7/32	0.458	1/8	N	0.020~0.197	0.004~0.016	
			33.53-MM								0.375	3/64	7/32	0.458	1/8	N	0.020~0.197	0.005~0.018	
S type	SNMG-VQ 	SNMG	332-VQ			●					0.375	1/32	3/16	0.375	1/8	N	0.020~0.098	0.003~0.012	
			333-VQ								0.375	3/64	3/16	0.375	1/8	N	0.020~0.098	0.004~0.012	
	SNMG-MP 	SNMG	331-MP								0.375	1/64	3/16	0.375	1/8	N	0.020~0.157	0.004~0.016	
			332-MP								0.375	1/32	3/16	0.375	1/8	N	0.020~0.157	0.006~0.016	
			334-MP								0.375	1/16	3/16	0.375	1/8	N	0.020~0.157	0.006~0.018	
	SNMG-MM 	SNMG	331-MM								0.375	1/64	3/16	0.375	1/8	N	0.020~0.197	0.003~0.012	
			332-MM								0.375	1/32	3/16	0.375	1/8	N	0.020~0.197	0.004~0.016	
			333-MM								0.375	3/64	3/16	0.375	1/8	N	0.020~0.197	0.005~0.018	
W type	WNMG-VQ 	WNMG	331-VQ								0.375	1/64	3/16	0.256	1/8	N	0.012~0.078	0.002~0.012	
			332-VQ								0.375	1/32	3/16	0.256	1/8	N	0.020~0.078	0.003~0.012	
			333-VQ								0.375	3/64	3/16	0.256	1/8	N	0.020~0.078	0.004~0.012	
	WNMG-MP 	WNMG	331-MP	●	●	●		●			0.375	1/64	3/16	0.256	1/8	N	0.020~0.138	0.004~0.016	
			332-MP	●	●	●	●	●			0.375	1/32	3/16	0.256	1/8	N	0.020~0.138	0.006~0.016	
			333-MP								0.375	3/64	3/16	0.256	1/8	N	0.020~0.138	0.006~0.018	
	WNMG-MM 	WNMG	331-MM								0.375	1/64	3/16	0.256	1/8	N	0.020~0.157	0.003~0.012	
			332-MM					●	●	●	0.375	1/32	3/16	0.256	1/8	N	0.020~0.157	0.004~0.016	
			333-MM					●			0.375	3/64	3/16	0.256	1/8	N	0.020~0.157	0.005~0.018	

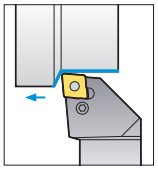
● : Stock item

PCLNR/L



CN□□





95°
• R type holder

(inch)

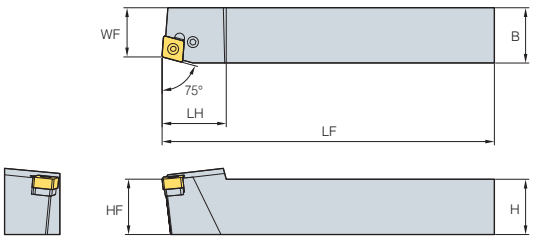
Designation		LH	LF	WF	HF	B	H	HAND	Applicable insert	Lever	Screw	Shim	Shim Pin	Wrench	Shim Pin Punch
PCLNR/L	10-3A-3N	0.787	4	0.787	0.625	5/8	5/8	R/L	CN□□33□□	LV3N	VHX0617N	SC32N	SP3	HW25L	LSPS3
	12-3B-3N	1.000	4 1/2	1.000	0.787	3/4	3/4	R/L							
	16-3D-3N	1.063	6	1.250	1.000	1	1	R/L							

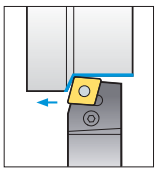
Applicable inserts **B154**

PCBNR/L



CN□□





75°
• R type holder

(inch)

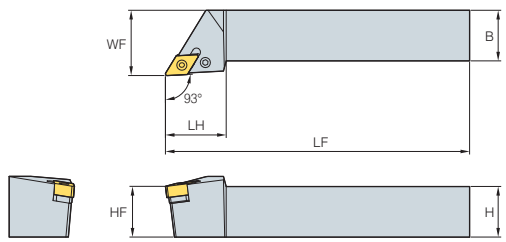
Designation		LH	LF	WF	HF	B	H	HAND	Applicable insert	Lever	Screw	Shim	Shim Pin	Wrench	Shim Pin Punch
PCBNR/L	12-3B-3N	1.063	4 1/2	0.669	0.787	3/4	3/4	R/L	CN□□33□□	LV3N	VHX0617N	SC32N	SP3	HW25L	LSPS3
	16-3D-3N	1.142	6	0.866	1.000	1	1	R/L							

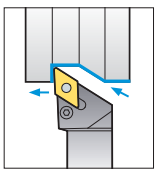
Applicable inserts **B154**

PDJNR/L



DN□□





93°
• R type holder

(inch)

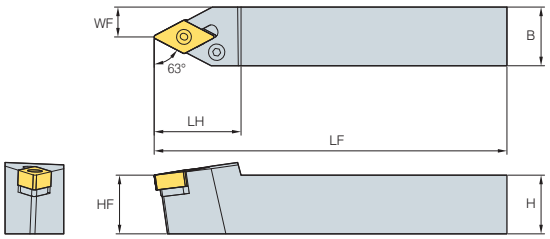
Designation		LH	LF	WF	HF	B	H	HAND	Applicable insert	Lever	Screw	Shim	Shim Pin	Wrench	Shim Pin Punch
PDJNR/L	12-3B-3.5N	1.000	4 1/2	1.000	0.787	3/4	3/4	R/L	DN□□33.5□□	LV3AN	VHX0617N	SD32N	SP3	HW25L	LSPS3
	16-3D-3.5N	1.181	6	1.260	1.000	1	1	R/L							

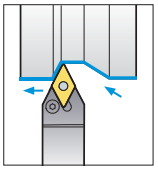
Applicable inserts **B154**

PDNNR/L



DN□□





63°
• R type holder

(inch)

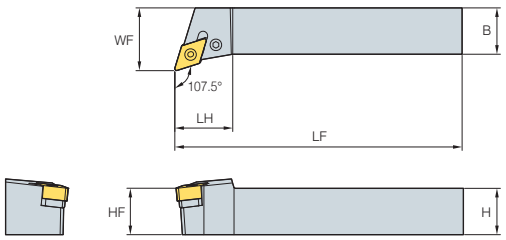
Designation		LH	LF	WF	HF	B	H	HAND	Applicable insert	Lever	Screw	Shim	Shim Pin	Wrench	Shim Pin Punch
PDNNR/L	12-3B-3.5N	1.181	4 1/2	1.000	0.787	3/4	3/4	R/L	DN□□33.5□□	LV3AN	VHX0617N	SD32N	SP3	HW25L	LSPS3
	16-3D-3.5N	1.181	6	1.260	1.000	1	1	R/L							

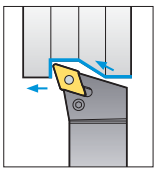
Applicable inserts **B154**

PDQNR/L



DN□□





107.5°
• R type holder

(inch)

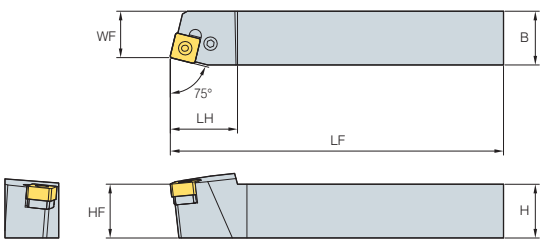
Designation		LH	LF	WF	HF	B	H	HAND	Applicable insert	Lever	Screw	Shim	Shim Pin	Wrench	Shim Pin Punch
PDQNR/L	12-3B-3.5N	1.181	4 1/2	1.000	0.787	3/4	3/4	R/L	DN□□33.5□□	LV3AN	VHX0617N	SD32N	SP3	HW25L	LSPS3
	16-3D-3.5N	1.181	6	1.260	1.000	1	1	R/L							

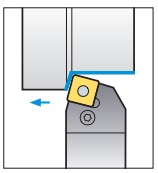
Applicable inserts **B154**

PSBNR/L



SN□□





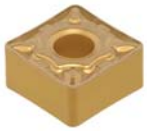
75°
• R type holder

(inch)

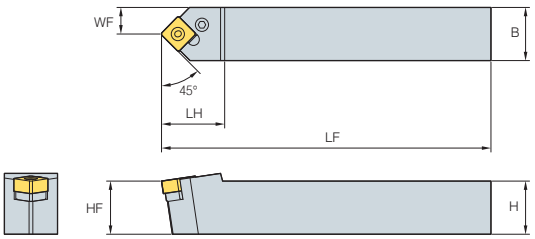
Designation		LH	LF	WF	HF	B	H	HAND	Applicable insert	Lever	Screw	Shim	Shim Pin	Wrench	Shim Pin Punch
PSBNR/L	12-3B-3N	1.000	4 1/2	0.669	0.787	3/4	3/4	R/L	SN□□33□□	LV3AN	VHX0617N	SS32N	SP3	HW25L	LSPS3
	16-3D-3N	1.000	6	0.866	1.000	1	1	R/L							

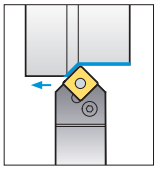
Applicable inserts **B154**

PSDNN



SN□□





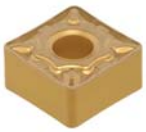
45°

(inch)

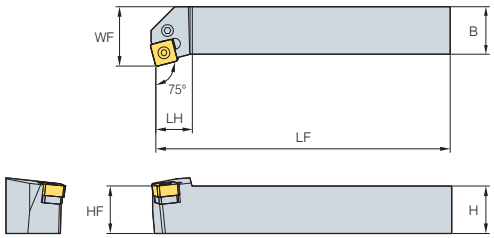
Designation		LH	LF	WF	HF	B	H	HAND	Applicable insert	Lever	Screw	Shim	Shim Pin	Wrench	Shim Pin Punch
PSDNN	12-3B-3N	1.000	4 1/2	0.669	0.787	3/4	3/4	N	SN□□33□□	LV3AN	VHX0617N	SS32N	SP3	HW25L	LSPS3
	16-3D-3N	1.000	6	0.866	1.000	1	1	N							

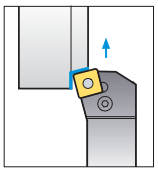
Applicable inserts **B154**

PSKNR/L



SN□□





75°

• R type holder

(inch)

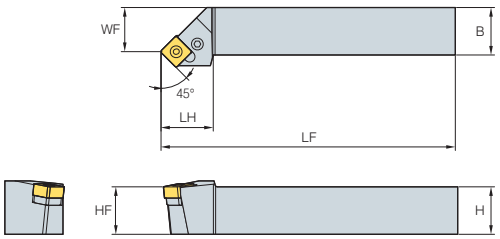
Designation		LH	LF	WF	HF	B	H	HAND	Applicable insert	Lever	Screw	Shim	Shim Pin	Wrench	Shim Pin Punch
PSKNR/L	12-3B-3N	1.000	4 1/2	0.669	0.787	3/4	3/4	R/L	SN□□33□□	LV3AN	VHX0617N	SS32N	SP3	HW25L	LSPS3
	16-3D-3N	1.000	6	0.866	1.000	1	1	R/L							

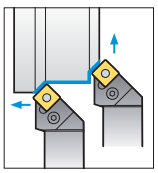
Applicable inserts **B154**

PSSNR/L



SN□□





45°

• R type holder

(inch)

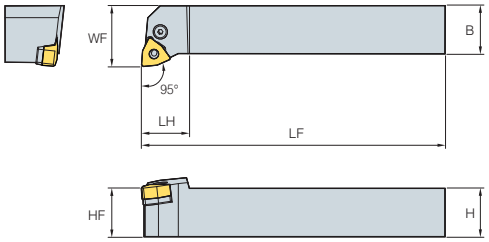
Designation		LH	LF	WF	HF	B	H	HAND	Applicable insert	Lever	Screw	Shim	Shim Pin	Wrench	Shim Pin Punch
PSSNR/L	12-3B-3N	1.000	4 1/2	0.669	0.787	3/4	3/4	R/L	SN□□33□□	LV3AN	VHX0617N	SS32N	SP3	HW25L	LSPS3
	16-3D-3N	1.000	6	0.866	1.000	1	1	R/L							

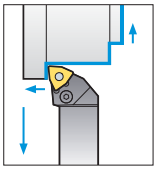
Applicable inserts **B154**

PWLNR/L



WN□□





95°

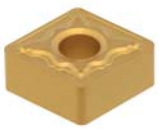
• R type holder

(inch)

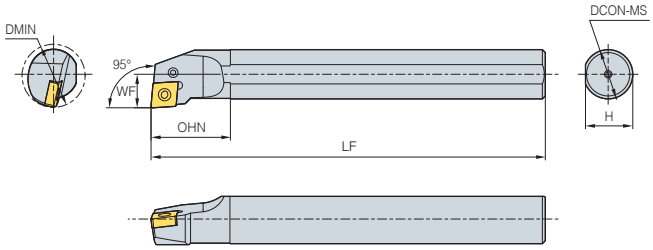
Designation		LH	LF	WF	HF	B	H	HAND	Applicable insert	Lever	Screw	Shim	Shim Pin	Wrench	Shim Pin Punch
PWLNR/L	10-3A	0.787	4	0.750	0.625	5/8	5/8	R/L	WN□□33□□	LV3AN	VHX0617N	SS32N	SP3	HW25L	LSPS3
	12-3B	0.787	4 1/2	1.000	0.750	3/4	3/4	R/L							
	16-3D	0.787	6	1.250	1.000	1	1	R/L							

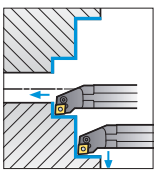
Applicable inserts **B154**

PCLNR/L



CN□□





95°

• R type holder

(inch)

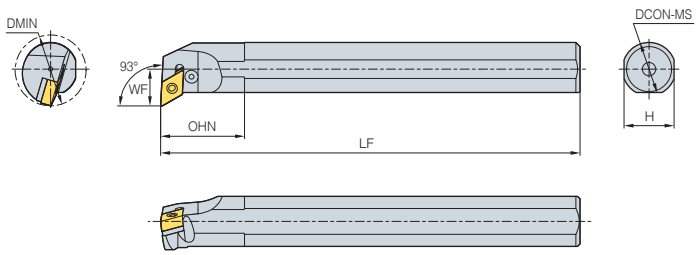
Designation	DMIN	OHN	LF	WF	H	DCON-MS	HAND	Applicable insert	Lever	Screw	Shim	Shim Pin	Wrench	Shim Pin Punch
S20Q-PCLNR/L-3-3N	1.000	1.969	7	0.512	0.709	1 1/4	R/L	CN□□33□□	LV3B	VHX0512B	–	–	HW20L	–
S25R-PCLNR/L-3-3N	1.260	1.969	8	0.669	0.906	1	R/L		LV3B	VHX0512B	SC32N	SP3	HW20L	LSPS3
S32S-PCLNR/L-3-3N	1.575	1.969	10	0.866	1.181	2	R/L		LV3N	VHX0617N	SC32N	SP3	HW25L	LSPS3

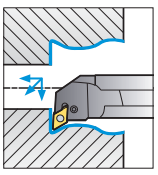
Applicable inserts **B154**

PDUNR/L



DN□□





93°

• R type holder

(inch)

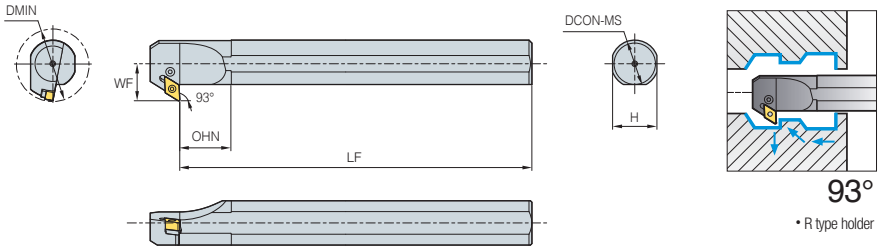
Designation	DMIN	OHN	LF	WF	H	DCON-MS	HAND	Applicable insert	Lever	Screw	Shim	Shim Pin	Wrench	Shim Pin Punch
S32S-PDUNR/L-3-3.5N	1.575	1.181	8	0.866	1.181	1	R/L	DN□□33.5□□	LV3AN	VHX0617N	SD32N	SP3	HW25L	LSPS3
S40T-PDUNR/L-3-3.5N	1.969	1.969	12	1.063	1.496	2 1/2	R/L							

Applicable inserts **B154**

PDZNR/L



DN□□



93°

• R type holder

(inch)

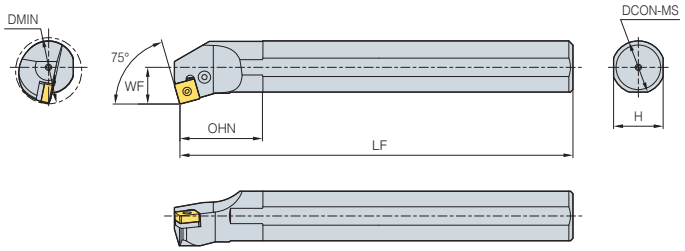
Designation	DMIN	OHN	LF	WF	H	DCON-MS	HAND	Applicable insert	Lever	Screw	Shim	Shim Pin	Wrench	Shim Pin Punch
S32S-PDZNR/L-3-3.5N	1.575	1.181	8	0.866	1.181	1	R/L	DN□□33.5□□	LV3AN	VHX0617N	SD32N	SP3	HW25L	LSPS3
S40T-PDZNR/L-3-3.5N	1.969	1.969	12	1.063	1.496	2 1/2	R/L							

Applicable inserts **B154**

PSKNR/L



SN□□



75°

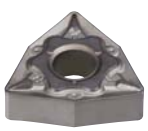
• R type holder

(inch)

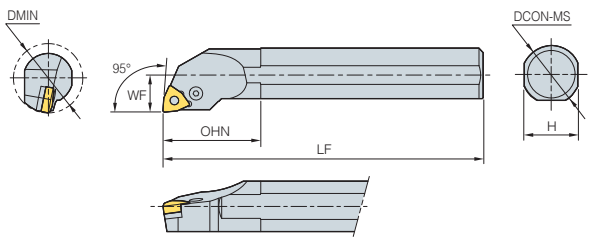
Designation	DMIN	OHN	LF	WF	H	DCON-MS	HAND	Applicable insert	Lever	Screw	Shim	Shim Pin	Wrench	Shim Pin Punch
S25R-PSKNR/L-3-3N	1.260	1.260	8	0.669	0.906	1	R/L	SN□□33□□	LV3B	VHX0512B	–	–	HW20L	–
S32S-PSKNR/L-3-3N	1.575	1.260	10	0.866	1.181	2	R/L		LV3N	VHX0617N	SS32N	–	HW25L	LSPS3

Applicable inserts **B154**

PWLNR/L



WN□□



95°

• R type holder

(inch)

Designation	DMIN	OHN	LF	WF	H	DCON-MS	HAND	Applicable insert	Lever	Screw	Shim	Shim Pin	Wrench	Shim Pin Punch
S12S-PWLNR/L3	0.930	1.574	10	0.500	0.671	3/4	R/L	WN□□33□□	LV3B	VHX0512B	–	–	–	–
S16T-PWLNR/L3	1.200	1.575	12	0.640	0.921	1	R/L							
S20U-PWLNR/L3	1.470	1.772	14	0.765	1.171	1 1/4	R/L		LV3B	VHX0617B	SW317	SP3	HW25L	LSPS3

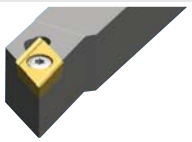
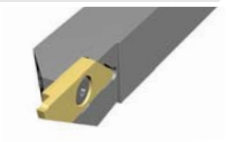
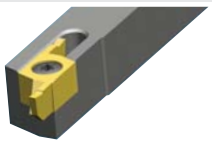
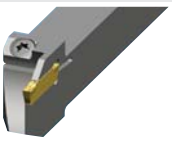
Applicable inserts **B154**

Excellent for precision machining

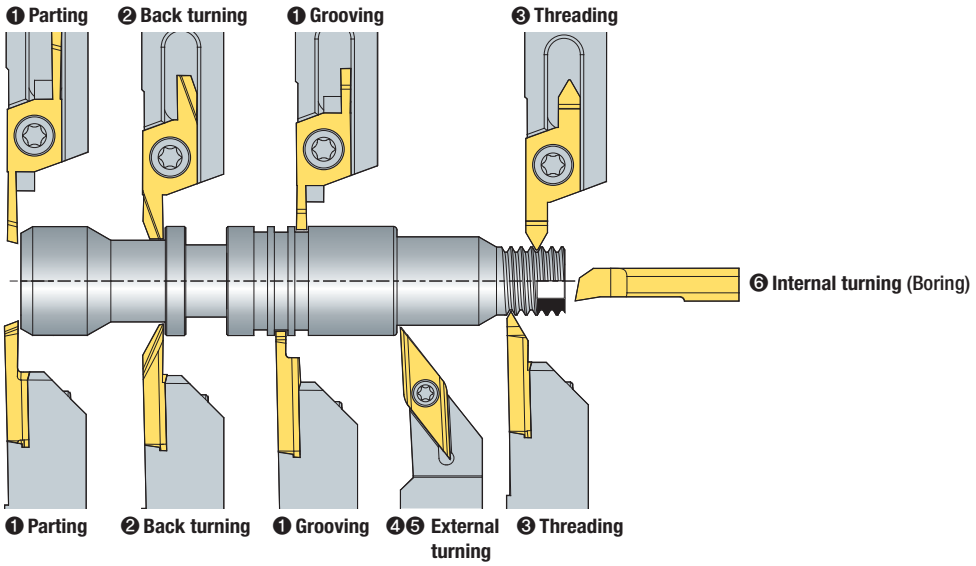
Auto Tools

- High precision machining of small parts and complex forms, etc.
- High quality products through stable machining
- Exclusive insert for automatic lathes

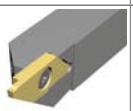
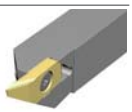
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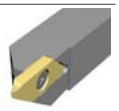
ISO	Blade	Multi utility	MGT	MSB tools
				

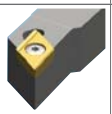
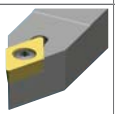
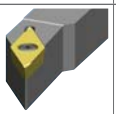
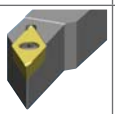
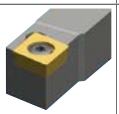
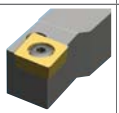
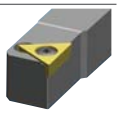
Application example



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	0.39~0.79inch	0.39~0.79inch	0.39~0.63inch	0.39~0.63inch	0.39~0.63inch	0.39~0.63inch	0.39~0.79inch	0.39~0.79inch	0.39~0.63inch
Insert shape									
Cutting width	0.04~0.12inch	0.04~0.12inch	0.03~0.08inch	0.03~0.08inch	0.06~0.10inch	0.06~0.10inch	0.08~0.16inch	0.08~0.12inch	0.13inch
DMAX	Ø0.71	Ø0.71	Ø0.63	Ø0.63	Ø1.26	Ø1.26	Tmax 0.32	Tmax 0.34	Tmax 0.32
Page	B180	B180	B177	B177	C50	C31	B180	B180	B177

Specification	❸ Threading	
Holder	SXGNR/L	SBHR/L
Insert	ST	SBT
Holder size	0.39~0.79inch	0.39~0.63inch
Insert shape		
Feature	Pitch ranges 0.02~0.06 / 0.06~0.12	Pitch ranges 0.01~0.06 / 0.04~0.08
Page	B180	B177

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	0.32~0.63inch	0.32~0.63inch	0.39~0.63inch	0.39~0.63inch	0.32~0.63inch	0.32~0.63inch	0.32~0.39inch
Insert shape							
Feature	Offset "0"				Offset "0"		
Page	B115	B115	B119	B120	B168	B168	B169

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

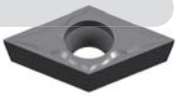
- Exclusive chip breaker for hard-to-cut materials such as titanium alloy, Inconel, stainless steel, etc.
- Minimized cutting heat by reducing contact area between chips and rake surface with the use of high positive blade

VP1



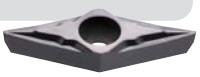
- Hard cutting edge for medium cutting
- Optimal width of chip breaker by each depth of cuts realizes wide workpiece machining

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

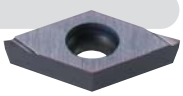


- For finishing (for surface roughness)
- 1st recommended chip breaker for chip control
- Better surface roughness, surface finish and chip control

KF/KM chip breaker, ground type for grooving

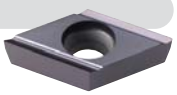
- Ground chip breaker with sharp cutting edge
- High precision insert of E-class tolerance with accurate nose radius

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

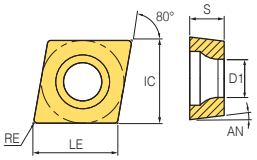
KM



- 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

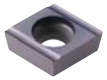
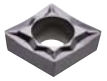
Applicable insert

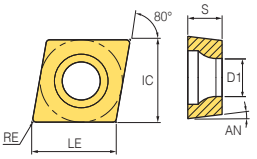
Picture	Designation	Coated				Uncoated	Dimensions (inch)							Configuration
		PC5300	PC8105	PC8110	PC8115	H01	IC	RE	S	LE	AN	D1	HAND	
CCGT-KF Finishing (High precision)	1.210.1R-KF	●		●			0.138	0.001	0.055	0.142	7	0.075	R	
	1.210.2R-KF	●		●			0.138	0.004	0.055	0.138	7	0.075	R	
	1.210.5R-KF	●		●			0.138	0.008	0.055	0.138	7	0.075	R	
	1.211R-KF	●		●			0.138	0.016	0.055	0.138	7	0.075	R	
	1.510.1R-KF	●		●			0.169	0.001	0.07	0.173	7	0.091	R	
	1.510.2R-KF	●		●			0.169	0.004	0.07	0.173	7	0.091	R	
	1.510.5R-KF	●		●			0.169	0.008	0.07	0.169	7	0.091	R	
	1.511R-KF	●		●			0.169	0.016	0.07	0.169	7	0.091	R	
	21.50.1R-KF						0.01	0.001	0.004	0.01	7	0.004	R	
	21.50.2R-KF						1/4	1/256	3/32	0.252	7	7/64	R	
	21.50.5R-KF						1/4	1/128	3/32	0.244	7	7/64	R	
	32.50.1R-KF						0.015	0.001	0.006	0.015	7	0.007	R	
	32.50.2R-KF						3/8	1/256	5/32	0.378	7	11/64	R	
	32.50.5R-KF						3/8	1/128	5/32	0.362	7	11/64	R	
	1.210.1L-KF	●		●			0.138	0.001	0.055	0.142	7	0.075	L	
	1.210.2L-KF	●		●			0.138	0.004	0.055	0.138	7	0.075	L	
	1.210.5L-KF	●		●			0.138	0.008	0.055	0.138	7	0.075	L	
	1.211L-KF	●		●			0.138	0.016	0.055	0.138	7	0.075	L	
	1.510.1L-KF	●		●			0.169	0.001	0.07	0.173	7	0.091	L	
	1.510.2L-KF	●		●			0.169	0.004	0.07	0.173	7	0.091	L	
	1.510.5L-KF	●		●			0.169	0.008	0.07	0.169	7	0.091	L	
	1.511L-KF	●		●			0.169	0.016	0.07	0.169	7	0.091	L	
	21.50.1L-KF						0.01	0.001	0.004	0.01	7	0.004	L	
	21.50.2L-KF						1/4	1/256	3/32	0.252	7	7/64	L	
	21.50.5L-KF						1/4	1/128	3/32	0.244	7	7/64	L	
	32.50.1L-KF						0.015	0.001	0.006	0.015	7	0.007	L	
	32.50.2L-KF						3/8	1/256	5/32	0.378	7	11/64	L	
	32.50.5L-KF						3/8	1/128	5/32	0.362	7	11/64	L	
CCGT-KF Finishing (Ultra high precision)	21.50.13MFR-KF						1/4	< 1/512	3/32	0.26	7	7/64	R	
	21.50.2MFR-KF			●			1/4	< 1/256	3/32	0.252	7	7/64	R	
	21.50.5MFR-KF	●		●			1/4	< 1/128	3/32	0.244	7	7/64	R	
	32.50.13MFR-KF						3/8	< 1/512	5/32	0.386	7	11/64	R	
	32.50.2MFR-KF	●		●			3/8	< 1/256	5/32	0.378	7	11/64	R	
	32.50.5MFR-KF	●					3/8	< 1/128	5/32	0.362	7	11/64	R	
	21.5.13MFL-KF						1/4	< 1/512	3/32	0.26	7	7/64	L	
	21.50.2MFL-KF			●			1/4	< 1/256	3/32	0.252	7	7/64	L	
	21.50.5MFL-KF	●		●			1/4	< 1/128	3/32	0.244	7	7/64	L	
	32.50.13MFL-KF						3/8	< 1/512	5/32	0.386	7	11/64	L	
	32.50.2MFL-KF	●					3/8	< 1/256	5/32	0.378	7	11/64	L	
	32.50.5MFL-KF	●		●			3/8	< 1/128	5/32	0.362	7	11/64	L	
CCGT-KM Medium to finishing (High precision)	21.50.1R-KM	●		●			0.01	0.001	0.004	0.01	7	0.004	R	
	21.50.2R-KM						0.01	0.0002	0.004	0.01	7	0.004	R	
	21.50.5R-KM	●		●			0.01	0.0003	0.004	0.01	7	0.004	R	
	21.51R-KM	●		●			0.01	0.016	0.004	0.01	7	0.004	R	
	32.50.1R-KM	●		●			0.015	0.001	0.006	0.015	7	0.007	R	
	32.50.2R-KM	●					0.015	0.0002	0.006	0.015	7	0.007	R	
	32.50.5R-KM	●		●			0.015	0.0003	0.006	0.014	7	0.007	R	
	32.51R-KM	●		●			0.015	0.016	0.006	0.014	7	0.007	R	
	21.50.1L-KM	●		●			0.01	0.001	0.004	0.01	7	0.004	L	
	21.50.2L-KM	●		●			0.01	0.0002	0.004	0.01	7	0.004	L	
	21.50.5L-KM	●		●			0.01	0.0003	0.004	0.01	7	0.004	L	
	21.51L-KM	●		●			0.01	0.016	0.004	0.01	7	0.004	L	
	32.50.1L-KM	●					0.015	0.001	0.006	0.015	7	0.007	L	
	32.50.2L-KM	●					0.015	0.0002	0.006	0.015	7	0.007	L	
	32.50.5L-KM	●		●			0.015	0.0003	0.006	0.014	7	0.007	L	
	32.51L-KM	●		●			0.015	0.016	0.006	0.014	7	0.007	L	

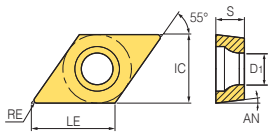


● : Stock item

Applicable insert

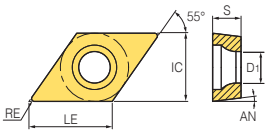
Picture	Designation	Coated				Uncoated	Dimensions (inch)							Configuration
		PC5300	PC8105	PC8110	PC8115	H01	IC	RE	S	LE	AN	D1	HAND	
CCET-KM  Medium to finishing (Ultra high precision)	**21.50.13MFR-KM**	●		●			1/4	< 1/512	3/32	0.26	7	7/64	R	
	21.50.2MFR-KM	●		●			1/4	< 1/256	3/32	0.252	7	7/64	R	
	21.50.5MFR-KM	●		●			1/4	< 1/128	3/32	0.244	7	7/64	R	
	32.50.13MFR-KM	●		●			3/8	< 1/512	5/32	0.386	7	11/64	R	
	32.50.2MFR-KM	●		●			3/8	< 1/256	5/32	0.378	7	11/64	R	
	32.50.5MFR-KM	●		●			3/8	< 1/128	5/32	0.362	7	11/64	R	
	21.50.13MFL-KM	●		●			1/4	< 1/512	3/32	0.26	7	7/64	L	
	21.50.2MFL-KM	●		●			1/4	< 1/256	3/32	0.252	7	7/64	L	
	21.50.5MFL-KM	●		●			1/4	< 1/128	3/32	0.244	7	7/64	L	
	32.50.13MFL-KM	●		●			3/8	< 1/512	5/32	0.386	7	11/64	L	
	32.50.2MFL-KM	●		●			3/8	< 1/256	5/32	0.378	7	11/64	L	
	32.50.5MFL-KM	●		●			3/8	< 1/128	5/32	0.362	7	11/64	L	
CCGT-FS  Finishing (High precision)	**21.50.2-FS**	●		●			1/4	< 0.004	3/32	0.248	7	7/64	N	
	21.50.5-FS	●		●			1/4	< 0.008	3/32	0.244	7	7/64	N	
	21.51-FS	●		●			1/4	< 1/64	3/32	0.236	7	7/64	N	
	32.50.2-FS	●		●			3/8	< 0.004	5/32	0.386	7	11/64	N	
	32.50.5-FS	●		●			3/8	< 0.008	5/32	0.378	7	11/64	N	
	32.51-FS	●		●			3/8	< 1/64	5/32	0.362	7	11/64	N	
	32.52-FS	●		●			3/8	< 1/32	5/32	0.346	7	11/64	N	
CCGT-FS  Finishing (Ultra high precision)	**21.50.2MFN-FS**						1/4	< 0.004	3/32	0.248	7	7/64	N	
	21.50.5MFN-FS						1/4	< 0.008	3/32	0.244	7	7/64	N	
	21.51MFN-FS						1/4	< 1/64	3/32	0.236	7	7/64	N	
	32.50.2MFN-FS						3/8	< 0.004	5/32	0.386	7	11/64	N	
	32.50.5MFN-FS						3/8	< 0.008	5/32	0.378	7	11/64	N	
	32.51MFN-FS						3/8	< 1/64	5/32	0.362	7	11/64	N	
	32.52MFN-FS						3/8	< 1/32	5/32	0.346	7	11/64	N	
CCGT-MS  Medium cutting (High precision)	**32.50.2-MS**	●		●			3/8	< 0.004	5/32	0.386	7	11/64	N	
	32.50.5-MS	●		●			3/8	< 0.008	5/32	0.378	7	11/64	N	
	32.51-MS	●		●			3/8	< 1/64	5/32	0.362	7	11/64	N	
CCGT-MS  Medium cutting (High precision)	**32.50.2MFN-MS**	●		●			3/8	< 0.004	5/32	0.386	7	11/64	N	
	32.50.5MFN-MS	●		●			3/8	< 0.008	5/32	0.378	7	11/64	N	
	32.51MFN-MS	●		●			3/8	< 1/64	5/32	0.362	7	11/64	N	
CCGT-VP1  Finishing (High precision)	**21.50.2-VP1**	●	●	●	●	●	1/4	1/256	3/32	0.26	7	7/64	N	
	21.50.5-VP1	●	●	●	●		1/4	1/128	3/32	0.252	7	7/64	N	
	21.51-VP1	●	●	●	●	●	1/4	1/64	3/32	0.244	7	7/64	N	
	32.50.2-VP1	●	●	●	●	●	3/8	1/256	5/32	0.386	7	11/64	N	
	32.50.5-VP1	●	●	●	●		3/8	1/128	5/32	0.378	7	11/64	N	
	32.51-VP1	●	●	●	●	●	3/8	1/64	5/32	0.362	7	11/64	N	
CCGT-VP1  Finishing (Ultra high precision)	**21.50.2MFN-VP1**			●			1/4	< 1/256	3/32	0.26	7	7/64	N	
	21.50.5MFN-VP1	●		●			1/4	< 1/128	3/32	0.252	7	7/64	N	
	21.51MFN-VP1			●			1/4	< 1/64	3/32	0.244	7	7/64	N	
	32.50.2MFN-VP1	●		●			3/8	< 1/256	5/32	0.386	7	11/64	N	
	32.50.5MFN-VP1	●		●			3/8	< 1/128	5/32	0.378	7	11/64	N	
	32.51MFN-VP1	●		●			3/8	< 1/64	5/32	0.362	7	11/64	N	
DCGT-KF  Finishing (High precision)	**21.50.1R-KF**	●		●			0.25	0.001	0.094	0.307	7	0.004	R	
	21.50.2R-KF	●					0.25	0.004	0.094	0.307	7	0.004	R	
	21.50.5R-KF	●		●			0.25	0.008	0.094	0.307	7	0.004	R	
	21.51R-KF	●		●			0.25	0.016	0.094	0.307	7	0.004	R	
	32.50.1R-KF	●		●			0.375	0.001	0.156	0.457	7	0.007	R	
	32.50.2R-KF	●		●			0.375	0.004	0.156	0.457	7	0.007	R	
	32.50.5R-KF	●		●			0.375	0.008	0.156	0.457	7	0.007	R	
	32.51R-KF	●		●			0.375	0.016	0.156	0.457	7	0.007	R	
	21.50.1L-KF	●		●			0.25	0.001	0.094	0.307	7	0.004	L	
	21.50.2L-KF	●					0.25	0.004	0.094	0.307	7	0.004	L	
	21.50.5L-KF	●					0.25	0.008	0.094	0.307	7	0.004	L	
	21.51L-KF	●		●			0.25	0.016	0.094	0.307	7	0.004	L	
	32.50.1L-KF	●		●			0.375	0.001	0.156	0.457	7	0.007	L	
	32.50.2L-KF	●					0.375	0.004	0.156	0.457	7	0.007	L	
	32.50.5L-KF	●		●			0.375	0.008	0.156	0.457	7	0.007	L	
	32.51L-KF	●		●			0.375	0.016	0.156	0.457	7	0.007	L	





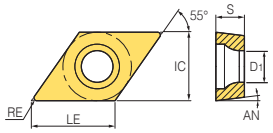
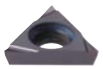
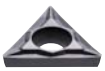
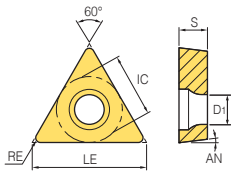
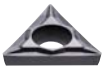
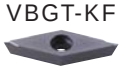
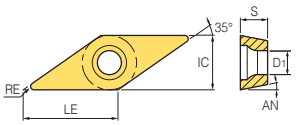
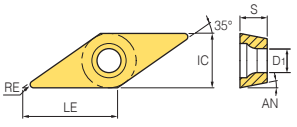
● : Stock item

Applicable insert

Picture	Designation	Coated				Uncoated	Dimensions (inch)							Configuration
		PC5300	PC8105	PC8110	PC8115	H01	IC	RE	S	LE	AN	D_1	HAND	
DCET-KF Finishing (Ultra high precision)	**21.50.13MFR-KF**	●		●			1/4	< 1/512	3/32	0.307	7	7/64	R	
	21.50.2MFR-KF			●			1/4	< 1/256	3/32	0.307	7	7/64	R	
	21.50.5MFR-KF			●			1/4	< 1/128	3/32	0.307	7	7/64	R	
	32.50.13MFR-KF	●		●			3/8	< 1/512	5/32	0.457	7	11/64	R	
	32.50.2MFR-KF			●			3/8	< 1/256	5/32	0.457	7	11/64	R	
	32.50.5MFR-KF	●		●			3/8	< 1/128	5/32	0.457	7	11/64	R	
	21.50.13MFL-KF			●			1/4	< 1/512	3/32	0.307	7	7/64	L	
	21.50.2MFL-KF						1/4	< 1/256	3/32	0.307	7	7/64	L	
	21.50.5MFL-KF						1/4	< 1/128	3/32	0.307	7	7/64	L	
	32.50.13MFL-KF	●		●			3/8	< 1/512	5/32	0.457	7	11/64	L	
	32.50.2MFL-KF						3/8	< 1/256	5/32	0.457	7	11/64	L	
	32.50.5MFL-KF						3/8	< 1/128	5/32	0.457	7	11/64	L	
DCGT-KM Medium to finishing (High precision)	**21.50.1R-KM**	●		●			0.01	0.001	0.004	0.012	7	0.004	R	
	21.50.2R-KM	●		●			1/4	1/256	3/32	0.307	7	7/64	R	
	21.50.5R-KM	●		●			1/4	1/128	3/32	0.307	7	7/64	R	
	21.51R-KM	●					0.01	0.016	0.004	0.012	7	0.004	R	
	32.50.1R-KM	●		●			0.015	0.001	0.006	0.018	7	0.007	R	
	32.50.2R-KM	●		●			3/8	1/256	5/32	0.457	7	11/64	R	
	32.50.5R-KM	●		●			3/8	1/128	5/32	0.457	7	11/64	R	
	32.51R-KM	●		●			0.015	0.016	0.006	0.018	7	0.007	R	
	21.50.1L-KM	●		●			0.01	0.001	0.004	0.012	7	0.004	L	
	21.50.2L-KM	●					1/4	1/256	3/32	0.307	7	7/64	L	
	21.50.5L-KM	●					1/4	1/128	3/32	0.307	7	7/64	L	
	21.51L-KM	●					0.01	0.016	0.004	0.012	7	0.004	L	
	32.50.1L-KM	●					0.006	0.001	0.006	0.018	7	0.007	L	
	32.50.2L-KM	●					3/8	1/256	5/32	0.457	7	11/64	L	
	32.50.5L-KM	●		●			3/8	1/128	5/32	0.457	7	11/64	L	
	32.51L-KM	●					0.006	0.016	0.006	0.018	7	0.007	L	
DCGT-KM Medium to finishing (Ultra high precision)	**21.50.13MFR-KM**						1/4	< 1/512	3/32	0.307	7	7/64	R	
	21.50.2MFR-KM	●		●			1/4	< 1/256	3/32	0.307	7	7/64	R	
	21.50.5MFR-KM	●		●			1/4	< 1/128	3/32	0.307	7	7/64	R	
	32.50.13MFR-KM	●		●			3/8	< 1/512	5/32	0.457	7	11/64	R	
	32.50.2MFR-KM	●		●			3/8	< 1/256	5/32	0.457	7	11/64	R	
	32.50.5MFR-KM	●		●			3/8	< 1/128	5/32	0.457	7	11/64	R	
	21.50.13MFL-KM			●			1/4	< 1/512	3/32	0.307	7	7/64	L	
	21.50.2MFL-KM	●					1/4	< 1/256	3/32	0.307	7	7/64	L	
	21.50.5MFL-KM	●		●			1/4	< 1/128	3/32	0.307	7	7/64	L	
	32.50.13MFL-KM	●		●			3/8	< 1/512	5/32	0.457	7	11/64	L	
	32.50.2MFL-KM	●		●			3/8	< 1/256	5/32	0.457	7	11/64	L	
	32.50.5MFL-KM	●					3/8	< 1/128	5/32	0.457	7	11/64	L	
DCGT-FS Finishing (High precision)	**21.50.2-FS**	●		●			1/4	0.004	3/32	0.299	7	7/64	N	
	21.50.5-FS	●		●			1/4	0.008	3/32	0.295	7	7/64	N	
	32.50.2-FS	●		●			3/8	0.004	5/32	0.457	7	11/64	N	
	32.50.5-FS	●		●			3/8	0.008	5/32	0.449	7	11/64	N	
	32.51-FS	●		●			3/8	1/64	5/32	0.441	7	11/64	N	
	32.52-FS	●		●			3/8	1/32	5/32	0.433	7	11/64	N	
DCGT-FS Finishing (Ultra high precision)	**21.50.2MFN-FS**						1/4	< 0.004	3/32	0.299	7	7/64	N	
	21.50.5MFN-FS						1/4	< 0.008	3/32	0.295	7	7/64	N	
	32.50.2MFN-FS						3/8	< 0.004	5/32	0.457	7	11/64	N	
	32.50.5MFN-FS						3/8	< 0.008	5/32	0.449	7	11/64	N	
	32.51MFN-FS						3/8	< 1/64	5/32	0.441	7	11/64	N	
	32.52MFN-FS						3/8	< 1/32	5/32	0.433	7	11/64	N	
DCGT-MS Medium cutting (High precision)	**32.50.2-MS**	●		●			3/8	0.004	5/32	0.449	7	11/64	N	
	32.50.5-MS	●		●			3/8	0.008	5/32	0.441	7	11/64	N	
	32.51-MS	●		●			3/8	1/64	5/32	0.433	7	11/64	N	
DCGT-MS Medium cutting (Ultra high precision)	**32.50.2MFN-MS**	●		●			3/8	< 0.004	5/32	0.449	7	11/64	N	
	32.50.5MFN-MS						3/8	< 0.008	5/32	0.441	7	11/64	N	
	32.51MFN-MS	●		●			3/8	< 1/64	5/32	0.433	7	11/64	N	

● : Stock item

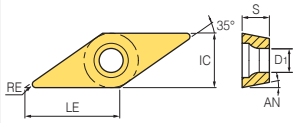
Applicable insert

Picture	Designation	Coated				Uncoated	Dimensions (inch)							Configuration
		PC5300	PC8105	PC8110	PC8115	H01	IC	RE	S	LE	AN	D1	HAND	
DCGT-VP1  Finishing (High precision)	21.50.2-VP1	●	●	●	●		1/4	1/256	3/32	0.307	7	7/64	N	
	21.50.5-VP1	●		●	●	●	1/4	1/128	3/32	0.307	7	7/64	N	
	21.51-VP1	●	●	●	●		1/4	1/64	3/32	0.307	7	7/64	N	
	32.50.2-VP1	●		●			3/8	1/256	5/32	0.457	7	11/64	N	
	32.50.5-VP1	●	●	●	●	●	3/8	1/128	5/32	0.457	7	11/64	N	
	32.51-VP1	●	●	●	●	●	3/8	1/64	5/32	0.457	7	11/64	N	
DCGT-VP1  Finishing (Ultra high precision)	21.50.2MFN-VP1			●			1/4	< 1/256	3/32	0.307	7	7/64	N	
	21.50.5MFN-VP1	●		●			1/4	< 1/128	3/32	0.307	7	7/64	N	
	21.51MFN-VP1			●			1/4	< 1/64	3/32	0.307	7	7/64	N	
	32.50.2MFN-VP1			●			3/8	< 1/256	5/32	0.457	7	11/64	N	
	32.50.5MFN-VP1			●			3/8	< 1/128	5/32	0.457	7	11/64	N	
	32.51MFN-VP1	●		●			3/8	< 1/64	5/32	0.457	7	11/64	N	
TCGT-KF  Finishing (High precision)	1.51.50.1R-KF						0.187	0.001	0.094	0.321	7	0.094	R	
	1.51.50.2R-KF						0.187	0.004	0.094	0.315	7	0.094	R	
	1.51.50.5R-KF						0.187	0.008	0.094	0.303	7	0.094	R	
	1.51.50.1L-KF						0.187	0.001	0.094	0.321	7	0.094	L	
	1.51.50.2L-KF						0.187	0.004	0.094	0.315	7	0.094	L	
	1.51.50.5L-KF						0.187	0.008	0.094	0.303	7	0.094	L	
TCGT-FS  Finishing (High precision)	21.50.2-FS	●		●			1/4	0.004	3/32	0.366	7	7/64	N	
	21.50.5-FS	●		●			1/4	0.008	3/32	0.358	7	7/64	N	
	21.51-FS	●		●			1/4	1/64	3/32	0.339	7	7/64	N	
TCGT-FS  Finishing (Ultra high precision)	21.50.2MFN-FS						1/4	< 0.004	3/32	0.366	7	7/64	N	
	21.50.5MFN-FS						1/4	< 0.008	3/32	0.358	7	7/64	N	
	21.51MFN-FS						1/4	< 1/64	3/32	0.339	7	7/64	N	
VBGT-KF  Finishing (High precision)	220.1R-KF	●					0.01	0.001	0.094	0.307	5	0.004	R	
	220.2R-KF	●					0.01	0.004	0.094	0.307	5	0.004	R	
	220.5R-KF	●					0.01	0.008	0.094	0.307	5	0.004	R	
	220.1L-KF	●					0.015	0.001	0.156	0.457	5	0.007	L	
	220.2L-KF	●					0.015	0.004	0.156	0.457	5	0.007	L	
	220.5L-KF	●					0.015	0.008	0.156	0.457	5	0.007	L	
VBGT-KM  Medium to finishing (High precision)	220.1R-KM	●		●			0.01	0.001	0.094	0.307	5	0.004	R	
	220.2R-KM	●					0.01	0.004	0.094	0.307	5	0.004	R	
	220.5R-KM	●		●			0.01	0.008	0.094	0.307	5	0.004	R	
	220.1L-KM	●		●			0.015	0.001	0.156	0.457	5	0.007	L	
	220.2L-KM	●					0.015	0.004	0.156	0.457	5	0.007	L	
	220.5L-KM	●					0.015	0.008	0.156	0.457	5	0.007	L	
VBGT-FS  Finishing (High precision)	220.2 -FS	●		●			1/4	0.004	1/8	0.425	5	7/64	N	
	220.5 -FS	●		●			1/4	0.008	1/8	0.417	5	7/64	N	
	221 -FS	●		●			1/4	1/64	1/8	0.449	5	7/64	N	
	330.2 -FS	●		●			3/8	0.004	3/16	0.642	5	11/64	N	
	330.5 -FS	●		●			3/8	0.008	3/16	0.634	5	11/64	N	
	331 -FS	●		●			3/8	1/64	3/16	0.618	5	11/64	N	
VBGT-FS  Finishing (Ultra high precision)	220.2MFN-FS						1/4	< 0.004	1/8	0.425	5	7/64	N	
	220.5MFN-FS						1/4	< 0.008	1/8	0.417	5	7/64	N	
	221MFN-FS						1/4	< 1/64	1/8	0.449	5	7/64	N	
	330.2MFN-FS						3/8	< 0.004	3/16	0.642	5	11/64	N	
	330.5MFN-FS						3/8	< 0.008	3/16	0.634	5	11/64	N	
	331MFN-FS						3/8	< 1/64	3/16	0.618	5	11/64	N	
VCGT-KF  Finishing (High precision)	220.1R-KM						0.01	0.001	0.125	0.017	7	0.004	R	
	220.2R-KM						0.01	0.004	0.125	0.017	7	0.004	R	
	220.5R-KM						0.01	0.008	0.125	0.017	7	0.004	R	
	220.1L-KM						0.01	0.001	0.125	0.017	7	0.004	L	
	220.2L-KM						0.01	0.004	0.125	0.017	7	0.004	L	
	220.5L-KM						0.01	0.008	0.125	0.017	7	0.004	L	

● : Stock item

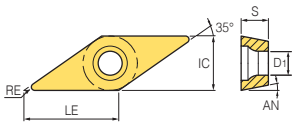
Applicable insert

Picture	Designation	Coated				Uncoated	Dimensions (inch)							Configuration
		PC5300	PC8105	PC8110	PC8115	H01	IC	RE	S	LE	AN	D1	HAND	
VCET-KF Finishing (Ultra high precision)	220.13MFR-KF	●		●			1/4	< 1/512	1/8	0.433	7	7/64	R	
	220.2MFR-KF			●			1/4	< 1/256	1/8	0.433	7	7/64	R	
	220.5MFR-KF						1/4	< 1/128	1/8	0.433	7	7/64	R	
	220.13MFL-KF						1/4	< 1/512	1/8	0.433	7	7/64	L	
	220.2MFL-KF			●			1/4	< 1/256	1/8	0.433	7	7/64	L	
	220.5MFL-KF			●			1/4	< 1/128	1/8	0.433	7	7/64	L	
VCGT-KM Medium to finishing (High precision)	21.50.1R-KM						0.01	0.001	0.005	0.017	7	0.004	R	
	220.2R-KM						1/4	1/256	1/8	0.433	7	7/64	R	
	220.5R-KM						1/4	1/128	1/8	0.433	7	7/64	R	
	21.50.1L-KM						0.01	0.001	0.005	0.017	7	0.004	L	
	220.2L-KM						1/4	1/256	1/8	0.433	7	7/64	L	
	220.5L-KM						1/4	1/128	1/8	0.433	7	7/64	L	
VCET-KM Medium to finishing (Ultra high precision)	220.13MFR-KM			●			1/4	< 1/512	1/8	0.433	7	7/64	R	
	220.2MFR-KM			●			1/4	< 1/256	1/8	0.433	7	7/64	R	
	220.5MFR-KM	●		●			1/4	< 1/128	1/8	0.433	7	7/64	R	
	220.13MFL-KM						1/4	< 1/512	1/8	0.433	7	7/64	L	
	220.2MFL-KM						1/4	< 1/256	1/8	0.433	7	7/64	L	
	220.5MFL-KM	●		●			1/4	< 1/128	1/8	0.433	7	7/64	L	
VCGT-FS Finishing (High precision)	220.2-FS	●		●			1/4	0.004	1/8	0.425	7	7/64	N	
	220.5-FS	●		●			1/4	0.008	1/8	0.417	7	7/64	N	
	221-FS	●		●			1/4	1/65	1/8	0.449	7	7/64	N	
	330.2-FS	●		●			3/8	0.004	3/16	0.642	7	7/64	N	
	330.5-FS	●		●			3/8	0.008	3/16	0.634	7	11/64	N	
	331-FS	●		●			3/8	1/65	3/16	0.618	7	11/64	N	
VCGT-FS Finishing (Ultra high precision)	220.2MFN-FS						1/4	< 0.004	1/8	0.425	7	7/64	N	
	220.5MFN-FS						1/4	< 0.008	1/8	0.417	7	7/64	N	
	221MFN-FS						1/4	< 1/65	1/8	0.449	7	7/64	N	
	330.2MFN-FS						3/8	< 0.004	3/16	0.642	7	11/64	N	
	330.5MFN-FS						3/8	< 0.008	3/16	0.634	7	11/64	N	
	331MFN-FS						3/8	< 1/65	3/16	0.618	7	11/64	N	
VCGT-MS Medium cutting (High precision)	220.2-MS	●		●			1/4	0.004	1/8	0.425	7	7/64	N	
	220.5-MS	●		●			1/4	0.008	1/8	0.417	7	7/64	N	
	221-MS	●		●			1/4	1/64	1/8	0.449	7	7/64	N	
VCGT-MS Medium cutting (Ultra high precision)	220.2MFN-MS	●		●			1/4	< 0.004	1/8	0.425	7	7/64	N	
	220.5MFN-MS	●		●			1/4	< 0.008	1/8	0.417	7	7/64	N	
	221MFN-MS	●		●			1/4	< 1/64	1/8	0.449	7	7/64	N	
VCGT-VP1 Finishing (High precision)	220.2-VP1	●	●	●	●	●	1/4	1/256	1/8	0.433	7	7/64	N	
	220.5-VP1	●	●	●	●	●	1/4	1/128	1/8	0.433	7	7/64	N	
	221-VP1	●	●	●	●	●	1/4	1/64	1/8	0.433	7	7/64	N	
VCGT-VP1 Finishing (Ultra high precision)	220.2MFN-VP1	●		●			1/4	< 1/256	1/8	0.433	7	7/64	N	
	220.5MFN-VP1	●		●			1/4	< 1/128	1/8	0.433	7	7/64	N	
	221MFN-VP1	●		●			1/4	< 1/64	1/8	0.433	7	7/64	N	
VCGT-MS Medium cutting (Ultra high precision)	1203008FN-MS	●		●			0.295	< 0.003	0.118	0.433	7	7/64	N	
	120301FN-MS	●		●			0.295	< 1/256	0.118	0.433	7	7/64	N	
	120302FN-MS	●					0.295	< 1/128	0.118	0.433	7	7/64	N	
	120304FN-MS	●		●			0.295	< 1/64	0.118	0.433	7	7/64	N	
VCGX-VP1 Finishing (Ultra high precision) Chamfer type	120300MFR-VP1	●		●			0.295	< 0.0	1/8	0.433	7	7/64	R	
	120301MFR-VP1	●		●			0.295	< 1/256	1/8	0.433	7	7/64	R	
	120302MFR-VP1	●		●			0.295	< 1/128	1/8	0.433	7	7/64	R	
	120304MFR-VP1	●		●			0.295	< 1/64	1/8	0.433	7	7/64	R	
	120308MFR-VP1	●		●			0.295	< 1/32	1/8	0.433	7	7/64	R	



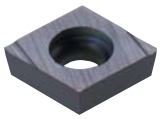
● : Stock item

Applicable insert

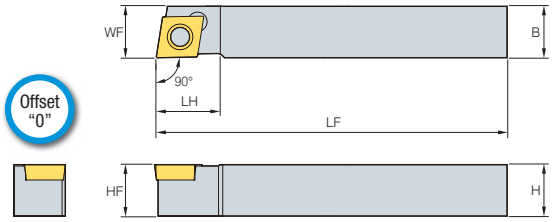
Picture	Designation	Coated				Uncoated	Dimensions (inch)							Configuration
		PC5300	PC8105	PC8110	PC8115	H01	IC	RE	S	LE	AN	D_1	HAND	
VPGT-KF Finishing (High precision)	**1.51.50.2R-KF**	●		●			0.187	0.004	0.094	0.315	11	0.091	R	
	1.51.50.5R-KF	●		●			0.187	0.008	0.094	0.315	11	0.091	R	
	220.1R-KF	●		●			0.25	0.001	0.125	0.433	11	0.11	R	
	220.2R-KF	●		●			0.25	0.004	0.125	0.433	11	0.11	R	
	220.5R-KF	●		●			0.25	0.008	0.125	0.433	11	0.11	R	
	1.51.50.2L-KF	●		●			0.187	0.004	0.094	0.315	11	0.091	L	
	1.51.50.5L-KF	●		●			0.187	0.008	0.094	0.315	11	0.091	L	
	220.1L-KF	●		●			0.25	0.001	0.125	0.433	11	0.11	L	
	220.2L-KF	●		●			0.25	0.004	0.125	0.433	11	0.11	L	
	220.5L-KF	●		●			0.25	0.008	0.125	0.433	11	0.11	L	
VPGT-KF Finishing (Ultra high precision)	**1.51.50.13MFR-KF**						3/16	< 1/512	3/32	0.315	11	6/64	R	
	1.51.50.2MFR-KF						3/16	< 1/256	3/32	0.315	11	6/64	R	
	1.51.50.5MFR-KF	●		●			3/16	< 1/128	3/32	0.315	11	6/64	R	
	1.51.50.13MFL-KF			●			3/16	< 1/512	3/32	0.315	11	6/64	L	
	1.51.50.2MFL-KF						3/16	< 1/256	3/32	0.315	11	6/64	L	
	1.51.50.5MFL-KF	●		●			3/16	< 1/128	3/32	0.315	11	6/64	L	
VPGT-KM Medium to finishing (High precision)	**1.51.50.2R-KM**	●		●			0.187	0.004	0.094	0.315	11	0.091	R	
	1.51.50.5R-KM	●		●			0.187	0.008	0.094	0.315	11	0.091	R	
	220.1R-KM	●		●			0.25	0.001	0.125	0.433	11	0.11	R	
	220.2R-KM	●		●			0.25	0.004	0.125	0.433	11	0.11	R	
	220.5R-KM	●		●			0.25	0.008	0.125	0.433	11	0.11	R	
	1.51.50.2L-KM	●		●			0.187	0.004	0.094	0.315	11	0.091	L	
	1.51.50.5L-KM	●		●			0.187	0.008	0.094	0.315	11	0.091	L	
	220.1L-KM	●		●			0.25	0.001	0.125	0.433	11	0.11	L	
	220.2L-KM	●		●			0.25	0.004	0.125	0.433	11	0.11	L	
	220.5L-KM	●		●			0.25	0.008	0.125	0.433	11	0.11	L	
VPGT-KM Medium to finishing (Ultra high precision)	**1.51.50.13MFR-KM**						3/16	< 1/512	1/8	0.315	11	7/64	R	
	1.51.50.2MFR-KM						3/16	< 1/256	1/8	0.315	11	7/64	R	
	1.51.50.5MFR-KM	●		●			3/16	< 1/128	1/8	0.315	11	7/64	R	
	1.51.50.13MFL-KM						3/16	< 1/512	1/8	0.315	11	7/64	L	
	1.51.50.2MFL-KM						3/16	< 1/256	1/8	0.315	11	7/64	L	
	1.51.50.5MFL-KM						3/16	< 1/128	1/8	0.315	11	7/64	L	
VPGT-VP1 Medium cutting (High precision)	**220.2-VP1**	●		●			1/4	1/256	1/8	0.433	11	7/64	N	
	220.5-VP1	●		●			1/4	1/128	1/8	0.433	11	7/64	N	
	221-VP1					●	1/4	1/64	1/8	0.433	11	7/64	N	
VPGT-VP1 Medium cutting (Ultra high precision)	**220.2MFN-VP1**	●		●			1/4	< 1/256	1/8	0.433	11	7/64	N	
	220.5MFN-VP1			●			1/4	< 1/128	1/8	0.433	11	7/64	N	
	221MFN-VP1	●		●			1/4	< 1/64	1/8	0.433	11	7/64	N	

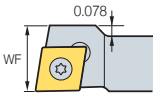
● : Stock item

SCACR/L

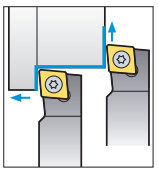


CC□T





※ Only SCACR/L1010-X09A is designed as above picture.



90°

• R type holder

(inch)

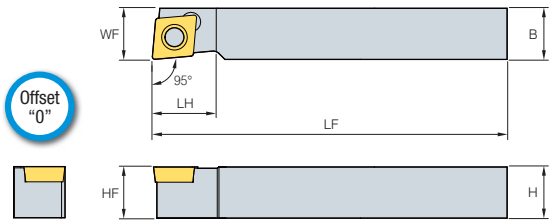
Designation		LH	LF	WF	HF	B	H	HAND	Applicable insert	Screw	Wrench
SCACR/L	05-X2A	0.394	4 1/2	0.313	0.313	5/16	5/16	R/L	CC□T21.5□	FTKA02565	TW07P
	06-X2A	0.394	4 1/2	0.375	0.375	3/8	3/8	R/L			
	06-X3A	0.512	4 1/2	0.500	0.500	3/8	3/8	R/L	CC□T32.5□	FTKA0410	TW15P
	08-X3A	0.630	4 1/2	0.500	0.500	1/2	1/2	R/L			
	10-X3A	0.630	4 1/2	0.625	0.625	5/8	5/8	R/L			

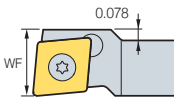
Applicable inserts **B44~B48, B75, B162~B163**

SCLCR/L

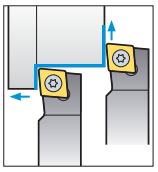


CC□T





※ Only SCLCR/L1010-X09A is designed as above picture.



95°

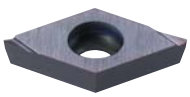
• R type holder

(inch)

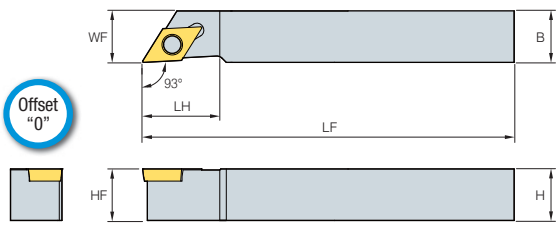
Designation		LH	LF	WF	HF	B	H	HAND	Applicable insert	Screw	Wrench
SCLCR/L	05-X2A	0.394	4 1/2	0.313	0.313	5/16	5/16	R/L	CC□T21.5□	FTKA02565	TW07P
	06-X2A	0.394	4 1/2	0.375	0.375	3/8	3/8	R/L			
	06-X3A	0.512	4 1/2	0.500	0.500	3/8	3/8	R/L	CC□T32.5□	FTKA0410	TW15P
	08-X3A	0.630	4 1/2	0.500	0.500	1/2	1/2	R/L			
	10-X3A	0.630	4 1/2	0.625	0.625	5/8	5/8	R/L			

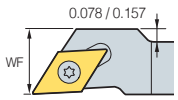
Applicable inserts **B44~B48, B75, B162~B163**

SDJCR/L

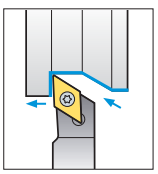


DC□T





※ Only SDJCR/L0808-X07A, 1010-X11A, 1212-X11A are designed as above picture.



93°

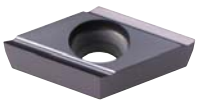
• R type holder

(inch)

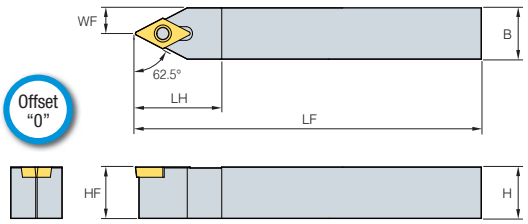
Designation		LH	LF	WF	HF	B	H	HAND	Applicable insert	Screw	Wrench
SDJCR/L	05-X2A	0.709	4 1/2	0.375	0.313	5/16	5/16	R/L	DC□T21.5□	FTKA02565	TW07P
	06-X2A	0.590	4 1/2	0.375	0.375	3/8	3/8	R/L			
	06-X3A	0.709	4 1/2	0.550	0.500	3/8	3/8	R/L	DC□T32.5□□	FTKA0410	TW15P
	08-X3A	0.709	4 1/2	0.550	0.500	1/2	1/2	R/L			
	10-X3A	0.866	4 1/2	0.625	0.625	5/8	5/8	R/L			

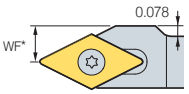
Applicable inserts **B50~B53, B76, B163~B165**

SDNCN

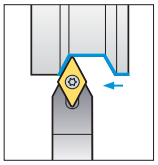


DC□T





※ Only SDNCN1010-X11A is designed as above picture.



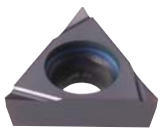
62.5°

(inch)

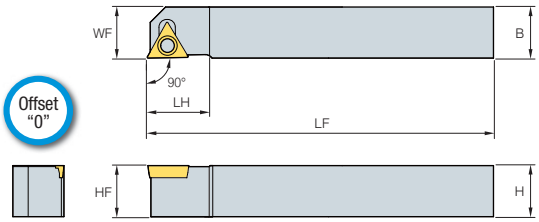
Designation		LH	LF	WF	HF	B	H	HAND	Applicable insert	Screw	Wrench
SDNCN	05-X2A	-	4 1/2	0.125	0.313	5/16	5/16	N	DC□T21.5□	FTKA02565	TW07P
	06-X2A	-	4 1/2	0.158	0.375	3/8	3/8	N			
	06-X3A	-	4 1/2	0.276	0.375	3/8	3/8	N	DC□T32.5□	FTKA0410	TW15P
	08-X3A	-	4 1/2	0.250	0.500	1/2	1/2	N			
	10-X3A	-	4 1/2	0.313	0.625	5/8	5/8	N			

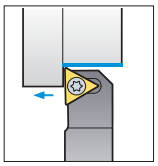
Applicable inserts **B50~B53, B76, B163~B165**

STACR/L



TC□T





90°

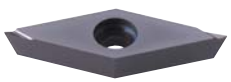
• R type holder

(inch)

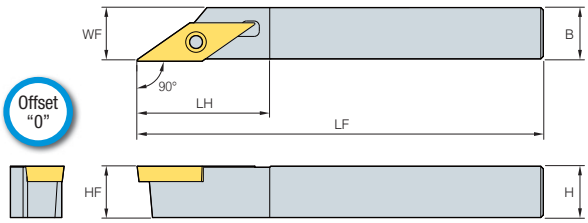
Designation		LH	LF	WF	HF	B	H	HAND	Applicable insert	Screw	Wrench
STACR/L	05-X1.5A	0.472	4 1/2	0.313	0.313	5/16	5/16	R/L	TC□T51.5□	FTNA0206	TW06P
	06-X1.5A	0.472	4 1/2	0.375	0.375	3/8	3/8	R/L			

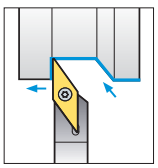
Applicable inserts **B165**

SVACR/L



VC□□





90°

• R type holder

(inch)

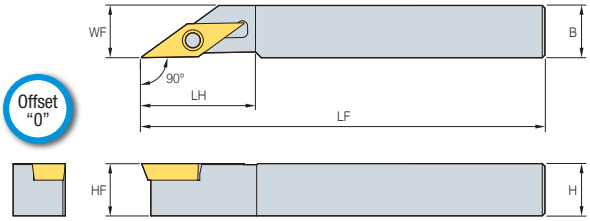
Designation		LH	LF	WF	HF	B	H	HAND	Applicable insert	Screw	Wrench
SVACR/L	05-X12A	1.024	4 1/2	0.313	0.313	5/16	5/16	R/L	VC□T1203□□	FTKA02565	TW07P
	06-X12A	1.024	4 1/2	0.375	0.375	3/8	3/8	R/L			
	08-X12A	1.024	4 1/2	0.472	0.472	1/2	1/2	R/L			
	10-X12A	1.024	4 1/2	0.630	0.630	5/8	5/8	R/L			
SVACR/L	05-X12C	1.024	4 1/2	0.313	0.313	5/16	5/16	R/L	VC□X1203□□	FTKA02565	TW07P
	06-X12C	1.024	4 1/2	0.375	0.375	3/8	3/8	R/L			
	08-X12C	1.024	4 1/2	0.472	0.472	1/2	1/2	R/L			
	10-X12C	1.024	4 1/2	0.630	0.630	5/8	5/8	R/L			

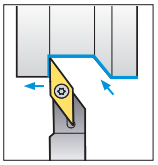
Applicable inserts **B68~B70, B81, B166**

SVAPR/L



VP□T





90°
• R type holder

(inch)

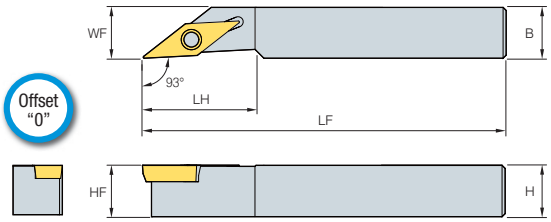
Designation		LH	LF	WF	HF	B	H	HAND	Applicable insert	Screw	Wrench
SVAPR/L	05-X2A	0.866	4 1/2	0.313	0.313	5/16	5/16	R/L	VP□T22□□	FTKA02565	TW07P
	06-X2A	0.866	4 1/2	0.375	0.375	3/8	3/8	R/L			
	08-X2A	0.866	4 1/2	0.472	0.472	1/2	1/2	R/L			
	10-X2A	0.945	4 1/2	0.630	0.630	5/8	5/8	R/L			

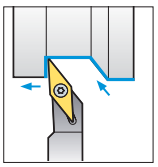
Applicable inserts **B71, B167**

SVJBR/L



VB□T





93°
• R type holder

(inch)

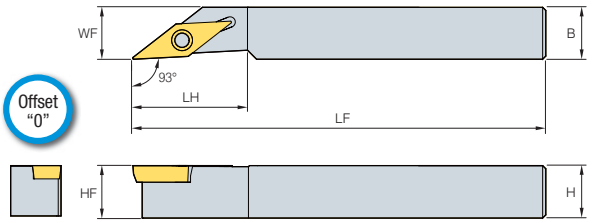
Designation		LH	LF	WF	HF	B	H	HAND	Applicable insert	Screw	Wrench
SVJBR/L	06-X2A	0.866	4 1/2	0.375	0.375	3/8	3/8	R/L	VB□T22□	FTKA02565	TW07P
	08-X2A	0.866	4 1/2	0.500	0.500	1/2	1/2	R/L			
	10-X2A	0.945	4 1/2	0.625	0.625	5/8	5/8	R/L			

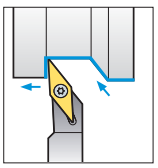
Applicable inserts **B65 ~ B67, B80, B165**

SVJCR/L



VC□□





93°
• R type holder

(inch)

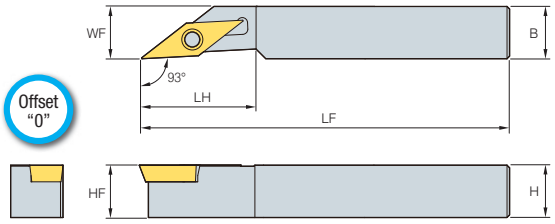
Designation		LH	LF	WF	HF	B	H	HAND	Applicable insert	Screw	Wrench
SVJCR/L	06-X2A	0.866	4 1/2	0.375	0.375	3/8	3/8	R/L	VC□T22□□	FTKA02565	TW07P
	08-X2A	0.866	4 1/2	0.500	0.500	1/2	1/2	R/L			
	10-X2A	0.945	4 1/2	0.625	0.625	5/8	5/8	R/L			
	05-X12A	1.024	4 1/2	0.313	0.313	5/16	5/16	R/L	VC□T1203□□	FTKA02565	TW07P
	06-X12A	1.024	4 1/2	0.375	0.375	3/8	3/8	R/L			
	08-X12A	1.024	4 1/2	0.472	0.472	1/2	1/2	R/L			
	10-X12A	1.024	4 1/2	0.630	0.630	5/8	5/8	R/L			
SVJCR/L	05-X12C	1.024	4 1/2	0.313	0.313	5/16	5/16	R/L	VC□X1203□□	FTKA02565	TW07P
	06-X12C	1.024	4 1/2	0.375	0.375	3/8	3/8	R/L			
	08-X12C	1.024	4 1/2	0.472	0.472	1/2	1/2	R/L			
	10-X12C	1.024	4 1/2	0.630	0.630	5/8	5/8	R/L			

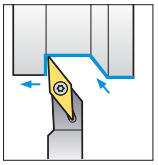
Applicable inserts **B68 ~ B70, B165 ~ B166**

SVJPR/L



VP□T





93°

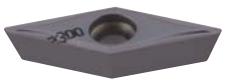
• R type holder

(inch)

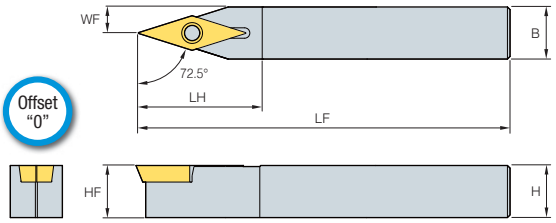
Designation		LH	LF	WF	HF	B	H	HAND	Applicable insert	Screw	Wrench
SVJPR/L	05-X2A	0.866	4 1/2	0.313	0.375	3/8	5/16	R/L	VP□T22□□	FTKA02565	TW07P
	06-X2A	0.866	4 1/2	0.375	0.375	3/8	3/8	R/L			
	08-X2A	0.866	4 1/2	0.472	0.472	1/2	1/2	R/L			
	10-X2A	0.945	4 1/2	0.630	0.630	5/8	5/8	R/L			

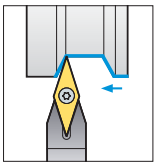
Applicable inserts **B71, B167**

SVVPN



VP□T





72.5°

(inch)

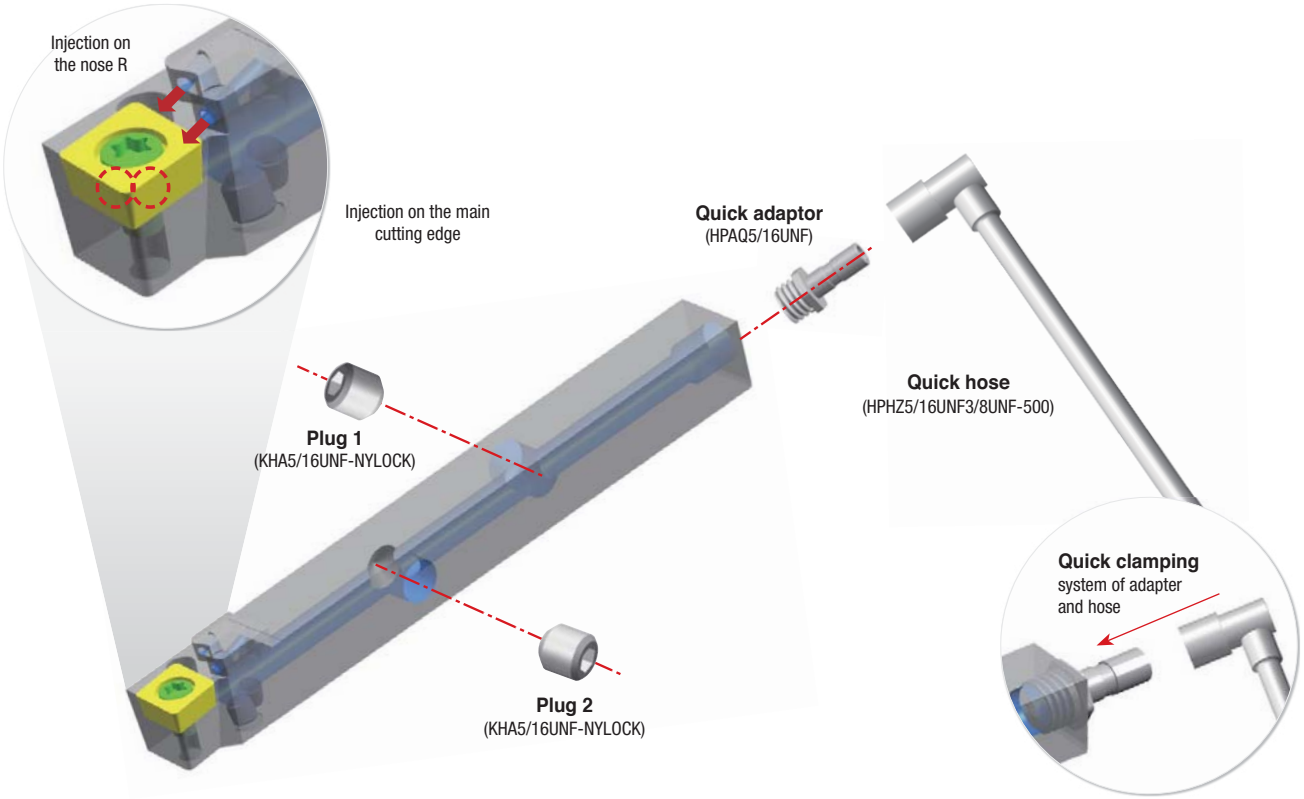
Designation		LH	LF	WF	HF	B	H	HAND	Applicable insert	Screw	Wrench
SVVPN	05-X2A	0.945	4 1/2	0.157	0.315	3/8	5/16	N	VP□T22□□	FTKA02565	TW07P
	06-X2A	0.945	4 1/2	0.197	0.375	3/8	3/8	N			
	08-X2A	0.945	4 1/2	0.236	0.472	1/2	1/2	N			
	10-X2A	1.102	4 1/2	0.313	0.630	5/8	5/8	N			

Applicable inserts **B71, B167**

Auto tools (KHP)

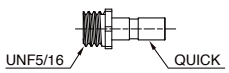
- High pressure coolant holder for high productivity of precise parts machining on automatic lathe
- Improved cooling and chip control due to injecting coolant through two holes to the main cutting edge and nose R concentrically
- Two holes with different injection angles each other increase chip control
- Easy clamping system of quick hose adapter and quick hose provides convenient using

Structure of holder



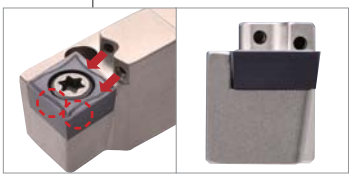
※ Quick adapter and quick hose are sold separately

Parts

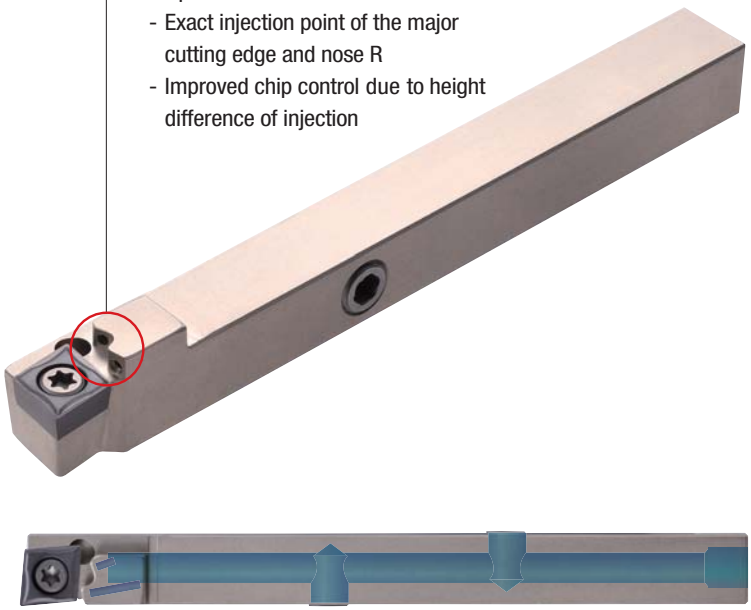
Shape		Configuration	Length	Q clamping dimensions	S clamping dimensions
Quick to straight	HPHZ5/16UNF3/8UNF-500 	Q  S	19.7 inch	UNF5/16	-
Quick adaptor	HPAQ5/16UNF 		0.7 inch	UNF5/16	

Features

2 pointed injection with different angles

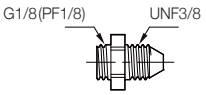
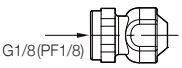
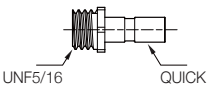


Injection nozzle
- Optimal coolant nozzle size
- Exact injection point of the major cutting edge and nose R
- Improved chip control due to height difference of injection



Max 300 bar		
Workpiece	The minimum pressure	The maximum pressure
P	100	300
M	120	
K	110	
N	100	
S	120	

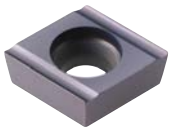
Parts

Division	Designation	Shape	
Adaptor	HPA3/8UNF1/8PF		
Blank	HPB1/8PF		
Quick adaptor	HPAQ5/16UNF		

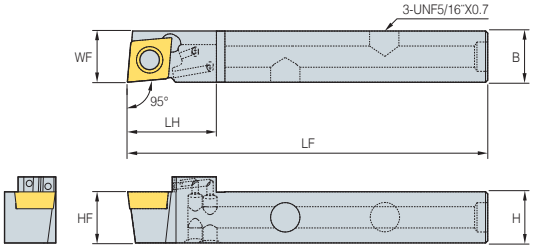
High pressure hose

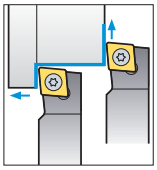
Shape		length	Q clamping dimensions	S clamping dimensions
Quick to straight (HPHZ5/16UNF3/8UNF-500)		19.7 inch	UNF5/16	-

SCLCR/L



CC□T





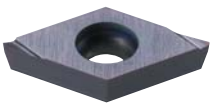
95°
• R type holder

(inch)

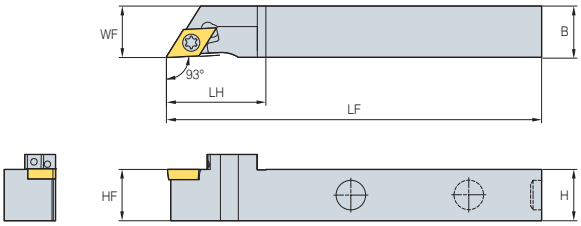
Designation		LH	LF	WF	HF	B	H	HAND	Applicable insert	Screw	Plug	Wrench
SCLCR/L	**08-X3A-KHP**	0.827	4 1/2	0.500	0.500	1/2	1/2	R/L	CC□T32.5□	FTKA0410	KHA0404-NYLOCK	TW15P

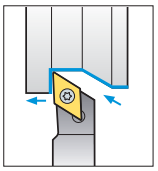
Applicable inserts **B44 ~ B48, B75**

SDJCR/L



DC□T





93°
• R type holder

(inch)

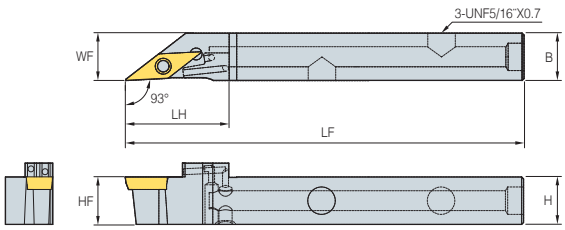
Designation		LH	LF	WF	HF	B	H	HAND	Applicable insert	Screw	Plug	Wrench
SDJCR/L	**08-X2A-KHP**	0.827	4 1/2	0.500	0.500	1/2	1/2	R/L	DC□T21.5□	FTKA02565	KHA0404-NYLOCK	TW07P
	08-X3A-KHP	1.173	4 1/2	0.551	0.500	1/2	1/2	R/L	DC□T32.5□	FTKA0408	KHA0404-NYLOCK	TW15P

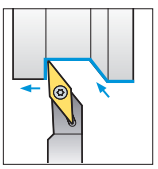
Applicable inserts **B50 ~ B53, B76**

SVJCR/L



VC□□





93°
• R type holder

(inch)

Designation		LH	LF	WF	HF	B	H	HAND	Applicable insert	Screw	Plug	Wrench
SVJCR/L	**08-X2A-KHP**	1.024	4 1/2	0.500	0.500	1/2	1/2	R/L	VC□T22□	FTKA02565	KHA0404-NYLOCK	TW07P
	08-X12A-KHP	1.024	4 1/2	0.500	0.500	1/2	1/2	R/L	VC□□1203□□	FTKA02565	KHA0404-NYLOCK	TW07P

Applicable inserts **B68 ~ B70, B81**

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

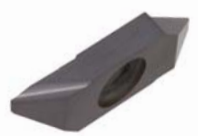
SB	C	R	25	20	16	-	N
Small blade	Cut off / Parting	Hand R: Right L: Left	Length of insert	Width of cutting edge	Max. machining diameter		Hand of thread R: Right L: Left N: None

• 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

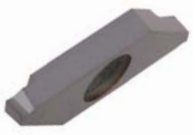
Types of blade insert

Possible to apply various types of blade inserts to one holder



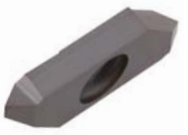
SBB : For back turning

- Approach angle: 59°
- Max. cutting depth: 0.157 inch
- Nose R: 0.002, 0.004, 0.008 inch



SBG : For grooving

- Width: 0.02~0.1 inch
- Nose R: 0.002 inch



SBT : For threading

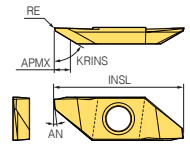
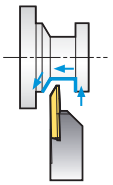
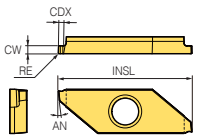
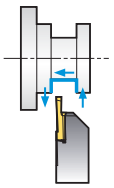
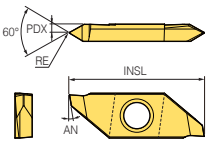
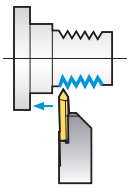
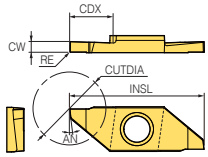
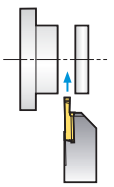
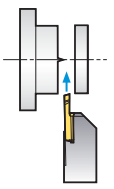
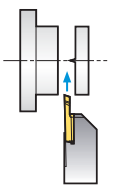
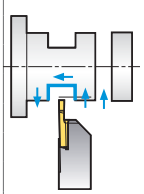
- V profile: 60°
- Pitch: 0.008~0.04 inch
- Nose R: 0.002 inch



SBC : For cut off/Parting

- Cutting width: 0.028~0.079 inch
- DMax.: 0.63 inch
- Nose R: 0.002 inch

Applicable insert

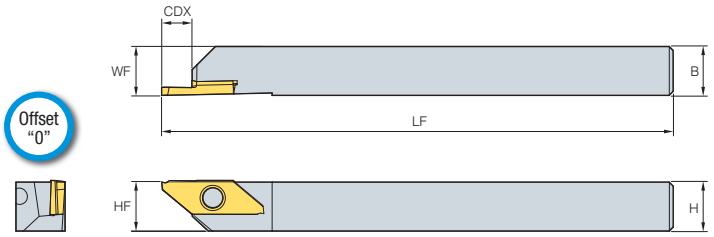
Application	Picture	Designation		Coated				Dimensions (inch)									Configuration	Feed direction
				PC8110		PC5300												
				R	L	R	L	PDX	CDX	APMX	CW	RE	KRINS	INSL	AN	HAND		
Back turning	SBBR/L	SBBR/L	25005	●	●	●	●	-	-	6	-	0.002	59	0.984	6	R/L		
			25010	●	●	●	●	-	-	6	-	0.004	59	0.984	6	R/L		
			25020	●	●	●	●	-	-	6	-	0.008	59	0.984	6	R/L		
Grooving	SBGR/L	SBGR/L	2505	●	●	●	●	-	0.053	0.053	0.020	0.002	-	0.984	6	R/L		
			2510	●	●	●		-	0.108	0.108	0.039	0.002	-	0.984	6	R/L		
			2515	●	●		●	-	0.147	0.148	0.059	0.002	-	0.984	6	R/L		
			2520	●	●	●		-	0.147	0.148	0.079	0.002	-	0.984	6	R/L		
			2525	●	●	●		-	0.147	0.148	0.098	0.002	-	0.984	6	R/L		
Threading	SBTR/L	SBTR/L	2560-N-005	●	●	●	●	0.063	-	-	-	0.002	-	0.984	9.5	R/L		
			2560-N-010	●	●	●	●	0.063	-	-	-	0.004	-	0.984	9.5	R/L		
			2560-R-005	●	●	●	●	0.024	-	-	-	0.002	-	0.984	9.5	R/L		
			2560-R-010	●	●		●	0.024	-	-	-	0.004	-	0.984	9.5	R/L		
			2560-L-005		●		●	0.024	-	-	-	0.002	-	0.984	9.5	R/L		
			2560-L-010					0.024	-	-	-	0.004	-	0.984	9.5	R/L		
Parting off	SBCR/L	SBCR/L	250708-N	●		●	●	-	-	-	0.028	0.002	0	0.984	6	R/L		
			251012-N	●	●	●	●	-	-	-	0.039	0.002	0	0.984	6	R/L		
			251512-N	●	●	●		-	-	-	0.059	0.002	0	0.984	6	R/L		
			252016-N	●	●	●	●	-	-	-	0.079	0.002	0	0.984	6	R/L		
			250708-R	●		●		-	-	-	0.028	0.002	15	0.984	6	R/L		
			251012-R	●	●	●	●	-	-	-	0.039	0.002	15	0.984	6	R/L		
			251512-R	●		●		-	-	-	0.059	0.002	15	0.984	6	R/L		
			252016-R	●	●	●		-	-	-	0.079	0.002	15	0.984	6	R/L		
			250708-L				●	-	-	-	0.028	0.002	15	0.984	6	R/L		
			251012-L	●	●			-	-	-	0.039	0.002	15	0.984	6	R/L		
			251512-L	●	●	●		-	-	-	0.059	0.002	15	0.984	6	R/L		
			252016-L	●	●			-	-	-	0.079	0.002	15	0.984	6	R/L		
			251012-T		●	●	●	-	-	-	0.039	0.002	0	0.984	6	R/L		
			251512-T	●	●	●	●	-	-	-	0.059	0.002	0	0.984	6	R/L		
			252016-T	●	●	●	●	-	-	-	0.079	0.002	0	0.984	6	R/L		

● : Stock item

SBHR/L



SBBR SBGR
SBTR SBCR



(inch)

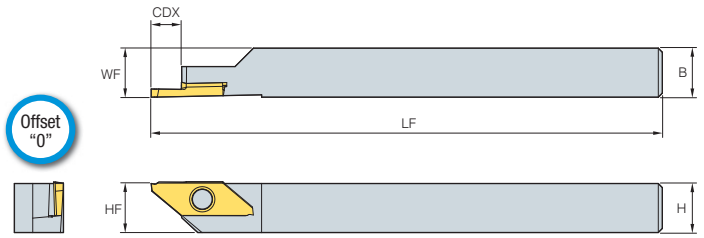
Designation		CDX	LF	WF	HF	B	H	HAND	Applicable insert	Screw	Wrench
SBHR/L	06-K25	0.295	5	0.375	0.375	3/8	3/8	R/L	SB□R/L25	FTKA0409S	TW09P
	08-K25	0.295	5	0.5	0.5	1/2	1/2	R/L			
	10-K25	0.295	5	0.625	0.625	5/8	5/8	R/L			

Applicable inserts **B176**

SBHR/L-X (Sub spindle)



SBBR SBGR
SBTR SBCR



(inch)

Designation		CDX	LF	WF	HF	B	H	HAND	Applicable insert	Screw	Wrench
SBHR/L	06-K25-X	0.295	5	0.375	0.375	3/8	3/8	R/L	SB□R/L25	FTKA0407S	TW09P
	08-K25-X	0.295	5	0.5	0.5	1/2	1/2	R/L			

Applicable inserts **B176**

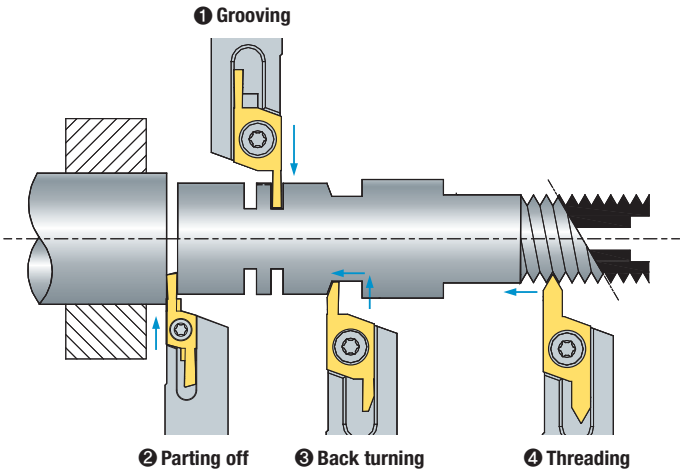
Auto tools (Multi utility)

- 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

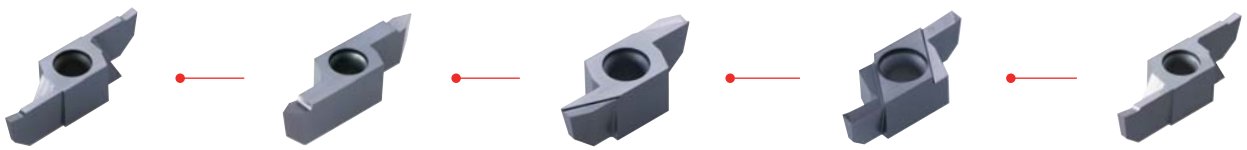
S	G	R	06	06	10	(15 - 10)	-	R05
Small Auto Tool	Application B: Back turning G: Grooving C: Parting off T: Threading GB: Grooving and back turning	Hand R: Right L: Left	Height of cutting edge	Cutting depth	Width of cutting edge	Pitch of thread insert	Initial cutting width of back turning insert	Nose radius

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)

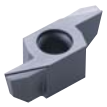
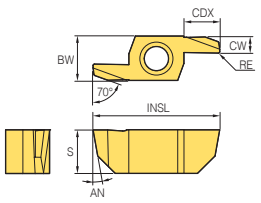
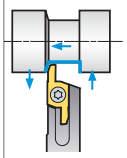
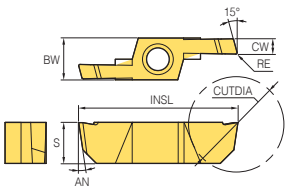
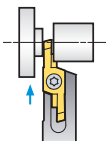


SG : Grooving	ST : Threading	SB : Back turning	SGB : Grooving and back turning	SC : Parting off

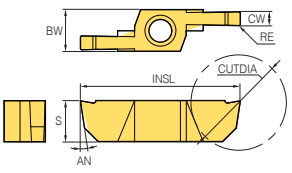
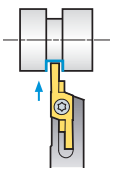
Recommended cutting conditions

Workpiece		Turning		Grooving		Parting off		Back turning	
		Cutting speed, vc (sfm)	Feed, fn (ipr)	Cutting speed, vc (sfm)	Feed, fn (ipr)	Cutting speed, vc (sfm)	Feed, fn (ipr)	Cutting speed, vc (sfm)	Feed, fn (ipr)
P	Carbon steel	160~490	0.0004~0.0098	160~490	0.0008~0.0031	160~490	0.0004~0.0031	160~490	0.0004~0.0098
P	Free cutting steel	100~490	0.0008~0.0098	100~490	0.0008~0.0031	100~490	0.0004~0.0031	100~490	0.0004~0.0098
M	Stainless steel	160~400	0.0008~0.0079	160~400	0.0008~0.0020	160~400	0.0008~0.0020	160~400	0.0008~0.0079
N	Non-ferrous metal	230~660	0.0012~0.0098	230~660	0.0012~0.0039	230~660	0.0012~0.0039	230~660	0.0012~0.0118

Applicable insert

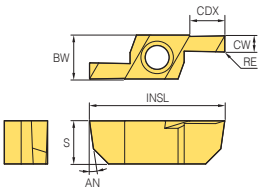
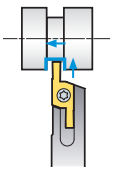
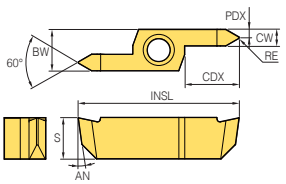
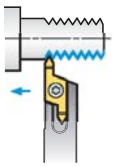
Application	Picture	Designation		Coated PC9030 R	L	SSC	CDX	CUTDIA	CW	RE	BW	S	INSL	AN	Configuration	Feed direction
Back turning	SBR/L 	SBR/L	060520-10-R00			20	0.217	-	0.079	0	0.315	0.236	0.866	10		
			060520-10-R05			20	0.217	-	0.079	0.002	0.315	0.236	0.866	10		
			060520-10-R10			20	0.217	-	0.079	0.004	0.315	0.236	0.866	10		
			060630-20-R00			30	0.256	-	0.118	0	0.315	0.236	0.945	10		
			060630-20-R05			30	0.256	-	0.118	0.002	0.315	0.236	0.945	10		
			060630-20-R10			30	0.256	-	0.118	0.004	0.315	0.236	0.945	10		
			080630-20-R00			30	0.256	-	0.118	0	0.315	0.236	0.906	10		
			080630-20-R05			30	0.256	-	0.118	0.002	0.315	0.236	0.906	10		
			080630-20-R10			30	0.256	-	0.118	0.004	0.315	0.236	0.906	10		
			080840-20-R00			40	0.335	-	0.157	0	0.315	0.335	1.063	10		
			080840-20-R05			40	0.335	-	0.157	0.002	0.315	0.335	1.063	10		
			080840-20-R10			40	0.335	-	0.157	0.004	0.315	0.335	1.063	10		
Parting off	SCR/L 	SCR/L	060610-R00			10	-	0.433	0.039	0	0.315	-	0.945	8		
			060610-R05	●		10	-	0.433	0.039	0.002	0.315	-	0.945	8		
			060610-R10	●		10	-	0.433	0.039	0.004	0.315	-	0.945	8		
			060615-R00			15	-	0.433	0.059	0	0.315	-	0.945	8		
			060615-R05	●		15	-	0.433	0.059	0.002	0.315	-	0.945	8		
			060615-R10	●		15	-	0.433	0.059	0.004	0.315	-	0.945	8		
			060620-R00			20	-	0.433	0.079	0	0.315	-	0.945	8		
			060620-R05	●		20	-	0.433	0.079	0.002	0.315	-	0.945	8		
			060620-R10	●		20	-	0.433	0.079	0.004	0.315	-	0.945	8		
			081015-R00			15	-	0.709	0.059	0	0.315	-	1.22	8		
			081015-R05			15	-	0.709	0.059	0.002	0.315	-	1.22	8		
			081015-R10			15	-	0.709	0.059	0.004	0.315	-	1.22	8		
			081020-R00			20	-	0.709	0.079	0	0.315	-	1.22	8		
			081020-R05			20	-	0.709	0.079	0.002	0.315	-	1.22	8		
			081020-R10	●		20	-	0.709	0.079	0.004	0.315	-	1.22	8		
			081025-R00			25	-	0.709	0.098	0	0.315	-	1.22	8		
			081025-R05	●		25	-	0.709	0.098	0.002	0.315	-	1.22	8		
			081025-R10	●		25	-	0.709	0.098	0.004	0.315	-	1.22	8		
			081030-R00			30	-	0.709	0.118	0	0.315	-	1.22	8		
			081030-R05			30	-	0.709	0.118	0.002	0.315	-	1.22	8		
			081030-R10			30	-	0.709	0.118	0.004	0.315	-	1.22	8		

● : Stock item

Application	Picture	Designation		Coated PC9030 R	L	SSC	CDX	CUT-DIA	CW	RE	BW	S	INSL	AN	HAND	Configuration	Feed direction
Grooving	SGR/L 	SGR/L	060610-R00			0.394	-	0.433	0.039	0	0.315	0.236	0.945	8	R/L		
			060610-R05	●		0.394	-	0.433	0.039	0.002	0.315	0.236	0.945	8	R/L		
			060610-R10	●		0.394	-	0.433	0.039	0.004	0.315	0.236	0.945	8	R/L		
			060615-R00			0.591	-	0.433	0.059	0	0.315	0.236	0.945	8	R/L		
			060615-R05	●		0.591	-	0.433	0.059	0.002	0.315	0.236	0.945	8	R/L		
			060615-R10	●		0.591	-	0.433	0.059	0.004	0.315	0.236	0.945	8	R/L		
			060620-R00			0.787	-	0.433	0.079	0	0.315	0.236	0.945	8	R/L		
			060620-R05	●		0.787	-	0.433	0.079	0.002	0.315	0.236	0.945	8	R/L		
			060620-R10			0.787	-	0.433	0.079	0.004	0.315	0.236	0.945	8	R/L		
			081015-R00			0.591	-	0.709	0.059	0	0.315	0.315	1.220	8	R/L		
			081015-R05			0.591	-	0.709	0.059	0.002	0.315	0.315	1.220	8	R/L		
			081015-R10			0.591	-	0.709	0.059	0.004	0.315	0.315	1.220	8	R/L		
			081020-R00			0.787	-	0.709	0.079	0	0.315	0.315	1.220	8	R/L		
			081020-R05	●		0.787	-	0.709	0.079	0.002	0.315	0.315	1.220	8	R/L		
			081020-R10			0.787	-	0.709	0.079	0.004	0.315	0.315	1.220	8	R/L		
			081025-R00			0.984	-	0.709	0.098	0	0.315	0.315	1.220	8	R/L		
			081025-R05			0.984	-	0.709	0.098	0.002	0.315	0.315	1.220	8	R/L		
			081025-R10			0.984	-	0.709	0.098	0.004	0.315	0.315	1.220	8	R/L		
			081030-R00			1.181	-	0.709	0.118	0	0.31	0.315	1.220	8	R/L		
			081030-R05			1.181	-	0.709	0.118	0.002	0.315	0.315	1.220	8	R/L		
			081030-R10			1.181	-	0.709	0.118	0.004	0.315	0.315	1.220	8	R/L		

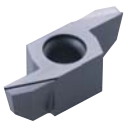
● : Stock item

Applicable insert

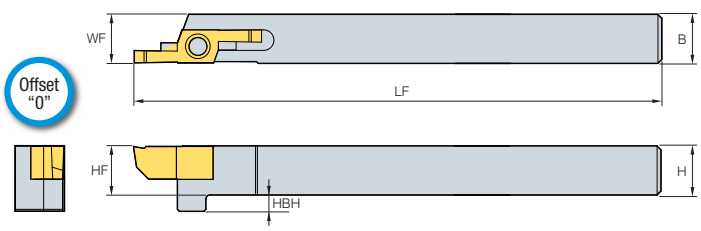
Application	Picture	Designation		Coated PC9030 R	Coated PC9030 L	SSC	CDX	CUT-DIA	CW	RE	BW	S	INSL	AN	HAND	Configuration	Feed direction
Grooving and back turning	SGBR/L	SGBR/L	0604520-R00			0.787	0.009	-	0.079	0	0.315	0.236	0.866	8	R/L		
			0604520-R05			0.787	0.009	-	0.079	0.002	0.315	0.236	0.866	8	R/L		
			0604520-R10			0.787	0.009	-	0.079	0.004	0.315	0.236	0.866	8	R/L		
			0604525-R00			0.984	0.009	-	0.098	0	0.315	0.236	0.866	8	R/L		
			0604525-R05			0.984	0.009	-	0.098	0.002	0.315	0.236	0.866	8	R/L		
			0604525-R10			0.984	0.009	-	0.098	0.004	0.315	0.236	0.866	8	R/L		
			0605530-R00			1.181	0.010	-	0.118	5	0.310	0.236	0.940	8	R/L		
			0605530-R05			1.181	0.010	-	0.118	0.002	0.315	0.236	0.945	8	R/L		
			0605530-R10			1.181	0.010	-	0.118	0.004	0.315	0.236	0.945	8	R/L		
			0805525-R00			0.984	0.011	-	0.098	0	0.315	0.315	0.945	8	R/L		
			0805525-R05			0.984	0.011	-	0.098	0.002	0.315	0.315	0.945	8	R/L		
			0805525-R10			0.984	0.011	-	0.098	0.004	0.315	0.315	0.945	8	R/L		
			0806530-R00			1.181	0.012	-	0.118	4	0.315	0.315	1.020	8	R/L		
			0806530-R05			1.181	0.012	-	0.118	0.002	0.315	0.315	1.024	8	R/L		
			0806530-R10			1.181	0.012	-	0.118	0.004	0.315	0.315	1.024	8	R/L		
Threading	STR/L	STR/L	06073215			0.591	0.011	-	0.126	0.002	0.315	0.315	0.984	8	R/L		
			06073230			1.181	0.011	-	0.126	0.007	0.315	0.315	0.984	8	R/L		
			08103215			0.591	0.016	-	0.126	0.002	0.315	0.315	1.220	8	R/L		
			08103230			1.181	0.016	-	0.126	0.007	0.315	0.315	1.220	8	R/L		

● : Stock item

SXGNR/L



SBR, SGBR
SCR, STR, SGR



(inch)

Designation		LF	WF	HF	B	H	HAND	Applicable insert	Screw	Wrench
SXGNR/L	06-X6A	4 1/2	0.375	0.375	3/8	3/8	R/L	S□R/L06	FTNA 0408	TW 15P
	08-X6A	4 1/2	0.472	0.500	1/2	1/2	R/L			
	10-X6A	4 1/2	0.625	0.625	5/8	5/8	R/L			
	12-X6A	4 1/2	0.750	0.750	3/4	3/4	R/L			
	08-X8A	4 1/2	0.500	0.500	1/2	1/2	R/L	S□R/L08	FTNA 0411	TW 15P
	10-X8A	4 1/2	0.625	0.625	5/8	5/8	R/L			
	12-X8A	4 1/2	0.750	0.750	3/4	3/4	R/L			

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 KG SYSTEM (KORLOY grooving) MG SYSTEM (Multi grooving)	**Tolerance** M: Pressed class G: Ground class	**Hand** N: Neutral R: Right L: Left I : Internal	**Width of cutting edge** 0.079~0.315 inch		**Corner nose radius of insert** 0.008 inch 0.012 inch 0.016 inch		**Chip breaker** L / R / T / C LP / RP

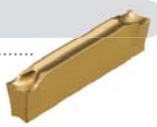
• Holder

KG	E	H	R/L	16	-	3	T15
System code KG SYSTEM (KORLOY grooving) MG SYSTEM (Multi grooving)	**Application** E: External machining I : Internal machining	**Holder type** H: Horizontal type V: Vertical type U: Undercut type	**Hand** R: Right L: Left	**Shank size** Height 1 inch, width 1 inch (For internal machining: Min. machining diameter)		**Cutting width** 0.079~0.315 inch	**Max. cutting diameter** 0.315~1.417 inch

Chip breaker line-up

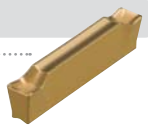
• KGT Type

KGMN-L



- Sharp cutting edge
- For small diameter parts
- For low feed machining

KGMN-R



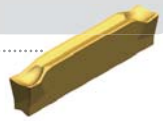
- Reinforced cutting edge
- For interrupted cutting
- For high feed machining

KGMN-T



- Sharp cutting edge
- For turning and grooving
- Stronger chip control

KGMR/L-LP



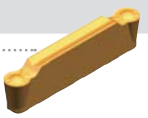
- Sharp cutting edge
- Small diameter component
- For low feed machining
- Right/Left handed

KGMR/L-RP



- Strong cutting edge
- For interrupted cutting
- For high feed machining
- Right/Left handed

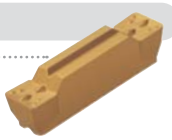
KGMN-C



- Improved chip control
- Cast iron
- Copying
- Alloy steel
- Relief
- Carbon steel
- Stainless

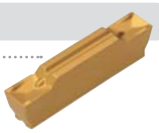
• MGT Type

MGM(G)N-M



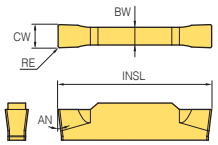
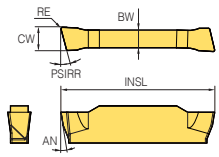
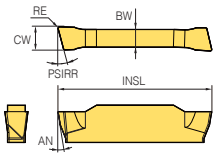
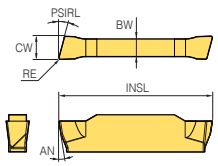
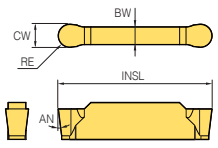
- Easier chip control by narrowing chip width with the use of chip breaker on rake surface center
- Smooth chip flow by small dots in external machining
- Available for both external machining and grooving

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 (inch)							Configuration
				NC3120	NC3225	NC5330	NC6315	PC3035	PC5300	PC9030	SSC	CW	RE	BW	INSL	AN	HAND	
Grooving	KGMN-L	KGMN	200-02-L		●	●		●	●	●	20	0.079	1/128	0.067	0.787	7	N	
			300-02-L		●	●		●	●	●	30	0.118	1/128	0.091	0.787	7	N	
Grooving, Parting off	KGMN-R	KGMN	200-02-R		●	●		●	●	●	20	0.079	1/128	0.067	0.787	7	N	
			300-02-R		●	●		●	●	●	30	0.118	1/128	0.091	0.787	7	N	
Grooving.turning	KGMN-T	KGMN	200-02-T		●	●		●	●	●	20	0.079	1/128	0.067	0.787	7	N	
			300-02-T		●	●		●	●	●	30	0.118	1/128	0.091	0.787	7	N	
			300-04-T		●	●		●	●	●	30	0.118	1/64	0.091	0.787	7	N	
Parting off (Right handed)	KGMR-LP	KGMR	200-6D-LP			●			●		20	0.079	1/128	0.067	0.787	7	R	
			200-15D-LP			●			●		20	0.079	1/128	0.067	0.787	7	R	
			300-6D-LP			●			●		30	0.118	1/128	0.091	0.787	7	R	
			300-15D-LP			●			●		30	0.118	1/128	0.091	0.787	7	R	
Parting off (Right handed)	KGMR-RP	KGMR	200-6D-RP			●			●		20	0.079	1/128	0.067	0.787	7	R	
			200-15D-RP			●			●		20	0.079	1/128	0.067	0.787	7	R	
			300-6D-RP			●			●		30	0.118	1/128	0.091	0.787	7	R	
			300-15D-RP			●			●		30	0.118	1/128	0.091	0.787	7	R	
Parting off (Left handed)	KGML-LP	KGML	200-6D-LP								20	0.079	1/128	0.067	0.787	7	L	
			200-15D-LP								20	0.079	1/128	0.067	0.787	7	L	
			300-6D-LP								30	0.118	1/128	0.091	0.787	7	L	
			300-15D-LP								30	0.118	1/128	0.091	0.787	7	L	
Parting off (Left handed)	KGML-RP	KGML	200-6D-RP								20	0.079	1/128	0.067	0.787	7	L	
			200-15D-RP								20	0.079	1/128	0.067	0.787	7	L	
			300-6D-RP								30	0.118	1/128	0.091	0.787	7	L	
			300-15D-RP								30	0.118	1/128	0.091	0.787	7	L	
Copying	KRMN-C	KRMN	200-C		●	●	●	●	●		20	0.079	3/64	0.067	0.787	5	N	
			300-C		●	●	●	●	●		30	0.118	1/14	0.087	0.787	7	N	

● : Stock item

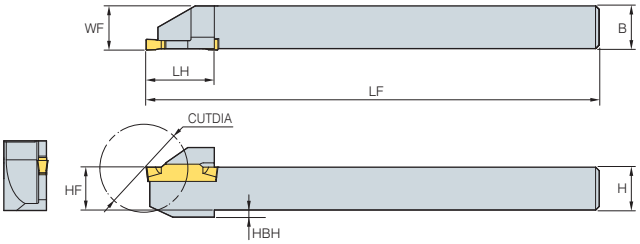
KGEHR/L-D00A

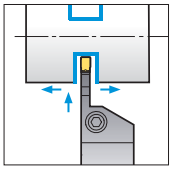
Grooving, turning, parting off

Compact type



KGGN KGMN KGMR/L
KRGN KRMN





• R type holder

(inch)

Designation		Dimensions (inch)							Applicable insert	Screw	Wrench
		LF	WF	HF	B	H	HBH	HAND			
KGEHR/L	06-2-D20A	5	0.383	3/8	3/8	3/8	0.079	R/L	KGMN200-□-□ KGMR/L200-□-□ KRMN200-C	ETNA0412	TW15L
	08-2-D25A	5	0.508	1/2	1/2	1/2	0.079	R/L			
	10-2-D32A	5	0.633	5/8	5/8	5/8	-	R/L			
	08-3-D25A	5	0.508	1/2	1/2	1/2	0.079	R/L	KGMN300-□-□ KGMR/L300-□-□ KRMN300-C		
	10-3-D32A	5	0.633	5/8	5/8	5/8	-	R/L			

Applicable inserts **B182**

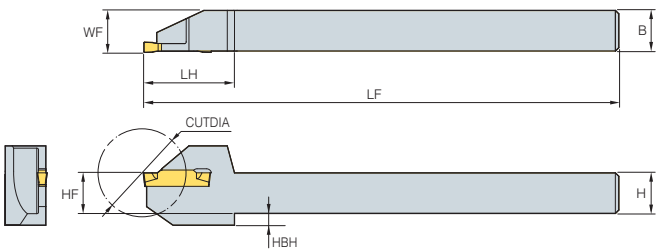
KGEHR/L-D00B

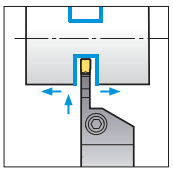
Grooving, turning, parting off

High rigidity type



KGGN KGMN KGMR/L
KRGN KRMN





• R type holder

(inch)

Designation		Dimensions (inch)							Applicable insert	Screw	Wrench
		LF	WF	HF	B	H	HBH	HAND			
KGEHR/L	06-2-D30B	5	0.383	3/8	3/8	3/8	0.260	R/L	KGMN200-□-□ KGMR/L200-□-□ KRMN200-C	MHA0512	HW40L
	08-2-D25B	5	0.508	1/2	1/2	1/2	0.138	R/L			
	08-2-D30B	5	0.508	1/2	1/2	1/2	0.138	R/L			
	10-2-D32B	5	0.633	5/8	5/8	5/8	-	R/L			
	08-3-D25B	5	0.508	1/2	1/2	1/2	0.138	R/L	KGMN300-□-□ KGMR/L300-□-□ KRMN300-C		
	08-3-D32B	5	0.508	1/2	1/2	1/2	0.138	R/L			
	10-3-D32B	5	0.633	5/8	5/8	5/8	-	R/L			

Applicable inserts **B182**

MGT Plus / MGT applicable inserts

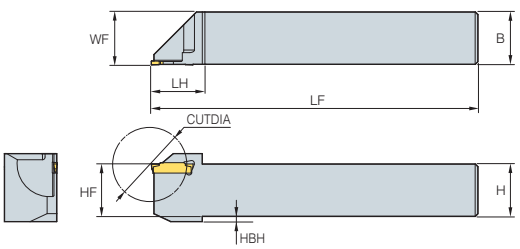
Application	Picture	Designation		Coated							Uncoated			Dimensions (inch)							Configuration
				NC3120	NC3225	NC3030	NC3235	NC5330	NC6315	PC3035	PC5300	PC9030	H01	G10	ST30A	SSC	CW	RE	BW	INSL	AN	HAND	
Grooving · Turning	PGMN-MM	PGMN	200-02-MM		●		●			●	●	●					0.079	1/128	0.063	0.630			
Grooving	PGMN-GM	PGMN	150-015-GM		●		●			●	●	●					0.059	3/512	0.047	0.630			
			200-02-GM		●		●			●	●	●					0.079	1/128	0.063	0.630			
			250-02-GM		●		●			●	●	●					2.50	1/128	0.728	0.728			
Reliefing Profiling	PRMN-RM	PRMN	200-RM		●		●			●	●	●					0.079	3/64	0.063	0.630			
Grooving	MGMN-G	MGMN	150-G		●	●					●	●	●			15	0.059	0.006	0.047	0.630	7	N	
			200-G	●	●	●					●	●	●			20	0.079	0.008	0.047	0.630	7	N	
			250-G		●	●					●	●				25	0.098	0.008	0.079	0.728	7	N	
Grooving · Turning	MGMN-M	MGMN	200-M	●	●	●		●			●	●	●			20	0.079	0.008	0.047	0.630	7	N	
			250-M	●	●	●					●	●				25	0.098	0.008	0.079	0.728	7	N	

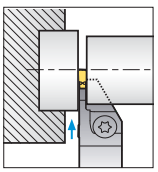
● : Stock item

MGEHR



PGMN PRMN MGMN





• R type holder

(inch)

Designation		LF	WF	HF	B	H	HBH	HAND	Applicable insert	Screw	Wrench
MGEHR	06-X15A	4.5	0.508	1/2	1/2	1/2	0.079	R	PGMN150-□-□ MGMN150-G	ETNA0412	TW15L
	08-X20A	4.5	0.510	1/2	1/2	1/2	0.079	R	PGMN200-□-□ PRMN200-□ MGMN200-M MGMN200-G	ETNA0412	TW15L
	08-X25A	4.5	0.512	1/2	1/2	1/2	0.079	R	PGMN250-□-□ MGMN250-M MGMN250-G	ETNA0412	TW15L
	10-X25A	4.5	0.637	5/8	5/8	5/8	0.079	R			

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	Handed	Shank dia.	Min. machining dia.	Max. machining depth	Coolant		Radius / Width

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	Shank type	Coolant	Bore size (1)	Shank size	Bore size (2)	No. of flat side

Use
R: MSB plus round shank holder

Shank type
N: Neck type
R: Round type
S: Shrink holder

Coolant
C: Coolant

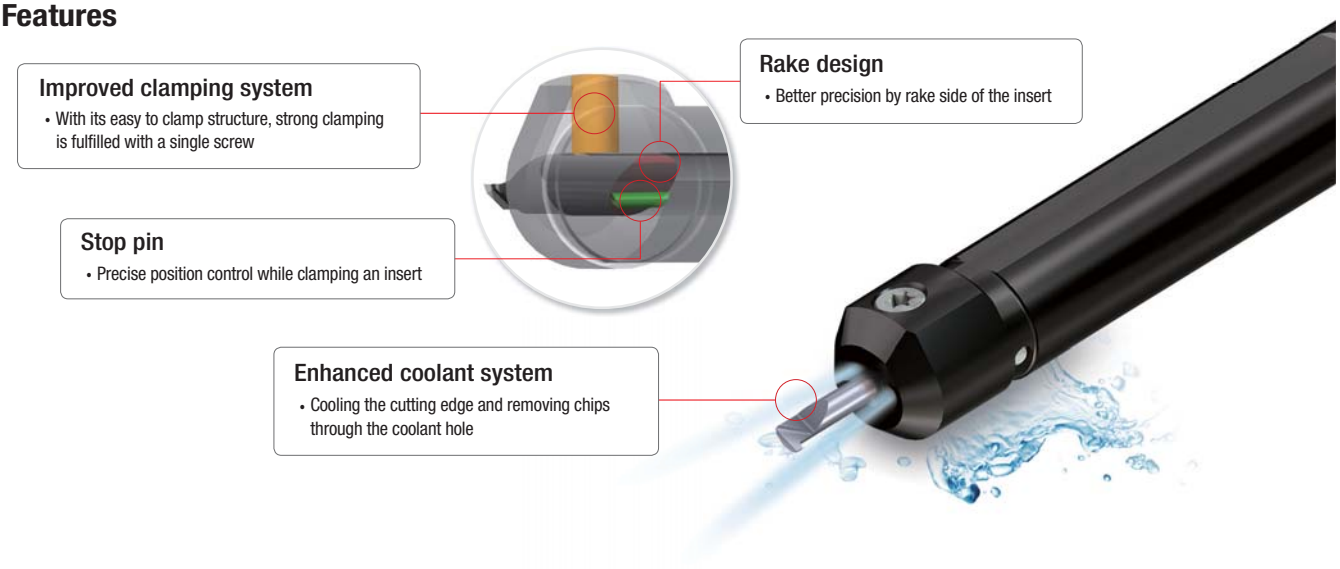
Bore size (1)
4: Ø4.0mm
5: Ø5.0mm
6: Ø6.0mm
7: Ø7.0mm

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

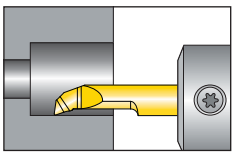
Features



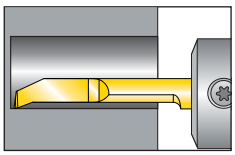
Application range

» Boring

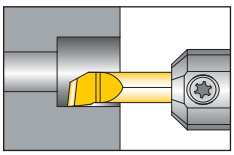




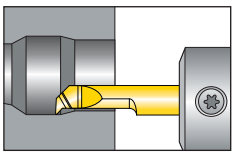
Boring



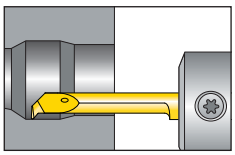
Boring (chip breaker)



Boring (chip former)

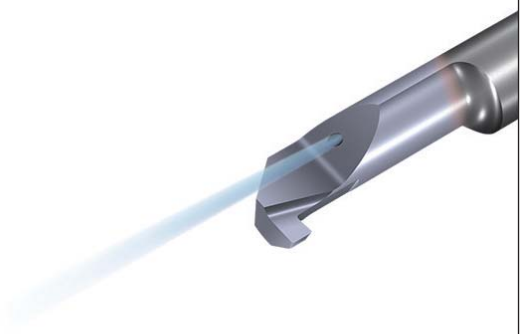


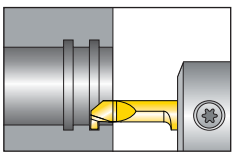
Boring & Profiling (CL)



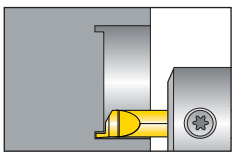
Boring & Profiling (CBLF chip breaker)

» Grooving

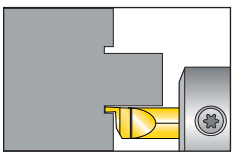




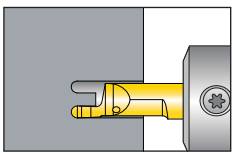
Square grooving



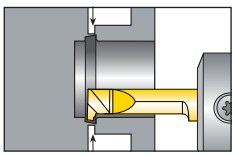
Face grooving internal



Face grooving external



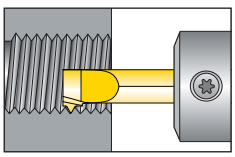
Round face grooving internal



Pre-part off

» Threading

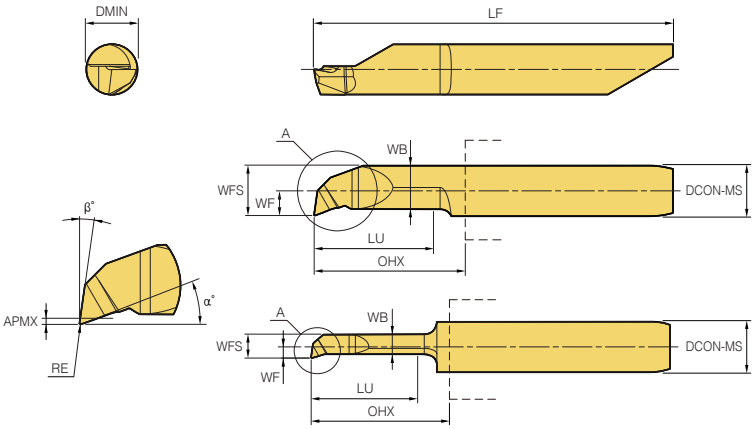


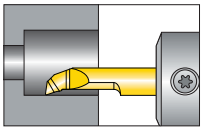


Threading

Boring





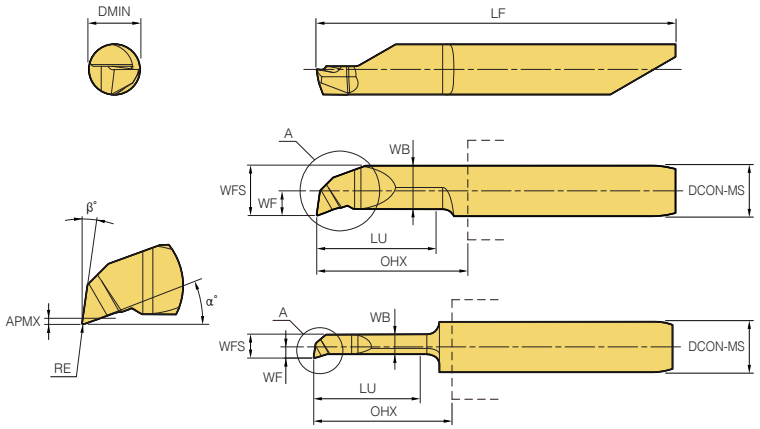


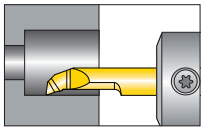
For internal cutting

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	

Boring





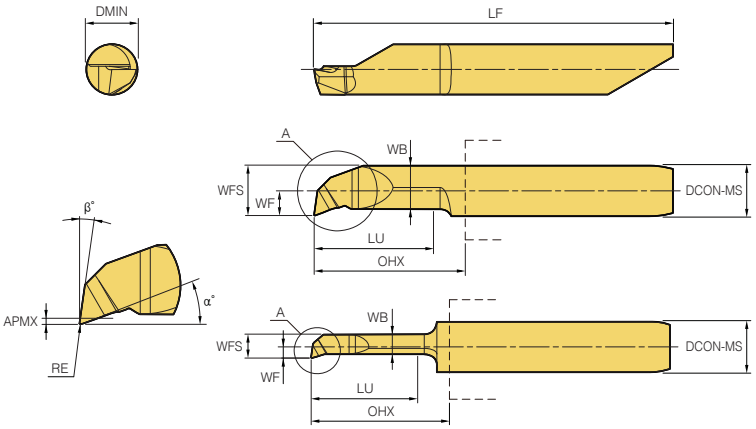


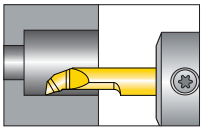
For internal cutting

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	

Boring





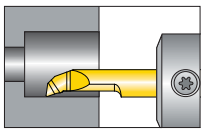


For internal cutting

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	

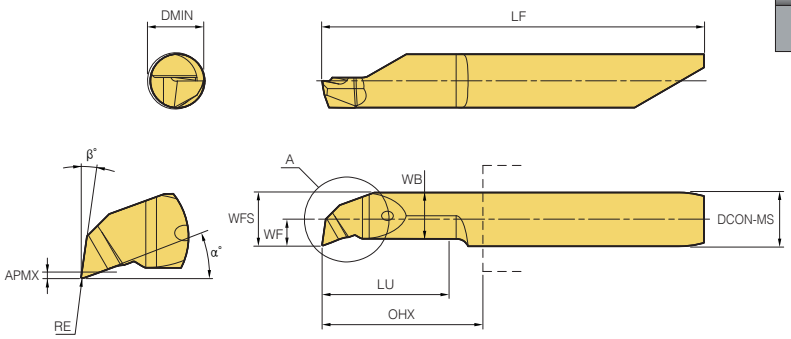
Boring HPC

※ HPC: High pressure coolant



For internal cutting

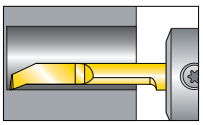




Designation		DMIN	Dimensions (mm)									DCON-MS
			LU	RE	WF	APMX	WFS	WB	α°	β°	OHX	LF	
MBCR	430L20C-R015	3.0	20	0.15	1.36	0.20	2.70	2.36	17.5	8	22.80	39.80	
	432L10C-R015	3.2	10	0.15	1.44	0.20	2.90	2.50	17.5	8	11.50	28.50	
	432L20C-R015		20	0.15	1.40	0.20	2.87	2.45	17.5	8	22.80	39.80	
	440L10C-R020	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	

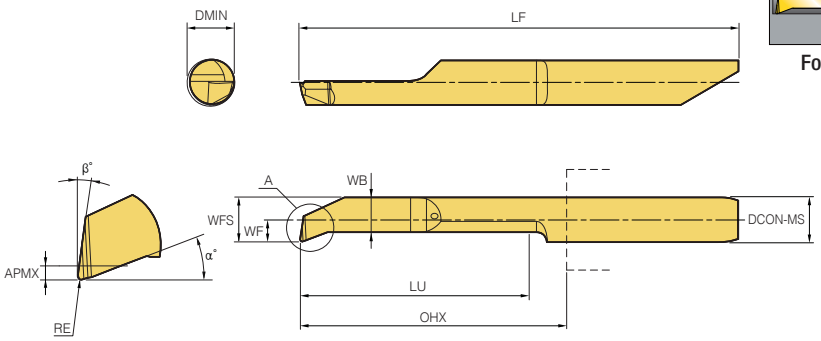
Boring chip breaker HPC

※ HPC: High pressure coolant



For internal cutting

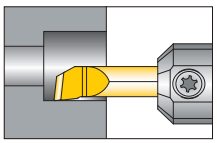




Designation		DMIN	Dimensions (mm)										DCON-MS
			LU	RE	WF	APMX	WFS	WB	α°	β°	OHX	LF	
MBCBR	442L20C-R015	4.2	20	0.15	1.95	0.30	3.95	3.13	21	8	22.80	39.80	4.0
	552L15C-R020	5.2	15	0.20	2.44	0.50	4.94	4.04	21	8	18.15	41.00	5.0
	552L25C-R020		25	0.20	2.44	0.50	4.94	4.04	21	8	28.15	51.00	
	662L30C-R020	6.2	30	0.20	2.93	0.50	5.93	4.73	22	8	32.30	56.00	6.0

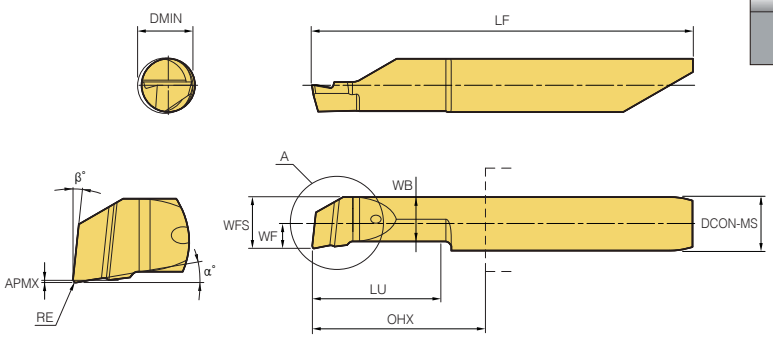
Boring chip former HPC

※ HPC: High pressure coolant



For internal cutting



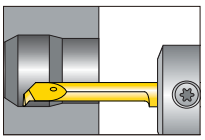


Designation		DMIN	Dimensions (mm)										DCON-MS
			LU	RE	WF	APMX	WFS	WB	α°	β°	OHX	LF	
MBCFR	442L10C-R015	4.2	10	0.15	1.85	0.05	3.85	3.35	7.5	6	11.50	28.50	4.0

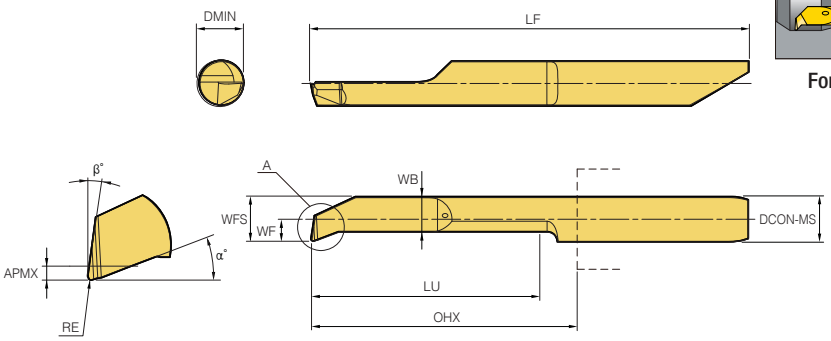
Boring & Profiling (CBLF) HPC

※ HPC: High pressure coolant





For internal cutting

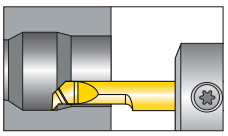


Designation		DMIN	Dimensions (mm)									DCON-MS
			LU	RE	WF	APMX	WFS	WB	α°	β°	OHX	LF	
MCBLFR/L	442L10C-R015	4.2	10	0.15	1.90	0.70	3.90	3.10	47	3	11.50	28.50	4.0
	442L16C-R015		16	0.15	1.90	0.70	3.90	3.10	47	3	18.20	35.20	
	442L21C-R015		21	0.15	1.90	0.70	3.90	3.10	47	3	22.80	39.80	
	552L16C-R020	5.2	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	

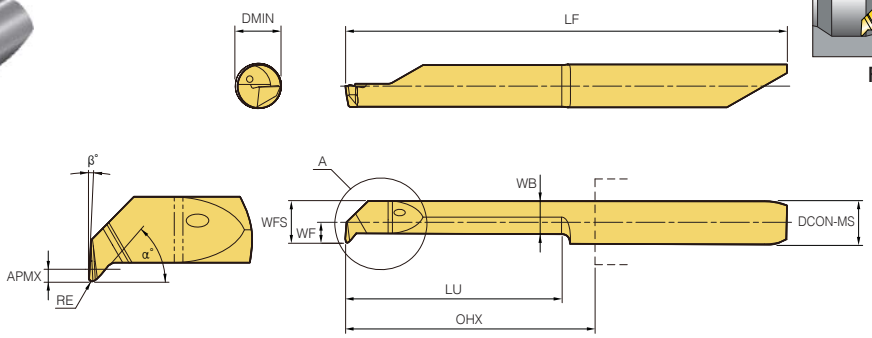
Boring & Profiling (CL) HPC

※ HPC: High pressure coolant





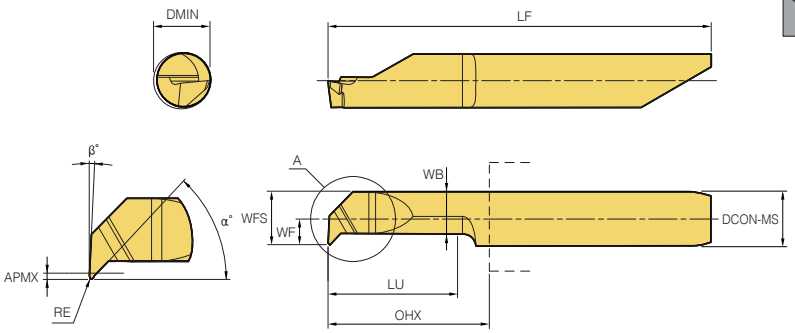
For internal cutting

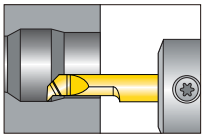


Designation		DMIN	Dimensions (mm)									DCON-MS
			LU	RE	WF	APMX	WFS	WB	α°	β°	OHX	LF	
MCLR	442L10C-R015	4.2	10	0.15	1.90	0.70	3.90	3.10	47	3	11.50	28.50	4.0
	442L21C-R015		21	0.15	1.90	0.70	3.90	3.10	47	3	18.20	35.20	
	552L25C-R020	5.2	25	0.20	2.40	0.95	4.90	3.80	49	3	28.15	51.00	5.0

Boring & Profiling (CL)







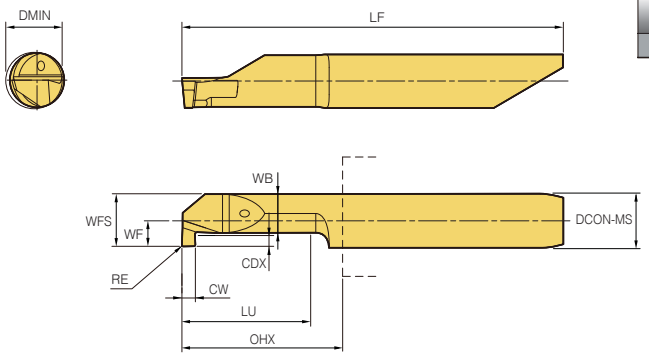
For internal cutting

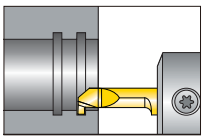
Designation		DMIN	Dimensions (mm)										DCON-MS
			LU	RE	WF	APMX	WFS	WB	α°	β°	OHX	LF	
MCLR	442L10-R010	4.2	10	0.10	1.90	0.70	3.90	3.10	47	3	11.50	28.50	4.0
MCLR/L	442L10-R015		10	0.15	1.90	0.70	3.90	3.10	47	3	11.50	28.50	
	442L16-R015		16	0.15	1.90	0.70	3.90	3.10	47	3	18.20	35.20	
	442L21-R015		21	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	

Square grooving HPC

※ HPC: High pressure coolant





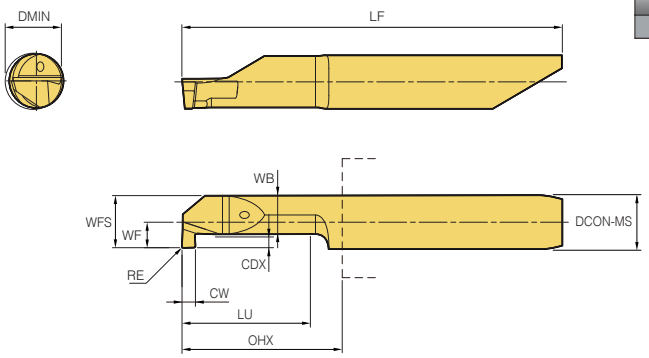


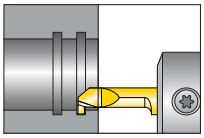
For internal cutting

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	

Square grooving





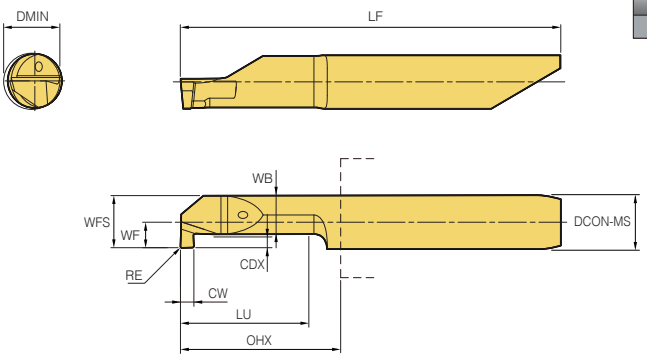


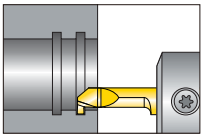
For internal cutting

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	

Square grooving





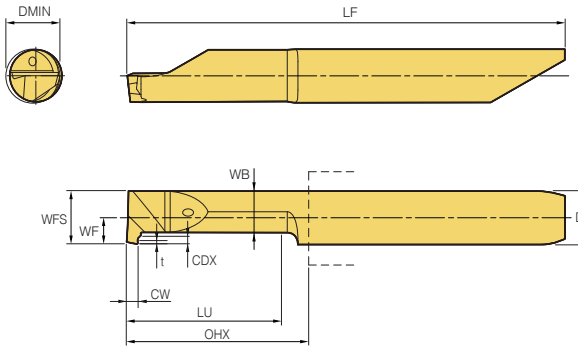


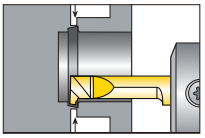
For internal cutting

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	

Pre-part off







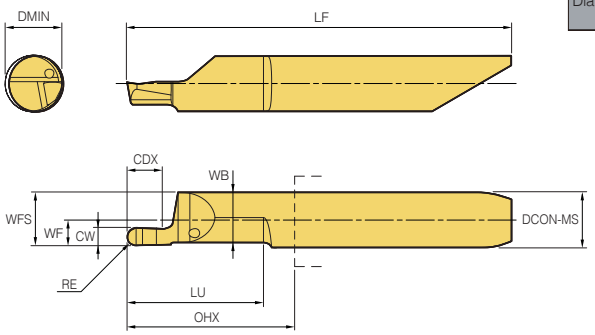
For internal cutting

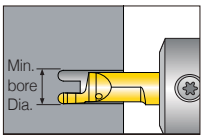
Designation		DMIN	Dimensions (mm)									DCON-MS
			CW±0.025	CDX	LU	WF	RE	WFS	WB	OHX	LF	
MPPR/L	552L15-W100	5.2	1.00	0.70	15	2.44	0.30	4.94	3.88	18.15	41.00	5.0
	552L20-W100		1.00	0.70	20	2.44	0.30	4.94	3.88	23.15	46.00	
MPPR	552L20C-W100		1.00	0.70	20	2.44	0.30	4.94	3.88	23.15	46.00	
MPPR/L	552L25-W100		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	

Round face grooving internal HPC

※ HPC: High pressure coolant





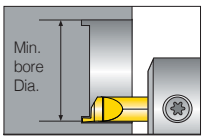


For internal cutting

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	

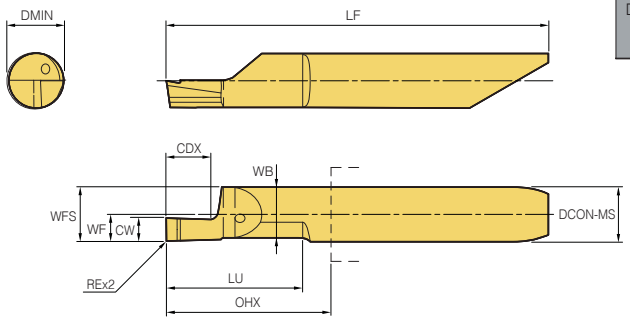
Face grooving HPC

※ HPC: High pressure coolant



For internal cutting

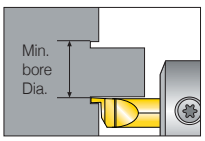




Designation		DMIN	Dimensions (mm)									DCON-MS
			CW±0.025	CDX	LU	WF	RE	WFS	WB	OHX	LF	
MFGR/L	680L15C-W100	8.0	1.00	2.00	15	2.80	0.10	5.80	5.55	18.30	42.00	6.0
	680L15C-W117		1.17	2.00	15	2.80	0.15	5.80	5.55	18.30	42.00	
	680L15C-W150		1.50	3.00	15	2.80	0.10	5.80	5.55	18.30	42.00	
	680L15C-W157		1.57	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	

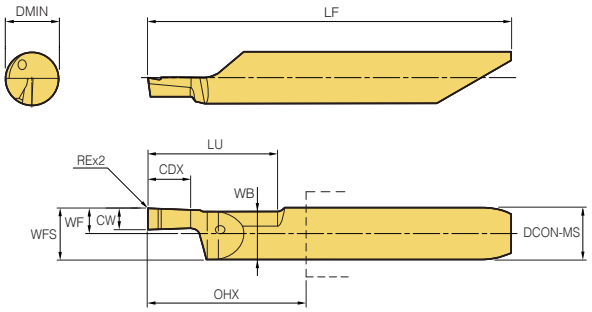
Face grooving HPC

※ HPC: High pressure coolant



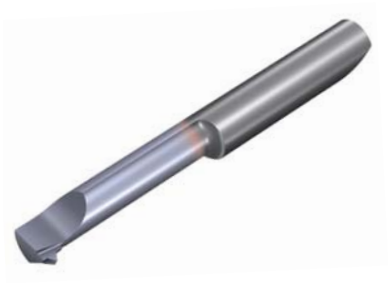
For internal cutting

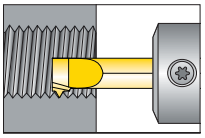




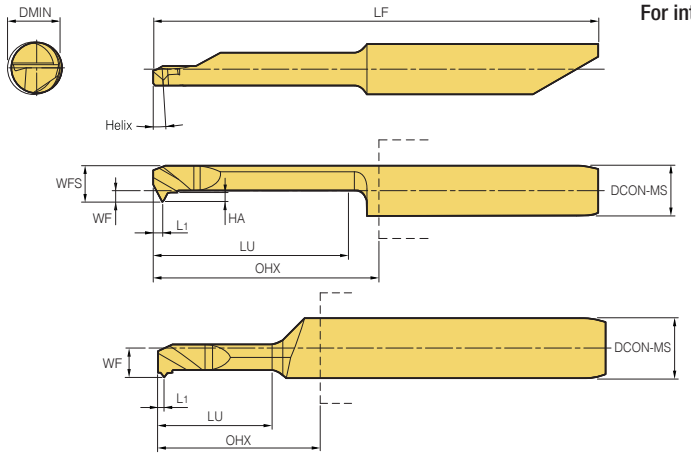
Designation		DMIN	Dimensions (mm)									DCON-MS
			CW±0.025	CDX	LU	WF	RE	WFS	WB	OHX	LF	
MFPR/L	680L15C-W100	8.0	1.00	2.00	15	2.80	0.10	5.80	5.55	18.30	42.00	6.0
	680L15C-W117		1.17	2.00	15	2.80	0.15	5.80	5.55	18.30	42.00	
	680L15C-W150		1.50	3.00	15	2.80	0.10	5.80	5.55	18.30	42.00	
	680L15C-W157		1.57	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	

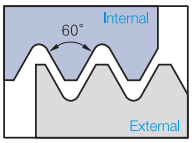
Threading





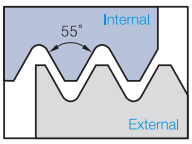
For internal cutting





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

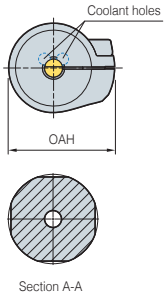


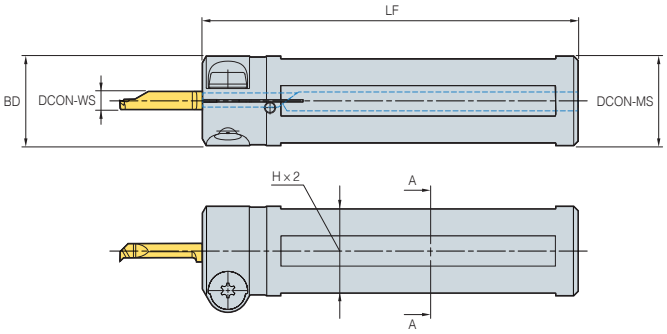
Partial profile 55°

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

MHRSC (Shrink tool holder)



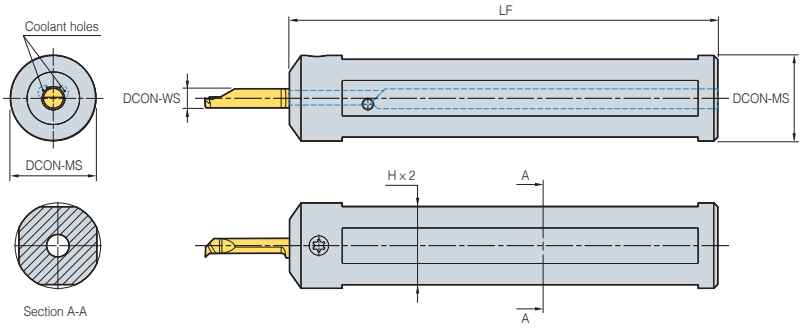




Designation		DCON-WS	Dimensions (mm)					Screw	Wrench
			DCON-MS	OAH	BD	H	LF		
MHRSC	4-10-4F	4.0	10	19.7	13.3	8.8	65	MTS10-15X2	MTL15/MTLX15
	4-12-4F		12	19.7	13.8	10.8	70		
	4-16-4F		16	21.7	16.0	14.8	75		
	4-20-4F		20	23.7	20.0	18.8	84		
	4-22-4F		22	24.7	22.0	20.0	110		
	5-16-4F	5.0	16	21.7	16.0	14.8	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		

MHRRC (Round holder)

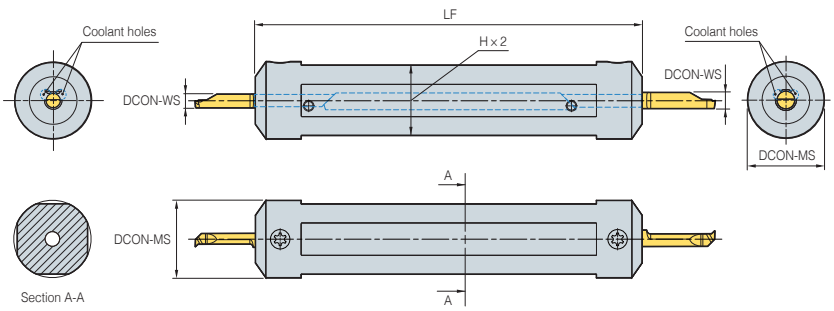




Designation		DCON-WS	Dimensions (mm)			Screw	Wrench
			DCON-MS	H	LF		
MHRRC	4-20-4F	4.0	20.00	18.8	83.5	MTDBT15	MTF15
	4-22-4F		22.00	20.0	110.0		
	5-20-4F	5.0	20.00	18.8	83.5		
	5-22-4F		22.00	20.0	110.0		
	6-20-4F	6.0	20.00	18.8	83.5		
	6-22-4F		22.00	20.0	110.0		
	7-25-4F	7.0	25.00	20.0	110.0		

MHRRC (Double-sided round holder)

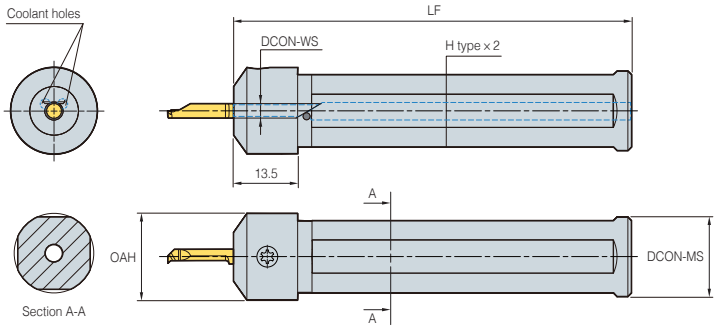




Designation		DCON-WS	Dimensions (mm)			Screw	Wrench
			DCON-MS	H	LF		
MHRRC	4-075-5-4F	4.0 ~ 5.0	19.05	17.8	83.5	MTDBT15	MTF15
	4-20-5-4F		20.00	18.8	83.5		
	4-22-5-4F		22.00	20.0	110.0		
	4-25-5-4F		25.00	23.0	110.0		
	6-20-7-4F	6.0 ~ 7.0	20.00	18.8	83.5		
	6-25-7-4F		25.00	23.0	110.0		

MHRNC-4F (Round shank holder)

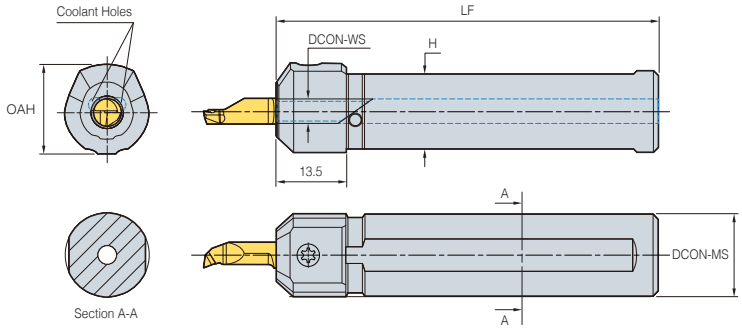




Designation		DCON-WS	Dimensions (mm)				Screw	Wrench
			DCON-MS	OAH	H	LF		
MHRNC	4-20-4F	4.0	20	22	18.8	83.5	MTDT15 or MTDBT15	MTKT15 or MTF15
	4-22-4F		22	24	20.0	110.0		
	4-23-4F		23	25	21.0	110.0		
	4-25-4F		25	27	23.0	110.0		
	4-28-4F		28	30	26.0	110.0		
	5-20-4F	5.0	20	22	18.8	83.5		
	5-22-4F		22	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		

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		

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	Application	Hand	Shank dia.	Max. aspect ratio	Machining size		Cutting edge

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

M This is metric size. We can also provide in inch type

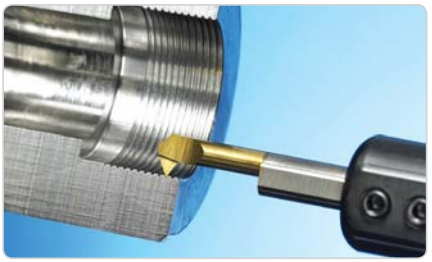
Grades

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

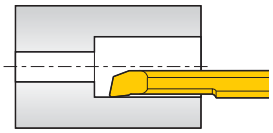




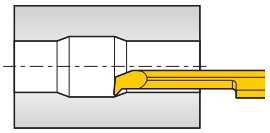


Types

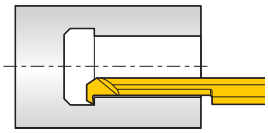
Boring



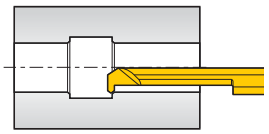
Boring
Min. dia. of machining: Ø0.13



Copying
Min. dia. of machining: Ø0.20

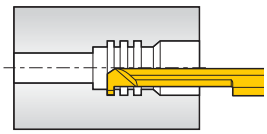


Back Boring
Min. dia. of machining: Ø0.13

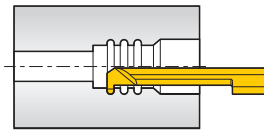


Chamfering
Min. dia. of machining: Ø0.20

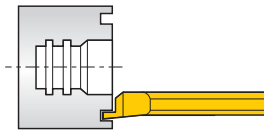
Grooving



Square Grooving
Min. dia. of machining: Ø0.13

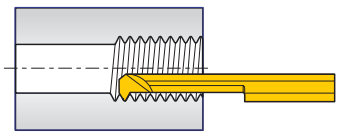


Round Grooving
Min. dia. of machining: Ø0.13



Face Grooving
Min. dia. of machining: Ø0.27

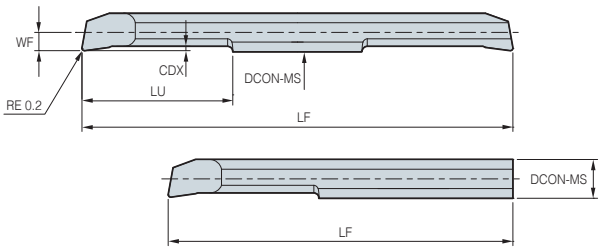
Threading

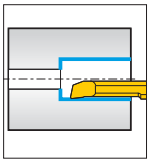


Threading
Min. dia. of machining: Ø0.13

Boring







(mm)

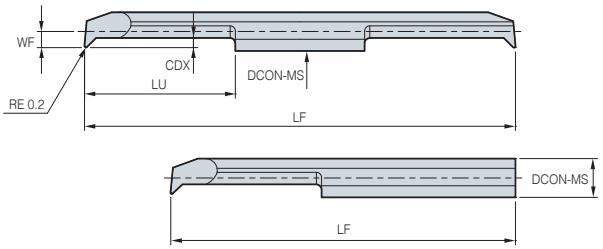
Twin edge				Single edge				DCON-MS	DCN	LU	Overall length		Detailed cutting edge	
Designation		Coated	Uncoated	Designation		Coated	Uncoated				LF		CDX	WF
		PC30M	Z12M			PC30M	Z12M				Double ended	Single ended		
MBR	0310	●		MBR	0310-1			3.0	3.2	10	40	35	0.5	1.4
	0315	●			0315-1					15	50	45		
	0410	●			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		

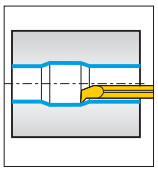
M This is metric size. We can also provide in inch type

● : Stock item

Copying







(mm)

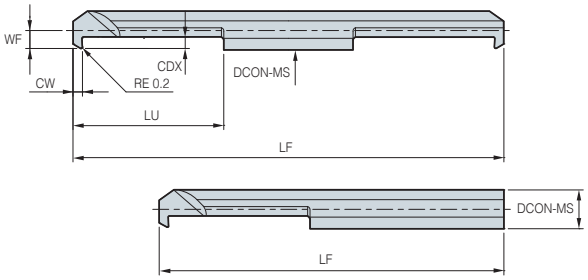
Twin edge				Single edge				DCON-MS	DCN	LU	Overall length		Detailed cutting edge	
Designation		Coated	Uncoated	Designation		Coated	Uncoated				LF		CDX	WF
		PC30M	Z12M			PC30M	Z12M				Double ended	Single ended		
MBCR	0410	●		MBCR	0410-1			4.0	4.2	10	40	35	1.0	1.9
	0415	●			0415-1					15	50	45		
	0420	●			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		

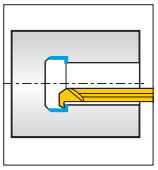
M This is metric size. We can also provide in inch type

● : Stock item

Back Boring







(mm)

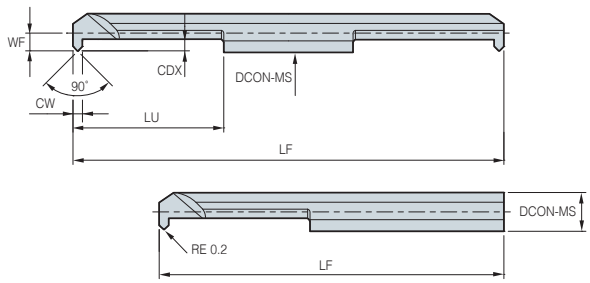
Twin edge				Single edge				DCON-MS	DCN	LU	Overall length		Detailed cutting edge		
Designation		Coated PC30M	Uncoated Z12M	Designation		Coated PC30M	Uncoated Z12M				LF Double ended	LF Single ended	CW	CDX	WF
MBBR	0310	●		MBBR	0310-1			3.0	3.2	10	40	35	1.5	0.8	1.4
	0315	●			0315-1					15	50	45			
	0410	●			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			

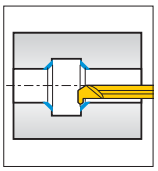
M This is metric size. We can also provide in inch type

● : Stock item

Chamfering







(mm)

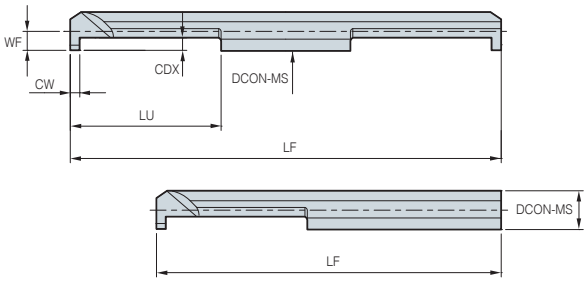
Twin edge				Single edge				DCON-MS	DCN	LU	Overall length		Detailed cutting edge		
Designation		Coated PC30M	Uncoated Z12M	Designation		Coated PC30M	Uncoated Z12M				LF Double ended	LF Single ended	CW	CDX	WF
MBFR	0410	●		MBFR	0410-1			4.0	4.2	10	40	35	0.8	1.0	1.9
	0415	●			0415-1					15	50	45			
	0420	●			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			

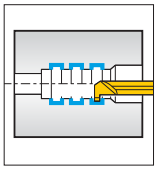
M This is metric size. We can also provide in inch type

● : Stock item

Square Grooving







(mm)

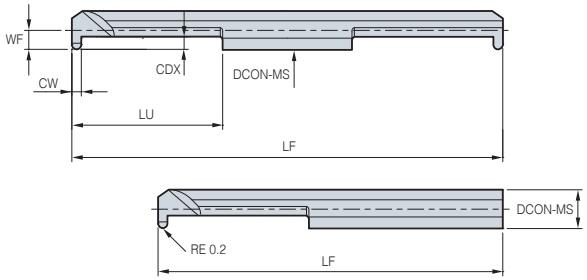
Twin edge				Single edge				DCON-MS	DCN	LU	Overall length		Detailed cutting edge		
Designation		Coated	Uncoated	Designation		Coated	Uncoated				LF		CW	CDX	WF
		PC30M	Z12M			PC30M	Z12M				Double ended	Single ended			
MGR	0310-1.0	●		MGR	0310-1.0-1			3.0	3.2	10	40	35	1.0	0.8	1.4
	0315-1.0	●			0315-1.0-1					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		

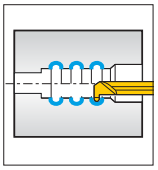
M This is metric size. We can also provide in inch type

● : Stock item

Round Grooving







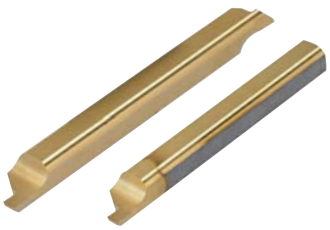
(mm)

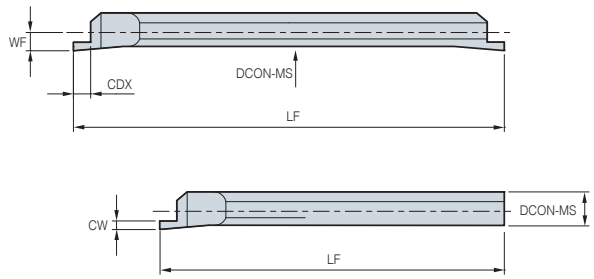
Twin edge				Single edge				DCON-MS	DCN	LU	Overall length		Detailed cutting edge		
Designation		Coated PC30M	Uncoated Z12M	Designation		Coated PC30M	Uncoated Z12M				LF		CW	CDX	WF
											Double ended	Single ended			
MGRR	0310-0.8	●		MGRR	0310-0.8-1			3.0	3.2	10	40	35	0.8	0.8	1.4
	0315-0.8	●			0315-0.8-1					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		

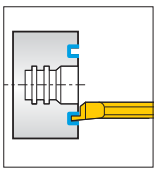
M This is metric size. We can also provide in inch type

● : Stock item

Face Grooving







(mm)

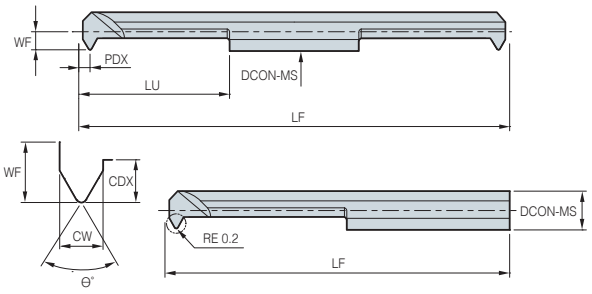
Twin edge				Single edge				DCON-MS	DCN	Overall length		Detailed cutting edge		
Designation		Coated PC30M	Uncoated Z12M	Designation		Coated PC30M	Uncoated Z12M			LF		CW	CDX	WF
										Double ended	Single ended			
MGFR	0400-1.0	●		MGFR	0400-1.0-1			4.0	6.0	50	45	1.0	1.5	1.8
	0400-1.5	●			0400-1.5-1							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	

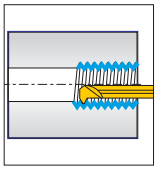
M This is metric size. We can also provide in inch type

● : 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

M This is metric size. We can also provide in inch type

● : Stock item

Sleeve

SL (Sleeve)

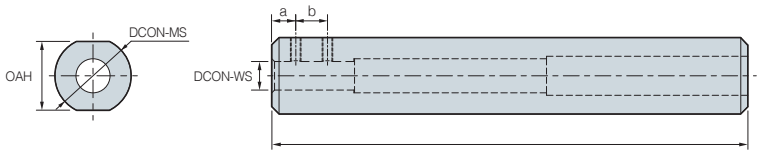


Fig. 1

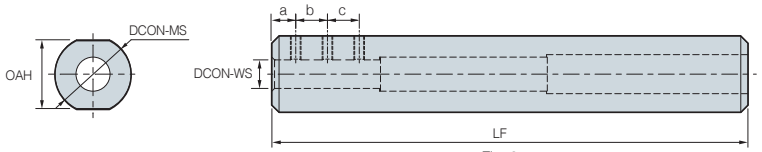


Fig. 2

(mm)

Designation	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	

M This is metric size. We can also provide in inch type

※ Fine tolerance and surface roughness

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**

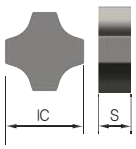
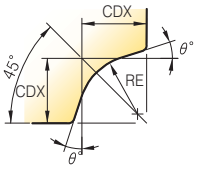
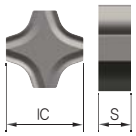
S	R	C	P	R	25	25	B	-	M	16	B	-	D32
Clamping method	Insert shape	Holder style	Relief angle	Hand	Height of shank	Width of shank	Additional information of holder (B: Bearing)		Length of Holder	Length of cutting edge	Application		Minimum diameter for machining

Application

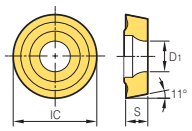
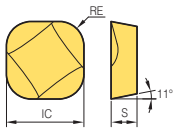
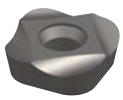
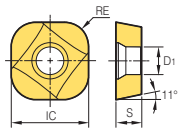
B: Internal machining
E: External machining
F: Face machining
RW: Raceway
BS: Bearing Shield



Applicable insert

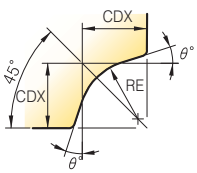
Application	Picture	Designation	Cermet	Dimensions (mm)					Configuration
			CN2500	RE	θ°	CDX	IC	S	
R-Chamfering		MC0906		0.6	12	1.8	9.525	3.18	
		MC0910		1	12	2.4	9.525	3.18	
		MC1206		0.6	18	1.8	12.7	4.76	
		MC1210		1	18	2.4	12.7	4.76	
		MC1212		1.2	18	2.2	12.7	4.76	
		MC1215		1.5	18	3	12.7	4.76	
		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	

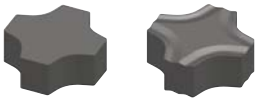
● : Stock item

Special order-form

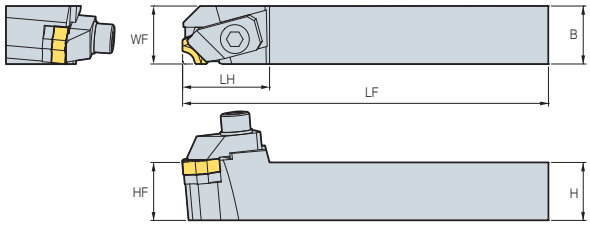


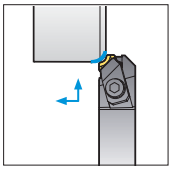
Designation	CN2500	RE	θ°	CDX	IC	S	Configuration
MC...							

CMSN...F type



MC12□□ MC12□□-BR
MC15□□





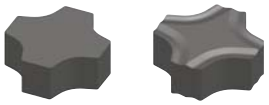
• R type holder

(mm)

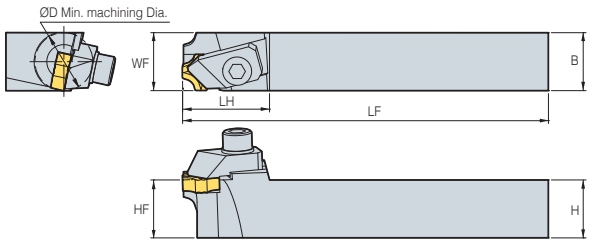
Designation		LH	LF	WF	HF	B	H	HAND	Applicable insert	Clamp	Clamp Screw	Shim	Shim Screw	Wrench
CMSNR/L	2020B-L12F	33	140	21	20	20	20	R/L	MC12□□ MC12□□-BR	CH6R/L1B	BHA0620	SX42CB	SS0308	HW50L
	2023B-L12F	33	140	24	20	23	20	R/L						
	2525B-L15F	33	140	26	25	25	25	R/L	MC15□□	CH6R/L1B	BHA0620	SX52CB	SS0408	HW50L

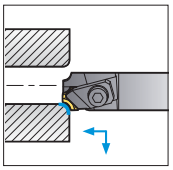
M This is metric size. We can also provide in inch type

CMSN...B type



MC12□□ MC12□□-BR





• R type holder

(mm)

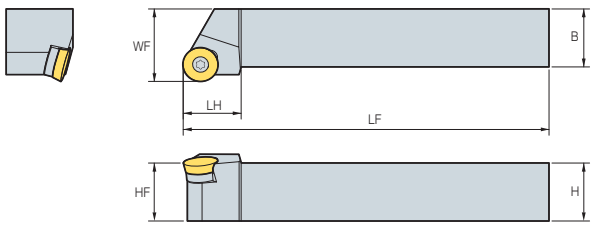
Designation		DMIN	LH	LF	WF	HF	B	H	HAND	Applicable insert	Clamp	Clamp Screw	Shim	Shim Screw	Wrench
CMSNR/L	2020B-L12B-D28	28	33	140	21	20	20	20	R/L	MC12□□ MC12□□-BR	CH6R/L1B	BHA0620	SX42CB	SS0308	HW50L
	2525B-L12B-D28	28	33	140	26	25	25	25	R/L		CH6R/L1B	BHA0620	SX42CB	SS0308	HW50L
	1620B-L12B-D20	20	32	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

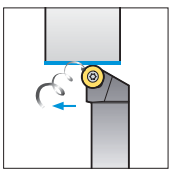
M This is metric size. We can also provide in inch type

SRGP...E type



RPGT





• R type holder

(mm)

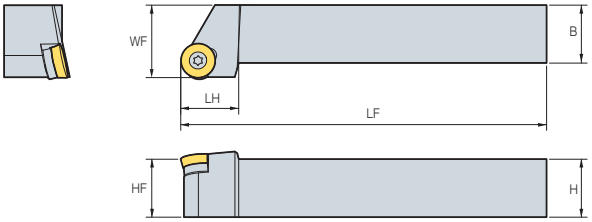
Designation		LH	LF	WF	HF	B	H	HAND	Applicable insert	Screw	Shim	Shim Screw	Wrench
SRGPR/L	2020B-L12E	20	140	25	20	20	20	R/L	RPGT1203M0	FTKA0410	SR1203S	SHXN0609F	TW15P
	2020B-L16E	20	140	25	20	20	20	R/L	RPGT1604M0	FTNA0513	SR16T3S	SHXN0712F	TW20P
	2525B-L20E	30	140	32	25	25	25	R/L	RPGT2004M0	FTNA0513	SR20T3S	SHXN0712F	TW20P

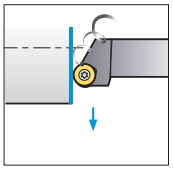
M This is metric size. We can also provide in inch type

SRGP...F type



RPGT1203M0
RPGT1604M0
RPGT2004M0





• R type holder

(mm)

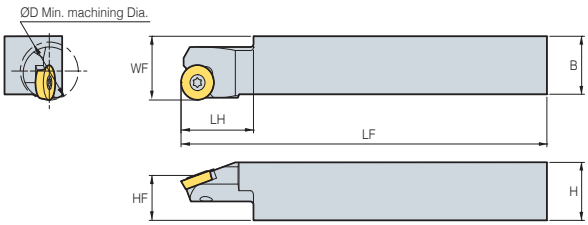
Designation		LH	LF	WF	HF	B	H	HAND	Applicable insert	Screw	Shim	Shim Screw	Wrench
SRGPR/L	2020B-L12F	20	140	25	20	20	20	R/L	RPGT1203M0	FTKA0410	SR1203S	SHXN0609F	TW15P
	2020B-L16F	20	140	25	20	20	20	R/L	RPGT1604M0	FTNA0513	SR16T3S	SHXN0712F	TW20P
	2525B-L20F	30	140	32	25	25	25	R/L	RPGT2004M0	FTNA0513	SR20T3S	SHXN0712F	TW20P

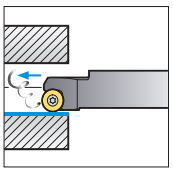
M This is metric size. We can also provide in inch type

SRCP...B type



RPGT0802M0
RPGT1203M0
RPGT1604M0





• R type holder

(mm)

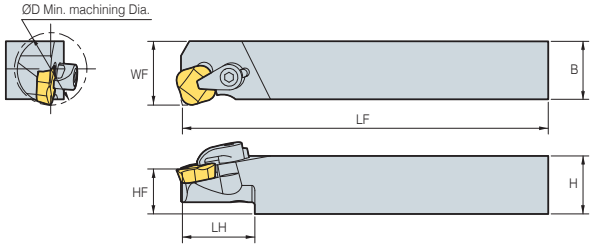
Designation		DMIN	LH	LF	WF	HF	B	H	HAND	Applicable insert	Screw	Wrench
SRCPR/L	2020B-L08B-D12	12	25	140	21.5	15.5	20	20	R/L	RPGT0802M0	FTKA0305	TW09P
	1919B-L12B-D15	15	25	140	21	16	19	19	R/L	RPGT1203M0	FTNA0408	TW15P
	2020B-L12B-D20	20	25	140	22	15.5	20	20	R/L	RPGT1203M0	FTNA0408	TW15P
	2525B-L16B-D32	32	30	140	27	20	25	25	R/L	RPGT1604M0	FTKA0510	TW20P

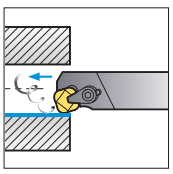
M This is metric size. We can also provide in inch type

CSKP...B type



SPGR120440L





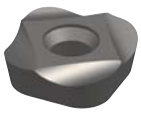
• R type holder

(mm)

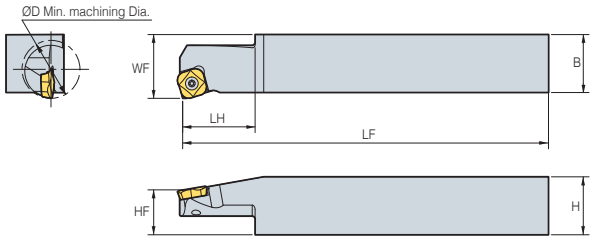
Designation		DMIN	LH	LF	WF	HF	B	H	HAND	Applicable insert	Clamp	Clamp Screw	Wrench
CSKPR/L	2022B-L12B-D30	30	37	140	27	20	22	20	R/L	SPGR120440R/L	CH5R1	CHX0510	HW30L

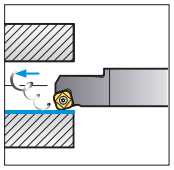
M This is metric size. We can also provide in inch type

SSKP...B type



SPGH090330L





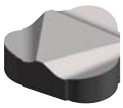
• R type holder

(mm)

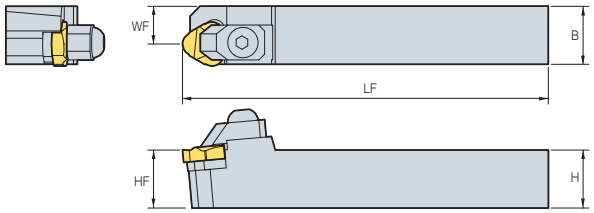
Designation		DMIN	LH	LF	WF	HF	B	H	HAND	Applicable insert	Screw	Wrench
SSKPR/L	2020B-L09B-D12	12	20	140	21.7	19	20	20	R/L	SPGH090330R/L	FTNA0307	TW09P
	2020B-L09B-D13	13	20	140	21.7	19	20	20	R/L			
	2020B-L09B-D20	20	20	140	21.7	19	20	20	R/L			

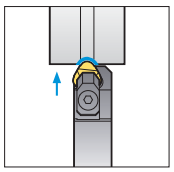
M This is metric size. We can also provide in inch type

CKFN...RW type



KORIC





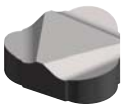
• R type holder

(mm)

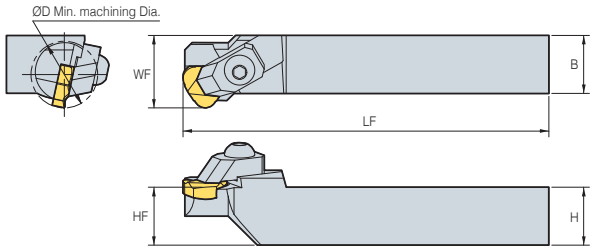
Designation		LH	LF	WF	HF	B	H	HAND	Applicable insert	Clamp	Clamp Screw	Shim	Shim Screw	Wrench
CKFNR/L	2020B-L22RW	-	140	12.5	20	20	20	R/L	KORIC2204R/L	CH6N1B	BHA0620	ST42CB	SS0408	HW50L
	2022B-L27RW	-	140	13	20	22	20	R/L	KORIC2704R/L	CH8R/L1B	BHA0820	ST52CB	SS0408	HW60L
	2025B-L33RW	-	140	16	20	25	20	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

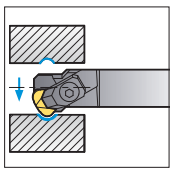
M This is metric size. We can also provide in inch type

CKGN...RW type



KORIC





• R type holder

(mm)

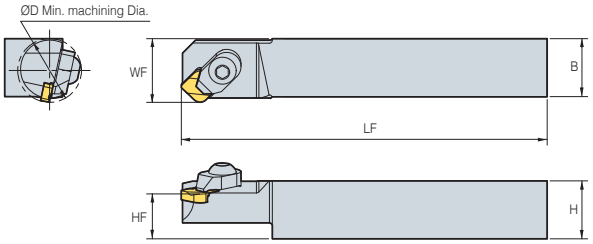
Designation		DMIN	LH	LF	WF	HF	B	H	HAND	Applicable insert	Clamp	Clamp Screw	Shim	Shim Screw	Wrench
CKGNR/L	2022B-L22RW-D23	23	-	140	30	20	22	20	R/L	KORIC2204R/L	CH6R/L3B	BHA0620	ST42CB	SS0408	HW50L
	2022B-L27RW-D29	29	-	140	34	20	22	20	R/L	KORIC2704R/L	CH6R/L7B	BHA0620	ST52CB	SS0408	HW50L
	2025B-L33RW-D38	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

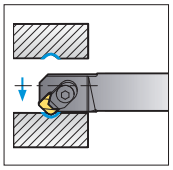
M This is metric size. We can also provide in inch type

CSGN...RW type



SNGN





• R type holder

(mm)

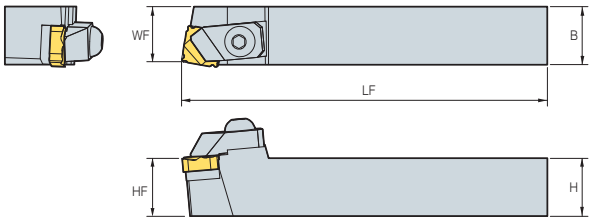
	Designation	DMIN	LH	LF	WF	HF	B	H	HAND	Applicable insert	Clamp	Clamp Screw	Wrench
CSGNR/L	2020B-L09RW-D17	17	-	140	22	20	20	20	R/L	SNGN0903WR/L	CH5R1	CHX0510	HW30L
	2020B-L09RW-D22	22	-	140	22	20	20	20	R/L	SNGN0903WR/L	CH5R1	CHX0510	HW30L

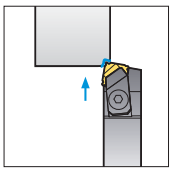
M This is metric size. We can also provide in inch type

CSBN...BS type



SNGN





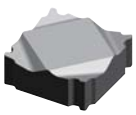
• R type holder

(mm)

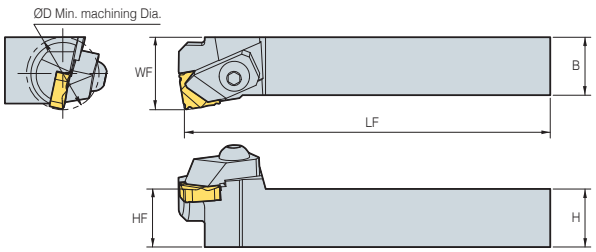
	Designation	LH	LF	WF	HF	B	H	HAND	Applicable insert	Clamp	Clamp Screw	Shim	Shim Screw	Wrench
CSBNR/L	2023B-L12BS	-	140	21	20	23	20	R/L	SNGN1204SR/L	CH6N1B	BHA0620	SS42CB	SS0308	HW50L
	2525B-L15BS	-	140	23	25	25	25	R/L	SNGN1504SR/L	CH6N1B	BHA0620	SS52CB	SS0408	HW50L

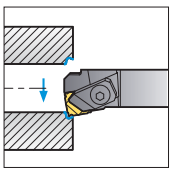
M This is metric size. We can also provide in inch type

CSKN...BS type



SNGN





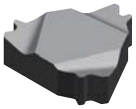
• R type holder

(mm)

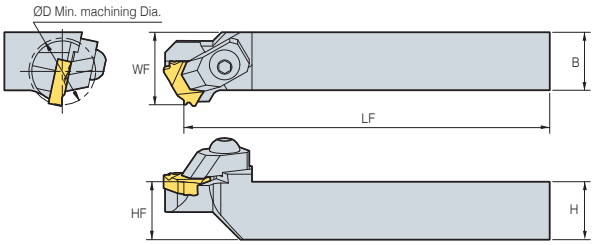
	Designation	DMIN	LH	LF	WF	HF	B	H	HAND	Applicable insert	Clamp	Clamp Screw	Shim	Shim Screw	Wrench
CSKNR/L	1622B-L09BS-D14	14	-	140	16	16	22	16	R/L	SNGN0903SR/L	CH6R/L2B	BHA0620	-	-	HW50L
	2022B-L12BS-D26	25	-	140	27	20	22	20	R/L	SNGN1204SR/L	CH6R/L1B	BHA0620	SS42CB	SS0308	HW50L
	2525B-L15BS-D35	35	-	140	31	25	25	25	R/L	SNGN1504SR/L	CH6R/L3B	BHA0620	SS52CB	SS0408	HW50L

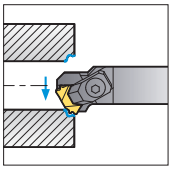
M This is metric size. We can also provide in inch type

CTGN...BS type



TNGN





• R type holder

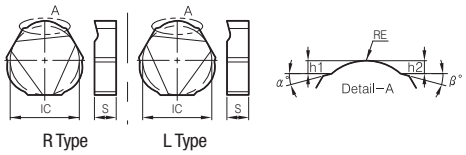
(mm)

Designation	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

M This is metric size. We can also provide in inch type

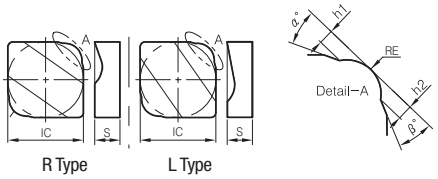
Machining race-way

KORIC... R/L type



		IC	S	RE	h1	h2	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					

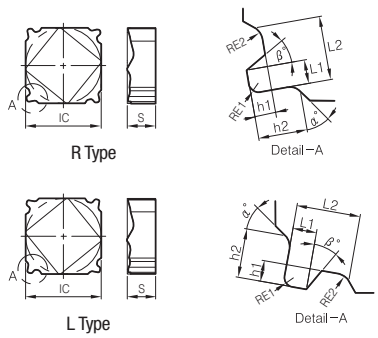
SNGN... WR/L type



		IC	S	RE	h1	h2	α°	β°
SNGN	0903WR/L	9.525	3.18					
	1504WR/L	15.875	4.76					
	1905WR/L	19.05	5.56					

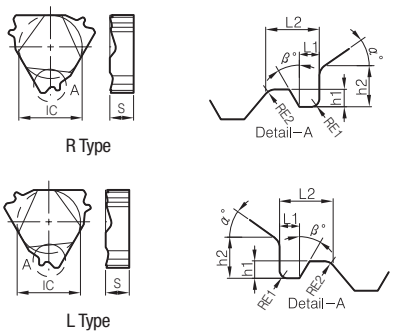
Machining for bearing shield

KORIC... R/L type



		IC	S	L1	L2	h1	h2	RE1	RE2	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



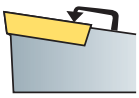
		IC	S	L1	L2	h1	h2	RE1	RE2	α°	β°
TNGN	02204SR/L	12.7	4.76								

S T F C R 12 C A - 16

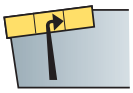
1	2	3	4	5	6	7	8	9
Clamping system	Insert shape	Holder style	Relief angle of insert	Hand	Height of cutting edge	Cartridge code	Type of cartridge	Length of cutting edge

1 Clamping system

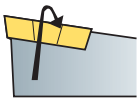
S T F C R 12 C A - 16



Top Clamping — C



Hole Clamping — P



Screw on — S

2 Insert shape

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C



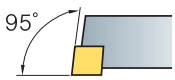
S



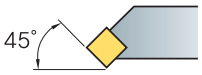
T

3 Holder style

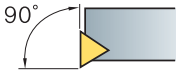
S T F C R 12 C A - 16



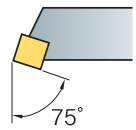
L



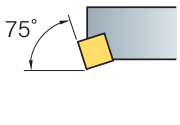
S



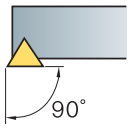
F



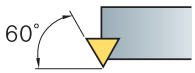
R



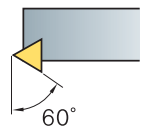
K



G



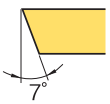
W



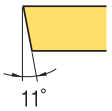
T

4 Relief angle of insert

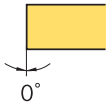
S T F C R 12 C A - 16



C



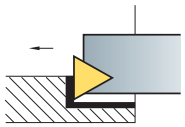
P

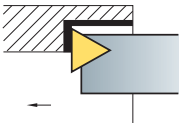


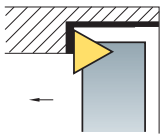
N

5 Hand

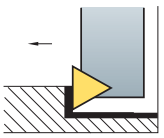
S T F C R 12 C A - 16







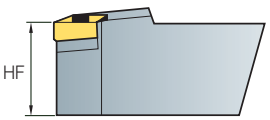
R



L

6 Height of cutting edge

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7 Cartrige code

S T F C R 12 C A - 16

C (Cartridge)

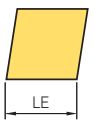
8 Type of cartridge

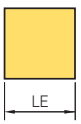
S T F C R 12 C A - 16

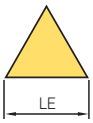
A (ISO5611)

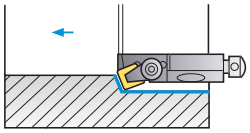
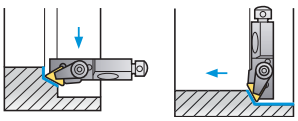
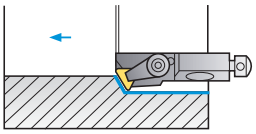
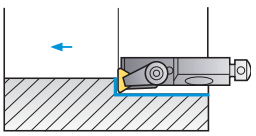
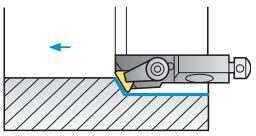
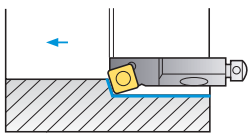
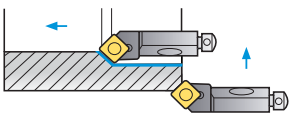
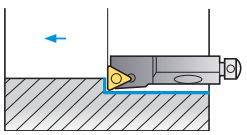
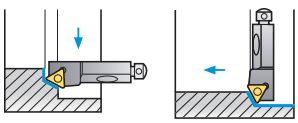
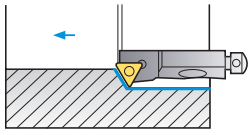
9 Length of cutting edge

S T F C R 12 C A - 16

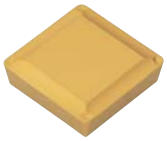




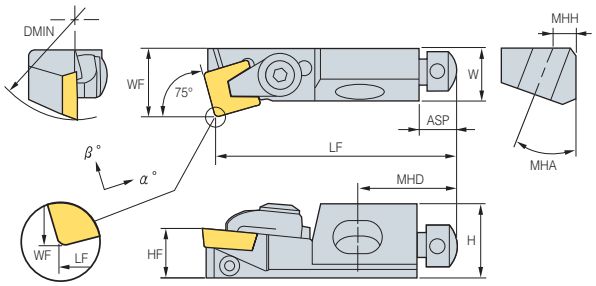


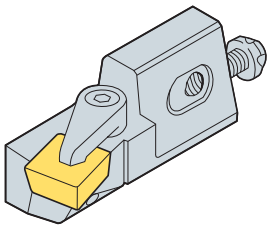
	Cutting Shape			Turning	Copying	Facing	Chamfering	Applicable inserts	Page
Clamp on system	**CSKPR/L**		10CA-09 12CA-12	●				SP□R0903□□ SP□R1203□□	B220
	CTTPR/L		10CA-11 12CA-16	●				TP□R1103□□ TP□R1603□□	B221
	CTWPR/L		10CA-11 12CA-16	●				TP□R1103□□ TP□R1603□□	B222
	CTFPR/L		10CA-11 12CA-16	●		●		TP□R1103□□ TP□R1603□□	B220
	CTSPR/L		10CA-11 12CA-16	●				TP□R1103□□ TP□R1603□□	B221
Screw on system	**SSKCR/L**		10CA-09 12CA-12	●				SC□T09T3□□ SC□T1204□□	B222
	SSSCR/L		10CA-09 12CA-12	●			●	SC□T09T3□□ SC□T1204□□	B223
	STFCR/L		10CA-11 12CA-16	●		●		TC□T1102□□ TC□T16T3□□	B223
	STTCR/L		10CA-11 12CA-16	●		●		TC□T1102□□ TC□T16T3□□	B224
	STWCR/L		10CA-11 12CA-16	●				TC□T1102□□ TC□T16T3□□	B224

CSKPR/L



SP□R





• R type holder

(mm)

Designation		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 holders **B56 ~ B57**

* a base Insert : r = 0.4 (l =11) r = 0.8 (l = 16) Dmin = ØD Min. machining Dia.

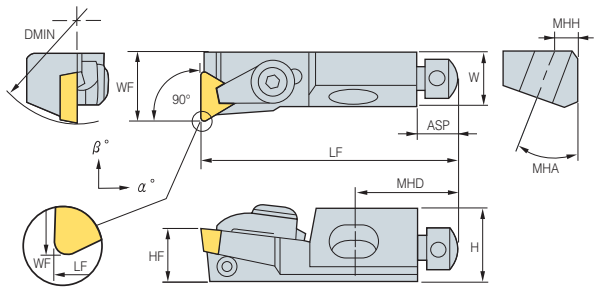
Parts		Clamp	Axial Adjust Screw	Radial Adjust Screw	Mounting Screw	Washer	Wrench	Wrench
CSKPR/L	10CA-09	CA05R	AZ0508F	KHA0408	RHA0620	WA0602	TW 15P	HW20L
	12CA-12	CA06R	AZ0508F	KHA0412	RHA0625	WA0602	TW 15P	HW20L

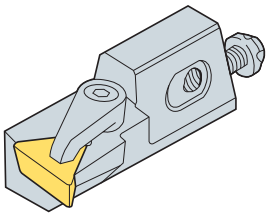
M This is metric size. We can also provide in inch type

CTFPR/L



TP□R





• R type holder

(mm)

Designation		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 holders **B62 ~ B63**

* a base Insert : r = 0.8 Dmin = ØD Min. machining Dia.

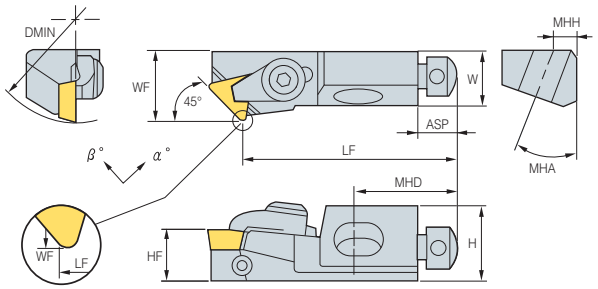
Parts		Clamp	Axial Adjust Screw	Radial Adjust Screw	Mounting Screw	Washer	Wrench	Wrench
CTFPR/L	10CA-11	CA05R	AZ0508F	KHA0408	RHA0620	WA0602	TW25L	HW20L
	12CA-16	CA06R	AZ0508F	KHA0412	RHA0625	WA0602	TW30L	HW20L

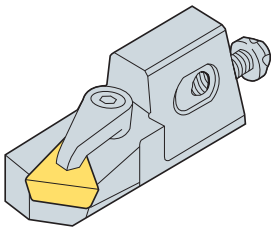
M This is metric size. We can also provide in inch type

CTSPR/L



TP□R





• R type holder

(mm)

Designation		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 holders **B62 ~ B63**

* a base Insert : r = 0.4 (l =11) r = 0.8 (l = 16) Dmin = ØD Min. machining Dia.

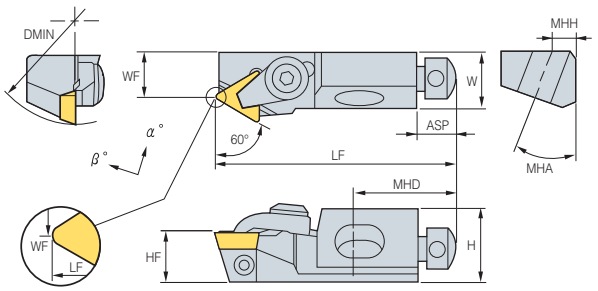
Parts		Clamp	Axial Adjust Screw	Radial Adjust Screw	Mounting Screw	Washer	Wrench	Wrench
CTSPR/L	10CA-11	CA05R	AZ0508F	KHA0408	RHA0620	WA0602	TW25L	HW20L
	12CA-16	CA06R	AZ0508F	KHA0412	RHA0625	WA0602	TW30L	HW20L

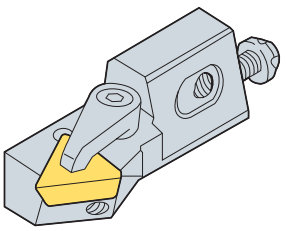
M This is metric size. We can also provide in inch type

CTTPR/L



TP□R





• R type holder

(mm)

Designation		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 holders **B62 ~ B63**

* a base Insert : r = 0.8 Dmin = ØD Min. machining Dia.

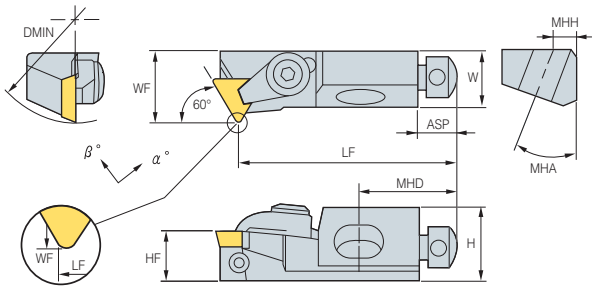
Parts		Clamp	Axial Adjust Screw	Radial Adjust Screw	Mounting Screw	Washer	Wrench	Wrench
CTTPR/L	10CA-11	CA05R	AZ0508F	KHA0408	RHA0620	WA0602	TW25L	HW20L
	12CA-16	CA06R	AZ0508F	KHA0412	RHA0625	WA0602	TW30L	HW20L

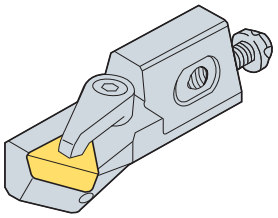
M This is metric size. We can also provide in inch type

CTWPR/L



TP□R





• R type holder

(mm)

Designation		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 holders **B62 ~ B63**

* a base Insert : r = 0.8 Dmin = ØD Min. machining Dia.

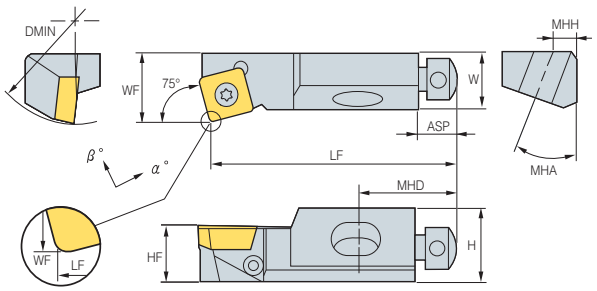
Parts		Clamp	Axial Adjust Screw	Radial Adjust Screw	Mounting Screw	Washer	Wrench	Wrench
CTWPR/L	10CA-11	CA05R	AZ0508F	KHA0408	RHA0620	WA0602	TW25L	HW20L
	12CA-16	CA06R	AZ0508F	KHA0412	RHA0625	WA0602	TW30L	HW20L

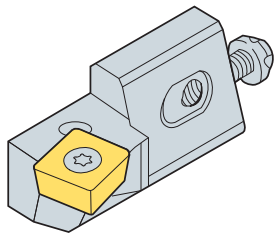
M This is metric size. We can also provide in inch type

SSKCR/L



SC□T





• R type holder

(mm)

Designation		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 holders **B55**

* a base Insert : r = 0.8 Dmin = ØD Min. machining Dia.

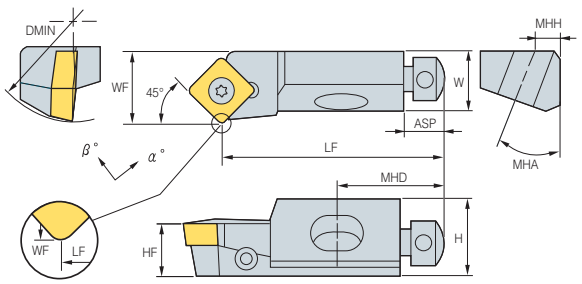
Parts		Screw	Axial Adjust Screw	Radial Adjust Screw	Mounting Screw	Washer	Wrench	Wrench
SSKCR/L	10CA-09	FTGA03508	AZ0508F	KHA0408	RHA0620	WA0602	TW 15P	HW20L
	12CA-12	FTGA0411F	AZ0508F	KHA0412	RHA0625	WA0602	TW 15P	HW20L

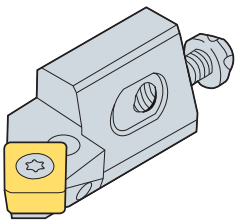
M This is metric size. We can also provide in inch type

SSSCR/L



SC□T





• R type holder

(mm)

Designation		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□□

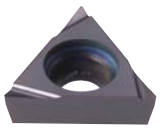
Applicable holders **B55**

* a base Insert : r = 0.8 Dmin = ØD Min. machining Dia.

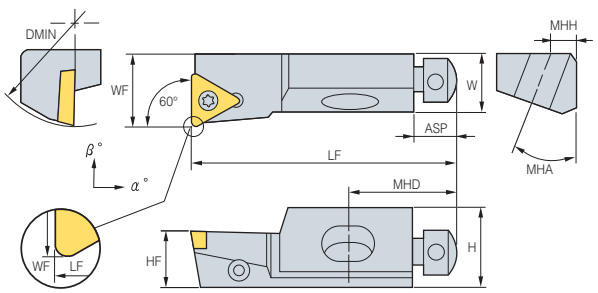
Parts		Screw	Axial Adjust Screw	Radial Adjust Screw	Mounting Screw	Washer	Wrench	Wrench
SSSCR/L	10CA-09	FTGA03508	AZ0508F	KHA0408	RHA0620	WA0602	TW 15P	HW20L
	12CA-12	FTGA0411F	AZ0508F	KHA0412	RHA0625	WA0602	TW 15P	HW20L

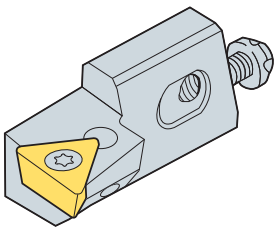
M This is metric size. We can also provide in inch type

STFCR/L



TC□T





• R type holder

(mm)

Designation		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□□

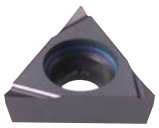
Applicable holders **B59 ~ B60**

* a base Insert : r = 0.4 (l =11) r = 0.8 (l = 16) Dmin = ØD Min. machining Dia.

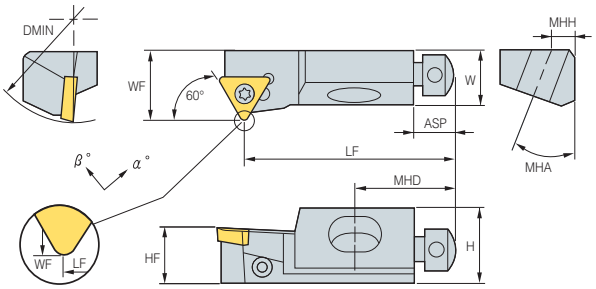
Parts		Screw	Axial Adjust Screw	Radial Adjust Screw	Mounting Screw	Washer	Wrench	Wrench
STFCR/L	10CA-11	FTKA02565	AZ0508F	KHA0408	RHA0620	WA0602	TW 15P	HW20L
	12CA-16	FTKA03508	AZ0508F	KHA0412	RHA0625	WA0602	TW 15P	HW20L

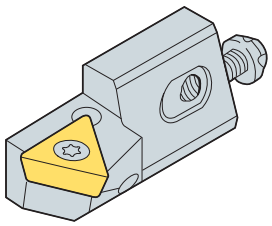
M This is metric size. We can also provide in inch type

STTCR/L



TC□T





• R type holder

(mm)

Designation		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 holders **B59 ~ B60**

* a base Insert : r = 0.4 (l =11) r = 0.8 (l = 16) Dmin = ØD Min. machining Dia.

● : Stock item

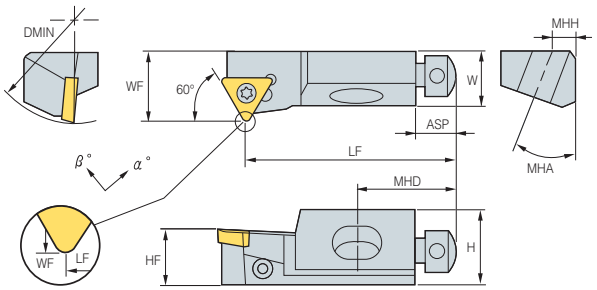
Parts		Screw	Axial Adjust Screw	Radial Adjust Screw	Mounting Screw	Washer	Wrench	Wrench
STTCR/L	10CA-11	FTKA02565	AZ0508F	KHA0408	RHA0620	WA0602	TW 07P	HW20L
	12CA-16	FTKA03508	AZ0508F	KHA0412	RHA0625	WA0602	TW 15P	HW20L

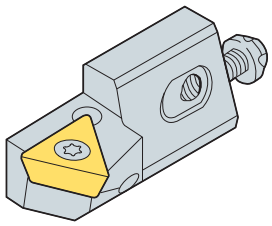
M This is metric size. We can also provide in inch type

STWCR/L



TC□T





• R type holder

(mm)

Designation		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 holders **B55**

* a base Insert : r = 0.4 (l =11) r = 0.8 (l = 16) Dmin = ØD Min. machining Dia.

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

M This is metric size. We can also provide in inch type

C PART

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
C50 MGT Plus/MGT

KGT/MGT Cartridges
C56 Technical Information for KGT/MGT Cartridges
C57 KGT/MGT Cartridges

MGT 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 Insert
C71 TB/TB-M Holder

Hexa Blade

C72 Technical Information for Hexa Blade
C74 Hexa Blade Insert/Holder

Grooving Tools

C75 Grooving Tools

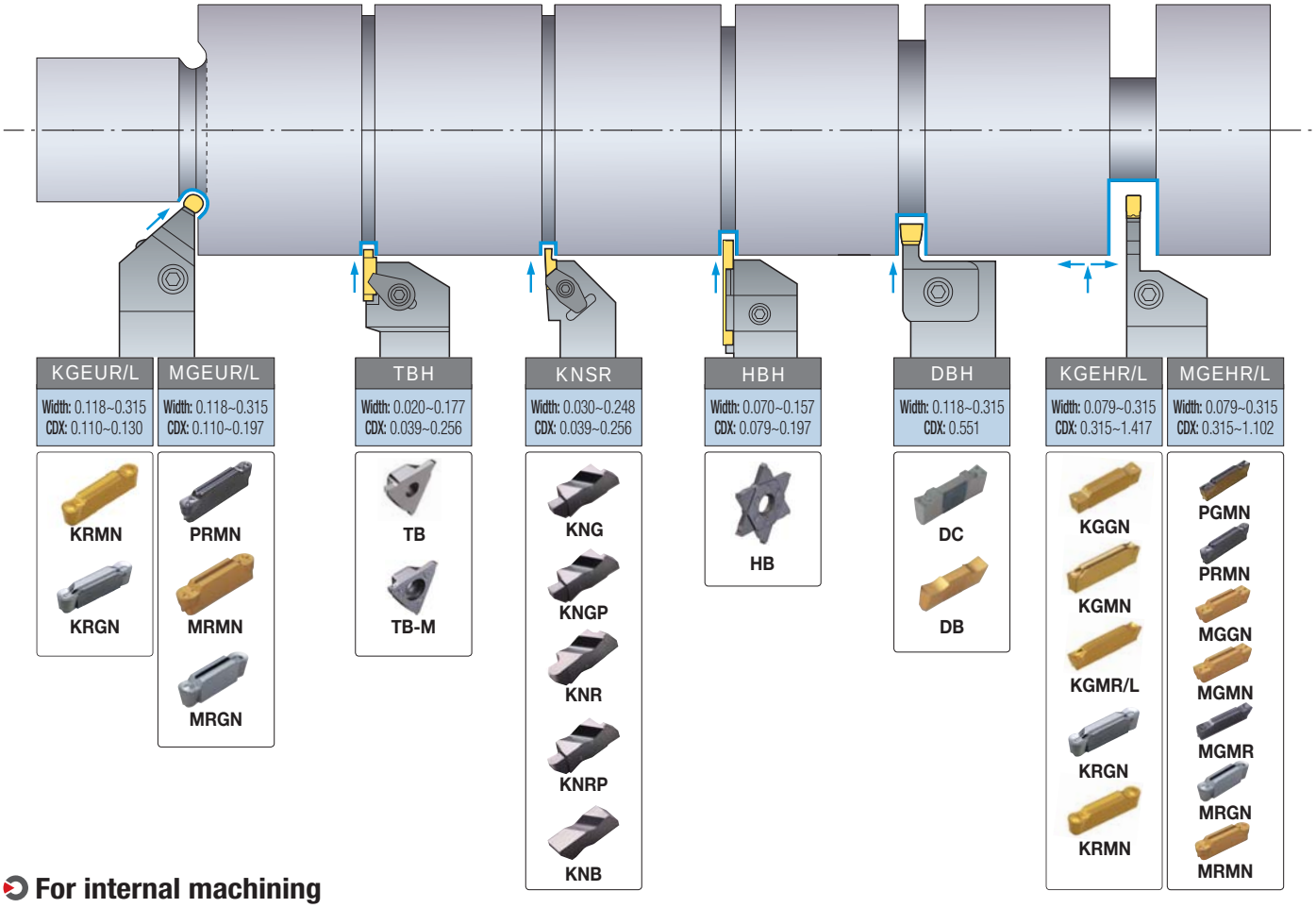
Special Order Form

C80 Special Order Form for MGT
C81 Special Order Form for V-Pulley Inserts

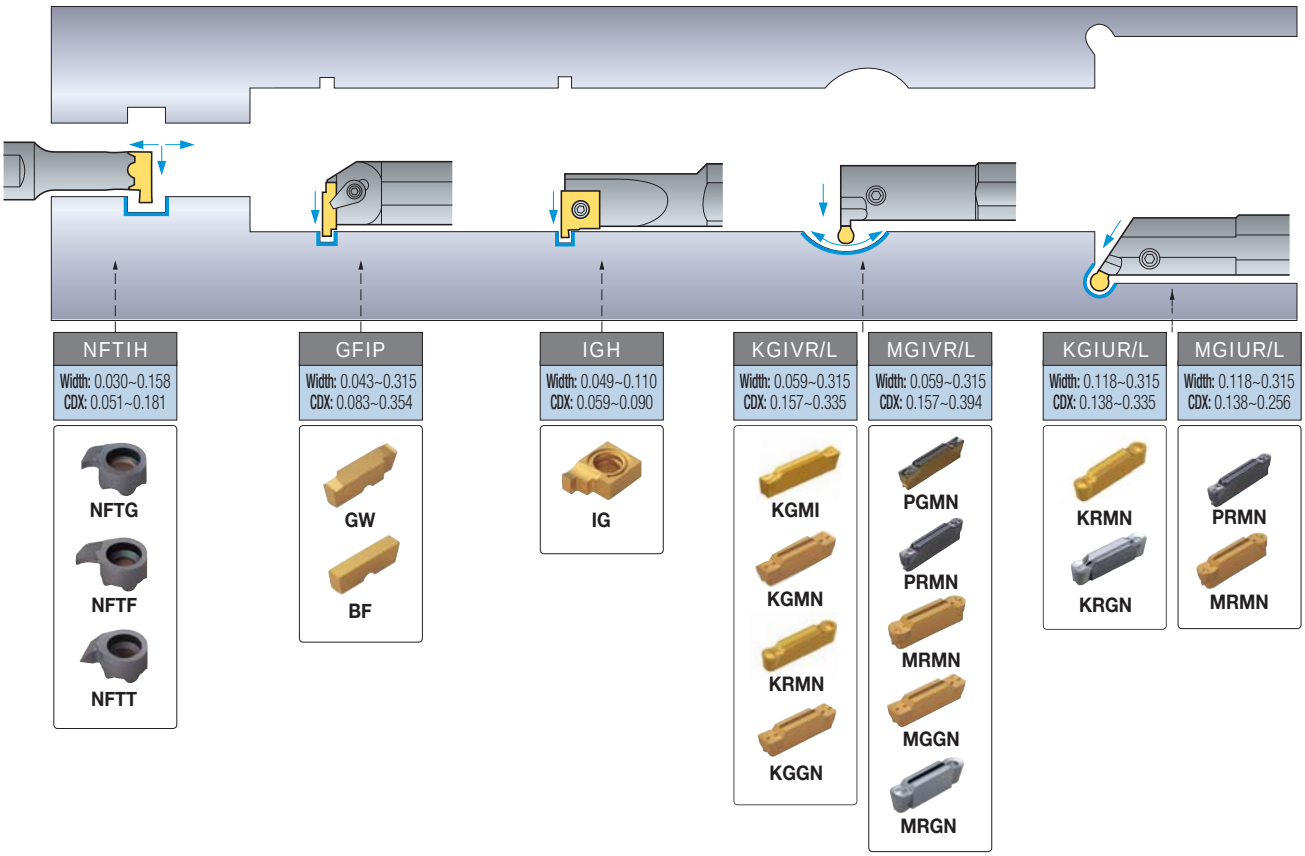


C Application Example

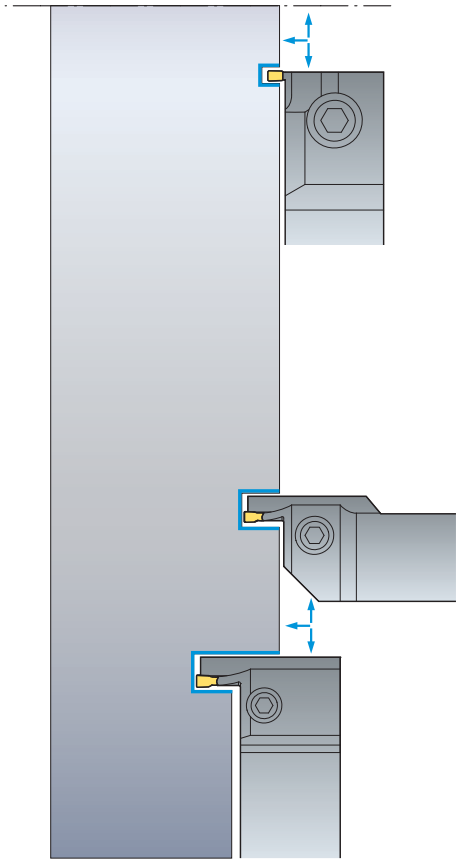
For external machining



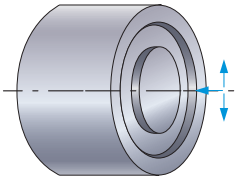
For internal machining



For face grooving

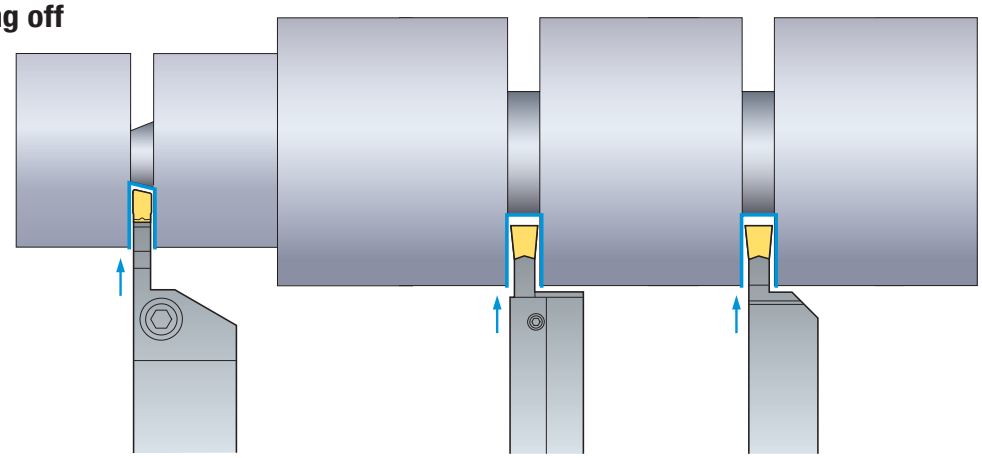


KGEVR/L	MGEVR/L	MGEVR/L
Width: 0.059~0.315 CDX: 0.118~0.315	Width: 0.059~0.315 CDX: 0.118~0.354	Width: 0.059~0.315 CDX: 0.118~0.354
KGMN	PGMN	MGMN
KGGN	PRMN	MGGN
KRMN		MRMN
KRGN		MRGN



FGHH/FGVH	MGFHR/L, MGFVR/L	KGFHR/L, KGFVR/L
Width: 0.118~0.197 CDX: 0.472~0.984	Width: 0.118~0.157 CDX: 0.394~0.590	Width: 0.118~0.236 CDX: 0.394~0.984
FGD	PGMN	KGMN
FGM	PRMN	KRMN
FMM	MGMN	KGGN
	MFMN	KRGN

For parting off



KGEHR/L	MGEHR/L	KSPB	SPB-(S)	KGTB
Width: 0.079~0.197 CDX: 0.315~0.984	Width: 0.079~0.197 CDX: 0.315~1.102	Width: 0.079~0.236 CDX: 1.378~4.921	Width: 0.079~0.236 CDX: 1.378~4.921	Width: 0.079~0.315 CDX: 1.023~4.724
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 : 0.079 inch 300 : 0.118 inch 400 : 0.157 inch		**Nose r** 020 : 1/128 inch 030 : 3/256 inch		**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 : 0.079 inch 300 : 0.118 inch 400 : 0.157 inch	**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

KSPHA	100	2	R
KORLOY Saw Man-X Parting Holder	**Cutting edge width** 062 : 5/8 inch 075 : 3/4 inch 100 : 1 inch	**Cutting width** 2 : 0.079 inch 3 : 0.118 inch 4 : 0.157 inch	**Hand** R : Right-handed L : Left-handed

• Blade

KSPB	125	3	-	(KHP)
KORLOY Saw Man-X Parting Blade	**Blade height** 100 : 1 inch 125 : 1¼ inch	**Cutting width** 2 : 0.079 inch 3 : 0.118 inch 4 : 0.157 inch		**Oil hole** None : Without oil hole KHP : High pressure coolant

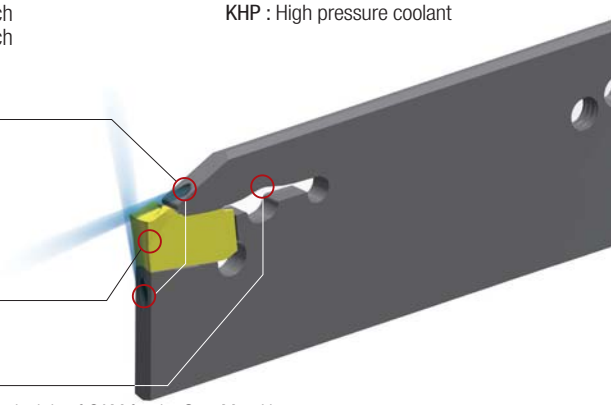
Features

- 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

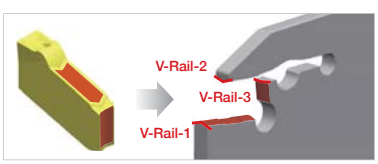
- Enhances cooling efficiency through direct coolant spraying to the cutting edge
- Longer tool life in HRSA cutting

(*Exclusive blades and blocks are required for high-pressure coolant)



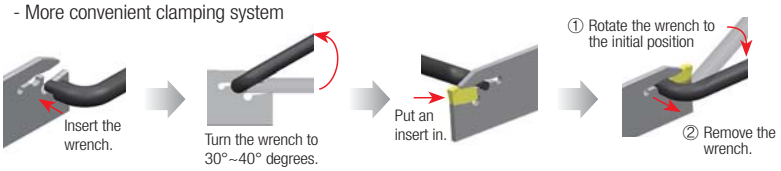
Three-way V-Rail

- 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

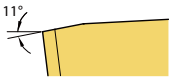
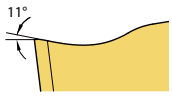
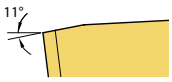


Exclusive wrench

- The exclusive wrench having the principle of CAM for the Saw Man-X
- More convenient clamping system



Chip breaker features

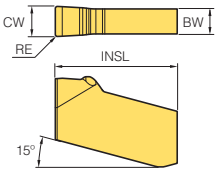
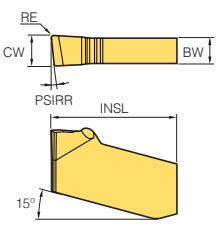
Type	Shape	Cutting edge	Features
N Chip breaker			• 1st recommended in steel and cast iron cutting • Negative land cutting edge • For interrupted and high feed cutting
S Chip breaker			• 1st recommended in Stainless steel and HRSA cutting • Sharp cutting edge • For high speed and continuous cutting
N 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

Tools	Cutting width (inch) / Cutting depth maximum (inch)	No. of edges	Machining				Features
			External	Internal	Facing	Parting	
Saw Man-X 	0.079 – 0.236 – 2.362	1	○			◎	• Various lead angles • Minimizing burr
Hexa Blade 	0.070 – 0.157 / 0.197	6	◎			○	• Precision type • High cost efficient cutting
TB 	0.049 – 0.236 / 0.256	3	◎			○	• Precision type • Optimal for automated machining
KGT 	0.059 – 0.315 / 1.102	2	◎	○	○	◎	• For various kinds of cutting • For general cutting range
K Notch 	0.030 – 0.248 / 0.256	2	◎				• Precision type • Strong clamping system

Applicable insert

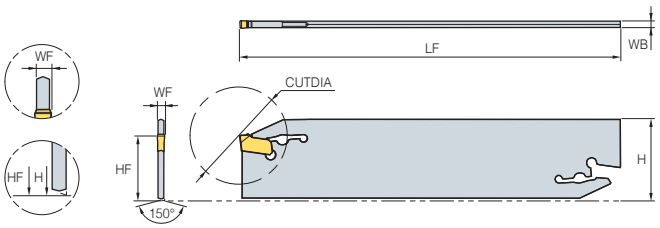
Picture	Designation		Coated			Dimensions (inch)								Configuration
			PC3035	PC5300	PC8110	SSC	CW	PSIRL	PSIRR	RE	BW	INSL	HAND	
	KSP	200-020-N	●	●	●	20	0.079	-	-	1/128		0.433	N	
		300-020-N	●	●	●	30	0.118	-	-	1/128	0.098	0.472	N	
		400-025-N	●	●	●	40	0.157	-	-	5/512	0.130	0.492	N	
		500-025-N	●	●		50	0.197	-	-	5/512	0.169	0.531	N	
		600-035-N	●	●		60	0.236	-	-	7/512	0.209	0.571	N	
	KSP	200-020-S		●	●	20	0.079	-	-	1/128	0.063	0.433	N	
		300-020-S		●	●	30	0.118	-	-	1/128	0.098	0.472	N	
		400-025-S		●	●	40	0.157	-	-	5/512	0.130	0.492	N	
		500-025-S		●	●	50	0.197	-	-	5/512	0.169	0.531	N	
		600-035-S		●		60	0.236	-	-	7/512	0.209	0.571	N	
	KSP	200R-6D-N	●	●	●	20	0.079	-	6	1/128	0.063	0.433	R	
		200L-6D-N				20	0.079	-	6	1/128	0.063	0.433	L	
		300R-6D-N	●	●	●	30	0.118	-	6	1/128	0.098	0.472	R	
		300L-6D-N				30	0.118	-	6	1/128	0.098	0.472	L	
		400R-4D-N	●	●	●	40	0.157	-	4	5/512	0.130	0.492	R	
		400L-4D-N				40	0.157	-	4	5/512	0.130	0.492	L	

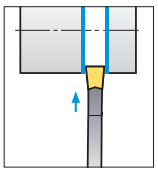
● : Stock item

KSPBA (Blade)



KSP





(inch)

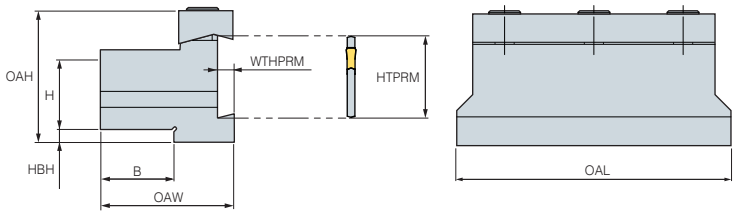
Designation		Cutting width (CW)	CUTDIA	H	WF	WB	HF	LF	HAND	Wrench
KSPBA	100-2	0.078	1.969	1	0.071	1/16	0.827	4.331	N	CW08
	125-2	0.078	2.047	1 1/4	0.071	1/16	0.984	5.906	N	
	100-3	0.118	2.835	1	0.106	3/32	0.827	4.331	N	
	125-3	0.118	4.724	1 1/4	0.106	3/32	0.984	5.906	N	
	100-4	0.157	2.835	1	0.142	1/8	0.827	4.331	N	
	125-4	0.157	4.724	1 1/4	0.142	1/8	0.984	5.906	N	
	100-5	0.197	3.150	1	0.177	5/32	0.827	4.331	N	CW10
	125-5	0.197	4.724	1 1/4	0.177	5/32	0.984	5.906	N	
	100-6	0.236	4.724	1	0.220	13/64	0.827	4.331	N	
	125-6	0.236	4.724	1 1/4	0.220	13/64	0.984	5.906	N	

Applicable inserts **C5**

SMBBA (Block)



KSPB□□□□
SPB□□□(-S)
KGTB□□□□(S)



(inch)

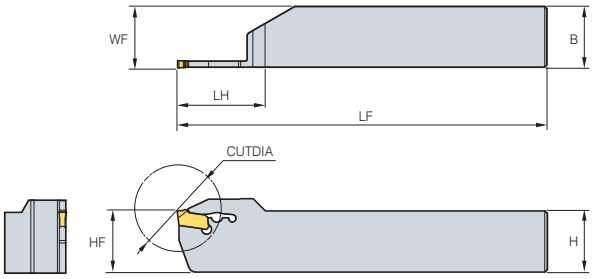
Designation		H	B	HTPRM	OAL	OAH	HBH	OAW	WTHPRM	Screw	Wrench
SMBBA	0610	5/8	5/8	1.024	3	1.496	0.472	0.181	0.157	BHA0620	HW50L
	0710	3/4	3/4	1.024	3 3/8	1.693	0.354	1.496	0.209		
	0712	3/4	3/4	1.260	4	1.969	0.512	1.496	0.209		
	1010	1	29/32	1.024	4 3/8	1.693	0.157	1.654	0.209		
	1012	1	29/32	1.260	4 3/8	1.969	0.315	1.654	0.209		
	1212	1 1/4	1 3/16	1.260	4 3/8	2.126	0.197	1.890	0.209		

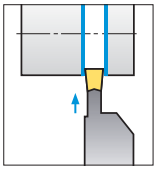
Applicable inserts **C5**

KSPHA (Shank-Self grip)



KSP





• R type holder

(inch)

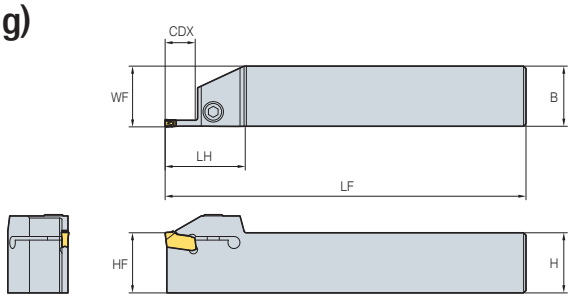
Designation		Cutting width (CW)	CUTDIA	LH	LF	WF	HF	B	H	HAND	Wrench
KSPHA	062R/L-2	0.078	1.811	1.220	4	0.637	5/8	5/8	5/8	R/L	CW08
	075R/L-2	0.078	1.889	1.260	4 3/4	0.795	3/4	3/4	3/4	R/L	
	100R/L-2	0.078	1.968	1.309	6	1.012	1	1	1	R/L	
	062R/L-3	0.118	2.047	1.339	4	0.637	5/8	5/8	5/8	R/L	
	075R/L-3	0.118	2.126	1.378	4 3/4	0.795	3/4	3/4	3/4	R/L	
	100R/L-3	0.118	2.205	1.417	6	1.012	1	1	1	R/L	
	075R/L-4	0.157	2.519	1.575	4 3/4	0.798	3/4	3/4	3/4	R/L	
	100R/L-4	0.157	2.598	1.614	6	1.016	1	1	1	R/L	
	075R/L-5	0.197	2.913	1.772	4 3/4	0.798	3/4	3/4	3/4	R/L	CW10
	100R/L-5	0.197	2.992	1.811	6	1.016	1	1	1	R/L	
	100R/L-6	0.236	2.991	1.811	6	1.016	1	1	1	R/L	

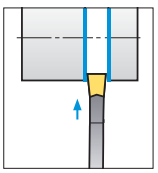
Applicable inserts **C5**

KSEHR/L (Shank-Screw clamping)



KSP





• R type holder

(inch)

Designation		Cutting width (CW)	H=(HF)	LH	LF	WF	CDX	B	HAND	Screw	Wrench
KSEHR/L	12-2-T12	0.078	0.75	1.102	5	0.795	0.472	0.75	R/L	MHA0512	HW40L
	16-2-T12	0.078	1	1.102	6	0.992	0.472	1	R/L		
	12-2-T20	0.078	0.75	1.417	5	0.795	0.787	0.75	R/L		
	16-2-T20	0.078	1	1.417	6	0.992	0.787	1	R/L		
	12-3-T12	0.118	0.75	1.102	5	0.797	0.472	0.75	R/L		
	16-3-T12	0.118	1	1.102	6	0.994	0.472	1	R/L		
	12-3-T25	0.118	0.75	1.614	5	0.797	0.984	0.75	R/L		
	16-3-T25	0.118	1	1.614	6	0.994	0.984	1	R/L		
	12-4-T15	0.157	0.75	1.417	5	0.803	0.59	0.75	R/L	BHA0616	HW50L
	16-4-T15	0.157	1	1.417	6	1	0.59	1	R/L		
	12-4-T25	0.157	0.75	1.614	5	0.803	0.984	0.75	R/L		
	16-4-T25	0.157	1	1.614	6	1	0.984	1	R/L		
	16-5-T25	0.197	1	1.614	6	1.004	0.984	1	R/L		
	16-6-T25	0.236	1	1.614	6	1.004	0.984	1	R/L		

Applicable inserts **C5**

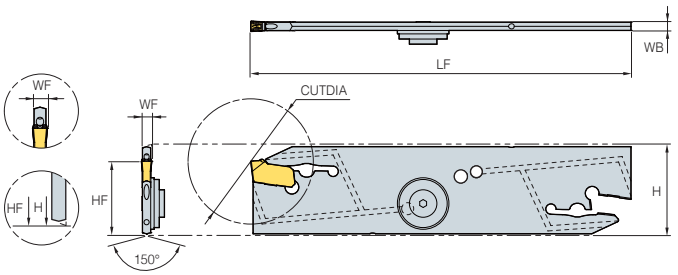
KSPBA-KHP (Blade)

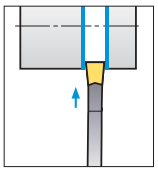
High pressure coolant

Recommended pressure: 70 bar



KSP





(inch)

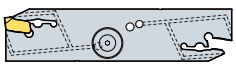
Designation		Cutting width (CW)	CUTDIA	H	WF	WB	LF	HF	HAND	Wrench	Copper washer	Sealing plate	Sealing screw
KSPBA	100-3-KHP	0.118	2.835	1	0.106	3/32	4.331	0.827	N	CW08	HPW1/8PF	FWASMH-D15-V4.5-T1.5	CBSA4-5
	100-4-KHP	0.157	2.835	1	0.142	1/8	4.331	0.827	N				

Applicable inserts **C5**

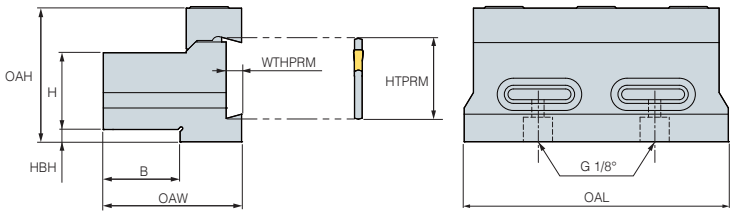
SMBBA-KHP (Block)

High pressure coolant

Recommended pressure: 70 bar



KSPB□□□□-KHP



(inch)

Designation		H	B	HTPRM	OAL	OAH	HBH	OAW	WTHPRM	Screw	Wrench	O-ring
SMBBA	0710-KHP	3/4	3/4	1.024	3.386	1.693	0.354	1.575	0.197	BHA0812	HW60L	NPA14
	1010-KHP	1	1	1.024	3.386	1.713	0.157	1.772	0.197			

Applicable inserts **C5**

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 — Saw Man Parting

300 — Cutting width
200 : 0.079 inch
300 : 0.118 inch
400 : 0.157 inch

R — Hand
R : Right handed
L : Left handed

• Shank

SPHA — Saw Man Parting Holder

3 — Cutting edge width
062 : 5/8 inch
075 : 3/4 inch
100 : 1 inch

R — Hand
R : Right-handed
L : Left-handed

3 — Cutting width
2 : 0.079 inch
3 : 0.118 inch
4 : 0.157 inch

• Blade

SPBA — Saw Man Parting Blade

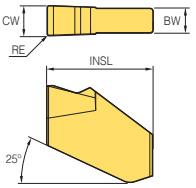
125 — Blade height
100 : 1 inch
125 : 1 1/4 inch

3 — Cutting width
2 : 0.079 inch
3 : 0.118 inch
4 : 0.157 inch

Recommended cutting conditions

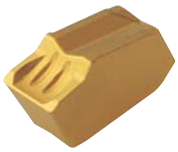
Workpiece	Cutting Speed (vc = sfm)						Feed (fn = ipr)				
	CVD			PVD		Uncoated	Cutting width (inch)				
	NC3120	NC3030	NC5330	PC8110	PC5300	ST30A	2	3	4	5	6
SM□□C	260~590		260~590		260~590		0.001~0.006	0.001~0.008	0.003~0.012	0.004~0.016	0.005~0.020
SCM	230~490	230~490	230~490		230~490		0.001~0.006	0.001~0.008	0.003~0.012	0.004~0.016	0.005~0.020
GC/GCD			160~330			160~330	0.002~0.005	0.004~0.010	0.004~0.012	0.004~0.014	0.004~0.016
STS			160~390	160~390	200~460		0.001~0.004	0.001~0.006	0.003~0.010	0.004~0.014	0.005~0.016
Non-ferrous metal (Al, Copper)						660~1480	0.002~0.004	0.002~0.008	0.002~0.012	0.002~0.012	0.002~0.014

Applicable insert

Application	Picture	Designation	Coated										Uncoated	Dimensions (inch)						Configuration
			NC3120	NC3225	NC3030	NCM325	NC5330	PC3035	PC8105	PC8110	PC5300	PC9030	ST30A	SSC	CW	RE	BW	INSL	HAND	
Parting tools		SP 160												16	0.063	0.006	0.051	0.307	N	
		180												18	0.071	0.006	0.055	0.366	N	
		200		●			●			●	●	●		20	0.087	0.008	0.069	0.366	N	
		200R			●							●		20	0.087	0.008	0.069	0.366	R	
		200L										●		20	0.087	0.008	0.069	0.366	L	
		300	●	●	●		●			●	●	●	●	30	0.122	0.008	0.100	0.445	N	
		300R		●	●					●	●			30	0.122	0.008	0.100	0.445	R	
		300L			●									30	0.122	0.008	0.100	0.445	L	
		400	●	●	●		●			●	●	●		40	0.161	0.01	0.136	0.445	N	
		400R			●					●				40	0.161	0.01	0.136	0.445	R	
		400L			●									40	0.161	0.01	0.136	0.445	L	
		500			●		●			●	●			50	0.201	0.012	0.171	0.449	N	
		500R												50	0.201	0.012	0.171	0.449	R	
		500L												50	0.201	0.012	0.171	0.449	L	
		600			●		●				●			60	0.252	0.014	0.219	0.449	N	
		600R												60	0.252	0.014	0.219	0.449	R	
		600L												60	0.252	0.014	0.219	0.449	L	
		800												80	0.315	0.016	0.283	0.554	N	
		900												90	0.378	0.018	0.331	0.554	N	

● : Stock item

SPBA/SPBA-S (Blade)



SP

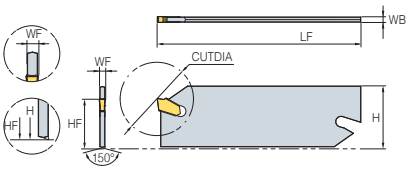


Fig. 1

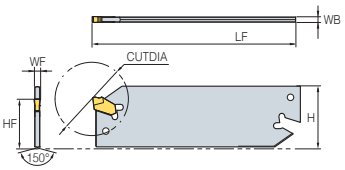
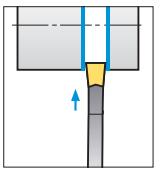


Fig. 2



(inch)

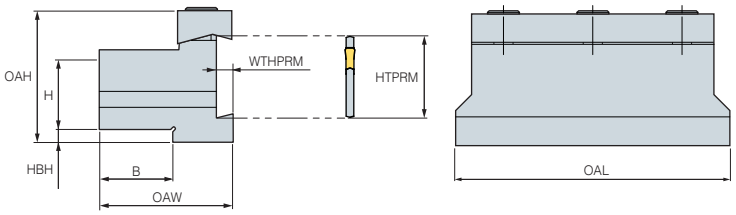
Designation		CUTDIA	H	WF	WB	HF	LF	HAND	Applicable inserts	Wrench		Fig.
SPBA	100-2	1.969	1	0.075	1/16	0.827	4 3/8	N	SP200, 200R/L	SW50L	-	1
	125-2	2.047	1 1/4	0.075	1/16	0.984	6	N	SP200, 200R/L			
	100-3	2.835	1	0.108	3/32	0.827	4 3/8	N	SP300, 300R/L			
	125-3	4.724	1 1/4	0.108	3/32	0.984	6	N	SP300, 300R/L			
	100-4	2.835	1	0.144	1/8	0.827	4 3/8	N	SP400, 400R/L			
	125-4	4.724	1 1/4	0.144	1/8	0.984	6	N	SP400, 400R/L			
	100-5	3.150	1	0.179	5/32	0.827	4 3/8	N	SP500, 500R/L			
	125-5	4.724	1 1/4	0.179	5/32	0.984	6	N	SP500, 500R/L			
	100-6	4.724	1	0.228	13/64	0.827	4 3/8	N	SP600, 600R/L			
	125-6	4.724	1 1/4	0.228	13/64	0.984	6	N	SP600, 600R/L			
SPBA-S	100-S-2	1.969	1	0.075	1/16	0.827	4 3/8	N	SP200, 200R/L	-	SW15S (Separately ordered)	2
	125-S-2	2.047	1 1/4	0.075	1/16	0.984	6	N	SP200, 200R/L			
	100-S-3	2.835	1	0.108	3/32	0.827	4 3/8	N	SP300, 300R/L			
	125-S-3	4.724	1 1/4	0.108	3/32	0.984	6	N	SP300, 300R/L			
	100-S-4	2.835	1	0.144	1/8	0.827	4 3/8	N	SP400, 400R/L			
	125-S-4	4.724	1 1/4	0.144	1/8	0.984	6	N	SP400, 400R/L			
	100-S-5	3.150	1	0.179	5/32	0.827	4 3/8	N	SP500, 500R/L			
	125-S-5	4.724	1 1/4	0.179	5/32	0.984	6	N	SP500, 500R/L			
	100-S-6	4.724	1	0.228	13/64	0.827	4 3/8	N	SP600, 600R/L			
	125-S-6	4.724	1 1/4	0.228	13/64	0.984	6	N	SP600, 600R/L			
	125-S-8	4.724	1.25	0.291	0.268	0.984	6	N	SP800			
	207-S-8	4.724	2.07	0.346	0.268	1.772	7.48	N	SP900			
	125-S-9	4.724	1.25	0.291	0.315	0.984	6	N	SP800			
	207-S-9	4.724	2.07	0.346	0.315	1.772	7.48	N	SP900			

Applicable inserts **C10**

SMBBA (Block)



KSPB□□□□
SPB□□□(-S)
KGTB□□□□(S)

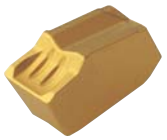


(inch)

Designation		H	B	HTPRM	OAL	OAH	HBH	OAW	WTHPRM	Screw	Wrench
SMBBA	610	5/8	5/8	1.024	3	1.496	0.472	0.181	0.157	BHA0620	HW50L
	710	3/4	3/4	1.024	3 3/8	1.693	0.354	1.496	0.209		
	712	3/4	3/4	1.260	4	1.969	0.512	1.496	0.209		
	1010	1	29/32	1.024	4 3/8	1.693	0.157	1.654	0.209		
	1012	1	29/32	1.260	4 3/8	1.969	0.315	1.654	0.209		
	1212	1 1/4	1 3/16	1.260	4 3/8	2.126	0.197	1.890	0.209		
	40207	1.575	1.614	2.07	5.118	3.189	0.866	2.3	0.315		

Applicable inserts **C10**

SPHA/SPHA-S (Holder)



SP

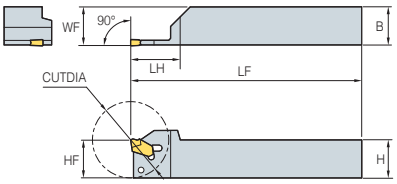


Fig. 1

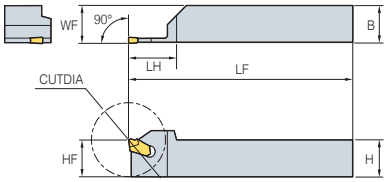
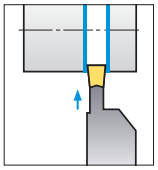


Fig. 2



• R type holder

(inch)

Designation		CUTDIA	LH	LF	WF	HF	B	H	HAND	Applicable inserts	Wrench		Fig.
SPHA	**062R-3**	1.260	0.937	4	0.637	5/8	5/8	5/8	R	SP300, 300R/L			
	075R-3	1.575	1.024	4 3/4	0.762	3/4	3/4	3/4	R	SP300, 300R/L			
	100R-3	1.969	1.220	6	1.012	1	1	1	R	SP300, 300R/L			
	075R-4	1.969	1.220	4 3/4	0.766	3/4	3/4	3/4	R	SP400, 400R/L	SW50L	-	1
	100R-4	2.362	1.417	6	1.016	1	1	1	R	SP400, 400R/L			
	075R-5	2.362	1.417	4 3/4	0.770	3/4	3/4	3/4	R	SP500, 500R/L			
	100R-5	2.756	1.614	6	1.020	1	1	1	R	SP500, 500R/L			
SPHA-S	**062R-S-3**	1.260	0.937	4	0.637	5/8	5/8	5/8	R	SP300, 300R/L			
	075R-S-3	1.575	1.024	4 3/4	0.726	3/4	3/4	3/4	R	SP300, 300R/L			
	100R-S-3	1.969	1.220	6	1.012	1	1	1	R	SP300, 300R/L			
	075R-S-4	1.969	1.220	4 3/4	0.766	3/4	3/4	3/4	R	SP400, 400R/L	-	SW15S (Separately ordered)	2
	100R-S-4	2.362	1.417	6	1.016	1	1	1	R	SP400, 400R/L			
	075R-S-5	2.362	1.417	4 3/4	0.770	3/4	3/4	3/4	R	SP500, 500R/L			
	100R-S-5	2.756	1.614	6	1.020	1	1	1	R	SP500, 500R/L			

Applicable inserts **C10**

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

NFTIHA	31	50	C	3
New Fine Tool Internal Holder	Minimum diameter	Shank diameter	Shank type S : Steel, C : Carbide	Overhang(LH/DMIN)

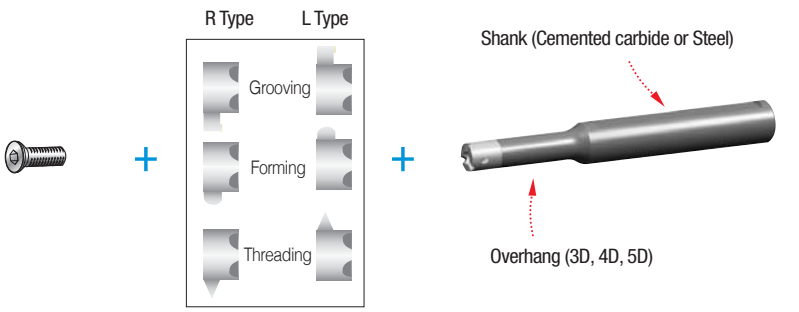
Recommended cutting conditions

Workpiece	Grade (PC130)	Cutting Conditions				
		Min. machining Dia. (DMIN)				
			Ø5/16	Ø7/16	Ø35/64	Ø5/8
Carbon steel	◎	vc (sfm)	230~390	230~390	230~390	230~390
		fn (ipr)	0.0004~0.0016	0.0004~0.0020	0.0008~0.0020	0.0008~0.0024
Alloy steel	◎	vc (sfm)	230~390	230~390	230~390	230~390
		fn (ipr)	0.0004~0.0008	0.0004~0.0016	0.0008~0.0016	0.0008~0.0020
Cast iron	○	vc (sfm)	200~330	200~330	200~330	200~330
		fn (ipr)	0.0004~0.0020	0.0004~0.0020	0.0008~0.0020	0.0008~0.0020
Non-ferrous alloy	○	vc (sfm)	330~590	330~590	330~590	330~590
		fn (ipr)	0.0008~0.0024	0.0008~0.0024	0.0008~0.0024	0.0008~0.0024

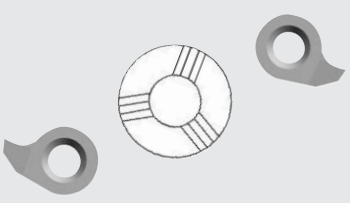
Note - In case of chattering, reduce the cutting speed and feed
- To find the optimal cutting conditions, advise to gradually increase from the lowest cutting condition of the above recommendation
- In case of the unilateral grooving depth over 0.004 inch, work to the step feed rate

Clamping system

Screw + **Insert** + **Holder**

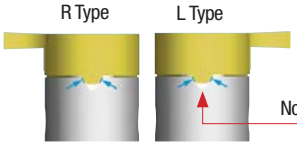


• Available R/L type insert with one holder

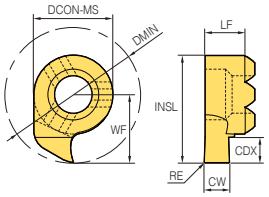


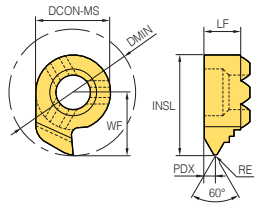


Stable clamping according to the tripod structure



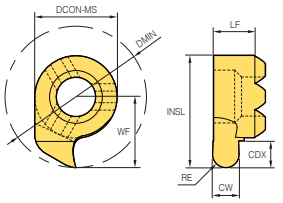
Insert

Application	Picture	Designation		Coated PC5300 R	Coated PC5300 L	Dimensions (inch) SSC	DMIN	CDX	CW	RE	LF	WF	INSL	DCON-MS	HAND	Configuration
Internal grooving		NFTG	08075R/L	●		5/16	5/16	0.051	0.030	-	0.124	0.189	0.305	0.232	R/L	
			08085R/L	●		5/16	5/16	0.051	0.033	-	0.124	0.189	0.305	0.232	R/L	
			08095R/L	●		5/16	5/16	0.051	0.037	-	0.124	0.189	0.305	0.232	R/L	
			08121R/L	●		5/16	5/16	0.051	0.048	-	0.124	0.189	0.305	0.232	R/L	
			08141R/L	●		5/16	5/16	0.051	0.056	-	0.124	0.189	0.305	0.232	R/L	
			08152R/L	●		5/16	5/16	0.051	0.060	-	0.124	0.189	0.305	0.232	R/L	
			08171R/L	●		5/16	5/16	0.051	0.067	-	0.124	0.189	0.305	0.232	R/L	
			08202R/L	●		5/16	5/16	0.051	0.080	-	0.124	0.189	0.305	0.232	R/L	
			11075R/L	●		7/16	7/16	0.071	0.030	1/128	0.154	0.264	0.421	0.315	R/L	
			11085R/L	●		7/16	7/16	0.071	0.033	1/128	0.154	0.264	0.421	0.315	R/L	
			11095R/L	●		7/16	7/16	0.071	0.037	1/128	0.154	0.264	0.421	0.315	R/L	
			11121R/L	●		7/16	7/16	0.102	0.048	1/128	0.154	0.264	0.421	0.315	R/L	
			11141R/L	●		7/16	7/16	0.102	0.056	1/128	0.154	0.264	0.421	0.315	R/L	
			11152R/L	●		7/16	7/16	0.102	0.060	1/128	0.154	0.264	0.421	0.315	R/L	
			11171R/L	●		7/16	7/16	0.102	0.067	1/128	0.154	0.264	0.421	0.315	R/L	
			11202R/L	●		7/16	7/16	0.102	0.080	1/128	0.154	0.264	0.421	0.315	R/L	
			11202R/L-02	●		7/16	7/16	0.102	0.080	1/128	0.154	0.264	0.421	0.315	R/L	
			11252R/L	●		7/16	7/16	0.102	0.099	1/128	0.154	0.264	0.421	0.315	R/L	
			11302R/L	●		7/16	7/16	0.102	0.119	1/128	0.154	0.264	0.421	0.315	R/L	
			14075R/L	●		35/64	35/64	0.071	0.030	-	0.191	0.354	0.531	0.354	R/L	
			14085R/L	●		35/64	35/64	0.071	0.033	-	0.191	0.354	0.531	0.354	R/L	
			14095R/L	●		35/64	35/64	0.071	0.037	-	0.191	0.354	0.531	0.354	R/L	
			14121R/L	●		35/64	35/64	0.169	0.048	-	0.191	0.354	0.531	0.354	R/L	
			14141R/L	●		35/64	35/64	0.169	0.056	-	0.191	0.354	0.531	0.354	R/L	
			14152R/L	●		35/64	35/64	0.169	0.060	-	0.191	0.354	0.531	0.354	R/L	
			14171R/L	●		35/64	35/64	0.169	0.067	-	0.191	0.354	0.531	0.354	R/L	
			14202R/L	●		35/64	35/64	0.169	0.080	-	0.191	0.354	0.531	0.354	R/L	
			14252R/L	●		35/64	35/64	0.169	0.099	-	0.191	0.354	0.531	0.354	R/L	
			14302R/L	●		35/64	35/64	0.169	0.119	-	0.191	0.354	0.531	0.354	R/L	
			16075R/L	●		5/8	5/8	0.071	0.030	-	0.189	0.402	0.618	0.433	R/L	
			16085R/L	●		5/8	5/8	0.071	0.033	-	0.189	0.402	0.618	0.433	R/L	
			16095R/L	●		5/8	5/8	0.071	0.037	-	0.189	0.402	0.618	0.433	R/L	
			16121R/L	●		5/8	5/8	0.181	0.048	-	0.189	0.402	0.618	0.433	R/L	
			16141R/L	●		5/8	5/8	0.181	0.056	-	0.189	0.402	0.618	0.433	R/L	
			16171R/L	●		5/8	5/8	0.181	0.067	-	0.189	0.402	0.618	0.433	R/L	
			16202R/L	●		5/8	5/8	0.181	0.080	-	0.189	0.402	0.618	0.433	R/L	
			16252R/L	●		5/8	5/8	0.181	0.099	-	0.189	0.402	0.618	0.433	R/L	
			16302R/L	●		5/8	5/8	0.181	0.119	-	0.189	0.402	0.618	0.433	R/L	
			16352R/L	●		5/8	5/8	0.181	0.139	-	0.189	0.402	0.618	0.433	R/L	
			16402R/L	●		5/8	5/8	0.181	0.158	-	0.189	0.402	0.618	0.433	R/L	

Application	Picture	Designation		Coated PC5300 R	Coated PC5300 L	Dimensions (inch) SSC	DMIN	PDX	PDY	LF	WF	INSL	DCON-MS	HAND	Configuration
Threading		NFTT	0805MR/L	●		5/16	5/16	0.039	0.189	0.124	0.189	0.305	0.236	R/L	
			0810MR/L	●		5/16	5/16	0.039	0.189	0.124	0.189	0.305	0.236	R/L	
			0815MR/L	●		5/16	5/16	0.047	0.189	0.124	0.189	0.305	0.236	R/L	
			1110MR/L	●		7/16	7/16	0.047	0.264	0.154	0.264	0.421	0.315	R/L	
			1115MR/L	●		7/16	7/16	0.047	0.264	0.154	0.264	0.421	0.315	R/L	
			1120MR/L	●		7/16	7/16	0.047	0.264	0.154	0.264	0.421	0.315	R/L	
			1125MR/L	●		7/16	7/16	0.047	0.264	0.154	0.264	0.421	0.315	R/L	
			1410MR/L			35/64	35/64	0.047	0.354	0.191	0.354	0.531	0.354	R/L	
			1415MR/L	●		35/64	35/64	0.047	0.354	0.191	0.354	0.531	0.354	R/L	
			1420MR/L			35/64	35/64	0.047	0.354	0.191	0.354	0.531	0.354	R/L	
			1425MR/L	●		35/64	35/64	0.047	0.354	0.191	0.354	0.531	0.354	R/L	
			1610MR/L			5/8	5/8	0.047	0.402	0.189	0.402	0.618	0.433	R/L	
			1615MR/L	●		5/8	5/8	0.047	0.402	0.189	0.402	0.618	0.433	R/L	
			1620MR/L	●		5/8	5/8	0.047	0.402	0.189	0.402	0.618	0.433	R/L	
			1625MR/L	●		5/8	5/8	0.047	0.402	0.189	0.402	0.618	0.433	R/L	
			1630MR/L			5/8	5/8	0.059	0.402	0.189	0.402	0.618	0.433	R/L	
			1635MR/L			5/8	5/8	0.063	0.402	0.189	0.402	0.618	0.433	R/L	
			1640MR/L	●		5/8	5/8	0.071	0.402	0.189	0.402	0.618	0.433	R/L	

● : Stock item

Applicable inserts

Application	Picture	Designation		Coated PC5300 R	Coated PC5300 L	Dimensions (inch) SSC	DMIN	CDX	CW	RE	LF	WF	INSL	DCON-MS	HAND	Configuration
Forming		NFTF	08082R/L	●		5/16	5/16	0.051	0.032	0.016	0.124	0.189	0.031	0.236	R/L	
			08122R/L	●		5/16	5/16	0.051	0.048	0.024	0.124	0.189	0.031	0.236	R/L	
			08182R/L	●		5/16	5/16	0.051	0.072	0.036	0.124	0.189	0.031	0.236	R/L	
			11082R/L	●		7/16	7/16	0.102	0.032	0.016	0.154	0.264	0.421	0.315	R/L	
			11122R/L			7/16	7/16	0.102	0.048	0.024	0.154	0.264	0.421	0.315	R/L	
			11182R/L	●		7/16	7/16	0.102	0.072	0.036	0.154	0.264	0.421	0.315	R/L	
			11202R/L	●		7/16	7/16	0.102	0.080	0.040	0.154	0.264	0.421	0.315	R/L	
			11302R/L	●		7/16	7/16	0.102	0.119	0.059	0.154	0.264	0.421	0.315	R/L	
			14122R/L	●		35/64	35/64	0.169	0.048	0.024	0.191	0.354	0.531	0.354	R/L	
			14182R/L	●		35/64	35/64	0.169	0.072	0.036	0.191	0.354	0.531	0.354	R/L	
			14202R/L	●		35/64	35/64	0.169	0.080	0.040	0.191	0.354	0.531	0.354	R/L	
			14222R/L	●		35/64	35/64	0.169	0.087	0.044	0.191	0.354	0.531	0.354	R/L	
			14302R/L	●		35/64	35/64	0.169	0.119	0.059	0.191	0.354	0.531	0.354	R/L	
			16182R/L	●		5/8	5/8	0.181	0.072	0.036	0.189	0.402	0.618	0.433	R/L	
			16222R/L	●		5/8	5/8	0.181	0.087	0.044	0.189	0.402	0.618	0.433	R/L	
			16302R/L	●		5/8	5/8	0.181	0.119	0.059	0.189	0.402	0.618	0.433	R/L	
			16402R/L	●		5/8	5/8	0.181	0.158	0.079	0.189	0.402	0.618	0.433	R/L	

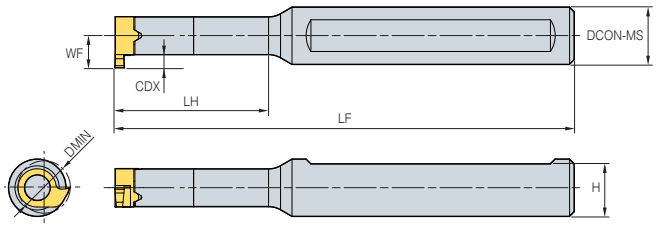
● : Stock item

NFTIHA

- For NFTIH14 type



NFTF
NFTT
NFTG



(inch)

Designation		CDX	DMIN	LH	LF	WF	H	DCON-MS	HAND	Applicable inserts (NFTG : Grooving, NFTT : Threading, NFTF : Forming)	Screw	Wrench
NFTIHA	3125C-2	0.0394	5/16	0.528	2.559	0.189	0.171	1/4	N	NFTG08□□□R/L NFTT08□□□R/L NFTF08□□□R/L	PTKA02508	TW08P
	3150C-2	0.0394	5/16	0.591	2.756	0.189	0.394	1/2	N			
	3150C-3	0.0394	5/16	0.906	3.150	0.189	0.394	1/2	N			
	3150S-3	0.0394	5/16	0.906	3.150	0.189	0.394	1/2	N			
	3150C-4	0.0394	5/16	1.220	3.453	0.189	0.421	1/2	N			
	3150C-5	0.0394	5/16	1.535	3.947	0.189	0.394	1/2	N			
	4330C-2	0.0906	7/16	0.650	3.150	0.264	0.276	5/16	N	NFTG11□□□R/L NFTT11□□□R/L NFTF11□□□R/L	PTKA03510	TW15P
	4350C-2	0.0906	7/16	1.024	2.953	0.264	0.433	1/2	N			
	4350C-3	0.0906	7/16	1.260	3.740	0.264	0.433	1/2	N			
	4350S-3	0.0906	7/16	1.260	3.740	0.264	0.433	1/2	N			
	4350C-4	0.0906	7/16	1.732	4.331	0.264	0.461	1/2	N			
	4350C-5	0.0906	7/16	2.126	4.724	0.264	0.433	1/2	N			
	5550C-0	0.1575	35/64	0.787	2.953	0.354	0.433	1/2	N	NFTG14□□□R/L NFTT14□□□R/L NFTF14□□□R/L	PTKA0412	TW15P
	5562C-0	0.1575	35/64	0.787	2.953	0.354	0.591	5/8	N			
	5550C-1	0.1575	35/64	1.339	3.937	0.354	0.433	1/2	N			
	5562C-1	0.1575	35/64	1.339	3.937	0.354	0.591	5/8	N			
	5550C-2	0.1575	35/64	1.772	4.331	0.354	0.433	1/2	N			
	5562C-2	0.1575	35/64	1.772	4.331	0.354	0.591	5/8	N			
	5550C-3	0.1575	35/64	2.638	5.118	0.354	0.433	1/2	N			
	5562C-3	0.1575	35/64	2.520	5.118	0.354	0.591	0.472	N			
	6350C-3	0.1693	5/8	1.850	5.118	0.402	0.461	1/2	N	NFTG16□□□R/L NFTT16□□□R/L NFTF16□□□R/L	PTKA0512	TW20P
	6350S-3	0.1693	5/8	1.850	5.118	0.402	0.433	1/2	N			
	6350C-4	0.1693	5/8	2.480	5.118	0.402	0.461	1/2	N			
	6350C-5	0.1693	5/8	3.110	5.906	0.402	0.433	1/2	N			
	6362C-3	0.1693	5/8	1.890	5.118	0.402	0.591	5/8	N			
	6362C-4	0.1693	5/8	2.520	5.118	0.402	0.591	5/8	N			
	6362C-5	0.1693	5/8	3.150	5.906	0.402	0.591	5/8	N			

Applicable inserts C14 ~ C15

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	125	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** 125 : 0.125 inch	**Hand** L : Left-handed R : Right-handed

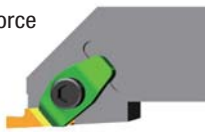
• Holder

KN	S	R	16	3	C
K-Notch	**Clamping position** S : Side	**Hand** L : Left-handed R : Right-handed	**Shank size** (Height x Width) 06: 0.375 inch 12: 0.75 inch 08 : 0.5 inch 16: 1 inch 10: 0.625 inch 20: 1.25 inch	**Insert length** 2, 3, 4	**Holder length** B: 4.5 inch C: 5.0 inch D: 6.0 inch V: 3.5 inch None: 2.5 inch

Features of holder

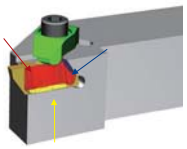
Clamp

- Rigid binding force relative to the clamping force
- User-oriented convenient shape


Clamped view

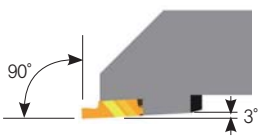
Insert clamping

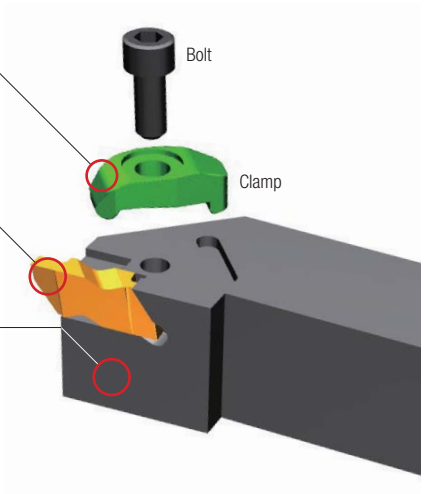
- Provides excellent clamping stability due to the 3-face (bottom, side, and rear face) binding


3-face clamping

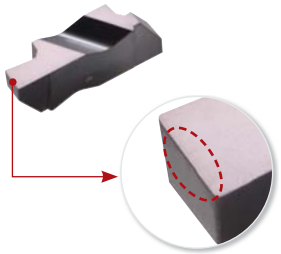
Relief angle

- The relief angle of a flank surface when clamping an insert: 3°





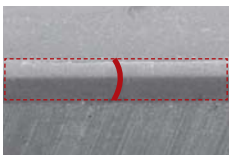
Features of insert



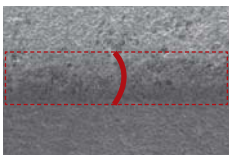
[Edge preparation]

High-quality edge preparation

- Cutting edges in uniform quality
- Long tool life



[K-Notch]



[Competitor]

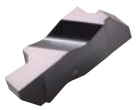
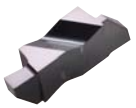
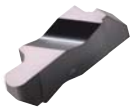
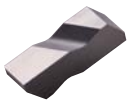
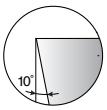
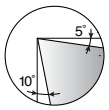
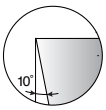
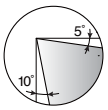
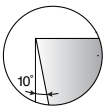
Mirror-like rake surface

- Improved resistance to welding and chipping
- Improved surface finish of workpieces



[K-Notch]

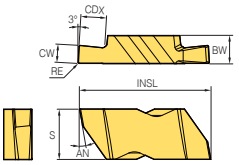
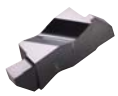
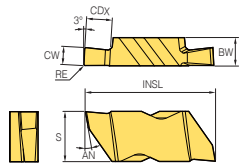
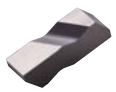
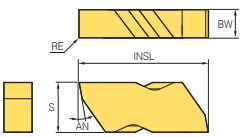
Recommended feed per insert type

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 (ipr)	P	0.004 ~ 0.011	0.003 ~ 0.010	0.004 ~ 0.011	0.003 - 0.010	-
	M	0.004 ~ 0.010	0.003 ~ 0.010	0.004 ~ 0.010	0.003 - 0.010	-
	K	0.004 ~ 0.011	0.003 ~ 0.010	0.004 ~ 0.011	0.003 - 0.010	-
	N	0.001 ~ 0.012	0.001 ~ 0.012	0.001 ~ 0.012	0.001 - 0.012	-
	S	0.002 ~ 0.006	0.002 ~ 0.006	0.002 ~ 0.006	0.002 - 0.006	-

Recommended cutting speed per grade

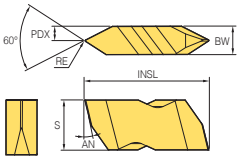
Workpiece		Grade	Recommended cutting speed, vc (sfm) 164 328 656 984 1969
P	Steel	PC5300	262 ~ 656
	Alloy steel	PC5300	197 ~ 525
M	Stainless steel	PC5300	262 ~ 427
		PC8110	262 ~ 525
K	Cast iron	PC5300	295 ~ 656
N	Non-ferrous metal	PC5300	525 ~ 1969
S	Heat-resistant alloy	PC8110	114 ~ 213

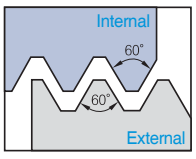
Applicable inserts

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	0.11	0.059	0.0075	0.059	0.513	0.219	10	R	
				200R				20	0.11	0.079	0.0075	0.079	0.513	0.219	10	R	
				250R				20	0.11	0.098	0.0075	0.098	0.513	0.219	10	R	
				300R				20	0.11	0.118	0.0075	0.118	0.513	0.219	10	R	
			3M	150R	●			30	0.11	0.059	0.0075	0.059	0.894	0.344	10	R	
				200R	●			30	0.11	0.079	0.0075	0.079	0.894	0.344	10	R	
				250R	●	●		30	0.15	0.098	0.0075	0.098	0.894	0.344	10	R	
				300R	●	●		30	0.15	0.118	0.0075	0.118	0.894	0.344	10	R	
				400R	●			30	0.15	0.1557	0.0075	0.157	0.894	0.344	10	R	
			4M	500R				40	0.25	0.197	0.0079	0.197	1.128	0.453	10	R	
				600R				40	0.25	0.236	0.0079	0.236	1.128	0.453	10	R	
C/B Ground		KNGP	2M	150R				20	0.11	0.059	0.0075	0.059	0.513	0.219	10	R	
				200R				20	0.11	0.079	0.0075	0.079	0.513	0.219	10	R	
				250R				20	0.11	0.098	0.0075	0.098	0.513	0.219	10	R	
				300R				20	0.11	0.118	0.0075	0.118	0.513	0.219	10	R	
			3M	150R	●			30	0.11	0.059	0.0075	0.059	0.894	0.344	10	R	
				200R	●	●		30	0.11	0.079	0.0075	0.079	0.894	0.344	10	R	
				250R	●	●		30	0.15	0.098	0.0075	0.098	0.894	0.344	10	R	
				300R	●			30	0.15	0.118	0.0075	0.118	0.894	0.344	10	R	
				400R	●			30	0.15	0.157	0.0075	0.157	0.894	0.344	10	R	
			4M	500R				40	0.25	0.197	0.0079	0.197	1.128	0.453	10	R	
				600R				40	0.25	0.236	0.0079	0.236	1.128	0.453	10	R	
Blank		KNB	2R					20	-	0.150	-	0.150	0.513	0.219	10	R	
			3R					30	-	0.195	-	0.116	0.894	0.344	10	R	
			4R					40	-	0.255	-	0.255	1.128	0.453	10	R	

● : Stock item

Applicable inserts (Threading)

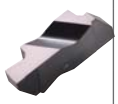
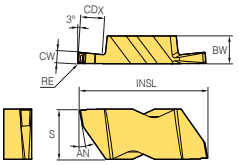
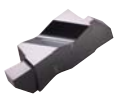
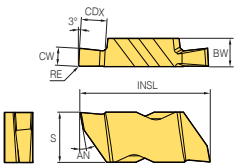
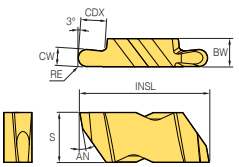
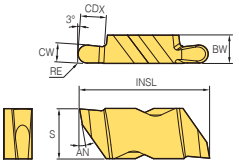
Application	Picture	Designation			Coated PC5300	Coated PC8110	SSC	PDX	RE	S	INSL	BW	AN	HAND	Pitch (External) mm	Pitch (External) tpi	Configuration
Partial Profiling 60°		KNT	2R				20	0.075	0.004	0.219	0.513	0.151	13.5	R	0.70~3.00	8~36	
			3R				30	0.098	0.007	0.344	0.894	0.195	13.5	R	1.25~4.00	6~20	
			4R				40	0.128	0.007	0.453	1.128	0.255	13.5	R	1.25~6.25	4~20	



Partial Profiling 60°

● : Stock item

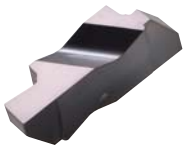
Applicable inserts

Application	Picture	Designation	Coated		Dimensions (inch)									Configuration
			PC5300	PC8110	SSC	CDX	CW	RE	S	BW	INSL	AN	HAND	
Flat Top		KNG 2031R			20	0.05	0.031	0.0035	0.219	0.151	0.513	10	R	
		2041R			20	0.05	0.041	0.0035	0.219	0.151	0.513	10	R	
		2047R			20	0.05	0.047	0.0035	0.219	0.151	0.513	10	R	
		2058R			20	0.05	0.058	0.0075	0.219	0.151	0.513	10	R	
		2062R			20	0.11	0.062	0.0075	0.219	0.151	0.513	10	R	
		2094R			20	0.11	0.094	0.0075	0.219	0.151	0.513	10	R	
		2125R			20	0.11	0.125	0.0075	0.219	0.151	0.513	10	R	
		3047R			30	0.075	0.047	0.0075	0.344	0.195	0.894	10	R	
		3062R	●	●	30	0.094	0.062	0.0075	0.344	0.195	0.894	10	R	
		3072R			30	0.094	0.072	0.0075	0.344	0.195	0.894	10	R	
		3078R	●		30	0.094	0.078	0.0075	0.344	0.195	0.894	10	R	
		3088R			30	0.094	0.088	0.0075	0.344	0.195	0.894	10	R	
		3094R			30	0.15	0.094	0.0075	0.344	0.195	0.894	10	R	
		3097R	●		30	0.15	0.091	0.0125	0.344	0.195	0.894	10	R	
		3105R			30	0.15	0.105	0.0075	0.344	0.195	0.894	10	R	
		3110R			30	0.15	0.110	0.0125	0.344	0.195	0.894	10	R	
		3122R			30	0.15	0.122	0.0075	0.344	0.195	0.894	10	R	
		3125R	●	●	30	0.15	0.125	0.0075	0.344	0.195	0.894	10	R	
		3142R			30	0.15	0.142	0.0125	0.344	0.195	0.894	10	R	
		3156R			30	0.15	0.156	0.0075	0.344	0.195	0.894	10	R	
		3178R			30	0.15	0.178	0.0075	0.344	0.195	0.894	10	R	
		3185R			30	0.15	0.185	0.0225	0.344	0.195	0.894	10	R	
		3189R		●	30	0.15	0.189	0.0225	0.344	0.195	0.894	10	R	
		4125R			40	0.15	0.125	0.0075	0.453	0.255	1.128	10	R	
		4189R			40	0.25	0.189	0.0225	0.453	0.255	1.128	10	R	
		4213R			40	0.25	0.213	0.0075	0.453	0.255	1.128	10	R	
		4219R			40	0.25	0.219	0.0225	0.453	0.255	1.128	10	R	
		4250R			40	0.25	0.250	0.0225	0.453	0.255	1.128	10	R	
C/B Ground		KNGP 2031R			20	0.05	0.031	0.0035	0.219	0.151	0.513	10	R	
		2062R			20	0.11	0.062	0.0075	0.219	0.151	0.513	10	R	
		2125R			20	0.11	0.125	0.0075	0.219	0.151	0.513	10	R	
		3088R			30	0.094	0.088	0.0075	0.344	0.195	0.894	10	R	
		3125R	●	●	30	0.15	0.125	0.0075	0.344	0.195	0.894	10	R	
		3156R			30	0.15	0.156	0.0075	0.344	0.195	0.894	10	R	
		3189R			30	0.15	0.189	0.0225	0.344	0.195	0.894	10	R	
		4189R			40	0.25	0.189	0.0225	0.453	0.255	1.128	10	R	
		4250R			40	0.25	0.250	0.0225	0.453	0.255	1.128	10	R	
Round Flat Top		KNR 2031R			20	0.11	0.062	0.031	0.219	0.151	0.513	10	R	
		2047R			20	0.11	0.094	0.047	0.219	0.151	0.513	10	R	
		3031R	●		30	0.094	0.062	0.031	0.344	0.195	0.894	10	R	
		3047R		●	30	0.15	0.094	0.047	0.344	0.195	0.894	10	R	
		3062R		●	30	0.15	0.125	0.0625	0.344	0.195	0.894	10	R	
		3078R			30	0.15	0.156	0.078	0.344	0.195	0.894	10	R	
		3094R			30	0.15	0.188	0.094	0.344	0.195	0.894	10	R	
		4125R			40	0.25	0.250	0.125	0.453	0.255	1.128	10	R	
Round C/B Ground		KNRP 2031R			20	0.11	0.062	0.031	0.219	0.151	0.513	10	R	
		2047R			20	0.11	0.094	0.047	0.219	0.151	0.513	10	R	
		3031R	●		30	0.094	0.062	0.031	0.344	0.195	0.894	10	R	
		3047R	●	●	30	0.15	0.094	0.047	0.344	0.195	0.894	10	R	
		3062R	●	●	30	0.15	0.125	0.0625	0.344	0.195	0.894	10	R	
		3078R		●	30	0.15	0.156	0.078	0.344	0.195	0.894	10	R	
		3094R		●	30	0.15	0.188	0.094	0.344	0.195	0.894	10	R	
		4125R			40	0.25	0.250	0.125	0.453	0.255	1.128	10	R	

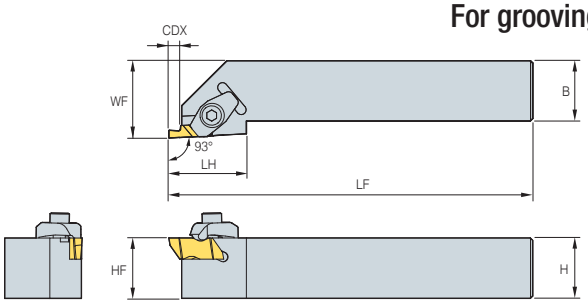
● : Stock item

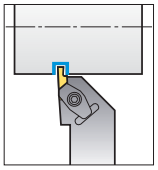
KNSR

For grooving, Profiling machining



KNG KNGP KNT
KNR KNRP KNB





93°
• R type holder

(inch)

Designation		CDX	LH	LF	WF	B	H	HF	HAND	Applicable inserts	Clamp	Screw	Wrench
KNSR	062	0.110	0.75	2.5	0.562	0.375	0.375	0.375	R	KNG2□ KNGP2□ KNR2□ KNB2R KNT2R	CM74	MHB3010	HW25L
	082V	0.110	0.75	3.5	0.75	0.5	0.5	0.5	R				
	103B	0.150	0.75	4.5	0.875	0.625	0.625	0.625	R				
	122B	0.110	0.75	4.5	1	0.75	0.75	0.75	R				
	162C	0.110	0.75	5	1.25	1	1	1	R				
	123B	0.150	1.25	4.5	1	0.75	0.75	0.75	R	KNG3□ KNGP3□ KNR3□ KNRP3□ KNB3R KNT3R	CM72LP	MHA0512	HW40L
	163C	0.150	1.25	5	1.25	1	1	1	R				
	163D	0.150	1.25	6	1.25	1	1	1	R				
	203D	0.150	1.25	6	1.5	1.25	1.25	1.25	R				
	164D	0.250	1.38	6	1.25	1	1	1	R	KNG4□ KNGP4□ KNR4□ KNB4R KNT4R	CM72LP	MHA0512	HW40L
	204D	0.250	1.38	5	1.5	1.25	1.25	1.25	R				

Applicable inserts **C18 ~ C19**

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	-	04	-	T
KORLOY Grooving	**Tolerance** M : Pressed class G : Ground class	**Hand** N : Neutral R : Right L : Left I: Internal	**Width of cutting edge** 300 : 0.118 inch		**Nose R** 04 : 1/64 inch		**Chip breaker** Flat : L, TL, T, R, B, A Lead angle : LP, RP

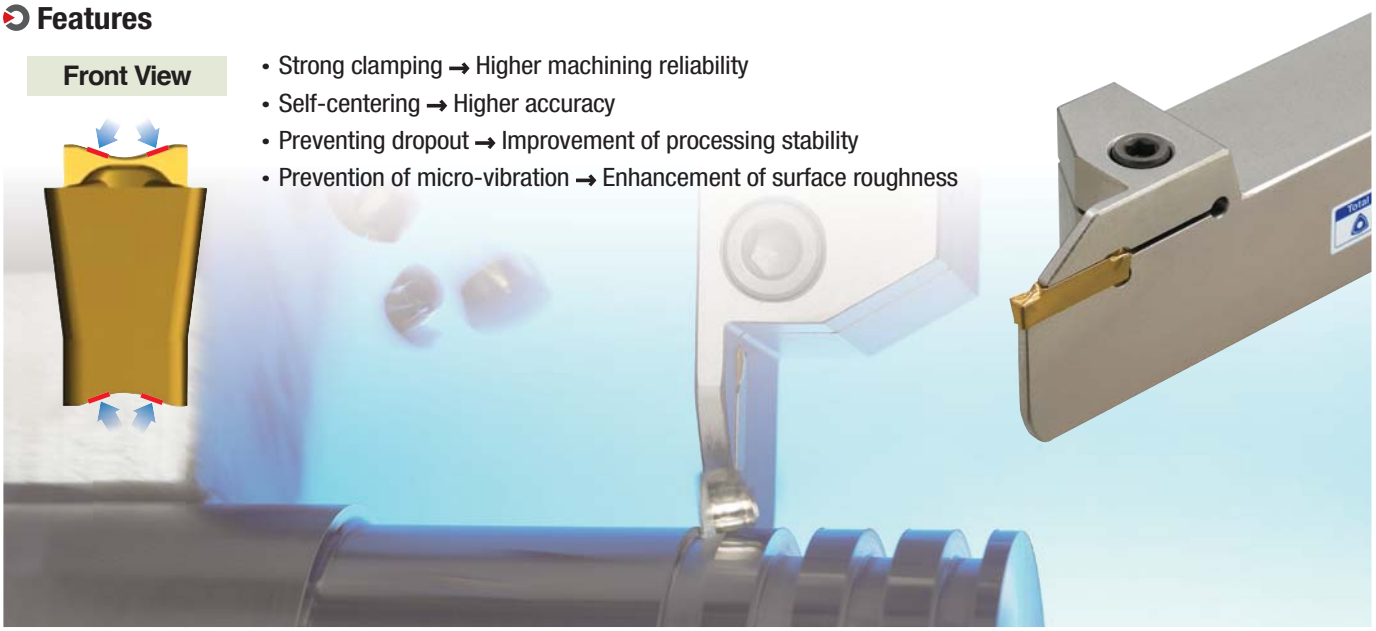
• Holder

KG	E	H	R/L	16	-	3	T20
KORLOY Grooving	**Working style** E : External Process I : Internal Process F : Facing Process	**Holder style** H : Horizontal V : Vertical U : Under cut	**Hand** R : Right-handed L : Left-handed	**Shank height, Shank width** 16 : 1 inch		**Width of insert cutting edge** 3 : 0.118 inch	**Max. depth of cut** T20 : 0.787 inch

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

◎: 1st recommendation ○: 2nd recommendation

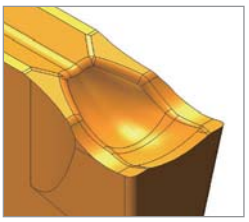
Type	Chip breaker	Cross section type	Recommended workpiece					Recommended cutting											
								External					Internal				Facing		Special
			P	M	K	N	S	Grooving	Parting	Turning	Copying	Relief	Grooving	Turning	Copying	Relief	Grooving	Turning	
KGMN	L		◎	○				◎	○				○				○		
	TL		○	○			◎	◎	○	○			○	○			◎	○	
	T		◎	○	○			◎	○	◎			○	○			◎	◎	
	R		◎	○	◎			◎	○				○				○		
KGGN	B		◎		○			◎											◎
	A					◎		◎	○	○			○						
	R		◎	○	◎			◎	○				○				○		
KGMI	T		◎	○	○								◎	◎					
KGMR/L	LP		◎	○					◎										
	RP		◎		○				◎										
KRMN	C		◎	○	○						◎	◎			○	○			
KRGN	A					◎					◎	◎			○	○			
	CM		○	○			◎				◎	◎			○	○			
KRMI	C		◎	○	○										◎	◎			

Features of chip breaker

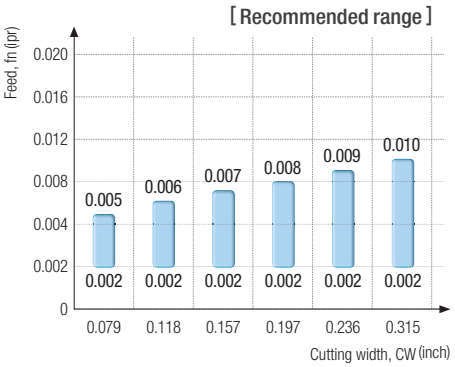
◎: 1st recommendation ○: 2nd recommendation

L Light grooving





- For grooving and parting
- Concave cutting edge
- Concave rake surface
- Low hardness workpiece
- Small diameter part cutting

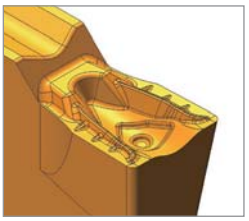


Recommended cutting												
External					Internal				Facing		Special
Grooving	Parting	Turning	Copying	Relief	Grooving	Turning	Copying	Relief	Grooving	Turning	
◎	○				○				○		

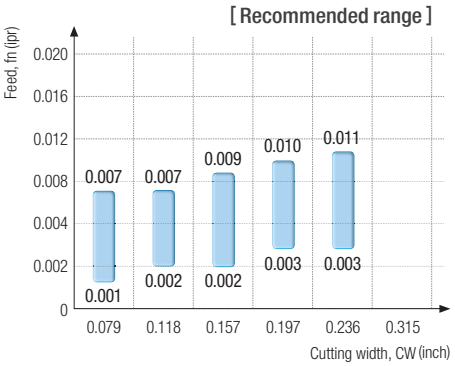
Recommended workpiece				
P	M	K	N	S
◎	○			

TL Turning and grooving in Low feed





- For grooving, cutting and parting
- Concave cutting edge
- Concave bump
- For HRSA cutting
- Good chip control

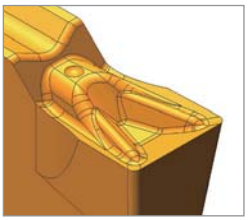


Recommended cutting												
External					Internal				Facing		Special
Grooving	Parting	Turning	Copying	Relief	Grooving	Turning	Copying	Relief	Grooving	Turning	
◎	○	○			○	○			◎	○	

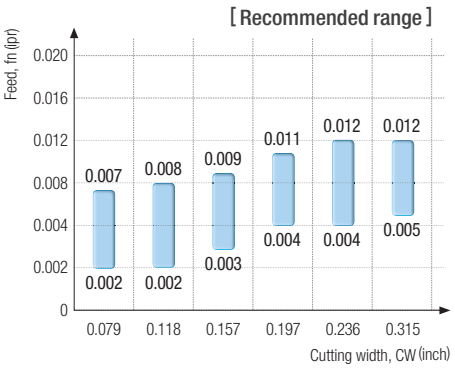
Recommended workpiece				
P	M	K	N	S
○	○			◎

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	
◎	○	◎			○	○			◎	◎	

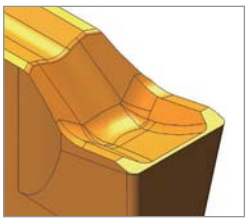
Recommended workpiece				
P	M	K	N	S
◎	○	○		

Features of Chip breaker

◎: 1st recommendation ○: 2nd recommendation

R Rough grooving

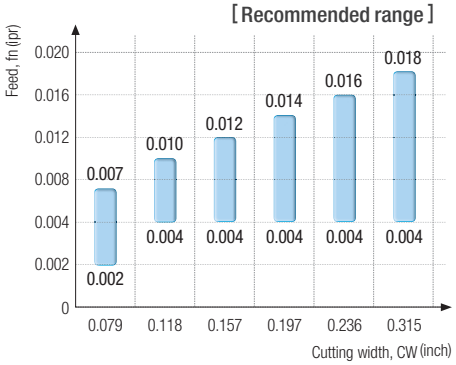




- For grooving and parting
- Straight cutting edge
- Hard cutting edge
- High hardness workpiece
- For high feed cutting

Recommended cutting											
External					Internal				Facing		Special
Grooving	Parting	Turning	Copying	Relief	Grooving	Turning	Copying	Relief	Grooving	Turning	
◎	○				○				○		

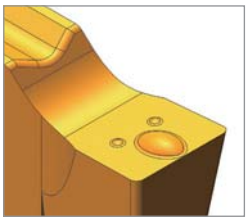
[Recommended range]



Recommended workpiece				
P	M	K	N	S
◎	○	◎		

B Blank for precision grooving

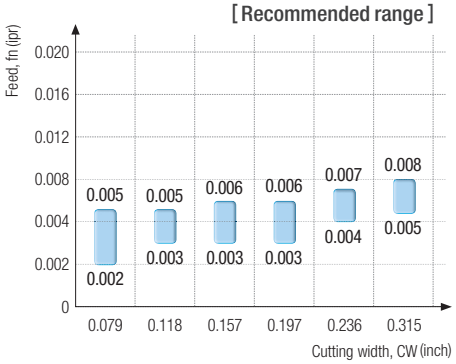




- For grooving
- Straight cutting edge
- Special shape
- Good surface finish of workpiece

Recommended cutting											
External					Internal				Facing		Special
Grooving	Parting	Turning	Copying	Relief	Grooving	Turning	Copying	Relief	Grooving	Turning	
◎											◎

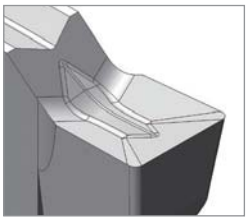
[Recommended range]



Recommended workpiece				
P	M	K	N	S
◎		○		

A Aluminum grooving

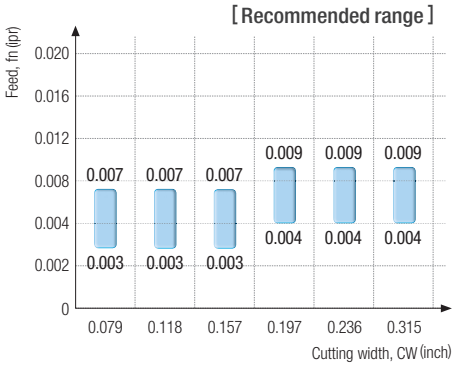




- For grooving, parting and turning
- Straight cutting edge
- Aluminum workpiece
- Good surface finish of workpiece

Recommended cutting											
External					Internal				Facing		Special
Grooving	Parting	Turning	Copying	Relief	Grooving	Turning	Copying	Relief	Grooving	Turning	
◎	○	○			○						

[Recommended range]



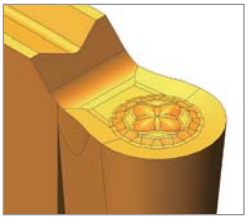
Recommended workpiece				
P	M	K	N	S
			◎	

Features of Chip breaker

◎: 1st recommendation ○: 2nd recommendation

CM Copying and relief in Medium feed

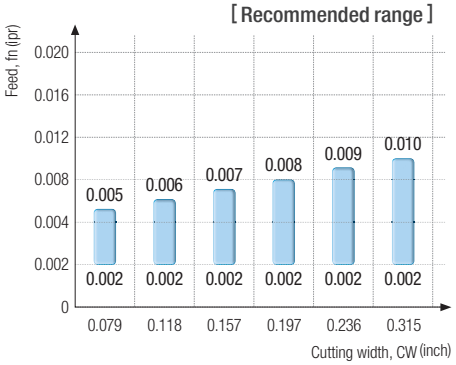




- For copying and relief
- Round cutting edge
- Bump on rake surface
- For HRSA cutting
- Good surface finish of workpiece

Recommended cutting											
External					Internal				Facing		Special
Grooving	Parting	Turning	Copying	Relief	Grooving	Turning	Copying	Relief	Grooving	Turning	
			◎	◎			○	○			

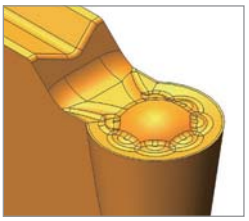
[Recommended range]



Recommended workpiece				
P	M	K	N	S
○	○			◎

C Copying and relief

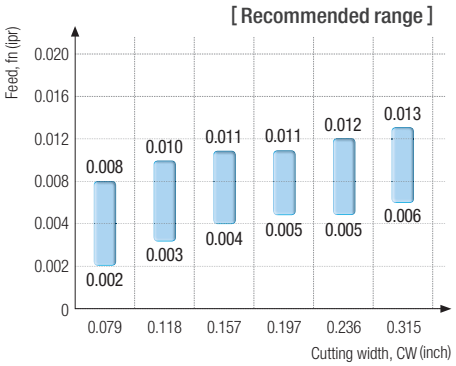




- For copying and relief
- Round cutting edge
- Bump on rake surface
- Good surface finish of workpiece

Recommended cutting											
External					Internal				Facing		Special
Grooving	Parting	Turning	Copying	Relief	Grooving	Turning	Copying	Relief	Grooving	Turning	
			◎	◎			○	○			

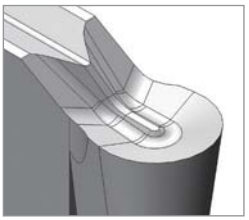
[Recommended range]



Recommended workpiece				
P	M	K	N	S
◎	○	○		

A Aluminum grooving

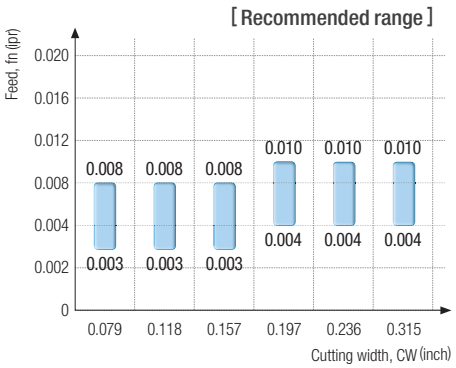




- For copying and relief
- Round cutting edge
- Aluminum workpiece
- Good surface finish of workpiece

Recommended cutting											
External					Internal				Facing		Special
Grooving	Parting	Turning	Copying	Relief	Grooving	Turning	Copying	Relief	Grooving	Turning	
			◎	◎			○	○			

[Recommended range]



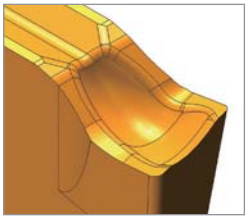
Recommended workpiece				
P	M	K	N	S
			◎	

Features of chip breaker

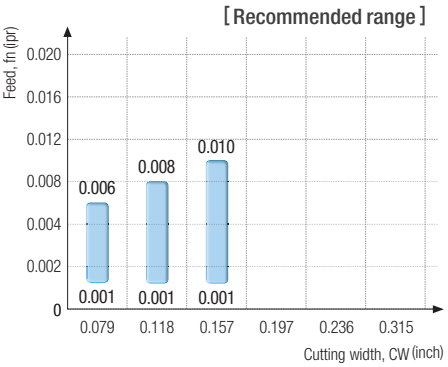
◎: 1st recommendation ○: 2nd recommendation

LP Light Parting





- For Parting
- Lead angle cutting edge
- Concave rake surface
- Low hardness workpiece
- Small diameter part cutting

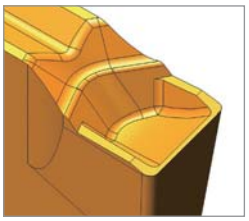


Recommended cutting											
External					Internal				Facing		Special
Grooving	Parting	Turning	Copying	Relief	Grooving	Turning	Copying	Relief	Grooving	Turning	
	◎										

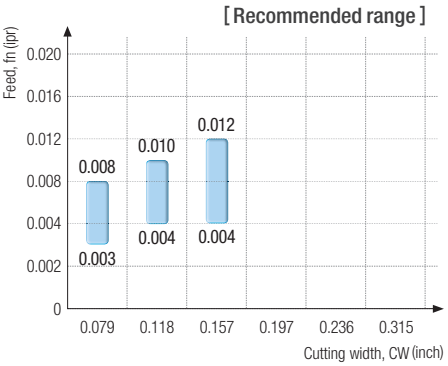
Recommended workpiece				
P	M	K	N	S
◎	○			

RP Rough Parting





- For Parting
- Lead angle cutting edge
- Hard cutting edge
- High hardness workpiece
- Good for high feed cutting



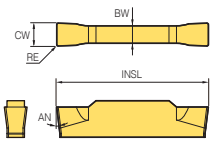
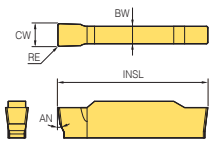
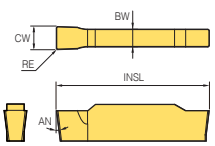
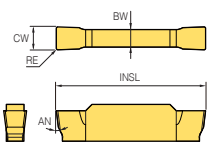
Recommended cutting											
External					Internal				Facing		Special
Grooving	Parting	Turning	Copying	Relief	Grooving	Turning	Copying	Relief	Grooving	Turning	
	◎										

Recommended workpiece				
P	M	K	N	S
◎		○		

Recommended cutting conditions

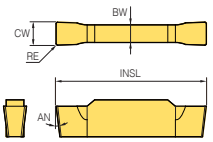
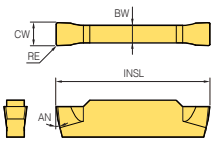
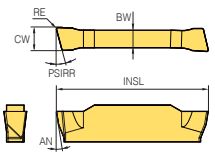
Workpiece						Grade						Chip breaker									
						CVD			PVD			Grooving						Turning			
ISO	Workpiece material		AISI	ISO	Brinell hardness (HB)	NC3225	NC5330	NC6315	PC3035	PC5300	PC9030	L	TL	T	R	C	CM	TL	T	C	CM
						vc (sfm)						fn (ipr)						fn (ipr)			
P	Carbon steel	C = 0.10 ~0.25%	1025	C25	125	689	525	-	328	361	-	0.006	0.005	0.006	0.010	0.008	0.006	0.007	0.008	0.010	0.009
						755	**558**	**-**	**459**	**459**	**-**	**0.004**	**0.004**	**0.004**	**0.007**	**0.006**	**0.005**	**0.007**	**0.006**	**0.008**	**0.007**
						787	623	-	591	558	-	0.002	0.003	0.003	0.004	0.004	0.004	0.006	0.005	0.006	0.005
		C = 0.25 ~0.55%	1035	C35	160	656	459	-	312	328	-	0.006	0.005	0.006	0.010	0.008	0.006	0.007	0.008	0.010	0.009
						689	**525**	**-**	**427**	**427**	**-**	**0.004**	**0.004**	**0.004**	**0.007**	**0.006**	**0.005**	**0.007**	**0.006**	**0.008**	**0.007**
						722	558	-	591	525	-	0.002	0.003	0.003	0.004	0.004	0.004	0.006	0.005	0.006	0.005
		C = 0.55 ~0.80%	1055	C55	229	591	427	-	295	295	-	0.006	0.005	0.006	0.010	0.008	0.006	0.007	0.008	0.010	0.009
						656	**492**	**-**	**427**	**394**	**-**	**0.004**	**0.004**	**0.004**	**0.007**	**0.006**	**0.005**	**0.007**	**0.006**	**0.008**	**0.007**
						689	525	-	558	492	-	0.002	0.003	0.003	0.004	0.004	0.004	0.006	0.005	0.006	0.005
	Low alloy steel ≤ 5%	Non-hardened	4140	42CrMo4	180	492	361	-	197	230	-	0.005	0.004	0.005	0.008	0.007	0.006	0.007	0.007	0.009	0.008
						525	**394**	**-**	**328**	**328**	**-**	**0.004**	**0.004**	**0.004**	**0.006**	**0.005**	**0.004**	**0.006**	**0.006**	**0.007**	**0.006**
						558	427	-	459	427	-	0.002	0.003	0.003	0.004	0.003	0.003	0.005	0.004	0.005	0.004
		Hardened and tempered	4145	-	350	279	197	-	131	164	-	0.005	0.004	0.005	0.008	0.007	0.006	0.007	0.007	0.009	0.008
						295	**230**	**-**	**213**	**197**	**-**	**0.004**	**0.004**	**0.004**	**0.006**	**0.005**	**0.004**	**0.006**	**0.006**	**0.007**	**0.006**
						328	262	-	295	230	-	0.002	0.003	0.003	0.004	0.003	0.003	0.005	0.004	0.005	0.004
	High alloy steel > 5%	Annealed	D2	-	200	361	262	-	164	180	-	0.005	0.004	0.005	0.008	0.007	0.006	0.007	0.007	0.009	0.008
						394	**295**	**-**	**262**	**246**	**-**	**0.004**	**0.004**	**0.004**	**0.006**	**0.005**	**0.004**	**0.006**	**0.006**	**0.007**	**0.006**
						427	328	-	394	312	-	0.002	0.003	0.003	0.004	0.003	0.003	0.005	0.004	0.005	0.004
		Hardened tool steel	H13	X40CrMoV5-1	352	295	213	-	131	131	-	0.005	0.004	0.005	0.008	0.007	0.006	0.007	0.007	0.009	0.008
						328	**230**	**-**	**213**	**197**	**-**	**0.004**	**0.004**	**0.004**	**0.006**	**0.005**	**0.004**	**0.006**	**0.006**	**0.007**	**0.006**
						361	262	-	295	262	-	0.002	0.003	0.003	0.004	0.003	0.003	0.005	0.004	0.005	0.004
M	Austenite series		304	X5CrNi18-9	160 ~ 180	-	279	-	-	197	164	0.005	0.004	0.005	0.008	0.007	0.006	0.007	0.007	0.009	0.008
						-	**295**	**-**	**-**	**262**	**230**	**0.004**	**0.004**	**0.004**	**0.006**	**0.005**	**0.004**	**0.006**	**0.006**	**0.007**	**0.006**
						-	328	-	-	328	295	0.002	0.003	0.003	0.004	0.003	0.003	0.005	0.004	0.005	0.004
			316	X5CrNiMo17-12-2	160 ~ 180	-	279	-	-	197	164	0.005	0.004	0.005	0.008	0.007	0.006	0.007	0.007	0.009	0.008
						-	**295**	**-**	**-**	**262**	**230**	**0.004**	**0.004**	**0.004**	**0.006**	**0.005**	**0.004**	**0.006**	**0.006**	**0.007**	**0.006**
						-	328	-	-	328	295	0.002	0.003	0.003	0.004	0.003	0.003	0.005	0.004	0.005	0.004
K	Gray cast iron	Low tensile strength	No25B	150	≤ 212	-	344	492	-	262	-	-	-	0.005	0.008	0.007	-	0.007	0.007	0.009	0.008
						-	**361**	**525**	**-**	**328**	**-**	**-**	**-**	**0.004**	**0.006**	**0.005**	**-**	**0.006**	**0.006**	**0.007**	**0.006**
						-	394	558	-	394	-	-	-	0.003	0.004	0.003	-	0.005	0.004	0.005	0.004
		High tensile strength	No35B No50B	250 350	≤ 248 ≤ 277	-	279	394	-	262	-	-	-	0.005	0.008	0.007	-	0.007	0.007	0.009	0.008
						-	**295**	**427**	**-**	**328**	**-**	**-**	**-**	**0.004**	**0.006**	**0.005**	**-**	**0.006**	**0.006**	**0.007**	**0.006**
						-	328	459	-	394	-	-	-	0.003	0.004	0.003	-	0.005	0.004	0.005	0.004
	Ductile cast iron	Ferritic	65-45-12	500-7	170 ~ 241	-	213	312	-	230	-	-	-	0.006	0.010	0.008	-	0.007	0.008	0.010	0.009
						-	**230**	**328**	**-**	**279**	**-**	**-**	**-**	**0.004**	**0.007**	**0.006**	**-**	**0.007**	**0.006**	**0.008**	**0.007**
						-	262	361	-	328	-	-	-	0.003	0.004	0.004	-	0.006	0.005	0.006	0.005
		Pearlitic	80-55-06	600-3	192 ~ 269	-	180	279	-	230	-	-	-	0.006	0.010	0.008	-	0.007	0.008	0.010	0.009
						-	**197**	**295**	**-**	**279**	**-**	**-**	**-**	**0.004**	**0.007**	**0.006**	**-**	**0.007**	**0.006**	**0.008**	**0.007**
						-	230	328	-	328	-	-	-	0.003	0.004	0.004	-	0.006	0.005	0.006	0.005
		martensitic	100-70-03	700-2	229 ~ 302	-	180	279	-	230	-	-	-	0.006	0.010	0.008	-	0.007	0.008	0.010	0.009
						-	**197**	**295**	**-**	**279**	**-**	**-**	**-**	**0.004**	**0.007**	**0.006**	**-**	**0.007**	**0.006**	**0.008**	**0.007**
						-	230	328	-	328	-	-	-	0.003	0.004	0.004	-	0.006	0.005	0.006	0.005
S	Inconel		-	-	200	-	-	-	-	98	-	-	0.004	0.004	-	0.005	0.004	0.006	0.005	0.006	0.006
						-	**-**	**-**	**-**	**131**	**-**	**-**	**0.003**	**0.003**	**-**	**0.004**	**0.003**	**0.005**	**0.004**	**0.006**	**0.005**
						-	-	-	-	164	-	-	0.002	0.002	-	0.003	0.002	0.004	0.004	0.005	0.004
			-	-	350	-	-	-	-	66	-	-	0.004	0.004	-	0.005	0.004	0.006	0.005	0.006	0.006
						-	**-**	**-**	**-**	**98**	**-**	**-**	**0.003**	**0.003**	**-**	**0.004**	**0.003**	**0.005**	**0.004**	**0.006**	**0.005**
						-	-	-	-	131	-	-	0.002	0.002	-	0.003	0.002	0.004	0.004	0.005	0.004
	Titanium alloy		-	-	3400	-	-	-	-	131	-	-	0.004	0.005	-	0.007	0.006	0.007	0.007	0.008	0.008
						-	**-**	**-**	**-**	**164**	**-**	**-**	**0.004**	**0.004**	**-**	**0.005**	**0.004**	**0.006**	**0.006**	**0.007**	**0.006**
						-	-	-	-	197	-	-	0.003	0.003	-	0.003	0.003	0.005	0.004	0.006	0.004
			-	-	950	-	-	-	-	131	-	-	0.004	0.005	-	0.007	0.006	0.007	0.007	0.008	0.008
						-	**-**	**-**	**-**	**164**	**-**	**-**	**0.004**	**0.004**	**-**	**0.005**	**0.004**	**0.006**	**0.006**	**0.007**	**0.006**
						-	-	-	-	197	-	-	0.003	0.003	-	0.003	0.003	0.005	0.004	0.006	0.004

Applicable inserts

Application	Picture	Designation		Coated						Uncoated		Dimensions (inch)							Configuration
				NC3225	NC5330	NC6315	PC3035	PC5300	PC9030	H01	H05	SSC	CW	RE	BW	INSL	AN	HAND	
Grooving	KGMN-L	KGMN	200-02-L	●	●		●	●	●			20	0.079	1/128	0.067	0.787	7	N	
			300-02-L	●	●		●	●	●			30	0.118	1/128	0.091	0.787	7	N	
			400-02-L	●	●		●	●	●			40	0.157	1/128	0.130	0.787	7	N	
			500-03-L	●	●		●	●				50	0.197	3/256	0.161	0.984	7	N	
			600-03-L					●				60	0.236	3/256	0.200	0.984	7	N	
Grooving • Turning	KGMN-TL	KGMN	300-02-TL									30	0.118	1/128	0.091	0.787	7	N	
			300-04-TL									30	0.118	1/64	0.091	0.787	7	N	
			400-04-TL									40	0.157	1/64	0.130	0.787	7	N	
			500-04-TL									50	0.197	1/64	0.161	0.984	7	N	
			500-08-TL									50	0.197	1/32	0.161	0.984	7	N	
			600-08-TL									60	0.236	1/32	0.200	0.984	7	N	
Grooving • Turning	KGMN-T	KGMN	150-015-T	●	●			●				15	0.059	3/512	0.047	0.63	7	N	
			200-02-T	●	●	●	●	●	●			20	0.079	1/128	0.067	0.787	7	N	
			250-02-T	●	●			●				25	0.098	1/128	0.079	0.787	7	N	
			300-02-T	●	●	●	●	●	●			30	0.118	1/128	0.091	0.787	7	N	
			300-04-T	●	●	●	●	●	●			30	0.118	1/64	0.091	0.787	7	N	
			400-04-T	●	●	●	●	●	●			40	0.157	1/64	0.130	0.787	7	N	
			400-08-T	●	●	●	●	●	●			40	0.157	1/32	0.130	0.787	7	N	
			500-04-T	●	●	●	●	●	●			50	0.197	1/64	0.161	0.984	7	N	
			500-08-T	●	●	●	●	●	●			50	0.197	1/32	0.161	0.984	7	N	
			600-04-T	●	●	●	●	●	●			60	0.236	1/64	0.200	0.984	7	N	
			600-08-T	●	●	●	●	●				60	0.236	1/32	0.200	0.984	7	N	
			800-08-T	●		●	●	●				80	0.315	1/32	0.240	1.181	7	N	
Rough Grooving	KGMN-R	KGMN	150-015-R	●	●			●				15	0.059	3/512	0.047	0.63	7	N	
			200-02-R	●	●		●	●	●			20	0.079	1/128	0.067	0.787	7	N	
			300-02-R	●	●		●	●	●			30	0.118	1/128	0.091	0.787	7	N	
			400-03-R	●	●		●	●	●			40	0.157	3/256	0.130	0.787	7	N	
			500-03-R		●			●				50	0.197	3/256	0.161	0.984	7	N	
			600-03-R		●			●				60	0.236	3/256	0.200	0.984	7	N	
			800-04-R		●			●				80	0.315	1/64	0.240	1.181	7	N	
Aluminum Grooving (Single insert)	KGGN-A	KGGN	200S-02-A									20	0.079	1/128	0.067	0.787	7	N	
			300S-02-A									30	0.118	1/128	0.091	0.787	7	N	
			400S-04-A									40	0.157	1/64	0.130	0.787	7	N	
			500S-04-A									50	0.197	1/64	0.161	0.984	7	N	
			600S-04-A									60	0.236	1/64	0.200	0.984	7	N	
Grooving • Parting off (Single insert)	KGGN-R	KGGN	200S-02-R									20	0.079	1/128	0.067	0.760	7	N	
			300S-02-R					●				30	0.118	1/128	0.091	0.785	7	N	
			400S-02-R					●				40	0.157	3/256	0.130	0.785	7	N	
			500S-02-R					●				50	0.197	3/256	0.161	0.982	7	N	
			600S-02-R					●				60	0.236	3/256	0.200	0.982	7	N	
			800S-04-R					●				80	0.315	1/64	0.240	1.178	7	N	
Aluminum Grooving	KGGN-A	KGGN	200-02-A							●		20	0.079	1/128	0.067	0.787	7	N	
			300-02-A							●		30	0.118	1/128	0.091	0.787	7	N	
			400-04-A							●		40	0.157	1/64	0.130	0.787	7	N	
			500-04-A							●		50	0.197	1/64	0.161	0.984	7	N	
			600-04-A							●		60	0.236	1/64	0.200	0.984	7	N	

● : Stock item

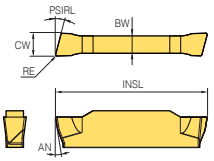
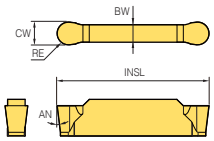
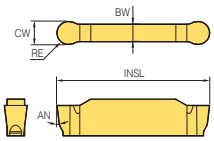
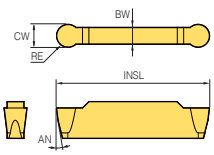
Applicable inserts

Application	Picture	Designation		Coated						Uncoated		Dimensions (inch)									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	0.104	-	-	3/512	0.091	0.787	7	N	
			300-020-B									30	0.118	-	-	1/128	0.091	0.787	7	N	
			300-040-B									30	0.118	-	-	1/64	0.091	0.787	7	N	
			315-015-B									30	0.124	-	-	3/512	0.091	0.787	7	N	
			400-040-B									40	0.157	-	-	1/64	0.130	0.787	7	N	
			400-080-B									40	0.157	-	-	1/32	0.130	0.787	7	N	
			415-015-B									40	0.163	-	-	3/512	0.130	0.787	7	N	
			478-055-B									50	0.188	-	-	11/512	0.161	0.984	7	N	
			500-080-B									50	0.197	-	-	1/32	0.161	0.984	7	N	
			515-015-B									50	0.203	-	-	3/512	0.161	0.984	7	N	
			600-080-B									60	0.236	-	-	1/32	0.200	0.984	7	N	
			600-120-B									60	0.236	-	-	3/64	0.200	0.984	7	N	
			800-080-B									80	0.315	-	-	1/32	0.240	1.181	7	N	
			800-120-B									80	0.315	-	-	3/64	0.240	1.181	7	N	
Grooving • Parting off	KGGN-R	KGGN	200-02-R									20	0.079	-	-	1/128	0.067	0.787	7	N	
			300-02-R									30	0.118	-	-	1/128	0.091	0.787	7	N	
			400-03-R									40	0.157	-	-	3/256	0.130	0.787	7	N	
			500-03-R									50	0.197	-	-	3/256	0.161	0.984	7	N	
			600-03-R									60	0.236	-	-	3/256	0.200	0.984	7	N	
			800-04-R									80	0.315	-	-	1/64	0.240	1.181	7	N	
Grooving • Internal	KGMI-T	KGMI	200-02-T					●				20	0.079	-	-	1/128	0.067	0.787	7	N	
			300-04-T					●				30	0.118	-	-	1/64	0.091	0.787	7	N	
			400-04-T					●				40	0.157	-	-	1/64	0.130	0.787	7	N	
Light parting	KGMR-LP	KGMR	200-6D-LP		●			●				20	0.079	-	6	1/128	0.067	0.787	7	R	
			200-8D-LP									20	0.079	-	8	1/128	0.067	0.787	7	R	
			200-15D-LP		●			●				20	0.079	-	15	1/128	0.067	0.787	7	R	
			300-6D-LP		●			●				30	0.118	-	6	1/128	0.091	0.787	7	R	
			300-15D-LP		●			●				30	0.118	-	15	1/128	0.091	0.787	7	R	
			400-4D-LP		●			●				40	0.157	-	4	3/256	0.130	0.787	7	R	
			400-15D-LP									40	0.157	-	15	3/256	0.130	0.787	7	R	
			500-4D-LP									50	0.197	-	4	3/256	0.161	0.984	7	R	
Rough parting	KGMR-RP	KGMR	200-6D-RP		●			●				20	0.079	-	6	1/128	0.067	0.787	7	R	
			200-8D-RP									20	0.079	-	8	1/128	0.067	0.787	7	R	
			200-15D-RP		●			●				20	0.079	-	15	1/128	0.067	0.787	7	R	
			300-6D-RP		●			●				30	0.118	-	6	1/128	0.091	0.787	7	R	
			300-15D-RP		●			●				30	0.118	-	15	1/128	0.091	0.787	7	R	
			400-4D-RP		●			●				40	0.157	-	4	3/256	0.130	0.787	7	R	
			400-15D-RP		●			●				40	0.1557	-	15	3/256	0.130	0.787	7	R	
			500-4D-RP									50	0.197	-	4	3/256	0.161	0.984	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 (inch)									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	0.079	6	-	1/128	0.067	0.787	7	L	
			200-15D-LP									20	0.079	15	-	1/128	0.067	0.787	7	L	
			300-6D-LP									30	0.118	6	-	1/128	0.091	0.787	7	L	
			300-15D-LP									30	0.118	15	-	1/128	0.091	0.787	7	L	
			400-4D-LP									40	0.157	4	-	1/128	0.130	0.787	7	L	
			400-15D-LP									40	0.157	15	-	1/128	0.130	0.787	7	L	
Rough parting	KGML-RP	KGML	200-6D-RP									20	0.079	6	-	1/128	0.067	0.787	7	L	
			200-15D-RP									20	0.079	15	-	1/128	0.067	0.787	7	L	
			300-6D-RP									30	0.118	6	-	1/128	0.091	0.787	7	L	
			300-15D-RP									30	0.118	15	-	1/128	0.091	0.787	7	L	
			400-4D-RP									40	0.157	4	-	1/128	0.130	0.787	7	L	
			400-15D-RP									40	0.157	15	-	1/128	0.130	0.787	7	L	
Relief Profiling	KRMN-C	KRMN	200-C	●	●	●	●	●				20	0.079	-	-	3/64	0.067	0.787	5	N	
			300-C	●	●		●	●				30	0.118	-	-	1/14	0.087	0.787	7	N	
			400-C	●	●	●	●	●				40	0.157	-	-	5/64	0.126	0.787	7	N	
			500-C	●	●	●	●	●				50	0.197	-	-	3/32	0.157	0.984	7	N	
			600-C	●	●	●	●	●				60	0.236	-	-	1/8	0.197	0.984	7	N	
			800-C	●	●	●		●				80	0.315	-	-	5/32	0.236	1.181	7	N	
Aluminum Grooving	KRGN-A	KRGN	300-A							●		30	0.118	-	-	1/16	0.091	0.787	7	N	
			400-A							●		40	0.157	-	-	5/64	0.130	0.787	7	N	
			500-A							●		50	0.197	-	-	3/32	0.161	0.984	7	N	
			600-A							●		60	0.236	-	-	1/8	0.200	0.984	7	N	
			800-A									80	0.315	-	-	5/32	0.240	0.181	7	N	
Relief Profiling	KRGN-CM	KRGN	300-CM									30	0.118	-	-	1/14	0.087	0.787	7	N	
			400-CM									40	0.157	-	-	5/64	0.126	0.787	7	N	
			500-CM									50	0.197	-	-	3/32	0.157	0.984	7	N	
Profiling	KRMI-C	KRMI	200-C									20	0.079	-	-	3/64	0.067	0.787	7	N	
			300-C									30	0.118	-	-	1/14	0.087	0.787	7	N	
			400-C									40	0.157	-	-	5/64	0.126	0.787	7	N	

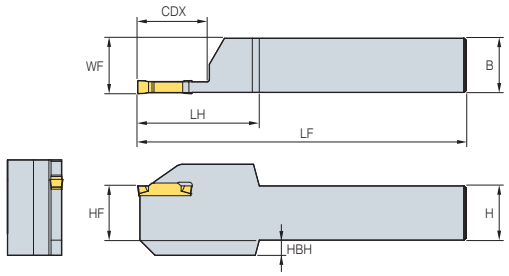
● : Stock item

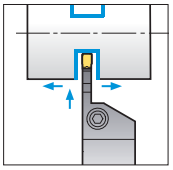
KGEHR/L

For grooving, turning, parting off, and relief machining



KGGN KGMN
KGMR/L KRMN
KRGN





• R type holder

(inch)

Designation		CDX	LH	LF	WF	HF	HBH	B	H	HAND	Applicable insert	Screw	Wrench
KGEHR/L	10-1.5-T14	0.551	1.299	4	0.638	5/8	-	5/8	5/8	R/L	KGMN150-□-□	MHA0512	HW40L
	12-1.5-T14	0.551	1.299	5	0.795	3/4	-	3/4	3/4	R/L			
	16-1.5-T14	0.551	1.299	6	0.795	1	-	1	1	R/L			
	08-2-T08	0.315	1.299	4	0.48	1/2	-	1/2	1/2	R/L	KGMN200-□-□ KGMR/L200-□-□ KRMN200-C KGGN200-□-□	MHA0512	HW40L
	10-2-T08	0.315	1.299	4	0.633	5/8	-	5/8	5/8	R/L			
	12-2-T08	0.315	1.299	5	0.758	3/4	-	3/4	3/4	R/L			
	16-2-T08	0.315	1.299	6	1.008	1	-	1	1	R/L			
	10-2-T12	0.472	1.299	4	0.633	5/8	-	5/8	5/8	R/L			
	12-2-T12	0.472	1.299	5	0.758	3/4	-	3/4	3/4	R/L			
	16-2-T12	0.472	1.417	6	1.008	1	-	1	1	R/L			
	10-2-T17	0.669	1.496	4	0.633	5/8	-	5/8	5/8	R/L			
	12-2-T17	0.669	1.496	5	0.758	3/4	-	3/4	3/4	R/L			
	16-2-T17	0.669	1.496	6	1.008	1	-	1	1	R/L			
	10-2.5-T17	0.669	1.496	4	0.642	5/8	-	5/8	5/8	R/L	KGMN250-□-□	MHA0512	HW40L
	12-2.5-T17	0.669	1.496	5	0.642	3/4	-	3/4	3/4	R/L			
	16-2.5-T17	0.669	1.496	6	0.642	1	-	1	1	R/L			
	10-3-T10	0.394	1.299	4	0.641	5/8	-	5/8	5/8	R/L	KGMN300-□-□ KGMR/L300-□-□ KRMN300-C KGGN300-□-□ KRGN300-□	MHA0512	HW40L
	12-3-T10	0.394	1.299	5	0.766	3/4	-	3/4	3/4	R/L			
	16-3-T10	0.394	1.299	6	1.016	1	-	1	1	R/L			
	20-3-T10	0.394	1.299	6 3/4	1.276	1 1/4	-	1 1/4	1 1/4	R/L			
	10-3-T13	0.512	1.299	4	0.641	5/8	-	5/8	5/8	R/L			
	12-3-T13	0.512	1.299	5	0.766	3/4	-	3/4	3/4	R/L			
	16-3-T13	0.512	1.299	6	1.016	1	-	1	1	R/L			
	10-3-T20	0.787	1.614	4	0.641	5/8	-	5/8	5/8	R/L			
	12-3-T20	0.787	1.614	5	0.766	3/4	-	3/4	3/4	R/L			
	16-3-T20	0.787	1.614	6	1.016	1	-	1	1	R/L			
	20-3-T20	0.787	1.614	6 3/4	1.266	1 1/4	-	1 1/4	1 1/4	R/L			
	16-3-T25	0.984	1.811	6	1.016	1	-	1	1	R/L			
	10-4-T10	0.394	1.299	4	0.641	5/8	-	5/8	5/8	R/L	KGMN400-□-□ KGMR/L400-□-□ KRMN400-C KGGN400-□-□ KRGN400-□	BHA0616	HW50L
	12-4-T10	0.394	1.299	5	0.766	3/4	-	3/4	3/4	R/L			
	16-4-T10	0.394	1.299	6	1.016	1	-	1	1	R/L			
	20-4-T10	0.394	1.299	6 3/4	1.276	1 1/4	-	1 1/4	1 1/4	R/L			
	10-4-T15	0.591	1.417	4	0.641	5/8	-	5/8	5/8	R/L			
	12-4-T15	0.591	1.417	5	0.766	3/4	-	3/4	3/4	R/L			
	16-4-T15	0.591	1.417	6	1.016	1	-	1	1	R/L			
	10-4-T20	0.787	1.614	4	0.641	5/8	-	5/8	5/8	R/L			
	12-4-T20	0.787	1.614	5	0.766	3/4	-	3/4	3/4	R/L			
	16-4-T20	0.787	1.614	6	1.016	1	-	1	1	R/L			
	20-4-T20	0.787	1.614	6 3/4	1.266	1 1/4	-	1 1/4	1 1/4	R/L			
	10-4-T25	0.984	1.811	4	0.641	5/8	-	5/8	5/8	R/L			
	12-4-T25	0.984	1.811	5	0.766	3/4	-	3/4	3/4	R/L			
	16-4-T25	0.984	1.811	6	1.016	1	-	1	1	R/L			

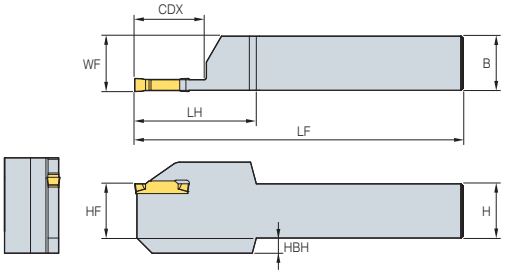
Applicable inserts **C28 ~ C30**

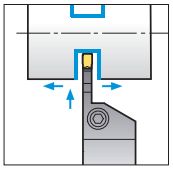
KGEHR/L

For grooving, turning, parting off, and relief machining



KGGN KGMN
KGMR/L KRMN
KRGN





• R type holder

(inch)

Designation		CDX	LH	LF	WF	HF	HBH	B	H	HAND	Applicable insert	Screw	Wrench
KGEHR/L	12-5-T12	0.472	1.457	5	0.770	3/4	-	3/4	3/4	R/L	KGMN500-□-□ KRMN500-C KGGN500-□-□ KRGN500-□	BHA0616	HW50L
	16-5-T12	0.472	1.457	6	1.020	1	-	1	1	R/L			
	12-5-T15	0.591	1.575	5	0.807	3/4	-	3/4	3/4	R/L			
	16-5-T15	0.591	1.575	6	1.004	1	-	1	1	R/L			
	20-5-T15	0.591	1.575	6 3/4	1.250	1 1/4	-	1 1/4	1 1/4	R/L			
	12-5-T20	0.787	1.614	5	0.770	3/4	-	3/4	3/4	R/L			
	16-5-T20	0.787	1.622	6	1.020	1	-	1	1	R/L			
	20-5-T20	0.787	1.614	6 3/4	1.270	1 1/4	-	1 1/4	1 1/4	R/L		BHA0620	HW50L
	16-5-T32	1.260	2.087	6	1.020	1	0.276	1	1	R/L			
	12-6-T12	0.472	1.457	5	1.770	3/4	-	3/4	3/4	R/L	KGMN600-□-□ KRMN600-C KGGN600-□-□ KRGN600-□	BHA0616	HW50L
	16-6-T12	0.472	1.457	6	1.020	1	-	1	1	R/L			
	16-6-T15	0.591	1.575	6	1.004	1	-	1	1	R/L			
	20-6-T15	0.591	1.575	6 3/4	1.280	1 1/4	-	1 1/4	1 1/4	R/L			
	12-6-T20	0.787	1.614	5	0.770	3/4	-	3/4	3/4	R/L			
	16-6-T20	0.787	1.614	6	1.020	1	-	1	1	R/L			
	20-6-T20	0.787	1.614	6 3/4	1.270	1 1/4	-	1 1/4	1 1/4	R/L		BHA0620	HW50L
	16-6-T32	1.260	2.087	6	1.020	1	0.276	1	1	R/L			
	16-8-T16	0.630	1.811	6	1.020	1	-	1	1	R/L	KGMN800-□-□ KRMN800-C KGGN800-□-□ KRGN800-□	BHA0616	HW50L
	20-8-T16	0.630	1.575	6 3/4	1.299	1 1/4	-	1 1/4	1 1/4	R/L			
	16-8-T25	0.984	1.811	6	1.039	1	-	1	1	R/L			
	20-8-T25	0.984	1.811	6 3/4	1.289	1 1/4	-	1 1/4	1 1/4	R/L		BHA0620	HW50L
	16-8-T36	1.417	2.283	6	1.039	1	0.276	1	1	R/L			
	20-8-T36	1.417	2.283	6 3/4	1.289	1 1/4	-	1 1/4	1 1/4	R/L			

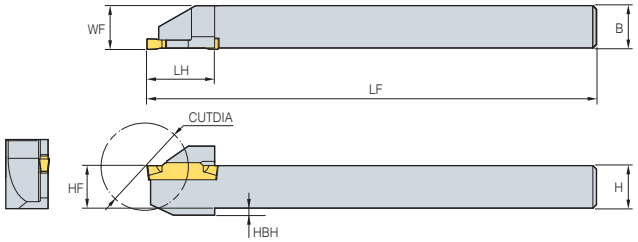
Applicable inserts **C28 ~ C30**

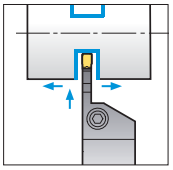
KGEHR/L-D00A (Auto Tool)

For grooving, turning, parting off machining



KGMN KGGN
KRMN KRGN
KGMR/L





• R type holder

(inch)

Designation		CUTDIA	LH	LF	WF	HF	HBH	B	H	HAND	Applicable insert	Screw	Wrench
KGEHR/L	06-2-D20A	0.787	0.748	5	0.383	3/8	0.079	3/8	3/8	R/L	KGMN200-□-□ KGMR/L200-□-□ KRMN200-C KGGN200-□-□	ETNA0412	TW15L
	08-2-D25A	0.984	0.748	5	0.508	1/2	0.079	1/2	1/2	R/L			
	09-2-D25A	0.984	0.748	5	0.559	5/9	-	5/9	5/9	R/L			
	10-2-D32A	1.260	0.984	5	0.633	5/8	-	5/8	5/8	R/L			
	08-3-D25A	0.984	0.748	5	0.508	1/2	0.079	1/2	1/2	R/L	KGMN300-□-□ KGMR/L300-□-□ KRMN300-C KGGN300-□-□		
	10-3-D32A	1.260	0.984	5	0.633	5/8	-	5/8	5/8	R/L			

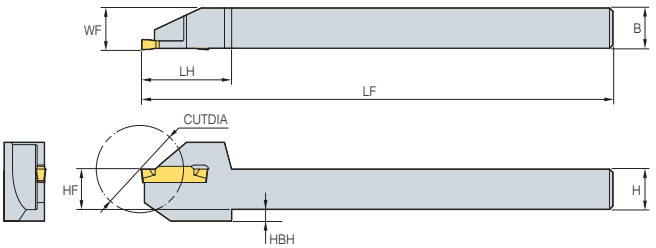
Applicable inserts C28 ~ C30

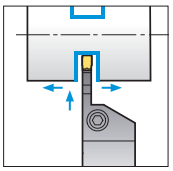
KGEHR/L-D00B (Auto Tool)

For grooving, turning, parting off machining



KGMN KGGN
KRMN KRGN
KGMR/L





• R type holder

(inch)

Designation		CUTDIA	LH	LF	WF	HF	HBH	B	H	HAND	Applicable insert	Screw	Wrench
KGEHR/L	06-2-D30B	1.181	1.165	5.510	0.401	3/8	0.26	3/8	3/8	R/L	KGMN200-□-□ KGMR/L200-□-□ KRMN200-C KGGN200-□-□	MHA0512	HW40L
	08-2-D25B	0.894	1.067	5.510	0.492	1/2	0.138	1/2	1/2	R/L			
	08-2-D30B	1.181	1.165	5.510	0.480	1/2	0.138	1/2	1/2	R/L			
	10-2-D25B	0.984	1.067	5.510	0.638	5/8	-	5/8	5/8	R/L			
	10-2-D32B	1.181	1.205	5.510	0.638	5/8	-	5/8	5/8	R/L			
	08-3-D25B	0.984	1.067	5.510	0.488	1/2	0.138	1/2	1/2	R/L	KGMN300-□-□ KGMR/L300-□-□ KRMN300-C KGGN300-□-□		
	08-3-D32B	1.181	1.205	5.510	0.488	1/2	0.138	1/2	1/2	R/L			
	10-3-D25B	0.984	1.061	5.510	0.646	5/8	-	5/8	5/8	R/L			
	10-3-D32B	1.181	1.067	5.510	0.646	5/8	-	5/8	5/8	R/L			

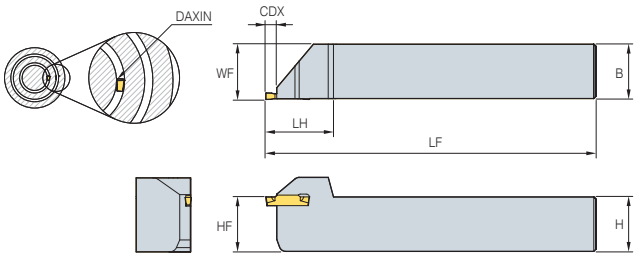
Applicable inserts C28 ~ C30

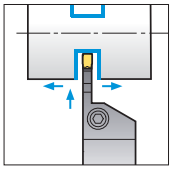
KGEHR/L-T00

For grooving, turning, face grooving machining



KGMN KRMN
KGGN KRGN





• R type holder

(inch)

Designation		CDX	LH	LF	WF	HF	HBH	B	H	DAXIN	HAND	Applicable insert	Screw	Wrench
KGEHR/L	10-3-T00	0.189	1.220	4	0.646	5/8	-	5/8	5/8	3.150	R/L	KGMN300-□-□ KRMN300-C KGGN300-□-□ KRGN300-□	MHA0512	HW40L
	12-3-T00	0.189	1.220	5	0.803	3/4	-	3/4	3/4	3.150	R/L			
	16-3-T00	0.189	1.220	6	1.016	1	-	1	1	3.150	R/L			
	10-4-T00	0.189	1.220	4	0.641	5/8	-	5/8	5/8	3.150	R/L	KGMN400-□-□ KRMN400-C KGGN400-□-□ KRGN400-□	BHA0616	HW50L
	12-4-T00	0.189	1.220	5	0.766	3/4	-	3/4	3/4	3.150	R/L			
	16-4-T00	0.189	1.220	6	1.016	1	-	1	1	3.150	R/L			
	12-6-T00	0.236	1.417	5	0.770	3/4	-	3/4	3/4	3.150	R/L	KGMN600-□-□ KRMN600-C KGGN600-□-□ KRGN600-□	BHA0616	HW50L
	16-6-T00	0.236	1.437	6	1.020	1	-	1	1	3.150	R/L			

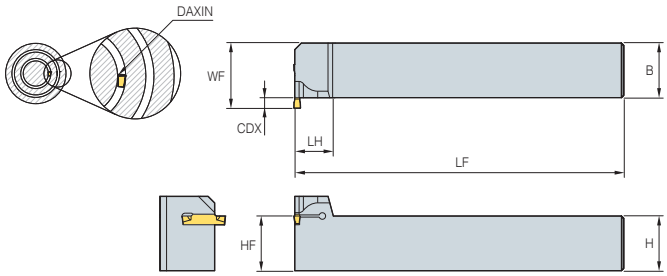
Applicable inserts **C28 ~ C30**

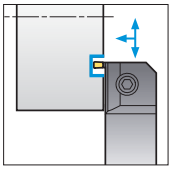
KGEVR/L-T00

For grooving, turning, face grooving machining



KGMN KRMN
KRGN KGGN





• R type holder

(inch)

Designation		CDX	LH	LF	WF	HF	B	H	DAXIN	HAND	Applicable insert	Screw	Wrench
KGEVR/L	12-1.5-T00	0.118	0.709	5	0.925	3/4	3/4	3/4	4.724	R/L	KGMN150-□-□	MHA0512	HW40L
	16-1.5-T00	0.118	0.709	6	1.122	1	1	1	4.724	R/L			
	20-1.5-T00	0.118	0.866	6 3/4	1.398	1 1/4	1 1/4	1 1/4	4.724	R/L			
	12-2-T00	0.118	0.699	5	0.925	3/4	3/4	3/4	4.724	R/L	KGMN200-□-□ KRMN200-C KGGN200-□-□-□	MHA0512	HW40L
	16-2-T00	0.118	0.699	6	1.122	1	1	1	4.724	R/L			
	20-2-T00	0.118	0.856	6 3/4	1.398	1 1/4	1 1/4	1 1/4	4.724	R/L			
	12-2.5-T00	0.157	0.709	5	0.965	3/4	3/4	3/4	3.150	R/L	KGMN250-□□	MHA0512	HW40L
	16-2.5-T00	0.157	0.709	6	1.161	1	1	1	3.150	R/L			
	20-2.5-T00	0.157	0.856	6 3/4	1.437	1 1/4	1 1/4	1 1/4	3.150	R/L			
	12-3-T00	0.189	0.709	5	0.947	3/4	3/4	3/4	3.150	R/L	KGMN300-□-□ KRMN300-C KGGN300-□-□ KRGN300-□	MHA0512	HW40L
	16-3-T00	0.189	0.709	6	1.197	1	1	1	3.150	R/L			
	20-3-T00	0.189	0.866	6 3/4	1.457	1 1/4	1 1/4	1 1/4	3.150	R/L			
	12-4-T00	0.189	0.772	5	0.947	3/4	3/4	3/4	3.150	R/L	KGMN400-□-□ KRMN400-C KGGN400-□-□ KRGN400-□	BHA0616	HW50L
	16-4-T00	0.189	0.772	6	1.197	1	1	1	3.150	R/L			
	20-4-T00	0.189	0.866	6 3/4	1.457	1 1/4	1 1/4	1 1/4	3.150	R/L			
	12-5-T00	0.236	0.787	5	1.161	3/4	3/4	3/4	2.362	R/L	KGMN500-□-□ KRMN500-C KGGN500-□-□ KRGN500-□	BHA0616	HW50L
	16-5-T00	0.236	0.787	6	1.240	1	1	1	2.362	R/L			
	20-5-T00	0.236	0.945	6 3/4	1.516	1 1/4	1 1/4	1 1/4	2.362	R/L			
	12-6-T00	0.236	0.866	5	1.043	3/4	3/4	3/4	2.362	R/L	KGMN600-□-□ KRMN600-C KGGN600-□-□ KRGN600-□	BHA0616	HW50L
	16-6-T00	0.236	0.866	6	1.256	1	1	1	3.150	R/L			
	20-6-T00	0.236	0.866	6 3/4	1.516	1 1/4	1 1/4	1 1/4	2.362	R/L			
	16-8-T00	0.315	0.945	6	1.319	1	1	1	1.969	R/L	KGMN800-□-□ KRMN800-C KGGN800-□-□ KRGN800-□	BHA0616	HW50L
	20-8-T00	0.315	0.945	6 3/4	1.516	1 1/4	1 1/4	1 1/4	1.969	R/L			

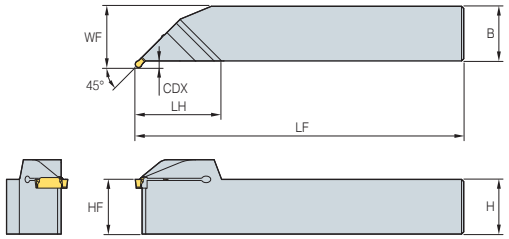
Applicable inserts **C28 ~ C30**

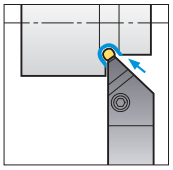
KGEUR/L

For relief machining



KRMN
KRGN





45°
• R type holder

(inch)

Designation		CDX	DMIN	LF	WF	HF	B	H	HAND	Applicable insert	Screw	Wrench
KGEUR/L	10-3	0.110	1.575	4	0.748	5/8	5/8	5/8	R/L	KRMN300-C KRGN300-□	MHA0512	HW40L
	12-3	0.110	1.575	5	0.906	3/4	3/4	3/4	R/L			
	16-3	0.110	1.575	6	1.102	1	1	1	R/L			
	20-3	0.110	1.575	6 3/4	1.378	1 1/4	1 1/4	1 1/4	R/L			
	10-4	0.110	1.575	4	0.748	5/8	5/8	5/8	R/L	KRMN400-C KRGN400-□	BHA0616	HW50L
	12-4	0.110	1.575	5	0.906	3/4	3/4	3/4	R/L			
	16-4	0.110	1.575	6	1.102	1	1	1	R/L			
	20-4	0.130	1.969	6 3/4	1.378	1 1/4	1 1/4	1 1/4	R/L			
	12-5	0.130	1.969	5	0.925	3/4	3/4	3/4	R/L	KRMN500-C KRGN500-□	BHA0616	HW50L
	16-5	0.130	1.969	6	1.122	1	1	1	R/L			
	20-5	0.130	1.969	6 3/4	1.398	1 1/4	1 1/4	1 1/4	R/L			
	12-6	0.130	1.969	5	0.925	3/4	3/4	3/4	R/L	KRMN600-C KRGN600-□	BHA0616	HW50L
	16-6	0.130	1.969	6	1.122	1	1	1	R/L			
	20-6	0.130	1.969	6 3/4	1.398	1 1/4	1 1/4	1 1/4	R/L			
	16-8	0.130	2.559	6	1.122	1	1	1	R/L	KRMN800-C KRGN800-□	BHA0616	HW50L
	20-8	0.130	2.559	6 3/4	1.398	1 1/4	1 1/4	1 1/4	R/L			

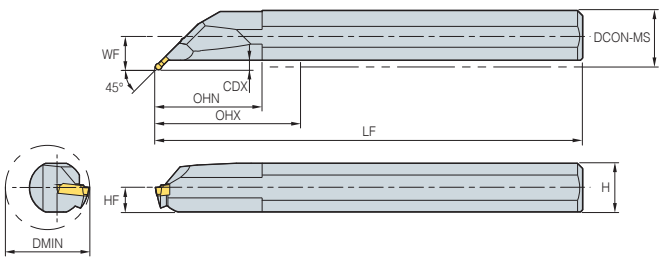
Applicable inserts **C28 ~ C30**

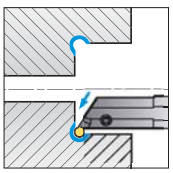
KGIUR/L

For relief machining



KRMN
KRGN





45°
• R type holder

(inch)

Designation		CDX	DMIN	OHN	LF	WF	H	DCON-MS	HAND	Applicable insert	Screw	Wrench
KGIUR/L	13-12-3	0.138	1.378	1.772	6	0.512	0.709	3/4	R/L	KRMN300-C KRGN300-□	MHA0512	HW40L
	13-12-4	0.138	1.378	1.772	6	0.512	0.709	3/4	R/L			
	15-16-3	0.138	1.575	1.969	8	0.610	0.906	1	R/L			
	19-20-3	0.138	1.969	2.559	10	0.748	1.181	1 1/4	R/L	KRMN400-C KRGN400-□	MHA0512	HW40L
	15-16-4	0.138	1.575	1.969	8	0.610	0.906	1	R/L			
	19-20-4	0.138	1.969	2.559	10	0.748	1.181	1 1/4	R/L			
	15-16-5	0.138	1.575	1.969	8	0.610	0.906	1	R/L	KRMN500-C KRGN500-□	MHA0512	HW40L
	19-20-5	0.138	1.969	2.559	10	0.748	1.181	1 1/4	R/L			
	15-16-6	0.138	1.575	1.969	8	0.610	0.906	1	R/L	KRMN600-C KRGN600-□	MHA0512	HW40L
	19-20-6	0.138	1.969	2.559	10	0.748	1.181	1 1/4	R/L			
	15-16-8	0.138	1.575	1.969	8	0.610	0.906	1	R/L	KRMN800-C KRGN800-□	MHA0512	HW40L
	19-20-8	0.138	1.969	2.559	10	0.748	1.181	1 1/4	R/L			

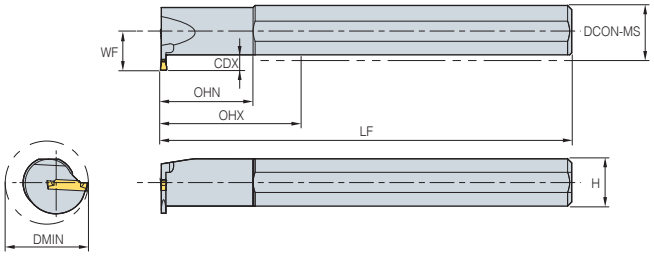
Applicable inserts **C28 ~ C30**

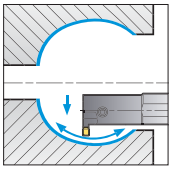
KGIVR/L

For face grooving machining



KGMI KGMN
KGGN KRMI
KRMN





• R type holder

(inch)

Designation		CDX	DMIN	OHN	LF	WF	H	DCON-MS	HAND	Applicable insert	Screw	Wrench
KGIVR/L	07-10-1.5	0.157	0.787	1.378	5	0.472	0.591	5/8	R/L	KGMN150-□-□	MHB0410	HW30L
	09-12-1.5	0.236	0.984	1.772	6	0.610	0.709	3/4	R/L		MHB0410	
	12-16-1.5	0.276	1.26	1.772	8	0.748	0.906	1	R/L		MHA0512	HW40L
	09-10-2	0.256	0.894	1.378	5	0.551	0.591	5/8	R/L	KGMI200-□-T KRMI200-C	MHB0410	HW30L
	09-12-2	0.256	0.984	1.772	6	0.610	0.709	3/4	R/L			
	12-16-2	0.276	1.26	1.772	8	0.748	0.906	1	R/L		MHB0512	HW40L
	09-10-2.5	0.256	0.984	1.378	5	0.551	0.591	5/8	R/L	KGMN250-□-□	MHB0410	HW30L
	09-12-2.5	0.256	0.984	1.772	6	0.610	0.709	3/4	R/L			
	12-16-2.5	0.276	1.26	1.772	8	0.748	0.906	1	R/L		MHA0512	HW40L
	09-12-3	0.256	0.984	1.772	6	0.610	0.09	3/4	R/L	KGMI300-□-T KRMI300-C	MHB0410	HW30L
	12-16-3	0.276	1.26	1.772	8	0.748	0.906	1	R/L		MHA0512	HW40L
	15-20-3	0.295	1.575	2.165	10	0.886	1.181	1 1/4	R/L		BHA0616	HW50L
	09-12-4	0.256	0.984	1.772	6	0.610	0.709	3/4	R/L	KGMI400-□-T KRMI400-C	MHB0410	HW30L
	12-16-4	0.276	1.26	1.772	8	0.748	0.906	1	R/L		MHA0512	HW40L
	15-20-4	0.295	1.575	2.165	10	0.886	1.181	1 1/4	R/L		BHA0616	HW50L
	12-16-5	0.295	1.26	1.772	8	0.768	0.906	1	R/L	KGMN500-□-□ KRMN500-C KGGN500-□-R KGGN500-□-A	MHA0512	HW40L
	15-20-5	0.335	1.575	2.165	10	0.925	1.181	1 1/4	R/L		BHA0616	HW50L
	12-16-6	0.295	1.26	1.772	8	0.768	0.906	1	R/L	KGMN600-□-□ KRMN600-C KGGN600-□-R KGGN600-□-A	MHA0512	HW40L
	15-20-6	0.335	1.575	2.165	10	0.925	1.181	1 1/4	R/L		BHA0616	HW50L
	15-20-8	0.335	1.575	2.165	10	0.925	1.181	1 1/4	R/L	KGMN800-□-□ KRMN800-C KGGN800-□-R	BHA0616	HW50L
	17-24-8	0.335	1.772	2.756	12	1.043	1.457	1 1/2	R/L		BHA0616	HW50L

Applicable inserts **C28 ~ C30**

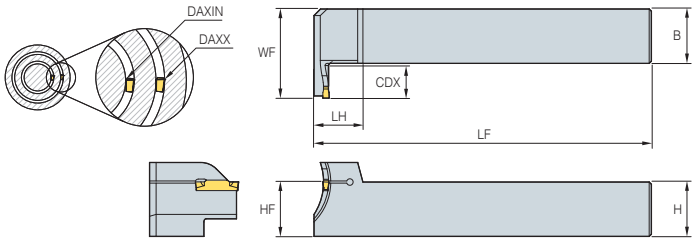
• In case of using external insert instead of internal insert, please check the available insert for each item.

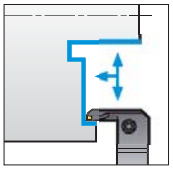
KGFVR/L

For face grooving machining



KGMN KRMN
KGGN KRGN





• R type holder

(inch)

Designation			CDX	DAXIN	DAXX	LF	WF	HF	B	H	HAND	Applicable insert	Screw	Wrench
KGFVR/L	16-3-	13/19-T10	0.394	1.338	1.968	6	1.417	1	1	1	R/L	KGMN300-□-□ KRMN300-C KGGN300-□-□ KRGN300-□	MHA0512	HW40L
		17/23-T15	0.590	1.732	2.362	6	1.614	1	1	1	R/L			
		21/33-T15	0.590	2.126	3.346	6	1.614	1	1	1	R/L			
	16-4-	12/19-T15	0.590	1.260	1.968	6	1.614	1	1	1	R/L	KGMN400-□-□ KRMN400-C KGGN400-□-□ KRGN400-□	BHA0616	HW50L
		16/23-T15	0.590	1.653	2.362	6	1.614	1	1	1	R/L			
		20/33-T15	0.590	2.047	3.346	6	1.614	1	1	1	R/L			
		17/27-T20	0.787	1.732	2.756	6	1.807	1	1	1	R/L			
		23/47-T20	0.787	2.362	4.724	6	1.807	1	1	1	R/L			
		44/78-T20	0.787	4.409	7.874	6	1.807	1	1	1	R/L			
	16-5-	19/31-T20	0.787	1.968	3.149	6	1.811	1	1	1	R/L	KGMN500-□-□ KRMN500-C KGGN500-□-□ KRGN500-□	BHA0616	HW50L
		27/43-T20	0.787	2.756	4.331	6	1.811	1	1	1	R/L			
		39/59-T20	0.787	3.937	5.905	6	1.811	1	1	1	R/L			
		55/78-T20	0.787	5.512	7.874	6	1.811	1	1	1	R/L			
		78-T20	0.787	7.874	∞	6	1.811	1	1	1	R/L			
	16-6-	18/33-T20	0.787	1.889	3.346	6	1.811	1	1	1	R/L	KGMN600-□-□ KRMN600-C KGGN600-□-□ KRGN600-□	BHA0616	HW50L
		28/59-T20	0.787	2.874	5.905	6	1.811	1	1	1	R/L			
		54/98-T20	0.787	5.433	9.842	6	1.811	1	1	1	R/L			
		98-T20	0.787	9.842	∞	6	1.811	1	1	1	R/L			

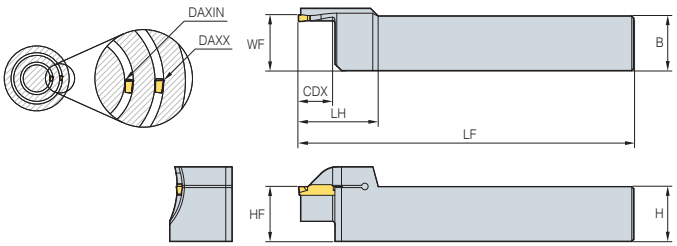
Applicable inserts **C28 ~ C30**

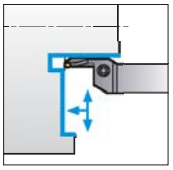
KGFHR/L

For face grooving machining



KGMN KRMN
KGGN KRGN





• R type holder

(inch)

Designation			CDX	DAXIN	DAXX	LH	LF	WF	HF	B	H	HAND	Applicable insert	Screw	Wrench
KGFHR/L	12-3-	13/19-T10	0.394	1.338	1.968	1.299	6	0.807	3/4	3/4	3/4	R/L	KGMN300-□-□ KRMN300-C KGGN300-□-□ KRGN300-□	MHA0512	HW40L
		17/27-T15	0.590	1.732	2.756	1.417	6	0.807	3/4	3/4	3/4	R/L			
		25/39-T15	0.590	2.520	3.937	1.417	6	0.807	3/4	3/4	3/4	R/L			
	16-3-	13/19-T10	0.394	1.339	1.969	1.299	6	1.004	1	1	1	R/L			
		17/27-T15	0.591	1.732	2.756	1.417	6	1.004	1	1	1	R/L			
		25/39-T15	0.591	2.520	3.937	1.417	6	1.004	1	1	1	R/L			
	12-4	13/19-T16	0.630	1.338	1.968	1.575	6	0.807	3/4	3/4	3/4	R/L	KGMN400-□-□ KRMN400-C KGGN400-□-□ KRGN400-□	BHA0616	HW50L
		16/27-T16	0.630	1.653	2.756	1.575	6	0.807	3/4	3/4	3/4	R/L			
		24/47-T16	0.630	2.441	4.724	1.575	6	0.807	3/4	3/4	3/4	R/L			
		44/78-T16	0.630	4.409	7.874	1.575	6	0.807	3/4	3/4	3/4	R/L			
	16-4-	13/19-T20	0.787	1.338	1.968	1.614	6	1.008	1	1	1	R/L			
		15/23-T10	0.394	1.575	2.362	1.299	6	1.008	1	1	1	R/L			
		17/27-T20	0.787	1.732	2.756	1.535	6	1.016	1	1	1	R/L			
		23/47-T20	0.787	2.362	4.724	1.535	6	1.016	1	1	1	R/L			
		33/36-T20	0.787	3.307	3.622	1.535	6	1.008	1	1	1	R/L			
		44/78-T20	0.787	4.409	7.874	1.535	6	1.016	1	1	1	R/L			
		78-T20	0.787	7.874	∞	1.614	6	1.008	1	1	1	R/L			
	16-5-	19/31-T15	0.591	1.968	3.149	1.496	6	1.008	1	1	1	R/L	KGMN500-□-□ KRMN500-C KGGN500-□-□ KRGN500-□	BHA0616	HW50L
		19/31-T25	0.984	1.968	3.149	1.732	6	1.008	1	1	1	R/L			
		27/43-T15	0.591	2.756	4.331	1.496	6	1.008	1	1	1	R/L			
		27/43-T25	0.984	2.756	4.331	1.732	6	1.008	1	1	1	R/L			
		39/59-T25	0.984	3.937	5.905	1.732	6	1.008	1	1	1	R/L			
		55/78-T25	0.984	5.512	7.874	1.732	6	1.008	1	1	1	R/L			
		74/86-T10	0.394	7.480	8.661	1.457	6	1.008	1	1	1	R/L			
		78-T25	0.984	7.874	∞	1.732	6	1.008	1	1	1	R/L			
	16-6-	66/74-T10	0.394	6.639	7.480	1.457	6	1.008	1	1	1	R/L	KGMN600-□-□ KRMN600-C KGGN600-□-□ KRGN600-□	BHA0616	HW50L
		74/86-T10	0.394	7.480	8.661	1.457	6	1.008	1	1	1	R/L			

Applicable inserts **C28 ~ C30**

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

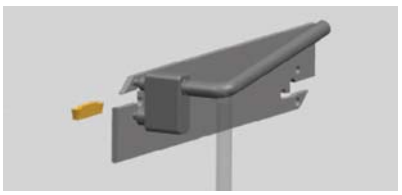
Code system

KGTBA	100	3	S
KGTB system	Shank height	Cutting width	**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.

KGTBA



KGMN
KGGN

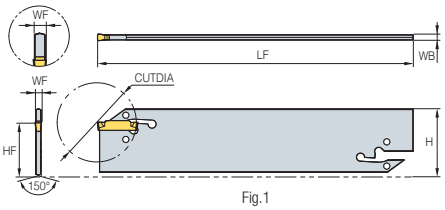


Fig.1

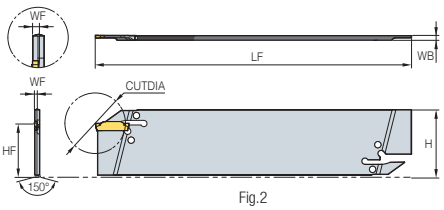


Fig.2

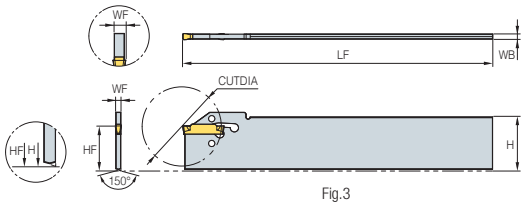


Fig.3

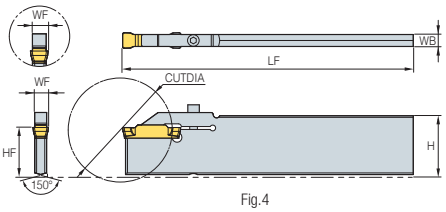


Fig.4

(inch)

Designation		LF	WF	WB	HF	H	HAND	ØD CUTDIA(2)	ØD CUTDIA(3)	Applicable insert	Wrench	Fig.
KGTBA	100-1.5-S	6	0.051	3/32	0.827	1	N	-	1.024	KG□□150-□-□	EW1203 (Separately ordered)	4
	125-1.5	6	0.051	3/32	0.984	1 1/4	N	-	1.024	KG□□150-□-□		1
	100-2-S	6	0.075	3/32	0.827	1	N	1.969	1.535	KG□□200-□-□ KG□□200S-□-R(4)		4
	125-2	6	0.075	3/32	0.984	1 1/4	N	1.969	1.535	KG□□200-□-□ KG□□200S-□-R(4)		1
	100-3-S	6	0.106	3/32	0.827	1	N	3.937	1.535	KG□□300-□-□ KG□□300S-□-R(4)		4
	125-3	6	0.106	3/32	0.984	1 1/4	N	3.937	1.535	KG□□300-□-□ KG□□300S-□-R(4)		2
	100-4-S	6	0.142	1/8	0.827	1	N	3.937	1.535	KG□□400-□-□ KG□□400S-□-R(4)		4
	125-4	6	0.142	1/8	0.984	1 1/4	N	3.937	1.535	KG□□400-□-□ KG□□400S-□-R(4)		2
	125-5	6	0.177	5/32	0.984	1 1/4	N	4.724	1.929	KG□□500-□-□ KG□□500S-□-R(4)		2
	125-6	6	0.220	13/64	0.984	1 1/4	N	4.724	1.929	KG□□600-□-□ KG□□600S-□-R(4)		2
	125-8-S(1)	6	0.280	1/4	0.984	1 1/4	N	3.150	2.323	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

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 : 0.079 inch 300 : 0.118 inch 400 : 0.157 inch		**Nose R** 04 : 1/64 inch		**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 : 0.079 inch 300 : 0.118 inch 400 : 0.157 inch		**Chip breaker** RM

• Shank (External)

MG	E	H	R	16	-	3	-	T10
・MGT Grooving	**Use** E : External	**Holder type** H : Horizontal V : Vertical U : Under cut	**Hand** R : Right-handed L : Left-handed	**Shank height, Shank width** 16 : 1 inch		**Width of insert cutting edge** 3 : 0.118 inch		**Max. depth of cut** T10 : 0.394 inch

• Shank (Internal)

MG	I	V	R	16	-	12	-	3
・MGT Grooving	**Use** I : Internal	**Holder type** V : Vertical U : Under cut	**Hand** R : Right-handed L : Left-handed	**Min. cutting dia.** 16 : 1 inch		**Shank dia.** 12: 0.75 inch		**Width of insert cutting edge** 3: 0.118 inch

• Shank (Facing)

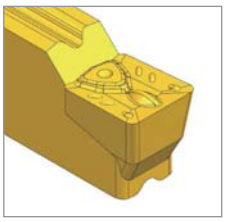
MG	F	H	R	16	4	-	44	/	78	-	T05
・MGT Grooving	**Use** F : Facing	**Holder type** H : Horizontal V : Vertical	**Hand** R : Right-handed L : Left-handed	**Shank height, Shank width** 16: 1 inch	**Width of insert cutting edge** 4: 0.157 inch		**Min. cutting dia.** 44: 1.732 inch		**Max. cutting dia.** 78: 3.071 inch		**Max. depth of cut** T05: 0.197 inch

Features of Chip breaker

◎: 1st recommendation ○: 2nd recommendation

MM Multi Medium

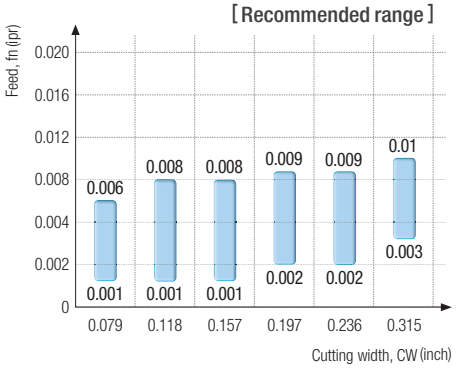




- For grooving, parting and turning
- Bumps on the rake surface
- Straight cutting edge
- Various workpieces

Recommended cutting											
External					Internal				Facing		Special
Grooving	Parting	Turning	Copying	Relief	Grooving	Turning	Copying	Relief	Grooving	Turning	
◎	○	◎			○	○			○	○	

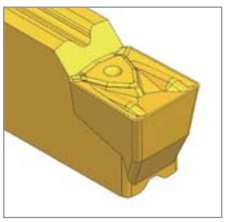
[Recommended range]



Recommended workpiece				
P	M	K	N	S
◎	○	○		○

GM Groove Medium

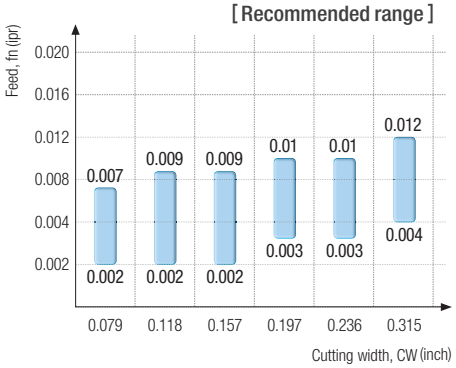




- For grooving and parting
- Straight cutting edge
- Bumps on the rake surface
- Various workpieces
- High depth of cut machining
- For Hard-to-cut material Cutting

Recommended cutting											
External					Internal				Facing		Special
Grooving	Parting	Turning	Copying	Relief	Grooving	Turning	Copying	Relief	Grooving	Turning	
◎	◎				○				○		

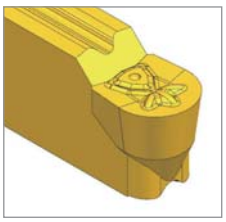
[Recommended range]



Recommended workpiece				
P	M	K	N	S
◎	◎	○		○

RM Relief Medium

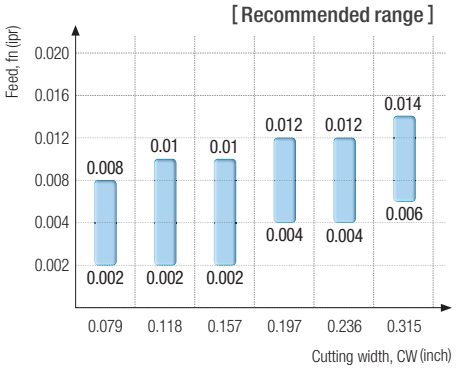




- For copying and relief cutting
- Round cutting edge
- Bumps on the rake surface
- Excellent surface finish

Recommended cutting											
External					Internal				Facing		Special
Grooving	Parting	Turning	Copying	Relief	Grooving	Turning	Copying	Relief	Grooving	Turning	
○			◎	◎			◎	◎			

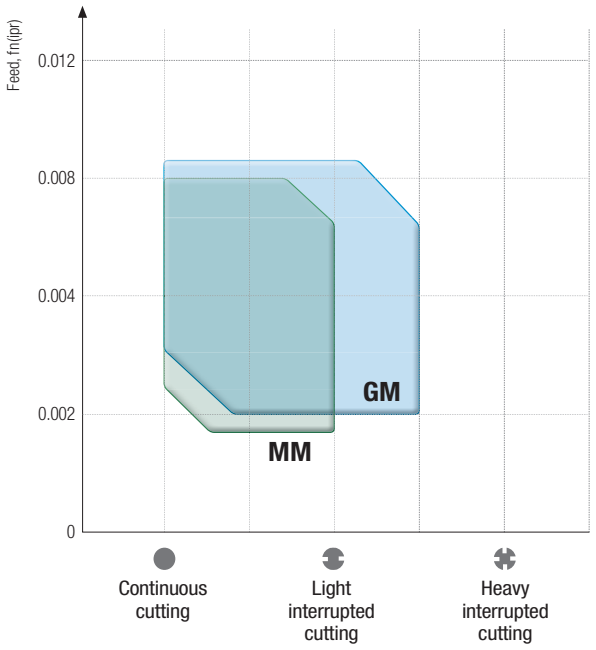
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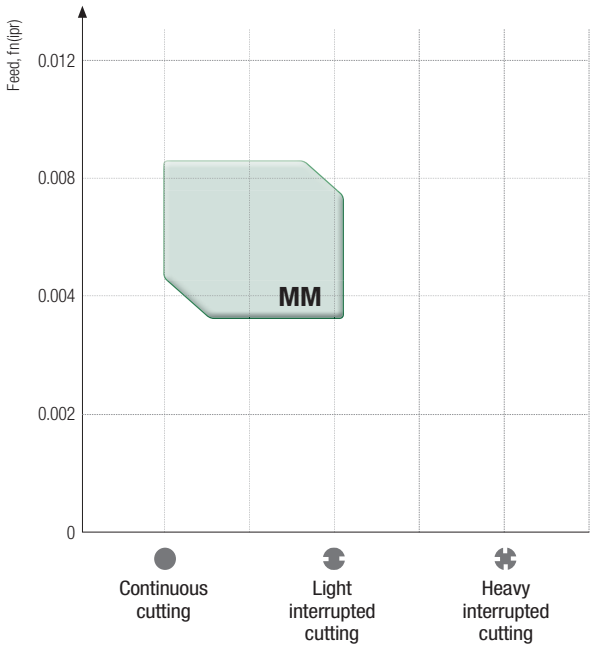
Recommended workpiece				
P	M	K	N	S
◎	○	○		○

Cutting range

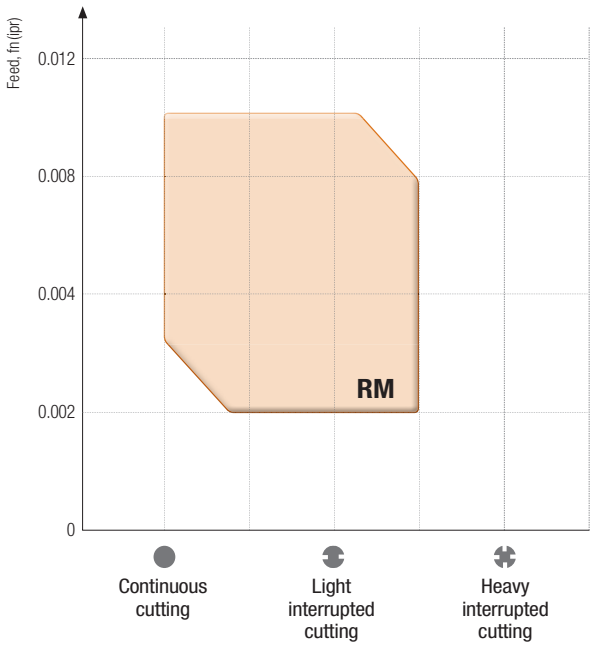
Grooving



Turning



Profile

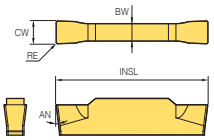
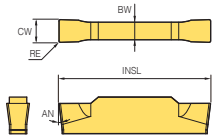
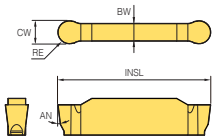


Recommended cutting conditions

Cutting width (inch) = Based on 0.118

Workpiece						Grade					Chip breaker				
						CVD		PVD			Grooving			Turning	
ISO	Workpiece material		AISI	ISO	Brinell hardness (HB)	NC3225	NC3235	PC3035	PC5300	PC9030	MM	GM	RM	MM	RM
						vc (sfm)					fn (ipr)			fn (ipr)	
P	Carbon steel	C = 0.25%	1025	C25	125	591	459	361	361	361	0.008	0.009	0.01	0.008	0.01
						902	**705**	**558**	**558**	**558**	**0.005**	**0.006**	**0.006**	**0.006**	**0.008**
						1214	951	755	755	755	0.001	0.002	0.002	0.005	0.006
		C = 0.35%	1035	C35	160	558	427	328	328	328	0.008	0.009	0.01	0.008	0.01
						837	**656**	**509**	**509**	**509**	**0.005**	**0.006**	**0.006**	**0.006**	**0.008**
						1115	886	689	689	689	0.001	0.002	0.002	0.005	0.006
		C = 0.45%	1045	C45	170	492	394	295	295	295	0.008	0.009	0.01	0.008	0.01
						771	**607**	**476**	**476**	**476**	**0.005**	**0.006**	**0.006**	**0.006**	**0.008**
						1050	820	656	656	656	0.001	0.002	0.002	0.005	0.006
	Low alloy steel ≤ 5%	Non-hardened	4140	42CrMo4	180	427	328	262	262	262	0.008	0.009	0.01	0.007	0.009
						640	**509**	**394**	**394**	**394**	**0.005**	**0.006**	**0.006**	**0.006**	**0.007**
						853	689	525	525	525	0.001	0.002	0.002	0.004	0.005
		Hardened and tempered	4145	-	350	262	197	164	164	164	0.008	0.009	0.01	0.007	0.009
						377	**295**	**246**	**246**	**246**	**0.005**	**0.006**	**0.006**	**0.006**	**0.007**
						492	394	328	328	328	0.001	0.002	0.002	0.004	0.005
	High alloy steel < 5%	Annealed	D2	-	200	328	262	197	197	197	0.008	0.009	0.008	0.007	0.009
						492	**394**	**295**	**295**	**295**	**0.005**	**0.006**	**0.005**	**0.006**	**0.007**
						656	525	394	394	394	0.001	0.002	0.001	0.004	0.005
		Hardened tool steel	H13	X40CrMoV5-1	352	262	197	164	164	164	0.008	0.009	0.008	0.007	0.009
						394	**312**	**246**	**246**	**246**	**0.005**	**0.006**	**0.005**	**0.006**	**0.007**
						525	427	328	328	328	0.001	0.002	0.001	0.004	0.005
M	Austenite series		304	X5CrNi18-9	160 ~ 180	-	328	-	262	262	0.006	0.006	0.007	0.007	0.009
						-	**476**	-	**377**	**377**	**0.004**	**0.004**	**0.005**	**0.006**	**0.007**
						-	623	-	492	492	0.001	0.001	0.003	0.004	0.005
			316	X5CrNiMo17-12-2	160 ~ 180	-	328	-	262	262	0.006	0.006	0.007	0.007	0.009
						-	**476**	-	**377**	**377**	**0.004**	**0.004**	**0.005**	**0.006**	**0.007**
						-	623	-	492	492	0.001	0.001	0.003	0.004	0.005
K	Gray cast iron	Low tensile strength	No25B	150	≤ 212	-	-	-	328	-	0.01	0.01	0.01	0.007	0.009
						-	-	-	**492**	-	**0.007**	**0.007**	**0.006**	**0.006**	**0.007**
						-	-	-	656	-	0.004	0.004	0.002	0.004	0.005
		High tensile strength	No35B No50B	250 350	≤ 248 ≤ 277	-	-	-	262	-	0.01	0.01	0.01	0.007	0.009
						-	-	-	**410**	-	**0.007**	**0.007**	**0.006**	**0.006**	**0.007**
						-	-	-	558	-	0.004	0.004	0.002	0.004	0.005
	Ductile cast iron	Ferritic	65-45-12	500-7	170 ~ 241	-	-	-	230	-	0.01	0.01	0.01	0.008	0.01
						-	-	-	**344**	-	**0.007**	**0.007**	**0.006**	**0.006**	**0.008**
						-	-	-	459	-	0.004	0.004	0.002	0.005	0.006
		Pearlitic	80-55-06	600-3	192 ~ 269	-	-	-	164	-	0.01	0.01	0.01	0.008	0.01
						-	-	-	**262**	-	**0.007**	**0.007**	**0.006**	**0.006**	**0.008**
						-	-	-	361	-	0.004	0.004	0.002	0.005	0.006
		Martensitic	100-70-03	700-2	229 ~ 302	-	-	-	164	-	0.008	0.009	0.008	0.008	0.01
						-	-	-	**262**	-	**0.005**	**0.006**	**0.005**	**0.006**	**0.008**
						-	-	-	361	-	0.001	0.002	0.001	0.005	0.006
S	Inconel		-	-	200	-	-	-	66	-	0.004	0.004	0.005	0.005	0.006
						-	-	-	**115**	-	**0.002**	**0.002**	**0.004**	**0.004**	**0.006**
						-	-	-	164	-	0.001	0.001	0.003	0.004	0.005
			-	-	250 350	-	-	-	66	-	0.004	0.004	0.005	0.005	0.006
						-	-	-	**115**	-	**0.002**	**0.002**	**0.004**	**0.004**	**0.006**
						-	-	-	164	-	0.001	0.001	0.003	0.004	0.005
	Titanium alloy		-	-	3400	-	-	-	197	-	0.004	0.004	0.007	0.007	0.008
						-	-	-	**262**	-	**0.002**	**0.002**	**0.005**	**0.006**	**0.007**
						-	-	-	328	-	0.001	0.001	0.003	0.004	0.006
			-	-	950	-	-	-	98	-	0.004	0.004	0.007	0.007	0.008
						-	-	-	**148**	-	**0.002**	**0.002**	**0.005**	**0.006**	**0.007**
						-	-	-	197	-	0.001	0.001	0.003	0.004	0.006

MGT Plus / MGT applicable inserts

Application	Picture	Designation		Coated					Dimensions (inch)							Geometry
				NC3225	NC3235	PC3035	PC5300	PC9030	SSC	CW	RE	BW	INSL	AN	HAND	
Grooving · Turning	PGMN-MM 	PGMN	200-02-MM	●	●	●	●	●	20	0.079	0.008	0.063	0.63	7	N	
			300-04-MM	●	●	●	●	●	30	0.118	0.016	0.093	0.827	7	N	
			400-04-MM	●	●	●	●	●	40	0.157	0.016	0.13	0.827	7	N	
			500-08-MM	●	●		●	●	50	0.197	0.031	0.161	1.024	7	N	
			600-08-MM	●	●		●	●	60	0.236	0.031	0.197	1.024	7	N	
			800-08-MM	●	●		●	●	80	0.315	0.031	0.236	1.22	7	N	
Grooving	PGMN-GM 	PGMN	150-015-GM	●	●	●	●	●	15	0.059	0.006	0.047	0.63	7	N	
			200-02-GM	●	●	●	●	●	20	0.079	0.008	0.063	0.63	7	N	
			250-02-GM	●	●	●	●	●	25	0.098	0.008	0.079	0.728	7	N	
			300-03-GM	●	●	●	●	●	30	0.118	0.012	0.093	0.827	7	N	
			400-03-GM	●	●	●	●	●	40	0.157	0.012	0.13	0.827	7	N	
Reliefing profiling	PRMN-RM 	PRMN	200-RM	●	●	●	●	●	20	0.079	0.039	0.063	0.63	7	N	
			300-RM	●	●	●	●	●	30	0.118	0.059	0.093	0.827	7	N	
			400-RM	●	●	●	●	●	40	0.157	0.079	0.13	0.827	7	N	
			500-RM	●	●		●	●	50	0.197	0.098	0.161	1.024	7	N	
			600-RM	●	●				60	0.236	0.118	0.197	1.024	7	N	
			800-RM	●	●				80	0.315	0.157	0.236	1.22	7	N	

● : 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

MGGN-A



- Smooth chip flow
- Prevent built-up edge face grooving

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

Parting off (MGMN / MGMR/L)

Workpiece	Cutting Speed (vc = sfm)								Feed (fn = ipr)				
	CVD				PVD			Uncoated	Cutting width (inch)				
	NC3120	NC3030	NCM325	NC5330	PC8110	PC5300	PC6510	ST30A	0.079	0.118	0.157	0.197	0.236
SM□□C	260~590			260~590		260~590			0.001~0.006	0.001~0.008	0.003~0.012	0.004~0.016	0.005~0.020
SCM	230~490	230~490	230~490	230~490		230~490			0.001~0.006	0.001~0.008	0.003~0.012	0.004~0.016	0.005~0.020
GC/GCD				160~330			160~330	160~330	0.002~0.005	0.004~0.010	0.004~0.012	0.004~0.014	0.004~0.016
STS			160~390	160~390	160~390	200~460			0.001~0.004	0.001~0.006	0.003~0.010	0.004~0.014	0.005~0.016
Non-ferrous metal (Al, Copper)								660~1480	0.002~0.004	0.002~0.008	0.002~0.012	0.002~0.012	0.002~0.014

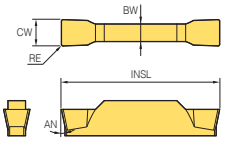
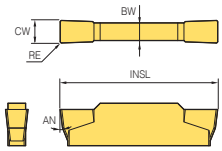
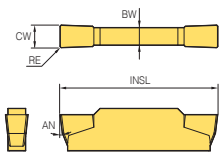
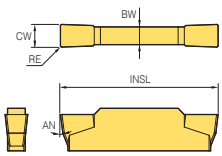
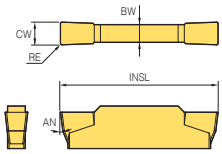
Facing (FGD / FGM / FMM / MFMN / MGMN)

Workpiece	Cutting Speed (vc = sfm)							Feed (fn = ipr)		
	CVD				PVD		Uncoated	Cutting width (inch)		
	NC6310	NC3030	NC5330	NC3120	PC215K	PC8110 / PC5300	H01	0.118	0.157	0.197
SM□□C			330~530	330~530				0.002~0.004	0.002~0.005	0.002~0.006
SCM		160~430	160~430	160~430			656~2625	0.002~0.004	0.002~0.005	0.002~0.006
GC/GCD	390~490		390~490		390~490			0.002~0.004	0.002~0.005	0.002~0.006
STS			200~490			200~490		0.002~0.004	0.002~0.005	0.002~0.006
Non-ferrous metal (Al, Copper)								0.002~0.006	0.003~0.006	0.003~0.006

Grooving, Turning (MGMN / MRMN)

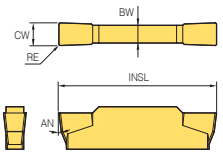
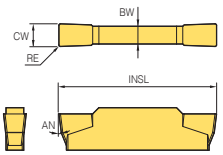
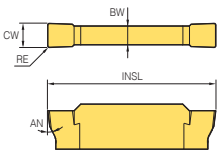
Workpiece	Cutting Speed (vc = sfm)								Feed (fn = ipr)					
	CVD			PVD		Cermet	Uncoated		Cutting width (inch)					
	NC3120	NC3030	NC5330	PC215K	PC5300	CN2500	ST30A	ST20	0.020~0.039	0.039~0.079	0.079~0.118	0.118~0.157	0.157~0.197	0.236~0.315
SM□□C	260~660		260~660		260~590	260~390		260~390	0.001~0.003	0.002~0.004	0.002~0.004	0.002~0.005	0.002~0.006	0.002~0.006
SCM	260~590	260~590	260~590		260~530	260~390	260~390	260~390	0.001~0.003	0.002~0.003	0.002~0.003	0.002~0.004	0.002~0.005	0.002~0.006
GC/GCD			200~430		200~430				0.001~0.003	0.002~0.003	0.002~0.003	0.002~0.004	0.002~0.004	0.002~0.005
STS			200~330	200~330			200~330		0.001~0.003	0.002~0.004	0.002~0.004	0.002~0.005	0.002~0.005	0.002~0.006
Non-ferrous metal (Al, Copper)				490~980			490~1310		0.002~0.005	0.002~0.006	0.002~0.006	0.003~0.006	0.003~0.006	0.004~0.008

Applicable insert

Application	Picture	Designation		Coated							Uncoated	Dimensions (inch)							Configuration
				NC3120	NC3225	NC3030	NC5330	NC6315	PC5300	PC8110	PC9030	H01	SSC	CW	RE	BW	INSL	AN	HAND	
Face Grooving	MFMN	**MFMN**	**300**				●						30	0.118	1/128	0.079	0.709	7	N	
Grooving · Turning	MGGN-M		**300-02-M**										30	0.118	1/128	0.093	0.827	7	N	
			300-04-M										30	0.118	1/64	0.093	0.827	7	N	
			300-08-M										30	0.118	1/32	0.093	0.827	7	N	
			400-02-M										40	0.157	1/128	0.130	0.827	7	N	
			400-04-M										40	0.157	1/26	0.130	0.827	7	N	
			400-08-M										40	0.157	1/32	0.130	0.827	7	N	
			500-02-M										50	0.197	1/128	0.161	1.024	7	N	
			500-04-M										50	0.197	1/64	0.161	1.024	7	N	
			500-08-M										50	0.197	1/32	0.161	1.024	7	N	
			600-02-M										60	0.236	1/128	0.197	1.024	7	N	
			600-04-M										60	0.236	1/64	0.197	1.024	7	N	
			600-08-M										60	0.236	1/32	0.197	1.024	7	N	
Grooving	MGMN-G	**MGMN**	**150-G**		●	●			●		●	●	15	0.059	0.006	0.047	0.630	7	N	
			200-G	●	●	●			●		●	●	20	0.079	1/128	0.063	0.630	7	N	
			250-G			●			●		●		25	0.098	1/128	0.079	0.728	7	N	
			300-G	●	●	●	●		●		●		30	0.118	1/64	0.093	0.827	7	N	
			400-G	●		●			●		●		40	0.157	1/64	0.13	0.827	7	N	
			500-G										50	0.197	1/32	0.161	1.024	7	N	
			600-G										60	0.236	1/32	0.197	1.024	7	N	
Grooving · Turning	MGMN-M	**MGMN**	**200-M**	●	●	●	●		●		●	●	20	0.079	1/128	0.047	0.630	7	N	
			250-M	●	●	●			●		●		25	0.098	1/128	0.079	0.728	7	N	
			300-02-M				●						30	0.118	1/128	0.093	0.827	7	N	
			300-M	●	●	●	●	●	●	●	●	●	30	0.118	1/64	0.093	0.827	7	N	
			350-03-M										40	0.138	3/256	0.130	0.827	7	N	
			400-02-M										40	0.157	1/128	0.130	0.827	7	N	
			400-M	●	●	●	●	●	●	●	●	●	40	0.157	1/64	0.130	0.827	7	N	
			500-04-M			●							50	0.197	1/64	0.161	1.024	7	N	
			500-M	●	●	●	●	●			●		50	0.197	1/32	0.161	1.024	7	N	
			600-M	●	●	●	●	●					60	0.236	1/32	0.197	1.024	7	N	
			800-M			●	●						80	0.315	1/32	0.236	1.220	7	N	
Grooving	MGMN-L	**MGMN**	**200-02-L**										20	0.079	1/128	0.063	0.630	7	L	
			200-04-L										20	0.079	1/64	0.067	0.787	7	L	
			250-02-L										25	0.099	1/128	0.789	0.729	7	L	
			300-02-L						●				30	0.118	1/128	0.093	0.827	7	L	
			300-04-L										30	0.118	1/64	0.091	0.787	7	L	
			400-02-L						●				40	0.157	1/128	0.130	0.827	7	L	
			400-04-L										40	0.157	1/64	0.130	0.787	7	L	
			500-03-L										50	0.197	3/256	0.161	1.024	7	L	
			500-04-L						●				50	0.197	1/64	0.161	1.024	7	L	

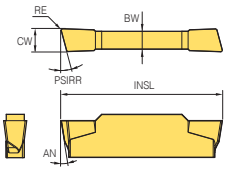
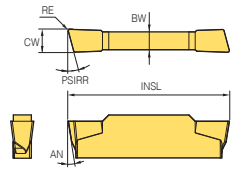
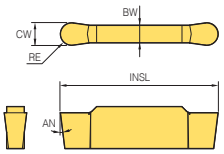
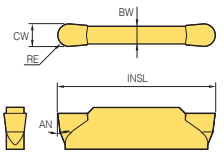
● : Stock item

Applicable insert

Application	Picture	Designation	Coated								Uncoated		Dimensions (inch)							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	0.059	3/512	0.048	0.630	7	R	
		200-02-R											20	0.079	1/128	0.063	0.630	7	R	
		200-04-R											20	0.079	1/64	0.067	0.87	7	R	
		250-02-R											25	0.099	1/128	0.789	0.729	7	R	
		300-02-R			●			●					30	0.118	1/128	0.093	0.827	7	R	
		300-04-R											30	0.118	1/64	0.091	0.787	7	R	
		400-02-R			●			●					40	0.157	1/128	0.130	0.827	7	R	
		400-04-R											40	0.157	1/64	0.130	0.787	7	R	
		500-04-R			●			●					50	0.197	1/64	0.161	1.024	7	R	
		500-08-R											50	0.197	1/64	0.161	1.024	7	R	
		600-04-R											60	0.237	1/64	0.197	1.024	7	R	
		600-08-R											60	0.237	1/32	0.197	1.024	7	R	
Grooving • Turning	MGMN-T	MGMN 150-015-T											15	0.059	3/512	0.048	0.630	7	N	
		200-T											20	0.079	1/128	0.063	0.630	7	N	
		300-T			●			●					30	0.118	1/64	0.093	0.827	7	N	
		400-T			●			●					40	0.157	1/64	0.130	0.827	7	N	
		500-04-T											50	0.197	1/64	0.161	1.024	7	N	
		500-T						●					50	0.197	1/32	0.161	1.024	7	N	
		600-08-T											60	0.237	1/32	0.197	1.024	7	N	
Grooving	MGGN-A	MGGN 300-02-A											30	0.118	1/128	0.093	0.827	7	N	
		300-04-A											30	0.18	1/64	0.093	0.827	7	N	
		300-08-A											30	0.118	1/32	0.093	0.827	7	N	
		400-02-A											40	0.157	1/128	0.130	0.827	7	N	
		400-04-A											40	0.157	1/64	0.130	0.827	7	N	
		400-08-A											40	0.157	1/32	0.130	0.827	7	N	
		500-02-A											50	0.197	1/128	0.161	1.024	7	N	
		500-04-A											50	0.197	1/64	0.161	1.024	7	N	
		500-08-A											50	0.197	1/32	0.161	1.024	7	N	

● : Stock item

Applicable insert

Application	Picture	Designation	Coated							Uncoated		Dimensions (inch)								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	0.118	-	6	1/128	0.827	0.098	7	R	
		300-8D-PS											30	0.118	-	5	1/128	0.827	0.098	7	R	
		300-15D-PS											30	0.118	-	15	1/128	0.827	0.098	7	R	
		400-4D-PS											40	0.157	-	4	3/256	0.827	0.130	7	R	
		500-4D-PS											50	0.197	-	4	3/256	1.024	0.161	7	R	
	MGML-PS	MGML 300-6D-PS											30	0.118	6	-	1/128	0.827	0.098	7	L	
		300-8D-PS											30	0.118	5	-	1/128	0.827	0.098	7	L	
		300-15D-PS											30	0.118	15	-	1/128	0.827	0.098	7	L	
		400-4D-PS											40	0.157	4	-	3/256	0.827	0.130	7	L	
		500-4D-PS											50	0.197	4	-	3/256	1.024	0.161	7	L	
Parting off	MGMR-PT	MGMR 200-6D-PT						●					20	0.079	-	6	1/128	0.630	0.063	7	R	
		300-6D-PT											30	0.118	-	6	1/128	0.827	0.093	7	R	
		300-8D-PT		●									30	0.118	-	8	1/128	0.827	0.093	7	R	
		300-15D-PT											30	0.118	-	15	1/128	0.827	0.093	7	R	
		400-4D-PT											40	0.157	-	4	3/256	0.827	0.130	7	R	
		500-4D-PT											50	0.197	-	4	3/256	1.024	0.161	7	R	
	MGML-PT	MGML 200-6D-PT											20	0.079	6	-	1/128	0.630	0.063	7	L	
		300-6D-PT				●							30	0.118	6	-	1/128	0.827	0.093	7	L	
		300-8D-PT											30	0.118	8	-	1/128	0.827	0.093	7	L	
		300-15D-PT											30	0.118	15	-	1/128	0.827	0.093	7	L	
		400-4D-PT											40	0.157	4	-	3/256	0.827	0.130	7	L	
		500-4D-PT											50	0.197	4	-	3/256	1.024	0.161	7	L	
Aluminum	MRGN-A	MRGN 300-A											30	0.118	-	-	1/16.	0.827	0.191	7	N	
		400-A									●		40	0.157	-	-	5/64	0.827	0.191	7	N	
		500-A											50	0.197	-	-	3/32	1.024	0.230	7	N	
		600-A									●		60	0.236	-	-	1/8.	1.024	0.229	12	N	
		800-A									●		80	0.315	-	-	5/32	1.220	0.257	12	N	
Reliefing Profiling	MRMN-M	MRMN 200-M	●	●	●					●			20	0.079	-	-	3/64	0.630	0.138	7	N	
		300-M	●	●	●	●		●		●			30	0.118	-	-	1/16.	0.827	0.191	7	N	
		400-M	●	●	●	●				●			40	0.157	-	-	5/64	0.827	0.191	7	N	
		500-M			●		●						50	0.197	-	-	3/32	1.024	0.230	7	N	
		600-M		●	●	●							60	0.236	-	-	1/8.	1.024	0.229	7	N	
		800-M			●	●							80	0.315	-	-	5/32	1.220	0.257	7	N	

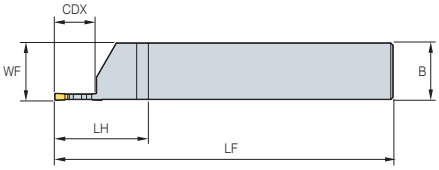
● : Stock item

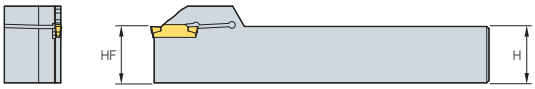
MGEHR/L

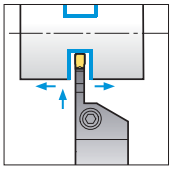
For grooving, turning, parting off, relief, profiling machining



PGMN PRMN MGMN MGGN MRGN MGMR MRMN







• R type holder

(inch)

Designation		CDX	LH	LF	WF	HF	HBH	B	H	HAND	Applicable insert	Screw	Wrench
MGEHR/L	10-1.5	0.57	1.437	4	0.635	5/8	-	5/8	5/8	R/L	PGMN150-□-□ MGMN150-G	LTX0514	TW20L
	12-1.5	0.57	1.437	5	0.760	3/4	-	3/4	3/4	R/L			
	16-1.5	0.57	1.437	6	1.010	1	-	1	1	R/L			
	08-2	0.57	1.260	4	0.510	1/2	-	1/2	1/2	R/L	PGMN200-□-□ PRMN200-□ MGMN200-G MGMN200-M MGMR200-□□-□□	MHA0512	HW40L
	10-2	0.57	1.437	4	0.635	5/8	-	5/8	5/8	R/L			
	12-2	0.57	1.437	5	0.760	3/4	-	3/4	3/4	R/L			
	16-2	0.57	1.437	6	1.010	1	-	1	1	R/L			
	10-2.5	0.65	1.535	4	0.637	5/8	-	5/8	5/8	R/L	PGMN250-□-□ MGMN250-G MGMN250-M	MHA0512	HW40L
	12-2.5	0.65	1.535	5	0.762	3/4	-	3/4	3/4	R/L			
	16-2.5	0.65	1.535	6	1.012	1	-	1	1	R/L			
	10-3	0.72	1.634	4	0.639	5/8	-	5/8	5/8	R/L	PGMN300-□-□ PRMN300-□ MGMN300-M/T MGGN300-□□-M MRMN300-M MGMR300-□□-□□ MGMN300-□□-L/R	BHA0616	HW50L
	12-3	0.70	1.634	5	0.764	3/4	-	3/4	3/4	R/L			
	12-3-T03	0.39	1.634	5	0.764	3/4	-	3/4	3/4	R/L			
	16-3	0.70	1.634	6	1.014	1	-	1	1	R/L			
	16-3-T03	0.39	1.634	6	1.014	1	-	1	1	R/L			
	20-3	0.70	1.634	6 3/4	1.264	1 1/4	-	1 1/4	1 1/4	R/L			
	20-3-T03	0.39	1.634	6 3/4	1.264	1 1/4	-	1 1/4	1 1/4	R/L			
	12-4	0.70	1.634	5	0.766	3/4	-	3/4	3/4	R/L	PGMN400-□-□ PRMN400-□ MGMN400-M/T MGGN400-□□-M MRMN400-M MGMR400-□□-□□ MGMN400-□□-L/R		
	12-4-T03	0.39	1.634	5	0.766	3/4	-	3/4	3/4	R/L			
	16-4	0.70	1.634	6	1.016	1	-	1	1	R/L			
	16-4-T03	0.39	1.634	6	1.016	1	-	1	1	R/L			
	20-4	0.70	1.634	6 3/4	1.266	1 1/4	-	1 1/4	1 1/4	R/L			
	20-4-T03	0.39	1.831	6 3/4	1.266	1 1/4	-	1 1/4	1 1/4	R/L			
	12-5	0.90	1.831	5	0.770	3/4	-	3/4	3/4	R/L	PGMN500-□-□ PRMN500-□ MGMN500-M/T MGGN500-□□-M MRMN500-M MGMR500-□□-□□ MGMN500-□□-L/R		
	12-5-T05	0.59	1.594	5	0.770	3/4	-	3/4	3/4	R/L			
	16-5	0.90	1.831	6	1.020	1	-	1	1	R/L			
	16-5-T05	0.59	1.831	6	1.020	1	-	1	1	R/L			
	20-5	0.90	1.831	6 3/4	1.270	1 1/4	-	1 1/4	1 1/4	R/L			
	20-5-T05	0.59	1.831	6 3/4	1.270	1 1/4	-	1 1/4	1 1/4	R/L			
	12-6	0.90	1.831	5	0.774	3/4	-	3/4	3/4	R/L	PGMN600-□-□ PRMN600-□ MGMN600-M MGGN600-□□-M MRMN600-M		
	12-6-T05	0.59	1.831	5	0.774	3/4	-	3/4	3/4	R/L			
	16-6	0.90	1.831	6	1.024	1	-	1	1	R/L			
	16-6-T05	0.59	1.831	6	1.024	1	-	1	1	R/L			
	20-6	0.90	1.831	6 3/4	1.274	1 1/4	-	1 1/4	1 1/4	R/L			
	20-6-T05	0.59	1.831	6 3/4	1.274	1 1/4	-	1 1/4	1 1/4	R/L			
	16-8	1.10	2.028	6	1.043	1	-	1	1	R/L	PGMN800-□-□ PRMN800-□ MRMN800-M MGMN800-M		
	16-8-T05	0.59	2.028	6	1.043	1	-	1	1	R/L			
	20-8	1.10	2.028	6 3/4	1.293	1 1/4	-	1 1/4	1 1/4	R/L			
	20-8-T05	0.59	2.028	6 3/4	1.293	1 1/4	-	1 1/4	1 1/4	R/L			
	16-6A	0.90	1.831	6	1.024	1	-	1	1	R/L	MRGN600-A		
	16-6A-T05	0.59	1.831	6	1.024	1	-	1	1	R/L			
	20-6A	0.90	1.831	6 3/4	1.274	1 1/4	-	1 1/4	1 1/4	R/L			
	20-6A-T05	0.59	1.831	6 3/4	1.293	1 1/4	-	1 1/4	1 1/4	R/L			
	16-8A	1.10	2.028	6	1.043	1	-	1	1	R/L	MRGN800-A		
	16-8A-T05	0.59	2.028	6	1.043	1	-	1	1	R/L			
	20-8A	1.10	2.028	6 3/4	1.293	1 1/4	-	1 1/4	1 1/4	R/L			
	20-8A-T05	0.59	2.028	6 3/4	1.293	1 1/4	-	1 1/4	1 1/4	R/L			

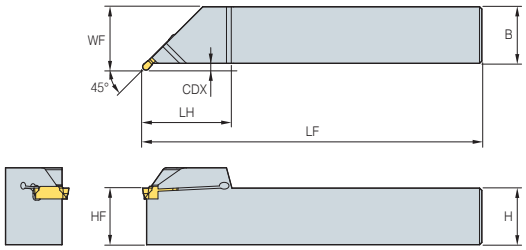
Applicable inserts **C45 ~ C49**

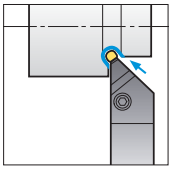
MGEUR/L

For relief, profiling machining



PRMN MRMN
MRGN





45°
• R type holder

(inch)

Designation		CDX	LH	LF	WF	HF	B	H	HAND	Applicable insert	Screw	Wrench
MGEUR/L	M12-3	0.11	1.555	5	0.967	3/4	3/4	3/4	R/L	PRMN300-□ MRMN300-M	BHA0616	HW50L
	M16-3	0.11	1.555	6	1.217	1	1	1	R/L			
	M20-3	0.11	1.555	6 3/4	1.467	1 1/3	1 1/3	1 1/3	R/L			
	M12-4	0.11	1.555	5	0.967	3/4	3/4	3/4	R/L	PRMN400-□ MRMN400-M		
	M16-4	0.11	1.555	6	1.217	1	1	1	R/L			
	M20-4	0.11	1.555	6 3/4	1.467	1 1/4	1 1/4	1 1/4	R/L			
	M12-5	0.15	1.575	5	1.026	3/4	3/4	3/4	R/L	PRMN500-□ MRMN500-M		
	M16-5	0.15	1.614	6	1.276	1	1	1	R/L			
	M20-5	0.15	1.575	6 3/4	1.526	1 1/4	1 1/4	1 1/4	R/L			
	M12-6	0.15	1.575	5	1.222	3/4	3/4	3/4	R/L	PRMN600-□ MRMN600-M		
	M16-6	0.15	1.575	6	1.276	1	1	1	R/L			
	M20-6	0.15	1.575	6 3/4	1.526	1 1/4	1 1/4	1 1/4	R/L			
	M16-8	0.19	1.555	6	1.354	1	1	1	R/L	PRMN800-□ MRMN800-M		
	M20-8	0.19	1.772	6 3/4	1.604	1 1/4	1 1/4	1 1/4	R/L			
	M16-6A	0.15	1.575	6	1.276	1	1	1	R/L	MRGN600-A		
	M20-6A	0.15	1.575	6 3/4	1.526	1 1/4	1 1/4	1 1/4	R/L			
	M16-8A	0.19	1.772	6	1.354	1	1	1	R/L	MRGN800-A		
	M20-8A	0.19	1.772	6 3/4	1.604	1 1/4	1 1/4	1 1/4	R/L			

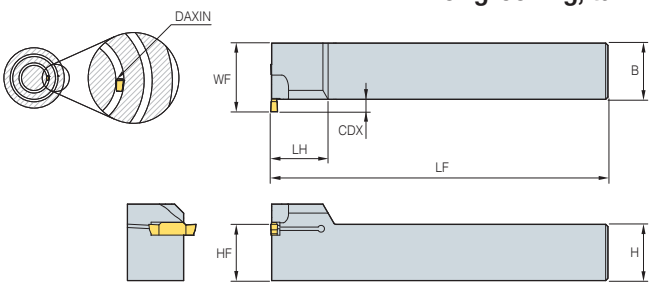
Applicable inserts **C45 ~ C49**

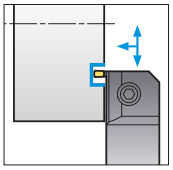
MGEVR/L

For grooving, turning, profiling machining



PGMN MGMN MGGN
PRMN MRMN MRGN





• R type holder

(inch)

Designation		CDX	LH	LF	WF	HF	HBH	B	H	DAXIN	HAND	Applicable insert	Screw	Wrench
MGEVR/L	12-1.5	0.11	1.102	5	0.868	3/4	-	3/4	3/4	3.346	R/L	PGMN150-□-□ MGMN150-G	LTX0514	TW20L
	16-1.5	0.11	1.102	6	1.118	1	-	1	1	3.346	R/L			
	20-1.5	0.11	1.102	6 3/4	1.368	1 1/4	-	1 1/4	1 1/4	3.346	R/L			
	12-2	0.13	1.102	5	0.888	3/4	-	3/4	3/4	2.559	R/L	PGMN200-□-□ PRMN200-□ MGMN200-M MGMN200-G	BHA0616	HW50L
	16-2	0.13	1.102	6	1.138	1	-	1	1	2.559	R/L			
	20-2	0.13	1.102	6 3/4	1.388	1 1/4	-	1 1/4	1 1/4	2.559	R/L			
	12-2.5	0.15	1.102	5	0.907	3/4	-	3/4	3/4	2.559	R/L	PGMN250-□-□ MGMN250-M MGMN250-G		
	16-2.5	0.15	1.102	6	1.157	1	-	1	1	2.559	R/L			
	20-2.5	0.15	1.102	6 3/4	1.407	1 1/4	-	1 1/4	1 1/4	2.559	R/L			
	12-3	0.21	1.102	5	0.967	3/4	-	3/4	3/4	2.953	R/L	PGMN300-□-□ PRMN300-□ MGMN300-M/T MGGN300-□-M MRMN300-M MGMN300-□□-L/R		
	16-3	0.21	1.102	6	1.217	1	-	1	1	2.953	R/L			
	20-3	0.21	1.102	6 3/4	1.467	1 1/4	-	1 1/4	1 1/4	2.953	R/L			
	12-4	0.21	1.102	5	0.967	3/4	-	3/4	3/4	2.756	R/L	PGMN400-□-□ PRMN400-□ MGMN400-M/T MGGN400-□□-M MRMN400-M MGMN400-□□-L/R		
	16-4	0.21	1.102	6	1.217	1	-	1	1	2.756	R/L			
	20-4	0.21	1.102	6 3/4	1.467	1 1/4	-	1 1/4	1 1/4	2.756	R/L			
	12-5	0.27	1.181	5	1.026	3/4	-	3/4	3/4	2.953	R/L	PGMN500-□-□ PRMN500-□ MGMN500-M/T MGGN500-□□-M MRMN500-M MGMN500-□□-L/R		
	16-5	0.27	1.201	6	1.276	1	-	1	1	2.953	R/L			
	20-5	0.27	1.181	6 3/4	1.526	1 1/4	-	1 1/4	1 1/4	2.953	R/L			
	12-6	0.27	1.201	5	1.222	3/4	-	3/4	3/4	2.756	R/L	PGMN600-□-□ PRMN600-□ MGMN600-M MGGN600-□□-M MRMN600-M		
	16-6	0.27	1.181	6	1.276	1	-	1	1	2.756	R/L			
	20-6	0.27	1.201	6 3/4	1.526	1 1/4	-	1 1/4	1 1/4	2.756	R/L			
	16-8	0.35	1.220	6	1.354	1	-	1	1	1.969	R/L	PGMN800-□-□ PRMN800-□ MRMN800-M MGMN800-M		
	20-8	0.35	1.220	6 3/4	1.604	1 1/4	-	1 1/4	1 1/4	1.969	R/L			
	16-6A	0.27	1.181	6	1.276	1	-	1	1	2.756	R/L	MRGN600-A		
	20-6A	0.27	1.181	6 3/4	1.526	1 1/4	-	1 1/4	1 1/4	2.756	R/L			
	16-8A	0.35	1.181	6	1.354	1	-	1	1	1.772	R/L	MRGN800-A		
	20-8A	0.35	1.181	6 3/4	1.604	1 1/4	-	1 1/4	1 1/4	1.772	R/L			

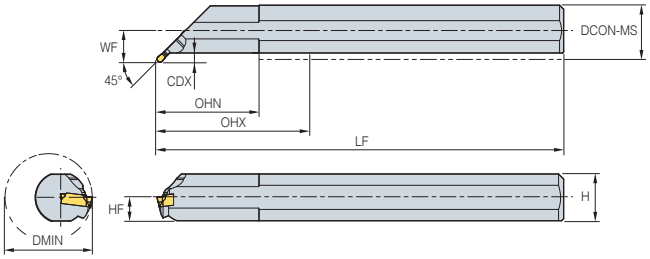
Applicable inserts **C45 ~ C49**

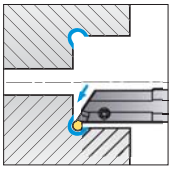
MGIUR/L

For relief, profiling machining



PRMN MRMN MRGN





45°

• R type holder

(inch)

Designation		CDX	DMIN	OHN	LF	WF	H	DCON-MS	HAND	Applicable insert	Screw	Wrench
MGIUR/L	23-12-3	0.13	1 7/16	1.772	6	0.512	0.670	3/4	R/L	PRMN300-□ MRMN300-M	MHA0512	HW40L
	26-16-3	0.13	1 5/8	1.772	8	0.610	0.920	1	R/L			
	32-20-3	0.13	2	2.559	10	0.748	1.170	1 1/4	R/L			
	23-12-4	0.13	1 7/16	1.772	6	0.512	0.670	3/4	R/L	PRMN400-□ MRMN400-M		
	26-16-4	0.13	1 5/8	1.772	8	0.610	0.920	1	R/L			
	32-20-4	0.13	2	2.559	10	0.748	1.170	1 1/4	R/L			
	26-16-5	0.13	1 5/8	1.772	8	0.610	1.920	1	R/L	PRMN500-□ MRMN500-M	BHA0616 BHA0620	HW50L
	32-20-5	0.13	2	1.772	8	0.748	1.170	1 1/4	R/L			
	26-16-6	0.13	1 5/8	2.559	10	0.748	1.920	1	R/L	PRMN600-□ MRMN600-M	BHA0616 BHA0620	
	32-20-6	0.13	2	2.559	10	0.748	1.170	1 1/4	R/L			
	26-16-8	0.13	1 5/8	1.772	8	0.610	0.920	1	R/L	PRMN800-□ MRMN800-M	BHA0616 BHA0620	
	32-20-8	0.25	2	2.559	10	0.748	1.170	1 1/4	R/L			
	26-16-6A	0.25	1 5/8	1.772	8	0.610	0.920	1	R/L	MRGN600-A	BHA0616 BHA0620	
	32-20-6A	0.13	2	2.559	10	0.748	1.170	1 1/4	R/L			
	26-16-8A	0.25	1 5/8	1.772	8	0.728	0.920	1	R/L	MRGN800-A	BHA0616 BHA0620	
	32-20-8A	0.25	2	2.559	10	0.866	1.170	1 1/4	R/L			

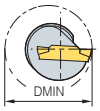
Applicable inserts **C45 ~ C49**

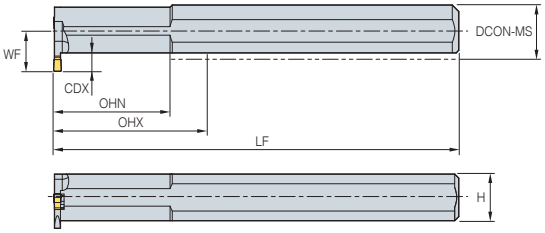
MGIVR/L

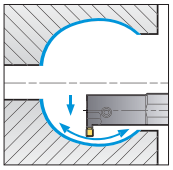
For grooving, turning, profiling machining



PGMN PRMN MGMN MGGN MRMN MRGN







• R type holder

(inch)

Designation		CDX	DMIN	OHN	LF	WF	H	DCON-MS	HAND	Applicable insert	Screw	Wrench
MGIVR/L	12-10-1.5	0.15	3/4	1.378	5	0.445	0.545	5/8	R/L	PGMN150-□-□ MGMN150-G	MHB0310	HW25L
	16-12-1.5	0.15	1	1.772	6	0.516	0.670	3/4	R/L		MHA0512	HW40L
	18-16-1.5	0.15	1 1/4	1.772	8	0.638	0.920	1	R/L			
	12-10-2	0.19	3/4	1.378	4.920	0.470	0.590	5/8	R/L	PGMN200-□-□ PRMN200-□-□ MGMN200-G MGMN200-M MRMN200-M	MHB0310	HW25L
	16-12-2	0.19	1	1.772	6	0.550	0.708	3/4	R/L		MHA0512	HW40L
	18-16-2	0.19	1 1/4	1.772	8	0.677	0.920	1	R/L			
	12-10-2.5	0.23	3/4	1.378	5	0.482	0.545	5/8	R/L	PGMN250-□-□ MGMN250-G MGMN250-M	MHB0310	HW25L
	16-12-2.5	0.23	1	1.772	6	0.594	0.670	3/4	R/L		MHA0512	HW40L
	18-16-2.5	0.23	1 1/4	1.772	8	0.717	0.920	1	R/L			
	16-12-3	0.23	1	1.772	6	0.641	0.708	3/4	R/L	PGMN300-□-□ PRMN300-□-□ MGMN300-M/G/T MGGN300-□□-M MRMN300-M MGMN300-□□-L/R	MHA0512	HW40L
	20-16-3	0.25	1 1/4	1.772	8	0.744	0.920	1	R/L			
	24-20-3	0.25	1 1/2	2.559	9.842	0.846	1.170	1 1/4	R/L			
	16-12-4	0.25	1	1.772	6	0.614	0.670	3/4	R/L	PGMN400-□-□ PRMN400-□-□ MGMN400-M/G/T MGGN400-□□-M MRMN400-M MGMN400-□□-L/R	MHA0512	HW40L
	20-16-4	0.25	1 1/4	1.772	8	0.744	0.920	1	R/L			
	24-20-4	0.25	1 1/2	2.559	9.842	0.846	1.170	1 1/4	R/L			
	20-16-5	0.31	1 1/4	1.772	8	0.764	0.920	1	R/L	PGMN500-□-□ PRMN500-□-□ MGMN500-M/G/T MGGN500-□□-M MRMN500-M MGMN500-□□-L/R	BHA0616	HW50L
	24-20-5	0.31	1 1/2	2.559	10	0.846	1.170	1 1/4	R/L		BHA0620	
	20-16-6	0.31	1 1/4	1.772	8	0.764	0.920	1	R/L	PGMN600-□-□ PRMN600-□-□ MGMN600-MG MGGN600-□□-M MRMN600-M	BHA0616	HW50L
	24-20-6	0.31	1 1/2	2.559	10	0.846	1.170	1 1/4	R/L		BHA0620	
	24-20-8	0.39	1 1/2	2.559	10	0.921	1.170	1 1/4	R/L	PGMN800-□-□ PRMN800-□-□ MRMN800-M MGMN800-M	BHA0620	HW50L
	29-24-8	0.39	1 13/16	2.756	12	1.071	1.380	1 1/2	R/L			
	20-16-6A	0.31	1 1/4	1.772	8	0.764	0.920	1	R/L	MRGN600-A	BHA0616	HW50L
	24-20-6A	0.31	1 1/2	2.559	10	0.846	1.170	1 1/4	R/L		BHA0620	
	24-20-8A	0.39	1 1/2	2.559	10	0.921	1.170	1 1/4	R/L	MRGN800-A	BHA0620	HW50L
	29-24-8A	0.39	1 13/16	2.756	12	1.071	1.380	1 1/2	R/L			

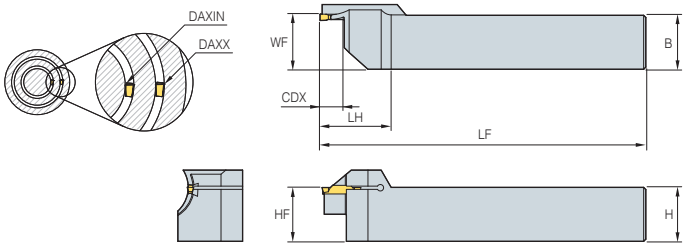
Applicable inserts **C45 ~ C49**

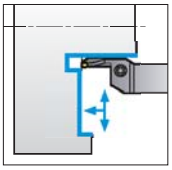
MGFHR/L

For face grooving machining



PGMN MFMN
PRMN MGMN





• R type holder

(inch)

Designation		CDX	DAXIN	DAXX	LF	WF	HF	B	H	HAND	Applicable insert	Screw	Wrench
MGFHR/L 16-3-	09/13-T03	0.393	0.945	1.378	6	1.008	1	1	1	R/L	PGMN300-□-□ PRMN300-□ MFMN300	BHA0616	HW50L
	11/15-T03	0.393	1.142	1.575	6	1.008	1	1	1	R/L			
	13/19-T03	0.393	1.339	1.969	6	1.008	1	1	1	R/L			
	17/27-T03	0.393	1.732	2.756	6	1.008	1	1	1	R/L			
	25/38-T03	0.393	2.520	3.898	6	1.008	1	1	1	R/L			
16-4-	16/24-T15	0.591	1.653	2.480	6	1.008	1	1	1	R/L			
	24/47-T05	0.591	2.441	4.724	6	1.008	1	1	1	R/L	PGMN400-□-□ PRMN400-□ MGMN400-M/T MGMN400-□□-L/R		
	44/78-T05	0.591	4.409	7.874	6	1.008	1	1	1	R/L			

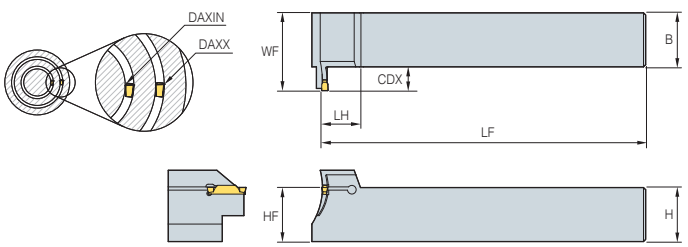
Applicable inserts **C45 ~ C49**

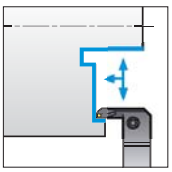
MGFVR/L

For face grooving machining



PGMN MFMN
PRMN MGMN





• R type holder

(inch)

Designation		CDX	DAXIN	DAXX	LF	WF	HF	B	H	HAND	Applicable insert	Screw	Wrench
MGFVR/L 16-3-	09/13-T03	0.393	0.945	1.378	6	1.417	1	1	1	R/L	PGMN300-□-□ PRMN300-□ MFMN300	MHA0512	HW40L
	11/15-T03	0.393	1.142	1.575	6	1.417	1	1	1	R/L			
	13/19-T03	0.393	1.339	1.969	6	1.417	1	1	1	R/L			
	17/27-T03	0.393	0.732	2.755	6	1.417	1	1	1	R/L			
	25/38-T03	0.393	2.519	3.897	6	1.417	1	1	1	R/L			
16-4-	17/25-T03	0.393	1.732	2.362	6	1.614	1	1	1	R/L	PGMN400-□-□ PRMN400-□ MGMN400-M/T MGMN400-□□-L/R	BHA0616	HW50L
	23/47-T05	0.590	2.362	4.724	6	1.614	1	1	1	R/L			
	44/78-T05	0.590	4.409	7.874	6	1.614	1	1	1	R/L			

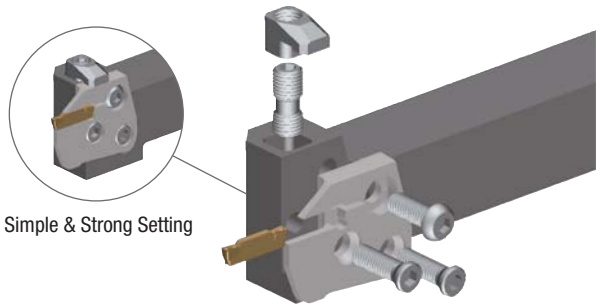
Applicable inserts **C45 ~ C49**

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	Shank height	Shank width
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	Min. cutting dia. / Max. cutting dia.	Cutting depth maximum
KC : KGT-Cartridge System MC : MGT-Cartridge System	E : External Process F : Facing Process				

External process



KCER / MCER | KCEL / MCEL

Facing process



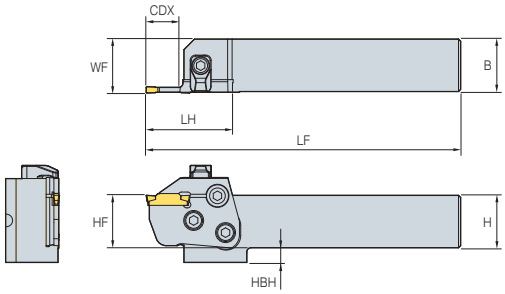
KCFR / MCFR | KCFL / MCFL

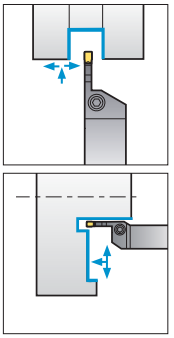
MCHR/L (Holder)

For grooving, turning, parting off, relief, profiling machining



KCER/L MCER/L MGMN
KCFR/L MCFR/ MFMN





• R type holder

(inch)

Designation		LF	WF	HF	B	H	HBH	HAND	Applicable Cartridge	Clamp	Clamp Screw	Hinge Screw	Clamping Screw	Wrench
MCHR/L	2020	5.236	0.815	0.787	0.787	0.787	0.472	R/L	KCER/L KCFR/L MCER/L MCFR/L	CXH8N	DHA0818F	RHA0613	FHGA0618	HW40L
	2525	5.236	1.012	0.984	0.984	0.984	0.276	R/L						
	3232	6.024	1.287	1.260	1.260	1.260	-	R/L						

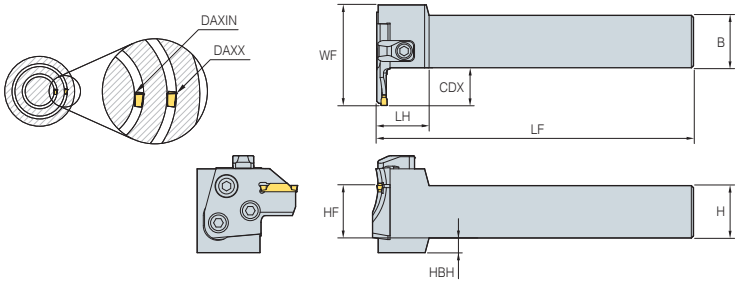
Applicable inserts **C58 ~ C59**

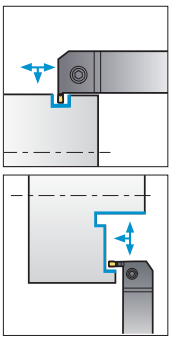
MCVR/L (Holder)

For face grooving, turning machining



KCER/L MCER/L
KCFR/L MCFR/L





• R type holder

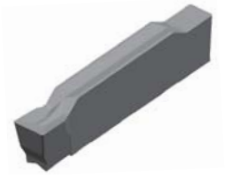
(inch)

Designation		LF	WF	HF	B	H	HBH	HAND	Applicable Cartridge	Clamp	Clamp Screw	Hinge Screw	Clamping Screw	Wrench
MCVR/L	2020	5.906	1.469	0.787	0.787	0.787	0.472	R/L	KCER/L KCFR/L MCER/L MCFR/L	CXH8N	DHA0818F	RHA0613	FHGA0618	HW40L
	2525	5.906	1.693	0.984	0.984	0.984	0.276	R/L						
	3232	6.693	1.969	1.260	1.260	1.260	-	R/L						

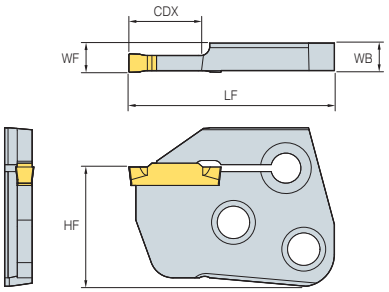
Applicable inserts **C58 ~ C59**

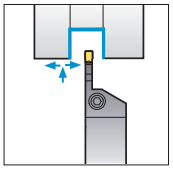
KCER/L (Cartridge)

For grooving, turning, parting off, relief, profilingmachining



KGMN KGMR/L
KGGN KRMN





• R type holder

(inch)

Designation		CDX	LF	WF	WB	HF	HAND	Applicable insert		Holder
								Width	Designation	
KCER/L	3-T16	0.630	1.752	0.250	0.235	1.017	R/L	3	KGMN KGMR/L KGGN KRMN	MCVR/L MCHR/L
	4-T16	0.630	1.752	0.250	0.235	1.017	R/L	4		
	5-T20	0.787	1.909	0.250	0.231	1.017	R/L	5		
	6-T20	0.787	1.909	0.250	0.229	1.017	R/L	6		

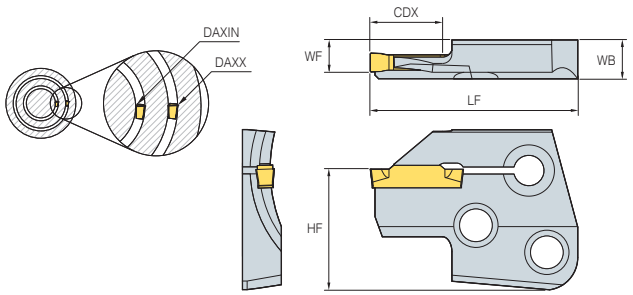
Applicable inserts C28 ~ C30

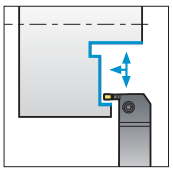
KCFR/L (Cartridge)

For face grooving, turning machining



KGMN
KGMI





• R type holder

(inch)

Designation			CDX	DAXIN	DAXX	LF	WF	WB	HF	HAND	Applicable insert		Holder
											Width	Designation	
KCFR/L	3-	34/50-T16	0.630	1.339	1.969	1.752	0.250	0.315	1.017	R/L	3	KGMN KRMN KGGN	MCVR/L MCHR/L
		44/70-T16	0.630	1.732	2.756	1.752	0.250	0.315	1.017	R/L	3		
		64/99-T16	0.630	2.519	3.898	1.752	0.250	0.315	1.017	R/L	3		
	4-	44/60-T16	0.630	1.339	2.362	1.752	0.250	0.314	1.017	R/L	4		
		60/120-T16	0.630	2.362	4.724	1.752	0.250	0.314	1.017	R/L	4		
		112/200-T16	0.630	4.409	7.874	1.752	0.250	0.314	1.017	R/L	4		

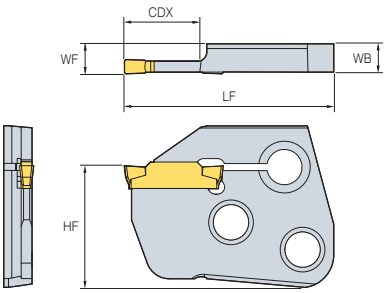
Applicable inserts C28 ~ C30

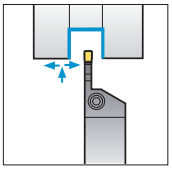
MCER/L (Cartridge)

For grooving, turning, parting off, relief, profiling machining



PGMN MGMN MGMR
PRMN MGGN MRMN





• R type holder

(inch)

Designation		CDX	LF	WF	WB	HF	HAND	Applicable insert		Holder
								Width	Designation	
MCER/L	3-T16	0.630	1.752	0.250	0.236	1.017	R/L	3	PGMN PRMN MGMN MGMR/L MGGN MRMN	MCVR/L MCHR/L
	4-T16	0.630	1.752	0.250	0.235	1.017	R/L	4		
	5-T20	0.787	1.909	0.250	0.231	1.017	R/L	5		
	6-T20	0.787	1.909	0.250	0.229	1.017	R/L	6		

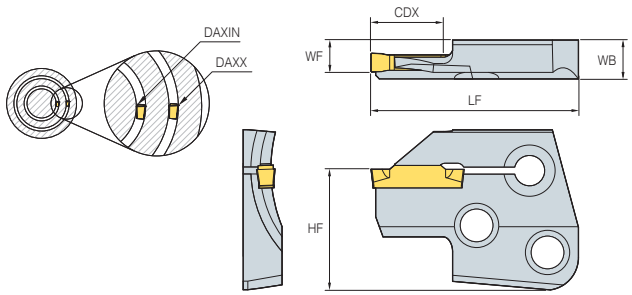
Applicable inserts **C45 ~ C49**

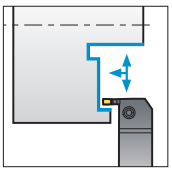
MCFR/L (Cartridge)

For face grooving, turning machining



PGMN MFNM
PRMN MGMN





• R type holder

(inch)

Designation			CDX	DAXIN	DAXX	LF	WF	WB	HF	HAND	Applicable insert		Holder
											Width	Designation	
MCFR/L	3-	24/35-T16	0.630	0.944	1.378	1.752	0.250	0.315	1.017	R/L	3	MFMN300	MCVR/L MCHR/L
		29/40-T16	0.630	1.142	1.575	1.752	0.250	0.315	1.017	R/L	3		
		34/50-T16	0.630	1.339	1.969	1.752	0.250	0.315	1.017	R/L	3		
		44/70-T16	0.630	1.732	2.756	1.752	0.250	0.315	1.017	R/L	3		
		64/99-T16	0.630	2.519	3.898	1.752	0.250	0.315	1.017	R/L	3		
	4-	44/60-T16	0.630	1.339	2.362	1.752	0.250	0.314	1.017	R/L	4	PGMN400-□-□	
		60/120-T16	0.630	2.362	4.724	1.752	0.250	0.314	1.017	R/L	4	PRMN400-□	
		112/200-T16	0.630	4.409	7.874	1.752	0.250	0.314	1.017	R/L	4	MGMN400	

Applicable inserts **C45 ~ C49**

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

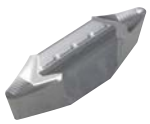
MR	G	N	6	-	A
System code	**Tolerance**	**Hand**	**Cutting edge width**		**Chip breaker**
MR : Multi Grooving Round shape MV : Multi Grooving V shape	G: Ground	N : Neutral	0.236 inch, 0.315 inch		A /AM /AP /A5

• Holder

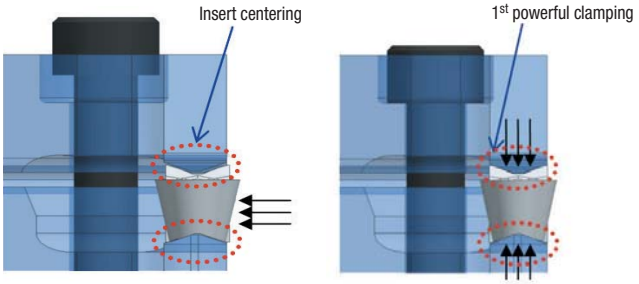
MG	E	H	R/L	25N	-	8	A	-	MR
System code	**Application**	**Holder type**	**Hand**	**Shank size**		**Cutting width**	**Chip breaker**		**Insert type**
MG : Multi Grooving	E : External machining I : Internal machining	H : Horizontal V : Vertical U : Undercut X : Special	R : Right-handed L : Left-handed	**Height** : 1 inch **Width** : 1 inch (For internal machining: Minimum diameter)		0.236 inch 0.315 inch	A /AM /AP /A5		**MR** : Round **MV** : V

Various insert types

MRGN type : Full "Round" geometry

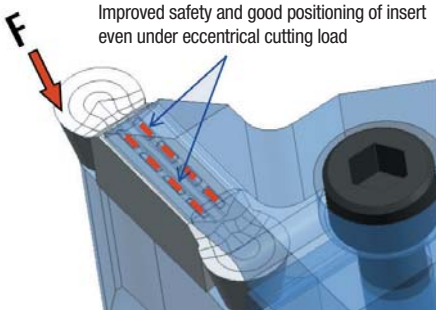
MRGN-A (For general)	MRGN-A5 (For copying)	MRGN-AM (Medium finishing)	MRGN-AP (PCD)	MVGN-A (For fine finishing)
				
High rake angle, Sharp cutting edge	Reinforced clamping force	For ductile cast iron	Improved chip control	High rake and relief angle

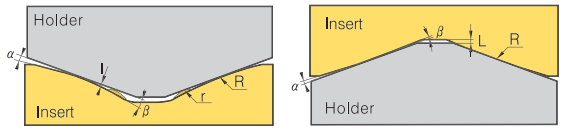
New clamping system



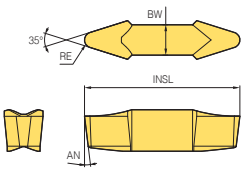
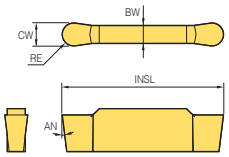
* Reinforcing the clamping force due to radius designed on the top & bottom side of insert and convex "DOT" on the top of insert

PATENT





Applicable insert

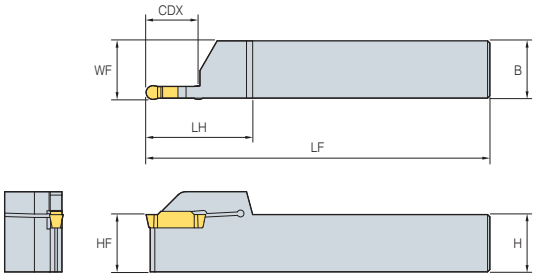
Application	Picture	Designation		Coated	Uncoated	Dimensions (inch)							Configuration
				DP150	G10	SSC	CW	RE	BW	INSL	AN	HAND	
For Aluminum Wheel	MVGN 	MVGN	8N-A-R1.2			80	0.315	3/64	0.315	1.181	7	N	
			8N-A-R1.6			80	0.315	1/16.	0.315	1.181	7	N	
	MRGN-A 	MRGN	6N-A		●	60	0.236	1/8.	0.283	1.024	12	N	
			6N-AM			60	0.236	1/8.	0.283	1.024	12	N	
			6N-AP			60	0.236	1/8.	0.283	1.024	12	N	
			6N-A5		●	60	0.236	1/8.	0.283	1.024	17	N	
			8N-A			80	0.315	5/32	0.315	1.181	12	N	
			8N-AM			80	0.315	5/32	0.315	1.181	12	N	
			8N-AP			80	0.315	5/32	0.315	1.181	12	N	
			8N-A5		●	80	0.315	5/32	0.315	1.181	17	N	

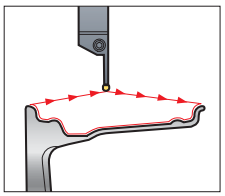
● : Stock item

MGEHR/L



MRGN





• R type holder

(inch)

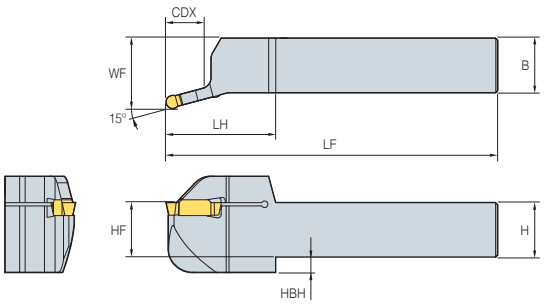
Designation		CDX	LH	LF	WF	HF	HBH	B	H	HAND	Applicable insert	Screw	Wrench
MGEHR/L	16N-6A	0.93	1.758	6	1.006	1	1	1	1	R/L	MRGN6N-A/AP/AM	BHA0620	HW50L
	20N-6A	1.06	2.039	6	1.281	1 1/4	1 1/4	1 1/4	1 1/4	R/L			
	16N-8A	0.93	2.039	6	1.006	1	1	1	1	R/L	MRGN8N-A/AP/AM		
	20N-8A	1.06	1.969	6	1.281	1 1/4	1 1/4	1 1/4	1 1/4	R/L			
	16N-6A5	0.93	1.758	6	1.006	1	1	1	1	R/L	MRGN6N-A5		
	20N-6A5	1.06	1.969	6	1.281	1 1/4	1 1/4	1 1/4	1 1/4	R/L			
	16N-8A5	0.93	1.969	6	1.006	1	1	1	1	R/L	MRGN8N-A5		
	20N-8A5	1.06	1.969	6	1.281	1 1/4	1 1/4	1 1/4	1 1/4	R/L			

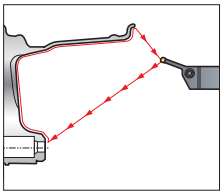
Applicable inserts C61

MGEHR/L-15



MRGN





• R type holder

(inch)

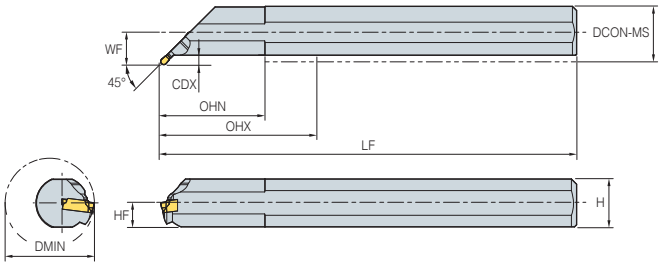
Designation		CDX	LH	LF	WF	HF	HBH	B	H	HAND	Applicable insert	Screw	Wrench
MGEHR/L	16N-6A-15	0.79	1.969	6	1.268	1	0.276	1	1	R/L	MRGN6N-A/AP/AM	BHA0620	HW50L
	20N-6A-15	0.98	1.969	6	1.543	1 1/4	0.315	1 1/4	1 1/4	R/L			
	16N-8A-15	0.79	2.165	6	1.268	1	0.276	1	1	R/L	MRGN8N-A/AP/AM		
	20N-8A-15	0.98	2.165	6	1.543	1 1/4	0.315	1 1/4	1 1/4	R/L			
	16N-6A5-15	0.79	2.165	6	1.268	1	0.276	1	1	R/L	MRGN6N-A5		
	20N-6A5-15	0.98	2.165	6	1.543	1 1/4	0.315	1 1/4	1 1/4	R/L			
	16N-8A5-15	0.79	2.362	6	1.268	1	0.276	1	1	R/L	MRGN8N-A5		
	20N-8A5-15	0.98	2.362	6	1.543	1 1/4	0.315	1 1/4	1 1/4	R/L			

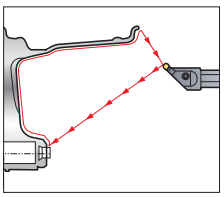
Applicable inserts **C61**

MGIUR/L-MR



MRGN





45°

• R type holder

(inch)

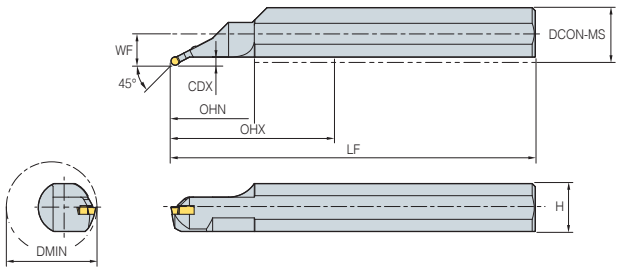
Designation		CDX	DMIN	OHN	LF	WF	H	DCON-MS	HAND	Applicable insert	Screw	Wrench
MGIUR/L	4420-8A-MR	0.315	2 43/64	2.56	7	1.023	1.181	1 1/4	R/L	MRGN8N-A/AM/AP	BHA0620	HW50L
	4420-8A5-MR	0.315	2 43/64	2.56	7	1.023	1.181	1 1/4	R/L	MRGN8N-A5		

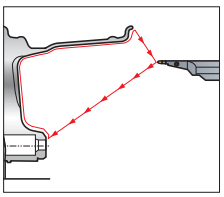
Applicable inserts **C61**

MGIXR/L-MR



MRGN





45°

• R type holder

(inch)

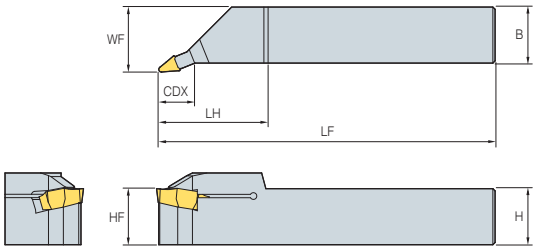
Designation		CDX	DMIN	OHN	LF	WF	H	DCON-MS	HAND	Applicable insert	Screw	Wrench
MGIXR/L	4632-8A-MR	0.303	2 3/4	3.150	14	1.188	1.811	2	R/L	MRGN8N-A/AM/AP	BHA0620	HW50L
	4632-8A5-MR	0.303	2 3/4	3.150	14	1.188	1.811	2	R/L	MRGN8N-A5		

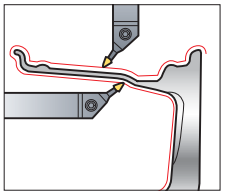
Applicable inserts **C61**

MGEXR/L



MVGN





• R type holder

(inch)

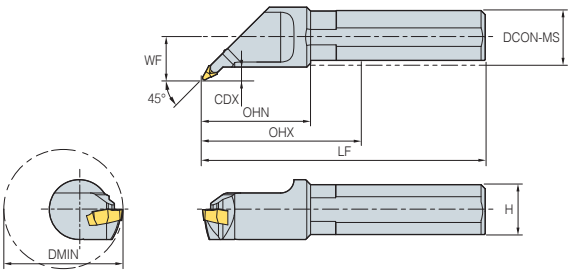
Designation		CDX	DMIN	OHN	LF	WF	H	B	HAND	Applicable insert	Screw	Wrench
MGEXR/L	16N-8A-5V	0.98	1.919	1.142	6	1.142	1	1	R/L	MVGN8N-A-R1.2	BHA0620	HW50L
	16N-8A-22.5V	1.06	1.679	1.378	6	1.378	1	1	R/L	MVGN8N-A-R1.6		

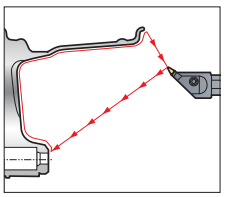
Applicable inserts **C61**

MGIUR/L-MV



MVGN





45°

• R type holder

(inch)

Designation		CDX	DMIN	OHN	LF	WF	H	DCON-MS	HAND	Applicable insert	Screw	Wrench
MGIUR/L	4420-8A-MV	0.315	2 43/64	2.560	7	1.023	1.181	1 1/4	R/L	MVGN8N-A-R1.2 MVGN8N-A-R1.6	BHA0620	HW50L

Economical 3-corner insert for high precision grooving

TB/TB-M



- Economical 3-corner insert for grooving
- Various cutting edge size ranging from 0.02~0.177 inch
- High accuracy ground insert ensures high precision machining
- Stable chip control optimized for automated grooving process

Code system

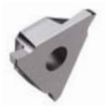
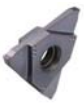
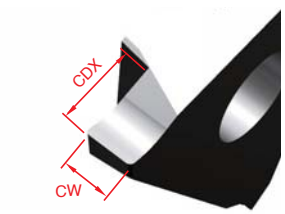
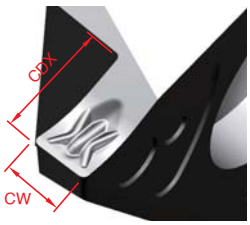
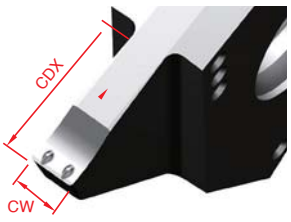
• Insert

TB	5	150	N	-	010	M
Triangle Blade	**Inscribed circle** 3 : 3/8 inch 4 : 1/2 inch 5 : 5/8 inch	**Cutting edge width** 0.02~0.177 inch	**Hand** N : Neutral R : Right L : Left		**Nose R** 0.000~0.016 inch	**Chip breaker** None M

• Holder

TBH	16	R	5
Triangle Blade Holder	**Inscribed circle** 06~16	**Hand** R : Right-handed L : Left-handed	**Inscribed circle** 3 : 3/8 inch 4 : 1/2 inch 5 : 5/8 inch

TB/TB-M

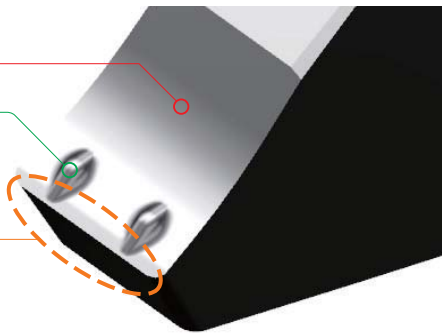
Specification		TB3000R/L, TB4000R/L	TB4000R-M	TB5000N-000-M
Designation		TB3125R/L ~ TB3430R/L (Inscribed circle of 0.375 inch) TB4125R/L ~ TB4430R/L (Inscribed circle of 0.5 inch)	TB4150R-M ~TB4450R-M (Inscribed circle of 0.5 inch)	TB5050N-000-M ~TB5318-020-M (Inscribed circle of 0.625 inch)
Insert 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: 0.049~0.169 inch TB4000: 0.049~1.177 inch	0.059~0.177 inch	0.02~0.125 inch
	Depth of cut (CDX)	TB3000: ~0.138 inch TB4000: ~0.197 inch	~0.197 inch	~0.256 inch
	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

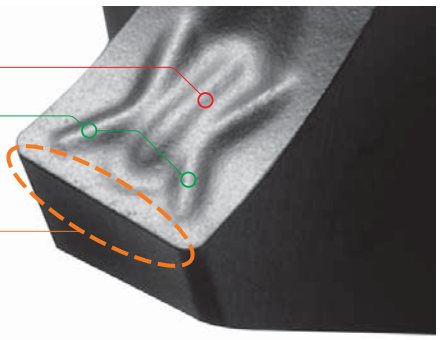
- **Lowered back area :** reduced load of chip evacuation due to minimizing chip friction
- **Beveled protruding dot :** made regular sized chip curls good chip flow out of the groove by reducing the chip width minimized load for chip evacuation in high depth of cut
- **Land :** prevented chipping and increased stability in interrupted machining
- **Use :** for grooving with T-MAX 0.256 inch below, parting and interrupted machining

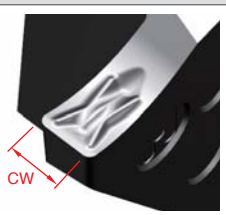
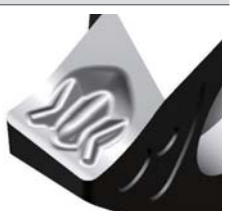


Designation	TB5050N-M ~ TB5120N-M	TB5140N-M ~ TB5178N-M	TB5196N-M ~ TB5239N-M	TB5247N-M ~ TB5287N-M	TB5300N-M ~ TB5318N-M
Shape					
Cutting edge width (CW)	0.02~0.047 inch	0.055~0.07 inch	0.077~0.094 inch	0.097~0.113 inch	0.118~0.125 inch

TB4-M Chip breaker

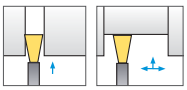
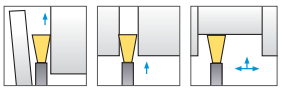
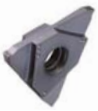
- **Second protruding dot :** stable chip curl control
- **Main protruding dot :** making regular sized chip curl good chip flow out of the groove by reducing the chip width good chip control in turning and chamfering
- **Sharp cutting edge :** increased machinability
- **Use :** for grooving with T-MAX 0.177 inch 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)	0.059~0.73 inch	0.079~0.11 inch	0.118~0.138 inch	0.157~0.177 inch

Guide for TB

(inch)

TB					TB3 / TB4	TB4-M	TB5-M
Recommended machining method							
Cutting edge width (CW)	Depth of cut CDX			Recommended feed rate (ipr)			
	TB3/TB4	TB4-M	TB5-M				
0.020	-	-	0.098	0.002 (0.001~0.004)	–	–	●
0.031	-	-	0.063		–	–	●
0.039	-	-	0.138		–	–	●
0.041	-	-	0.079		–	–	●
0.047	-	-	0.079		–	–	●
0.049	0.079	-	0.079		●	–	●
0.055	0.079	-	0.256	0.004 (0.001~0.006)	●	–	●
0.057	0.079	-	-		●	–	–
0.058	-	-	0.256		–	–	●
0.059	0.138	0.138	0.256		●	●	●
0.062	-	-	0.256		–	–	●
0.067	-	-	0.256		–	–	●
0.069	0.138	0.138	-		●	●	–
0.070	-	-	0.256		–	–	●
0.073	0.138	0.138	-		●	●	–
0.077	-	-	0.256		–	–	●
0.079	0.138	0.138	0.256		●	●	●
0.085	0.138	0.138	-	0.005 (0.001~0.008)	●	●	–
0.087	0.256	-	0.256		–	–	●
0.091	0.138	0.138	0.256		●	●	●
0.094	-	-	0.256		–	–	●
0.097	-	-	0.256		–	–	●
0.098	0.157	0.157	0.256		●	●	●
0.104	0.157	0.157	0.256		●	●	●
0.106	-	-	0.256		–	–	●
0.110	0.157	0.157	-		●	●	–
0.113	-	-	0.256		–	–	●
0.118	0.157	0.157	0.256		●	●	●
0.124	-	-	0.256	0.006 (0.002~0.008)	–	–	●
0.125	-	-	0.256		–	–	●
0.130	0.157	-	-		●	–	–
0.138	0.197	0.197	-		●	●	–
0.157	0.197	0.197	-		●	●	–
0.169	0.197	0.197	-		●	●	–
0.177	0.197	0.197	-		●	●	–

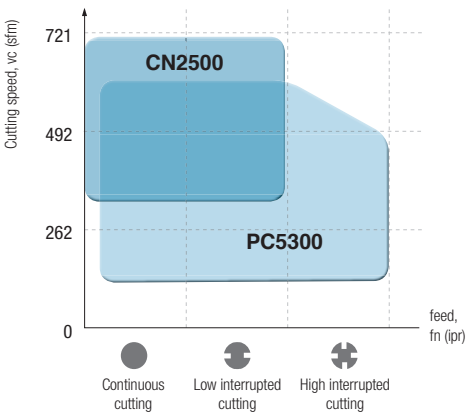
● : Stock item

Recommended cutting conditions

Workpiece		CN2500 (Cermet)			PC5300 (Coated)		
		Min	Recommended	Max.	Min	Recommended	Max.
P	SM□□C	328	524	721	262	459	656
P	SCM	328	492	656	262	426	590
M	STS	-	-	-	131	262	492
K	GC, GCD	-	-	-	262	426	590

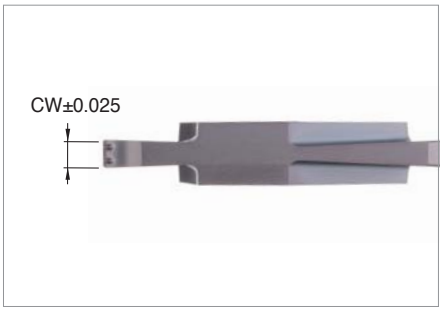
Recommended cutting speed, vc (sfm)

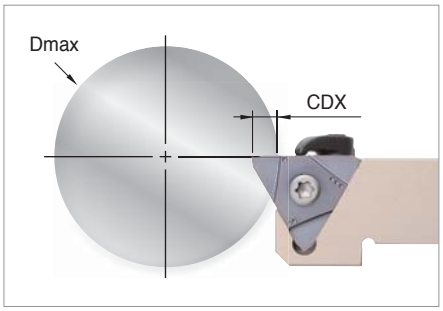
Recommended cutting range

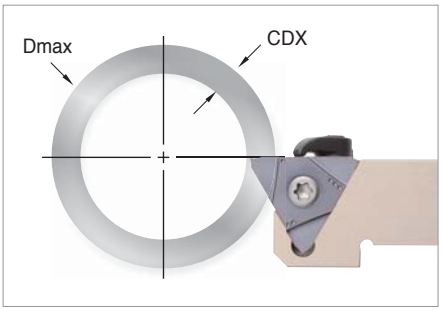


TB5-M machining range

- There is a limit to cutting diameters of TB5-M when depth of cuts are over 0.197 inch
  (e.g. When cutting with a TB5200N-020-M insert at the depth of 0.244 inch, Ø2.362 DMAX is available)
- N.L = No limit



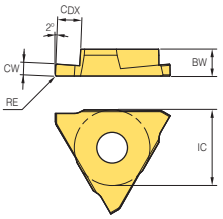




(inch)

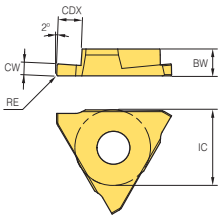
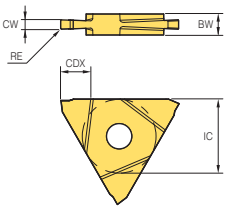
Designation		CW	RE	CDX	DMAX								
					T≤0.118	T≤0.138	T≤0.157	T≤0.177	T≤0.197	T≤0.217	T≤0.236	T≤0.252	T≤0.256
TB	5050N- 000-M	0.020	0	0.039	-	-	-	-	-	-	-	-	-
	004-M	0.020	0.002	0.098	-	-	-	-	-	-	-	-	-
	5080N- 000-M	0.031	0	0.063	-	-	-	-	-	-	-	-	-
	5100N- 006-M	0.039	0.002	0.138	-	-	-	-	-	-	-	-	-
	5104N- 000-M	0.041	0	0.079	-	-	-	-	-	-	-	-	-
	5120N- 000-M	0.047	0	0.079	-	-	-	-	-	-	-	-	-
	5140N- 000-M	0.055	0	0.256	N.L	N.L	N.L	N.L	N.L	Ø11.811	Ø6.693	Ø2.362	Ø1.575
	5147N- 000-M	0.058	0	0.256	N.L	N.L	N.L	N.L	N.L	Ø11.811	Ø6.693	Ø2.362	Ø1.575
	5150N- 010-M	0.059	0.004	0.256	N.L	N.L	N.L	N.L	N.L	Ø11.811	Ø6.693	Ø2.362	Ø1.575
	015-M	0.059	0.006	0.256	N.L	N.L	N.L	N.L	N.L	Ø11.811	Ø6.693	Ø2.362	Ø1.575
	5157N- 015-M	0.062	0.006	0.256	N.L	N.L	N.L	N.L	N.L	Ø11.811	Ø6.693	Ø2.362	Ø1.575
	5170N- 010-M	0.067	0.004	0.256	N.L	N.L	N.L	N.L	N.L	Ø11.811	Ø6.693	Ø2.362	Ø1.575
	5178N- 018-M	0.070	0.007	0.256	N.L	N.L	N.L	N.L	N.L	Ø11.811	Ø6.693	Ø2.362	Ø1.575
	5196N- 015-M	0.077	0.006	0.256	N.L	N.L	N.L	N.L	N.L	Ø11.811	Ø6.693	Ø2.362	Ø1.575
	5200N- 020-M	0.079	1/128	0.256	N.L	N.L	N.L	N.L	N.L	Ø11.811	Ø6.693	Ø2.362	Ø1.575
	5222N- 015-M	0.087	0.006	0.256	N.L	N.L	N.L	N.L	N.L	Ø11.811	Ø6.693	Ø2.362	Ø1.575
	5230N- 020-M	0.091	1/128	0.256	N.L	N.L	N.L	N.L	N.L	Ø11.811	Ø6.693	Ø2.362	Ø1.575
	5239N- 015-M	0.094	0.006	0.256	N.L	N.L	N.L	N.L	N.L	Ø11.811	Ø6.693	Ø2.362	Ø1.575
	5247N- 020-M	0.097	1/128	0.256	N.L	N.L	N.L	N.L	N.L	Ø11.811	Ø6.693	Ø2.362	Ø1.575
	5250N- 020-M	0.098	1/128	0.256	N.L	N.L	N.L	N.L	N.L	Ø11.811	Ø6.693	Ø2.362	Ø1.575
	5270N- 010-M	0.106	0.004	0.256	N.L	N.L	N.L	N.L	N.L	Ø11.811	Ø6.693	Ø2.362	Ø1.575
	5287N- 020-M	0.113	1/128	0.256	N.L	N.L	N.L	N.L	N.L	Ø11.811	Ø6.693	Ø2.362	Ø1.575
	5300N- 000-M	0.118	0	0.256	N.L	N.L	N.L	N.L	N.L	Ø11.811	Ø6.693	Ø2.362	Ø1.575
	5300N- 020-M	0.118	1/128	0.256	N.L	N.L	N.L	N.L	N.L	Ø11.811	Ø6.693	Ø2.362	Ø1.575
	040-M	0.118	1/64	0.256	N.L	N.L	N.L	N.L	N.L	Ø11.811	Ø6.693	Ø2.362	Ø1.575
	5315N- 015-M	0.124	0.006	0.256	N.L	N.L	N.L	N.L	N.L	Ø11.811	Ø6.693	Ø2.362	Ø1.575
	5318N- 020-M	0.125	1/128	0.256	N.L	N.L	N.L	N.L	N.L	Ø11.811	Ø6.693	Ø2.362	Ø1.575

TB insert

Picture	Designation		Cermet	Coated	Dimensions (inch)								Configuration
			CN2500	PC5300	SSC	IC	CDX	CW	RE	BW	AN	HAND	
	TB (Right-handed)	3125R			30	3/8	0.059	0.049	1/128	3/16	5	R	
		3145R			30	3/8	0.059	0.057	1/128	3/16	5	R	
		3175R			30	3/8	0.098	0.069	1/128	3/16	5	R	
		3185R			30	3/8	0.098	0.073	1/128	3/16	5	R	
		3200R		●	30	3/8	0.098	0.079	1/128	3/16	5	R	
		3230R			30	3/8	0.138	0.091	0.012	3/16	5	R	
		3280R			30	3/8	0.138	0.110	0.012	3/16	5	R	
		3330R			30	3/8	0.138	0.130	0.012	3/16	5	R	
		3430R			30	3/8	0.138	0.169	1/64	3/16	5	R	
		4125R	●	●	40	1/2	0.079	0.049	1/128	3/16	5	R	
		4145R	●	●	40	1/2	0.079	0.057	1/128	3/16	5	R	
		4150R	●	●	40	1/2	0.138	0.059	1/128	3/16	5	R	
		4175R	●	●	40	1/2	0.138	0.069	1/128	3/16	5	R	
		4185R	●	●	40	1/2	0.138	0.073	1/128	3/16	5	R	
		4200R	●	●	40	1/2	0.138	0.079	1/128	3/16	5	R	
		4215R	●	●	40	1/2	0.138	0.058	1/128	3/16	5	R	
		4230R	●	●	40	1/2	0.138	0.091	1/128	3/16	5	R	
		4250R	●	●	40	1/2	0.157	0.098	0.012	3/16	5	R	
		4265R			40	1/2	0.157	0.104	0.012	3/16	5	R	
		4280R			40	1/2	0.157	0.110	0.012	3/16	5	R	
		4300R		●	40	1/2	0.157	0.118	0.012	3/16	5	R	
		4330R			40	1/2	0.157	0.130	0.012	3/16	5	R	
		4350R			40	1/2	0.197	0.138	0.012	3/16	5	R	
		4400R		●	40	1/2	0.197	0.157	1/64	3/16	5	R	
		4430R			40	1/2	0.197	0.169	1/64	3/16	5	R	
		4450R		●	40	1/2	0.197	0.177	1/64	3/16	5	R	
	TB (Left-handed)	3125L			30	3/8	0.059	0.049	1/128	3/16	5	L	
		3145L		●	30	3/8	0.059	0.057	1/128	3/16	5	L	
		3175L			30	3/8	0.098	0.069	1/128	3/16	5	L	
		3185L			30	3/8	0.098	0.073	1/128	3/16	5	L	
		3200L			30	3/8	0.098	0.079	1/128	3/16	5	L	
		3230L			30	3/8	0.138	0.091	0.012	3/16	5	L	
		3280L			30	3/8	0.138	0.110	0.012	3/16	5	L	
		3330L			30	3/8	0.138	0.130	0.012	3/16	5	L	
		3430L			30	3/8	0.138	0.169	1/64	3/16	5	L	
		4125L			40	1/2	0.079	0.049	1/128	3/16	5	L	
		4145L			40	1/2	0.079	0.057	1/128	3/16	5	L	
		4150L		●	40	1/2	0.138	0.059	1/128	3/16	5	L	
		4175L		●	40	1/2	0.138	0.069	1/128	3/16	5	L	
		4185L			40	1/2	0.138	0.073	1/128	3/16	5	L	
		4200L		●	40	1/2	0.138	0.079	1/128	3/16	5	L	
		4215L			40	1/2	0.138	0.058	1/128	3/16	5	L	
		4230L			40	1/2	0.138	0.091	1/128	3/16	5	L	
		4250L		●	40	1/2	0.157	0.098	0.012	3/16	5	L	
		4265L		●	40	1/2	0.157	0.104	0.012	3/16	5	L	
		4280L			40	1/2	0.157	0.110	0.012	3/16	5	L	
		4300L		●	40	1/2	0.157	0.118	0.012	3/16	5	L	
		4330L			40	1/2	0.157	0.130	0.012	3/16	5	L	
		4350L		●	40	1/2	0.197	0.138	0.012	3/16	5	L	
		4400L		●	40	1/2	0.197	0.157	1/64	3/16	5	L	
		4430L			40	1/2	0.197	0.169	1/64	3/16	5	L	
		4450L			40	1/2	0.197	0.177	1/64	3/16	5	L	

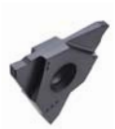
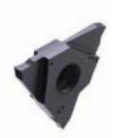
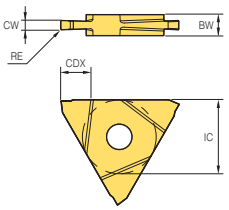
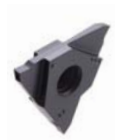
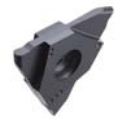
● : Stock item

TB insert

Picture	Designation		Cermet	Coated	Dimensions (inch)								Configuration
			CN2500	PC5300	SSC	IC	CDX	CW	RE	BW	AN	HAND	
	TB (Right-handed)	4150R-M	●	●	40	1/2	0.138	0.059	1/128	3/16	5	R	
		4175R-M	●	●	40	1/2	0.138	0.069	1/128	3/16	5	R	
		4185R-M	●	●	40	1/2	0.138	0.073	1/128	3/16	5	R	
		4200R-M	●	●	40	1/2	0.138	0.079	1/128	3/16	5	R	
		4215R-M	●	●	40	1/2	0.138	0.085	1/128	3/16	5	R	
		4230R-M	●	●	40	1/2	0.138	0.091	1/128	3/16	5	R	
		4250R-M	●	●	40	1/2	0.157	0.098	0.012	3/16	5	R	
		4265R-M		●	40	1/2	0.157	0.104	0.012	3/16	5	R	
		4280R-M		●	40	1/2	0.157	0.110	0.012	3/16	5	R	
		4300R-M		●	40	1/2	0.157	0.118	0.012	3/16	5	R	
		4330R-M		●	40	1/2	0.157	0.130	0.012	3/16	5	R	
		4350R-M	●	●	40	1/2	0.197	0.138	0.012	3/16	5	R	
		4400R-M		●	40	1/2	0.197	0.157	1/64	3/16	5	R	
		4430R-M			40	1/2	0.197	0.169	1/64	3/16	5	R	
		4450R-M		●	40	1/2	0.197	0.177	1/64	3/16	5	R	
	TB (Neutral)	5050N-000-M		●	50	5/8	0.039	0.020	0.000	0.177	7	N	
		5050N-004-M		●	50	5/8	0.098	0.020	0.002	0.177	7	N	
		5080N-000-M		●	50	5/8	0.063	0.031	0.000	0.177	7	N	
		5100N-006-M		●	50	5/8	0.138	0.039	0.002	0.177	7	N	
		5104N-000-M			50	5/8	0.079	0.041	0.000	0.177	7	N	
		5120N-000-M		●	50	5/8	0.079	0.047	0.000	0.177	7	N	
		5140N-000-M		●	50	5/8	0.256	0.055	0.000	0.177	7	N	
		5147N-000-M		●	50	5/8	0.256	0.058	0.000	0.177	7	N	
		5150N-010-M		●	50	5/8	0.256	0.059	0.004	0.177	7	N	
		5150N-015-M		●	50	5/8	0.256	0.059	0.006	0.177	7	N	
		5157N-015-M		●	50	5/8	0.256	0.062	0.006	0.177	7	N	
		5170N-010-M			50	5/8	0.256	0.067	0.004	0.177	7	N	
		5178N-018-M			50	5/8	0.256	0.070	0.007	0.177	7	N	
		5196N-015-M		●	50	5/8	0.256	0.077	0.006	0.177	7	N	
		5200N-020-M		●	50	5/8	0.256	0.079	1/128	0.177	7	N	
		5222N-015-M		●	50	5/8	0.256	0.087	0.006	0.177	7	N	
		5230N-020-M			50	5/8	0.256	0.091	1/128	0.177	7	N	
		5239N-015-M		●	50	5/8	0.256	0.094	0.006	0.177	7	N	
		5247N-020-M		●	50	5/8	0.256	0.097	1/128	0.177	7	N	
		5250N-020-M		●	50	5/8	0.256	0.098	1/128	0.177	7	N	
		5270N-010-M		●	50	5/8	0.256	0.106	0.004	0.177	7	N	
		5287N-020-M			50	5/8	0.256	0.113	1/128	0.177	7	N	
		5300N-000-M		●	50	5/8	0.256	0.118	0.000	0.177	7	N	
		5300N-020-M		●	50	5/8	0.256	0.118	1/128	0.177	7	N	
		5300N-040-M			50	5/8	0.256	0.118	1/64	0.177	7	N	
		5315N-015-M			50	5/8	0.256	0.124	0.006	0.177	7	N	
		5318N-020-M		●	50	5/8	0.256	0.125	1/128	0.177	7	N	

● : Stock item

TB insert

Picture	Designation		Cermet	Coated	Dimensions (inch)								Configuration
			CN2500	PC5300	SSC	IC	CDX	CW	RE	BW	AN	HAND	
	TB (Neutral)	5050N-004-P			50	5/8	0.039	0.02	0.002	0.177	7	N	
		5100N-010-P			50	5/8	0.138	0.039	0.004	0.177	7	N	
		5150N-010-P			50	5/8	0.256	0.059	0.004	0.177	7	N	
		020-P			50	5/8	0.256	0.059	1/128	0.177	7	N	
		5200N-010-P			50	5/8	0.256	0.079	0.004	0.177	7	N	
		020-P			50	5/8	0.256	0.079	1/128	0.177	7	N	
		5239N-015-P			50	5/8	0.256	0.094	0.06	0.177	7	N	
		5250N-020-P			50	5/8	0.256	0.098	1/128	0.177	7	N	
		5300N-020-P			50	5/8	0.256	0.091	1/128	0.177	7	N	
	TB (Neutral, Right-handed)	5100N-6DR-P		●	50	5/8	0.138	0.039	0.002	0.177	7	N	
		15DR-P		●	50	5/8	0.138	0.039	0.002	0.177	7	N	
		5150N-6DR-P		●	50	5/8	0.256	0.059	0.002	0.177	7	N	
		15DR-P		●	50	5/8	0.256	0.059	0.002	0.177	7	N	
		5200N-6DR-P		●	50	5/8	0.256	0.079	0.004	0.177	7	N	
		15DR-P			50	5/8	0.256	0.079	0.004	0.177	7	N	
	TB (Neutral, Left-handed)	5100N-6DL-P			50	5/8	0.138	0.039	0.002	0.177	7	N	
		15DL-P			50	5/8	0.138	0.039	0.002	0.177	7	N	
		5150N-6DL-P			50	5/8	0.256	0.059	0.002	0.177	7	N	
		15DL-P			50	5/8	0.256	0.059	0.002	0.177	7	N	
		5200N-6DL-P			50	5/8	0.256	0.079	0.004	0.177	7	N	
		15DL-P			50	5/8	0.256	0.079	0.004	0.177	7	N	
	TB (Neutral, Round shape)	5157N-079-P			50	5/8	0.256	0.062	0.031	0.177	7	N	
		5200N-100-P			50	5/8	0.256	0.079	0.039	0.177	7	N	
		5239N-120-P			50	5/8	0.256	0.094	0.047	0.177	7	N	
		5300N-150-P			50	5/8	0.256	0.118	0.059	0.177	7	N	

● : Stock item

TBH



TB3000R/L
TB4000R-M

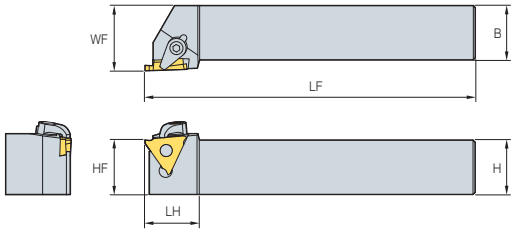
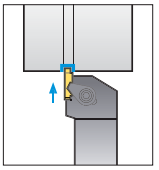
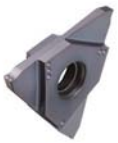


Fig. 1



• R type holder



TB5000N-□□□-M

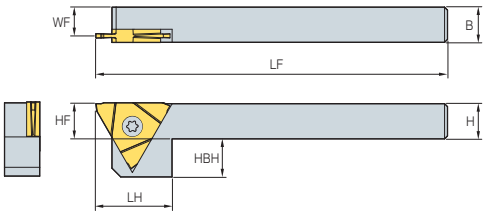


Fig. 2

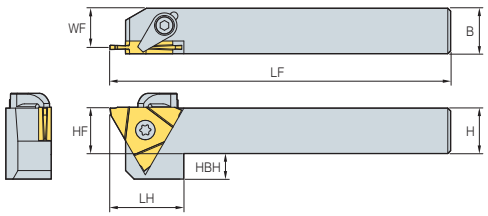


Fig. 3

(inch)

Designation		HF	B	H	LH	LF	WF	HBH	HAND	Applicable insert	Clamp	Clamp Screw	Screw	Wrench	Fig.
TBH	12R/L-3-23	3/4	3/4	3/4	1.004	5	0.947	-	R/L	TB3125~3230R/L	CS6R1	DHA0617	-	HW30L	1
	12R/L-3-33	3/4	3/4	3/4	1.004	5	0.947	-	R/L	TB3280~3330R/L					
	12R/L-3-43	3/4	3/4	3/4	1.004	5	0.947	-	R/L	TB3430R/L					
	16R-3-23	1	1	1	1.004	6	1.197	-	R/L	TB3125~3230R/L					
	16R-3-33	1	1	1	1.004	6	1.197	-	R/L	TB3280~3330R/L					
	16R-3-43	1	1	1	1.004	6	1.197	-	R/L	TB3430R/L					
	12R/L-4-23	3/4	3/4	3/4	1.004	5	0.947	-	R/L	TB4125~4230R/L					
	12R/L-4-33	3/4	3/4	3/4	1.004	5	0.947	-	R/L	TB4250~4330R/L					
	12R/L-4-45	3/4	3/4	3/4	1.004	5	0.947	-	R/L	TB4350~4450R/L					
	16R/L-4-23	1	1	1	1.004	6	1.197	-	R/L	TB4125~4230R/L					
	16R/L-4-33	1	1	1	1.004	6	1.197	-	R/L	TB4250~4330R/L					
	16R/L-4-45	1	1	1	1.004	6	1.197	-	R/L	TB4350~4450R/L					
TBH	06R/L-5	3/8	3/8	3/8	0.984	5	0.307	0.591	R/L	TB5050~5318N	-	-	FTNA0512	TW20L	2
	08R/L-5	1/2	1/2	1/2	0.984	5	0.386	0.512	R/L						
	10R/L-5	5/8	5/8	5/8	1.024	5	0.543	0.354	R/L		CS6R1	DHA0617	FTNA0516	HW30L, TW20L	3
	12R/L-5	3/4	3/4	3/4	1.024	5	0.701	0.197	R/L						
	16R/L-5	1	1	1	-	6	0.898	-	R/L						

Applicable inserts **C68 ~ C70**

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 : 1.063 inch	**Hand** N : Neutral	**Cutting width** 200 : 0.079 inch		**Nose R** 020 : 1/128 inch		**Chip breaker** M

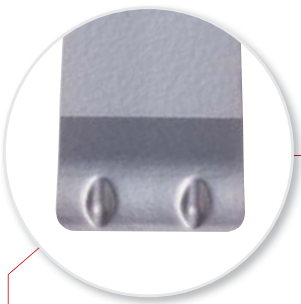
• Holder

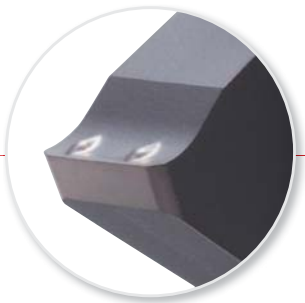
HB	E	H	R	16	-	27	-	2
Hexa Blade	**Application** E : External machining	**Holder type** H : Horizontal	**Hand** R : Right-handed L : Left-handed	**shank size** 16 : 1 inch		**Inscribed circle diameter** 27 : 1.063 inch		**Insert size** 2 : BW = 0.106 inch 3 : BW = 0.146 inch 4 : BW = 0.185 inch

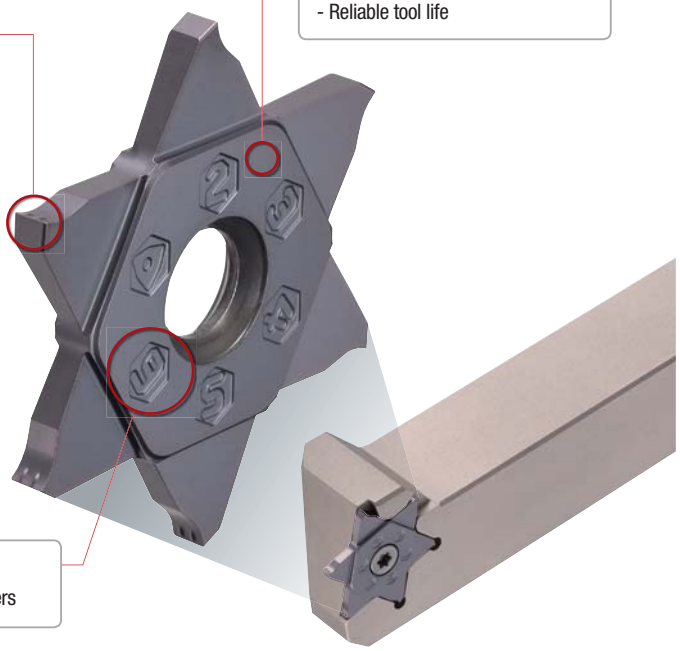
*IC = Inscribed circle diameter

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

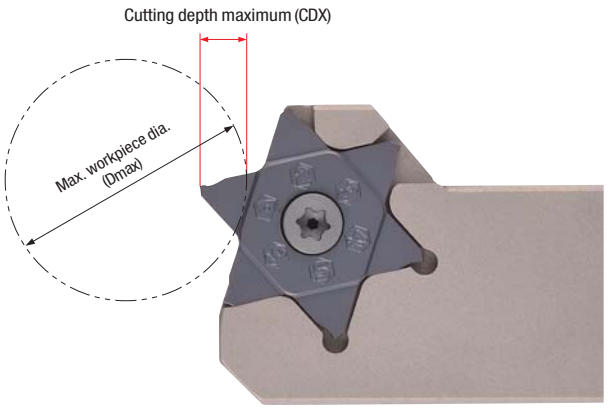
• 6 cornered insert
- High cost efficiency from multi-corners

Recommended cutting conditions

Workpiece					Specific cutting force (N/mm²)	Brinell hardness (HB)	Grade	C/B	ap (inch)
ISO	Workpiece materials		AISI	ISO			PC5300	M	
							vc (sfm)	fn (ipr)	
P	Unalloyed steel	C = 0.25~0.55%	1035	C35	1600	150	360	0.006	≤ 0.197
							427	**0.005**	
							492	0.004	
		C = 0.55~0.80%	1045 1046	C45	1700	170	262	0.006	
							328	**0.005**	
							394	0.004	
	Low alloy steel	Non-hardened	4140	43CrMo4	1700	180	262	0.006	
							328	**0.005**	
							394	0.004	
		Hardened and tempered	4145	-	2050	350	164	0.006	
							197	**0.005**	
							230	0.004	
	High alloy steel	Annealed	D2	-	1950	200	197	0.006	
							246	**0.005**	
							295	0.004	
M	Austenite series		304	X5CrNi18-9	2000	180	197	0.004	≤ 0.197
							262	**0.003**	
							328	0.002	
			316	X5CrNiMo17-12-2	2000	180	197	0.004	
							262	**0.003**	
							328	0.002	

Product using guide

Cutting depth maximum and max. workpiece dia. (inch)		
Cutting depth maximum (CDX)	Max. workpiece dia. (Dmax)	Using guide
0.197	≤ 1.181	
0.193	≤ 1.338	
0.189	≤ 1.496	
0.185	≤ 1.653	
0.181	≤ 1.811	
0.177	≤ 2.283	
0.173	≤ 2.440	
0.169	≤ 2.598	
0.165	≤ 2.755	
0.161	≤ 2.913	
0.157	≤ 3.503	
0.154	≤ 3.661	
0.150	≤ 3.818	
0.146	≤ 3.976	
0.142	≤ 4.133	
0.138	≤ 4.291	
0.134	≤ 4.842	
0.130	≤ 5.000	
0.126	≤ 5.157	
0.122	≤ 5.314	
0.118	≤ 5.787	
0.114	≤ 5.944	
0.110	≤ 6.102	
0.106	≤ 6.259	
0.102	≤ 6.417	
0.098	≤ 7.874	
0.094	≤ 7.874	
0.091	≤ 7.874	
0.087	≤ 7.874	
0.083	≤ 7.874	
0.079	∞	



① Hexa Blade enables to cut with maximum 0.197inch depth of cut. In this case, the maximum workpiece cutting diameter is 1.181 inch.

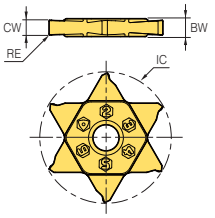
② In Hexa Blade cutting with 0.079 inch depth of cut, the size of workpiece cutting diameter doesn't matter. If cutting with more than 0.079 inch depth of cut, the applicable workpiece cutting diameter could be different depending on depth of cut.

③ If workpiece cutting diameter is bigger than 2.559 inch, the maximum depth of cut is 0.169 inch. In case of cutting with deeper than 0.169 inch, there could be cutting troubles because the holder touches workpieces.

④ If depth of cut is 0.138 inch, the maximum workpiece cutting diameter is 4.291 inch. If it is bigger than 4.291 inch, there could be cutting troubles because the holder touches workpieces.

※ Cutting depth maximum and max. workpiece dia. on the chart could be different up to cutting environment.

Applicable inserts

Application	Picture	Designation		Coated PC5300	Dimensions (inch) SSC	IC	CDX	CW	RE	BW	AN	HAND	Configuration
Parting		HB	27N178-018-M	●	20	1.063	0.197	0.07	0.007	0.106	5	N	
			27N185-015-M	●	20	1.063	0.197	0.073	0.006	0.106	5	N	
			27N196-015-M	●	20	1.063	0.197	0.077	0.006	0.106	5	N	
			27N200-020-M	●	20	1.063	0.197	0.079	0.008	0.106	5	N	
			27N200-040-M	●	20	1.063	0.197	0.079	0.016	0.106	5	N	
			27N270-010-M	●	30	1.063	0.197	0.106	0.004	0.146	5	N	
			27N287-020-M	●	30	1.063	0.197	0.113	0.008	0.146	5	N	
			27N300-000-M	●	30	1.063	0.197	0.118	0	0.146	5	N	
			27N300-020-M	●	30	1.063	0.197	0.118	0.008	0.146	5	N	
			27N300-040-M	●	30	1.063	0.197	0.118	0.016	0.146	5	N	
			27N374-020-M	●	40	1.063	0.197	0.147	0.008	0.185	5	N	
			27N398-020-M	●	40	1.063	0.197	0.157	0.008	0.185	5	N	
			27N400-040-M	●	40	1.063	0.197	0.157	0.016	0.185	5	N	

● : Stock item

HBEHR/L



HB

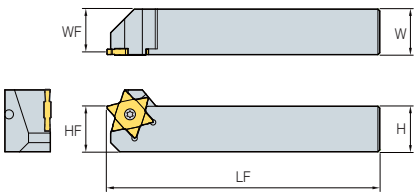


Fig. 1

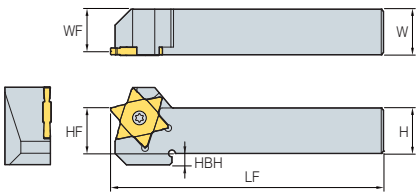
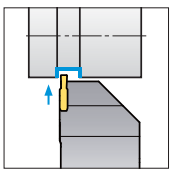


Fig. 2



• R type holder

(inch)

Designation		H	B	LF	HF	WF	HBH	LH	HAND	Screw	Wrench	Fig.
HBEHR/L	1616-27-2	5/8	5/8	4	5/8	0.586	0.354	1.063	R/L			2
	2020-27-2	3/4	3/4	5	3/4	0.566	0.197	1.063	R/L			2
	2525-27-2	1	1	6	1	0.546	-	1.063	R/L			1
	1616-27-3	5/8	5/8	4	5/8	0.711	0.354	1.063	R/L			2
	2020-27-3	3/4	3/4	5	3/4	0.691	0.197	1.063	R/L	PTMA0512D	TW15P	2
	2525-27-3	1	1	6	1	0.671	-	1.063	R/L			1
	1616-27-4	5/8	5/8	4	5/8	0.961	0.354	1.063	R/L			2
	2020-27-4	3/4	3/4	5	3/4	0.941	0.197	1.063	R/L			2
	2525-27-4	1	1	6	1	0.921	-	1.063	R/L			1

Cutting depth maximum and max. workpiece dia. (inch)							
Cutting depth maximum (CDX)	0.197	0.177	0.157	0.138	0.118	0.098	0.079
Max. workpiece dia. (Dmax)	≤ 1.181	≤ 2.283	≤ 3.503	≤ 4.291	≤ 5.787	≤ 7.874	∞

Applicable inserts C74

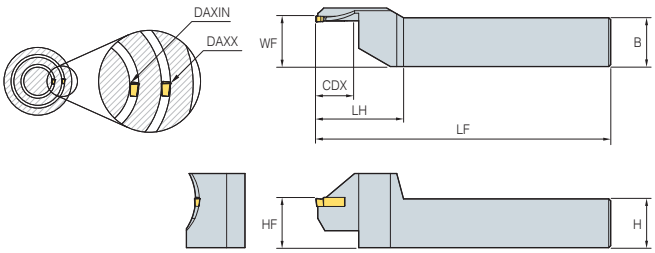
※ Please refer to the Page C74 for the cutting depth maximum and max. workpiece dia. (inch)

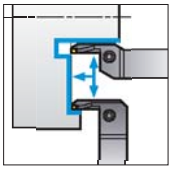
FGHH

For face grooving, turning machining



FGD FGM FMM





• R type holder

(inch)

Designation		CDX	DAXIN	DAXX	LF	WF	HF	B	H	HAND	Applicable insert	Screw	Wrench
FGHH	12R-3- 09/11	0.472	0.984	1.181	5	0.774	3/4	3/4	3/4	R	FMM300R-03	BHA0616	HW50L
	11/13	0.472	1.181	1.378	5	0.774	3/4	3/4	3/4	R			
	13/18	0.472	1.378	1.89	5	0.774	3/4	3/4	3/4	R			
	18/23	0.866	1.89	2.362	5	0.774	3/4	3/4	3/4	R	FGD300R-03 FGM300R-03		
	23/29	0.866	2.362	2.953	5	0.774	3/4	3/4	3/4	R			
	29/39	0.866	2.953	3.937	5	0.774	3/4	3/4	3/4	R			
	39/55	0.866	3.937	5.512	5	0.774	3/4	3/4	3/4	R			
	16R-3- 09/11	0.472	0.984	1.181	6	1.024	1	1	1	R	FMM300R-03		
	11/13	0.472	1.181	1.378	6	1.024	1	1	1	R			
	13/18	0.472	1.378	1.89	6	1.024	1	1	1	R			
	18/23	0.866	1.89	2.362	6	1.024	1	1	1	R	FGD300R-03 FGM300R-03		
	23/29	0.866	2.362	2.953	6	1.024	1	1	1	R			
	29/39	0.866	2.953	3.937	6	1.024	1	1	1	R			
	39/55	0.866	3.937	5.512	6	1.024	1	1	1	R			
	12R-4- 09/11	0.472	0.984	1.181	5	0.774	3/4	3/4	3/4	R	FMM400R-04		
	11/13	0.472	1.181	1.378	5	0.774	3/4	3/4	3/4	R			
	13/18	0.472	1.378	1.89	5	0.774	3/4	3/4	3/4	R			
	18/23	0.984	1.89	2.362	5	0.774	3/4	3/4	3/4	R	FGD400R-04 FGM400R-04		
	23/29	0.984	2.362	2.953	5	0.774	3/4	3/4	3/4	R			
	29/39	0.984	2.953	3.937	5	0.774	3/4	3/4	3/4	R			
	39/55	0.984	3.937	5.512	5	0.774	3/4	3/4	3/4	R			
	16R-4- 09/11	0.472	0.984	1.181	6	1.024	1	1	1	R	FMM400R-04		
	11/13	0.472	1.181	1.378	6	1.024	1	1	1	R			
	13/18	0.472	1.378	1.89	6	1.024	1	1	1	R			
	18/23	0.984	1.89	2.362	6	1.024	1	1	1	R	FGD400R-04 FGM400R-04		
	23/29	0.984	2.362	2.953	6	1.024	1	1	1	R			
	29/39	0.984	2.953	3.937	6	1.024	1	1	1	R			
	39/55	0.984	3.937	5.512	6	1.024	1	1	1	R			
	12R-5- 09/11	0.472	0.984	1.181	5	0.774	3/4	3/4	3/4	R	FMM500R-04		
	11/13	0.472	1.81	1.378	5	0.774	3/4	3/4	3/4	R			
	13/15	0.787	1.38	1.575	5	0.774	3/4	3/4	3/4	R			
	15/18	0.787	1.575	1.89	5	0.774	3/4	3/4	3/4	R			
	18/23	0.984	1.89	2.362	5	0.774	3/4	3/4	3/4	R	FGD500R-04 FGM500R-04		
	23/29	0.984	2.362	2.953	5	0.774	3/4	3/4	3/4	R			
	29/39	0.984	2.953	3.937	5	0.774	3/4	3/4	3/4	R			
	39/55	0.984	3.937	5.512	5	0.774	3/4	3/4	3/4	R			
	16R-5- 09/11	0.472	0.984	1.181	6	1.024	1	1	1	R	FMM500R-04		
	11/13	0.472	1.181	1.378	6	1.024	1	1	1	R			
	13/15	0.787	1.378	1.575	6	1.024	1	1	1	R			
	15/18	0.787	1.575	1.890	6	1.024	1	1	1	R			
	18/23	0.984	1.890	2.362	6	1.024	1	1	1	R	FGD500R-04 FGM500R-04		
	23/29	0.984	2.362	2.953	6	1.024	1	1	1	R			
	29/39	0.984	2.953	3.937	6	1.024	1	1	1	R			
	39/55	0.984	3.937	5.512	6	1.024	1	1	1	R			

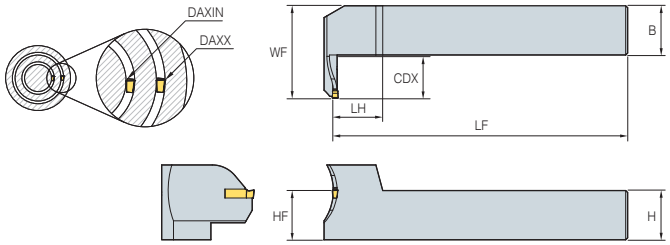
Applicable inserts **C77**

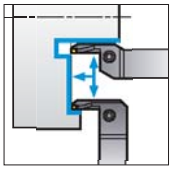
FGHH

For face grooving, turning machining



FGD FGM FMM





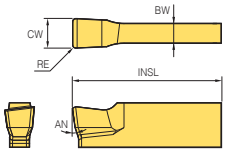
• R type holder

(inch)

Designation		CDX	DAXIN	DAXX	LF	WF	HF	B	H	HAND	Applicable insert	Screw	Wrench
FGVH	12R-3- 09/11	0.472	0.984	1.181	5	0.774	3/4	3/4	3/4	R	FMM300R-03	BHA0616	HW50L
	11/13	0.472	1.181	1.378	5	0.774	3/4	3/4	3/4	R			
	13/18	0.472	1.378	1.890	5	0.774	3/4	3/4	3/4	R			
	18/23	0.866	1.890	2.362	5	0.774	3/4	3/4	3/4	R	FGD300R-03 FGM300R-03		
	23/29	0.866	2.362	2.953	5	0.774	3/4	3/4	3/4	R			
	29/39	0.866	2.953	3.937	5	0.774	3/4	3/4	3/4	R			
	39/55	0.866	3.937	5.512	5	0.774	3/4	3/4	3/4	R			
	16R-3- 09/11	0.472	0.984	1.181	6	1.024	1	1	1	R	FMM300R-03		
	11/13	0.472	1.181	1.378	6	1.024	1	1	1	R			
	13/18	0.472	1.378	1.890	6	1.024	1	1	1	R			
	18/23	0.866	1.890	2.362	6	1.024	1	1	1	R	FGD300R-03 FGM300R-03		
	23/29	0.866	2.362	2.953	6	1.024	1	1	1	R			
	29/39	0.866	2.953	3.937	6	1.024	1	1	1	R			
	39/55	0.866	3.937	5.512	6	1.024	1	1	1	R			
	12R-4- 09/11	0.472	0.984	1.181	5	0.774	3/4	3/4	3/4	R	FMM400R-04		
	11/13	0.472	1.181	1.378	5	0.774	3/4	3/4	3/4	R			
	13/18	0.472	1.378	1.890	5	0.774	3/4	3/4	3/4	R			
	18/23	0.984	1.890	2.362	5	0.774	3/4	3/4	3/4	R	FGD400R-04 FGM400R-04		
	23/29	0.984	2.362	2.953	5	0.774	3/4	3/4	3/4	R			
	29/39	0.984	2.953	3.937	5	0.774	3/4	3/4	3/4	R			
	39/55	0.984	3.937	5.512	5	0.774	3/4	3/4	3/4	R			
	16R-4- 09/11	0.472	0.984	1.181	6	1.024	1	1	1	R	FMM400R-04		
	11/13	0.472	1.181	1.378	6	1.024	1	1	1	R			
	13/18	0.472	1.378	1.890	6	1.024	1	1	1	R			
	18/23	0.984	1.890	2.362	6	1.024	1	1	1	R	FGD400R-04 FGM400R-04		
	23/29	0.984	2.362	2.953	6	1.024	1	1	1	R			
	29/39	0.984	2.953	3.937	6	1.024	1	1	1	R			
	39/55	0.984	3.937	5.512	6	1.024	1	1	1	R			
	12R-5- 09/11	0.472	0.984	1.181	5	0.774	3/4	3/4	3/4	R	FMM500R-04		
	11/13	0.472	1.181	1.378	5	0.774	3/4	3/4	3/4	R			
	13/15	0.787	1.378	1.575	5	0.774	3/4	3/4	3/4	R			
	15/18	0.787	1.575	1.890	5	0.774	3/4	3/4	3/4	R			
	18/23	0.984	1.890	2.362	5	0.774	3/4	3/4	3/4	R	FGD500R-04 FGM500R-04		
	23/29	0.984	2.362	2.953	5	0.774	3/4	3/4	3/4	R			
	29/39	0.984	2.953	3.937	5	0.774	3/4	3/4	3/4	R			
	39/55	0.984	3.937	5.512	5	0.774	3/4	3/4	3/4	R			
	16R-5- 09/11	0.472	0.984	1.181	6	1.024	1	1	1	R	FMM500R-04		
	11/13	0.472	1.181	1.378	6	1.024	1	1	1	R			
	13/15	0.787	1.378	1.575	6	1.024	1	1	1	R			
	15/18	0.787	1.575	1.890	6	1.024	1	1	1	R			
	18/23	0.984	1.890	2.362	6	1.024	1	1	1	R	FGD500R-04 FGM500R-04		
	23/29	0.984	2.362	2.953	6	1.024	1	1	1	R			
	29/39	0.984	2.953	3.937	6	1.024	1	1	1	R			
	39/55	0.984	3.937	5.512	6	1.024	1	1	1	R			

Applicable inserts **C77**

Applicable inserts

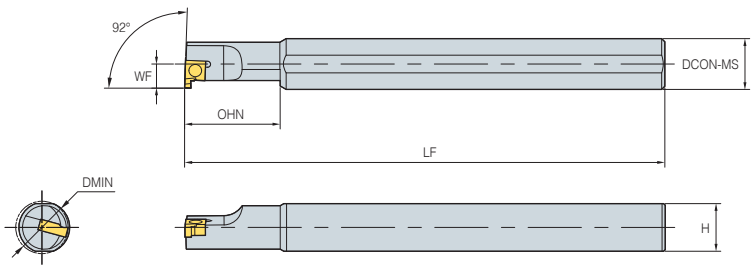
Application	Picture	Designation		Coated NC3120	Coated NC3225	Coated NC3030	Coated NC5330	Coated NC6315	Coated PC5300	Coated PC8110	Coated PC9030	Uncoated H01	SSC	CW	RE	BW	INSL	AN	HAND	Configuration	Page
Face grooving	FGD 	FGD	300R-03			●							30	0.118	3/256	0.079	0.590	7	N		C37 C38
			400R-04			●							40	0.157	1/64	0.118	0.590	7	N		
			500R-04			●							50	0.197	1/64	0.157	0.590	7	N		
	FGM 	FGM	300R-03										30	0.118	3/256	0.079	0.590	7	N		C37 C38
			400R-04			●							40	0.157	1/64	0.118	0.590	7	N		
			500R-04										50	0.197	1/64	0.157	0.590	7	N		
	FMM 	FMM	300R-03			●				●			30	0.118	3/256	0.079	0.590	7	N		C37 C38
			400R-04			●							40	0.157	1/64	0.118	0.590	7	N		
			500R-04										50	0.197	1/64	0.157	0.590	7	N		

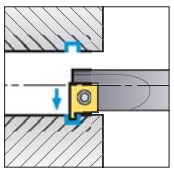
● : Stock item

IGH For internal grooving



IG





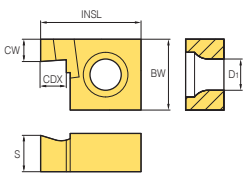
• R type holder

(inch)

Designation		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			

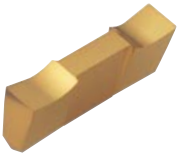
Applicable inserts C77

Applicable inserts

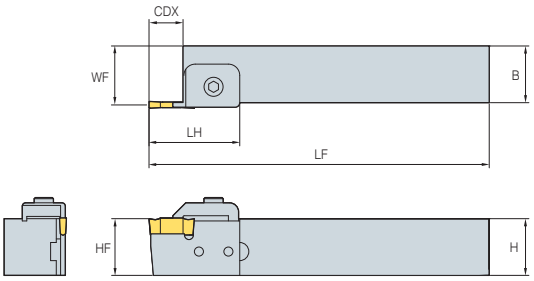
Application	Picture	Designation		Coated NC3215	Coated NC3120	Coated NC3225	Uncoated H01	Uncoated G10	Uncoated ST30A	SSC	CDX	CW	S	IC	INSL	D1	HAND	Configuration
Internal grooving		IG	125R						●	20	1.5	1.25	3.18	6.35	9	2.8	R	
			145R						●	20	1.5	1.45	3.18	6.35	9	2.8	R	
			175R						●	20	1.5	1.75	3.18	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	

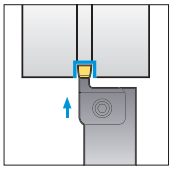
● : Stock item

DBH For deep and wide grooving



DB DC





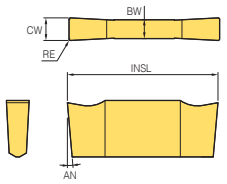
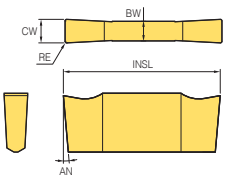
• R type holder

(inch)

Designation		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	DB400	CGH5R1	MHA0512	MHB0410	LD34	HW30L HW40L
	325R	13.9	40	150	20.8	25	25	25	R	DC300	DC400					
	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**

Applicable inserts

Application	Picture	Designation		Coated			Uncoated		Dimensions (inch)							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	

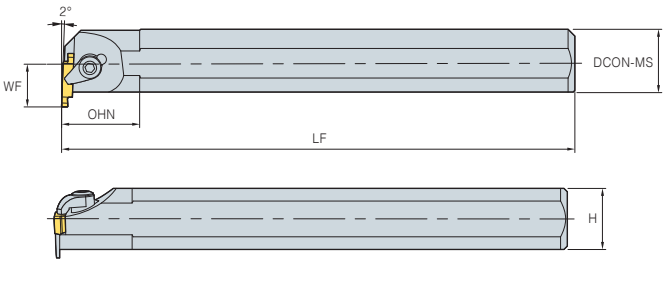
● : Stock item

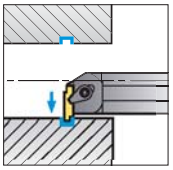
GFIP For internal grooving



BF GW







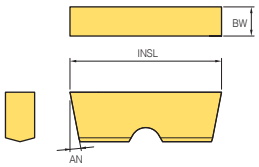
• R type holder

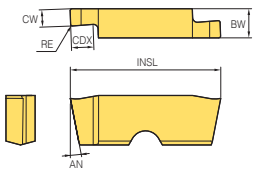
(inch)

Designation		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**

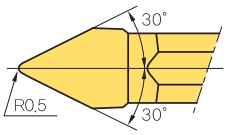
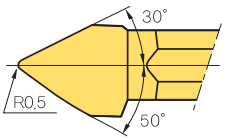
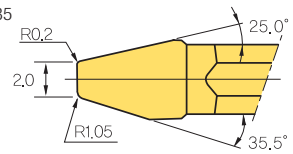
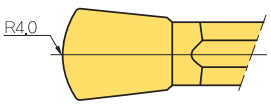
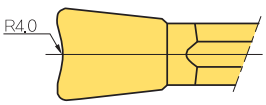
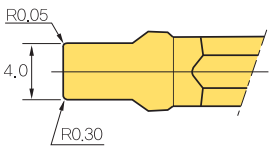
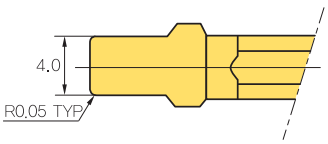
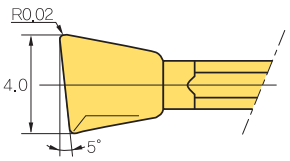
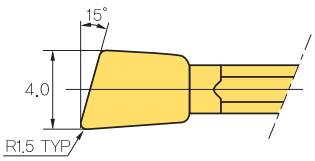
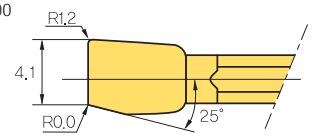
Applicable inserts

Application	Picture	Designation		Uncoated ST30A	Dimensions (inch) 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	L	Dimensions (inch) 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

Special Order Form for MGT

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 

M This is metric size. We can also provide in inch type

Code system

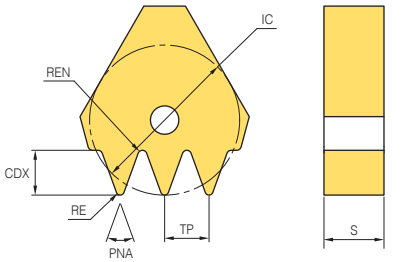
KP	27	064	-	R0.425	N3
KORLOY PULLEY	ØD	W		RE	No. of flutes

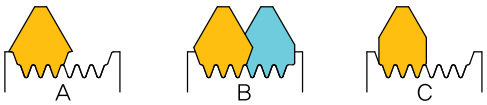
Ex)

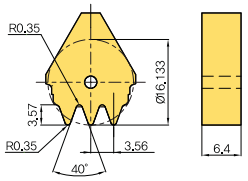
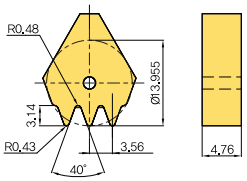
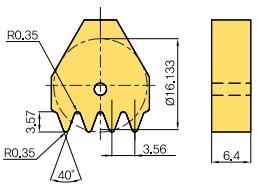
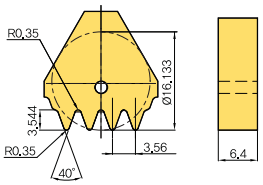
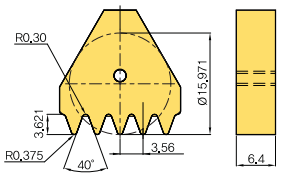
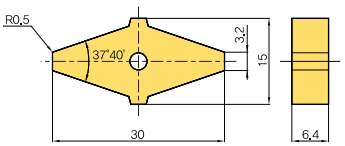
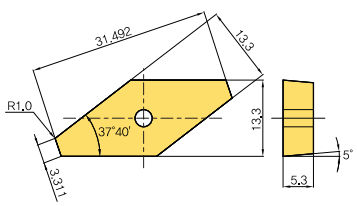
I.C	T	R	Z
Ø15.875	6.4	0.425	3

» Special types are available for quotation

Insert for machining of pulley



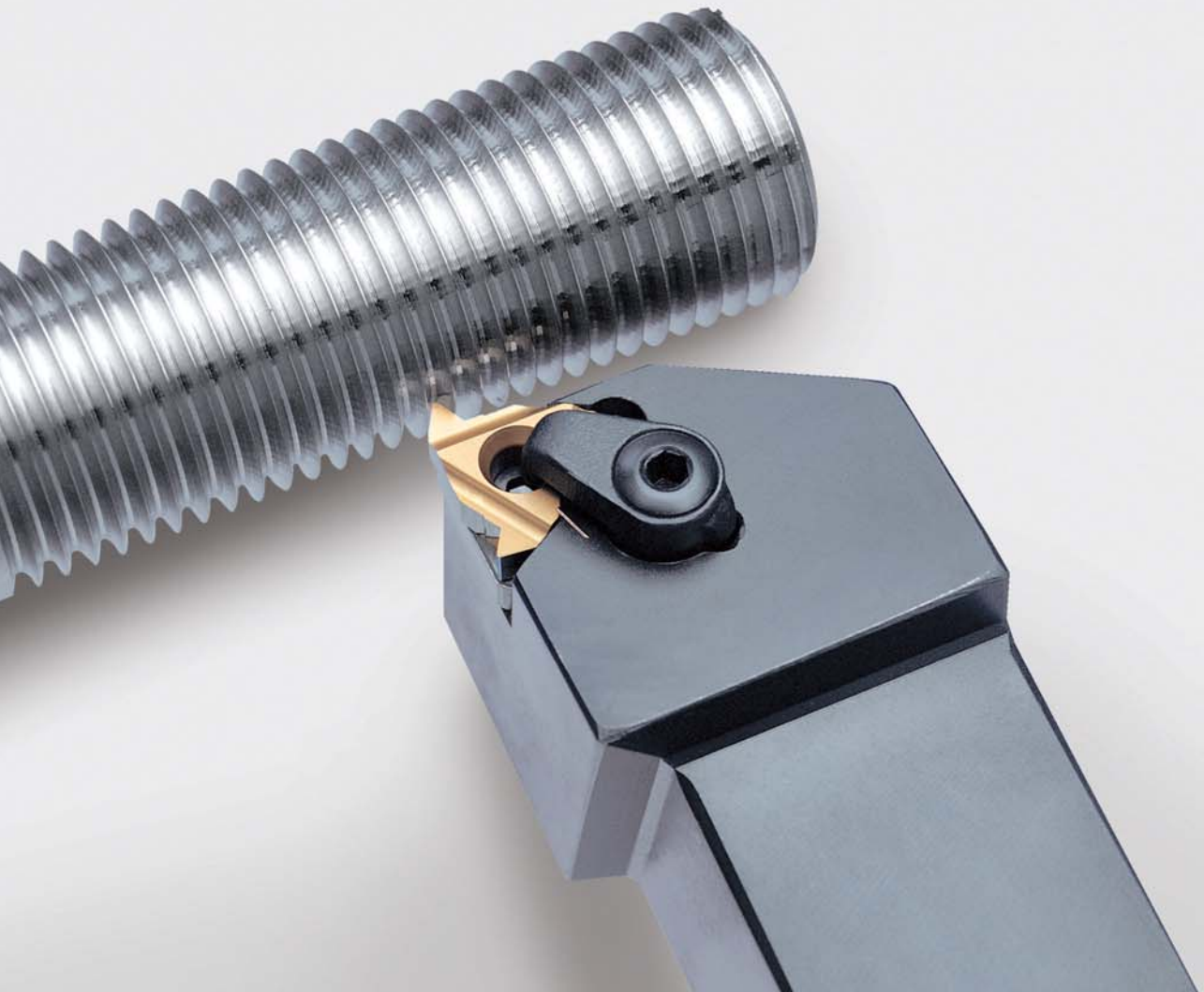


Specifications	Standard designation	Specifications	Standard designation
	**KP27064-R0.35-N3** (**Former:** DF356-3B)		**KP270476-R0.43-N3** (**Former:** DF356-3SR)
	**KP27064-R0.35-N4** (**Former:** DF356-4B)		**KP27064-R0.35-N4-A** (**Former:** DF356-4X)
	**KP27064-R0.375-N5** (**Former:** DF356-5B)		**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**

Thread Inserts

D11 **Partial profile 60°**
D11 **Partial profile 60°** (M chip breaker)
D11 **Partial profile 60°** (U chip breaker)
D12 **Partial profile 55°**
D12 **Partial profile 55°** (M chip breaker)
D12 **Partial profile 55°** (U chip breaker)
D13 **ISO Metric**
D14 **ISO Metric** (M chip breaker)
D14 **ISO Metric** (U chip breaker)
D15 **ISO Metric**
D16 **ISO Metric** (M chip breaker)
D16 **ISO Metric** (U chip breaker)
D17 **American UN** (UN, UNC, UNF, UNEF, UNS)
D19 **Whitworth** (BSW, BSF, BSP, BSB)
D20 **Whitworth** (M chip breaker)
D20 **Whitworth** (U chip breaker)
D21 **Whitworth** (BSW, BSF, BSP, BSB)
D22 **Whitworth** (M chip breaker)
D22 **Whitworth** (U chip breaker)
D23 **British Standard Pipe Thread** (BSPT)
D23 **National Pipe Thread** (NPT)
D24 **National Pipe Threads-Dryseal** (NPTF)
D24 **Round DIN405** (RD)
D25 **Trapez DIN103** (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)

External Holders

D32 **ER(L)H**
D32 **ER(L)H-C**

Internal Holders

D33 **IR(L)H**
D33 **IR(L)H-C**

Vertical Type Holders

D34 **VTH**

Threading holder code system

E R H 031 (N) - 11 (C)

1 Holder type | 2 Hand of insert | 3 Name | 4 Height of shank | 5 Shim | 6 Insert size | 7 Clamping system

1 Holder type
E R H 031 (N) - 11 (C)

E : For External
I : For Internal

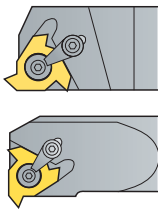
2 Hand of insert
E R H 031 (N) - 11 (C)

R: Right handed
L: Left handed

3 Name
E R H 031 (N) - 11 (C)

H: Holder

4 Height of shank
E R H 031 (N) - 11 (C)



* Refer to the specification for shank diameter information

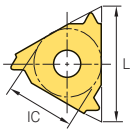
031: 0.31
0375: 0.375
050: 0.50
0625: 0.625
075: 0.75
100: 1.00
125: 1.25
150: 1.50
200: 2.00
250: 2.50

5 Shim
E R H 031 (N) - 11 (C)

No code: Shim required
N: No shim required

6 Insert size (inch)
E R H 031 (N) - 11 (C)

11 : d = 1/4
16 : d = 3/8
22 : d = 1/2
27 : d = 5/8



7 Clmaping system
E R H 031 (N) - 11 (C)

No code: Screw on system
C: Clamp on system

Threading insert code system

E R H 16 - 1.5 ISO

1 Holder type | 2 Hand of insert | 3 Name | 4 Insert size (inch) | 5 Pitch | 6 Type

1 Insert type
E R M 16 - 1.5 ISO

E : External thread
I : Internal thread

2 Hand of insert
E R M 16 - 1.5 ISO

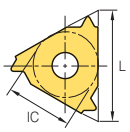
R: Right handed
L: Left handed

3 Chip breaker
E R M 16 - 1.5 ISO

M: With Chip Breaker

4 Insert size (inch)
E R M 16 - 1.5 ISO

11 : IC = 1/4
16 : IC = 3/8
22 : IC = 1/2
27 : IC = 5/8



Insert shape


< ER / IR >


< ERM / IRM >

5 Pitch
E R M 16 - 1.5 ISO

Full profile		Partial profile	
mm	tpi	mm	tpi
0.35~6.0	72~3	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

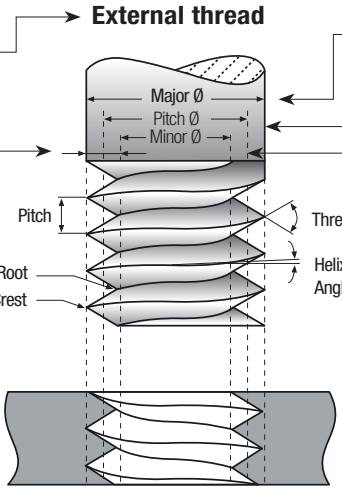
Special features

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

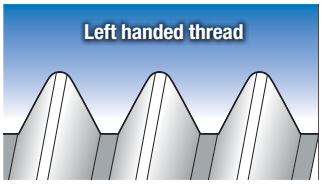
Pitch diameter
On a straight thread, the diameter of an imaginary cylinder, the surface of which cuts the thread forms where the width of the thread and groove are equal

Minor diameter
The smallest diameter of a screw thread

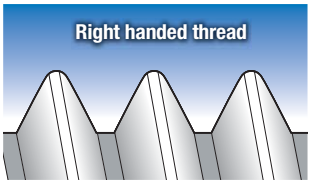
Helix angle
For a straight thread, where the lead of the thread and the pitch diameter circle circumference form a right angled triangle, the helix angle is the angle opposite of the lead

Straight thread
A thread formed on a cylinder

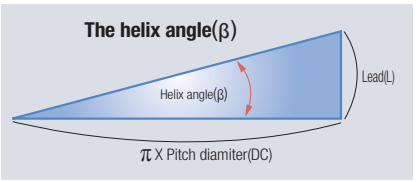
Internal thread
A thread on the internal surface of a cylinder or cone



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

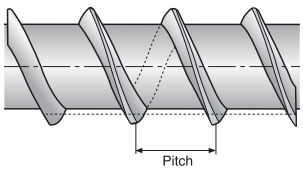


For a straight thread, where the lead of the thread and the pitch diameter circle circumference form a right angled triangle, the helix angle is the angle opposite of the lead

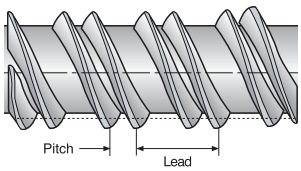
Machining a multi-start thread

- 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

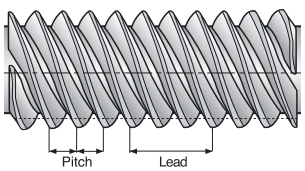
First start machined



Second start machined

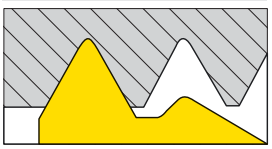


Third start machined (Final, 3 starts thread)



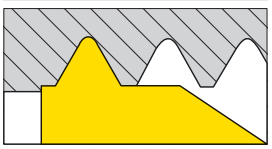
Insert profile style

Partial profile



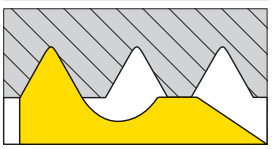
The V partial profile insert cuts without topping the outer diameter of the thread. The same insert can be used for a range of different thread pitches which have a common thread angle

Full profile



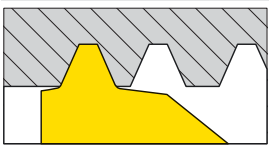
The full profile insert will form a complete thread profile including the crest. For every thread pitch and standard, a separate insert is required

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

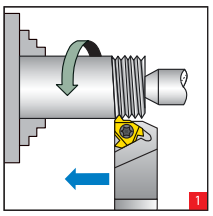


The Semi profile insert will form a complete thread including crest radius but without topping the outer diameter mainly used for trapezoidal profiles

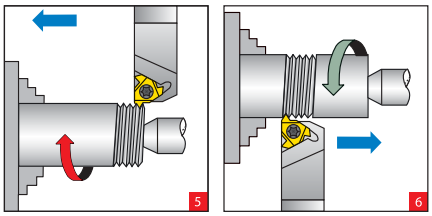
Thread turning method

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

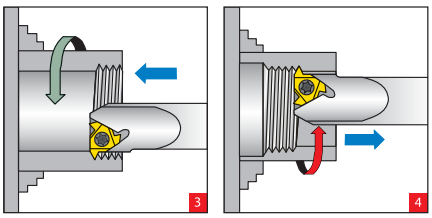
External RH thread



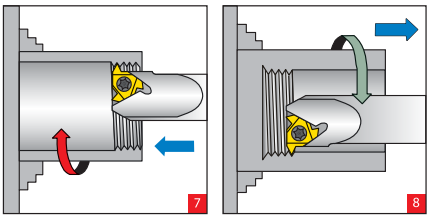
External LH thread



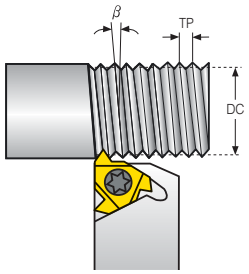
Internal RH thread



Internal LH thread



Calculating the helix angle (β)



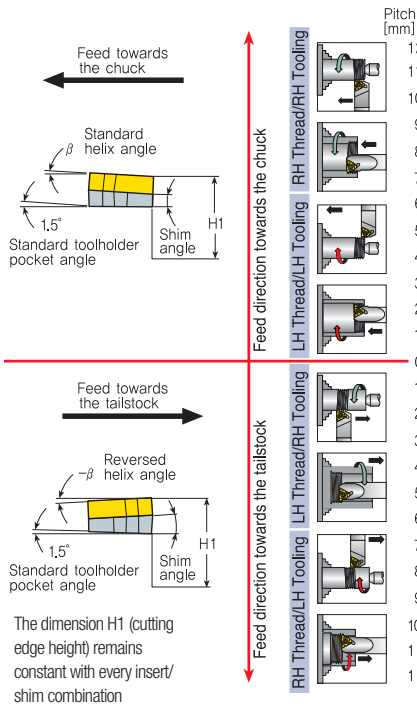
- The helix angle is calculated by the ollowing formula:

$$\beta = \tan^{-1}\frac{TP \times N}{\pi \times DC}$$

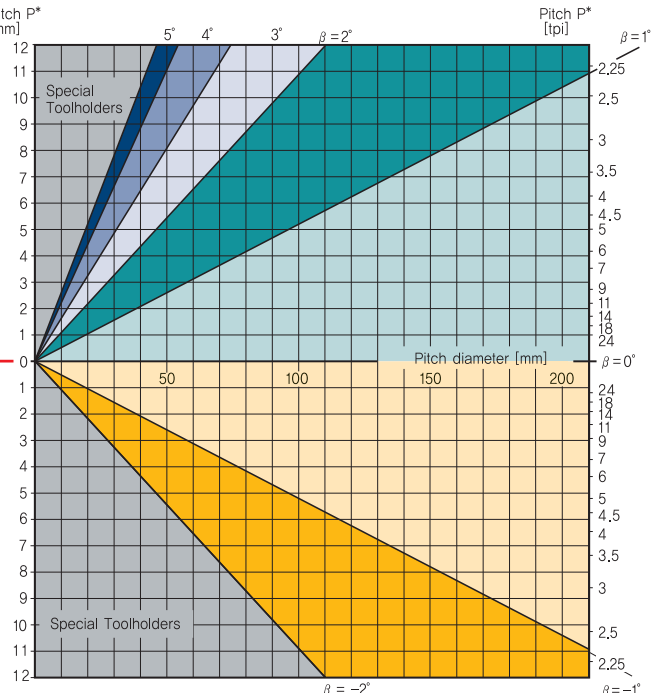
β: Helix angle (°)
P: Pitch (mm)
N: No. of starts
D: Pitch diameter (mm)
Lead = P x N

- The helix angle can also be found from the diagram below

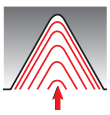
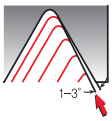
(Helix angle diagram)



The dimension H1 (cutting edge height) remains constant with every insert/ shim combination

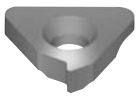


Thread infeed method

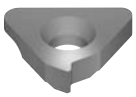
Infeed	Application	
 **Radial infeed**	• When the pitch is smaller than 16 tpi • For material with short chips • For work with hardened material	Radial infeed is the simplest and quickest method The feed is perpendicular to the turning axis, and both flanks of the insert perform the cutting operation 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



ATE (External)



ATI (Through)

Resultant Helix Angle1.5°

Insert size	**IC**	9.525 (3/8)		12.7 (1/2)		15.875 (5/8)	
	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

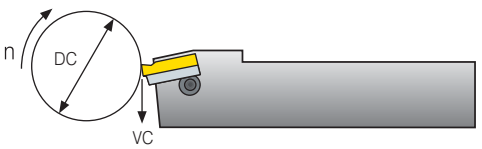
	Workpiece	
P	Carbon steel, alloy steel, cast steel	PC5300 PC3030T
M	Stainless steel	PC5300 PC3030T PC9070T
K	Cast steel	PC5300 PC3030T
N	Aluminum, copper	PC5300 PC3030T

Recommended cutting speed as per workpiece (vc)

Workpiece			Hardness brinell (HB)	vc (sfm)		
				PC3030T	PC9070T	PC5300
P	Carbon steel	Low carbon (C=0.1-0.25 %)	125	380~630		360~620
		Medium carbon (C=0.25-0.55 %)	150	330~580		330~540
		High carbon (C=0.55-0.85 %)	170	300~510		290~510
	Low alloy steel	Non-hardened	180	330~600		330~590
		Hardened	275	250~460		250~460
		Hardened	350	230~450		230~440
	High alloy steel	Annealed	200	260~400		260~390
		Hardened	325	170~330		160~330
	Cast steel	Low alloy	200	230~430		230~430
		High alloy	225	200~400		200~390
M	Stainless steel ferritic	Non-hardened	200	230~430	230~490	230~430
		Hardened	330	170~310	200~410	160~310
	Stainless steel austenitic	Austenitic	180	260~400	290~520	260~390
		Super austenitic	200	100~330	130~390	100~330
	Stainless steel cast ferritic	Non-hardened	200	300~400	290~490	290~390
		Hardened	330	220~360	210~390	210~360
	Stainless steel cast austenitic	Austenitic	200	280~360	280~390	280~360
		Hardened	330	200~330	190~360	200~330
	High temperature alloy	Annealed (Iron based)	200	150~200		150~190
		Aged (Iron based)	280	100~170		100~160
		Annealed (Nickel or Cobalt based)	250	70~100		65~160
		Aged (Nickel or Cobalt based)	350	50~80		50~80
	Titanium alloy	99.5% pure Titanium	400Rm	460~560		460~560
		Titanium alloy	1050Rm	170~230		160~230
K	Extra hard steel	Hardened & tempered	55HRC	150~200		150~190
	Malleable cast iron	Ferritic (short chips)	130	230~400		190~390
		Pearlitic (long chips)	230	230~400		190~390
	Gray cast iron	Low tensile strength	180	230~430		190~430
		High tensile strength	260	200~330		200~330
	Nodular SG iron	Ferritic	160	410~530		410~520
		Pearlitic	260	300~400		290~390
N	Aluminum alloy wrought	Non-aging	60	330~830		330~820
		Aged	100	260~600		260~590
	Aluminum alloy	Cast	75	660~1300		660~1310
		Cast & aged	90	660~920		660~920
		Cast Si 13-22%	130	200~500		200~590
	Copper and copper alloy	Brass	90	260~400		260~690
		Bronze and non-leaded copper	100	260~400		260~690

Calculation of n [RPM]

$$n = \frac{vc \times 1000}{\pi \times DC} \qquad vc = \frac{\pi \times DC \times n}{1000}$$



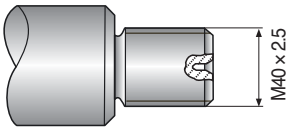
n: Revolution per minute [min-1]
vc: Cutting speed [m/min]
DC: Workpiece diameter [mm]

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)

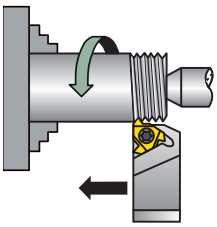
Step by step thread turning



Application

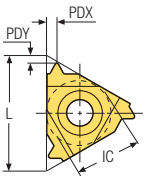
- **Thread:** External right handed ISO metric M40x2.5
- **Material:** 4140 (25 HRC)

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

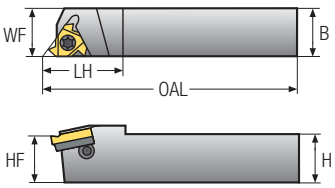
2 Choose the insert size



- **Chosen insert:** ER16-2.5 ISO

Insert size	Pitch	Ordering code	Shim	Tool holder
IC	**mm**	**RH** (Right Handed)	**RH** (Right Handed)	
3/8	2.5	ER16-2.5ISO	ATE16	ERH□□-16

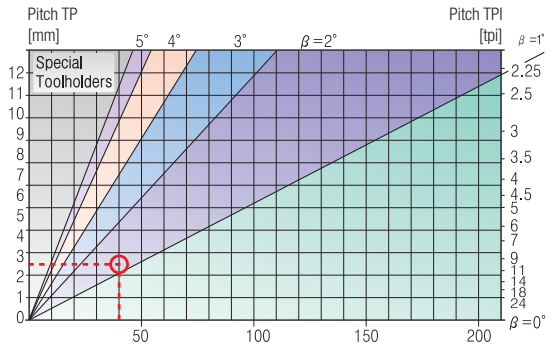
3 Choose the tool holder



- **Chosen tool holder:** ERH 25-16

Insert size	Pitch	Dimensions (inch)				
IC	**RH** (Right handed)	**H = HF**	**B**	**WF**	**OAL**	**LH**
3/8	ERH25-16	0.625	0.625	0.625	5.0	1.02

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 (sfm)
				PC3030T
P	**Low alloy steel**	Non-hardened	180	330~600
		Hardened	275	250~460
		Hardened	350	230~450

7 Determine the number of passes

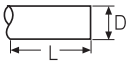
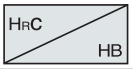
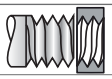
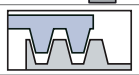
- Carbide grade chosen: PC3030T
- Cutting speed: 140 m/min

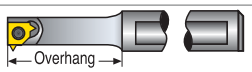
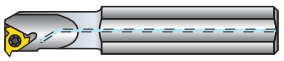
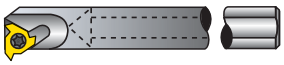
Pitch	mm	1.50	1.75	2.00	2.50	3.00	3.50	4.00
	TPI	16	14	12	10	8	7	6
No.of passes		6~10	7~12	7~12	8~14	9~16	10~18	11~18

8 Summary

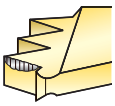
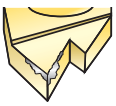
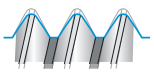
Thread type	ISO M40 x 2.5 External right handed
1. Feed direction	Towards the chuck
2. Insert and grade	ER16–2.5ISO, PC3030T
3. Tool holder	ERH25–16
4. Helix angle	1.5°
5. Shim	ATE16
6. Cutting speed	140 m/min
7. Number of passes	10

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	

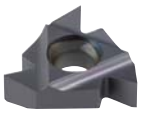
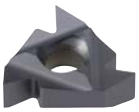
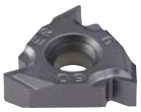
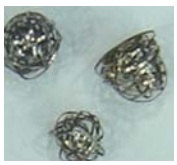
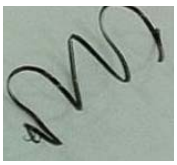
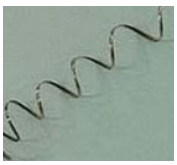
Cutting condition depending on

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

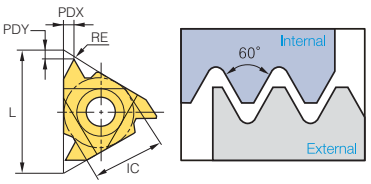
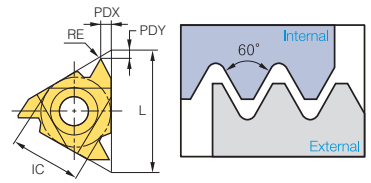
Threading inserts with chip breaker

- 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	ER16-1.5 ISO		ERM16-1.5 ISO		ERM16-1.5 ISO-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	

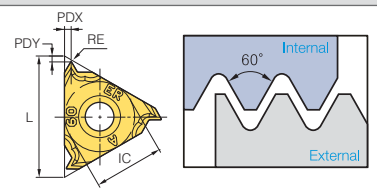
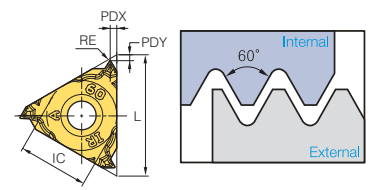
Partial profile 60°

Type	Designation (Right)	PC3030T	PC9070T	Designation (Left)	PC3030T	PC9070T	Pitch TP	Pitch TPI	IC	L	RE	PDY	PDX	Configuration
External	ER 11-A60	●	●	EL 11-A60	●		0.5~1.5	48~16	1/4	0.433	0.002	0.03	0.04	
	16-A60	●	●	16-A60	●		0.5~1.5	48~16	3/8	0.630	0.011	0.05	0.07	
	16-G60	●		16-G60	●		1.75~3.0	14~8	3/8	0.630	0.011	0.05	0.07	
	16-AG60	●	●	16-AG60	●		0.5~3.0	48~8	3/8	0.630	0.003	0.05	0.07	
	22-N60	●	●	22-N60	●		3.5~5.0	7~5	1/2	0.866	0.021	0.07	0.10	
	27-Q60	●	●	27-Q60	●		5.5~6.0	4.5~4	5/8	1.063	0.021	0.07	0.10	
Internal	IR 11-A60	●	●	IL 11-A60	●	●	0.5~1.5	48~16	1/4	0.433	0.002	0.03	0.04	
	16-A60	●		16-A60	●		0.5~1.5	48~16	3/8	0.630	0.002	0.03	0.04	
	16-G60	●		16-G60	●		1.75~3.0	14~8	3/8	0.630	0.006	0.05	0.07	
	16-AG60	●	●	16-AG60	●		0.5~3.0	48~8	3/8	0.630	0.002	0.05	0.07	
	22-N60	●	●	22-N60	●		3.5~5.0	7~5	1/2	0.866	0.012	0.08	0.10	
	27-Q60	●	●	27-Q60			5.5~6.0	4.5~4	5/8	1.063	0.012	0.07	0.11	

Applicable holders **D32, D33**

● : Stock item

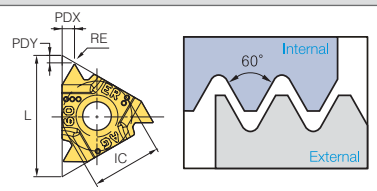
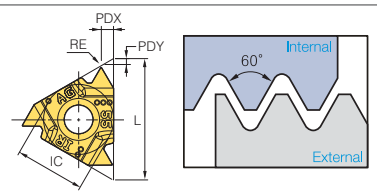
Partial profile 60°(M chip breaker)

Type	Designation (Right)	PC3030T	PC5300	Designation (Left)	PC3030T	Pitch TP	Pitch TPI	IC	L	RE	PDY	PDX	Configuration
External	ERM 16-A60	●				0.5~1.5	48~16	3/8	0.630	0.002	0.05	0.07	
	16-G60	●				1.75~3.0	14~8	3/8	0.630	0.011	0.05	0.07	
	16-AG60	●				0.5~3.0	48~8	3/8	0.630	0.003	0.05	0.07	
	22-N60	●				3.5~5.0	7~5	1/2	0.866	0.021	0.07	0.10	
Internal	IRM 11-A60	●				0.5~1.5	48~16	1/4	0.433	0.003	0.03	0.04	
	16-A60	●				0.5~1.5	48~16	3/8	0.630	0.003	0.03	0.04	
	16-G60	●				1.75~3.0	14~8	3/8	0.630	0.005	0.05	0.07	
	16-AG60	●				0.5~3.0	48~8	3/8	0.630	0.003	0.05	0.07	
	22-N60	●				3.5~5.0	7~5	1/2	0.866	0.012	0.07	0.10	

Applicable holders **D32, D33**

● : Stock item

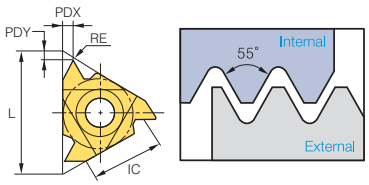
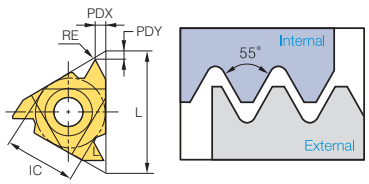
Partial profile 60°(U chip breaker)

Type	Designation (Right)	PC3030T	PC5300	Designation (Left)	PC3030T	Pitch TP	Pitch TPI	IC	L	RE	PDY	PDX	Configuration
External	ERM 16-AG60-U					0.5~3.0	48~8	3/8	0.630	0.003	0.05	0.07	
Internal	IRM 16-AG60-U					0.5~3.0	48~8	3/8	0.630	0.003	0.05	0.07	

Applicable holders **D32, D33**

● : Stock item

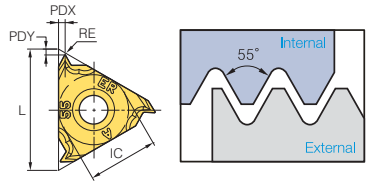
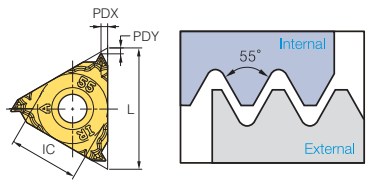
Partial profile 55°

Type	Designation (Right)	PC3030T	PC9070T	Designation (Left)	PC3030T	PC9070T	Pitch TP	Pitch TPI	Dimensions (inch) IC	L	RE	PDY	PDX	Configuration
External	ER 11-A55	●		EL 11-A55			0.5~1.5	48~16	1/4	0.433	0.002	0.03	0.04	
	16-A55	●		16-A55	●		0.5~1.5	48~16	3/8	0.630	0.002	0.03	0.04	
	16-G55	●		16-G55			1.75~3.0	14~8	3/8	0.630	0.008	0.05	0.07	
	16-AG55	●		16-AG55	●		0.5~3.0	48~8	3/8	0.630	0.003	0.05	0.07	
	22-N55	●		22-N55			3.5~5.0	7~5	1/2	0.866	0.017	0.07	0.10	
	27-Q55			27-Q55			5.5~6.0	4.5~4	5/8	1.063	0.024	0.08	0.11	
Internal	IR 11-A55	●		IL 11-A55	●		0.5~1.5	48~16	1/4	0.433	0.002	0.03	0.04	
	16-A55	●		16-A55			0.5~1.5	48~16	3/8	0.630	0.020	0.02	0.04	
	16-G55	●		16-G55			1.75~3.0	14~8	3/8	0.630	0.008	0.05	0.07	
	16-AG55	●		16-AG55	●		0.5~3.0	48~8	3/8	0.630	0.003	0.05	0.07	
	22-N55	●		22-N55			3.5~5.0	7~5	1/2	0.866	0.017	0.67	0.10	
	27-Q55			27-Q55			5.5~6.0	4.5~4	5/8	1.063	0.024	0.08	0.10	

Applicable holders **D32, D33**

● : Stock item

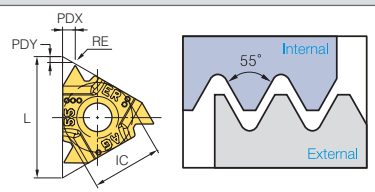
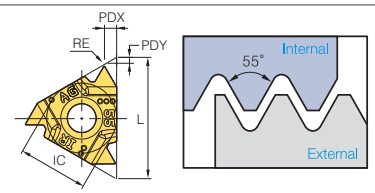
Partial profile 55° (M chip breaker)

Type	Designation (Right)	PC3030T	PC5300	Designation (Left)	PC3030T	Pitch TP	Pitch TPI	Dimensions (inch) IC	L	RE	PDY	PDX	Configuration
External	ERM 16-A55	●				0.5~1.5	48~16	3/8	0.630	0.003	0.03	0.04	
	16-G55	●				1.75~3.0	14~8	3/8	0.630	0.008	0.05	0.07	
	16-AG55	●				0.5~3.0	48~8	3/8	0.630	0.003	0.05	0.07	
	22-N55	●				3.5~5.0	7~5	1/2	0.866	0.017	0.07	0.10	
Internal	IRM 11-A55	●				0.5~1.5	48~16	1/4	0.433	0.003	0.03	0.04	
	16-A55	●				0.5~1.5	48~16	3/8	0.630	0.002	0.03	0.04	
	16-G55					1.75~3.0	14~8	3/8	0.630	0.003	0.05	0.07	
	16-AG55	●				0.5~3.0	48~8	3/8	0.630	0.003	0.05	0.07	
	22-N55	●				3.5~5.0	7~5	1/2	0.866	0.017	0.07	0.10	

Applicable holders **D32, D33**

● : Stock item

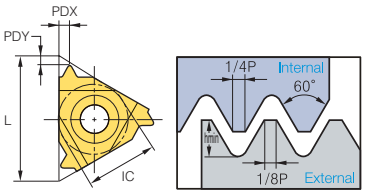
Partial profile 55° (U chip breaker)

Type	Designation (Right)	PC3030T	PC5300	Designation (Left)	PC3030T	Pitch TP	Pitch TPI	Dimensions (inch) IC	L	RE	PDY	PDX	Configuration
External	ERM 16-AG55-U					0.5~3.0	48~8	3/8	0.630	0.003	0.05	0.07	
Internal	IRM 16-AG55-U					0.5~3.0	48~8	3/8	0.630	0.003	0.05	0.07	

Applicable holders **D32, D33**

● : Stock item

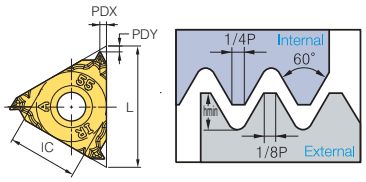
ISO Metric

Type	Designation (Right)		PC3030T	PC9070T	Designation (Left)		PC3030T	PC9070T	Pitch	Dimensions (inch)					Configuration
									TP	IC	L	hmin	PDY	PDX	
External	ER	11-0.35ISO	●		EL	11-0.35ISO			0.35	1/4	0.433	0.008	0.03	0.02	
		11-0.4ISO	●			11-0.4ISO			0.4	1/4	0.433	0.011	0.03	0.02	
		11-0.45ISO	●			11-0.45ISO			0.45	1/4	0.433	0.011	0.03	0.02	
		11-0.5ISO	●			11-0.5ISO			0.5	1/4	0.433	0.012	0.02	0.02	
		11-0.6ISO	●			11-0.6ISO			0.6	1/4	0.433	0.015	0.02	0.02	
		11-0.7ISO	●			11-0.7ISO			0.7	1/4	0.433	0.017	0.02	0.02	
		11-0.75ISO				11-0.75ISO			0.75	1/4	0.433	0.017	0.02	0.02	
		11-0.8ISO	●			11-0.8ISO			0.8	1/4	0.433	0.019	0.02	0.02	
		11-1.0ISO	●			11-1.0ISO			1.0	1/4	0.433	0.024	0.02	0.03	
		11-1.25ISO	●	●		11-1.25ISO			1.25	1/4	0.433	0.030	0.03	0.04	
		11-1.5ISO	●			11-1.5ISO	●		1.5	1/4	0.433	0.036	0.03	0.04	
		11-1.75ISO	●			11-1.75ISO			1.75	1/4	0.433	0.042	0.03	0.04	
		16-0.35ISO				16-0.35ISO			0.35	3/8	0.630	0.008	0.03	0.02	
		16-0.4ISO				16-0.4ISO			0.4	3/8	0.630	0.010	0.03	0.02	
		16-0.45ISO	●			16-0.45ISO			0.45	3/8	0.630	0.011	0.03	0.02	
		16-0.5ISO	●			16-0.5ISO	●		0.5	3/8	0.630	0.012	0.03	0.02	
		16-0.6ISO	●			16-0.6ISO			0.6	3/8	0.630	0.015	0.02	0.02	
		16-0.7ISO	●			16-0.7ISO			0.7	3/8	0.630	0.017	0.02	0.02	
		16-0.75ISO	●			16-0.75ISO			0.75	3/8	0.630	0.018	0.02	0.02	
		16-0.8ISO	●	●		16-0.8ISO			0.8	3/8	0.630	0.019	0.02	0.03	
		16-1.0ISO	●	●		16-1.0ISO	●		1.0	3/8	0.630	0.024	0.02	0.03	
		16-1.25ISO	●	●		16-1.25ISO	●		1.25	3/8	0.630	0.030	0.03	0.04	
		16-1.5ISO	●	●		16-1.5ISO	●		1.5	3/8	0.630	0.036	0.03	0.04	
		16-1.75ISO	●	●		16-1.75ISO			1.75	3/8	0.630	0.042	0.04	0.05	
		16-2.0ISO	●	●		16-2.0ISO	●		2.0	3/8	0.630	0.048	0.04	0.05	
		16-2.5ISO	●	●		16-2.5ISO			2.5	3/8	0.630	0.060	0.04	0.07	
		16-3.0ISO	●	●		16-3.0ISO	●		3.0	3/8	0.060	0.067	0.05	0.07	
		22-3.5ISO	●	●		22-3.5ISO			3.5	1/2	0.866	0.085	0.06	0.09	
		22-4.0ISO	●	●		22-4.0ISO	●		4.0	1/2	0.866	0.096	0.06	0.09	
		22-4.5ISO	●	●		22-4.5ISO			4.5	1/2	0.866	0.109	0.06	0.09	
		22-5.0ISO	●	●		22-5.0ISO	●		5.0	1/2	0.866	0.121	0.06	0.10	
		27-5.5ISO				27-5.5ISO			5.5	5/8	1.063	0.133	0.06	0.11	
		27-6.0ISO	●	●		27-6.0ISO			6.0	5/8	1.063	0.145	0.08	0.11	

Applicable holders **D32**

● : Stock item

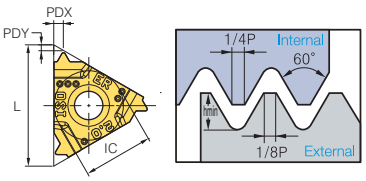
ISO Metric (M chip breaker)

Type	Designation (Right)	PC3030T	PC5300	Designation (Left)	PC3030T	Pitch	Dimensions (inch)					Configuration
						TP	IC	L	hmin	PDY	PDX	
External	ERM 16-1.0ISO	●				1.0	3/8	0.630	0.024	0.02	0.03	
	16-1.25ISO					1.25	3/8	0.630	0.030	0.03	0.04	
	16-1.5ISO	●				1.5	3/8	0.630	0.036	0.03	0.04	
	16-1.75ISO	●				1.75	3/8	0.630	0.042	0.04	0.05	
	16-2.0ISO	●				2.0	3/8	0.630	0.049	0.04	0.05	
	16-2.5ISO	●				2.5	3/8	0.630	0.060	0.04	0.05	
	16-3.0ISO	●				3.0	3/8	0.630	0.073	0.05	0.06	

Applicable holders **D32**

● : Stock item

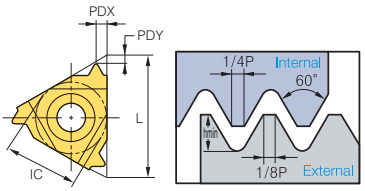
ISO Metric (U chip breaker)

Type	Designation (Right)	PC3030T	PC5300	Designation (Left)	PC3030T	Pitch	Dimensions (inch)					Configuration
						TP	IC	L	hmin	PDY	PDX	
External	ERM 16-1.5ISO-U					1.5	3/8	0.630	0.036	0.03	0.04	
	16-2.0ISO-U					2.0	3/8	0.630	0.049	0.04	0.05	

Applicable holders **D32**

● : Stock item

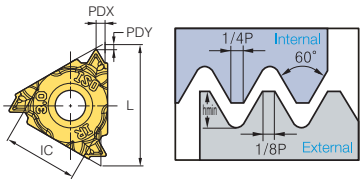
ISO Metric

Type	Designation (Right)		PC3030T	PC9070T	Designation (Left)		PC3030T	PC9070T	Pitch	Dimensions (inch)					Configuration
									TP	IC	L	hmin	PDY	PDX	
Internal	IR	11-0.35ISO	●		IL	11-0.35ISO			0.35	1/4	0.433	0.008	0.03	0.01	
		11-0.4ISO	●			11-0.4ISO			0.4	1/4	0.433	0.009	0.03	0.02	
		11-0.45ISO	●			11-0.45ISO			0.45	1/4	0.433	0.010	0.03	0.02	
		11-0.5ISO	●			11-0.5ISO	●		0.5	1/4	0.433	0.001	0.02	0.02	
		11-0.6ISO	●			11-0.6ISO			0.6	1/4	0.433	0.014	0.02	0.02	
		11-0.7ISO	●			11-0.7ISO			0.7	1/4	0.433	0.016	0.02	0.02	
		11-0.75ISO	●			11-0.75ISO	●		0.75	1/4	0.433	0.017	0.02	0.02	
		11-0.8ISO				11-0.8ISO			0.8	1/4	0.433	0.018	0.02	0.03	
		11-1.0ISO	●	●		11-1.0ISO			1.0	1/4	0.433	0.023	0.02	0.03	
		11-1.25ISO	●	●		11-1.25ISO	●		1.25	1/4	0.433	0.028	0.03	0.04	
		11-1.5ISO	●	●		11-1.5ISO	●	●	1.5	1/4	0.433	0.034	0.03	0.04	
		11-1.75ISO		●		11-1.75ISO			1.75	1/4	0.433	0.040	0.04	0.04	
		11-2.0ISO	●	●		11-2.0ISO	●		2.0	1/4	0.433	0.045	0.03	0.04	
		11-2.5ISO	●			11-2.5ISO	●		2.5	1/4	0.433	0.057	0.03	0.04	
		16-0.35ISO	●			16-0.35ISO			0.35	3/8	0.630	0.008	0.03	0.01	
		16-0.4ISO	●			16-0.4ISO			0.4	3/8	0.630	0.009	0.03	0.02	
		16-0.45ISO	●			16-0.45ISO			0.45	3/8	0.630	0.010	0.03	0.02	
		16-0.5ISO	●			16-0.5ISO			0.5	3/8	0.630	0.011	0.03	0.02	
		16-0.6ISO				16-0.6ISO			0.6	3/8	0.630	0.014	0.02	0.02	
		16-0.7ISO				16-0.7ISO			0.7	3/8	0.630	0.016	0.02	0.02	
		16-0.75ISO	●			16-0.75ISO			0.75	3/8	0.630	0.017	0.02	0.02	
		16-0.8ISO	●			16-0.8ISO			0.8	3/8	0.630	0.018	0.02	0.02	
		16-1.0ISO	●	●		16-1.0ISO			1.0	3/8	0.630	0.023	0.02	0.03	
		16-1.25ISO	●	●		16-1.25ISO			1.25	3/8	0.630	0.028	0.03	0.04	
		16-1.5ISO	●	●		16-1.5ISO	●		1.5	3/8	0.630	0.034	0.03	0.04	
		16-1.75ISO	●	●		16-1.75ISO			1.75	3/8	0.630	0.040	0.04	0.05	
		16-2.0ISO	●	●		16-2.0ISO	●		2.0	3/8	0.630	0.045	0.04	0.05	
		16-2.5ISO	●	●		16-2.5ISO	●		2.5	3/8	0.630	0.057	0.04	0.07	
		16-3.0ISO	●	●		16-3.0ISO	●		3.0	3/8	0.630	0.068	0.04	0.06	
		22-3.5ISO	●	●		22-3.5ISO			3.5	1/2	0.866	0.08	0.06	0.09	
		22-4.0ISO	●	●		22-4.0ISO	●		4.0	1/2	0.866	0.091	0.06	0.09	
		22-4.5ISO	●	●		22-4.5ISO			4.5	1/2	0.866	0.102	0.06	0.09	
		22-5.0ISO	●	●		22-5.0ISO			5.0	1/2	0.866	0.114	0.06	0.09	
		27-5.5ISO	●			27-5.5ISO			5.5	5/8	1.063	0.125	0.06	0.09	
		27-6.0ISO	●			27-6.0ISO			6.0	5/8	1.063	0.136	0.07	0.10	

Applicable holders **D33**

●: Stock item

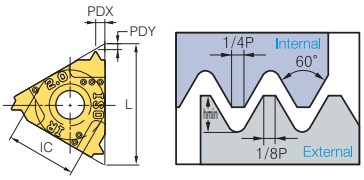
ISO Metric (M chip breaker)

Type	Designation (Right)	PC3030T	PC5300	Designation (Left)	PC3030T	Pitch	Dimensions (inch)					Configuration
						TP	IC	L	hmin	PDY	PDX	
Internal	IRM 11-1.5ISO	●				1.5	1/4	0.433	0.034	0.03	0.04	
	16-1.0ISO	●				1.0	3/8	0.630	0.023	0.02	0.03	
	16-1.25ISO					1.25	3/8	0.630	0.034	0.03	0.04	
	16-1.5ISO	●				1.5	3/8	0.630	0.028	0.03	0.04	
	16-1.75ISO					1.75	3/8	0.630	0.034	0.04	0.05	
	16-2.0ISO	●				2.0	3/8	0.630	0.045	0.04	0.05	
	16-2.5ISO	●				2.5	3/8	0.630	0.057	0.04	0.06	
	16-3.0ISO	●				3.0	3/8	0.630	0.068	0.04	0.06	

Applicable holders **D33**

● : Stock item

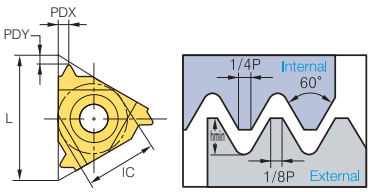
ISO Metric (U chip breaker)

Type	Designation (Right)	PC3030T	PC5300	Designation (Left)	PC3030T	Pitch	Dimensions (inch)					Configuration
						TP	IC	L	hmin	PDY	PDX	
Internal	IRM 16-1.5ISO-U					1.5	3/8	0.630	0.034	0.03	0.04	
	16-2.0ISO-U					2.0	3/8	0.630	0.045	0.04	0.05	

Applicable holders **D33**

● : Stock item

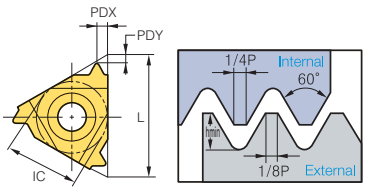
American UN (UN, UNC, UNF, UNEF, UNS)

Type	Designation (Right)		PC3030T	PC9070T	Designation (Left)		PC3030T	PC9070T	Pitch	Dimensions (inch)					Configuration
									TPI	IC	L	hmin	PDY	PDX	
External	ER	11-72UN	●		EL	11-72UN			72	1/4	0.433	0.009	1/32	0.016	
		11-64UN	●			11-64UN			64	1/4	0.433	0.009	1/32	0.016	
		11-56UN	●			11-56UN			56	1/4	0.433	0.011	0.028	0.016	
		11-48UN	●			11-48UN			48	1/4	0.433	0.013	0.024	0.024	
		11-44UN	●			11-44UN			44	1/4	0.433	0.014	0.024	0.024	
		11-40UN	●			11-40UN			40	1/4	0.433	0.015	0.024	0.024	
		11-36UN	●			11-36UN			36	1/4	0.433	0.017	0.024	0.024	
		11-32UN	●			11-32UN			32	1/4	0.433	0.019	0.024	0.024	
		11-28UN	●			11-28UN			28	1/4	0.433	0.022	0.024	0.028	
		11-27UN	●			11-27UN			27	1/4	0.433	0.023	0.028	0.031	
		11-24UN	●			11-24UN			24	1/4	0.433	0.026	0.028	0.031	
		11-20UN	●			11-20UN			20	1/4	0.433	0.031	1/32	0.035	
		11-18UN	●			11-18UN			18	1/4	0.433	0.034	1/32	0.039	
		11-16UN	●			11-16UN			16	1/4	0.433	0.038	0.035	0.043	
		11-14UN	●			11-14UN			14	1/4	0.433	0.044	0.035	0.043	
		16-72UN				16-72UN			72	3/8	0.630	0.009	1/32	0.016	
		16-64UN				16-64UN			64	3/8	0.630	0.009	1/32	0.016	
		16-56UN				16-56UN			56	3/8	0.630	0.011	0.028	0.016	
		16-48UN				16-48UN			48	3/8	0.630	0.013	0.024	0.024	
		16-44UN				16-44UN			44	3/8	0.630	0.014	0.024	0.024	
		16-40UN				16-40UN			40	3/8	0.630	0.015	0.024	0.024	
		16-36UN				16-36UN			36	3/8	0.630	0.017	0.024	0.024	
		16-32UN	●			16-32UN			32	3/8	0.630	0.008	0.024	0.024	
		16-28UN	●			16-28UN			28	3/8	0.630	0.022	0.024	0.028	
		16-27UN	●			16-27UN			27	3/8	0.630	0.023	0.028	0.031	
		16-24UN	●	●		16-24UN			24	3/8	0.630	0.026	0.028	0.031	
		16-20UN	●	●		16-20UN			20	3/8	0.630	0.031	1/32	0.035	
		16-18UN	●	●		16-18UN	●		18	3/8	0.630	0.034	1/32	0.039	
		16-16UN	●	●		16-16UN	●		16	3/8	0.630	0.038	0.035	0.043	
		16-14UN	●	●		16-14UN			14	3/8	0.630	0.004	0.039	0.047	
		16-13UN				16-13UN			13	3/8	0.630	0.047	0.039	0.051	
		16-12UN	●	●		16-12UN			12	3/8	0.630	0.051	0.043	0.055	
		16-11.5UN				16-11.5UN			11.5	3/8	0.630	0.053	0.043	0.059	
		16-11UN	●	●		16-11UN			11	3/8	0.630	0.056	0.043	0.059	
		16-10UN	●	●		16-10UN			10	3/8	0.630	0.061	0.043	0.059	
		16-9UN	●			16-9UN			9	3/8	0.630	0.068	0.047	0.067	
		16-8UN	●	●		16-8UN			8	3/8	0.630	0.077	0.047	0.063	
		22-7UN				22-7UN			7	1/2	0.866	0.087	0.063	0.091	
		22-6UN				22-6UN			6	1/2	0.866	0.102	0.063	0.091	
		22-5UN	●			22-5UN			5	1/2	0.866	0.123	0.067	0.098	
		27-4.5UN				27-4.5UN			4.5	5/8	1.063	0.136	0.075	0.106	
		27-4UN				27-4UN			4	5/8	1.063	0.153	0.083	0.118	

Applicable holders **D33**

●: Stock item

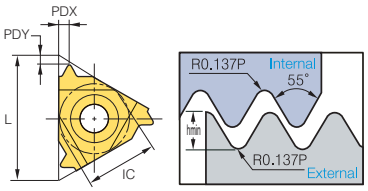
American UN (UN, UNC, UNF, UNEF, UNS)

Type	Designation (Right)	PC3030T	PC9070T	Designation (Left)	PC3030T	PC9070T	Pitch	Dimensions (inch)					Configuration
							TPI	IC	L	hmin	PDY	PDX	
Internal	IR 11-72UN			IL 11-72UN			72	1/4	0.433	0.008	1/32	0.012	
	11-64UN			11-64UN			64	1/4	0.433	0.009	1/32	0.016	
	11-56UN			11-56UN			56	1/4	0.433	0.010	0.028	0.016	
	11-48UN			11-48UN			48	1/4	0.433	0.012	0.024	0.024	
	11-44UN			11-44UN			44	1/4	0.433	0.013	0.024	0.024	
	11-40UN			11-40UN			40	1/4	0.433	0.015	0.024	0.024	
	11-36UN			11-36UN			36	1/4	0.433	0.016	0.024	0.024	
	11-32UN			11-32UN			32	1/4	0.433	0.018	0.024	0.024	
	11-28UN			11-28UN			28	1/4	0.433	0.020	0.024	0.028	
	11-27UN			11-27UN			27	1/4	0.433	0.021	0.028	0.031	
	11-24UN			11-24UN			24	1/4	0.433	0.024	0.028	0.031	
	11-20UN		●	11-20UN			20	1/4	0.433	0.029	1/32	0.035	
	11-18UN	●		11-18UN			18	1/4	0.433	0.032	1/32	0.039	
	11-16UN		●	11-16UN			16	1/4	0.433	0.036	0.035	0.043	
	11-14UN	●		11-14UN			14	1/4	0.433	0.041	0.035	0.043	
	11-12UN		●	11-12UN			12	1/4	0.433	0.048	1/32	0.043	
	11-11UN	●		11-11UN	●		11	1/4	0.433	0.052	1/32	0.043	
	16-72UN			16-72UN			72	3/8	0.630	0.008	1/32	0.012	
	16-64UN			16-64UN			64	3/8	0.630	0.009	1/32	0.016	
	16-56UN			16-56UN			56	3/8	0.630	0.010	0.028	0.016	
	16-48UN			16-48UN			48	3/8	0.630	0.012	0.024	0.024	
	16-44UN			16-44UN			44	3/8	0.630	0.013	0.024	0.024	
	16-40UN			16-40UN			40	3/8	0.630	0.015	0.024	0.024	
	16-36UN			16-36UN			36	3/8	0.630	0.016	0.024	0.024	
	16-32UN			16-32UN			32	3/8	0.630	0.020	0.024	0.024	
	16-28UN	●		16-28UN			28	3/8	0.630	0.020	0.024	0.028	
	16-27UN			16-27UN			27	3/8	0.630	0.021	0.028	0.031	
	16-24UN			16-24UN			24	3/8	0.630	0.024	0.028	0.031	
	16-20UN	●		16-20UN			20	3/8	0.630	0.029	1/32	0.035	
	16-18UN	●	●	16-18UN			18	3/8	0.630	0.032	1/32	0.039	
	16-16UN	●	●	16-16UN			16	3/8	0.630	0.036	0.035	0.043	
	16-14UN	●		16-14UN			14	3/8	0.630	0.041	0.035	0.047	
	16-13UN			16-13UN			13	3/8	0.630	0.044	0.039	0.051	
	16-12UN	●	●	16-12UN			12	3/8	0.630	0.048	0.043	0.055	
	16-11.5UN	●		16-11.5UN			11.5	3/8	0.630	0.050	0.043	0.059	
	16-11UN	●	●	16-11UN			11	3/8	0.630	0.052	0.043	0.059	
	16-10UN	●		16-10UN	●		10	3/8	0.630	0.058	0.043	0.059	
	16-9UN		●	16-9UN			9	3/8	0.630	0.064	0.047	0.067	
	16-8UN	●	●	16-8UN	●		8	3/8	0.630	0.072	0.043	0.059	
	22-7UN			22-7UN			7	1/2	0.866	0.082	0.063	0.091	
	22-6UN			22-6UN			6	1/2	0.866	0.096	0.063	0.091	
	22-5UN			22-5UN			5	1/2	0.866	0.115	0.063	0.091	
	27-4.5UN			27-4.5UN			4.5	5/8	1.063	0.128	0.067	0.094	
	27-4UN			27-4UN			4	5/8	1.063	0.144	0.071	0.106	

Applicable holders **D33**

● : Stock item

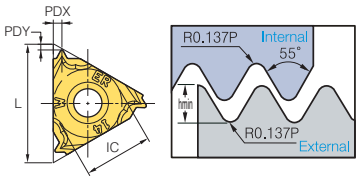
Whitworth (BSW, BSF, BSP, BSB)

Type	Designation (Right)	PC3030T	PC9070T	Designation (Left)	PC3030T	PC9070T	Pitch	Dimensions (inch)					Configuration
							TPI	IC	L	hmin	PDY	PDX	
External	ER 11-72W	●		EL 11-72W			72	1/4	0.433	0.009	0.028	0.016	
	11-60W	●		11-60W			60	1/4	0.433	0.011	0.028	0.016	
	11-56W	●		11-56W			56	1/4	0.433	0.011	0.028	0.016	
	11-48W	●		11-48W			48	1/4	0.433	0.013	0.024	0.024	
	11-40W	●		11-40W			40	1/4	0.433	0.016	0.024	0.024	
	11-36W	●		11-36W			36	1/4	0.433	0.018	0.024	0.024	
	11-32W	●		11-32W			32	1/4	0.433	0.020	0.024	0.024	
	11-28W	●		11-28W			28	1/4	0.433	0.023	0.024	0.028	
	11-26W	●		11-26W			26	1/4	0.433	0.025	0.028	0.031	
	11-24W	●		11-24W			24	1/4	0.433	0.027	0.028	0.031	
	11-22W	●		11-22W			22	1/4	0.433	0.029	1/32	0.035	
	11-20W	●		11-20W			20	1/4	0.433	0.032	1/32	0.035	
	11-19W	●		11-19W			19	1/4	0.433	0.034	1/32	0.039	
	11-18W	●		11-18W			18	1/4	0.433	0.035	1/32	0.039	
	11-16W	●		11-16W			16	1/4	0.433	0.040	0.035	0.043	
	11-14W	●		11-14W	●		14	1/4	0.433	0.046	0.039	0.047	
	16-72W	●		16-72W			72	3/8	0.630	0.009	0.028	0.016	
	16-60W	●		16-60W			60	3/8	0.630	0.011	0.028	0.016	
	16-56W	●		16-56W			56	3/8	0.630	0.011	0.028	0.016	
	16-48W	●		16-48W			48	3/8	0.630	0.013	0.024	0.024	
	16-40W	●		16-40W			40	3/8	0.630	0.016	0.024	0.024	
	16-36W	●		16-36W			36	3/8	0.630	0.018	0.024	0.024	
	16-32W	●		16-32W			32	3/8	0.630	0.020	0.024	0.024	
	16-30W	●		16-30W			30	3/8	0.630	0.022	0.024	0.028	
	16-28W	●	●	16-28W			28	3/8	0.630	0.023	0.024	0.028	
	16-26W			16-26W			26	3/8	0.630	0.025	0.028	0.031	
	16-24W	●		16-24W			24	3/8	0.630	0.027	0.028	0.031	
	16-22W	●		16-22W			22	3/8	0.630	0.029	1/32	0.035	
	16-20W	●		16-20W			20	3/8	0.630	0.032	1/32	0.035	
	16-19W	●	●	16-19W			19	3/8	0.630	0.034	1/32	0.039	
	16-18W	●		16-18W			18	3/8	0.630	0.035	1/32	0.039	
	16-16W	●		16-16W			16	3/8	0.630	0.040	0.035	0.043	
	16-14W	●	●	16-14W			14	3/8	0.630	0.046	0.039	0.047	
	16-12W	●		16-12W			12	3/8	0.630	0.054	0.043	0.055	
	16-11W	●	●	16-11W			11	3/8	0.630	0.058	0.043	0.059	
	16-10W	●		16-10W			10	3/8	0.630	0.064	0.043	0.059	
	16-9W	●		16-9W			9	3/8	0.630	0.071	0.047	0.067	
	16-8W	●		16-8W			8	3/8	0.630	0.080	0.047	0.059	
	22-7W	●		22-7W			7	1/2	0.866	0.131	0.063	0.091	
	22-6W	●		22-6W	●		6	1/2	0.866	0.107	0.063	0.091	
	22-5W	●		22-5W			5	1/2	0.866	0.128	0.067	0.094	
	27-4.5W	●		27-4.5W			4.5	5/8	1.063	0.142	0.071	0.102	
	27-4W			27-4W			4	5/8	1.063	0.160	0.079	0.114	

Applicable holders **D32**

● : Stock item

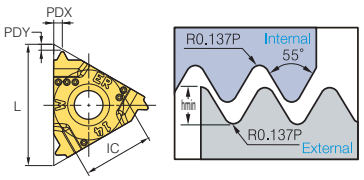
Whitworth (M chip breaker)

Type	Designation (Right)	PC3030T	PC5300	Designation (Left)	PC3030T	Pitch	Dimensions (inch)					Configuration
						TPI	IC	L	hmin	PDY	PDX	
Internal	ERM 16-11W	●				14	3/8	0.630	0.046	0.039	0.047	
	16-14W	●				11	3/8	0.630	0.058	0.043	0.059	
	16-19W	●				19	3/8	0.630	0.034	1/32	0.039	

Applicable holders **D32**

● : Stock item

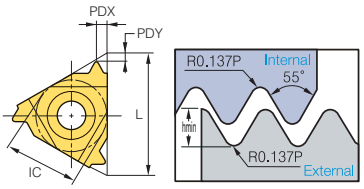
Whitworth (U chip breaker)

Type	Designation (Right)	PC3030T	PC5300	Designation (Left)	PC3030T	Pitch	Dimensions (inch)					Configuration
						TPI	IC	L	hmin	PDY	PDX	
Internal	ERM 16-14W-U					14	3/8	0.630	0.046	0.039	0.047	
	16-11W-U					11	3/8	0.630	0.058	0.043	0.059	

Applicable holders **D32**

● : Stock item

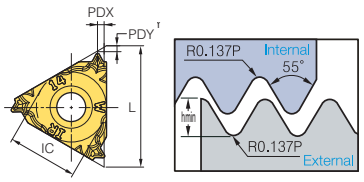
Whitworth (BSW, BSF, BSP, BSB)

Type	Designation (Right)	PC3030T	PC9070T	Designation (Left)	PC3030T	PC9070T	Pitch	Dimensions (inch)					Configuration
							TPI	IC	L	hmin	PDY	PDX	
Internal	IR 11-72W	●		IL 11-72W			72	1/4	0.433	0.009	0.028	0.016	
	11-60W	●		11-60W			60	1/4	0.433	0.011	0.028	0.016	
	11-56W	●		11-56W			56	1/4	0.433	0.011	0.028	0.016	
	11-48W	●		11-48W			48	1/4	0.433	0.013	0.024	0.024	
	11-40W	●		11-40W			40	1/4	0.433	0.016	0.024	0.024	
	11-36W	●		11-36W			36	1/4	0.433	0.018	0.024	0.024	
	11-32W	●		11-32W			32	1/4	0.433	0.020	0.024	0.024	
	11-28W	●		11-28W			28	1/4	0.433	0.023	0.024	0.028	
	11-26W	●		11-26W			26	1/4	0.433	0.025	0.028	0.031	
	11-24W	●		11-24W			24	1/4	0.433	0.027	0.028	0.031	
	11-22W	●		11-22W			22	1/4	0.433	0.029	1/32	0.035	
	11-20W			11-20W			20	1/4	0.433	0.032	1/32	0.035	
	11-19W	●	●	11-19W	●		19	1/4	0.433	0.034	1/32	0.039	
	11-18W	●		11-18W	●		18	1/4	0.433	0.035	1/32	0.039	
	11-16W	●		11-16W	●		16	1/4	0.433	0.040	0.035	0.043	
	11-14W	●		11-14W	●		14	1/4	0.433	0.046	0.035	0.043	
	11-12W	●		11-12W	●		12	1/4	0.433	0.052	0.035	0.047	
	16-72W	●		16-72W			72	3/8	0.63	0.009	0.028	0.016	
	16-60W	●		16-60W			60	3/8	0.63	0.011	0.028	0.016	
	16-56W	●		16-56W			56	3/8	0.63	0.011	0.028	0.016	
	16-48W	●		16-48W			48	3/8	0.63	0.013	0.024	0.024	
	16-40W	●		16-40W			40	3/8	0.63	0.016	0.024	0.024	
	16-36W	●		16-36W			36	3/8	0.63	0.018	0.024	0.024	
	16-32W	●		16-32W			32	3/8	0.63	0.020	0.024	0.024	
	16-30W	●		16-30W			30	3/8	0.63	0.022	0.024	0.028	
	16-28W	●		16-28W			28	3/8	0.63	0.023	0.024	0.028	
	16-26W	●		16-26W			26	3/8	0.63	0.025	0.028	0.031	
	16-24W	●		16-24W			24	3/8	0.63	0.027	0.028	0.031	
	16-22W	●		16-22W			22	3/8	0.63	0.029	1/32	0.035	
	16-20W	●		16-20W			20	3/8	0.63	0.032	1/32	0.035	
	16-19W	●		16-19W			19	3/8	0.63	0.034	1/32	0.039	
	16-18W	●		16-18W			18	3/8	0.63	0.035	1/32	0.039	
	16-16W	●		16-16W			16	3/8	0.63	0.040	0.035	0.043	
	16-14W	●	●	16-14W			14	3/8	0.63	0.046	0.039	0.047	
	16-12W	●		16-12W			12	3/8	0.63	0.054	0.043	0.055	
	16-11W	●	●	16-11W			11	3/8	0.63	0.058	0.043	0.059	
	16-10W	●		16-10W			10	3/8	0.63	0.064	0.043	0.059	
	16-9W	●		16-9W			9	3/8	0.63	0.071	0.047	0.067	
	16-8W	●		16-8W			8	3/8	0.63	0.080	0.047	0.056	
	22-7W			22-7W			7	1/2	0.866	0.131	0.063	0.097	
	22-6W	●		22-6W			6	1/2	0.866	0.107	0.063	0.097	
	22-5W	●		22-5W			5	1/2	0.866	0.128	0.067	0.094	
	27-4.5W	●		27-4.5W			4.5	5/8	1.063	0.142	0.071	0.102	
	27-4W	●		27-4W			4	5/8	1.063	0.160	0.079	0.114	

Applicable holders **D33**

● : Stock item

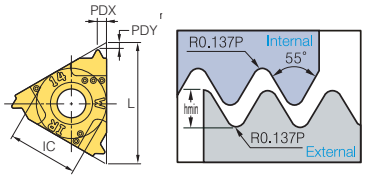
Whitworth (M chip breaker)

Type	Designation (Right)	PC3030T	PC5300	Designation (Left)	PC3030T	Pitch TPI	Dimensions (inch) IC	L	hmin	PDY	PDX	Configuration
Internal	IRM 16-14W					14	3/8	0.630	0.046	0.039	0.047	
	16-11W	●				11	3/8	0.630	0.058	0.043	0.059	

Applicable holders **D33**

●: Stock item

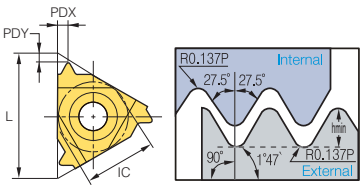
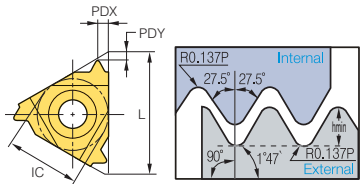
Whitworth (U chip breaker)

Type	Designation (Right)	PC3030T	PC5300	Designation (Left)	PC3030T	Pitch TPI	Dimensions (inch) IC	L	hmin	PDY	PDX	Configuration
Internal	IRM 16-14W-U					14	3/8	0.630	0.046	0.039	0.047	
	16-11W-U					11	3/8	0.630	0.058	0.043	0.059	

Applicable holders **D33**

●: Stock item

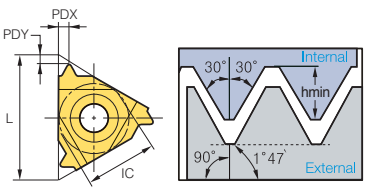
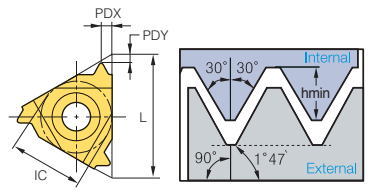
British Standard Pipe Thread (BSPT)

Type	Designation (Right)		PC3030T	PC9070T	Designation (Left)		PC3030T	PC9070T	Pitch	Dimensions (inch)					Configuration
									TPI	IC	L	hmin	PDY	PDX	
External	ER	11-28BSPT			EL	11-28BSPT			28	1/4	0.43	0.023	0.02	0.02	
		11-19BSPT				11-19BSPT			19	1/4	0.43	0.034	0.04	0.04	
		11-14BSPT				11-14BSPT			14	1/4	0.43	0.046	0.04	0.04	
		16-28BSPT				16-28BSPT			28	3/8	0.63	0.023	0.02	0.02	
		16-19BSPT	●	●		16-19BSPT			19	3/8	0.63	0.034	0.04	0.04	
		16-14BSPT		●		16-14BSPT			14	3/8	0.63	0.046	0.05	0.05	
		16-11BSPT	●	●		16-11BSPT			11	3/8	0.63	0.056	0.06	0.06	
Internal	IR	11-28BSPT			IL	11-28BSPT			28	1/4	0.43	0.023	0.02	0.02	
		11-19BSPT		●		11-19BSPT			19	1/4	0.43	0.034	0.03	0.04	
		11-14BSPT		●		11-14BSPT			14	1/4	0.43	0.046	0.04	0.04	
		16-28BSPT				16-28BSPT			28	3/8	0.63	0.023	0.02	0.02	
		16-19BSPT	●	●		16-19BSPT			19	3/8	0.63	0.034	0.03	0.04	
		16-14BSPT	●	●		16-14BSPT			14	3/8	0.63	0.046	0.04	0.05	
		16-11BSPT	●	●		16-11BSPT			11	3/8	0.63	0.058	0.04	0.06	

Applicable holders **D32, D33**

● : Stock item

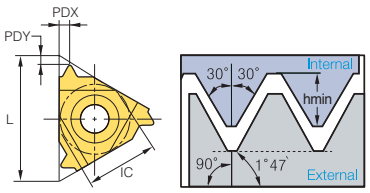
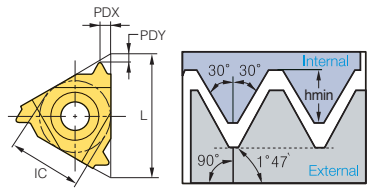
National Pipe Thread (NPT)

Type	Designation (Right)		PC3030T	PC9070T	Designation (Left)		PC3030T	PC9070T	Pitch	Dimensions (inch)					Configuration
									TPI	IC	L	hmin	PDY	PDX	
External	ER	11-27NPT	●		EL	11-27NPT			27	1/4	0.43	0.026	0.03	0.03	
		11-18NPT	●			11-18NPT			18	1/4	0.43	0.040	0.03	0.04	
		11-14NPT	●			11-14NPT			14	1/4	0.43	0.052	0.03	0.04	
		16-27NPT	●			16-27NPT			27	3/8	0.63	0.026	0.03	0.03	
		16-18NPT	●	●		16-18NPT			18	3/8	0.63	0.040	0.03	0.04	
		16-14NPT	●	●		16-14NPT			14	3/8	0.63	0.052	0.04	0.05	
		16-11.5NPT	●			16-11.5NPT			11.5	3/8	0.63	0.065	0.04	0.06	
		16-8NPT	●			16-8NPT			8	3/8	0.63	0.095	0.05	0.07	
Internal	IR	11-27NPT	●		IL	11-27NPT			27	1/4	0.43	0.026	0.03	0.03	
		11-18NPT	●			11-18NPT			18	1/4	0.43	0.040	0.03	0.04	
		11-14NPT	●	●		11-14NPT	●		14	1/4	0.43	0.052	0.03	0.04	
		16-27NPT	●			16-27NPT			27	3/8	0.63	0.026	0.03	0.03	
		16-18NPT				16-18NPT			18	3/8	0.63	0.040	0.03	0.04	
		16-14NPT	●	●		16-14NPT			14	3/8	0.63	0.052	0.04	0.05	
		16-11.5NPT	●	●		16-11.5NPT	●		11.5	3/8	0.63	0.065	0.04	0.06	
		16-8NPT	●			16-8NPT	●		8	3/8	0.63	0.095	0.05	0.06	

Applicable holders **D32, D33**

● : Stock item

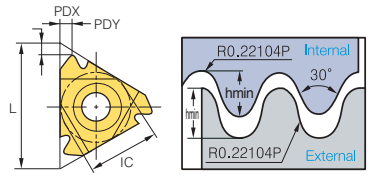
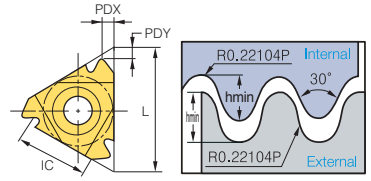
National Pipe Threads-Dryseal (NPTF)

Type	Designation (Right)		PC3030T	PC9070T	Designation (Left)		PC3030T	PC9070T	Pitch	Dimensions (inch)					Configuration
									TPI	IC	L	hmin	PDY	PDX	
External	ER	11-27NPTF			EL	11-27NPTF			27	1/4	0.43	0.025	0.03	0.03	
		11-18NPTF				11-18NPTF			18	1/4	0.43	0.039	0.03	0.04	
		11-14NPTF				11-14NPTF			14	1/4	0.43	0.053	0.03	0.04	
		16-27NPTF				16-27NPTF			27	3/8	0.63	0.025	0.03	0.03	
		16-18NPTF	●			16-18NPTF			18	3/8	0.63	0.039	0.03	0.04	
		16-14NPTF				16-14NPTF			14	3/8	0.63	0.053	0.04	0.05	
		16-11.5NPTF				16-11.5NPTF			11.5	3/8	0.63	0.064	0.04	0.06	
		16-8NPTF				16-8NPTF	●		8	3/8	0.63	0.094	0.05	0.07	
Internal	IR	11-27NPTF			IL	11-27NPTF			27	1/4	0.43	0.025	0.03	0.03	
		11-18NPTF				11-18NPTF			18	1/4	0.43	0.039	0.03	0.04	
		11-14NPTF				11-14NPTF			14	1/4	0.43	0.053	0.03	0.04	
		16-27NPTF				16-27NPTF			27	3/8	0.63	0.025	0.03	0.03	
		16-18NPTF				16-18NPTF			18	3/8	0.63	0.039	0.03	0.04	
		16-14NPTF				16-14NPTF			14	3/8	0.63	0.053	0.04	0.05	
		16-11.5NPTF				16-11.5NPTF			11.5	3/8	0.63	0.064	0.04	0.06	
		16-8NPTF				16-8NPTF			8	3/8	0.63	0.094	0.05	0.07	

Applicable holders **D32, D33**

● : Stock item

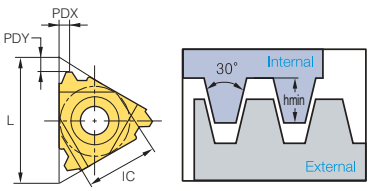
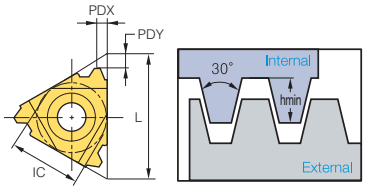
Round DIN405 (RD)

Type	Designation (Right)		PC3030T	PC9070T	Designation (Left)		PC3030T	PC9070T	Pitch	Dimensions (inch)					Configuration
									TPI	IC	L	hmin	PDY	PDX	
External	ER	16-10RD			EL	16-10RD			10	3/8	0.63	0.050	0.04	0.05	
		16-8RD	●			16-8RD			8	3/8	0.63	0.063	0.06	0.05	
		16-6RD	●			16-6RD			6	3/8	0.63	0.083	0.06	0.07	
		22-6RD				22-6RD			6	1/2	0.87	0.083	0.06	0.07	
		22-4RD	●			22-4RD			4	1/2	0.87	0.125	0.09	0.09	
		27-4RD				27-4RD			4	5/8	1.06	0.125	0.09	0.09	
Internal	IR	16-10RD			IL	16-10RD			10	3/8	0.63	0.050	0.04	0.05	
		16-8RD				16-8RD			8	3/8	0.63	0.063	0.06	0.05	
		16-6RD	●			16-6RD			6	3/8	0.63	0.083	0.06	0.07	
		22-6RD				22-6RD			6	1/2	0.87	0.083	0.06	0.07	
		22-4RD	●			22-4RD			4	1/2	0.87	0.125	0.09	0.09	
		27-4RD				27-4RD			4	5/8	1.06	0.125	0.09	0.09	

Applicable holders **D32, D33**

● : Stock item

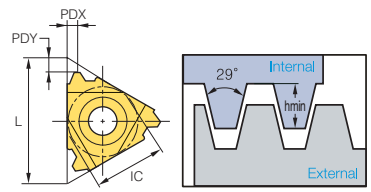
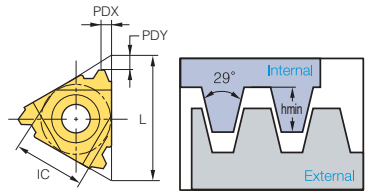
Trapez DIN 103 (TR)

Type	Designation (Right)		PC3030T	PC9070T	Designation (Left)		PC3030T	PC9070T	Pitch	Dimensions (inch)					Configuration
									TP	IC	L	hmin	PDY	PDX	
External	ER	11-1.5TR	●		EL	11-1.5TR	●		1.5	1/4	0.43	0.035	0.03	0.04	
		16-1.5TR				16-1.5TR			1.5	3/8	0.63	0.035	0.04	0.04	
		16-2.0TR	●			16-2.0TR	●		2.0	3/8	0.63	0.049	0.04	0.05	
		16-3.0TR	●	●		16-3.0TR	●		3.0	3/8	0.63	0.069	0.05	0.06	
		22-4.0TR	●	●		22-4.0TR	●		4.0	1/2	0.87	0.089	0.07	0.07	
		22-5.0TR	●	●		22-5.0TR	●		5.0	1/2	0.87	0.108	0.08	0.10	
		27-6.0TR	●	●		27-6.0TR	●		6.0	5/8	1.06	0.138	0.09	0.11	
Internal	IR	11-1.5TR			IL	11-1.5TR	●		1.5	1/4	0.43	0.035	0.03	0.04	
		16-1.5TR	●			16-1.5TR	●		1.5	3/8	0.63	0.035	0.04	0.04	
		16-2.0TR	●			16-2.0TR	●		2.0	3/8	0.63	0.049	0.04	0.05	
		16-2.5TR	●			16-2.5TR	●		2.5	3/8	0.63	0.060	0.05	0.06	
		16-3.0TR	●			16-3.0TR	●		3.0	3/8	0.63	0.069	0.05	0.06	
		22-4.0TR	●	●		22-4.0TR	●		4.0	1/2	0.87	0.089	0.07	0.07	
		22-5.0TR	●	●		22-5.0TR			5.0	1/2	0.87	0.108	0.08	0.10	
		27-6.0TR	●	●		27-6.0TR	●		6.0	5/8	1.06	0.138	0.09	0.11	

Applicable holders **D32, D33**

●: Stock item

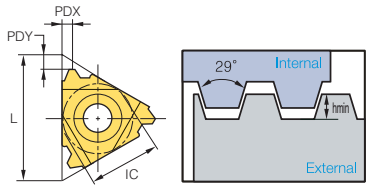
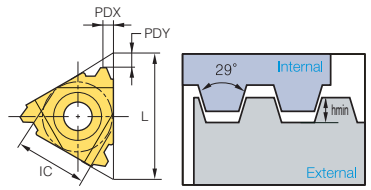
American ACME (ACME)

Type	Designation (Right)		PC3030T	PC9070T	Designation (Left)		PC3030T	PC9070T	Pitch	Dimensions (inch)					Configuration
									TPI	IC	L	hmin	PDY	PDX	
External	ER	11-16ACME			EL	11-16ACME			16	1/4	0.43	0.036	0.04	0.04	
		16-16ACME				16-16ACME			16	3/8	0.63	0.036	0.04	0.04	
		16-14ACME				16-14ACME			14	3/8	0.63	0.041	0.04	0.05	
		16-12ACME				16-12ACME			12	3/8	0.63	0.047	0.04	0.05	
		16-10ACME				16-10ACME			10	3/8	0.63	0.060	0.05	0.06	
		16-8ACME				16-8ACME			8	3/8	0.63	0.072	0.06	0.06	
		16-6ACME				16-6ACME			6	3/8	0.63	0.093	0.07	0.07	
		22-6ACME	●			22-6ACME	●		6	1/2	0.87	0.093	0.07	0.08	
		22-5ACME	●			22-5ACME	●		5	1/2	0.87	0.110	0.08	0.09	
		27-4ACME				27-4ACME			4	5/8	1.06	0.135	0.09	0.11	
Internal	IR	11-16ACME			IL	11-16ACME			16	1/4	0.43	0.036	0.04	0.04	
		16-16ACME				16-16ACME			16	3/8	0.63	0.036	0.04	0.04	
		16-14ACME				16-14ACME			14	3/8	0.63	0.041	0.04	0.05	
		16-12ACME				16-12ACME			12	3/8	0.63	0.047	0.05	0.05	
		16-10ACME	●			16-10ACME			10	3/8	0.63	0.060	0.05	0.05	
		16-8ACME	●			16-8ACME			8	3/8	0.63	0.072	0.06	0.06	
		16-6ACME				16-6ACME			6	3/8	0.63	0.093	0.07	0.07	
		22-6ACME	●			22-6ACME			6	1/2	0.87	0.093	0.07	0.08	
		22-5ACME	●			22-5ACME			5	1/2	0.87	0.110	0.08	0.09	
		27-4ACME	●			27-4ACME			4	5/8	1.06	0.135	0.09	0.10	

Applicable holders **D32, D33**

●: Stock item

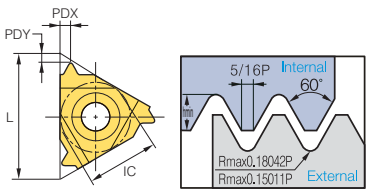
Stub ACME (STACME)

Type	Designation (Right)	PC3030T	PC9070T	Designation (Left)	PC3030T	PC9070T	Pitch	Dimensions (inch)					Configuration
							TPI	IC	L	hmin	PDY	PDX	
External	ER 11-16STACME			EL 11-16STACME			16	1/4	0.43	0.024	0.04	0.04	
	16-16STACME			16-16STACME			16	3/8	0.63	0.024	0.04	0.04	
	16-14STACME			16-14STACME			14	3/8	0.63	0.026	0.04	0.04	
	16-12STACME			16-12STACME			12	3/8	0.63	0.030	0.05	0.05	
	16-10STACME			16-10STACME			10	3/8	0.63	0.040	0.05	0.05	
	16-8STACME			16-8STACME			8	3/8	0.63	0.048	0.06	0.06	
	16-6STACME			16-6STACME			6	3/8	0.63	0.060	0.07	0.07	
	22-6STACME			22-6STACME			6	1/2	0.78	0.060	0.07	0.07	
	22-5STACME			22-5STACME			5	1/2	0.78	0.070	0.08	0.08	
	27-4STACME			27-4STACME			4	5/8	1.06	0.085	0.09	0.09	
	27-3STACME			27-3STACME			3	5/8	1.06	0.110	0.11	0.11	
Internal	IR 11-16STACME			IL 11-16STACME			16	1/4	0.63	0.024	0.04	0.04	
	16-16STACME			16-16STACME			16	3/8	0.63	0.024	0.04	0.04	
	16-14STACME			16-14STACME			14	3/8	0.63	0.026	0.04	0.04	
	16-12STACME			16-12STACME			12	3/8	0.63	0.030	0.04	0.05	
	16-10STACME			16-10STACME			10	3/8	0.63	0.040	0.05	0.05	
	16-8STACME			16-8STACME			8	3/8	0.63	0.048	0.06	0.06	
	16-6STACME			16-6STACME			6	3/8	0.87	0.060	0.07	0.07	
	22-6STACME			22-6STACME			6	1/2	0.87	0.060	0.07	0.07	
	22-5STACME			22-5STACME			5	1/2	0.87	0.070	0.08	0.09	
	27-4STACME			27-4STACME			4	5/8	1.06	0.085	0.09	0.09	
	27-3STACME			27-3STACME			3	5/8	1.06	0.110	0.11	0.11	

Applicable holders **D32, D33**

● : Stock item

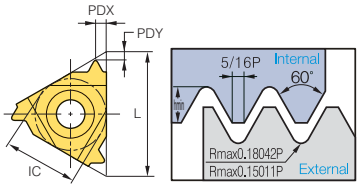
UNJ (Unified Constant Thread)

Type	Designation (Right)	PC3030T	PC9070T	Designation (Left)	PC3030T	PC9070T	Pitch	Dimensions (inch)					Configuration
							TPI	IC	L	hmin	PDY	PDX	
External	ER 11-48UNJ			EL 11-48UNJ			48	1/4	0.43	0.012	0.02	0.02	
	11-44UNJ			11-44UNJ			44	1/4	0.43	0.013	0.02	0.02	
	11-40UNJ			11-40UNJ			40	1/4	0.43	0.015	0.02	0.02	
	11-36UNJ			11-36UNJ			36	1/4	0.43	0.016	0.02	0.02	
	11-32UNJ			11-32UNJ			32	1/4	0.43	0.018	0.02	0.03	
	11-28UNJ			11-28UNJ			28	1/4	0.43	0.020	0.03	0.03	
	11-24UNJ	●		11-24UNJ			24	1/4	0.43	0.024	0.03	0.03	
	11-20UNJ			11-20UNJ			20	1/4	0.43	0.029	0.03	0.04	
	11-18UNJ			11-18UNJ			18	1/4	0.43	0.032	0.03	0.04	
	11-16UNJ			11-16UNJ			16	1/4	0.43	0.036	0.04	0.04	
	11-14UNJ			11-14UNJ			14	1/4	0.43	0.041	0.04	0.05	
	16-48UNJ			16-48UNJ			48	3/8	0.63	0.012	0.02	0.02	
	16-44UNJ			16-44UNJ			44	3/8	0.63	0.013	0.02	0.02	
	16-40UNJ			16-40UNJ			40	3/8	0.63	0.015	0.02	0.02	
	16-36UNJ			16-36UNJ			36	3/8	0.63	0.016	0.02	0.02	
	16-32UNJ	●		16-32UNJ			32	3/8	0.63	0.018	0.02	0.03	
	16-28UNJ	●		16-28UNJ			28	3/8	0.63	0.020	0.03	0.03	
	16-24UNJ	●		16-24UNJ			24	3/8	0.63	0.024	0.03	0.03	
	16-20UNJ	●		16-20UNJ			20	3/8	0.63	0.029	0.03	0.04	
	16-18UNJ			16-18UNJ			18	3/8	0.63	0.032	0.03	0.04	
	16-16UNJ	●		16-16UNJ			16	3/8	0.63	0.036	0.04	0.04	
	16-14UNJ			16-14UNJ			14	3/8	0.63	0.041	0.04	0.05	
	16-13UNJ			16-13UNJ			13	3/8	0.63	0.044	0.04	0.05	
	16-12UNJ	●		16-12UNJ			12	3/8	0.63	0.048	0.04	0.05	
	16-11UNJ			16-11UNJ			11	3/8	0.63	0.052	0.05	0.06	
	16-10UNJ			16-10UNJ	●		10	3/8	0.63	0.058	0.05	0.06	
	16-9UNJ			16-9UNJ			9	3/8	0.63	0.064	0.05	0.07	
	16-8UNJ			16-8UNJ			8	3/8	0.63	0.072	0.05	0.06	
	22-7UNJ			22-7UNJ			7	1/2	0.87	0.082	0.07	0.09	
	22-6UNJ			22-6UNJ			6	1/2	0.87	0.096	0.07	0.09	
	22-5UNJ			22-5UNJ			5	1/2	0.87	0.115	0.07	0.10	
	27-4.5UNJ			27-4.5UNJ			4.5	5/8	1.06	0.128	0.08	0.11	
	27-4UNJ			27-4UNJ			4	5/8	1.06	0.144	0.09	0.12	

Applicable holders **D32**

● : Stock item

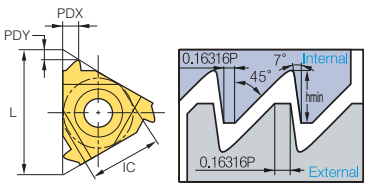
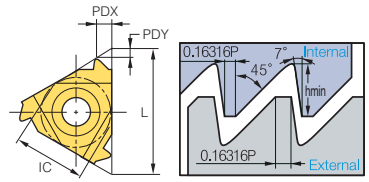
UNJ (Unified Constant Thread)

Type	Designation (Right)		PC3030T	PC9070T	Designation (Left)		PC3030T	PC9070T	Pitch	Dimensions (inch)					Configuration
									TPI	IC	L	hmin	PDY	PDX	
Internal	IR	11-48UNJ			IL	11-48UNJ			48	1/4	0.43	0.012	0.02	0.02	
		11-44UNJ				11-44UNJ			44	1/4	0.43	0.013	0.02	0.02	
		11-40UNJ				11-40UNJ			40	1/4	0.43	0.015	0.02	0.02	
		11-36UNJ				11-36UNJ			36	1/4	0.43	0.016	0.02	0.02	
		11-32UNJ				11-32UNJ			32	1/4	0.43	0.018	0.02	0.03	
		11-28UNJ				11-28UNJ			28	1/4	0.43	0.020	0.03	0.03	
		11-24UNJ				11-24UNJ			24	1/4	0.43	0.024	0.03	0.03	
		11-20UNJ				11-20UNJ			20	1/4	0.43	0.029	0.03	0.04	
		11-18UNJ				11-18UNJ			18	1/4	0.43	0.032	0.03	0.04	
		11-16UNJ				11-16UNJ			16	1/4	0.43	0.036	0.04	0.04	
		11-14UNJ				11-14UNJ			14	1/4	0.43	0.041	0.04	0.05	
		16-48UNJ				16-48UNJ			48	3/8	0.63	0.012	0.02	0.02	
		16-44UNJ				16-44UNJ			44	3/8	0.63	0.013	0.02	0.02	
		16-40UNJ				16-40UNJ			40	3/8	0.63	0.015	0.02	0.02	
		16-36UNJ				16-36UNJ			36	3/8	0.63	0.016	0.02	0.02	
		16-32UNJ				16-32UNJ			32	3/8	0.63	0.018	0.02	0.03	
		16-28UNJ				16-28UNJ			28	3/8	0.63	0.020	0.03	0.03	
		16-24UNJ				16-24UNJ			24	3/8	0.63	0.024	0.03	0.03	
		16-20UNJ				16-20UNJ			20	3/8	0.63	0.029	0.03	0.04	
		16-18UNJ				16-18UNJ			18	3/8	0.63	0.032	0.03	0.04	
		16-16UNJ				16-16UNJ			16	3/8	0.63	0.036	0.04	0.04	
		16-14UNJ				16-14UNJ			14	3/8	0.63	0.041	0.04	0.05	
		16-13UNJ				16-13UNJ			13	3/8	0.63	0.044	0.04	0.05	
		16-12UNJ				16-12UNJ	●		12	3/8	0.63	0.048	0.04	0.05	
		16-11UNJ				16-11UNJ			11	3/8	0.63	0.052	0.05	0.06	
		16-10UNJ				16-10UNJ			10	3/8	0.63	0.058	0.05	0.06	
		16-9UNJ				16-9UNJ			9	3/8	0.63	0.064	0.05	0.07	
		16-8UNJ				16-8UNJ			8	3/8	0.63	0.072	0.05	0.06	
		22-7UNJ				22-7UNJ			7	1/2	0.87	0.082	0.07	0.09	
		22-6UNJ				22-6UNJ			6	1/2	0.87	0.096	0.07	0.09	
		22-5UNJ				22-5UNJ			5	1/2	0.87	0.115	0.07	0.10	
		27-4.5UNJ				27-4.5UNJ			4.5	5/8	1.06	0.128	0.08	0.11	
		27-4UNJ				27-4UNJ			4	5/8	1.06	0.144	0.09	0.12	

Applicable holders **D33**

● : Stock item

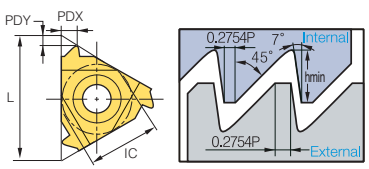
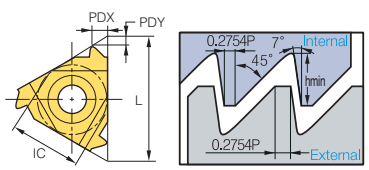
American Buttress (ABUT)

Type	Designation (Right)		PC3030T	PC9070T	Designation (Left)		PC3030T	PC9070T	Pitch	Dimensions (inch)					Configuration
									TPI	IC	L	hmin	PDY	PDX	
External	ER	11-20ABUT			EL	11-20ABUT			20	1/4	0.43	0.033	0.04	0.06	
		11-16ABUT				11-16ABUT			16	1/4	0.43	0.041	0.05	0.07	
		16-20ABUT	●			16-20ABUT			20	3/8	0.63	0.033	0.04	0.06	
		16-16ABUT				16-16ABUT			16	3/8	0.63	0.041	0.05	0.07	
		16-12ABUT				16-12ABUT			12	3/8	0.63	0.055	0.06	0.08	
		16-10ABUT				16-10ABUT			10	3/8	0.63	0.066	0.06	0.09	
		22-8ABUT				22-8ABUT			8	1/2	0.87	0.083	0.08	0.13	
		22-6ABUT				22-6ABUT			6	1/2	0.87	0.110	0.09	0.14	
Internal	IR	11-20ABUT	●		IL	11-20ABUT			20	1/4	0.43	0.033	0.04	0.06	
		11-16ABUT				11-16ABUT			16	1/4	0.43	0.041	0.05	0.07	
		16-20ABUT	●			16-20ABUT			20	3/8	0.63	0.033	0.04	0.06	
		16-16ABUT				16-16ABUT			16	3/8	0.63	0.041	0.05	0.07	
		16-12ABUT	●			16-12ABUT			12	3/8	0.63	0.055	0.06	0.08	
		16-10ABUT	●			16-10ABUT			10	3/8	0.63	0.066	0.06	0.09	
		22-8ABUT				22-8ABUT			8	1/2	0.87	0.083	0.08	0.13	
		22-6ABUT				22-6ABUT			6	1/2	0.87	0.110	0.09	0.14	

Applicable holders **D32, D33**

●: Stock item

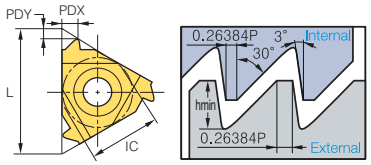
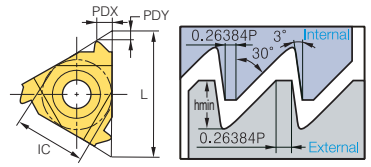
British Buttress (BBUT)

Type	Designation (Right)		PC3030T	PC9070T	Designation (Left)		PC3030T	PC9070T	Pitch	Dimensions (inch)					Configuration
									TPI	IC	L	hmin	PDY	PDX	
External	ER	16-16BBUT	●		EL	16-16BBUT			16	3/8	0.63	0.032	0.04	0.06	
		16-12BBUT				16-12BBUT			12	3/8	0.63	0.042	0.06	0.08	
		16-10BBUT				16-10BBUT			10	3/8	0.63	0.050	0.06	0.09	
		16-8BBUT	●			16-8BBUT			8	3/8	0.63	0.063	0.06	0.10	
		22-8BBUT				22-8BBUT			8	1/2	0.87	0.063	0.06	0.10	
Internal	IR	16-16BBUT	●		IL	16-16BBUT			16	3/8	0.63	0.032	0.04	0.06	
		16-12BBUT				16-12BBUT			12	3/8	0.63	0.042	0.06	0.08	
		16-10BBUT				16-10BBUT			10	3/8	0.63	0.050	0.06	0.09	
		16-8BBUT				16-8BBUT			8	3/8	0.63	0.063	0.06	0.10	
		22-8BBUT				22-8BBUT			8	1/2	0.87	0.063	0.06	0.10	

Applicable holders **D32, D33**

●: Stock item

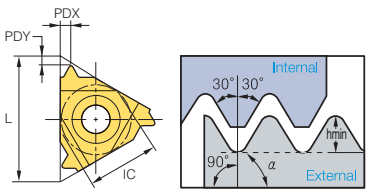
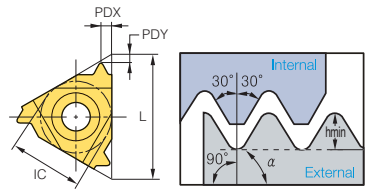
Metric Buttress (SAGE)

Type	Designation (Right)	PC3030T	PC9070T	Designation (Left)	PC3030T	PC9070T	Pitch	Dimensions (inch)					Configuration
							TP	IC	L	hmin	PDY	PDX	
External	ER 16-2.0SAGE			EL 16-2.0SAGE			2.0	3/8	0.63	0.069	0.06	0.08	
	22-2.0SAGE			22-2.0SAGE			2.0	1/2	0.87	0.069	0.06	0.08	
	22-3.0SAGE	●		22-3.0SAGE			3.0	1/2	0.87	0.102	0.07	0.10	
	27-4.0SAGE	●		27-4.0SAGE			4.0	5/8	1.06	0.140	0.08	0.13	
Internal	IR 16-2.0SAGE	●		IL 16-2.0SAGE			2.0	3/8	0.63	0.059	0.06	0.09	
	22-3.0SAGE			22-3.0SAGE			3.0	1/2	0.87	0.089	0.07	0.11	
	27-4.0SAGE	●		27-4.0SAGE			4.0	5/8	1.06	0.122	0.08	0.13	

Applicable holders **D32, D33**

● : Stock item

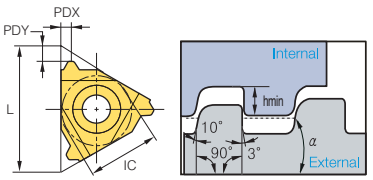
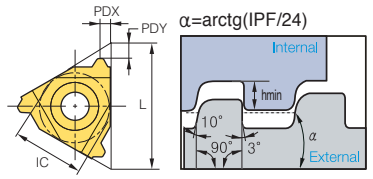
API

Type	Designation (Right)	PC3030T	PC9070T	Designation (Left)	PC3030T	PC9070T	Pitch	Dimensions (inch)					Configuration
							TPI	IC	L	hmin	PDY	PDX	
External	ER 22-4API382	●		EL 22-4API382			4	1/2	0.87	0.122	0.08	0.11	
	22-4API383			22-4API383			4	1/2	0.87	0.122	0.08	0.11	
	22-4API502	●		22-4API502			4	1/2	0.87	0.148	0.08	0.11	
	22-4API503	●		22-4API503			4	1/2	0.87	0.148	0.08	0.11	
	22-5API403			22-5API403			5	1/2	0.87	0.118	0.07	0.10	
	22-6API551			22-6API551			6	1/2	0.87	0.056	0.10	0.09	
	27-4API382	●		27-4API382			4	5/8	0.63	0.122	0.08	0.11	
	27-4API383			27-4API383			4	5/8	0.63	0.122	0.08	0.11	
	27-4API502			27-4API502			4	5/8	0.63	0.148	0.08	0.12	
	27-4API503	●		27-4API503			4	5/8	0.63	0.148	0.08	0.12	
	27-5API403	●		27-5API403			5	5/8	0.63	0.056	0.07	0.11	
Internal	IR 22-4API382			IL 22-4API382			4	1/2	0.87	0.122	0.08	0.11	
	22-4API383			22-4API383			4	1/2	0.87	0.122	0.08	0.11	
	22-4API502	●		22-4API502			4	1/2	0.87	0.148	0.08	0.12	
	22-4API503			22-4API503			4	1/2	0.87	0.148	0.08	0.11	
	22-5API403	●		22-5API403			5	1/2	0.87	0.118	0.07	0.10	
	22-6API551	●		22-6API551			6	1/2	0.87	0.056	0.10	0.09	
	27-4API382			27-4API382			4	5/8	0.63	0.122	0.08	0.11	
	27-4API383	●		27-4API383			4	5/8	0.63	0.122	0.08	0.11	
	27-4API502	●		27-4API502			4	5/8	0.63	0.148	0.08	0.12	
	27-4API503	●		27-4API503			4	5/8	0.63	0.148	0.08	0.12	
	27-5API403	●		27-5API403			5	5/8	0.63	0.056	0.07	0.11	

Applicable holders **D32, D33**

● : Stock item

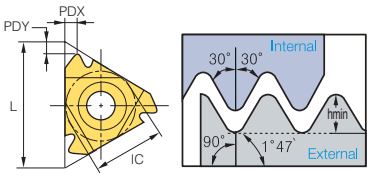
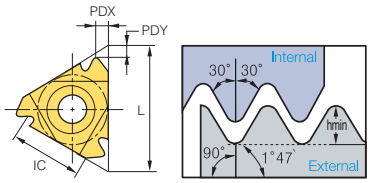
API Buttress Casing (BUT)

Type	Designation (Right)	PC3030T	PC9070T	Designation (Left)	PC3030T	PC9070T	Pitch TPI	Dimensions (inch) IC	L	hmin	PDY	PDX	Configuration
External	ER 22-5BUT75	●		EL 22-5BUT75			5	1/2	0.87	0.061	0.12	0.12	
	22-5BUT1			22-5BUT1			5	1/2	0.87	0.061	0.12	0.12	
Internal	IR 22-5BUT75	●		IL 22-5BUT75			5	1/2	0.87	0.061	0.12	0.12	
	22-5BUT1	●		22-5BUT1			5	1/2	0.87	0.061	0.12	0.12	

Applicable holders **D32, D33**

● : Stock item

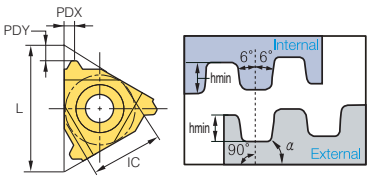
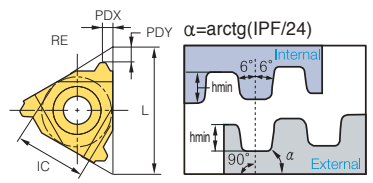
API Round Casing & Tubing (APIRD)

Type	Designation (Right)	PC3030T	PC9070T	Designation (Left)	PC3030T	PC9070T	Pitch TPI	Dimensions (inch) IC	L	hmin	PDY	PDX	Configuration
External	ER 16-10APIRD	●		EL 16-10APIRD			10	3/8	0.63	0.056	0.05	0.06	
	16-8APIRD	●		16-8APIRD			8	3/8	0.63	0.071	0.05	0.06	
Internal	IR 16-10APIRD	●		IL 16-10APIRD			10	3/8	0.63	0.056	0.05	0.06	
	16-8APIRD	●		16-8APIRD			8	3/8	0.63	0.071	0.05	0.06	

Applicable holders **D32, D33**

● : Stock item

Extreme Line Casing (EL)

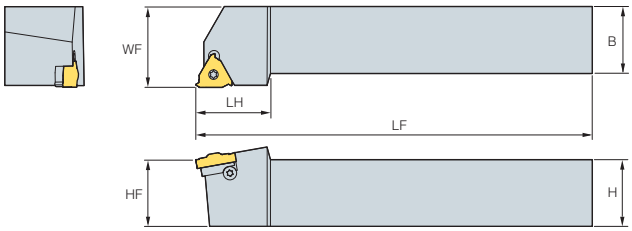
Type	Designation (Right)	PC3030T	PC9070T	Designation (Left)	PC3030T	PC9070T	Pitch TPI	Dimensions (inch) IC	L	hmin	PDY	PDX	Configuration
External	ER 22-6EL15			EL 22-6EL15			6	1/2	0.087	0.048	0.07	0.07	
	22-5EL125			22-5EL125			5	1/2	0.087	0.067	0.09	0.09	
Internal	IR 22-6EL15			IL 22-6EL15			6	1/2	0.087	0.055	0.07	0.07	
	22-5EL125			22-5EL125			5	1/2	0.087	0.075	0.09	0.09	

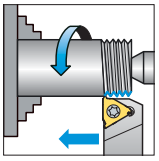
Applicable holders **D32, D33**

● : Stock item

ER(L)H
(Screw on system)






• R type holder

(inch)

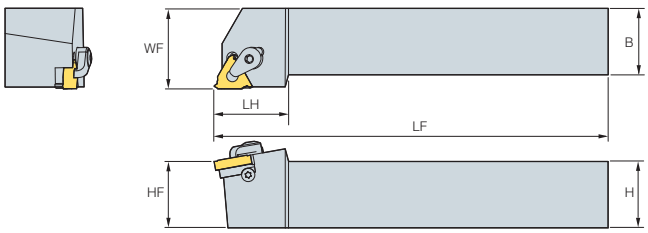
Designation		Inscribed circle	H	B	LF	WF	HF	LH	Insert screw	Shim screw	Shim RH	Shim LH	Wrench
ER(L)H	031N-11	1/4	0.31	0.31	5.37	0.425	0.31	0.69	ST11N	-	-	-	TW08P
	039N-11	1/4	0.39	0.39	2.75	0.43	0.39	0.68					
	050N-11	1/4	0.50	0.50	3.14	0.47	0.50	0.68					
	050N-16	3/8	0.50	0.50	3.27	0.625	0.50	0.87	ST16N	-	-	-	TW10P
	3/8-16	3/8	0.375	0.375	2.45	0.625	0.375	0.76	ST16	STA16	ATE16	ATI22	TW10P
	050-16	3/8	0.50	0.50	3.27	0.625	0.50	0.87					
	0625-16	3/8	0.625	0.625	5.00	0.625	0.625	1.02					
	075-16	3/8	0.75	0.75	5.00	0.75	0.75	1.02					
	100-16	3/8	1.00	1.00	6.00	1.00	1.00	1.20					
	125-16	3/8	1.25	1.25	7.00	1.25	1.25	1.18					
	100-22	1/2	1.00	1.00	6.00	1.00	1.00	1.42	ST22	STA22	ATE22	ATI22	TW20P
	125-22	1/2	1.25	1.25	7.00	1.25	1.25	1.42					
	150-22	1/2	1.50	1.50	8.00	1.50	1.50	1.42					
	100-27	5/8	1.00	1.00	6.00	1.25	1.00	1.57	ST27	STA27	ATE27	ATI27	TW25L
	125-27	5/8	1.25	1.25	7.00	1.25	1.25	1.57					
	150-27	5/8	1.50	1.50	8.00	1.50	1.50	1.57					
	200-27	5/8	2.00	2.00	10.00	2.00	2.00	1.57					

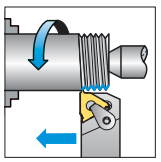
Applicable inserts **D11~D14, D17, D19, D20, D23~D27, D29~D31**

• Helix angle is 1.5 ° for all holders • No shim needed for N type holder

ER(L)H-C
(Screw on system)






• R type holder

(inch)

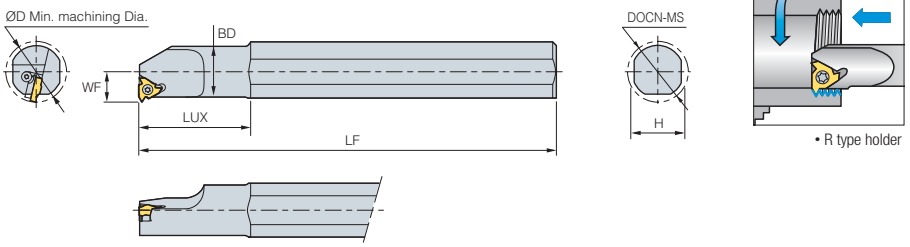
Designation		Inscribed circle	H	B	LF	WF	HF	LH	Shim screw	Clamp	Shim RH	Shim LH	Wrench
ER(L)H	075-16C	3/8	0.75	0.75	5.00	0.75	0.75	1.02	STA16	CTH16	ATE16	ATI16	TW10P TW15P
	100-16C	3/8	1.00	1.00	6.00	1.00	1.00	1.20					
	125-16C	3/8	1.25	1.25	7.00	1.25	1.25	1.18					
	100-22C	1/2	1.00	1.00	6.00	1.00	1.00	1.42	STA22	CTH22	ATE22	ATI22	TW20P
	125-22C	1/2	1.25	1.25	7.00	1.25	1.25	1.42					
	150-22C	1/2	1.50	1.50	8.00	1.50	1.50	1.42					
	100-27C	5/8	1.00	1.00	6.00	1.00	1.00	1.57	STA27	CTH27	ATE27	ATI27	TW25L
	125-27C	5/8	1.25	1.25	7.00	1.25	1.25	1.57					
	150-27C	5/8	1.50	1.50	8.00	1.50	1.50	1.57					
	200-27C	5/8	2.00	2.00	10.00	2.00	2.00	1.57					

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

IR(L)H
(Screw on system)





(inch)

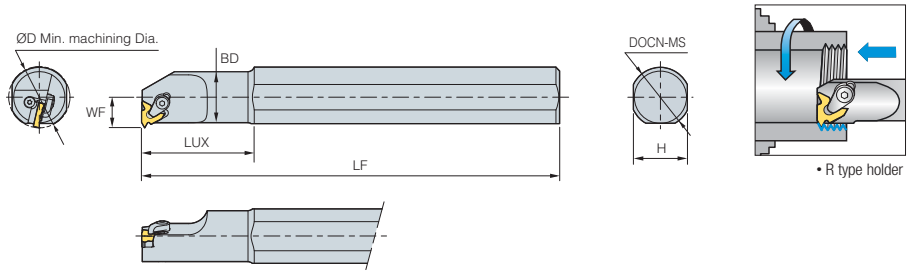
Designation		Inscribed circle	DMIN	DOCN-MS	BD	H	LF	WF	LUX	Insert screw	Shim screw	Shim RH	Shim LH	Wrench
IR(L)H	0375DN-11	1/4	0.50	0.40	0.375	0.37	3.9	0.28	-	ST11N	-	-	-	TW08P
	0375N-11	1/4	0.50	0.75	0.375	0.67	7.0	0.28	1.00					
	050N-11	1/4	0.65	0.75	0.50	0.67	7.0	0.37	1.25					
	050N-16	3/8	0.67	0.75	0.50	0.67	7.0	0.40	1.25	ST16N	-	-	-	TW10P
	0625N-16	3/8	0.80	0.75	0.625	0.67	7.0	0.46	1.50					
	0625DN-16	3/8	0.80	0.625	0.625	0.58	6.0	0.46	1.25					
	075-16	3/8	0.90	0.75	0.75	0.67	7.0	0.51	1.50	ST16	STA16	ATI16	ATE16	TW10P
	100-16	3/8	1.20	1.25	1.00	1.12	10.0	0.65	2.50					
	100D-16	3/8	1.20	1.00	1.00	0.90	8.0	0.65	1.75					
	125-16	3/8	1.45	1.25	1.25	1.12	10.0	0.77	2.50					
	150-16	3/8	1.65	1.50	1.50	1.34	12.0	0.90	2.50					
	075N-22	1/2	1.00	0.75	0.75	0.67	7.0	0.59	2.00	ST22N	-	-	-	TW20P
	100-22	1/2	1.25	1.25	1.00	1.12	10.0	0.71	2.50	ST22	STA22	ATI22	ATE22	TW20P
	100D-22	1/2	1.25	1.00	1.00	0.88	8.0	0.71	1.75					
	125-22	1/2	1.50	1.25	1.25	1.12	10.0	0.85	2.50					
	150-22	1/2	1.75	1.50	1.50	1.34	12.0	0.98	2.50					
	125-27	5/8	1.55	1.25	1.25	1.12	10.0	0.88	2.50	ST27	STA27	ATI27	ATE27	TW25L
	150-27	5/8	1.80	1.50	1.50	1.34	12.0	1.00	2.50					
	200-27	5/8	2.30	2.00	2.00	1.80	14.0	1.25	3.00					
	250-27	5/8	2.80	2.50	2.50	2.26	16.0	1.50	3.00					

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

IR(L)H-C
(Screw on system)





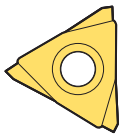
(inch)

Designation		Inscribed circle	DMIN	DOCN-MS	BD	H	LF	WF	LUX	Shim screw	Clamp	Shim RH	Shim LH	Wrench
IR(L)H	075-16C	3/8	0.90	0.75	0.75	0.67	7.0	0.51	1.50	STA16	CTH16	ATI16	ATE16	TW10P TW15P
	100-16C	3/8	1.20	1.25	1.00	1.12	10.0	0.65	2.50					
	100D-16C	3/8	1.20	1.00	1.00	0.90	8.0	0.65	1.75					
	125-16C	3/8	1.45	1.25	1.25	1.12	10.0	0.77	2.50					
	150-16C	3/8	1.65	1.50	1.50	1.34	12.0	0.90	2.50					
	100-22C	1/2	1.25	1.25	1.00	1.12	10.0	0.71	2.50	STA22	CTH22	ATI22	ATE22	TW20P
	100D-22C	1/2	1.25	1.00	1.00	0.88	8.0	0.71	1.75					
	125-22C	1/2	1.50	1.25	1.25	1.12	10.0	0.85	2.50					
	150-22C	1/2	1.75	1.50	1.50	1.34	12.0	0.98	2.50					
	125-27C	5/8	1.55	1.25	1.25	1.12	10.0	0.88	2.50	STA27	CTH27	ATI27	ATE27	TW25L
	150-27C	5/8	1.80	1.50	1.50	1.34	12.0	1.00	2.50					
	200-27C	5/8	2.30	2.00	2.00	1.80	14.0	1.25	3.00					
	250-27C	5/8	2.80	2.50	2.50	2.26	16.0	1.50	3.00					

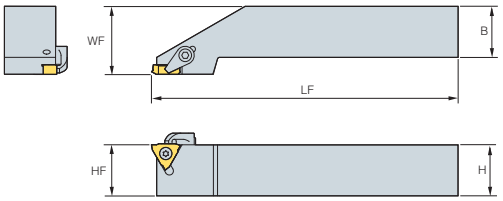
Applicable inserts **D11, D12, D15, D16, D18, D21~D26, D28~D31**

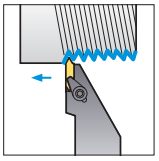
• Helix angle is 1.5 ° for all holders

VTH



VETR



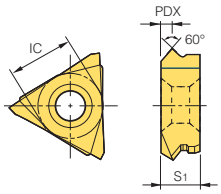


• R type holder

(inch)

Designation		H=(h)	B	LF	WF	Applicable inserts	Clamp	Clamp screw	Screw	Wrench
VTH	2020R	0.787	0.787	4.921	1.039	VETR	CS6R1	DHA0617	FTKA03510	TW15P HW30L
	2525R	0.984	0.984	5.906	1.315					
	3225R	1.260	0.984	6.693	1.315					

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 S1: 4.76

● : Stock item

PART

PARTS

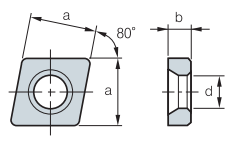
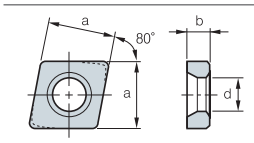
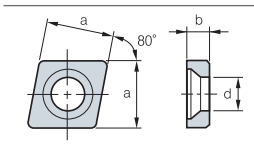
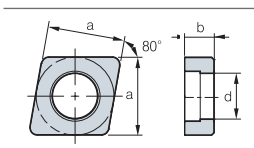
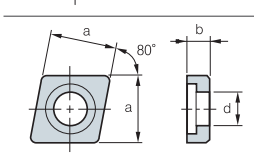
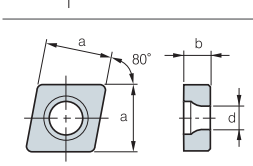
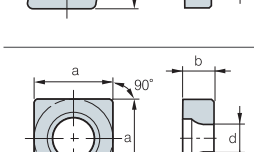
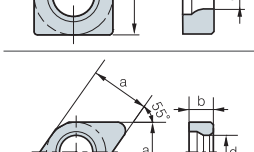
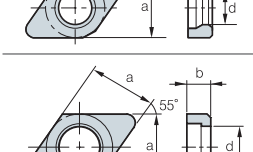
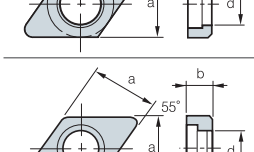
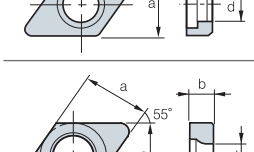


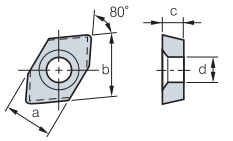
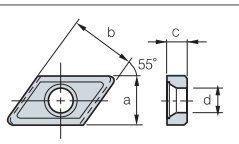
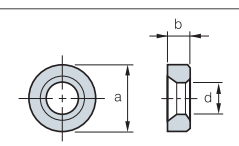
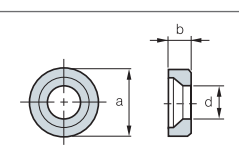
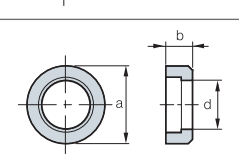
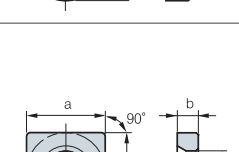
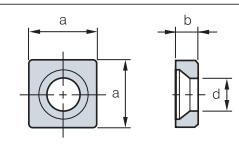
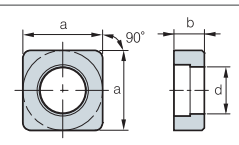
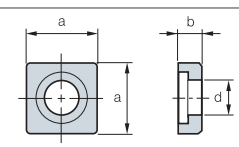
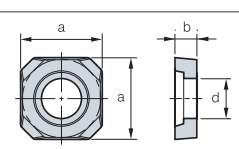
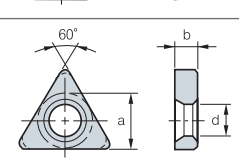


Technical information for PARTS

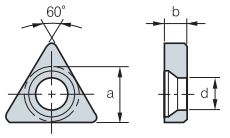
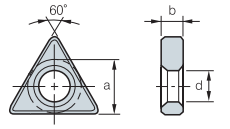
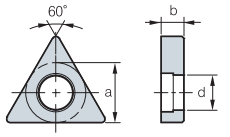
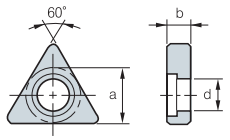
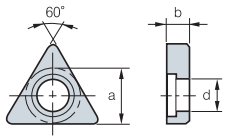
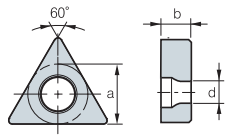
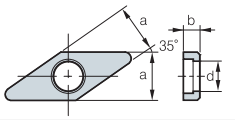
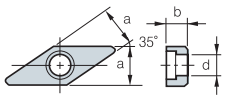
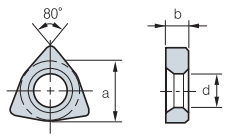
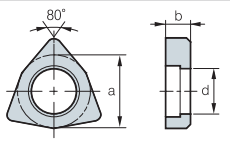
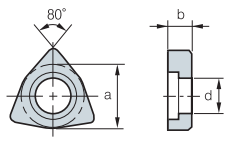
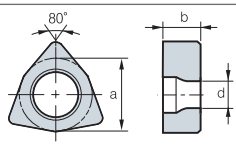
E3 Shim
E4 Cartridge
E4 Chip breaker
E4 Chip cover
E4 Clamp
E5 Coolant bolt
E5 Wrench bolt
E5 Lever
E6 Locator
E6 Nut
E6 Pin
E6 Screw
E7 Shim pin
E8 Spring
E8 Wrench
E8 Stop ring
E8 Washer
E8 Stopper
E8 Nozzle

Shim

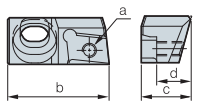
Geometry	Designation	Dimensions (inch)				
		a	b	c	d	angle
	**SC32**	0.335	0.125		0.193	
	SC32N	0.335	0.125		0.192	
	SC42	0.492	0.125		0.272	
	SC42N	0.457	0.125		0.256	
	SC53	0.618	0.187		0.311	
	SC53N	0.575	0.187		0.319	
	SC63	0.742	0.187		0.394	
	SC63N	0.701	0.187		0.378	
	SC83	0.961	0.187		0.504	
	SC84N	0.953	0.250		0.512	
	**SC42B**	0.492	0.125		0.272	
	**SC42CC**	0.492	0.125		0.138	
	**SC32D**	0.365	0.125		0.255	
	SC43D	0.490	0.187		0.289	
	SC53D	0.615	0.187		0.380	
	SC63D	0.740	0.187		0.443	
	SC84D	0.987	0.250		0.585	
	**SC42S**	0.453	0.125		0.252	
	SC32S	0.327	0.125		0.213	
	**SC63V**	0.722	0.187		0.217	
	SC83V	0.996	0.187		0.258	
	SC84V	0.996	0.250		0.250	
	SC32V	0.359	0.125		0.134	
	SC42V	0.496	0.125		0.177	
	SC44V	0.496	0.250		0.177	
	SC54V	0.620	0.250		0.217	
	**SS32V**	0.359	0.125		0.134	
	SS42V	0.496	0.125		0.177	
	SS54V	0.620	0.250		0.217	
	SS64V	0.744	0.250		0.217	
	**SD317**	0.368	0.106		0.205	
	SD32N	0.335	0.125		0.192	
	SD42	0.492	0.125		0.272	
	SD42N	0.457	0.125		0.256	
	SD43N	0.457	0.187		0.256	
	**SD32D**	0.362	0.125		0.228	
	SD43D	0.490	0.187		0.289	
	**SD32S**	0.335	0.125		0.213	
	SD42S	0.453	0.125		0.252	
	**SD32V**	0.359	0.125		0.134	
	SD43V	0.496	0.187		0.177	
	SD44V	0.496	0.250		0.177	

Geometry	Designation	Dimensions (inch)				
		a	b	c	d	angle
	**SES33C**	0.358	0.472	0.187	0.138	
	**SK33C**	0.367	0.579	0.189	0.138	
	SK33CL	0.367	0.579	0.189	0.138	
	**SR10**	0.331	0.125		0.185	
	SR12	0.394	0.125		0.185	
	SR16	0.533	0.187		0.272	
	SR20	0.673	0.191		0.311	
	SR25	0.866	0.250		0.378	
	SR32	1.094	0.250		0.512	
	**SR42CC**	0.495	0.125		0.138	
	**SR10S**	0.346	0.125		0.213	
	SR12S	0.415	0.125		0.213	
	**SS32**	0.335	0.125		0.193	
	SS32N	0.335	0.125		0.192	
	SS42	0.492	0.125		0.272	
	SS42B	0.492	0.125		0.272	
	SS42N	0.457	0.125		0.256	
	SS53	0.618	0.187		0.311	
	SS53N	0.575	0.187		0.319	
	SS63	0.742	0.187		0.394	
	SS63N	0.701	0.187		0.378	
	SS84	0.961	0.250		0.504	
	SS84N	0.953	0.250		0.512	
	**SS42CC**	0.492	0.125		0.138	
	SS32CC	0.366	0.125		0.138	
	**SS32D**	0.365	0.125		0.227	
	SS43D	0.490	0.187		0.289	
	SS53D	0.615	0.187		0.380	
	SS63D	0.740	0.187		0.443	
	SS84D	0.990	0.250		0.568	
	**SS32S**	0.327	0.125		0.213	
	SS42S	0.453	0.125		0.252	
	**SS42SAF**	0.441	0.118		0.217	
	**ST317**	0.368	0.106		0.197	
	ST317B	0.368	0.106		0.197	
	ST317N	0.335	0.106		0.192	
	ST42	0.492	0.125		0.272	
	ST42N	0.457	0.125		0.256	
	ST53	0.618	0.187		0.311	

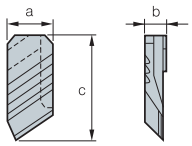
Shim

Geometry	Designation	Dimensions (inch)				
		a	b	c	d	angle
	ST32CC	0.368	0.125		0.138	
	ST32C1	0.359	0.125		0.195	
	ST42C1	0.484	0.125		0.195	
	ST32D	0.368	0.125		0.227	
	ST43D	0.493	0.187		0.289	
	ST53D	0.618	0.187		0.380	
	ST63D	0.743	0.187		0.443	
	ST32M	0.343	0.125		0.185	
	ST43M	0.492	0.187		0.248	
	ST32S	0.335	0.125		0.213	
	ST32V	0.359	0.125		0.134	
	ST44V	0.496	0.250		0.177	
	SV32D	0.362	0.125		0.228	
	SV43D	0.484	0.187		0.289	
	SV32D2	0.362	0.125		0.228	
	SV32S	0.331	0.125		0.213	
	SW317	0.368	0.106		0.197	
	SW317N	0.335	0.106		0.192	
	SW42	0.492	0.125		0.272	
	SW42N	0.457	0.125		0.256	
	SW32D	0.364	0.125		0.228	
	SW43D	0.490	0.187		0.289	
	SW53D	0.615	0.187		0.380	
	SW63D	0.740	0.187		0.443	
	SW84D	0.980	0.250		0.568	
	SW43M	0.492	0.187		0.244	
	SW32M	0.335	0.125		0.205	
	SW32V	0.359	0.125		0.134	
	SW44V	0.496	0.250		0.177	
	SW54V	0.620	0.187		0.217	

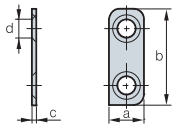
Cartridge

Geometry	Designation	Dimensions (inch)				
		a	b	c	d	angle
	LAPDR-AJ	M4×0.7	1.181	0.591	0.394	

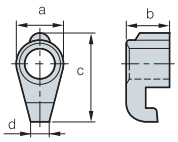
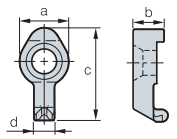
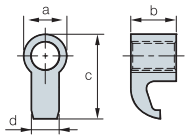
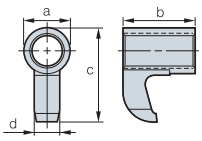
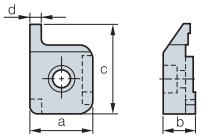
Chip breaker

Geometry	Designation	Dimensions (inch)				
		a	b	c	d	angle
	CB20	0.335	0.134	0.787		

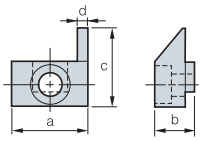
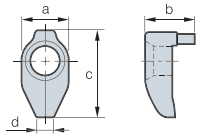
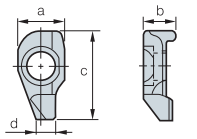
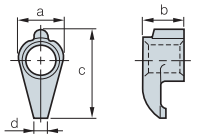
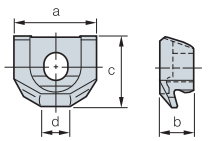
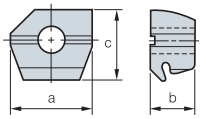
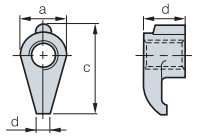
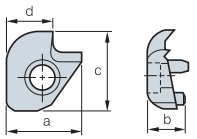
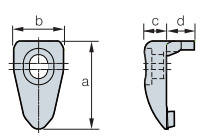
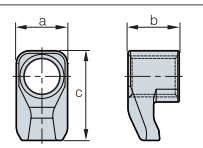
Chip cover

Geometry	Designation	Dimensions (inch)				
		a	b	c	d	angle
	CFMP3R14R1-A	0.413	0.787	0.039	(Ø0.169)	
	CFMP3R-A	0.315	0.709	0.039	(Ø0.169)	
	CFMP4R-A	0.315	0.866	0.039	(Ø0.169)	

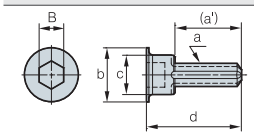
Clamp

Geometry	Designation	Dimensions (inch)				
		a	b	c	d	angle
	CA05R	0.350	0.217	0.693	0.130	
	CA06R	0.472	0.283	0.811	0.209	
	CH5R3	0.309	0.283	0.583	0.122	
	CH6R4	0.473	0.354	0.944	0.148	
	CBH4.5R1	0.315	0.226	0.697	0.157	
	CBH4.5R2	0.374	0.252	0.709	0.157	
	CBH5R1	0.394	0.307	0.839	0.197	
	CBH6R1	0.472	0.366	1.024	0.236	
	CDH6N	0.374	0.394	0.732	0.240	
	CDH7N	0.311	0.449	0.579	0.185	
	CDH8N	0.429	0.665	0.882	0.240	
	CDH8N1	0.429	0.665	0.752	0.240	
	CDH8N2	0.429	0.665	1.000	0.240	
	CDH8N3	0.492	0.780	1.000	0.362	
	CDS8N	0.425	0.669	0.874	0.197	
	CGH5R1	0.768	0.374	1.134	0.098	
	CGH5R2	0.807	0.374	1.134	0.138	
	CGH5R3	0.886	0.374	1.134	0.217	

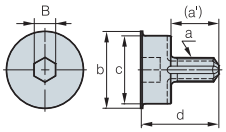
Clamp

Geometry	Designation	Dimensions (inch)				
		a	b	c	d	angle
	CGH6R1	0.878	0.469	0.913	0.098	
	CGH6R2	0.913	0.469	0.913	0.134	
	CGH6R3	0.945	0.469	0.913	0.165	
	CHH3.5R1	0.295	0.264	0.512	0.096	
	CHH4.5R1	0.311	0.309	0.555	0.100	
	CHH5.5R1	0.386	0.394	0.646	0.157	
	CH4R1	0.291	0.197	0.555	0.122	
	CH5R1	0.394	0.260	0.795	0.177	
	CH5R2	0.270	0.276	0.543	0.079	
	CH6R2	0.348	0.343	0.650	0.079	
	CH6R3	0.465	0.394	0.906	0.165	
	CMH5R1	0.728	0.311	0.630	0.246	
	CMH6R2	0.787	0.433	0.689	0.543	
	CMH6R6	0.728	0.311	0.630	0.246	
	CMH6R1	0.945	0.335	0.650	0.326	
	CMH6R3	0.787	0.433	0.689		
	CMH6L3	0.787	0.433	0.689		
	CS5R1	0.268	0.276	0.571	0.079	
	CS6R1	0.346	0.335	0.713	0.106	
	CS8R1	0.465	0.394	0.906	0.165	
	CTH6L1	0.925	0.472	1.000	0.565	
	CTH6R1	0.925	0.472	1.000	0.565	
	CTH6R2	0.857	0.508	1.229	0.682	
	CVH3	0.827	0.433	0.228	0.303	
	CVH3V	1.142	0.551	0.276	0.315	
	CVH4	1.004	0.571	0.236	0.276	
	CVH5	1.181	0.669	0.295	0.374	
	CVH6	1.319	0.728	0.315	0.394	
	CXH8N	0.398	0.394	0.689		

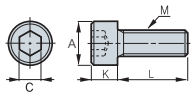
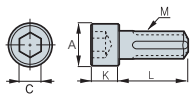
Coolant bolt

Geometry	Designation	Dimensions (inch)					
		a	b	c	d	B(T)	a´
	CBA063-3IN/MM	M10	Ø0.984	Ø0.630	1.457	0.315	(1.063)
	CBA063-4IN/MM	M10	Ø0.984	Ø0.630	1.673	0.315	(1.063)
	CBA080-IN/MM	M12	Ø1.102	Ø0.709	1.791	0.394	(1.260)
	CBP063-IN/MM	M10	Ø0.866	Ø0.630	1.520	0.315	(1.063)
	CBP080-IN/MM	M12	Ø0.984	Ø0.709	1.913	0.394	(1.260)

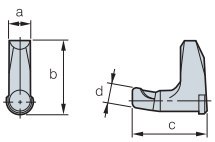
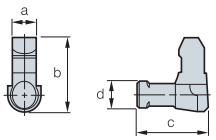
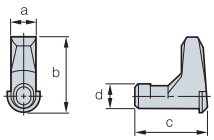
Coolant bolt

Geometry	Designation	Dimensions (inch)					
		a	b	c	d	B(T)	a´
	CBA100-IN/MM	M16	Ø2.126	Ø1.693	1.850	0.551	(1.260)
	CBA100-IN-25.4	M12	Ø1.732	Ø1.417	1.634	0.394	(0.984)
	CBA125-IN	M20	Ø2.559	Ø2.126	2.205	0.669	(1.496)
	CBA125-IN-25.4	M12	Ø1.732	Ø1.417	1.713	0.394	(0.984)
	CBA125-MM	M20	Ø2.559	Ø2.126	2.244	0.669	(1.378)
	CBA160-IN	M24	Ø3.268	Ø2.874	2.205	0.748	(1.496)
	CBA160-MM	M20	Ø3.268	Ø2.874	2.087	0.669	(1.339)
	CBP100-IN	M16	Ø1.969	Ø1.693	1.913	0.551	(1.260)
	CBP100-IN-25.4	M12	Ø1.732	Ø1.417	1.831	0.394	(0.984)
	CBP100-MM-1	M16	Ø1.969	Ø1.693	1.913	0.551	(1.417)
	CBP125-IN	M20	Ø2.559	Ø2.126	2.205	0.669	(1.496)
	CBP125-IN-25.4	M12	Ø1.732	Ø1.417	2.165	0.394	(0.984)
	CBP125-MM	M20	Ø2.559	Ø2.126	2.244	0.669	(1.378)
	CBP125-MM-1	M20	Ø2.402	Ø2.126	2.583	0.551	(1.299)
	CBP160-IN	M24	Ø3.268	Ø2.874	2.205	0.748	(1.496)
	CBP160-MM	M20	Ø3.268	Ø2.874	2.087	0.669	(1.339)

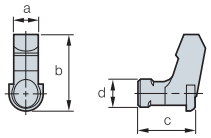
Wrench bolt

Geometry	Designation	Dimensions (inch)				
		A	C	K	L	M
	SB0825	0.512	0.236	0.315	0.984	M08×1.25
	SB1025	0.630	0.315	0.394	0.984	M10×1.50
	SB1035	0.630	0.315	0.394	1.378	M10×1.50
	SB1230	0.709	0.394	0.472	1.181	M12×1.75
	SB1630	0.945	0.551	0.630	1.181	M16×2.0
	SB1645	0.945	0.551	0.630	1.772	M6×2.0
	SB2040	1.181	0.669	0.787	1.575	M20×2.5
	CB1025	0.512	0.236	0.315	0.984	M08×1.25
	CB1025	0.630	0.315	0.394	0.984	M10×1.50
	CB1035	0.630	0.315	0.394	1.378	M10×1.50
	CB1230	0.709	0.394	0.472	1.181	M12×1.75
	CB1245	0.709	0.394	0.472	1.772	M12×1.75
	CB1630	0.945	0.551	0.630	1.181	M16×2.0
	CB1645	0.945	0.551	0.630	1.772	M16×2.0
	CB2040	1.181	0.669	0.787	1.575	M20×2.5

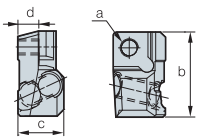
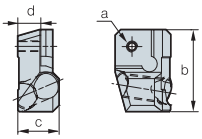
Lever

Geometry	Designation	Dimensions (inch)			
		a	b	c	d
	LR10	0.134	0.425	0.461	0.118
	LR12	0.146	0.531	0.528	0.138
	LR16	0.187	0.736	0.720	0.169
	LR20	0.232	0.807	0.736	0.219
	LR25	0.289	0.955	0.933	0.244
	LR32	0.333	1.169	1.061	0.311
	LV2	0.102	0.305	0.236	0.083
	LV3B	0.122	0.394	0.374	0.146
	LV4B	0.185	0.573	0.614	0.185
	LV4BN	0.185	0.630	0.587	0.184
	LV3	0.146	0.394	0.472	0.142
	LV3N	0.148	0.394	0.472	0.140
	LV3AN	0.148	0.476	0.449	0.183
	LV3C	0.122	0.394	0.309	0.142
	LV3CN	0.126	0.394	0.307	0.142
	LV3DN	0.126	0.459	0.374	0.140
	LV4	0.185	0.573	0.551	0.185
	LV4N	0.185	0.530	0.520	0.184
	LV5	0.236	0.673	0.669	0.236
	LV5N	0.236	0.646	0.672	0.234
	LV5AN	0.236	0.741	0.681	0.234
	LV6N	0.295	0.807	0.827	0.299
	LV8N	0.339	1.004	1.000	0.339

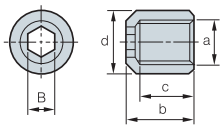
Lever

Geometry	Designation	Dimensions (inch)			
		a	b	c	d
	**LV4A**	0.181	0.521	0.392	0.185
	LV4AN	0.185	0.524	0.394	0.184

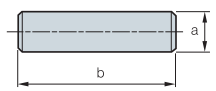
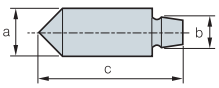
Locator

Geometry	Designation	Dimensions (inch)			
		a	b	c	d
	**LFMP3R-A**	M3.5	0.736	0.398	0.181
	LFMP4R1-A	M4.5	0.957	0.543	0.244
	LFMP4R-A	M4.5	1.035	0.543	0.244
	**LFMA3R-A**	M3	0.728	0.374	0.189
	LFMA4R-A	M3.5	1.024	0.516	0.287

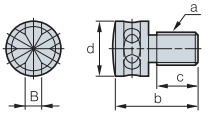
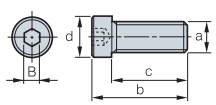
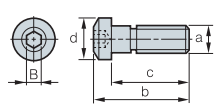
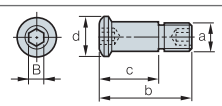
Nut

Geometry	Designation	Dimensions (inch)				
		a	b	c	d	B(T)
	**N0407**	M4 X 0.7	0.295	0.236	0.276	0.118
	N0508	M5 X 0.8	0.327	0.260	0.276	0.118

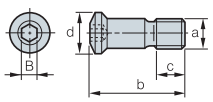
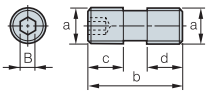
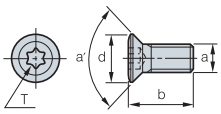
Pin

Geometry	Designation	Dimensions (inch)		
		a	b	c
	**PN0308**	0.118	0.315	
	PN0310	0.118	0.394	
	PN0312	0.118	0.472	
	PN0314	0.118	0.551	
	**PN0515**	0.189	0.130	0.571

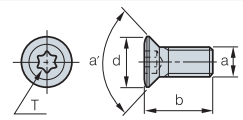
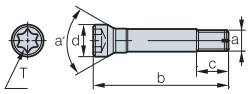
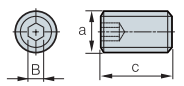
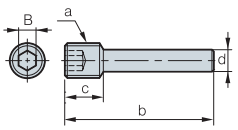
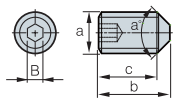
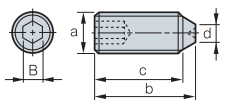
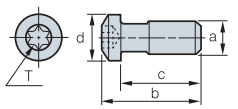
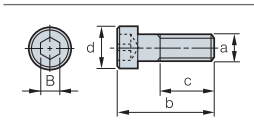
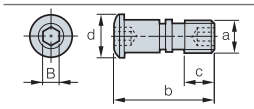
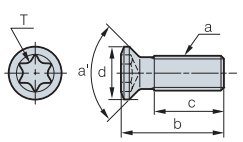
Screw

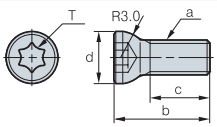
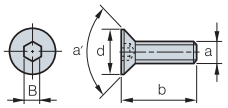
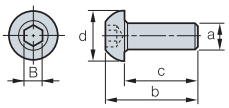
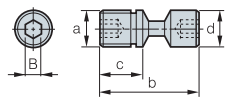
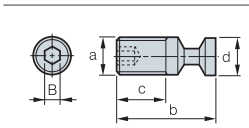
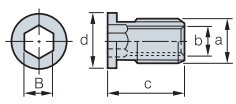
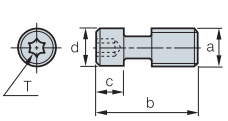
Geometry	Designation	Dimensions (inch)				
		a	b	c	d	B(T)
	**AZ0508F**	M5 X 0.5	0.512	0.315	0.354	Ø0.079
	AZ0514	M5 X 0.8	0.551	0.276	0.354	Ø0.098
	**BHA0510**	M5 X 0.8	0.591	0.394	0.335	0.157
	BHA0512	M5 X 0.8	0.669	0.472	0.335	0.157
	BHA0612	M6 X 1.0	0.709	0.472	0.394	0.197
	BHA0614	M6 X 1.0	0.787	0.551	0.394	0.197
	BHA0616	M6 X 1.0	0.866	0.630	0.394	0.197
	BHA0619-NYLOK	M6 X 1.0	0.984	0.748	0.394	0.197
	**CHX0407**	M4 X 0.7	0.374	0.290	0.224	0.098
	CHX0415	M4 X 0.7	0.689	0.591	0.213	0.098
	CHX0510	M5 X 0.8	0.516	0.398	0.303	0.118
	CHX0518	M5 X 0.8	0.846	0.709	0.315	0.118
	CHX0622	M6 X 1.0	1.043	0.866	0.394	0.157
	**CHX0513**	M5 X 0.8	0.512	0.315	0.252	0.098
	CHX0616	M6 x 1.0	0.638	0.398	0.335	0.118
	CHX0617L	M6 x 1.0(Left)	0.677	0.398	0.335	0.118
	CHX0621	M6 X 1.0	0.827	0.398	0.335	0.118

Screw

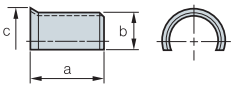
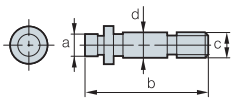
Geometry	Designation	Dimensions (inch)					
		a	b	c	d	B(T)	a´
	**CHX0625**	1/4-20UNC	0.976	0.433	0.394	0.157	-
	CTX03510	M3.5 X 0.6	0.394	0.185	0.209	0.591	-
	CTX04513	M4.5 X 0.75	0.516	0.272	0.268	0.787	-
	CTX04513H	M4.5 X 0.75	0.516	0.283	0.268	0.787	-
	CTX0515	M5 X 0.8	0.591	0.315	0.276	0.787	-
	CTX0517	M5 X 0.8	0.689	0.394	0.276	0.787	-
	CTX0621	M6 X 1.0	0.835	0.488	0.354	0.984	-
	**DHA0514**	M5 X 0.8	0.551	0.197	0.276	0.098	-
	DHA0617	M6 x 1.0	0.669	0.276	0.295	0.118	-
	DHA0620	M6 x 1.0	0.787	0.315	0.315	0.118	-
	DHA0624	M6 x 1.0	0.945	0.472	0.335	0.118	-
	DHA0815	M8 X 1.25	0.610	0.246	0.246	0.157	-
	DHA0818F	M8 X 1.0	0.709	0.335	0.217	0.157	-
	DHA0820	M8 X 1.25	0.787	0.315	0.354	0.157	-
	DHA0821F	M8 X 1.0	0.827	0.335	0.335	0.157	-
	DHA0825	M8 X 1.25	0.984	0.394	0.354	0.157	-
	DHA0830	M8 X 1.25	1.181	0.453	0.453	0.157	-
	**ETGA0520CBM**	M5 X 0.8	0.787	-	0.256	0.787	43°
	ETGD0825	M8 X 1.25	0.992	-	0.437	1.575	40°
	ETKA0523	M5 X 0.8	0.906	-	0.299	0.787	43°
	ETKA0625	M6 X 1.0	1.004	-	0.346	0.787	43°
	ETKD0516	M5 X 0.8	0.646	-	0.268	0.787	40°
	ETKD0620	M6 X 1.0	0.787	-	0.327	0.984	40°
	ETNA02506	M2.5 X 0.45	0.224	-	0.134	0.276	43°
	ETNA0408	M4 X 0.7	0.315	-	0.201	0.591	43°
	ETNA0412	M4 X 0.7	0.472	-	0.201	0.591	43°
	ETNA0511	M5 X 0.8	0.433	-	0.252	0.787	43°
	ETND02506F	M2.5 X 0.35	0.246	-	0.122	0.276	40°
	ETND0307F	M3 X 0.35	0.307	-	0.146	0.315	40°
	ETND03509	M3.5 X 0.6	0.378	-	0.185	0.394	40°
	FTGA03507	M3.5 X 0.6	0.276	-	0.209	0.591	60°
	FTGA03508	M3.5 X 0.6	0.315	-	0.209	0.591	60°
	FTGA03510	M3.5 X 0.6	0.394	-	0.209	0.591	60°
	FTGA03512	M3.5 X 0.6	0.472	-	0.197	0.591	60°
	FTGA0411F	M4 X 0.5	0.433	-	0.276	0.591	60°
	FTGA0417CBM	M4 X 0.7	0.669	-	0.217	0.591	62°
	FTGA0510-P	M5 X 0.8	0.394	-	0.276	0.787	63°
	FTGA0512-P	M5 X 0.8	0.472	-	0.276	0.787	63°
	FTGA0513	M5 X 0.8	0.520	-	0.276	0.787	61°
	FTGA0513-P	M5 X 0.8	0.512	-	0.276	0.787	63°
	FTGA0517	M5 X 0.8	0.669	-	0.295	0.787	61°
	FTGA0621	M6 X 1.0	0.846	-	0.354	0.787	61°
	FTGA0826	M8 X 1.25	1.024	-	0.457	0.984	61°
	FTKA02206	M2.2 X 0.45	0.217	-	0.118	0.236	60°
	FTKA02206S	M2.2 X 0.45	0.220	-	0.120	0.276	60°
	FTKA02555	M2.5 X 0.45	0.217	-	0.138	0.276	60°
	FTKA02565	M2.5 X 0.45	0.256	-	0.138	0.276	60°
	FTKA02565S	M2.5 X 0.45	0.256	-	0.150	0.315	60°
	FTKA0307	M3 X 0.5	0.283	-	0.165	0.354	60°
	FTKA03508	M3.5 X 0.6	0.331	-	0.217	0.591	60°
	FTKA03510	M3.5 X 0.6	0.409	-	0.217	0.591	60°
	FTKA03511A	M3.5 X 0.6	0.433	-	0.205	0.591	60°
	FTKA0408	M4 X 0.7	0.331	-	0.217	0.591	60°
	FTKA0410	M4 X 0.7	0.394	-	0.217	0.591	60°
	FTKA0411K	M4 X 0.7	0.433	-	0.268	0.591	60°
	FTKA0412B	M4 X 0.7	0.492	-	0.217	0.591	60°
	FTKA0413	M4 X 0.7	0.512	-	0.217	0.591	60°
	FTNA01633	M1.6 X 0.35	0.130	-	0.102	0.236	60°
	FTNA0203	M2 X 0.4	0.118	-	0.106	0.236	60°
	FTNA02033	M2 X 0.4	0.130	-	0.106	0.236	60°
	FTNA0204	M2 X 0.4	0.169	-	0.106	0.236	60°
	FTNA02205	M2.2 X 0.45	0.177	-	0.118	0.236	60°
	FTNA0238	M2 X 0.4	0.150	-	0.118	0.236	60°
	FTNA0305	M3 X 0.5	0.205	-	0.165	0.354	60°
	FTNA0306	M3 X 0.5	0.244	-	0.165	0.354	60°
	FTNA0307	M3 X 0.5	0.283	-	0.165	0.354	60°
	FTNA0408	M4 X 0.7	0.335	-	0.217	0.591	60°
	FTNA0411	M4 X 0.7	0.433	-	0.217	0.591	60°
	FTNA0511	M5 X 0.8	0.276	-	0.264	0.787	63°
	FTNA0513	M5 X 0.8	0.512	-	0.276	0.787	60°
	FTNA0516	M5 X 0.8	0.630	-	0.276	0.787	60°

Screw

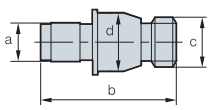
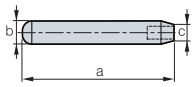
Geometry	Designation	Dimensions (inch)					
		a	b	c	d	B(T)	a´
	FTNB0411	M4 X 0.7	0.425	-	0.224	0.591	60°
	FTNC04509	M4.5 X 0.75	0.374	-	0.268	0.787	55°
	FTNC04511	M4.5 X 0.75	0.453	-	0.268	0.787	55°
	FTNB0209	2 X 0.4	0.354	0.098	0.106	-	60°
	FTNB0209-P	2 X 0.4	0.354	0.098	0.106	-	60°
	FTNB02512	2.5 X 0.45	0.472	0.138	0.138	-	60°
	FTNB02512-P	2.5 X 0.45	0.472	0.138	0.138	-	60°
	FTNB02514	2.5 X 0.45	0.551	0.138	0.138	-	60°
	FTNB02514-P	2.5 X 0.45	0.551	0.138	0.138	-	60°
	FTNB0316	3 X 0.5	0.630	0.177	0.165	-	60°
	FTNB0316-P	3 X 0.5	0.630	0.177	0.165	-	60°
	FTNB0319	3 X 0.5	0.748	0.197	0.177	-	60°
	FTNB03522	3.5 X 0.6	0.866	0.220	0.217	-	60°
	FTNB03524	3.5 X 0.6	0.945	0.220	0.217	-	60°
	FTNB0426	4 X 0.7	1.024	0.264	0.217	-	60°
	FTNB0528	5 X 0.8	1.102	0.264	0.276	-	60°
	KHA0508	M5 X 0.8	0.315	-	-	0.098	-
	KHA0510	M5 X 0.8	0.394	-	-	0.098	-
	KHA0610	M6 X 1.0	0.394	-	-	0.118	-
	KHA0612	M6 X 1.0	0.472	-	-	0.118	-
	KHA0812	M8 X 1.25	0.472	-	-	0.157	-
	KHA0815	M8 X 1.25	0.591	-	-	0.157	-
	KHA1015	M10 X 1.5	0.591	-	-	0.197	-
	KHA1020	M10 X 1.5	0.787	-	-	0.197	-
	KHB0417	M4 X 0.7	0.677	0.177	0.098	0.079	-
	KHB0406	M4 X 0.7	0.236	0.165	0.118	0.079	-
	KHC0510	M5 X 0.8	0.394	0.319	-	0.098	90°
	KHC0610	M6 X 1.0	0.394	0.307	-	0.118	90°
	KHC0812	M8 X 1.25	0.472	0.354	-	0.157	90°
	KHC1016	M10 X 1.5	0.630	0.484	-	0.197	90°
	KHC1020	M10 X 1.5	0.787	0.642	-	0.197	90°
	KHD0510	M5 X 0.8	0.394	0.354	0.118	0.098	-
	KHD0610	M6 X 1.0	0.394	0.394	0.157	0.118	-
	KHD0810	M8 X 1.25	0.394	0.394	0.295	0.157	-
	LTX0512	M5 X 0.8	0.594	0.472	0.287	0.787	-
	LTX0514	M5 X 0.8	0.673	0.551	0.287	0.787	-
	MHA0512	M5 X 0.8	0.669	0.425	0.315	0.157	-
	MHB0310	M3 X 0.5	0.528	0.315	0.217	0.098	-
	MHB0410	M4 X 0.7	0.551	0.315	0.276	0.118	-
	MHB1055	M10 X 1.5	2.559	1.969	0.630	0.315	-
	MHB1260	M12 X 1.75	2.835	2.165	0.709	0.394	-
	MHB1680	M16 X 2.0	3.780	2.953	0.945	0.551	-
	MHX0523	M5 X 0.8	0.925	0.382	0.394	0.098	-
	MHX0626	M6 X 1.0	1.016	0.394	0.433	0.118	-
	MHX0630	M6 X 1.0	1.181	0.492	0.413	0.157	-
	PTKA02508	M2.5 X 0.45	0.315	0.197	0.150	0.315	92°
	PTKA03510	M3.5 X 0.6	0.394	0.197	0.197	0.591	92°
	PTKA0407	M4 X 0.7	0.276	0.181	0.217	0.591	86°
	PTKA0407F	M4 X 0.5	0.287	0.150	0.256	0.591	91°
	PTKA0408	M4 X 0.7	0.315	0.220	0.217	0.591	86°
	PTKA0408F	M4 X 0.5	0.327	0.224	0.256	0.591	91°
	PTKA0409F	M4 X 0.5	0.366	0.264	0.256	0.591	91°
	PTKA0410F	M4 X 0.5	0.406	0.303	0.256	0.591	91°
	PTKA0411F	M4 X 0.5	0.445	0.343	0.256	0.591	91°
	PTKA0412	M4 X 0.7	0.472	0.295	0.232	0.591	92°
	PTKA0412F	M4 X 0.5	0.484	0.382	0.256	0.591	91°
	PTKA0413F	M4 X 0.5	0.524	0.421	0.256	0.591	91°
	PTKA0512	M5 X 0.8	0.472	0.276	0.272	0.787	92°
	PTMA03508	M3.5 X 0.6	0.315	0.209	0.236	0.354	90°
	PTMA0403F	M4 X 0.5	0.130	0.067	0.256	0.591	91°
	PTMA0404F	M4 X 0.5	0.169	0.106	0.256	0.591	91°
	PTMA0405F	M4 X 0.5	0.209	0.146	0.256	0.591	91°
	PTMA0406F	M4 X 0.5	0.248	0.185	0.256	0.591	91°
	PTMA0411	M4 X 0.7	0.433	0.335	0.260	0.591	90°

Geometry	Designation	Dimensions (inch)					
		a	b	c	d	B(T)	a´
	FHGA0618	M4 X 0.7	0.433	0.272	0.236	15	-
	FHGA0618	M6 X 1.0	0.709		0.335	0.157	61°
	PXMA0306	M3 X 0.5	0.232		0.224	0.079	90°
	SHX0310	M3 X 0.5	0.394		0.232	0.079	91°
	RHA0510	M5 X 0.8		0.394		0.157	-
	RHA0613	M6 X 1.0	0.642	0.512	0.413	0.157	-
	RHA0620	M6 X 1.0	0.945	0.787	0.413	0.157	-
	VHX0509B	M5 X 0.8	0.354	0.163	0.197	0.079	-
	VHX0512B	M5 X 0.8	0.472	0.256	0.197	0.079	-
	VHX0512BN	M5 X 0.8	0.472	0.258	0.197	0.079	-
	VHX0514	M5 X 0.8	0.571	0.325	0.197	0.079	-
	VHX0613N	M6 X 1.0	0.528	0.295	0.233	0.098	-
	VHX0617	M6 X 1.0	0.669	0.394	0.236	0.098	-
	VHX0617N	M6 X 1.0	0.659	0.328	0.232	0.098	-
	VHX0621	M6 X 1.0	0.827	0.551	0.236	0.098	-
	VHX0817N	M8 X 1.0	0.671	0.314	0.311	0.118	-
	VHX0820N	M8 X 1.0	0.815	0.314	0.311	0.118	-
	VHX0820AN	M8 X 1.0	0.807	0.408	0.311	0.118	-
	VHX0821	M8 X 1.0	0.827	0.394	0.315	0.118	-
	VHX0821N	M8 X 1.0	0.835	0.381	0.311	0.118	-
	VHX0823N	M8 X 1.0	0.925	0.408	0.311	0.118	-
	VHX0825	M8 X 1.0	0.984	0.472	0.315	0.118	-
	VHX1027N	M10 X 1.0	1.071	0.567	0.386	0.197	-
	VHX1236N	M12 X 1.0	1.417	0.720	0.465	0.197	-
	VHX0613A	M6 X 1.0	0.528	0.358	0.236	0.098	-
	SHXN0509F	M5 X 0.5	M3.5 X 0.6	0.341	0.248	0.138	-
	SHXN0609F	M6 X 0.75	M4 X 0.7	0.354	0.307	0.157	-
	SHXN0610F	M6 X0.75	M4 X 0.5	0.394	0.307	0.157	-
	SHXN0712F	M7 X0.75	M5 X 0.8	0.472	0.335	0.197	-
	WTX0813	M8 X 1.25	0.677	0.193	0.335	0.984	-
	WTX0817	M8 X 1.25	0.866	0.193	0.335	0.984	-

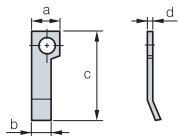
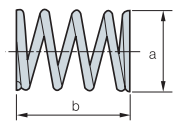
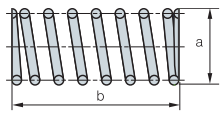
Shim pin

Geometry	Designation	Dimensions (inch)			
		a	b	c	d
	SP3	0.217	0.138	0.232	-
	SP3N	0.270	0.130	0.219	-
	SP4	0.276	0.157	0.299	-
	SP4N	0.228	0.171	0.291	-
	SP5	0.335	0.177	0.346	-
	SP5N	0.335	0.224	0.354	-
	SP6N	0.437	0.236	0.433	-
	SP8N	0.472	0.394	0.604	-
	SP2M	0.197	0.551	M5x0.8	0.236
	SP3M	0.138	0.768	M4x0.7	0.157
	SP3M-1	0.138	0.650	M4x0.7	0.157
	SP4M	0.197	0.748	M5x0.8	0.236

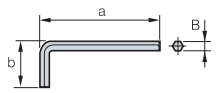
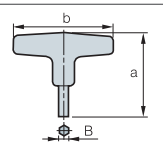
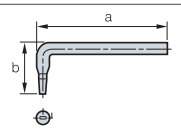
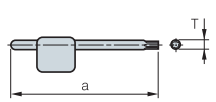
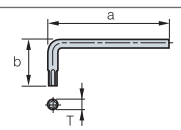
Shim pin

Geometry	Designation	Dimensions (inch)			
		a	b	c	d
	SP3D	0.146	0.516	UNF10-32	0.220
	SP3D2	0.142	0.472	UNF10-32	0.217
	SP3DS	0.146	0.454	UNF10-32	0.220
	SP4D	0.196	0.677	UNF1/4 28	0.280
	SP4DL	0.197	0.673	UNF1/4 28	0.276
	SP4DS	0.196	0.522	UNF1/4 28	0.000
	SP5D	0.244	0.862	UNF5/16-24	0.372
	SP6D	0.305	0.862	UNF3/8-24	0.434
	SP8D	0.355	1.167	UNF7/16-20	0.559
	LSPS3	2.362	0.323	0.219	-
	LSPS4	2.559	0.394	0.276	-
	LSPS5	2.717	0.449	0.348	-
	LSPS6	2.717	0.512	0.433	-
	LSPS8	2.874	0.650	0.598	-

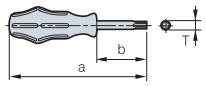
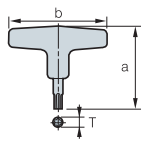
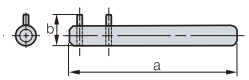
Spring

Geometry	Designation	Dimensions (inch)			
		a	b	c	d
	SR2	0.157	0.110	0.496	0.016
	SPR0315	0.118	0.591	-	-
	SPR0415	0.157	0.591	-	-
	SR3	0.362	0.492	-	-
	SR4	0.157	0.433	-	-
	SPR0714	0.276	0.551	-	-
	SPR0510	0.197	0.394	-	-
	SPR0714	0.276	0.551	-	-
	SPR0811	0.315	0.433	-	-

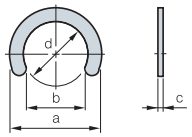
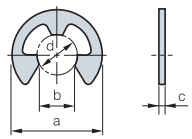
Wrench

Geometry	Designation	Dimensions (inch)		
		a	b	B(T)
	HW20L	2.047	0.709	0.079
	HW25L	2.303	0.807	0.098
	HW30L	2.598	0.906	0.118
	HW35L	2.835	0.984	0.138
	HW40L	2.913	1.142	0.157
	HW50L	3.346	1.299	0.197
	HW40	3.228	3.150	0.157
	HW50	3.780	3.543	0.197
	SW50L	2.756	1.083	-
	TW06P	2.480	-	0.236
	TW07P	2.480	-	0.276
	TW08P	2.795	-	0.315
	TW09P	2.953	-	0.354
	TW10P	3.071	-	0.394
	TW15P	3.228	-	0.591
	TW20P	3.386	-	0.787
	TW15L	2.362	0.827	0.591
	TW20L	2.362	0.827	0.787

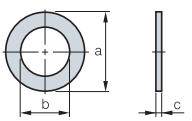
Wrench

Geometry	Designation	Dimensions (inch)		
		a	b	B(T)
	TW07S	5.512	2.362	0.276
	TW08S	5.906	2.992	0.315
	TW09S	6.496	2.756	0.354
	TW15S	7.480	3.543	0.591
	TW20S	7.677	3.583	0.787
	TW20	2.953	3.150	0.787
	TW25	2.913	3.150	0.984
	TW15-100	5.000	3.150	0.591
	TW20-100	5.000	3.150	0.787
	SW15S	5.906	0.512	-

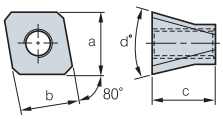
Stop ring

Geometry	Designation	Dimensions (inch)			
		a	b	c	d
	CR03	0.189	0.102	0.016	0.118
	CR04	0.260	0.142	0.016	0.157
	CR05	0.299	0.181	0.016	0.197
	ER03	0.276	0.102	0.024	0.118
	ER04	0.354	0.138	0.024	0.157
	ER05	0.039	0.169	0.024	0.197

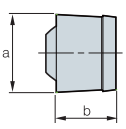
Washer

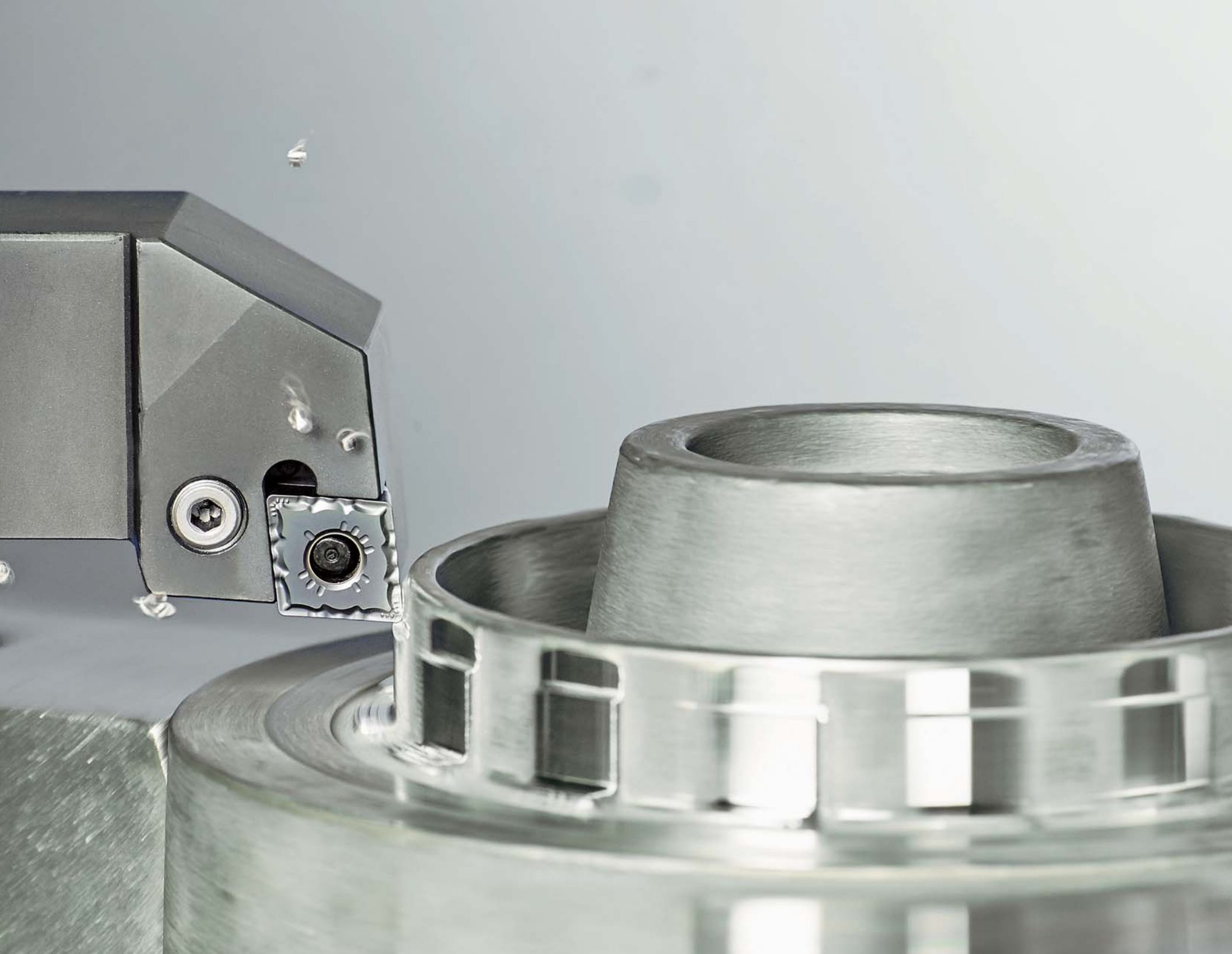
Geometry	Designation	Dimensions (inch)		
		a	b	c
	WA3	0.433	0.268	0.02~0.039
	WA4	0.394	0.209	0.02~0.039

Stopper

Geometry	Designation	Dimensions (inch)			
		a	b	c	d°
	STP5	0.433	0.402	0.433	30°

Nozzle

Geometry	Designation	Dimensions (inch)			
		a	b	c	d°
	CN0605	0.433	0.402		





TECHNICAL INFORMATION

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F20 Parting off & Grooving
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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		U.S.A AISI SAE	Korea KS	ISO ISO	Japan JIS	Great Britain BS BS/EN	Germany DIN DIN/EN	France NF NF/EN	Russia ГОСТ
Carbon steel		1010	SM10C	C10	S10C	040A10 045A10 045M10	C10E C10R	XC10	-
		1015	SM15C	C15E4 C15M2	S15C	055M15	C15E C15R	-	-
		1020	SM20C	-	S20C	070M20 C22, C22E C22R	C22 C22E C22R	C22 C22E C22R	-
		1025	SM25C	C25 C25E4 C25M2	S25C	C25 C25E C25R	C25 C25E C25R	C25 C25E C25R	-
		1030	SM30C	C30 C30E4 C30M2	S30C	080A30 080M30 CC30 C30E C30R	C30 C30E C30R	C30 C30E C30R	30Г
		1035	SM35C	C35 C35E4 C35M2	S35C	C35 C35E C35R	C35 C35E C35R	C35 C35E C35R	35Г
		1039 1040	SM40C	C40 C40E4 C40M2	S40C	080M40 C40 C40E C40R	C40 C40E C40R	C40 C40E C40R	40Г
		1042 1043	SM43C	-	S43C	080A42	-	-	40Г
		1045 1046	SM45C	C45 C45E4 C45M2	S45C	C45 C45E C45R	C45 C45E C45R	C45 C45E C45R	45Г
		-	SM48C	-	S48C	080A47	-	-	45Г
		1049	SM50C	C50 C50E4 C50M2	S50C	080M50 C50 C50E C50R	C50 C50E C50R	C50 C50E C50R	50Г
		1050 1053	SM53C	-	S53C	-	-	-	50Г
		1055	SM55C	C55 C55E4 C55M2	S55C	070M55 C55 C55E C55R	C55 C55E C55R	C55 C55E C55R	-
		1059 1060	SM58C	C60 C60E4 C60M2	S58C	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	8615 8617(H) 8620(H) 8622(H)	SNCM220	20NiCrMo2 20NiCrMoS2	SNCM220	805A20 805M20 805A22 805M22	20NiCrMo2 20NiCrMoS2	20NCD2	-
		8637 8640	SNCM240	41CrNiMo2 41CrNiMoS2	SNCM240	-	-	-	-
		- 4320(H) - 4340 - - - - -	SNCM415 SNCM420(H) SNCM431 SNCM439 SNCM447 SNCM616 SNCM625 SNCM630 SNCM815	- - - - - - - - -	SNCM415 SNCM420(H) SNCM431 SNCM439 SNCM447 SNCM616 SNCM625 SNCM630 SNCM815	- - - - - - - - -	- - - - - - - - -	- - - - - - - - -	- 20XH2M(20XHM) - - - - - - -
	Chromium steel	-	SCr415(H)	-	SCr415(H)	-	17Cr3 17CrS3	-	15X 15XA
		5120(H)	SCr420(H)	20Cr4(H) 20CrS4	SCr420(H)	-	-	-	20X
		5130(H) 5132(H)	SCr430(H)	34Cr4 34CrS4	SCr430(H)	34Cr4 34CrS4	34Cr4 34CrS4	34Cr4 34CrS4	30X
		5135(H)	SCr435(H)	34Cr4 34CrS4 37Cr4 37CrS4	SCr435(H)	37Cr4 37CrS4	37Cr4 37CrS4	37Cr4 37CrS4	35X
		5140(H)	SCr440(H)	37Cr4 37CrS4 41Cr4 41CrS4	SCr440(H)	530M40 41Cr4 41CrS4	41Cr4 41CrS4	41Cr4 41CrS4	40X
		-	SCr445(H)		SCr445(H)				45X

Carbon steel and alloy steel for structural use

Type		U.S.A AISI SAE	Korea KS	ISO ISO	Japan JIS	Great Britain BS BS/EN	Germany DIN DIN/EN	France NF NF/EN	Russia ГОСТ
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
		4130	SCM430	-	SCM430	-	-	-	30XM 30XMA
		-	SCM432	-	SCM432	-		-	-
		(4135H) 4137(H)	SCM435(H)	34CrMo4 34CrMoS4	SCM435(H)	34CrMo4 34CrMoS4	34CrMo4 34CrMoS4	34CrMo4 34CrMoS4	35XM
		4140(H) 4142(H)	SCM440(H)	42CrMo4 42CrMoS4	SCM440(H)	708M70 709M40 42CrMo4 42CrMoS4	42CrMo4 42CrMoS4	42CrMo4 42CrMoS4	-
		4145(H) 4147(H)	SCM445(H)	-	SCM445(H)	-	-	-	-
	Manganese steel and Manganese chromium steel	1522(H) 1534 1541(H) 1541(H) - -	SMn420(H) SMn433(H) SMn438(H) SMn443(H) SMnC420(H) SMnC443(H)	22Mn6(H) - 36Mn6(H) 42Mn6(H) - -	SMn420(H) SMn433(H) SMn438(H) SMn443(H) SMnC420(H) SMnC443(H)	150M19 150M36 150M36 - - -	- - - - -	- - - - -	- 30Г2 35Г2 35Г2 40Г2 40Г2 45Г2 - -
	Aluminum chromium molybdenum steel	-	SACM645	41CrAlMo74	SACM645	-	-	-	-

• The above Alloy steel can supplied by domestic manufacturing

Tool steel

Type	U.S.A AISI SAE	Korea KS	ISO ISO	Japan AISI SAE	Great Britain BS BS/EN	Germany DIN DIN/EN	France NF NF/EN	Russia ГОСТ
High speed steel	T1 T4 T5 T15 M2 M3-1 M3-2 M4 M 35 M36 - M7 M42	SKH2 SKH3 SKH4 SKH10 SKH51 SKH52 SKH53 SKH54 SKH55 SKH56 SKH57 SKH58 SKH59	HS18-0-1 - - - HS6-5-2 HS6-6-2 HS6-5-3 HS6-5-4 HS6-5-2-5 - HS10-4-3-10 HS2-9-2 HS2-9-1-8	SKH2 SKH3 SKH4 SKH10 SKH51 SKH52 SKH53 SKH54 SKH55 SKH56 SKH57 SKH58 SKH59	 BM 2 BM 35 	 S6/5/2 S6/5/2/5 S2/9/2 	 Z 85 WDCV 6-5-2-5 	
Alloy tool steel	F2 - - - L6 - - - - W2-9 1/ W2-8 1-2 - - - - - D3 D2 A2 - H21 H11 H13 H12 H10 H19 - L6	STS11 STS2 STS21 STS5 STS51 STS7 STS8 STS4 STS41 STS43 STS44 STS3 STS31 STS93 STS94 STS95 STD1 STD11 STD12 STD4 STD5 STD6 STD61 STD62 STD7 STD8 STF3 STF4	- - - - - - - - - 105V - - 105WCr1 - - - 210Cr12 - 100CrMoV5 - X30WCrV9-3 X37CrMoV5-1 X40CrMoV5-1 X35CrWMoV5 32CrMoV12-28 - - 55NiCrMoV7	SKS11 SKS2 SKS21 SKS5 SKS51 SKS7 SKS8 SKS4 SKS41 SKS43 SKS44 SKS3 SKS31 SKS93 SKS94 SKS95 SKD1 SKD11 SKD12 SKD4 SKD5 SKD6 SKD61 SKD62 SKD7 SKD8 SKT3 SKT4	 BD3 BA2 BH21 BH13 	 105WCr6 X210Cr12 X100CrMoV5 1 X30WCrV9 3 X40CrMoV5 1 55NiCrMoV6	 105WC13 Z200C12 Z100CDV5 Z30WCV9 Z40CDV5 55NCDV7	

• The above Alloy steel can supplied by domestic manufacturing

Tool steel

Type	U.S.A	Korea	ISO	Japan	Great Britain	Germany	France	Russia
	AISI SAE	KS	ISO	JIS	BS BS/EN	DIN DIN/EN	NF NF/EN	ГОСТ
Free cutting carbon steel	1110	SUM11	-	SUM11				
	1109	SUM12	-	SUM12				
	1212	SUM21	9S20	SUM21				
	1213	SUM22	11SMn28	SUM22	230M07	9SMn28	S250	
	12L13	SUM22L	11SMnPb28	SUM22L		9SMnPb28	S250Pb	
	1215	SUM23	-	SUM23	240M07	9SMn36	S 300	
	-	SUM23L	-	SUM23L				
	12L14	SUM24L	11SMnPb28	SUM24L		9SMnPb36	S300Pb	
	-	SUM25	12SMn35	SUM25				
	1117	SUM31	-	SUM31				
	-	SUM31L	-	SUM31L				
	-	SUM32	-	SUM32				
	1137	SUM41	-	SUM41				
	1141	SUM42	-	SUM42				
	1144	SUM43	44SMn28	SUM43				
High carbon chromiom	-	STB1	-	SUJ1				
	52100	STB2	B1	SUJ2	534A99	100Cr6	100Cr6	
	ASTM A 485 Grade 1	STB3	B2	SUJ3				
	-	STB4	-	SUJ4				
	-	STB5	-	SUJ5				

• The above Alloy steel can supplied by domestic manufacturing

Stainless steel

Type		U.S.A		Korea	ISO	Japan	Great Britain	Germany	France	Russia
		UNS	AISI SAE	KS	ISO	JIS	BS BS/EN	DIN DIN/EN	NF NF/EN	ГОСТ
Stainless steel	Austenitic	S20100	201	STS201	X12CrMnNiN17-7-5	SUS201	284S16	X12CrNi17-7	Z12CMN17-07Az	12X17ЯН4
		S20200	202	STS202	X12CrMnNiN18-9-5	SUS202	301S21	X2CrNiN18-7		07X16H6
		S30100	301	STS301	X10CrNi18-8	SUS301		X12CrNi17-7	Z11CN17-08	
				STS301L	X2CrNiN18-7	SUS301L				
				STS301J1		SUS301J1	302S25			12Х18Н9
		S30200	302	STS302		SUS302		X10CrNiS18-9	Z12CN18-09	
		S30215	302B	STS302B	X12CrNiSi18-9-3	SUS302B	303S21			
		S30300	303	STS303	X10CrNiS18-9	SUS303	303S41		Z8CNF18-09	12X18H10E
		S30323	303Se	STS303Se		SUS303Se		X5CrNi18-10		
				STS303Cu		SUS303Cu	304S31			08X18H10
		S30400	304	STS304	X5CrNi18-9 X2CrNi18-9	SUS304	304S11	X2CrNi19-11	Z7CN18-09	03X18H11
		S30403	304L	STS304L	X2CrNi19-11	SUS304L		X2CrNiN18-10	Z3CN19-11	
		S30451	304N	STS304N1	X5CrNiN18-8	SUS304N1			Z6CN19-09Az	
		S30453	304LN	STS304LN	X2CrNiN18-8	SUS304LN		X5CrNi18-12	Z3CN18-10Az	
				STS304J1		SUS304J1	305S19			06X18H11
		S30500	305	STS305	X6CrNi18-12	SUS305			Z8CN18-12	
		S30908	309S	STS309S		SUS309S	310S31	X5CrNiMo27-12-2	Z10CN24-13	10X23H18
		S31008	310S	STS310S	X6CrNi25-20	SUS310S	316S31	X5CrNiMo27-13-3	Z8CN25-20	
		S31600	316	STS316	X5CrNiMo17-12-2 X3CrNiMo17-12-3	SUS316	316S11	X2CrNiMo17-13-2 X2CrNiMo17-14-3	Z7CND17-12-02 Z6CND18-12-03	03X17H14M3
		S31603	316L	STS316L	X2CrNiMo17-12-2 X2CrNiMo17-12-3 X2CrNiMo18-14-3	SUS316L			Z3CND17-12-02 Z3CND17-12-03	
		S31651	316N	STS316N		SUS316N	317S16	X6CrNiTi18-10		
		S31700	317	STS317		SUS317	321S31	X6CrNiNb18-10		08X18H10T
		S32100	321	STS321	X6CrNiTi18-10	SUS321	347S31		Z6CNT18-10	08X18H12
		S34700	347	STS347	X6CrNiNb18-10	SUS347		X6CrAl13	Z6CNNb18-10	
		S38400	384	STS384	X3NiCr18-16	SUS384	405S17		Z6CN18-16	
	Ferritic	S40500	405	STS405	X6CrAl13	SUS405			Z8CA12	
				STS410L		SUS410L		X6Cr17	Z3C14	
		S42900	429	STS429		SUS429	430S17	X7CrS18		12Х17
		S43000	430	STS430	X6Cr17	SUS430		X6CrMo17-1	Z8C17	
		S43020	430F	STS430F	X7CrS17	SUS430F	434S17		Z8CF17	
		S43400	434	STS434	X6CrMo17-1	SUS434			Z8CD17-01	
		S44400	444	STS444	X2CrMoTi18-2	SUS444			Z3CDT18-02	
		S44627		STSXM27		SUSXM27		X10Cr13	Z1CD26-01	
	Martensitic	S40300	403	STS403		SUS403	410S21			
		S41000	410	STS410	X12Cr13	SUS410	416S21	X20Cr13	Z13C13	
		S41600	416	STS416	X12CrS13	SUS416	420S29	X20CrNi17-2	Z11CF13	20Х13
		S42000	420	STS420J1	X20Cr13	SUS420J1	431S29		Z20C13	20Х17Н2
		S43100	431	STS431	X19CrNi16-2	SUS431			Z15CN16-02	
		S44002	440A	STS440A	X70CrMo15	SUS440A		X7CrNiAl17-7	Z70C15	
	Precipitation hardening type	S17400	S17400	STS630	X5CrNiCuNb16-4	SUS630			Z6CNU17-04	09Х17Н7ІО
		S17700	S17700	STS631	X7CrNiAl17-7	SUS631			Z9CNA17-07	
				STS631J1		SUS631J1				

• The above Alloy steel can supplied by domestic manufacturing

Casting or forging steel

Type		U.S.A	Korea	ISO	Japan	Great Britain	Germany	France	Russia
		AISI SAE	KS	ISO	JIS	BS BS/EN	DIN DIN/EN	NF NF/EN	ГОСТ
Casting Iron	Grey iron casting	No 20 B No 25 B No 30 B No 35 B No 45 B No 50 B No 55 B	GC100 GC150 GC200 GC250 GC300 GC350	100,150, 200, 250, 300, 350	FC100 FC150 FC200 FC250 FC300 FC350	 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	60-40-18 65-45-12 80-55-06 100-70-03	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	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	Type 1, 2, Type D-2, D-3A Class 1, 2	FCA- FCDA-	L-, S-	FCA- FCDA-	F1, F2, S2W, S5S	GGL-, GGG-	L-, S-	

Non-ferrous alloy

Type		U.S.A	Korea	ISO	Japan	Great Britain	Germany	France	Russia
		AISI SAE	KS	ISO	JIS	BS BS/EN	DIN DIN/EN	NF NF/EN	ГОСТ
Aluminum alloy	Aluminum alloy ingots for casting	204.0	AC1B	Al-Cu4MgTi	AC1B	-	-	A-U5GT	
		-	AC2A	-	AC2A	-	-	-	
		319.0	AC2B	-	AC2B	-	-	-	
		-	AC3A	-	AC3A	LM-6	-	-	
		-	AC4A	-	AC4A	-	G(GK)-AlSi9Cu3	-	
		-	AC4B	-	AC4B	-	-	-	
		356.0	AC4C	Al-Si7Mg(Fe)	AC4C	LM-25	G(GK)-AlSi7MG	A-S7G	
		A356.0	AC4CH	Al-Si7Mg	AC4CH	-	-	-	
		355.0	AC4D	Al-Si5Cu1Mg	AC4D	LM-16	-	-	
		242.0	AC5A	Al-Cu4Ni2Mg2	AC5A	-	G(GK)-AlMg5	A-U4NT	
		514.0	AC7A	-	AC7A	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	A413.0	ALDC1	Al-Si12CuFe	ADC1	LM20	GD-AlSi10Mg	A-S13	
		A360.0	ALDC2	-	ADC3	-	GD-AlMg9	A-S9G	
		518.0	ALDC3	-	ADC5	-	-	A-G6	
		-	ALDC4	-	ADC6	-	GD-AlSi9Cu3	A-G3T	
		A380.0	ALDC7	Al-Si8Cu3Fe	ADC10	-	GD-AlSi9Cu3	-	
		A380.0	ALDC7Z	Al-Si8Cu3Fe	ADC10Z	LM24	-	-	
		383.0	ALDC8	-	ADC12	LM2	-	-	
		383.0	ALDC8Z	-	ADC12Z	LM2	-	-	
		B390.0	ALDC9	-	ADC14	LM30	EN AW-5052	-	
	Aluminum alloy extruded shapes	5052	A5052S	-	A5052S	EN AW-5052	EN AW-5454	EN AW-5052	
		5454	A5454S	-	A5454S	EN AW-5454	EN AW-5083	EN AW-5454	
		5083	A5083S	AlMg4.5Mn0.7	A5083S	EN AW-5083	EN AW-5086	EN AW-5083	
		5086	A5086S	-	A5086S	EN AW-5086	EN AW-6061	EN AW-5086	
		6061	A6061S	AlMg1SiCu	A6061S	EN AW-6061	EN AW-6063	EN AW-6061	
		6063	A6063S	AlMg0.7Si	A6063S	EN AW-6063	EN AW-7003	EN AW-6063	
		-	A7003S	-	A7003S	EN AW-7003	-	EN AW-7003	
		-	A7N01S	-	A7N01S	-	EN AW-7075	-	
		7075	A7075S	AlZn5.5MgCu	A7075S	EN AW-7075		EN AW-7075	

Heat resistant steel

Type		U.S.A		Korea	ISO	Japan	Great Britain	Germany	France	Russia
		UNS	AISI SAE	KS	ISO	JIS	BS BS/EN	DIN DIN/EN	NF NF/EN	ГОСТ
Heat resistant steel	Austenitic			STR31		SUH31	331S42		Z35CNWS14-14	
				STR35		SUH35	349S52	X53CrMnNi21-9	Z52CMN21-09-Az	
				STR36		SUH36	349S54		Z55CMN21-09-Az	
		S63008		STR37		SUH37	381S34			
		S63017		STR38		SUH38				
				STR309		SUH309	309S24	CrNi2520	Z15CN24-13	
		S30900		STR310		SUH310	310S24		Z15CN25-20	
		S31000	309	STR330		SUH330			Z12NCS35-16	
		N08330	310	STR660		SUH660			Z6NCTV25-20	
		S66286	N08330	STR661		SUH661		CrAl1205		
	Ferritic	R30155		STR21		SUH21		X6CrTi12		
				STR409	X6CrTi12	SUH409	409S19		Z6CT12	
		S40900		STR409L	X2CrTi12	SUH409L			Z3CT12	
			409	STR446		SUH446		X45CrSi9-3	Z12C25	
	Martensitic	S44600		STR1		SUH1	401S45		Z45CS9	
		S65007	446	STR3		SUH3			Z40CSD10	
				STR4		SUH4	443S65		Z80CSN20-02	
				STR11		SUH11				
				STR600		SUH600				
		S42200		STR616		SUH616				

• 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 Suructure	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·°C) cal/(g·°C)
1	2.38889×10^{-4}
4.18605×10^{3}	1

Thermal conductivity

W/(m·k)	kcal/(h·m·°C)
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

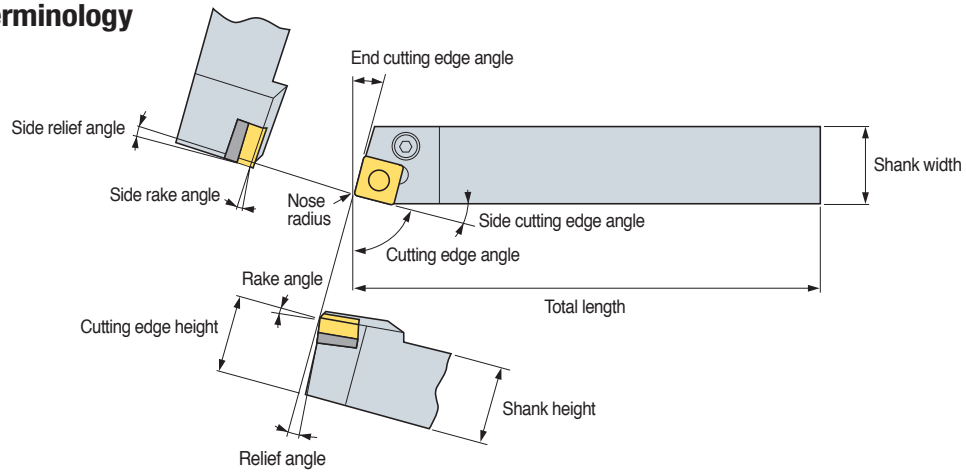
Work piece hardness calculating table

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
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

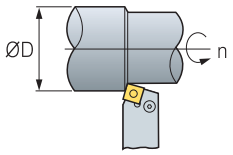


Relating angles between tool and workpiece

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



$$vc = \frac{\pi \times D \times n}{1000} \text{ (m/min)}$$

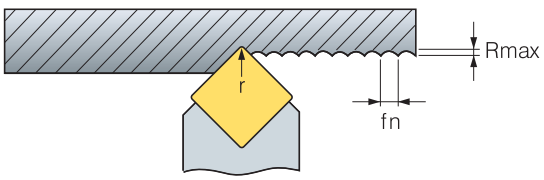
- **vc**: Cutting speed (sfm)
- **n**: Revolution per minute (min-1)
- **D**: Diameter (inch)
- **π**: Circular constant (3.14)

Feed

$$fn = \frac{vf}{n} \text{ (mm/rev)}$$

- **fn**: Feed per revolution (ipr)
- **vf** : Table feed (sfm)
- **n**: Revolution per minute (min-1)

Surface finish



• Theoretical surface roughness

$$Rmax = \frac{fn^2}{8r} 1000(\mu m)$$

• Practical surface roughness

Steel: Rmax × (1.5~3)
Cast iron: Rmax × (3~5)

- **Rmax**: Profile depth(Maximum height roughness) (μ)
- **fn**: feed (ipr)
- **r** : nose radius

Power requirement

$$P_{HP} = \frac{kc \times W \times ap \times fn}{4500 \times \eta} \qquad P_{KW} = \frac{kc \times W \times ap \times fn}{6120 \times \eta}$$

- **PKW**: Power requirement [kW]
- **PHP**: 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

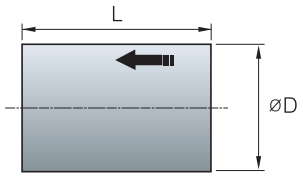
Material removal rate

$$Q \text{ (cm}^3\text{/min)} = vc \times ap \times fn$$

- **Q**: Material removal rate [㎤/min]
- **ap**: Depth of cut [sfm]
- **vc**: Cutting speed [inch]
- **fn**: Feed per revolution [ipr]

• Machining time

External face machining 1



Constant revolution per minute

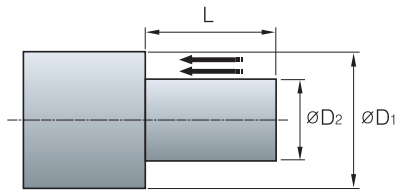
$$T = \frac{60 \times L}{fn \times n}$$

Constant cutting speed

$$T = \frac{60 \times \pi \times L \times D}{1000 \times fn \times vc}$$

- **T:** Machining time [sec]
- **L:** Cutting length [inch]
- **fn:** Feed per revolution [ipr]
- **n:** Revolution per minute [inch]
- **D:** Diameter of workpiece [inch]
- **vc:** Cutting speed [sfm]

External face machining 2



Constant revolution per minute

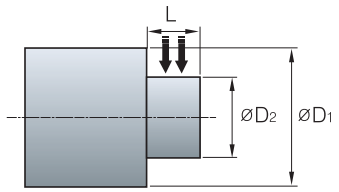
$$T = \frac{60 \times L}{fn \times n} \times N$$

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 [inch]
- **fn:** Feed per revolution [ipr]
- **n:** Revolution per minute [min]
- **D1:** Maximum diameter of workpiece [inch]
- **D2:** Minimum diameter of workpiece [inch]
- **vc:** Cutting speed [sfm]
- **N:** The number of pass = $(D_1\text{-}D_2)/d/2$

Facing



Constant revolution per minute

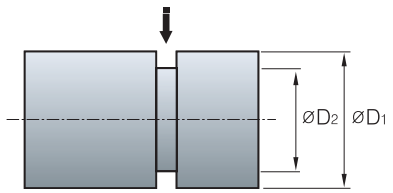
$$T = \frac{60 \times (D_1 - D_2)}{2 \times fn \times n} \times N$$

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 [inch]
- **fn:** Feed per revolution [ipr]
- **n:** Revolution per minute [min^{-1}]
- **D1:** Maximum diameter of workpiece [inch]
- **D2:** Minimum diameter of workpiece [inch]
- **vc:** Cutting speed [sfm]
- **N:** The number of pass = $(D_1\text{-}D_2)/d/2$

Grooving



Constant revolution per minute

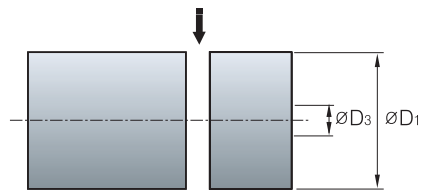
$$T = \frac{60 \times (D_1 - D_2)}{2 \times fn \times n}$$

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 [inch]
- **fn:** Feed per revolution [ipr]
- **n:** Revolution per minute [min-1]
- **D1:** Maximum diameter of workpiece [inch]
- **D2:** Minimum diameter of workpiece [inch]
- **vc:** Cutting speed [sfm]

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 [ipr]
- **n:** Revolution per minute [min-1]
- **nmax:** Maximum revolution per minute [min-1]
- **D1:** Maximum diameter of workpiece [inch]
- **D3:** Maximum diameter at maximum RPM [inch]
- **vc:** Cutting speed [sfm]

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

Cutting speed's effects

- When the cutting speed increases up to 20% in an application, the tool life respectively decreases down 50%
  Although inversely, if the cutting speed increases up to 50% the tool life decreases 20%. On the other hand if cutting speed is too low (66~131 sfm) Tool life shortens due to vibration

Feed

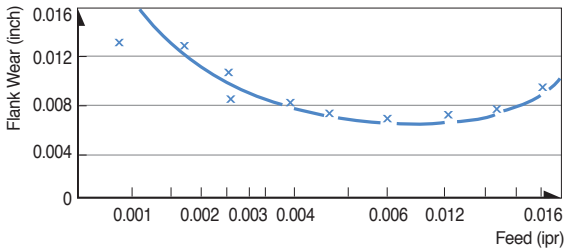
- The feed rate in turning means the progressed interval of a distance in a work piece within 1 revolution
  The feed rate in a milling application means the table feed divided by number of teeth of cutter (feed rate per tooth)

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

- **Workpiece:** SNCN431
- **Grade:** ST20
- **Cutting speed:** 656 sfm
- **Depth of cut:** 0.039 inch
- **Cutting time:** 10 min

(Relationship between feed and flank wear in steel turning)

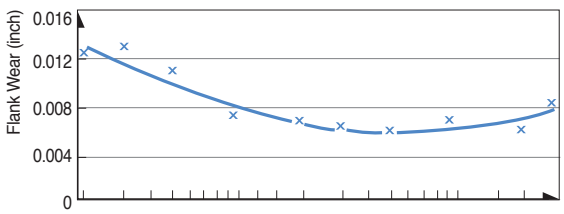


Depth of cut

- 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

- **Workpiece:** SNCN431
- **Grade:** ST20
- **Cutting speed:** 656 sfm
- **Feed:** 0.008 ipr
- **Cutting time:** 10 min

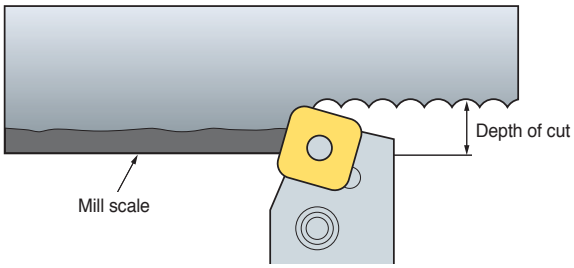
(Relationship between depth of cut and flank wear in steel turning)



The effects of cutting conditions

- The depth of cut does not have a big influence on tool life
- When the depth of cut is small the work piece 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 work piece

(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

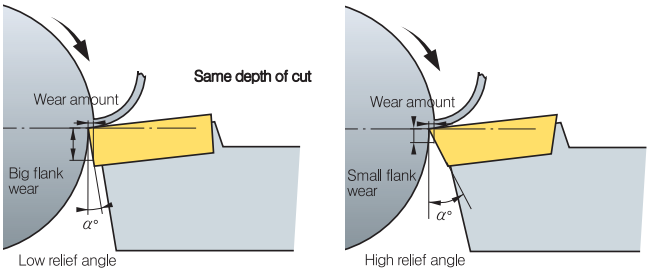
Relationship between various relief angle and flank wear

Affects

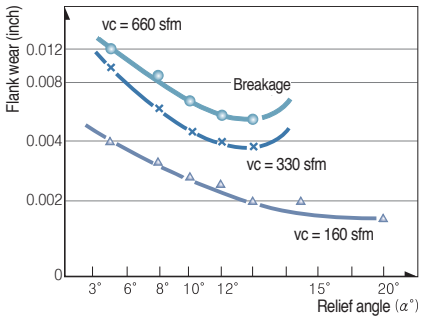
1. If relief angle is big Flank wear decreases
2. If relief angle is big Cutting edge strength weakens
3. If relief angle is small Chattering occurs

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:** 4320(H)
- **Grade:** P20
- **Depth of cut:** 0.04 inch
- **Feed:** 0.013 ipr
- **Cutting time:** 20 min



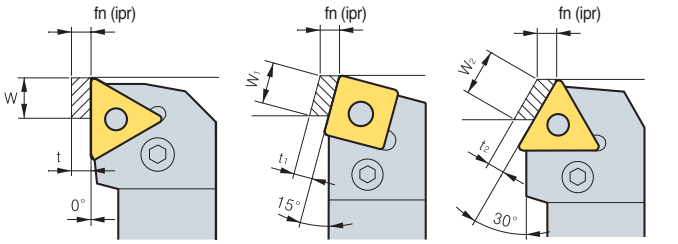
Side cutting edge angle

- 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

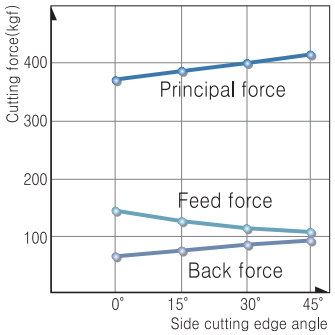
Affects

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

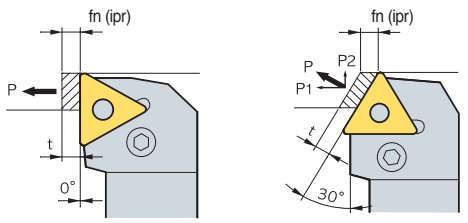
Selection system

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:** 4140
- **Grade:** TNGA433
- **vc:** 330 sfm
- **ap:** 0.16 inch
- **fn:** 0.018 ipr



▣ Side cutting edge angle and cutting load

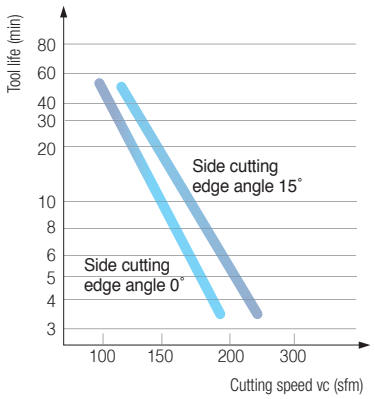


① "Force P is loaded." ② "Force P is scattered to P1, P2."

As approach angle gets bigger Back force gets bigger and feed force gets smaller

▣ Side cutting edge angle and tool life

- **Workpiece:** 4130
- **Grade:** P20
- **Depth of cut:** 0.12 inch
- **Feed:** 0.008 ipr



▣ 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

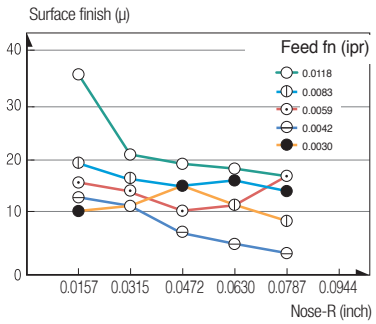
Affects

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

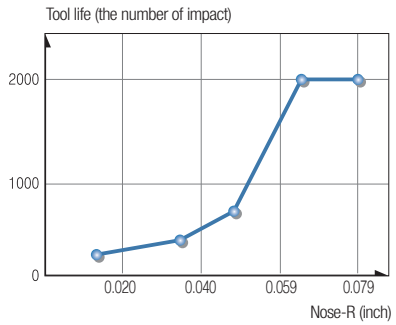
- Nose-R affects not only surface roughness but strength of cutting edge
- In general, It's desirable that Nose-R is 2~3 times bigger than feed

Nose R and surface finish



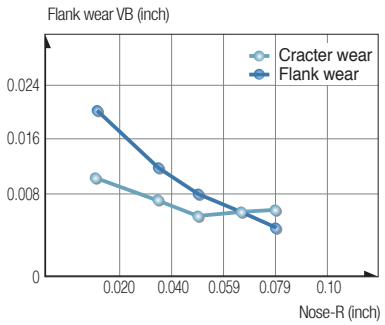
- **Workpiece:** 4340, HB200
- **Grade:** P20
- **vc:** 400 sfm
- **ap:** 0.020 inch

Nose R and tool life



- **Workpiece:** 4140, HB280
- **Grade:** P10
- **vc:** 330 sfm
- **ap:** 0.02 inch
- **fn:** 0.012 ipr

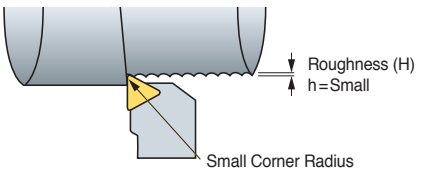
Nose R and wear of tool



- **Workpiece:** 4340, HB200
- **Grade:** P10
- **vc:** 460 sfm
- **ap:** 0.08 inch
- **fn:** 0.008 ipr
- **T:** 10 min

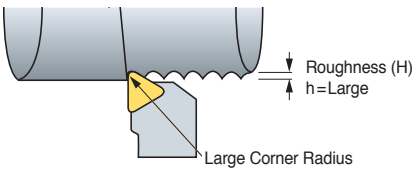
Affects

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

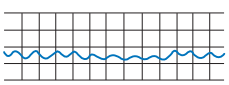
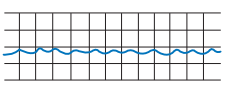
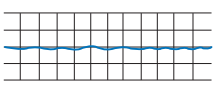
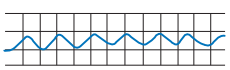
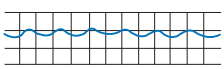
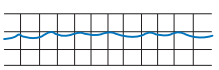
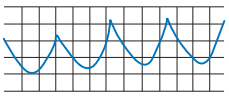
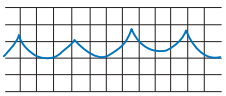
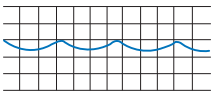


Selection system

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)

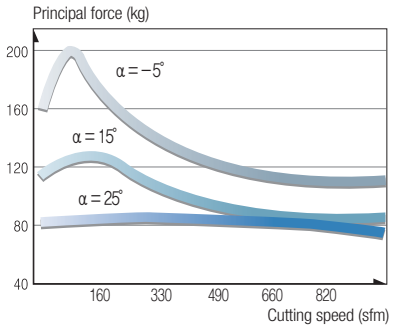
Rake angle has big influence on cutting force,
chip flow and tool life

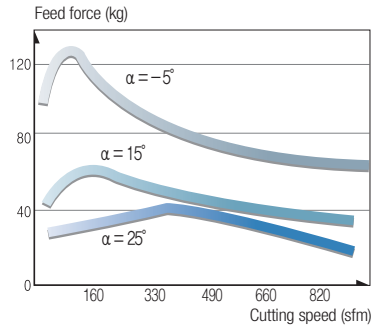
Affects

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

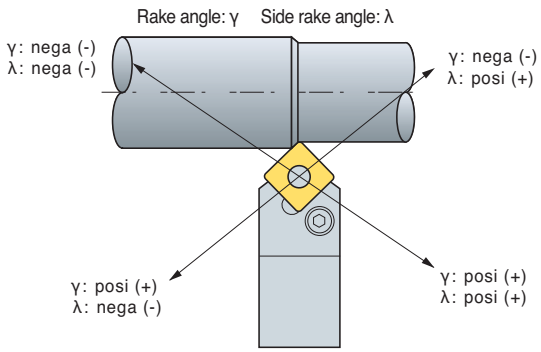
Selection system

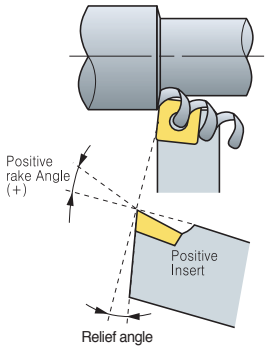
1. For hard workpiece/For applications that need strong cutting edge such as interrupted and machining mill scale
   - Low rake angle
2. For soft workpiece/Easy to cut material/
   When the rigidity of machine power and workpiece is low
   - High rake angle

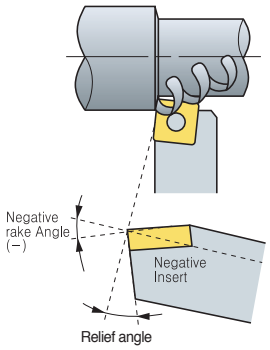




▣ Rake angle and the direction of chip flow







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

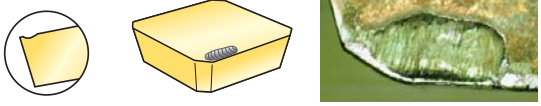
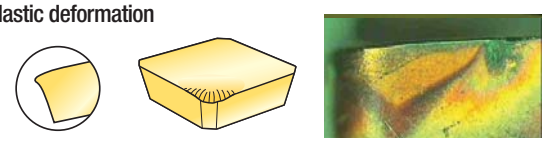
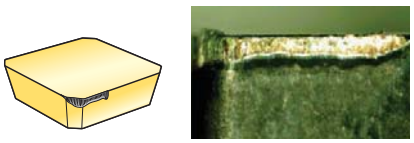
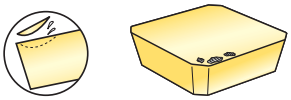
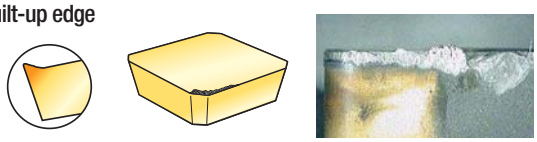
A Basic factors

- 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	0.008 inch	Precision light cutting , Finishing in nonferrous alloy
	0.016 inch	Machining special steel
	0.028 inch	General cutting in cast iron, steel etc
	0.040~0.050 inch	General cutting in cast iron, steel etc
Depth of crater wear	In general 0.002~0.004 inch	

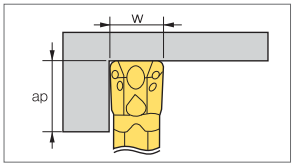
• ISO (B8688)

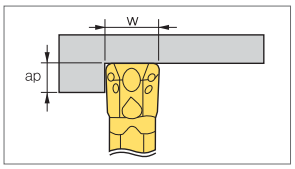
Tool life criterion	Application
Complete breakage	Machining special steel
Flank wear width VB = 0.012 inch	Even flank wear of cemented carbides, Ceramic tool
VBmax = 0.020 inch	Uneven flank wear
Crater wear width KT = 0.06+0.3 fmm (f: mm/ipr)	Cemented carbides tool
Criterion by surface roughness 1, 1.6, 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

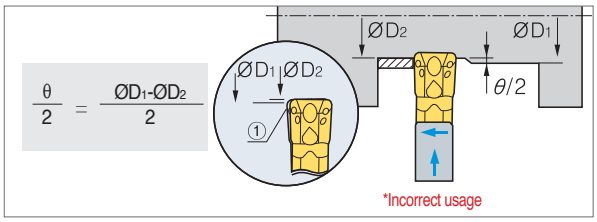
- KGT/MGT tools are designed to incur side cutting force from its clearance angle; this feature gives you advantage over a standard ISO insert
- The standard MGT insert also provides a "wiper" effect to improve surface roughness

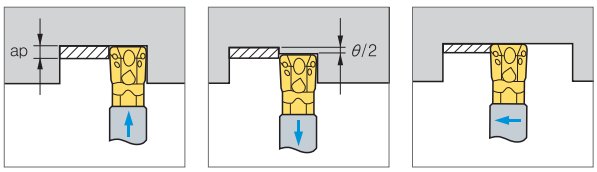
Notice for finishing (offset need final quality)

- 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

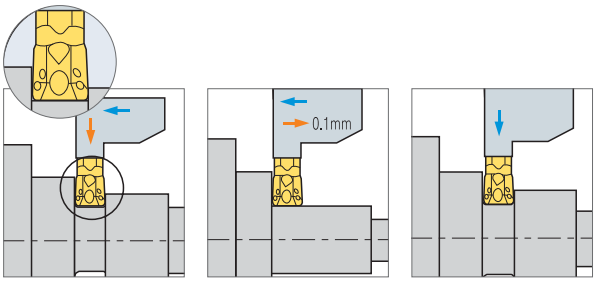
1) Groove to the desired diameter
2) Pull the tool backs a total distance of θ/2
3) Continue the external turning operation to desired diameter



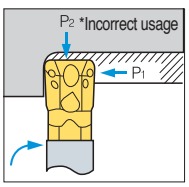


Notice for MGT turning applications

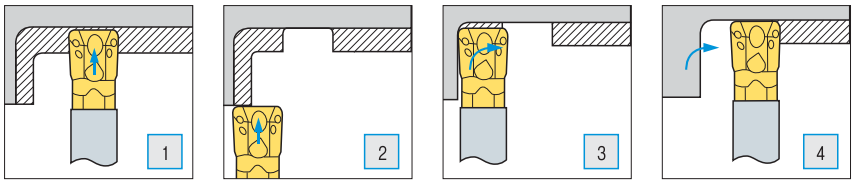
- KGT/MGT tools are available for grooving and turning as a multifunctional tool. When using a M.G.T tool keep in mind that the tool imitates a standard ISO turning application. The application uses a positive clearance angle where a tool's cutting force and depth of cut are all applied in an application. 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



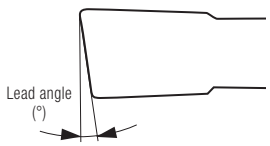
Stabilize your tool pressure. KGT/MGT tools create a cutting load when machining a workpiece with a radius larger than the corner radius of insert (shown in the picture). The unequal cutting force might initially break the insert or holder



Parting off & grooving

Insert

Lead angle applications



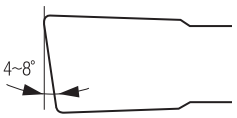
- 4°- Pipe (Tubing and hollow bar)
- 6°- Pipe and solid bar
- 8°- Solid bar
- 15°- Small diameter Solid bar

Lead angle 0°(Neutral)



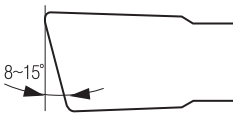
- Parting off on solid bar type
- Occurring the center stub when parting off
- Prevent to be deflected workpiece by cutting direction during parting off
- Available for use deep parting depth

Lead angle 4°~ 8°



- Reduce the center stub when parting off on solid bar type
- Reduce the burr when parting off on tubing or hollow bar type

Lead angle 8°~15°



- 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(Lead angle), KGMR/L□□□ - □□ - PS/PT(Lead angle)

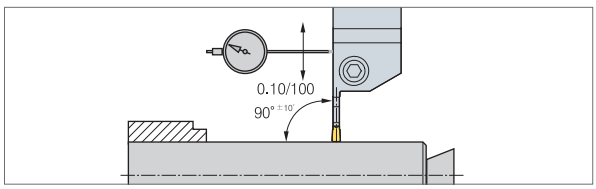
Selection of Insert



- 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

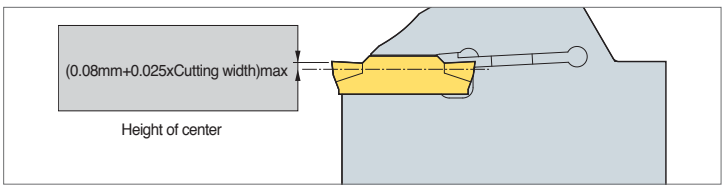
Setting of holders

- 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

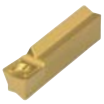
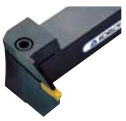
- Economical tools utilizing a double ended cutting edge system
- Newly designed chip breakers that help ensure chip control for various face grooving applications
- Korloy face grooving tools provide various holder line-ups to give you more options and benefits

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

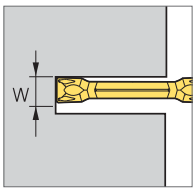
For deep grooving

- 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

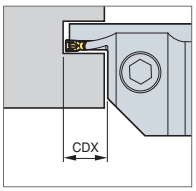
Selection system of holder

- Follow these 3 simple directions to choose the right insert and holder for your application



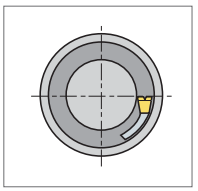
Insert and holder

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



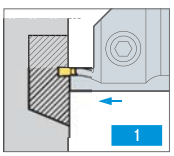
Machining Dia.

Choose the largest size of shank depending on the initial grooving diameter required in the application

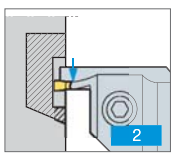
Notice: To minimize chattering, use the shortest holder according to CDX.

Optimization of face grooving

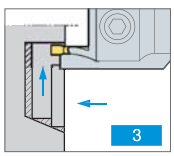
Roughing: When face grooving decreases the cutting speed 40% below a normal face turning operation



• Grooving at the initial diameter

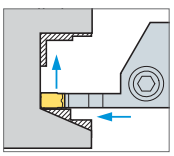


• Face turning away from center

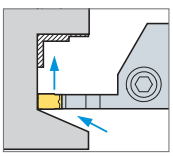


• Face turning to center

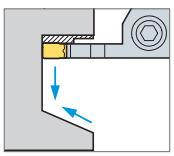
Finishing: When face grooving decreases the cutting speed 40% below a normal face turning operation



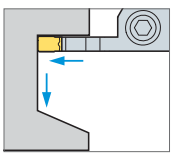
• Grooving at the initial diameter to the final cutting depth and face turning away from center



• Radius operation toward final dimension at the bottom



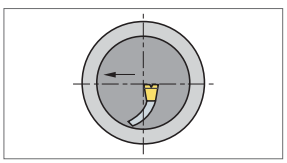
• Face turning to center



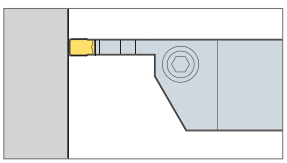
• Grooving for the right dimension you want

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

The comparison of grade for turning

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 AH710 GH110 AH120 AH330 AH630 GH330		VP10RT VP10MF MS6015	PR1705				VC907
		P10	PC8110		TS2000 CP200	WPP10S	KCS10 KCU10 KC5010	IC807 IC907				PR930			JP5003	VC927
		P15	PC8115★	GC1525												
		P20	PC9030		TS2500				AH725 AH6225 SH725 GH730 SH730		VP15TF MS7025					
		P25	PC5300		CP500	WSM21	KCU25 KC5025	IC908		TT9080 TT9020		PR1225 PR1725 PR1535	AC1030U	IP2000	JC5015	VC905
		P35	PC3035★						AH6235 AH645		VP20RT			IP3000		
		P40	PC5400		CP600			IC830		TT8080 TT8020						
	M	M10	PC8105★	GC1105 GC1115 GC1205 GC1210		WSM01		IC806	AH110 GH110 AH120 AH630 GH330		VP05RT MP9005 MP9015			IP050S	JC5003	
		M15	PC8110		TS2000 CP200		KCS10 KCS10B KCU10 KC5010	IC807 IC907		TT5080		PR930		IP100S		VC929
		M20	PC8115★			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

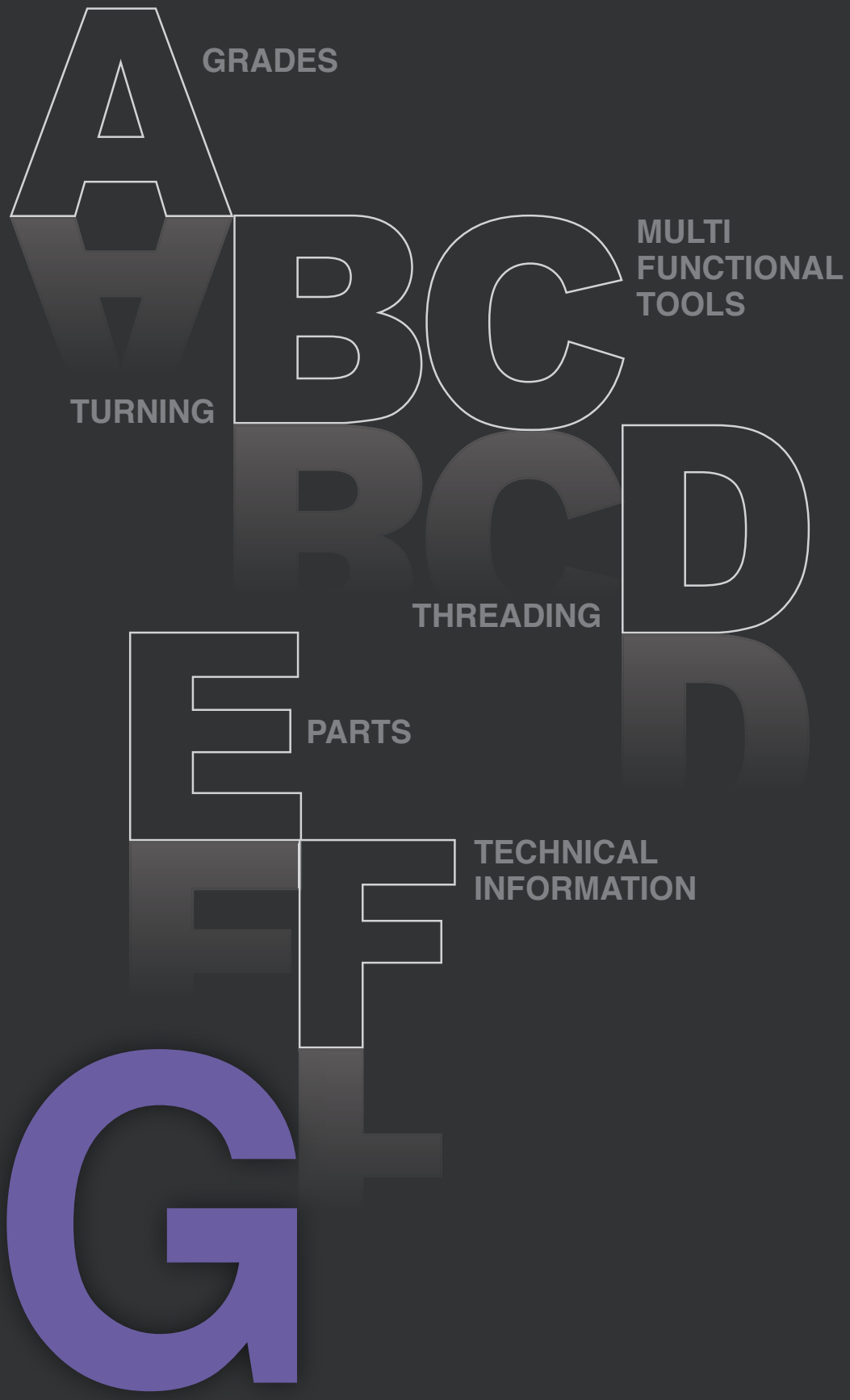
★ : PVD Coating cermet ★ : New Grade

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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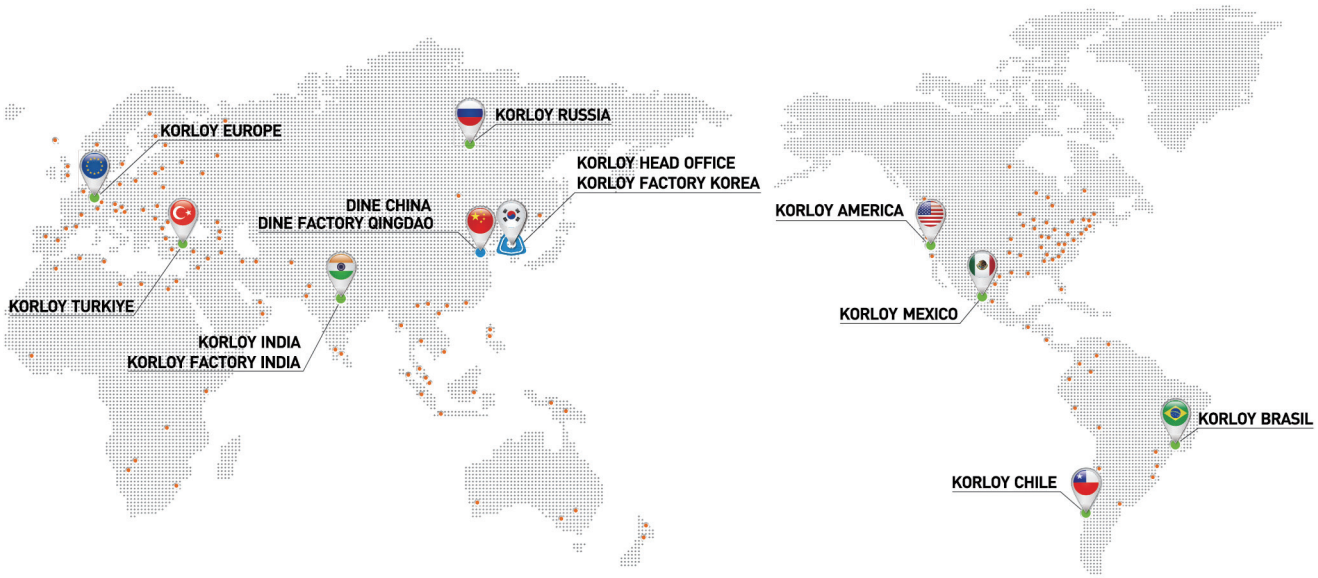
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