since 1966 ~ 2006
40th Anniversary of KORLOY
We Create Your Tomorrow!

2006
E-2

GRADES
TURNING
MILLING
DRILLING
OTHERS

KORLOY®
CUTTING TOOLS

KORLOY Inc.

A memorial emblem celebrating 40th establishment anniversary

since 1966~2006

40th Anniversary of KORLOY

WE CREATE YOUR TOMORROW!

Meaning

Holy star

Stars represent the company's frontier role in the cemented carbide tool industry.
The company has led the carbide tool industry and has always set a guiding post before any other companies. Also, stars show the intention that **KORLOY** faithfully follows the founder's philosophy and continues to make efforts to lead the industry.

Dragon

Traditionally dragon is a symbol of mystery and power. It represents **KORLOY's** long-standing history as a carbide cutting tool manufacturer. And it signifies company's powerful growing future as a global top manufacturer.

Shape

Shining stars cluster in the dark sky represent the company's guiding role in the carbide cutting tool industry.
Number "4" is a symbol for faithful and sincere corporate culture, and number "0" is a symbol of dragon's energetic movement which is also the image of dynamic **KORLOY** that will become a global top company.

Color

Blue color comes from the color of company's logo. The color represents the company's strong will toward the future.

Contents

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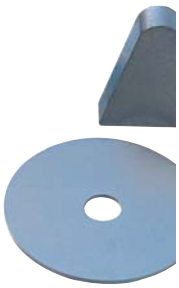
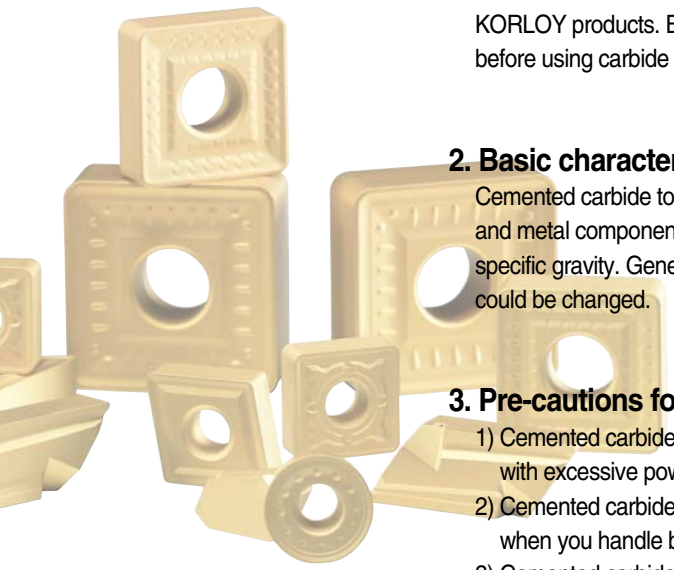


Others

SAFETY GUIDE OF CARBIDE PRODUCTS

KORLOY Inc. continuously trying to develop safe and good quality products.
Please be aware of safety guidance first written below, prior to use KORLOY Inc. products.



1. PL (Product Liability)

In accordance with the PL (Product Liability) law, we have attached label of WARNING on the case of KORLOY products. But there's no warning on the surface of tools. Please read this safety guidance before using carbide tools and educate the safety guidance to engineers working at the field.

2. Basic characteristics of CEMENTED CARBIDE tools

Cemented carbide tools are made of carbides, nitrides, carbonitrides, oxides of W, Ti, Al, Si, Ta, B etc and metal component like Co,Ni, Cr, 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. Pre-cautions for CEMENTED CARBIDE tools

1) Cemented carbides are extremely hard but brittle at the same time. Impactive shock and clamping with excessive power could cause fracture and break of tool.
2) Cemented carbides have large sepcific gravity, thus they require special attention as heavy material when you handle big size or large quantity.
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 un-desirable conditions like extremly high or low temperature.
4) There are several cemented carbide products having sharp cutting edges. Be careful not to handle the tools with bare hand which may cause cut or injury. Especially when put out the tools from the case, do not touch the cutting edgies and be careful not to drop it.
5) Storing carbide tools at corrosive atmosphere may cause erosion which cause poor toughness
6) Please refer to catalouge, safety guidance prior to handle the tools
7) Do not absue tools at in-appropriate condition

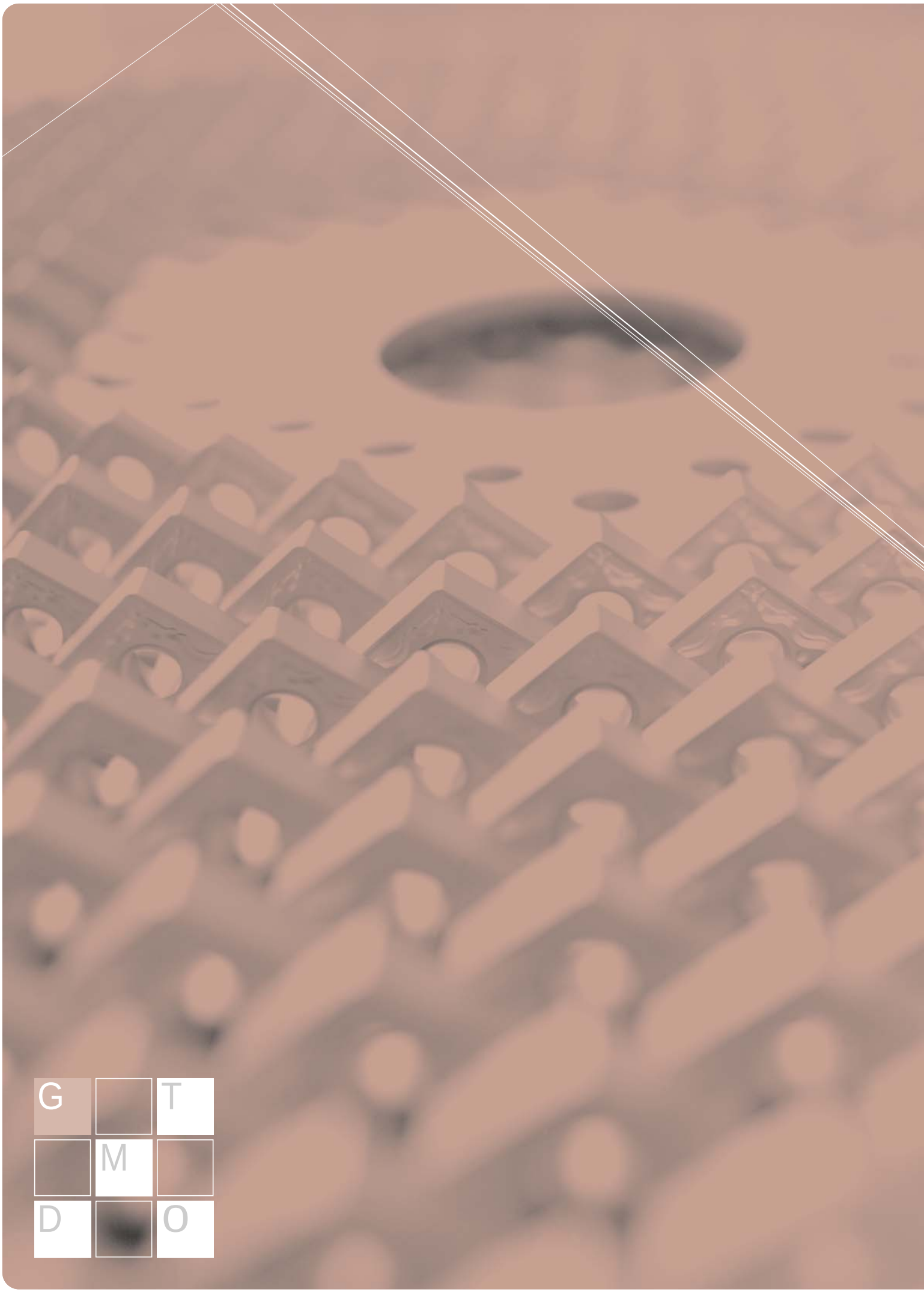
4. Pre-cautions for machining (grinding, welding, EDM) of CEMENTED CARBIDE tools

1) Surface condition can affect the toughness of tool, so it is recommended to use diamond grinding wheel.
2) Grinding of cemented carbide cause mist and dust. It contains harmful composition like Co, thus it is recommended to use mask, mist collection and other protective facilities. If the dust gets in your skin and eye, washing out with running water immediately.
3) In case of grinding with coolant, coolant contains harmful metal components which cause environmental problem. Treat the coolant very well to get rid of trouble.
4) Check crack first after re-grinding carbide tool.
5) Marking with laser and electric pen may cause crack on carbide tool. The crack can cause shortened tool life.
6) EDMing of carbide may cause residual crack on carbide tool, so if necessary, remove the crack with grinding processing
7) Brazing of carbide tools at the extremly high or low temperature compare with melting point of brazing materials may cause loosening or break
8) Using a oil base coolant may cause fire due to over-heat or frame, thus prepare to prevent fire.

* It is a general guidance of handling of cemented carbide tools written above.
* For more information, please contact us.
* KORLOY does not take any responsible for any accident that caused by in-appropriated changes of the products or abusing of tools.

5. METALCUTTING SAFETY

	DANGEROUS FACTOR	SAFETY COUNTERPLAN
CUTTING TOOLS	· Sharp cutting edge of cutting tools may cut your bare-hand.	· Take gloves when pull out the insert from the case or mount it on the machine.
	· In-appropriate condition or usage may cause flagmentation and expel of part of tools that may cause injury.	· Use glasses or safety cover for your safety. · Use the tools within the recommended range. · Please refer to catalogue and safety guide first.
	· Severe load on tool and premature wear of cutting edge may bring excessive cutting force on tool, and it may cause fracture of tools that may cause injure.	· Use glasses or safety cover for your safety. · Change the tool at proper time.
	· Chips evacuated during the cutting are so hot and sharp that may cause a burn and a cut.	· Use glasses or safety cover for your safety. · Stop the machine first and take safety glove and use hook to get rid of chips.
	· If you touch the surface of workpiece immediately after the cutting operation, it may cause a burn.	· Use gloves or safety cover for your safety.
	· Be aware of a fire and a explosion may brought by the hot chips and spark generated during the cutting operation.	· Do not use at the place where having explosive materials. · Prepare for fire extinguishments.
	· In case of high RPM machining, vibration and chattering may happen due to the balancing trouble of machine.	· Use glasses or safety cover for your safety. · Check it first that if there's any chattering, vibration or strange noise prior to your main cutting operation.
	· Touching of the burr remained on the workpiece with bare-hand may cause a cut.	· Do not touch the burr with bare-hand. · Use gloves or safety cover for your safety.
	· Loose clamping of workpiece may cause the fracture of tool and injure of body.	· Clamp the workpiece tightly.
	· Tools are operated to right-hand direction normally. Left-hand direction operation can cause fracture of tool and injure of body.	· Do not use left-hand direction without notice · Check the package of product to check the availability of left-hand operation.
INDEXABLE TOOLS	· Loose clamping of inserts and parts may cause flying out from the tool during the cutting, and it may cause injure.	· Chcek the clamping of inserts and parts prior to machining, and do use original parts only.
	· Over loaded clamping of inserts by using of zig (such as pipe) may cause dangerous drop out of parts and inserts by fracture.	· Do not use zig inappropriately.
	· In case of high speed machining, parts and inserts can be dropped out by centrifugal force.	· Use within recommended condition. · Use glasses or safety cover for your safety.
ROTATING TOOLS	· Since cutter has sharp cutting edges, bare-hand touch may cause a cut.	· Use gloves or safety cover for your safety.
	· It is dangerous to take glove with rotating machine. · It is also dangerous to be contacted body or clothes with rotating parts.	· Do not wear gloves when you work with rotating machine. · Keep your body and clothes away from rotating machine.
	· Vibration generated by balancing troble may cause a fracture and flying out of tool which may cause injure.	· RPM should be controled within recommended condition. · Check the balance of rotating part periodically.
	· In case of drilling, core bottom part chip of drilled region can be flying out with high speed.	· Use gloves or safety cover for your safety.
	· The edges of small diameter drill are sharp and easy to break.	· Use gloves or profer safety cover for your safety.
BRAZED TOOLS	· Fragmentation and flying of brazed carbide tip may cause injury.	· Check the brazed tip before using. · Do not use at high temperature cutting condition.
ETC	· There's a possibility of breaking of carbide tip after several brazing.	· Do not use brazing carbide tip that brazed several times.
	· Abusing may cause fragmentation of machine and tool that very dangerous.	· Stick to safety regulation.


G
T
M
D
O

Grades

Classification of KORLOY Grades

KORLOY

Coated Carbide

Turning

P	NC3010	NC3020	NC3030	NC500H
M	NC9020	PC8010	NC3030	PC9030
K	NC305K	NC6010	NC315K	
S	PC8010			

Milling

P	NCM325	PC3535	NCM335	PC3545	
M	NCM325	PC8520	NCM335	PC9530	PC3545
K	NCM310K	NCM320K	PC6510	PC215K	
S	PC8520				

Drill, Endmill

Coated	PC205F	PC210F	PC215F	PC220F	PC225F
Carbide	FG2	FS1	FCC	FA1	

Cermet

Turning	CN100	CT10	CN20	CN200
Milling	CN20	CN30		
Coated Cermet	CC105	CC115	CC125	

C.B.N

KB320	KB330	KB350	KB360	

P.C.D

DP90	DP150	DP200	

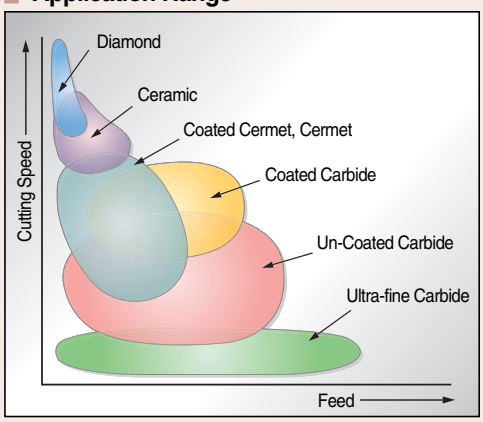
Diamond Coated Carbide

Turning		ND1000
Milling		ND2000

DLC

Turning		PD1000
Milling		PD2000
Endmill		PD3000

Application Range



Un-Coated Carbide

For Cutting Tool

P	ST05	ST10	ST15	ST20	MA2	ST30A ST30N	ST40	ST46 ST45
M	U10	U20	ST30A	U40				
K	H02	H01	H05	H10	G10			
Z	FS1	FCC	FA1					

For Wear Resisting Tool

V	D1	D2	D3	G5	G6	K20G

For Anti-Corrosion Alloy

IN10	IN20	IN40	

For Mining Tool

E	GR10	GR20	GR30	GR35	GR40	GR50

Selection of KORLOY Grades

Turning

Work piece	P						M				K				S			H		
Cutting Condition	High Speed		Medium Speed		Low Speed	Intermittent & Heavy Duty	High Speed		Medium Speed	Low Speed	High Speed		Medium Speed	Low Speed	High Speed	Medium Speed	Low Speed	High Speed	Medium Speed	Low Speed
ISO	P01	P10	P20	P30	P40	P50	M10	M20	M30	M40	K01	K10	K20	K30	S01	S10	S20	H01	H10	H20
Coated Carbide	NC3010		NC3020				NC9020				NC305K									
			NC3030					NC3030			NC6010									
			NC500H						PC9030			NC315K				PC8010				
			PC230																	
Cermet	CN100											CN100								
		CT10																		
			CN20																	
		CN200																		
C.B.N											KB350							KB320		
											KB360								KB330	
Un-Coated Carbide	ST05																			
		ST10						U10				H02								
		ST15							U20			H01								
		ST20											H05							
			MA2											H10						
			ST30N	ST40E						U40				G10						
					ST46															
					ST45															

Milling

Coated Carbide			NCM325				NCM325				NCM310K									
				NCM335				NCM335					NCM320K				PC8520			
			PC3535						PC9530			PC6510								
				PC3545						PC3545				PC215K						
Cermet		CN20																		
			CN30																	
C.B.N											KB360								KB350	
Un-Coated Carbide			ST20									H01								
				MA2					U10				H05							
					ST30A					U20			H10							
						ST30N					U40			G10						
						ST40														

Drilling & Endmilling

Coated Carbide			PC205F				PC205F				PC205F				PC205F			PC205F		
				PC210F				PC210F								PC210F			PC210F	
					PC215F								PC215F							
						PC220F				PC220F										PC220F
							PC225F			PC225F				PC225F						
Un-Coated Ultra-fine Carbide			FG2																	FG2
			FS1							FS1										
							FCC													
						FA1								FA1						

Special Features of KORLOY Coated Carbides

Special Features

KORLOY has opened a new era of the coated carbide insert through accumulated experiences and know-hows spanning over 40 years.
KORLOY NEO-Coating Series that has been developed by latest CVD coating technology, has the following features.

1) Highly effective cutting can be acquired. (Higher cutting speed can be acquired at the high feed rate range of un-coated carbide.)
2) Wide application range due to 2~3 times superior wear resistance than un-carbide ISO P10 and toughness as strong as carbide P20~P30.
3) Superior performance at wet cutting condition due to excellent thermal crack resistance.
4) Superior resistance for plastic deformation and built-up-edge

KORLOY PVD Coating Series (PC3000 Series) has been developed by employ PVD TiAlN film, has the following features.

1) It has excellent heat & wear-resistance due to the refractory hard film coated by KORLOY PVD technology.
2) Due to the PVD coating technology, strong toughness of the un-coated carbide substrate has been maintained.
3) It can cover wide range of applications like, from medium to finishing, even to roughing & intermittent cutting of the steel and the stainless steel.

Features of Coated Film Layer

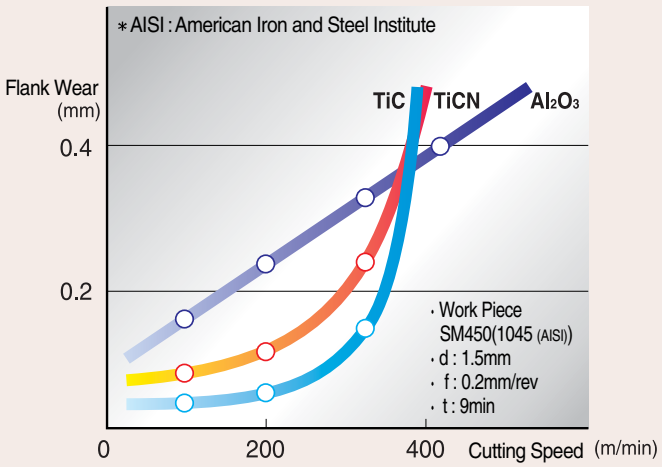
- Alumina layer (Al_2O_3)
  1) It has Superior wear-resistance at high-speed cutting.
  2) Due to the thermal stability at the high temperature, high hardness of Alumina- film can be maintained at the high cutting speed.

- Titanium-Carbide layer (TiC)
  1) Excellent wear resistance at medium to low cutting speed.
  2) Excellent Bonding strength with carbide substrate.

Wear Resistance

- Titanium Aluminum Nitride layer (TiAlN)
  1) Excellent heat resistance and wear resistance of film ensure ideal cutting performance at high speed operation.
  2) It shows exceptional performance at roughing and intermittent cutting of the steel and the stainless steel, as well as general cutting.

- Titanium-Nitride layer (TiN)
  1) Excellent anti-oxidation quality at higher temperature.
  2) Excellent performance at milling operation due to the superior thermal-shock resistance.

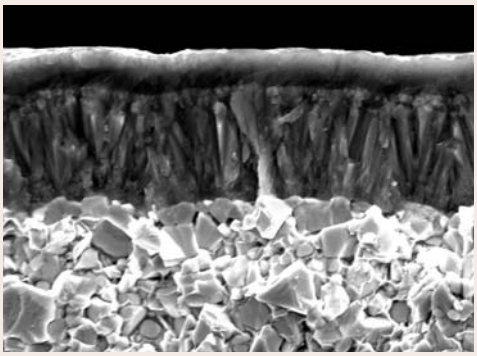


KORLOY CVD Coating Grades

Special Features

1) Due to the special crystalline structure of film, superior wear-resistance and toughness have been acquired.
2) Multi-layer coating, having strong bonding strength, has been employed by new coating technology.

Al_2O_3 (Enhance wear Resistance, Prevent Built-up-edge Intermediate layer for better adhesion)
TiC (Enhance wear Resistance)
TiCN (Enhancing wear-resistance and Toughness by adopting New-Coating Tech.)



Cross-sectional view of CVD coating film

Guide for Grade Selection

Turning

Workpiece	Cutting condition	1st Recommend Grade	Recommended cutting speed(m/min)	ISO	Application Range
Steel	Continuous cutting	NC3010	280(200 ~ 350)	P01	NC3010
				P10	
		NC3020	220(180 ~ 320)	P20	NC3020
	Intermittent cutting		180(150 ~ 300)	P25	NC3030
		NC3030	150(120 ~ 200)	P30	NC500H
	Heavy cutting	NC500H	100(50 ~ 100)	P40	
Cast Iron	Continuous cutting	NC305K	270(150 ~ 300)	K05	NC305K
		NC6010	250(150 ~ 270)	K10	NC6010
	Intermittent cutting	NC315K	200(150 ~ 250)	K20	NC315K
Stainless steel	Continuous cutting	NC9020	170(180 ~ 220)	M01	
				M10	NC9020
	Intermittent cutting	NC3030	100(50 ~ 120)	M20	NC3030
				M30	

Milling

Workpiece	1st Recommend Grade	Recommended cutting speed(m/min)	ISO	Application Range
Steel	NCM325	250(150 ~ 300)	P20 M20	NCM325
			P30 M30	
	NCM335	200(150 ~ 250)	P40 M40	NCM335
Cast Iron	NCM310K	250(150 ~ 300)	K10	NCM310K
			K20	
	NCM320K	200(150 ~ 250)	K30	NCM320K

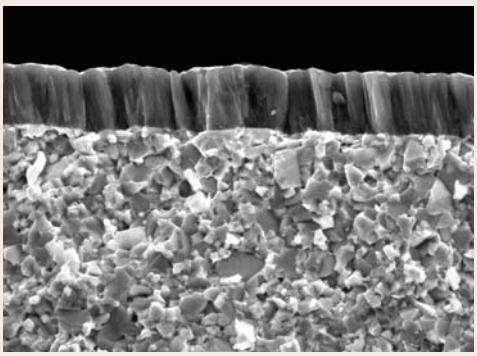
KORLOY CVD coating grades

CVD Coated Grades	ISO	Special Features	Use
NC3010	P05 ~ P15	•For high speed machining of steel •Optimal for high speed machining of steel due to the combination of high hardness substrate and CVD Al_2O_3 film •MT-TiCN + TiC + Al_2O_3	Turning
NC3020	P15 ~ P30	•For medium cutting of steel •Excellent combination of tough substrate and alumina-coating having superior chipping resistance provide stable and consistent cutting performance. •MT-TiCN + TiC + Al_2O_3	Turning
NC3030	P25 ~ P35 M15 ~ M25	•For medium to roughing, intermittent cutting of steel and stainless steel. •Combination of toughest substrate and alumina-coating having superior chipping resistance provide wide coverage. •MT-TiCN + TiC + Al_2O_3 + TiN	Turning
NC500H	P25 ~ P40	•For heavy duty cutting of steel •Combination of substrate having superior plastic deformation resistance and alumina-coating having superior chipping resistance provide excellent quality on heavy-duty cutting. •MT-TiCN + TiC + Al_2O_3 + TiN	Turning
NC305K	K01 ~ K10	•For high speed cutting of cast iron. •Conbination of hard substrate and thick CVD Al2O3 coating provide excellent wear resistance. •MT-TiCN + Al_2O_3 + TiN	Turning
NC6010	K05 ~ K15	•For general, high efficient cutting of cast iron(grey & ductile). •Conbination of tough substrate and thick CVD Al2O3 coating provide wide coverage of cast iron machining. •MT-TiCN + Al_2O_3	Turning
NC315K	K10 ~ K20	•For effective cutting of cast iron at intermittent cutting. •Conbination of soft substrate and thick CVD Al2O3 coating provide stable cutting with out breakage. •MT-TiCN + Al_2O_3	Turning
NC9020	M10 ~ M20	•For high speed cutting of stainless steel. •Matching of special substrate having excellent thermal stability and CVD coating having superior chipping resistance provide longer tool life. •MT-TiCN + Al_2O_3 + TiN	Turning
NCM325	P20 ~ P30 M20 ~ M30	•For high speed milling of steel and stainless steel •Optimized grade for steel & stainless steel milling by employing proper substrate (optimal hardness & toughness combination) and hard coating. •MT-TiCN + Al_2O_3 + TiN	Milling
NCM335	P30 ~ P40 M30 ~ M40	•For intermittent and rough milling of steel and stainless steel •Toughest substrate with hard coating provide stable cutting even at severe intermittent cutting. •MT-TiCN + Al_2O_3 + TiN	Milling
NCM310K	K05 ~ K15	•For high speed milling of cast iron •Hard substrate and fine grain size Al2O3 coating provide excellent wear resistance at high speed cutting. •MT-TiCN + Al_2O_3	Milling
NCM320K	K15 ~ K25	•For general milling of cast iron •Tough substrate and fine grain size Al2O3 coating provide wide coverage of milling of cast iron for both dry and wet cutting. •MT-TiCN + Al_2O_3	Milling

KORLOY PVD Coating Grades

Special Features

1) PVD coating technique has inherent advantage like superior chipping resistance of coated film itself and maintain the toughness of carbide substrate. Thus it is possible to increase the tool life approximately 2~4times longer than carbide cutting tools.
2) PVD coating can make sharp cutting edge without blunting of sharp substrate.
3) Ti-base coating film can provide excellent surface finish and high accuracy machining due to the low affinity of Ti film with Workpiece.



Cross-sectional view of PVD coating film

Special Features of KORLOY PVD Series

1) Using TiAlN film which is optimal for high speed dry cutting case.
2) Toughness of TiAlN has been enhanced than conventional brittle TiAlN.
3) Due to the TiN at outer most layer, friction has been reduced and surface has been improved.
4) Easy to recognize of wear amount on cutting edge.

Guide of Grade Selection

Turning

Workpiece	Coated film	1st Recommend Grade	Recommended cutting speed(m/min)	ISO	Application Range
Steel	TiAlN/ TiN	PC3535	180(120 ~ 230)	P10	
				P20	PC3535
				P30	
				P40	
Cast Iron	TiAlN/ TiN	PC6510	200(150 ~ 250)	K01	PC6510
				K10	
				K20	
Stainless steel	TiAlN	PC9030	130(50 ~ 180)	M20	
				M30	PC9030
				M40	
Hard to cut material	TiAlN/TiN	PC8010	50(30 ~ 80)	S10	

Milling

Workpiece	Coated film	1st Recommend Grade	Recommended cutting speed(m/min)	ISO	Application Range
Steel	TiAlN/ TiN	PC3535	200(150 ~ 250)	P10	
				P20	PC3535
		PC3545	120(100 ~ 150)	P30	PC3545
				P40	
Cast Iron	TiAlN/TiN	PC6510	200(150 ~ 250)	K01	PC6510
	TiAlN	PC215K	170(120 ~ 210)	K10	PC215K
				K20	
Stainless steel	TiAlN	PC9530	130(50 ~ 200)	M20	
				M30	PC9530
				M40	
Hard to cut material	TiAlN/TiN	PC8520	50(30 ~ 60)	S20	

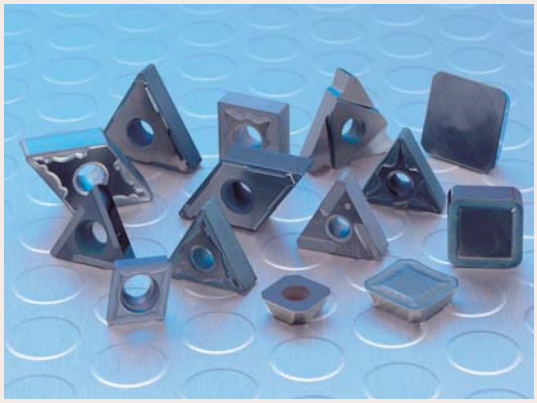
KORLOY PVD coating grades

PVD Coated Grades	ISO	Special Features	Use
PC3535	P20 ~ P35	•For milling & turning of steel •Comprehensive grade can cover wide application range due to special substrate that equipped with optimal wear resistance and toughness and PVD TiAlN coating film. •K-Gold coating	Turning Milling
PC3545	P30 ~ P50	•For medium & roughing of steel •Tough exclusive substrate with Nano-TiAlN coating provide excellent wear resistance and toughness at the same time. •K-Gold coating	Milling
PC8010	S10 ~ S20 M01 ~ M10	•For high speed machining of hard to cut material and stainless steel. Hard film guarantees pro-longed tool life at hard to cut material cutting. •K-Gold coating	Turning
PC8520	S20 ~ S30	•For medium & roughing of hard to cut material and stainless steel. •Tough substrate with hard coating provide stable tool life at intermittent cutting. •K-Gold coating	Milling
PC6510	K01 ~ K15	•High speed cast iron milling grade having superior wear resistance. Available for machining of aluminum as well. •K-Gold coating	Milling
PC215K	K15 ~ K30	•Optimal grade for milling of cast iron at medium to low speed cutting. Available for machining of aluminum as well. •TiAlN coating	Milling
PC9030	M20 ~ M35	•For medium to roughing, intermittent turning of stainless steel •Toughest sub-micron substrate with PVD TiAlN coating guarantee superior property of prevent build-up-edge, thus extended and consistent tool life can be acquired. •TiAlN coating	Turning
PC9530	M20 ~ M35	•For medium to rough milling of stainless steel •Toughest sub-micron substrate provide excellent cutting performance at high feed machining. •TiAlN coating	Milling

KORLOY Cermet Grades

Special Features

KORLOY cermet is a kind of carbonitride type cermet which has ultra fine micro structure by adding TiN, TiCN powders as additives. It has superior quality than conventional cermet when it comes to wear resistance and thermal shock resistance as well as toughness.



Special Advantages

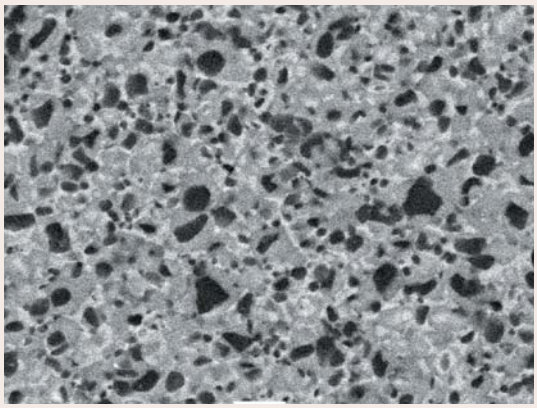
Cermet, using TiCN as main component, is harder than cemented carbide and has lower affinity with ferrous Workpiece at high temperature , thus cermet has special advantage as below,

● Comparing with Un-Coated Carbide

1. Since cermet has superior wear resistance and cratering resistance, high-speed cutting is available.
2. Since cermet has low affinity with ferrous work piece, high-speed cutting is available.
3. Low affinity with work piece provides excellent surface finish.
4. Excellent tool life and cutting performance can be acquired at high speed finishing.

● Comparing with Coated Carbide

1. Suitable for shallow depth and light cutting(finishing).
2. Better wear resistance and surface finish can be acquired at the same cutting condition.



Microstructure of Cermet

Guide of Grade Selection

Turning

Workpiece	Cutting condition	1st Recommend Grade	Recommended cutting speed(m/min)	ISO	Application Range
Steel	Light cutting	CN100	230(150 ~ 300)	P01	CN100, CT10, CN20, CN200
	Light to medium cutting	CT10	200(150 ~ 250)	P10	
		CN20 CN200	180(130 ~ 250)	P20	

Milling

Workpiece	Cutting condition	1st Recommend Grade	Recommended cutting speed(m/min)	ISO	Application Range
Steel	Light cutting	CN20	230(150 ~ 300)	P10	CN20, CN30
				P20	
	Light to medium cutting	CN30	200(150 ~ 250)	P30	

KORLOY Cermet Grades

KORLOY Cermet Grades	ISO	Special Features	Use
CN100	P05 ~ P10 K05 ~K15	•High speed cutting at medium to finishing of steel and cast iron •High efficient cermet equipped with thermal shock resistance and wear resistance.	Turning
CT10	P05 ~ P15	•For turning of steel. •Hard cermet having superior wear resistance.	Milling Turning
CN20	P10 ~ P20	•For turning and milling of steel. •Comprehensive grade having optimal wear resistance and toughness at the same time.	Milling Turning
CN200	P10 ~ P20	•Comprehensive grade can cover from finishing to roughing of steel. •Special cermet developed with functionally gradiented material technology.	Turning
CN30	P20 ~ P30	•Exclusive for steel milling •Toughest cermet having enough toughness	Milling

KORLOY Cermet Coating Grades

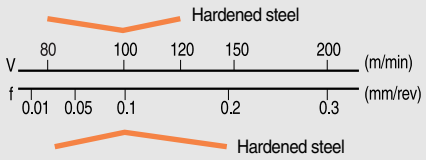
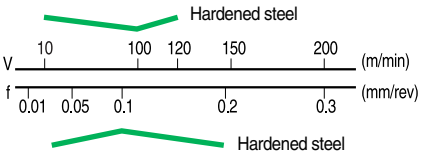
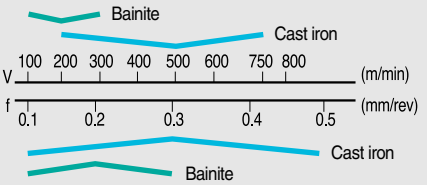
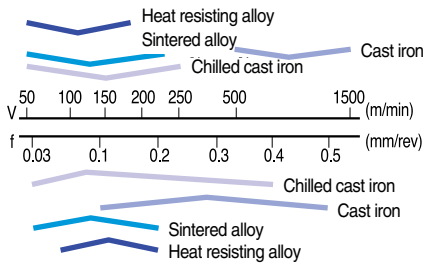
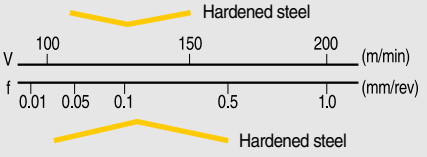
KORLOY Cermet Coating Grades	ISO	Special Features	Use
CC105	P01 ~ P10 K01 ~ K10	•PVD coated cermet •For high speed light cutting of steel and cast iron. •Optimal for precise boring.	Turning Boring
CC115	P10 ~ P20 K10 ~ K20	•PVD coated cermet •For medium to high speed light cutting of steel and cast iron. •Wet and dry machining is available.	Turning

KORLOY C.B.N Grades

Special Features

CBN is a cutting tool material that manufactured under ultra high pressure and temperature by sintering of mixture of cubic boron nitride and special ceramic binder material.
CBN is suitable for machining of high speed precise machining of hardened steels and cast irons. Machining with CBN can replace conventional grinding process, effectively.

KORLOY CBN grades

Cutting Condition	Special Features	Work piece
	**KB320** •Suitable for general cutting. (Intermittent and continuous cutting) •Superior toughness. •Comprehensive grade having optimal wear resistance and toughness.	**Hardened steel** HRC : 40~65
	**KB330** •Suitable for intermittent cutting.	**Hardened steel** HRC : 40~65
	**KB350** •Comprehensive grade for high speed finishing of casr iron •Comprehensive grade for machining of cast iron.	**Cast iron** HB : 180~250
	**KB360** •Suitable for high speed milling of cast iron, hagh hardness roll and sintered alloy.	**Cast iron, Sintered alloy** **Heat resisting alloy** **Carbide roll**
	**KB420** • Unsurpassed tool life at high speed cut. • High productivity.	**Hardened steel** HRC : 40~65

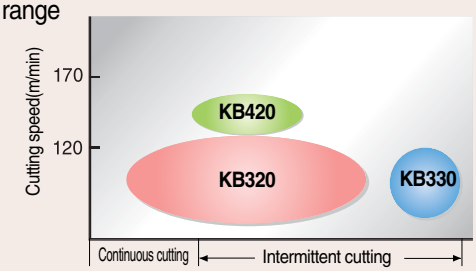
Cutting condition

Hardened steel

● Grade

Grade	Application range	Hardness(Hv)	TRS (kgf/㎟)
KB320	Comprehensive grade for hardened steel	3,200 ~ 3,400	100 ~ 110
KB330	Severe intermittent cutting	3,300 ~ 3,500	110 ~ 120
KB420	For very bad intermittent operations	3,300 ~ 3,500	110 ~ 120

● Application range



Cast iron

● Grade

Grade	Application range	Hardness(Hv)	TRS (kgf/㎟)
KB350	Cast iron, Ductile cast iron	3,300 ~ 3,500	100 ~ 110
KB360	Milling of cast iron	3,900 ~ 4,200	95 ~ 110

● Application range

Work piece	Hardness (HB)	Part name	Cutting speed(m/min) 100 200 400 600 800
GC250 Ferrite &Pearlite	180	Oil Pump Housing Brake Disc	KB350 KB360
GC300 Pearlite	⇩	Engine Block Scroll Compressor	
Alloy Iron Pearlite	250	Brake Drum Liner	
GCD400 Ferrite & Pearlite	150	Differential Case Brake body Knuckle	KB350
GCD700 Bainite	⇩ 300		

Sintered alloy (Fe-base)

● Grade

Grade	Application range	Hardness(Hv)	TRS(kgf/㎟)
KB360	Machining of sintered alloy, roll, heat resistant alloy	3,900 ~ 4,200	95 ~ 110

● Application range

	Valve seat of gasoline engine	Valve seat of diesel engine
Flange cutting	KB360 KB320	KB360 KB330
Traverse cutting	KB360 KB350	KB360 KB350
Hardness of work piece	low Hv300 high	low Hv300 high

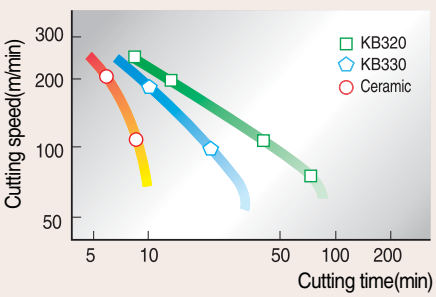
Heat resistant alloy

● Grade

Grade	Application range	Hardness(Hv)	TRS(kgf/㎟)
KB360	Ni-based alloy Co-based alloy	3,900 ~ 4,200	95 ~ 110

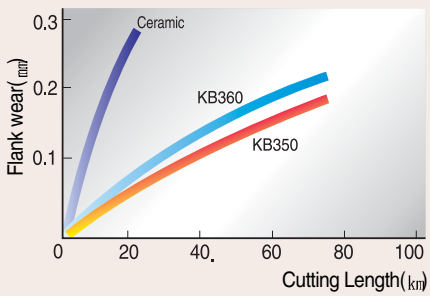
Cutting test examples

● Heat treated hardened steel



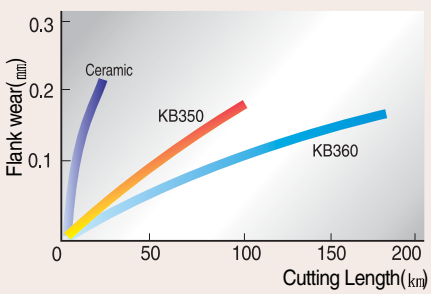
- Work piece : SUJ2(HRC62~64)
- Insert : SNGN120412
- Cutting condition : V = 75, 100, 200, 250m/min
  f = 0.1㎜/rev
  d = 0.2㎜

● Gray cast iron (GC300)



- Work piece : Gray cast iron (GC300)
- Cutting condition : V = 500m/min
  f = 0.30㎜/rev
  d = 0.15㎜, Wet cut

● Gray cast iron (GC250)



- Work piece :Gray cast iron (GC250)
- Cutting condition : V = 700m/min
  f = 0.25㎜/rev
  d = 0.3㎜ Wet cut

KORLOY P.C.D Grades

Special Features

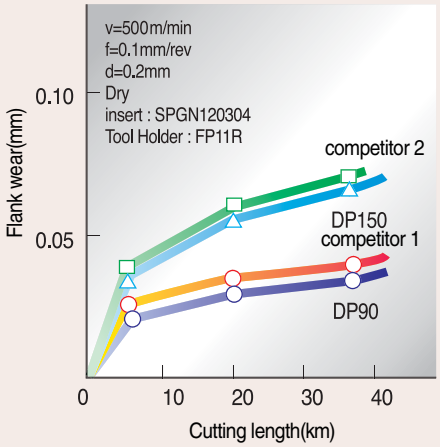
KORLOY PCD products are manufactured by using high quality PCD tip which is made under ultra high temperature and pressure. The PCD tip has been welded on the qualified carbide insert of KORLOY.
Since KORLOY supplies high quality PCD products for turning, milling and endmill, it is possible to meet the needs of variety of application.

KORLOY P.C.D Grades

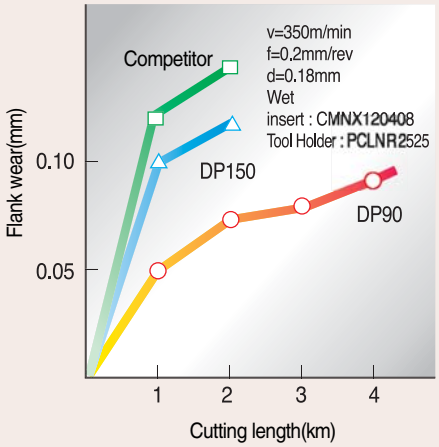
Grade	Special Features	Application range	Grain size (㎛)	Hardness (Hv)	TRS (kgf/㎟)
DP90	•Coarse diamond grain has been used to get excellent wear resistance enough to machine cemented-carbide, high Si aluminum alloy.	Cemented carbide Ceramic roughing High Si aluminum Rock, Stone	50	10,000 ~ 12,000	110
DP150	•By use of fine diamond grain having good bonding property, it is suitable for machining of non-ferrous metal, graphite.	High Si aluminum Cupper, Bronze Rubber, Wood, Carbon	5	10,000 ~ 12,000	200
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 cutting of aluminum	0.5	8,000 ~ 10,000	220

Cutting Test Result

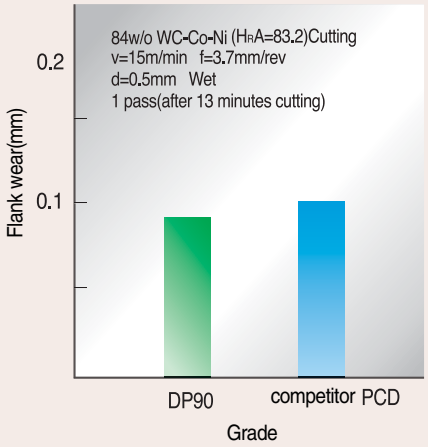
Continuous cutting of alloy



Intermittent cutting of alloy



Cutting of W alloy



KORLOY Uncoated Carbide Grades

Special Features

Due to the advanced sintering technology that KORLOY use, KORLOY uncoated carbide grades have even and fine alloy structure which is necessary to get superior quality as a cutting tool.
KORLOY uncoated carbide grades have exceptional wear resistance and toughness at the same time, due to the special design of WC, Co, TaC and TiC, etc.

Advantage

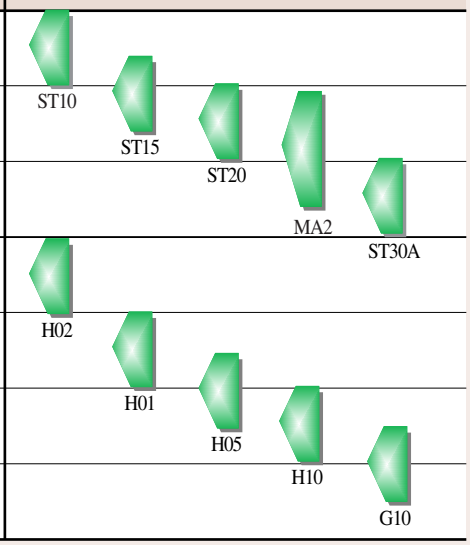
1) Variety of grades as per ISO classification (P,M,K)
2) Excellent quality at machining with coolant, due to the great thermal crack resistance of carbide.
3) Due to the special design of carbides, it has fine micro structure and low affinity with work piece.
4) It has excellent toughness, in general.

ISO	Composition	Characteristics	Work piece
P	WC-TiC-TaC-Co	Excellent thermal shock resistance and plastic deformation resistance.	Carbon steel, Alloy steel, Stainless steela
M	WC-TiC-TaC-Co	Comprehensive grades have excellent thermal shock resistance and superior	Carbon steel, Alloy steel, Stainless steela, Cast steel
K	WC-Co	Hard and strong grades	Cast iron, Non ferrous metal, Plastic, Acryl etc

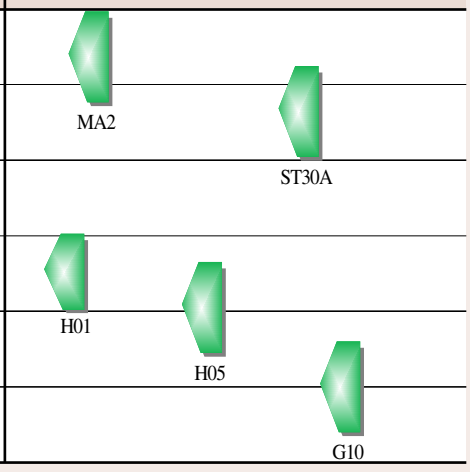
ISO	Grade	Hardness (H_RA)	TRS (kgf/mm^2)	Young's modulus ($10^3 kgf/mm^2$)	Thermal expansion coefficient ($10^{-6}/℃$)	Thermal conductivity ($cal/cm \cdot Sec \cdot ℃$)
P	ST05	92.7	140	-	-	-
	ST10	92.1	175	48	6.2	25
	ST20	91.9	200	56	5.2	45
	ST30A	91.3	230	53	5.2	-
M	U10	92.4	170	47	-	-
	U2	91.1	210	-	-	88
	ST30A	91.3	230	53	5.2	-
	U40	89.2	270	-	-	-
K	H02	93.2	185	61	4.4	105
	H01	92.9	210	66	4.7	109
	G10	90.9	250	63	-	105

KORLOY Uncoated Carbide Grades

For Turning

Work piece	1st Recommend Grade	Recommended cutting speed(m/min)	ISO	Application Range
Steel	ST10	150(100 ~ 200)	P10	
	ST15	140(90 ~ 190)	P20	
	ST20	130(70 ~ 180)		
	MA2, ST30A	130(70 ~ 180)	P30	
Cast steel	H02	150(100 ~ 200)	K01	
	H01, H05	140(100 ~ 200)	K10	
	H10, G10	130(90 ~ 190)		
Aluminum alloy	H01	500(300 ~ 800)	K20	
Cupper, Bronze	H01	200(150 ~ 300)	K30	

For Milling

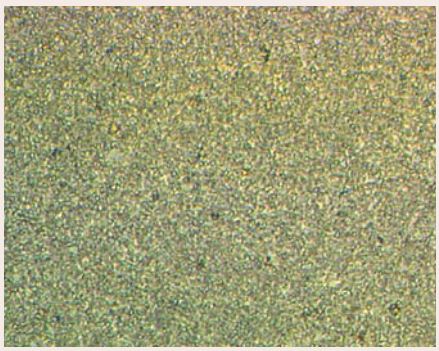
Work piece	1st Recommend Grade	Recommended cutting speed(m/min)	ISO	Application Range
Steel	MA2	140(70 ~ 180)	P20	
	ST30A	130(70 ~ 180)	P30	
Cast steel	H01, H05	150(100 ~ 200)	K01	
	H10, G10	140(90 ~ 190)	K10	
Aluminum alloy	H01	500(300 ~ 800)	K20	
Cupper, Bronze	H01	200(150 ~ 300)	K30	

KORLOY Ultra-Fine Grades "F-Series"

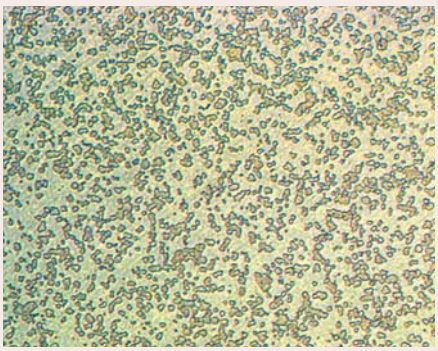
Special Features

In general, when we compare the cemented-carbide with the high speed steel, the cemented-carbide has high hardness but more brittle than the high speed steel.
To cover the de-merit of the cemented-carbide, KORLOY has developed ultra fine cemented carbide grade "F-Series"(WC size under 0.5㎛). It has got the better quality on toughness and plastic deformation resistance against cemented carbide having coarse grain size.
Main coverage for ultra fine cemented carbide is end-milling of hard to cut material like high temp alloy.

● Micro Structure of "F-Series"



FA1 Since it is a grade focused on toughness, it is possible to make endmill, side cutter, gun drill, reamer etc. It has superior quality on toughness and anti build-up-edge property.

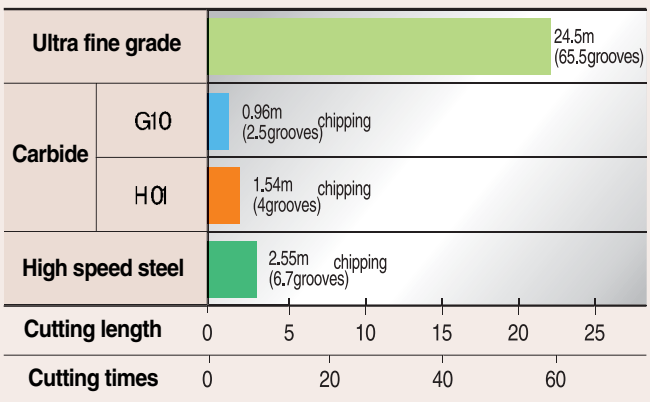


FCC It has been modified from FA1 to increase thermal shock resistance, thus FCC has proper properties to machine stainless steel and hard to machine materials at medium to high speed milling.

FS1 As a ultra fine grade having high hardness and superior toughness at the same time, it is the 1st recommended grade of KORLOY to make sharp cutting edge to cut hard to cut material.

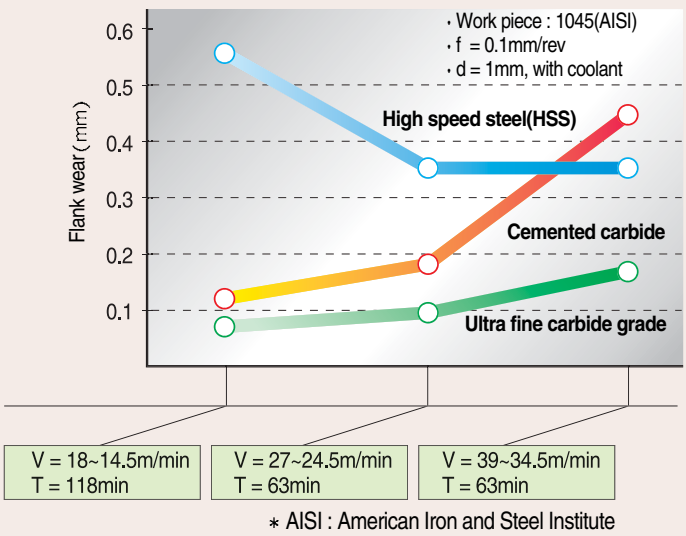
Cutting Performance

● Chipping Resistance



- Work piece : 4140(AISI)
- Tool : Solid carbide endmill (⌀8mm, 2Flutes)
- V = 26.5m/min, f = 0.0285mm/tooth
- F = 60mm/min, with coolant

● Wear resistance



∗ AISI : American Iron and Steel Institute

High speed steel, cemented carbide, ultra fine carbide grade

● Special Features

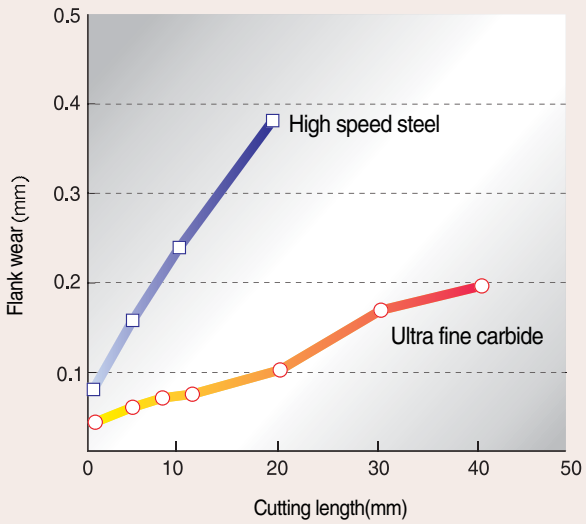
Grade	Characteristics			ISO classification	Wear resistance	Toughness
	Specific Gravity	Hardness (HRA)	TRS (kgf/㎟)			
FS1	14.4	92.4	250	Z10	⊙	○
FCC	12.6	91.5	250	Z10	⊙	○
FA1	14.1	91.2	300	Z20	○	⊙
FG2	14.3	92.7	350	Z10	⊙	○

Guide of Grade Selection

Work piece	1st Recommended Grade	Application tool
Non-ferrous metal Steel, Cast iron	FS1, FG2 FCC, FA1	Drill, End-mill

● Cutting condition

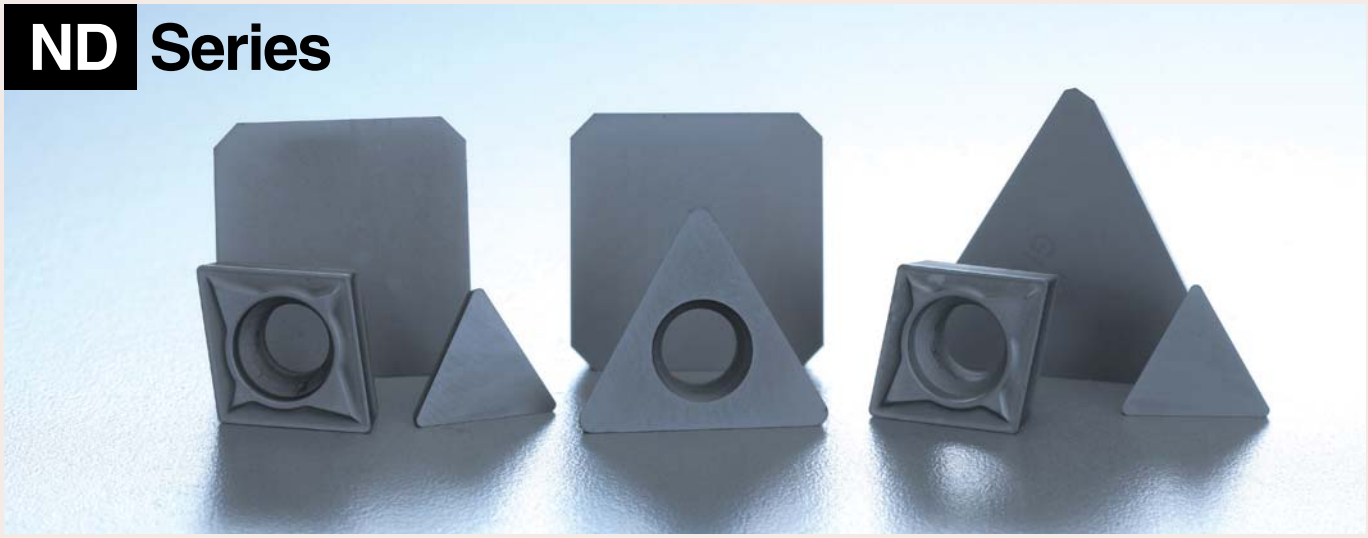
- Work piece : SM55C(HRC20)
- Tool: Ø10mm, 2 Flutes(SSE2100)
- Helix angle : 30°
- Cutting speed = 35m/mim
- RPM = 1,100r.p.m
- Feed= 0.1mm/tooth
- Axial depth = 12mm
- Radial depth = 1mm
- Downward cutting, Without coolant



KORLOY Diamond Coating Grades

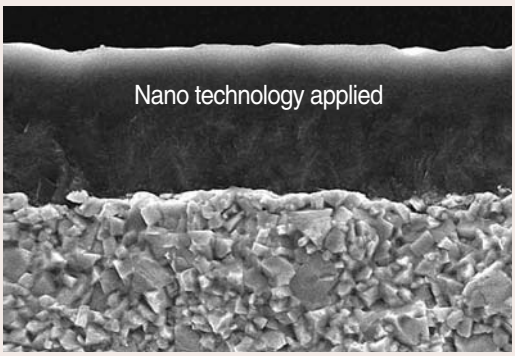
Diamond coated cutting tool equipped with Nano particle film for cutting of non-ferrous material.

ND Series



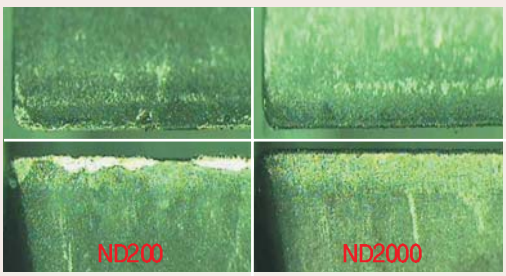
Special Features

1) Tool life has been prolonged upto 150% due to the Nano technology.
2) Thanks to the nano size(~100nm) diamond particle, friction co-efficient has been decreased. It makes better friction property that can lead good chip flow.
3) Due to the minimized build-up-edge, machined surface become better.



Crosectional view of ND1000 / ND2000

Cutting Performance of ND2000



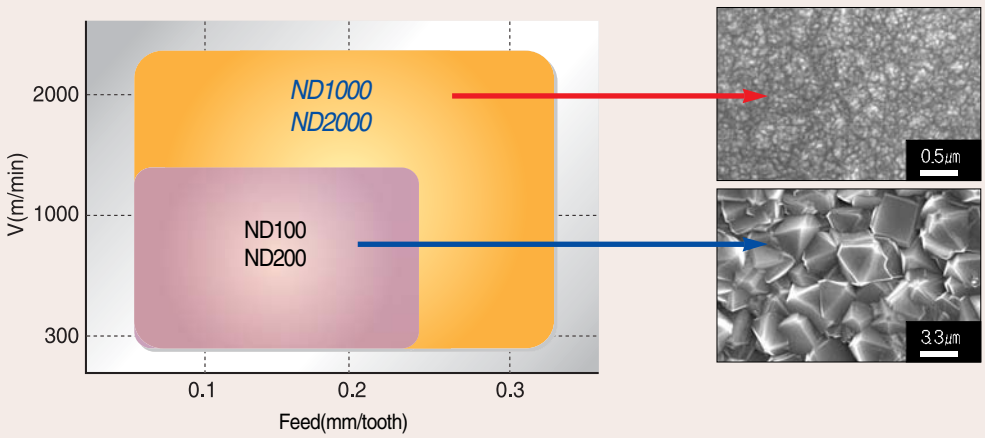
(APKT1604PDFR-MA, AMS3063S)

- Cutting legnth : 10m
- Work piece : AC8A
- Speed(V) : 950m/min
- Depth of cut(d) : Ad=Rd=5mm
- Feed(fz) : 0.15mm/tooth
- Coolant : Dry

Available Products

- TA Chip breaker
- AK Chip breaker
- Insert for Aluminum machining

Application range & Surface morphology of ND1000 / ND2000

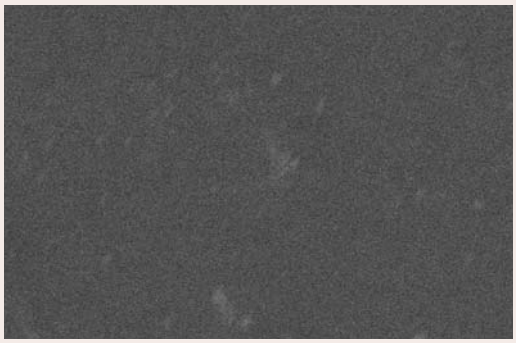


■ Leader of DLC coated cutting tool for aluminum machining

PD Series

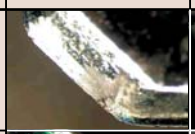
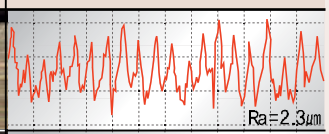
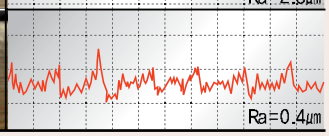
Special Features

1) Hardness of film is upto Hv 7000, tool life is 3~6times of the cemented carbide cutting tool.
2) Good surface finish can be acquired due to the lubrication effect that led from low friction co-efficient (<0.1)
3) Suitable for non-ferrous material machining.
4) Application - For aluminum, carbon, plastic, wood
   - Insert, drill, end-mill

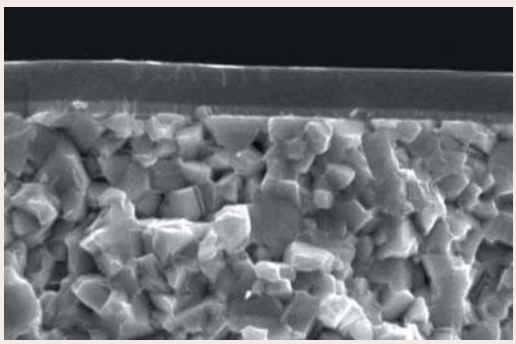


DLC coating film

Cutting performance (build up edge / surface finish, FMACM3100R)

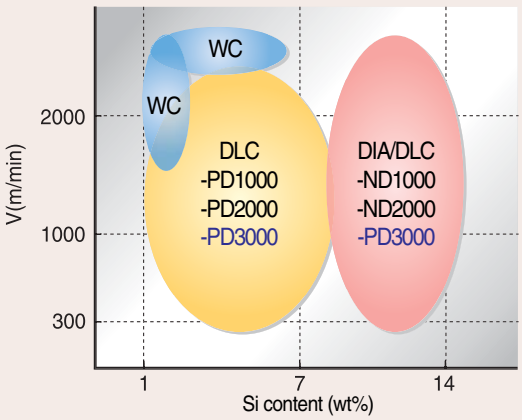
Grade	Top face	Major cutting edge	Surface finish of work piece
Carbide			 Ra=2.3㎛
DLC			 Ra=0.4㎛

• Work piece : AC2B • Cutting length : 12m • Cutting condition : V=1500m/min, fz=0.15mm/tooth, d=2mm, Dry



Crosectional view of DLC

Application range



KORLOY Corrosion & Magnetism Proof Grades, "IN-Series"

Special Features

1) Outstanding corrosion resistance : several hundred times better performance than general carbide grade (Test have been performed at 30% NHO3, comparing KORLOY G5 and IN-Series)
2) Excellent hardness & toughness : Over (HRA) 85 hardness, Over (TRS) 200 toughness
3) Several grades : 3 different kind of grades for specific application, respectively.

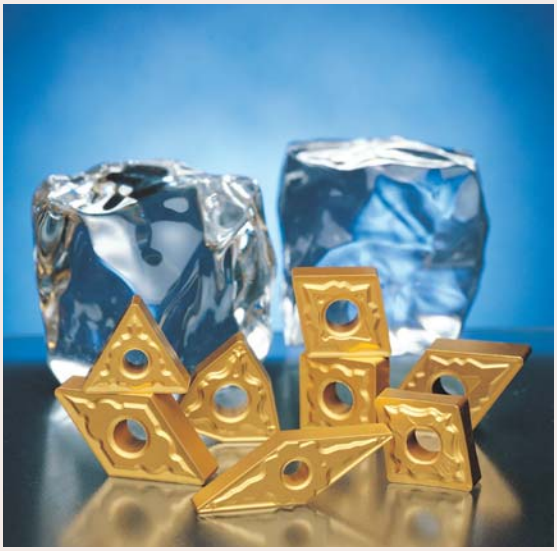
Grade	Specific gravity (g/㎤)	Hardness (HRA)	TRS (kgf/㎟)	Magnetic saturation (Gauss · ㎤/g)	Use
IN10	14.4	91.5	230	0	Mechanical Seal, Sliter Knife Anti-corrosive alloy, Magnetism proof alloy
IN20	14.5	91.0	250	90	Mechanical Seal, Sliter Knife Anti-corrosive alloy
IN40	13.5	85.5	280	0	Mold for magnetic powder Anticorrosive-Magnetism proof alloy

● Use

For Anti-corrosive	For Magnetism proof
• Parts for plant of corrosion-high pressure • Parts for sea water pump • Die / punch in high temperature • Mechanical seal	• Tape sliter • Mold for magnetic powder • Parts for VTR

Guide of stainless-steel machining

- The stainless steel is well know for it's excellent anti-corrosive property.
- Excellent anti-corrosive property is due to the "Cr" added to alloy. In general, the stainless steel has 4%~10% content of "Cr".



Classification & Features of Stainless Steels

1) **Austenite series** : It is a most general kind of stainless steels and has the best corrosion-resistance due to high Cr & Ni content. On the other hand, High Ni content makes machining difficult. It is used for can of foods, chemical products and construction purposes. (AISI 303,304,316)
2) **Ferrite series** : It has similar Cr content with Austenite series, but none of Ni content results in easy machining. (AISI 410,430,434)
3) **Martensite series** : It is the only stainless steels able to be heat treated. It has high carbon content and corrosion resistance is not so good, so it is used for a parts that needing higher hardness. (AISI410,420,432)
4) **Precipitate hardened series** : As a Cr-Ni alloy, it has improved hardness through low temperature heat-treatment and has superior corrosion-resistance and toughness at the same time. (AISI 17,15)
5) **Austenite-Ferrite series** : Though it has similar properties with Austenite and Ferrite, it has much superior heat-resistance (approx. 2 times better). It can be used at the place where require thermal-corrosion stability such as condenser (AISI S2304,2507)

Hard-to-cut Factors of Stainless Steels

1) Work-hardening property - Cause premature wear of tool and hard to chip control.
2) Low thermal conductivity - Cause plastic deformation of cutting edge and fast wear of tool.
3) Build-up-edge - Easy to make micro-chipping on cutting edge and cause bad surface-finish.
4) Chemical affinity between tool and workpiece caused by work-hardening and low thermal-conductivity of workpiece, generates easily not only normal-wear but also chipping and abnormal fracture.

Tips for machining of Stainless Steels

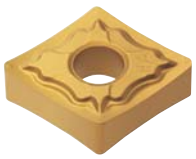
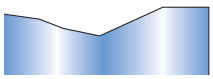
1) **Use a tool has higher thermal-conductivity**
Low thermal-conductivity of stainless steel accelerates wear resulted from decline of hardness of cutting edge due to heat pile up. It's better to use a tool has higher thermal conductivity with enough coolant.

2) **Sharper cutting edge-line**
It is necessary to make rake-angle bigger and chip-breaker land wider to reduce cutting-load and prevent build-up-edge so that chip can controlled well.

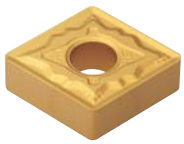
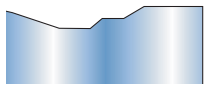
3) **Optimal cutting condition**
Inappropriate machining conditions like extremely low or high-speed, too low feed rate, can cause poor tool life due to work-hardening of work piece.

4) **Choose a appropriate tools**
Tools for the stainless steel should have good toughness, enough strength on edge-line & higher film adhesion.

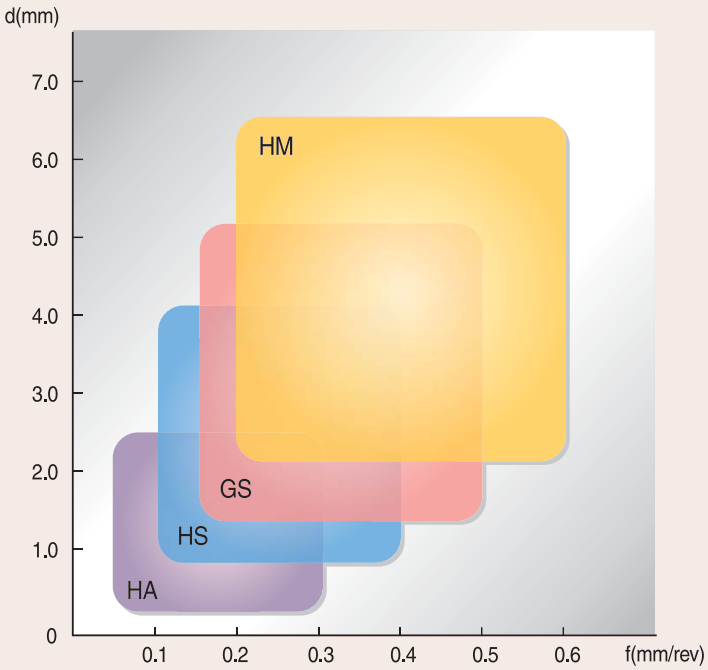
Chip Breakers for Stainless steel

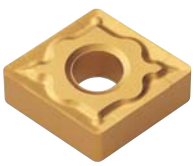
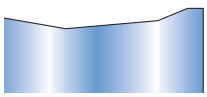
HA	Finishing
	

- Sharp edge for shallow depth cutting
- Increase tool life through reduce chip control friction at high speed cutting
- Good surface finish of work piece

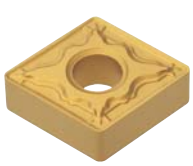
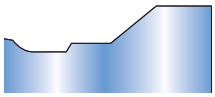
HS	Medium cutting
	

- Enhanced cutting efficiency and increase tool life due to enhanced chip flow.
- Reinforce wear resistance through adopting high land rake angle.
- Special land design to prevent notching and enhance toughness



GS	Medium to Rough cutting
	

- Superior tool life at light intermittent cutting
- Better chip flow through wide chip pocket
- Prevent build-up-edge by low cutting force design

HM	Roughing
	

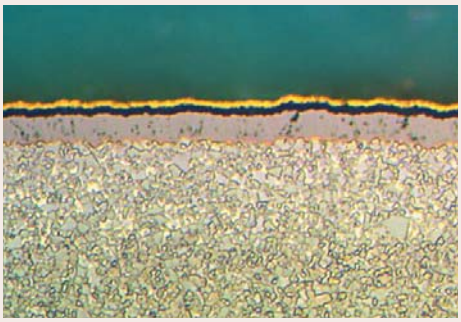
- Chip breaker for intermittent cutting
- Unique chip breaker design provide smooth chip control.
- Strong edge line permit superior toughness

New Grades for Stainless steel

KORLOY New Grades for Stainless steel Machinig

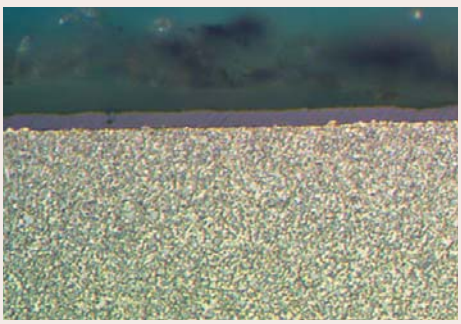
NC9020, For high speed turning of stainless steel

- Applying substrate & film suitable for high-speed machining of stainless steels
- Superior cutting performance under condition that middle-speed cutting for low-carbon steel, low-carbon alloy steel
- Longer tool-life can be acquired thanks to superior chipping-resistance
- Better cutting performance can be expected in combination with exclusive chip-breaker even in deeper depth of cut.



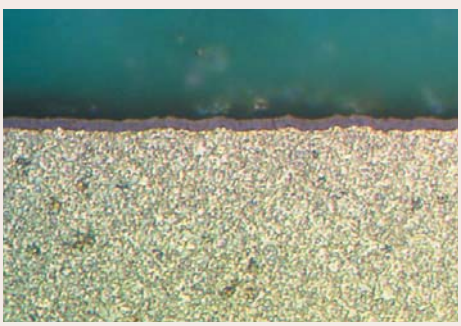
PC9030, For medium to low speed turning of stainless steel

- By using ultra fine carbide substrate, it has higher enough toughness for medium to roughing and intermittent cutting of Stainless steels
- Applying PVD coating for enhancing chipping-resistance and adhesion-resistance during machining of difficult-to-cut materia
- Exclusive grade for the stainless steel using high toughness carbide as substrate and PVD film having superior lubrication property.
- Enhancing surface finish and reducing burr due to the chip-breaker exclusive for Stainless steels



PC9530, For medium to low speed milling of stainless steel

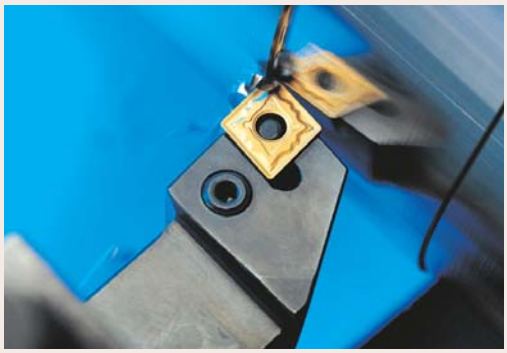
- Tough ultra-fine carbide substrate being used for roughing, intermittent milling of stainless steel
- PVD coating applied to get a better tool life for stainless steel, Ni-Cr steel.
- Chipping of cutting edge being reduced by prevent build-up-edge due to the combination of tough carbide substrate and PVD coating.



Technical Guide for Chip-Breakers

Function of Chip breaker

The long chip generally made at the continuous cutting of Workpiece could wrap the work piece and holder. Once it happen, additional time to remove chip is necessary, thus it is not efficient and no good for productivity. And when the double-sided insert with out chip breaker used, the rake angle will have minus value. It makes higher cutting resistance that will cause poor tool life. The chip breaker has been developed to settle the problem, to make well controled short chip with low cutting force.



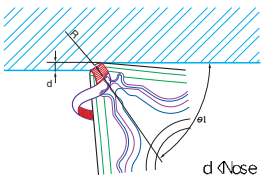
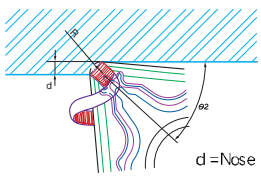
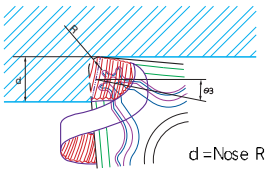
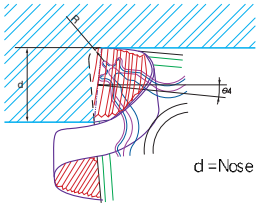
- Function of chip breaker in turning operation
  1) Make short chip at turning operation
  2) Decrease cutting resistance by make bigger rake angle
  3) Shorten idle time to remove chips from machine

Features of H-Series

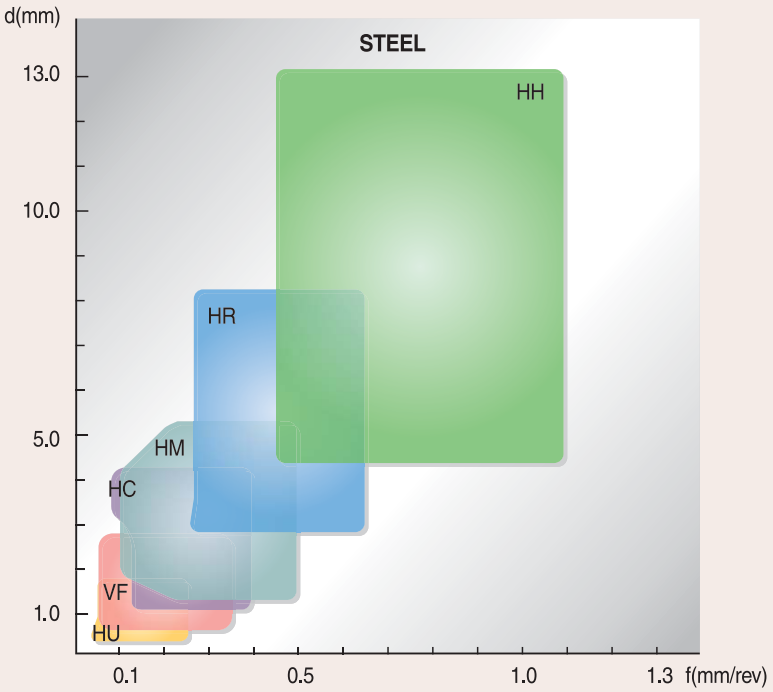
1) The H-series has designed with HARMONY concept. Chip flow direction(θ1, θ2, θ3, θ4) has been studied carefully as per variety of cutting condition. Based on the basic study, H-series chip-breakers have been designed to have excellent properties such as better chip breaking with stronger cutting edge and decrease of cutting resistance. And it ensures improve of tool life, cutting quality and productivity.

2) The H-series has been devided into several chip breakers as per depth-of-cut, from finish, medium and roughing. The following table shows chip-breaker's action in various depth-of-cut. (example, HM chip breaker)

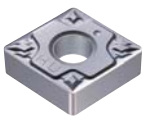
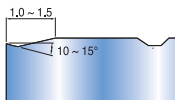
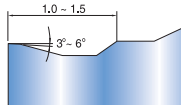
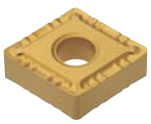
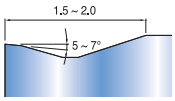
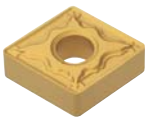
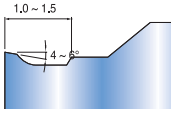
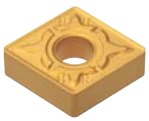
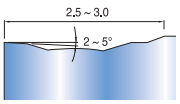
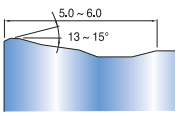
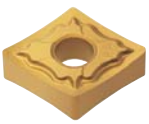
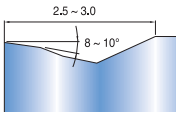
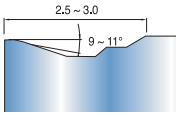
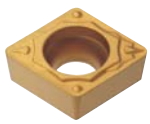
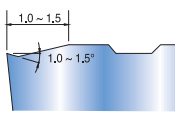
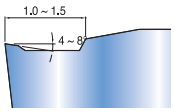
Variation of chip removal angle as per depth of cut

	● When the depth of cut is smaller than nose-R • Depth of cut 0.5~1.5mm, it is in finish or medium-finish cutting range • Main finish chip breakers control the chip and sub finish chip-breakers control the chip flow direction.
	● When the depth of cut is same as nose-R • Depth of cut 0.8~2.0mm, it is medium-finish cutting range • Main and sub finish chip-breakers control the chip well.
	● When the depth of cut is 2~4 times of nose-R • Depth of cut 1.5~4.5mm, it is in medium cutting range • Roughing chip-breaker breaks the chip
	● When the depth of cut is 5~8 times of nose-R • Depth of cut 4.0~6.0mm, it is in medium-roughing range • Side part of roughing chip breaker breaks the chip.

Application of Chip-Breakers



H-Series Cutting Edge Design

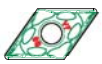
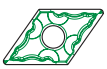
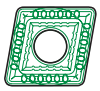
C/B	Cutting Edge	C/B	Cutting Edge	C/B	Cutting Edge
HU			VF			HC		
HM			HR			HH		
HA			HS			HFP		
HMP								

Chip-Breaker Recommendation as per Workpiece

Grades & Chip-Breakers

| Workpiece Material : SM10C, SM15C, SM25C, SS400, SCr415, SCM415, etc. Soft steel
Hardness : under H_B180

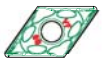
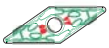
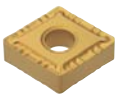
Chip Breaker, Grade, Cutting condition Recommendation

Work piece	C/B & Grade Selection				Insert shape					
	C/B & Feed		Grade & Cutting Speed		80° 80°	80° 80°	55° 55°	60° 60°	35° 35°	90° 90°
Depth of Cut(mm)	C/B	Feed mm/rev	Grade	Cutting Speed m/min	(NEGA) CN□G	(NEGA) WN□G	(NEGA) DN□G	(NEGA) TN□G	(NEGA) VN□G	(NEGA) SN□G
0.1 ~ **0.5** ~ 1.5 **Ultra Finishing**	HU 	0.03 ~ **0.10** ~ 0.25	**CT10** CN200	280 260	CNG(M)G  P.51		DNG(M)G  P.57	TNG(M)G  P.80		SNG(M)G  P.66
0.3 ~ **1.0** ~ 2.5 **Finishing**	VF 	0.05 ~ **0.15** ~ 0.35	**NC3010** NC3020 CN200	**310** 270 270	CNMG  P.53	WNMG  P.95	DNMG  P.59	TNMG  P.82	VNMG  P.89	SNMG  P.70
0.8 ~ **1.5** ~ 3.5 **Medium-Finshing**	HA 	0.10 ~ **0.20** ~ 0.40	**NC3010** **NC3020**	**300** 230	CNMG  P.51	WNMG  P.93	DNMG  P.58	TNMG  P.80	VNMG  P.87	SNMG  P.68
0.8 ~ **1.5** ~ 3.0 **Medium-Finshing**	HC 	0.8 ~ **0.20** ~ 0.40	**NC3010** NC3020 CN200	**290** 250 250	CNMG  P.51	WNMG  P.93	DNMG  P.58	TNMG  P.80		SNMG  P.68
1.0 ~ **2.5** ~ 5.0 **Medium cutting**	HM 	0.10 ~ **0.25** ~ 0.50	NC3010 **NC3020** NC3030 CN200	270 **230** 210 220	CNMG  P.52	WNMG  P.94	DNMG  P.59	TNMG  P.81	VNMG  P.88	SNMG  P.68
2.5 ~ **4.0** ~ 7.0 **Roughing**	HR 	0.25 ~ **0.45** ~ 0.65	NC3010 **NC3020** NC3030	150 **130** 100	CNMG  P.52	WNMG  P.94	DNMG  P.59	TNMG  P.81		SNMG  P.69
5.0 ~ **7.0** ~ 11.0 **Heavy duty**	HH 	0.5 ~ **0.8** ~ 1.1	NC3010 NC3020 **NC500H**	150 130 **100**	CNMM  P.53			TNMM  P.82		SNMM  P.70
Depth of Cut(mm)	**C/B**	**Feed mm/rev**	**Grade**	**Cutting Speed m/min**	(POSI) CC□T	(POSI) WC□T	(POSI) DC□T	(POSI) TC□T	(POSI) VC□T, VB□T	(POSI) SC□T
0.1 ~ **0.5** ~ 1.5 **Finishing**	HF P 	0.05 ~ **0.15** ~ 0.25	**NC3010** NC3020 CC105	**280** 250 250	CCG(M)T  P.53, 54		DCG(M)T  P.60	TCG(M)T  P.83, 87	VCG(M)T  P.90	SCG(M)T  P.71
0.5 ~ **1.5** ~ 3.5 **Medium-Finshing Medium cutting**	HMP 	0.08 ~ **0.20** ~ 0.40	**NC3010** NC3020 CN200	**260** 230 230	CCMT  P.54		DCMT  P.61	TCMT  P.83	VBMT  P.91	SCMT  P.72
1.0 ~ **2.0** ~ 3.0 **Medium cutting**	C25 	0.10 ~ **0.25** ~ 0.35	**NC3010** NC3020	**250** 220	CCMT  P.54		DCMT  P.61	TCMT  P.84		SCMT  P.72

1st Recommended cutting condition

||. Workpiece Material : S45C, S55C, SCM430, SCM440, etc, General steel
Hardness : 180~260HB

Chip Breaker, Grade, Cutting condition Recommendation

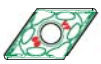
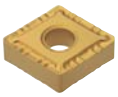
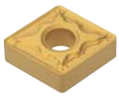
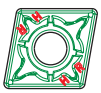
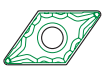
Work piece	C/B & Grade Selection				Insert shape					
	C/B & Feed		Grade & Cutting Speed		80°	80°	55°	60°	35°	90°
Depth of Cut(mm)	C/B	Feed mm/rev	Grade	Cutting Speed m/min	(NEGA) CN□G	(NEGA) WN□G	(NEGA) DN□G	(NEGA) TN□G	(NEGA) VN□G	(NEGA) SN□G
0.3 ~ **1.0** ~ 2.5 Finishing	VF 	0.05 ~ **0.15** ~ 0.35	**NC3010** NC3020 CN200	**220** 190 180	CNMG  P.51	WNMG  P.95	DNMG  P.59	TNMG  P.82	VNMG  P.89	SNMG  P.70
0.8 ~ **1.5** ~ 4.0 Medium-Finshing	HC 	0.08 ~ **0.20** ~ 0.40	NC3010 **NC3020** NC3030 CN200	210 **180** 160 170	CNMG  P.51	WNMG  P.93	DNMG  P.58	TNMG  P.80		SNMG  P.68
1.0~ **2.5** ~ 5.0 Medium cutting Medium-Roughing	HM 	0.10 ~ **0.25** ~ 0.50	NC3010 **NC3020** NC3030 CN200	200 **170** 150 160	CNMG  P.52	WNMG  P.94	DNMG  P.59	TNMG  P.81	VNMG  P.88	SNMG  P.68
2.5~ **4.0** ~ 7.0 Roughing	HR 	0.25 ~ **0.45** ~ 0.65	NC3010 NC3020 **NC3030**	170 150 **130**	CNMG  P.52	WNMG  P.94	DNMG  P.59	TNMG  P.81		SNMG  P.69
4.0~ **7.0** ~ 13.0 Heavy duty	HH 	0.40 ~ **0.70** ~ 1.1	NC3010 NC3020 **NC500H**	130 110 **90**	CNMM  P.53			TNMM  P.82		SNMM  P.70
Depth of Cut(mm)	**C/B**	**Feed mm/rev**	**Grade**	**Cutting Speed m/min**	(POSI) CC□T	(POSI) WC□T	(POSI) DC□T	(POSI) TC□T	(POSI) VC□T, VB□T	(POSI) SC□T
0.1 ~ **0.5** ~ 1.5 Finishing	HFP 	0.05 ~ **0.15** ~ 0.25	**NC3010** NC3020 CC105	**220** 180 200	CCG(M)T  P.53, 54		DCG(M)T  P.60	TCG(M)T  P.83, 87	VCG(M)T  P.90	SCG(M)T  P.71
0.5 ~ **1.5** ~ 3.5 Medium-Finshing Medium cutting	HMP 	0.18 ~ **0.20** ~ 0.4	NC3010 **NC3020** NC3030 CN200	210 **180** 150 170	CCMT  P.54		DCMT  P.61	TCMT  P.83	VBMT  P.91	SCMT  P.72
1.0 ~ **2.0** ~ 3.0 Medium-Roughing	C25 	0.1 ~ **0.25** ~ 0.35	NC3010 **NC3020** NC3030	200 **170** 150	CCMT  P.54		DCMT  P.61	TCMT  P.84		SCMT  P.72

1st Recommended cutting condition

Chip-Breaker Recommendation as per Workpiece

III. Workpiece Material : SNC415, SNC815, SNCM240, SNCM439, STS12, STS61, etc
SCM440, Hardened steels
Hardness : 260~350HB

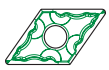
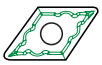
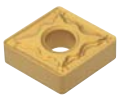
Chip Breaker, Grade, Cutting condition Recommendation

Work piece	C/B & Grade Selection				Insert shape					
	C/B & Feed		Grade & Cutting Speed		80°	80°	55°	60°	35°	90°
Depth of Cut(mm)	C/B	Feed mm/rev	Grade	Cutting Speed m/min	(NEGA) CN□G	(NEGA) WN□G	(NEGA) DN□G	(NEGA) TN□G	(NEGA) VN□G	(NEGA) SN□G
0.5 ~ **1.0** ~ 2.0 Finishing	VF 	0.08 ~ **0.15** ~ 0.30	**NC3010** NC3020 CN200	**130** 110 110	CNMG  P.53	WNMG  P.95	DNMG  P.59	TNMG  P.82	VNMG  P.89	SNMG  P.70
0.8 ~ **1.5** ~ 3.5 Medium-Finshing	HC 	0.10 ~ **0.20** ~ 0.35	NC3010 **NC3020** NC3030 CN200	150 **130** 110 100	CNMG  P.51	WNMG  P.93	DNMG  P.58	TNMG  P.80		SNMG  P.68
1.5 ~ **2.0** ~ 4.0 Medium-Finshing Medium-Roughing	HM 	0.15 ~ **0.25** ~ 0.50	NC3010 **NC3020** CN200	130 **100** 90	CNMG  P.52	WNMG  P.94	DNMG  P.59	TNMG  P.81	VNMG  P.88	SNMG  P.68
2.5 ~ **3.5** ~ 6.0 Roughing	HR 	0.25 ~ **0.35** ~ 0.60	NC3010 **NC3020** NC3030	100 **90** 80	CNMG  P.52	WNMG  P.94	DNMG  P.59	TNMG  P.81		SNMG  P.69
4.0 ~ **6.0** ~ 10.0 Heavy duty	HH 	0.40 ~ **0.60** ~ 1.0	NC3010 NC3020 **NC500H**	90 80 **70**	CNMM  P.53			TNMM  P.82		SNMM  P.70
Depth of Cut(mm)	C/B	Feed mm/rev	Grade	Cutting Speed m/min	(POSI) CC□T	(POSI) WC□T	(POSI) DC□T	(POSI) TC□T	(POSI) VC□T, VB□T	(POSI) SC□T
0.1 ~ **0.5** ~ 1.5 Finishing	HFP 	0.05 ~ **0.10** ~ 0.20	**NC3010** NC3020 CC105	**130** 110 120	CCG(M)T  P.53, 54		DCG(M)T  P.60	TCG(M)T  P.83, 87	VCG(M)T  P.90	SCG(M)T  P.71
0.5 ~ **1.0** ~ 3.0 Medium-Finshing Medium cutting	HMP 	0.08 ~ **0.15** ~ 0.25	NC3010 **NC3020** CN200	120 **110** 100	CCMT  P.54		DCMT  P.61	TCMT  P.83	VBMT  P.91	SCMT  P.72
0.5 ~ **1.5** ~ 0.25 Medium cutting	C25 	0.10 ~ **0.20** ~ 0.30	NC3010 **NC3020** NC3030	110 **100** 90	CCMT  P.54		DCMT  P.61	TCMT  P.84		SCMT  P.72

1st Recommended cutting condition

Ⅳ. Workpiece Material : STS430, STS444, STS416, STS432, etc
Ferritic, Martensitic Stainless steel
Hardness : 135~275HB

Chip Breaker, Grade, Cutting condition Recommendation

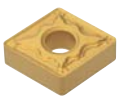
Work piece	C/B & Grade Selection				Insert shape					
	C/B & Feed		Grade & Cutting Speed		80°	80°	55°	60°	35°	90°
Depth of Cut(mm)	C/B	Feed mm/rev	Grade	Cutting Speed m/min	(NEGA) CN□G	(NEGA) WN□G	(NEGA) DN□G	(NEGA) TN□G	(NEGA) VN□G	(NEGA) SN□G
0.5 ~ **1.5** ~ 2.5 Medium-Finishing	HA 	0.03 ~ **0.15** ~ 0.30	NC9020 PC9030	190 170	CNMG  P.51	WNMG  P.93	DNMG  P.58	TNMG  P.80	VNMG  P.87	SNMG  P.68
1.0 ~ **2.5** ~ 4.0 Medium cutting	HS 	0.1 ~ **0.25** ~ 0.40	NC9020 PC9030	180 160	CNMG  P.52	WNMG  P.94	DNMG  P.58	TNMG  P.81	VNMG  P.88	SNMG  P.69
1.5 ~ **3.0** ~ 5.5 Intermittent Medium-Roughing	GS 	0.15 ~ **0.3** ~ 0.50	NC9020 PC9030	170 140	CNMG  P.49	WNMG  P.92	DNMG  P.57	TNMG  P.79		SNMG  P.66
2.0 ~ **4.5** ~ 6.5 Continuous Medium-Roughing	HM 	0.20 ~ **0.40** ~ 0.60	NC9020 PC9030	160 120	CNMG  P.52	WNMG  P.94	DNMG  P.59	TNMG  P.81	VNMG  P.88	SNMG  P.68
Depth of Cut(mm)	C/B	Feed mm/rev	Grade	Cutting Speed m/min	(POSI) CC□T	(POSI) WC□T	(POSI) DC□T	(POSI) TC□T	(POSI) VC□T, VB□T	(POSI) SC□T
0.1 ~ **0.5** ~ 1.5 Finishing	HFP 	0.05~ **0.15** ~ 0.25	NC9020 PC9030	180 160	CCG(M)T  P.53, 54		DCG(M)T  P.60	TCG(M)T  P.83, 87	VCG(M)T  P.90	SCG(M)T  P.71
0.5 ~ **1.0** ~ 3.0 Medium-Finishing	HMP 	0.10 ~ **0.20** ~ 0.30	NC9020 PC9030	170 150	CCMT  P.54		DCMT  P.61	TCMT  P.83	VB(C)MT  P.91	SCMT  P.72
1.0 ~ **1.5** ~ 3.0 Medium Cutting	C25 	0.15 ~ **0.25** ~ 0.35	NC9020 PC9030	160 140	CCMT  P.54		DCMT  P.61	TCMT  P.84		SCMT  P.72

1st Recommended cutting condition

Chip-Breaker Recommendation as per Workpiece

V. Workpiece Material : STS304, STS316, STS347, STS387, STS202, etc
Austenitic Stainless steel
Hardness : 135~185HB

Chip Breaker, Grade, Cutting condition Recommendation

Work piece	C/B & Grade Selection				Insert shape					
	C/B & Feed		Grade & Cutting Speed		80°	80°	55°	60°	35°	90°
Depth of Cut(mm)	C/B	Feed mm/rev	Grade	Cutting Speed m/min	(NEGA) CN□G	(NEGA) WN□G	(NEGA) DN□G	(NEGA) TN□G	(NEGA) VN□G	(NEGA) SN□G
0.5 ~ **1.5** ~ 2.5 Medium-Finshing	HA 	0.03 ~ **0.15** ~ 0.30	**NC9020** **PC9030**	**160** **140**	CNMG P.51	WNMG P.93	DNMG P.58	TNMG P.80	VNMG P.87	SNMG P.68
1.0 ~ **2.5** ~ 4.0 Medium cutting	HS 	0.1 ~ **0.25** ~ 0.40	**NC9020** **PC9030**	**150** **130**	CNMG P.52	WNMG P.94	DNMG P.58	TNMG P.81	VNMG P.88	SNMG P.69
1.5 ~ **3.0** ~ 5.5 Intermittent Medium-Roughing	GS 	0.15 ~ **0.3** ~ 0.50	**NC9020** **PC9030**	**140** **110**	CNMG P.49	WNMG P.92	DNMG P.57	TNMG P.79		SNMG P.66
2.0 ~ **4.5** ~ 6.5 Continuous Medium-Roughing	HM 	0.20 ~ **0.40** ~ 0.60	NC9020 **PC9030**	130 **90**	CNMG P.52	WNMG P.94	DNMG P.59	TNMG P.81	VNMG P.88	SNMG P.68
Depth of Cut(mm)	C/B	Feed mm/rev	Grade	Cutting Speed m/min	(POSI) CC□T	(POSI) WC□T	(POSI) DC□T	(POSI) TC□T	(POSI) VC□T, VB□T	(POSI) SC□T
0.1 ~ **0.5** ~ 1.5 Finishing	HF P 	0.05 ~ **0.15** ~ 0.25	**NC9020** **PC9030**	**150** 130	CCG(M)T P.53, 54		DCG(M)T P.60	TCG(M)T P.83, 87	VCG(M)T P.90	SCG(M)T P.71
0.5 ~ **1.0** ~ 3.0 Medium-Finishing	HMP 	0.10 ~ **0.20** ~ 0.30	**NC9020** **PC9030**	**140** 120	CCMT P.54		DCMT P.61	TCMT P.83	VBMT P.91	SCMT P.72
1.0 ~ **1.5** ~ 3.0 Medium Cutting	C25 	0.15 ~ **0.25** ~ 0.35	**NC9020** **PC9030**	**130** **110**	CCMT P.54		DCMT P.61	TCMT P.84		SCMT P.72

1st Recommended cutting condition

Ⅵ. Workpiece Material : GC250, GC300, GCD400, GCD700, etc : Gray Cast iron, Ductile Cast iron
Hardness : 135~185HB
Tensile strength : Under 450N/㎟

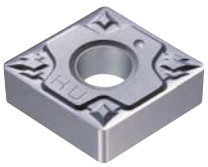
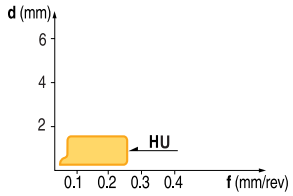
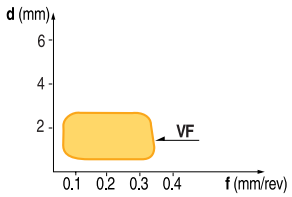
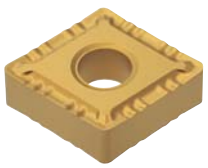
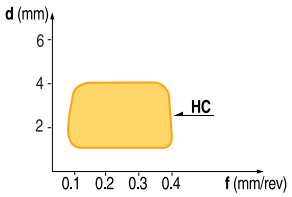
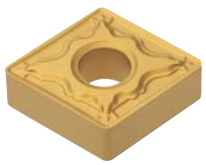
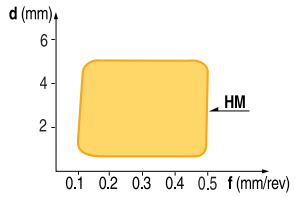
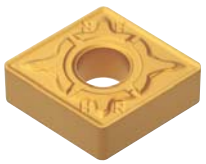
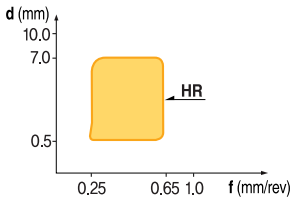
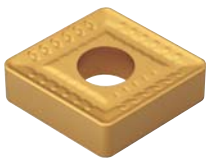
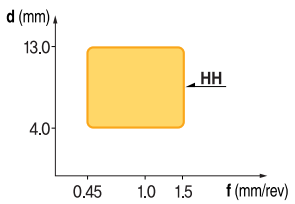
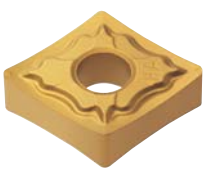
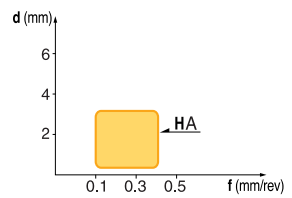
Chip Breaker, Grade, Cutting condition Recommendation

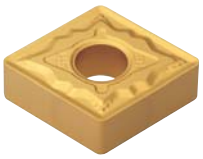
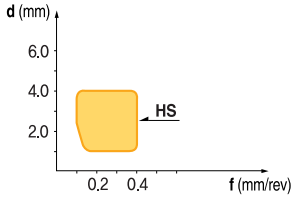
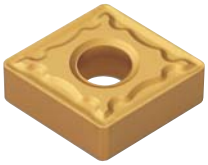
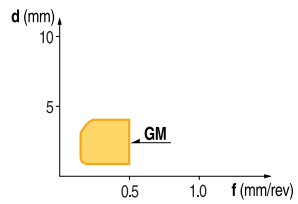
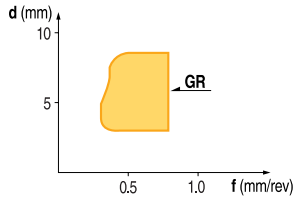
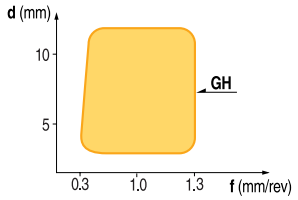
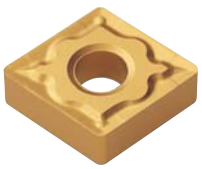
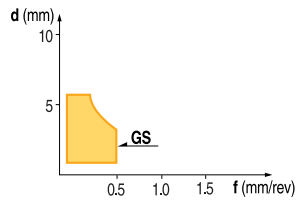
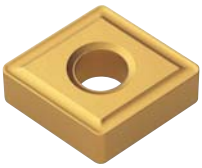
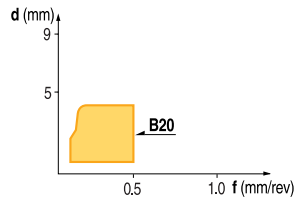
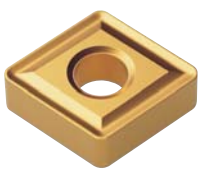
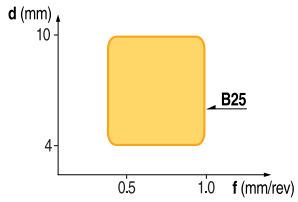
Work piece	C/B & Grade Selection				Insert shape					
	C/B & Feed		Grade & Cutting Speed		80°	80°	55°	60°	35°	90°
Depth of Cut(mm)	C/B	Feed mm/rev	Grade	Cutting Speed m/min	(CNMG) CN□G	(WNMG) WN□G	(DNMG) DNGG	(TNMG) TN□G	(VNMG) VN□G	(SNMG) SN□G
0.1 ~ **0.4** ~1.0 **Finishing**		0.05 ~ **0.10** ~ 0.50	**KB350** NC305K	200 ~ **500** ~ 700 300	CNMA P.48		DNMA P.55	TNG(M)A P.75, 76		SNG(M)A P.63, 64
0.5 ~ **2.0** ~ 3.5 **Medium-Finshing**	B20	0.10 ~ **0.20** ~ 0.30	**NC305K NC6010**	200 ~ **350** ~ 450	CNMG P.48		DNMG P.56	TNMG P.77	VNMG P.88	SNMG P.65
1.0 ~ **2.5** ~ 4.0 **Medium cutting**	HM	0.15 ~ **0.30** ~ 0.50	**NC305K NC6010** NC315K	**300** ~ 250	CNMG P.52	WNMG P.94	DNMG P.59	TNMG P.81	VNMG P.88	SNMG P.68
1.0 ~ **3.0** ~ 4.5 **Medium-Roughing**	GR	0.20 ~ **0.35** ~ 0.50	**NC305K NC6010** NC315K	**250** 220	CNMG P.50	WNMG P.93	DNMG P.57	TNMG P.79		SNMG P.67
2.5 ~ **3.5** ~6 .0 **Roughing**	HR	0.25 ~ **0.35** ~ 0.60	**NC6010**	100 **90** 80	CNMG P.52	WNMG P.94	DNMG P.59	TNMG P.81		SNMG P.69
4.3 ~ **6.5** ~10.0 **Heavy duty**	GH	0.30 ~ **0.70** ~ 1.10	**NC315K**	**150**	CNMM P.50					SNMM P.67
Depth of Cut(mm)	**C/B**	**Feed mm/rev**	**Grade**	**Cutting Speed m/min**	(POSI) CCMT	(POSI) WCMT	(POSI) DCMT	(POSI) TCMT	(POSI) VCMT, VBMT	(POSI) SCMT
0.5 ~ **1.5** ~ 3.0 **Medium-Finishing**	HMP	0.08 ~ **0.20** ~ 0.40	**NC305K NC6010** NC315K	**250** 220	CCMT P.54		DCMT P.61	TCMT P.83	VBMT P.91	SCMT P.72
1.0 ~ **2.0** ~ 3.5 **Medium Cutting**	C25	0.10 ~ **0.25** ~ 0.40	**NC305K NC6010** NC315K	**250** 220	CCMT P.54		DCMT P.61	TCMT P.84	VBMT	SCMT P.72

1st Recommended cutting condition

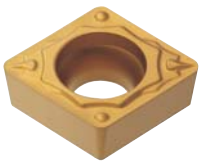
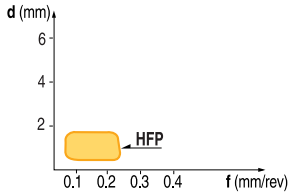
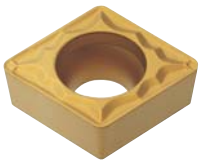
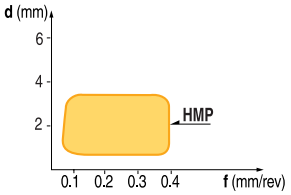
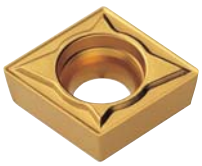
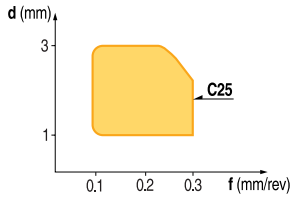
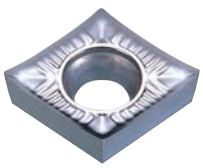
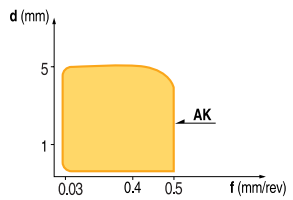
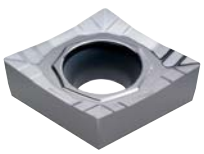
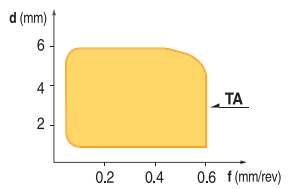
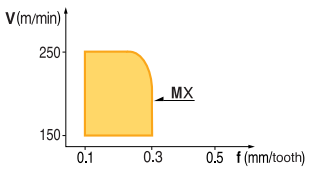
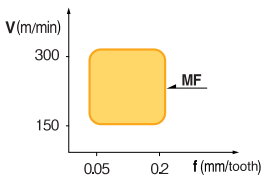
KORLOY Chip-Breakers

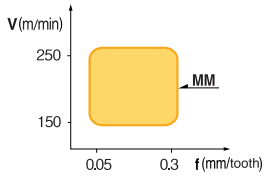
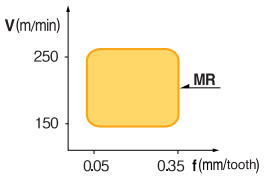
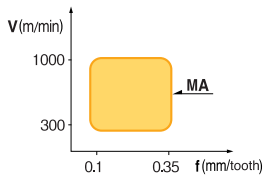
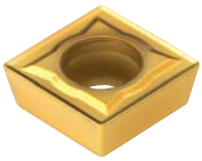
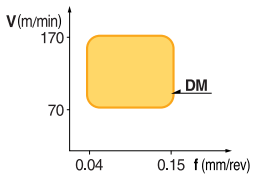
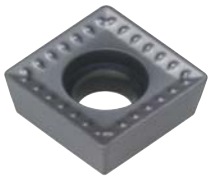
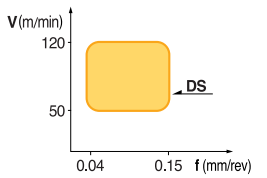
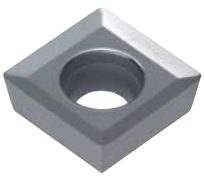
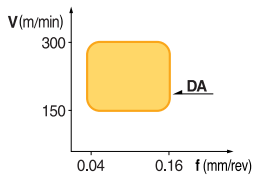
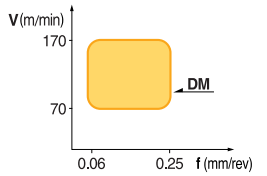
"H"Series

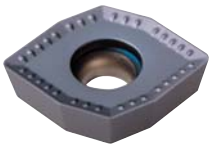
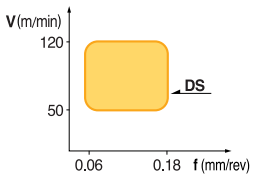
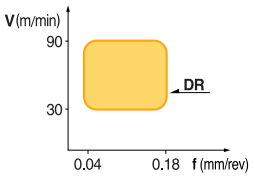
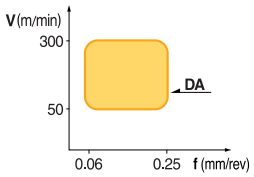
Shape	Application Range	Special Feature
HU 		■ For Ultra-fine Finishing, Finishing • Suitable for a machining need fine surface finish and a machining generate low cutting force due to sharp cutting edge design. • Specially designed chip breaker ensure stable chip control at ultra fine-finishing condition. ■ Recommended Cutting Conditions d = 0.1 ~ 1.5mm f = 0.03 ~ 0.25mm/rev
VF 		■ For Finishing • Good chip control quality on varied depth of cut.. • Excellent cutting edge strength has been acquired due to the special chip-breaker. ■ Recommended Cutting Conditions d = 0.3 ~ 2.5mm f = 0.05 ~ 0.35mm/rev
HC 		■ For Medium to Finish Cutting • Excellent for copying of special shape. • Smooth chip control at shallow cut as well as deep depth of cut. ■ Recommended Cutting Conditions d = 0.8 ~ 4.0mm f = 0.08 ~ 0.4mm/rev
HM 		■ For Medium Cutting • Wide available chip control range from medium-finishing to medium-roughing. • Suitable chip breaker for CNC machining ■ Recommended Cutting Conditions d = 1.0 ~ 5.0mm f = 0.1 ~ 0.5mm/rev
HR 		■ For Roughing • Excellent chip control at deep depth of cut and fast feed rate. • Strong cutting edge makes excellent cutting performance at intermittent cutting. ■ Recommended Cutting Conditions d = 2.5 ~ 7.0mm f = 0.25 ~ 0.65mm/rev
HH 		■ For Heavy duty cutting • Specially designed toughest cutting edge provides superior cutting performance at deep depth of cut and fast feed rate. • Unique design of dot on cutting edge makes smooth chip flow and reduce cutting force. ■ Recommended Cutting Conditions d = 4.0 ~ 13.0mm f = 0.45 ~ 1.5mm/rev
HA 		■ For Light-alloy, Stainless-steel machining. • Sharp cutting edge generate low cutting force. • Specially designed tough main cutting edge. • Suitable for cutting of low carbon steel, stainless steel, aluminum. ■ Recommended Cutting Conditions d = 0.8 ~ 3.5mm f = 0.1 ~ 0.4mm/rev

	Shape	Application Range	Special Feature
"H"Series	**HS** 		■ For Medium cutting of Stainless-steel • Exclusive design for stainless steel cutting provide longer tool life • Wear resistance have been reinforced through high rake angle of chip breaker land. ■ Recommended Cutting Conditions d = 1.0 ~ 4.0mm f = 0.1 ~ 0.4mm/rev
"G"Series	**GM** 		■ For Medium to Light cutting • Excellent chip control at general cutting conditions. • Strong cutting edge strength provide good performance at intermittent and fast feed cutting. ■ Recommended Cutting Conditions d = 0.7 ~ 4.0mm f = 0.1 ~ 0.5mm/rev
	GR 		■ For Medium to Roughing • Suitable for deep depth of cut and fast feed cutting of steel and cast iron. • Suitable for intermittent cutting. ■ Recommended Cutting Conditions d = 3.0 ~ 8.0mm f = 0.3 ~ 0.8mm/rev
	GH 		■ For Heavy duty cutting • Suitable for heavy duty cutting due to strong cutting edge. • Wide chip control range with low cutting force ■ Recommended Cutting Conditions d = 3.0 ~ 11.0mm f = 0.3 ~ 1.3mm/rev
	GS 		■ For Medium to Roughing of Stainless-steel • Exclusive chip breaker for stainless steel. ■ Recommended Cutting Conditions d = 1.5 ~ 5.5mm f = 0.15 ~ 0.5mm/rev
"B"Series	**B20** 		■ For Light to Medium cutting • Exclusive chip breaker for cutting of cast iron. ■ Recommended Cutting Conditions d = 1.5 ~ 4.0mm f = 0.15 ~ 0.5mm/rev
	B25 		■ For General cutting • Suitable for general cutting condition cutting. ■ Recommended Cutting Conditions d = 4.0 ~ 10.0mm f = 0.5 ~ 1.0mm/rev

KORLOY Chip-Breakers

	Shape	Application Range	Special Feature
"H-Posi"Series	**HFP** 		■ For Finishing • Excellent chip control at shallow depth of cut and low feed rate. • Excellent surface finish of work piece due to reduced cutting force. • Suitable for fine boring. ■ Recommended Cutting Conditions d = 0.1 ~ 1.5mm f = 0.05 ~ 0.25mm/rev
	HMP 		■ For Medium cutting • Excellent chip control at wide range of cutting conditions. • Suitable for stainless steel cutting. ■ Recommended Cutting Conditions d = 0.5 ~ 3.5mm f = 0.05 ~ 0.4mm/rev
"C"Series	**C25** 		■ For Medium cutting • Suitable for intermittent cutting and cast iron machining. • Good surface finish due to low cutting force. • Suitable for both boring and outer diameter turning. ■ Recommended Cutting Conditions d = 1.0 ~ 3.0mm f = 0.1 ~ 0.3mm/rev
"AK"Series	**AK** 		■ For Aluminum cutting • High rake angle and low resistance cutting edge secures long tool life in continuous cutting of aluminum turning. • High speed of finishing operation. ■ Recommended Cutting Conditions d = 0.1 ~ 5.0mm f = 0.03 ~ 0.5mm/rev
"TA"Series	**TA** 		■ For Aluminum cutting • High stability of cutting edge secures great performance in high speed and intermittent machining. • High speed of medium and interrupted operation. ■ Recommended Cutting Conditions d = 0.1 ~ 6.0mm f = 0.05 ~ 0.6mm/rev
"MX"Series	**MX** 		■ For General Milling • Possible to increase productivity through increase feed and depth. • Excellent heat resistance due to the special chip breaker design of top face of insert. ■ Recommended Cutting Conditions d = 1.0 ~ 5.0mm f = 0.1 ~ 0.3(mm/tooth)
"Future Mill"Series	**MF** 		■ For Finishing of Milling • Special design for light cutting of gummy materials like stainless steel and hard to machine material provide fine surface finish and longer tool life. ■ Recommended Cutting Conditions d = 0.5 ~ 5.0mm f = 0.05 ~ 0.2(mm/tooth)

	Shape	Application Range	Special Feature
"Future Mill"Series	**MM** 		■ For Medium cutting of Milling • Chip breaker design to cover general cutting condition provide wide available application range. • Ground type and as sintered type is available. ■ Recommended Cutting Conditions d = 1.0 ~ 5.0mm f = 0.05 ~ 0.3(mm/tooth)
	MR 		■ For Roughing of Milling • Strongest cutting edge strength provide stable tool life even in case of severe cutting with heavy intermittent and heavy roughing. ■ Recommended Cutting Conditions d = 1.5 ~ 5.0mm f = 0.05 ~ 0.35(mm/tooth)
	MA 		■ For Aluminum Milling • Suitable design for aluminum machining like sharp cutting edge, mirror face of insert top which prevent build up edge, provide excellent cutting performance. ■ Recommended Cutting Conditions d = 0.5 ~ 5.0mm f = 0.1 ~ 0.35(mm/tooth)
"SPDrill"Series	**DM** 		■ For Medium cutting of Drilling. • General application of steel, stainless and cast iron • Strong cutting edge suitable for interrupted hole drilling. ■ Recommended Cutting Conditions V = 70 ~ 170 m/min f = 0.04 ~ 0.15 mm/rev
	DS 		■ For Stainless Steel Drilling • As an insert for stainless steel drilling, combination of high rake angle and convex dot put on top face make good chip control and long last tool life at the same time. ■ Recommended Cutting Conditions V = 50 ~ 120 m/min f = 0.04 ~ 0.15 mm/rev
	DA 		■ For Aluminum Drilling • As an insert for aluminum drilling, it has sharp cutting edge and polished mirror top face. It prevents build-up edge, thus get great chip flow. ■ Recommended Cutting Conditions V = 150 ~ 300 m/min f = 0.04 ~ 0.16 mm/rev
"NPDrill"Series	**DM** 		■ For Medium cutting of Drilling. • Major application of steel and cast iron • Strong cutting edge suitable for interrupted hole drilling. ■ Recommended Cutting Conditions V = 70 ~ 170 m/min f = 0.06 ~ 0.25 mm/rev

	Shape	Application Range	Special Feature
"NPDrill" Series	**DS** 		■ For Stainless steel Drilling • Suitable design for stainless drilling having sharp edge and chip breaker ■ Recommended Cutting Conditions V = 120 ~ 50 m/min f = 0.06 ~ 0.18 mm/rev
	DR 		■ For Roughing of Soft steel. • Roughing of soft steel • Strong cutting edge suitable for interrupted hole drilling provides excellent cutting performance. ■ Recommended Cutting Conditions V = 30 ~ 90 m/min f = 0.04 ~ 0.18 mm/rev
	DA 		■ For Aluminum Drilling.. • Suitable design for aluminum machining. • Sharp cutting edge and buffed surface prevent built up edge. • It provides excellent cutting performance in high speed aluminum drilling. ■ Recommended Cutting Conditions V = 50 ~ 300 m/min f = 0.06 ~ 0.25 mm/rev


VF
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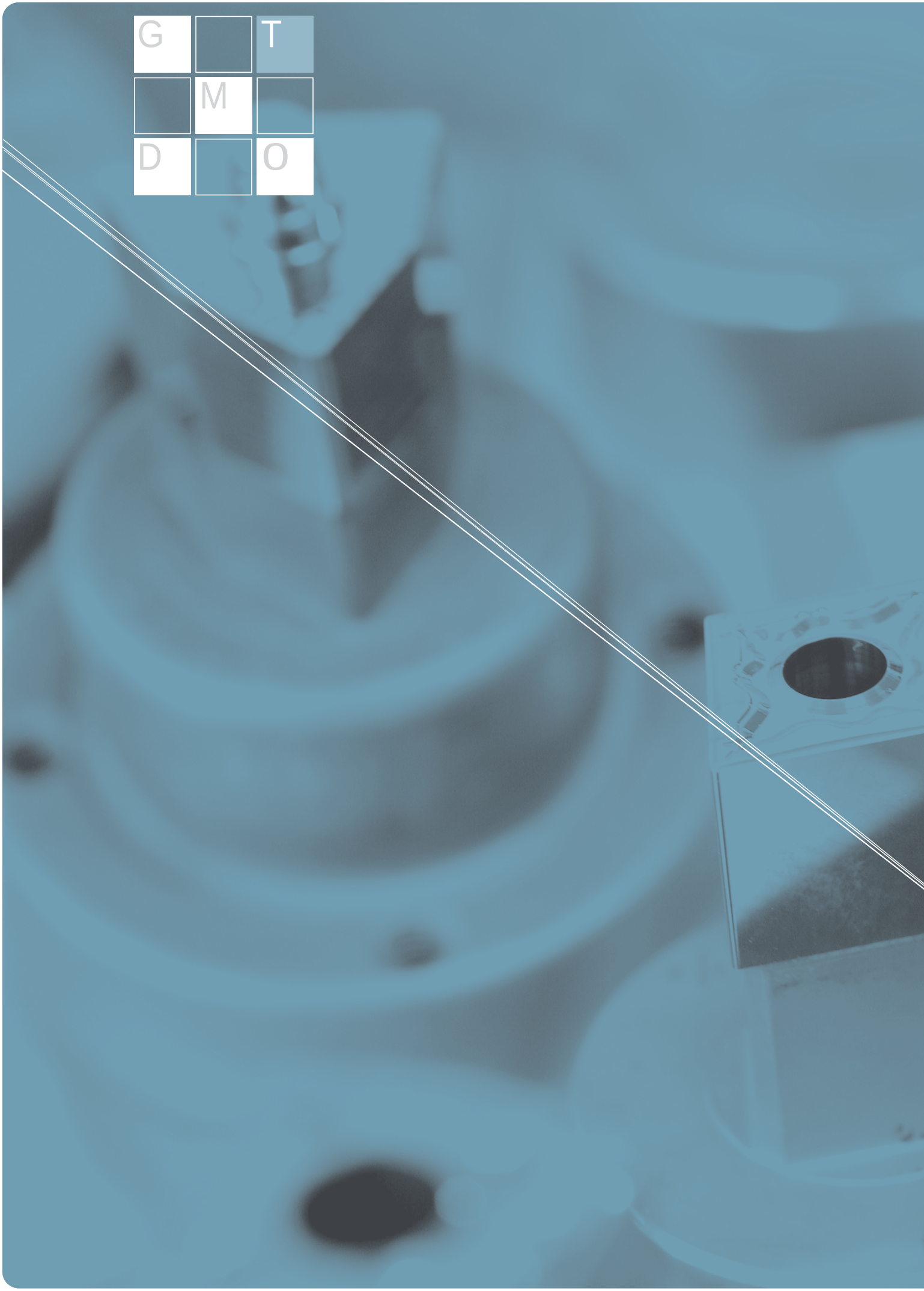
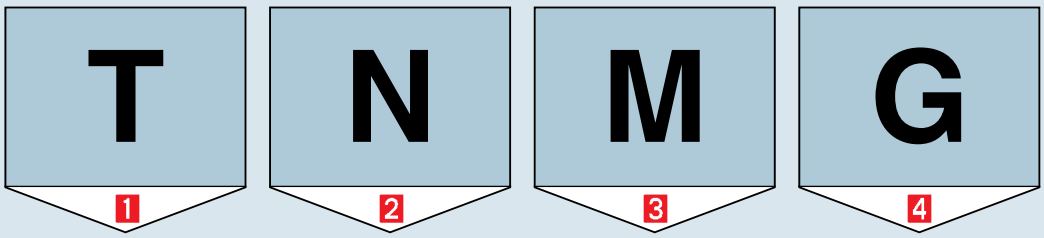

G
T
M
D
O

Turning

Turning Insert Code System (ISO)



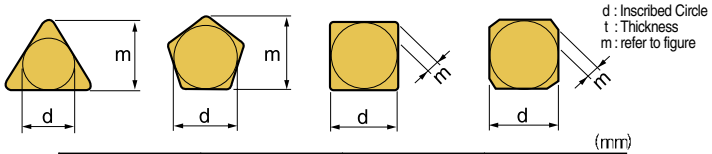
1 Insert Shape

			
C	D	E	K
			
L	R	S	T
			
V	W		

2 Relief Angle

			
B	C	D	E
			
F	N	P	
Special			
O			

3 Tolerance



(mm)

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

■ Tolerance on C,H,R,T,W class (exceptional case)

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

■ Tolerance on D class (exceptional case)

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

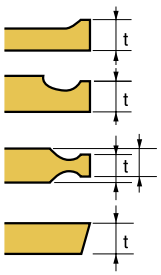
4 Cross Section Type

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

16 04 08 HM

5 6 7 8

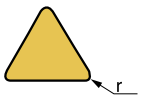
6 Height of Cutting Edge



Symbol		Height of Cutting Edge (t)	
Metric	Inch	mm	Inch
-	0.5(1)	0.79	1/32
T0	0.6	1.00	0.040
01	1(2)	1.59	1/16
T1	1.2	1.98	5/64
02	1.5(3)	2.38	3/32
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

7 Nose Radius (Nose R)

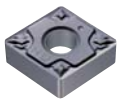
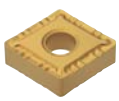
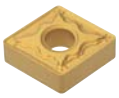


Symbol		Corner Radius	
Metric	Inch	mm	Inch
01	0	0.1	0.004
02	0.5	0.2	0.008
04	1	0.4	1/64
08	2	0.8	1/32
12	3	1.2	3/64
16	4	1.6	1/16
20	5	2.0	5/64
24	6	2.4	3/32
28	7	2.8	7/64
32	8	3.2	1/8
00	-	Round insert(Inch)	
M0	-	Round insert(Metric)	

5 Cutting Edge Length, Diameter of Inscribed circle

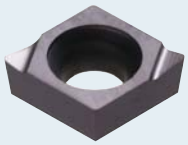
Symbol								IC
C	D	S	T	R	V	W		
Metric							Inch	d(mm)
03	04	03	06	03	-	02	1.2(5)	3.97
04	05	04	08	04	08	S3	1.5(6)	4.76
05	06	05	09	05	09	03	1.8(7)	5.56
-	-	-	-	06	-	-	-	6.00
06	07	06	11	06	11	04	2	6.35
08	09	07	13	07	13	05	2.5	7.94
-	-	-	-	08	-	-	-	8.00
09	11	09	16	09	16	06	3	9.525
-	-	-	-	10	-	-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

8 Chip Breaker for Turning

			
HU	VF	HC	HM
			
HR	HH	HA	HS
			
GM	GR	GH	GS
			
B20	B25	HFP	HMP
			
C25	AK	TA	

CCET

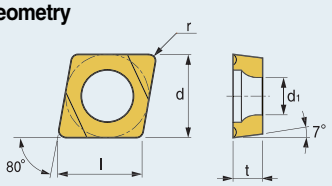
C type (80°)



USE
Finishing

Recommendation
d = 0.1~0.3mm
f = 0.01~0.05mm/rev

Geometry



Available Holder	Designation		ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)				
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030		CT10	CN20	CN100	CN200	H01	G10	ST10		l	d	t	d_1	r
SCLCR/L	CCET	0301005L									○		○								3.6	3.5	1.39	1.9	0.05
		030101L							○	○	○		○								3.6	3.5	1.39	1.9	0.1
		030102L							○	○	●		●				●				3.6	3.5	1.39	1.9	0.2
		030104L									○		○								3.6	3.5	1.39	1.9	0.4
		0401005L									○		○								4.4	4.3	1.79	2.3	0.05
		040101L							○	○	○		○								4.4	4.3	1.79	2.3	0.1
		040102L							○	○	●		●				●				4.4	4.3	1.79	2.3	0.2
		040104L									○		○								4.4	4.3	1.79	2.3	0.4

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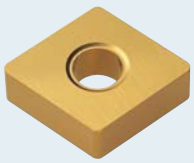
●: Stock Item ○: Under preparing for stock

CNMA

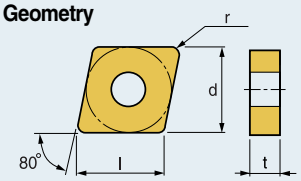
C type (80°)



USE
Finishing

Recommendation
d = 0.1~2.0mm
f = 0.05~0.3mm/rev

Geometry



Available Holder	Designation		ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)			
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	NC315K	CT10	CN20	CN100	CN200	H01	H05	ST10	U20	l	d	t	r
PCBNR/L PCLNR/L	CNMA	090308	322																		9.7	9.525	3.18	0.8
		120404	431					●	●			●									12.9	12.7	4.76	0.4
		120408	432	○	●			●	●		○	●					●	●		●	12.9	12.7	4.76	0.8
		120412	433	○	○			●	●			●									12.9	12.7	4.76	1.2
		120416	434						●												12.9	12.7	4.76	1.6
		160612	543					●													16.1	15.875	6.35	1.2
		160616	544																		16.1	15.875	6.35	1.6
		190608	642		○				○			○									19.3	19.05	6.35	0.8
		190612	643		○			●	●			●									19.3	19.05	6.35	1.2
		190616	644						●			●									19.3	19.05	6.35	1.6

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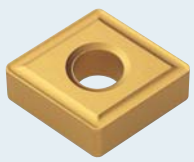
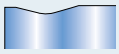
●: Stock Item ○: Under preparing for stock

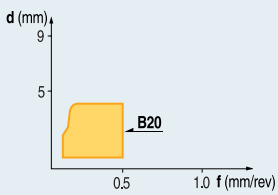
CNMG-B20

C type (80°)





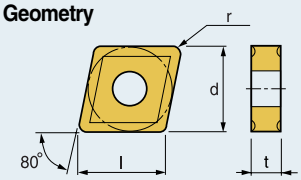
▪ Exclusive chip breaker for cast iron.



USE
Light & Medium

Recommendation
B20 d = 1.5~4.0mm
f = 0.15~0.5mm/rev

Geometry



Available Holder	Designation		ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)			
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	NC315K	CT10	CN20	CN100	CN200	H01	G10	ST10		l	d	t	r
PCBNR/L PCLNR/L	CNMG	090308-B20	322						●												9.7	9.525	3.18	0.8
		120404-B20	431					●	●												12.9	12.7	4.76	0.4
		120408-B20	432		○			●	●			●									12.9	12.7	4.76	0.8
		120412-B20	433		○			○	●			●									12.9	12.7	4.76	1.2
		190604-B20	641																		19.3	19.05	6.35	0.4
		190608-B20	642		○			●	●			●									19.3	19.05	6.35	0.8
		190612-B20	643		○	●		●	●			●									19.3	19.05	6.35	1.2

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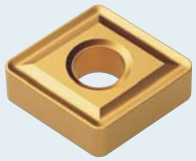
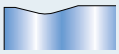
●: Stock Item ○: Under preparing for stock

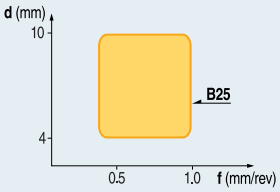
CNMG-B25

C type (80°)





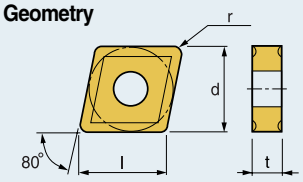
- Comprehensive chip breaker can cover general cutting.



USE
General Cutting

Recommendation
B25 d = 4.0~10.0mm
f = 0.5~1.0mm/rev

Geometry



Available Holder	Designation		ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)			
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	NC500H	CT10	CN20	CN100	CN200	H01	G10	ST10		l	d	t	r
PCBNR/L PCLNR/L	CNMG	120404-B25	431	○	●	●					○			●		●					12.9	12.7	4.76	0.4
		120408-B25	432	○	●	●	●				●	●		●		●					12.9	12.7	4.76	0.8
		120412-B25	433	○	●	●					○										12.9	12.7	4.76	1.2
		160608-B25	542	○		●															16.1	15.875	6.35	0.8
		160612-B25	543	○	●	●															16.1	15.875	6.35	1.2
		190604-B25	641	○	●	●				○											19.3	19.05	6.35	0.4
		190608-B25	642	○	●	●				○		○									19.3	19.05	6.35	0.8
		190612-B25	643	○		●				○		●									19.3	19.05	6.35	1.2
		190616-B25	644	○	●	●															19.3	19.05	6.35	1.6

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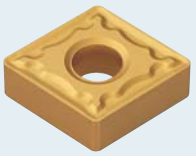
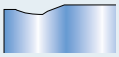
● : Stock Item ○ : Under preparing for stock

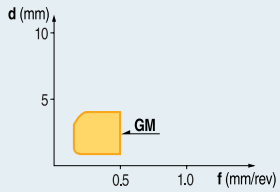
CNMG-GM

C type (80°)





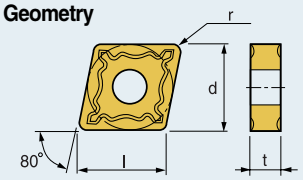
- Good chip control at general cutting of steel.
- Due to the strong cutting edge design, it is possible to machine with high feed rate even at intermittent cutting of steel.



USE
Medium

Recommendation
GM d = 0.7~4.0mm
f = 0.1~0.5mm/rev

Geometry



Available Holder	Designation		ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)			
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030		CT10	CN20	CN100	CN200	H01	G10	ST10		l	d	t	r
PCBNR/L PCLNR/L	CNMG	090304-GM	321																		9.7	9.525	3.18	0.4
		090308-GM	322																		9.7	9.525	3.18	0.8
		120404-GM	431		●	●				○	○			●		●					12.9	12.7	4.76	0.4
		120408-GM	432	○	●	●			○	○	○			●		●					12.9	12.7	4.76	0.8
		120412-GM	433	○	●				○	○	○										12.9	12.7	4.76	1.2
		190608-GM	642		●				○												19.3	19.05	6.35	0.8

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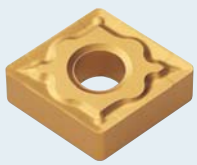
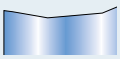
● : Stock Item ○ : Under preparing for stock

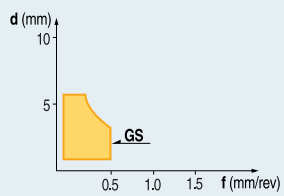
CNMG-GS

C type (80°)





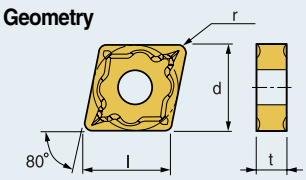
- As a chip breaker for stainless steel machining, good surface finish & smooth cutting process can be acquired.



USE
Stainless Steel

Recommendation
GS d = 1.5~5.5mm
f = 0.15~0.5mm/rev

Geometry



Available Holder	Designation		ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)			
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030		CT10	CN20	CN100	CN200	H01	G10	ST10		l	d	t	r
PCBNR/L PCLNR/L	CNMG	120404-GS	431				●			○	●										12.9	12.7	4.76	0.4
		120408-GS	432			●	●			○	●										12.9	12.7	4.76	0.8
		120412-GS	433			●	●			○	●										12.9	12.7	4.76	1.2
		160608-GS	542																		16.1	15.875	6.35	0.8
		160612-GS	543																		16.1	15.875	6.35	1.2
		190612-GS	643							○											19.3	19.05	6.35	1.2

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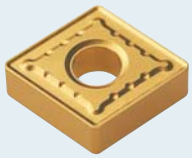
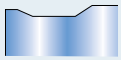
● : Stock Item ○ : Under preparing for stock

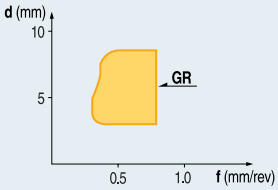
CNMG-GR

C type (80°)





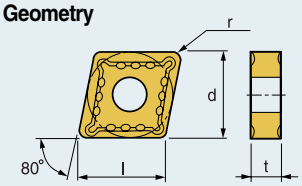
- Due to the strong cutting edge, it is possible to machine with high feed rate for steel & cast iron.



USE
Roughing

Recommendation
GR d = 3.0~8.0mm
f = 0.3~0.8mm/rev

Geometry



Available Holder	Designation		ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)			
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	NC500H	PC9030	NC315K	CT10	CN20	CN100	CN200	H01	G10	ST10		l	d	t	r
PCBNR/L PCLNR/L	CNMG	120408-GR	432	○	●	●		●	●		○	●									12.9	12.7	4.76	0.8
		120412-GR	433	○	●	●		●	●	●	○	●									12.9	12.7	4.76	1.2
		120416-GR	434																		12.9	12.7	4.76	1.6
		160608-GR	542	○	●	●			●												16.1	15.875	6.35	0.8
		160612-GR	543	○	●	●			●	●											16.1	15.875	6.35	1.2
		160616-GR	544		●	●															16.1	15.875	6.35	1.6
		190608-GR	642		●	●			●			○									19.3	19.05	6.35	0.8
		190612-GR	643	○	●	●			●	●		○									19.3	19.05	6.35	1.2
		190616-GR	644	○	●	●				●		○									19.3	19.05	6.35	1.6
		250724-GR	856							○											25.8	25.4	7.94	2.4
		250924-GR	866			●				○											25.8	25.4	9.52	2.4
	CNMM	120408-GR	432																		12.9	12.7	4.76	0.8
		120412-GR	433																		12.9	12.7	4.76	1.2
		190612-GR	643							○											19.3	19.05	6.35	1.2
		190616-GR	644							○											19.3	19.05	6.35	1.6

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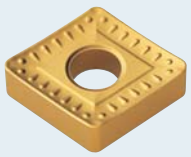
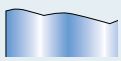
● : Stock Item ○ : Under preparing for stock

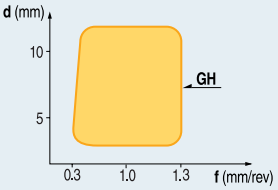
CNMM-GH

C type (80°)





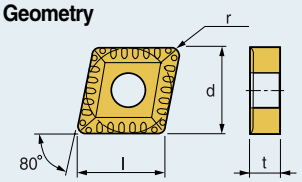
- Chip breaker for heavy cutting.



USE
Heavy Duty

Recommendation
GH d = 3.0~11.0mm
f = 0.3~1.3mm/rev

Geometry



Available Holder	Designation		ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)			
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	NC500H	CT10	CN20	CN100	CN200	H01	G10	ST10		l	d	t	r
PCBNR/L PCLNR/L	CNMM	120408-GH	432		●	●				○		○									12.9	12.7	4.76	0.8
		120412-GH	433		●	●				○		○									12.9	12.7	4.76	1.2
		160412-GH	533																		16.1	15.875	4.76	1.2
		160424-GH	536																		16.1	15.875	4.76	2.4
		160612-GH	543			●															16.1	15.875	6.35	1.2
		160616-GH	544		●																16.1	15.875	6.35	1.6
		160624-GH	546																		16.1	15.875	6.35	2.4
		190608-GH	642			○				○		○									19.3	19.05	6.35	0.8
		190612-GH	643	○	●	●				○		●									19.3	19.05	6.35	1.2
		190616-GH	644		●	●						●									19.3	19.05	6.35	1.6
		190624-GH	646		●																19.3	19.05	6.35	2.4
		250724-GH	856		●	●				○		○									25.8	25.4	7.94	2.4
		250924-GH	866		●	●						●									25.8	25.4	7.94	2.4

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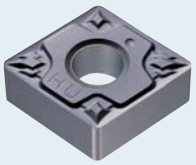
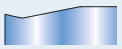
● : Stock Item ○ : Under preparing for stock

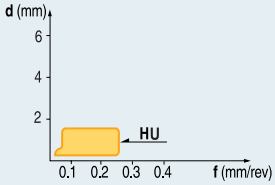
CNG(M)G-HU

C type (80°)





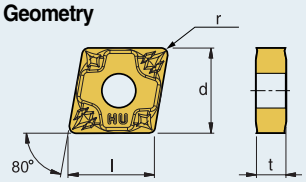
- Due to the low cutting load that has been originated from sharp cutting edge, good surface finish through smooth cutting can be acquried.
- Due to the special chip breaker design for shallow depth of cut, good chip control is possible at low depth of cut machining.



USE
Finishing

Recommendation
HU d = 0.1~1.5mm
f = 0.03~0.25mm/rev

Geometry



Available Holder	Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)			
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	CT10	CN20	CN100	CN200	H01	G10	ST10		l	d	t	r
PCBNR/L PCLNR/L	CNGG	120404-HU								○										12.9	12.7	4.76	0.4
		120408-HU									○			○						12.9	12.7	4.76	0.8
	CNMG	120404-HU		○			○			○										12.9	12.7	4.76	0.4
		120408-HU		○			○			○	○			○						12.9	12.7	4.76	0.8
		120412-HU																		12.9	12.7	4.76	1.2

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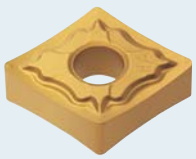
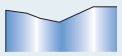
● : Stock Item ○ : Under preparing for stock

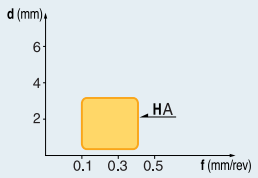
CNMG(M)-HA

C type (80°)





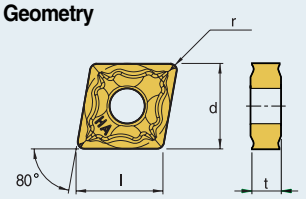
- Low cutting load due to the sharp cutting edge.
- Thanks to the special design on cutting edge line, strength of cutting edge has been icreased.
- Suitable for machining of low carbon steel, stainless steel and aluminum.



USE
Light & Medium

Recommendation
HA d = 0.8~3.5mm
f = 0.1~0.4mm/rev

Geometry



Available Holder	Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)			
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	CT10	CN20	CN100	CN200	H01	G10	ST10		l	d	t	r
PCBNR/L PCLNR/L	CNMG	120404-HA	431		●		●			●	●					●				12.9	12.7	4.76	0.4
		120408-HA	432		●		●			●	●					●				12.9	12.7	4.76	0.8
		120412-HA	433							●										12.9	12.7	4.76	1.2
	CNMM	120408-HA	432																	12.9	12.7	4.76	0.8

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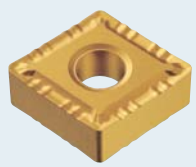
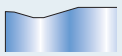
*In case of carbide insert(H01), special treatment on top & bottom face of insert has been applied to get good chip flow property.

● : Stock Item ○ : Under preparing for stock

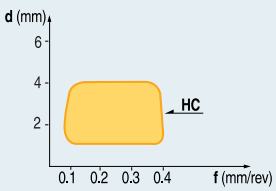
CNMG-HC

C type (80°)





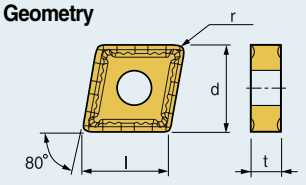
- Good performance for copy machining.
- Effective chip breaker can cover the deviation of depth of cut, from shallow to big.



USE
Light & Medium

Recommendation
HC d = 0.8~4.0mm
f = 0.08~0.4mm/rev

Geometry



Available Holder	Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)			
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	CT10	CN20	CN100	CN200	H01	G10	ST10		l	d	t	r
PCBNR/L PCLNR/L	CNMG	120404-HC	431	○	●	●				○	○				●					12.9	12.7	4.76	0.4
		120408-HC	432	○	●	●	●			○	○				●					12.9	12.7	4.76	0.8
		120412-HC	433																	12.9	12.7	4.76	1.2

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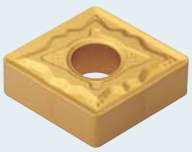
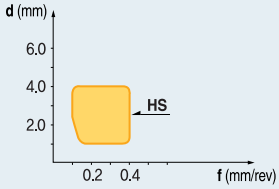
● : Stock Item ○ : Under preparing for stock

CNMG-HS

C type (80°)



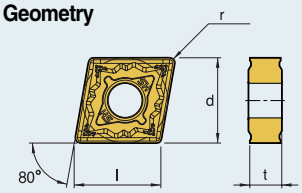
- Exclusive chip breaker for stainless steel.
- Due to the special chip breaker design to prevent notch wear on cutting edge, insert tool life has been increased.



USE
Stainless Steel(Medium)

Recommendation
HS d = 1.0~4.0mm
f = 0.1~0.4mm/rev

Geometry



Available Holder	Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)			
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	CT10	CN20	CN100	CN200	H01	G10	ST10		l	d	t	r
PCBNR/L PCLNR/L	CNMG	090304-HS	321				●				●									9.7	9.525	3.18	0.4
		090308-HS	322				●				●									9.7	9.525	3.18	0.8
		120404-HS	431				●			●	●									12.9	12.7	4.76	0.4
		120408-HS	432				●			●	●									12.9	12.7	4.76	0.8
		120412-HS	433				●			●	●									12.9	12.7	4.76	1.2
		160612-HS	543				●				●									16.1	15.875	6.35	1.2
		160616-HS	544				●				●									16.1	15.875	6.35	1.6
		190612-HS	643				●			●	●									19.3	19.05	6.35	1.2
		190616-HS	644				●			●	●									19.3	19.05	6.35	1.6

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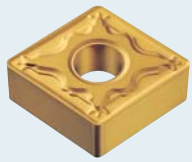
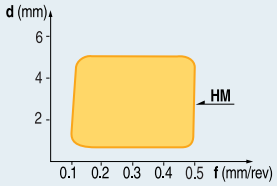
●: Stock Item ○: Under preparing for stock

CNMG-HM

C type (80°)



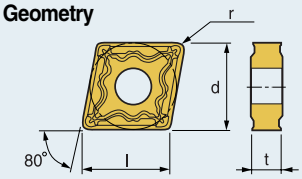
- Comprehensive chip breaker can cover from medium-finishing to medium-roughing.
- Suitable chip breaker for CNC machine.



USE
Medium

Recommendation
HM d = 1.0~5.0mm
f = 0.1~0.5mm/rev

Geometry



Available Holder	Designation		ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)			
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	NC315K	CT10	CN20	CN100	CN200	H01	G10	ST10		l	d	t	r
PCBNR/L PCLNR/L	CNMG	090304-HM	321	○	●				●												9.7	9.525	3.18	0.4
		090308-HM	322	○	●				●												9.7	9.525	3.18	0.8
		120404-HM	431	○	●	●	●		●	○	●	●		●		●					12.9	12.7	4.76	0.4
		120408-HM	432	○	●	●	●	●	●	●	●	●		●		●					12.9	12.7	4.76	0.8
		120412-HM	433	○	●	●	○	○	●	●	○	●									12.9	12.7	4.76	1.2
		160604-HM	541																		16.1	15.875	6.35	0.4
		160608-HM	542	○	●	●			●												16.1	15.875	6.35	0.8
		160612-HM	543		●				●	●											16.1	15.875	6.35	1.2
		190608-HM	642						●			○									19.3	19.05	6.35	0.8
		190612-HM	643		●				○	●	○	○									19.3	19.05	6.35	1.2

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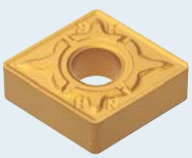
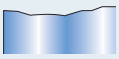
●: Stock Item ○: Under preparing for stock

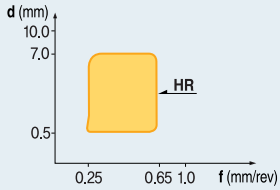
CNMG-HR

C type (80°)





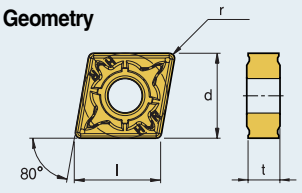
- Good chip flow at high feed & big depth of cut.
- Suitable chip breaker for intermittent cutting.



USE
Roughing

Recommendation
HR d = 2.5~7.0mm
f = 0.25~0.65mm/rev

Geometry



Available Holder	Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)			
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	NC500H	CT10	CN20	CN100	CN200	H01	G10	ST10		l	d	t	r
PCBNR/L PCLNR/L	CNMG	120408-HR	432	○	●	●			○												12.9	12.7	4.76	0.8
		120412-HR	433	○	●	●			○			●									12.9	12.7	4.76	1.2
		120416-HR	434																		12.9	12.7	4.76	1.6
		160608-HR	542	○	●	●															16.1	15.875	6.35	0.8
		160612-HR	543	○	●	●															16.1	15.875	6.35	1.2
		160616-HR	544	○	●	●															16.1	15.875	6.35	1.6
		160624-HR	546																		16.1	15.875	6.35	2.4
		190608-HR	642	○	●	●			○			○									19.3	19.05	6.35	0.8
		190612-HR	643	○	●	●			○			●									19.3	19.05	6.35	1.2
		190616-HR	644	○	●	●						○									19.3	19.05	6.35	1.6
		190624-HR	646																		19.3	19.05	6.35	2.4
		250924-HR	866																		25.8	25.4	9.52	2.4

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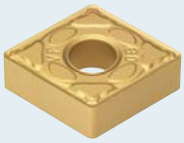
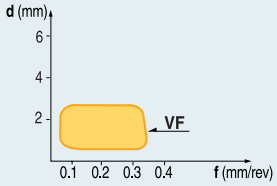
●: Stock Item ○: Under preparing for stock

CNMG-VF

C type (80°)



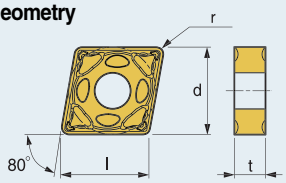
- Good chip control performance at various depth of cut.
- Sharp & strong cutting edge due to the special chip breaker design.



USE
Finishing

Recommendation
VF d = 0.3~2.5mm
f = 0.05~0.35mm/rev

Geometry



Available Holder	Designation		ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)			
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	NC315K	CT10	CN20	CN100	CN200	H01	G10	ST10		l	d	t	r
PCBNR/L PCLNR/L	CNMG	090304-VF	321	○	●					○	○					●					9.7	9.525	3.18	0.4
		090308-VF	322	○	●					○	○					●					9.7	9.525	3.18	0.8
		120404-VF	431	○	●					○	○					●					12.9	12.7	4.76	0.4
		120408-VF	432	○	●					○	○					●					12.9	12.7	4.76	0.8
		120412-VF	433		●																12.9	12.7	4.76	1.2

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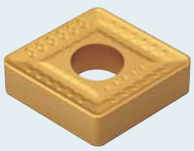
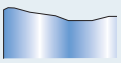
● : Stock Item ○ : Under preparing for stock

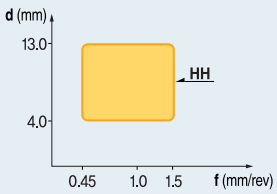
CNMM-HH

C type (80°)





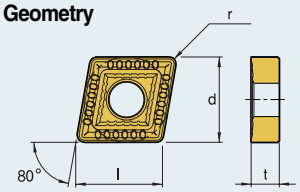
- Suitable chip breaker for high feed, big depth of cut machining.
- Since the special convex "dot" designed on cutting edge reduces cutting load, smooth cutting can be done even at the heavy cutting.



USE
Heavy Duty

Recommendation
HH d = 4.0~13.0mm
f = 0.45~1.5mm/rev

Geometry



Available Holder	Designation		ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)			
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	NC500H	CT10	CN20	CN100	CN200	H01	G10	ST10		l	d	t	r
PCBNR/L PCLNR/L	CNMM	160616-HH	544		●	●															1.61	15.875	6.35	1.6
		190608-HH	642		●	●				○		○									19.3	19.05	6.35	0.8
		190612-HH	643		●	●				○		○									19.3	19.05	6.35	1.2
		190616-HH	644		●	●					○	○									19.3	19.05	6.35	1.6
		190624-HH	646		●	●						○									19.3	19.05	6.35	2.4
		250724-HH	856		●	●						○									25.8	25.4	7.94	2.4
		250924-HH	866		●	●						○									25.8	25.4	9.52	2.4
		250932-HH	868		●	●						○									25.8	25.4	9.52	3.2

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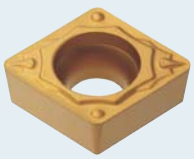
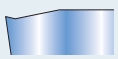
● : Stock Item ○ : Under preparing for stock

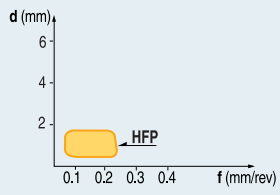
CCGT-HFP

C type (80°)





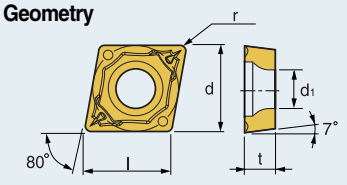
- Suitable chip breaker for shallow depth of cut & low feed rate.
- Good surface finish and smooth cutting can be acquried at the machining of inner diameter & outer diameter.



USE
Finishing

Recommendation
HFP d = 0.1~1.5mm
f = 0.05~0.25mm/rev

Geometry



Available Holder	Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)				
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	CT10	CN20	CN100	CN200	H01	G10	ST10		l	d	t	r	d_1
SCACR/L SCLCR/L	CCGT	060202-HFP	21.50.5		●				○	○	○			○						6.5	6.32	2.38	0.2	2.8
		060204-HFP	21.51		●				○	○	○			○						6.5	6.32	2.38	0.4	2.8
		060208-HFP	21.52																	6.5	6.32	2.38	0.8	2.8
		09T302-HFP	32.50.5		●				○	○	○			○						9.7	9.525	3.97	0.2	4.4
		09T304-HFP	32.51		●	●			○	○	●			○						9.7	9.525	3.97	0.4	4.4
		09T308-HFP	32.52		●						○									9.7	9.525	3.97	0.8	4.4
		120404-HFP	431																	12.9	12.7	4.76	0.4	5.5
		120408-HFP	432																	12.9	12.7	4.76	0.8	5.5

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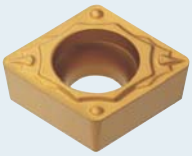
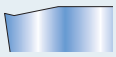
● : Stock Item ○ : Under preparing for stock

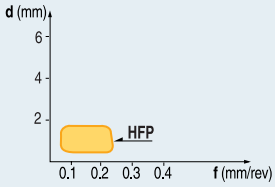
CCMT-HFP

C type (80°)





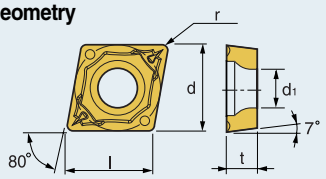
- Suitable chip breaker for shallow depth of cut & low feed rate.
- Good surface finish and smooth cutting can be acquried at the machining of inner diameter & outer diameter



USE
Finishing

Recommendation
HFP d = 0.1~1.5mm
f = 0.05~0.25mm/rev

Geometry



Available Holder	Designation	ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)				
			NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030		CT10	CN20	CN100	CN200	H01	G10	ST10		l	d	t	r	d_1
SCACR/L SCLCR/L	CCMT 060202-HFP	21.50.5		○																6.5	6.35	2.38	0.2	2.8
	060204-HFP	21.51		○					○											6.5	6.35	2.38	0.4	2.8
	060208-HFP	21.52		○					○											6.5	6.35	2.38	0.8	2.8
	09T302-HFP	32.50.5		○																9.7	9.525	3.97	0.2	4.4
	09T304-HFP	32.51		○					○											9.7	9.525	3.97	0.4	4.4
	09T308-HFP	32.52		○					○											9.7	9.525	3.97	0.8	4.4
	120404-HFP	431		○					○											12.9	12.7	4.76	0.4	5.5
	120408-HFP	432		○					○											12.9	12.7	4.76	0.8	5.5

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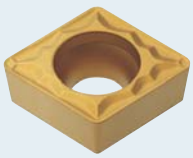
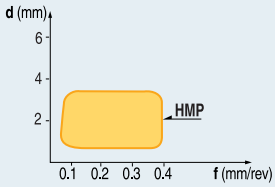
●: Stock Item ○: Under preparing for stock

CCMT-HMP

C type (80°)



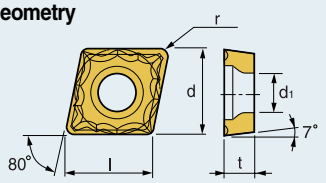
- Comprehensive chip breaker can cover various conditions of feed & depth for machining of steel & stainless steel.



USE
Medium

Recommendation
HMP d = 0.5~3.5mm
f = 0.05~0.4mm/rev

Geometry



Available Holder	Designation	ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)				
			NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	NC315K	CT10	CN20	CN100	CN200	H01	G10	ST10		l	d	t	r	d_1
SCACR/L SCLCR/L	CCMT 060202-HMP	21.50.5	○	●		●			●	●										6.5	6.35	2.38	0.2	2.8
	060204-HMP	21.51	○	●	●	●		●	○	●	●				●					6.5	6.35	2.38	0.4	2.8
	060208-HMP	21.52	○	●	●	●		●	○	●										6.5	6.35	2.38	0.8	2.8
	09T302-HMP	32.50.5	○			●				●					●					9.7	9.525	3.97	0.2	4.4
	09T304-HMP	32.51	○	●	●	●		●	○	●	●				●					9.7	9.525	3.97	0.4	4.4
	09T308-HMP	32.52	○	●	●	●	●	●	○	●	●				●					9.7	9.525	3.97	0.8	4.4
	120404-HMP	431	○	●	●	●		●	○	●	●									12.9	12.7	4.76	0.4	5.5
	120408-HMP	432	○	●	●	●	●	●	○	●	●									12.9	12.7	4.76	0.8	5.5

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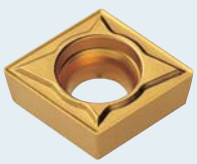
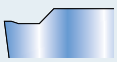
●: Stock Item ○: Under preparing for stock

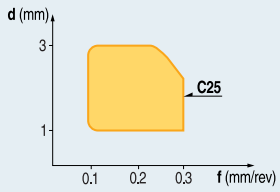
CCMT-C25

C type (80°)





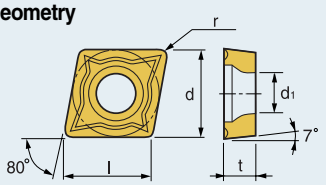
- Suitable chip breaker for intermittent cutting of steel and cast iron.



USE
Medium

Recommendation
C25 d = 1.0~3.0mm
f = 0.1~0.3mm/rev

Geometry



Available Holder	Designation	ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)				
			NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	CT10	CN20	CN100	CN200	H01	G10	ST10		l	d	t	r	d_1
SCACR/L SCLCR/L	CCMT 060202-C25	21.50.5		●	●			○		○		●		●					6.5	6.35	2.38	0.2	2.8
	060204-C25	21.51	○	●	●			○		○		●		●					6.5	6.35	2.38	0.4	2.8
	060208-C25	21.52		●	●														6.5	6.35	2.38	0.8	2.8
	080308-C25	2.522		●				○											8.1	7.94	3.18	0.8	3.4
	09T302-C25	32.50.5						○											9.7	9.525	3.97	0.2	4.4
	09T304-C25	32.51	○	●	●	●		○		●		●		●					9.7	9.525	3.97	0.4	4.4
	09T308-C25	32.52	○	●	●	●		○		●	●	●		●					9.7	9.525	3.97	0.8	4.4
	120404-C25	431	○	●				○		○									12.9	12.7	4.76	0.4	5.5
	120408-C25	432	○	●	●			○		○									12.9	12.7	4.76	0.8	5.5
	120412-C25	433																	12.9	12.7	4.76	1.2	5.5

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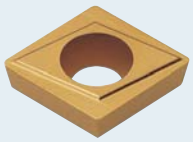
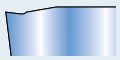
●: Stock Item ○: Under preparing for stock

CPGT

C type (80°)



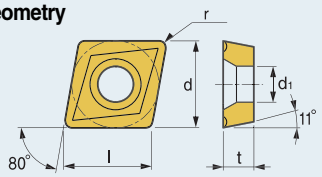


- Wide chip control area from light cutting to medium cutting.

USE
Finishing

Recommendation

Geometry



Available Holder	Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)				
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	CT10	CN20	CN100	CN200	H01	G10	ST10		l	d	t	r	d_1
SCLPR/L (Boring Bar)	CPGT	080202	2.51.50.5									●		○						8.1	7.94	2.38	0.2	3.4
		080204	2.51.51									●		●						8.1	7.94	2.38	0.4	3.4
		080208	2.51.52																	8.1	7.94	2.38	0.8	3.4
		090302	320.5									○		○						9.7	9.525	3.18	0.2	4.4
		090304	321									●		●						9.7	9.525	3.18	0.4	4.4
		090308	322																	9.7	9.525	3.18	0.8	4.4
		09T301	32.50																	9.7	9.525	3.97	0.1	4.4
		09T302	32.50.5																	9.7	9.525	3.97	0.2	4.4
		09T304	32.51																	9.7	9.525	3.97	0.4	4.4

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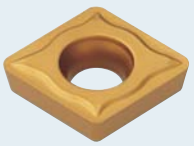
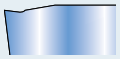
● : Stock Item ○ : Under preparing for stock

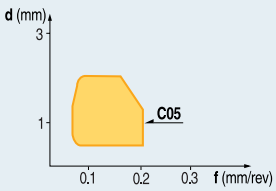
CPGT-C05

C type (80°)





- Good surface fihish due to reduced cutting load.

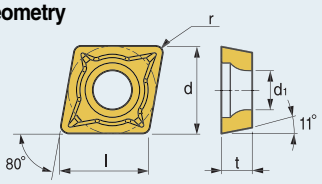


USE
Finishing

Recommendation

C05 d = 0.5~2.0mm
f = 0.05~0.2mm/rev

Geometry



Available Holder	Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)				
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	CT10	CN20	CN100	CN200	H01	G10	ST10		l	d	t	r	d_1
SCLPR/L (Boring Bar)	CPGT	080204-C05	2.51.51	○	●				○		○									8.1	7.94	2.38	0.4	3.4
		080208-C05	2.51.52	○	●				○		○									8.1	7.94	2.38	0.8	3.4
		090304-C05	321	○	●				○		○									9.7	9.525	3.18	0.4	4.4
		090308-C05	322	○	●				○		○									9.7	9.525	3.18	0.8	4.4
		09T304-C05	32.51																	9.7	9.525	3.97	0.4	4.4

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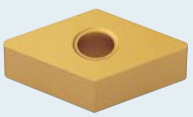
● : Stock Item ○ : Under preparing for stock

DNMA

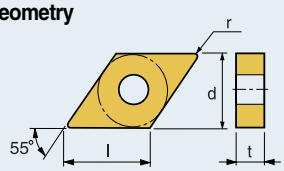
D type (55°)



USE

Recommendation

Geometry



Available Holder	Designation		ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)			
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	NC315K	CT10	CN20	CN100	CN200	H01	G10	ST10		l	d	t	r
PDJNR/L PDNNR/L PDSNR/L PDUNR/L	DNMA	110408	332																	11.6	9.525	4.76	0.8
		150404	431																	15.5	12.7	4.76	0.4
		150408	432						●											15.5	12.7	4.76	0.8
		150412	433																	15.5	12.7	4.76	1.2
		150604	441																	15.5	12.7	6.35	0.4
		150608	442	○					●			●								15.5	12.7	6.35	0.8
		150612	443	○					●			○								15.5	12.7	6.35	1.2
		150616	444																	15.5	12.7	6.35	1.6
		190608	542																	19.4	15.875	6.35	0.8

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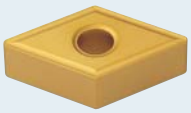
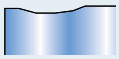
● : Stock Item ○ : Under preparing for stock

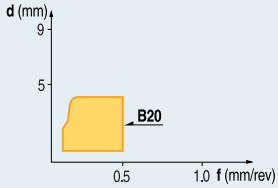
DNMG-B20

D type (55°)





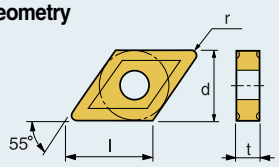
- Exclusive chip breaker for cast iron.



USE
Light & Medium

Recommendation
B20 d = 1.5~4.0mm
f = 0.15~0.5mm/rev

Geometry



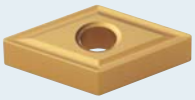
Available Holder	Designation	ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)			
			NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	NC315K	CT10	CN20	CN100	CN200	H01	G10	ST10		l	d	t	r
PDJNR/L	DNMG 150408-B20	432						●												15.5	12.7	4.76	0.8
PDNNR/L	150412-B20	433						○												15.5	12.7	4.76	1.2
PDSNR/L	150608-B20	442					●	●			●									15.5	12.7	6.35	0.8
PDUNR/L	150612-B20	433					○	●			○									15.5	12.7	6.35	1.2

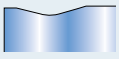
P. 138, 146, 147, 173, 174

● : Stock Item ○ : Under preparing for stock

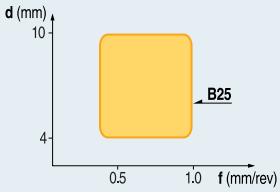
DNMG-B25

D type (55°)





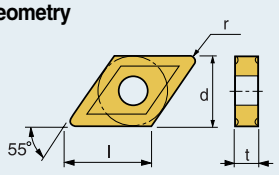
- Comprehensive chip breaker can cover general cutting.



USE
General Cutting

Recommendation
B25 d = 4.0~10.0mm
f = 0.5~1.0mm/rev

Geometry



Available Holder	Designation	ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)			
			NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	CT10	CN20	CN100	CN200	H01	G10	ST10		l	d	t	r
PDJNR/L	DNMG 150402-B25	430.5																	15.5	12.7	4.76	0.2
PDNNR/L	150404-B25	431		○	●					○									15.5	12.7	4.76	0.4
PDSNR/L	150408-B25	432		●	●					○									15.5	12.7	4.76	0.8
PDUNR/L	150412-B25	433								○									15.5	12.7	4.76	1.2
	150602-B25	440.5																	15.5	12.7	6.35	0.2
	150604-B25	441	○	●	●	○				○		●		●					15.5	12.7	6.35	0.4
	150608-B25	442	○	●	●	●				●		●		●					15.5	12.7	6.35	0.8
	150612-B25	443																	15.5	12.7	6.35	1.2

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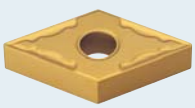
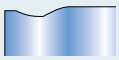
● : Stock Item ○ : Under preparing for stock

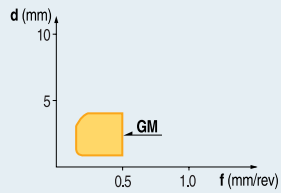
DNMG-GM

D type (55°)





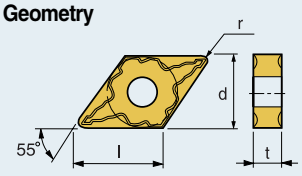
- Good chip control at general cutting of steel.
- Due to the strong cutting edge design, it is possible to machine with high feed rate even at intermittent cutting of steel.



USE
Medium

Recommendation
GM d = 1.5~5.5mm
f = 0.15~0.5mm/rev

Geometry



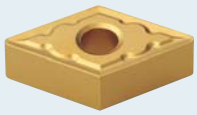
Available Holder	Designation	ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)			
			NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	CT10	CN20	CN100	CN200	H01	G10	ST10		l	d	t	r
PDJNR/L	DNMG 110308-GM	322																	11.6	9.525	3.18	0.8
PDJNR/L	110404-GM	331		●															11.6	9.525	4.76	0.4
PDSNR/L	110408-GM	332		●															11.6	9.525	4.76	0.8
PDUNR/L	150404-GM	431		●	●					○									15.5	12.7	4.76	0.4
	150408-GM	432	○	●	●					○									15.5	12.7	4.76	0.8
	150412-GM	433								○									15.5	12.7	4.76	1.2
	150604-GM	441		●	●					○		●		●					15.5	12.7	6.35	0.4
	150608-GM	442	○	●	●			○		○		●		●					15.5	12.7	6.35	0.8
	150612-GM	443	○	●	●			○		○									15.5	12.7	6.35	1.2

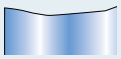
P. 138, 146, 147, 173, 174

● : Stock Item ○ : Under preparing for stock

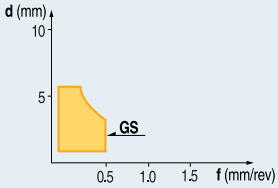
DNMG-GS

D type (55°)





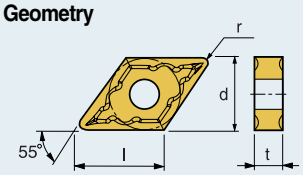
- As a chip breaker for stainless steel machining, good surface finish & smooth cutting process can be acquired.



USE
Stainless Steel

Recommendation
GS d = 1.5~5.5mm
f = 0.15~0.5mm/rev

Geometry



Available Holder	Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)			
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	CT10	CN20	CN100	CN200	H01	G10	ST10		l	d	t	r
PDJNR/L PDNNR/L PDSNR/L PDUNR/L	DNMG	150404-GS	431	○							○									15.5	12.7	4.76	0.4
		150408-GS	432	○			●				○									15.5	12.7	4.76	0.8
		150412-GS	433	○			●													15.5	12.7	4.76	1.2
		150604-GS	441	○			●				●									15.5	12.7	6.35	0.4
		150608-GS	442	○			●				●									15.5	12.7	6.35	0.8
		150612-GS	443	○			●													15.5	12.7	6.35	1.2

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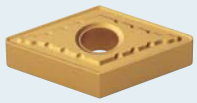
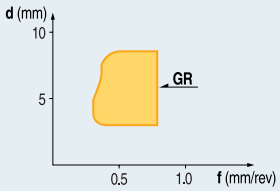
● : Stock Item ○ : Under preparing for stock

DNMG-GR

D type (55°)



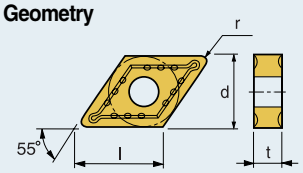
- Due to the strong cutting edge, it is possible to machine with high feed rate for steel & cast iron.



USE
Roughing

Recommendation
GR d = 3.0~8.0mm
f = 0.3~0.8mm/rev

Geometry



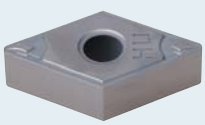
Available Holder	Designation		ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)			
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	NC315K	CT10	CN20	CN100	CN200	H01	G10	ST10		l	d	t	r
PDJNR/L PDNNR/L PDSNR/L PDUNR/L	DNMG	150404-GR	431						○												15.5	12.7	4.76	0.4
		150408-GR	432	○	●	●			○												15.5	12.7	4.76	0.8
		150412-GR	433																		15.5	12.7	4.76	1.2
		150416-GR	434																		15.5	12.7	4.76	1.6
		150604-GR	441																		15.5	12.7	6.35	0.4
		150608-GR	442	○	●	●			●			●									15.5	12.7	6.35	0.8
		150612-GR	443		●	○			●			●									15.5	12.7	6.35	1.2
		150616-GR	444		●				○			○									15.5	12.7	6.35	1.6

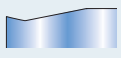
P. 138, 146, 147, 173, 174

● : Stock Item ○ : Under preparing for stock

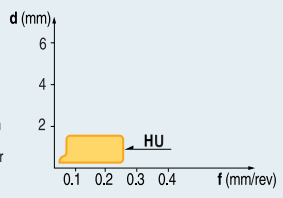
DNG(M)G-HU

D type (55°)





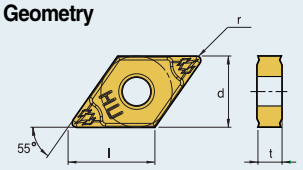
- Due to the low cutting load that has been originated from sharp cutting edge, good surface finish through smooth cutting can be acquried.
- Due to the special chip breaker design for shallow depth of cut, good chip control is possible at low depth of cut machining.



USE
Finishing

Recommendation
HU d = 0.1~1.5mm
f = 0.03~0.25mm/rev

Geometry



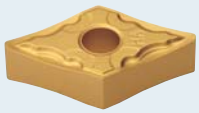
Available Holder	Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)			
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	CT10	CN20	CN100	CN200	H01	G10	ST10		l	d	t	r
PDJNR/L PDNNR/L	DNGG	150604-HU	441		○					○	○									15.5	12.7	6.35	0.4
		150608-HU	442		○					○	○									15.5	12.7	6.35	0.8
	DNMG	150404-HU	431		○					○	○									15.5	12.7	4.76	0.4
		150408-HU	432		○					○	○									15.5	12.7	4.76	0.8
		150412-HU	433																	15.5	12.7	4.76	1.2
		150604-HU	441		○					○	○									15.5	12.7	6.35	0.4
		150608-HU	442		○					○	○									15.5	12.7	6.35	0.8
		150612-HU	443																	15.5	12.7	6.35	1.2

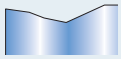
P. 138, 146, 147, 173, 174

● : Stock Item ○ : Under preparing for stock

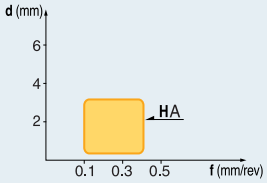
DNMG-HA

D type (55°)





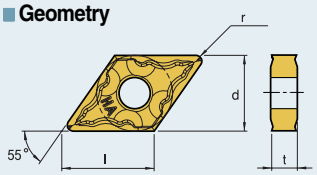
- Low cutting load due to the sharp cutting edge.
- Thanks to the special design on cutting edge line, strength of cutting edge has been icreased.
- Suitable for machining of low carbon steel, stainless steel and aluminum.



USE
Light & Medium

Recommendation
HA d = 0.8~3.5mm
f = 0.1~0.4mm/rev

Geometry



Available Holder	Designation	ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)			
			NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	CT10	CN20	CN100	CN200	H01	G10	ST10		l	d	t	r
PDJNR/L PDNNR/L	DNMG 150404-HA	431							●										15.5	12.7	4.76	0.4
	150408-HA	432							●										15.5	12.7	4.76	0.8
	150604-HA	441		●		●			●	●					●				15.5	12.7	6.35	0.4
	150608-HA	442		●		●			●	●					●				15.5	12.7	6.35	0.8

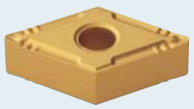
P. 138, 146, 147, 173, 174

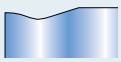
*In case of carbide insert(H01), special treatment on top & bottom face of insert has been applied to get good chip flow property.

●: Stock Item ○: Under preparing for stock

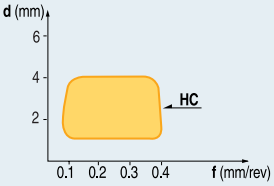
DNMG-HC

D type (55°)





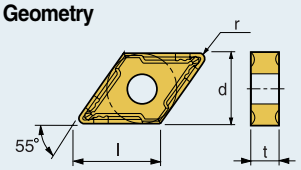
- Good performance for copy machining.
- Effective chip breaker can cover the deviation of depth of cut, from shallow to big.



USE
Light & Medium

Recommendation
HC d = 0.8~4.0mm
f = 0.08~0.4mm/rev

Geometry



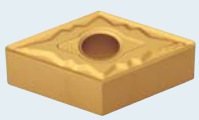
Available Holder	Designation	ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)			
			NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	CT10	CN20	CN100	CN200	H01	G10	ST10		l	d	t	r
PDJNR/L	DNMG 150404-HC	431	○							○									15.5	12.7	4.76	0.4
PDJNR/L	150408-HC	432	○	●						○									15.5	12.7	4.76	0.8
PDSNR/L	150412-HC	433																	15.5	12.7	4.76	1.2
PDUNR/L	150604-HC	441	○	●					○	○				●					15.5	12.7	6.35	0.4
	150608-HC	442	○	●	●				○	○				●					15.5	12.7	6.35	0.8
	150612-HC	443		●		●													15.5	12.7	6.35	1.2

P. 138, 146, 147, 173, 174

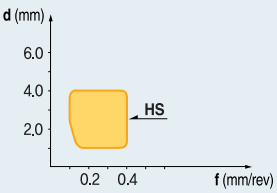
●: Stock Item ○: Under preparing for stock

DNMG-HS

D type (55°)



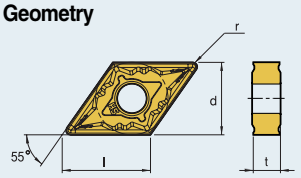
- Exclusive chip breaker for stainless steel.
- Due to the special chip breaker design to prevent notch wear on cutting edge, insert tool life has been increased.



USE
Stainless Steel(Medium)

Recommendation
HS d = 1.0~4.0mm
f = 0.1~0.4mm/rev

Geometry



Available Holder	Designation	ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)			
			NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	CT10	CN20	CN100	CN200	H01	G10	ST10		l	d	t	r
PDJNR/L	DNMG 110404-HS	331				●				●									11.6	9.525	4.76	0.4
PDNNR/L	110408-HS	332				●				●									11.6	9.525	4.76	0.8
	110412-HS	333																	11.6	9.525	4.76	1.2
	150404-HS	431				●			●	●									15.5	12.7	4.76	0.4
	150408-HS	432				●			●	●									15.5	12.7	4.76	0.8
	150412-HS	433				●				●									15.5	12.7	4.76	1.2
	150604-HS	441				●			●	●									15.5	12.7	6.35	0.4
	150608-HS	442				●			●	●									15.5	12.7	6.35	0.8
	150612-HS	443				●				●									15.5	12.7	6.35	1.2

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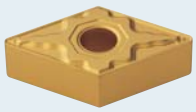
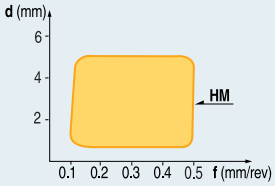
●: Stock Item ○: Under preparing for stock

DNMG-HM

D type (55°)



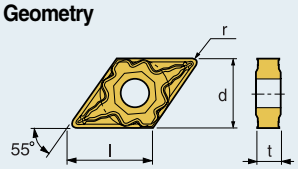
- Comprehensive chip breaker can cover from medium-finishing to medium-roughing.
- Suitable chip breaker for CNC machine.



USE
Medium

Recommendation
HM d = 1.0~5.0mm
f = 0.1~0.5mm/rev

Geometry



Available Holder	Designation	ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)			
			NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	NC315K	CT10	CN20	CN100	CN200	H01	G10	ST10		l	d	t	r
PDJNR/L PDNNR/L PDSNR/L PDUNR/L	DNMG 110404-HM	331	○	●				●			○									11.6	9.525	4.76	0.4
	110408-HM	332	○	●				●												11.6	9.525	4.76	0.8
	110412-HM	333		●				●												11.6	9.525	4.76	1.2
	150404-HM	431	○	●				●			○									15.5	12.7	4.76	0.4
	150408-HM	432	○	●	●			●			○									15.5	12.7	4.76	0.8
	150412-HM	433		●				●												15.5	12.7	4.76	1.2
	150604-HM	441	○	●	●	●		●		●	●		●		●					15.5	12.7	6.35	0.4
	150608-HM	442	○	●	●	●	●	●		●	●		●		●					15.5	12.7	6.35	0.8
	150612-HM	443	○	●	●	●		●			●									15.5	12.7	6.35	1.2

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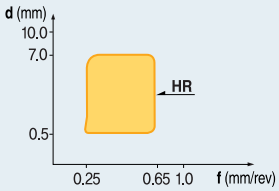
● : Stock Item ○ : Under preparing for stock

DNMG-HR

D type (55°)

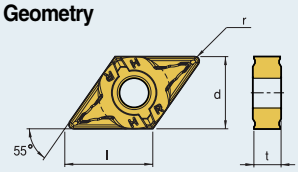
- Good chip flow at high feed & big depth of cut.
- Suitable chip breaker for intermittent cutting.



USE
Roughing

Recommendation
HR d = 2.5~7.0mm
f = 0.25~0.65mm/rev

Geometry



Available Holder	Designation	ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)			
			NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030		CT10	CN20	CN100	CN200	H01	G10	ST10		l	d	t	r
PDJNR/L PDNNR/L	DNMG 150408-HR	432		●	●															15.5	12.7	4.76	0.8
	150412-HR	433																		15.5	12.7	4.76	1.2
	150416-HR	434																		15.5	12.7	4.76	1.6
	150608-HR	442	○	●	●			○	○											15.5	12.7	6.35	0.8
	150612-HR	443	○	●	●			○	○											15.5	12.7	6.35	1.2
	150616-HR	444		●	●			○												15.5	12.7	6.35	1.6

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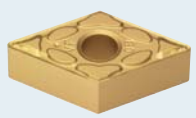
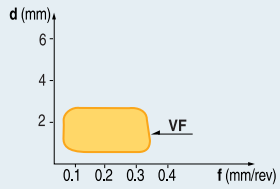
● : Stock Item ○ : Under preparing for stock

DNMG-VF

D type (55°)



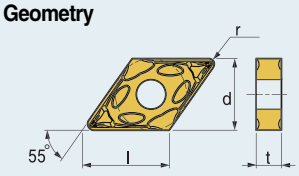
- Good chip control performance at various depth of cut.
- Sharp & strong cutting edge due to the special chip breaker design.



USE
Finishing

Recommendation
VF d = 0.3~2.5mm
f = 0.05~0.35mm/rev

Geometry



Available Holder	Designation	ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)			
			NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030		CT10	CN20	CN100	CN200	H01	G10	ST10		l	d	t	r
PDJNR/L PDNNR/L PDSNR/L PDUNR/L	DNMG 110402-VF	330.5	○	●						○					●					11.6	9.525	4.76	0.2
	110404-VF	331	○	●						○					●					11.6	9.525	4.76	0.4
	110408-VF	332	○	●											●					11.6	9.525	4.76	0.8
	150404-VF	431	○	●						○					●					15.5	12.7	4.76	0.4
	150408-VF	432	○	●						○					●					15.5	12.7	4.76	0.8
	150412-VF	433																		15.5	12.7	4.76	1.2
	150604-VF	441	○	●					○	○					●					15.5	12.7	6.35	0.4
	150608-VF	442	○	●					○	○					●					15.5	12.7	6.35	0.8
	150612-VF	443	○	●																15.5	12.7	6.35	1.2

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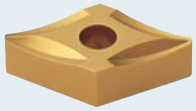
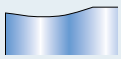
● : Stock Item ○ : Under preparing for stock

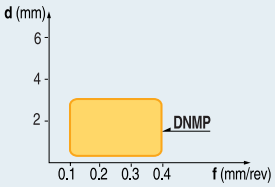
DNMP

D type (55°)





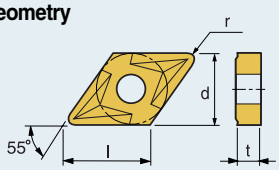
- For roughing of high temp alloy and aluminum alloy.



USE
Light

Recommendation
d = 0.3~3.0mm
f = 0.1~0.4mm/rev

Geometry



Available Holder	Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)			
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	CT10	CN20	CN100	CN200	H01	G10	ST10		l	d	t	r
PDJNR/L	DNMP	150408	432				○			○	○					○	○			15.5	12.7	4.76	0.8
PDNNR/L		150412	433				○			○	○					○	○			15.5	12.7	4.76	1.2
PDSNR/L		150608	442				○			○	○					○	○			15.5	12.7	6.35	0.8
PDUNR/L		150612	443				○			○	○					○	○			15.5	12.7	6.35	1.2

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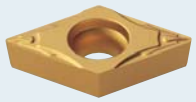
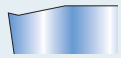
●: Stock Item ○: Under preparing for stock

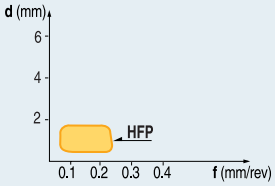
DCGT-HFP

D type (55°)





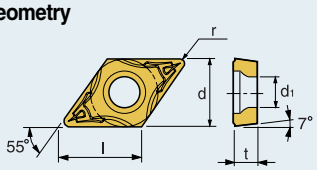
- Suitable chip breaker for shallow depth of cut & low feed rate.
- Good surface finish and smooth cutting can be acquried at the machining of inner diameter & outer diameter



USE
Finishing

Recommendation
HFP d = 0.1~1.5mm
f = 0.05~0.25mm/rev

Geometry



Available Holder	Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)				
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	CT10	CN20	CN100	CN200	H01	G10	ST10		l	d	t	r	d_1
SDACR/L	DCGT	070202-HFP	21.50.5	○						○	○									7.8	6.35	2.38	0.2	2.8
SDJCR/L		070204-HFP	21.51	○	●					○	○									7.8	6.35	2.38	0.4	2.8
SDNCN		070208-HFP	21.52																	7.8	6.35	2.38	0.8	2.8
SDQCR/L		11T302-HFP	32.50.5	○							○		●							11.6	9.525	3.97	0.2	4.4
SDUCR		11T304-HFP	32.51	○	●					○	○									11.6	9.525	3.97	0.4	4.4
SDZCR/L		11T308-HFP	32.52	○						○	○									11.6	9.525	3.97	0.8	4.4

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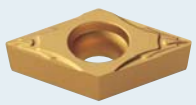
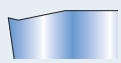
●: Stock Item ○: Under preparing for stock

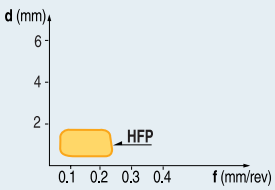
DCMT-HFP

D type (55°)





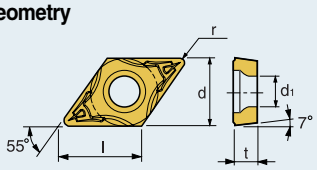
- Suitable chip breaker for shallow depth of cut & low feed rate.
- Good surface finish and smooth cutting can be acquried at the machining of inner diameter & outer diameter



USE
Finishing

Recommendation
HFP d = 0.1~1.5mm
f = 0.05~0.25mm/rev

Geometry



Available Holder	Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)				
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	CT10	CN20	CN100	CN200	H01	G10	ST10		l	d	t	r	d_1
SDACR/L	DCMT	070202-HFP	21.50.5	○	○					○	○									7.8	6.35	2.38	0.2	2.8
SDJCR/L		070204-HFP	21.51	○	○					○	○									7.8	6.35	2.38	0.4	2.8
SDNCN		070208-HFP	21.52		○															7.8	6.35	2.38	0.8	2.8
SDQCR/L		11T302-HFP	32.50.5	○	○						○									11.6	9.525	3.97	0.2	4.4
SDUCR		11T304-HFP	32.51	○	○					○	○									11.6	9.525	3.97	0.4	4.4
SDZCR/L		11T308-HFP	32.52	○	○					○	○									11.6	9.525	3.97	0.8	4.4

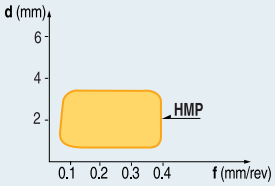
P. 150, 151, 178, 179

●: Stock Item ○: Under preparing for stock

DCMT-HMP

D type (55°)

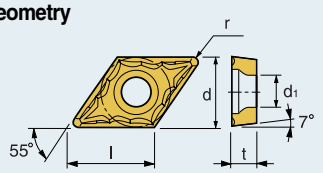
• Comprehensive chip breaker can cover various conditions of feed & depth for machining of steel & stainless steel.



USE
Medium

Recommendation
HMP d = 0.5~3.5mm
f = 0.05~0.4mm/rev

Geometry



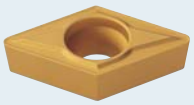
Available Holder	Designation	ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)				
			NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	NC315K	CT10	CN20	CN100	CN200	H01	G10	ST10		l	d	t	r	d_1
SDACR/L	DCMT 070202-HMP	21.50.5	○	●	●				○	○										7.8	6.35	2.38	0.2	2.8
SDJCR/L	070204-HMP	21.51	○	●	●	●		●	●	●										7.8	6.35	2.38	0.4	2.8
SDNCN	070208-HMP	21.52	○	●																7.8	6.35	2.38	0.8	2.8
SDQCR/L	11T302-HMP	32.50.5	○	●	●	●		○	●	●										11.6	9.525	3.97	0.2	4.4
SDUCR	11T304-HMP	32.51	○	●	●	●	●	●	●	●	●				●					11.6	9.525	3.97	0.4	4.4
SDZCR/L	11T308-HMP	32.52	○	●	●	●		●	●	●	●				●					11.6	9.525	3.97	0.8	4.4

P. 150, 151, 178, 179

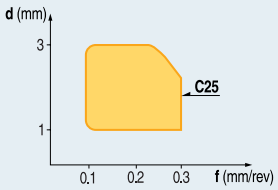
● : Stock Item ○ : Under preparing for stock

DCMT-C25

D type (55°)



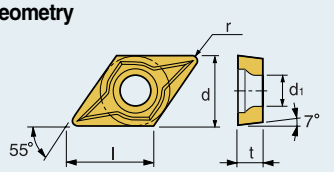
• Suitable chip breaker for intermittent cutting of steel and cast iron.



USE
Medium

Recommendation
C25 d = 1.0~3.0mm
f = 0.1~0.3mm/rev

Geometry



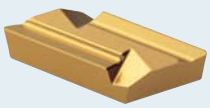
Available Holder	Designation	ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)				
			NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	NC315K	CT10	CN20	CN100	CN200	H01	G10	ST10		l	d	t	r	d_1
SDACR/L	DCMT 070202-C25	21.50.5	○					○		○					●					7.8	6.35	2.38	0.2	2.8
SDNCN	070204-C25	21.51	○	●	●			○	○	○					●					7.8	6.35	2.38	0.4	2.8
SDQCR/L	070208-C25	21.52		●																7.8	6.35	2.38	0.8	2.8
SDUCR	11T302-C25	32.50.5													●					11.6	9.525	3.97	0.2	4.4
SDZCR/L	11T304-C25	32.51	○	●	●	●		○	○	●	○		●		●					11.6	9.525	3.97	0.4	4.4
SDJCR/L	11T308-C25	32.52	○	●	●	●		●		●	●		●		●					11.6	9.525	3.97	0.8	4.4

P. 150, 151, 178, 179

● : Stock Item ○ : Under preparing for stock

KNUX

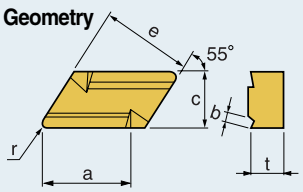
K type (55°)



USE

Recommendation

Geometry



Available Holder	Designation	ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)					
			NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	NC500H	CT10	CN20	CN100	CN200	H01	G10	ST10		a	e	t	r	c	b
CKJNR/L	KNUX 160405 R11		○	●	●	●		●	○	●	●							●		16.0	16.15	4.76	0.5	9.525	2.2
CKNNR/L	160410 R11		○	●	●			●												16.0	16.15	4.76	1.0	9.525	2.2
	160405 R12		○	●	●	○		○	○											16.0	16.15	4.76	0.5	9.525	3.2
	160410 R12			●	●															16.0	16.15	4.76	1.0	9.525	3.2
	160405 L11		○	●	●	○		○	○											16.0	16.15	4.76	0.5	9.525	2.2
	160410 L11		○	●	●															16.0	16.15	4.76	1.0	9.525	2.2
	160405 L12			●																16.0	16.15	4.76	0.5	9.525	3.2
	160410 L12			●																16.0	16.15	4.76	1.0	9.525	3.2

P. 161, 185

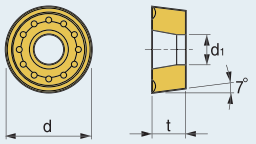
● : Stock Item ○ : Under preparing for stock

RCMX

■ USE

■ Recommendation

■ Geometry



Available Holder	Designation		ASA	Coated Carbide									Cermet				Uncoated Carbide			(mm)		
				NC3010	NC3020	NC3030	NC9020	NC315K	NC305K	NC6010	PC8010	PC9030	NC500H	CT10	CN20	CN100	CN200	H01	G10	ST10	d	t	d_1
PRDCN PRGCR/L	RCMX	1003M0			●	○	●	●		●	○										10.0	3.18	3.6
		1204M0			●	●		●		●	○										12.0	4.76	4.2
		1606M0			●	●				●	○										16.0	6.35	5.2
		2006M0			●	●				●	○		●								20.0	6.35	6.5
		2507M0			●	●							●								25.0	7.94	7.25
		3209M0			○	●							○								32.0	9.52	9.55

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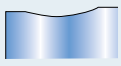
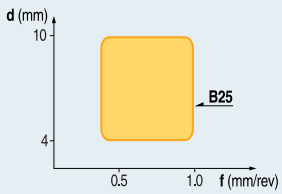
● : Stock Item ○ : Under preparing for stock

RNMG-B25



•Comprehensive chip breaker can cover general cutting.



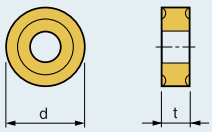
■ USE

General Cutting

■ Recommendation

B25 d = 4.0~10.0mm
f = 0.5~1.0mm/rev

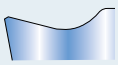
■ Geometry



Available Holder	Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)	
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	CT10	CN20	CN100	CN200	H01	G10	ST10		d	t
	RNMG	090300-B25	32			●	○			○										9.525	3.18
		120400-B25	43			●	○			○										12.7	4.76
		150400-B25	53																	15.875	4.76
		150600-B25	54																	15.875	6.35
		190600-B25	64			●	○			○										19.05	6.35
		250600-B25	84																	25.4	6.35
		250900-B25	86			○	○			○										25.4	9.52
		310900-B25	106																	31.75	9.52

● : Stock Item ○ : Under preparing for stock

RPMT

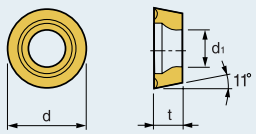


■ USE

General Cutting

■ Recommendation

■ Geometry

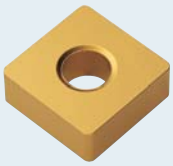


Available Holder	Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)		
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	CT10	CN20	CN100	CN200	H01	G10	ST10		d	t	d_1
	RPMT	0802M0											●							8.0	2.38	3.4
		1203M0																		12.0	3.18	4.4
		1604M0									○		○							16.0	4.76	5.5
		2004M0									○		○							20.0	4.76	5.5

● : Stock Item ○ : Under preparing for stock

SNGA SNPA*

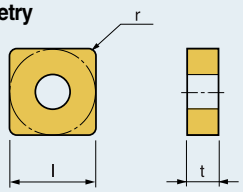
S type (90°)



■ USE

■ Recommendation

■ Geometry



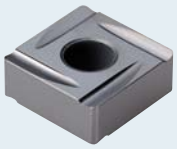
Available Holder	Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)		
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	CT10	CN20	CN100	CN200	H01	G10	ST10		(l=d)	t	r
PSBNR/L PSDNN PSKNR/L PSSNR/L	SNGA SNPA*	090304	321		○															9.525	3.18	0.4
		090308	322		○				○											9.525	3.18	0.8
		120402	430.5																	12.7	4.76	0.2
		120404	431		○									○						12.7	4.76	0.4
		120408	432		○				○					○						12.7	4.76	0.8
		120412	433		○				○											12.7	4.76	1.2
		150608	542		○				○											15.875	6.35	0.8
		150616	543																	15.875	6.35	1.6
		190608	642																	19.05	6.35	0.8
		190612	643																	19.05	6.35	1.2

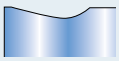
P. 140, 141, 174

● : Stock Item ○ : Under preparing for stock

SNGG SNPR/L*

S type (90°)



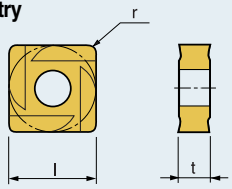


■ USE

■ Recommendation

d = 1.0~4.0mm
f = 0.1~0.4mm/rev

■ Geometry



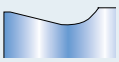
Available Holder	Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)		
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	CT10	CN20	CN100	CN200	H01	G10	ST10		(l=d)	t	r
PSBNR/L PSDNN PSKNR/L PSSNR/L	SNGG SNPR*	090304R	321																	9.525	3.18	0.4
		090308R	322																	9.525	3.18	0.8
		120404R	431									●		○						12.7	4.76	0.4
		120408R	432									●		○						12.7	4.76	0.8
		120412R	433																	12.7	4.76	1.2
	SNGG SNPL*	090304L	321																	9.525	3.18	0.4
		090308L	322																	9.525	3.18	0.8
		120404L	431									○		○						12.7	4.76	0.4
		120408L	432									○		○						12.7	4.76	0.8
		120412L	433																	12.7	4.76	1.2

P. 140, 141, 174

● : Stock Item ○ : Under preparing for stock

SNG(M)X

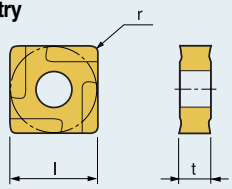
S type (90°)



■ USE

■ Recommendation

■ Geometry



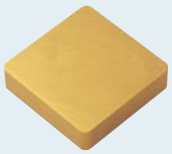
Available Holder	Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)		
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	CT10	CN20	CN100	CN200	H01	G10	ST10		(l=d)	t	r
PSBNR/L PSDNN PSKNR/L PSSNR/L	SNGX SNMX	120408 R	432		○		○			○										12.7	4.76	0.8

P. 140, 141, 174

● : Stock Item ○ : Under preparing for stock

SNGN

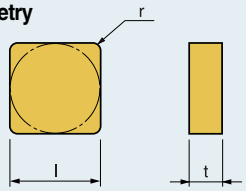
S type (90°)



■ USE

■ Recommendation

■ Geometry



Available Holder	Designation		ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)		
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030		CT10	CN20	CN100	CN200	H01	G10	ST10	ST30A	(l=d)	t	r
CSDNN CSKNR/L	SNGN	090304	321		○				○												9.525	3.18	0.4
		090308	322		○				○									●			9.525	3.18	0.8
		120304	421		○																12.7	3.18	0.4
		120308	422		○				○		○										12.7	3.18	0.8
		120312	423																		12.7	3.18	1.2
		120404	431																		12.7	4.76	0.4
		120408	432		○				○		○										12.7	4.76	0.8
		120412	433		○																12.7	4.76	1.2
		150408	532		○				○		○										15.875	4.76	0.8
		150412	533																		15.875	4.76	1.2
		150416	534																		15.875	4.76	1.6
		190412	633																	●	19.05	4.76	1.2
		250604	841																		25.4	6.35	0.4

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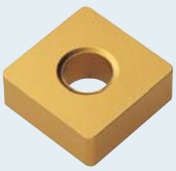
●: Stock Item ○: Under preparing for stock

SNMA

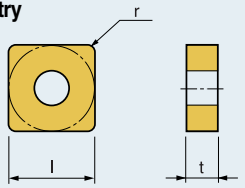
S type (90°)



■ USE

■ Recommendation

■ Geometry



Available Holder	Designation		ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)		
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	NC315K	CT10	CN20	CN100	CN200	H01	G10	ST10	U20	(l=d)	t	r
PSBNR/L PSDNN PSKNR/L PSSNR/L	SNMA	090308	322																		9.525	3.18	0.8
		090312	323																		9.525	3.18	1.2
		120402	430.5																		12.7	4.76	0.2
		120404	431																		12.7	4.76	0.4
		120408	432	○	○			●	●			●						●		●	12.7	4.76	0.8
		120412	433	○	○	●		●	●			●									12.7	4.76	1.2
		120416	434					●													12.7	4.76	1.6
		150612	543																		15.875	6.35	1.2
		150616	544																		15.875	6.35	1.6
		190608	642		○				○			○									19.05	6.35	0.8
		190612	643		○				●			●									19.05	6.35	1.2
		190616	644						●			●									19.05	6.35	1.6
		190624	646																		19.05	6.35	2.4
		250724	856																		25.4	7.94	2.4
		250924	866																		25.4	9.52	2.4

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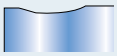
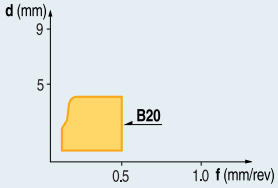
●: Stock Item ○: Under preparing for stock

SNMG-B20

S type (90°)



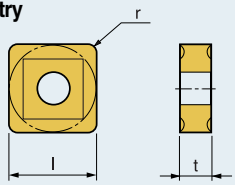
• Exclusive chip breaker for cast iron.



USE
Light & Medium

Recommendation
B20 d = 1.5~4.0mm
f = 0.15~0.5mm/rev

Geometry



Available Holder	Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)		
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	CT10	CN20	CN100	CN200	H01	G10	ST10		(l=d)	t	r
PSBNR/L	SNMG	090304-B20	321		○				●											9.525	3.18	0.4
PSDNN		090308-B20	322		○				●											9.525	3.18	0.8
PSKNR/L		120404-B20	431						●	○										12.7	4.76	0.4
PSSNR/L		120408-B20	432		○			●	●	○										12.7	4.76	0.8
		120412-B20	433		○	●														12.7	4.76	1.2
		150412-B20	533																	15.875	4.76	1.2
		150612-B20	543																	15.875	6.35	1.2
		190608-B20	642		○				●	○										19.05	6.35	0.8
		190612-B20	643		○				●	○										19.05	6.35	1.2

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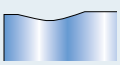
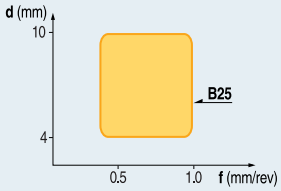
● : Stock Item ○ : Under preparing for stock

SNMG-B25

S type (90°)



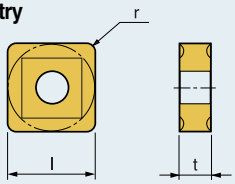
• Comprehensive chip breaker can cover general cutting.



USE
General Cutting

Recommendation
B25 d = 4.0~10.0mm
f = 0.5~1.0mm/rev

Geometry



Available Holder	Designation		ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)		
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	NC500H	CT10	CN20	CN100	CN200	H01	G10	ST10		(l=d)	t	r
PSBNR/L	SNMG	090308-B25	322	○	●	●														9.525	3.18	0.8
PSDNN		120404-B25	431	○	●	●					○									12.7	4.76	0.4
PSKNR/L		120408-B25	432	○	●	●	●		○		●									12.7	4.76	0.8
PSSNR/L		120412-B25	433	○	●	●			○		○									12.7	4.76	1.2
		120416-B25	434			●														12.7	4.76	1.6
		150608-B25	542																	15.875	6.35	0.8
		150612-B25	543																	15.875	6.35	1.2
		150616-B25	544																	15.875	6.35	1.6
		190608-B25	642	○	●	●			○	○										19.05	6.35	0.8
		190612-B25	643	○	●	●			○	○		●								19.05	6.35	1.2
		190616-B25	644	○	●															19.05	6.35	1.6
		250716-B25	854																	25.4	7.94	1.6
		250724-B25	856																	25.4	7.94	2.4

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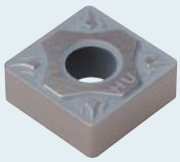
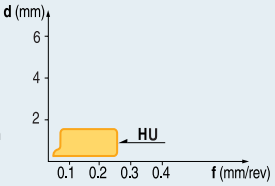
● : Stock Item ○ : Under preparing for stock

SNG(M)G-HU

S type (90°)



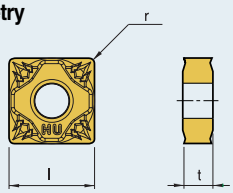
- Due to the low cutting load that has been originated from sharp cutting edge, good surface finish through smooth cutting can be acquried.
- Due to the special chip breaker design for shallow depth of cut, good chip control is possible at low depth of cut machining.



USE
Finishing

Recommendation
HU d = 0.1 ~ 1.5mm
f = 0.03 ~ 0.25mm/rev

Geometry



Available Holder	Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)		
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	CT10	CN20	CN100	CN200	H01	G10	ST10		(l=d)	t	r
PSBNR/L	SNGG	120408-HU	432	○						○	○									12.7	4.76	0.8
PSDNN	SNMG	120404-HU	431	○			○			○	○			○						12.7	4.76	0.4
PSKNR/L		120408-HU	432	○			○			○	○									12.7	4.76	0.8
PSSNR/L		120412-HU	433								○									12.7	4.76	1.2

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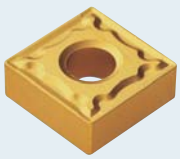
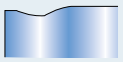
●: Stock Item ○: Under preparing for stock

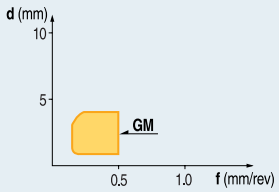
SNMG(M)-GM

S type (90°)





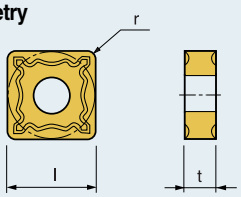
- Good chip control at general cutting of steel.
- Due to the strong cutting edge design, it is possible to machine with high feed rate even at intermittent cutting of steel.



USE
Medium

Recommendation
GM d = 0.7~4.0mm
f = 0.1~0.5mm/rev

Geometry



Available Holder	Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)		
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	CT10	CN20	CN100	CN200	H01	G10	ST10		(l=d)	t	r
PSBNR/L	SNMG	120404-GM	431	○	●						○									12.7	4.76	0.4
PSDNN		120408-GM	432	○	●	●			○		○		●		●					12.7	4.76	0.8
PSKNR/L		120412-GM	433			●			○		○									12.7	4.76	1.2
PSSNR/L	SNMM	120412-GM	433																	12.7	4.76	1.2

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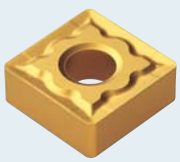
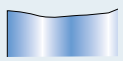
●: Stock Item ○: Under preparing for stock

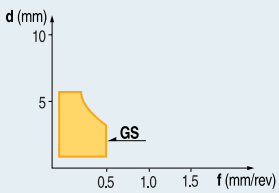
SNMG-GS

S type (90°)





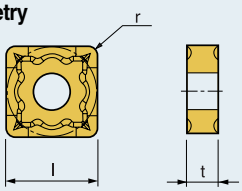
- As a chip breaker for stainless steel machining, good surface finish & smooth cutting process can be acquired.



USE
Stainless Steel

Recommendation
GS d = 1.5~5.5mm
f = 0.15~0.5mm/rev

Geometry



Available Holder	Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)		
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	CT10	CN20	CN100	CN200	H01	G10	ST10		(l=d)	t	r
PSBNR/L	SNMG	120404-GS	431		○	○	●			○	○									12.7	4.76	0.4
PSDNN		120408-GS	432		●	●	●			○	●									12.7	4.76	0.8
PSKNR/L		120412-GS	433		○	○	●			○										12.7	4.76	1.2
PSSNR/L		120416-GS	434																	12.7	4.76	1.6

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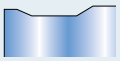
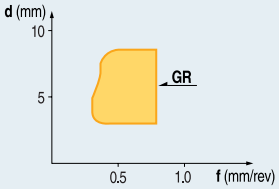
●: Stock Item ○: Under preparing for stock

SNMG(M)-GR

S type (90°)



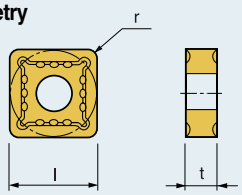
• Due to the strong cutting edge, it is possible to machine with high feed rate for steel & cast iron.



USE
Roughing

Recommendation
GR d = 3.0~8.0mm
f = 0.3~0.8mm/rev

Geometry



Available Holder	Designation		ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)		
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	NC500H	PC9030	NC315K	CT10	CN20	CN100	CN200	H01	G10	ST10		(l=d)	t	r
PSBNR/L	SNMG	120404-GR	431																		12.7	4.76	0.4
PSDNN		120408-GR	432	○	●	●		●	●		○	●									12.7	4.76	0.8
PSKNR/L		120412-GR	433		●	●		●	●	●	○	●									12.7	4.76	1.2
PSSNR/L		150608-GR	542			●															15.875	6.35	0.8
		150612-GR	543	○	●	●				●											15.875	6.35	1.2
		190608-GR	642		●				●			○									19.05	6.35	0.8
		190612-GR	643		●	●			●	●		○									19.05	6.35	1.2
		190616-GR	644		●	●			○	●		○									19.05	6.35	1.6
		250724-GR	856			●				○											25.4	7.94	2.4
		250924-GR	866		●	●				○											25.4	9.52	2.4
	SNMM	120408-GR	432																		12.7	4.76	0.8
		120412-GR	433																		12.7	4.76	1.2
		190612-GR	643							○											19.05	6.35	1.2
		190616-GR	644							○											19.05	6.35	1.6

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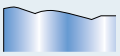
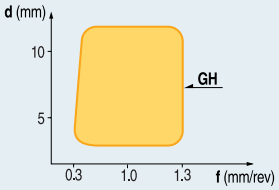
● : Stock Item ○ : Under preparing for stock

SNMM-GH

S type (90°)



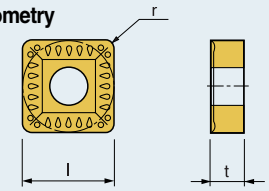
• Chip breaker for heavy cutting.



USE
Heavy Duty

Recommendation
GH d = 3.0~11.0mm
f = 0.3~1.3mm/rev

Geometry



Available Holder	Designation		ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)		
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	NC500H	CT10	CN20	CN100	CN200	H01	G10	ST10		(l=d)	t	r
PSBNR/L	SNMM	120408-GH	432		●	●				○		○									12.7	4.76	0.8
PSDNN		120412-GH	433		●	●				○		○									12.7	4.76	1.2
PSKNR/L		150612-GH	543		●																15.875	6.35	1.2
PSSNR/L		190612-GH	643		●	●				○		○									19.05	6.35	1.2
		190616-GH	644	○	●	●						●									19.05	6.35	1.6
		190624-GH	646		●																19.05	6.35	2.4
		250724-GH	856		●	●				○		●									25.4	7.94	2.4
		250924-GH	866		●	●						●									25.4	9.52	2.4
		250932-GH	868																		25.4	9.52	3.2

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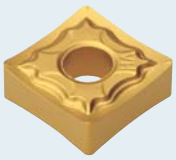
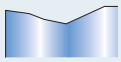
● : Stock Item ○ : Under preparing for stock

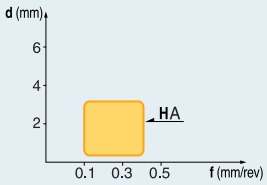
SNMG(M)-HA

S type (90°)





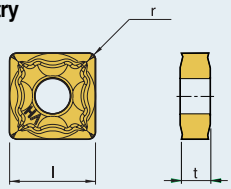
- Low cutting load due to the sharp cutting edge.
- Thanks to the special design on cutting edge line, strength of cutting edge has been icreased.
- Suitable for machining of low carbon steel, stainless steel and aluminum.



USE
Light & Medium

Recommendation
HA d = 0.8~3.5mm
f = 0.1~0.4mm/rev

Geometry



Available Holder	Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)		
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	CT10	CN20	CN100	CN200	H01	G10	ST10		(l=d)	t	r
PSBNR/L	SNMG	120404-HA	431		●		●				●					●				12.7	4.76	0.4
PSDNN		120408-HA	432		●		●				●					●				12.7	4.76	0.8
PSKNR/L		120412-HA	433																	12.7	4.76	1.2
PSSNR/L	SNMM	120408-HA	432																	12.7	4.76	0.8

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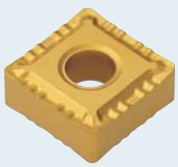
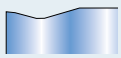
∗In case of carbide insert(H01), special treatment on top & bottom face of insert has been applied to get good chip flow property.

● : Stock Item ○ : Under preparing for stock

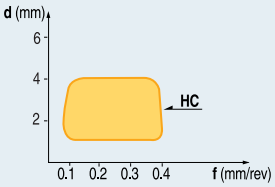
SNMG-HC

S type (90°)





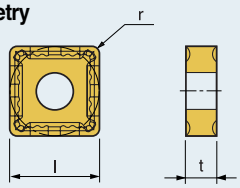
- Good performance for copy machining.
- Effective chip breaker can cover the deviation of depth of cut, from shallow to big.



USE
Light & Medium

Recommendation
HC d = 0.8~4.0mm
f =0.08~0.4mm/rev

Geometry



Available Holder	Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)		
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	CT10	CN20	CN100	CN200	H01	G10	ST10		(l=d)	t	r
PSBNR/L	SNMG	120404-HC	431	○	●					○	○									12.7	4.76	0.4
PSDNN		120408-HC	432	○	●					○	○									12.7	4.76	0.8
PSKNR/L																						
PSSNR/L																						

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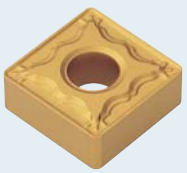
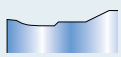
● : Stock Item ○ : Under preparing for stock

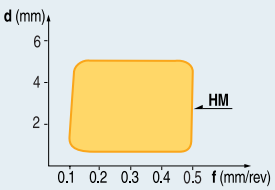
SNMG-HM

S type (90°)





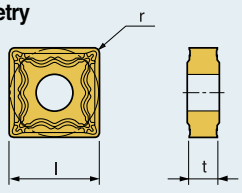
- Comprehensive chip breaker can cover from medium-finishing to medium-roughing.
- Suitable chip breaker for CNC machine.



USE
Medium

Recommendation
HM d = 1.0~5.0mm
f = 0.1~0.5mm/rev

Geometry



Available Holder	Designation		ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)		
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	NC315K	CT10	CN20	CN100	CN200	H01	G10	ST10		(l=d)	t	r
PSBNR/L	SNMG	090304-HM	321	○	●																9.525	3.18	0.4
PSDNN		090308-HM	322	○	●																9.525	3.18	0.8
PSKNR/L		120404-HM	431	○	●	●	●		●	○	●	●		●		●					12.7	4.76	0.4
PSSNR/L		120408-HM	432	○	●	●	●	●	●	○	●	●		●		●					12.7	4.76	0.8
		120412-HM	433	○	●	●	●	○	○	○	●	●									12.7	4.76	1.2
		190612-HM	643		○				○	○	○	○									19.05	6.35	1.2

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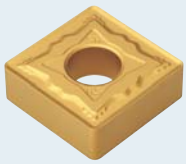
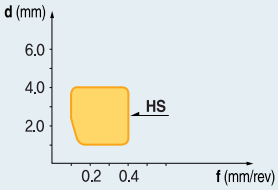
● : Stock Item ○ : Under preparing for stock

SNMG-HS

S type (90°)



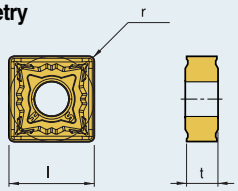
- Exclusive chip breaker for stainless steel.
- Due to the special chip breaker design to prevent notch wear on cutting edge, insert tool life has been increased.



USE
Srainless Steel(Medium)

Recommendation
HS d = 1.0~4.0mm
f = 0.1~0.4mm/rev

Geometry



Available Holder	Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)		
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	CT10	CN20	CN100	CN200	H01	G10	ST10		(l=d)	t	r
PSBNR/L PSDNN PSKNR/L PSSNR/L	SNMG	090304-HS	321				●				●									9.525	3.18	0.4
		090308-HS	322				●				●									9.525	3.18	0.8
		120404-HS	431				●				●									12.7	4.76	0.4
		120408-HS	432				●			●	●									12.7	4.76	0.8
		120412-HS	433				●			●	●									12.7	4.76	1.2
		150612-HS	543				●			●	●									15.875	6.35	1.2
		150616-HS	544				●				●									15.875	6.35	1.6
		190612-HS	643				●			●	●									19.05	6.35	1.2
		190616-HS	644				●			●	●									19.05	6.35	1.6

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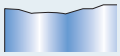
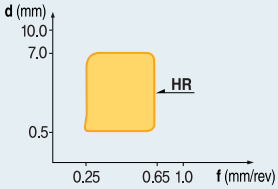
● : Stock Item ○ : Under preparing for stock

SNMG-HR

S type (90°)



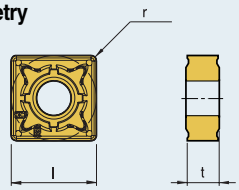
- Good chip flow at high feed & big depth of cut.
- Suitable chip breaker for intermittent cutting.



USE
Roughing

Recommendation
HR d = 2.5~7.0mm
f = 0.25~0.65mm/rev

Geometry



Available Holder	Designation		ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)		
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	NC500H	CT10	CN200	CN100	CN200	H01	G10	ST10		(l=d)	t	r
PSBNR/L PSDNN PSKNR/L PSSNR/L	SNMG	120408-HR	432	○	●	●			○			○									12.7	4.76	0.8
		120412-HR	433	○	●	●			○			○									12.7	4.76	1.2
		120416-HR	434																		12.7	4.76	1.6
		150608-HR	542	○	●	●															15.875	6.35	0.8
		150612-HR	543	○	●	●															15.875	6.35	1.2
		150616-HR	544																		15.875	6.35	1.6
		150624-HR	546																		15.875	6.35	2.4
		190608-HR	642	○	●	●			○			○									19.05	6.35	0.8
		190612-HR	643	○	●	●			○			●									19.05	6.35	1.2
		190616-HR	644	○	●	●						○									19.05	6.35	1.6
		190624-HR	646																		19.05	6.35	2.4
		250724-HR	856																		25.4	7.94	2.4
		250924-HR	866		●	●															25.4	9.52	2.4

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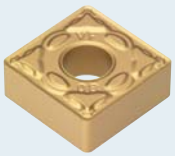
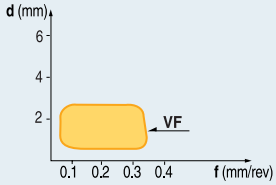
● : Stock Item ○ : Under preparing for stock

SNMG-VF

S type (90°)



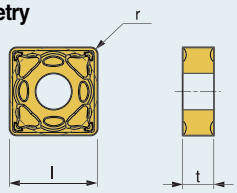
- Good chip control performance at various depth of cut.
- Sharp & strong cutting edge due to the special chip breaker design.



USE
Finishing

Recommendation
VF d = 0.3~2.5mm
f = 0.05~0.35mm/rev

Geometry



Available Holder	Designation	ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)		
			NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030		CT10	CN20	CN100	CN200	H01	G10	ST10		(l=d)	t	r
PSBNR/L PSDNN PSKNR/L PSSNR/L	SNMG 090304-VF	321		●											●					9.525	3.18	0.4
	090308-VF	322		●											●					9.525	3.18	0.8
	120404-VF	431	○	●					○	○					●					12.7	4.76	0.4
	120408-VF	432	○	●					○	○					●					12.7	4.76	0.8

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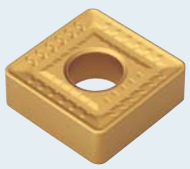
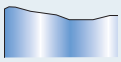
● : Stock Item ○ : Under preparing for stock

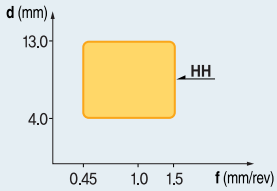
SNMM-HH

S type (90°)





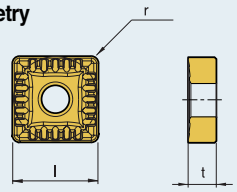
- Suitable chip breaker for high feed, big depth of cut machining.
- Since the special convex "dot" designed on cutting edge reduces cutting load, smooth cutting can be done even at the heavy cutting.



USE
Heavy Duty

Recommendation
HH d = 4.0~13.0mm
f = 0.45~1.5mm/rev

Geometry



Available Holder	Designation	ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)		
			NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	NC500H	CT10	CN20	CN100	CN200	H01	G10	ST10		(l=d)	t	r
PSBNR/L PSDNN PSKNR/L PSSNR/L	SNMM 190612-HH	643		●	●				○		○									19.05	6.35	1.2
	190616-HH	644		●	●															19.05	6.35	1.6
	190624-HH	646		●	●															19.05	6.35	2.4
	250724-HH	856		●	●						○									25.4	7.94	2.4
	250732-HH	858		●	●															25.4	7.94	3.2
	250924-HH	866		●	●						○									25.4	9.52	2.4
	250932-HH	868		●	●						○									25.4	9.52	3.2
	310924-HH	1066		●	●						○									31.75	9.52	2.4

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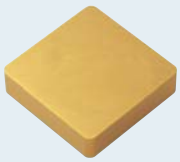
● : Stock Item ○ : Under preparing for stock

SNMN

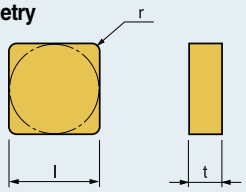
S type (90°)



■ USE

■ Recommendation

■ Geometry



Available Holder	Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)		
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	CT10	CN20	CN100	CN200	H01	G10	ST10		(l=d)	t	r
CSDNN CSKNR/L	SNMN	090304	321																	9.525	3.18	0.4
		090308	322																	9.525	3.18	0.8
		120304	421		○				○											12.7	3.18	0.4
		120308	422		○				○		○									12.7	3.18	0.8
		120312	423								○									12.7	3.18	1.2
		120404	431		○				○											12.7	4.76	0.4
		120408	432		○				○		○									12.7	4.76	0.8
		120412	433								○									12.7	4.76	1.2
		150408	532		○				○											15.875	4.76	0.8
		150412	533		○				○											15.875	4.76	1.2
		150416	534																	15.875	4.76	1.6

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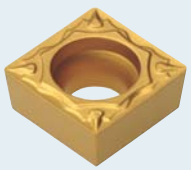
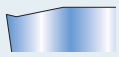
● : Stock Item ○ : Under preparing for stock

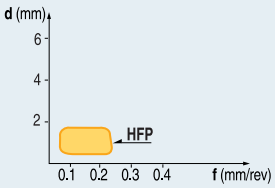
SCGT-HFP

S type (90°)





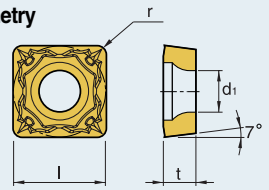
- Suitable chip breaker for shallow depth of cut & low feed rate.
- Good surface finish and smooth cutting can be acquried.
- Machining of inner diameter & outer diameter is available.



■ USE
Finishing

■ Recommendation
HFP d = 0.1~1.5mm
f = 0.05~0.25mm/rev

■ Geometry



Available Holder	Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)			
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	CT10	CN20	CN100	CN200	H01	G10	ST10		(l=d)	t	r	d_1
SSBCR/L SSDCN SSKCR/L SSSCR/L	SCGT	09T304-HFP	32.51	○			○		○	○										9.525	3.97	0.4	4.4

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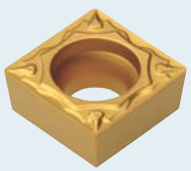
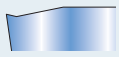
● : Stock Item ○ : Under preparing for stock

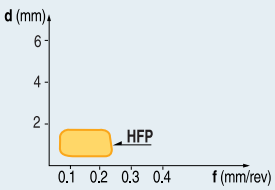
SCMT-HFP

S type (90°)





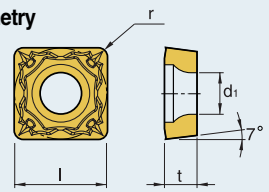
- Suitable chip breaker for shallow depth of cut & low feed rate.
- Good surface finish and smooth cutting can be acquried.
- Machining of inner diameter & outer diameter is available.



■ USE
Finishing

■ Recommendation
HFP d = 0.1~1.5mm
f = 0.05~0.25mm/rev

■ Geometry



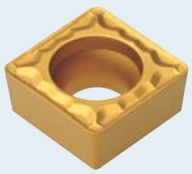
Available Holder	Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)			
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	CT10	CN20	CN100	CN200	H01	G10	ST10		(l=d)	t	r	d_1
SSBCR/L SSDCN SSKCR/L SSSCR/L	SCMT	09T304-HFP	32.51	○	○		○		○											9.525	3.97	0.4	4.4

P. 153~155, 175, 255

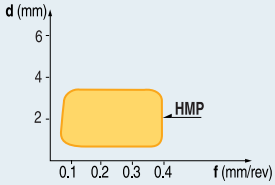
● : Stock Item ○ : Under preparing for stock

SCMT-HMP

S type (90°)



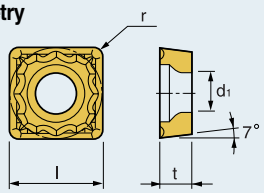
• Comprehensive chip breaker can cover various conditions of feed & depth for machining of steel & stainless steel.



USE
Medium

Recommendation
HMP d = 0.5~3.5mm
f = 0.08~0.4mm/rev

Geometry



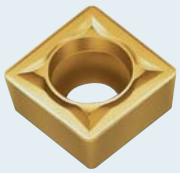
Available Holder	Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)			
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	CT10	CN20	CN100	CN200	H01	G10	ST10		(l=d)	t	r	d1
SSBCR/L	SCMT	09T304-HMP	32.51	○	●				●		○	●								9.525	3.97	0.4	4.4
SSDCN		09T308-HMP	32.52	○	●	●			●		○	●								9.525	3.97	0.8	4.4
SSKCR/L		120404-HMP	431	○																12.7	4.76	0.4	5.5
SSSCR/L		120408-HMP	432	○	●	●			●			●								12.7	4.76	0.8	5.5

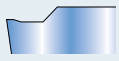
P. 153~155, 175, 255

● : Stock Item ○ : Under preparing for stock

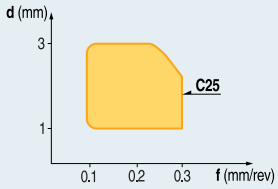
SCMT-C25

S type (90°)





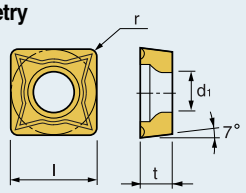
• Suitable chip breaker for intermittent cutting of steel and cast iron.



USE
Medium

Recommendation
C25 d = 1.0~3.0mm
f = 0.1~0.3mm/rev

Geometry



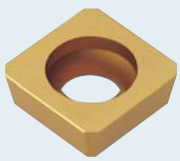
Available Holder	Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)			
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	CT10	CN20	CN100	CN200	H01	G10	ST10		(l=d)	t	r	d1
SSBCR/L	SCMT	060204-C25	21.51	○		●			○		○									6.35	2.38	0.4	4.4
SSDCN		09T304-C25	32.51		●	●			○		○		●		●					9.525	3.97	0.4	4.4
SSKCR/L		09T308-C25	32.52	○	●	●			○		○		●		●					9.525	3.97	0.8	4.4
SSSCR/L		120404-C25	431		●				○		●				●					12.7	4.76	0.4	5.5
		120408-C25	432	○	●	●			○		●				●					12.7	4.76	0.8	5.5

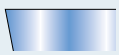
P. 153~155, 175, 255

● : Stock Item ○ : Under preparing for stock

SPGA(-Z)

S type (90°)

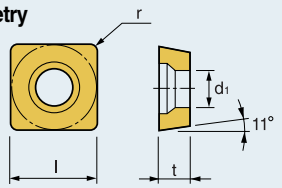




USE

Recommendation

Geometry

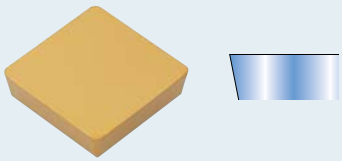


Available Holder	Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)			
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	CT10	CN20	CN100	CN200	H01	G10	ST10		(l=d)	t	r	d1
	SPGA	060204	21.51																	6.35	2.38	0.4	2.8
		090308T	322		○						○	●		●						9.525	3.18	0.8	4.4
		090308T -Z	322		○						○	●		●						9.525	3.18	0.8	3.4

● : Stock Item ○ : Under preparing for stock

SPGN

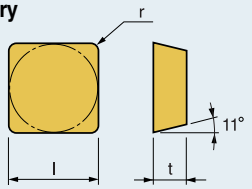
S type (90°)



■ USE

■ Recommendation

■ Geometry

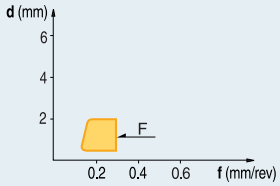


Available Holder	Designation		ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)		
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC6510	NC315K	CT10	CN20	CN100	CN200	ST30A	G10	ST10	ST20	(l=d)	l	r
	SPGN	070202	2.51.50.5																		7.94	2.38	0.2
		070208	2.51.53																		7.94	2.38	0.4
		090304	321																		9.525	3.18	0.4
		090308	322		○						●									●	9.525	3.18	0.8
		120302	420.5																		12.7	3.18	0.2
		120304	421		○											○					12.7	3.18	0.4
		120308	422	○	○	●											●	●			12.7	3.18	0.8
		120312	423			●						●				○		●			12.7	3.18	1.2
		120316	424			●															12.7	3.18	1.6
		120402	430.5													○					12.7	4.76	0.2
		120408	432		○																12.7	4.76	0.8
		150408	532													○					15.875	4.76	0.8
		150412	533																		15.875	4.76	1.2
		150416	534																		15.875	4.76	1.6
		190412	633																		19.05	4.76	1.2
		190416	634															●			19.05	4.76	1.6

● : Stock Item ○ : Under preparing for stock

SPG(M)R-F

S type (90°)

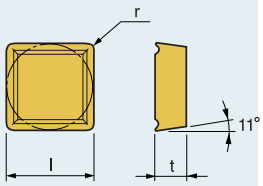


■ USE

■ Recommendation

F d = 0.5~2.0mm
f = 0.1~0.25mm/rev

■ Geometry



Available Holder	Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)		
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	CT10	CN20	CN100	CN200	H01	G10	ST10		(l=d)	l	r
CSKPR/L	SPGR	090304-F	321																	9.525	3.18	0.4
		120304-F	421																	12.7	3.18	0.4
	SPMR	090304-F	321	○	●	○			○		○									9.525	3.18	0.4
		120304-F	421	○	●	●			○	○										12.7	3.18	0.4

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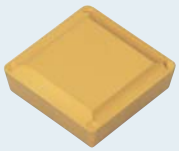
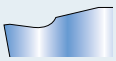
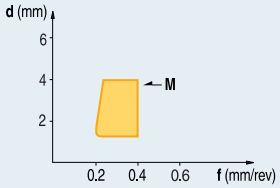
● : Stock Item ○ : Under preparing for stock

SPG(M)R-M

S type (90°)





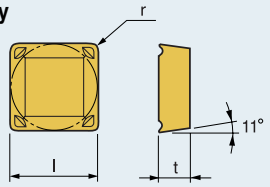


USE

Recommendation

M d =1.5~4.0mm
f = 0.2~0.4mm/rev

Geometry



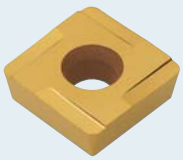
Available Holder	Designation		ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)		
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	NC500H	CT10	CN20	CN100	CN200	H01	G10	ST10		(l=d)	t	r
CSKPR/L	SPGR	090308-M	322																		9.525	3.18	0.8
		120308-M	422																		12.7	3.18	0.8
	SPMR	090308-M	322	○	●	●			○	○											9.525	3.18	0.8
		120308-M	422	○	●	●			○	○		●									12.7	3.18	0.8
		120312-M	423		●	●			○	○											12.7	3.18	1.2

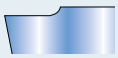
P. 164, 186

● : Stock Item ○ : Under preparing for stock

SPGT

S type (90°)

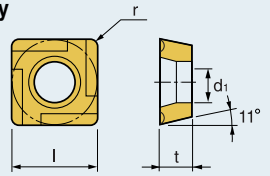




USE

Recommendation

Geometry



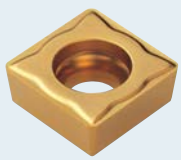
Available Holder	Designation		ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)			
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030		CT10	CN20	CN100	CN200	H01	G10	ST10		(l=d)	t	r	d_1
SSKPR/L (Boring Bar)	SPGT	090304R	321																		9.525	3.18	0.4	3.4
		090308R	322																		9.525	3.18	0.8	3.4
		090304L	321								○		●								9.525	3.18	0.4	3.4
		090308L	322										●								9.525	3.18	0.8	3.4

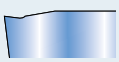
P. 180, 257

● : Stock Item ○ : Under preparing for stock

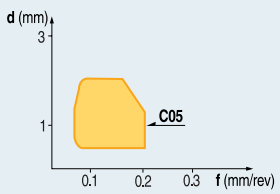
SPGT-C05

S type (90°)





- Good surface fihish due to reduced cutting load.

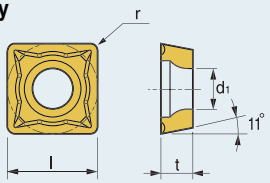


USE
Finishing

Recommendation

C05 d = 0.5~2.0mm
f = 0.05~0.3mm/rev

Geometry



Available Holder	Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)			
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	CT10	CN20	CN100	CN200	H01	G10	ST10		(l=d)	t	r	d_1
SSKPR/L (Boring Bar)	SPGT	090304-C05	321		○						○	●								9.525	3.18	0.4	4.4
		090308-C05	322		○						○	○								9.525	3.18	0.8	4.4

P. 180, 257

● : Stock Item ○ : Under preparing for stock

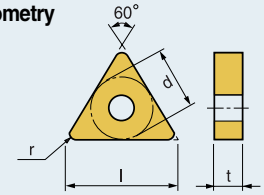
TNGA TNPA*

T type (60°)

■ USE

■ Recommendation

■ Geometry



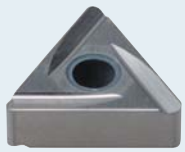
Available Holder	Designation	ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)			
			NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	CT10	CN20	CN100	CN200	H01	G10	ST10		l	d	t	r
PTFNR/L PTGNR/L PTTNR/L WTJNR/L WTXNR/L	TNGA 090204	1.81.51																	9.6	5.56	2.38	0.4
	TNPA* 110302	220.5		○				○											11.0	6.35	3.18	0.2
	110304	221		○				○											11.0	6.35	3.18	0.4
	160304	321																	16.5	9.525	3.18	0.4
	160402	330.5																	16.5	9.525	3.18	0.2
	160404	331		○				○			●		●						16.5	9.525	3.18	0.4
	160408	332		○				○			●		●						16.5	9.525	3.18	0.8
	220304	421																	22.0	12.7	3.18	0.4
	220402	430.5																	22.0	12.7	4.76	0.2
	220404	431		○				○					○						22.0	12.7	4.76	0.4
	220408	432		○				○					○						22.0	12.7	4.76	0.8
	220412	433		○				○											22.0	12.7	4.76	1.2
	270612	543																	27.5	15.875	6.35	1.2
	270624	546																	27.5	15.875	6.35	2.4

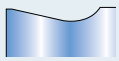
P. 142~144, 175

● : Stock Item ○ : Under preparing for stock

TNGG TNPR/L*

T type (60°)



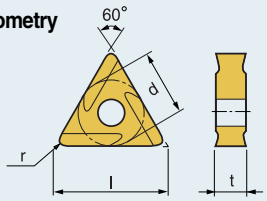


■ USE

■ Recommendation

d = 1.0~4.0mm
f = 0.1~0.4mm/rev

■ Geometry



Available Holder	Designation	ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)			
			NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	CT10	CN20	CN100	CN200	H01	G10	ST10	ST20	l	d	t	r
PTFNR/L PTGNR/L PTTNR/L WTJNR/L WTXNR/L	TNGG 110304R																		11.0	6.35	3.18	0.4
	TNPR/L* 160402R										●		●						16.5	9.525	4.76	0.2
	160404R										●	●	●					●	16.5	9.525	4.76	0.4
	160408R										●		○					●	16.5	9.525	4.76	0.8
	220404R										●		●						22.0	12.7	4.76	0.4
	220408R										●		●						22.0	12.7	4.76	0.8
	220412R																		22.0	12.7	4.76	1.2
	110304L																		11.0	6.35	3.18	0.4
	160402L																		16.5	9.525	4.76	0.2
	160404L										●	●	●						16.5	9.525	4.76	0.4
	160408L										●		○						16.5	9.525	4.76	0.8
	220404L																		22.0	12.7	4.76	0.4
	220408L																		22.0	12.7	4.76	0.8
	220412L																		22.0	12.7	4.76	1.2

P. 142~144, 175

● : Stock Item ○ : Under preparing for stock

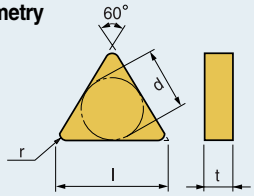
TNGN

T type (60°)

■ USE

■ Recommendation

■ Geometry



Available Holder	Designation		ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)			
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030		CT10	CN20	CN100	CN200	H01	G10	ST10		l	d	t	r
CTFNR/L CTGNR/L	TNGN	110304	221		○				○												11.0	6.35	3.18	0.4
		110308	222																		11.0	6.35	3.18	0.8
		160304	321		○				○												16.5	9.525	3.18	0.4
		160308	322		○	●			○												16.5	9.525	3.18	0.8
		160404	331		○				○												16.5	6.35	4.76	0.4
		160408	332																		16.5	6.35	4.76	0.8
		160412	333																		16.5	6.35	4.76	1.2
		220404	431																		22.0	12.7	4.76	0.4
		220408	432		○				○												22.0	12.7	4.76	0.8
		220412	433																		22.0	12.7	4.76	1.2
		220416	434																		22.0	12.7	4.76	1.6
		220424	436																		22.0	12.7	4.76	2.4

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● : Stock Item ○ : Under preparing for stock

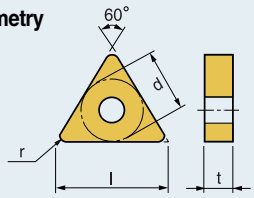
TNMA

T type (60°)

■ USE

■ Recommendation

■ Geometry



Available Holder	Designation		ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)			
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	NC315K	CT10	CN20	CN100	CN200	H01	G10	ST10	U20	l	d	t	r
PTFNR/L PTGNR/L PTTNR/L WTJNR/L WTXNR/L	TNMA	110308	222		○				○			●									11.0	6.35	3.18	0.8
		160404	331		○			●	●		○	●									16.5	9.525	4.76	0.4
		160408	332	○	○			●	●		○	●								●	16.5	9.525	4.76	0.8
		160412	333						●			●									16.5	9.525	4.76	1.2
		220404	431																		22.0	12.7	4.76	0.4
		220408	432	○	○				●												22.0	12.7	4.76	0.8
		220412	433	○	○			●	●												22.0	12.7	4.76	1.2
		220416	434					●													22.0	12.7	4.76	1.6
		220424	436																		22.0	12.7	4.76	2.4
		220432	438																		22.0	12.7	4.76	3.2

P. 142~144, 175

● : Stock Item ○ : Under preparing for stock

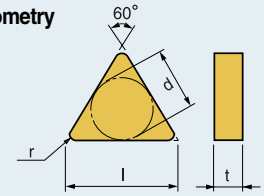
TNMN

T type (60°)

■ USE

■ Recommendation

■ Geometry



Available Holder	Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)			
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	CT10	CN20	CN100	CN200	H01	G10	ST10		l	d	t	r
CTFNR/L	TNMN	160408	332		○				○											16.5	9.525	4.76	0.8
CTGNR/L		220408	432		○				○		○				○					22.0	12.7	4.76	0.8
		220412	433		○				○											22.0	12.7	4.76	1.2

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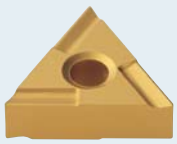
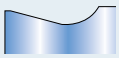
● : Stock Item ○ : Under preparing for stock

TNMX

T type (60°)

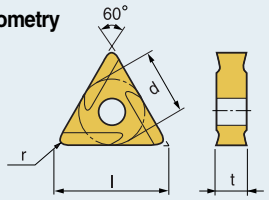




■ USE

■ Recommendation

■ Geometry



Available Holder	Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)			
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	CT10	CN20	CN100	CN200	H01	G10	ST10		l	d	t	r
PTFNR/L	TNMX	160402R	330.5								○		●		●					16.5	9.525	4.76	0.2
PTGNR/L		160404R	331		●						○		●		●					16.5	9.525	4.76	0.4
PTTNR/L		160408R	332		●						○		●		●					16.5	9.525	4.76	0.8
WTJNR/L		220404R	431		●						○		●							22.0	12.7	4.76	0.4
WTXNR/L		220408R	432		○						○		●							22.0	12.7	4.76	0.8
		160404L	331		●						○									16.5	9.525	4.76	0.4
		160408L	332		●															16.5	9.525	4.76	0.8

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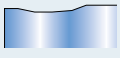
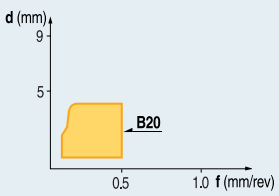
● : Stock Item ○ : Under preparing for stock

TNMG-B20

T type (60°)



• Exclusive chip breaker for cast iron.

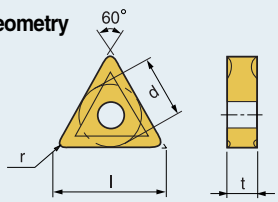


■ USE
Light & Medium

■ Recommendation

B20 d = 1.5~4.0mm
f = 0.15~0.5mm/rev

■ Geometry



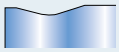
Available Holder	Designation		ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)			
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	NC315K	CT10	CN20	CN100	CN200	H01	G10	ST10		l	d	t	r
PTFNR/L	TNMG	160404-B20	331																	16.5	9.525	4.76	0.4
PTGNR/L		160408-B20	332		○				●			●								16.5	9.525	4.76	0.8
PTTNR/L		160412-B20	333		○				○			○								16.5	9.525	4.76	1.2
WTJNR/L		220408-B20	432		○				●			○								22.0	12.7	4.76	0.8
WTXNR/L		220412-B20	433																	22.0	12.7	4.76	1.2

P. 142~144, 175

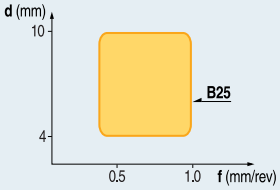
● : Stock Item ○ : Under preparing for stock

TNMG-B25

T type (60°)



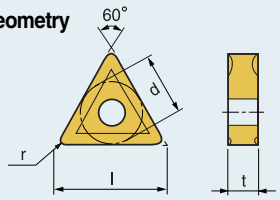
- Comprehensive chip breaker can cover general cutting.



USE
General Cutting

Recommendation
B25 d = 4.0~10.0mm
f = 0.5~1.0mm/rev

Geometry



Available Holder	Designation		ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)			
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	NC500H	CT10	CN20	CN100	CN200	H01	G10	ST10		l	d	t	r
PTFNR/L	TNMG	110308-B25	222																		11.0	6.35	3.18	0.8
PTGNR/L		160304-B25	321			●															16.5	9.525	3.18	0.4
PTTNR/L		160308-B25	322			●															16.5	9.525	3.18	0.8
WTJNR/L		160312-B25	323																		16.5	9.525	3.18	1.2
WTXNR/L		160316-B25	324																		16.5	9.525	3.18	1.6
		160404-B25	331	○	●	●			○		○										16.5	9.525	4.76	0.4
		160408-B25	332	○	●	●	●		○		●										16.5	9.525	4.76	0.8
		160412-B25	333			●															16.5	9.525	4.76	1.2
		160416-B25	334																		16.5	9.525	4.76	1.6
		220404-B25	431	○	●	●															22.0	12.7	4.76	0.4
		220408-B25	432	○	●	●			○		○	●									22.0	12.7	4.76	0.8
		220412-B25	433		○	●			○		○	○									22.0	12.7	4.76	1.2
		220416-B25	434		●	●															22.0	12.7	4.76	1.6
		220424-B25	436																		22.0	12.7	4.76	2.4
		270608-B25	542		●	●															27.5	15.875	6.35	0.8
		270612-B25	543		●	●															27.5	15.875	6.35	1.2
		270616-B25	544			●						○									27.5	15.875	6.35	1.6
		330716-B25	654		●																33.0	19.05	7.94	1.6
		330924-B25	666			●						○									33.0	19.05	9.52	2.4

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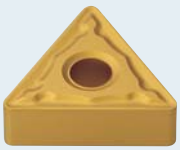
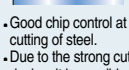
●: Stock Item ○: Under preparing for stock

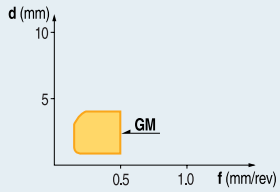
TNMG(M)-GM

T type (60°)





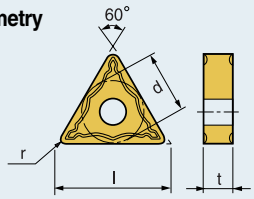
- Good chip control at general cutting of steel.
- Due to the strong cutting edge design, it is possible to machine with high feed rate even at intermittent cutting of steel.



USE
Medium

Recommendation
GM d = 1.0~4.0mm
f = 0.2~0.5mm/rev

Geometry



Available Holder	Designation		ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)			
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	NC500H	CT10	CN20	CN100	CN200	H01	G10	ST10		l	d	t	r
PTFNR/L	TNMG	160304-GM	321			●															16.5	9.525	3.18	0.4
PTGNR/L		160404-GM	331	○	●	●			○		○			●		●					16.5	9.525	4.76	0.4
PTTNR/L		160408-GM	332	○	●	●			○		○			●		●					16.5	9.525	4.76	0.8
WTJNR/L		160412-GM	333																		16.5	9.525	4.76	1.2
WTXNR/L		220404-GM	431		●	●															22.0	12.7	4.76	0.4
		220408-GM	432	○	●	●			○		○										22.0	12.7	4.76	0.8
		220412-GM	433	○	●	●			○		○	●									22.0	12.7	4.76	1.2
	TNMM	160412-GM	333																		16.5	9.525	4.76	1.2
		220412-GM	433																		22.0	12.7	4.76	1.2
		220416-GM	434																		22.0	12.7	4.76	1.6

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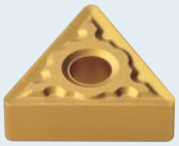
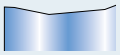
●: Stock Item ○: Under preparing for stock

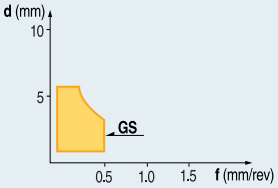
TNMG-GS

T type (60°)





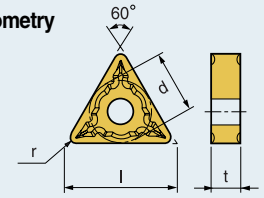
• As a chip breaker for stainless steel machining, good surface finish & smooth cutting process can be acquired.



USE
Stainless Steel

Recommendation
GS d = 1.5~5.5mm
f = 0.15~0.5mm/rev

Geometry



Available Holder	Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)			
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	CT10	CN20	CN100	CN200	H01	G10	ST10		l	d	t	r
PTFNR/L PTGNR/L PTTNR/L WTJNR/L WTXNR/L	TNMG	160404-GS	331	○	○		●				●									16.5	9.525	4.76	0.4
		160408-GS	332		●	●	●				●									16.5	9.525	4.76	0.8
		220408-GS	432																	22.0	12.7	4.76	0.8

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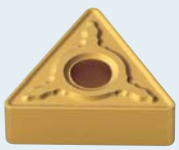
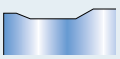
● : Stock Item ○ : Under preparing for stock

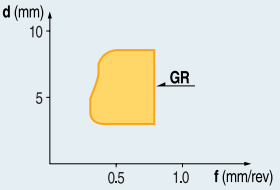
TNMG(M)-GR

T type (60°)





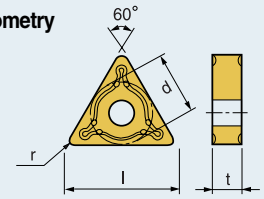
• Due to the strong cutting edge, it is possible to machine with high feed rate for steel & cast iron.



USE
Roughing

Recommendation
GR d = 3.0~8.0mm
f = 0.3~0.8mm/rev

Geometry



Available Holder	Designation		ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)			
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	NC500H	PC9030	NC315K	CT10	CN20	CN100	CN200	H01	G10	ST10		l	d	t	r
PTFNR/L PTGNR/L PTTNR/L WTJNR/L WTXNR/L	TNMG	160408-GR	332	○	●	●			●			●									16.5	9.525	4.76	0.8
		160412-GR	333		●	●			●			●									16.5	9.525	4.76	1.2
		220408-GR	432		●	●			●			○									22.0	12.7	4.76	0.8
		220412-GR	433		●	●			○	●		○									22.0	12.7	4.76	1.2
		220416-GR	434			●															22.0	12.7	4.76	1.6
		270608-GR	542																		27.5	15.875	6.35	0.8
		270612-GR	543		●	●															27.5	15.875	6.35	1.2
		270616-GR	544							○											27.5	15.875	6.35	1.6
		330924-GR	666			●				○											33.0	19.05	9.52	2.4
	TNMM	220408-GR	432																		22.0	12.7	4.76	0.8
		220412-GR	433																		22.0	12.7	4.76	1.2
		220416-GR	434																		22.0	12.7	4.76	1.6

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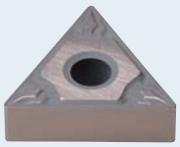
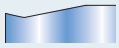
● : Stock Item ○ : Under preparing for stock

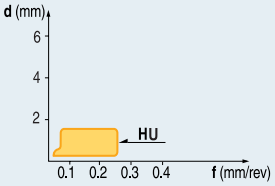
TNG(M)G-HU

T type (60°)





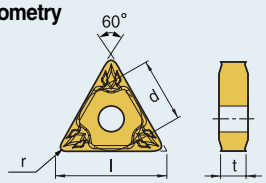
- Due to the low cutting load that has been originated from sharp cutting edge, good surface finish through smooth cutting can be acquried.
- Due to the special chip breaker design for shallow depth of cut, good chip control is possible at low depth of cut machining.



USE
Finishing

Recommendation
HU d = 0.1 ~ 1.5mm
f = 0.03 ~ 0.25mm/rev

Geometry



Available Holder	Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)			
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	CT10	CN20	CN100	CN200	H01	G10	ST10		l	d	t	r
PTFNR/L	TNGG	160404-HU	331																	16.5	9.525	4.76	0.4
PTGNR/L		160408-HU	332																	16.5	9.525	4.76	0.8
PTTNR/L	TNMG	160404-HU	331	○	○		○		○	○	○									16.5	9.525	4.76	0.4
WTJNR/L		160408-HU	332	○	○		○		○	○	○									16.5	9.525	4.76	0.8
WTXNR/L																							

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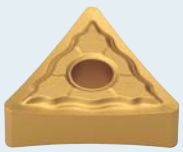
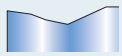
●: Stock Item ○: Under preparing for stock

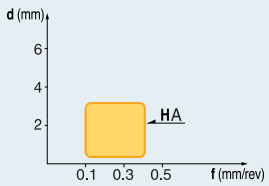
TNMG-HA

T type (60°)





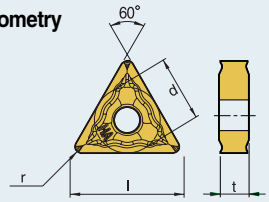
- Low cutting load due to the sharp cutting edge.
- Thanks to the special design on cutting edge line, strength of cutting edge has been increased.
- Suitable for machining of low carbon steel, stainless steel and aluminum.



USE
Light & Medium

Recommendation
HA d = 0.8~3.5mm
f = 0.1~0.4mm/rev

Geometry



Available Holder	Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)			
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	CT10	CN20	CN100	CN200	H01	G10	ST10		l	d	t	r
PTFNR/L	TNMG	160404-HA	331		●		●				●					●				16.5	9.525	4.76	0.4
PTGNR/L		160408-HA	332		●		●				●					●				16.5	9.525	4.76	0.8
PTTNR/L		220408-HA	432							●	●									22.0	12.7	4.76	0.8
WTJNR/L																							
WTXNR/L																							

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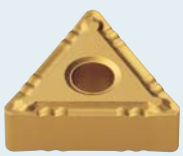
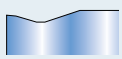
*In case of carbide insert(H01), special treatment on top & bottom face of insert has been applied to get good chip flow property.

●: Stock Item ○: Under preparing for stock

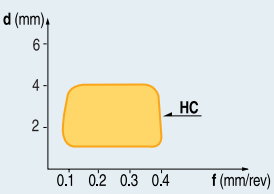
TNMG-HC

T type (60°)





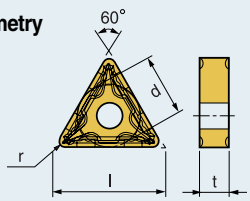
- Good performance for copy machining.
- Effective chip breaker can cover the deviation of depth of cut, from shallow to big.



USE
Light & Medium

Recommendation
HC d = 0.8~4.0mm
f = 0.08~0.4mm/rev

Geometry



Available Holder	Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)			
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	CT10	CN20	CN100	CN200	H01	G10	ST10		l	d	t	r
PTFNR/L	TNMG	160404-HC	331	○	●	○				○	○									16.5	9.525	4.76	0.4
PTGNR/L		160408-HC	332	○	●	●				○	○									16.5	9.525	4.76	0.8
PTTNR/L		160412-HC	333																	16.5	9.525	4.76	1.2
WTJNR/L		220408-HC	432	○	●	●				○										22.0	12.7	4.76	0.8
WTXNR/L																							

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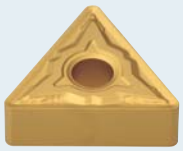
●: Stock Item ○: Under preparing for stock

TNMG-HS

T type (60°)

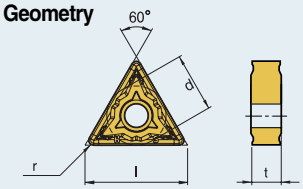


- Exclusive chip breaker for stainless steel.
- Due to the special chip breaker design to prevent notch wear on cutting edge, insert tool life has been increased.

USE
Stainless Steel(Medium)

Recommendation
HS d = 1.0~4.0mm
f = 0.1~0.4mm/rev

Geometry



Available Holder	Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)			
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	CT10	CN20	CN100	CN200	H01	G10	ST10		l	d	t	r
PTFNR/L	TNMG	160404-HS	331		○		●			●	●									16.5	9.525	4.76	0.4
PTGNR/L		160408-HS	332		○		●			●	●									16.5	9.525	4.76	0.8
PTTNR/L		160412-HS	333				●				●									16.5	9.525	4.76	1.2
WTJNR/L		220408-HS	432		○		●			●	●									22.0	12.7	4.76	0.8
WTXNR/L		220412-HS	433				●				●									22.0	12.7	4.76	1.2

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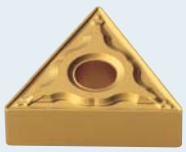
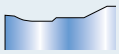
● : Stock Item ○ : Under preparing for stock

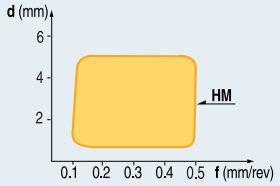
TNM(M)G-HM

T type (60°)





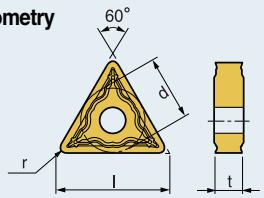
- Comprehensive chip breaker can cover from medium-finishing to medium-roughing.
- Suitable chip breaker for CNC machine.



USE
Medium

Recommendation
HM d = 1.0~5.0mm
f = 0.1~0.5mm/rev

Geometry



Available Holder	Designation		ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)			
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	NC315K	CT10	CN20	CN100	CN200	H01	G10	ST10		l	d	t	r
PTFNR/L	TNMG	110308-HM	222	○	●				●		○										11.0	6.35	3.18	0.8
PTGNR/L		160404-HM	331	○	●	●	○	●	●		○			●		●					16.5	9.525	4.76	0.4
PTTNR/L		160408-HM	332	○	●	●	●	●	●		●	●		●		●					16.5	9.525	4.76	0.8
WTJNR/L		160412-HM	333	○	●						○	●									16.5	9.525	4.76	1.2
WTXNR/L		220404-HM	431	○	●	●			●		○										22.0	12.7	4.76	0.4
		220408-HM	432	○	●	●			●	●	○										22.0	12.7	4.76	0.8
		220412-HM	433	○	●	●															22.0	12.7	4.76	1.2
	TNMM	160408-HM	332																		16.5	9.525	4.76	0.8
		220408-HM	432																		22.0	12.7	4.76	0.8

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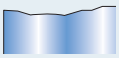
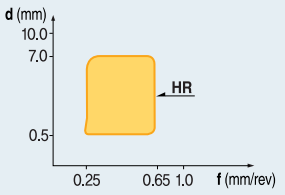
● : Stock Item ○ : Under preparing for stock

TNMG-HR

T type (60°)



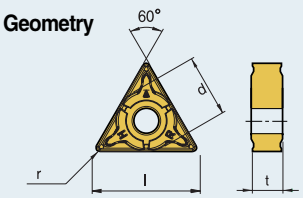
- Good chip flow at high feed & big depth of cut.
- Suitable chip breaker for intermittent cutting.



USE
Roughing

Recommendation
HR d = 2.5~7.0mm
f = 0.25~0.65mm/rev

Geometry



Available Holder	Designation		ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)			
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	NC500H	CT10	CN20	CN100	CN200	H01	G10	ST10		l	d	t	r
PTFNR/L	TNMG	160408-HR	332	○	●	●			○												16.5	9.525	4.76	0.8
PTGNR/L		160412-HR	333	○	●	●			○												16.5	9.525	4.76	1.2
PTTNR/L		220408-HR	432	○	●	●			○												22.0	12.7	4.76	0.8
WTJNR/L		220412-HR	433	○	●	●			○			●									22.0	12.7	4.76	1.2
WTXNR/L		220416-HR	434		●	●															22.0	12.7	4.76	1.6
		270608-HR	542																		27.5	15.875	6.35	0.8
		270612-HR	543		●	●						○									27.5	15.875	6.35	1.2
		270632-HR	548																		27.5	15.875	6.35	3.2
		330716-HR	654																		33.0	19.05	7.94	1.6
		330924-HR	666									○									33.0	19.05	9.52	2.4

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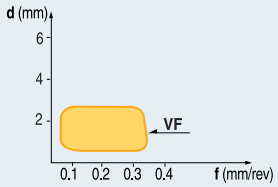
● : Stock Item ○ : Under preparing for stock

TNMG-VF

T type (60°)

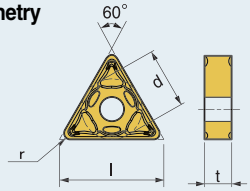
- Good chip control performance at various depth of cut.
- Sharp & strong cutting edge due to the special chip breaker design.



USE
Finishing

Recommendation
VF d = 0.3~2.5mm
f = 0.05~0.35mm/rev

Geometry



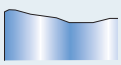
Available Holder	Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)			
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	CT10	CN20	CN100	CN200	H01	G10	ST10		l	d	t	r
PTFNR/L	TNMG	110304-VF	221	○	●						○				●					11.0	6.35	3.18	0.4
PTGNR/L		160404-VF	331	○	●	●					○				●					16.5	9.525	4.76	0.4
PTTNR/L		160408-VF	332	○	●	●					○				●					16.5	9.525	4.76	0.8
WTJNR/L		160412-VF	333		●						○									16.5	9.525	4.76	1.2
WTXNR/L		220404-VF	431	○	●						○				●					22.0	12.7	4.76	0.4
		220408-VF	432	○	●															22.0	12.7	4.76	0.8

P. 142~144, 175

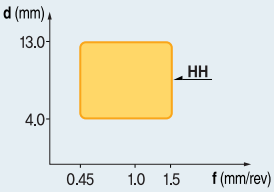
● : Stock Item ○ : Under preparing for stock

TNMM-HH

T type (60°)



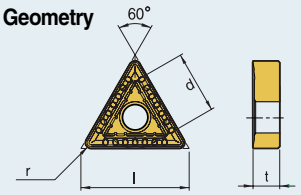
- Suitable chip breaker for high feed, big depth of cut machining.
- Since the special convex "dot" designed on cutting edge reduces cutting load, smooth cutting can be done even at the heavy cutting.



USE
Heavy Duty

Recommendation
HH d = 4.0~13.0mm
f = 0.45~1.5mm/rev

Geometry



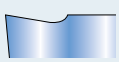
Available Holder	Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)			
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	CT10	CN20	CN100	CN200	H01	G10	ST10		l	d	t	r
PTFNR/L	TNMM	220412-HH	433		●	●					○									22.0	12.7	4.76	1.2
PTGNR/L		270616-HH	544		●	●					○									27.5	15.875	6.35	1.6
PTTNR/L		270624-HH	546		●	●					○									27.5	15.875	6.35	2.4
WTJNR/L		330924-HH	666		●	●					○									33.0	19.05	9.52	2.4
WTXNR/L																							

P. 142~144, 175

● : Stock Item ○ : Under preparing for stock

TBGT

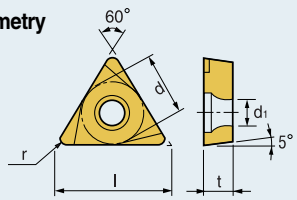
T type (60°)



USE

Recommendation

Geometry



Available Holder	Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)				
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	CT10	CN20	CN100	CN200	H01	G10	ST10		l	d	t	r	d_1
STUBR (Micro Boring Bar)	TBGT	060102L	1.210.5	○						○	●	●		●		●				6.8	3.97	1.59	0.2	2.16
		060104L	1.211									●								6.8	3.97	1.59	0.4	2.16

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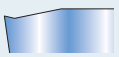
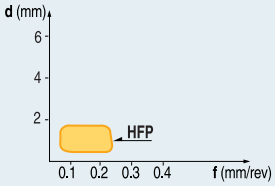
● : Stock Item ○ : Under preparing for stock

TCGT-HFP

T type (60°)



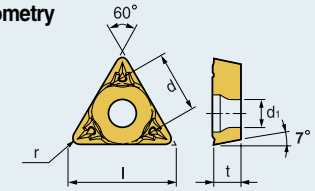
- Suitable chip breaker for shallow depth of cut & low feed rate.
- Good surface finish and smooth cutting can be acquried.
- Machining of inner diameter & outer diameter is available.



USE
Finishing

Recommendation
HFP d = 0.1~1.5mm
f = 0.05~0.25mm/rev

Geometry



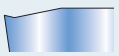
Available Holder	Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)				
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	CT10	CN20	CN100	CN200	H01	G10	ST10		l	d	t	r	d_1
STACR/L STFCR/L STGCR/L STTCR/L	TCGT	090204-HFP	731		○					○										9.6	5.56	2.38	0.4	2.5
		110202-HFP	21.50.5		○					○	○									11.0	6.35	2.38	0.2	2.8
		110204-HFP	21.51		○					○	○									11.0	6.35	2.38	0.4	2.8
		110208-HFP	21.52		○					○	○									11.0	6.35	2.38	0.8	2.8
		16T304-HFP	32.51		●					○										16.5	9.525	3.97	0.4	4.4
		16T308-HFP	32.52							○										16.5	9.525	3.97	0.8	4.4

P. 155, 156, 181, 256, 257

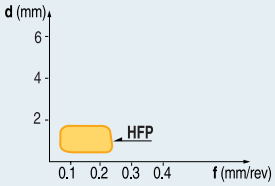
● : Stock Item ○ : Under preparing for stock

TCMT-HFP

T type (60°)



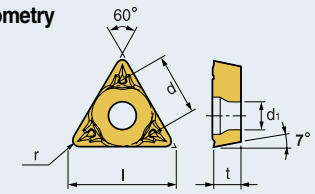
- Suitable chip breaker for shallow depth of cut & low feed rate.
- Good surface finish and smooth cutting can be acquried.
- Machining of inner diameter & outer diameter is available.



USE
Finishing

Recommendation
HFP d = 0.1~1.5mm
f = 0.05~0.25mm/rev

Geometry



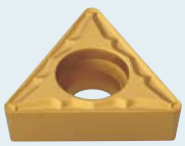
Available Holder	Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)				
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	CT10	CN20	CN100	CN200	H01	G10	ST10		l	d	t	r	d_1
STACR/L STFCR/L STGCR/L STTCR/L	TCMT	090204-HFP	731		○				○											9.6	5.56	2.38	0.4	2.5
		110202-HFP	21.50.5		○				○		○									11.0	6.35	2.38	0.2	2.8
		110204-HFP	21.51		○				○		○									11.0	6.35	2.38	0.4	2.8
		110208-HFP	21.52		○				○		○									11.0	6.35	2.38	0.8	2.8
		16T304-HFP	32.51		○				○											16.5	9.525	3.97	0.4	4.4
		16T308-HFP	32.52																	16.5	9.525	3.97	0.8	4.4

P. 155, 156, 181, 256, 257

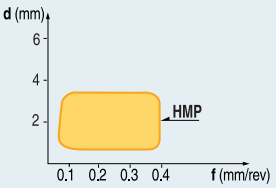
● : Stock Item ○ : Under preparing for stock

TCMT-HMP

T type (60°)



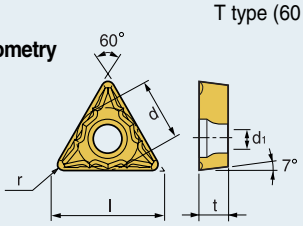
- Comprehensive chip breaker can cover various conditions of feed & depth for machining of steel.
- Applicable for stainless steel machining.



USE
Medium

Recommendation
HMP d = 0.5~3.5mm
f = 0.05~0.4mm/rev

Geometry



Available Holder	Designation		ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)				
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	NC315K	CT10	CN20	CN100	CN200	H01	G10	ST10		l	d	t	r	d_1
STACR/L STFCR/L STGCR/L STTCR/L	TCMT	090204-HMP	731	○	○	○	○		●												9.6	5.56	2.38	0.4	2.5
		090208-HMP	732						●												9.6	5.56	2.38	0.8	2.5
		110202-HMP	21.50.5						○		○										11.0	6.35	2.38	0.2	2.8
		110204-HMP	21.51	○	●	●	●		●		●					●					11.0	6.35	2.38	0.4	2.8
		110208-HMP	21.52	○	●	●	○		●		○										11.0	6.35	2.38	0.8	2.8
		16T304-HMP	32.51	○	●	●	●		●	●	●	●									16.5	9.525	3.97	0.4	4.4
		16T308-HMP	32.52	○	●	●	●		●		●	●									16.5	9.525	3.97	0.8	4.4

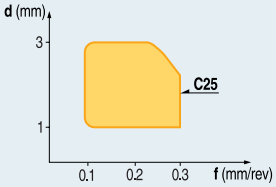
P. 155, 156, 181, 256, 257

● : Stock Item ○ : Under preparing for stock

TCMT-C25

T type (60°)

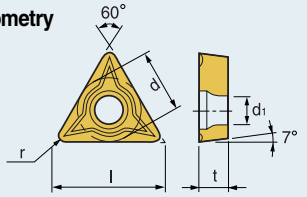
• Suitable chip breaker for intermittent cutting of steel and cast iron.



USE
Medium

Recommendation
C25 d = 1.0~3.0mm
f = 0.1~0.3mm/rev

Geometry



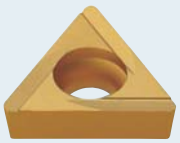
Available Holder	Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)				
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	CT10	CN20	CN100	CN200	H01	G10	ST10		l	d	t	r	d_1
STACR/L STFCR/L STGCR/L STTCR/L	TCMT	090204-C25	731	○	●	●			○		○									9.6	5.56	2.38	0.4	2.5
		090208-C25	732	○	●				○											9.6	5.56	2.38	0.8	2.5
		110202-C25	21.50.5		●				○		○				●					11.0	6.35	2.38	0.2	2.8
		110204-C25	21.51	○	●	●			○		○		●		●					11.0	6.35	2.38	0.4	2.8
		110208-C25	21.52	○	●	●			○		○				●					11.0	6.35	2.38	0.8	2.8
		16T304-C25	32.51	○	●	●	●		○		●		●		●					16.5	9.525	3.97	0.4	4.4
		16T308-C25	32.52	○	●	●	●		●		●		●		●					16.5	9.525	3.97	0.8	4.4

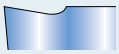
P. 155, 156, 181, 256, 257

● : Stock Item ○ : Under preparing for stock

TOEH

T type (60°)

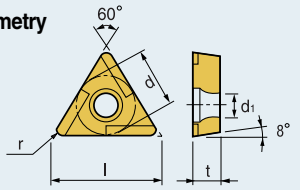




USE

Recommendation

Geometry

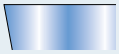


Available Holder	Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)				
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	CT10	CN20	CN100	CN200	H01	G10	ST10		l	d	t	r	d_1
For FZ unit	TOEH	060102L	1.210.5														●	●		6.8	3.97	1.59	0.2	2.15
		090204L	1.81.51														●	●		9.6	5.56	2.38	0.4	2.8
		140304L															●			14.2	8.2	3.0	0.4	3.8

● : Stock Item ○ : Under preparing for stock

TPGN

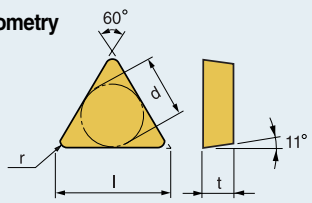
T type (60°)



USE

Recommendation

Geometry

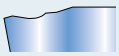


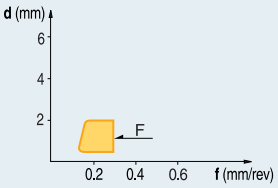
Available Holder	Designation		ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)			
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	NCM325	CT10	CN20	CN100	CN30	H01	G10	ST20	ST30A	l	d	t	r
	TPGN	110304	221		●	●											●			●	11.0	6.35	3.18	0.4
		110308	222		○	●											●			●	11.0	6.35	3.18	0.8
		160302	320.5		○						○			○		○					16.5	9.525	3.18	0.2
		160304	321	○	●	●					○	●		○		●	●	●		●	16.5	9.525	3.18	0.4
		160308	322	○	●	●					○			●		○	●	●	●		16.5	9.525	3.18	0.8
		160312	323			●													●	●	16.5	9.525	3.18	1.2
		160316	324			●												●	●	●	16.5	9.525	3.18	1.6
		220404	431			●												●		●	22.0	12.7	4.76	0.4
		220408	432		○	●												●		●	22.0	12.7	4.76	0.8
		220412	433		○	●															22.0	12.7	4.76	1.2
		220430	437.6															●			22.0	12.7	4.76	3.0

● : Stock Item ○ : Under preparing for stock

TPG(M)R-F

T type (60°)

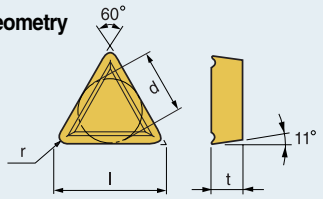




USE
Finishing

Recommendation
F d = 0.5~2.0mm
f = 0.1~0.25mm/rev

Geometry



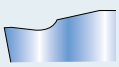
Available Holder	Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)			
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	CT10	CN20	CN100	CN200	H01	G10	ST10		l	d	t	r
CTFPR/L CTGPR/L	TPGR	110302-F	220.5																	11.0	6.35	3.18	0.2
		110304-F	221																	11.0	6.35	3.18	0.4
		160304-F	321																	16.5	9.525	3.18	0.4
	TPMR	090202-F	1.81.50.5																	9.6	5.56	2.38	0.2
		090204-F	1.81.51																	9.6	5.56	2.38	0.4
		110302-F	22.0.5																	11.0	6.35	3.18	0.2
		110304-F	221	○	●	●	●		●	○	●									11.0	6.35	3.18	0.4
		110308-F	222																	11.0	6.35	3.18	0.8
		160304-F	321	○	●	●	●	●	●	●	●									16.5	9.525	3.18	0.4
		160308-F	322				●													16.5	9.525	3.18	0.8

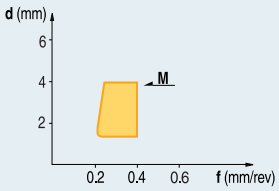
P. 165, 166, 187

● : Stock Item ○ : Under preparing for stock

TPG(M)R-M

T type (60°)

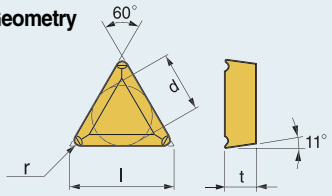




USE

Recommendation
M d = 1.5~4.0mm
f = 0.2~0.4mm/rev

Geometry



Available Holder	Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)			
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	CT10	CN20	CN100	CN200	H01	G10	ST10		l	d	t	r
CTFPR/L CTGPR/L	TPGR	110308-M	222																	11.0	6.35	3.18	0.8
		160308-M	322																	16.5	9.525	3.18	0.8
	TPMR	110304-M	221																	11.0	6.35	3.18	0.4
		110308-M	222	○	●	●	●	○	●	○										11.0	6.35	3.18	0.8
		160304-M	321																	16.5	9.525	3.18	0.4
		160308-M	322	○	●	●	●	●	●	●							●			16.5	9.525	3.18	0.8
		160312-M	323																	16.5	9.525	3.18	1.2
		220408-M	432																	22.0	12.7	4.76	0.8

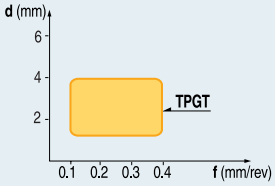
P. 165, 166, 187

● : Stock Item ○ : Under preparing for stock

TPGT

T type (60°)

- Wide chip control range from finishing to medium cutting.

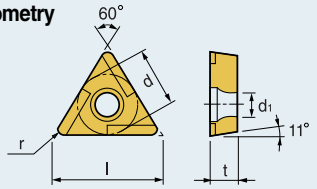


USE

Recommendation

d = 1.0~4.0mm
f = 0.1~0.4mm/rev

Geometry



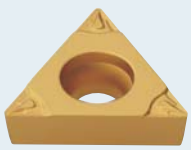
Available Holder	Designation		ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)				
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	PC215K	CT10	CN20	CN100	CN200	H01	G10	ST10		l	d	t	r	d_1
STFPR/L (Boring Bar) STUPR (Micro Boring Bar)	TPGT	080202R	1.51.50.5																		8.2	4.76	2.38	0.2	2.3
		110302R	220.5																		11.0	6.35	3.18	0.2	3.4
		110304R	221										●		●						11.0	6.35	3.18	0.4	3.4
		110308R	222																		11.0	6.35	3.18	0.8	3.4
		160404R	331										●		●						16.5	9.525	4.76	0.4	4.4
		160408R	332																		16.5	9.525	4.76	0.8	4.4
		080202L	1.51.50.5								●	●		●			●				8.2	4.76	2.38	0.2	2.3
		080204L	1.51.51									●									8.2	4.76	2.38	0.4	2.3
		110302L	220.5									●									11.0	6.35	3.18	0.2	3.4
		110304L	221									●	●	●	●						11.0	6.35	3.18	0.4	3.4
		110308L	222									●									11.0	6.35	3.18	0.8	3.4
		160404L	331										●	●	●						16.5	9.525	4.76	0.4	4.4
		160408L	332																		16.5	9.525	4.76	0.8	4.4

P. 182, 188, 258, 259

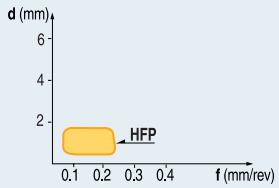
● : Stock Item ○ : Under preparing for stock

TPGT-HFP

T type (60°)



- Suitable chip breaker for shallow depth of cut & low feed rate.
- Good surface finish and smooth cutting can be acquried at the machining of inner diameter & outer diameter.



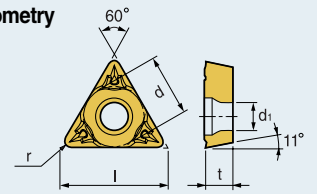
USE

Finishing

Recommendation

HFP d = 1.0~1.5mm
f = 0.05~0.25mm/rev

Geometry



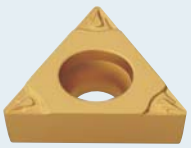
Available Holder	Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)				
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	CT10	CN20	CN100	CN200	H01	G10	ST10		l	d	t	r	d_1
STFPR/L (Boring Bar)	TPGT	110304-HFP	221	○			○		○											11.0	6.35	3.18	0.4	3.4
		160308-HFP	332	○					○		○									16.5	9.525	3.18	0.8	4.4

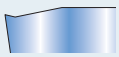
P. 182, 188, 258, 259

● : Stock Item ○ : Under preparing for stock

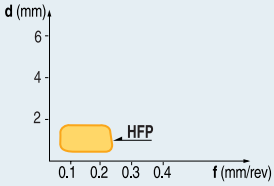
TPMT-HFP

T type (60°)





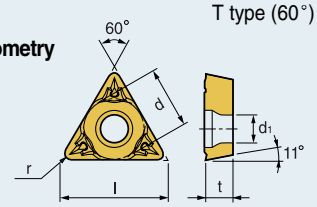
- Suitable chip breaker for shallow depth of cut & low feed rate.
- Good surface finish and smooth cutting can be acquried at the machining of inner diameter & outer diameter



USE
Finishing

Recommendation
HFP d = 1.0~1.5mm
f = 0.05~0.25mm/rev

Geometry



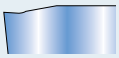
Available Holder	Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)				
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	CT10	CN20	CN100	CN200	H01	G10	ST10		l	d	t	r	d_1
STFPR/L (Boring Bar)	TPMT	110304-HFP	221		○				○	○	○			○						11.0	6.35	3.18	0.4	3.4
		160308-HFP	332		○				○	○	○			○						16.5	9.525	3.18	0.8	4.4

P. 182, 188, 258, 259

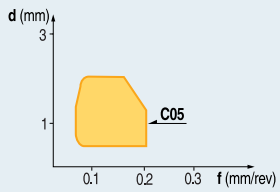
● : Stock Item ○ : Under preparing for stock

TPGT-C05

T type (60°)



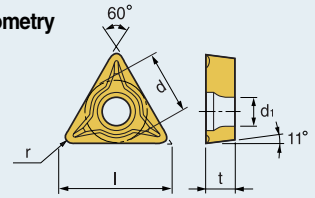
- Good surface fihish due to reduced cutting load.



USE
Finishing

Recommendation
C05 d = 0.5~2.0mm
f = 0.05~0.3mm/rev

Geometry



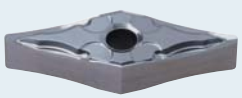
Available Holder	Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)				
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	CT10	CN20	CN100	CN200	H01	G10	ST10		l	d	t	r	d_1
STFPR/L (Boring Bar)	TPGT	110304-C05	221		○						○	●								11.0	6.35	3.18	0.4	3.4
		160404-C05	331		○						○	○								16.5	9.525	4.76	0.4	4.4

P. 182, 188, 258, 259

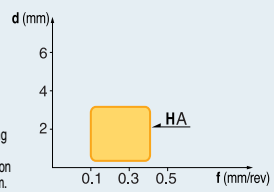
● : Stock Item ○ : Under preparing for stock

VNGG-HA

V type (35°)



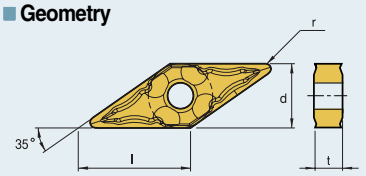
- Low cutting load due to the sharp cutting edge.
- Thanks to the special design on cutting edge line, strength of cutting edge has been increased.
- Suitable for machining of low carbon steel, stainless steel and aluminum.



USE
Light & Medium

Recommendation
HA d = 0.8~3.5mm
f = 0.1~0.4mm/rev

Geometry



Available Holder	Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)			
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	CT10	CN20	CN100	CN200	H01	G10	ST10		l	d	t	r
MVJNR/L	VNGG	160408-HA	332	○	○		○			●						○				16.6	9.525	4.76	0.8

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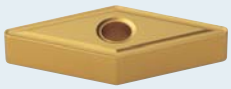
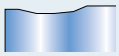
*In case of carbide insert(H01), special treatment on top & bottom face of insert has been applied to get good chip flow property.

● : Stock Item ○ : Under preparing for stock

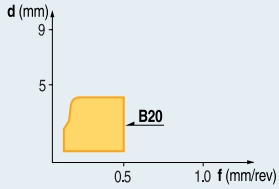
VNMG-B20

V type (35°)





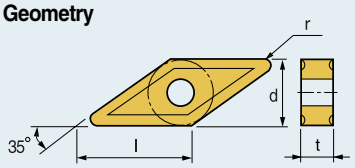
- Exclusive chip breaker for cast iron.



USE
Light & Medium

Recommendation
B20 d = 1.5~4.0mm
f = 0.15~0.5mm/rev

Geometry



Available Holder	Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)			
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	CT10	CN20	CN100	CN200	H01	G10	ST10		l	d	t	r
MVJNR/L	VNMG	160404-B20	331		○	●			●	○										16.6	9.525	4.76	0.4
		160408-B20	332		●	●			●	○										16.6	9.525	4.76	0.8

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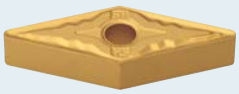
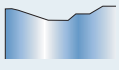
●: Stock Item ○: Under preparing for stock

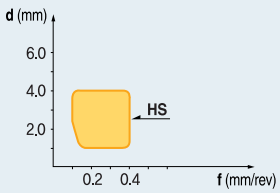
VNMG-HS

V type (35°)





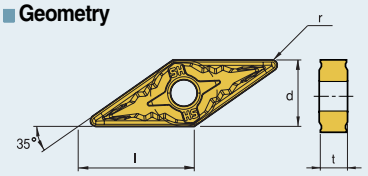
- Exclusive chip breaker for stainless steel.
- Due to the special chip breaker design to prevent notch wear on cutting edge, insert tool life has been increased.



USE
Stainless Steel(Medium)

Recommendation
HS d = 1.0~4.0mm
f = 0.1~0.4mm/rev

Geometry



Available Holder	Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)			
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	CT10	CN20	CN100	CN200	H01	G10	ST10		l	d	t	r
MVJNR/L	VNMG	160404-HS	331				●			●	●									16.6	9.525	4.76	0.4
		160408-HS	332				●			●	●									16.6	9.525	4.76	0.8

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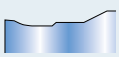
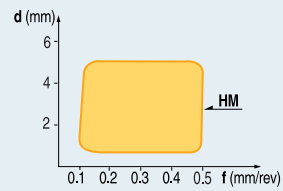
●: Stock Item ○: Under preparing for stock

VNMG-HM

V type (35°)



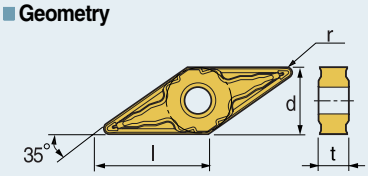
- Comprehensive chip breaker can cover from medium-finishing to medium-roughing.
- Suitable chip breaker for CNC machine.



USE
Medium

Recommendation
HM d = 1.0~5.0mm
f = 0.1~0.5mm/rev

Geometry



Available Holder	Designation		ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)			
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	NC315K	CT10	CN20	CN100	CN200	H01	G10	ST10		l	d	t	r
MVJNR/L	VNMG	160404-HM	331	○	●	●	●		●		●	○									16.6	9.525	4.76	0.4
		160408-HM	332	○	●	●	●		●		●	●									16.6	9.525	4.76	0.8
		160412-HM	333		●																16.6	9.525	4.76	1.2
		220404-HM	431																		22.1	12.7	4.76	0.4
		220408-HM	432																		22.1	12.7	4.76	0.8

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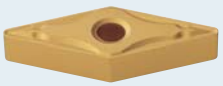
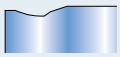
●: Stock Item ○: Under preparing for stock

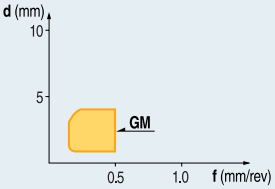
VNMG-GM

V type (35°)





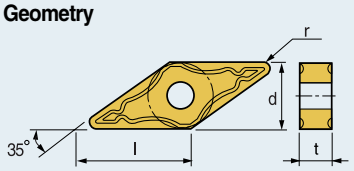
- Good chip control at general cutting of steel.
- Due to the strong cutting edge design, it is possible to machine with high feed rate even at intermittent cutting of steel.



USE
Medium

Recommendation
GM d = 0.7~4.0mm
f = 0.1~0.5mm/rev

Geometry



Available Holder	Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)			
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	CT10	CN20	CN100	CN200	H01	G10	ST10		l	d	t	r
MVJNR/L	VNMG	160404-GM	331		●	●			○		○									16.6	9.525	4.76	0.4
		160408-GM	332		●	●			○		○									16.6	9.525	4.76	0.8

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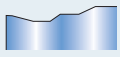
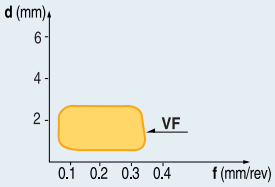
● : Stock Item ○ : Under preparing for stock

VNMG-VF

V type (35°)



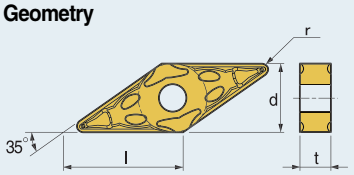
- Good chip control performance at various depth of cut.
- Sharp & strong cutting edge due to the special chip breaker design.



USE
Finishing

Recommendation
VF d = 0.3~2.5mm
f = 0.05~0.35mm/rev

Geometry



Available Holder	Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)			
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	CT10	CN20	CN100	CN200	H01	G10	ST10		l	d	t	r
MVJNR/L	VNMG	160402-VF	330.5		●										●					16.6	9.525	4.76	0.2
		160404-VF	331	○	●	●				○	○				●					16.6	9.525	4.76	0.4
		160408-VF	332	○	●	●				○	○				●					16.6	9.525	4.76	0.8
		160412-VF	333																	16.6	9.525	4.76	1.2

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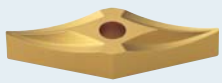
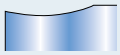
● : Stock Item ○ : Under preparing for stock

VNMP

V type (35°)



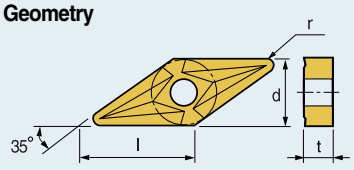


- For roughing of high temp alloy and aluminum alloy

USE

Recommendation

Geometry



Available Holder	Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)			
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	CT10	CN20	CN100	CN200	H01	G10	ST10		l	d	t	r
MVJNR/L	VNMP	160404	331		○		○			○							●			16.6	9.525	4.76	0.4
		160408	332		○		○			○										16.6	9.525	4.76	0.8

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● : Stock Item ○ : Under preparing for stock

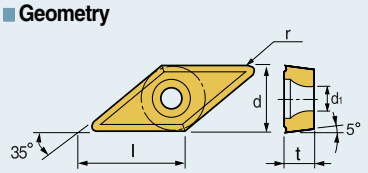
VBG(M)T

V type (35°)

■ USE

■ Recommendation

■ Geometry



Available Holder	Designation		ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)				
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	NC315K	CT10	CN20	CN100	CN200	H01	G10	ST10		l	d	t	r	d_1
SVABR/L	VBGT	160404	331																		16.5	9.525	4.76	0.4	4.4
SVJBR/L		160408	332																		16.5	9.525	4.76	0.8	4.4
SVVBN	VBMT	160404	331	○	●	●	●		●		●	●				●					16.5	9.525	4.76	0.4	4.4
SVQBR/L		160408	332	○	●	●	●		●		●	●				●					16.5	9.525	4.76	0.8	4.4
SVUBR/L																									

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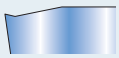
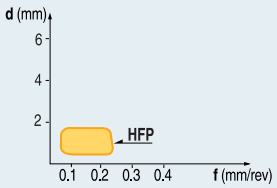
●: Stock Item ○: Under preparing for stock

VCGT-HFP

V type (35°)



- Suitable chip breaker for shallow depth of cut & low feed rate.
- Good surface finish and smooth cutting can be acquried at the machining of inner diameter & outer diameter.



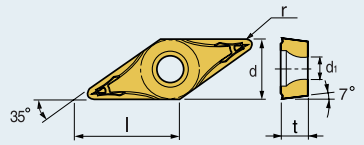
■ USE

Finishing

■ Recommendation

HFP d = 0.1~1.5mm
f = 0.05~0.25mm/rev

■ Geometry



Available Holder	Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)				
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	CT10	CN20	CN100	CN200	H01	G10	ST10		l	d	t	r	d_1
SVJCR/L	VCGT	110302-HFP	220.5		○					○	○									11.0	6.35	3.18	0.2	3.4
		110304-HFP	221		●				○	○	○									11.0	6.35	3.18	0.4	3.4
		110308-HFP	222		○				○		○									11.0	6.35	3.18	0.8	3.4
		160404-HFP	331		●				○	○	○									16.5	9.525	4.76	0.4	4.4
		160408-HFP	332		●				○											16.5	9.525	4.76	0.8	4.4

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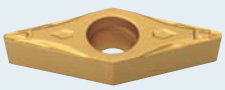
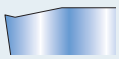
●: Stock Item ○: Under preparing for stock

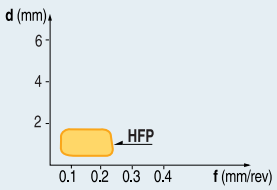
VCMT-HFP

V type (35°)





- Suitable chip breaker for shallow depth of cut & low feed rate.
- Good surface finish and smooth cutting can be acquried at the machining of inner diameter & outer diameter



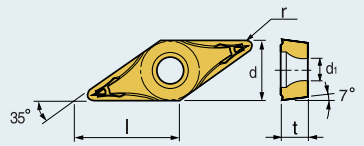
■ USE

Finishing

■ Recommendation

HFP d = 0.1~1.5mm
f = 0.05~0.25mm/rev

■ Geometry



Available Holder	Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)				
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	CT10	CN20	CN100	CN200	H01	G10	ST10		l	d	t	r	d_1
SVJCR/L	VCMT	110302-HFP	220.5		○				○		○									11.0	6.35	3.18	0.2	3.4
		110304-HFP	221		○				○	○	○									11.0	6.35	3.18	0.4	3.4
		110308-HFP	222		○				○	○	○									11.0	6.35	3.18	0.8	3.4
		160404-HFP	331		○				○	○	○									16.5	9.525	4.76	0.4	4.4
		160408-HFP	332		○				○	○										16.5	9.525	4.76	0.8	4.4

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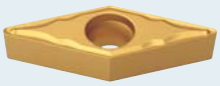
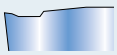
●: Stock Item ○: Under preparing for stock

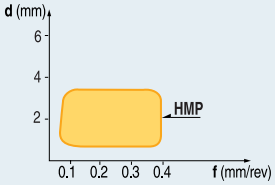
VBMT-HMP

V type (35°)





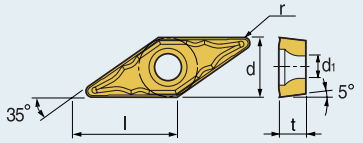
• Comprehensive chip breaker can cover various conditions of feed & depth for machining of steel & stainless steel.



USE
Medium

Recommendation
HMP d = 0.5~3.5mm
f = 0.05~0.4mm/rev

Geometry



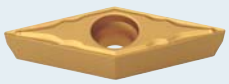
Available Holder	Designation	ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)				
			NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	CT10	CN20	CN100	CN200	H01	G10	ST10		l	d	t	r	d_1
SVABR/L	VBMT 110204-HMP	21.51	○	●															11.1	6.35	2.38	0.4	2.8
SVJBR/L	110304-HMP	221	○	●				○	○										11.1	6.35	3.18	0.4	3.4
SVVBN	110308-HMP	222	○	○				○	○										11.1	6.35	3.18	0.8	3.4
SVQBR/L	160404-HMP	331	○	●				●	●	○									16.5	9.525	4.76	0.4	4.4
SVUBR/L	160408-HMP	332	○	●	●			●	●	○									16.5	9.525	4.76	0.8	4.4

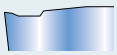
P. 157, 158, 183

● : Stock Item ○ : Under preparing for stock

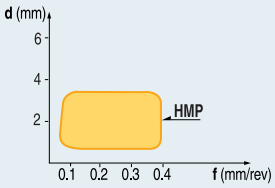
VCMT-HMP

V type (35°)





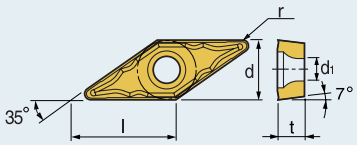
• Comprehensive chip breaker can cover various conditions of feed & depth for machining of steel & stainless steel.



USE
Medium

Recommendation
HMP d = 0.5~3.5mm
f = 0.05~0.4mm/rev

Geometry



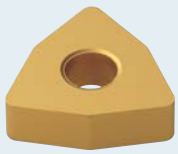
Available Holder	Designation	ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)				
			NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	CT10	CN20	CN100	CN200	H01	G10	ST10		l	d	t	r	d_1
SVJCR/L	VCMT 160404-HMP	331	○	●		●		○	○										16.5	9.525	4.76	0.4	4.4
	160408-HMP	332		●		●		○	○										16.5	9.525	4.76	0.8	4.4

P. 159, 184

● : Stock Item ○ : Under preparing for stock

WNMA

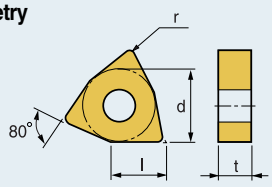
W type (80°)



USE

Recommendation

Geometry



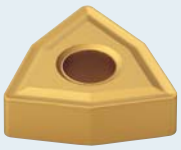
Available Holder	Designation	ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)			
			NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	NC315K	CT10	CN20	CN100	CN200	H01	G10	ST10		l	d	t	r
PWLNR/L	WNMA 060404	331																		6.5	9.525	4.76	0.4
WWLNR/L	060408	332						●												6.5	9.525	4.76	0.8
	080408	432	○	○		○	●	●	○		●									8.7	12.7	4.76	0.8
	080412	433		○		○		●												8.7	12.7	4.76	1.2

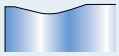
P. 143, 145, 149, 175, 185

● : Stock Item ○ : Under preparing for stock

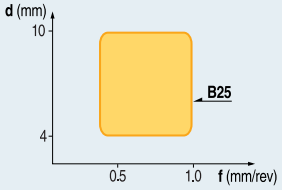
WNMG-B25

W type (80°)





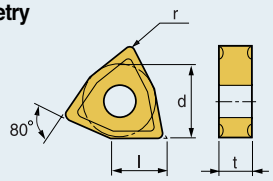
- Comprehensive chip breaker can cover general cutting.



USE
General Cutting

Recommendation
B25 d = 4.0~10.0mm
f = 0.5~1.0mm/rev

Geometry



Available Holder	Designation	ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)			
			NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	CT10	CN20	CN100	CN200	H01	G10	ST10		l	d	t	r
PWLNR/L WWLNR/L	WNMG 080404-B25	431		○	○			●	○										8.7	12.7	4.76	0.4
	080408-B25	432		●	●			●	○										8.7	12.7	4.76	0.8
	080412-B25	433																	8.7	12.7	4.76	1.2
	WNMM 100608-B25	542			○														10.7	15.875	6.35	0.8
	130612-B25	643			○														13.8	19.05	6.35	1.2

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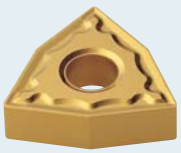
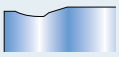
●: Stock Item ○: Under preparing for stock

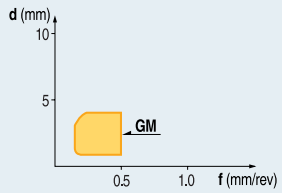
WNMG-GM

W type (80°)





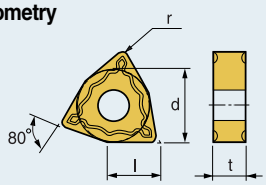
- Good chip control at general cutting of steel.
- Due to the strong cutting edge design, it is possible to machine with high feed rate even at intermittent cutting of steel.



USE
Medium

Recommendation
GM d = 0.7~4.0mm
f = 0.1~0.5mm/rev

Geometry



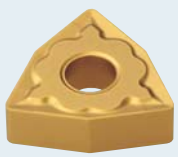
Available Holder	Designation	ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)			
			NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	CT10	CN20	CN100	CN200	H01	G10	ST10		l	d	t	r
PWLNR/L WWLNR/L	WNMG 060404-GM	331	○	●				○											6.5	9.525	4.76	0.4
	060408-GM	332	○	●	●			○											6.5	9.525	4.76	0.8
	080404-GM	431	○	●	●			○	○										8.7	12.7	4.76	0.4
	080408-GM	432	○	●	●			○	○	○									8.7	12.7	4.76	0.8
	080412-GM	433	○	●				○											8.7	12.7	4.76	1.2

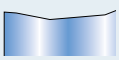
P. 143, 145, 149, 175, 185

●: Stock Item ○: Under preparing for stock

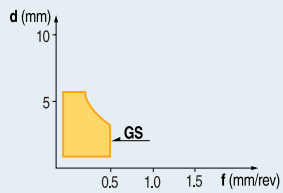
WNMG-GS

W type (80°)





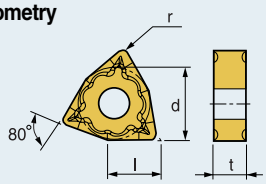
- As a chip breaker for stainless steel machining, good surface finish & smooth cutting process can be acquired.



USE
Stainless Steel

Recommendation
GS d = 1.5~5.5mm
f = 0.15~0.5mm/rev

Geometry



Available Holder	Designation	ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)			
			NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	CT10	CN20	CN100	CN200	H01	G10	ST10		l	d	t	r
PWLNR/L WWLNR/L	WNMG 060404-GS	331				●				○									6.5	9.525	4.76	0.4
	060408-GS	332				●				○									6.5	9.525	4.76	0.8
	080404-GS	431		●		●				●									8.7	12.7	4.76	0.4
	080408-GS	432		●		●				●									8.7	12.7	4.76	0.8
	080412-GS	433				●													8.7	12.7	4.76	1.2

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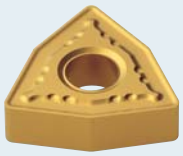
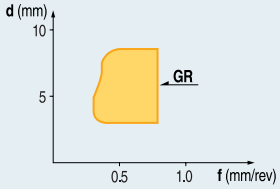
●: Stock Item ○: Under preparing for stock

WNMG-GR

W type (80°)



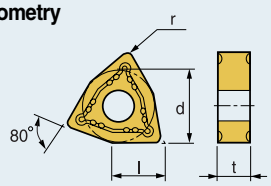
- Due to the strong cutting edge, it is possible to machine with high feed rate for steel & cast iron.



USE
Roughing

Recommendation
GR d = 3.0~8.0mm
f = 0.3~0.8mm/rev

Geometry



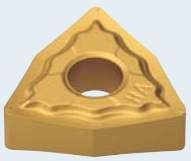
Available Holder	Designation	ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)			
			NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	NC315K	CT10	CN20	CN100	CN200	H01	G10	ST10		l	d	t	r
PWLNR/L WWLNR/L	WNMG 080408-GR	332	○	●	●		●	●	○		●									8.7	12.7	4.76	0.8
	080412-GR	433	○	●	●			●	○		●									8.7	12.7	4.76	1.2
	080416-GR	434																		8.7	12.7	4.76	1.6

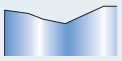
P. 143, 145, 149, 175, 185

● : Stock Item ○ : Under preparing for stock

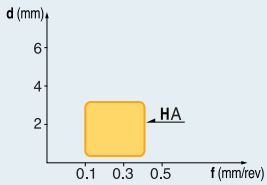
WNMG-HA

W type (80°)





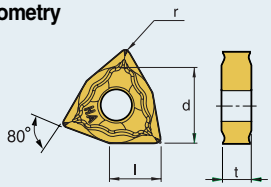
- Low cutting load due to the sharp cutting edge.
- Thanks to the special design on cutting edge line, strength of cutting edge has been increased.
- Suitable for machining of low carbon steel, stainless steel and aluminum.



USE
Light & Medium

Recommendation
HA d = 0.8~3.5mm
f = 0.1~0.4mm/rev

Geometry



Available Holder	Designation	ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)			
			NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030		CT10	CN20	CN100	CN200	H01	G10	ST10		l	d	t	r
PWLNR/L WWLNR/L	WNMG 060404-HA	331							●											6.5	9.525	4.76	0.4
	060408-HA	332							●											6.5	9.525	4.76	0.8
	080404-HA	431		●		●			○	●						●				8.7	12.7	4.76	0.4
	080408-HA	432		●		●			●	●						●				8.7	12.7	4.76	0.8
	080412-HA	433																		8.7	12.7	4.76	1.2

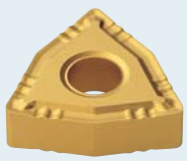
P. 143, 145, 149, 175, 185

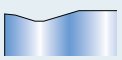
*In case of carbide insert(H01), special treatment on top & bottom face of insert has been applied to get good chip flow property.

● : Stock Item ○ : Under preparing for stock

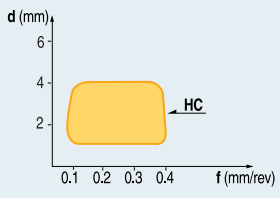
WNMG-HC

W type (80°)





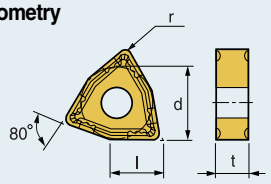
- Good performance for copy machining.
- Effective chip breaker can cover the deviation of depth of cut, from shallow to big.



USE
Light & Medium

Recommendation
HC d = 0.8~5.0mm
f = 0.08~0.4mm/rev

Geometry



Available Holder	Designation	ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)			
			NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030		CT10	CN20	CN100	CN200	H01	G10	ST10		l	d	t	r
PWLNR/L WWLNR/L	WNMG 060404-HC	331	○	○																6.5	9.525	4.76	0.4
	080404-HC	431	○	○						○										8.7	12.7	4.76	0.4
	080408-HC	432	○	●	●				○											8.7	12.7	4.76	0.8

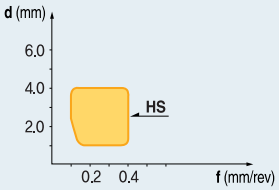
P. 143, 145, 149, 175, 185

● : Stock Item ○ : Under preparing for stock

WNMG-HS

W type (80°)

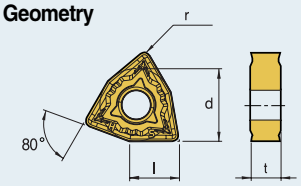
- Exclusive chip breaker for stainless steel.
- Due to the special chip breaker design to prevent notch wear on cutting edge, insert tool life has been increased.



USE

Recommendation

Geometry



Available Holder	Designation	ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)			
			NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	CT10	CN20	CN100	CN200	H01	G10	ST10		l	d	t	r
PWLNR/L WWLNR/L	WNMG 060404-HS	331				●			●	●									6.5	9.525	4.76	0.4
	060408-HS	332				●			●	●									6.5	9.525	4.76	0.8
	060412-HS	333				●				●									6.5	9.525	4.76	1.2
	080404-HS	431				●			○	●									8.7	12.7	4.76	0.4
	080408-HS	432				●			●	●									8.7	12.7	4.76	0.8
	080412-HS	433				●			○	●									8.7	12.7	4.76	1.2

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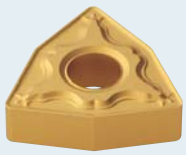
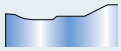
●: Stock Item ○: Under preparing for stock

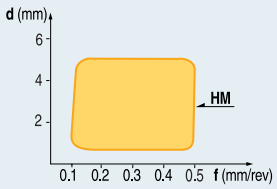
WNMG-HM

W type (80°)





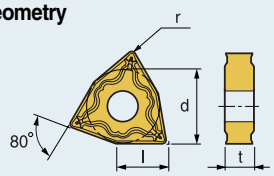
- Comprehensive chip breaker can cover from medium-finishing to medium-roughing.
- Suitable chip breaker for CNC machine.



USE
Medium

Recommendation
HM d = 1.0~5.0mm
f = 0.1~0.5mm/rev

Geometry



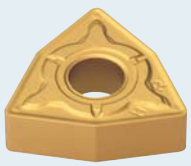
Available Holder	Designation	ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)			
			NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	NC315K	CT10	CN20	CN100	CN200	H01	G10	ST10		l	d	t	r
PWLNR/L WWLNR/L	WNMG 060404-HM	331	○	●				●		○	○									6.5	9.525	4.76	0.4
	060408-HM	332	○	●	●			●		○										6.5	9.525	4.76	0.8
	060412-HM	333		●				●		○										6.5	9.525	4.76	1.2
	080404-HM	431	○	●	●	●		●	○	○										8.7	12.7	4.76	0.4
	080408-HM	432	○	●	●	●	●	●	●	●	●									8.7	12.7	4.76	0.8
	080412-HM	433	○	●	●			●		○	●									8.7	12.7	4.76	1.2

P. 143, 145, 149, 175, 185

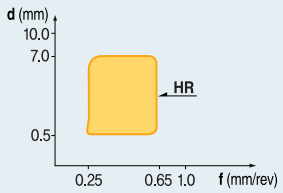
●: Stock Item ○: Under preparing for stock

WNMG-HR

W type (80°)



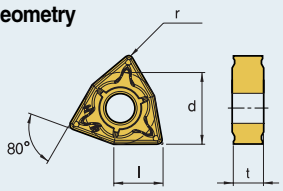
- Good chip flow at high feed & big depth of cut.
- Suitable chip breaker for intermittent cutting.



USE
Roughing

Recommendation
HR d = 2.5~7.0mm
f = 0.25~0.65mm/rev

Geometry



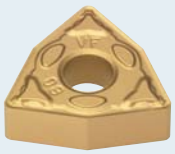
Available Holder	Designation	ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)			
			NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	CT10	CN20	CN100	CN200	H01	G10	ST10		l	d	t	r
PWLNR/L WWLNR/L	WNMG 060408-HR	332																	6.5	9.525	4.76	0.8
	060412-HR	333																	6.5	9.525	4.76	1.2
	080408-HR	432	○	●	●			○	○										8.7	12.7	4.76	0.8
	080412-HR	433	○	●	●			○	○										8.7	12.7	4.76	1.2
	080416-HR	434																	8.7	12.7	4.76	1.6

P. 143, 145, 149, 175, 185

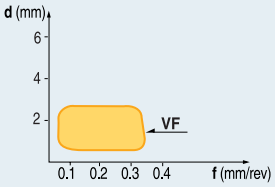
●: Stock Item ○: Under preparing for stock

WNMG-VF

W type (80°)



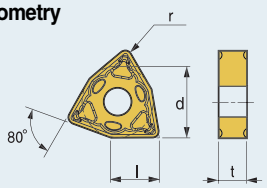
- Good chip control performance at various depth of cut.
- Sharp & strong cutting edge due to the special chip breaker design.



USE
Finishing

Recommendation
VF d = 0.3~2.5mm
f = 0.05~0.35mm/rev

Geometry



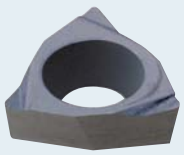
Available Holder	Designation	ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)			
			NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	CT10	CN20	CN100	CN200	H01	G10	ST10		l	d	t	r
PWLNR/L WWLNR/L	WNMG 060404-VF	331	○	●					○	○				●					6.5	9.525	4.76	0.4
	060408-VF	332	○	●					○	○				●					6.5	9.525	4.76	0.8
	060412-VF	333																	6.5	9.525	4.76	1.2
	080404-VF	431	○	●					○	○				●					8.7	12.7	4.76	0.4
	080408-VF	432	○	●					○	○				●					8.7	12.7	4.76	0.8

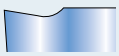
P. 143, 145, 149, 175, 185

● : Stock Item ○ : Under preparing for stock

WBGT

W type (80°)



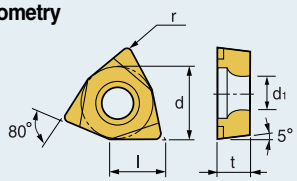


- Wide chip control coverage from light to medium cutting.

USE

Recommendation

Geometry



Available Holder	Designation	ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)				
			NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	CT10	CN20	CN100	CN200	H01	G10	ST10		l	d	t	r	d_1
SWUBR/L (Micro Boring Bar)	WBGT 020102L	520.5	○				○			●	●		●		●				2.7	3.97	1.59	0.2	2.2
	S30202L	630.5	○				○			●	●		○		●				3.3	4.76	2.38	0.2	2.3
	S30204L	631																	3.3	4.76	2.38	0.4	2.3

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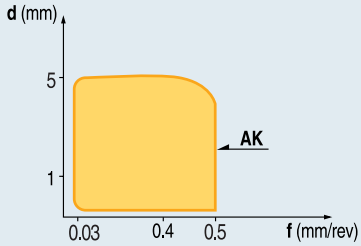
※ Similar designation : WBGT020100 → WBGT060100
WBGTS30200 → WBGT080200

● : Stock Item ○ : Under preparing for stock

Aluminum Threading Chip Breaker "AK"

Recommended Cutting Condition

d = 0.1~5.0㎜
f = 0.03~0.5㎜/rev

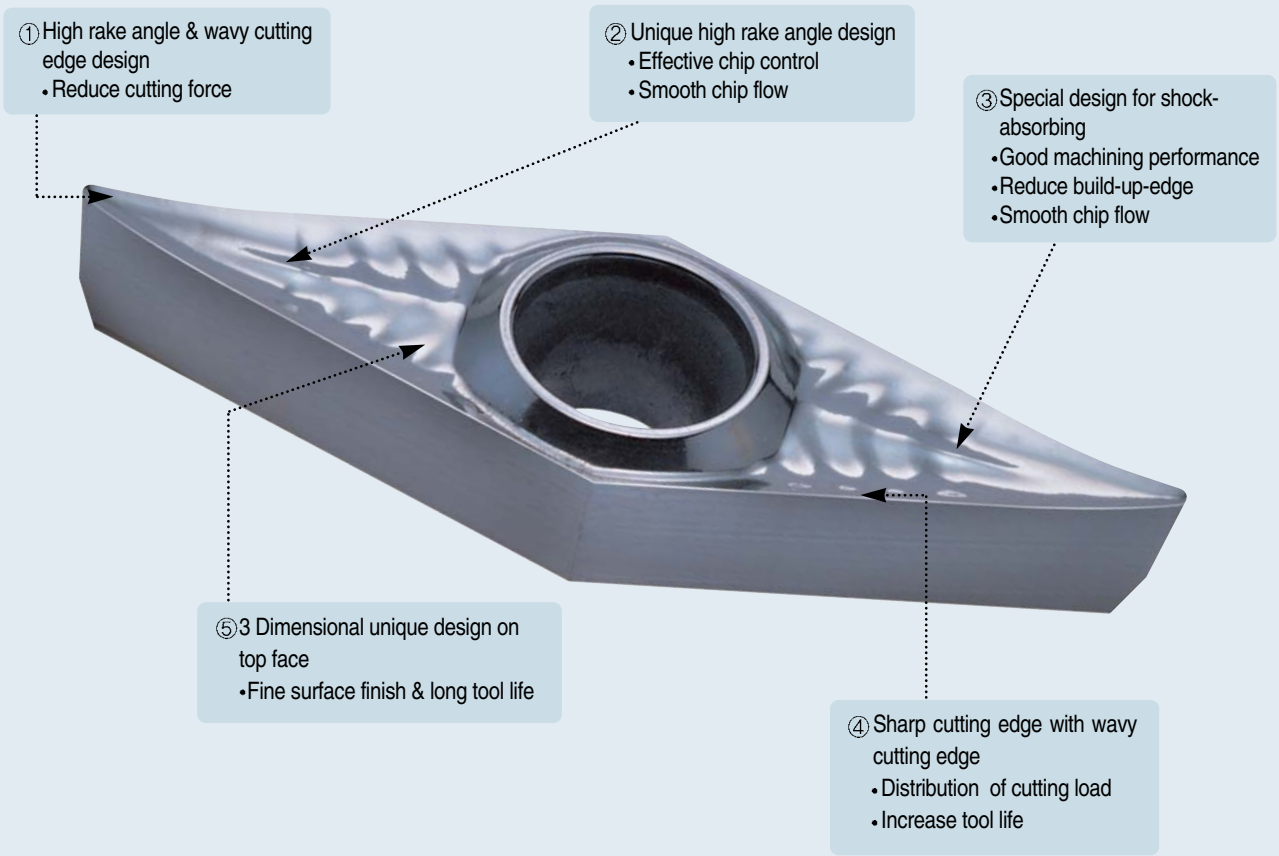


Available Grades

H01 (Carbide, K10~K20)
ND1000 (Diamond coating)
PC230 (PVD coating, P15~P35, M15~M35)

Special Features

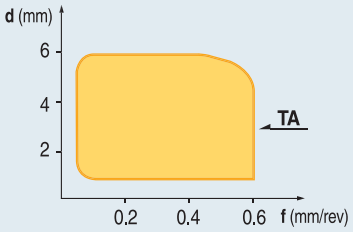
1) Unique rake surface design of insert provides smooth chip flow and excellent chip breaking at the same time, thus longer tool life can be acquired due to the reduced cutting load.
2) High rake angle of main cutting edge reduce cutting load and prolong tool life.
3) "AK" chip breaker equipped with mirror face on top face through special buffing process. The mirror face prevent sticking of work piece material on cutting edge and provide smooth chip flow.



Aluminum Machining Chip Breaker "TA"

Recommended Cutting Condition

d=0.1~6.0㎜
f=0.05~0.6㎜/rev

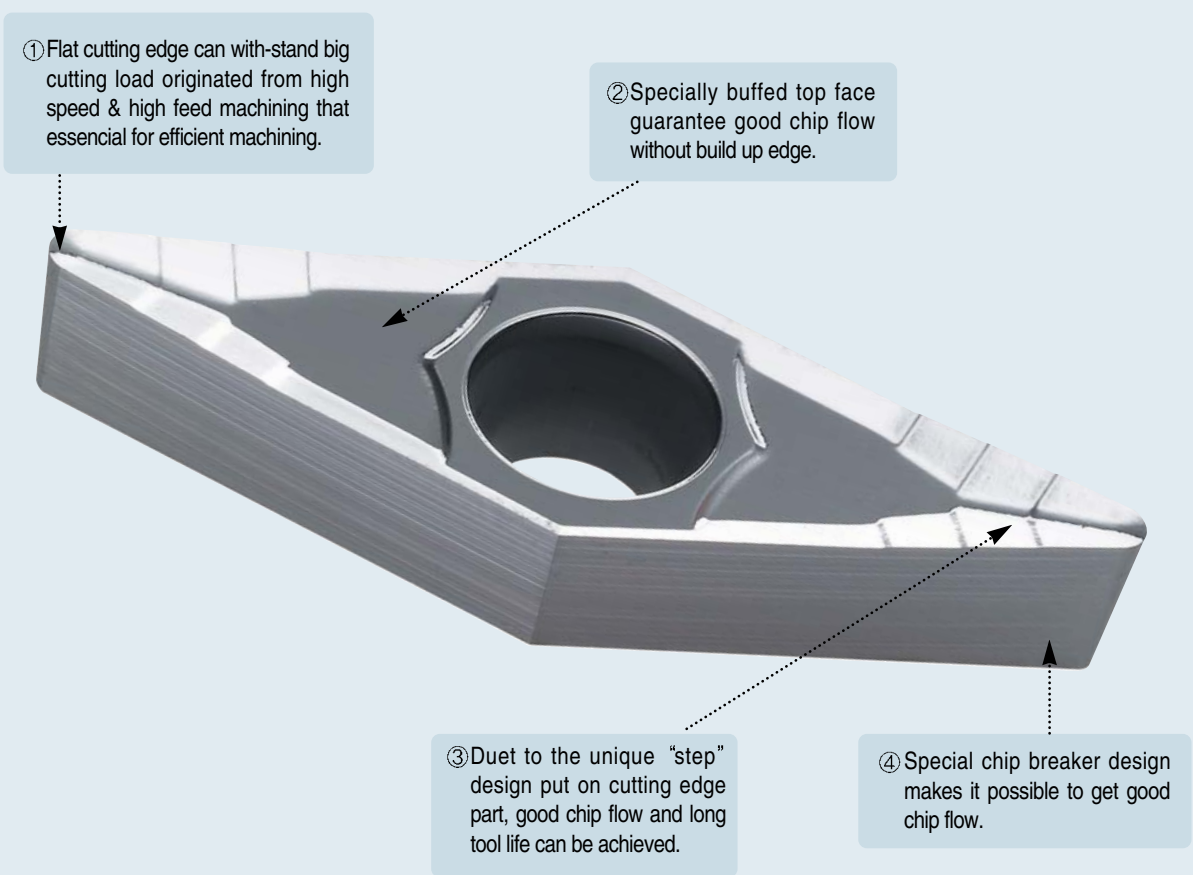


Available Grades

H01 (Carbide, K10~K20)
ND1000 (Diamond coating)
PD1000 (DLC coating)

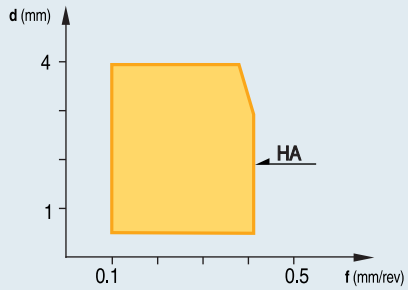
Special Features

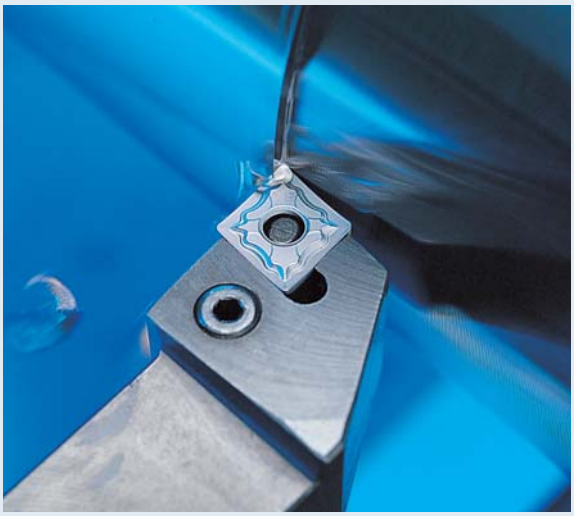
1) Since TA chip breaker is a tougher version for aluminum machining, excellent performance can be acquired at the high feed, roughing applicaion.



Aluminum Machining Chip Breaker "HA"

Recommended Cutting Condition



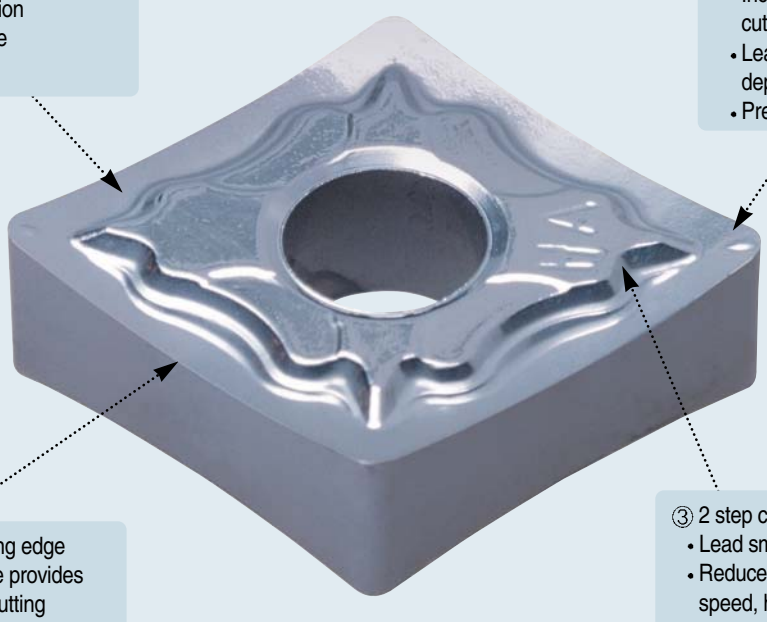


Special Features

Work piece	Hardness	Recommended Grade	Recommended Cutting Condition		
			Speed(m/min)	Feed(mm/rev)	Depth of cut(mm)
Aluminum and Aluminum alloy	20~125HB	H01	200~800	0.1~0.4	0.5~4.0

① Wide chip pocket & High rake angle
- Smooth chip evacuation
- Prevent build-up-edge
- Reduce cutting force

② Reinforce cutting edge strength
- Increase the toughness of the main cutting edge
- Lead smooth chip flow at shallow depth of cut
- Prevent chipping

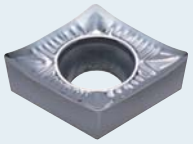


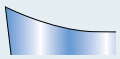
③ 2 step chip breaker
- Lead smooth chip curl.
- Reduce cutting force at high speed, high feed machining

④ Curved wavy cutting edge
- Sharp cutting edge provides effective shallow cutting
- Excellent surface finish of work piece and smooth cut

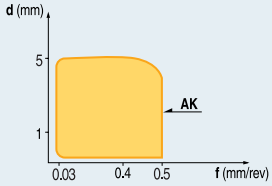
CCGT-AK

C type (80°)





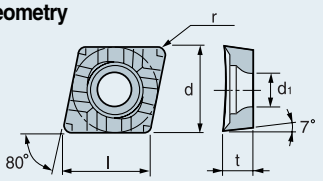
• Exclusive chip breaker for aluminum & aluminum alloy.



USE
Aluminium Cutting

Recommendation
AK d = 0.1~5.0mm
f = 0.03~0.5mm/rev

Geometry



Available Holder	Designation		ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)				
				PC230	PC130	CX1794	CX1233	NC305K	NC6010	PC8010	PD1000		CT10	CN20	CN100	CN200	H01	G10	ST10	H10	l	d	t	r	d_1
SCACR/L SCLCR/L	CCGT	060202-AK	21.50.5	●		●											●				6.5	6.35	2.38	0.2	2.8
		060204-AK	21.51	●	●	●											●				6.5	6.35	2.38	0.4	2.8
		060208-AK	21.52														●				6.5	6.35	2.38	0.8	2.8
		09T302-AK	32.50.5	●													●				9.7	9.525	3.97	0.2	4.4
		09T304-AK	32.51	●	●	●					●						●				9.7	9.525	3.97	0.4	4.4
		09T308-AK	32.52	●		○											●				9.7	9.525	3.97	0.8	4.4
		120402-AK	430.5														●				12.9	12.7	4.76	0.2	5.5
		120404-AK	431	●	●	●					●						●			●	12.9	12.7	4.76	0.4	5.5
		120408-AK	432	●	●	○											●				12.9	12.7	4.76	0.8	5.5

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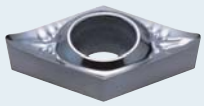
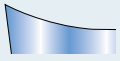
● : Stock Item ○ : Under preparing for stock

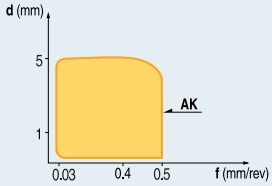
DCGT-AK

D type (55°)





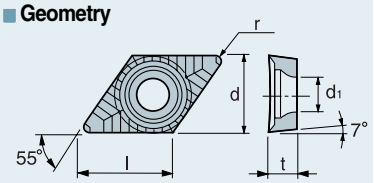
• Exclusive chip breaker for aluminum & aluminum alloy.



USE
Aluminium Cutting

Recommendation
AK d = 0.1~5.0mm
f = 0.03~0.5mm/rev

Geometry

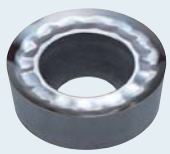


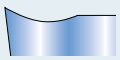
Available Holder	Designation		ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)				
				PC230	PC130	CX1794	CX1233	NC305K	NC6010	PC8010	PC9030	PD1000	CT10	CN20	CN100	CN200	H01	G10	ST10		l	d	t	r	d_1
SDACR/L SDJCR/L SDNCN SDQCR/L SDUCR/L SDZCR/L	DCGT	070202-AK	21.50.5	●													●				7.8	6.35	2.38	0.2	2.8
		070204-AK	21.51	●	●	●											●				7.8	6.35	2.38	0.4	2.8
		11T302-AK	32.50.5	●	●	●											●				11.6	9.525	3.97	0.2	4.4
		11T304-AK	32.51	●	●	●						●					●				11.6	9.525	3.97	0.4	4.4
		11T308-AK	32.52	●	●	●						●					●				11.6	9.525	3.97	0.8	4.4
		11T312-AK	32.53														●				11.6	9.525	3.97	1.2	4.4

P. 150, 151, 178

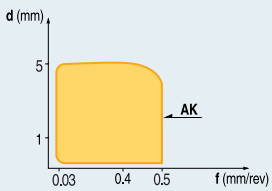
● : Stock Item ○ : Under preparing for stock

RCGT-AK





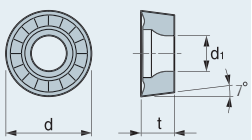
• Exclusive chip breaker for aluminum & aluminum alloy.



USE
Aluminium Cutting

Recommendation
AK d = 0.1~5.0mm
f = 0.03~0.5mm/rev

Geometry



Available Holder	Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)		
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	CT10	CN20	CN100	CN200	H01	G10	ST10		d	t	d_1
SRDCN SRGCR/L	RCGT	0602M0-AK														●				6.0	2.38	2.2
		0803M0-AK														●				8.0	3.18	3.35
		1003M0-AK														●				10.0	3.18	4.0
		10T3M0-AK														○				10.0	3.97	4.4
		1204M0-AK														●				12.0	4.76	4.4

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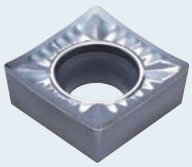
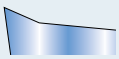
● : Stock Item ○ : Under preparing for stock

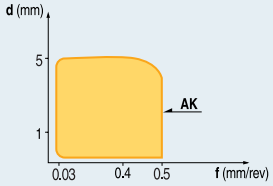
SCGT-AK

S type (90°)





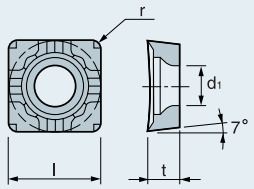
▪ Exclusive chip breaker for aluminum & aluminum alloy.



USE
Aluminium Cutting

Recommendation
AK d = 0.1~5.0mm
f = 0.03~0.5mm/rev

Geometry



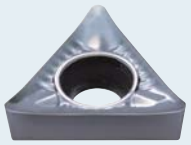
Available Holder	Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)			
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	CT10	CN20	CN100	CN200	H01	G10	ST10		(l=d)	t	r	d_1
SSBCR/L	SCGT	09T302-AK	32.50.5																	9.525	3.97	0.2	4.4
SSDCN		09T304-AK	32.51													●				9.525	3.97	0.4	4.4
SSKCR/L		09T308-AK	32.52													●				9.525	3.97	0.8	4.4
SSSCR/L		120404-AK	431													●				12.7	4.76	0.4	5.5
		120408-AK	432													●				12.7	4.76	0.8	5.5
		120416-AK	434																	12.7	4.76	1.6	5.5

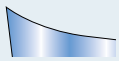
P. 153~155, 175

● : Stock Item ○ : Under preparing for stock

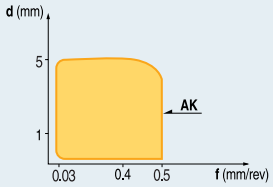
TCGT-AK

T type (60°)





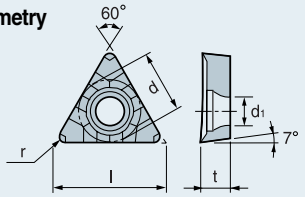
▪ Exclusive chip breaker for aluminum & aluminum alloy.



USE
Aluminium Cutting

Recommendation
AK d = 0.1~5.0mm
f = 0.03~0.5mm/rev

Geometry



Available Holder	Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)			
				NC3010	PC130	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	CT10	CN20	CN100	CN200	H01	G10	ST10		l	d	t	r	d_1
STACR/L	TCGT	090202-AK	1.81.50.5																	9.6	5.56	2.38	0.2	2.5
STFCR/L		090204-AK	1.81.51													●				9.6	5.56	2.38	0.4	2.5
STGCR/L		110202-AK	21.50.5													●				11.0	6.35	2.38	0.2	2.8
STTCR/L		110204-AK	21.51													●				11.0	6.35	2.38	0.4	2.8
		110208-AK	21.52													●				11.0	6.35	2.38	0.8	2.8
		16T302-AK	32.50.5													●				16.5	9.525	3.97	0.2	4.4
		16T304-AK	32.51		●											●				16.5	9.525	3.97	0.4	4.4
		16T308-AK	32.52													●				16.5	9.525	3.97	0.8	4.4
		16T312-AK	32.53													●				16.5	9.525	3.97	1.2	4.4
		16T316-AK	32.54													●				16.5	9.525	3.97	1.6	4.4

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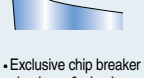
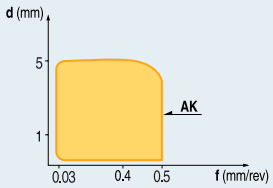
● : Stock Item ○ : Under preparing for stock

VBGT-AK

V type (35°)



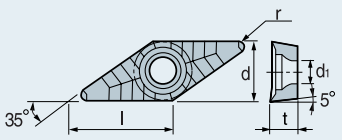
▪ Exclusive chip breaker for aluminum & aluminum alloy.



USE
Aluminium Cutting

Recommendation
d = 0.1~5.0mm
f = 0.03~0.5mm/rev

Geometry



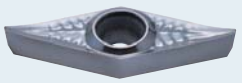
Available Holder	Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)			
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	CT10	CN20	CN100	CN200	H01	G10	ST10		l	d	t	r	d_1
SVABR/L	VBGT	110302-AK	220.5													●				11.0	6.35	3.18	0.2	2.8
SVJBR/L		110304-AK	221													●				11.0	6.35	3.18	0.4	2.8
SVVBN		110308-AK	222																	11.0	6.35	3.18	0.8	2.8
SVQBR/L		160402-AK	330.5																	16.5	9.525	4.76	0.2	4.4
SVUBR/L		160404-AK	331													●				16.5	9.525	4.76	0.4	4.4
		160408-AK	332													●				16.5	9.525	4.76	0.8	4.4
		160412-AK	333																	16.5	9.525	4.76	1.2	4.4

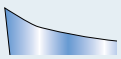
P. 157, 158, 183

● : Stock Item ○ : Under preparing for stock

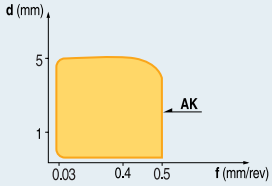
VCGT-AK

V type (35°)





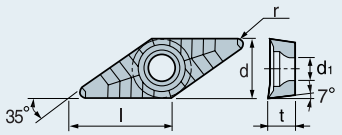
• Exclusive chip breaker for aluminum & aluminum alloy.



USE
Aluminium Cutting

Recommendation
AK d = 0.1~5.0mm
f = 0.03~0.5mm/rev

Geometry



Available Holder	Designation		ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)				
				PC230	PC130	CX1794	CX1233	NC305K	NC6010	PC8010	PC9030	PD1000	CT10	CN20	CN100	CN200	H01	G10	ST10		l	d	t	r	d_1
SVJCR/L SVVCN	VCGT	110301-AK	220																		11.0	6.35	3.18	0.1	2.8
		110302-AK	220.5			●											●				11.0	6.35	3.18	0.2	2.8
		110304-AK	221	●	●	●											●				11.0	6.35	3.18	0.4	2.8
		110308-AK	222														●				11.0	6.35	3.18	0.8	2.8
		130302-AK	2.520.5														●				13.8	7.94	3.18	0.2	3.4
		130304-AK	2.521														●				13.8	7.94	3.18	0.4	3.4
		130308-AK	2.522																		13.8	7.94	3.18	0.8	3.4
		160402-AK	330.5														●				16.5	9.525	4.76	0.2	4.4
		160404-AK	331	●		●						●					●				16.5	9.525	4.76	0.4	4.4
		160408-AK	332									●					●				16.5	9.525	4.76	0.8	4.4
		160412-AK	333									●					●				16.5	9.525	4.76	1.2	4.4
		220516-AK	43.54																		22.1	12.7	5.56	1.6	5.6
		220525-AK	43.56.3																		22.1	12.7	5.56	2.5	5.6
		220530-AK	43.57.6														●				22.1	12.7	5.56	3.0	5.6

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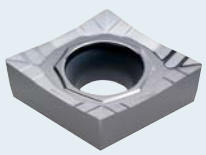
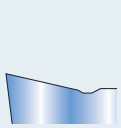
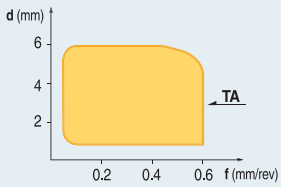
● : Stock Item ○ : Under preparing for stock

CCGT-TA

C type (80°)



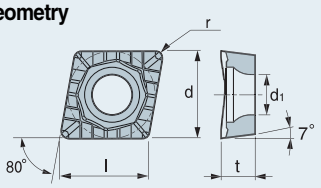




USE
Aluminium Cutting

Recommendation
TA d = 0.5~6.0mm
f = 0.05~0.6mm/rev

Geometry



Available Holder	Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)				
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	CT10	CN20	CN100	CN200	H01	G10	ST10		l	d	t	r	d_1
SCLCR/L	CCGT	060202-TA	21.50.5													○				6.5	6.35	2.38	0.2	2.8
		060204-TA	21.51													○				6.5	6.35	2.38	0.4	2.8
		060208-TA	21.52													○				6.5	6.35	2.38	0.8	2.8
		09T302-TA	32.50.5													○				9.7	9.525	3.97	0.2	4.4
		09T304-TA	32.51													●				9.7	9.525	3.97	0.4	4.4
		09T308-TA	32.52													●				9.7	9.525	3.97	0.8	4.4
		120402-TA	430.5													○				12.9	12.7	4.76	0.2	5.5
		120404-TA	431													●				12.9	12.7	4.76	0.4	5.5
		120408-TA	432													●				12.9	12.7	4.76	0.8	5.5
		120412-TA	433													○				12.9	12.7	4.76	1.2	5.5

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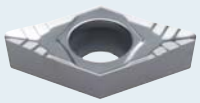
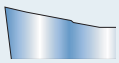
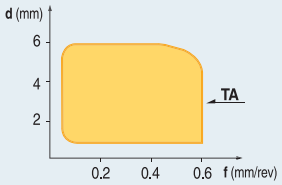
● : Stock Item ○ : Under preparing for stock

DCGT-TA

D type (55°)



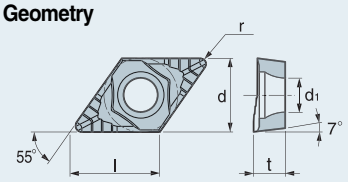




USE
Aluminium Cutting

Recommendation
TA d = 0.5~6.0mm
f = 0.05~0.6mm/rev

Geometry



Available Holder	Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)				
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	CT10	CN20	CN100	CN200	H01	G10	ST10		l	d	t	r	d_1
SDACR/L	DCGT	070202-TA	21.50.5													○				7.8	6.35	2.38	0.2	2.8
SDJCR/L		070204-TA	21.51													●				7.8	6.35	2.38	0.4	2.8
SDUCR/L		070208-TA	21.52													○				7.8	6.35	2.38	0.8	2.8
SDQCR/L		11T302-TA	32.50.5													○				11.6	9.525	3.97	0.2	4.4
SDNCN		11T304-TA	32.51													●				11.6	9.525	3.97	0.4	4.4
SDZCR/L		11T308-TA	32.52													●				11.6	9.525	3.97	0.8	4.4
		11T312-TA	32.53													○				11.6	9.525	3.97	1.2	4.4

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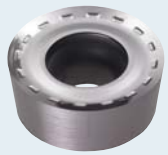
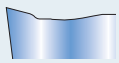
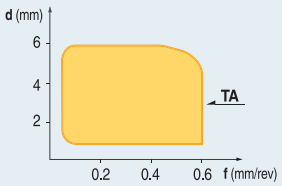
●: Stock Item ○: Under preparing for stock

RCGT-TA



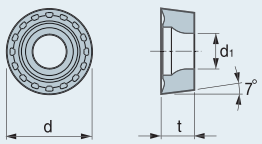




USE
Aluminium Cutting

Recommendation
TA d = 0.5~6.0mm
f = 0.05~0.6mm/rev

Geometry



Available Holder	Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)		
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	CT10	CN20	CN100	CN200	H01	G10	ST10		d	t	d_1
	RCGT	0602M0-TA														○				6.0	2.38	2.2
		0803M0-TA														○				8.0	3.18	3.35
		1003M0-TA														●				10.0	3.18	4.0
		10T3M0-TA																		10.0	3.97	4.4
		1204M0-TA														●				12.0	4.76	4.4

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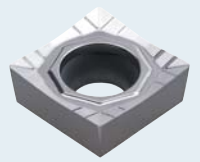
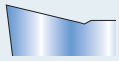
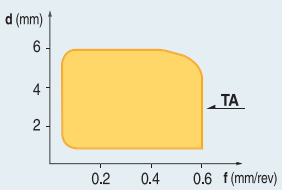
●: Stock Item ○: Under preparing for stock

SCGT-TA

S type (90°)



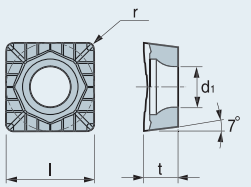




USE
Aluminium Cutting

Recommendation
TA d = 0.5~6.0mm
f = 0.05~0.6mm/rev

Geometry



Available Holder	Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)			
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	CT10	CN20	CN100	CN200	H1	G10	ST10		l = d	t	r	d_1
SSBCR/L	SCGT	09T304-TA	32.51													○				9.525	3.97	0.4	4.4
SSDCN		09T308-TA	32.52													●				9.525	3.97	0.8	4.4
SSKCR/L		120404-TA	431													○				12.7	4.76	0.4	5.5
SSSCR/L		120408-TA	432													●				12.7	4.76	0.8	5.5
		120416-TA	434													○				12.7	4.76	1.6	5.5

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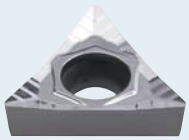
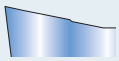
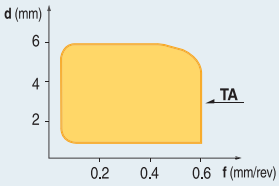
●: Stock Item ○: Under preparing for stock

TCGT-TA

T type (60°)



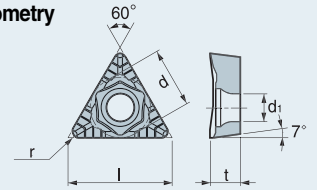




■ **USE**
Aluminium Cutting

■ **Recommendation**
TA d = 0.5~6.0mm
f = 0.05~0.6mm/rev

■ **Geometry**



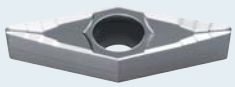
Available Holder	Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)				
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	CT10	CN20	CN100	CN200	H01	G10	ST10		l	d	t	r	d_1
STACR/L STKCR/L STGCR/L STTCR/L	TCGT	090202-TA	1.81.50.5													○				9.6	5.56	2.38	0.2	2.5
		090204-TA	1.81.51													○				9.6	5.56	2.38	0.4	2.5
		110202-TA	21.50.5													○				11.0	6.35	2.38	0.2	2.8
		110204-TA	21.51													●				11.0	6.35	2.38	0.4	2.8
		110208-TA	21.52													●				11.0	6.35	2.38	0.8	2.8
		16T302-TA	32.51													○				16.5	9.525	3.97	0.2	4.4
		16T304-TA	32.51													●				16.5	9.525	3.97	0.4	4.4
		16T308-TA	32.52													●				16.5	9.525	3.97	0.8	4.4
		16T312-TA	32.53													○				16.5	9.525	3.97	1.2	4.4
		16T316-TA	32.54													○				16.5	9.525	3.97	1.6	4.4

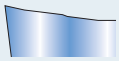
P. 155, 156, 181

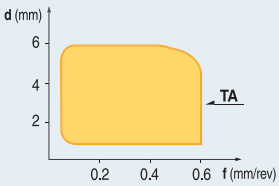
● : Stock Item ○ : Under preparing for stock

VBGT-TA

V type (35°)



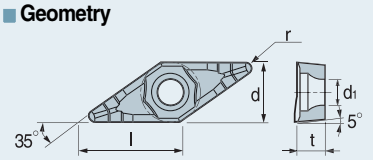




■ **USE**
Aluminium Cutting

■ **Recommendation**
TA d = 0.5~6.0mm
f = 0.05~0.6mm/rev

■ **Geometry**



Available Holder	Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)				
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	CT10	CN20	CN100	CN200	H01	G10	ST10		l	d	t	r	d_1
SVABR/L SVJBR/L SVVBN SVQBR/L SVUBR/L	VBGT	110302-TA	220.5													○				11.0	6.35	3.18	0.2	2.8
		110304-TA	220.5													○				11.0	6.35	3.18	0.4	2.8
		110308-TA	220.5													○				11.0	6.35	3.18	0.8	2.8
		160402-TA	330.5													○				16.5	9.525	4.76	0.2	4.4
		160404-TA	331													○				16.5	9.525	4.76	0.4	4.4
		160408-TA	332													○				16.5	9.525	4.76	0.8	4.4
		160412-TA	333													○				16.5	9.525	4.76	1.2	4.4

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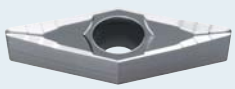
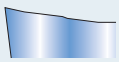
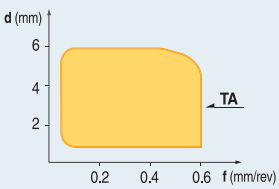
● : Stock Item ○ : Under preparing for stock

VCGT-TA

V type (35°)



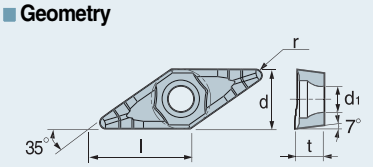




■ **USE**
Aluminium Cutting

■ **Recommendation**
TA d = 0.5~6.0mm
f = 0.05~0.6mm/rev

■ **Geometry**



Available Holder	Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)				
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	CT10	CN20	CN100	CN200	H01	G10	ST10		l	d	t	r	d_1
SVJCR/L SVVCN	VCGT	110302-TA	220.5													○				11.0	6.35	3.18	0.2	2.8
		110304-TA	221													●				11.0	6.35	3.18	0.4	2.8
		110308-TA	222													○				11.0	6.35	3.18	0.8	2.8
		130302-TA	2.520.5													○				13.8	7.94	3.18	0.2	3.4
		130304-TA	2.521													○				13.8	7.94	3.18	0.4	3.4
		130308-TA	2.522													○				13.8	7.94	3.18	0.8	3.4
		160402-TA	330.5													○				16.5	9.525	4.76	0.2	4.4
		160404-TA	331													●				16.5	9.525	4.76	0.4	4.4
		160408-TA	332													●				16.5	9.525	4.76	0.8	4.4
		160412-TA	333													●				16.5	9.525	4.76	1.2	4.4
		220525-TA	43.56.3																	22.1	12.7	5.56	2.5	5.6
		220530-TA	43.576													●				22.1	12.7	5.56	3.0	5.6

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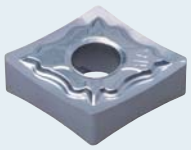
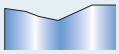
● : Stock Item ○ : Under preparing for stock

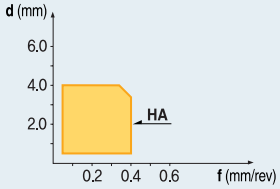
CNM(M)G-HA

C type (80°)





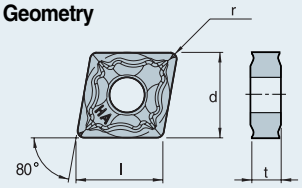
- Low cutting load due to the sharp cutting edge.
- Thanks to the special design on cutting edge line, strength of cutting edge has been increased.
- Suitable for machining of low carbon steel, stainless steel and aluminum.



USE
Aluminium Cutting

Recommendation
HA d = 0.5~5.0mm
f = 0.05~0.5mm/rev

Geometry



Available Holder	Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)			
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	CT10	CN20	CN100	CN200	H01	G10	ST10		l	d	t	r
PCBNR/L	CNMG	120404-HA	431		●		●			●	●					●				12.9	12.7	4.76	0.4
PCLNR/L		120408-HA	432		●		●			●	●					●				12.9	12.7	4.76	0.8
		120412-HA	433		○		○			●	○					○				12.9	12.7	4.76	1.2
	CNMM	120408-HA	432																	12.9	12.7	4.76	0.8

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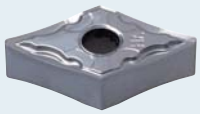
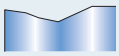
●: Stock Item ○: Under preparing for stock

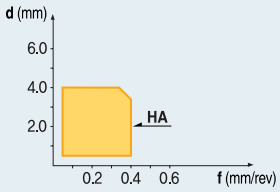
DNMG-HA

D type (55°)





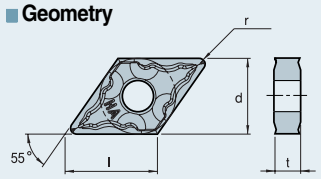
- Low cutting load due to the sharp cutting edge.
- Thanks to the special design on cutting edge line, strength of cutting edge has been increased.
- Suitable for machining of low carbon steel, stainless steel and aluminum.



USE
Aluminium Cutting

Recommendation
HA d = 0.5~5.0mm
f = 0.05~0.5mm/rev

Geometry



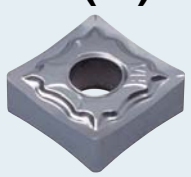
Available Holder	Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)			
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	CT10	CN20	CN100	CN200	H01	G10	ST10		l	d	t	r
PDJNR/L	DNMG	150404-HA	431							●										15.5	12.7	4.76	0.4
PDNNR/L		150408-HA	432							●										15.5	12.7	4.76	0.8
		150604-HA	441		●		●			●	●					●				15.5	12.7	6.35	0.4
		150608-HA	442		●		●			●	●					●				15.5	12.7	6.35	0.8

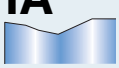
P. 138, 146, 147, 173, 174

●: Stock Item ○: Under preparing for stock

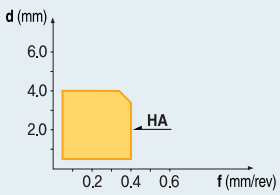
SNM(M)G-HA

S type (90°)





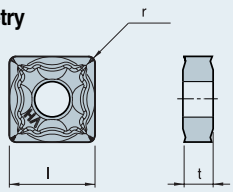
- Low cutting load due to the sharp cutting edge.
- Thanks to the special design on cutting edge line, strength of cutting edge has been increased.
- Suitable for machining of low carbon steel, stainless steel and aluminum.



USE
Aluminium Cutting

Recommendation
HA d = 0.5~5.0mm
f = 0.05~0.5mm/rev

Geometry



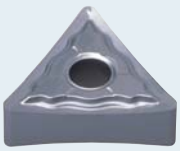
Available Holder	Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)		
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	CT10	CN20	CN100	CN200	H01	G10	ST10		l	t	r
PSBNR/L	SNMG	120404-HA	431		●		●			○	●					●				12.7	4.76	0.4
PSDNN		120408-HA	432		●		●			○	●					●				12.7	4.76	0.8
PSKNR/L		120412-HA	433																	12.7	4.76	1.2
PSSNR/L	SNMM	120408-HA	432																	12.7	4.76	0.8

P. 140, 141, 174

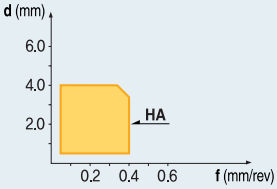
●: Stock Item ○: Under preparing for stock

TNMG-HA

T type (60°)



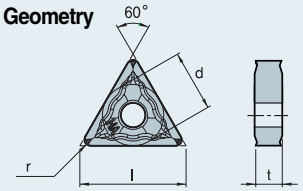
- Low cutting load due to the sharp cutting edge.
- Thanks to the special design on cutting edge line, strength of cutting edge has been increased.
- Suitable for machining of low carbon steel, stainless steel and aluminum.



USE
Aluminium Cutting

Recommendation
HA d = 0.5~5.0mm
f = 0.05~0.5mm/rev

Geometry



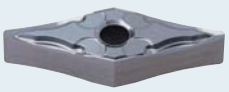
Available Holder	Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)			
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	CT10	CN20	CN100	CN200	H01	G10	ST10		l	d	t	r
PTFNR/L	TNMG	160404-HA	331		●		●			●	●					●				16.5	9.525	4.76	0.4
PTGNR/L		160408-HA	332		●		●			●	●					●				16.5	9.525	4.76	0.8
PTTNR/L		220408-HA	432																	22.0	12.7	4.76	0.8
WTJNR/L																							
WTXNR/L																							

P. 142~144, 175

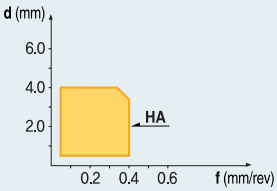
● : Stock Item ○ : Under preparing for stock

VNM(G)G-HA

V type (35°)



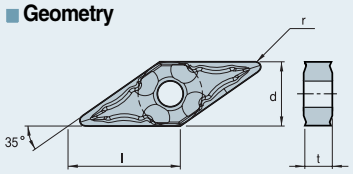
- Low cutting load due to the sharp cutting edge.
- Thanks to the special design on cutting edge line, strength of cutting edge has been increased.
- Suitable for machining of low carbon steel, stainless steel and aluminum.



USE
Aluminium Cutting

Recommendation
HA d = 0.5~5.0mm
f = 0.05~0.5mm/rev

Geometry



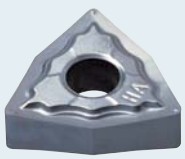
Available Holder	Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)			
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	CT10	CN20	CN100	CN200	H01	G10	ST10		l	d	t	r
MVJNR/L	VNGG	160408-HA	332							●										16.6	9.525	4.76	0.8
	VNMG	160404-HA	331		○		○			●	○									16.6	9.525	4.76	0.4
		160408-HA	332		○		○			●	○									16.6	9.525	4.76	0.8

P. 147, 148

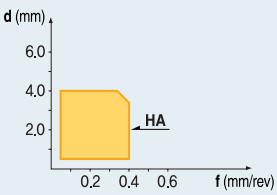
● : Stock Item ○ : Under preparing for stock

WNMG-HA

W type (80°)



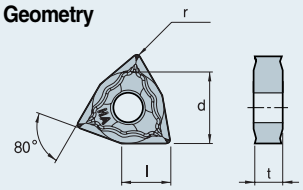
- Low cutting load due to the sharp cutting edge.
- Thanks to the special design on cutting edge line, strength of cutting edge has been increased.
- Suitable for machining of low carbon steel, stainless steel and aluminum.



USE
Aluminium Cutting

Recommendation
HA d = 0.5~5.0mm
f = 0.05~0.5mm/rev

Geometry



Available Holder	Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)			
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	CT10	CN20	CN100	CN200	H01	G10	ST10		l	d	t	r
PWLNR/L	WNMG	060404-HA	331							●										6.5	9.525	4.76	0.4
WWLNR/L		060408-HA	332							●										6.5	9.525	4.76	0.8
		080404-HA	431		●		●			○	●					●				8.7	12.7	4.76	0.4
		080408-HA	432		●		●			●	●					●				8.7	12.7	4.76	0.8
		080412-HA	433																	8.7	12.7	4.76	1.2

P. 143, 145, 149, 175, 185

● : Stock Item ○ : Under preparing for stock

Technical Guide for C.B.N Inserts

Characteristics of KORLOY C.B.N

KORLOY C.B.N is made of Cubic Boron Nitride powder and special ceramic binder. C.B.N can provide excellent cutting performance for hardened steel and cast iron having high hardness. Since C.B.N can get as good surface as grinded surface, using a C.B.N is very effecitive on cost-saving by get rid of additional grinding process.

- Suitable for sintered alloy, hard material, heat treated alloy
- Excellent surface finish for hardened steel with high speed machining
- Excellent for cast iron high speed machining

Recommended Cutting Condition

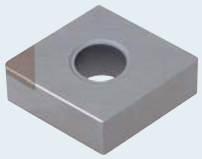
Work piece	Speed(m/min)	Feed Turning(mm/rev) Milling(mm/tooth)	Depth(mm)	1st Recommended Grade
Gray Cast Iron (180~230HB)	400 ~ 1000	0.1 ~ 0.5	0.10 ~ 1.0	KB350 KB360
Heat Treated Steel (over HRC45)	100 ~ 140	0.03 ~ 0.3	0.03 ~ 0.5	KB320 KB330
High Temp Alloy (over HRC45)	50 ~ 180	0.05 ~ 0.2	0.1 ~ 1.0	KB360
Sintered Alloy	50 ~ 250	0.03 ~ 0.2	0.1 ~ 1.0	KB360
Carbide Roll, High speed steel Roll	45 ~ 60	0.6 ~ 0.8	2.0 ~ 4.0	KB360

Grades comparison chart

MAKER	Heat Treated Steel	Cast Iron	Sintered Alloy	ROLL	High Temp Alloy
KORLOY	KB320 KB330	KB360 KB350	KB320 KB350 KB360	KB350 KB360	KB360
MITSUBISHI	MB820 MB825 MB810	MB420 MB710 MB730 MB910	MB730 MB710	MB730 MB710	MB730
TOSHIBA	BX360 BX340 BX270 BX290	BX230 BX870 BX950 BX850	BX950	BX950 BX850	BX950
SOWHA DENKO	KT30N KT25	KT10 KT10C KT20C	KT10C KT20C	KT10	
G.E	BZN8100 BZN8200	BZN6000	BZN6000	BZN6000 BZN7000S	BZN6000
DE BEERS	DBC50 AMBRITE	AMBRITE DBC50 DBC80		AMBORITE	
DIJET	JBN300 JBN330 JBN10	JBN330 JBN20			
KENNAMETAL	KD060 KD081	KD120		KD200	
SANDVIK	CB20 CB7020 CB7050	CB7050 CB50		CB50	

CNMA

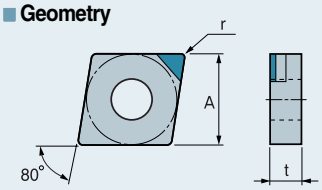
Negative Type With Hole



■ USE

■ Recommendation

■ Geometry



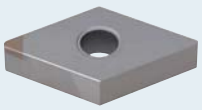
Available Holder	Designation		ASA	Grades								(mm) A	t	r	Hole Size
				KB320	KB330	KB350	KB360	KB420							
PCLNR/L	CNMA	120404	431	●								12.7	4.76	0.4	5.16
		120408	432	●				●				12.7	4.76	0.8	5.16
		120412	433	●				●				12.7	4.76	1.2	5.16

P. 137, 145, 173, 190

● : Stock Item ○ : Under preparing for stock

DNMA

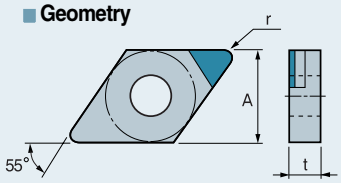
Negative Type With Hole



■ USE

■ Recommendation

■ Geometry



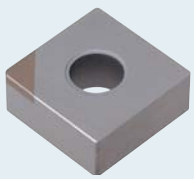
Available Holder	Designation		ASA	Grades								(mm) A	t	r	Hole Size
				KB320	KB330	KB350	KB360	KB420							
PDJNR/L	DNMA	150404	431	●								12.7	4.76	0.4	5.16
PDNNR/L		150408	432	●				●				12.7	4.76	0.8	5.16
PDSNR/L		150412	433									12.7	4.76	1.2	5.16
PDUNR/L															

P. 138, 146, 147, 173, 174

● : Stock Item ○ : Under preparing for stock

SNMA

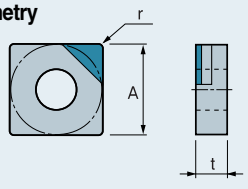
Negative Type With Hole



■ USE

■ Recommendation

■ Geometry



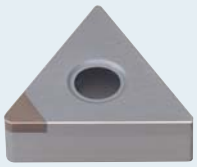
Available Holder	Designation		ASA	Grades								(mm) A	t	r	Hole Size
				KB320	KB330	KB350	KB360	KB420							
PSBNR/L	SNMA	120404	431	●								12.7	4.76	0.4	5.16
PSDNN		120408	432	●				●				12.7	4.76	0.8	5.16
PSKNR/L		120412	433									12.7	4.76	1.2	5.16
PSSNR/L															

P. 140, 141, 174

● : Stock Item ○ : Under preparing for stock

TNMA

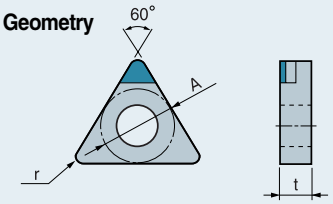
Negative Type With Hole



■ USE

■ Recommendation

■ Geometry



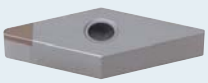
Available Holder	Designation		ASA	Grades								(mm) A	t	r	Hole Size
				KB320	KB330	KB350	KB360	KB420							
PTFNR/L	TNMA	160402	330.5									9.525	4.76	0.2	3.81
PTGNR/L		160404	331	●								9.525	4.76	0.4	3.81
PTTNR/L		160408	332	●								9.525	4.76	0.8	3.81
WTJNR/L		160412	333									9.525	4.76	1.2	3.81
WTXNR/L		220408	432									12.7	4.76	0.8	5.16
		220412	433									12.7	4.76	1.2	5.16

P. 142~144, 175

●: Stock Item ○: Under preparing for stock

VNMA

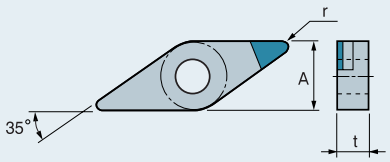
Negative Type With Hole



■ USE

■ Recommendation

■ Geometry



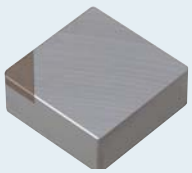
Available Holder	Designation		ASA	Grades								(mm) A	t	r	Hole Size
				KB320	KB330	KB350	KB360	KB420							
MVJNR/L	VNMA	160404	331									9.525	4.76	0.4	3.81
		160408	332									9.525	4.76	0.8	3.81
		220408	432									12.7	4.76	0.8	5.16

P. 147, 148

●: Stock Item ○: Under preparing for stock

SNGN

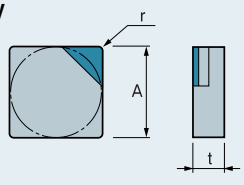
Negative Type Without Hole



■ USE

■ Recommendation

■ Geometry



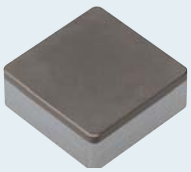
Available Holder	Designation		ASA	Grades								(mm) A	t	r	Hole Size
				KB320	KB330	KB350	KB360	KB420							
CSDNN	SNGN	120408	432			●						12.7	4.76	0.8	-
CSKNR/L		120412	433									12.7	4.76	1.2	-

P. 163, 164

●: Stock Item ○: Under preparing for stock

SNGN-B

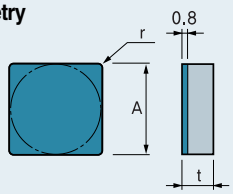
Negative Type Without Hole



■ USE

■ Recommendation

■ Geometry



Available Holder	Designation		ASA	Grades								A	t	r	Hole Size
				KB320	KB330	KB350	KB360	KB420							(mm)
CSDNN CSKNR/L	SNGN	120408-B	432									12.7	4.76	0.8	-
		120412-B	433									12.7	4.76	1.2	-
		120416-B	434									12.7	4.76	1.6	-

P. 163, 164

● : Stock Item ○ : Under preparing for stock

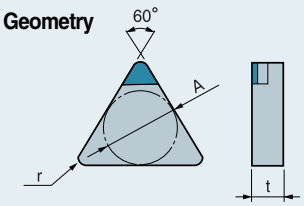
TNGN

Negative Type Without Hole

■ USE

■ Recommendation

■ Geometry



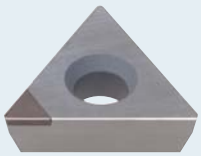
Available Holder	Designation		ASA	Grades								A	t	r	Hole Size
				KB320	KB330	KB350	KB360	KB420							(mm)
CTFNR/L CTGNR/L	TNGN	160404	331									9.525	4.76	0.4	-
		160408	332									9.525	4.76	0.8	-
		160412	333									9.525	4.76	1.2	-

P. 165, 166

● : Stock Item ○ : Under preparing for stock

TPGW

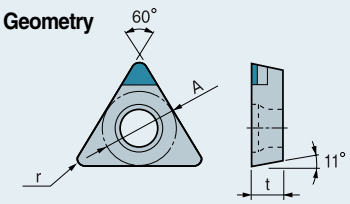
Positive Type With Hole



■ USE

■ Recommendation

■ Geometry



Available Holder	Designation		ASA	Grades								A	t	r	Hole Size
				KB320	KB330	KB350	KB360	KB420							(mm)
STFPR/L	TPGW	110304	221	●								6.35	3.18	0.4	3.40
		110308	222	●								6.35	3.18	0.8	3.40
		160404	331	●	●							9.525	4.76	0.4	4.40
		160408	332	●								9.525	4.76	0.8	4.40
		160412	333									9.525	4.76	1.2	4.40

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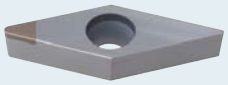
● : Stock Item ○ : Under preparing for stock

VBMW

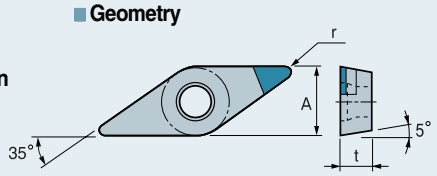
Positive Type With Hole



■ USE

■ Recommendation

■ Geometry



Available Holder	Designation	ASA	Grades								(mm) A	t	r	Hole Size
			KB320	KB330	KB350	KB360	KB420							
SVABR/L	VBMW 160404	331	●								9.525	4.76	0.4	4.40
SVJBR/L	160408	332	●								9.525	4.76	0.8	4.40
SVVBN														
SVQBR/L														
SVUBR/L														

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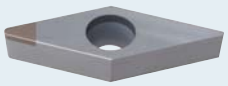
●: Stock Item ○: Under preparing for stock

VCMW

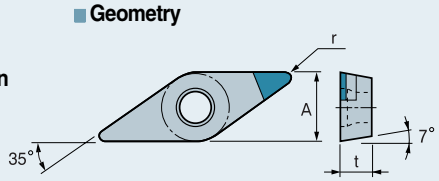
Positive Type With Hole



■ USE

■ Recommendation

■ Geometry



Available Holder	Designation	ASA	Grades								(mm) A	t	r	Hole Size
			KB320	KB330	KB350	KB360	KB420							
SVJCR/L	VCMW 160404	331									9.525	4.76	0.4	4.40
	160408	332									9.525	4.76	0.8	4.40

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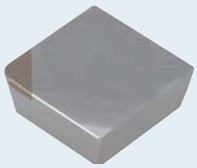
●: Stock Item ○: Under preparing for stock

SPGN

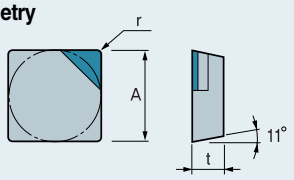
Positive Type Without Hole



■ USE

■ Recommendation

■ Geometry

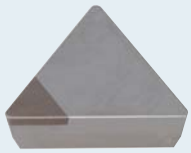


Available Holder	Designation	ASA	Grades								(mm) A	t	r	Hole Size
			KB320	KB330	KB350	KB360	KB420							
	SPGN 090304	321	●								9.525	3.18	0.4	-
	090308	322	●				●				9.525	3.18	0.8	-
	090312	323	●				●				9.525	3.18	1.2	-
	120308	422									12.7	3.18	0.8	-
	120312	423									12.7	3.18	1.2	-

●: Stock Item ○: Under preparing for stock

TPGN

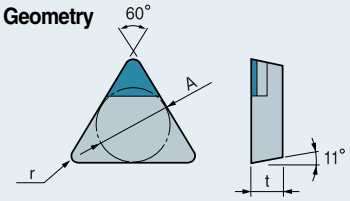
Positive Type Without Hole



■ USE

■ Recommendation

■ Geometry



Available Holder	Designation		ASA	Grades								A	t	r	Hole Size
				KB320	KB330	KB350	KB360	KB420							(mm)
	TPGN	090204	1.81.51									5.56	2.38	0.4	-
		090208	1.81.52									5.56	2.38	0.8	-
		110304	221	●								6.35	3.18	0.4	-
		110308	222	●								6.35	3.18	0.8	-
		160304	321	●								9.525	3.18	0.4	-
		160308	322	●								9.525	3.18	0.8	-
		160312	323									9.525	3.18	1.2	-
		220408	432									12.70	4.76	0.8	-

● : Stock Item ○ : Under preparing for stock

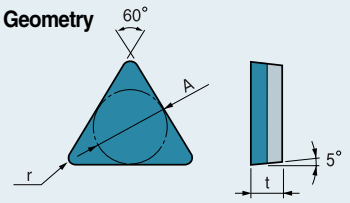
TBGN-B

Positive Type Without Hole

■ USE

■ Recommendation

■ Geometry

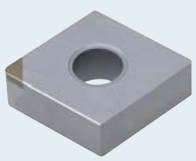


Available Holder	Designation		ASA	Grades								A	t	r	Hole Size
				KB320	KB330	KB350	KB360	KB420							(mm)
	TBGN	060102-B	1.210.5									3.97	1.59	0.2	-
		060104-B	1.211	●	●							3.97	1.59	0.4	-
		060108-B	1.212	●	●							3.97	1.59	0.8	-

● : Stock Item ○ : Under preparing for stock

NU-CNMA

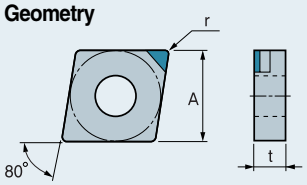
Negative Type With Hole



■ USE

■ Recommendation

■ Geometry



Available Holder	Designation		ASA	Grades								A	t	r	Hole Size
				KB320	KB330	KB350	KB360	KB420							(mm)
PCLNR/L	NU-CNMA	120404	431	●				●				12.7	4.76	0.4	5.16
		120408	432	●				●				12.7	4.76	0.8	5.16
		120412	433	●				●				12.7	4.76	1.2	5.16

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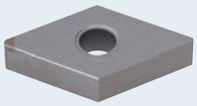
● : Stock Item ○ : Under preparing for stock

NU-DNMA

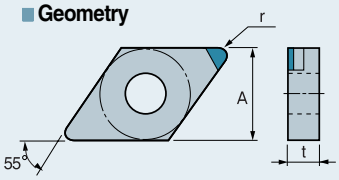
Negative Type With Hole



■ USE

■ Recommendation

■ Geometry



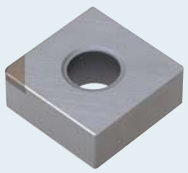
Available Holder	Designation		ASA	Grades								(mm) A	t	r	Hole Size
				KB320	KB330	KB350	KB360	KB420							
PDJNR/L	NU-DNMA	150404	431	●								12.7	4.76	0.4	5.16
PDNNR/L		150408	432	●								12.7	4.76	0.8	5.16
PDSNR/L		150412	433									12.7	4.76	1.2	5.16
PDUNR/L															

P. 138, 146, 147, 173, 174

● : Stock Item ○ : Under preparing for stock

NU-SNMA

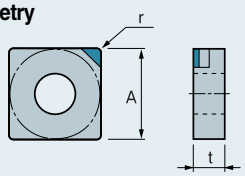
Negative Type With Hole



■ USE

■ Recommendation

■ Geometry



Available Holder	Designation		ASA	Grades								(mm) A	t	r	Hole Size
				KB320	KB330	KB350	KB360	KB420							
PSBNR/L	NU-SNMA	120404	431	●								12.7	4.76	0.4	5.16
PSDNN		120408	432	●								12.7	4.76	0.8	5.16
PSKNR/L		120412	433									12.7	4.76	1.2	5.16
PSSNR/L															

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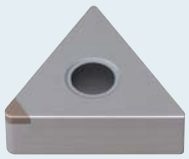
● : Stock Item ○ : Under preparing for stock

NU-TNMA

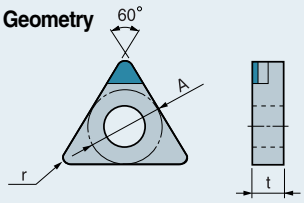
Negative Type With Hole



■ USE

■ Recommendation

■ Geometry



Available Holder	Designation		ASA	Grades								(mm) A	t	r	Hole Size
				KB320	KB330	KB350	KB360	KB420							
PTFNR/L	NU-TNMA	160404	331	●								9.525	4.76	0.4	3.81
PTGNR/L		160408	332	●								9.525	4.76	0.8	3.81
PTTNR/L		160412	333									9.525	4.76	1.2	3.81
PTTNR/L															
WTJNR/L															
WTXNR/L															

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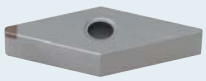
● : Stock Item ○ : Under preparing for stock

NU-VNMA

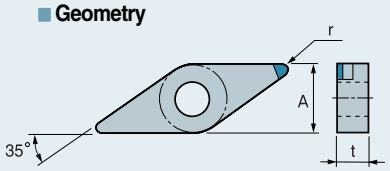
Negative Type With Hole



■ USE

■ Recommendation

■ Geometry



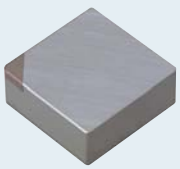
Available Holder	Designation		ASA	Grades								(mm) A	t	r	Hole Size
				KB320	KB330	KB350	KB360	KB420							
MVJNR/L	NU-VNMA	160404	331	●								9.525	4.76	0.4	3.81
		160408	332	●								9.525	4.76	0.8	3.81
		160412	333									9.525	4.76	1.2	3.81

P. 147, 148

● : Stock Item ○ : Under preparing for stock

NU-SNMN

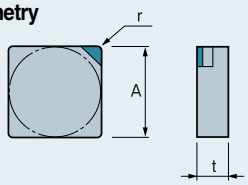
Negative Type Without Hole



■ USE

■ Recommendation

■ Geometry



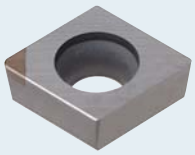
Available Holder	Designation		ASA	Grades								(mm) A	t	r	Hole Size
				KB320	KB330	KB350	KB360	KB420							
CSDNN CSKNR/L	NU-SNMN	120408	432			●						12.7	4.76	0.8	-
		120412	433			●						12.7	4.76	1.2	-

P. 163, 164

● : Stock Item ○ : Under preparing for stock

NU-CC(P)GW

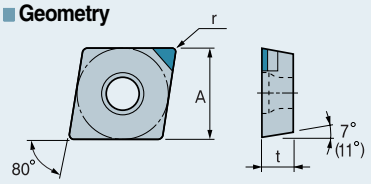
Positive Type With Hole



■ USE

■ Recommendation

■ Geometry



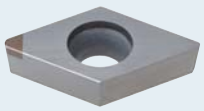
Available Holder	Designation		ASA	Grades								(mm) A	t	r	Hole Size
				KB320	KB330	KB350	KB360	KB420							
SCACR/L	NU-CCGW	060202	21.50.5	●				●				6.35	2.38	0.2	2.8
SCLCR/L		060204	21.51	●				●				6.35	2.38	0.4	2.8
		060208	21.52	●				●				6.35	2.38	0.8	2.8
		09T302	32.50.5	●				●				9.525	3.97	0.2	4.4
		09T304	32.51	●				●				9.525	3.97	0.4	4.4
		09T308	32.52									9.525	3.97	0.8	4.4
SCLPR/L	NU-CPGW	080202	2.51.50.5									7.94	2.38	0.2	3.4
		080204	2.51.51									7.94	2.38	0.4	3.4
		080208	2.51.52									7.94	2.38	0.8	3.4
		090302	320.5	●				●				9.525	3.18	0.2	4.4
		090304	321	●				●				9.525	3.18	0.4	4.4
		090308	322	●				●				9.525	3.18	0.8	4.4

P. 149, 150, 176, 177

● : Stock Item ○ : Under preparing for stock

NU-DCGW

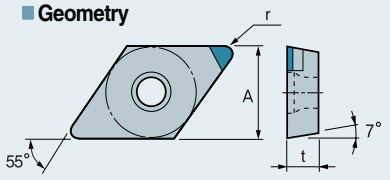
Positive Type With Hole



■ USE

■ Recommendation

■ Geometry



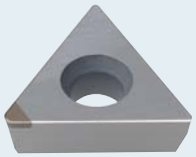
Available Holder	Designation		ASA	Grades								(mm) A	t	r	Hole Size
				KB320	KB330	KB350	KB360	KB420							
SDACR/L	NU-DCGW	070202	21.50.5									6.35	2.38	0.2	2.8
SDJCR/L		070204	21.51									6.35	2.38	0.4	2.8
SDNCN		070208	21.52									6.35	2.38	0.8	2.8
SDQCR/L		11T302	32.50.5									9.525	3.97	0.2	4.4
SDUCR/L		11T304	32.51	●				●				9.525	3.97	0.4	4.4
SDZCR/L		11T308	32.52	●				●				9.525	3.97	0.8	4.4

P. 150, 151, 178, 179

● : Stock Item ○ : Under preparing for stock

NU-TPGW

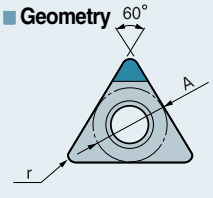
Positive Type With Hole



■ USE

■ Recommendation

■ Geometry



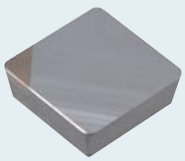
Available Holder	Designation		ASA	Grades								(mm) A	t	r	Hole Size
				KB320	KB330	KB350	KB360	KB420							
STFPR/L	NU-TPGW	080202	1.51.50.5									4.762	2.38	0.2	2.3
		080204	1.51.51									4.762	2.38	0.4	2.3
		080208	1.51.52									4.762	2.38	0.8	2.3
		110202	21.50.5									6.35	2.38	0.2	2.8
		110204	21.51									6.35	2.38	0.4	2.8
		110208	21.52									6.35	2.38	0.8	2.8
		110302	220.5									6.35	3.18	0.2	3.4
		110304	221	●								6.35	3.18	0.4	3.4
		110308	222	●								6.35	3.18	0.8	3.4
		160404	331	●								9.525	4.76	0.4	4.4
		160408	332	●								9.525	4.76	0.8	4.4

P. 182, 188

● : Stock Item ○ : Under preparing for stock

NU-SPGN

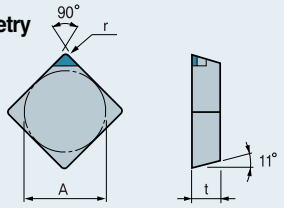
Positive Type Without Hole



■ USE

■ Recommendation

■ Geometry



Available Holder	Designation		ASA	Grades								(mm) A	t	r	Hole Size
				KB320	KB330	KB350	KB360	KB420							
	NU-SPGN	090304	321									9.525	3.18	0.4	-
		090308	322									9.525	3.18	0.8	-

● : Stock Item ○ : Under preparing for stock

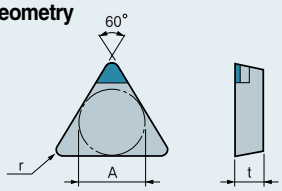
NU-TPGN

Positive Type Without Hole

■ USE

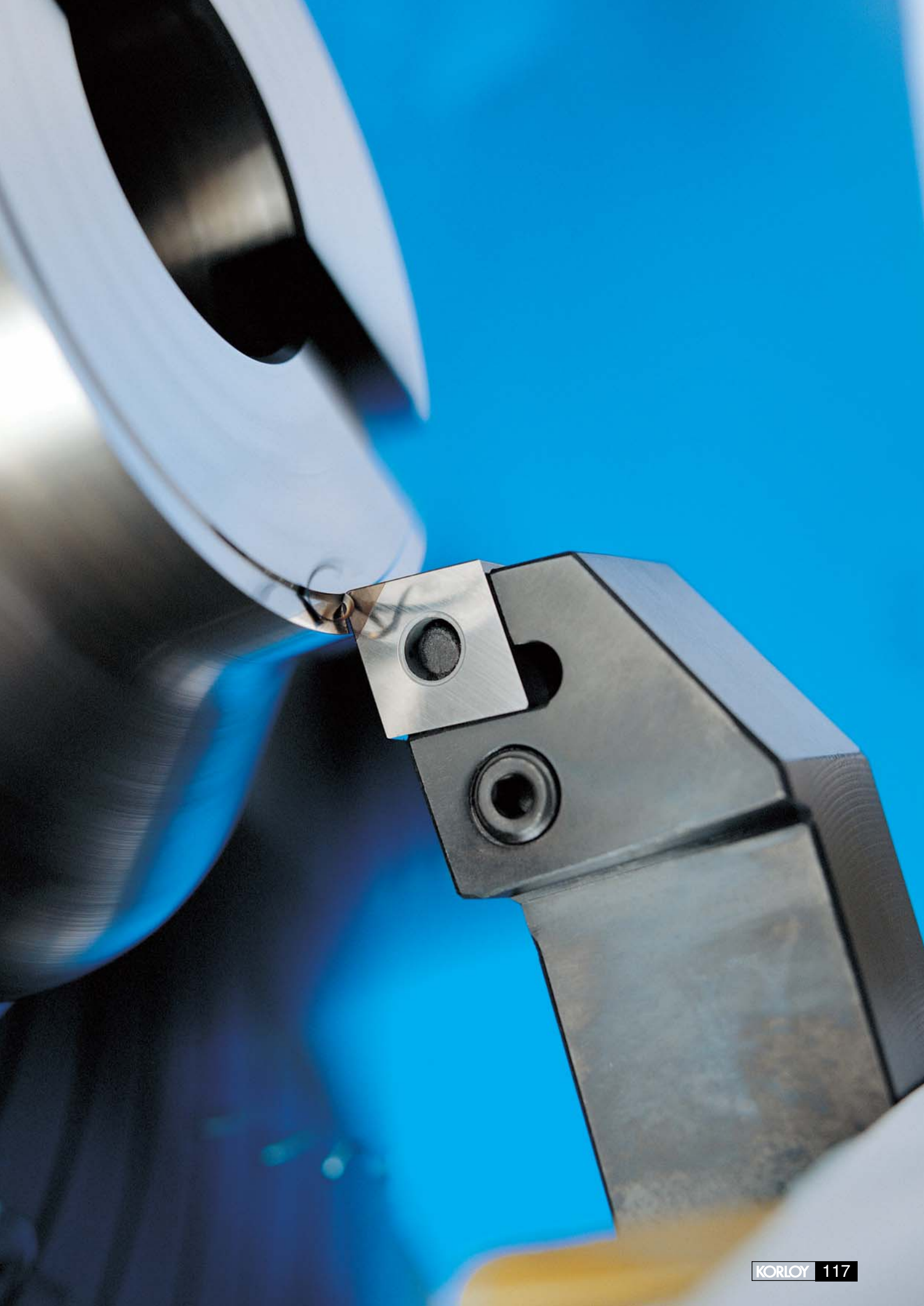
■ Recommendation

■ Geometry



Available Holder	Designation		ASA	Grades								(mm) A	t	r	Hole Size
				KB320	KB330	KB350	KB360	KB420							
	NU-TPGN	110304	221	●				●				6.35	3.18	0.4	-
		110308	222	●				●				6.35	3.18	0.8	-
		160304	321	●				●				9.525	3.18	0.4	-
		160308	322	●				●				9.525	3.18	0.8	-

● : Stock Item ○ : Under preparing for stock



Characteristics of KORLOY P. C. D

Since KORLOY P.C.D product is produced through ultra high temperature and high pressure processing, it is equipped with outstanding wear resistance and toughness at the same time. Variety of work pieces and cutting conditions can be covered by several grades that made by diamond polycrystalline size control technology. You can expect excellent surface finish and precise machining as well as long tool life with KORLOY P.C.D tools.

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

Recommended Cutting Condition

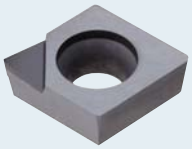
Work piece	Speed(m/min)	Feed Turning(mm/rev) Milling(mm/tooth)	Depth(mm)	Recommended Grade 1st	Recommended Grade 2nd
Aluminum alloy(4% ~ 8%Si)	1000 ~ 3000	0.1 ~ 0.6	~ 3	DP150	DP200
Aluminum alloy(9% ~ 14%Si)	600 ~ 2500	0.1 ~ 0.5	~ 3	DP150	DP200
Aluminum alloy(15% ~ 18%Si)	300 ~ 700	0.1 ~ 0.4	~ 3	DP150	DP200
Cupper alloy	~ 1000	0.05 ~ 0.2	~ 3	DP150	DP200
FRP	~ 1000	0.1 ~ 0.3	~ 2	DP150	DP200
Wood	~ 4000	0.1 ~ 0.4	-	DP150	DP200
Carbide	10 ~ 30	~ 0.2	~ 0.5	DP90	DP150

Grades comparison chart

MAKER	Grade	Comparable grade			Note
		Superior in Wear resistance	Equivalent grade	Superior in Toughness	
KENNAMETAL	KD105		DP90	DP150	
	KD100	DP90	DP150	DP200	
MITSUBISHI	MD230	DP150	DP200		
	MD220	DP90	DP150	DP200	
	MD205	DP90	DP150	DP200	
SANDVIK	CD10	DP90	DP150	DP200	
	CD1810	DP90	DP150	DP200	CVD
SECO	PCD10		DP200		
	PCD20	DP90	DP150	DP200	
	PCD30		DP90	DP150	
	PAX20	DP90	DP150	DP200	
	PAX30		DP90	DP150	
STELLRAM	TPC-21		DP90	DP200	CVD
TOSHIBA	DX120	DP90 / DP150	DP200		
	DX140	DP90	DP150	DP200	
	DX160	DP90	DP150	DP200	
	DX180		DP90	DP150	
VALENITE	VC727	DP90	DP150	DP200	
	VC728		DP90	DP200 / DP150	
	VC746	DP90	DP150	DP200	
ISCAR	ID5	DP150	DP200		

CCMT

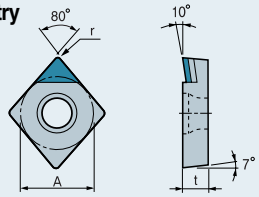
Positive Type With Hole



■ USE

■ Recommendation

■ Geometry



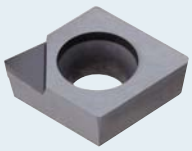
Available Holder	Designation		ASA	Grades								(mm) A	t	r	Hole Size
				DP90	DP150	DP200									
SCACR/L SCLCR/L	CCMT	060201	21.50									6.35	2.38	0.1	2.8
		060202	21.50.5		●							6.35	2.38	0.2	2.8
		060204	21.51		●							6.35	2.38	0.4	2.8
		09T301	32.50									9.525	3.97	0.1	4.4
		09T302	32.50.5									9.525	3.97	0.2	4.4
		09T304	32.51									9.525	3.97	0.4	4.4

P. 149, 150, 176

● : Stock Item ○ : Under preparing for stock

CPMT

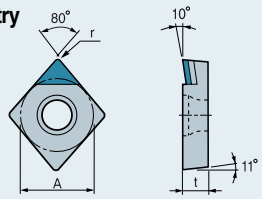
Positive Type With Hole



■ USE

■ Recommendation

■ Geometry



Available Holder	Designation		ASA	Grades								(mm) A	t	r	Hole Size
				DP90	DP150	DP200									
SCLPR/L	CPMT	080202	2.51.50.5		●							7.94	2.38	0.2	3.4
		080204	2.51.51		●							7.94	2.38	0.4	3.4
		080208	2.51.52		●							7.94	2.38	0.8	3.4
		090302	320.5		●							9.525	3.18	0.2	4.4
		090304	321		●							9.525	3.18	0.4	4.4
		090308	322		●							9.525	3.18	0.8	4.4

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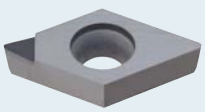
● : Stock Item ○ : Under preparing for stock

DCMT

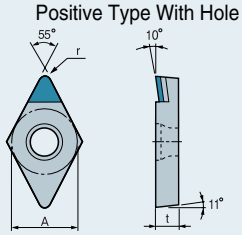
Positive Type With Hole



■ USE

■ Recommendation

■ Geometry



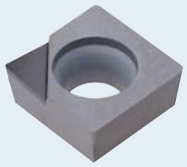
Available Holder	Designation		ASA	Grades								(mm) A	t	r	Hole Size
				DP90	DP150	DP200									
SDACR/L SDJCR/L SDNCN SDQCR/L SDUCR/L SDZCR/L	DCMT	070201	21.50									6.35	2.38	0.1	2.8
		070202	21.50.5									6.35	2.38	0.2	2.8
		070204	21.51									6.35	2.38	0.4	2.8
		11T301	32.50									9.525	3.97	0.1	4.4
		11T302	32.50.5		●							9.525	3.97	0.2	4.4
		11T304	32.51		●							9.525	3.97	0.4	4.4

P. 150, 151, 178, 179

● : Stock Item ○ : Under preparing for stock

SCMT

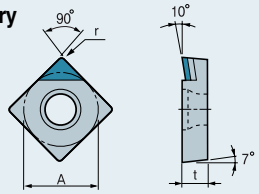
Positive Type With Hole



■ USE

■ Recommendation

■ Geometry



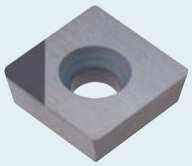
Available Holder	Designation		ASA	Grades								(mm) A	t	r	Hole Size
				DP90	DP150	DP200									
SSBCR/L	SCMT	070201	2.51.50									7.94	2.38	0.1	3.4
SSDCN		070202	2.51.50.5									7.94	2.38	0.2	3.4
SSKCR/L		070204	2.51.51									7.94	2.38	0.4	3.4
SSSCR/L		09T301	32.50									9.525	3.97	0.1	4.4
		09T302	32.50.5									9.525	3.97	0.2	4.4
		09T304	32.51									9.525	3.97	0.4	4.4

P. 153~155, 179

● : Stock Item ○ : Under preparing for stock

SPGW

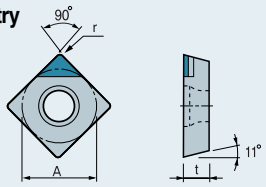
Positive Type With Hole



■ USE

■ Recommendation

■ Geometry



Available Holder	Designation		ASA	Grades								(mm) A	t	r	Hole Size
				DP90	DP150	DP200									
SSKPR/L	SPGW	090302	320.5		●							9.525	3.18	0.2	3.4
		090304	321		●							9.525	3.18	0.4	3.4
		090308	322									9.525	3.18	0.8	3.4

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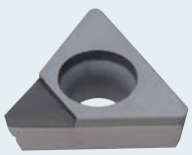
● : Stock Item ○ : Under preparing for stock

TBGW

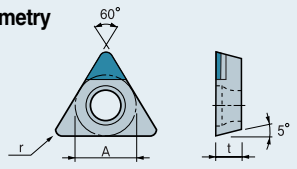
Positive Type With Hole



■ USE

■ Recommendation

■ Geometry



Available Holder	Designation		ASA	Grades								(mm) A	t	r	Hole Size
				DP90	DP150	DP200									
STUBR/L	TBGW	060102	1.210.5									3.97	1.59	0.2	2.2
		060104	1.211									3.97	1.59	0.4	2.2

P. 188

● : Stock Item ○ : Under preparing for stock

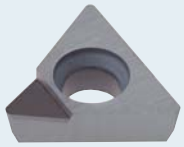
TCMT

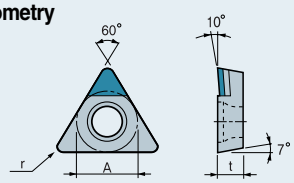
Positive Type With Hole

■ USE

■ Recommendation

■ Geometry





Available Holder	Designation		ASA	Grades								(mm) A	t	r	Hole Size
				DP90	DP150	DP200									
STACR/L STFCR/L STGCR/L STTCR/L	TCMT	090201	1.81.50									5.56	2.38	0.1	2.5
		090202	1.81.50.5									5.56	2.38	0.2	2.5
		090204	1.81.51									5.56	2.38	0.4	2.5
		110201	21.50									6.35	2.38	0.1	2.8
		110202	21.50.5									6.35	2.38	0.2	2.8
		110204	21.51									6.35	2.38	0.4	2.8

P. 155, 156, 181

● : Stock Item ○ : Under preparing for stock

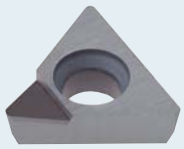
TPMT

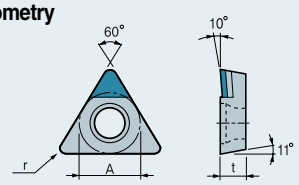
Positive Type With Hole

■ USE

■ Recommendation

■ Geometry





Available Holder	Designation		ASA	Grades								(mm) A	t	r	Hole Size
				DP90	DP150	DP200									
STFPR/L	TPMT	110302	220.5									6.35	3.18	0.2	3.4
		110304	221		●							6.35	3.18	0.4	3.4
		110308	222									6.35	3.18	0.8	3.4

P. 182, 188

● : Stock Item ○ : Under preparing for stock

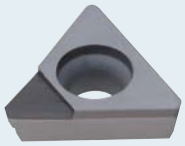
TPGW

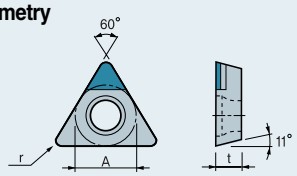
Positive Type With Hole

■ USE

■ Recommendation

■ Geometry





Available Holder	Designation		ASA	Grades								A	t	r	Hole Size
				DP90	DP150	DP200									
STFPR/L	TPGW	080202	1.51.50.5									4.76	2.38	0.2	2.4
		080204	1.51.51									4.76	2.38	0.4	2.4
		080208	1.51.52									4.76	2.38	0.8	2.4
		110202	21.50.5									6.35	2.38	0.2	2.8
		110204	21.51									6.35	2.38	0.4	2.8
		110208	21.52									6.35	2.38	0.8	2.8
		110300	210									6.35	3.18	0.05	3.4
		110302	210.5		●							6.35	3.18	0.2	3.4
		110304	211		●							6.35	3.18	0.4	3.4
		110308	212		●							6.35	3.18	0.8	3.4
		160402	330.5									9.525	4.76	0.2	4.4
		160404	331									9.525	4.76	0.4	4.4
		160408	332									9.525	4.76	0.8	4.4
		160412	333									9.525	4.76	1.2	4.4

(mm)

P. 182, 188

●: Stock Item ○: Under preparing for stock

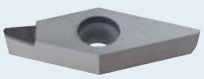
VCMT

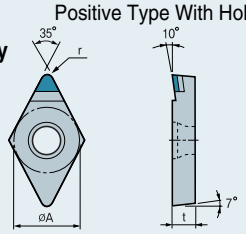
Positive Type With Hole

■ USE

■ Recommendation

■ Geometry





Available Holder	Designation		ASA	Grades								A	t	r	Hole Size
				DP90	DP150	DP200									
SVJCR/L	VCMT	110301	220									6.35	3.18	0.1	2.8
		110302	220.5									6.35	3.18	0.2	2.8
		110304	221									6.35	3.18	0.4	2.8
		110308	222									6.35	3.18	0.8	2.8
		160408	332		●							9.525	4.76	0.8	4.4
		160412	333		●							9.525	4.76	1.2	4.4
		220520	43.55									12.7	5.56	2.0	5.5
		220530	43.57.6									12.7	5.56	3.0	5.5

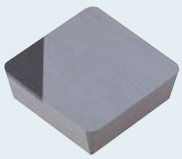
(mm)

P. 159, 184

●: Stock Item ○: Under preparing for stock

SEGN

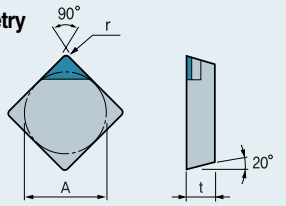
Positive Type Without Hole



■ USE

■ Recommendation

■ Geometry

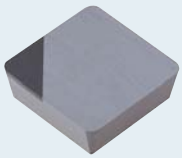


Available Holder	Designation		ASA	Grades								(mm)		
				DP90	DP150	DP200						A	t	r
	SEGN	070202	2.51.50.5									7.94	2.38	0.2
		070204	2.51.51									7.94	2.38	0.4
		070208	2.51.52									7.94	2.38	0.8
		090302	320.5									9.525	3.18	0.2
		090304	321									9.525	3.18	0.4
		090308	322									9.525	3.18	0.8
		120302	420.5									12.7	3.18	0.2
		120304	421									12.7	3.18	0.4
		120308	422									12.7	3.18	0.8

● : Stock Item ○ : Under preparing for stock

SPGN

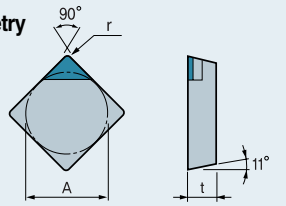
Positive Type Without Hole



■ USE

■ Recommendation

■ Geometry



Available Holder	Designation		ASA	Grades								(mm)		
				DP90	DP150	DP200						A	t	r
	SPGN	090302	320.5									9.525	3.18	0.2
		090304	321		●							9.525	3.18	0.4
		090308	322		●							9.525	3.18	0.8
		120304	421									12.7	3.18	0.4
		120308	422									12.7	3.18	0.8
		120312	423									12.7	3.18	1.2

● : Stock Item ○ : Under preparing for stock

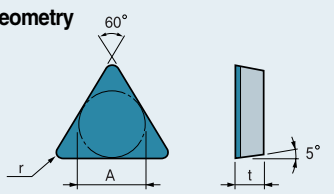
TBGN-B

Positive Type Without Hole

■ USE

■ Recommendation

■ Geometry



Available Holder	Designation		ASA	Grades								(mm)		
				DP90	DP150	DP200						A	t	r
	TBGN	060102-B	1.210.5									3.97	1.59	0.2
		060104-B	1.211									3.97	1.59	0.4
		060108-B	1.212									3.97	1.59	0.8

● : Stock Item ○ : Under preparing for stock

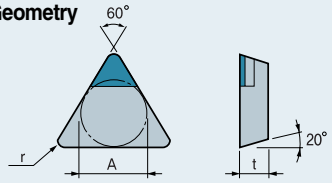
TEGN

Positive Type Without Hole

■ USE

■ Recommendation

■ Geometry



Available Holder	Designation		ASA	Grades								(mm)		
				DP90	DP150	DP200						A	t	r
	TEGN	110202	21.50.5									6.35	2.38	0.2
		110204	21.51									6.35	2.38	0.4
		110208	21.52									6.35	2.38	0.8
		110302	220.5									6.35	3.18	0.2
		110304	221									6.35	3.18	0.4
		110308	222									6.35	3.18	0.8
		160302	320.5									9.525	3.18	0.2
		160304	321									9.525	3.18	0.4
		160308	322									9.525	3.18	0.8
		220404	431									12.7	4.76	0.4
		220408	432									12.7	4.76	0.8

● : Stock Item ○ : Under preparing for stock

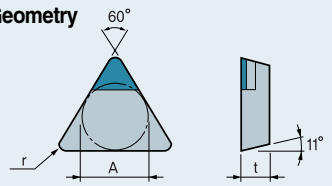
TPGN

Positive Type Without Hole

■ USE

■ Recommendation

■ Geometry

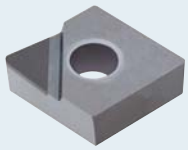


Available Holder	Designation		ASA	Grades								(mm)		
				DP90	DP150	DP200						A	t	r
	TPGN	090202	1.81.50.5		●							5.56	2.38	0.2
		090204	1.81.51		●							5.56	2.38	0.4
		090208	1.81.52		●							5.56	2.38	0.8
		110302	220.5		●							6.35	3.18	0.2
		110304	221		●							6.35	3.18	0.4
		110308	222		●							6.35	3.18	0.8
		160302	320.5		●							9.525	3.18	0.2
		160304	321		●							9.525	3.18	0.4
		160308	322		●							9.525	3.18	0.8
		160312	323									9.525	3.18	1.2

● : Stock Item ○ : Under preparing for stock

CNMX

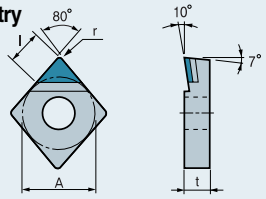
Negative - Positive Type



■ USE

■ Recommendation

■ Geometry



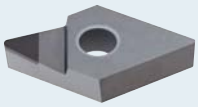
Available Holder	Designation		ASA	Grades								(mm)				
				DP90	DP150	DP200						A	t	l	r	Hole Size
PCLNR/L	CNMX	120404	431		●							12.7	4.76	5.7	0.4	5.16
		120408	432		●							12.7	4.76	5.6	0.8	5.16
		120412	433									12.7	4.76	5.6	1.2	5.16

P. 137, 145, 173, 190

● : Stock Item ○ : Under preparing for stock

DNMX

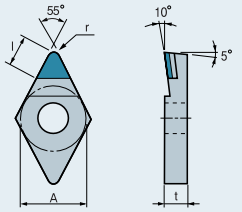
Negative - Positive Type



■ USE

■ Recommendation

■ Geometry



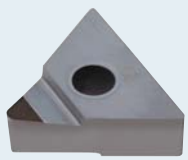
Available Holder	Designation		ASA	Grades								(mm)				
				DP90	DP150	DP200						A	t	l	r	Hole Size
PDJNR/L	DNMX	150404	431		●							12.7	4.76	6.2	0.4	5.16
PDNNR/L		150408	432		●							12.7	4.76	5.8	0.8	5.16
PDSNR/L		150412	433									12.7	4.76	5.4	1.2	5.16
PDUNR/L																

P. 138, 146, 147, 173, 174

● : Stock Item ○ : Under preparing for stock

TNMX

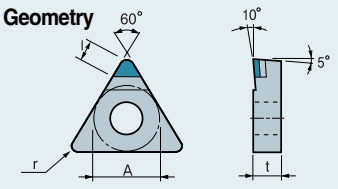
Negative - Positive Type



■ USE

■ Recommendation

■ Geometry



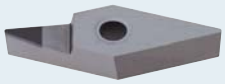
Available Holder	Designation		ASA	Grades								(mm)				
				DP90	DP150	DP200						A	t	l	r	Hole Size
PTFNR/L	TNMX	160404	331									9.525	4.76	3.6	0.4	3.81
PTGNR/L		160408	332									9.525	4.76	3.3	0.8	3.81
PTTNR/L		160412	333									9.525	4.76	3.0	1.2	3.81
WTJNR/L																
WTXNR/L																

P. 142~144, 175

● : Stock Item ○ : Under preparing for stock

VNMX

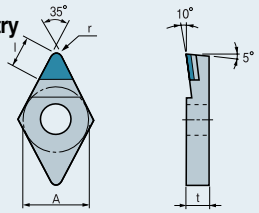
Negative - Positive Type



■ USE

■ Recommendation

■ Geometry



Available Holder	Designation		ASA	Grades								(mm)				
				DP90	DP150	DP200						A	t	l	r	Hole Size
MVJNR/L	VNMX	160402	330.5		●							9.525	4.76	6.9	0.2	3.81
		160404	331		●							9.525	4.76	6.4	0.4	3.81
		160408	332									9.525	4.76	5.6	0.8	3.81
		160412	333									9.525	4.76	4.7	1.2	3.81

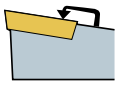
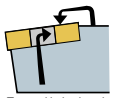
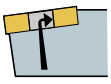
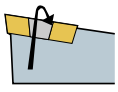
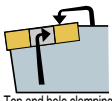
P. 147, 148

● : Stock Item ○ : Under preparing for stock

Turning Tool-holder Code System (ISO)

P	S	K	N	R
1	2	3	4	5

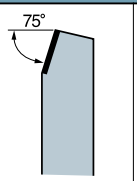
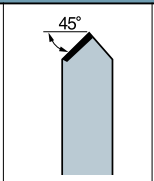
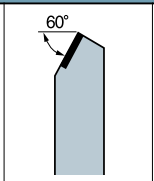
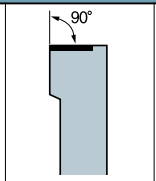
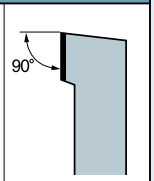
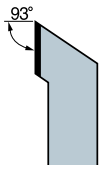
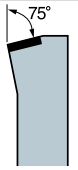
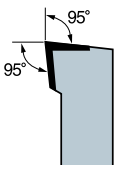
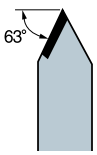
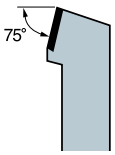
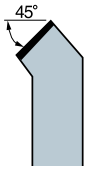
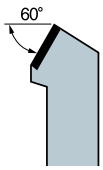
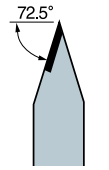
1 Clamping Method of Insert

				
Top clamping without hole	Top and hole clamping (Multi clamp, Pin and clamp)	Hole clamping (Pin lock)	Screw on	Top and hole clamping (wedge clamp, Pin and clamp)
C	M	P	S	W

2 Insert Shape

			
C	D	E	K
			
L	R	S	T
			
V	W		

3 Holder Style

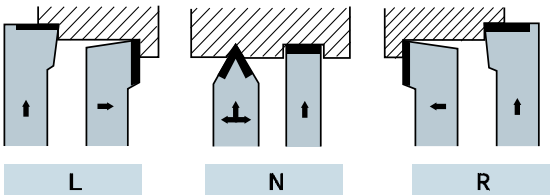
				
B	D	E	F	G
				
J	K	L	N	R
				
S	T	V	Y	

4 Clearance angle of Insert

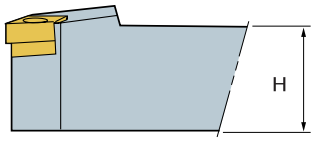
	
B	C
	
D	E
	
F	N
	
P	

25	25	—	M	12
6	7		8	9

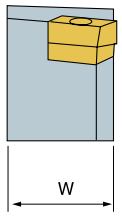
5 Hand of Tool



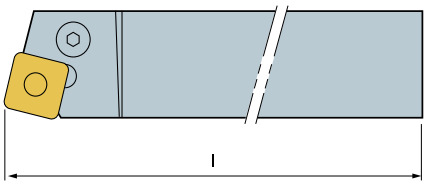
6 Height of shank



7 Width of shank



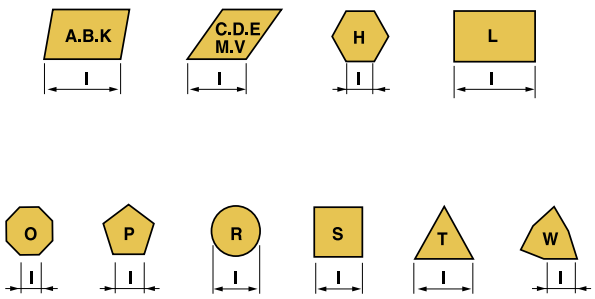
8 Length of holder



(mm)

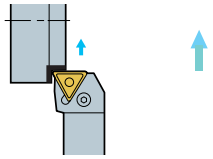
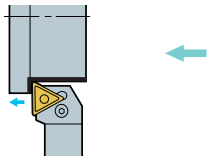
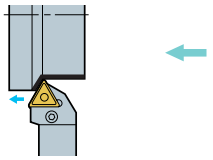
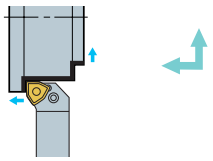
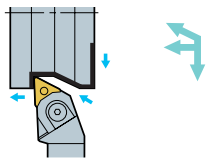
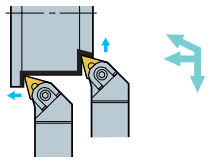
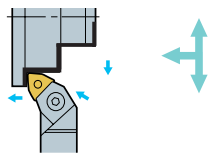
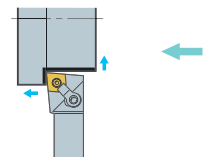
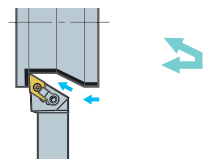
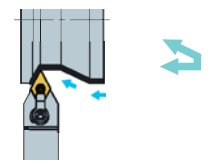
A - 32	H - 100	Q - 180	x-special
B - 40	J - 110	R - 200	
C - 50	K - 125	S - 250	
D - 60	L - 140	T - 300	
E - 70	M - 150	U - 350	
F - 80	N - 160	V - 400	
G - 90	P - 170	W - 450	

9 Length of Insert cutting edge

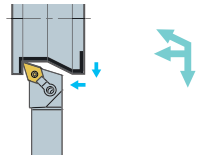
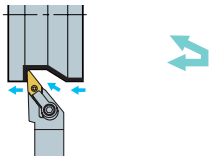
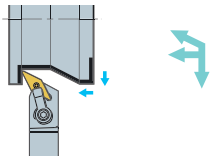
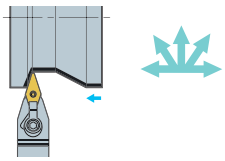
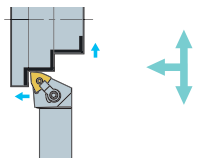
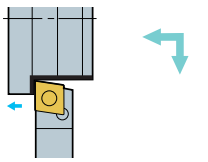
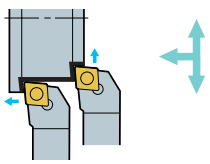
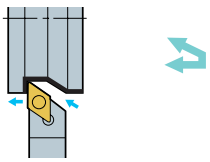
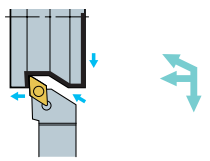
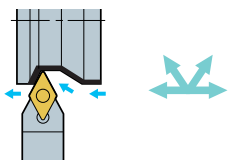


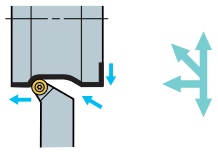
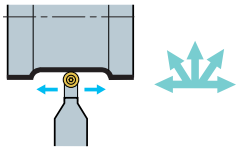
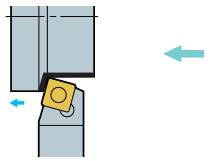
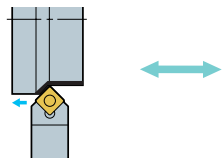
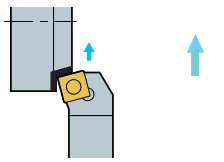
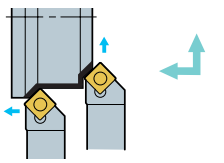
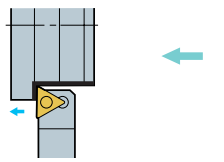
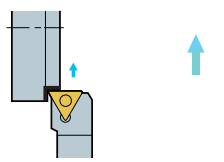
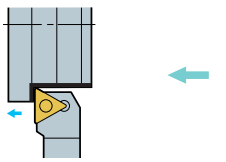
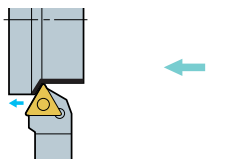
KORLOY Tool Holder Series

Cutting Shape	Designation	Turning	Copying	Facing	Chamfering	Available Inserts
Lever lock system **PCBNR/L** P. 137	2020-K12 3232-P16 2525-M12 3232-P19 2525-M16 4040-S19	●				CN□□ 1204□□ 1606□□ 1906□□ P. 48~53, 104, 107, 111, 125
PCLNR/L P. 137	1616-H09 2525-M16 1616-H12 3232-P16 2020-K09 3232-P19 2525-M09 4040-P19 2020-K12 4040-S19 2525-M12 4040-S25 3232-P12	●		●		CN□□ 0903□□ 1204□□ 1606□□ 1906□□ 2509□□ P. 48~53, 104, 107, 111, 125
PDJNR/L P. 138	1616-H11 2020-K15-3 2020-K11 2525-M15-3 2525-M11 3232-P15-3 2020-K15 2525-M15 3232-P15	●	●	●		DN□□ 1104□□ 1504□□ 1506□□ P. 55~60, 104, 112, 125
PDNNR/L P. 138	2525-M15 4025-M15 3232-P15 2525-M15-3 4025-M15-3	●	●	●		DN□□ 1504□□ 1506□□ P. 55~60, 104, 112, 125
PRDCN P. 139	2020-M10 2525-M12	●	●			RCMX 1003□□ 1204□□ P. 62
PRGCR/L P. 139	2020-K10 2525-M10 2020-K12 2525-M12	●	●	●		RCMX 1003□□ 1204□□ P. 62
PSBNR/L P. 140	1616-H09 2525-M15 2020-K09 3232-P15 2020-K12 3232-P19 2525-M12 4040-S19 3225-P12 4040-S25 3232-P12	●				SN□□ 0903□□ 1204□□ 1506□□ 1906□□ 2507□□ P. 63~70, 104, 107, 112
PSDNN P. 140	1616-H09 3232-P15 2020-K12 3232-P19 2525-M12 4040-S19 3232-P12 4040-S25	●			●	SN□□ 0903□□ 1204□□ 1506□□ 1906□□ 2507□□ P. 63~70, 104, 107, 112
PSKNR/L P. 141	1616-H09 2525-M15 2020-K09 3232-P15 2020-K12 3232-P19 2525-M12 4040-S19 3232-P12	●		●		SN□□ 0903□□ 1204□□ 1506□□ 1906□□ P. 63~70, 104, 107, 112
PSSNR/L P. 141	1616-H09 3232-P15 2020-K12 3232-P19 2525-M12 4040-S19 3232-P12 4040-R19 2525-M15 4040-S25	●		●	●	SN□□ 0903□□ 1204□□ 1506□□ 1906□□ P. 63~70, 104, 107, 112

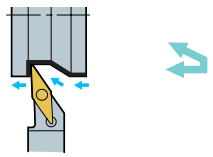
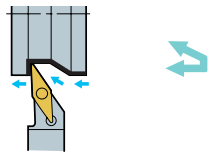
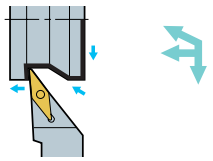
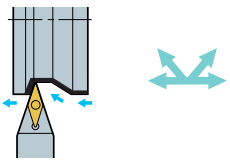
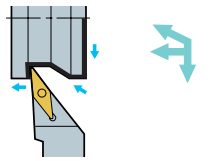
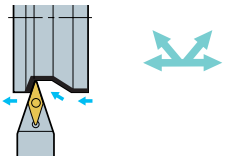
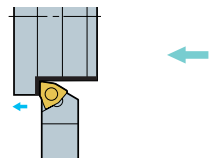
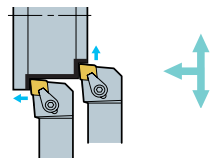
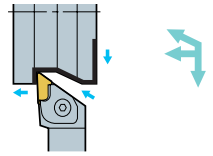
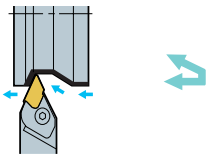
Cutting Shape		Designation	Turning	Copying	Facing	Chamfering	Available Inserts
Lever lock system **PTFNR/L** P. 142		1616-H16 3232-P22 2020-K16 3232-P27 2525-M16 4040-S27 2525-M22			●		TN□□ 1604□□ 2204□□ 2706□□ P. 75~82, 105, 108, 112, 125
PTGNR/L P. 142		1616-H11 3232-P16 2020-K11 2525-M22 2525-M11 3232-P22 1616-H16 3232-P27 2020-K16 4040-S27 2525-M16	●				TN□□ 1103□□ 1604□□ 2204□□ 2706□□ P. 75~82, 105, 108, 112, 125
PTTNR/L P. 143		1616-H16 2020-K16 2525-M22	●			●	TN□□ 1604□□ 2204□□ P. 75~82, 105, 108, 112, 125
PWLNR/L P. 143		1616-H06 2020-K06 2525-M06 2020-K08 2525-M08	●		●		WN□□ 0604□□ 0804□□ P. 91~95, 105
Wedge clamp system **WTJNR/L** P. 144		2020-K16 2525-M22 2525-M16 3232-P22 3232-P16	●	●	●		TN□□ 1604□□ 2204□□ P. 75~82, 105, 108, 112, 125
WTXNR/L P. 144		2020-K16 2525-M16 3232-P16	●	●	●		TN□□ 1604□□ P. 75~82, 105, 108, 112, 125
WWLNR/L P. 145		2020-K08 2525-M08	●		●		WN□□ 0804□□ P. 91~95, 105
Multi lock system **MCLNR/L** P. 145		2525-M12 2525-M16 3232-P12 3232-P16	●		●		CN□□ 1204□□ 1606□□ P. 48~53, 104, 107, 111, 125
MDJNR/L P. 146		2020-K15-3 2525-M15-3	●	●			DN□□ 1504□□ P. 55~60, 104, 112, 125
MDNNN P. 146		2525-M15-3	●	●			DN□□ 1504□□ P. 55~60, 104, 112, 125

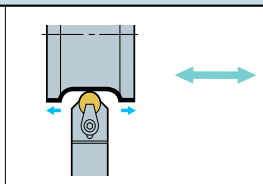
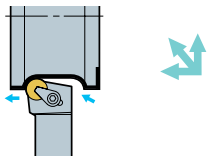
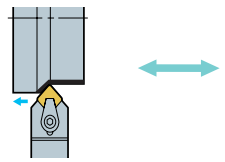
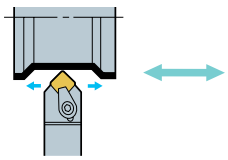
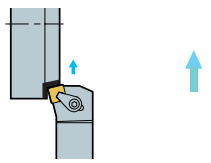
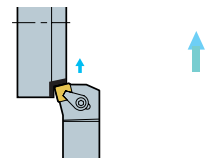
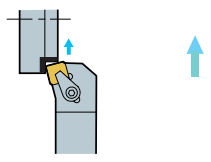
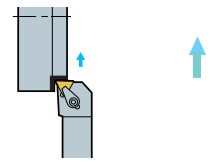
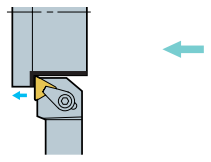
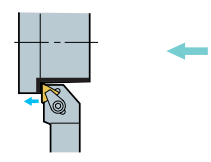
KORLOY Tool Holder Series

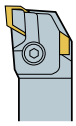
Cutting Shape		Designation	Turning	Copying	Facing	Chamfering	Available Inserts
MDQNR/L P. 147		2525-M15	●	●	●		DN□□ 1506□□ P. 55~60, 104, 112, 125
MVJNR/L P. 147		2020-K16 2525-M16	●	●			VN□□ 1604□□ P. 87~89, 105, 108, 113, 126
MVQNR/L P. 148		2020-K16 2525-M16	●	●	●		VN□□ 1604□□ P. 87~89, 105, 108, 113, 126
MVVNN P. 148		2020-K16 2525-M16	●	●			VN□□ 1604□□ P. 87~89, 105, 108, 113, 126
MWLNR/L P. 149		2020-K08 2525-M08	●		●		WN□□ 0804□□ P. 91~95, 105
Screw on system **SCACR/L** P. 149		1010-E06 1212-F09	●				CC□T 0602□□ 09T3□□ P. 48, 53, 54, 99, 101, 114, 119
SCLCR/L P. 150		0808-E06 1010-E06 1212-F09 1616-H09 2020-K12 2525-M12	●		●		CC□T 0602□□ 09T3□□ 1204□□ P. 48, 53, 54, 99, 101, 114, 119
SDACR/L P. 150		1010-E07 1212-F11 1616-H11	●	●			DC□T 0702□□ 11T3 P. 60, 61, 99, 102, 114, 119
SDJCR/L P. 151		1010-E07 1212-F07 1616-H11 2020-K11 2525-M11	●	●	●		DC□T 0702□□ 11T3□□ P. 60, 61, 99, 102, 114, 119
SDNCN P. 151		1010-E07 1212-F07 1212-H11 1616-H11 2020-K11	●	●			DC□T 0702□□ 11T3□□ P. 60, 61, 99, 102, 114, 119

Cutting Shape		Designation	Turning	Copying	Facing	Chamfering	Available Inserts
SRGCR/L		1010-E06 1616-H10 1212-F06 2020-K10 1616-H06 2525-M10 1616-H08 2020-K12 2020-K08 2525-M12 2525-M08	●	●	●		RC□T 0602M0 RC□T 0803M0 RC□T 1003M0 RC□T 1204M0
P. 152							P. 99
SRDCN		1010-E06 1616-H10 1212-F06 2020-K10 1616-H06 2525-M10 1616-H08 2020-K12 2020-K08 2525-M12 2525-M08	●	●			RC□T 0602M0 RC□T 0803M0 RC□T 1003M0 RC□T 1204M0
P. 152							P. 102
SSBCR/L		1212-F09 1616-H09 2020-K12	●				SC□T 09T3□□ 1204□□
P. 153							P. 71, 72, 100, 102, 120
SSDCN		1212-F09 1616-H09	●			●	SC□T 09T3□□
P. 153							P. 71, 72, 100, 102, 120
SSKCR/L		1616-H09			●		SC□T 09T3□□
P. 154							P. 71, 72, 100, 102, 120
SSSCR/L		1616-H09 2020-K12	●		●	●	SC□T 09T3□□ 1204□□
P. 154							P. 71, 72, 100, 102, 120
STACR/L		1010-E09 1212-F11	●				TC□T 0902□□ 1102□□
P. 155							P. 83, 84, 100, 103, 121
STFCR/L		1010-E09 1212-F11 1616-H11 1616-H16 2020-K16			●		TC□T 0902□□ 1102□□ 16T3□□
P. 155							P. 83, 84, 100, 103, 121
STGCR/L		0808-D09 1010-E09 1212-F11 1616-H11 2020-K16 2525-M16	●				TC□T 0902□□ 1102□□ 16T3□□
P. 156							P. 83, 84, 100, 103, 121
STTCR/L		1616-H11 1616-H16 2020-K16	●			●	TC□T 1102□□ 16T3□□
P. 156							P. 83, 84, 100, 103, 121

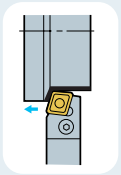
KORLOY Tool Holder Series

Cutting Shape		Designation	Turning	Copying	Facing	Chamfering	Available Inserts
SVABR/L P. 157		1616-H16 2020-K16	●	●			VB□T 1604□□ P. 90, 91, 100, 103, 110
SVHBR/L P. 157		2525-M16 3225-P16	●	●			VB□T 1604□□ P. 90, 91, 100, 103, 110
SVJBR/L P. 158		1212-F11 2020-H16 1616-H11 2525-M16 2020-K11 1616-H16	●	●	●		VB□T 1102□□ 1604□□ P. 90, 91, 100, 110
SVVBN P. 158		1212-F11 1616-H11 2020-K11 1616-H16 2020-K16 2525-M16	●	●			VB□T 1102□□ 1604□□ P. 90, 91, 100, 110
SVJCR/L P. 159		1212-F11 2020-K13 1616-H11 1616-H16 2020-K11 2020-K16 1212-F13 2525-M16 1616-H13	●	●	●		VC□T 1103□□ VC□T 1303□□ VC□T 1604□□ P. 90, 91, 101, 103, 110, 122
SVVCN P. 159		1212-F11 2020-K13 1616-H11 1616-H16 2020-K11 2020-K16 1212-F13 2525-M16 1616-H13	●	●			VC□T 1103□□ VC□T 1303□□ VC□T 1604□□ P. 90, 91, 101, 103, 110, 122
SWACR/L P. 160		1010-E04 1212-F04 1616-H06 2020-K08	●				WC□T 0402□□ 06T3□□ 0804□□
Clamp on system **CCLNR/L** P. 160		2020-K12C 2525-M12C 3225-P12C	●		●		CNGN 1204□□ 1207□□
CKJNR/L P. 161		2020-K16 2525-M16 3232-P16 4040-R16	●	●	●		KN□□ 1604□□ P. 61
CKNNR/L P. 161		2525-M16 3232-P16	●	●			KN□□ 1604□□ P. 61

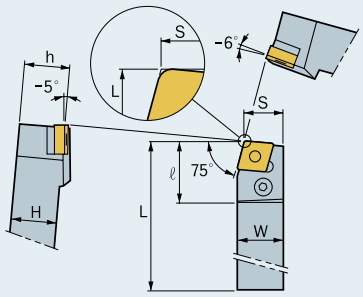
Cutting Shape		Designation	Turning	Copying	Facing	Chamfering	Available Inserts
CRDNN P. 162		2020-K12C 2525-M12C 3225-P12C	●	●			RNGN 1204□□ 1207□□
CRGNR/L P. 162		2020-K12C 2525-M12C 3225-P12C	●		●		RNGN 1204□□ 1207□□
CSDNN P. 163		2020-K12C 2525-M12C 3225-P12C	●			●	SN□N 1204□□ 1207□□ P. 64, 71, 108, 109, 113
CSDPN P. 163		1616-H09 2525-M12	●	●			SP□R 0903□□ 1203□□ P. 73, 74
CSKNR/L P. 164		2020-K12C 2525-M12C 3225-P12C			●		SN□N 1204□□ 1207□□ P. 64, 71, 108, 109, 113
CSKPR/L P. 164		2525-M12			●		SP□R 1203□□ P. 73, 74
CTFNR/L P. 165		2020-K16C 2525-M16C 3225-P16C			●		TN□N 1604□□ 1607□□ P. 109, 176, 177
CTFPR/L P. 165		2020-K16 2525-M16			●		TP□R 1603□□ P. 85
CTGNR/L P. 166		2020-K16C 2525-M16C 3225-P16C	●				TN□N 1604□□ 1607□□ P. 109, 176, 177
CTGPR/L P. 166		1212-F11 2525-M22 1616-H11 3232-P22 2020-K11 2020-K16 2525-M16	●				TP□R 1103□□ 1603□□ 2204□□ P. 85

Cutting Shape		Designation	Turning	Copying	Facing	Chamfering	Available Inserts
EH P. 167		620 625	●		●		ESB 34 P. 200

PCBNR/L



Feed direction



Right-hand shown

Ref	Holder Style	Application
Comment	B style, Lead angle 75 °	Turning

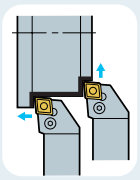
(mm)

Designation		Stock R	Stock L	H	W	L*	S*	h	ℓ	Available Inserts	Lever	Screw	Shim	Shim Pin	Wrench
PCBNR/L	2020-K12	●	●	20	20	125	17	20	27	CN □□1204 □□	LV4	VHX0821	SC42	SP4	HW30L
	2525-M12	●	●	25	25	150	22	25	27						
	3225-P12	●	●	32	25	170	22	32	27						
	2525-M16	●	●	25	25	150	22	25	33	CN □□1606 □□	LV5	VHX0825	SC53	SP5	HW30L
	3232-P16	●	●	32	32	170	27	32	33						
	3232-P19	●	●	32	32	170	27	32	38	CN □□1906 □□	LV6	VHX1027	SC63	SP6	HW40L
	4040-S19	●	●	40	40	250	35	40	38						
	4040-S25	●	●	40	40	250	35	40	45	CN □□2509 □□	LV8	VHX1236	SC83	SP8	HW50L

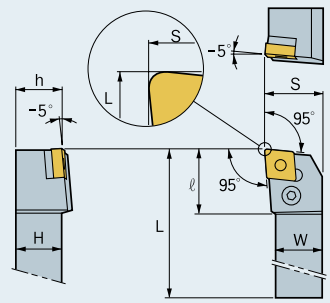
* Model Insert : r=0.8(l=12) r=1.2(l=16, 19) r=2.4(l=25) P. 48~53, 104, 107, 111, 125

● : Stock Item ○ : Under preparing for stock

PCLNR/L



Feed direction



Right-hand shown

Ref	Holder Style	Application
Comment	L style, Lead angle 95 °	Turning, Facing

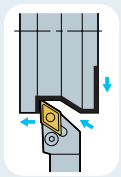
(mm)

Designation		Stock R	Stock L	H	W	L*	S*	h	ℓ	Available Inserts	Lever	Screw	Shim	Shim Pin	Wrench
PCLNR/L	1616-H09	●		16	16	100	20	16	20	CN □□0903 □	LV3	VHX0617	SC32	SP10	HW25L
	2020-K09	●	●	20	20	125	25	20	22						
	2525-M09	●	●	25	25	150	32	25	22						
	1616-H12	●	●	16	16	100	20	16	28	CN □□1204 □□	LV4	VHX0821	SC42	SP4	HW30L
	2020-K12	●	●	20	20	125	25	20	28						
	2525-M12	●	●	25	25	150	32	25	28						
	3225-P12	●	●	32	25	170	32	32	28						
	3232-P12	●	●	32	32	170	40	32	28						
	2525-M16	●	●	25	25	150	32	25	33	CN □□1606 □□	LV5	VHX0825	SC53	SP5	HW30L
	3232-P16	●	●	32	32	170	40	32	33						
	2525-M19	●	●	25	25	150	32	25	38	CN □□1906 □□	LV6	VHX1027	SC63	SP6	HW40L
	3225-P19	●	○	32	25	170	32	32	38						
	3232-P19	●	●	32	32	170	40	32	38						
	4040-S19	●	●	40	40	250	50	40	38						
	4040-P19	●		40	40	170	50	40	38						
	4040-S25	●	●	40	40	250	50	40	45	CN □□2509 □□	LV8	VHX1236	SC83	SP8	HW50L
	5050-T25	●	●	50	50	300	60	50	45						

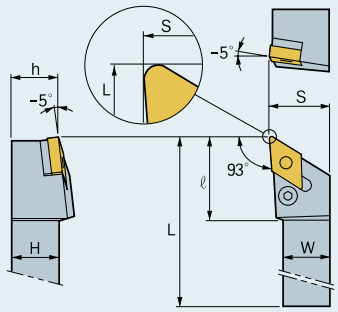
* Model Insert : r=0.8(l=12) r=1.2(l=16, 19) r=2.4(l=25) P. 48~53, 104, 107, 111, 125

● : Stock Item ○ : Under preparing for stock

PDJNR/L



Feed direction



Right-hand shown

Ref	Holder Style	Application	Available Inserts	Parts
Comment	J style, Lead angle 93 °	Turning, Facing, Copy		

(mm)

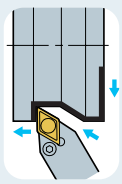
Designation		Stock R	Stock L	H	W	L*	S*	h	ℓ	Available Inserts	Lever	Screw	Shim	Shim Pin	Wrench
PDJNR/L	1616-H11	●	●	16	16	100	20	16	25						
	2020-K11	●	●	20	20	125	25	20	25	DN □□1104 □□	LV3	VHX0617	SD317	SP3	HW25L
	2525-M11	●	●	25	25	150	32	25	30						
	2020-K15	●	●	20	20	125	25	20	35						
	2525-M15	●	●	25	25	150	32	25	35	DN □□1506 □□	LV4B	VHX0821	SD42	SP4	HW30L
	3225-P15	●	●	32	25	170	32	32	35						
	3232-P15	●	●	32	32	170	40	32	35						
	2020-K15-3	●	○	20	20	125	25	20	35						
	2525-M15-3	●	●	25	25	150	32	25	35	DN □□1504 □□	LV4	VHX0821	SD42	SP4	HW30L
	3232-P15-3			32	32	170	40	32	35						

* Model Insert : r=0.8

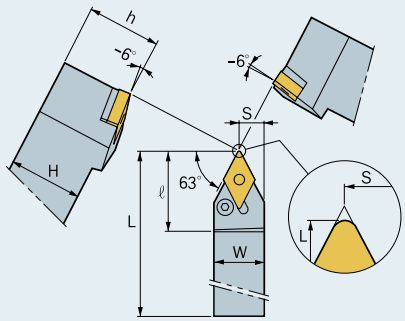
P. 55~60, 104, 112, 125

● : Stock Item ○ : Under preparing for stock

PDNNR/L



Feed direction



Right-hand shown

Ref	Holder Style	Application	Available Inserts	Parts
Comment	N style, Lead angle 63 °	Turning, Copy		

(mm)

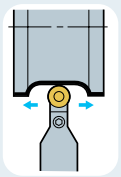
Designation		Stock R	Stock L	H	W	L*	S*	h	ℓ	Available Inserts	Lever	Screw	Shim	Shim Pin	Wrench
PDNNR/L	2020-K15	●	○	20	20	125	8	20	37						
	2525-M15	●	●	25	25	150	12.5	25	37	DN □□1506 □□	LV4B	VHX0821	SD42	SP4	HW30L
	4025-M15	○	○	40	25	150	12.5	40	37						
	3232-P15	●	○	32	32	170	16	32	37						
	2525-M15-3	●		25	25	150	12.5	25	37	DN □□1504 □□	LV4	VHX0821	SD42	SP4	HW30L
	4025-M15-3			40	25	150	12.5	40	37						

* Model Insert : r=0.8

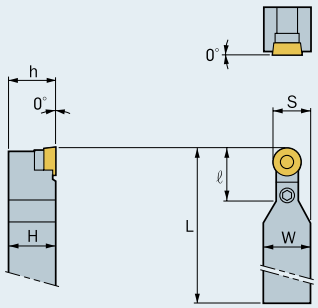
P. 55~60, 104, 112, 125

● : Stock Item ○ : Under preparing for stock

PRDCN



Feed direction



Ref	Holder Style	Application	Available Inserts	Parts
Comment	D style	Turning, Copy		

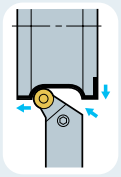
(mm)

Designation		Stock	H	W	L*	S*	h	ℓ	Lever	Screw	Shim	Shim Pin	Wrench
PRDCN	2020-M10	●	20	20	150	15	20	22	RCMX 1003 M0	LR10	VHX0514	SR10	SP10	HW20L
	2525-M10	●	25	25	150	17.5	25	24						
	2525-M12	●	25	25	150	18.5	25	24	RCMX 1204 M0	LR12	VHX0617	SR12	SP10	HW25L
	2020-K12	●	20	20	125	16	20	24						
	3225-Q12	●	32	25	180	18.5	32	24						
	2525-Q16	●	25	25	180	20.5	25	30	RCMX 1606 M0	LR16	VHX0621	SR16	SP16T	HW25L
	3225-Q16	●	32	25	180	20.5	32	30						
	3232-Q16	●	32	32	180	24	32	35						
	3232-Q20	●	32	32	180	26	32	40	RCMX 2006 M0	LR20	VHX0823	SR20	SP20T	HW30L
	4040-S25	●	40	40	250	32.5	40	42	RCMX 2507 M0	LR25	VHX1030	SR25	SP25T	HW40L
	4040-T25	●	40	40	300	32.5	40	42						
	5050-U32	●	50	50	350	41	50	52	RCMX 3209 M0	LR32	VHX1236	SR32	SP32T	HW50L

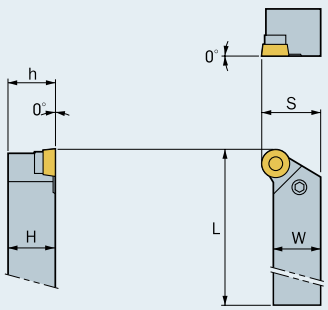
P. 62

● : Stock Item ○ : Under preparing for stock

PRGCR/L



Feed direction



Right-hand shown

Ref	Holder Style	Application	Available Inserts	Parts
Comment	G style	Turning, Facing, Copy		

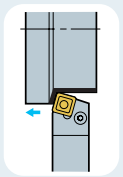
(mm)

Designation		Stock		H	W	L*	S*	h	Lever	Screw	Shim	Shim Pin	Wrench
		R	L										
PRGCR/L	2020-K10	●	●	20	20	125	25	20	RCMX 1003 M0	LR10	VHX0514	SR10	SP10	HW20L
	2525-M10	●	●	25	25	150	32	25						
	2020-K12	●	●	20	20	125	25	20	RCMX 1204 M0	LR12	VHX0617	SR12	SP10	HW25L
	2525-M12	●	●	25	25	150	32	25						
	3225-P12	●	●	32	25	170	32	32						
	2525-M16	●	●	25	25	150	32	25	RCMX 1606 M0	LR16	VHX0621	SR16	SP16T	HW25L
	3225-P16	●	●	32	25	170	32	32						
	3232-P20	●	●	32	32	170	40	32	RCMX 2006 M0	LR20	VHX0823	SR20	SP20T	HW30L
	4040-S25	●	●	40	40	250	50	40	RCMX 2507 M0	LR25	VHX1030	SR25	SP25T	HW40L

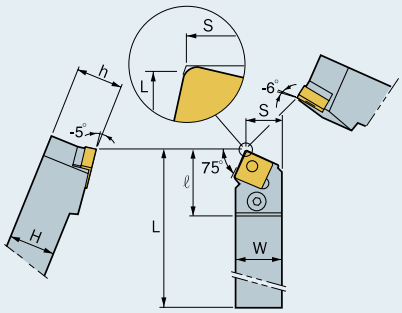
P. 62

● : Stock Item ○ : Under preparing for stock

PSBNR/L



Feed direction



Right-hand shown

Ref	Holder Style	Application	Available Inserts	Parts
Comment	B style, Lead angle 75 °	Turning		

(mm)

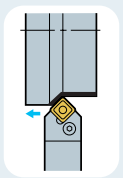
Designation		Stock R	Stock L	H	W	L*	S*	h	ℓ	Available Inserts	Lever	Screw	Shim	Shim Pin	Wrench
PSBNR/L	1616-H09	○	●	16	16	100	13	16	21	SN □□0903 □□	LV3	VHX0617	SS32	SP10	HW25L
	2020-K09	●		20	20	125	17	20	23						
	2020-K12	●	●	20	20	125	17	20	28	SN □□1204 □□	LV4	VHX0821	SS42	SP4	HW30L
	2525-M12	●	●	25	25	150	22	25	28						
	3225-P12	●	●	32	25	170	22	32	28						
	3232-P12	○	○	32	32	170	27	32	28						
	2525-M15	●	●	25	25	150	22	25	35	SN □□1506 □□	LV5	VHX0825	SS53	SP5	HW30L
	3232-P15	●	●	32	32	170	27	32	35						
	3232-P19	●	●	32	32	170	27	32	40	SN □□1906 □□	LV6	VHX1027	SS63	SP6	HW40L
	4040-S19	●	●	40	40	250	35	40	40						
	4040-S25	●	●	40	40	250	35	40	50	SN □□2507 □□	LV8	VHX1236	SS84	SP8	HW50L
	5050-T25	●	●	50	50	300	43	50	50						

* Model Insert : r=0.8(l=12) r=1.2(l=15, 19) r=2.4(l=25)

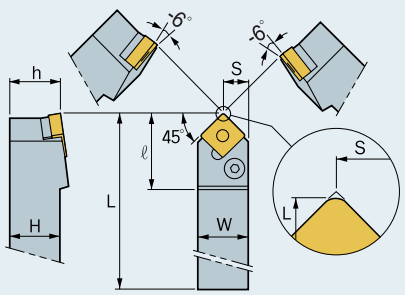
P. 63~70, 104, 107, 112

● : Stock Item ○ : Under preparing for stock

PSDNN



Feed direction



Right-hand shown

Ref	Holder Style	Application	Available Inserts	Parts
Comment	D style, Lead angle 45 °	Turning, Chamfering		

(mm)

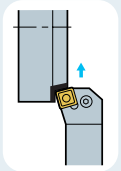
Designation		Stock	H	W	L*	S*	h	ℓ	Available Inserts	Lever	Screw	Shim	Shim Pin	Wrench
PSDNN	1616-H09	●	16	16	100	8	16	23	SN □□0903 □□	LV3	VHX0617	SS32	SP10	HW25L
	2020-K12	●	20	20	125	10	20	30	SN □□1204 □□	LV4	VHX0821	SS42	SP4	HW30L
	2525-M12	●	25	25	150	12.5	25	30						
	3225-P12	●	32	25	170	12.5	32	30						
	3232-P12	●	32	32	170	16	32	40						
	2525-M15	●	25	25	150	12.5	25	40	SN □□1506 □□	LV5	VHX0825	SS53	SP5	HW30L
	3232-P15	○	32	32	170	16	32	40						
	3225-P19	●	32	25	170	12.5	32	40	SN □□1906 □□	LV6	VHX1027	SS63	SP6	HW40L
	3232-P19	●	32	32	170	16	32	40						
	4040-S19	●	40	40	250	20	40	40						
	4040-S25	●	40	40	250	20	40	50	SN □□2507 □□	LV8	VHX1236	SS84	SP8	HW50L
	5050-T25	●	50	50	300	25	50	50						

* Model Insert : r=0.8(l=12) r=1.2(l=15, 19) r=2.4(l=25)

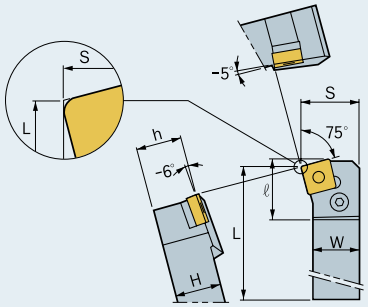
P. 63~70, 104, 107, 112

● : Stock Item ○ : Under preparing for stock

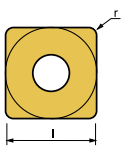
PSKNR/L



Feed direction



Right-hand shown

Ref	Holder Style	Application	Available Inserts	Parts
Comment	K style, Lead angle 75 °	Turning		

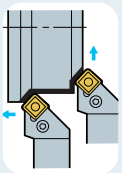
(mm)

Designation		Stock R	Stock L	H	W	L*	S*	h	ℓ	Lever	Screw	Shim	Shim Pin	Wrench
PSKNR/L	1616-H09			16	16	100	20	16	17	SN □□0903 □□	LV3	VHX0617	SS32	SP10	HW25L
	2020-K09	●	○	20	20	125	25	20	20						
	2020-K12	●	●	20	20	125	25	20	26	SN □□1204 □□	LV4	VHX0821	SS42	SP4	HW30L
	2525-M12	●	●	25	25	150	32	25	26						
	3232-P12			32	32	170	40	32	26						
	2525-M15			25	25	150	32	25	32	SN □□1506 □□	LV5	VHX0825	SS53	SP5	HW30L
	3232-P15	●	●	32	32	170	40	32	32						
	3232-P19	●	●	32	32	170	40	32	36	SN □□1906 □□	LV6	VHX1027	SS63	SP6	HW40L
	4040-S19	●	●	40	40	250	50	40	40						
	4040-S25	●	●	40	40	250	50	40	44	SN □□2507 □□	LV8	VHX1236	SS84	SP8	HW50L

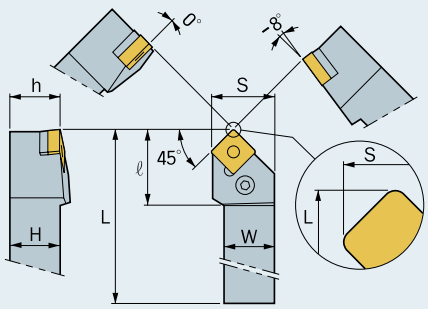
* Model Insert : r=0.8(l=12) r=1.2(l=15, 19) r=2.4(l=25) P. 63~70, 104, 107, 112

● : Stock Item ○ : Under preparing for stock

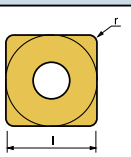
PSSNR/L



Feed direction



Right-hand shown

Ref	Holder Style	Application	Available Inserts	Parts
Comment	S style, Lead angle 45 °	Turning, Facing, Chamfering		

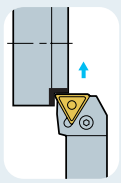
(mm)

Designation		Stock R	Stock L	H	W	L*	S*	h	ℓ	Lever	Screw	Shim	Shim Pin	Wrench
PSSNR/L	1616-H09	●		16	16	100	20	16	25	SN □□0903 □□	LV3	VHX0617	SS32	SP10	HW25L
	2020-K12	●	●	20	20	125	25	20	30						
	2525-M12	●	●	25	25	150	32	25	36	SN □□1204 □□	LV4	VHX0821	SS42	SP4	HW30L
	3225-P12	●		32	25	170	32	32	45						
	3232-P12			32	32	170	40	32	40						
	2525-M15	●	●	25	25	150	32	25	36	SN □□1506 □□	LV5	VHX0825	SS53	SP5	HW30L
	3232-P15	●	●	32	32	170	40	32	45						
	3232-P19	●	●	32	32	170	40	32	45						
	4040-S19	●	●	40	40	250	50	40	50	SN □□1906 □□	LV6	VHX1027	SS63	SP6	HW40L
	4040-R19	●	●	40	40	200	50	40	50						
	4040-S25	●		40	40	250	50	40	50	SN □□2507 □□	LV8	VHX1236	SS84	SP8	HW50L

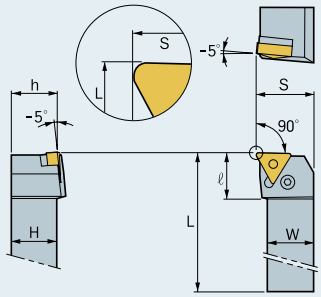
* Model Insert : r=0.8(l=12) r=1.2(l=15, 19) r=2.4(l=25) P. 63~70, 104, 107, 112

● : Stock Item ○ : Under preparing for stock

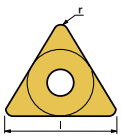
PTFNR/L



Feed direction



Right-hand shown

Ref	Holder Style	Application	Available Inserts	Parts
Comment	F style, Lead angle 90 °	Facing		 Lever  Screw  Shim  Shim Pin  Wrench

(mm)

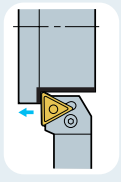
Designation		Stock R	Stock L	H	W	L*	S*	h	ℓ	Available Inserts	Lever	Screw	Shim	Shim Pin	Wrench
PTFNR/L	1616-H16	●	●	16	16	100	20	16	20						
	2020-K16	●	●	20	20	125	25	20	20	TN □□1604□□	LV3	VHX0617	ST317	SP3	HW25L
	2525-M16	●	●	25	25	150	32	25	20						
	2525-M22	●	●	25	25	150	32	25	25	TN □□2204□□	LV4	VHX0821	ST42	SP4	HW30L
	3232-P22	●	○	32	32	170	40	32	25						
	3232-P27			32	32	170	40	32	34	TN □□2706□□	LV5	VHX0825	ST53	SP5	HW30L
	4040-S27			40	40	250	50	40	34						

* Model Insert : r=0.8(l=16, 22) r=1.2(l=27)

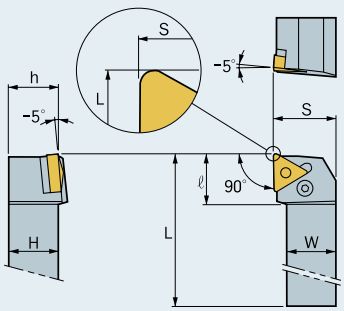
P. 75~82, 105, 108, 112, 125

● : Stock Item ○ : Under preparing for stock

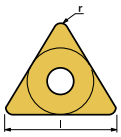
PTGNR/L



Feed direction



Right-hand shown

Ref	Holder Style	Application	Available Inserts	Parts
Comment	G style, Lead angle 90 °	Turning		 Lever  Screw  Shim  Shim Pin  Wrench

(mm)

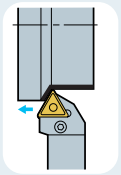
Designation		Stock R	Stock L	H	W	L*	S*	h	ℓ	Available Inserts	Lever	Screw	Shim	Shim Pin	Wrench
PTGNR/L	1212-F11	●		12	12	80	16	12	16						
	1616-H11	●		16	16	100	20	16	18	TN □□1103□□	LV2	VHX0509B	–	–	HW20L
	2020-K11	●		20	20	125	25	20	19						
	2525-M11	●		25	25	150	32	25	20						
	1616-H16	●	●	16	16	100	20	16	20						
	2020-K16	●	●	20	20	125	25	20	20	TN □□1604□□	LV3	VHX0617	ST317	SP3	HW25L
	2525-M16	●	●	25	25	150	32	25	20						
	3232-P16	●	○	32	32	170	40	32	20						
	2525-M22	●	●	25	25	150	32	25	28	TN □□2204□□	LV4	VHX0821	ST42	SP4	HW30L
	3232-P22	●	●	32	32	170	40	32	28						
	3232-P27	●		32	32	170	40	32	33	TN □□2706□□	LV5	VHX0825	ST53	SP5	HW30L
	4040-S27			40	40	250	50	40	33						

* Model Insert : r=0.8(l=16, 22) r=0.4(l=11) r=1.2(l=27)

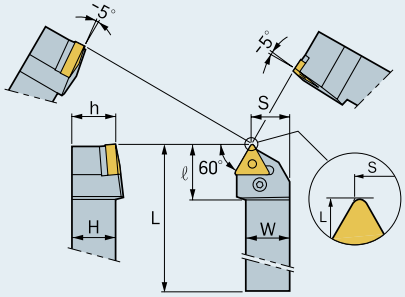
P. 75~82, 105, 108, 112, 125

● : Stock Item ○ : Under preparing for stock

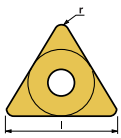
PTTNR/L



Feed direction



Right-hand shown

Ref	Holder Style	Application	Available Inserts	Parts
Comment	T style, Lead angle 60 °	Turning, Chamfering		

(mm)

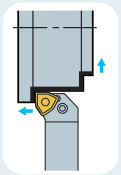
Designation		Stock R	Stock L	H	W	L*	S*	h	ℓ	Lever	Screw	Shim	Shim Pin	Wrench
PTTNR/L	1616-H16			16	16	100	13	16	25					
	2020-K16	●		20	20	125	17	20	25	TN □□1604□□	LV3	VHX0617	ST317	SP3	HW25L
	2525-M16	●		25	25	150	22	25	32					
	2525-M22	●		25	25	150	22	25	32	TN □□2204□□	LV4	VHX0821	ST42	SP4	HW30L

* Model Insert : r=0.8(l=16, 22)

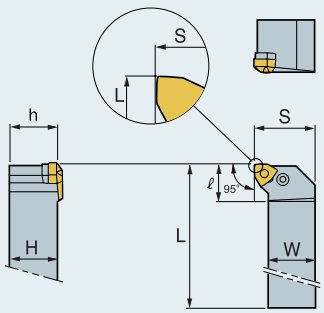
P. 75~82, 105, 108, 112, 125

● : Stock Item ○ : Under preparing for stock

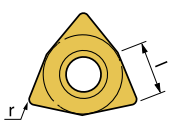
PWLNR/L



Feed direction



Right-hand shown

Ref	Holder Style	Application	Available Inserts	Parts
Comment	L style, Lead angle 95 °	Turning, Facing		

(mm)

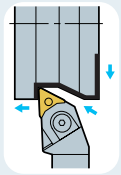
Designation		Stock R	Stock L	H	W	L*	S*	h	ℓ	Lever	Screw	Shim	Shim Pin	Wrench
PWLNR/L	1616-H06	●	●	16	16	100	20	16	20					
	2020-K06	●	●	20	20	125	25	20	20	WN □□0604□□	LV3	VHX0617	SW317	SP3	HW25L
	2525-M06	●	●	25	25	150	32	25	20					
	2020-K08	●	●	20	20	125	25	20	26	WN □□0804□□	LV4	VHX0821	SW42	SP4	HW30L
	2525-M08	●	●	25	25	150	32	25	26					

* Model Insert : r=0.8

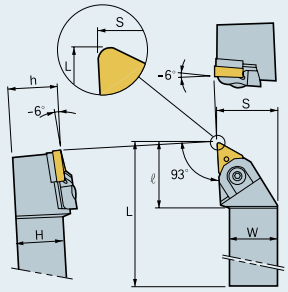
P. 91~95, 105

● : Stock Item ○ : Under preparing for stock

WTJNR/L



Feed direction



Right-hand shown

Ref	Holder Style	Application
Comment	J style, Lead angle 93 °	Turning, Facing, Copy

(mm)

Designation		Stock R	Stock L	H	W	L*	S*	h	ℓ
WTJNR/L	2020-K16	●	●	20	20	125	25	20	33
	2525-M16	●	●	25	25	150	32	25	33
	3225-P16	●	○	32	25	170	32	32	33
	3232-P16	●	●	32	32	170	40	32	33
	2525-M22	●	●	25	25	150	32	25	35
	3232-P22	●	●	32	32	170	40	32	35

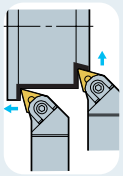
Available Inserts	Wedge Clamp	Screw	Stopper Ring	Shim	Pin	Nut	Washer	Wrench
TN □□1604 □□	CMH5R1	MHX 0523	ER04	ST32M	SP3M-1 SP3M	N0407	WA4	HW25L HW30L
TN □□2204 □□	CMH6R1	MHX 0626	ER04	ST43M	SP4M	N0508	WA3	HW30L

* Model Insert : r=0.8

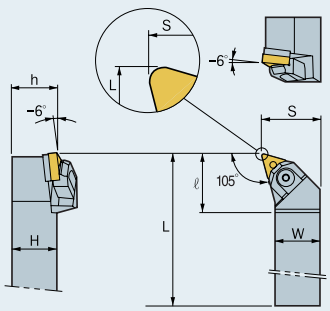
P. 75~82, 105, 108, 112, 125

● : Stock Item ○ : Under preparing for stock

WTXNR/L



Feed direction



Right-hand shown

Ref	Holder Style	Application
Comment	X style, Lead angle 105 °	Turning, Facing, Copy

(mm)

Designation		Stock R	Stock L	H	W	L*	S*	h	ℓ
WTXNR/L	2020-K16	●	●	20	20	125	25	20	30
	2525-M16	●	●	25	25	150	32	25	33
	3232-P16			32	32	170	40	32	33

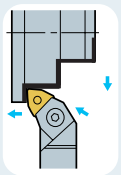
Available Inserts	Wedge Clamp	Screw	Stopper Ring	Shim	Pin	Nut	Washer	Wrench
TN □□1604 □□	CMH5R1	MHX 0523	ER04	ST32M	SP3M-1 SP3M	N0407	WA4	HW25L HW30L

* Model Insert : r=0.8

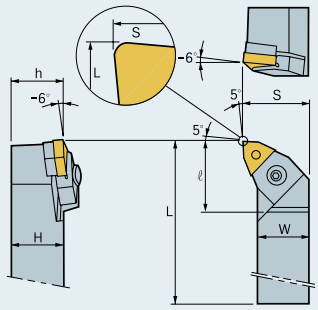
P. 75~82, 105, 108, 112, 125

● : Stock Item ○ : Under preparing for stock

WWLNR/L



Feed direction



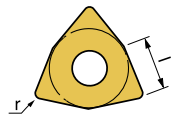
Right-hand shown

Ref	Holder Style	Application
Comment	L style, Lead angle 95 °	Turning, Facing

(mm)

Designation		Stock R	Stock L	H	W	L*	S*	h	ℓ
WWLNR/L	2020-K08	●	●	20	20	125	25	20	32
	2525-M08	●	●	25	25	150	32	25	33
	3232-P08	●	●	32	32	170	40	32	33

Available Inserts



WN □□0804 □□

Parts

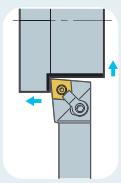
Wedge Clamp	Screw	Stopper Ring	Shim	Pin	Nut	Wrench
CMH6R/L3				SP2M		HW30L
CMH6R2	MHX0630	CR05	SW43M	SP4M	N0508	HW40L
CMH6R2				SP4M		

* Model Insert : r=0.8

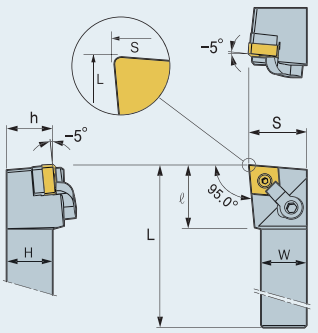
P. 91~95, 105

● : Stock Item ○ : Under preparing for stock

MCLNR/L



Feed direction



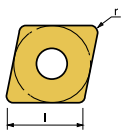
Right-hand shown

Ref	Holder Style	Application
Comment	L style, Lead angle 95 °	Turning, Facing

(mm)

Designation		Stock R	Stock L	H	W	L*	S*	h	ℓ
MCLNR/L	2020-K12	○		20	20	125	25.0	20	32
	2525-M12	●		25	25	150	32.0	25	32
	3225-P12	○		32	25	170	32.0	32	32
	3232-P12	●		32	32	170	40.0	32	32
	2525-M16	●		25	25	150	32.0	25	33
	3232-P16	●		32	32	170	40.0	32	33
	4040-S16			40	40	250	50.0	40	33
	2525-M19	○		25	25	150	32.0	25	38
	3232-P19	○		32	32	170	40.0	32	38
	4040-S19	○		40	40	250	50.0	40	38
	4040-S25	○		40	40	250	50.0	40	38

Available Inserts



CN □□1204 □□	
CN □□1606 □□	
CN □□1906 □□	
CN □□2507 □□	

Parts

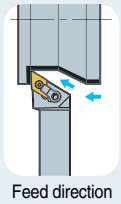
Clamp	Screw	Shim	Pin	Wrench
CDH6N	DHA1/4-25	SC43D	SP4D	HW30L HW23.8L
CDH8N	DHA5/16-32	SC53D	SP5D	HW40L HW30L
CDH8N	DHA5/16-32	SC63D	SP6D	HW40L HW35L
CDH8N3	DHA3/8-35	SC83D	SP8D	HW40L HW50L

* Model Insert : r=0.8(l=12) r=1.2(l=16, 19) r=2.4(l=25)

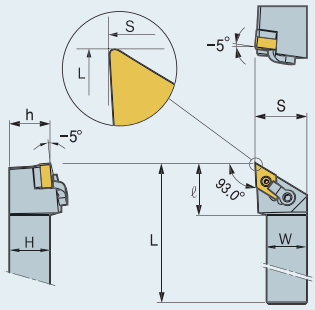
P. 48~53, 104, 107, 111, 125

● : Stock Item ○ : Under preparing for stock

MDJNR/L



Feed direction



Right-hand shown

Ref	Holder Style	Application
Comment	J style, Lead angle 93 °	Turning, Facing, Copy

(mm)

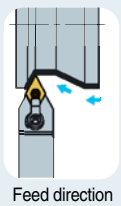
Designation		Stock R	Stock L	H	W	L*	S*	h	ℓ	Available Inserts	Clamp	Screw	Shim	Pin	Wrench
MDJNR/L	2020-K11	○		20	20	125	25.0	20	32	DN □□1104 □□	CDH6N	DHA1/4-19	SD32D	SP3D	HW30L HW23.8L
	2525-M11			25	25	150	32.0	25	32						
	2020-K15-3	●		20	20	125	25.0	20	36	DN □□1504 □□	CDH6N	DHA1/4-25	SD43D	SP4D	HW30L HW23.8L
	2525-M15-3	●		25	25	150	32.0	25	36						
	3232-P15-3			32	32	170	40.0	32	36						

* Model Insert : r=0.8

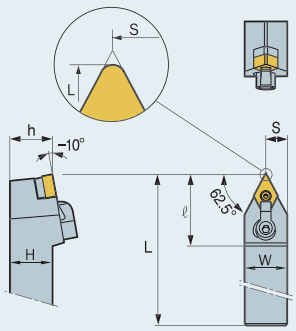
P. 55~60, 104, 112, 125

● : Stock Item ○ : Under preparing for stock

MDNNN



Feed direction



Right-hand shown

Ref	Holder Style	Application
Comment	N style, Lead angle 62.5 °	Turning, Copy

(mm)

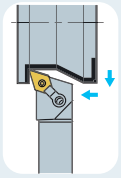
Designation		Stock	H	W	L*	S*	h	ℓ	Available Inserts	Clamp	Screw	Shim	Pin	Wrench
MDNNN (MDPNN)	2525-M15-3	●	25	25	150	12.5	25	41	DN □□1504 □□	CDH8N	DHA5/16-32	SD43D	SP4DL	HW30L HW23.8L

* Model Insert : r=0.8

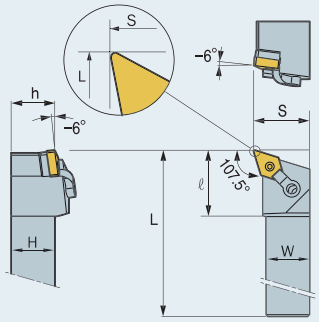
P. 55~60, 104, 112, 125

● : Stock Item ○ : Under preparing for stock

MDQNR/L



Feed direction



Right-hand shown

Ref	Holder Style	Application
Comment	Q style, Lead angle 107.5 °	Turning, Facing, Copy

(mm)

Designation		Stock R	Stock L	H	W	L*	S*	h	ℓ
MDQNR/L	2525-M15	●	●	25	25	150	30	25	36
	3232-P15	○		32	32	170	40	32	36

Available Inserts: DN □□1506 □□

Parts

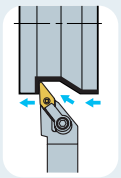
Clamp	Screw	Shim	Pin	Wrench
CDH6N	DHA1/4-25	SD43D	SP4D	HW31.8L HW23.8L

* Model Insert : r=0.8

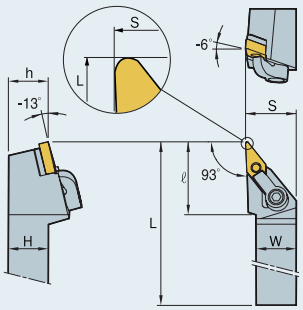
P. 55~60, 104, 112, 125

● : Stock Item ○ : Under preparing for stock

MVJNR/L



Feed direction



Right-hand shown

Ref	Holder Style	Application
Comment	J style, Lead angle 93 °	Turning, Copy

(mm)

Designation		Stock R	Stock L	H	W	L*	S*	h	ℓ
MVJNR/L	2020-K16	●	●	20	20	125	25	20	36
	2525-M16	●	●	25	25	150	32	25	42

Available Inserts: VN □□1604 □□

Parts

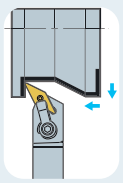
Clamp	Screw	Shim	Pin	Wrench
CDH8N2	DHA5/16-32	SV32D	SP3D	HW20L HW40L

* Model Insert : r=0.8

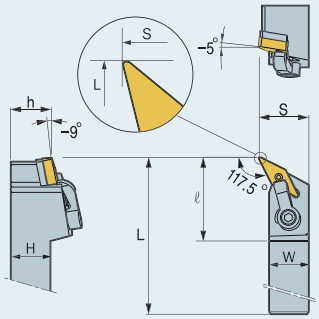
P. 87~89, 105, 108, 113, 126

● : Stock Item ○ : Under preparing for stock

MVQNR/L



Feed direction



Right-hand shown

Ref	Holder Style	Application	Available Inserts	Parts
Comment	Q style, Lead angle 117.5 °	Turning, Facing, Copy		

(mm)

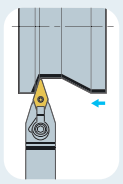
Designation		Stock R	Stock L	H	W	L*	S*	h	ℓ	Available Inserts	Clamp	Screw	Shim	Pin	Wrench
MVQNR/L	2020-K16	●	●	20	20	125	25	20	42	VN□□1604□□	CDH8N2	DHA5/16-32	SV32D	SP3D	HW40L, HW20L
	2525-M16	●	●	25	25	150	32	25	42						

* Model Insert : r=0.8

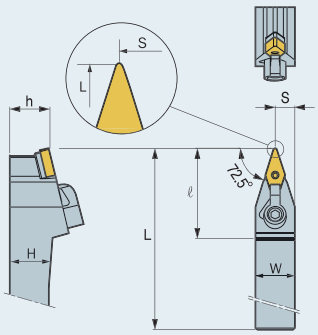
P. 87~89, 105, 108, 113, 126

●: Stock Item ○: Under preparing for stock

MVVNN



Feed direction



Right-hand shown

Ref	Holder Style	Application	Available Inserts	Parts
Comment	V style, Lead angle 72.5 °	Turning, Copy		

(mm)

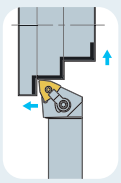
Designation		Stock	H	W	L*	S*	h	ℓ	Available Inserts	Clamp	Screw	Shim	Pin	Wrench
MVVNN	2020-K16	●	20	20	125	10	20	42	VN□□1604□□	CDH8N2	DHA5/16-32	SV32D	SP3D	HW40L HW20L
	2525-M16	●	25	25	150	12.5	25	42						

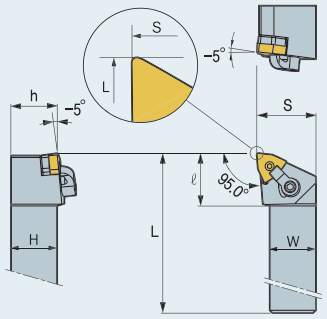
* Model Insert : r=0.8

P. 87~89, 105, 108, 113, 126

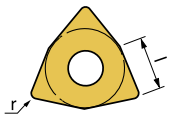
●: Stock Item ○: Under preparing for stock

MWLNR/L


Feed direction



Right-hand shown

Ref	Holder Style	Application	Available Inserts	Parts
Comment	L style, Lead angle 95 °	Turning, Facing		

(mm)

Designation		Stock R	Stock L	H	W	L*	S*	h	ℓ	Clamp	Screw	Shim	Pin	Wrench
MWLNR/L	2020-K06	○	○	20	20	125	25.0	20	32	CDH7N	DHA10-32-19	SW32D	SP3D	HW30L HW23.8L
	2525-M06			25	25	150	32.0	25	32					
	3232-P06			32	32	170	40.0	32	32					
	2020-K08	●	○	20	20	125	25.0	20	32	CDH6N	DHA1/4-21	SW43D	SP4D	HW31.8L HW23.8L
	2525-M08	●	●	25	25	150	32.0	25	32					
	3232-P08			32	32	170	40.0	32	32					

WN □□0604 □□

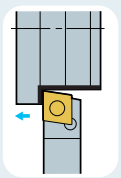
WN □□0804 □□

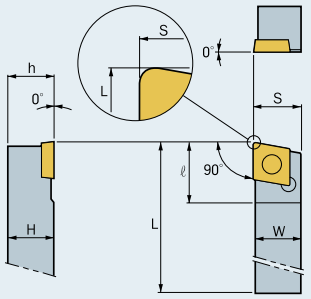
* Model Insert : r=0.8

P. 91~95, 105

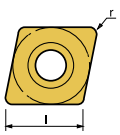
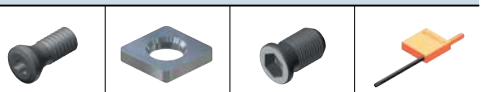
● : Stock Item ○ : Under preparing for stock

SCACR/L


Feed direction



Right-hand shown

Ref	Holder Style	Application	Available Inserts	Parts
Comment	A style, Lead angle 90 °	Turning		

(mm)

Designation		Stock R	Stock L	H	W	L*	S*	h	ℓ	Screw	Shim	Screw for Shim	Wrench
SCACR/L	1010-E06	○	●	10	10	70	10.5	10	10	FTKA02565	-	-	TW07P
	1212-F09	○	○	12	12	80	12.5	12	16	FTGA03508	-	-	TW15P

CC □T 0602 □□

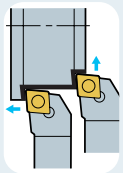
CC □T 09T3 □□

* Model Insert : r=0.8(l=09) r=0.4(l=06)

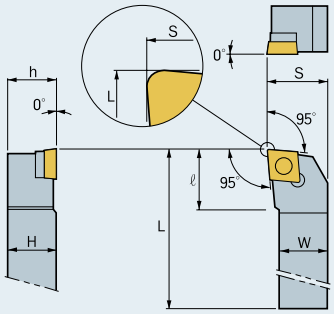
P. 48, 53, 54, 99, 101, 114, 119

● : Stock Item ○ : Under preparing for stock

SCLCR/L



Feed direction



Right-hand shown

Ref	Holder Style	Application
Comment	L style, Lead angle 95 °	Turning, Facing

(mm)

Designation		Stock R	Stock L	H	W	L*	S*	h	ℓ
SCLCR/L	0808-D06	●	●	08	08	60	10	08	10
	1010-E06	●	●	10	10	70	12	10	10
	1212-F09	●	●	12	12	80	16	12	16
	1616-H09	●	●	16	16	100	20	16	16
	2020-K09	●	●	20	20	125	25	20	16
	2525-M09	●	○	25	25	150	32	25	26
	2020-K12	●	●	20	20	125	25	20	25
	2525-M12	●	●	25	25	150	32	25	26

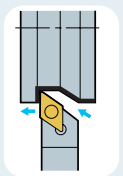
Available Inserts	Parts: Screw	Shim	Screw for Shim	Wrench
CC □T 0602 □□	FTKA02565	-	-	TW07P
CC □T 09T3 □□	FTGA03508	-	-	TW15P
CC □T 1204 □□	FTGA0411F	SC42S	SHXN0610F	TW15P, HW40L

* Model Insert : r=0.4(l=06) r=0.8(l=09, 12)

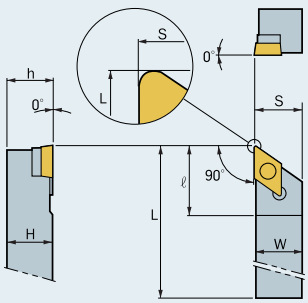
P. 48, 53, 54, 99, 101, 114, 119

● : Stock Item ○ : Under preparing for stock

SDACR/L



Feed direction



Right-hand shown

Ref	Holder Style	Application
Comment	A style, Lead angle 90 °	Turning, Copy

(mm)

Designation		Stock R	Stock L	H	W	L*	S*	h	ℓ
SDACR/L	1010-E07	○		10	10	70	10.5	10	15
	1212-F11	●	○	12	12	80	12.5	12	15
	1616-H11	●		16	16	100	16.5	16	24

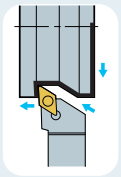
Available Inserts	Parts: Screw	Shim	Screw for Shim	Wrench
DC □T 0702 □□	FTKA02565			TW07P
DC □T 11T3 □□	FTGA03508	-	-	TW15P
	FTGA03512	SD32S	SHXN0509F	TW15P, HW35L

* Model Insert : r=0.4(l=07) r=0.8(l=11)

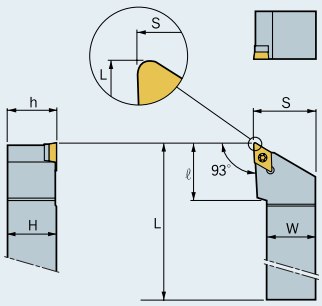
P. 60, 61, 99, 102, 114, 119

● : Stock Item ○ : Under preparing for stock

SDJCR/L



Feed direction



Right-hand shown

Ref	Holder Style	Application
Comment	J style, Lead angle 93 °	Turning, Copy

(mm)

Designation		Stock R	Stock L	H	W	L*	S*	h	ℓ
SDJCR/L	1010-E07	●		10	10	70	12	10	15
	1212-F07	●	●	12	12	80	16	12	15
	1616-H07	●		16	16	100	20	16	18
	2020-K07	●	●	20	20	125	25	20	20
	1212-F11	●		12	12	80	16	12	15
	1616-H11	●	●	16	16	100	20	16	24
	2020-K11	●	●	20	20	125	25	20	24
	2525-M11	●	●	25	25	150	32	25	29

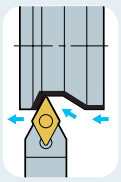
Available Inserts	Parts: Screw	Shim	Screw for Shim	Wrench
DC □T 0702 □□	FTKA02565			TW07P
DC □T 11T3 □□	FTGA03512	SD32S	SHXN0509F	TW15P, HW35L

* Model Insert : r=0.4(l=04) r=0.8(l=11)

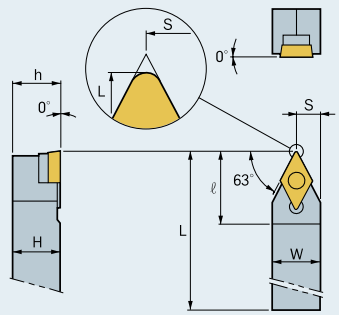
P. 60, 61, 99, 102, 114, 119

● : Stock Item ○ : Under preparing for stock

SDNCN



Feed direction



Right-hand shown

Ref	Holder Style	Application
Comment	N style, Lead angle 63 °	Turning, Copy

(mm)

Designation		Stock	H	W	L*	S*	h	ℓ
SDNCN	1010-E07	●	10	10	70	5	10	20
	1212-F07	●	12	12	80	6	12	20
	1212-H11	●	12	12	100	6	12	30
	1616-H11	●	16	16	100	8	16	30
	2020-K11	●	20	20	125	10	20	30

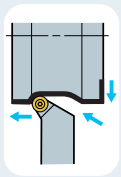
Available Inserts	Parts: Screw	Shim	Screw for Shim	Wrench
DC □T 0702 □□	FTKA02565	-	-	TW07P
DC □T 11T3 □□	FTGA03508	-	-	TW15P
DC □T 11T3 □□	FTGA03512	SD32S	SHXN0509F	TW15P, HW35L

* Model Insert : r=0.4(l=04) r=0.8(l=11)

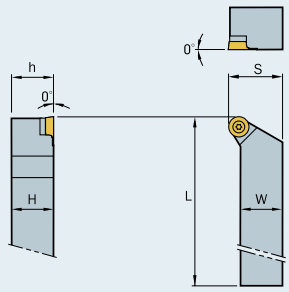
P. 60, 61, 99, 102, 114, 119

● : Stock Item ○ : Under preparing for stock

SRGCR/L



Feed direction



Right-hand shown

Ref	Holder Style	Application	Available Inserts	Parts			
Comment	G style	Turning, Facing					

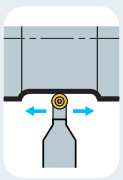
(mm)

Designation		Stock R	Stock L	H	W	L*	S*	h	ℓ	Available Inserts	Screw	Shim	Screw for Shim	Wrench
SRGCR/L	1010-E06			10	10	70	12	10		RC □T 0602M0	FTKA02565	-	-	TW07P
	1212-F06	●		12	12	80	16	12						
	1616-H06			16	16	100	20	16						
	1616-H08	●		16	16	100	20	16		RC □T 0803M0	FTNA0307	-	-	TW09P
	2020-K08			20	20	125	25	20						
	2525-M08			25	25	150	32	25						
	1616-H10			16	16	100	20	16		RC □T 1003M0	FTKA03511A	SR10S	SHXN0509F	TW15P HW35L
	2020-K10	●	●	20	20	125	25	20						
	2525-M10			25	25	150	32	25						
	2020-K12	●	●	20	20	125	25	20		RC □T 1204M0	FTGA03512	SR12S	SHXN0509F	TW15P HW35L
	2525-M12	●	●	25	25	150	32	25						

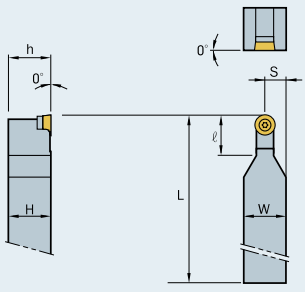
P. 99, 102

● : Stock Item ○ : Under preparing for stock

SRDCN



Feed direction



Right-hand shown

Ref	Holder Style	Application	Available Inserts	Parts			
Comment	D style	Turning, Copy					

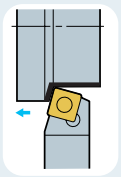
(mm)

Designation		Stock	H	W	L*	S*	h	ℓ	Available Inserts	Screw	Shim	Screw for Shim	Wrench
SRDCN	1010-E06		10	10	70	5	10	10	RC □T 0602M0	FTKA02565	-	-	TW07P
	1212-F06	●	12	12	80	6	12	12					
	1616-H06		16	16	100	8	16	12					
	2525-M06	●	25	25	150	12.5	25	20	RC □T 0803M0	FTNA0307	-	-	TW09P
	1616-H08	●	16	16	100	8	16	16					
	2020-K08		20	20	125	10	20	20					
	2525-M08	●	25	25	150	12.5	25	20					
	1616-H10		16	16	100	8	16	25	RC □T 1003M0	FTKA03511A	SR10S	SHXN0509F	TW15P HW35L
	2020-K10	●	20	20	125	10	20	25					
	2525-M10	●	25	25	150	12.5	25	25					
	2020-K12		20	20	125	10	20	28	RC □T 1204M0	FTGA03512	SR12S	SHXN0509F	TW15P HW35L
	2525-M12	●	25	25	150	12.5	25	28					

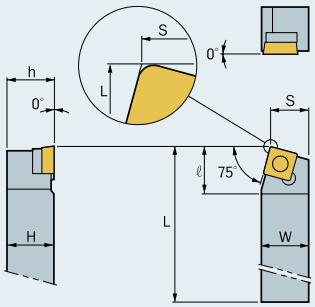
P. 99, 102

● : Stock Item ○ : Under preparing for stock

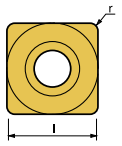
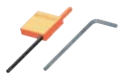
SSBCR/L



Feed direction



Right-hand shown

Ref	Holder Style	Application	Available Inserts	Parts
Comment	B style, Lead angle 75 °	Turning		   

(mm)

Designation		Stock R	Stock L	H	W	L*	S*	h	ℓ	Screw	Shim	Screw for Shim	Wrench
SSBCR/L	1212-F09	○		12	12	80	11	12	16	FTGA03508	-	-	TW15P
	1616-H09	●	○	16	16	100	13	16	16	FTGA03512	SS32S	SHXN0509F	TW15P, HW35L
	2020-K12	○		20	20	125	17	20	25	FTGA0411F	SS42S	SHXN0610F	TW15P, HW40L

SC □T 09T3 □□

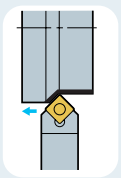
SC □T 1204 □□

* Model Insert : r=0.8

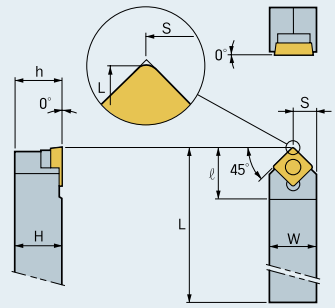
P. 71, 72, 100, 102, 120

● : Stock Item ○ : Under preparing for stock

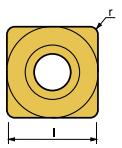
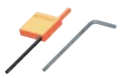
SSDCN



Feed direction



Right-hand shown

Ref	Holder Style	Application	Available Inserts	Parts
Comment	D style, Lead angle 45 °	Turning, Facing		   

(mm)

Designation		Stock	H	W	L*	S*	h	ℓ	Screw	Shim	Screw for Shim	Wrench
SSDCN	1212-F09	●	12	12	80	6	12	15.5	FTGA03508	-	-	TW15P
	1616-H09	●	16	16	100	8	16	15.5	FTGA03512	SS32S	SHXN0509F	TW15P, HW35L

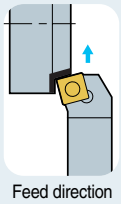
SC □T 09T3 □□

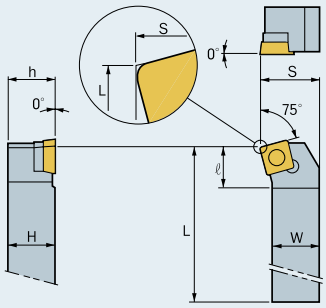
* Model Insert : r=0.8

P. 71, 72, 100, 102, 120

● : Stock Item ○ : Under preparing for stock

SSKCR/L


Feed direction



Right-hand shown

Ref	Holder Style	Application	Available Inserts	Parts
Comment	K style, Lead angle 75 °	Facing		

(mm)

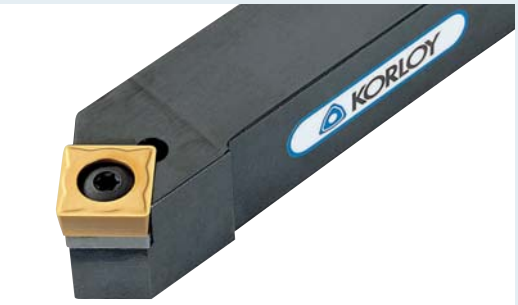
Designation		Stock R	Stock L	H	W	L*	S*	h	ℓ	Available Inserts	Screw	Shim	Screw for Shim	Wrench
SSKCR/L	1616-H09	○		16	16	100	20	16	13	SC □T 09T3 □□	FTGA03512	SS32S	SHXN0509F	TW15P, HW35L

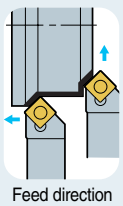
* Model Insert : r=0.8

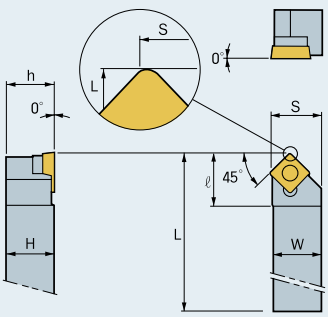
P. 71, 72, 100, 102, 120

● : Stock Item ○ : Under preparing for stock

SSSCR/L




Feed direction



Right-hand shown

Ref	Holder Style	Application	Available Inserts	Parts
Comment	S style, Lead angle 45 °	Turning, Facing		

(mm)

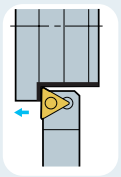
Designation		Stock R	Stock L	H	W	L*	S*	h	ℓ	Available Inserts	Screw	Shim	Screw for Shim	Wrench
SSSCR/L	1616-H09	●	○	16	16	100	17	16	15.5	SC □T 09T3 □□	FTGA03512	-	-	TW15P
	2020-K12	●	●	20	20	125	21	20	24	SC □T 1204 □□	FTGA0411F	SS42S	SHXN0610F	TW15P, HW40L
	2525-M12	●	●	25	25	150	26	25	24					

* Model Insert : r=0.8

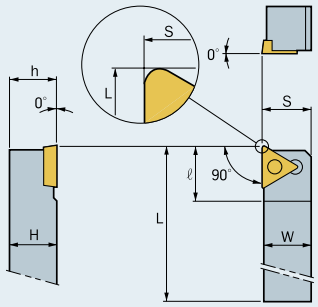
P. 71, 72, 100, 102, 120

● : Stock Item ○ : Under preparing for stock

STACR/L



Feed direction



Right-hand shown

Ref	Holder Style	Application
Comment	A style, Lead angle 90 °	Turning

(mm)

Designation		Stock R	Stock L	H	W	L*	S*	h	ℓ
STACR/L	1010-E09	○		10	10	70	10.5	10	10
	1212-F11	●		12	12	80	12.5	12	14

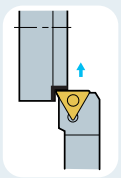
Available Inserts	Screw	Shim	Screw for Shim	Wrench
TC □T 0902 □	FTKA02206	-	-	TW06P
TC □T 1102 □□	FTKA02565	-	-	TW07P

* Model Insert : r=0.4(l=09) r=0.8(l=11)

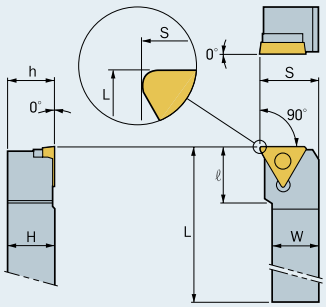
P. 83, 84, 100, 103, 121

● : Stock Item ○ : Under preparing for stock

STFCR/L



Feed direction



Right-hand shown

Ref	Holder Style	Application
Comment	F style, Lead angle 90 °	Facing

(mm)

Designation		Stock R	Stock L	H	W	L*	S*	h	ℓ
STFCR/L	1010-E09	○		10	10	70	12	10	10
	1212-F11	●		12	12	80	16	12	14
	1616-H11	●		16	16	100	20	16	14
	1616-H16			16	16	100	20	16	19
	2020-K16	●	●	20	20	125	25	20	19
	2525-M16	●	●	25	25	150	32	25	25.2

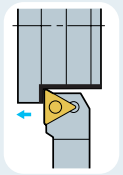
Available Inserts	Screw	Shim	Screw for Shim	Wrench
TC □T 0902 □□	FTKA02206	-	-	TW06P
TC □T 1102 □□	FTKA02565	-	-	TW07P
TC □T 16T3 □□	FTGA03512	ST32S	SHXN0509F	TW15P, HW35L

* Model Insert : r=0.4(l=09) r=0.8(l=11, 16)

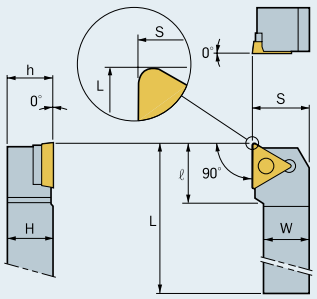
P. 83, 84, 100, 103, 121

● : Stock Item ○ : Under preparing for stock

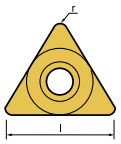
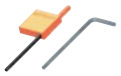
STGCR/L



Feed direction



Right-hand shown

Ref	Holder Style	Application	Available Inserts	Parts
Comment	G style, Lead angle 90 °	Turning		   

(mm)

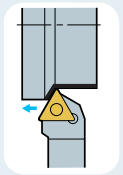
Designation		Stock R	Stock L	H	W	L*	S*	h	ℓ	Screw	Shim	Screw for Shim	Wrench
STGCR/L	0808-D09	○		08	08	60	10	08	11	TC □T 0902 □□	FTKA02206	-	-	TW06P
	1010-E09	●		10	10	70	12	10	11					
	1212-F11	●	●	12	12	80	16	12	14	TC □T 1102 □□	FTKA02565	-	-	TW07P
	1616-H11	●	●	16	16	100	20	16	16					
	1616-H16	●	●	16	16	100	20	16	16	TC □T 16T3 □□	FTGA03512	ST32S	SHXN0509F	TW15P, HW35L
	2020-K16	●	●	20	20	125	25	20	21					
	2525-M16	●	●	25	25	150	32	25	21					

* Model Insert : r=0.4(l=09) r=0.8(l=11, 16)

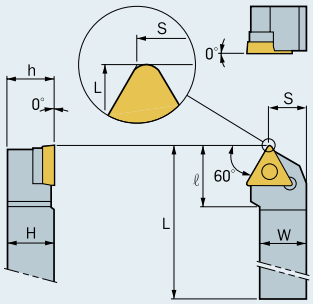
P. 83, 84, 100, 103, 121

● : Stock Item ○ : Under preparing for stock

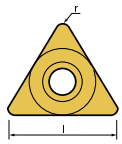
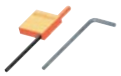
STTCR/L



Feed direction



Right-hand shown

Ref	Holder Style	Application	Available Inserts	Parts
Comment	T style, Lead angle 60 °	Turning, Facing		   

(mm)

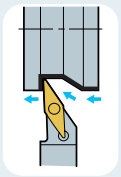
Designation		Stock R	Stock L	H	W	L*	S*	h	ℓ	Screw	Shim	Screw for Shim	Wrench
STTCR/L	1616-H11	○		16	16	100	13	16	14	TC □T 1102 □□	FTKA02565	-	-	TW07P
	1616-H16	○		16	16	100	13	16	19	TC □T 16T3 □□	FTGA03512	ST32S	SHXN0509F	TW15P · HW35L
	2020-K16	○		20	20	125	17	20	19					

* Model Insert : r=0.8

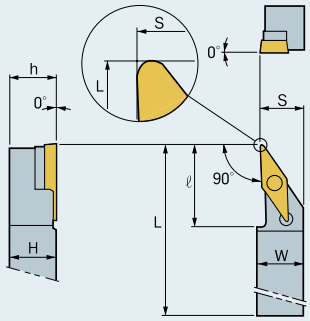
P. 83, 84, 100, 103, 121

● : Stock Item ○ : Under preparing for stock

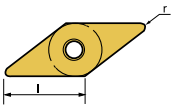
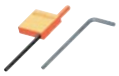
SVABR/L



Feed direction



Right-hand shown

Ref	Holder Style	Application	Available Inserts	Parts			
Comment	A style, Lead angle 90 °	Turning, Copy					

(mm)

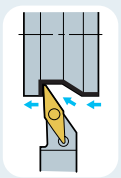
Designation		Stock R	Stock L	H	W	L*	S*	h	ℓ	Screw	Shim	Screw for Shim	Wrench
SVABR/L	1616-H16	○		16	16	100	16.5	16	28	VB□T 1604□□	FTGA03512	SV32S	SHXN0509F	TW15P , HW35L
	2020-K16	○		20	20	125	20.5	20	28					

* Model Insert : r=0.8

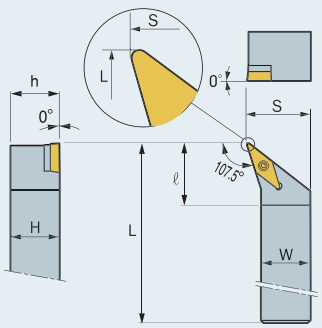
P. 90, 91, 100, 103, 110

● : Stock Item ○ : Under preparing for stock

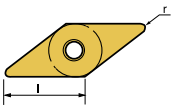
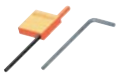
SVHBR/L



Feed direction



Right-hand shown

Ref	Holder Style	Application	Available Inserts	Parts			
Comment	H style, Lead angle 107.5 °	Turning, Facing, Copy					

(mm)

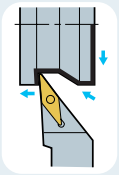
Designation		Stock R	Stock L	H	W	L*	S*	h	ℓ	Screw	Shim	Screw for Shim	Wrench
SVHBR/L	3225-P16	●	●	32	25	170	32	32	31.5	VB□T 1604□□	FTGA03512	SV32S SV32S	SHXN0509F	TW15P HW35L
	2525-M16	●	●	25	25	150	32	25	31.5					

* Model Insert : r=0.8

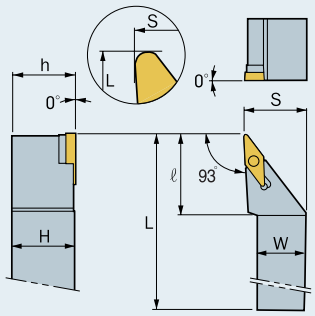
P. 90, 91, 100, 103, 110

● : Stock Item ○ : Under preparing for stock

SVJBR/L



Feed direction



Right-hand shown

Ref	Holder Style	Application
Comment	J style, Lead angle 93 °	Turning, Facing, Copy

(mm)

Designation		Stock R	Stock L	H	W	L*	S*	h	ℓ
SVJBR/L	1212-F11	●	●	12	12	80	16	12	27
	1616-H11	●	○	16	16	100	20	16	27
	2020-K11	●	●	20	20	125	25	20	27
	1212-F11-2			12	12	80	16	12	27
	1616-H11-2			16	16	100	20	16	27
	2020-K11-2			20	20	125	25	20	27
	1616-H16	●	○	16	16	100	20	16	36
	2020-K16	●	●	20	20	125	25	20	41
	2525-M16	●	●	25	25	150	32	25	41
	3225-P16	●	●	32	25	170	32	32	55
	3232-P16	●	●	32	32	170	40	32	55

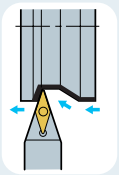
Available Inserts	Screw	Shim	Screw for Shim	Wrench
VB □T 1102 □□	FTKA02565	-	-	TW07P
VB □T 1103 □□	FTKA02515	-	-	TW07P
VB □T 1604 □□	FTGA03512	SV32S	SHXN0509F	TW15P, HW35L

* Model Insert : r=0.4(l=11) r=0.8(l=16)

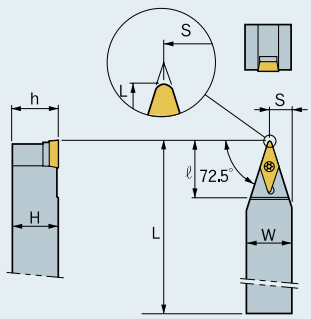
P. 90, 91, 100, 110

● : Stock Item ○ : Under preparing for stock

SVVBN



Feed direction



Right-hand shown

Ref	Holder Style	Application
Comment	V style, Lead angle 72.5 °	Turning, Copy

(mm)

Designation		Stock	H	W	L*	S*	h	ℓ
SVVBN	1212-F11	●	12	12	80	6	12	27
	1616-H11		16	16	100	8	16	27
	2020-K11	●	20	20	125	10	20	27
	1212-F11-2		12	12	80	6	12	27
	1616-H11-2		16	16	100	8	16	27
	2020-K11-2		20	20	125	10	20	27
	1616-H16	●	16	16	100	8	16	32
	2020-K16	●	20	20	125	10	20	32
	2525-M16	●	25	25	150	12.5	25	32
	3225-P16	●	32	25	170	12.5	32	32

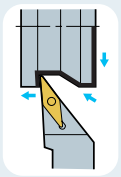
Available Inserts	Screw	Shim	Screw for Shim	Wrench
VB □T 1102 □□	FTGA02565	-	-	TW07P
VB □T 1103 □□	FTGA02565	-	-	TW07P
VB □T 1604 □□	FTGA03512	SV32S	SHXN0509F	TW15P, HW35L

* Model Insert : r=0.4(l=11) r=0.8(l=16)

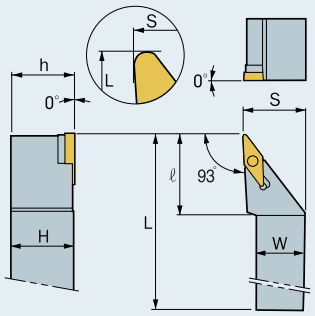
P. 90, 91, 100, 110

● : Stock Item ○ : Under preparing for stock

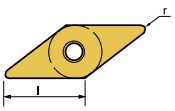
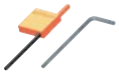
SVJCR/L



Feed direction



Right-hand shown

Ref	Holder Style	Application	Available Inserts	Parts
Comment	J style, Lead angle 93 °	Turning, Facing, Copy		   

(mm)

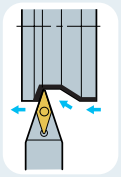
Designation		Stock R	Stock L	H	W	L*	S*	h	ℓ	Available Inserts	Screw	Shim	Screw for Shim	Wrench
SVJCR/L	1212-F11	●		12	12	80	16	12	25	VC□T 1103□□	FTKA02565	-	-	TW07P
	1616-H11	●		16	16	100	20	16	25					
	2020-K11	●	●	20	20	125	25	20	25					
	1212-F13	○		12	12	80	16	12	32	VC□T 1303□□	FTKA0307	-	-	TW09P
	1616-H13	○		16	16	100	20	16	32					
	2020-K13	●		20	20	125	25	20	32					
	1616-H16			16	16	100	20	16	40	VC□T 1604□□	FTGA03512	SV32S	SHXN0509F	TW15P HW35L
	2020-K16	●	●	20	20	125	25	20	40					
	2525-M16	●	●	25	25	150	32	25	40					

* Model Insert : r=0.4(l=11) r=0.8(l=16)

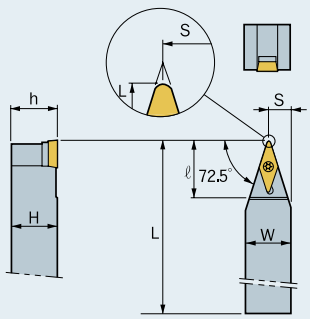
P. 90, 91, 99, 103, 110, 122

● : Stock Item ○ : Under preparing for stock

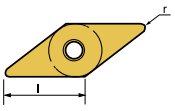
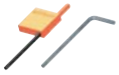
SVVCN



Feed direction



Right-hand shown

Ref	Holder Style	Application	Available Inserts	Parts
Comment	V style, Lead angle 72.5 °	Turning, Copy		   

(mm)

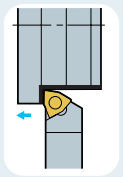
Designation		Stock	H	W	L*	S*	h	ℓ	Available Inserts	Screw	Shim	Screw for Shim	Wrench
SVVCN	1212-F11	●	12	12	80	6	12	25	VC□T 1103□□	FTKA02565	-	-	TW07P
	1616-H11		16	16	100	8	16	25					
	2020-K11	●	20	20	125	10	20	25					
	1212-F13		12	12	80	6	12	32	VC□T 1303□□	FTKA0307	-	-	TW09P
	1616-H13	○	16	16	100	8	16	32					
	2020-K13	●	20	20	125	10	20	32					
	1616-H16		16	16	100	8	16	40	VC□T 1604□□	FTGA03512	SV32S	SHXN0509F	TW15P HW35L
	2020-K16	●	20	20	125	10	20	40					
	2525-M16	●	25	25	150	12.5	25	40					

* Model Insert : r=0.4(l=04) r=0.8(l=06,08)

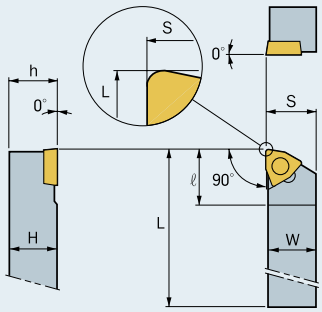
P. 90, 91, 99, 103, 110, 122

● : Stock Item ○ : Under preparing for stock

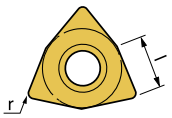
SWACR/L



Feed direction



Right-hand shown

Ref	Holder Style	Application	Available Inserts	Parts	
Comment	A style, Lead angle 90 °	Turning		 Screw	 Wrench

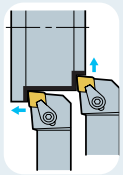
(mm)

Designation		Stock R	Stock L	H	W	L*	S*	h	ℓ	Available Inserts	Screw	Wrench
SWACR/L	1010-E04	○		10	10	70	10.1	10	10	WC □T 0402 □□	FTKA02565	TW07P
	1212-F04	○		12	12	80	12.1	12	14			
	1616-H06	○		16	16	100	16.1	16	20	WC □T 06T3 □□	FTGA03508	TW15P
	2020-K08	○		20	20	125	20.1	20	24	WC □T 0804 □□	FTGA0411F	TW15P

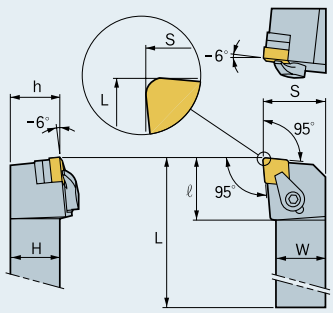
* Model Insert : r=0.4(l=04, 06) r=0.8(l=08)

● : Stock Item ○ : Under preparing for stock

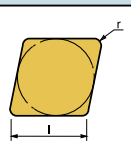
CCLNR/L



Feed direction



Right-hand shown

Ref	Holder Style	Application	Available Inserts	Parts				
Comment	L style, Lead angle 95 °	Turning, Facing		 Clamp	 Spring	 Screw	 Shim	 Wrench

(mm)

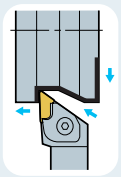
Designation		Stock R	Stock L	H	W	L*	S*	h	ℓ	Available Inserts	Clamp	Spring	Screw	Shim	Wrench
CCLNR/L	2020-K12C	○		20	20	125	25	20	32	CN □N 1204 □□	CH6R3	SR3	MHX0630	SC42CC	HW40L
	2525-M12C	●		25	25	150	32	25	32	1207 □□			SHX0310		HW20L
	3225-P12C			32	25	170	32	32	32						

* Model Insert : r=0.8

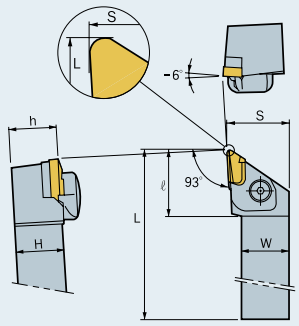
P. 51, 104

● : Stock Item ○ : Under preparing for stock

CKJNR/L



Feed direction

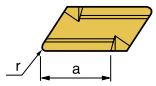


Right-hand shown

Ref	Holder Style	Application	Available Inserts
Comment	J style, Lead angle 93 °	Turning, Facing, Copy	

(mm)

Designation		Stock R	Stock L	H	W	L*	S*	h	ℓ
CKJNR	2020-K16	●		20	20	125	25	20	32
	2525-M16	●		25	25	150	32	25	32
	3225-M16			32	25	150	32	32	32
	3225-P16	●		32	25	170	32	32	32
	3232-P16	●		32	32	170	40	32	32
	4040-R16	●		40	40	200	50	40	32
CKJNL	2020-K16		●	20	20	125	25	20	32
	2525-M16		●	25	25	150	32	25	32
	3232-P16		●	32	32	170	40	32	32
	4040-R16			40	40	200	50	40	32



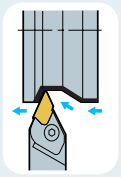
Available Inserts	Clamp	Screw for Clamp	Spring	Shim	Pin	Screw for Shim	Wrench
KN□□1604□□R	CTH6R1	CHX0625	SR3, SR4	SK33C	PN0515	SHX0310	HW20L
KN□□1604□□L	CTH6L1	CHX0625	SR3, SR4	SK33CL	PN0515	SHX0310	HW40L

* Model Insert : r=0.5

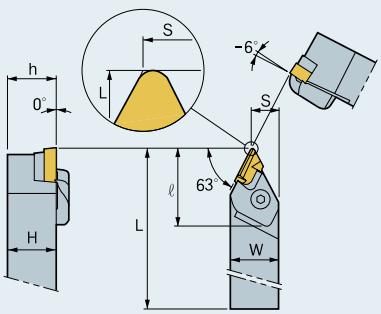
P. 61

● : Stock Item ○ : Under preparing for stock

CKNNR/L



Feed direction

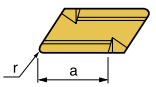


Right-hand shown

Ref	Holder Style	Application	Available Inserts
Comment	N style, Lead angle 63 °	Turning, Copy	

(mm)

Designation		Stock R	Stock L	H	W	L*	S*	h	ℓ
CKNNR	2525-M16	●		25	25	150	14.3	25	37
	3232-P16	●		32	32	170	16.8	32	37
CKNNL	2525-M16			25	25	150	14.3	25	37
	3232-P16	○	●	32	32	170	16.8	32	37



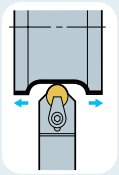
Available Inserts	Clamp	Screw for Clamp	Spring	Shim	Pin	Screw for Shim	Wrench
KN□□1604□□R	CTH6R1	CHX0625	SR3 SR4	SK33C	PN0515	SHX0310	HW20L HW40L
KN□□1604□□L	CTH6L1	CHX0625	SR3 SR4	SK33CL	PN0515	SHX0310	HW20L HW40L

* Model Insert : r=0.5

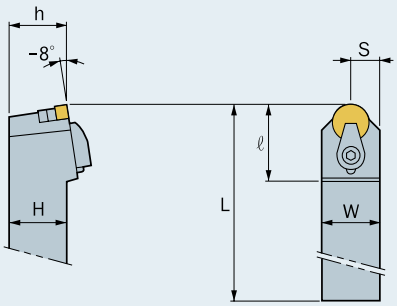
P. 61

● : Stock Item ○ : Under preparing for stock

CRDNN



Feed direction



Right-hand shown

Ref	Holder Style	Application	Available Inserts	Parts				
Comment	D style	Turning, Copy						

(mm)

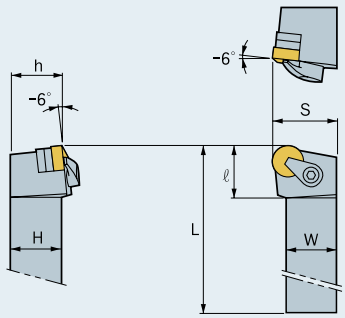
Designation		Stock	H	W	L*	S*	h	ℓ	Clamp	Spring	Screw	Shim	Wrench
CRDNN	2020-K12C	○	20	20	125	10	20	35	CH6R3	SR3	MHX0630 SHX0310	SR42CC	HW40L HW20L
	2525-M12C	●	25	25	150	12.5	25	35					
	3225-P12C		32	25	170	12.5	32	35					

Available Inserts: RN □N 1204 □□, 1207 □□

● : Stock Item ○ : Under preparing for stock

CRGNR/L

Feed direction



Right-hand shown

Ref	Holder Style	Application	Available Inserts	Parts				
Comment	G style	Turning, Facing						

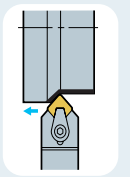
(mm)

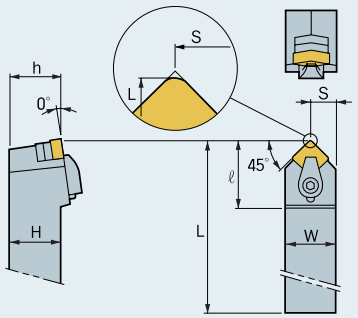
Designation		Stock		H	W	L*	S*	h	ℓ	Clamp	Spring	Screw	Shim	Wrench
		R	L											
CRGNR/L	2020-K12C			20	20	125	25	20	32	CH6R3	SR3	MHX0630 SHX0310	SR42CC	HW40L HW20L
	2525-M12C	●		25	25	150	32	25	32					
	3225-P12C			32	25	170	32	32	32					

Available Inserts: RN □N 1204 □□, 1207 □□

● : Stock Item ○ : Under preparing for stock

CSDNN


Feed direction



Right-hand shown

Ref	Holder Style	Application	Available Inserts	Parts
Comment	D style, Lead angle 45 °	Turning, Chamfering		

(mm)

Designation		Stock	H	W	L*	S*	h	ℓ
CSDNN	2020-K12C	○	20	20	125	10	20	35
	2525-M12C	●	25	25	125	12.5	25	35
	3225-P12C		32	25	170	12.5	32	35

Available Inserts: SN □N 1204 □□, 1207 □□

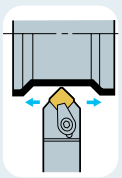
Clamp	Spring	Screw	Shim	Wrench
CH6R3	SR3	MHX0630 SHX0310	SS42CC	HW40L HW20L

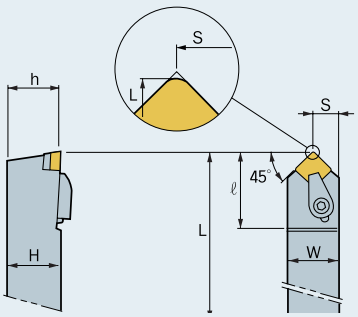
* Model Insert : r=0.8

P. 64, 71, 108, 109, 113

● : Stock Item ○ : Under preparing for stock

CSDPN


Feed direction



Right-hand shown

Ref	Holder Style	Application	Available Inserts	Parts
Comment	D style, Lead angle 45 °	Turning, Chamfering		

(mm)

Designation		Stock	H	W	L*	S*	h	ℓ
CSDPN	1616-H09	○	16	16	100	8	16	30
	2525-M12	●	25	25	150	12.5	25	35

Available Inserts: SP □R 0903 □□, SP □R 1203 □□

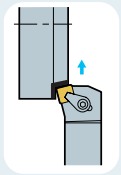
Clamp	Clamp for Screw	Shim	Pin for Shim	Ring	Wrench
CH53R1	CHX0515	SS32C	SP3C	CR04	HW25L
CH6R3	CHX0621	SS42C	SP3C	ER04	HW30L

* Model Insert : r=0.8

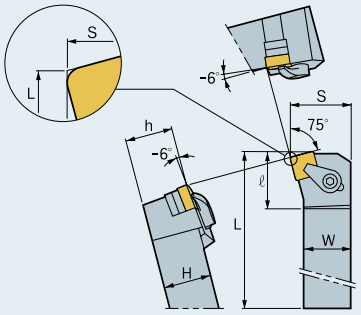
P. 73, 74

● : Stock Item ○ : Under preparing for stock

CSKNR/L



Feed direction



Right-hand shown

Ref	Holder Style	Application	Available Inserts	Parts
Comment	K style, Lead angle 75 °	Facing		

(mm)

Designation		Stock R	Stock L	H	W	L*	S*	h	ℓ
CSKNR/L	2020-K12C	○		20	20	125	25	20	25
	2525-M12C	●		25	25	150	32	25	28
	3225-P12C			32	25	170	32	32	28

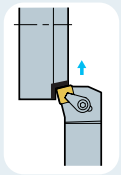
Available Inserts	Clamp	Spring	Screw	Shim	Wrench
SN □N 1204 □□ 1207 □□	CH6R3	SR3	MHX0630 SHX0310	SS42CC	HW40L HW20L

* Model Insert : r=0.8

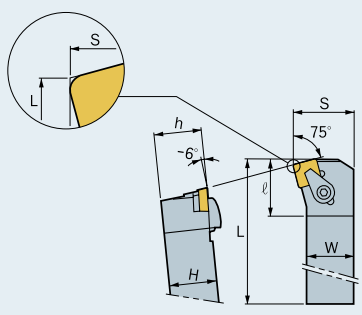
P. 64, 71, 108, 109, 113

● : Stock Item ○ : Under preparing for stock

CSKPR/L



Feed direction



Right-hand shown

Ref	Holder Style	Application	Available Inserts	Parts
Comment	K style, Lead angle 75 °	Facing		

(mm)

Designation		Stock R	Stock L	H	W	L*	S*	h	ℓ
CSKPR/L	2525-M12	●		25	25	150	32	20	32

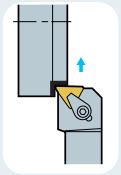
Available Inserts	Clamp	Clamp for Screw	Shim	Pin for Shim	Ring	Wrench
SP □R 1203 □□	CH6R3	CHX0621	SS42C	SP3C	ER04	HW30L

* Model Insert : r=0.8

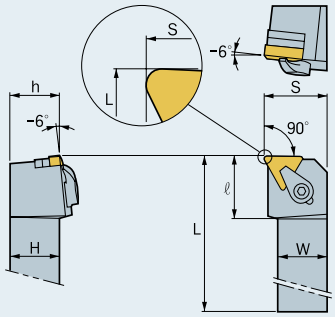
P. 73, 74

● : Stock Item ○ : Under preparing for stock

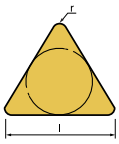
CTFNR/L



Feed direction



Right-hand shown

Ref	Holder Style	Application	Available Inserts	Parts
Comment	F style, Lead angle 90 °	Facing		

(mm)

Designation		Stock R	Stock L	H	W	L*	S*	h	ℓ	Clamp	Spring	Screw	Shim	Wrench
CTFNR/L	2020-K16C	○		20	20	125	25	20	32	CH6R3	SR3	MHX0630 SHX0310	ST32CC	HW40L HW20L
	2525-M16C	●		25	25	150	32	25	32					
	3225-P16C			32	25	170	32	32	32					

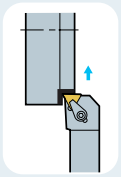
TN □N 1604 □□
1607 □□

* Model Insert : r=0.8

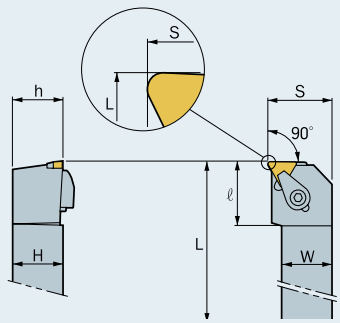
P. 109, 176, 177

● : Stock Item ○ : Under preparing for stock

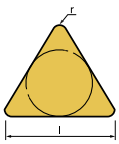
CTFPR/L



Feed direction



Right-hand shown

Ref	Holder Style	Application	Available Inserts	Parts
Comment	F style, Lead angle 90 °	Facing		

(mm)

Designation		Stock R	Stock L	H	W	L*	S*	h	ℓ	Clamp	Clamp for Screw	Shim	Pin for Shim	Ring	Wrench
CTFPR/L	2020-K16	●	●	20	20	125	25	20	32	CH6R3	CHX0621	ST32C	SP3C	ER04	HW30L
	2525-M16	●	●	25	25	150	32	25	32						

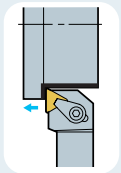
TP □R 1603 □□

* Model Insert : r=0.8

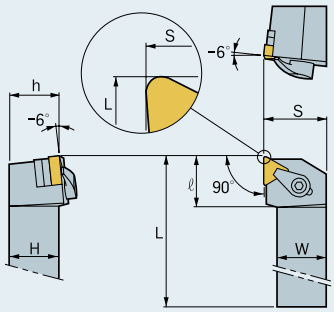
P. 85

● : Stock Item ○ : Under preparing for stock

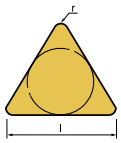
CTGNR/L



Feed direction



Right-hand shown

Ref	Holder Style	Application	Available Inserts	Parts
Comment	G style, Lead angle 90 °	Turning		    

(mm)

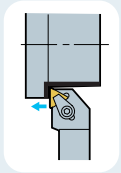
Designation		Stock R	Stock L	H	W	L*	S*	h	ℓ		Clamp	Spring	Screw	Shim	Wrench
CTGNR/L	2020-K16C	○		20	20	125	25	20	31	TN □N 1604 □□ 1607 □□	CH6R3	SR3	MHX0630 SHX0310	ST32CC	HW40L HW20L
	2525-M16C	●		25	25	150	32	25	25						
	3225-P16C			32	25	170	32	32	25						

* Model Insert : r=0.8

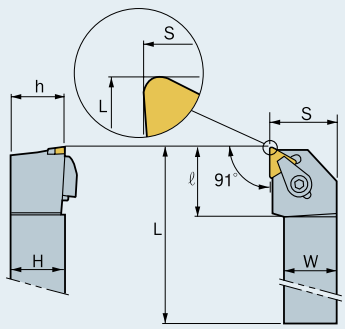
P. 109, 176, 177

● : Stock Item ○ : Under preparing for stock

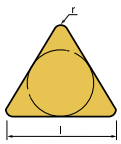
CTGPR/L



Feed direction



Right-hand shown

Ref	Holder Style	Application	Available Inserts	Parts
Comment	G style, Lead angle 90 °	Facing		     

(mm)

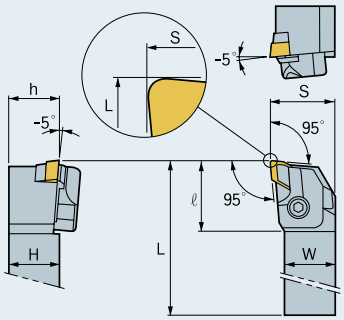
Designation		Stock R	Stock L	H	W	L*	S*	h	ℓ		Clamp	Clamp for Screw	Shim	Pin for Shim	Ring	Wrench
CTGPR/L	1212-F11	●		12	12	80	16	12	20							
	1616-H11	●		16	16	100	20	16	20	TP □R 1103 □□	CH53R1	CHX0515			CR04	HW25L
	2020-K11			20	20	125	25	25	20							
	2020-K16	●	●	20	20	125	25	25	25							
	2525-M16	●	●	25	25	150	32	25	25	TP □R 1603 □□	CH6R3	CHX0621	ST32C	SP3C	ER04	HW25L
	2525-M22	●		25	25	150	32	25	32							
	3232-P22			32	32	170	40	32	32	TP □R 2204 □□	CH83R1	CHX07822	ST43C	SP11	CR09	HW40L

* Model Insert : r=0.4(l=11) r=0.8(l=16, 22)

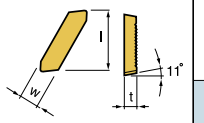
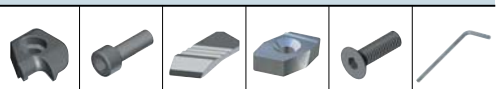
P. 85

● : Stock Item ○ : Under preparing for stock

EH



Right-hand shown

Ref	Holder Style	Application	Available Inserts	Parts
Comment	Lead angle 95 °	Turning		

(mm)

Designation		Stock	H	W	L*	S*	ℓ	Clamp	Clamp for Screw	Chip Breaker	Shim	Shim screw	Wrench
EH	620R	●	20	20	125	27	36	CTH 6R2	BHA0616	CB20	SES33C	SHX0310	HW50L-HW20L
	625R	●	25	25	150	32	36						

P. 200

● : Stock Item ○ : Under preparing for stock

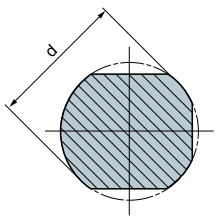
Boring Bar Code System (ISO)

S	12	M	–	S
1	2	3		4

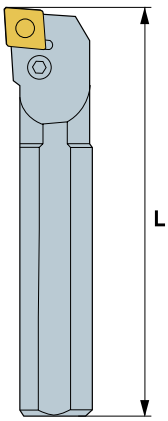
1 Type of Bar

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

2 Bar diameter

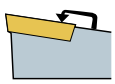
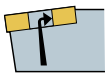
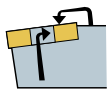
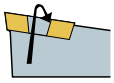


3 Bar length



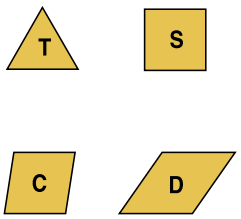
Length (L)	(mm)
H	100
K	125
M	150
N	160
Q	180
R	200
S	250
T	300
U	350
V	400

4 Method of Mounting Insert

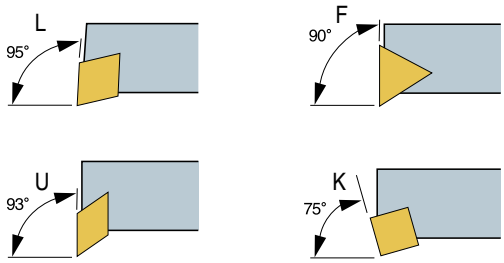
 Top Clamping	 Hole Clamping	 Top and hole clamping	 Screw on
C	P	M	S

T	F	P	R	11
5	6	7	8	9

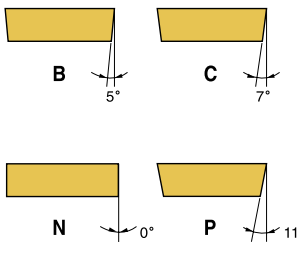
5 Insert shape



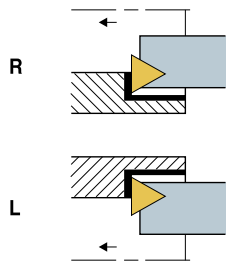
6 Lead angle of boring bar



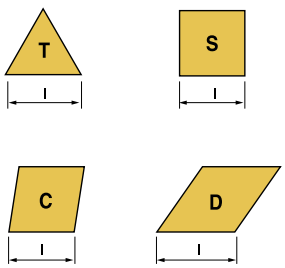
7 Relief angle of Insert



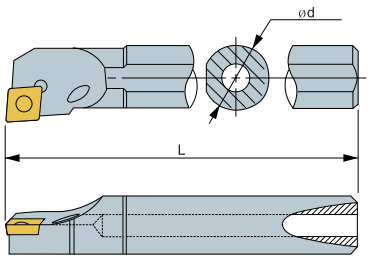
8 Hand of Bar



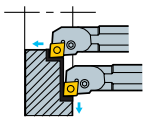
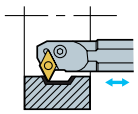
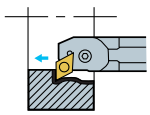
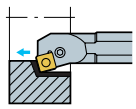
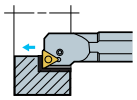
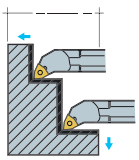
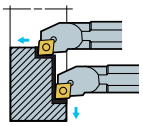
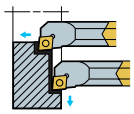
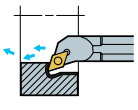
9 Length of cutting edge

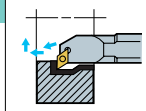
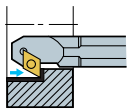
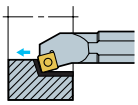
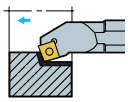
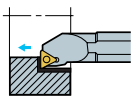
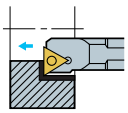
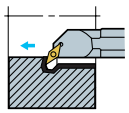
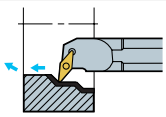
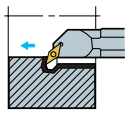
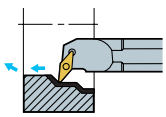


Boring bar with coolant hole



KORLOY Boring Bar Index

Cutting Shape		Designation	Facing	Copying	Through hole machining	Blind hole machining	Copying and Reliefing	Back Turning	Available Inserts
Lever lock system **PCLNR/L** P. 173		S16R-PCLNR/L 09 S20S-PCLNR/L 09 S25T-PCLNR/L 09 S25T-PCLNR/L 12 S32U-PCLNR/L 12 S40V-PCLNR/L 12	●		●	●			CN□□ 0903□□ CN□□ 1204□□ P. 45~53, 104, 107, 111, 125
PDSNR/L P. 173		S32U-PDSNR/L 15 S40V-PDSNR/L 15		●	●				DN□□ 1506□□ P. 55~60, 104, 112, 125, 107
PDUNR/L P. 174		S20S-PDUNR/L 11 S25T-PDUNR/L 11 S32U-PDUNR/L 11 S32U-PDUNR/L 15 S40V-PDUNR/L 15		●	●	●			DN□□ 1104□□ DN□□ 1506□□ P. 55~60, 104, 112, 125, 107
PSKNR/L P. 174		S25T-PSKNR/L 12 S32U-PSKNR/L 12 S40V-PSKNR/L 12			●				SN□□ 1204□□ P. 63~70, 104, 107, 112
PTFNR/L P. 175		S16R-PTFNR/L 11 S20S-PTFNR/L 11 S25T-PTFNR/L 11 S25T-PTFNR/L 16 S32T-PTFNR/L 16 S40V-PTFNR/L 16	●		●	●			TN□□ 1103□□ TN□□ 1604□□ P. 75~82, 105, 108, 112, 125
PWLNR/L P. 175		S20S-PWLNR/L 06 S25T-PWLNR/L 06 S32U-PWLNR/L 06 S25T-PWLNR/L 08 S32U-PWLNR/L 08	●		●				WN□□ 0604□□ WN□□ 0804□□ P. 91~95, 105
Screw On System **SCLCR/L** P. 176		S08K-SCLCR/L 06 S10M-SCLCR/L 06 S12M-SCLCR/L 06 S12M-SCLCR/L 09 S16R-SCLCR/L 09 S20S-SCLCR/L 09 S25T-SCLCR/L 09 S25T-SCLCR/L 12 S32U-SCLCR/L 12 S40V-SCLCR/L 12	●		●	●			CC□T 0602□□ CC□T 09T3□□ CC□T 1204□□ P. 48, 53, 54, 99, 101, 114, 119
SCLPR/L Carbide shank Steel shank P. 177		S10M-SCLPR/L 08 S12M-SCLPR/L 08 S16N-SCLPR/L 09 S16R-SCLPR/L 09 S20N-SCLPR/L 09 S20S-SCLPR/L 09	●		●	●			CP□T 0802□□ CP□T 0903□□ P. 55, 114, 119
SDQCR/L P. 178		S10M-SDQCR/L 07 S12M-SDQCR/L 07 S16R-SDQCR/L 07 S20S-SDQCR/L 11 S25T-SDQCR/L 11		●	●	●			DC□T 0702□□ DC□T 11T3□□ P. 60, 61, 99, 102, 114, 119

Cutting Shape		Designation	Facing	Copying	Through hole machining	Blind hole machining	Copying and Reliefing	Back Turning	Available Inserts
Screw On System **SDUCR/L** P. 178		S10M-SDUCR/L 07 S12M-SDUCR/L 07 S16R-SDUCR/L 07 S20S-SDUCR/L 11 S25T-SDUCR/L 11		●		●			DC□T 0702□□ DC□T 11T3□□ P. 60, 61, 99, 102, 114, 119
SDZCR/L P. 179		S25T-SDZCR/L 11 S32U-SDZCR/L 11 S40V-SDZCR/L 11		●	●				DC□T 11T3□□ P. 60, 61, 99, 102, 114, 119
SSKCR/L P. 179		S16R-SSKCR/L 09 S20S-SSKCR/L 09 S25T-SSKCR/L 12 S32U-SSKCR/L 12			●				SC□T 09T3□□ SC□T 1204□□ P. 71, 72, 100, 102, 120
SSKPR/L P. 180		S12M-SSKPR/L 09 S16N-SSKPR/L 09 S16R-SSKPR/L 09 S20N-SSKPR/L 09 S20S-SSKPR/L 09			●				SP□T 0903□□R/L 0903□□ P. 74, 120
STFCR/L P. 181		S10M-STFCR/L 09 S12M-STFCR/L 09 S12M-STFCR/L 11 S16R-STFCR/L 11 S20S-STFCR/L 11 S25T-STFCR/L 16 S32U-STFCR/L 16 S40V-STFCR/L 16	●		●	●			TC□T 0902□□ TC□T 1102□□ TC□T 16T3□□ P. 83, 84, 100, 103, 121
STFPR/L Carbide shank Steel shank P. 182		S10M-STFPR/L 11 S12M-STFPR/L 11 S16N-STFPR/L 11 S16R -STFPR/L 11 S20N-STFPR/L 16 S20S-STFPR/L 16	●		●	●			TP□T 1103□□R/L TP□T 1604□□R/L P. 86, 87, 109, 115, 121, 122
SVQBR/L P. 183		S32U-SVQBR/L 16 S40V-SVQBR/L 16					●		VB□T 1604□□ P. 90, 91, 100, 103, 110
SVUBR/L P. 183		S32U-SVUBR/L 16 S40V-SVUBR/L 16		●	●		●		VB□T 1604□□ P. 90, 91, 100, 110
SVQCR/L P. 184		S16R-SVQCR/L 11 S20S-SVQCR/L 11 S25T-SVQCR/L 11 S20S-SVQCR/L 13 S25T-SVQCR/L 13 S25T-SVQCR/L 16 S32U-SVQCR/L 16 S40V-SVQCR/L 16					●		VC□T 1103□□ VC□T 1303□□ VC□T 1604□□ P. 90, 91, 101, 103, 110, 122
SVUCR/L P. 184		S16R-SVUCR/L 11 S20S-SVUCR/L 11 S25T-SVUCR/L 11 S20S-SVUCR/L 13 S25T-SVUCR/L 13 S25T-SVUCR/L 16 S32U-SVUCR/L 16 S40V-SVUCR/L 16					●		VC□T 1103□□ VC□T 1303□□ VC□T 1604□□ P. 90, 91, 101, 103, 110, 122

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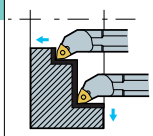
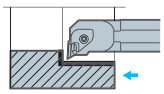
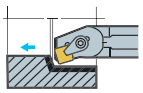
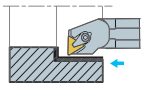
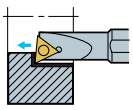
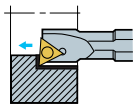
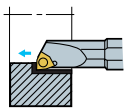
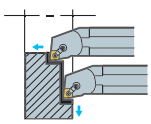
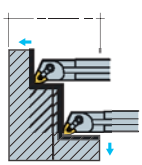
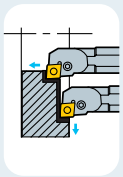
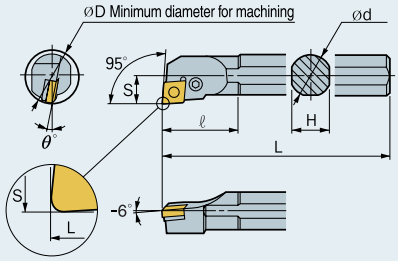
Cutting Shape		Designation	Facing	Copying	Through hole machining	Blind hole machining	Copying and Reliefing	Back Turning	Available Inserts
Screw On System **SWLCR/L** P. 185		S25T-SWLCR/L 08 S32U-SWLCR/L 08 S40V-SWLCR/L 08	●		●	●			WC□T 0804□□
Clamp on System **CKUNR/L** P. 185		S32U-CKUNR/L16 S40V-CKUNR/L16 S50W-CKUNR/L16			●				KN□□1604□□R/L P. 61
CSKPR/L P. 186		S16R-CSKPR/L09 S20S-CSKPR/L09			●				SP□R 0903□□
		S20S-CSKPR/L12 S25T-CSKPR/L12							SP□R 1203□□ P. 73, 74
CTFPR/L P. 187		S12M-CTFPR11 S16R-CTFPR11 S20S-CTFPR11			●				TP□R 1103□□
		S16R-CTFPR16 S20S-CTFPR16 S25T-CTFPR16 S32U-CTFPR16 S40V-CTFPR16							TP□R 1603□□
		S40V-CTFPR22							TP□R 2204□□ P. 85
Micro Boring Bar **STUBR/L** P. 188		S08K-STUBR/L 06	●		●	●			TB□T 060102R/L P. 82, 120
STUPR/L P. 188		S08K-STUPR/L 08	●		●	●			TP□T 0802□□R/L P. 86, 87, 109, 115, 121, 122
SWUBR/L P. 189		S05H-SWUBR/L 02 S08K-SWUBR/L 02	●		●	●			WB□T 0201□□R/L
		S08K-SWUBR/L S3							WB□T S302□□R/L P. 95
Multi Lock System **MCLNR/L** P. 190		S25T-MCLNR/L12 S32U-MCLNR/L12	●		●	●			CN□□1204□□ P. 48~53, 104, 107, 111, 125
MWLNR/L P. 190		S25T-MWLNR/L06 S25T-MWLNR/L08	●		●				WN□□ 0604□□
		S32U-MWLNR/L08 S40V-MWLNR/L08							WN□□ 0804□□ P. 91~95, 105

PCLNR/L



Feed direction



Right-hand shown

Ref	Holder Style	Application
Comment	L style, Lead angle 95 °	Facing, Through hole, Blind hole machining

(mm)

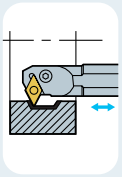
Designation	Stock R	Stock L	ØD	Ød	H	L*	S*	θ°	ℓ	Available Inserts	Lever	Screw	Shim	Pin for Shim	Wrench
S16R-PCLNR/L 09	●	●	20	16	15	200	11	-12°	28	CN □□0903 □□	LV3C	VHX0509B	-	-	HW20L
S20S-PCLNR/L 09	●	●	25	20	18	250	13	-11°	32						
S25T-PCLNR/L 09	●	○	32	25	23	300	17	-10°	36						
S25T-PCLNR/L 12	●	●	32	25	23	300	17	-12°	40	CN □□1204 □□	LV4A	VHX0613A	-	-	HW25L
S32U-PCLNR/L 12	●	●	40	32	30	350	22	-11°	50		LV4	VHX0821	SC42B	SP4	HW30L
S40V-PCLNR/L 12	●	●	50	40	37	400	27	-10°	55						
S50W-PCLNR/L 12	●	●	63	50	47	450	35	-10°	56						
S50W-PCLNR/L 19	●	●	70	50	47	450	35	-10°	63	CN □□1906 □□	LV6	VHX1027	SC63	SP6	HW40L
※ A25R-PCLNR/L 12	●	●	32	25	24	200	17	-12°	40	CN □□1204 □□	LV4A	VHX0613A	-	-	HW25L
※ A32S-PCLNR/L 12	●	●	44	32	31	250	22	-10°	50		LV4	VHX0821	SC42B	SP4	HW30L
※ A40T-PCLNR/L 12	●		50	40	47	300	27	-10°	60						

* Model Insert: r=0.8(12) r=1.2(19) ※Boring bar with coolant hole.

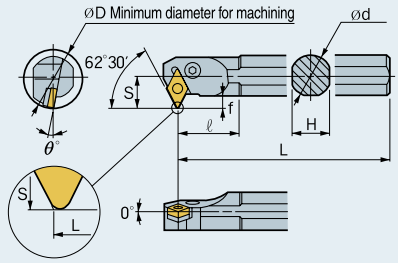
P. 48~53, 104, 107, 111, 125

● : Stock Item ○ : Under preparing for stock

PDSNR/L



Feed direction



Right-hand shown

Ref	Holder Style	Application
Comment	S style, Lead angle 62.5 °	Copy, Through hole

(mm)

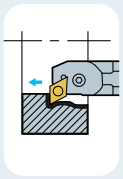
Designation	Stock R	Stock L	ØD	Ød	H	L*	S*	θ°	ℓ	f	Available Inserts	Lever	Screw	Shim	Pin for Shim	Wrench
S32U-PDSNR/L 15	●	●	40	32	30	350	22	-11°	45	8.5	DN □□1506 □□	LV4B	VHX0821	SD42	SP4	HW30L
S40V-PDSNR/L 15	●	●	50	40	37	400	27	-11°	43	9.4						
S32U-PDSNR/L 15-3			40	32	30	350	22	-11°	45	8.5	DN □□1504 □□	LV4	VHX0821	SD42	SP4	HW30L
S40V-PDSNR/L 15-3			50	40	37	400	27	-11°	43	9.4						
※ A32S-PDSNR/L 15			40	32	31	250	22	-12°	45	8.5	DN □□1506 □□	LV4B	VHX0821	SD42	SP4	HW30L
※ A32S-PDSNR/L 15-3			40	32	31	250	22	-12°	45	8.5	DN □□1504 □□	LV4	VHX0821	SD42	SP4	HW30L

* Model Insert: r=0.8 ※Boring bar with coolant hole.

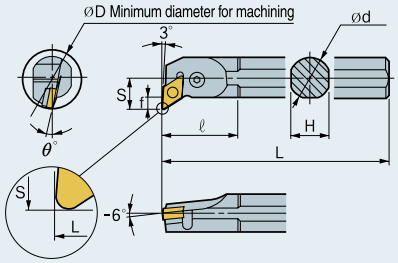
P. 55~60, 104, 107, 112, 125

● : Stock Item ○ : Under preparing for stock

PDUNR/L



Feed direction



Right-hand shown

Ref	Holder Style	Application
Comment	U style, Lead angle 93 °	Copy, Through hole, Blind hole machining

(mm)

Designation	Stock R	Stock L	ØD	Ød	H	L*	S*	θ°	ℓ	f
S20S-PDUNR/L 11	●	○	25	20	18	250	13	-16°	30	-
S25T-PDUNR/L 11	●	●	32	25	23	300	17	-13°	35	-
S32U-PDUNR/L 11			40	32	30	350	22	-16°	40	7
S32U-PDUNR/L 15	●	●	40	32	30	350	22	-16°	50	8.5
S40V-PDUNR/L 15	●	●	50	40	37	400	27	-11°	50	9.4
S50W-PDUNR/L 15	●		63	50	47	450	35	-11°	63	11.5
S32U-PDUNR/L 15-3			40	32	30	350	22	-16°	50	8.5
S40V-PDUNR/L 15-3			50	40	37	400	27	-11°	50	9.4
※ A32S-PDUNR/L 15			40	32	31	250	22	-16°	50	8.5
※ A32S-PDUNR/L 15-3			40	32	31	250	22	-16°	50	8.5

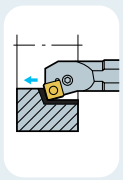
Available Inserts	Lever	Screw	Shim	Pin for Shim	Wrench
DN □□1104 □□	LV3D	VHX0512B	-	-	HW20L
	LV3	VHX0617	SD317	SP3	HW25L
DN □□1506 □□	LV4B	VHX0821	SD42	SP4	HW30L
DN □□1504 □□	LV4	VHX0821	SD42	SP4	HW30L
DN □□1506 □□	LV4B	VHX0821	SD42	SP4	HW30L
DN □□1504 □□	LV4	VHX0821	SD42	SP4	HW30L

* Model Insert : r=0.4(l=11) r=0.8(l=15) ※Boring bar with coolant hole.

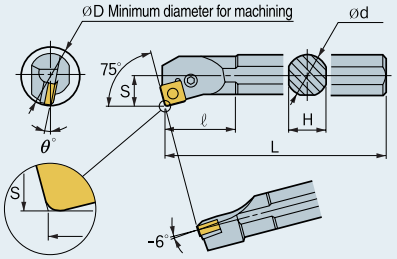
P. 55~60, 104, 107, 112, 125

●: Stock Item ○: Under preparing for stock

PSKNR/L



Feed direction



Right-hand shown

Ref	Holder Style	Application
Comment	K style, Lead angle 75 °	Through hole

(mm)

Designation	Stock R	Stock L	ØD	Ød	H	L*	S*	θ°	ℓ
S25T-PSKNR/L 12	●	●	32	25	23	300	17	-12°	42
S32U-PSKNR/L 12	●	○	40	32	30	350	22	-12°	45
S40V-PSKNR/L 12	●	○	50	40	37	400	27	-12°	50
※ A25R-PSKNR/L 12			32	25	24	200	17	-12°	42
※ A32S-PSKNR/L 12			40	32	31	250	22	-12°	50

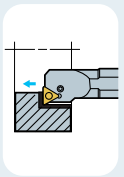
Available Inserts	Lever	Screw	Shim	Pin for Shim	Wrench
SN □□1204 □□	LV4A	VHX0613A	-	-	HW25L
	LV4	VHX0821	SS42B	SP4	HW30L
	LV4A	VHX0613A	-	-	HW25L
	LV4	VHX0821	SS42B	SP4	HW30L

* Model Insert : r=0.8 ※Boring bar with coolant hole.

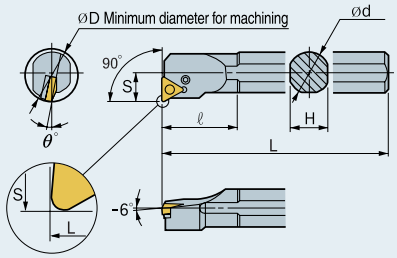
P. 63~70, 104, 107, 112

●: Stock Item ○: Under preparing for stock

PTFNR/L



Feed direction



Right-hand shown

Ref	Holder Style	Application
Comment	F style, Lead angle 90 °	Facing, Through hole, Blind hole machining

(mm)

Designation	Stock R	Stock L	øD	ød	H	L*	S*	θ°	ℓ
S16R-PTFNR/L 11	●		20	16	15	200	11	-14°	28
S20S-PTFNR/L 11	●		25	20	18	250	13	-12°	33
S25T-PTFNR/L 11	●		32	25	23	300	17	-12°	36
S25T-PTFNR/L 16	●	●	32	25	23	300	17	-12°	42
S32U-PTFNR/L 16	●	●	44	32	30	350	22	-10°	50
S40V-PTFNR/L 16	●		54	40	37	400	27	-10°	55
※ A25R-PTFNR/L 16			32	25	24	200	17	-12°	40
※ A32S-PTFNR/L 16			40	32	31	250	22	-12°	50

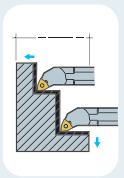
Available Inserts	Lever	Screw	Shim	Pin for Shim	Wrench
TN □□1103 □□	LV2	VHX0509B	-	-	HW20L
	LV3B	VHX0512B	-	-	HW20L
TN □□1604 □□	LV3	VHX0617	ST317B	SP3	HW25L
	LV3	VHX0617	ST317B	SP3	HW25L
	LV3	VHX0617	ST317B	SP3	HW25L

* Model Insert : r=0.8 ※Boring bar with coolant hole.

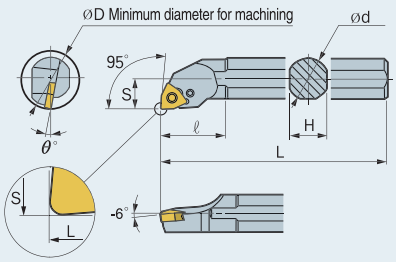
P. 75~82, 105, 108, 112, 125

● : Stock Item ○ : Under preparing for stock

PWLNR/L



Feed direction



Right-hand shown

Ref	Holder Style	Application
Comment	L style, Lead angle 95 °	Facing, Through hole, Blind hole machining

(mm)

Designation	Stock R	Stock L	øD	ød	H	L*	S*	θ°	ℓ
S16Q-PWLNR/L 06			20	16	15	180	11	-16°	40
S16R-PWLNR/L 06	○		20	16	15	200	11	-16°	40
S20R-PWLNR/L 06			25	20	18	200	13	-12°	40
S20S-PWLNR/L 06	●	●	25	20	18	250	13	-12°	40
S25R-PWLNR/L 06			32	25	23	200	17	-12°	40
S25S-PWLNR/L 06			32	25	23	250	17	-12°	40
S25T-PWLNR/L 06	●		32	25	23	300	17	-12°	40
S32U-PWLNR/L 06	●		44	32	30	350	22	-10°	45
S25S-PWLNR/L 08			32	25	23	250	17	-12°	40
S25T-PWLNR/L 08	●	●	32	25	23	300	17	-12°	45
S32S-PWLNR/L 08			44	32	30	250	22	-10°	50
S32U-PWLNR/L 08	●	●	44	32	30	350	22	-10°	50
S40T-PWLNR/L 08			54	40	37	300	27	-10°	55

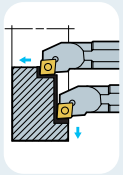
Available Inserts	Lever	Screw	Shim	Pin for Shim	Wrench
WN □□0604 □□	LV3B	VHX0512B	-	-	HW20L
	LV3B	VHX0512B	-	-	HW20L
	LV3B	VHX0512B	-	-	HW20L
	LV3B	VHX0512B	-	-	HW20L
	LV3B	VHX0512B	-	-	HW20L
	LV3B	VHX0512B	-	-	HW20L
	LV3B	VHX0512B	-	-	HW20L
	LV3	VHX0617	SW317	SP3	HW25L
	LV4A	VHX0613A	-	-	HW25L
	LV4A	VHX0613A	-	-	HW25L
WN □□0804 □□	LV4	VHX0821	SW42	SP4	HW30L
	LV4	VHX0821	SW42	SP4	HW30L
	LV4	VHX0821	SW42	SP4	HW30L

* Model Insert : r=0.8

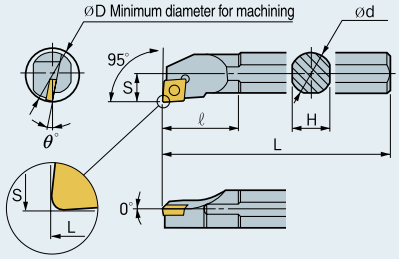
P. 91~95, 105

● : Stock Item ○ : Under preparing for stock

SCLCR/L



Feed direction

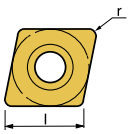


Right-hand shown

Ref	Holder Style	Application
Comment	L style, Lead angle 95 °	Facing, Through hole, Blind hole machining

(mm)

Designation	Stock R	Stock L	ØD	Ød	H	L*	S*	θ°	ℓ
S08K-SCLCR/L 06	●	●	10	8	7	125	5	-15°	14
S10K-SCLCR/L 06	●	○	12	10	9	125	6	-13°	14
S10M-SCLCR/L 06	●	●	12	10	9	150	6	-13°	14
S12M-SCLCR/L 06	●	●	16	12	11	150	9	-10°	25
S16R-SCLCR/L 06			20	16	15	200	11	-8°	32
S12M-SCLCR/L 09	●	●	16	12	11	150	9	-10°	25
S16R-SCLCR/L 09	●	●	20	16	15	200	11	-12°	32.5
S20S-SCLCR/L 09	●	●	25	20	18	250	13	-8°	38
S25T-SCLCR/L 09	●	●	32	25	23	300	17	-6°	45
S25T-SCLCR/L 12	●	●	32	25	23	300	17	-6°	45
S32U-SCLCR/L 12	●	●	40	32	30	350	22	-10°	50
S40V-SCLCR/L 12	●	●	50	40	37	400	27	-8°	60
※ A08F-SCLCR/L 06			10	8	7.5	80	5	-15°	14
※ A10H-SCLCR/L 06			12	10	9.5	100	6	-13°	14
※ A12K-SCLCR/L 06			16	12	11	125	9	-10°	25
※ A12K-SCLCR/L 09			16	12	11	125	9	-10°	25
※ A16M-SCLCR/L 09			20	16	15	150	11	-12°	32.5
※ A20Q-SCLCR/L 09	●		25	20	19	180	12	-8°	38
※ A25R-SCLCR/L 09			32	25	24	200	17	-6°	45
※ A25R-SCLCR/L 12			32	25	24	200	17	-6°	45
※ A32S-SCLCR/L 12	●		40	32	31	250	22	-10°	50
★ C08K-SCLCR/L 06			10	8	7	125	5	-15°	14
★ C10K-SCLCR/L 06			12	10	9	125	6	-13°	14
★ C12M-SCLCR/L 09			16	12	11	150	9	-12°	25
★ C16R-SCLCR/L 09			20	16	15	200	11	-12°	32
★ C20S-SCLCR/L 09			25	20	18	250	13	-8°	38
☆ C04G-SCLCR/L 0305	●		5	4	3.8	90	2.5	-15°	-
☆ C05H-SCLCR/L 0306	●		6	5	4.4	100	3.0	-13°	-
☆ C06J-SCLCR/L 0407	●		7	6	5.4	110	3.5	-13°	-
☆ C07K-SCLCR/L 0408	●		8	7	6.4	120	4.0	-11°	-
☆ S10H-SCLCR/L 0305	●		5	10	9	100	2.5	-15°	25
☆ S10H-SCLCR/L 0306	●		6	10	9	100	3.0	-13°	25
☆ S10J-SCLCR/L 0407	●		7	10	9	110	3.5	-13°	30
☆ S10J-SCLCR/L 0408	●		8	10	9	110	4.0	-11°	30



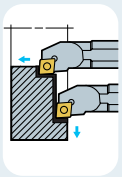
Available Inserts	Screw	Shim	Screw for Shim	Wrench
CC □T 0602 □□	FTKA02555	-	-	TW07P
CC □T 09T3 □□	FTGA03508	-	-	TW15P
	FTGA03510			
CC □T 1204 □□	FTGA0411F	-	-	TW15P
		SC42S	SHXN0610F	HW40L, TW15P
CC □T 0602 □□	FTKA02565	-	-	TW07P
CC □T 09T3 □□	FTGA03508	-	-	TW15P
	FTGA03510			
CC □T 1204 □□	FTGA0411F	-	-	TW15P
		SC42S	SHXN0610F	HW40L,TW15P
CC □T 0602 □□	FTKA02565F	-	-	TW07P
CC □T 09T3 □□	FTGA03508	-	-	TW15P
CC □T 0301 □□	FTNA01633	-	-	TW06P
CC □T 0401 □□	FTNA0238	-	-	
CC □T 0301 □□	FTNA01633	-	-	TW06P
CC □T 0401 □□	FTNA0238	-	-	

* Model Insert: r=0.4(06, 09) r=0.8(12) ※Boring bar with coolant hole. ★Boring bar with carbide shank

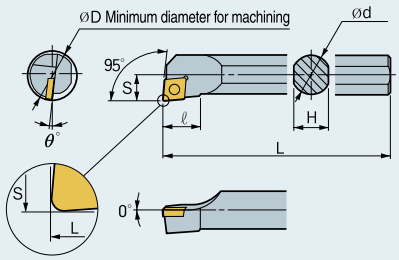
P. 48, 53, 54, 99, 101, 114, 119

● : Stock Item ○ : Under preparing for stock

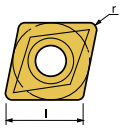
SCLPR/L



Feed direction



Right-hand shown

Ref	Holder Style	Application	Available Inserts	Parts	
Comment	L style, Lead angle 95 °	Facing, Through hole, Blind hole machining		 Screw	 Wrench

(mm)

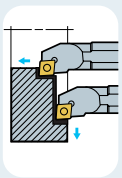
Designation	Stock R	Stock L	ØD	Ød	H	L*	S*	θ°	ℓ	Available Inserts	Screw	Wrench
S10M-SCLPR/L 08	●		12	10	9	150	6	-5°	-	CP □T 0802 □□	FTNA0305 FTNA0307	TW09P
S12M-SCLPR/L 08	●		16	12	11	150	8	-2°	15			
S16N-SCLPR/L 09	●		20	16	15	160	10	-2°	15	CP □T 0903 □□	FTNA0408	TW15P
S16R-SCLPR/L 09	●		20	16	15	200	10	-2°	15			
S20N-SCLPR/L 09	●		25	20	18	160	12.5	0°	20			
S20S-SCLPR/L 09	●		25	20	18	250	12.5	0°	20			
※ A10H-SCLPR/L 08			12	10	9.5	100	6	-5°	-	CP □T 0802 □□	FTNA0305	TW09P
※ A12K-SCLPR/L 08			16	12	11	125	8	-2°	20			
※ A16M-SCLPR/L 09			20	16	15	150	10	-2°	15	CP □T 0903 □□	FTNA0408	TW15P
※ A20Q-SCLPR/L 09			25	20	19	180	12.5	0°	28			

* Model Insert: r=0.4(l=08) r=0.8(l=09) ※Boring bar with coolant hole.

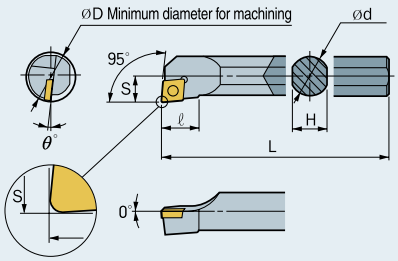
P. 55, 114, 119

● : Stock Item ○ : Under preparing for stock

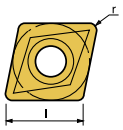
SCLPR/L (Carbide Shank)



Feed direction



Right-hand shown

Ref	Holder Style	Application	Available Inserts	Parts	
Comment	L style, Lead angle 95 °	Facing, Through hole, Blind hole machining		 Screw	 Wrench

(mm)

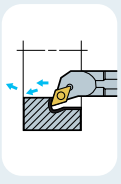
Designation	Stock R	Stock L	ØD	Ød	H	L*	S*	θ°	ℓ	Available Inserts	Screw	Wrench
C10M-SCLPR/L 08	○		12	10	9	150	6	-5°	18	CP □T 0802 □□	FTNA0305 FTNA0307	TW09P
C12M-SCLPR/L 08			16	12	11	150	8	-2°	18			
C16R-SCLPR/L 09	○		20	16	15	200	10	-2°	15	CP □T 0903 □□	FTNA0408	TW15P
C20S-SCLPR/L 09			25	20	18	250	12.5	0°	20			
※ E10M-SCLPR/R 08			12	10	9.5	150	6	-5°	18	CP □T 0802 □□	FTNA0305	TW09P
※ E12M-SCLPR/L 08	○		16	12	11	150	8	-2°	18			
※ E16R-SCLPR/L 09			20	16	15	200	10	-2°	20	CP □T 0903 □□	FTNA0407 FTNA0408	TW15P
※ E20S-SCLPR/L 09	○		25	20	19	250	12.5	0°	25			

* Model Insert: r=0.4(l=08) r=0.8(l=09) ※Boring bar with coolant hole.

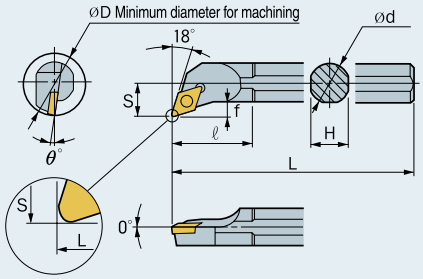
P. 55, 114, 119

● : Stock Item ○ : Under preparing for stock

SDQCR/L



Feed direction



Right-hand shown

Ref	Holder Style	Application
Comment	Q style, Lead angle 108 °	Facing, Through hole, Blind hole machining

(mm)

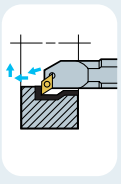
Designation	Stock R	Stock L	ØD	Ød	H	L*	S*	θ°	ℓ	f	Available Inserts	Screw	Wrench
S10M-SDQCR/L 07	●	●	13	10	9	150	7	-8°	20	2.5	DC □T 0702 □□	FTKA02555	TW07P
S12M-SDQCR/L 07	●	●	16	12	11	150	9	-8°	22	3.5		FTKA02565	
S16R-SDQCR/L 07	●	●	20	16	15	200	11	-6°	27	4.0			
S16R-SDQCR/L 11	●	●	20	16	15	200	11	-6°	32	4.0	DC □T 11T3 □□	FTGA03508	TW15P
S20S-SDQCR/L 11	●	●	25	20	18	250	13	-6°	32	4.5			
S25T-SDQCR/L 11	●	●	32	25	23	300	17	-6°	32	7.0		FTGA03510	
※ A10H-SDQCR/L 07			13	10	9.5	100	7	-8°	20	2.0	DC □T 0702 □□	FTKA02555	TW07P
※ A12K-SDQCR/L 07	○		16	12	11	125	9	-8°	22	3.0		FTKA02565	
※ A16M-SDQCR/L 11			20	16	15	150	11	-6°	27	3.0	DC □T 11T3 □□	FTGA03508	TW15P
※ A20Q-SDQCR/L 11			25	20	19	180	13	-6°	32	3.0			
※ A25R-SDQCR/L 11	○		32	25	24	200	17	-6°	32	4.0		FTGA03510	

* Model Insert: r=0.4(l=7) r=0.8(l=11) ※Boring bar with coolant hole.

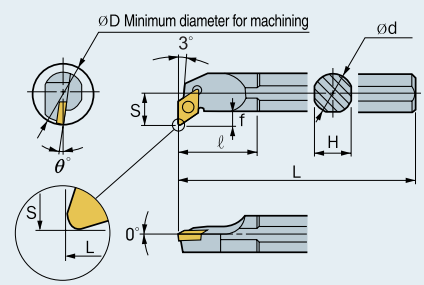
P. 60, 61, 99, 102, 114, 119

●: Stock Item ○: Under preparing for stock

SDUCR/L



Feed direction



Right-hand shown

Ref	Holder Style	Application
Comment	U style, Lead angle 93 °	Facing, Through hole, Blind hole machining

(mm)

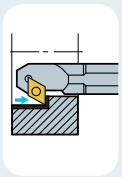
Designation	Stock R	Stock L	ØD	Ød	H	L*	S*	θ°	ℓ	f	Available Inserts	Screw	Wrench
S10M-SDUCR/L 07	●	●	13	10	9	150	7	-8°	0	2.5	DC □T 0702 □□	FTKA02555	TW07P
S12M-SDUCR/L 07	●	●	16	12	11	150	9	-8°	22	3.5		FTKA02565	
S16R-SDUCR/L 07	●	●	20	16	15	200	11	-6°	27	4.0			
S16R-SDUCR/L 11	●	●	20	16	15	200	11	-8°	27	4.0	DC □T 11T3 □□	FTGA03508	TW15P
S20S-SDUCR/L 11	●	●	25	20	18	250	13	-6°	40	4.3			
S25T-SDUCR/L 11	●	●	32	25	23	300	17	-6°	46	6.8		FTGA03510	
S32U-SDUCR/L 11	●	●	40	32	30	350	22	-6°	50	8.4			
※ A10H-SDUCR/L 07			13	10	9.5	100	7	-8°	0	2.0	DC □T 0702 □□	FTKA02555	TW07P
※ A12K-SDUCR/L 07	○		16	12	11	125	9	-8°	22	3.0		FTKA02565	
※ A16M-SDUCR/L 07			20	16	15	150	11	-6°	27	3.0			
※ A20Q-SDUCR/L 11	●		25	20	19	180	13	-6°	35	3.0	DC □T 11T3 □□	FTGA03510	TW15P
※ A25R-SDUCR/L 11			32	25	24	200	17	-6°	46	4.5		FTGA03510	

* Model Insert: r=0.4(l=7) r=0.8(l=11) ※Boring bar with coolant hole.

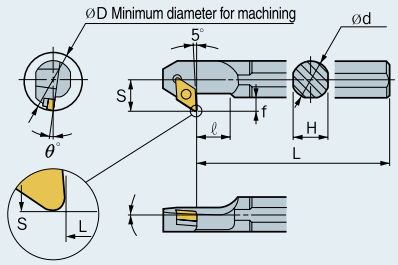
P. 60, 61, 99, 102, 114, 119

●: Stock Item ○: Under preparing for stock

SDZCR/L



Feed direction



Right-hand shown

Ref	Holder Style	Application
Comment	Z style, Lead angle 85 °	Copy, Blind hole machining

(mm)

Designation	Stock R	Stock L	ØD	Ød	H	L*	S*	θ°	ℓ	f
S16R-SDZCR/L 07	●		20	16	15	200	11	-6°	20	4.0
S20S-SDZCR/L 07	●		25	20	18	250	13	-6°	25	4.5
S25T-SDZCR/L 11	●		32	25	23	300	17	-6°	30	6.9
S32U-SDZCR/L 11	●		40	32	30	350	22	-6°	39	8.4
S40V-SDZCR/L 11			50	40	37	400	27	-4°	47	9.4
※ A25R-SDZCR/L 11			32	25	24	200	17	-6°	30	4.5
※ A32S-SDZCR/L 11	○		40	32	31	250	22	-6°	39	6.0

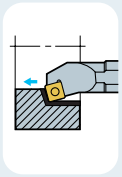
Available Inserts	Screw	Shim	Screw for Shim	Wrench
DC □T 0702 □□	FTGA02565	-	-	TW07P
	FTGA03510	-	-	TW15P
DC □T 11T3 □□	FTGA03512	SD32S	SHXN0509F	TW15P,HW35L
	FTGA03510	-	-	TW15P
	FTGA03512	SD32S	SHXN0509F	TW15P,HW35L

* Model Insert: r=0.4(l=07) r=0.8(l=11) ※Boring bar with coolant hole.

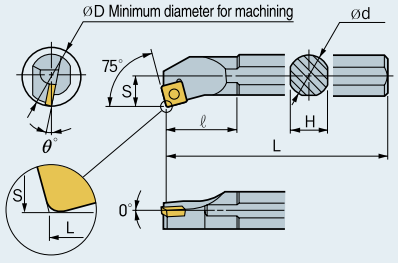
P. 60, 61, 99, 102, 114, 119

● : Stock Item ○ : Under preparing for stock

SSKCR/L



Feed direction



Right-hand shown

Ref	Holder Style	Application
Comment	K style, Lead angle 75 °	Through hole machining

(mm)

Designation	Stock R	Stock L	ØD	Ød	H	L*	* S	θ°	ℓ
S12M-SSKCR/L 09	●		16	12	11	150	9	-10°	26
S16R-SSKCR/L 09	●		20	16	15	200	11	-11°	32
S20S-SSKCR/L 09	●		25	20	18	250	13	-8°	34
S25T-SSKCR/L 12	●	●	32	25	23	300	17	-8°	36
S32U-SSKCR/L 12	●		40	32	30	350	22	-10°	43
※ A12K-SSKCR/L 09			16	12	11	125	9	-10°	26
※ A16M-SSKCR/L 09			20	16	15	150	11	-11°	32
※ A20Q-SSKCR/L 09	○		25	20	19	180	12	-8°	34
※ A25R-SSKCR/L 12			32	25	24	200	17	-8°	36
※ A32S-SSKCR/L 12	○		40	32	31	250	22	-10°	43

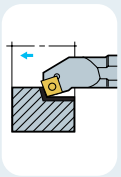
Available Inserts	Screw	Shim	Screw for Shim	Wrench
SC □T 09T3 □□	FTGA03508	-	-	TW15P
SC □T 1204 □□	FTGA0411F	SS42S	SHXN0610F	TW15P,HW40L
SC □T 09T3 □□	FTGA03507	-	-	TW15P
	FTGA03508			
SC □T 1204 □□	FTGA0411F	SS42S	SHXN0610F	TW15P
				TW15P,HW40L

* Model Insert: r=0.8 ※Boring bar with coolant hole.

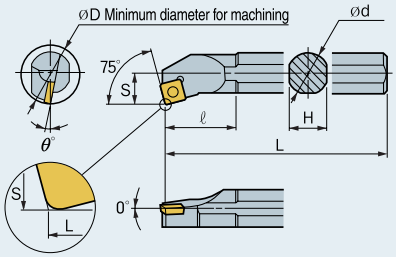
P. 71, 72, 100, 102, 120

● : Stock Item ○ : Under preparing for stock

SSKPR/L



Feed direction

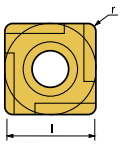


Right-hand shown

Ref	Holder Style	Application
Comment	K style, Lead angle 75 °	Through machining

(mm)

Designation	Stock R	Stock L	ØD	Ød	H	L*	S*	θ°	ℓ
S12M-SSKPR/L 09	●	●	16	12	11	150	8	-4°	18
S16N-SSKPR/L 09	●	●	20	16	15	160	10	-2°	30
S16R-SSKPR/L 09	●		20	16	15	200	10	-2°	32
S20N-SSKPR/L 09	●	●	25	20	18	160	12.5	0°	32
S20S-SSKPR/L 09	●		25	20	18	250	12.5	0°	35
X12M-SSKPR/L 09			16	12	11	150	8	-4°	18
X16N-SSKPR/L 09			20	16	15	160	10	-2°	30
X16R-SSKPR/L 09			20	16	15	200	10	-2°	32
X20N-SSKPR/L 09			25	20	18	160	12.5	0°	32
X20S-SSKPR/L 09			25	20	18	250	12.5	0°	32
※ A12K-SSKPR/L 09			16	12	11	125	8	-4°	21
※ A16M-SSKPR/L 09			20	16	15	150	10	-2°	30
※ A20Q-SSKPR/L 09	○		25	20	19	180	12.5	0°	32

Available Inserts	Parts: Screw	Parts: Wrench
		
SP□T 0903 □□R/L	FTNA0307	TW09P
SP□T 0903 □□C05	FTGA03508	TW15P
SP□T 0903 □□R/L	FTNA0305 FTNA0307	TW09P

* Model Insert: r=0.8

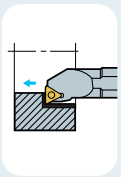
• Use left hand insert for right hand holder.

※Boring bar with coolant hole.

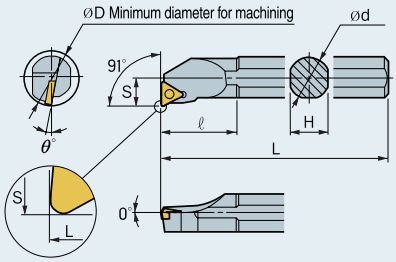
P. 74, 120

●: Stock Item ○: Under preparing for stock

STFCR/L



Feed direction



Right-hand shown

Ref	Holder Style	Application
Comment	F style, Lead angle 91 °	Facing, Through hole, Blind hole machining

(mm)

Designation	Stock R	Stock L	ØD	Ød	H	L*	S*	θ°	ℓ
S10M-STFCR/L 09	●	●	13	10	9	150	7	-13°	23
S12M-STFCR/L 09	●		16	12	11	150	9	-10°	28
S12M-STFCR/L 11	●	●	16	12	11	150	9	-10°	30
S16R-STFCR/L 11	●	●	20	16	15	200	11	-6°	35
S20S-STFCR/L 11	●	●	25	20	18	250	13	-3°	36
S20S-STFCR/L 16	●		25	20	18	250	13	-10°	40
S25T-STFCR/L 16	●	●	32	25	23	300	17	-6°	49
S32U-STFCR/L 16	●		40	32	30	350	22	-10°	50
S40V-STFCR/L 16	●		50	40	37	400	27	-8°	60
※ A10H-STFCR/L 09			13	10	9.5	100	7	-13°	23
※ A12K-STFCR/L 09			16	12	11	125	9	-10°	28
※ A12K-STFCR/L 11			16	12	11	125	9	-10°	30
※ A16M-STFCR/L 11	●		20	16	15	150	11	-6°	35
※ A20Q-STFCR/L 11			25	20	19	180	13	-3°	36
※ A25R-STFCR/L 16	○		32	25	24	200	17	-6°	49
※ A32S-STFCR/L 16			40	32	31	250	22	-10°	50

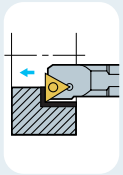
Available Inserts	Screw	Shim	Screw for Shim	Wrench
TC □T 0902 □□	FTKA02206	-	-	TW06P
TC □T 1102 □□	FTKA02565	-	-	TW07P
TC □T 16T3 □□	FTGA03510	-	-	TW15P
	FTGA03512	ST32S	SHXN0509F	TW15P, HW35L
TC □T 0902 □□	FTKA02206	-	-	TW06P
TC □T 1102 □□	FTKA02565	-	-	TW07P
TC □T 16T3 □□	FTKA03510	-	-	TW15P
	FTGA03512	ST32S	SHXN0509F	TW15P, HW35L

* Model Insert: r=0.4(l=09, 11) r=0.8(l=16) ※Boring bar with coolant hole.

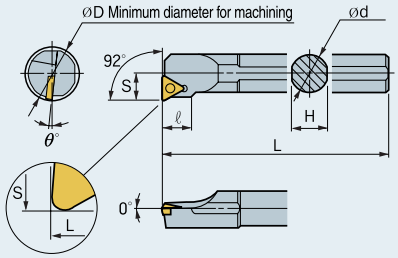
P. 83, 84, 100, 103, 121

● : Stock Item ○ : Under preparing for stock

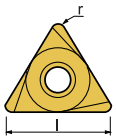
STFPR/L



Feed direction



Right-hand shown

Ref	Holder Style	Application	Available Inserts	Parts	
Comment	F style, Lead angle 92 °	Facing, Through hole, Blind hole machining			

(mm)

Designation	Stock R	Stock L	ØD	Ød	H	L*	S*	θ°	ℓ	Screw	Wrench
S10M-STFPR/L 11	●		12	10	9	150	6	- 5°	-	FTNA0305	TW09P
S12M-STFPR/L 11	●		16	12	11	150	8	- 4°	10	TP □T 1103 □□	
S16N-STFPR/L 11	●		20	16	15	160	10	- 2°	12	FTNA0307	TW09P
S16R-STFPR/L 11	●	●	20	16	15	200	10	- 2°	12		
S20N-STFPR/L 16	●		25	20	18	160	12.5	0°	14	TP □T 1604 □□	FTNA0408 TW15P
S20S-STFPR/L 16	●		25	20	18	250	12.5	0°	14		
※ A10H-STFPR/L 11			12	10	9.5	100	6	- 5°	-	FTNA0305	TW09P
※ A12K-STFPR/L 11			16	12	11	125	8	- 4°	10	TP □T 1103 □□	FTNA0307 TW09P
※ A16M-STFPR/L 11			20	16	15	150	10	- 2°	12		
※ A20Q-STFPR/L 16			25	20	19	180	12.5	0°	14	TP □T 1604 □□	FTNA0408 TW15P

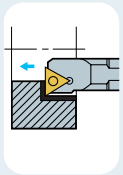
* Model Insert: r=0.8 • Use left hand insert for right hand holder.

※Boring bar with coolant hole.

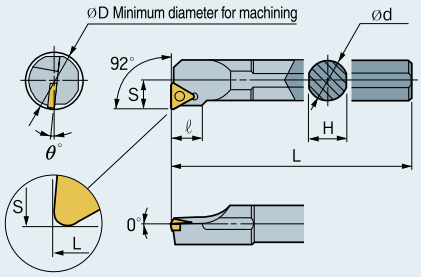
P. 86, 87, 109, 115, 121, 122

● : Stock Item ○ : Under preparing for stock

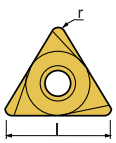
STFPR/L (Carbide shank)



Feed direction



Right-hand shown

Ref	Holder Style	Application	Available Inserts	Parts	
Comment	F style, Lead angle 92 °	Facing, Through hole, Blind hole machining			

(mm)

Designation	Stock R	Stock L	ØD	Ød	H	L*	S*	θ°	ℓ	Screw	Wrench
C10M-STFPR/L 11			12	10	9	150	6	-5°	-	FTNA0305	TW09P
C12M-STFPR/L 11	○		16	12	11	150	8	-4°	-	TP □T 1103 □□	
C16R-STFPR/L 11			20	16	15	200	10	-2°	12	FTNA0307	TW09P
C20S-STFPR/L 16	○		25	20	18	250	12.5	0°	14	TP □T 1604 □□	FTNA0408 TW15P
※ E10M-STFPR/L 11			12	10	9.5	150	6	-5°	-	FTNA0305	TW09P
※ E12M-STFPR/L 11			16	12	11	150	8	-4°	-	TP □T 1103 □□	FTNA0307 TW09P
※ E16R-STFPR/L 11	○		20	16	15	200	10	-2°	12		
※ E20S-STFPR/L 16	○		25	20	19	250	12.5	0°	14	TP □T 1604 □□	FTNA0408 TW15P

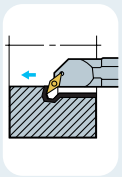
* Model Insert: r=0.8 • Use left hand insert for right hand holder.

※Boring bar with coolant hole.

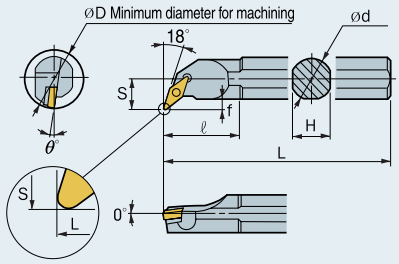
P. 86, 87, 109, 115, 121, 122

● : Stock Item ○ : Under preparing for stock

SVQBR/L



Feed direction

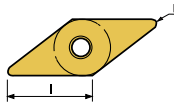


Right-hand shown

Ref	Holder Style	Application
Comment	Q style, Lead angle 108 °	Copy, Reliefing

(mm)

Designation	Stock R	Stock L	ØD	Ød	H	L*	S*	θ°	ℓ	f
S32U-SVQBR/L 16	●	●	40	32	30	350	22	- 8°	56	8.4
S40V-SVQBR /L 16	●		50	40	37	400	27	- 8°	64	9.4
※ A32S-SVQBR /L 16			40	32	31	250	22	- 8°	56	8.4

Available Inserts: 

VB □T 1604 □□

Parts

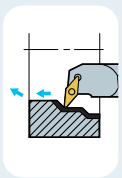
Screw	Shim	Screw for Shim	Wrench
FTGA03512	SV32S	SHXN0509F	TW15P, HW35L

* Model Insert : r=0.8 ※Boring bar with coolant hole.

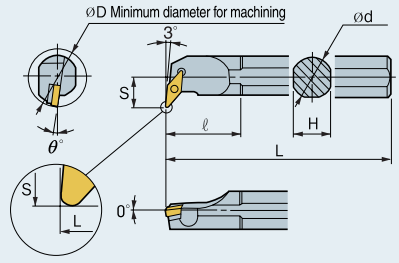
P. 90, 91, 100, 103, 110

● : Stock Item ○ : Under preparing for stock

SVUBR/L



Feed direction

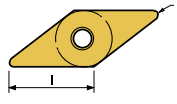


Right-hand shown

Ref	Holder Style	Application
Comment	U style, Lead angle 93 °	Copy

(mm)

Designation	Stock R	Stock L	ØD	Ød	H	L*	S*	θ°	ℓ	f
S32U-SVUBR/L 16	●	●	40	32	30	350	22	- 8°	49	8.4
S40V-SVUBR/L 16	●		50	40	37	400	27	- 8°	56	9.4
※ A32S-SVUBR/L 16			40	32	31	250	22	- 8°	49	8.4

Available Inserts: 

VB □T 1604 □□

Parts

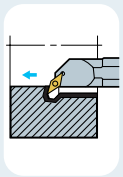
Screw	Shim	Screw for Shim	Wrench
FTGA03512	SV32S	SHXN0509F	TW15P, HW35L

* Model Insert : r=0.8 ※Boring bar with coolant hole.

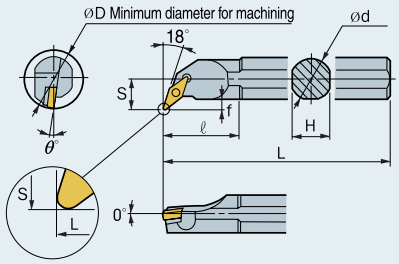
P. 90, 91, 100, 110

● : Stock Item ○ : Under preparing for stock

SVQCR/L



Feed direction



Right-hand shown

Ref	Holder Style	Application
Comment	Q style, Lead angle 108 °	Copy, Reliefing

(mm)

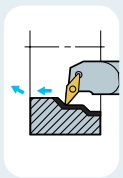
Designation	Stock R	Stock L	ØD	Ød	H	L*	* S	θ°	ℓ	Available Inserts	Screw	Shim	Screw for Shim	Wrench
S16R-SVQCR/L 11	●		20	16	15	200	11	-7°	35	VC □T1103 □□	FTKA02565	-	-	TW07P
S20S-SVQCR/L 11			25	20	18	250	13	-6°	38					
S25T-SVQCR/L 11			32	25	23	300	17	-6°	42					
S20S-SVQCR/L 13	●		25	20	18	250	13	-6°	42	VC □T1303 □□	FTKA0307	-	-	TW09P
S25T-SVQCR/L 13			32	25	23	300	17	-6°	45					
S25T-SVQCR/L 16	●	●	32	25	23	300	17	-6°	50	VC □T1604 □□	FTGA03510	-	-	TW15P
S32U-SVQCR/L 16	●		40	32	30	350	22	-8°	56		FTGA03512	SV32S	SHXN0509F	TW15P HW35L
S40V-SVQCR/L 16			50	40	37	400	27	-8°	64					

* Model Insert: r=0.4(l=11, 13) r=0.8(l=16)

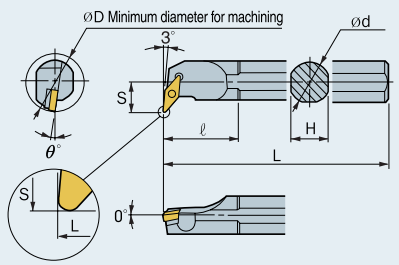
P. 90, 91, 101, 103, 110, 122

●: Stock Item ○: Under preparing for stock

SVUCR/L



Feed direction



Right-hand shown

Ref	Holder Style	Application
Comment	U style, Lead angle 93 °	Copy

(mm)

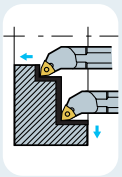
Designation	Stock R	Stock L	ØD	Ød	H	L*	* S	θ°	ℓ	Available Inserts	Screw	Shim	Screw for Shim	Wrench
S16R-SVUCR/L11	●		20	16	15	200	11	-7°	30	VC □T 1103 □□	FTKA02565	-	-	TW07P
S20S-SVUCR/L11			25	20	18	250	13	-5°	33					
S25T-SVUCR/L11			32	25	23	300	17	-3°	38					
S20S-SVUCR/L13	●		28	20	18	250	16	-5°	35	VC □T 1303 □□	FTKA0307	-	-	TW09P
S25T-SVUCR/L13			32	25	23	300	17	-3°	40					
S25T-SVUCR/L16	●	●	32	25	23	300	19	-6°	50	VC □T 1604 □□	FTGA03510	-	-	TW15P
S32U-SVUCR/L16	●		40	32	30	350	22	-8°	56		FTGA03512	SV32S	SHXN0509F	TW15P HW35L
S40V-SVUCR/L16			50	40	37	400	27	-8°	64					

* Model Insert: r=0.4(l=11, 13) r=0.8(l=16)

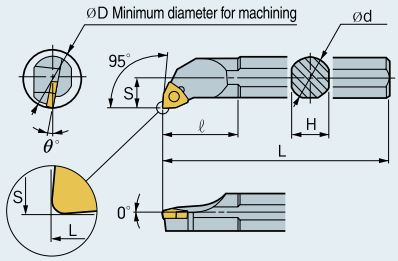
P. 90, 91, 101, 103, 110, 122

●: Stock Item ○: Under preparing for stock

SWLCR/L



Feed direction

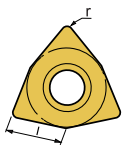


Right-hand shown

Ref	Holder Style	Application
Comment	L style, Lead angle 95 °	Facing, Through hole, Blind hole machining

(mm)

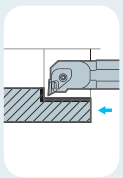
Designation	Stock R	Stock L	øD	ød	H	L*	S*	θ°	ℓ
S25T-SWLCR/L 08	●		32	25	23	300	17	- 7°	46
S32U-SWLCR/L 08	●		40	32	30	350	22	- 5°	51
※ A25R-SWLCR/L 08			32	25	24	200	17	- 7°	46
※ A32S-SWLCR/L 08	○		40	32	31	250	22	- 5°	51

Available Inserts	Parts	
	 Screw	 Wrench
WC □T 0804 □□	FTGA0411F	TW15P
WC □T 0804 □□	FTGA0411F	TW15P

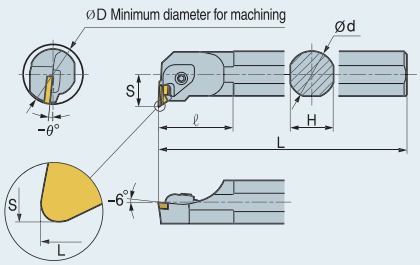
* Model Insert : r=0.8 ※Boring bar with coolant hole.

● : Stock Item ○ : Under preparing for stock

CKUNR/L



Feed direction

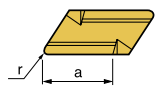


Right-hand shown

Ref	Holder Style	Application
Comment	U style, Lead angle 93 °	Through hole machining

(mm)

Designation	Stock R	Stock L	øD	ød	H	L*	S*	ℓ
S32U-CKUNR/L16	●		40	32	30	350	22	70
S40V-CKUNR/L16	●		50	40	37	400	27	60
S50W-CKUNR/L16	●		63	50	43	450	35	55

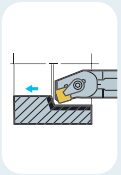
Available Inserts	Parts						
	 Clamp	 Screw for clamp	 Spring	 Shim	 Pin	 Shim screw	 Wrench
KN □□1604 □□R/L	CTH6R/L	CHX0625	SR3,SR4	SK33C/L	PN0515	SHX0310	HW40L

* Model Insert : r=0.8

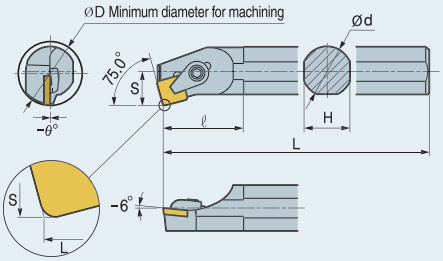
P. 61

● : Stock Item ○ : Under preparing for stock

CSKPR/L



Feed direction



Right-hand shown

Ref	Holder Style	Application
Comment	K style, Lead angle 75 °	Turning

(mm)

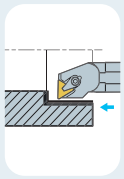
Designation	Stock R	Stock L	ØD	Ød	H	L*	S*	ℓ	Available Inserts	Clamp	Screw for clamp	Ring	Wrench
S16R-CSKPR-09	●		20	16	15	200	11	30	SP □R 0903 □□	CH5R1C	CHX03815	CR04C	HW25L
S20S-CSKPR-09	●		25	20	18	250	13	36					
S20S-CSKPR-12	●		25	20	18	250	13	28	SP □R 1203 □□	CH6R3	CHX0519	CR08	HW30L
S25T-CSKPR-12	●		32	25	23	300	17	40					

* Model Insert : r=0.8

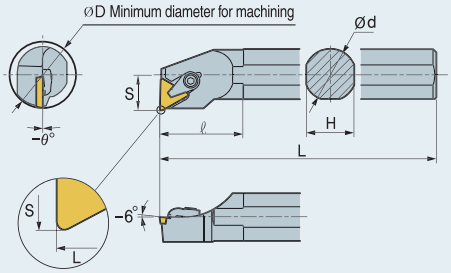
P. 74, 113

● : Stock Item ○ : Under preparing for stock

CTFPR/L



Feed direction



Right-hand shown

Ref	Holder Style	Application	Available Inserts	Parts
Comment	F style, Lead angle 90 °	Turning		

(mm)

Designation	Stock R	Stock L	øD	ød	H	L*	S*	ℓ	Available Inserts	Clamp	Screw for clamp	Ring	Shim	Pin for Shim	Wrench
S12M-CTFPR/L11	●		16	12	11	150	9	26	TP □R 1103 □□	CH5R1C	CHX03815	CR04C	-	-	HW25L
S16R-CTFPR/L11	●	●	20	16	15	200	11	40							
S20S-CTFPR/L11	●	●	25	20	18	250	13	40							
S16R-CTFPR/L16	●		20	16	15	200	11	40	TP □R 1603 □□	CH6R3C	CHX0519	CR04	-	-	HW30L
S20S-CTFPR/L16	●		25	20	18	250	13	40							
S25T-CTFPR/L16	●	●	32	25	23	300	17	40							
S32U-CTFPR/L16	●		40	32	30	350	22	45		CH6R3	CHX0621	CR08	ST32C	SP3C	
S40V-CTFPR/L16			50	40	37	400	27	60							
S40V-CTFPR/L22	●		50	40	37	400	27	60	TP □R 2204 □□	CH83R1	CHX07822	CR09	ST43C	SP11	HW40L

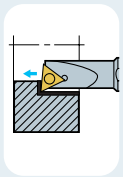
* Model Insert : r=0.4(l=11) r=0.8(l=16, 22)

P. 85

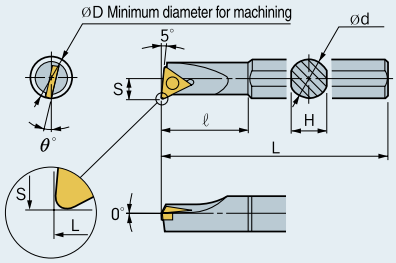
● : Stock Item ○ : Under preparing for stock

Micro boring bar

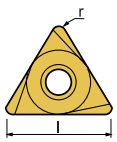
STUBR/L



Feed direction



Right-hand shown

Ref	Holder Style	Application	Available Inserts	Parts	
Comment	U style, Lead angle 95 °	Facing, Through hole, Blind hole machining			

(mm)

Designation	Stock R	Stock L	ØD	Ød	H	L*	S*	θ°	ℓ	Screw	Wrench
S08K-STUBR/L 06	●		8	8	7	125	4	-12°	30	FTNA0204	TW06P
C08K-STUBR/L 06	●		8	8	7	125	4	-12°	-		
※ A08F-STUBR/L 06			8	8	7.5	80	4	-12°	30		

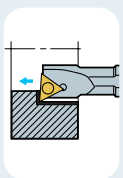
TB □T 060102

* Model Insert : r=0.8 ※Boring bar with coolant hole.

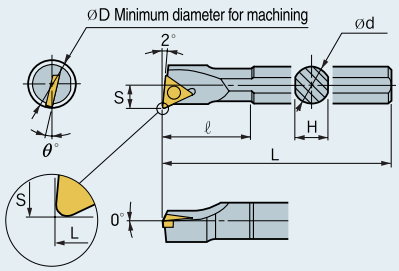
P. 82,120

●: Stock Item ○: Under preparing for stock

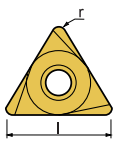
STUPR/L



Feed direction



Right-hand shown

Ref	Holder Style	Application	Available Inserts	Parts	
Comment	U style, Lead angle 92 °	Facing, Through hole, Blind hole machining			

(mm)

Designation	Stock R	Stock L	ØD	Ød	H	L*	S*	θ°	ℓ	Screw	Wrench
S08K-STUPR/L 08	●		10	8	7	125	5	-10°	18	FTNA02205	TW06P
C08K-STUPR/L 08	●		10	8	7	125	5	-10°	-		
※ A08F-STUPR/L 08			10	8	7.5	80	5	-10°	18		

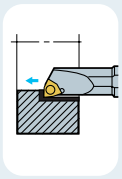
TP □T 080202

* Model Insert: r=0.2 • Use left hand insert for right hand holder.
※Boring bar with coolant hole.

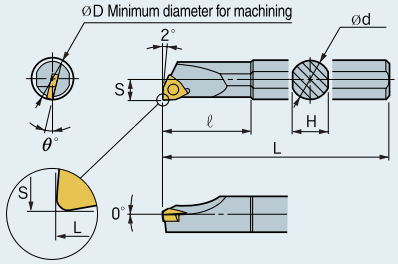
P. 86, 87, 109, 115, 121, 122

●: Stock Item ○: Under preparing for stock

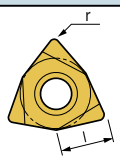
SWUBR/L



Feed direction



Right-hand shown

Ref	Holder Style	Application	Available Inserts	Parts	
Comment	U style, Lead angle 92 °	Facing, Through hole, Blind hole machining			

(mm)

Designation	Stock R	Stock L	ØD	Ød	H	L*	S*	θ°	ℓ	Available Inserts	Screw	Wrench
S05H-SWUBR/L 02	●		5.5	5	4.5	100	2.75	-12°	-	WB □T020102	FTNA0203	TW06P
S08K-SWUBR/L 02	●		8	8	7	125	4	-10°	30		FTNA02033	
S08K-SWUBR/L S3			10	8	7	125	5	-13°	18	WB □TS30202	FTNA02205	TW06P
C05H-SWUBR/L 02	●		5.5	5	4.5	100	2.75	-12°	-	WB □T020102	FTNA0203	TW06P
C08K-SWUBR/L 02	●		8	8	7	125	4	-10°	30			
C08K-SWUBR/L S3	●		10	8	7	125	5	-13°	18	WB □TS30202	FTNA02033	TW06P
※ A08F-SWUBR/L 02			8	8	7.5	80	4	-10°	30	WB □T020102	FTNA0203	TW06P
※ A08F-SWUBR/L S3			10	8	7.5	80	5	-13°	16	WB □TS30202	FTNA02205	
※ E05H-SWUBR/L 02			5.5	5	4.5	100	2.75	-12°	-	WB □T020102	FTNA0203	TW06P
※ E08K-SWUBR/L 02			8	8	7	125	4	-10°	30		FTNA02033	

* Model Insert: r=0.2

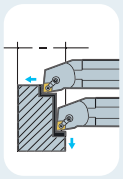
• Use left hand insert for right hand holder.

※Boring bar with coolant hole.

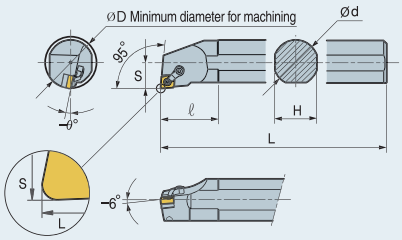
P. 95

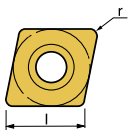
● : Stock Item ○ : Under preparing for stock

MCLNR/L



Feed direction



Ref	Holder Style	Application	Available Inserts	Parts				
Comment	L style, Lead angle 95 °	Turning						

(mm)

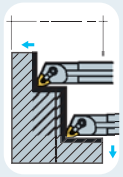
Designation	Stock R	Stock L	øD min	ød	h	L*	S*	ℓ	Clamp	Screw for clamp	Shim	Shim pin	Wrench
S25T-MCLNR/L12	●		32	25	23	300	17.0	36	CN □G 1204 □□	CDH6N	DHA1/4-19	SC43D	SP4DS	HW23.8L HW30L
S32U-MCLNR/L12	●		40	32	30	350	22.0	50						
S40V-MCLNR/L12			50	40	37	400	27.0	60						
※ A25R-MCLNR/L12			32	25	23	200	17.0	40	CN □G 1204 □□	CDH6N	DHA1/4-21	SC43D	SP4D	HW23.8L HW30L
※ A32S-MCLNR/L12			40	32	30	250	22.0	50						

* Model Insert : r=0.8 ※Boring bar with coolant hole.

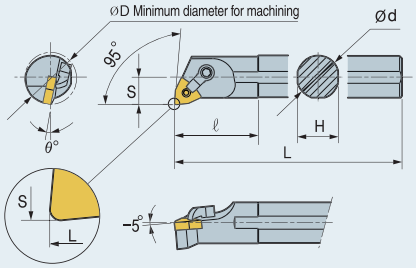
P. 48~53, 104, 107, 111, 125

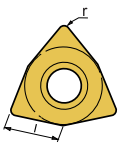
●: Stock Item ○: Under preparing for stock

MWLNR/L



Feed direction



Ref	Holder Style	Application	Available Inserts	Parts				
Comment	L style, Lead angle 95 °	Turning						

(mm)

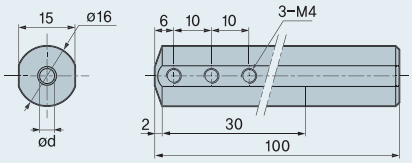
Designation	Stock R	Stock L	øD min	ød	h	L*	S*	ℓ	Clamp	Screw for clamp	Shim	Shim pin	Wrench
S25T-MWLNR/L06	●		32	25	23	300	17.0	36	WN □G 0604 □□	CDH6N	DHA1/4-25	SW32D	SP3D	HW23.8L HW30L
S32U-MWLNR/L06			40	32	30	350	22.0	50						
S40V-MWLNR/L06			50	40	37	400	27.0	60						
S25T-MWLNR/L08	●	●	32	25	23	300	17.0	36	WN □G 0804 □□	CDH6N	DHA1/4-19	SW43D	SP4DS	HW23.8L HW30L
S32U-MWLNR/L08	●		40	32	30	350	22.0	50						
S40V-MWLNR/L08	●		50	40	37	400	27.0	60						
S25R-MWLNR/L06			32	25	23	200	17.0	40	WN □G 0604 □□	CDH6N	DHA1/4-25	SW32D	SP3D	HW20L HW30L
S32S-MWLNR/L06			40	32	30	250	22.0	50						
S25R-MWLNR/L08			32	25	23	200	17.0	40	WN □G 0804 □□	CDH6N	DHA1/4-19	SW43D	SP4DS	HW23.8L HW30L
S32S-MWLNR/L08	○		40	32	30	250	22.0	50						

* Model Insert : r=0.8

P. 91~95, 105

●: Stock Item ○: Under preparing for stock

SLEEVE



Ref	Holder Style	Application	Available Inserts	Parts	
Comment					

(mm)

Designation	Stock	ød		Screw	Wrench
BSL0416	●	4	C04G-SCLCR/L0305	M4-4 Bolt	HW20L
BSL0516	●	5	C05H-SCLCR/L0306		
BSL0616	●	6	C06J-SCLCR/L0407		
BSL0716	●	7	C07K-SCLCR/L0408		

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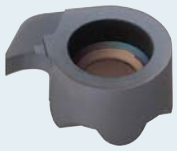
● : Stock Item ○ : Under preparing for stock

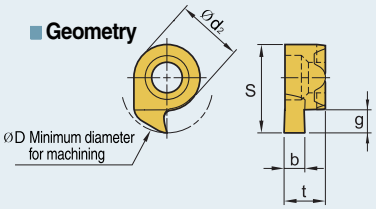
FTG For grooving



■ USE

■ Recommendation

■ Geometry



(mm)

Available Holder	Designation	ASA	Coated Carbide						Cermet				Uncoated Carbide				ØD	S	b	g	Ød2	t
			PC215K	PC230					CN20	CN30			ST30A	G10	H01							
FTIH08000S FTIH08000C	FTG 08075R		●	●													ø8	7.8	0.75	1.5	6	4.0
	08085R			●													ø8	7.8	0.85	1.5	6	4.0
	08095R			●													ø8	7.8	0.95	1.5	6	4.0
	08100R			●													ø8	7.8	1.00	1.8	6	4.0
	08121R			●													ø8	7.8	1.21	1.8	6	4.0
	08141R		●	●													ø8	7.8	1.41	1.8	6	4.0
	08152R			○													ø8	7.8	1.52	1.8	6	4.0
	* FTG 08171R			●													ø8	7.8	1.71	1.8	6	4.0
	08200R			●													ø8	7.8	2.00	1.8	6	4.0
	* FTG 08202R			●													ø8	7.8	2.02	1.8	6	4.0
FTIH11000S FTIH11000C	FTG 11075R		●	●													ø11	10.7	0.75	2	8	5.05
	11085R			●													ø11	10.7	0.85	2	8	5.05
	11095R			●													ø11	10.7	0.95	2	8	5.05
	11100R			●													ø11	10.7	1.00	2	8	5.05
	11115R			○													ø11	10.7	1.15	2.8	8	5.05
	11121R			●													ø11	10.7	1.21	2.8	8	5.05
	11135R			○													ø11	10.7	1.35	2.8	8	5.05
	11141R			●													ø11	10.7	1.41	2.8	8	5.05
	11152R		●	●													ø11	10.7	1.52	2.8	8	5.05
	11165R			○													ø11	10.7	1.65	2.8	8	5.05
	* FTG 11171R			●													ø11	10.7	1.71	2.8	8	5.05
	11200R			●													ø11	10.7	2.00	2.8	8	5.05
	* FTG 11202R			●													ø11	10.7	2.02	2.8	8	5.05
	* FTG 11252R			●													ø11	10.7	2.52	2.8	8	5.05
	* FTG 11302R			●													ø11	10.7	3.02	2.8	8	5.05
FTIH14000S FTIH14000C	FTG 14075R																ø14	13.5	0.75	2	9	6.0
	14085R																ø14	13.5	0.85	2	9	6.0
	14095R																ø14	13.5	0.95	2	9	6.0
	14100R			●													ø14	13.5	1.00	2	9	6.0
	14115R			○													ø14	13.5	1.15	4.3	9	6.0
	14121R			●													ø14	13.5	1.21	4.3	9	6.0
	14141R			●													ø14	13.5	1.41	4.3	9	6.0
	14152R			○													ø14	13.5	1.52	4.3	9	6.0
	14165R			○													ø14	13.5	1.65	4.3	9	6.0
	14171R			●													ø14	13.5	1.71	4.3	9	6.0
	14190R			○													ø14	13.5	1.90	4.3	9	6.0
	14200R			●													ø14	13.5	2.00	4.3	9	6.0
	* FTG 14202R			●													ø14	13.5	2.02	4.3	9	6.0
	* FTG 14252R			●													ø14	13.5	2.52	4.3	9	6.0
	* FTG 14302R			○													ø14	13.5	3.02	4.3	9	6.0
FTIH16000S FTIH16000C	FTG 16075R																ø16	15.7	0.75	2	11	6.0
	16085R																ø16	15.7	0.85	2	11	6.0
	16095R																ø16	15.7	0.95	2	11	6.0
	16100R			●													ø16	15.7	1.00	2	11	6.0
	16115R			○													ø16	15.7	1.15	4.6	11	6.0
	16121R			●													ø16	15.7	1.21	4.6	11	6.0
	16141R			●													ø16	15.7	1.41	4.6	11	6.0
	16165R			○													ø16	15.7	1.65	4.6	11	6.0
	16171R			●													ø16	15.7	1.71	4.6	11	6.0
	16190R			○													ø16	15.7	1.90	4.6	11	6.0
	16200R			●													ø16	15.7	2.00	4.6	11	6.0
	* FTG 16202R			●													ø16	15.7	2.02	4.6	11	6.0
	* FTG 16220R			○													ø16	15.7	2.20	4.6	11	6.0
	* FTG 16252R			○													ø16	15.7	2.52	4.6	11	6.0
	* FTG 16270R			○													ø16	15.7	2.70	4.6	11	6.0
	16300R			●													ø16	15.7	3.00	4.6	11	6.0
	* FTG 16302R			●													ø16	15.7	3.02	4.6	11	6.0
	* FTG 16320R			○													ø16	15.7	3.20	4.6	11	6.0
	* FTG 16352R			○													ø16	15.7	3.52	4.6	11	6.0
	* FTG 16402R			●													ø16	15.7	4.02	4.6	11	6.0

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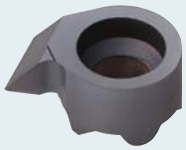
* Tool for outer diameter & inner diameter machining.

● : Stock Item ○ : Under preparing for stock

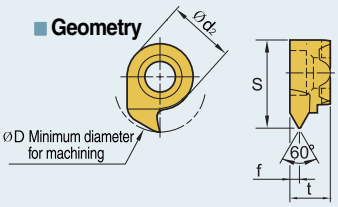
FTT For threading



■ USE

■ Recommendation

■ Geometry



Available Holder	Designation		ASA	Coated Carbide							Cermet				Uncoated Carbide				(mm)					
				PC215K	PC230						CN20	CN30			ST30A	G10			ØD	Pitch	S	Ød2	f	t
FTIH08000S FTIH08000C	FTT	080515R-M			●														ø8	"0.5 ~1.5"	7.8	6	1.0	3.85
FTIH11000S FTIH11000C		110525R-M		○	●														ø11	"0.5 ~2.5"	10.7	8	1.6	4.9
FTIH14000S FTIH14000C		141025R-M			●														ø14	"1.0 ~2.5"	13.5	9	1.6	5.85
FTIH16000S FTIH16000C		161025R-M		○	●														ø16	"1.0 ~2.5"	15.7	11	1.6	5.8

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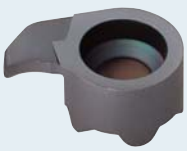
● : Stock Item ○ : Under preparing for stock

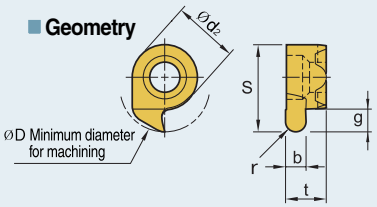
FTF For copy



■ USE

■ Recommendation

■ Geometry



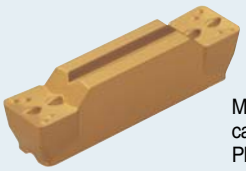
Available Holder	Designation		ASA	Coated Carbide							Cermet				Uncoated Carbide				(mm)						
				PC215K	PC230						CN20	CN30			ST30A	G10			ØD	b	r	S	g	Ød2	t
FTIH08000S FTIH08000C	FTF	0808R			●														ø8	0.8	0.4	7.8	1.5	6	4.0
		0812R			●														ø8	1.2	0.6	7.8	1.5	6	4.0
		0818R			●														ø8	1.8	0.9	7.8	1.5	6	4.0
FTIH11000S FTIH11000C		1108R			●														ø11	0.8	0.4	10.7	2.8	8	5.05
		1112R			●														ø11	1.2	0.6	10.7	2.8	8	5.05
		1118R			●														ø11	1.8	0.9	10.7	2.8	8	5.05
		1120R			●														ø11	2.0	1.0	10.7	2.8	8	5.05
		1130R			●														ø11	3.0	1.5	10.7	2.8	8	5.05
FTIH14000S FTIH14000C		1412R			●														ø14	1.2	0.6	13.5	4.3	9	6.0
		1418R			●														ø14	1.8	0.9	13.5	4.3	9	6.0
		1420R			●														ø14	2.0	1.0	13.5	4.3	9	6.0
		1422R			●														ø14	2.2	1.1	13.5	4.3	9	6.0
		1430R			●														ø14	3.0	1.5	13.5	4.3	9	6.0
FTIH16000S FTIH16000C		1618R			●														ø16	1.8	0.9	15.7	4.6	11	6.0
		1622R			●														ø16	2.2	1.1	15.7	4.6	11	6.0
		1630R			●														ø16	3.0	1.5	15.7	4.6	11	6.0
		1640R			●														ø16	4.0	2.0	15.7	4.6	11	6.0

P. 215

● : Stock Item ○ : Under preparing for stock

MGM(G)N-M For grooving, turning

MGMNOOO : b = ±0.05
MGGNOOO : b = ±0.02

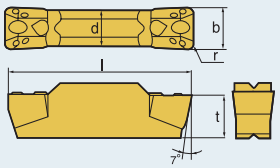


MGM(G)N-M for aluminum machining with carbide grade is available.
Please contact us for more information.

■ USE

■ Recommendation

■ Geometry



Available Holder	Designation		ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)				
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC215K	PC9030	PC230	CT10	CN20	CN100	CN200	H01	G10	ST10		b	r	l	d	t
MGEHR/L MGEVR/L MGIVR/L	MGMN	200-M			●						●										2.0	0.2	16.0	1.2	3.5
		250-M			●						●										2.5	0.2	18.5	2.0	3.85
		300-02-M			○					○		○									3.0	0.2	21.0	2.35	4.8
		300-M		○	●	●				●		●									3.0	0.4	21.0	2.35	4.8
		350-03-M			○					○		○									3.5	0.3	21.0	2.9	4.8
		400-02-M			○					○		○									4.0	0.2	21.0	3.3	4.8
		400-M			●	●				●		●									4.0	0.4	21.0	3.3	4.8
		500-04-M			○	○				○		○									5.0	0.4	26.0	4.1	5.8
		500-M			●	●				○		●									5.0	0.8	26.0	4.1	5.8
		600-M			●	●				○											6.0	0.8	26.0	5.0	5.8
		800-M			○	●															8.0	0.8	31.0	6.0	6.5
	MGGN	300-02-M												●							3.0	0.2	21.0	2.35	4.8
		300-04-M												●							3.0	0.4	21.0	2.35	4.8
		300-08-M												○							3.0	0.8	21.0	2.35	4.8
		400-02-M												●							4.0	0.2	21.0	3.3	4.8
		400-04-M												●							4.0	0.4	21.0	3.3	4.8
		400-08-M												○							4.0	0.8	21.0	3.3	4.8
		500-02-M												○							5.0	0.2	26.0	4.1	5.8
		500-04-M												●							5.0	0.4	26.0	4.1	5.8
		500-08-M												●							5.0	0.8	26.0	4.1	5.8
		600-02-M												○							6.0	0.2	26.0	5.0	5.8
		600-04-M																			6.0	0.4	26.0	5.0	5.8
		600-08-M																			6.0	0.8	26.0	5.0	5.8

P. 210, 211, 213

● : Stock Item ○ : Under preparing for stock

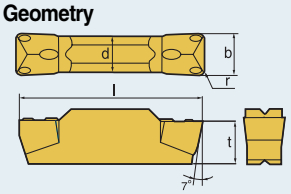
MGMN-G For grooving

MGMNOOO : b = ±0.05

■ USE

■ Recommendation

■ Geometry



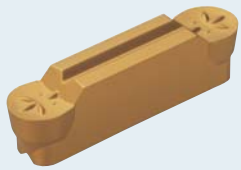
Available Holder	Designation		ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)				
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	PC3535	CT10	CN20	CN100	CN200	H01	G10	ST10		b	r	l	d	t
MGEHR/L MGEVR/L MGIVR/L	MGMN	150-G			●							●									1.5	0.15	16.0	1.2	3.5
		200-G			●						●										2.0	0.2	16.0	1.6	3.5
		250-G			●						●										2.5	0.2	18.5	2.0	3.85
		300-G			○						○										3.0	0.4	21.0	2.35	4.8
		400-G			○						○										4.0	0.4	21.0	3.3	4.8
		500-G			○						○										5.0	0.8	26.0	4.1	5.8
		600-G			○																6.0	0.8	26.0	5.0	5.8

P. 210, 211, 213

● : Stock Item ○ : Under preparing for stock

MRMN-M For grooving, Copy

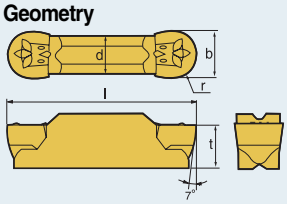
MRMNOOO : b = ±0.05



■ USE

■ Recommendation

■ Geometry



Available Holder	Designation		ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)				
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	PC230	CT10	CN20	CN100	CN200	H01	G10	ST10		b	r	l	d	t
MGEHR/L	MRMN	200-M				●					○										2.0	1.0	16.0	1.50	3.5
MGEUR/L		300-M			●	●					○	●									3.0	1.5	21.0	2.35	4.8
MGIVR/L		400-M			●	●					○	○									4.0	2.0	21.0	3.3	4.8
MGIUR/L		500-M			●	●					○	●									5.0	2.5	26.0	4.1	5.8
		600-M			●	●					○										6.0	3.0	26.0	5.0	5.8
		800-M			●	●					○										8.0	4.0	31.0	6.0	6.5

P. 210, 212, 214

● : Stock Item ○ : Under preparing for stock

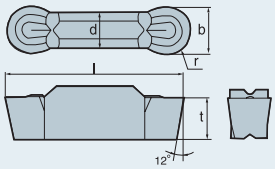
MRGN-A For aluminum machining

MRGNOOO : b = ±0.03

■ USE

■ Recommendation

■ Geometry

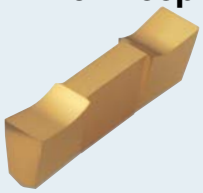


Available Holder	Designation		ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)				
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030		CT10	CN20	CN100	CN200	H01	G10	ST10		b	r	l	d	t
MGEHR/L	MRGN	400-A															○				4.0	2.0	21.0	3.3	4.8
MGEUR/L		500-A															○				5.0	2.5	26.0	4.1	5.8
MGIVR/L		600-A															●				6.0	3.0	26.0	5.0	5.8
MGIUR/L		800-A															●				8.0	4.0	31.0	6.0	6.5

P. 210, 212, 214

● : Stock Item ○ : Under preparing for stock

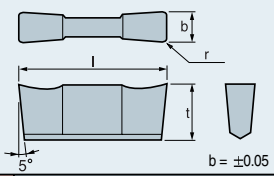
DB For Deep and Wide Grooving



■ USE

■ Recommendation

■ Geometry



Available Holder	Designation		ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)			
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030		CT10	CN20	CN100	CN200	H01	G10	ST10		b	l	t	r
DBH □□□	DB	300					○				○			●							3.0	20	7.5	0.2
		400					○				○			●							4.0	20	7.5	0.2
		500					○				○			●							5.0	20	7.5	0.2
		600					○				○			●							6.0	20	7.5	0.2
		700																			7.0	20	7.5	0.2
		800																			8.0	20	7.5	0.2

P. 216

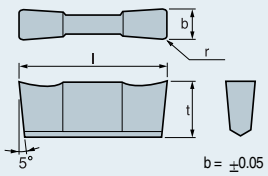
● : Stock Item ○ : Under preparing for stock

DC For Deep and Wide Grooving

■ USE

■ Recommendation

■ Geometry



Available Holder	Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)			
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	CT10	CN20	CN100	CN200	H01	G10	ST10		b	l	t	r
DBH □□□	DC	300									○		●							3.0	20	7.5	0.2
		400									○		●							4.0	20	7.5	0.25
		500																		5.0	20	7.5	0.3

P. 216

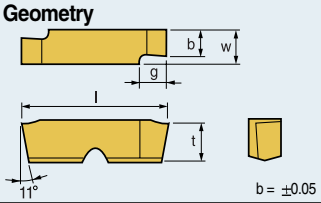
●: Stock Item ○: Under preparing for stock

GW For Wide Grooving

■ USE

■ Recommendation

■ Geometry



Available Holder		Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)				
					NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	CT10	CN20	CN100	CN200	H01	G10	ST10	ST30A	b	g	w	l	t
GFT	525	GW	110R									○								●	1.1	2.1	3.1	16	5.0
	825		110L																	●	1.1	2.1	3.1	16	5.0
GFIP	525		130R									○								●	1.3	2.3	3.1	16	5.0
	540		130L																	●	1.3	2.3	3.1	16	5.0
	840		160R									○								●	1.6	2.6	3.1	16	5.0
GFIP	316		160L																	●	1.6	2.6	3.1	16	5.0
	325		185R									○								●	1.85	2.9	3.1	16	5.0
	340		185L																	●	1.85	2.9	3.1	16	5.0
			215R									○								●	2.15	3.2	3.1	16	5.0
			215L																	●	2.15	3.2	3.1	16	5.0
			265R									○								●	2.65	3.7	3.1	16	5.0
			265L																	●	2.65	3.7	3.1	16	5.0
			300R									○								●	3.0	4.0	3.1	16	5.0
			300L																	●	3.0	4.0	3.1	16	5.0
			315R									○								●	3.15	4.2	5.1	22	6.0
			315L																	●	3.15	4.2	5.1	22	6.0
			415R									○								●	4.15	5.2	5.1	22	6.0
			415L																	●	4.15	5.2	5.1	22	6.0
			500R									○								●	5.0	6.0	5.1	22	6.0
			500L																	●	5.0	6.0	5.1	22	6.0
			600R									○								●	6.0	7.0	8.1	27	7.0
			600L																		6.0	7.0	8.1	27	7.0
			800R									○								●	8.0	9.0	8.1	27	7.0
			800L																		8.0	9.0	8.1	27	7.0

P. 218, 220

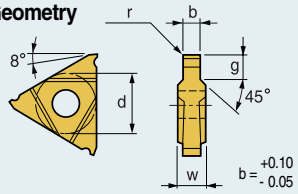
●: Stock Item ○: Under preparing for stock

GO For O-Ring Grooving

■ USE

■ Recommendation

■ Geometry

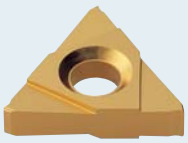


Available Holder	Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)				
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC215K	PC9030	CT10	CN20	CN100	CN200	H01	G10	ST10	ST20	b	g	w	r	d
GH□□□□-□	GO	250					○			○									●	2.5	1.5	3.3	0.35	9.525
		320					○			○									●	3.2	2.0	3.8	0.35	9.525
		410																		4.1	2.5	4.5	0.65	9.525

P. 218

● : Stock Item ○ : Under preparing for stock

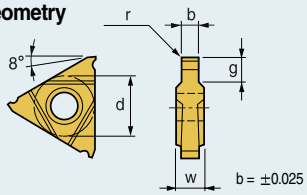
GS For Narrow Grooving



■ USE

■ Recommendation

■ Geometry



Available Holder	Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)				
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	CT10	CN20	CN100	CN200	H01	G10	ST10	ST20	b	g	w	r	d
GH□□□□-□	GS	125					○												●	1.23	1.5	2.5	0.2	9.525
		145					○												●	1.43	1.5	2.5	0.2	9.525
		175					○												●	1.73	2.0	2.5	0.2	9.525
		185					○												●	1.83	2.0	2.5	0.2	9.525
		200					○												●	2.03	2.5	2.5	0.2	9.525
		230					○												●	2.28	3.5	2.8	0.2	9.525
		280					○												●	2.78	3.5	3.3	0.3	9.525
		330					○												●	3.28	4.0	3.8	0.3	9.525
		430					○												●	4.28	4.0	4.5	0.4	9.525

P. 218

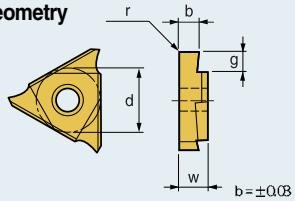
● : Stock Item ○ : Under preparing for stock

TB For Narrow Grooving

■ USE

■ Recommendation

■ Geometry

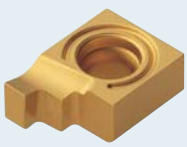


Available Holder	Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)				
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	CT10	CN20	CN100	CN200	H01	G10	ST10	ST20	b	g	w	r	d
TBH 3□□-□□	TB	3125R					○													1.25	1.5	4.76	0.2	9.525
		3145R					○													1.45	1.5	4.76	0.2	9.525
		3175R					○													1.75	2.5	4.76	0.2	9.525
		3185R					○													1.85	2.5	4.76	0.2	9.525
		3200R					○													2.00	2.5	4.76	0.2	9.525
		3230R					○												●	2.30	3.5	4.76	0.3	9.525
		3280R					○													2.80	3.5	4.76	0.3	9.525
		3330R					○													3.30	3.5	4.76	0.3	9.525
		3430R					○													4.30	3.5	4.76	0.4	9.525
TBH 4□□-□□	TB	4125R									○		●							1.25	2.0	4.76	0.2	12.7
		4145R									○		●							1.45	2.0	4.76	0.2	12.7
		4150R									○		●							1.50	3.5	4.76	0.2	12.7
		4175R									○		●							1.75	3.5	4.76	0.2	12.7
		4185R									○		●							1.85	3.5	4.76	0.2	12.7
		4200R									○	●	●							2.00	3.5	4.76	0.2	12.7
		4215R									○		○							2.15	3.5	4.76	0.2	12.7
		4230R									○		●							2.30	3.5	4.76	0.2	12.7
		4250R									○		●							2.50	4.0	4.76	0.3	12.7
		4265R									○		○							2.65	4.0	4.76	0.3	12.7
		4280R									○		●							2.80	4.0	4.76	0.3	12.7
		4300R									○		●							3.00	4.0	4.76	0.3	12.7
		4330R									○		●							3.30	4.0	4.76	0.3	12.7
		4350R									○		○							3.50	5.0	4.76	0.3	12.7
		4400R									○		○							4.00	5.0	4.76	0.4	12.7
		4430R									○		●							4.30	5.0	4.76	0.4	12.7
		4450R									○		○							4.50	5.0	4.76	0.4	12.7

P. 219

●: Stock Item ○: Under preparing for stock

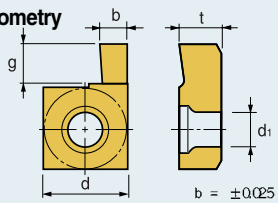
IG For Internal Grooving



■ USE

■ Recommendation

■ Geometry



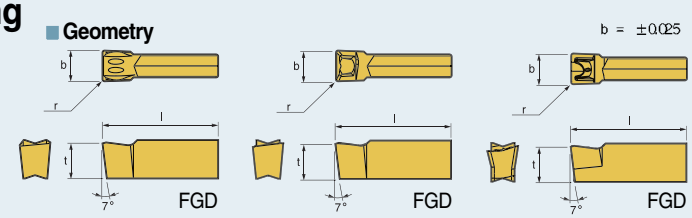
Available Holder	Designation		ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)				
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	PC215K	CT10	CN20	CN100	CN200	H01	G10	ST10	ST30A	b	g	t	d	d_1
IGH □□□	IG	125					○					○								●	1.25	1.5	3.18	6.35	2.8
		145					○					○								●	1.45	1.5	3.18	6.35	2.8
		175					○					○								●	1.75	1.5	3.18	6.35	2.8
		200					○					○								●	2.0	2.3	3.18	6.35	2.8
		230					○					○								●	2.3	2.3	3.18	6.35	2.8
		280					○					○								●	2.8	2.3	3.18	6.35	2.8

P. 221

●: Stock Item ○: Under preparing for stock

FGD, FGM, FMM For Facial Grooving

Geometry



Available Holder	Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)			
				NC3010	NC3020	NC3030	NC9020	NC305K	PC6510	PC8010	PC3535	PC215K	CT10	CN20	CN100	CN200	H01	G10	ST10		b	l	t	r
FGHH □□□ FGVH □□□	FGD	300R-03				●				○	○	●									3.0	15	4.0	0.3
		400R-04				●				○	○	●					○				4.0	15	4.5	0.4
		500R-04				●				○	○	●									5.0	15	5.0	0.4
	FGM	300R-03									○	○									3.0	15	4.0	0.3
		400R-04									○	○									4.0	15	4.5	0.4
		500R-04									○	○									5.0	15	5.0	0.4
	FMM	300R-03				●			●	●	●										3.0	15	3.91	0.3
		400R-04				●			●	●	●										4.0	15	3.96	0.4
		500R-04				●			●	●	●										5.0	15	4.42	0.4

P. 217

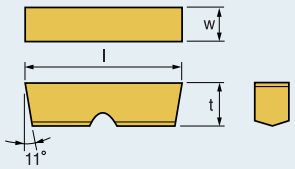
● : Stock Item ○ : Under preparing for stock

BF For Forming

USE

Recommendation

Geometry

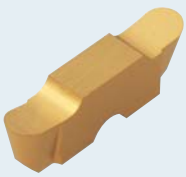


Available Holder	Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)		
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	CT10	CN20	CN100	CN200	H01	G10	ST10	ST30A	w	t	l
GFT □□□	BF-	3																	●	3.1	5.26	16.4
		5																	●	5.1	6.26	22.4
		8																	●	8.1	7.26	27.4

P. 218, 220

● : Stock Item ○ : Under preparing for stock

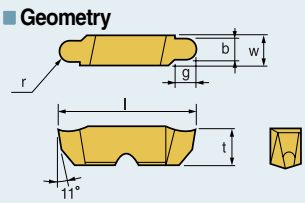
GR For Reliefing



USE

Recommendation

Geometry



Available Holder	Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)					
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	CT10	CN20	CN100	CN200	H01	G10	ST10	ST30A	b	g	w	l	t	r
GFIK □□□	GR	310R					○												○	2.0	2.0	3.1	15.9	5.0	1.0
		315R					○												○	3.0	2.9	3.1	15.9	5.0	1.5
		520R					○												○	4.0	4.0	5.1	21.9	6.0	2.0
		525R					○												○	5.0	5.0	5.1	21.8	6.0	2.5
		830R																		6.0	6.0	8.1	26.8	7.0	3.0
		840R																		8.0	8.0	8.1	26.7	7.0	4.0

P. 220

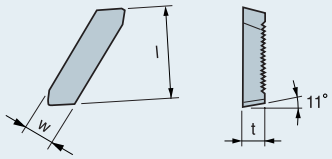
● : Stock Item ○ : Under preparing for stock

ESB Regrinding type insert

■ USE

■ Recommendation

■ Geometry



Available Holder	Designation	ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)		
			NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	CT10	CN20	CN100	CN200	H01	G10	ST10	ST20	w	l	t
EH 6□□	ESB 34																	●	9.525	30.0	6.35

P. 167

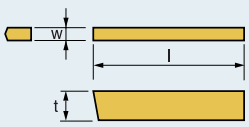
●: Stock Item ○: Under preparing for stock

POB For Parting off

■ USE

■ Recommendation

■ Geometry



Available Holder	Designation	ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)		
			NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	CT10	CN20	CN100	CN200	H01	G10	ST10	ST20	w	l	t
PH□□□	POB 300																	●	3.0	55	6.0
	400																	●	4.0	55	7.0
	500																	●	5.0	55	8.0

P. 219

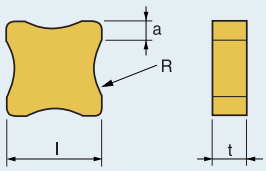
●: Stock Item ○: Under preparing for stock

SNMN For Pipe Scalping

■ USE

■ Recommendation

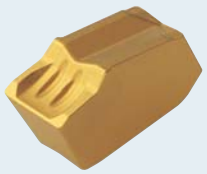
■ Geometry



Available Holder	Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)			
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	CT10	CN20	CN100	CN200	H01	G10	ST10		l	t	R	a
	SNMN1207	-10R				○														12.7	7.94	10	2.1
		-12R				○														12.7	7.94	12	2.1
		-16R				○														12.7	7.94	16	2.1
		-18R				○														12.7	7.94	18	2.1
		-20R				○														12.7	7.94	20	2.1
		-30R				○														12.7	7.94	30	2.1
		-35R				○														12.7	7.94	35	2.1
		-40R				○														12.7	7.94	40	2.1
		-45R				○														12.7	7.94	45	2.1
		-50R				○														12.7	7.94	50	2.1
		-60R				○														12.7	7.94	60	2.1
		-70R				○														12.7	7.94	70	2.1
		-80R				○														12.7	7.94	80	2.1
		-90R				○														12.7	7.94	90	2.1
		-100R				○														12.7	7.94	100	2.1
	SNMN1507	-70R				○														15.875	7.94	70	2.5
		-80R				○														15.875	7.94	80	2.5

● : Stock Item ○ : Under preparing for stock

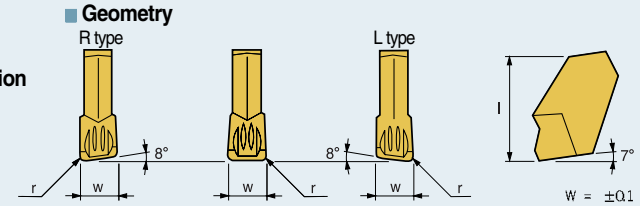
SP For Parting off Saw-man®



■ USE

■ Recommendation

■ Geometry

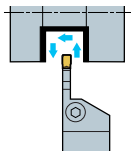
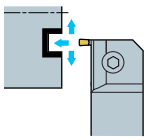
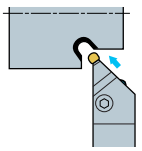
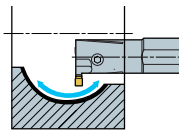
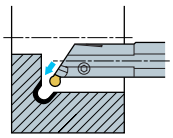
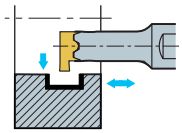
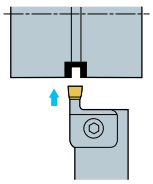
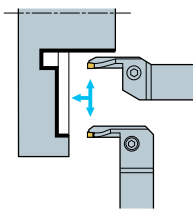


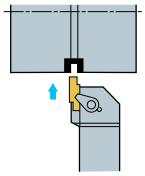
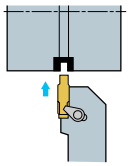
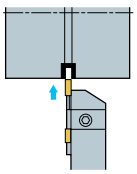
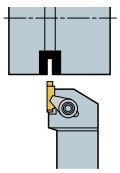
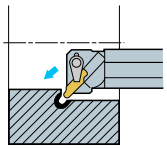
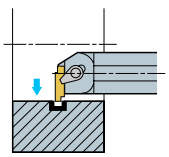
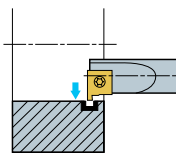
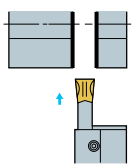
Available Holder	Designation		ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)		
				NC3010	NC3020	NC3030	NCM325	PC230	NC500H	PC8010	PC9030	PC6510	CT10	CN20	CN100	CN200	H01	G10	ST10	ST30A	w	l	r
SPB□□□	SP	200			●	●	●	○		●	●	●									2.2	9.3	0.2
SPB□□□–S		200R			●	●				●	●										2.2	9.3	0.2
SPH□□□		200L			●					●	●										2.2	9.3	0.2
SPH□□□–S		300			●	●	●	●		●	●	●								●	3.1	11.3	0.2
		300R			●	●				●											3.1	11.3	0.2
		300L			●	●				●											3.1	11.3	0.2
		300H				●															3.1	11.4	0.2
		400			●	●	●	●	○	●	●	●									4.1	11.3	0.25
		400R			●	●				●											4.1	11.3	0.25
		400L			●	●				●											4.1	11.3	0.25
		400H				●															4.1	11.4	0.25
		500			●	●		○	●	●		●									5.1	11.4	0.3
		500R																			5.1	11.4	0.3
		500L																			5.1	11.4	0.3
		600			●	●				○		●									6.4	11.4	0.35
		600R																			6.4	11.4	0.35
		600L																			6.4	11.4	0.35

P. 221~223

● : Stock Item ○ : Under preparing for stock

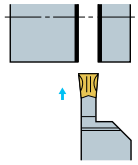
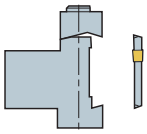
Forming, Grooving, Parting-off, Relieving Tool Index

Shape	Designation	Use	Available Insert
MGEHR/L P. 210		**MGEHR/L** 2020-□ 2525-□ 3232-□ 2020-□-T□□ 2525-□-T□□ 3232-□-T□□	External Grooving External Turning	MGMN 200-G 300-G 400-G 500-G MGMN 300-M 400-M 500-M 600-M MRMN 300-M 400-M 500-M 600-M 800-M MGGN 300-□□-M 400-□□-M 500-□□-M 600-□□-M MRGN 600-A 800-A
MGEVR/L P. 211		**MGEVR/L** 2020-□ 2525-□ 3232-□	External, Facial Grooving	
MGEUR/L P. 212		**MGEUR/L** 2020-□ 2525-□ 3232-□	External Relief Machining	
MGIVR/L P. 213		**MGIVR/L** 2520-□ 3125-□ 3732-□ 4540-□	Internal Grooving Internal Turning	
MGIUR/L P. 214		**MGIUR/L** 3520-□ 4025-□ 5032-□	Internal Relief Machining	
FTIH P. 215		**FTIH** 08312S 14316C 08312C 14416C 08412C 14516C 08512C 16312S 11312S 16312C 11412C 16412C 11512C 16512C 14312S 16316C 14312C 16416C 14412C 16516C 14512C	Internal Grooving, Forming, Threading Turning, Milling Grooving	FTG 08000~16000R/L FTT 08000~16000R/L FTF 08000~16000R/L P. 192, 193
DBH P. 216		**DBH** 320 325 520 525 720 725	Grooving (Deep & Wide)	DC 300~500 DB 300~800 P. 195, 196
FGHH **FGVH** P. 217		**FGHH** 325R-48/60 **FGVH** 60/75 75/100 100/140 **FGHH** 425R-48/60 **FGVH** 60/75 75/100 100/140 **FGHH** 525R-48/60 **FGVH** 60/75 75/100 100/140	Facial Grooving	FGD 300R-03 400R-04 500R-04 FGM 300R-03 400R-04 500R-04 FMM 300R-03 400R-04 500R-05 P. 199

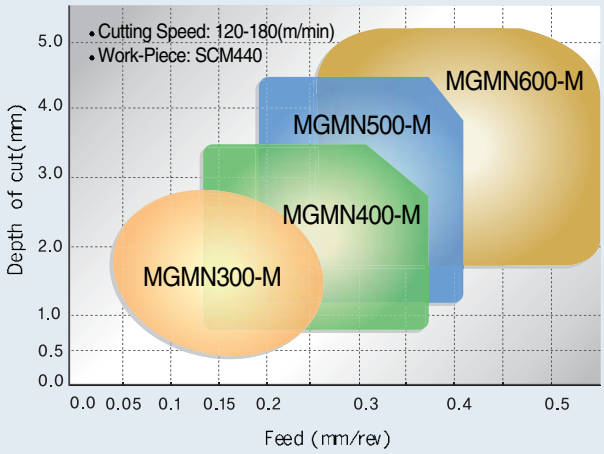
Shape		Designation	Use	Available Insert
GFT P. 218		**GFT** 325 525 825	Forming, Grooving (Deep & Wide)	GW 110R/L~800R/L BF 3 5 8 P. 196, 199
GH P. 218		**GH** 2020-3 -4 2525-3 -4	Grooving (Narrow, O-Ring, Snap Ring)	GS 125~430 GO 250~410 P. 197
PH P. 219		**PH** 320 325 420 425 525	Parting off, Grooving	POB 300 400 500 P. 200
TBH P. 219		**TBH** 320-23R 420-33R 320-33R 420-45R 320-43R 425-23R 325-23R 425-33R 325-33R 425-45R 325-43R 420-23R	Narrow Grooving	TB 3125~3430 TB 4125~4450 P. 198
GFIK P. 220		**GFIK** 316 325 340 525 540 840	Relief Grooving	GR 310R/L~840R/L P. 119
GFIP P. 220		**GFIP** 316 320 325 340 525 540 840	Internal Grooving	GW 110R/L~800R/L BF 3 5 8 P. 196, 199
IGH P. 221		**IGH** 214 216 220	Internal, Small diameter Grooving	IG 125~280 P. 198
SPB **SPB-S** P. 221, 222		**SPB** 226 232 **SPB-S** 326 332 426 432 526 532 626 632	Parting off	SP 200 300 400 500 600 P. 201

Forming, Grooving, Parting-off, Relieving Tool Index

KORLOY

Shape		Designation	Use	Available Insert
SPH **SPH-S** P. 222, 223		**SPH 316** **SPH-S 320** **325** **420** **425** **520** **525**	Parting off	SP 300 400 500 600 P. 201
SMBB P. 223		**SMBB 1626** **2026** **2032** **2526** **2532** **3232**	Saw-man Blade Block	SPB 226 232 SPB-S 326 332 426 432 526 532 626 632 P. 221, 222

Appication Range of M.G.T. Insert



Depth of Cut, Feed and Width of Cutting Edge

- If the depth of cut and feed are too bigger than the width of cutting edge, it may bring into breaking due to increasing of cutting resistance of insert.
- If the depth of cut and feed are tool smaller than the width of cutting edge, it may lead to the vibration or unstable machining due to no formation of the sub-cutting edge relief angle.

Depth of Cut in Grooving Operation

- It can be performed as deep as Tmax of the holder.

The Basis of Selection for Grades

Work-Piece		The Basis of Selection for Grades (Grooving, Turning)						
ISO	Material	Grade	Wear resistance ◄——► Toughness					
			01	10	20	30	40	
P	Carbon steel Alloy steel	CVD	NC3010	NC3020		NC3030		
		PVD	PC3535(PC230)					
		Cermet	CT10		CN20			
M	Stainless steel	CVD	NC3020		NC3030			
		PVD	PC9030(PC230)					
K	Cast iron	CVD	NC6010		NC315K			
		PVD	PC205K		PC215K			
	Aluminium	Uncoated	H01				G10	

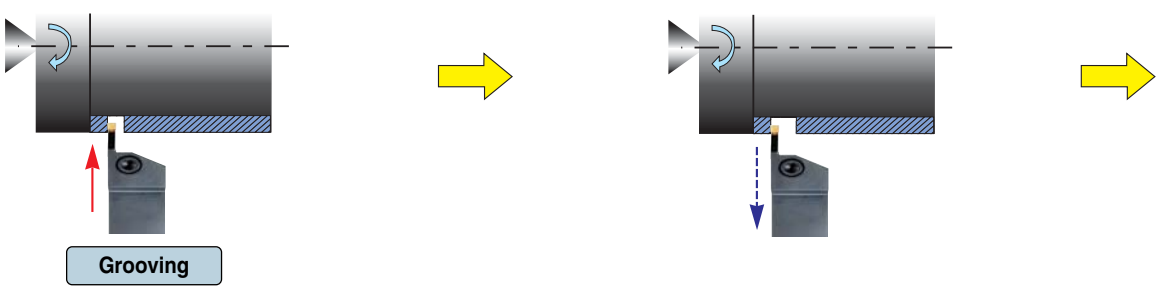
: Primary Recommendation

Applcation Range of M.G.T. Insert

Cat.No	Steel						Stainless Steel			Cast Iron		Aluminium
	CVD		PVD		Cermet		CVD	PVD		PVD	Carbide	Carbide
	NC3020	NC3030	PC230	PC3535	CN20	CT10	NC3030	PC230	PC9030	PC215K	G10	H01
MGMN150-G	●	-	-	●	-	-	-	-	-	-	-	-
MGMN200-G	●	△	△	-	-	-	△	△	●	△	△	-
MGMN200-M	●	-	-	-	-	-	-	-	●	-	-	-
MGMN250-G	●	-	-	-	-	-	-	-	●	-	-	-
MGMN250-M	●	-	-	-	-	-	-	-	●	-	-	-
MGMN300-G	△	△	△	-	-	-	△	△	-	△	△	-
MGMN400-G	△	△	△	-	-	-	△	△	-	△	△	-
MGMN500-G	△	△	△	-	-	-	△	△	-	△	△	-
MGMN300-M	●	●	●	-	-	-	●	●	-	●	△	-
MGMN400-M	●	●	●	-	-	-	●	●	-	●	△	-
MGMN500-M	●	△	●	-	-	-	△	●	-	△	△	-
MGMN600-M	●	△	△	-	-	-	△	△	-	△	△	-
MGMN800-M	△	△	△	-	-	-	△	△	-	△	△	-
MGGN300-00-M	-	-	-	-	△	△	-	-	-	-	-	-
MGGN400-00-M	-	-	-	-	△	△	-	-	-	-	-	-
MGGN500-00-M	-	-	-	-	△	△	-	-	-	-	-	-
MGGN600-00-M	-	-	-	-	△	△	-	-	-	-	-	-
MRMN300-M	●	△	△	-	-	-	△	△	-	△	△	-
MRMN400-M	●	△	△	-	-	-	△	△	-	△	△	-
MRMN500-M	●	△	△	-	-	-	△	△	-	△	△	-
MRMN600-M	●	△	△	-	-	-	△	△	-	△	△	-
MRMN800-M	△	△	△	-	-	-	△	△	-	△	△	-
MRGN600-A	-	-	-	-	-	-	-	-	-	-	-	●
MRGN800-A	-	-	-	-	-	-	-	-	-	-	-	●

Note / ● : Stock △ : Order Made

M.G.T Applications

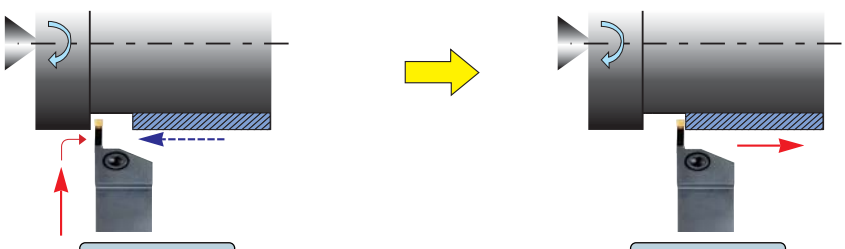


Grooving

Applcation Range of M.G.T. Insert

Feed by Cat.No.		Recommended cutting speed by Work-piece											
Cat.No	Feed (mm/rev)	Carbon Steel			High Hardened Alloy Steel			Hardend Steel			STS	Cast ironl	Al
		NC3020	NC3030	CN20 CT10	NC3020	NC3030 PC230	CN20 CT10	NC3020	NC3030	CN20 CT10	PC9030 PC230	PC215K	H01
MGMN150-G MGMN200-M(G) MRMN250-M(G)	0.05	200	170	170	180	150	150	130	100	100	160	210	-
	0.12	180	150	150	160	130	130	120	90	90	150	180	-
	0.2	150	120	120	130	100	100	90	60	60	130	150	-
MGMN300-M(G) MGGN300-00-M MRMN300-M	0.07	190	160	160	160	130	130	120	90	90	160	200	-
	0.15	170	140	140	140	110	110	100	70	70	140	180	-
	0.25	140	110	110	120	90	90	60	40	40	120	150	-
MGMN400-M(G) MGGN400-00-M MRMN400-M	0.13	200	170	170	180	150	150	130	100	100	160	210	-
	0.25	170	140	140	160	130	130	110	80	80	140	180	-
	0.35	120	100	100	130	100	100	70	50	50	120	130	-
MGMN500-M(G) MGGN500-00-M MRMN500-M	0.15~0.2	180	150	150	160	130	130	120	90	90	150	180	-
	0.3	150	120	120	130	100	100	70	50	50	120	130	-
	0.4	120	100	100	100	80	80	60	40	40	100	120	-
MGMN600-M MGGN600-00-M MRMN600-M	0.25	190	160	160	160	130	130	100	70	70	160	190	-
	0.35	150	120	120	100	80	80	70	50	50	110	150	-
	0.5	120	90	90	80	50	50	50	30	30	80	120	-
MRMN800-M	0.25	190	160	160	160	130	130	100	70	70	160	190	-
	0.35	150	120	120	100	80	80	70	50	50	110	150	-
	0.4	120	90	90	80	50	50	50	30	30	80	120	-
MRGN 300-A 400-A 500-A 600-A	0.1	-	-	-	-	-	-	-	-	-	-	-	250~1000
	0.25	-	-	-	-	-	-	-	-	-	-	-	250~800
	0.4	-	-	-	-	-	-	-	-	-	-	-	250~700
MRGN800-A	0.1	-	-	-	-	-	-	-	-	-	-	-	250~1000
	0.25	-	-	-	-	-	-	-	-	-	-	-	250~800
	0.4	-	-	-	-	-	-	-	-	-	-	-	250~700

- Recommendations written above are subject to change as per machine,work piece,etc.
- Contact KORLOY for more information.



Cornering

Turning

Fine tool Technical Guide

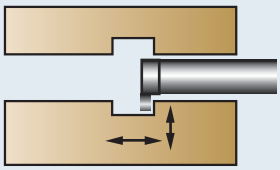
Applications

Internal grooving, Copying, Threading and Boring at ø8~ ø20.

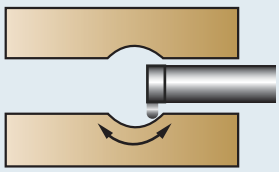
Features

1. Strong clamping structure and special insert shape suitable to the internal operation of small diameter.
2. Various cutting operations are possible because one holder can be appliedwith 6 kinds of inserts as the cutting purpose.
3. Guarantee of the optimal tool life as the combination of TiAlN coating layer and the good toughness substrates.
4. High precision cutting operations are ensured by precise grinding class inserts.

Application Examples



<Grooving, Boring>



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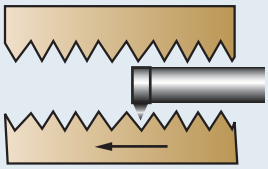
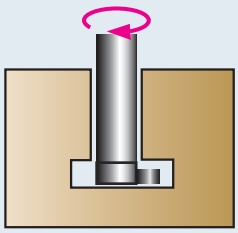


〈Threading〉



〈Milling-Grooving〉

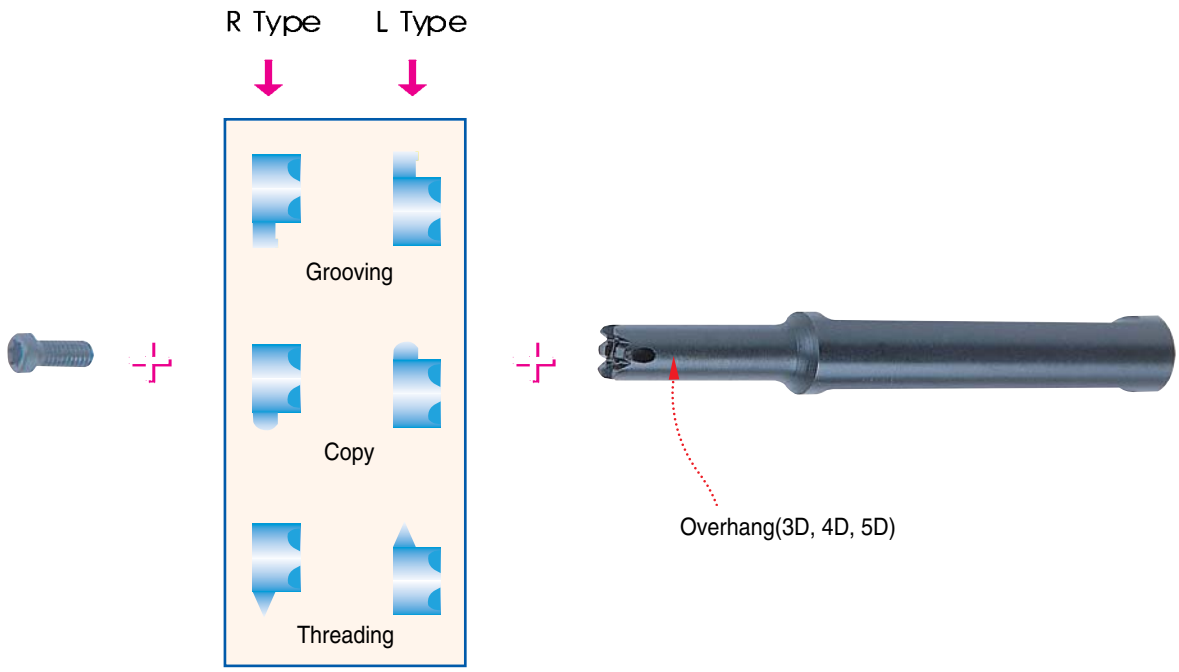
Recommended Cutting Conditions

Work-piece Material	Grade		Cutting Conditions(V:m/min, f:min/rev)				
				Minimum Cutting Diameter			
	PC230	PC215K		ø8	ø11	ø14	ø16
Carbon Steel	◎	△	V f	30~60 0.01~0.03	30~80 0.01~0.04	30~80 0.01~0.04	30~80 0.01~0.04
Alloy Steel	◎	△	V f	30~60 0.01~0.03	30~80 0.01~0.04	30~80 0.01~0.04	30~80 0.01~0.04
Cast Iron	△	◎	V f	30~60 0.01~0.03	30~80 0.01~0.04	30~80 0.01~0.04	30~80 0.01~0.04
Non-ferrous Alloy	△	◎	V f	Over 70 0.01~0.03	Over 100 0.01~0.04	Over 100 0.01~0.04	Over 100 0.01~0.04

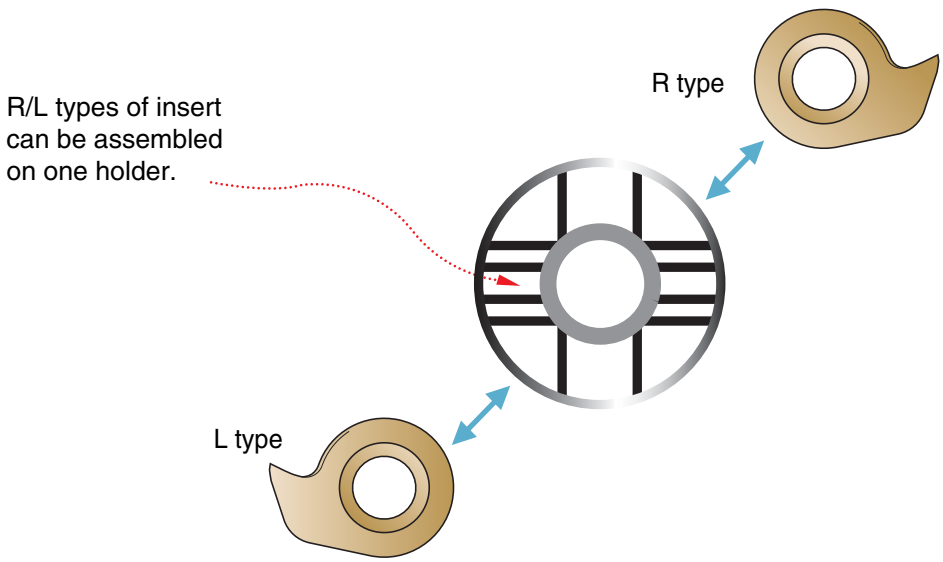
Notice
1. If the tool has vibration, reduce cutting speed and feed.
2. It is favorable to start lowest cutting condition written above, and increase the conditions step by step.
3. Use step feeding, if the grooving depth exceed 1mm.

Clamping System

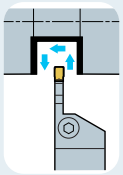
Screw	Inserts	Holder



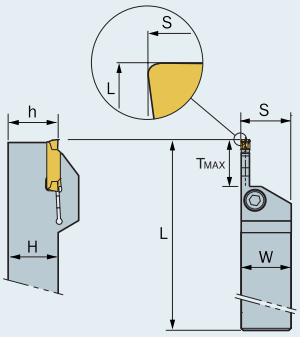
Useful Setting Method



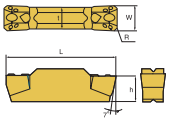
MGEHR/L



Feed direction



Right-hand shown

Ref	Holder Style	Application	Available Inserts	Parts	
Comment		External Grooving , Turning			

(mm)

Designation		Stock R	Stock L	H(h)	W	L	S	TMAX	Screw	Wrench
MGEHR/L	1616-1.5	●	●	16	16	100	16.25	14.5	MGMN150-G	LTX0512	TW20L
	2020-1.5	●	●	20	20	125	20.25	14.5			
	2525-1.5	●	●	25	25	150	25.25	14.5			
	1212-2	●		12	12	100	14.25	14.5	MGMN200-G MGMN200-M	BHA0616	HW50L
	1616-2	●	●	16	16	100	16.25	14.5			
	2020-2	●	●	20	20	125	20.25	14.5			
	2525-2	●	●	25	25	150	25.25	14.5			
	1616-2.5	●	●	16	16	100	16.30	16.5	MGMN250-G MGMN250-M	MHA0512	HW40L
	2020-2.5	●	●	20	20	125	20.30	16.5			
	2525-2.5	●	●	25	25	150	25.30	16.5			
	1616-3	●	●	16	16	100	16.35	18.5	MGMN300-M MGGN300-□□-M MRMN300-M	BHA0616	HW 50L
	2020-3	●	●	20	20	125	20.4	18			
	2020-3-T10	●		20	20	125	20.4	10			
	2525-3	●	●	25	25	150	25.4	18			
	2525-3-T10	●		25	25	150	25.4	10			
	3232-3	●	●	32	32	170	32.4	18			
	3232-3-T10			32	32	170	32.4	10			
	2020-4	●	●	20	20	125	20.4	18	MGMN400-M MGGN400-□□-M MRMN400-M		
	2020-4-T10	●		20	20	125	20.4	10			
	2525-4	●	●	25	25	150	25.4	18			
	2525-4-T10	●	●	25	25	150	25.4	10			
	3232-4	●	●	32	32	170	32.4	18			
	3232-4-T10			32	32	170	32.4	10			
	2020-5	●	●	20	20	150	20.5	23	MGMN500-M MGGN500-□□-M MRMN500-M		
	2020-5-T15			20	20	150	20.5	15			
	2525-5	●	●	25	25	150	25.5	23			
	2525-5-T15			25	25	150	25.5	15			
	3232-5	●	●	32	32	170	32.5	23			
	3232-5-T15			32	32	170	32.5	15			
	2020-6	●	●	20	20	125	20.6	23	MGMN600-M MGGN600-□□-M MRMN600-M		
	2020-6-T15			20	20	125	20.6	15			
	2525-6	●	●	25	25	150	25.6	23			
	2525-6-T15			25	25	150	25.6	15			
	3232-6	●	●	32	32	170	32.6	23			
	3232-6-T15			32	32	170	32.6	15			
	2525-8	●	●	25	25	150	26.1	28	MRMN800-M		
	2525-8-T15	●		25	25	150	26.1	15			
	3232-8	●		32	32	170	33.1	28			
	3232-8-T15			32	32	170	33.1	16			
	2525-6A	●	●	25	25	150	25.6	23	MRGN600-A		
	2525-6A-T15			25	25	150	25.6	15			
	3232-6A			32	32	170	32.6	23			
	3232-6A-T15			32	32	170	32.6	15			
	2525-8A	●	●	25	25	150	26.1	28	MRGN800-A		
	2525-8A-T15	●	●	25	25	150	26.1	16			
	3232-8A			32	32	170	33.1	28			
	3232-8A-T15			32	32	170	33.1	15			

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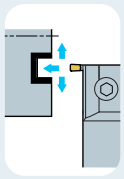
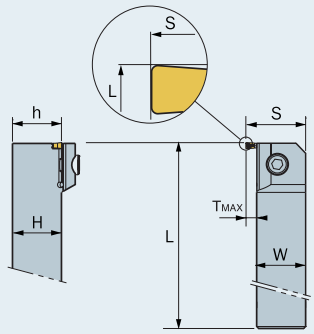
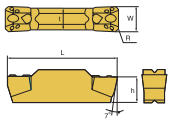
● : Stock Item ○ : Under preparing for stock

MGEVR/L


Feed direction



Right-hand shown

Ref	Holder Style	Application	Available Inserts	Parts	
Comment		Facial grooving , Turning		 Screw	 Wrench

(mm)

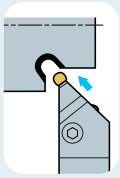
Designation		Stock R	Stock L	H(h)	W	L	S	TMAX	Available Inserts
MGEVR/L	2020-1.5	○		20	20	125	23	3	MGMN150-G
	2525-1.5			25	25	150	28	3	
	3232-1.5			32	32	170	35	3	
	2020-2	●		20	20	125	23.5	3.5	MGMN200-M MGMN200-G
	2525-2	○		25	25	150	28.5	3.5	
	3232-2			32	32	170	35.5	3.5	
	2020-2.5	○		20	20	125	24	4	MGMN250-M MGMN250-G
	2525-2.5	○		25	25	150	29	4	
	3232-2.5			32	32	170	36	4	
	2020-3	●		20	20	125	25.5	5	MGMN300-M MGGN300-□□-M MRMN300-M
	2525-3	●	●	25	25	150	30.5	5	
	3232-3	○		32	32	170	37.5	5	
	2020-4	●		20	20	125	25.5	5	MGMN400-M MGGN400-□□-M MRMN400-M
	2525-4	●		25	25	150	30.5	5	
	3232-4	○		32	32	170	37.5	5	
	2020-5			20	20	125	27	7	MGMN500-M MGGN500-□□-M MRMN500-M
	2525-5	○		25	25	150	32	7	
	3232-5	○		32	32	170	39	7	
	2020-6			20	20	125	27	7	MGMN600-M MGGN600-□□-M MRMN600-M
	2525-6	○		25	25	150	32	7	
	3232-6	○		32	32	170	39	7	
	2525-8			25	25	150	34	9	MRMN800-M
	3232-8	○		32	32	170	41	9	
	2525-6A			25	25	150	32	7	MRGN600-A
	3232-6A			32	32	170	39	7	
	2525-8A			25	25	150	34	9	MRGN800-A
	3232-8A			32	32	170	41	9	

BHA0616 | HW 50L

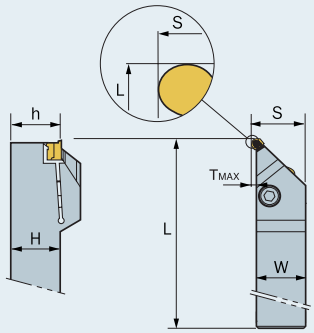
P. 194, 195

● : Stock Item ○ : Under preparing for stock

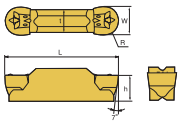
MGEUR/L



Feed direction



Right-hand shown

Ref	Holder Style	Application	Available Inserts	Parts	
Comment		External Relief Grooving			

(mm)

Designation		Stock R	Stock L	H(h)	W	L	S	TMAX	Screw	Wrench
MGEUR/L	2020-3	●		20	20	125	23	3		
	2525-3	●		25	25	150	28	3	MRMN300-M	
	3232-3			32	32	170	35	3		
	2020-4	○		20	20	125	23	3		
	2525-4	●		25	25	150	28	3	MRMN400-M	
	3232-4	○		32	32	170	35	3		
	2020-5			20	20	125	24	4		
	2525-5	○		25	25	150	29	4	MRMN500-M	
	3232-5	○		32	32	170	36	4		
	2020-6			20	20	125	24	4		
	2525-6	○		25	25	150	29	4	MRMN600-M	
	3232-6	○		32	32	170	36	4		
	2525-8			25	25	150	30	5	MRMN800-M	
	3232-8			32	32	170	37	5		
	2525-6A			25	25	150	29	4	MRGN600-A	
	3232-6A			32	32	170	36	4		
	2525-8A			25	25	150	30	5	MRGN800-A	
	3232-8A			32	32	170	37	5		

BHA0616 | HW 50L

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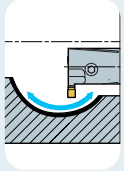
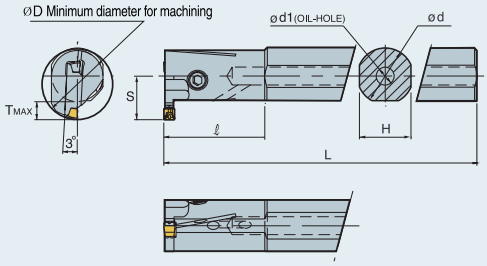
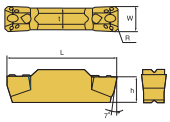
● : Stock Item ○ : Under preparing for stock

MGIVR/L





Right-hand shown

Ref	Holder Style	Application	Available Inserts	Parts	
Comment		Internal Grooving, Turning			

(mm)

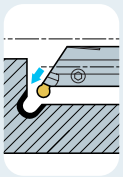
Designation		Stock R	Stock L	ø D	ø d	L	ℓ	TMAX	H	S	Screw	Wrench
MGIVR/L	2016-1.5	○		20	16	125	35	4	15	11.3	MHB0310	HW25L
	2520-1.5			25	20	150	45	4	18	13.1	MHA0512	HW40L
	2925-1.5			29	25	200	45	4	23	16.2		
	2016-2	●	●	20	16	125	35	5	15	12.4	MHB0310	HW25L
	2520-2	●	●	25	20	150	45	5	18	14.0	MHA0512	HW40L
	2925-2	●	●	29	25	200	45	5	23	17.2		
	2016-2.5			20	16	125	35	6	15	12.5	MHB0310	HW25L
	2520-2.5	○		25	20	150	45	6	18	15.1	MHB0512	HW40L
	2925-2.5	○		29	25	200	45	6	23	18.2		
	2520-3	●	●	25	20	150	45	6	18	15.6		
	3125-3	●	●	31	25	200	45	6	23	18.9		
	3732-3	●	●	37	32	250	65	6	30	21.5		
	2520-4	●	●	25	20	150	45	6	18	15.6		
	3125-4	●		31	25	200	45	6	23	18.9		
	3732-4	●		37	32	250	65	6	30	21.5		
	3125-5	●		31	25	200	45	8	23	19.4		
	3732-5	●		37	32	250	65	8	30	21.5		
	3125-6	●	●	31	25	200	45	8	23	19.4		
	3732-6	●		37	32	250	65	8	30	21.5		
	3732-8	●		37	32	250	65	10	30	23.4		
	4540-8	●		45	40	300	70	10	37	27.2		
	3125-6A			31	25	200	45	8	23	19.4		
	3732-6A			37	32	250	65	8	30	21.5		
	3732-8A			37	32	250	65	10	30	23.4		
	4540-8A			45	40	300	70	10	37	27.2		

Available Inserts	
MGMN150-G	
MGMN200-G MGMN200-M	
MGMN250-G MGMN250-M	
MGMN300-M	
MGGN300-□□-M	
MRMN300-M	
MGMN400-M	
MGGN400-□□-M	
MRMN400-M	
MGMN500-M	
MGGN500-□□-M	
MRMN500-M	
MGMN600-M	
MGGN600-□□-M	
MRMN600-M	
MRMN800-M	
MRGN600-A	
MRGN800-A	

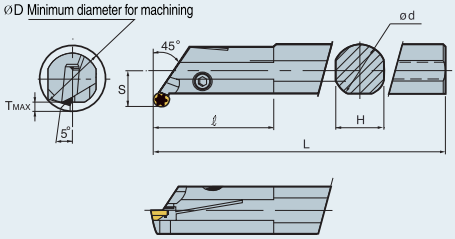
P. 194, 195

● : Stock Item ○ : Under preparing for stock

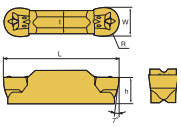
MGIUR/L



Feed direction



Right-hand shown

Ref	Holder Style	Application	Available Inserts	Parts	
Comment		Internal Relief Grooving			

(mm)

Designation		Stock R	Stock L	ØD	Ød	L	ℓ	TMAX	H	S	Screw	Wrench
MGIUR/L	3520-3	○		35	20	150	45	3.5	18	13	MHA0512	HW 40L
	4025-3	●		40	25	200	45	3.5	23	15.5		
	5032-3			50	32	250	65	3.5	30	19		
	3520-4			35	20	150	45	3.5	18	13		
	4025-4	●		40	25	200	45	3.5	23	15.5		
	5032-4	●		50	32	250	65	3.5	30	19		
	4025-5	○		40	25	200	45	3.5	23	15.5		
	5032-5	○		50	32	250	65	3.5	30	19		
	4025-6			40	25	200	45	3.5	23	19		
	5032-6	○		50	32	250	65	3.5	30	19		
	4025-8			40	25	200	45	6.5	23	15.5		
	5032-8	○		50	32	250	65	6.5	30	19		
	4025-6A			40	25	200	45	6.5	23	15.5		
	5032-6A			50	32	250	65	3.5	30	19		
	4025-8A			40	25	200	45	5.0	23	18.5		
	5032-8A			50	32	250	65	6.5	30	22		

Available Inserts
MRMN300-M
MRMN400-M
MRMN500-M
MRMN600-M
MRMN800-M
MRGN600-A
MRGN800-A

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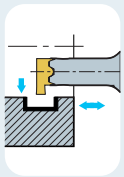
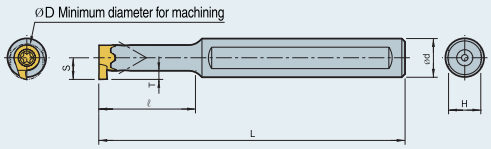
● : Stock Item ○ : Under preparing for stock

FTIH



Feed direction



Right-hand shown

Ref	Holder Style	Application	Available Inserts			Parts	
Comment		Internal grooving, threading, forming					

(mm)

Designation		Stock	ØD	Ød	L	ℓ	TMAX	H	S	Grooving	Threading	Forming	Screw	Wrench
FTIH	08312S	●	8	12	80	24	1.5 ~ 1.8	11	4.8	FTG0800R/L	FTT08000R/L	FTF08000R/L	PTKA02508	TW08P
	08312C	●	8	12	80	24		11	4.8					
	08412C	●	8	12	90	32		11	4.8					
	08512C	●	8	12	100	40		11	4.8					
	11312S	●	11	12	95	33	2 ~ 2.8	11	6.7	FTG11000R/L	FTT11000R/L	FTF11000R/L	PTKA03510	TW15P
	11312C	●	11	12	95	33		11	6.7					
	11412C	●	11	12	110	44		11	6.7					
	11512C	●	11	12	120	55		11	6.7					
	14312S	●	14	12	100	42	2 ~ 4.3	11	9	FTG14000R/L	FTT14000R/L	FTF14000R/L	PTKA0412	TW15P
	14312C	●	14	12	100	42		11	9					
	14412C	●	14	12	110	56		11	9					
	14512C	●	14	12	130	70		11	9					
	14316C	○	14	16	100	42		15	9					
	14416C	○	14	16	110	56		15	9					
	14516C	○	14	16	130	70		15	9					
	16312S	●	16	12	130	48	2 ~ 4.6	11	10.2	FTG16000R/L	FTT16000R/L	FTF16000R/L	PTKA0512	TW20P
	16312C	●	16	12	130	48		11	10.2					
	16412C	●	16	12	130	64		11	10.2					
	16512C	●	16	12	150	80		11	10.2					
	16316C	●	16	16	130	48		15	10.2					
	16416C	●	16	16	130	64		15	10.2					
	16516C	●	16	16	150	80		15	10.2					

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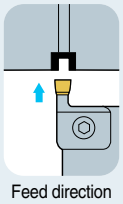
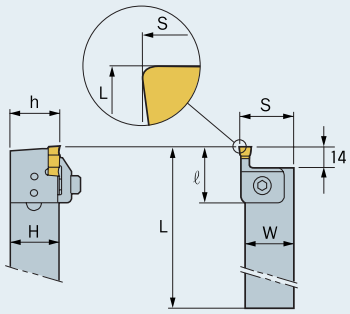
● : Stock Item ○ : Under preparing for stock

*** How to Read Designation : FTIH 08 3 12 S**

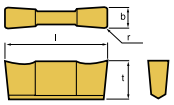
- S — Shank Material (S:Steel, C:Carbide)
- 12 — Shank Diameter
- 3 — Entering Depth
- 08 — Minimum Machining Diameter

DBH


Feed direction



Right-hand shown

Ref	Holder Style	Application	Available Inserts	Parts
Comment		Grooving for Wide, Deep		    

(mm)

Designation		Stock R	Stock L	H=(h)	W	L	ℓ	S		Available Inserts	Clamp	Clamp Screw	Screw	Locater	Wrench
DBH	320R/L	●		20	20	150	40	22.3*	22.8**	DB300,* 400**	CGH5R1	MHA0512	MHB0410	LD34	HW30L HW40L
	325R/L	●		25	25	150	40	27.3	27.8	DC300, 400					
	520R/L	●		20	20	150	40	23.8	24.3	DB500, 600	CGH5R2	MHA0512	MHB0410	LD56	HW30L HW40L
	525R/L	●		25	25	150	40	28.8	29.3	DC500					
	720R/L	●		20	20	150	40	25.8	26.3	DB700, 800	CGH5R3	MHA0512	MHB0410	LD78	HW30L HW40L
	725R/L	●		25	25	150	40	30.8	31.3						

• Available Insert : Use * holder for * insert and **holder for **insert.

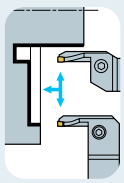
P. 195, 196

● : Stock Item ○ : Under preparing for stock

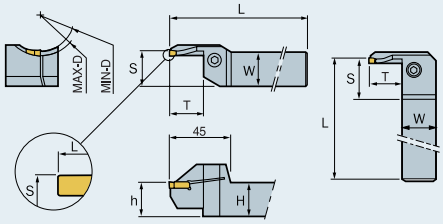
FGHH / FGVH

FGHH

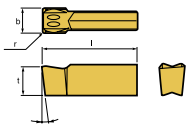
FGVH



Feed direction



Right-hand shown

Ref	Holder Style	Application	Available Inserts	Parts	
Comment		Tool Holder for Facial grooving		 Screw	 Wrench

(mm)

Designation		Stock FGHH	Stock FGVH	H=(h)	W	L	S	TMAX	Min	Max	Available Inserts	Screw	Wrench
FGHH (FGVH)	320R-25/30	●	●	20	20	125	20.6	12	25	30	FMM300R-03	MHB0625	HW50L
	30/35	●	●	20	20	125	20.6	12	30	35			
	35/48	●	●	20	20	125	20.6	12	35	48			
	48/60			20	20	125	20.6	22	48	60	FGD300R-03 FGM300R-03		
	60/75			20	20	125	20.6	22	60	75			
	75/100			20	20	125	20.6	22	75	100			
	100/140			20	20	125	20.6	22	100	140			
	325R-25/30	●	●	25	25	150	25.6	12	25	30	FMM300R-03		
	30/35	●	●	25	25	150	25.6	12	30	35			
	35/48	●	●	25	25	150	25.6	12	35	48			
	48/60	●	●	25	25	150	25.6	22	48	60	FGD300R-03 FGM300R-03		
	60/75	●	●	25	25	150	25.6	22	60	75			
	75/100	●	●	25	25	150	25.6	22	75	100			
	100/140	●	●	25	25	150	25.6	22	100	140			
	420R-25/30	●	●	20	20	125	20.6	12	25	30	FMM400R-04		
	30/35	●	●	20	20	125	20.6	12	30	35			
	35/48	●	●	20	20	125	20.6	12	35	48			
	48/60			20	20	125	20.6	25	48	60	FGD400R-04 FGM400R-04		
	60/75			20	20	125	20.6	25	60	75			
	75/100			20	20	125	20.6	25	75	100			
	100/140			20	20	125	20.6	25	100	140			
	425R-25/30	●	●	25	25	150	25.6	12	25	30	FMM400R-04		
	30/35	●	●	25	25	150	25.6	12	30	35			
	35/48	●	●	25	25	150	25.6	12	35	48			
	48/60	●	●	25	25	150	25.6	25	48	60	FGD400R-04 FGM400R-04		
	60/75	●	●	25	25	150	25.6	25	60	75			
	75/100	●	●	25	25	150	25.6	25	75	100			
	100/140	●	●	25	25	150	25.6	25	100	140			
	520R-25/30	●	●	20	20	125	20.6	12	25	30	FMM500R-04		
	30/35	●	●	20	20	125	20.6	12	30	35			
	35/40	●	●	20	20	125	20.6	20	35	40			
	40/48	●	●	20	20	125	20.6	20	40	48			
	48/60			20	20	125	20.6	25	48	60	FGD500R-04 FGM500R-04		
	60/75			20	20	125	20.6	25	60	75			
	75/100			20	20	125	20.6	25	75	100			
	100/140			20	20	125	20.6	25	100	140			
	525R-25/30	●	●	25	25	150	25.6	12	25	30	FMM500R-04		
	30/35	●	●	25	25	150	25.6	12	30	35			
	35/40	●	●	25	25	150	25.6	20	35	40			
	40/48	●	●	25	25	150	25.6	20	40	48			
	48/60	●	●	25	25	150	25.6	25	48	60	FGD500R-04 FGM500R-04		
	60/75	●	●	25	25	150	25.6	25	60	75			
	75/100	●	●	25	25	150	25.6	25	75	100			
	100/140	●	●	25	25	150	25.6	25	100	140			

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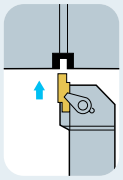
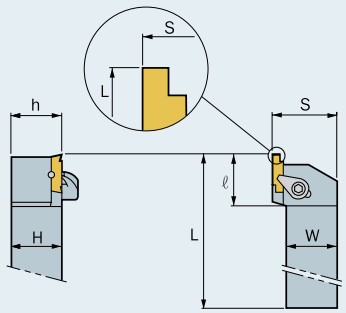
● : Stock Item ○ : Under preparing for stock

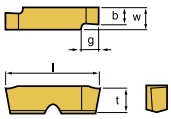
GFT



Feed direction



Right-hand shown

Ref	Holder Style	Application	Available Inserts	Parts			
Comment		Forming, Grooving for Wide, Deep					

(mm)

Designation		Stock R	Stock L	H=(h)	W	L	ℓ	S	Clamp	Screw	Pin	Wrench
GFT	320R/L	●		20	20	125	23.5	25	CS5R1	DHA0514	PN0308	HW25L
	325R/L	●	●	25	25	150	23.5	32				
	525R/L	●		25	25	150	25.5	32	CS6R1	DHA0617	PN0312	HW30L
	825R/L	●		25	25	150	28.5	32	CS8R1	DHA0820	PN0314	HW40L

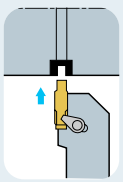
GW110~300R/L,BF3 | GW315~500R/L,BF5 | GW600~800R/L,BF8

• Use right-hand inert for right-hand holder

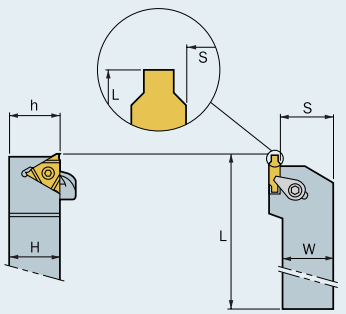
P. 196, 199

●: Stock Item ○: Under preparing for stock

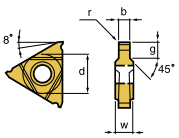
GH



Feed direction



Right-hand shown

Ref	Holder Style	Application	Available Inserts	Parts			
Comment		Grooving for Narrow, O-Ring, Snap-Ring					

(mm)

Designation		Stock R	Stock L	H=(h)	W	L	S	Clamp	Clamp Screw	Screw	Wrench
GH	2020R-3	●		20	20	125	22	CS6R1	DHA0617	PTMA03508	TW09P-HW30L
	2525R-3	●		25	25	150	27				
	2020R-4	●		20	20	125	21				
	2525R-4	●		25	25	150	26				

GS 125~280 | GO 250 | GS 330 | 430 | GO 320 | 410

• Use right-hand inert for right-hand holder

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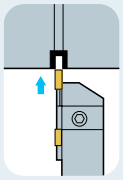
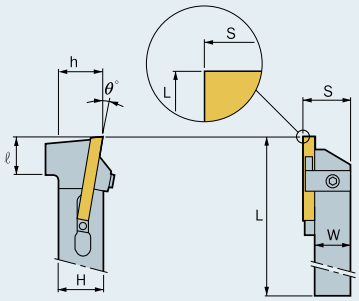
●: Stock Item ○: Under preparing for stock

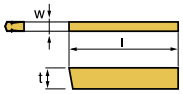
PH



Feed direction



Right-hand shown

Ref	Holder Style	Application	Available Inserts	Parts
Comment		Parting off, Grooving		

(mm)

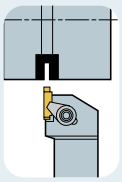
Designation		Stock R	Stock L	W	H	L	ℓ	S	h	θ°	최대 (ø)	Clamp	Clamp Screw	Stopper	Stopper Screw	Wrench
PH	320R	●		19	19	150	34	22.55	19	10°	30	CGH6R1	BHA0616	STP5	KHD0510	HW25L-HW50L
	325R	●		19	25	150	34	22.55	25	10°	40					
	420R	●		19	19	150	34	23.5	19	10°	30	CGH6R2	BHA0616	STP5	KHD0510	HW25L-HW50L
	425R	●		19	25	150	34	23.5	25	10°	40					
	520R	●		19	19	150	34	24.4	19	10°	50	CGH6R3	BHA0616	STP5	KHD0510	HW25L-HW50L
	525R	●		19	25	150	34	24.4	25	10°	50					

POB300 | POB400 | POB500

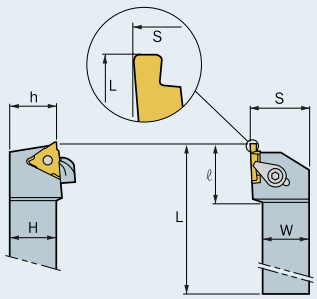
P. 200

● : Stock Item ○ : Under preparing for stock

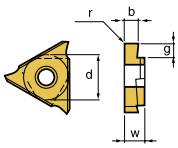
TBH



Feed direction



Right-hand shown

Ref	Holder Style	Application	Available Inserts	Parts
Comment		Narrow Grooving		

(mm)

Designation		Stock R	Stock L	H=(h)	W	L	ℓ	S	Clamp	Clamp Screw	Wrench
TBH	320-23	○		20	20	125	25.5	25	CS6R1	DHA0617	HW30L
	320-33	○		20	20	125	25.5	25			
	320-43	○		20	20	125	25.5	25			
	325-23	●		25	25	150	25.5	30			
	325-33	●		25	25	150	25.5	30			
	325-43	●		25	25	150	25.5	30			
	420-23	●		20	20	125	25.5	25			
	420-33	●		20	20	125	25.5	25			
	420-45	●		20	20	125	25.5	25			
	425-23	●		25	25	150	25.5	30			
	425-33	●		25	25	150	25.5	30			
	425-45	●		25	25	150	25.5	30			

TB3125-3230 | TB3280-3330 | TB3430 | TB3125-3230 | TB3280-3330 | TB3430 | TB4125-4230 | TB4250-4330 | TB4350-4450 | TB4125-4230 | TB4250-4330 | TB4350-4450

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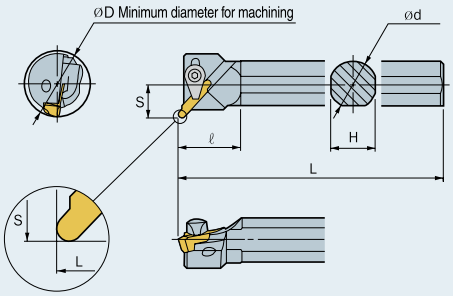
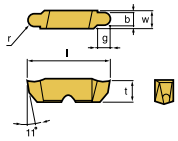
● : Stock Item ○ : Under preparing for stock

GFIK

Feed direction



Ref	Holder Style	Application	Available Inserts	Parts				
Comment		Relief grooving						

(mm)

Designation		Stock R	Stock L	ØD	Ød	H	L	ℓ	S		Clamp	C ring	Screw	Pin	Wrench
GFIK	316	○		22	16	15	150	21.5	11		CH5R2	CR04	CHX0513	PN0310	HW25L
	325	○		32	25	23	200	21.5	17	GR3 □□	CH5R2	CR04	CHX0513	PN0310	HW25L
	340			50	40	37	300	35.4	27		CS5RI		DHA0514	PN0310	
	525	○		32	25	23	200	27.5	17	GR5 □□	CS6R1		DHA0617	PN0314	HW30L
	540	○		50	40	37	300	39.5	27						
	840	○		50	40	37	300	41.8	27	GR8 □□	CS8R1		DHA0820	PN0314	HW40L

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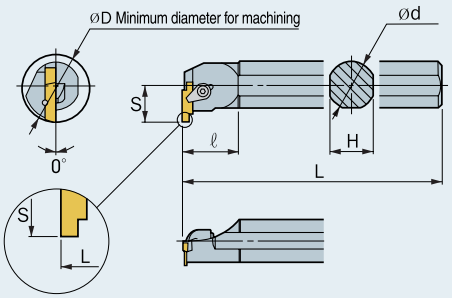
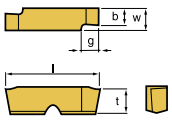
● : Stock Item ○ : Under preparing for stock

GFIP

Feed direction



Right-hand shown

Ref	Holder Style	Application	Available Inserts	Parts				
Comment		Internal Grooving						

(mm)

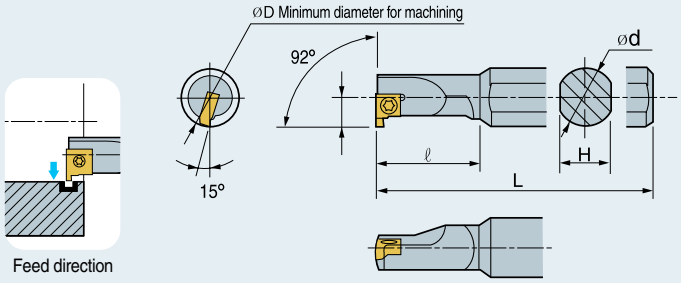
Designation		Stock R	Stock L	ØD	Ød	H	L	ℓ	S		Clamp	C ring	Screw	Pin	Wrench
GFIP	316R	●	●	20	16	15	150	17	11		CH5R2	CR04	CHX0513	PN0310	HW25L
	320R	●		26	20	18	150	22	13.5	BF3, GW110L-300L					
	325R	●		32	25	23	200	22	17						
	340R	●		50	40	37	300	32	27		CH6R2	CR05	CHX0616	PN0310	HW30L
	525R	●		32	25	23	200	22	17	BF5, GW315L-500L					
	540R	●		50	40	37	300	32	27						
	840R	●		50	40	37	300	32	27	BF8, GW600L-800L	CS8R1	-	DHA0820	PN0314	HW40L

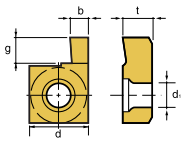
• Use right-hand inert for right-hand holder

P. 196, 199

● : Stock Item ○ : Under preparing for stock

IGH



Ref	Holder Style	Application	Available Inserts	Parts	
Comment		Internal, Small Diameter Grooving		 Screw	 Wrench

(mm)

Designation		Stock R	Stock L	øD	ød	H	L	ℓ	S
IGH	214	●		14	16	15	150	25	6.6
	216	●		16	16	15	150	30	7.6
	220	●		20	20	18	200	40	9.6

IG125 - 280 | FTKA02565 | TW07P

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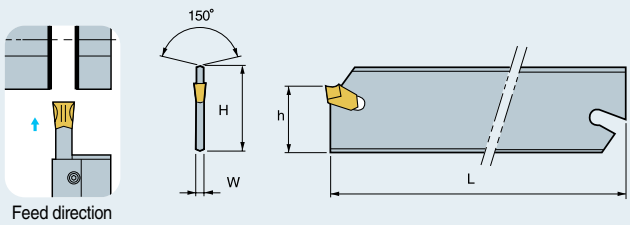
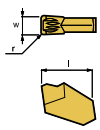
● : Stock Item ○ : Under preparing for stock

SPB



Ref	Holder Style	Application	Available Inserts	Parts
Comment		Parting off		 Wrench

(mm)

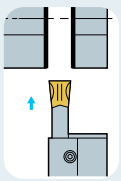
Designation		Stock	H	W	L	h	
SPB	226	●	26	1.6	110	21	SP200, 200R/L
	326	●	26	2.4	110	21	SP300, 300R/L
	426	●	26	3.2	110	21	SP400, 400R/L
	526	●	26	4.0	110	21	SP500, 500R/L
	626		26	5.2	110	21	SP600, 600R/L
	232	●	32	1.6	150	25	SP200, 200R/L
	332	●	32	2.4	150	25	SP300, 300R/L
	432	●	32	3.2	150	25	SP400, 400R/L
	532	●	32	4.0	150	25	SP500, 500R/L
	632	●	32	5.2	150	25	SP600, 600R/L

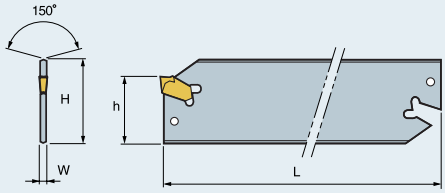
SW50L

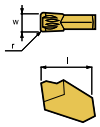
P. 201

● : Stock Item ○ : Under preparing for stock

SPB-S (Stopper type)


Feed direction



Ref	Holder Style	Application	Available Inserts	Parts
Comment		Parting off		

(mm)

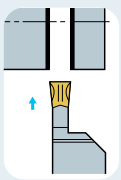
Designation		Stock	H	W	L	h	Wrench
SPB	226-S	●	26	1.6	110	21	SP200, 200R/L
	326-S	●	26	2.4	110	21	SP300, 300R/L
	426-S	●	26	3.2	110	21	SP400, 400R/L
	526-S		26	4.0	110	21	SP500, 500R/L
	626-S		26	5.2	110	21	SP600, 600R/L
	232-S	●	32	1.6	150	25	SP200, 200R/L
	332-S	●	32	2.4	150	25	SP300, 300R/L
	432-S	●	32	3.2	150	25	SP400, 400R/L
	532-S	●	32	4.0	150	25	SP500, 500R/L
	632-S		32	5.2	150	25	SP600, 600R/L

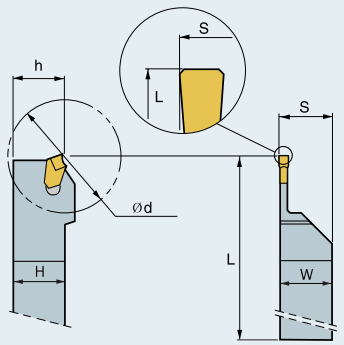
SW15S

P. 201

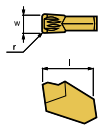
● : Stock Item ○ : Under preparing for stock

SPH


Feed direction



Right-hand shown

Ref	Holder Style	Application	Available Inserts	Parts
Comment		Parting off		

(mm)

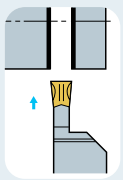
Designation		Stock R	Stock L	H=(h)	W	L	Ød	S	Wrench
SPH	316R/L	○		16	16	100	32	16.3	SP300, 300R/L
	320R/L	●	●	20	20	120	40	20.3	SP300, 300R/L
	420R/L	●		20	20	120	50	20.4	SP400, 400R/L
	520R/L	○		20	20	120	60	20.5	SP500, 500R/L
	325R/L	●		25	25	150	50	25.3	SP300, 300R/L
	425R/L	●	●	25	25	150	60	25.4	SP400, 400R/L
	525R/L	●		25	25	150	70	25.5	SP500, 500R/L

SW50L

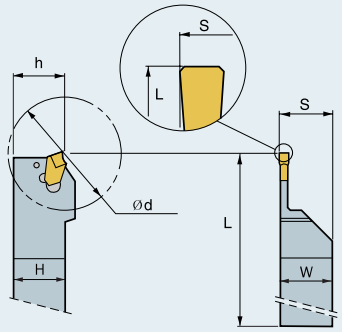
P. 201

● : Stock Item ○ : Under preparing for stock

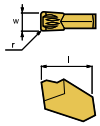
SPH-S (Stopper type)



Feed direction



Right-hand shown

Ref	Holder Style	Application	Available Inserts	Parts
Comment		Parting off		

(mm)

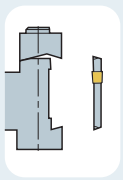
Designation		Stock R	Stock L	H=(h)	W	L	ød	S	Wrench
SPH	316R/L-S	●		16	16	100	32	16.3	SP300, 300R/L
	320R/L-S	●		20	20	120	40	20.3	SP300, 300R/L
	420R/L-S	●		20	20	120	50	20.4	SP400, 400R/L
	520R/L-S	○		20	20	120	60	20.5	SP500, 500R/L
	325R/L-S	●		25	25	150	50	25.3	SP300, 300R/L
	425R/L-S	○		25	25	150	60	25.4	SP400, 400R/L
	525R/L-S	●		25	25	150	70	25.5	SP500, 500R/L

SW15S

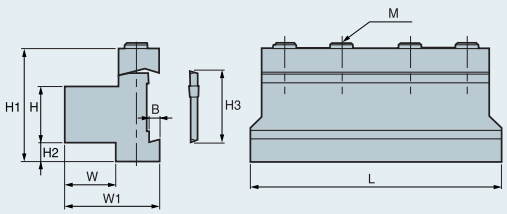
P. 201

● : Stock Item ○ : Under preparing for stock

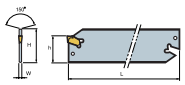
SMBB



Feed direction



Right-hand shown

Ref	Holder Style	Application	Available Inserts	Parts
Comment		Sawman blade block		

(mm)

Designation		Stock	H	W	H3	L	H1	H2	W1	B	M	Wrench
SMBB	1626	○	16	12	26	86	43	13	30	5.3	3-M6	
	2026	●	20	19	26	86	43	9	38	5.3	3-M6	SPB □26
	2032	●	20	19	32	100	50	13	38	5.3	4-M6	SPB □32
	2526	●	25	23	26	86	43	4	42	5.3	4-M6	SPB □26-S
	2532	●	25	23	32	110	50	8	42	5.3	4-M6	SPB □32-S
	3232	●	32	30	32	110	54	5	48	5.3	4-M6	

HW50L

P. 221, 222

● : Stock Item ○ : Under preparing for stock

Threading insert Code system

E	R	16	–	1.5	ISO
1	2	3		4	5

1 Type of Insert

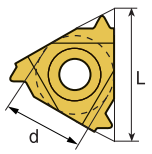
E : External
I : Internal

2 Hand of Insert

R : Right Hand Insert
L : Left Hand Insert

3 Insert Size

11 - IC 6.35
16 - IC 9.525
22 - IC 12.7
27 - IC 15.875



4 Pitch

Full profile

mm	TPI
0.35 - 6.0	72 - 4

Partial profile

	mm	TPI
A	0.5 - 1.5	48 - 16
AG	0.5 - 3.0	48 - 8
G	1.75 - 3.0	14 - 8
N	3.5 - 5.0	7 - 5
Q	5.5 - 6.0	4.5 - 4

5 Thread Standard

60° - Partial profile 60°
55° - Partial profile 55°
ISO - ISO Metric
UN - American UN
W - Whitworth for BSW, BSP
NPT - NPT

Technical guide for threading

Special Features

External Thread

A thread on the external surface of a cylinder screw or cone

Depth of Thread

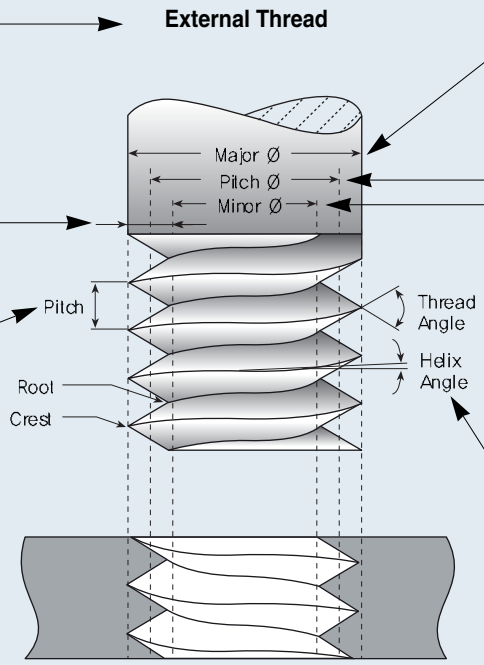
The distance between crest and root measured normal to the axis.

Pitch

The distance between 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.

Nominal Diameter

The diameter from which the diameter limits are derived by the application of deviation allowances and tolerances.



Internal Thread

A thread on the internal surface of a cylinder or 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 the lead.

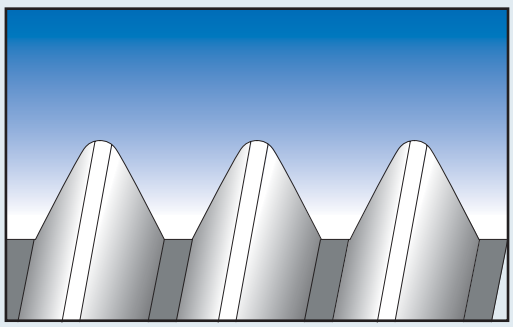
Straight Thread

A thread formed on a cylinder

Taper Thread

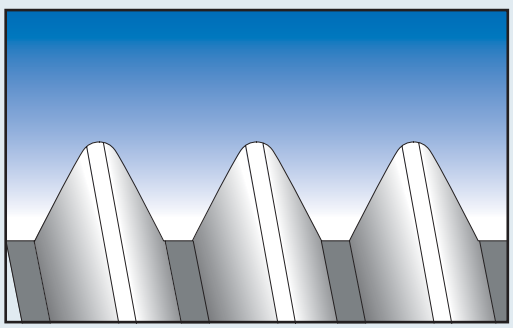
A thread formed on a cone

Left-hand thread



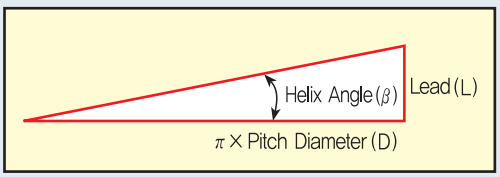
A thread which, when viewed axially, winds in a counterclockwise and receding direction. All left-hand threads are designated LH.

Right-hand thread



A thread which, when viewed axially, winds in a clockwise and receding direction. Threads are always right-hand unless otherwise specified.

The Helix Angle(β)



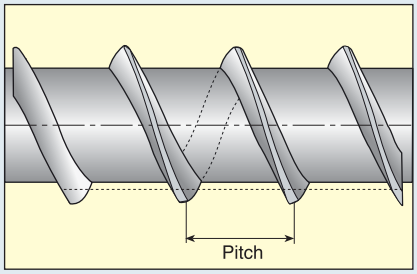
Lead

The distance a threaded part moves axially, with respect to a fixed mating part, in one complete revolution. The lead is equal to the pitch multiplied by the number of thread starts.

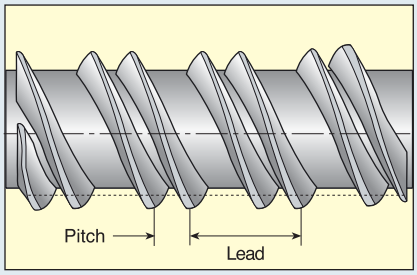
Machining a Multi-Start Thread

A thread in which the lead is an integral multiple, greater thanone, of the pitch. A multi-start thread permits a more rapid advance without a coarser (larger) thread form.

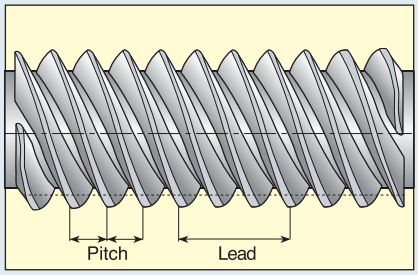
● First Start Machined



● Second Start Machined

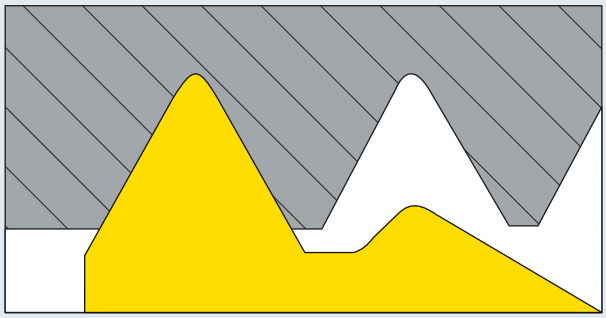


● Third Start Machined (Final, 3 Starts Thread)



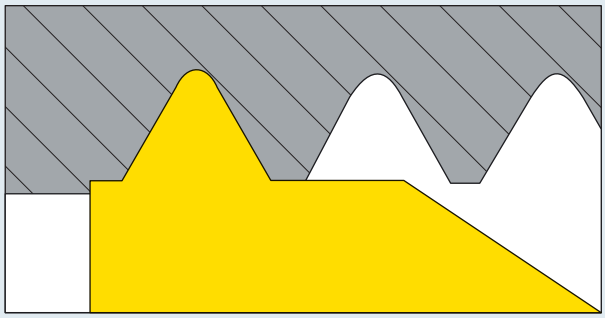
Insert Profile Style

● Partial Profile



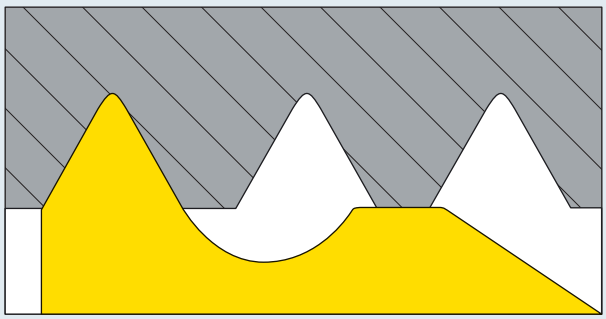
The V partial profile insert cuts without topping the outer diameter of the thread. The same insert can be used for a range of different thread pitches which have a common thread angle.

● Full Profile



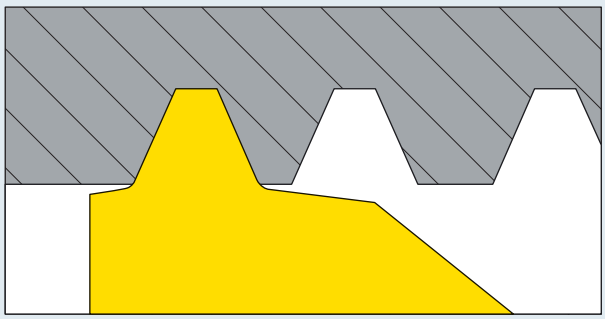
The full profile insert will form a complete thread profile including the crest. For every thread pitch and standard, a separate insert is required.

● 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.

● Semi Full

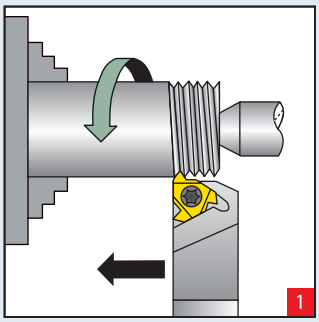


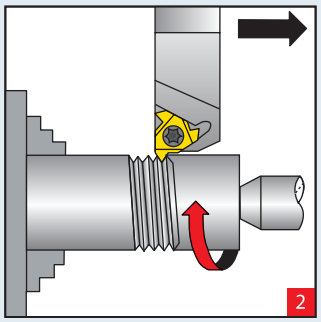
The Semi profile insert will form a complete thread including crest radius but without topping the outer diameter.
Mainly used for trapezoidal profiles.

Thread Turning Method

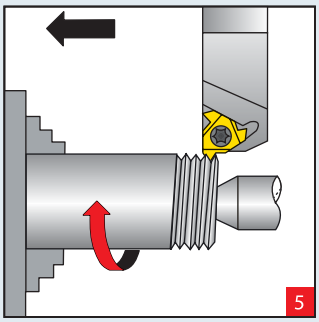
Thread	Inserts & Toolholder	Rotation	Feed Direction	Helix Method	Drawing No.
Right Hand External	EX RH	Counterclockwise	Towards chuck	Regular	1
	EX LH	Clockwise	From chuck	Reversed	2
Right Hand Internal	IN RH	Counterclockwise	Towards chuck	Regular	3
	IN LH	Clockwise	From chuck	Reversed	4
Left Hand External	EX LH	Counterclockwise	Towards chuck	Regular	5
	EX RH	Clockwise	From chuck	Reversed	6
Left Hand Internal	IN LH	Counterclockwise	Towards chuck	Regular	7
	IN RH	Clockwise	From chuck	Reversed	8

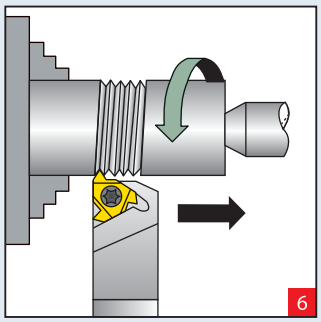
● External RH Thread



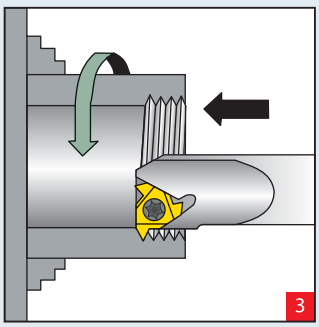


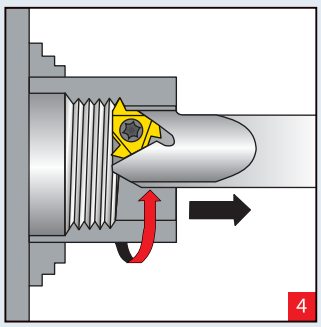
● External LH Thread



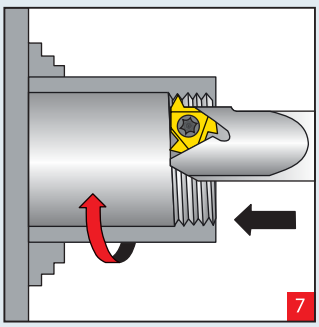


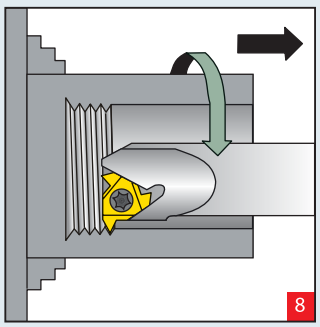
● Internal RH Thread





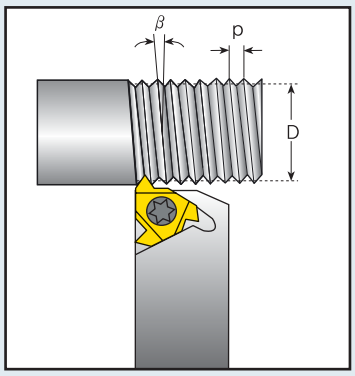
● Internal LH Thread





Technical guide for threading

Calculating the Helix Angle β



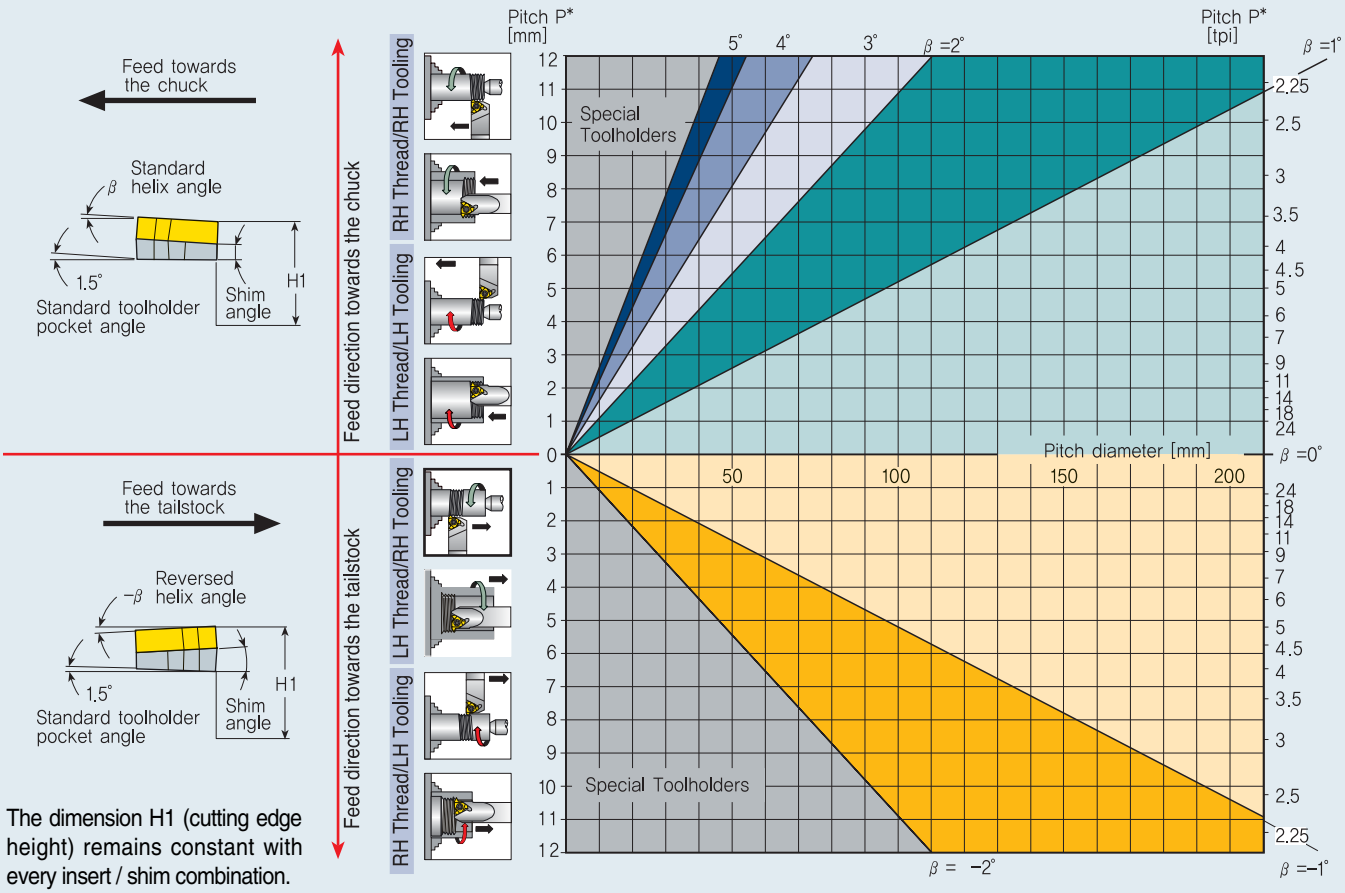
The helix angle is calculated by the following formula:

$$\beta = \tan^{-1}\frac{P \times N}{\pi \times D}$$

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

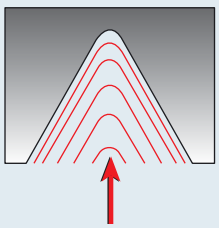


The dimension H1 (cutting edge height) remains constant with every insert / shim combination.

* For Multi-start threads, use the lead value instead of the pitch

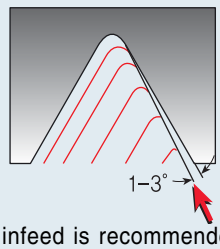
Thread Infeed Method

Radial Infeed



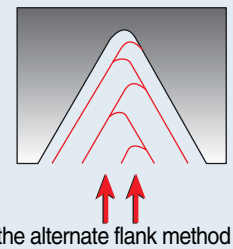
Radial infeed is the simplest and quickest method.
The feed is perpendicular to the turning axis, and both flanks of the insert perform the cutting operation.
Radial infeed is recommended in 3 cases:
- when the pitch is smaller than 16 tpi
- for material with short chips
- for work with hardened material

Flank Infeed (modified)



Flank infeed is recommended in the following cases:
- 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 result in three cutting edges, making chip flow very difficult.

Alternate Flank Infeed

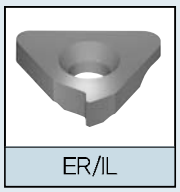


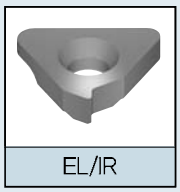
Use of the alternate flank method is recommended especially in large pitches and for materials with long chils.
This method divides the load equally on both flanks, resulting in equal wear along the cutting edges.
Alternate flank infeed requires more complicated programming, and is not available on all lathes.

Shim

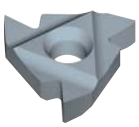
Resultant Helix Angle			1.5°
Insert Size		Holder	Ordering Code
IC	L(mm)		
9.525	16	ER/IL	ATE16
		EL/IR	ATI16
12.7	22	ER/IL	ATE22
		EL/IR	ATI22
15.875	27	ER/IL	ATE27
		EL/IR	ATI27

Standard Shim


ER/IL


EL/IR

Grade and Application

Grade	Application	Sample
PC3030T	A tough sub-micron substrate with TiAlN coating provides good fracture toughness and excellent wear resistance.	

Technical guide for threading

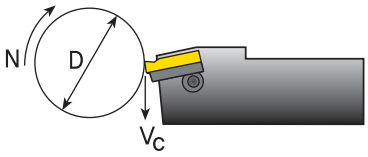
Recommended Cutting Speed as per workpiece [Vc]

Material			Hardness Brinell HB	Vc PC3030T
P	Unalloyed steel	Low carbon (C=0.1-0.25 %)	125	115-190
		Medium carbon (C=0.25-0.55 %)	150	100-175
		High carbon (C=0.55-0.85 %)	170	90-165
	Low alloy steel (alloying elements ≤ 5%)	Non hardened	180	85-145
		Hardened	275	75-140
		Hardened	350	70-135
	High alloy steel (alloying elements > 5%)	Annealed	200	70-110
		Hardened	325	50-100
	Cast steel	Low alloy (alloying elements <5%)	200	75-140
		High alloy (alloying elements >5%)	225	60-120
M	Stainless steel Feritic	Non hardened	200	70-130
		Hardened	330	60-115
	Stainless steel Austenitic	Austenitic	180	90-140
		Super austenitic	200	40-110
	Stainless steel Cast feritic	Non hardened	200	90-120
		Hardened	330	65-110
	Stainless steel Cast austenitic	Austenitic	200	85-110
		Hardened	330	60-100
	High temperature alloy	Annealed (Iron based)	200	45-60
		Aged (Iron based)	280	30-50
		Annealed (Nickel or Cobalt based)	250	20-30
		Aged (Nickel or Cobalt based)	350	15-25
	Titanium alloy	Pure 99.5 Ti	400Rm	140-170
		a+b alloys	1050Rm	50-70
K	Extra hard material	Hardened & tempered	55HRc	45-60
	Malleable cast iron	Ferritic (short chips)	130	70-160
		Pearlitic (long chips)	230	60-145
	Grey cast iron	Low tensile strength	180	70-130
		High tensile strength	260	60-115
	Nodular SG iron	Feritic	160	125-160
		Pearlitic	260	90-120
	Aluminum alloy Wrought	non aging	60	100-365
		Aged	100	80-220
	Aluminum alloy	Cast	75	200-400
		Cast & aged	90	200-280
		Cast Si 13-22%	130	60-180
	Copper and copper alloy	Brass	90	80-225
		Bronze and non leaded copper	100	80-225

Calculation of N [RPM]

$$N = \frac{1000 \times Vc}{\pi \times D}$$

$$Vc = \frac{N \times \pi \times D}{1000}$$

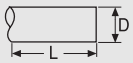
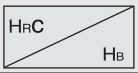
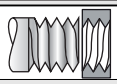
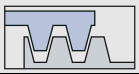
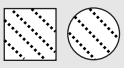
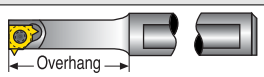
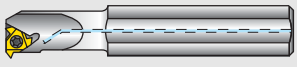
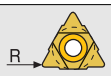


N - Revolution Per Minute [RPM]
Vc - Cutting Speed [m/min]
D - Workpiece Diameter [mm]

Number of Passes

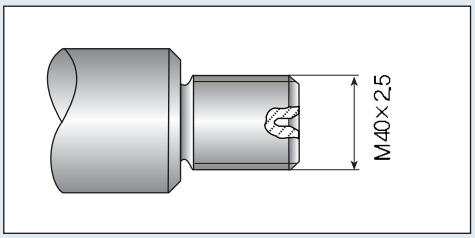
Pitch	mm	0.50	0.75	1.00	1.25	1.50	1.75	2.00	2.50	3.00	3.50	4.00	4.50	5.00	5.50	6.00	8.00
	TPI	48	32	24	20	16	14	12	10	8	7	6	5.5	5	4.5	4	3
No. of passes		4–6	4–7	4–8	5–9	6–10	7–12	7–12	8–14	9–16	10–18	11–18	11–19	12–20	12–20	12–20	15–24

Cutting Condition Depends 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, Carbide Implant	
Insert	Grade	
	Profile Shape: Pitch and Depth	
	Nose Radius	
	Chipbreaker Style	

Technical guide for threading

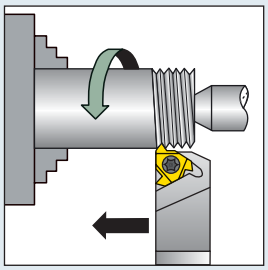
Step by Step Thread Turning - Example



Application:

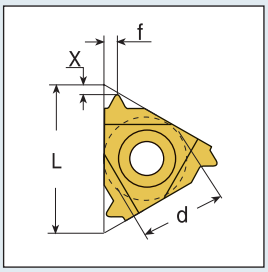
Thread : External Right Hand
ISO Metric M40x2.5
Material : 4140 (25 HRc)

1 Choose the Thread Turning Method



Feed direction towards the chuck was chosen.
Therefore an external right hand insert and an external right hand holder will be used.

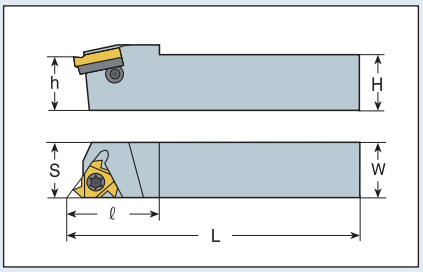
2 Choose the Insert Size



Chosen insert **: ER16 - 2.5 ISO**

Insert	Size	Pitch	Ordering Code	Shim	Toolholder
IC	L(mm)	mm	RH	RH	
9.525	16	2.5	ER16-2.5ISO	ATE16	ERH□□-16

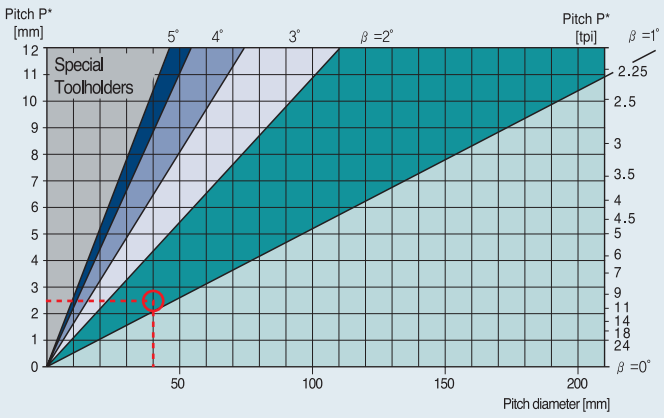
3 Choose the Toolholder



Chosen toolholder **: ERH 25 - 16**

Insert Size	Ordering Code	Dimensions (mm)			
IC	RH	H=H1=B	F	L_1	L_2
9.525	ERH 25-16	25	25	153.6	30

4 Determine the Helix Angle



From the table, using a pitch of 2.5 mm(10 tpi) and a workpiece diameter of 40mm (1.57″), we find the helix angle to be 1.5°.

5 Choose the Correct Shim

Shim Chosen : **ATE16**

Resultant Helix Angle		1.5°
Insert Size		**Odering Code**
IC	L(mm)	
3/8″	16	ATE16

6 Choose the Carbide Grade and Cutting Speed

Carbide grade chosen : **PC3030T**

Cutting speed : **140 m /min**

Material			Hardness Brinell HB	Vc PC3030T
P	**Low alloy steel** (alloying elements ≤5%)	Non hardened	180	85-145
		Hardened	275	75-140
		Hardened	350	70-135

7 Determine the Number of Passes

Number of passes : 10

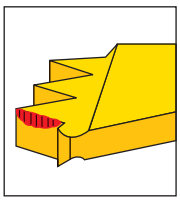
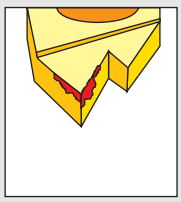
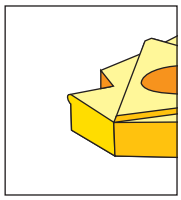
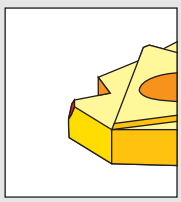
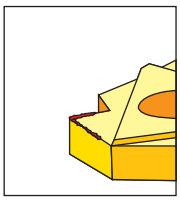
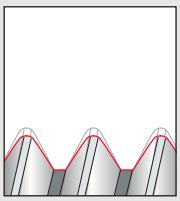
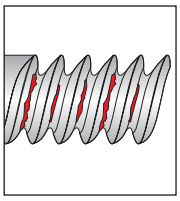
ISO External

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

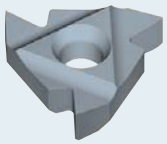
Summary

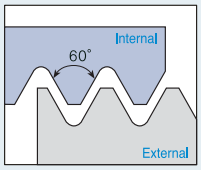
Thread Type	ISO M40x2.5 External Right Hand
1 Feed Direction:	Towards the chuck
2 Insert and Grade:	ER16-2.5ISO, PC3030T
3 Toolholder:	ERH25-16
4 Helix Angle:	1.5°
5 Shim	ATE16
6 Cutting Speed:	140 m/min
7 Number of Passes:	10

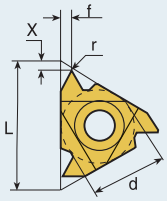
Trouble Shooting

Problem	Possible Cause	Solution
 **Increased flank wear**	Cutting speed too hight	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**	Cutting speed too low	Increase cutting speed
	Wrong shim	Choose correct shim
	Flank infeed method is not appropriate	Use the alternate flank or radial infeed method

Partial profile 60 ° (External)







Available Holder	Designation (Right hand)	PC3030T	Designation (Left hand)	PC3030T	Pitch (mm)	Number of crest (TPI)	Specification (mm)				
							d	L	r	X	f
ER(L)H□□-11(C)	ER11-A60	○	EL11-A60	○	0.5-1.5	48-16	6.35	11	0.05	0.8	0.9
	ER16-A60	●	EL16-A60	●	0.5-1.5	48-16	9.525	16	0.05	0.8	0.9
ER(L)H□□-16(C)	ER16-G60	●	EL16-G60	○	1.75-3.0	14-8	9.525	16	0.27	1.2	1.7
	ER16-AG60	●	EL16-AG60	○	0.5-3.0	48-8	9.525	16	0.08	1.2	1.7
ER(L)H□□-22(C)	ER22-N60	●	EL22-N60	○	3.5-5.0	7-5	12.7	22	0.53	1.7	2.5
ER(L)H□□-27(C)	ER27-Q60	●	EL27-Q60	○	5.5-6.0	4.5-4	15.875	27	0.64	2.1	3.1

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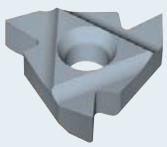
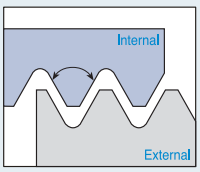
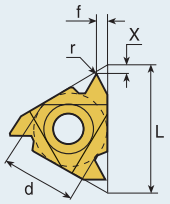
● : Stock Item ○ : Under preparing for stock

Partial profile 60 ° (Internal)







Available Holder	Designation (Right hand)	PC3030T	Designation (Left hand)	PC3030T	Pitch (mm)	Number of crest (TPI)	Specification (mm)				
							d	L	r	X	f
IR(L)H□□N-11	IR11-A60	●	IL11-A60	○	0.5-1.5	48-16	6.35	11	0.05	0.8	0.9
	IR16-A60	●	IL16-A60	○	0.5-1.5	48-16	9.525	16	0.05	0.8	0.9
IR(L)H□□-16(C)	IR16-G60	●	IL16-G60	○	1.75-3.0	14-8	9.525	16	0.16	1.2	1.7
	IR16-AG60	●	IL16-AG60	○	0.5-3.0	48-8	9.525	16	0.05	1.2	1.7
IR(L)H□□-22(C)	IR22-N60	●	IL22-N60	○	3.5-5.0	7-5	12.7	22	0.30	1.7	2.5
IR(L)H□□-27(C)	IR27-Q60	●	IL27-Q60	○	5.5-6.0	4.5-4	15.875	27	0.30	1.8	2.7

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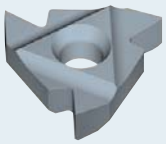
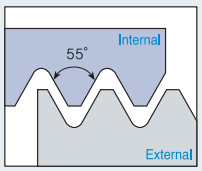
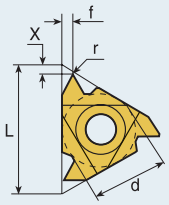
● : Stock Item ○ : Under preparing for stock

Partial profile 55 ° (External)







Available Holder	Designation (Right hand)	PC3030T	Designation (Left hand)	PC3030T	Pitch (mm)	Number of crest (TPI)	Specification (mm)				
							d	L	r	X	f
ER(L)H□□N-11	ER11-A55	○	EL11-A55	○	0.5-1.5	48-16	6.35	11	0.05	0.8	0.9
	ER16-A55	●	EL16-A55	○	0.5-1.5	48-16	9.525	16	0.05	0.8	0.9
ER(L)H□□16(C)	ER16-G55	●	EL16-G55	○	1.75-3.0	14-8	9.525	16	0.21	1.2	1.7
	ER16-AG55	●	EL16-AG55	○	0.5-3.0	48-8	9.525	16	0.07	1.2	1.7
ER(L)H□□22(C)	ER22-N55	●	EL22-N55	○	3.5-5.0	7-5	12.7	22	0.43	1.7	2.5
ER(L)H□□27(C)	ER27-Q55	○	EL27-Q55	○	5.5-6.0	4.5-4	15.875	27	0.60	2.0	2.9

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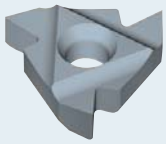
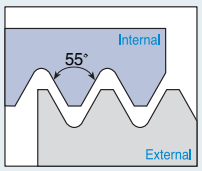
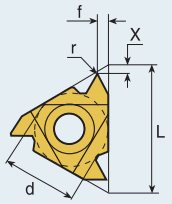
● : Stock Item ○ : Under preparing for stock

Partial profile 55 ° (Internal)







Available Holder	Designation (Right hand)	PC3030T	Designation (Left hand)	PC3030T	Pitch (mm)	Number of crest (TPI)	Specification (mm)				
							d	L	r	X	f
IR(L)H□□N-11	IR11-A55	●	IL11-A55	○	0.5-1.5	48-16	6.35	11	0.05	0.8	0.9
	IR16-A55	●	IL16-A55	○	0.5-1.5	48-16	9.525	16	0.05	0.8	0.9
IR(L)H□□16(C)	IR16-G55	●	IL16-G55	○	1.75-3.0	14-8	9.525	16	0.21	1.2	1.7
	IR16-AG55	●	IL16-AG55	○	0.5-3.0	48-8	9.525	16	0.07	1.2	1.7
IR(L)H□□22(C)	IR22-N55	●	IL22-N55	○	3.5-5.0	7-5	12.7	22	0.43	1.7	2.5
IR(L)H□□27(C)	IR27-Q55	○	IL27-Q55	○	5.5-6.0	4.5-4	15.875	27	0.60	2.0	2.9

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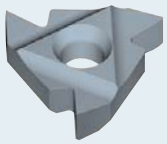
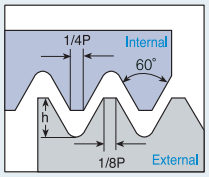
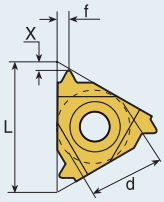
● : Stock Item ○ : Under preparing for stock

Iso Metric (External)







Available Holder	Designation (Right hand)	PC3030T	Designation (Left hand)	PC3030T	Pitch (mm)	Specification (mm)				
						d	L	h_{min}	X	f
ER(L)H□□N-11	ER11-0.35ISO	○	EL11-0.35ISO	○	0.35	6.35	11	0.21	0.8	0.4
	ER11-0.4ISO	○	EL11-0.4ISO	○	0.4	6.35	11	0.25	0.7	0.4
	ER11-0.45ISO	○	EL11-0.45ISO	○	0.45	6.35	11	0.28	0.7	0.4
	ER11-0.5ISO	○	EL11-0.5ISO	○	0.5	6.35	11	0.31	0.6	0.4
	ER11-0.6ISO	○	EL11-0.6ISO	○	0.6	6.35	11	0.37	0.6	0.6
	ER11-0.7ISO	○	EL11-0.7ISO	○	0.7	6.35	11	0.43	0.6	0.6
	ER11-0.75ISO	○	EL11-0.75ISO	○	0.75	6.35	11	0.46	0.6	0.6
	ER11-0.8ISO	○	EL11-0.8ISO	○	0.8	6.35	11	0.49	0.6	0.6
	ER11-1.0ISO	○	EL11-1.0ISO	○	1.0	6.35	11	0.61	0.7	0.7
	ER11-1.25ISO	○	EL11-1.25ISO	○	1.25	6.35	11	0.77	0.8	0.9
	ER11-1.5ISO	○	EL11-1.5ISO	○	1.5	6.35	11	0.92	0.8	1.0
	ER11-1.75ISO	○	EL11-1.75ISO	○	1.75	6.35	11	1.07	0.8	1.1
ER(L)H□□-16(C)	ER16-0.35ISO	○	EL16-0.35ISO	○	0.35	9.525	16	0.21	0.8	0.4
	ER16-0.4ISO	○	EL16-0.4ISO	○	0.4	9.525	16	0.25	0.7	0.4
	ER16-0.45ISO	○	EL16-0.45ISO	○	0.45	9.525	16	0.28	0.7	0.4
	ER16-0.5ISO	●	EL16-0.5ISO	○	0.5	9.525	16	0.31	0.6	0.4
	ER16-0.6ISO	○	EL16-0.6ISO	○	0.6	9.525	16	0.37	0.6	0.6
	ER16-0.7ISO	●	EL16-0.7ISO	○	0.7	9.525	16	0.43	0.6	0.6
	ER16-0.75ISO	●	EL16-0.75ISO	○	0.75	9.525	16	0.46	0.6	0.6
	ER16-0.8ISO	●	EL16-0.8ISO	○	0.8	9.525	16	0.49	0.6	0.6
	ER16-1.0ISO	●	EL16-1.0ISO	○	1.0	9.525	16	0.61	0.7	0.7
	ER16-1.25ISO	●	EL16-1.25ISO	○	1.25	9.525	16	0.77	0.8	0.9
	ER16-1.5ISO	●	EL16-1.5ISO	○	1.5	9.525	16	0.92	0.8	1.0
	ER16-1.75ISO	●	EL16-1.75ISO	○	1.75	9.525	16	1.07	0.9	1.2
	ER16-2.0ISO	●	EL16-2.0ISO	○	2.0	9.525	16	1.23	1.0	1.3
	ER16-2.5ISO	●	EL16-2.5ISO	○	2.5	9.525	16	1.53	1.1	1.5
	ER16-3.0ISO	●	EL16-3.0ISO	○	3.0	9.525	16	1.84	1.2	1.6
ER(L)H□□-22(C)	ER22-3.5ISO	●	EL22-3.5ISO	○	3.5	12.7	22	2.15	1.6	2.3
	ER22-4.0ISO	○	EL22-4.0ISO	○	4.0	12.7	22	2.45	1.6	2.3
	ER22-4.5ISO	●	EL22-4.5ISO	○	4.5	12.7	22	2.76	1.7	2.4
	ER22-5.0ISO	●	EL22-5.0ISO	○	5.0	12.7	22	3.07	1.7	2.5
ER(L)H□□-27(C)	ER27-5.5ISO	○	EL27-5.5ISO	○	5.5	15.875	27	3.37	1.9	2.7
	ER27-6.0ISO	○	EL27-6.0ISO	○	6.0	15.875	27	3.68	2.0	2.9

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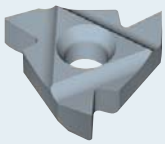
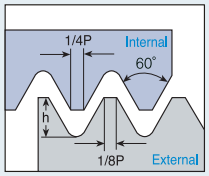
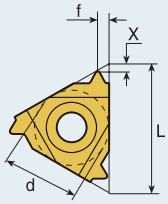
● : Stock Item ○ : Under preparing for stock

Iso Metric (Internal)







Available Holder	Designation (Right hand)	PC3030T	Designation (Left hand)	PC3030T	Pitch (mm)	Specification (mm)				
						d	L	h_{min}	X	f
IR(L)H□□N-11	IR11-0.35ISO	○	IL11-0.35ISO	○	0.35	6.35	11	0.20	0.8	0.3
	IR11-0.4ISO	○	IL11-0.4ISO	○	0.4	6.35	11	0.23	0.8	0.4
	IR11-0.45ISO	○	IL11-0.45ISO	○	0.45	6.35	11	0.26	0.8	0.4
	IR11-0.5ISO	●	IL11-0.5ISO	○	0.5	6.35	11	0.29	0.6	0.4
	IR11-0.6ISO	○	IL11-0.6ISO	○	0.6	6.35	11	0.35	0.6	0.6
	IR11-0.7ISO	○	IL11-0.7ISO	○	0.7	6.35	11	0.40	0.6	0.6
	IR11-0.75ISO	●	IL11-0.75ISO	○	0.75	6.35	11	0.43	0.6	0.6
	IR11-0.8ISO	○	IL11-0.8ISO	○	0.8	6.35	11	0.46	0.6	0.6
	IR11-1.0ISO	●	IL11-1.0ISO	○	1.0	6.35	11	0.58	0.6	0.7
	IR11-1.25ISO	●	IL11-1.25ISO	○	1.25	6.35	11	0.72	0.8	0.9
	IR11-1.5ISO	●	IL11-1.5ISO	○	1.5	6.35	11	0.87	0.8	1.0
	IR11-1.75ISO	●	IL11-1.75ISO	○	1.75	6.35	11	1.01	0.9	1.1
	IR11-2.0ISO	○	IL11-2.0ISO	○	2.0	6.35	11	1.15	0.9	1.1
	IR11-2.5ISO	○	IL11-2.5ISO	○	2.5	6.35	11	1.44	0.8	1.1
IR(L)H□□-16(C)	IR16-0.35ISO	○	IL16-0.35ISO	○	0.35	9.525	16	0.20	0.8	0.3
	IR16-0.4ISO	○	IL16-0.4ISO	○	0.4	9.525	16	0.23	0.8	0.4
	IR16-0.45ISO	○	IL16-0.45ISO	○	0.45	9.525	16	0.26	0.8	0.4
	IR16-0.5ISO	●	IL16-0.5ISO	○	0.5	9.525	16	0.29	0.6	0.4
	IR16-0.6ISO	○	IL16-0.6ISO	○	0.6	9.525	16	0.35	0.6	0.6
	IR16-0.7ISO	○	IL16-0.7ISO	○	0.7	9.525	16	0.40	0.6	0.6
	IR16-0.75ISO	●	IL16-0.75ISO	○	0.75	9.525	16	0.43	0.6	0.6
	IR16-0.8ISO	○	IL16-0.8ISO	○	0.8	9.525	16	0.46	0.6	0.6
	IR16-1.0ISO	●	IL16-1.0ISO	○	1.0	9.525	16	0.58	0.6	0.7
	IR16-1.25ISO	●	IL16-1.25ISO	○	1.25	9.525	16	0.72	0.8	0.9
	IR16-1.5ISO	●	IL16-1.5ISO	○	1.5	9.525	16	0.87	0.8	1.0
	IR16-1.75ISO	●	IL16-1.75ISO	○	1.75	9.525	16	1.01	0.9	1.2
	IR16-2.0ISO	●	IL16-2.0ISO	○	2.0	9.525	16	1.15	1.0	1.3
	IR16-2.5ISO	●	IL16-2.5ISO	○	2.5	9.525	16	1.44	1.1	1.5
	IR16-3.0ISO	●	IL16-3.0ISO	○	3.0	9.525	16	1.73	1.1	1.5
IR(L)H□□-22(C)	IR22-3.5ISO	●	IL22-3.5ISO	○	3.5	12.7	22	2.02	1.6	2.3
	IR22-4.0ISO	●	IL22-4.0ISO	○	4.0	12.7	22	2.31	1.6	2.3
	IR22-4.5ISO	●	IL22-4.5ISO	○	4.5	12.7	22	2.60	1.6	2.4
	IR22-5.0ISO	●	IL22-5.0ISO	○	5.0	12.7	22	2.89	1.6	2.3
IR(L)H□□-27(C)	IR27-5.5ISO	○	IL27-5.5ISO	○	5.5	15.875	27	3.17	1.6	2.3
	IR27-6.0ISO	○	IL27-6.0ISO	○	6.0	15.875	27	3.46	1.8	2.5

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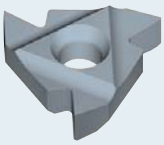
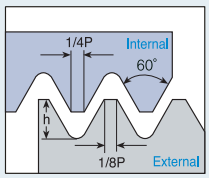
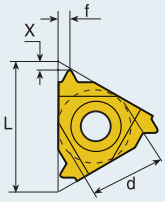
● : Stock Item ○ : Under preparing for stock

American UN (External)







Available Holder	Designation (Right hand)	PC3030T	Designation (Left hand)	PC3030T	Number of crest (TPI)	Specification (mm)				
						d	L	h_{min}	X	f
ER(L)H□□N-11	ER11-72UN	○	EL11-72UN	○	72	6.35	11	0.22	0.8	0.4
	ER11-64UN	○	EL11-64UN	○	64	6.35	11	0.24	0.8	0.4
	ER11-56UN	○	EL11-56UN	○	56	6.35	11	0.28	0.7	0.4
	ER11-48UN	○	EL11-48UN	○	48	6.35	11	0.32	0.6	0.6
	ER11-44UN	○	EL11-44UN	○	44	6.35	11	0.35	0.6	0.6
	ER11-40UN	○	EL11-40UN	○	40	6.35	11	0.39	0.6	0.6
	ER11-36UN	○	EL11-36UN	○	36	6.35	11	0.43	0.6	0.6
	ER11-32UN	○	EL11-32UN	○	32	6.35	11	0.49	0.6	0.6
	ER11-28UN	○	EL11-28UN	○	28	6.35	11	0.56	0.6	0.7
	ER11-27UN	○	EL11-27UN	○	27	6.35	11	0.58	0.7	0.8
	ER11-24UN	○	EL11-24UN	○	24	6.35	11	0.65	0.7	0.8
	ER11-20UN	○	EL11-20UN	○	20	6.35	11	0.78	0.8	0.9
	ER11-18UN	○	EL11-18UN	○	18	6.35	11	0.87	0.8	1.0
	ER11-16UN	○	EL11-16UN	○	16	6.35	11	0.97	0.9	1.1
	ER11-14UN	○	EL11-14UN	○	14	6.35	11	1.11	0.9	1.1
ER(L)H□□-16(C)	ER16-72UN	○	EL16-72UN	○	72	9.525	16	0.22	0.8	0.4
	ER16-64UN	○	EL16-64UN	○	64	9.525	16	0.24	0.8	0.4
	ER16-56UN	○	EL16-56UN	○	56	9.525	16	0.28	0.7	0.4
	ER16-48UN	○	EL16-48UN	○	48	9.525	16	0.32	0.6	0.6
	ER16-44UN	○	EL16-44UN	○	44	9.525	16	0.35	0.6	0.6
	ER16-40UN	○	EL16-40UN	○	40	9.525	16	0.39	0.6	0.6
	ER16-36UN	○	EL16-36UN	○	36	9.525	16	0.43	0.6	0.6
	ER16-32UN	○	EL16-32UN	○	32	9.525	16	0.49	0.6	0.6
	ER16-28UN	●	EL16-28UN	○	28	9.525	16	0.56	0.6	0.7
	ER16-27UN	○	EL16-27UN	○	27	9.525	16	0.58	0.7	0.8
	ER16-24UN	●	EL16-24UN	○	24	9.525	16	0.65	0.7	0.8
	ER16-20UN	●	EL16-20UN	○	20	9.525	16	0.78	0.8	0.9
	ER16-18UN	●	EL16-18UN	○	18	9.525	16	0.87	0.8	1.0
	ER16-16UN	●	EL16-16UN	○	16	9.525	16	0.97	0.9	1.1
	ER16-14UN	●	EL16-14UN	○	14	9.525	16	1.11	1.0	1.2
	ER16-13UN	○	EL16-13UN	○	13	9.525	16	1.20	1.0	1.3
	ER16-12UN	●	EL16-12UN	○	12	9.525	16	1.30	1.1	1.4
	ER16-11.5UN	○	EL16-11.5UN	○	11.5	9.525	16	1.35	1.1	1.5
	ER16-11UN	●	EL16-11UN	○	11	9.525	16	1.42	1.1	1.5
	ER16-10UN	●	EL16-10UN	○	10	9.525	16	1.56	1.1	1.5
	ER16-9UN	●	EL16-9UN	○	9	9.525	16	1.73	1.2	1.7
	ER16-8UN	●	EL16-8UN	○	8	9.525	16	1.95	1.2	1.6
ER(L)H□□-22(C)	ER22-7UN	○	EL22-7UN	○	7	12.7	22	2.22	1.6	2.3
	ER22-6UN	○	EL22-6UN	○	6	12.7	22	2.60	1.6	2.3
	ER22-5UN	○	EL22-5UN	○	5	12.7	22	3.12	1.7	2.5
ER(L)H□□-27(C)	ER27-4.5UN	○	EL27-4.5UN	○	4.5	15.875	27	3.46	1.9	2.7
	ER27-4UN	○	EL27-4UN	○	4	15.875	27	3.89	2.1	3.0

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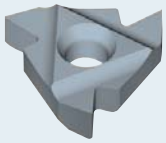
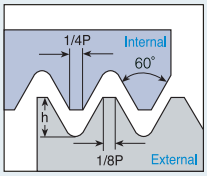
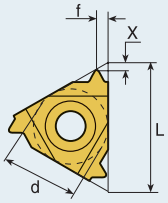
● : Stock Item ○ : Under preparing for stock

American UN (Internal)







Available Holder	Designation (Right hand)	PC3030T	Designation (Left hand)	PC3030T	Number of crest (TPI)	Specification (mm)				
						d	L	h_{min}	X	f
IR(L)H□□N-11	IR11-72UN	○	IL11-72UN	○	72	6.35	11	0.20	0.8	0.3
	IR11-64UN	○	IL11-64UN	○	64	6.35	11	0.23	0.8	0.4
	IR11-56UN	○	IL11-56UN	○	56	6.35	11	0.26	0.7	0.4
	IR11-48UN	○	IL11-48UN	○	48	6.35	11	0.31	0.6	0.6
	IR11-44UN	○	IL11-44UN	○	44	6.35	11	0.33	0.6	0.6
	IR11-40UN	○	IL11-40UN	○	40	6.35	11	0.37	0.6	0.6
	IR11-36UN	○	IL11-36UN	○	36	6.35	11	0.41	0.6	0.6
	IR11-32UN	○	IL11-32UN	○	32	6.35	11	0.46	0.6	0.6
	IR11-28UN	○	IL11-28UN	○	28	6.35	11	0.52	0.6	0.7
	IR11-27UN	○	IL11-27UN	○	27	6.35	11	0.54	0.7	0.8
	IR11-24UN	○	IL11-24UN	○	24	6.35	11	0.61	0.7	0.8
	IR11-20UN	○	IL11-20UN	○	20	6.35	11	0.73	0.8	0.9
	IR11-18UN	○	IL11-18UN	○	18	6.35	11	0.81	0.8	1.0
	IR11-16UN	○	IL11-16UN	○	16	6.35	11	0.92	0.9	1.1
	IR11-14UN	○	IL11-14UN	○	14	6.35	11	1.05	0.9	1.1
	IR11-12UN	○	IL11-12UN	○	12	6.35	11	1.22	0.8	1.1
	IR11-11UN	○	IL11-11UN	○	11	6.35	11	1.33	0.8	1.1
IR(L)H□□-16(C)	IR16-72UN	○	IL16-72UN	○	72	9.525	16	0.20	0.8	0.3
	IR16-64UN	○	IL16-64UN	○	64	9.525	16	0.23	0.8	0.4
	IR16-56UN	○	IL16-56UN	○	56	9.525	16	0.26	0.7	0.4
	IR16-48UN	○	IL16-48UN	○	48	9.525	16	0.31	0.6	0.6
	IR16-44UN	○	IL16-44UN	○	44	9.525	16	0.33	0.6	0.6
	IR16-40UN	○	IL16-40UN	○	40	9.525	16	0.37	0.6	0.6
	IR16-36UN	○	IL16-36UN	○	36	9.525	16	0.41	0.6	0.6
	IR16-32UN	○	IL16-32UN	○	32	9.525	16	0.51	0.6	0.6
	IR16-28UN	○	IL16-28UN	○	28	9.525	16	0.52	0.6	0.7
	IR16-27UN	○	IL16-27UN	○	27	9.525	16	0.54	0.7	0.8
	IR16-24UN	○	IL16-24UN	○	24	9.525	16	0.61	0.7	0.8
	IR16-20UN	●	IL16-20UN	○	20	9.525	16	0.73	0.8	0.9
	IR16-18UN	●	IL16-18UN	○	18	9.525	16	0.81	0.8	1.0
	IR16-16UN	●	IL16-16UN	○	16	9.525	16	0.92	0.9	1.1
	IR16-14UN	●	IL16-14UN	○	14	9.525	16	1.05	0.9	1.2
	IR16-13UN	○	IL16-13UN	○	13	9.525	16	1.13	1.0	1.3
	IR16-12UN	●	IL16-12UN	○	12	9.525	16	1.22	1.1	1.4
	IR16-11.5UN	○	IL16-11.5UN	○	11.5	9.525	16	1.28	1.1	1.5
	IR16-11UN	○	IL16-11UN	○	11	9.525	16	1.33	1.1	1.5
	IR16-10UN	○	IL16-10UN	○	10	9.525	16	1.47	1.1	1.5
	IR16-9UN	○	IL16-9UN	○	9	9.525	16	1.63	1.2	1.7
	IR16-8UN	●	IL16-8UN	○	8	9.525	16	1.83	1.1	1.5
IR(L)H□□-22(C)	IR22-7UN	○	IL22-7UN	○	7	12.7	22	2.09	1.6	2.3
	IR22-6UN	○	IL22-6UN	○	6	12.7	22	2.44	1.6	2.3
	IR22-5UN	○	IL22-5UN	○	5	12.7	22	2.93	1.6	2.3
IR(L)H□□-27(C)	IR27-4.5UN	○	IL27-4.5UN	○	4.5	15.875	27	3.26	1.7	2.4
	IR27-4UN	○	IL27-4UN	○	4	15.875	27	3.67	1.8	2.7

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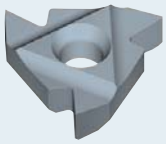
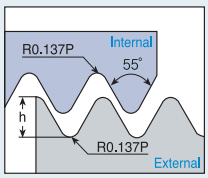
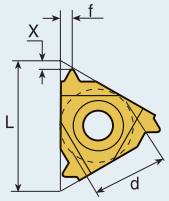
● : Stock Item ○ : Under preparing for stock

Whitworth for BSW, BSP (External)







Available Holder	Designation (Right hand)	PC3030T	Designation (Left hand)	PC3030T	Number of crest (TPI)	Specification (mm)				
						d	L	h_{min}	X	f
ER(L)H□□N-11	ER11-72W	○	EL11-72W	○	72	6.35	11	0.23	0.7	0.4
	ER11-60W	○	EL11-60W	○	60	6.35	11	0.27	0.7	0.4
	ER11-56W	○	EL11-56W	○	56	6.35	11	0.29	0.7	0.4
	ER11-48W	○	EL11-48W	○	48	6.35	11	0.34	0.6	0.6
	ER11-40W	○	EL11-40W	○	40	6.35	11	0.41	0.6	0.6
	ER11-36W	○	EL11-36W	○	36	6.35	11	0.45	0.6	0.6
	ER11-32W	○	EL11-32W	○	32	6.35	11	0.51	0.6	0.6
	ER11-28W	○	EL11-28W	○	28	6.35	11	0.58	0.6	0.7
	ER11-26W	○	EL11-26W	○	26	6.35	11	0.63	0.7	0.8
	ER11-24W	○	EL11-24W	○	24	6.35	11	0.68	0.7	0.8
	ER11-22W	○	EL11-22W	○	22	6.35	11	0.74	0.8	0.9
	ER11-20W	○	EL11-20W	○	20	6.35	11	0.81	0.8	0.9
	ER11-19W	○	EL11-19W	○	19	6.35	11	0.86	0.8	1.0
	ER11-18W	○	EL11-18W	○	18	6.35	11	0.90	0.8	1.0
	ER11-16W	○	EL11-16W	○	16	6.35	11	1.02	0.9	1.1
	ER11-14W	○	EL11-14W	○	14	6.35	11	1.16	1.0	1.2
ER(L)H□□-16(C)	ER16-72W	○	EL16-72W	○	72	9.525	16	0.23	0.7	0.4
	ER16-60W	○	EL16-60W	○	60	9.525	16	0.27	0.7	0.4
	ER16-56W	○	EL16-56W	○	56	9.525	16	0.29	0.7	0.4
	ER16-48W	○	EL16-48W	○	48	9.525	16	0.34	0.6	0.6
	ER16-40W	○	EL16-40W	○	40	9.525	16	0.41	0.6	0.6
	ER16-36W	○	EL16-36W	○	36	9.525	16	0.45	0.6	0.6
	ER16-32W	○	EL16-32W	○	32	9.525	16	0.51	0.6	0.6
	ER16-30W	○	EL16-30W	○	30	9.525	16	0.55	0.6	0.7
	ER16-28W	●	EL16-28W	○	28	9.525	16	0.58	0.6	0.7
	ER16-26W	●	EL16-26W	○	26	9.525	16	0.63	0.7	0.8
	ER16-24W	○	EL16-24W	○	24	9.525	16	0.68	0.7	0.8
	ER16-22W	○	EL16-22W	○	22	9.525	16	0.74	0.8	0.9
	ER16-20W	●	EL16-20W	○	20	9.525	16	0.81	0.8	0.9
	ER16-19W	●	EL16-19W	○	19	9.525	16	0.86	0.8	1.0
	ER16-18W	●	EL16-18W	○	18	9.525	16	0.90	0.8	1.0
	ER16-16W	●	EL16-16W	○	16	9.525	16	1.02	0.9	1.1
	ER16-14W	●	EL16-14W	○	14	9.525	16	1.16	1.0	1.2
	ER16-12W	●	EL16-12W	○	12	9.525	16	1.36	1.1	1.4
	ER16-11W	●	EL16-11W	○	11	9.525	16	1.48	1.1	1.5
	ER16-10W	●	EL16-10W	○	10	9.525	16	1.63	1.1	1.5
	ER16-9W	●	EL16-9W	○	9	9.525	16	1.81	1.2	1.7
	ER16-8W	●	EL16-8W	○	8	9.525	16	2.03	1.2	1.5
ER(L)H□□-22(C)	ER22-7W	○	EL22-7W	○	7	12.7	22	3.32	1.6	2.3
	ER22-6W	○	EL22-6W	○	6	12.7	22	2.71	1.6	2.3
	ER22-5W	○	EL22-5W	○	5	12.7	22	3.25	1.7	2.4
ER(L)H□□-27(C)	ER27-4.5W	○	EL27-4.5W	○	4.5	15.875	27	3.61	1.8	2.6
	ER27-4W	○	EL27-4W	○	4	15.875	27	4.07	2.0	2.9

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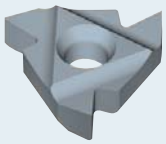
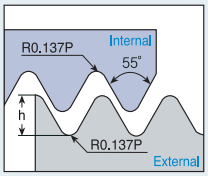
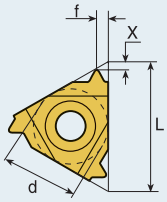
● : Stock Item ○ : Under preparing for stock

Whitworth for BSW, BSP (Internal)







Available Holder	Designation (Right hand)	PC3030T	Designation (Left hand)	PC3030T	Number of crest (TPI)	Specification (mm)				
						d	L	h_{min}	X	f
IR(L)H□□N-11	IR11-72W	○	IL11-72W	○	72	6.35	11	0.23	0.7	0.4
	IR11-60W	○	IL11-60W	○	60	6.35	11	0.27	0.7	0.4
	IR11-56W	○	IL11-56W	○	56	6.35	11	0.29	0.7	0.4
	IR11-48W	○	IL11-48W	○	48	6.35	11	0.34	0.6	0.6
	IR11-40W	○	IL11-40W	○	40	6.35	11	0.41	0.6	0.6
	IR11-36W	○	IL11-36W	○	36	6.35	11	0.45	0.6	0.6
	IR11-32W	○	IL11-32W	○	32	6.35	11	0.51	0.6	0.6
	IR11-28W	○	IL11-28W	○	28	6.35	11	0.58	0.6	0.7
	IR11-26W	○	IL11-26W	○	26	6.35	11	0.63	0.7	0.8
	IR11-24W	○	IL11-24W	○	24	6.35	11	0.68	0.7	0.8
	IR11-22W	○	IL11-22W	○	22	6.35	11	0.74	0.8	0.9
	IR11-20W	○	IL11-20W	○	20	6.35	11	0.81	0.8	0.9
	IR11-19W	●	IL11-19W	○	19	6.35	11	0.86	0.8	1.0
	IR11-18W	○	IL11-18W	○	18	6.35	11	0.90	0.8	1.0
	IR11-16W	○	IL11-16W	○	16	6.35	11	1.02	0.9	1.1
	IR11-14W	●	IL11-14W	○	14	6.35	11	1.16	0.9	1.1
	IR11-12W	○	IL11-12W	○	12	6.35	11	1.32	0.9	1.2
IR(L)H□□-16(C)	IR16-72W	○	IL16-72W	○	72	9.525	16	0.23	0.7	0.4
	IR16-60W	○	IL16-60W	○	60	9.525	16	0.27	0.7	0.4
	IR16-56W	○	IL16-56W	○	56	9.525	16	0.29	0.7	0.4
	IR16-48W	○	IL16-48W	○	48	9.525	16	0.34	0.6	0.6
	IR16-40W	○	IL16-40W	○	40	9.525	16	0.41	0.6	0.6
	IR16-36W	○	IL16-36W	○	36	9.525	16	0.45	0.6	0.6
	IR16-32W	○	IL16-32W	○	32	9.525	16	0.51	0.6	0.6
	IR16-30W	○	IL16-30W	○	30	9.525	16	0.55	0.6	0.7
	IR16-28W	○	IL16-28W	○	28	9.525	16	0.58	0.6	0.7
	IR16-26W	○	IL16-26W	○	26	9.525	16	0.63	0.7	0.8
	IR16-24W	○	IL16-24W	○	24	9.525	16	0.68	0.7	0.8
	IR16-22W	○	IL16-22W	○	22	9.525	16	0.74	0.8	0.9
	IR16-20W	○	IL16-20W	○	20	9.525	16	0.81	0.8	0.9
	IR16-19W	●	IL16-19W	○	19	9.525	16	0.86	0.8	1.0
	IR16-18W	○	IL16-18W	○	18	9.525	16	0.90	0.8	1.0
	IR16-16W	●	IL16-16W	○	16	9.525	16	1.02	0.9	1.1
	IR16-14W	●	IL16-14W	○	14	9.525	16	1.16	1.0	1.2
	IR16-12W	●	IL16-12W	○	12	9.525	16	1.36	1.1	1.4
	IR16-11W	●	IL16-11W	○	11	9.525	16	1.48	1.1	1.5
	IR16-10W	○	IL16-10W	○	10	9.525	16	1.63	1.1	1.5
	IR16-9W	○	IL16-9W	○	9	9.525	16	1.81	1.2	1.7
	IR16-8W	○	IL16-8W	○	8	9.525	16	2.03	1.2	1.5
IR(L)H□□-22(C)	IR22-7W	○	IL22-7W	○	7	12.7	22	3.32	1.6	2.3
	IR22-6W	○	IL22-6W	○	6	12.7	22	2.71	1.6	2.3
	IR22-5W	○	IL22-5W	○	5	12.7	22	3.25	1.7	2.4
IR(L)H□□-27(C)	IR27-4.5W	○	IL27-4.5W	○	4.5	15.875	27	3.61	1.8	2.6
	IR27-4W	○	IL27-4W	○	4	15.875	27	4.07	2.0	2.9

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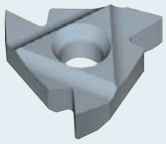
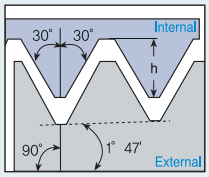
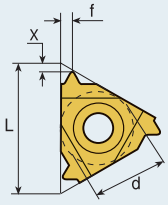
● : Stock Item ○ : Under preparing for stock

NPT (External)







Available Holder	Designation (Right hand)	PC3030T	Designation (Left hand)	PC3030T	Number of crest (TPI)	Specification (mm)				
						d	L	h_{min}	X	f
ER(L)H□□N-11	ER11-27NPT	○	EL11-27NPT	○	27	6.35	11	0.66	0.7	0.8
	ER11-18NPT	○	EL11-18NPT	○	18	6.35	11	1.01	0.8	1.0
	ER11-14NPT	○	EL11-14NPT	○	14	6.35	11	1.33	0.8	1.0
ER(L)H□□-16(C)	ER16-27NPT	○	EL16-27NPT	○	27	9.525	16	0.66	0.7	0.8
	ER16-18NPT	●	EL16-18NPT	○	18	9.525	16	1.01	0.8	1.0
	ER16-14NPT	●	EL16-14NPT	○	14	9.525	16	1.33	0.9	1.2
	ER16-11.5NPT	●	EL16-11.5NPT	○	11.5	9.525	16	1.64	1.1	1.5
	ER16-8NPT	●	EL16-8NPT	○	8	9.525	16	2.42	1.3	1.8

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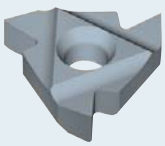
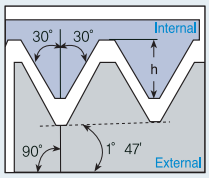
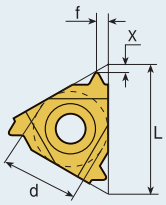
● : Stock Item ○ : Under preparing for stock

NPT (Internal)







Available Holder	Designation (Right hand)	PC3030T	Designation (Left hand)	PC3030T	Number of crest (TPI)	Specification (mm)				
						d	L	h_{min}	X	f
IR(L)H□□N-11	IR11-27NPT	○	IL11-27NPT	○	27	6.35	11	0.66	0.7	0.8
	IR11-18NPT	○	IL11-18NPT	○	18	6.35	11	1.01	0.8	1.0
	IR11-14NPT	○	IL11-14NPT	○	14	6.35	11	1.33	0.8	1.0
IR(L)H□□-16(C)	IR16-27NPT	○	IL16-27NPT	○	27	9.525	16	0.66	0.7	0.8
	IR16-18NPT	○	IL16-18NPT	○	18	9.525	16	1.01	0.8	1.0
	IR16-14NPT	●	IL16-14NPT	○	14	9.525	16	1.33	0.9	1.2
	IR16-11.5NPT	●	IL16-11.5NPT	○	11.5	9.525	16	1.64	1.1	1.5
	IR16-8NPT	●	IL16-8NPT	○	8	9.525	16	2.42	1.3	1.8

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● : Stock Item ○ : Under preparing for stock

Threading holder code system (External)

E	R	H	10	(N)	–	11	(C)
1	2	3	4	5		6	7

1 Application

E : Holder for external threading

2 Hand of tool

R : Right hand
L : Left hand

3 Name

H : Holder

4 Height of shank (mm)

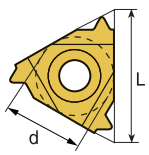
8, 10, 12, 16, 20,
25, 32, 40, 50

5 Shim

Not shown : Shim required
N : No shim required

6 Available insert size

L11 : d 6.35
L16 : d 9.525
L22 : d 12.7
L27 : d 15.875



7 Clamping system

Not shown : Screw on system
C : Clamp on system

Threading holder code system (Internal)

I	R	H	10	(N)	–	11	(C)
1	2	3	4	5		6	7

1 Application

I : Holder for internal threading

2 Hand of tool

R : Right hand
L : Left hand

3 Name

H : Holder

4 Diameter shank(Front part) (Ø)

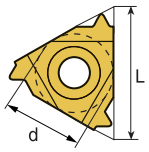
10, 12, 13, 16,
20, 25, 32, 40, 50, 60

5 Shim

Not shown : Shim required
N : No shim required

6 Available insert size

L11 : d 6.35
L16 : d 9.525
L22 : d 12.7
L27 : d 15.875



7 Clamping system

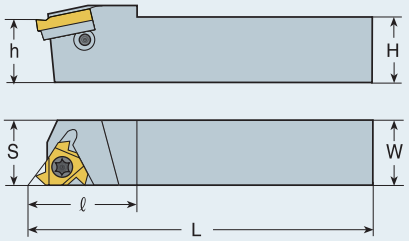
Not shown : Screw on system
C : Clamp on system

Note

※Please refer to detail specification for shank diameter(rear part)

Threading holder (External)

Screw on system



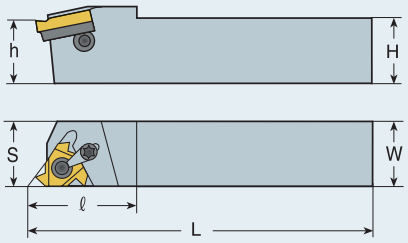
Designation	Stock		Specification (mm)						Parts				
													
	RH	LH	IC of insert	H=h	W	S	L	ℓ	Screw for insert	Shim screw	Right hand shim	Left hand shim	Wrench
ER(L)H08N-11	○	○	6.35	8	8	11	136.4	17.5	ST11N	-	-	-	TW08P
ER(L)H10N-11	○	○	6.35	10	10	11	70.0	17.5					
ER(L)H12N-11	○	○	6.35	12	12	12	80.0	17.5					
ER(L)H12N-16	○	○	9.525	12	12	16	83.2	22	ST16N	-	-	-	TW10P
ER(L)H09-16	○	○	9.525	9.52	9.52	16	63.6	20.5	ST16	STA16	ATE16	ATI16	TW10P
ER(L)H12-16	●	○	9.525	12	12	16	83.2	22					
ER(L)H16-16	●	○	9.525	16	16	16	100.0	20.5					
ER(L)H20-16	●	○	9.525	20	20	20	128.6	30					
ER(L)H25-16	●	●	9.525	25	25	25	153.6	30					
ER(L)H32-16	●	○	9.525	32	32	32	173.6	30					
ER(L)H25-22	●	○	12.7	25	25	25	155.7	36	ST22	STA22	ATE22	ATI22	TW20P
ER(L)H32-22	●	○	12.7	32	32	32	175.7	36					
ER(L)H40-22	●	○	12.7	40	40	40	205.7	36					
ER(L)H25-27	●	○	15.875	25	25	32	151.6	35	ST27	STA27	ATE27	ATI27	TW25L
ER(L)H32-27	○	○	15.875	32	32	32	176.6	40					
ER(L)H40-27	○	○	15.875	40	40	40	206.6	40					
ER(L)H50-27	○	○	15.875	50	50	50	256.6	40					

- Helix angle of everyholder is 1.5 °
- N type : No shim required.

P. 235~239, 241, 243

● : Stock Item ○ : Under preparing for stock

Clamp on system



Designation	Stock		Specification (mm)						Parts				
	RH	LH	IC of insert	H=h	W	S	L	ℓ	Shim screw	Clamp	Right hand shim	Left hand shim	Wrench
ER(L)H20-16C	●	○	9.525	20	20	20	128.6	30	STA16	CTH16	ATE16	ATI16	TW10P TW15P
ER(L)H25-16C	●	○	9.525	25	25	25	153.6	30					
ER(L)H32-16C	●	○	9.525	32	32	32	173.6	30					
ER(L)H25-22C	●	○	12.7	25	25	25	155.7	36	STA22	CTH22	ATE22	ATI22	TW20P
ER(L)H32-22C	●	○	12.7	32	32	32	175.7	36					
ER(L)H40-22C	●	○	12.7	40	40	40	205.7	36					
ER(L)H25-27C	○	○	15.875	25	25	32	151.6	35	STA27	CTH27	ATE27	ATI27	TW25L
ER(L)H32-27C	○	○	15.875	32	32	32	176.6	40					
ER(L)H40-27C	○	○	15.875	40	40	40	206.6	40					
ER(L)H50-27C	○	○	15.875	50	50	50	256.6	40					

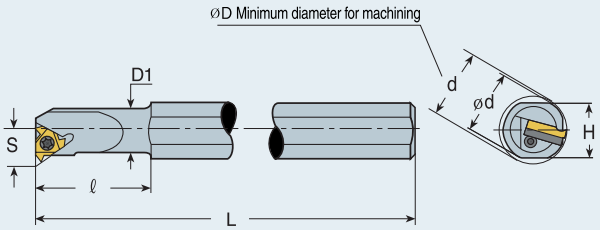
• Helix angle of everyholder is 1.5 °

P. 235~239, 241, 243

● : Stock Item ○ : Under preparing for stock

Threading holder (Internal)

Screw on system



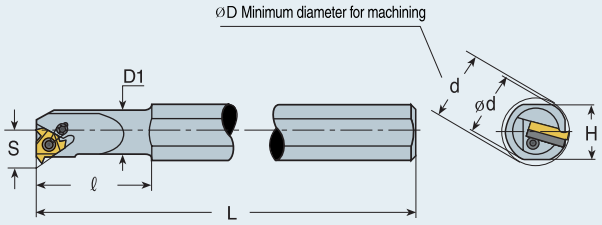
Designation	Stock		Specification (mm)								Parts				
	RH	LH	IC of insert	H	L	ℓ	Ød	D1	S	d	Screw for insert	Shim screw	Right hand shim	Left hand shim	Wrench
IR(L)H10DN-11	●	○	6.35		100		10	10.0	7.3	13					
IR(L)H10N-11	●	○	6.35	18.0	180	25	20	10.0	7.3	13	ST11N	-	-	-	TW08P
IR(L)H13N-11	●	○	6.35	18.0	180	32	20	13.0	8.9	16					
IR(L)H13N-16	●	○	9.525	18.0	180	32	20	12.7	10.3	17					
IR(L)H16N-16	●	○	9.525	18.0	180	40	20	16.0	11.5	20	ST16N	-	-	-	TW10P
IR(L)H16DN-16	●	○	9.525	15.2	150	32	16	16.0	11.3	20					
IR(L)H20-16	●	○	9.525	18.0	180	40	20	20.0	13.4	24					
IR(L)H25-16	●	○	9.525	29.0	250	60	32	25.0	16.3	29					
IR(L)H25D-16	●	○	9.525	22.6	200	45	25	24.6	16.1	29	ST16	STA16	ATI16	ATE16	TW10P
IR(L)H32-16	●	○	9.525	29.0	250	60	32	32.0	19.6	36					
IR(L)H40-16	●	○	9.525	36.0	300	60	40	40.0	23.8	44					
IR(L)H20N-22	●	○	12.7	18.0	180	50	20	20.0	15.6	27	ST22N	-	-	-	TW20P
IR(L)H25-22	●	○	12.7	29.0	250	60	32	25.0	17.4	32					
IR(L)H25D-22	●	○	12.7	22.6	200	45	25	24.6	17.2	32					
IR(L)H32-22	●	○	12.7	29.0	250	60	32	32.0	21.5	39	ST22	STA22	ATI22	ATE22	TW20P
IR(L)H40-22	●	○	12.7	36.0	300	60	40	40.0	25.8	47					
IR(L)H32-27	○	○	15.875	29.0	250	60	32	32.0	22.4	40					
IR(L)H40-27	●	○	15.875	36.0	300	60	40	40.0	26.4	48					
IR(L)H50-27	○	○	15.875	45.0	350	75	50	50.0	31.4	58	ST27	STA27	ATI27	ATE27	TW25L
IR(L)H60-27	○	○	15.875	54.0	400	75	60	60.0	36.4	69					

- Helix angle of everyholder is 1.5 °
- N type : No shim required.
- D type is a straight type that having same diameter through out whole shank.

P. 235, 236, 238, 240, 242, 243

● : Stock Item ○ : Under preparing for stock

Clamp on system



Designation	Stock		Specification (mm)								Parts				
															
	RH	LH	IC of insert	H	L	ℓ	Ød	D1	S	d	Shim screw	Clamp	Right hand shim	Left hand shim	Wrench
IR(L)H20-16C	●	○	9.525	18.0	180	50	20	20.0	13.4	24	STA16	CTH16	ATI16	ATE16	TW10P TW15P
IR(L)H25-16C	●	○	9.525	28.0	250	60	32	25.0	16.3	29					
IR(L)H25D-16C	●	○	9.525	22.6	200	45	25	24.6	16.1	29					
IR(L)H32-16C	●	○	9.525	29.0	250	60	32	32.0	19.6	36					
IR(L)H40-16C	●	○	9.525	36.0	300	60	40	40.0	23.8	44					
IR(L)H25-22C	●	○	12.7	29.0	250	60	32	25.0	17.4	32	STA22	CTH22	ATI22	ATE22	TW20P
IR(L)H25D-22C	●	○	12.7	22.6	200	45	25	24.6	17.2	32					
IR(L)H32-22C	●	○	12.7	29.0	250	60	32	32.0	21.5	39					
IR(L)H40-22C	●	○	12.7	36.0	300	60	40	40.0	25.8	47					
IR(L)H32-27C	○	○	15.875	29.0	250	60	32	32.0	22.4	40	STA27	CTH27	ATI27	ATE27	TW25L
IR(L)H40-27C	○	○	15.875	36.0	300	60	40	40.0	26.4	48					
IR(L)H50-27C	○	○	15.875	45.0	350	75	50	50.0	31.4	58					
IR(L)H60-27C	○	○	15.875	54.0	400	75	60	60.0	36.4	69					

- Helix angle of everyholder is 1.5 °
- N type : No shim required.
- D type is a straight type that having same diameter through out whole shank.

P. 235, 236, 238, 240, 242, 243

● : Stock Item ○ : Under preparing for stock

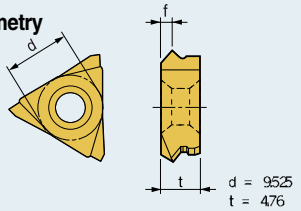
Vertical type threading insert & holder

VETR Vertical

■ USE

■ Recommendation

■ Geometry



Available Holder	Designation		ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)		
				NC3010	NC3020	NC3030	NC9020	NC305K	NC6010	PC8010	PC9030	PC130	CT10	CN20	CN100	CN200	H01	G10	ST10		Pitch	θ	f
VTH 2525R	VETR	080										○							●		0.8	60°	1.4
		100										○							●		1.0	60°	1.4
		125										○							●		1.25	60°	1.4
		150										○							●		1.5	60°	1.2
		175										○							●		1.75	60°	1.2
		200										○							●		2.0	60°	1.2
		250										○							●		2.5	60°	1.4
		300										○							●		3.0	60°	1.6
		150F					○			○	○	○		●					●		0.8-1.5	60°	1.4
		300F					○			○	○	●		●					●		1.5-3.0	60°	1.6

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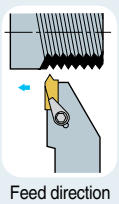
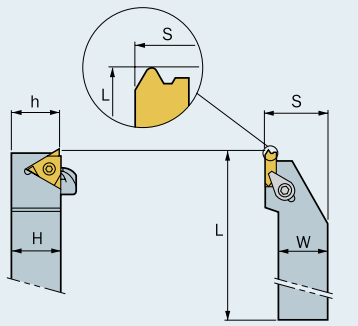
● : Stock Item ○ : Under preparing for stock

VTH



Feed direction



Right-hand shown

Ref	Holder Style	Application	Available Inserts	Parts			
Comment		External threading					

(mm)

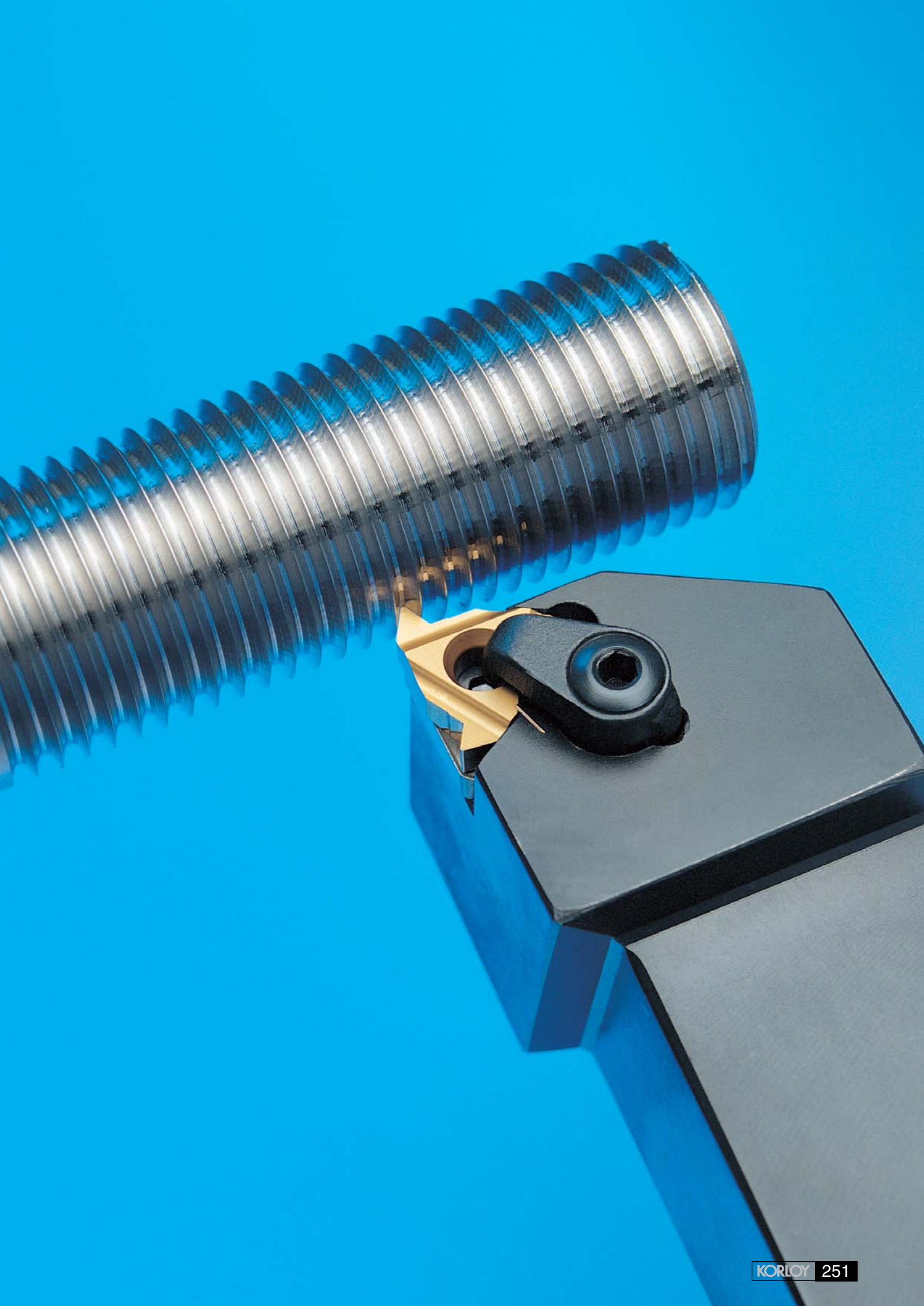
Designation		Stock	H=(h)	W	L	S	Clamp	Screw for clamp	Screw	Wrench
VTH	2020R	●	20	20	125	26.4				
	2525R	●	25	25	150	33.4	CS6R1	DHA0617	FTKA03510	TW15P, HW30L
	3225R	○	32	25	170	33.4				

Available Inserts: VETR □□□

* Model Insert : r=0.8 ※Boring bar with coolant hole.

P. 250

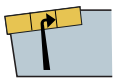
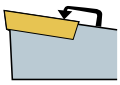
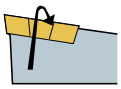
● : Stock Item ○ : Under preparing for stock



Cartridge Code System (ISO)

S	T	F	C	R
1	2	3	4	5

1 Clamping method of Insert

		
Hole Clamping (Pin Lock)	Top clamping without hole	Screw on
P	C	S

2 Insert Shape


T

S

C

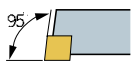
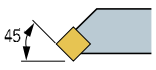
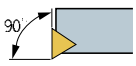
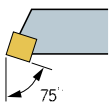
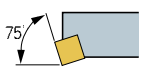
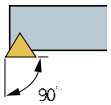
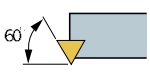
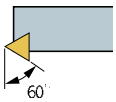
4 Relief angle of Insert


C

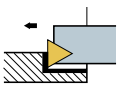
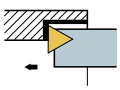
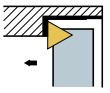
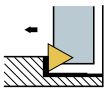
P

N

3 Lead angle

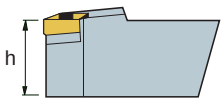
	
L	S
	
F	R
	
K	G
	
W	T

5 Hand of Tool

	
	
R	L

12	C	A	—	16
6	7	8		9

6 Height of Cutting edge



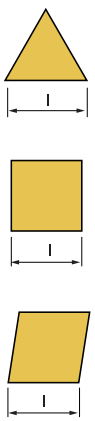
8 Type of Cartridge

A
(ISO5611)

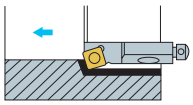
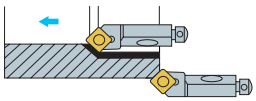
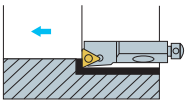
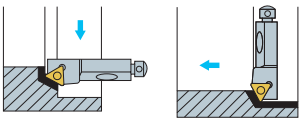
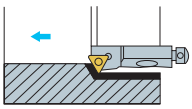
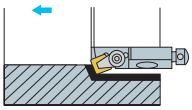
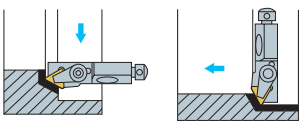
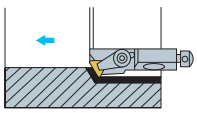
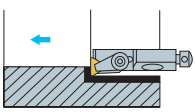
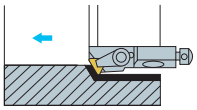
7 Cartridge Code

C
(Cartridge)

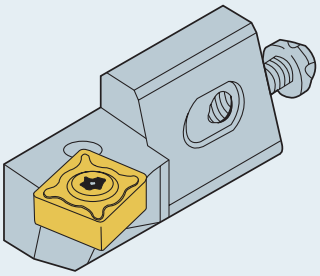
9 Length of Insert cutting edge

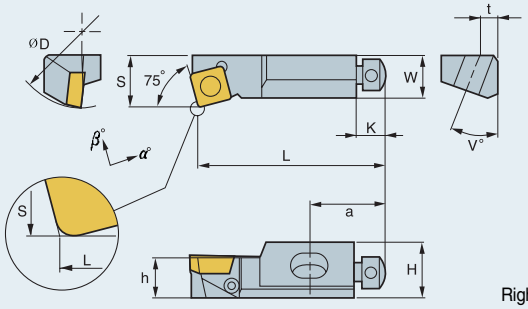


KORLOY Cartridge Index

Cutting Shape	Designation	Turning	Copying	Facing	Chamfering	Available Inserts
Screw on system						
SSKCR P. 255		**10CA-09** **12CA-12**	●			SC□T 09T3 □□ 1204 □□ P. 71, 72
SSSCR P. 255		**10CA-09** **12CA-12**	●		●	SC□T 09T3 □□ 1204 □□ P. 71, 72
STFCR P. 256		**10CA-11** **12CA-16**	●	●		TC□T 1102□□ 16T3□□ P. 83, 84
STTCR P. 256		**10CA-11** **12CA-16**	●	●		TC□T 1102□□ 16T3□□ P. 83, 84
STWCR P. 257		**10CA-11** **12CA-16**	●			TC□T 1102□□ 16T3□□ P. 83, 84
Clamp on system						
CSKPR P. 257		**10CA-09** **12CA-12**	●			SP□T 0903□□ 1203□□ P. 74
CTTPR P. 258		**10CA-11** **12CA-16**	●			TP□T 1103□□ 1603□□ P. 86, 87
CTWPR P. 258		**10CA-11** **12CA-16**	●			TP□T 1103□□ 1603□□ P. 86, 87
CTFPR P. 259		**10CA-11** **12CA-16**	●	●		TP□T 1103□□ 1603□□ P. 86, 87
CTSPR P. 259		**10CA-11** **12CA-16**	●			TP□T 1103□□ 1603□□ P. 86, 87

SSKCR/L (Screw on System)





Right-hand shown

(mm)

Designation	H	W	L	S	h	K	α°	β°	a	t	V°	ØD	Stock R	Stock L	Available Inserts
SSKCR/L 10CA-09	15	11	50	14	10	8	0	-4	20	5	20	40	○		SC □T 09T3 □□
12CA-12	20	15	55	20	12	8	0	-4	20	6	20	50	○		1204 □□

* Model Insert : r=0.8 D=Minimum machining Diameter

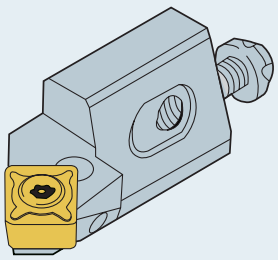
● : Stock Item ○ : Under preparing for stock

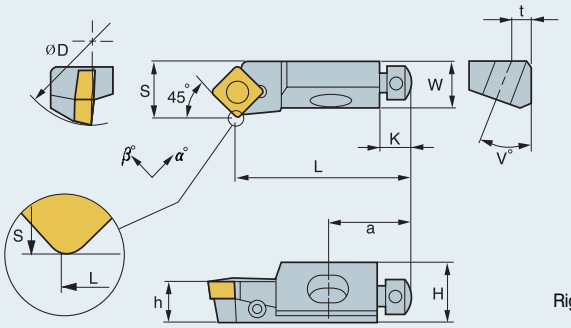
P. 71, 72

Parts

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

SSSCR/L (Screw on System)





Right-hand shown

(mm)

Designation	H	W	L	S	h	K	α°	β°	a	t	V°	ØD	Stock R	Stock L	Available Inserts
SSSCR/L 10CA-09	15	11	44	14	10	8	-5	0	20	5	20	40	○		SC □T 09T3 □□
12CA-12	20	15	47	20	12	8	-5	0	20	6	20	50	○		1204 □□

* Model Insert : r=0.8 D=Minimum machining Diameter

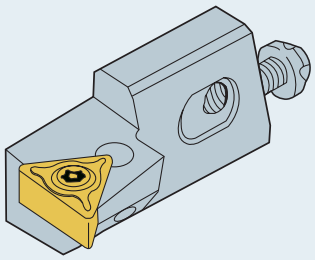
● : Stock Item ○ : Under preparing for stock

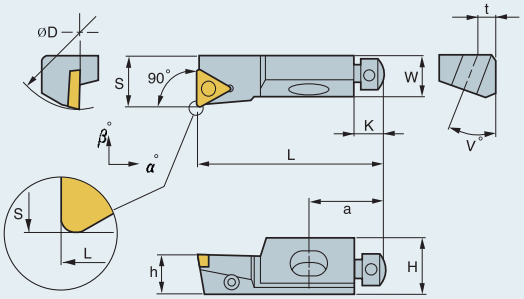
P. 71, 72

Parts

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

STFCR/L (Screw on System)





Right-hand shown

(mm)

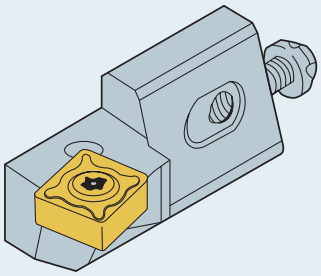
Designation	H	W	L	S	h	K	α°	β°	a	t	V°	ØD	Stock R	Stock L	Available Inserts
STFCR/L 10CA-11	15	11	50	14	10	8	0	-3	20	5	20	40			TC □T 1102 □□
12CA-16	20	15	55	20	12	8	0	-3	20	6	20	50			16T3 □□

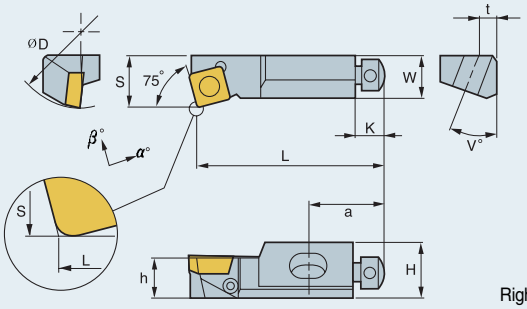
* Model Insert : r=0.4(l=11), r=0.8(l=16) D=Minimum machining Diameter ● : Stock Item ○ : Under preparing for stock P. 83, 84

Parts

Parts							
	Screw	Axial Adjusting Screw	Radial Adjusting Screw	Mounting Screw	Washer	Wrench	Wrench
STFCR/L 10CA-11	FTKA02565	AZ0508F	KHA0408	RHA0620	WA0602	TW 15P	HW20L
12CA-16	FTGA03508	AZ0508F	KHA0412	RHA0625	WA0602	TW 15P	HW20L

STTCR/L (Screw on System)





Right-hand shown

(mm)

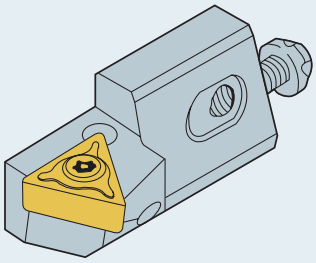
Designation	H	W	L	S	h	K	α°	β°	a	t	V°	ØD	Stock R	Stock L	Available Inserts
STTCR/L 10CA-11	15	11	50	9	10	8	-5	0	20	5	20	40			TC □T 1102□□
12CA-16	20	15	47	20	12	8	-3	0	20	6	20	50			16T3□□

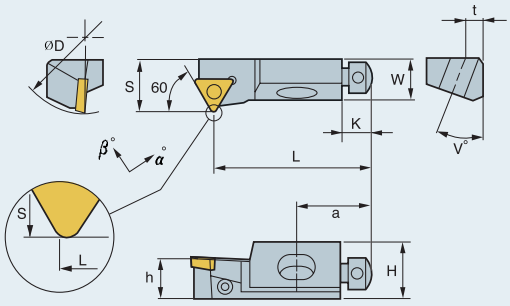
* Model Insert : r=0.4(l=11), r=0.8(l=16) D=Minimum machining Diameter ● : Stock Item ○ : Under preparing for stock P. 83, 84

Parts

Parts							
	Screw	Axial Adjusting Screw	Radial Adjusting Screw	Mounting Screw	Washer	Wrench	Wrench
STTCR/L 10CA-11	FTKA02565	AZ0508F	KHA0408	RHA0620	WA0602	TW 07P	HW20L
12CA-16	FTGA03508	AZ0508F	KHA0412	RHA0625	WA0602	TW15P	HW20L

STWCR/L (Screw on System)





Right-hand shown

(mm)

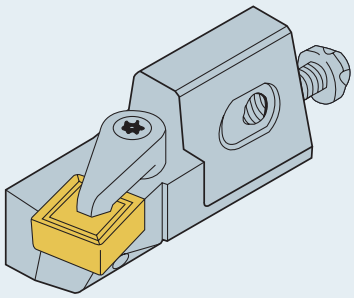
Designation	H	W	L	S	h	K	α°	β°	a	t	V°	ØD	Stock R	Stock L	Available Inserts
STWCR/L 10CA-11	15	11	44	14	10	8	0	-4	20	5	20	40			TC □T 1102 □□
12CA-16	20	15	47	20	12	8	-5	0	20	6	20	50			16T3 □□

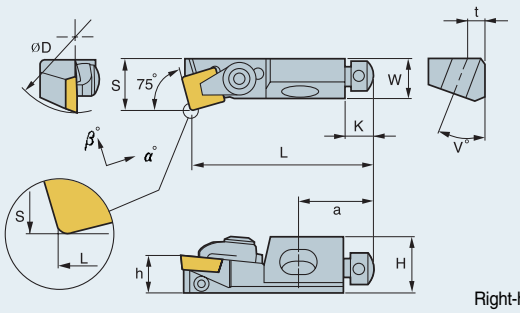
* Model Insert : r=0.4(l=11), r=0.8(l=16) D=Minimum machining Diameter ● : Stock Item ○ : Under preparing for stock P. 83, 84

Parts

Parts							
	Screw	Axial Adjusting Screw	Radial Adjusting Screw	Mounting Screw	Washer	Wrench	Wrench
STWCR/L 10CA-11	FTKA02565	AZ0508F	KHA0408	RHA0620	WA0602	TW 07P	HW20L
12CA-16	FTGA03508	AZ0508F	KHA0412	RHA0625	WA0602	TW15P	HW20L

CSKPR/L (Clamp on System)





Right-hand shown

(mm)

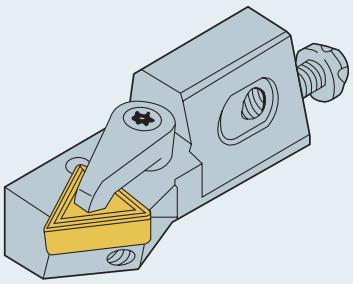
Designation	H	W	L	S	h	K	α°	β°	a	t	V°	ØD	Stock R	Stock L	Available Inserts
CSKPR/L 10CA-09	15	11	50	14	10	8	6	0	20	5	20	40			SP □T 0903 □□
12CA-12	20	16	55	20	12	8	6	0	20	6	20	50	●		1203 □□

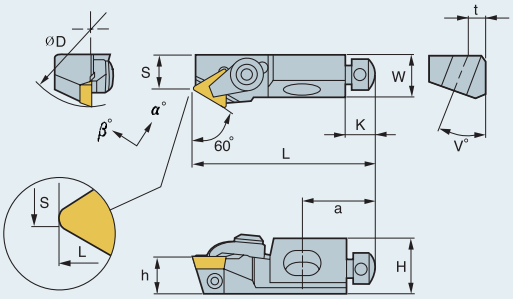
* Model Insert : r=0.8 D=Minimum machining Diameter ● : Stock Item ○ : Under preparing for stock P. 74

Parts

Parts							
	Clamp	Axial Adjusting Screw	Radial Adjusting Screw	Mounting Screw	Washer	Wrench	Wrench
CSKPR/L 10CA-09	CA05R	AZ0508F	KHA0408	RHA0620	WA0602	HW25L	HW20L
12CA-12	CA06R	AZ0508F	KHA0412	RHA0625	WA0602	HW30L	HW20L

CTTPR/L (Clamp on System)





Right-hand shown

(mm)

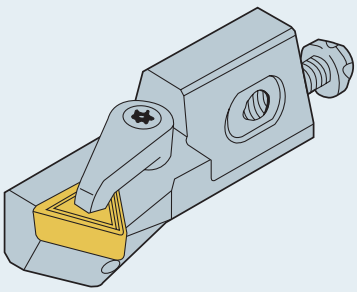
Designation	H	W	L	S	h	K	α°	β°	a	t	V°	ØD	Stock R	Stock L	Available Inserts
CTTPR/L 10CA-11	15	11	50	9	10	8	5	0	20	5	20	40	●		TP □T 1103 □□
12CA-16	20	16	55	20	12	8	5	0	20	6	20	50	●		1603 □□

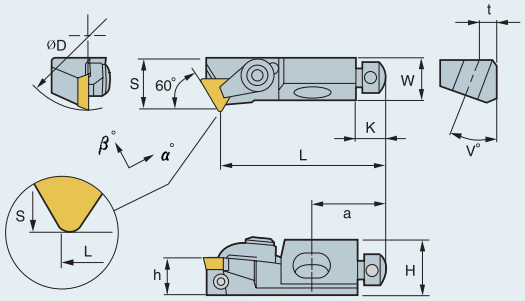
* Model Insert : r=0.4(l=11), r=0.8(l=16) D=Minimum machining Diameter ● : Stock Item ○ : Under preparing for stock P. 86, 87

Parts

Parts							
	Clamp	Axial Adjusting Screw	Radial Adjusting Screw	Mounting Screw	Washer	Wrench	Wrench
CTTPR/L 10CA-11	CA05R	AZ0508F	KHA0408	RHA0620	WA0602	HW 25L	HW20L
12CA-16	CA06R	AZ0508F	KHA0412	RHA0625	WA0602	HW 30L	HW20L

CTWPR/L (Clamp on System)





Right-hand shown

(mm)

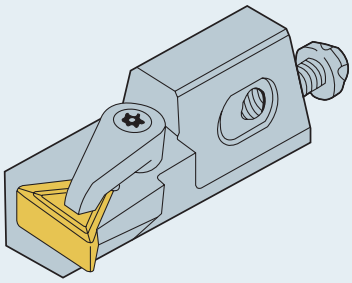
Designation	H	W	L	S	h	K	α°	β°	a	t	V°	ØD	Stock R	Stock L	Available Inserts
CTWPR/L 10CA-11	15	11	44	14	10	8	6	0	20	5	20	40	●		TP □T 1103 □□
12CA-16	20	16	47	20	12	8	6	0	20	6	20	50	●		1603 □□

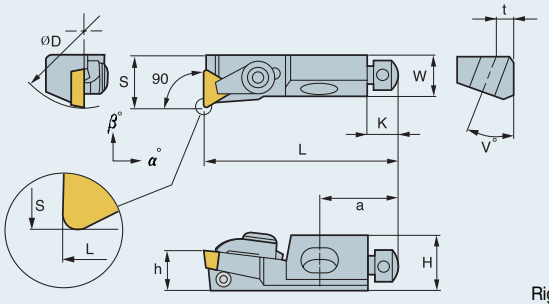
* Model Insert : r=0.4(l=11), r=0.8(l=16) D=Minimum machining Diameter ● : Stock Item ○ : Under preparing for stock P. 86, 87

Parts

Parts							
	Clamp	Axial Adjusting Screw	Radial Adjusting Screw	Mounting Screw	Washer	Wrench	Wrench
CTWPR/L 10CA-11	CA05R	AZ0508F	KHA0408	RHA0620	WA0602	HW 25L	HW20L
12CA-16	CA06R	AZ0508F	KHA0412	RHA0625	WA0602	HW 30L	HW20L

CTFPR/L (Clamp on System)





Right-hand shown

(mm)

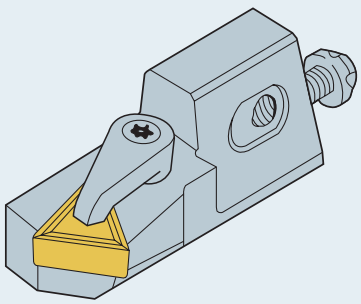
Designation	H	W	L	S	h	K	α°	β°	a	t	V°	ØD	Stock R	Stock L	Available Inserts
CTFPR/L 10CA-11	15	11	50	14	10	8	6	0	20	5	20	40	●		TP □T 1103 □□
12CA-16	20	16	55	20	12	8	6	0	20	6	20	50			1603 □□

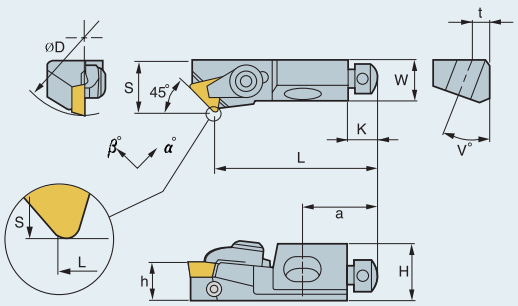
* Model Insert : r=0.4(l=11), r=0.8(l=16) D=Minimum machining Diameter ● : Stock Item ○ : Under preparing for stock P. 86, 87

Parts

Parts							
	Clamp	Axial Adjusting Screw	Radial Adjusting Screw	Mounting Screw	Washer	Wrench	Wrench
CTFPR/L 10CA-11	CA05R	AZ0508F	KHA0408	RHA0620	WA0602	HW 25L	HW20L
12CA-16	CA06R	AZ0508F	KHA0412	RHA0625	WA0602	HW 30L	HW20L

CTSPR/L (Clamp on System)





Right-hand shown

(mm)

Designation	H	W	L	S	h	K	α°	β°	a	t	V°	ØD	Stock R	Stock L	Available Inserts
CTSPR/L 10CA-11	15	11	44	14	10	8	4	0	20	5	20	40	●		TP □T 1103 □□
12CA-16	20	16	47	20	12	8	5	0	20	6	20	50	●		1603 □□

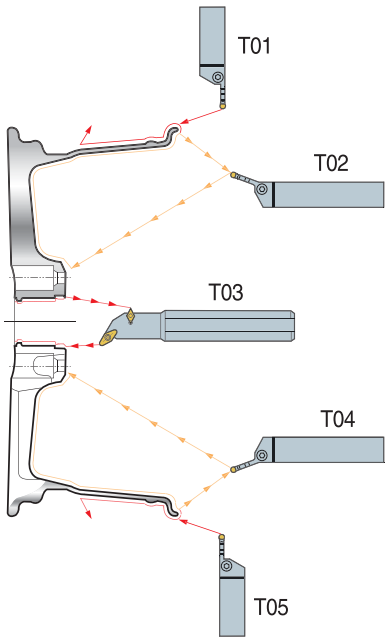
* Model Insert : r=0.4(l=11), r=0.8(l=16) D=Minimum machining Diameter ● : Stock Item ○ : Under preparing for stock P. 86, 87

Parts

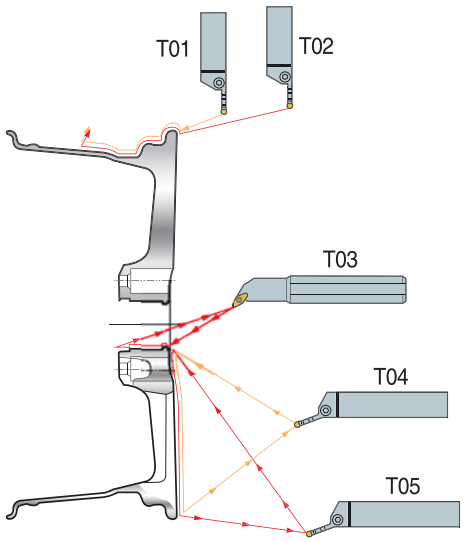
Parts							
	Clamp	Axial Adjusting Screw	Radial Adjusting Screw	Mounting Screw	Washer	Wrench	Wrench
CTSPR/L 10CA-11	CA05R	AZ0508F	KHA0408	RHA0620	WA0602	HW 25L	HW20L
12CA-16	CA06R	AZ0508F	KHA0412	RHA0625	WA0602	HW 30L	HW20L

Aluminum wheel tooling example

MACHINING SIDE A



MACHINING SIDE B



MACHINING SIDE A Top Turret

T01	Rim Roughing	MGEHR25N-8A
		MRGN8N-A(Carbide)
T02	Internal Roughing	MGEHL25N-8A-15
		MRGN8N-A(Carbide)
T03	Rough Boring	S40S-SVQCR22
		VCGT220530-TA(Carbide)
		DCGT11T304-TA(Carbide)
T04	Rim Roughing	MGEHR25N-8A-15
		MRGN8N-AP(PCD)
T05	Internal Finishing	MGEHR25N-8A
		MRGN8N-AP(PCD)

MACHINING SIDE B Top Turret

T01	Rim Roughing	MGEHR25N-8A
		MRGN8N-A(Carbide)
T02	Rim Finishing	MGEHR25N-8A
		MRGN8N-AP(PCD)
T03	Finish Boring	S32U-SVQCR16
		VCGT160408-AK(Carbide)
T04	Internal Roughing	MGEHR25N-8A-15
		MRGN8N-A(Carbide)
T05	Internal Finishing	MGEHR25N-8A-15
		MRGN8N-AP(PCD)

Various type of inserts

MRGN-A
(For general use)

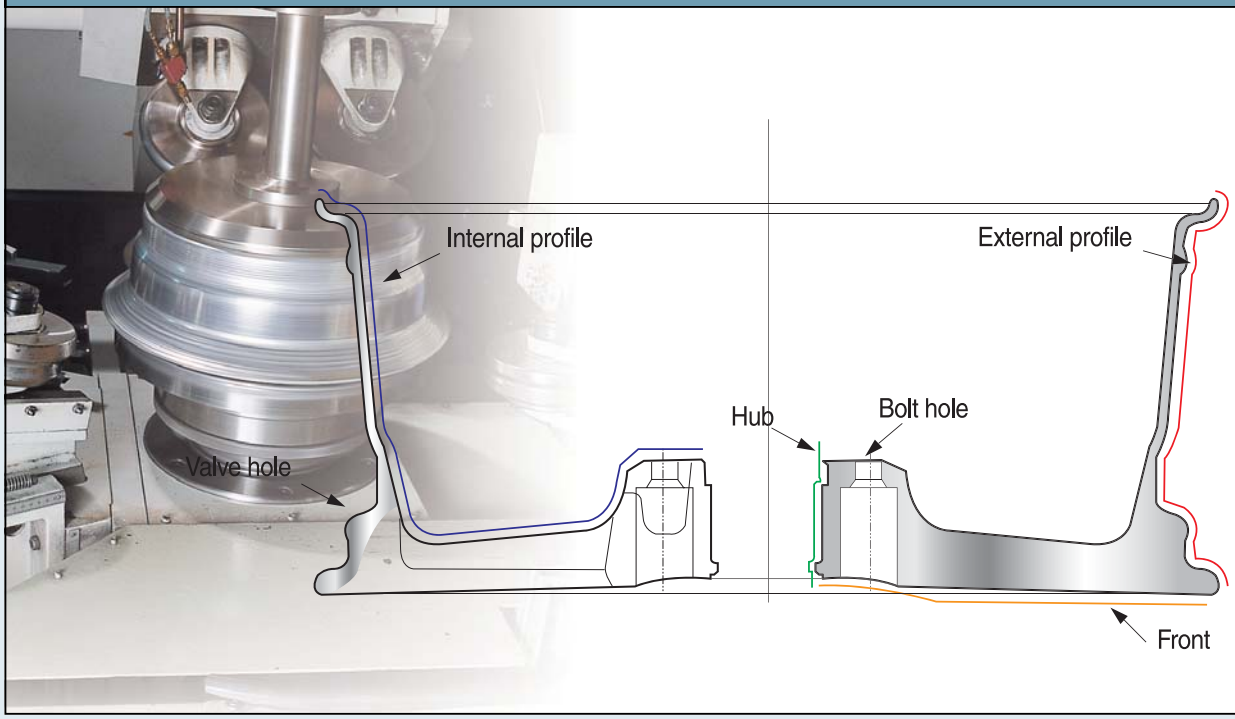
MRGN-A5
(For copy machining)

MRGN-AM
(For medium roughing)

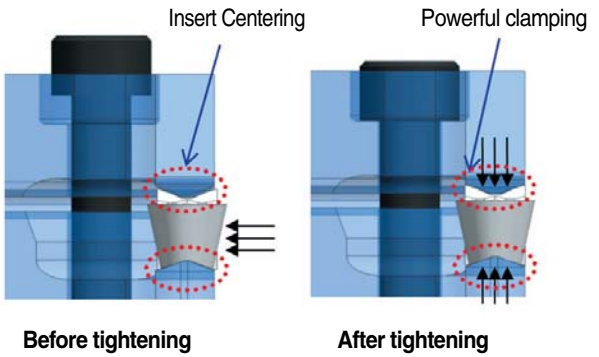
MRGN-AP
(PCD insert)

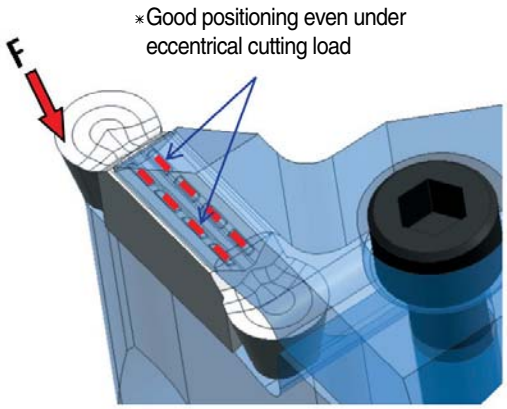
MVGN-A
New V type insert
(instead of VCGT)

Part name of Al wheel

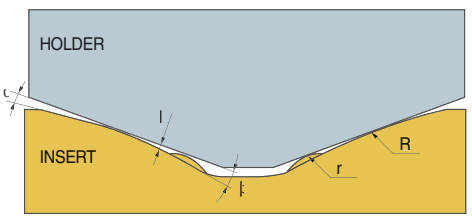


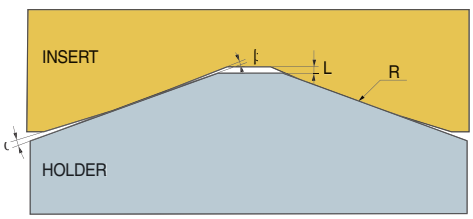
Clmaping mechanism for new MGT insert





New concept clamping system





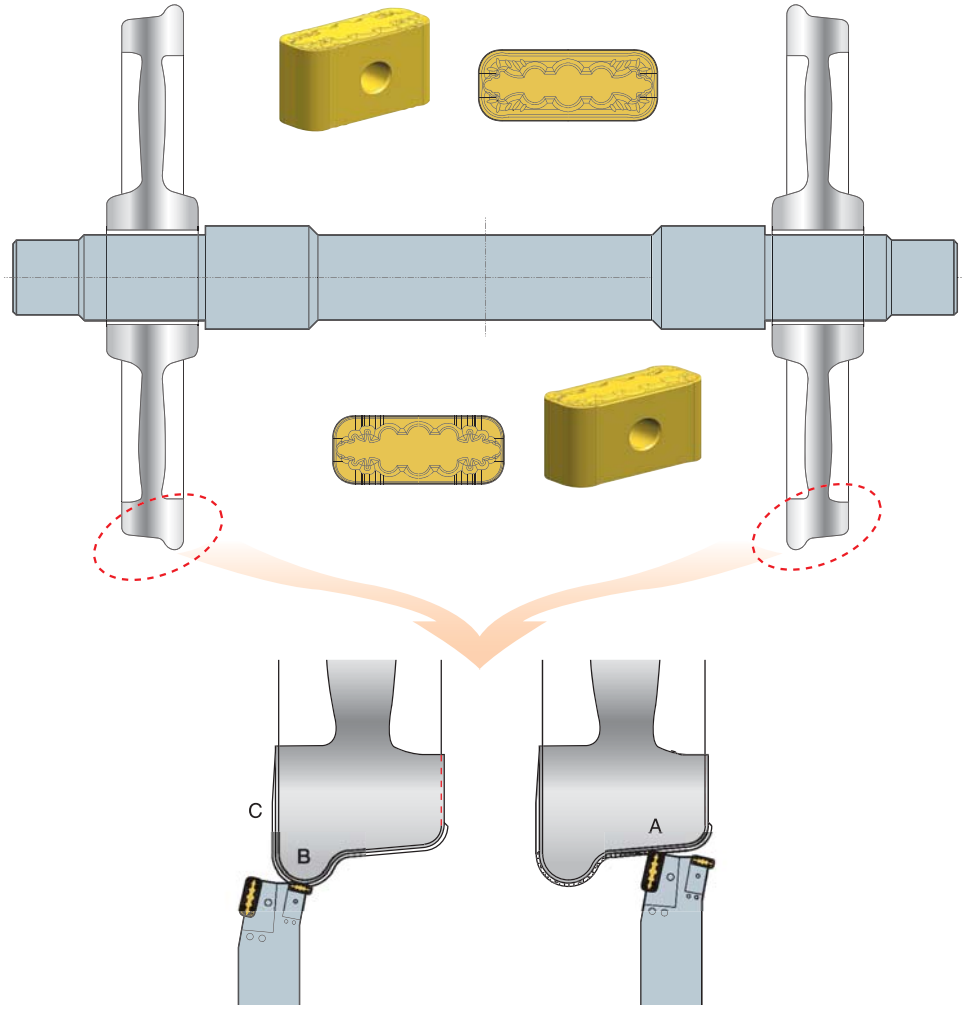
∗ Strong clamping power acquired due to special radius(R) and convex "dot" designed on clamping part of insert.

Railway wheel tooling example

Special Features

- Exclusive tool for railway wheel machining
- To machine new wheel → RCMX type
- To repair wheel → LNUX type
- Excellent tool life and chip control performance from roughing to finishing.

Machining example - Repair

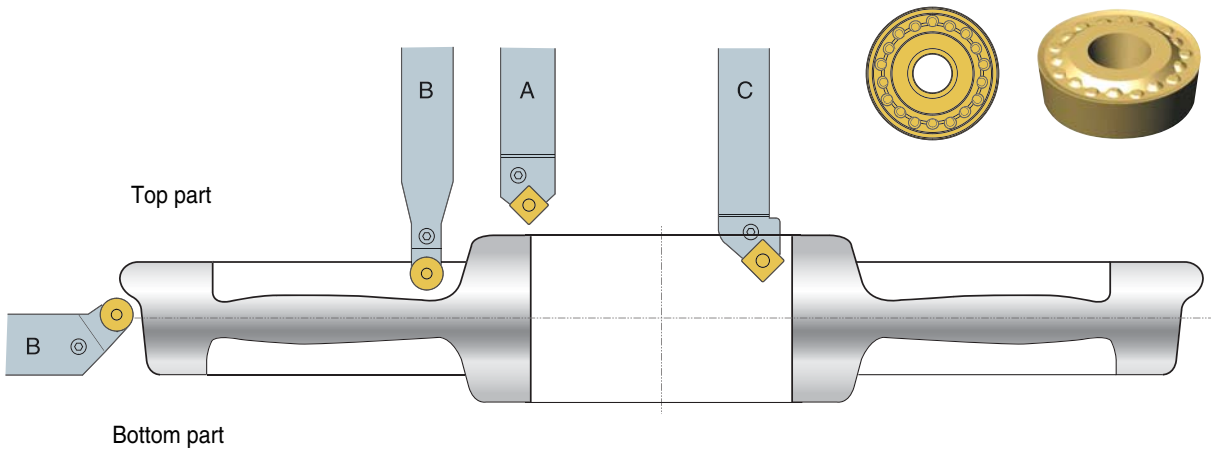


Machining sequence	A	B	C
Insert	LNUX301940-TF/TM	LNUX191940-25/22	
Grade	NC3015	NC3015	
Recommendation	Reduce cutting speed at part A where depth of cut become bigger.	Increase cutting speed at part B,C to get good chip control.	

※Machining example (Testing against competitor)

- Insert : LNUX301940-TM
- Grade : NC3015
- Work Piece : SSW2, Ø920~1000
- Cutting condition
  V=78m/min S13~18rpm
  f=1.0mm/rev d=3~4mm
- Testing result : Longer tool life & smooth chip flow than competitor's have been acquired.

Machining example



Machining sequence	A	B	C
Holder	PSDNN5050-U25	PRDCN5050-U32 PRGCN5050-U32	PSSNR5050-S25
Insert	SNMM250724-GH	RCMX3209MO-SL	
Grade	NC3015	NC3015	

※Machining sequence : Top face(A → B) ⇨ Bottom face(A → B → C)

※Machining example (Testing against competitor)

- Insert : RCMX3209M0-SL
- Grade : NC3015
- Work Piece : SSW2, ∅840
- Cutting condition
  V=55~100m/min f=1.0~1.5mm/rev
  d=1~6mm
- Testing result : Longer tool life & smooth chip flow than competitor's have been acquired.

Railway Machining example

Milling of Running gear & Lowering

Milling of Fish plating


G T
M
D O

Milling

Milling Insert Code System (ISO)

S	P	K	R	12
1	2	3	4	5

1 Insert Shape

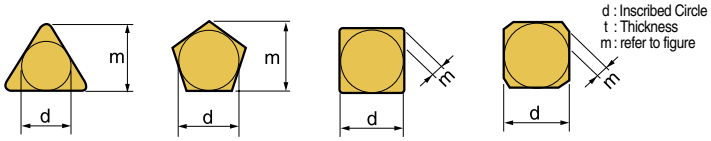
			
C	D	H	L
			
O	R	S	T
			
V	W		

2 Relief Angle

		
A	B	C
		
D	E	F
		
G	N	P

(mm)

3 Tolerance



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

■ Tolerance on C,H,R,T,W class (exceptional case)

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

■ Tolerance on D class (exceptional case)

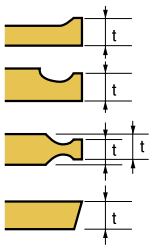
d	Tolerance on d	Tolerance on m
6.35	±0.05	±0.11
9.525	±0.05	±0.11
12.7	±0.08	±0.15
15.875	±0.10	±0.18
19.05	±0.10	±0.18

4 Cross Section Type

	 C' Sink 70° - 90°
A	B
 C' Sink 70° - 90°	
C	F
	 C' Sink 70° - 90°
G	H
 C' Sink 70° - 90°	
J	M
	 C' Sink 40° - 60°
N	Q
	 C' Sink 40° - 60°
R	T
 C' Sink 40° - 60°	 C' Sink 40° - 60°
U	W
Special type	
X	

03	ED 08	S	R	-	MX
6	7	8	9		10

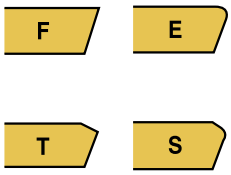
6 Height of cutting edge



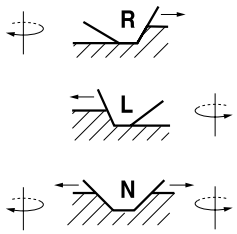
Symbol		Height of cutting edge(t)	
Metric	Inch	mm	Inch
-	0.5(1)	0.79	1/32
T0	0.6	1.00	0.040
01	1(2)	1.59	1/16
T1	1.2	1.98	5.64
02	1.5(3)	2.38	3/32
03	2	3.18	1/8
T3	2.5	3.97	5/32
04	3	4.76	3/16
05	3.5	5.56	7/32
06	4	6.35	1/4
07	5	7.94	5/16
09	6	9.52	3/8
11	7	11.11	7/16
12	8	12.70	1/2

( ) Symbol for small size insert

8 Edge preparation

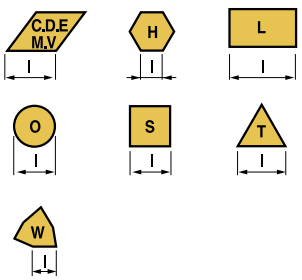


9 Hand of Tool

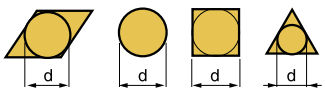


5 Cutting Edge Length, Diameter of Inscribed circle

■ Metric system



■ Inch system



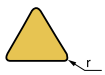
Use 1/32″ unit for a insert having smaller I.C under 1/4″
Use 1/8″ unit for a insert having larger I.C over 1/4″

* In case of rectangular and rhombic insert indicate cutting edge length instead of inscribed circle.

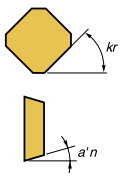
■ Cross over chart for "Metric" and "Inch" system

	06	09	11	16	22	27	33	44
	03	05	06	09	12	15	19	25
55°	04	06	07	11	15	19	23	31
80°	03	05	06	09	12	16	19	25
Inscribed circle	5/32″	7/32″	1/4″	3/8″	1/2″	5/8″	3/4″	1″
Inch system	5	7	2(8)	3	4	5	6	8

7 Nose Radius (Nose R)

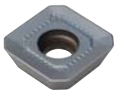


r		Symbol		r		Symbol	
mm	Inch	mm	Inch	mm	Inch	mm	Inch
00	0	0.0		12	3	1.2	3/64
02		0.2		15		1.5	
04	1	0.4	1/64	16	4	1.6	4/64
05		0.5		24	6	2.4	6/64
08	2	0.8	2/64	32	8	3.2	8/64
10		1.0		40		4.0	

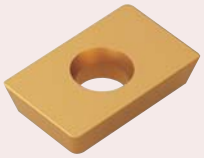


Parallel Land	Relief Angle	
kr	a' n	
A - 45°	A - 3°	F - 25°
D - 60°	B - 5°	G - 30°
E - 75°	C - 7°	N - 0°
F - 85°	D - 15°	P - 11°
P - 90°	E - 20°	
Z - Special		

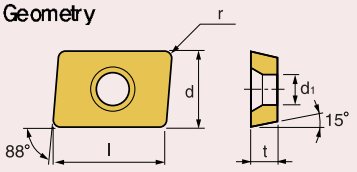
10 Chip Breaker for Milling

		
MA	MF	MM
		
MX	MF	MM
		
MR	MA	

ADKA



Geometry

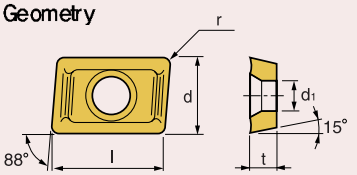


Available cutter	Designation	ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)				
			NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510	PC230	CT10	CN20	CN30		H01	G10	ST30A	ST20	l	d	t	r	d_1
	ADKA 150308R					○				○							○			15.0	9.525	3.18	0.8	4.5
	150308TR								○		●		○	●				○		15.0	9.525	3.18	0.8	4.5
	150308SR		●				○		○											15.0	9.525	3.18	0.8	4.5

● : Stock Item ○ : Under preparing for stock

ADLT

Geometry

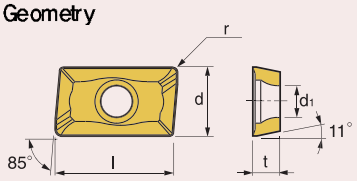


Available cutter	Designation	ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)				
			NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510	PC230	CT10	CN20	CN30		H01	G10	ST30A	ST20	l	d	t	r	d_1
	ADLT 150308R		●							○							○			15.0	9.525	3.18	0.8	4.5
	150308TR						○		○				○	●						15.0	9.525	3.18	0.8	4.5
	150308SR						●				●							●		15.0	9.525	3.18	0.8	4.5

● : Stock Item ○ : Under preparing for stock

APKT

Geometry



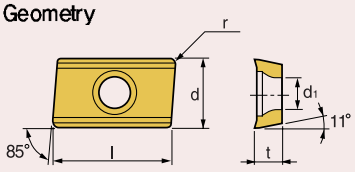
Available cutter	Designation	ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)				
			NCM325	NCM310K	NCM320K	PC3535	PC3545	PC3530	PC6510			CT10	CN20	CN30		H01	G10	ST30A	ST20	l	d	t	r	d_1
AMS 3000 AMC(M) 3000 AMS3000-K AMC(M)3000-K	APKT 1604PDSR		●			●	●	●	●											16.4	9.525	4.76	0.8	4.4

P. 338, 339, 341~343

● : Stock Item ○ : Under preparing for stock

APKT-MA

Geometry



Available cutter	Designation		ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)				
				NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510	PD2000	CT10	CN20	CN30		H01	G10	ST30A	ST20	l	d	t	r	d_1
AMS 3000 AMC(M) 3000 AMS3000-K AMC(M)3000-K	APKT	1604PDFR-MA										●					●				16.4	9.525	4.76	0.4	4.4

P. 338, 339, 341~343

● : Stock Item ○ : Under preparing for stock

APXT, APKT

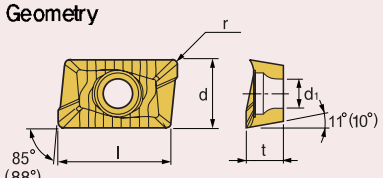
Special Notice for APKT/APXT16□□□□-□□Use.

Every single Alpha Mill holder which is listed here is optimally designed to be clamped with both APKT and APXT16□□□□-□□ insert for general cutting application. For better precision tooling, how ever, such as finishing of shouldering, slotting and facing, we recommend special "Alpha Mill-K" Holder and APKT insert.

Available "Alpha Mill-K" Holders			
AMS(A)3000S-K	AMS(A)2000MH-K	AMS(A)3000MH-K	AMC(A)3000S-K

Warning : Using APKT16□□□-□□ in general Alpha Mill holder (without-K) may cause tolerance trouble in case of precision operation

Geometry



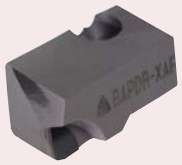
▪ ( ) number is for APXT11T3□□□.

Available cutter	Designation		ASA	Coated Carbide											Cermet		Uncoated Carbide				(mm)				
				NCM325	NCM335	PC8520	NCM320K	PC3535	PC3545	PC9530	PC6510	PC230	PC240	PC215K	CT10	CN20	H01	G10	ST30A	ST20	l	d	t	r	d_1
AMS 2000 AMC(M) 2000	APXT	11T3PDSR-MF		●	●	●	●	●	●	●	●			●							11.3	6.60	3.6	0.5	2.85
		11T3PDSR-MM		●	●	○	●	●	●	●	●	●	●	○							11.3	6.60	3.6	0.5	2.85
		11T3PDSR-MR		●								●									11.3	6.60	3.6	0.5	2.85
		11T312R-MM		●	●							●									11.3	6.60	3.6	1.2	2.85
		11T316R-MM																			11.3	6.60	3.6	1.6	2.85
		11T324R-MM			●																11.3	6.60	3.6	2.4	2.85
		11T3PDR-MA												○			●				11.3	6.60	3.6	0.5	2.85
		11T318R-MA																			11.3	6.60	3.6	1.8	2.85
		11T318R-MM																			11.3	6.60	3.6	1.8	2.85
AMS 3000 AMC(M) 3000		1604PDSR-MF		●	●	●	●	●	●	●	●			○							16.5	9.56	5.76	0.8	4.5
		1604PDSR-MM		●	●	○	●	●	●	●	●	●	●	●							16.5	9.56	5.76	0.8	4.5
		160416R-MM		●	●							●									16.5	9.56	5.76	1.6	4.5
		160432R-MM		●																	16.5	9.56	5.76	3.2	4.5
	APKT	1604PDFR-MA2												○			○				16.5	9.56	5.76	0.8	4.5
		160416FR-MA2																			16.5	9.56	5.76	1.6	4.5
		160432FR-MA2																			16.5	9.56	5.76	3.2	4.5

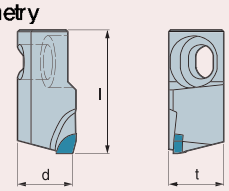
P. 338~344

● : Stock Item ○ : Under preparing for stock

BAPDR/L-XAF(NAF)(BLADE)



■ Geometry



Available cutter	Designation	ASA	PCD									Cermet				Uncoated Carbide				(mm)		
			DP150	DP200	DP2200							CT10	CN20	CN30		H01	G10	ST30A	ST20	l	d	t
APD(M)-B	BAPDR/L-XAF			●																31	14	13.8
	⁎-NAF																			31	14	13.8

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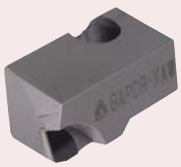
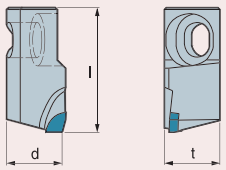
⁎Nega land applied blade on cutting edge

●: Stock Item ○: Under preparing for stock

BAPDR/L-XAW(NAW)(BLADE)



■ Geometry



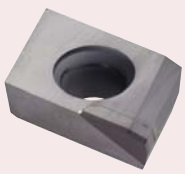
Available cutter	Designation	ASA	PCD									Cermet				Uncoated Carbide				(mm)		
			DP150	DP200	DP2200							CT10	CN20	CN30		H01	G10	ST30A	ST20	l	d	t
APD(M)-B	BAPDR/L-XAW			●																31	13.8	13.8
	⁎-NAW																			31	13.8	13.8

P. 337

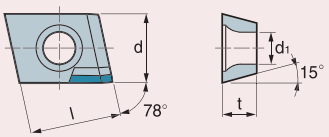
⁎Nega land applied blade on cutting edge

●: Stock Item ○: Under preparing for stock

CDEW-XAF(NAF)



■ Geometry



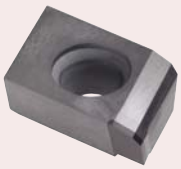
Available cutter	Designation	ASA	PCD									Cermet				Uncoated Carbide				(mm)			
			DP150	DP200	DP2200							CT10	CN20	CN30		H01	G10	ST30A	ST20	l	d	t	d_1
APD(M)-A	CEDW 1204R/L-XAF		○	●	○															12.7	9.525	4.76	4.4
	⁎1204R/L-NAF		○	●	○															12.7	9.525	4.76	4.4

P. 336

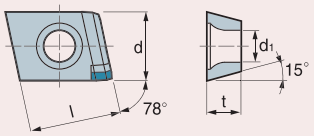
⁎Nega land applied insert on cutting edge

●: Stock Item ○: Under preparing for stock

CDEW-XAW(NAW)



■ Geometry



Available cutter	Designation	ASA	PCD								Cermet				Uncoated Carbide				(mm)			
			DP150	DP200	DP2200						CT10	CN20	CN30		H01	G10	ST30A	ST20	l	d	t	d_1
APD(M)-A	CDEW 1204R/L-XAW		○	●	○														12.7	9.525	4.76	4.4
	∗1204R/L-NAW		○	●	○														12.7	9.525	4.76	4.4

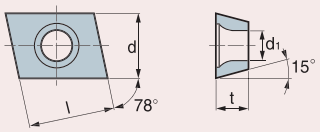
P. 336

∗Nega land applied insert on cutting edge

● : Stock Item ○ : Under preparing for stock

CDEW-XCF

■ Geometry



Available cutter	Designation	ASA	PCD								Cermet				Uncoated Carbide				(mm)			
			DP150	DP200	DP2200						CT10	CN20	CN30		H01	G10	ST30A	ST20	l	d	t	d_1
APD(M)-A	CDEW 1204R/L-XCF														●				12.7	9.525	4.76	4.4

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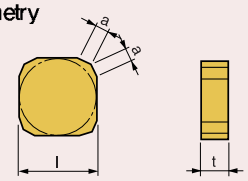
● : Stock Item ○ : Under preparing for stock

CSN(CSNH)

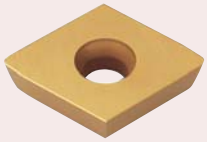
■ Geometry



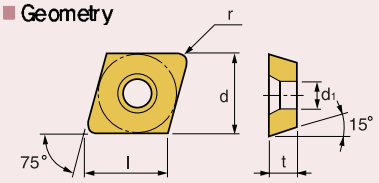
Available cutter	Designation	ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)		
			NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510	CT10	CN20	CN30		H01	G10	ST30A	ST20	l(=d)	t	a
	CSN 43M																●		12.7	4.76	2.0
	43MT																		12.7	4.76	2.0
	CSNH 43M																		12.7	4.76	2.0
	43MT																		12.7	4.76	2.0

● : Stock Item ○ : Under preparing for stock

EDCW



Geometry



Available cutter	Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)				
				NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510	CT10	CN20	CN30		H01	G10	ST30A	ST20	l	d	t	r	d_1
PM	EDCW	1604ZDFR	53					○		○	○							○		16.4	15.875	4.76	0.8	5.5
		1604ZDTR	53					○		○	○							●		16.4	15.875	4.76	0.8	5.5

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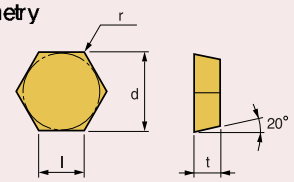
●: Stock Item ○: Under preparing for stock

HECN

Geometry



Available cutter	Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)			
				NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510	CT10	CN20	CN30		H01	G10	ST30A	ST20	l	d	t	r
DEH 5000	HECN	090408FN	532					○			○						○	○		9.0	15.875	4.76	0.8
		090408SN	532					○			○						○	○		9.0	15.875	4.76	0.8
		090408TN	532					○			○						○	○		9.0	15.875	4.76	0.8
		110412FN	633					○			○						○	○		11.0	19.05	4.76	1.2
		110412TN	633					○			○						○	○		11.0	19.05	4.76	1.2

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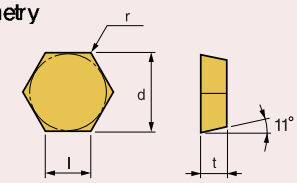
●: Stock Item ○: Under preparing for stock

HPEN

Geometry



Available cutter	Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)			
				NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510	CT10	CN20	CN30		H01	G10	ST30A	ST20	l	d	t	r
DPH 5000	HPEN	090408FN	532					○			○						○	○		9.0	15.875	4.76	0.8
		090408SN	532					○			○						○	○		9.0	15.875	4.76	0.8
		090408EN	532					○			○						○	○		9.0	15.875	4.76	0.8
		110412FN	633					○			○						○	○		11.0	19.05	4.76	1.2

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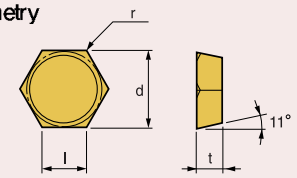
●: Stock Item ○: Under preparing for stock

HPEN-WC

Geometry



Available cutter	Designation		ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)			
				NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510		CT10	CN20	CN30		H01	G10	ST30A	ST20	l	d	t	r
DPH 5000	HPEN	090408-WC	532					○			○							○	○		9.0	15.875	4.76	0.8
		110412-WC	633					○			○							○	○		11.0	19.05	4.76	1.2

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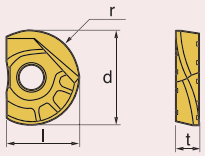
● : Stock Item ○ : Under preparing for stock

LBH

Geometry



Available cutter	Designation		ASA	Coated Carbide										Cermet				Uncoated Carbide				(mm)			
				NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510	PC210F		CT10	CN20	CN30		H01	G10	ST30A	ST20	l	d	t	r
LBE	LBH	080						○		○		●		○								7	8	2.4	4
		100						○		○		●		○								8.5	10	2.6	5
		120						○		○		●		○								10	12	3	6
		160						○		○		●		○								12	16	4	8
		200						○		○		●		○								15	20	5	10
		250						○		○		●		○								18.5	25	6	12.5
		300						○		○		●		○								22.5	30	7	15
		320						○		○		●		○								23.5	32	7	16

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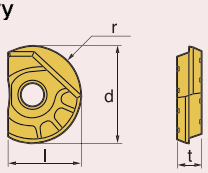
● : Stock Item ○ : Under preparing for stock

LBS

Geometry



Available cutter	Designation		ASA	Coated Carbide										Cermet				Uncoated Carbide				(mm)			
				NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510	PC210F		CT10	CN20	CN30		H01	G10	ST30A	ST20	l	d	t	r
LBE	LBS	080						○		○		○		○								7	8	2.4	4
		100						○		○		○		○								8.5	10	2.6	5
		120						○		○		○		○								10	12	3	6
		160						○		○		○		○								12	16	4	8
		200						○		○		○		○								15	20	5	10
		250						○		○		○		○								18.5	25	6	12.5
		300						○		○		○		○								22.5	30	7	15
		320						○		○		○		○								23.5	32	7	16

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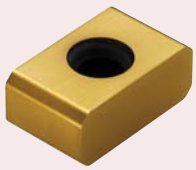
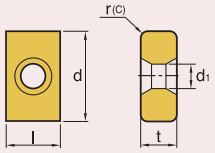
● : Stock Item ○ : Under preparing for stock

LNE



Geometry



Available cutter	Designation		ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)				
				NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510	PC215K	CT10	CN20	CN30		H01	G10	ST30A	ST20	l	d	t	r(c)	d_1
SQN(M) 3000 SFN(M) 3000 SEN(M) 3000 SAN(M) 3000	LNE	324-C1.0									○	○									9.525	15.875	6.35	1.0	4.3
		324-R0.8									○	○									9.525	15.875	6.35	0.8	4.3

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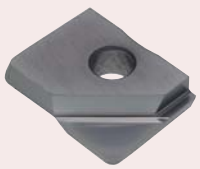
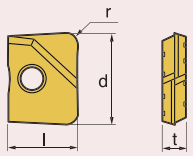
●: Stock Item ○: Under preparing for stock

LR



Geometry



Available cutter	Designation		ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)			
				NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510	PC210F	CT10	CN20	CN30		H01	G10	ST30A	ST20	l	d	t	r*
LBE	LR	100-R□						○		○		●	○								8.5	10	2.6	0.5~2.0
		120-R□						○		○		●	○								10	12	3	0.5~2.0
		160-R□						○		○		●	○								12	16	4	0.5~3.0
		200-R□						○		○		●	○								15	20	5	0.5~3.0
		250-R□						○		○		●	○								18.5	25	6	1.0~3.0
		300-R□						○		○		●	○								22.5	30	7	1.0~3.0
		320-R□						○		○		●	○								23.5	32	7	1.0~3.0
								○																

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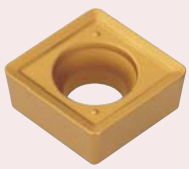
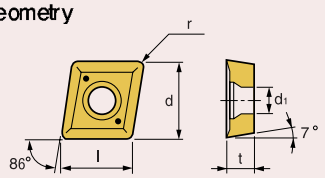
*Corner Radius.

●: Stock Item ○: Under preparing for stock

MCMT



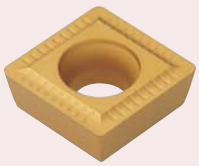
Geometry



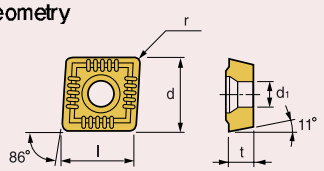
Available cutter	Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)				
				NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510	CT10	CN20	CN30		H01	G10	ST30A	ST20	l	d	t	r	d_1
	MCMT	080308EN		●			●	○			○									8.0	7.94	3.18	0.8	3.5
		09T308EN		●			●	○			○									9.5	9.525	3.97	0.8	4.5

●: Stock Item ○: Under preparing for stock

MPMT



Geometry



Available cutter	Designation		ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)				
				NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510	NC40	CT10	CN20	CN30		H01	G10	ST30A	ST20	l	d	t	r	d_1
SE	MPMT	090308	322					○			○	●									9.5	9.525	3.18	0.8	4.4
		120408	432					○			○	●									12.7	12.7	4.76	0.8	5.5

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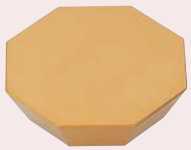
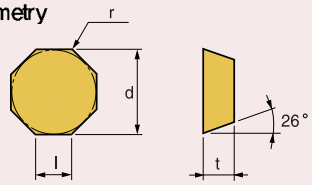
● : Stock Item ○ : Under preparing for stock

OFCN



Geometry



Available cutter	Designation		ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)			
				NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510		CT10	CN20	CN30		H01	G10	ST30A	ST20	l	d	t	r
AFO(M) 5000	OFCN	0704SN		●				●	●		●										7.4	18	4.76	0.5
		0704FN		○		○		○			○										7.4	18	4.76	0.5
		070408SN								○					○						7.4	18	4.76	0.8
		070408FN								○					○						7.4	18	4.76	0.8

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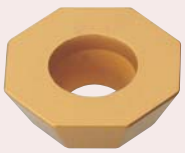
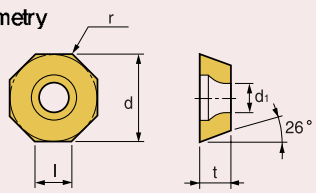
● : Stock Item ○ : Under preparing for stock

OFCW



Geometry



Available cutter	Designation		ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)				
				NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510	PC230	CT10	CN20	CN30		H01	G10	ST30A	ST20	l	d	t	r	d_1
AFO(M) 4000	OFCW	05T3SN		●				○				●									5.2	12.7	3.97	0.5	4.4
		05T3FN																			5.2	12.7	3.97	0.5	4.4
		05T308FN		○						○	○	○									5.2	12.7	3.97	0.8	4.4

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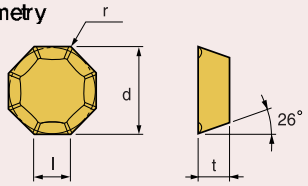
● : Stock Item ○ : Under preparing for stock

OFKR-MF, MM, MA

Geometry



Available cutter	Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)			
				NCM325	NCM335	NCM320K	PC3535	PC3545	PC9530	PC6510	PC8520	PC230	CT10	CN20	CN30	H01	G10	ST30A	ST20	l	d	t	r
AFO(M) 5000	OFKR	0704SN-MF		●	●	●	○		○	○	●									7.4	18	4.76	0.5
		070408SN-MF																		7.4	18	4.76	0.8
		0704SN-MM		●	●	●	●	●	●	●		●								7.4	18	4.76	0.5
		070408SN-MM																		7.4	18	4.76	0.8
		0704FN-MA														●				7.4	18	4.76	0.5
		0704EN-MA																		7.4	18	4.76	0.5

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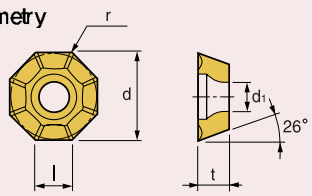
● : Stock Item ○ : Under preparing for stock

OFKT-MF, MM, MA

Geometry



Available cutter	Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)				
				NCM325	NCM335	NCM320K	PC3535	PC3545	PC9530	PC8520	PC205K	PC230	CT10	CN20	CN30	H01	G10	ST30A	ST20	l	d	t	r	d_1
AFO(M) 4000	OFKT	05T3SN-MF		●	●	●	○	○		●	●									5.2	12.7	3.97	0.5	4.4
		05T308SN-MF																		5.2	12.7	3.97	0.8	4.4
		05T3SN-MM		●		●	○	○		○	○	●								5.2	12.7	3.97	0.5	4.4
		05T308SN-MM																		5.2	12.7	3.97	0.8	4.4
		05T3FN-MA								○	○					●				5.2	12.7	3.97	0.5	4.4
		05T3EN-MA																		5.2	12.7	3.97	0.5	4.4
		0704SN-MM																		7.4	18	4.76	0.5	5.5
		0704EN-MA																		7.4	18	4.76	0.5	5.5
		0704FN-MA								○	○					●				7.4	18	4.76	0.5	5.5

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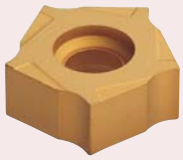
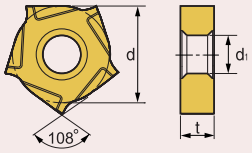
● : Stock Item ○ : Under preparing for stock

PNEJ



Geometry

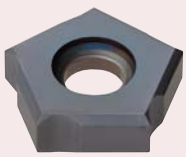


Available cutter	Designation		ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)			
				NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510	PC230	CT10	CN20	CN30		H01	G10	ST30A	ST20	d	d_1	t	Width of cutter
SPP(M) SPB	PNEJ	1223N		○				○			○	○									12.7	5.0	2.3	4.0
		1225N		○				○			○	○									12.7	5.0	2.5	4.5
		1230N		○				○			○	○									12.7	5.0	3.0	5.0
		1235N		○				○			○	○									12.7	5.0	3.5	6.0
		1240N		○	●			○			○	●									12.7	5.0	4.0	7.0
		1245N		●				○			○	●									12.7	5.0	4.5	8.0
		1250N		○				○			○	○									12.7	5.0	5.0	9.0
		1255N		○				○			○	●									12.7	5.0	5.5	10.0
		1260N		○				○			○	○									12.7	5.0	6.0	11.0
		1265N		○	●			○			○	○									12.7	5.0	6.5	12.0
		1270N		○				○			○	○									12.7	5.0	7.0	13.0
		1275N		○	●			○			○	○									12.7	5.0	7.5	14.0
		1285N		○				○			○	○									12.7	5.0	8.5	16.0

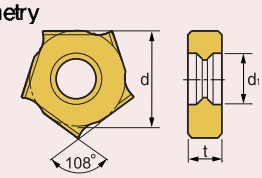
P. 392, 393

● : Stock Item ○ : Under preparing for stock

PNEJ-C



Geometry



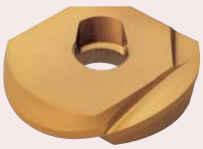
Available cutter	Designation		ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)			
				NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510	PC230	CT10	CN20	CN30		H01	G10	ST30A	ST20	d	d_1	t	Width of cutter
SPP(M) SPB	PNEJ	1223N-C03										○									12.7	5.0	2.3	4.0
		1230N-C03										○									12.7	5.0	3.0	5.0
		1235N-C03										○									12.7	5.0	3.5	6.0
		1240N-C05										○									12.7	5.0	4.0	7.0
		1245N-C05										○									12.7	5.0	4.5	8.0
		1250N-C05										○									12.7	5.0	5.0	9.0
		1255N-C05										○									12.7	5.0	5.5	10.0
		1260N-C05										○									12.7	5.0	6.0	11.0
		1265N-C05										○									12.7	5.0	6.5	12.0
		1270N-C05										○									12.7	5.0	7.0	13.0
		1275N-C05										○									12.7	5.0	7.5	14.0

P. 392, 393

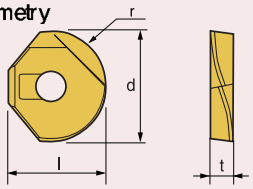
∗C03 : chamfer 0.3mm, C05 : chamfer 0.5mm

● : Stock Item ○ : Under preparing for stock

RC



Geometry



Available cutter	Designation		ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)			
				NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510	PC210F	CT10	CN20	CN30		H01	G10	ST30A	ST20	l	d	t	r
BFE	RC	16								○		●									15.8	16	3.5	8
		20								○		●									17.8	20	4	10
		25								○		●									22	25	5	12.5
		30								○		●									26.8	30	6	15
		32								○		●									27.8	32	6	16

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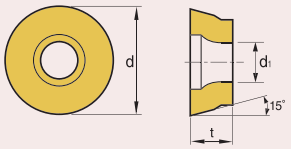
● : Stock Item ○ : Under preparing for stock

RDHW

Geometry



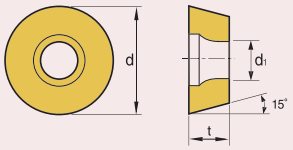
Available cutter	Designation		ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)		
				NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510	PC8520	CT10	CN20	CN30		H01	G10	ST30A	ST20	d	t	d_1
FMRS 1000 2000 2500	RDHW	0501M0F								○											5	1.59	2.3
1500		0501M0E						○		●	○										5	1.59	2.3
		0501M0S								○		○									5	1.59	2.3
		06T1M0F								○											6	1.98	2.5
		06T1M0E						○		●	○										6	1.98	2.5
		06T1M0S								○		○									6	1.98	2.5
		0702M0F								○											7	2.38	2.8
		0702M0E						○		●	○										7	2.38	2.8
		0702M0S								○		○									7	2.38	2.8
		0803M0F								○											8	3.18	3.4
		0803M0E						○		●	○										8	3.18	3.4
		0803M0S								○		○									8	3.18	3.4
FMRC(M)5000 6000		1605M0F								○											16	5.56	5.5
		1605M0E						○		○	○										16	5.56	5.5
		1605M0S								○		○									16	5.56	5.5
		2006M0F								○											20	6.35	5.5
		2006M0E						○		○	○										20	6.35	5.5
		2006M0S								○		○									20	6.35	5.5

P. 352, 353, 355, 356

● : Stock Item ○ : Under preparing for stock

RDKW

Geometry



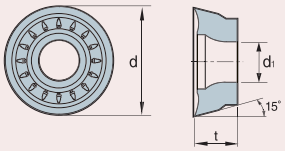
Available cutter	Designation	ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)		
			NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510		CT10	CN20	CN30		H01	G10	ST30A	ST20	d	t	d1
FMRS 1000	RDKW 0501M0E						●		○											5.0	1.59	2.3
1500	06T1M0E						●		○											6.0	1.98	2.5
2000	0702M0E						●		○											7.0	2.38	2.8
2500	0803M0E						●		○											8.0	3.18	3.4

P. 353, 356

● : Stock Item ○ : Under preparing for stock

RDCT-MA

Geometry



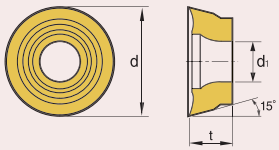
Available cutter	Designation	ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)		
			NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510		CT10	CN20	CN30		H01	G10	ST30A	ST20	d	t	d1
FMRC(M) 3000	RDCT 10T3M0-MA								○	○						●				10	3.97	4.0
FMRS 4000	1204M0-MA								○	○						●				12	4.76	4.5

P. 351, 354, 356

● : Stock Item ○ : Under preparing for stock

RDKT-MF

Geometry



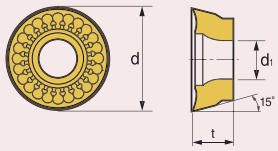
Available cutter	Designation	ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)		
			NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510	PC8520	CT10	CN20	CN30		H01	G10	ST30A	ST20	d	t	d1
FMRC(M)3000	RDKT 10T3M0-MF						●	●	●		●									10	3.97	3.85
FMRS 4000	1204M0-MF						●	●	●		●									12	4.76	4.5

P. 351, 354, 356

● : Stock Item ○ : Under preparing for stock

RDKT-MM

Geometry



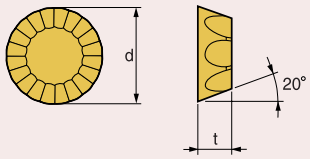
Available cutter	Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)		
				NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510	PC8520	CT10	CN20	CN30	H01	G10	ST30A	ST20	d	t	d1
FMRC(M)3000	RDKT	10T3M0-MM		●	●			●	●	●	●	○								10	3.97	3.85
FMRS 4000		1204M0-MM		●	●			●	●	●	●	○								12	4.76	4.5
5000		1605M0-MM							●											16	5.56	5.5
6000		2006M0-MM						●	●											20	6.35	5.5

P. 351, 352, 354~356

●: Stock Item ○: Under preparing for stock

REKR-MM

Geometry



Available cutter	Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)	
				NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510		CT10	CN20	CN30	H01	G10	ST30A	ST20	d	t
AFO(M) 5000	REKR	170400-MM		○				○		○	○									17.8	4.76

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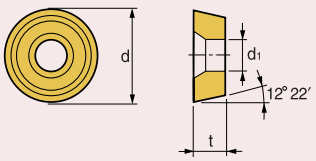
●: Stock Item ○: Under preparing for stock

RPMM

Geometry

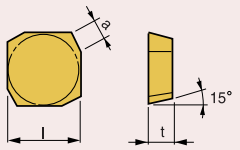


Available cutter	Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)		
				NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510		CT10	CN20	CN30	H01	G10	ST30A	ST20	d	t	d1
	RPMM	120400		●	●			○		○	○							●		12.7	4.76	5.5

●: Stock Item ○: Under preparing for stock

SDCN

Geometry



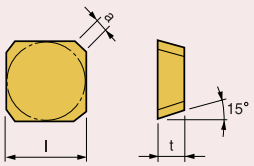
Available cutter	Designation		ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)		
				NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510		CT10	CN20	CN30		H010	G10	ST30A	ST20	l(=d)	t	a
CDH 4000 5000	SDCN	42R									○						○				12.7	3.18	3.5
		42L									○						●				12.7	3.18	3.5
		53R																			15.875	4.76	5.0
		53L																			15.875	4.76	5.0

P. 324, 325, 385

● : Stock Item ○ : Under preparing for stock

SDCN, SDKN

Geometry

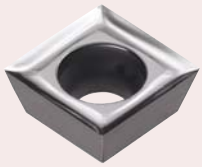


Available cutter	Designation		ASA	Coated Carbide										Cermet			Uncoated Carbide				(mm)		
				NCM325	NCM335	NCM310K	NCM320K	PC3530	PC3535	PC6510	PC9530	PC130	PC230	CT10	CN20	CN30	ST20	G10	ST30A		l(=d)	t	a
ADN(M) 4000 5000 ADS 4000 5000	SDCN	1203AEFN																			12.7	3.18	1.5
	SDKN	1203AETN																			12.7	3.18	1.5
		1203AESN		●																	12.7	3.18	1.5
		1504AEFN																			15.875	4.76	1.5
		1504AETN																			15.875	4.76	1.5
		1504AESN																			15.875	4.76	1.5
		42M					●			○								●			12.7	3.18	1.5
		42MT			●				○		○	●	●			●	●		●		12.7	3.18	1.5
		42MT-RH						●													12.7	3.18	1.5
		42MT-S20									●										12.7	3.18	1.5
		53M					●			○								●			15.875	4.76	1.5
		53MT		●	●				○		○	●	●			●	●		●		15.875	4.76	1.5
		53MT-RH						●													15.875	4.76	1.5
		53MT-S20									●										15.875	4.76	1.5
		1203AESN-RH							●	●											12.7	3.18	1.43
		AEEN-RH								●											12.7	3.18	1.43
		1504AESN-RH							●	●											15.875	4.76	1.43
		AEEN-RH								●											15.875	4.76	1.43

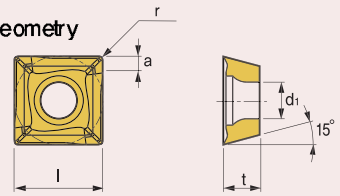
P. 324, 325, 373, 374

● : Stock Item ○ : Under preparing for stock

SDET-MA



Geometry



Available cutter	Designation		ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)				
				NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510	PD2000	CT10	CN20	CN30		H01	G10	ST30A	ST20	l(=d)	t	r	a	d_1
FMPC(M) 3000-A	SDET	09M402R-MA										●					●				9.525	4.0	0.5	1.2	4.0
FMPC(M) 4000-A	SDET	130504R-MA										●					●				13.5	5.56	0.8	2.2	5.56
FMPC(M) 3000																									
FMPC(M) 4000																									

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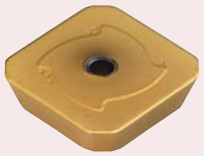
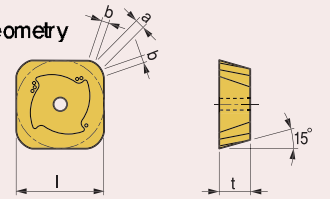
●: Stock Item ○: Under preparing for stock

SDKN-SM



Geometry

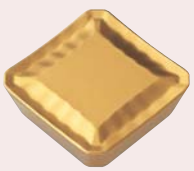


Available cutter	Designation		ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)			
				NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510		CT10	CN20	CN30		H01	G10	ST30A	ST20	l(=d)	t	a	b
ADN(M) 4000	SDKN	1203AESN-SM						●	●												12.7	3.18	1.64	0.59
ADS 5000		1504AESN-SM						●	●												15.875	4.76	1.64	0.58

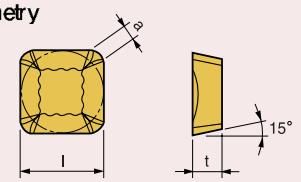
P. 324, 325, 373, 374

●: Stock Item ○: Under preparing for stock

SDKR-MX



Geometry

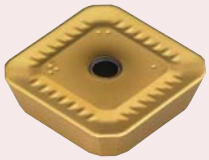


Available cutter	Designation		ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)		
				NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510		CT10	CN20	CN30		MA2	G10	ST30A	ST20	l(=d)	t	a
ADN(M) 4000	SDKR	1203AESN-MX			○			○							○		○				12.7	3.18	2.0
ADS 5000		1203AETN-MX						○		○											12.7	3.18	2.0
		1203AEN-MX		●							○							○			12.7	3.18	2.0
		1504AESN-MX			●			○							○		●				15.875	4.76	2.0
		1504AETN-MX						○		○											15.875	4.76	2.0
		1504AEN-MX		●							○							○			15.875	4.76	2.0

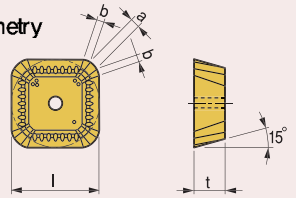
P. 324, 325, 373, 374

●: Stock Item ○: Under preparing for stock

SDKR-SM



Geometry



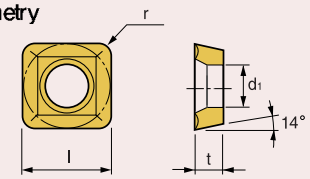
Available cutter	Designation	ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)			
			NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510		CT10	CN20	CN30		H01	G10	ST30A	ST20	l(=d)	t	a	b
ADN(M) 4000 ADS 5000	SDKR 1203AESN-SM						●		○					○						12.7	3.18	1.64	0.59
	1504AESN-SM						●		○					○						15.875	4.76	1.64	0.58

P. 324, 325, 373, 374

● : Stock Item ○ : Under preparing for stock

SDMT

Geometry

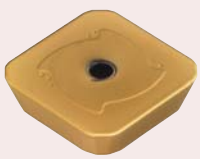


Available cutter	Designation	ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)			
			NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510	PC8520	CT10	CN20	CN30		H01	G10	ST30A	ST20	l(=d)	t	r	d_1
BRE 32	SDMT 090308		●				●		○		○									9.525	3.18	0.8	4.4

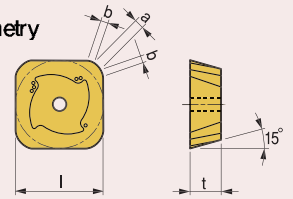
P. 361

● : Stock Item ○ : Under preparing for stock

SDXN-FM



Geometry

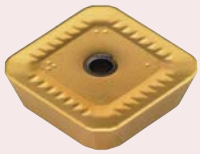


Available cutter	Designation	ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)			
			NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510		CT10	CN20	CN30		H01	G10	ST30A	ST20	l(=d)	t	a	b
ADN(M) 4000 ADS 5000	SDXN 1203AESN-FM						●	●												12.7	3.18	1.43	0.71
	1504AESN-FM						●	●												15.875	4.76	1.43	0.70

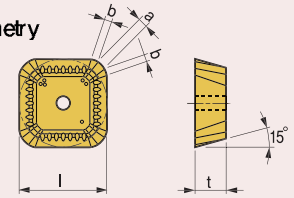
P. 324, 325, 373, 374

● : Stock Item ○ : Under preparing for stock

SDXR-FM



Geometry

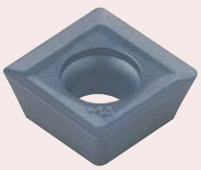


Available cutter	Designation		ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)			
				NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510		CT10	CN20	CN30		H01	G10	ST30A	ST20	l(=d)	t	a	b
ADN(M) 4000 ADS 5000	SDXR	1203AESN-FM							●												12.7	3.18	1.43	0.71
		1504AESN-FM							●												15.875	4.76	1.43	0.70

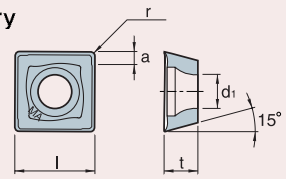
P. 324, 325, 373, 374

● : Stock Item ○ : Under preparing for stock

SDXT-MA



Geometry

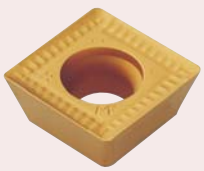


Available cutter	Designation		ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)				
				NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510		CT10	CN20	CN30		H01	G10	ST30A	ST20	l(=d)	t	r	a	d_1
FMPC(M) 3000 FMPS 4000	SDXT	09M405R-MA															●	○			9.525	4.0	0.5	1.2	4.0
		130508R-MA															●	○			13.5	5.56	0.8	2.2	5.56

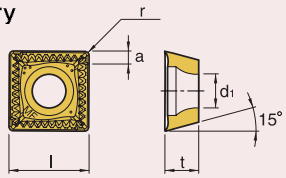
P. 346, 349, 350

● : Stock Item ○ : Under preparing for stock

SDXT-MF



Geometry



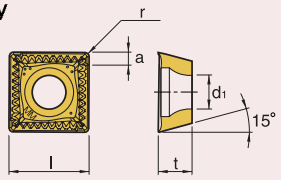
Available cutter	Designation		ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)				
				NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510	PC8520	CT10	CN20	CN30		H01	G10	ST30A	ST20	l(=d)	t	r	a	d_1
FMPC(M) 3000 FMPS 4000	SDXT	09M405R-MF		●	●		●	○		●	○	●									9.525	4.0	0.5	1.2	4.0
		09M405L-MF																			9.525	4.0	0.5	1.2	4.0
		130508R-MF		●	●		●	○		●	○	●									13.5	5.56	0.8	2.2	5.56

P. 346, 349, 350

● : Stock Item ○ : Under preparing for stock

SDXT-MM

Geometry

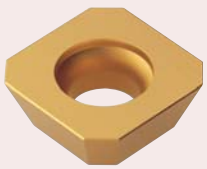


Available cutter	Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)				
				NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510	PC8520	CT10	CN20	CN30		H01	G10	ST30A	ST20	l(=d)	t	r	a	d_1
FMPC(M) 3000	SDXT	09M405R-MM		●	●		○	●		●	●	●									9.525	4.0	0.5	1.2	4.0
FMPS 4000	SDXT	09M405L-MM																			9.525	4.0	0.5	1.2	4.0
		130508R-MM		●	●		●	●	●	●	●	●									13.5	5.56	0.8	2.2	5.56
		130538-MM																			13.5	5.56	3.8	-	5.56

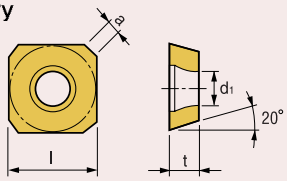
P. 346, 349, 350

● : Stock Item ○ : Under preparing for stock

SECA



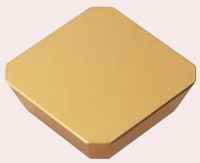
Geometry



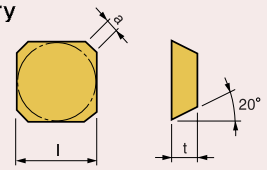
Available cutter	Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)			
				NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510	PC230	CT10	CN20	CN30		H01	G10	ST30A	ST20	l(=d)	t	a	d_1
	SECA	1204AFSN		●				○													12.7	4.76	2.66	5.56
		1204AFTN								○		●			●						12.7	4.76	2.66	5.56
		1204AFFN									○										12.7	4.76	2.66	5.56
		1204AFEN																			12.7	4.76	2.66	5.56
		1504AFSN		○				○													15.875	4.76	2.8	5.5
		1504AFTN								○		○			○						15.875	4.76	2.8	5.5
		1504AFFN									○										15.875	4.76	2.8	5.5

● : Stock Item ○ : Under preparing for stock

SECN, SEKN



Geometry

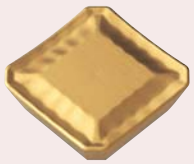


Available cutter	Designation		ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)		
				NCM325	NCM335	NCM310K	NCM320K	PC3535	PC9530	PC6510	PC240	PC130	CT10	CN20	CN30		H01	G10	ST30A	ST20	l(=d)	t	a
AE(M) 4000 5000	SECN	1203AFTN						○	○		●				●				●		12.7	3.18	2.3
	SEKN	1203AFEN				●	●														12.7	3.18	2.3
		1203AFFN								○							●	●			12.7	3.18	2.3
		1203AFSN		●	●																12.7	3.18	2.3
		1203AFTN-S20							●												12.7	3.18	2.3
		1504AFFN								○							○	○			15.875	4.76	2.4
		1504AFTN						○	○			●			○				●		15.875	4.76	2.4
		1504AFEN				●	●														15.875	4.76	2.4
		1504AFSN		●	●																15.875	4.76	2.4
		1203AFSN-RH						●		●											12.7	3.18	2.36
		1203AFEN-RH								●											12.7	3.18	2.36
		1504AFSN-RH						●		●											15.875	4.76	2.4
		1504AFEN-RH								●											15.875	4.76	2.4

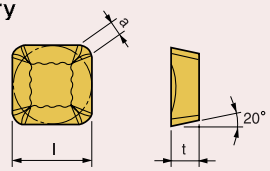
P. 326, 327

● : Stock Item ○ : Under preparing for stock

SECR-MX, SEKR-MX(MF1)



Geometry



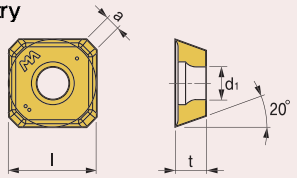
Available cutter	Designation		ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)		
				NCM325	NCM335	NCM310K	NCM320K	PC9530	PC6510	PC130	PC230	NCM120	CT10	CN20	CN30		MA2	G10	ST30A	ST20	l(=d)	t	a
AE(M) 4000 5000	SECR	1203AFSN-MX	42	●	●			●		●	●	●			●		●				12.7	3.18	2.3
	SEKR	1203AFSN-MF1	42		●																12.7	3.18	2.3
		1204AFSN-MX	43	●																	12.7	4.76	2.3
		1504AFSN-MX	53	●	●			●			○										15.875	4.76	2.3

P. 326, 327

● : Stock Item ○ : Under preparing for stock

SEET-MA

Geometry

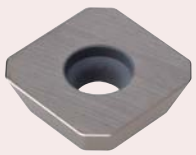


Available cutter	Designation		ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)			
				NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510	PD2000	CT10	CN20	CN30		H01	G10	ST30A	ST20	l(=d)	t	a	d_1
FMAC(M) 3000	SEET	0903AGFN-MA										●					●				9.525	3.18	2.11	3.4
FMAS 4000		14M4AGFN-MA										●					●				14.0	4.0	2.64	4.4

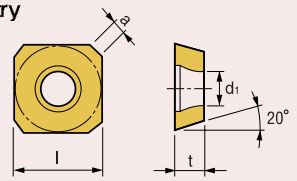
P. 345, 347, 348

● : Stock Item ○ : Under preparing for stock

SEEW



Geometry

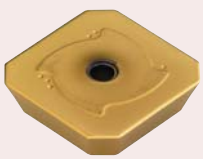


Available cutter	Designation		ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)			
				NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510		CT10	CN20	CN30		H01	G10	ST30A	ST20	l(=d)	t	a	d_1
FMAC(M) 3000	SEEW	0903AGTN								○					●						9.525	3.18	2.11	3.4
FMAS 4000		14M4AGTN								○					●						14.0	4.0	2.64	4.4

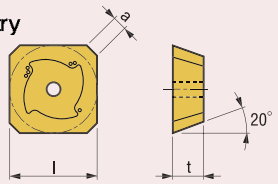
P. 345, 347, 348

● : Stock Item ○ : Under preparing for stock

SEKN-SM



Geometry

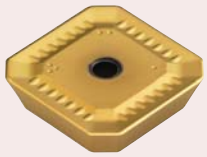


Available cutter	Designation		ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)		
				NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510		CT10	CN20	CN30		H01	G10	ST30A	ST20	l(=d)	t	a
AE(M) 4000	SEKN	1203AFSN-SM						●	●												12.7	3.18	2.46
5000		1504AFSN-SM						●	●												15.875	4.76	2.50

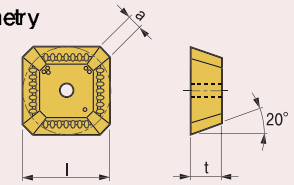
P. 326, 327

● : Stock Item ○ : Under preparing for stock

SEKR-SM



Geometry



Available cutter	Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)		
				NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510	CT10	CN20	CN30		H01	G10	ST30A	ST20	l(=d)	t	a
AE(M) 4000 5000	SEKR	1203AFSN-SM						●		○										12.7	3.18	2.46
		1504AFSN-SM						●												15.875	4.76	2.50

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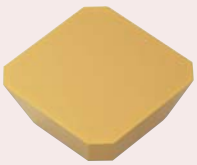
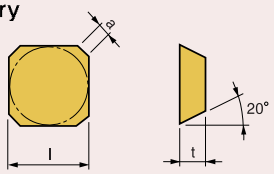
● : Stock Item ○ : Under preparing for stock

SEMN



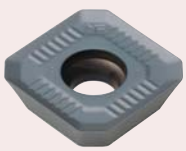
Geometry



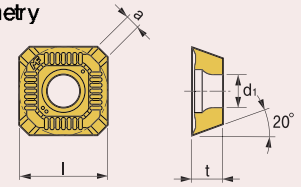
Available cutter	Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)		
				NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510	CT10	CN20	CN30		H01	G10	ST30A	ST20	l(=d)	t	a
	SEMN	1204AZ	43	●				○			○						●	●		12.7	4.76	2.2

● : Stock Item ○ : Under preparing for stock

SEX(E)T-MF



Geometry

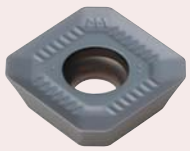


Available cutter	Designation		ASA	Coated Carbide									Cermet			Uncoated Carbide				(mm)			
				NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC215K	PC8520	CT10	CN20	CN30	H01	G10	ST30A	ST20	l(=d)	t	a	d_1
FMAC(M) 3000	SEET	0903AGSN-MF		●			●			●		●								9.525	3.18	2.11	3.4
4000	SEXT	0903AGSN-MF		○			●			○	●	●								9.525	3.18	2.11	3.4
FMAS 3000	SEET	14M4AGSN-MF		●	●		●			●		○								14.0	4.0	2.64	4.4
4000	SEXT	14M4AGSN-MF		●			●			○	●	●								14.0	4.0	2.64	4.4

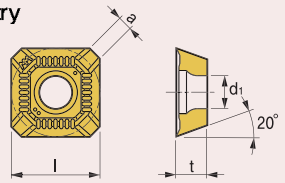
P. 345, 347, 348

● : Stock Item ○ : Under preparing for stock

SEX(E)T-MM



Geometry

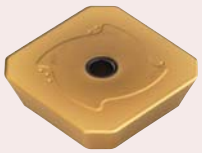


Available cutter	Designation		ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)			
				NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510	PC215K	CT10	CN20	CN30		H01	G10	ST30A	ST20	l(=d)	t	a	d_1
FMAC(M) 3000	SEET	0903AGSN-MM		●			●	○		●	○										9.525	3.18	2.11	3.4
4000	SEXT	0903AGSN-MM		○			○	●		○	●	●									9.525	3.18	2.11	3.4
FMAS 3000	SEET	14M4AGSN-MM		●	●		●	●		●	○										14.0	4.0	2.64	4.4
4000	SEXT	14M4AGSN-MM		●	●		●	●		●	●	●									14.0	4.0	2.64	4.4

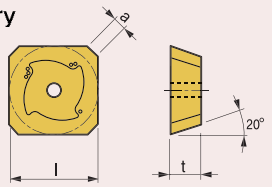
P. 345, 347, 348

● : Stock Item ○ : Under preparing for stock

SEXN-FM



Geometry

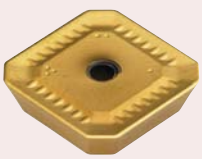


Available cutter	Designation		ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)		
				NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510		CT10	CN20	CN30		H01	G10	ST30A	ST20	l(=d)	t	a
AE(M) 4000	SEXN	1203AFSN-FM						●	●												12.7	3.18	2.36
5000		1504AFSN-FM						●	●												15.875	4.76	2.40

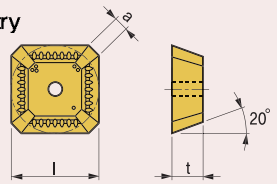
P. 326, 327

● : Stock Item ○ : Under preparing for stock

SEXR-FM



Geometry

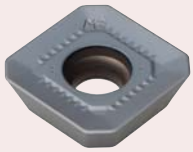


Available cutter	Designation		ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)		
				NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510		CT10	CN20	CN30		H01	G10	ST30A	ST20	l(=d)	t	a
AE(M) 4000	SEXR	1203AFSN-FM							●												12.7	3.18	2.36
5000		1504AFSN-FM							●												15.875	4.76	2.40

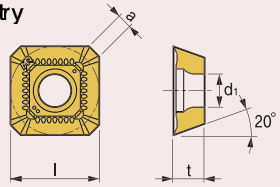
P. 326, 327

● : Stock Item ○ : Under preparing for stock

SEXT-MR



Geometry



Available cutter	Designation		ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)			
				NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510	PC3530	CT10	CN20	CN30		H01	G10	ST30A	ST20	l(=d)	t	a	d_1
FMAC(M) 3000 FMAS 4000	SEXT	0903AGSN-MR								○		●									9.525	3.18	2.11	3.4
		14M4AGSN-MR								●		●									14.0	4.0	2.64	4.4

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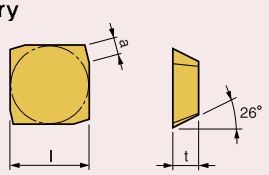
●: Stock Item ○: Under preparing for stock

SFCN

Geometry



Available cutter	Designation		ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)		
				NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510		CT10	CN20	CN30		H01	G10	ST30A	ST20	l(=d)	t	a
EF(M)4000	SFCN	1203EFR								○							●	●			12.7	3.18	2.5

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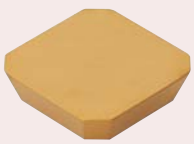
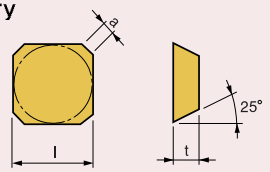
●: Stock Item ○: Under preparing for stock

SFKN



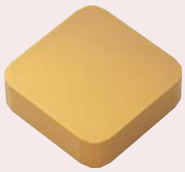
Geometry



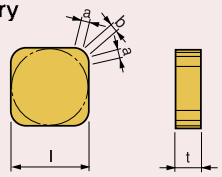
Available cutter	Designation		ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)		
				NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510		CT10	CN20	CN30		H01	G10	ST30A	ST20	l(=d)	t	r
	SFKN	12T3AZTN	42.5							○					●						12.7	3.97	2.2
		12T3AZSN	42.5	●						○											12.7	3.97	2.2
		12T3AZFN	42.5								○				○						12.7	3.97	2.2
		12T3AZEN	42.5								○										12.7	3.97	2.2

●: Stock Item ○: Under preparing for stock

SNCN, SNKN



Geometry

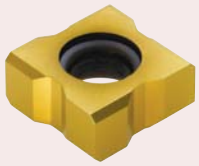


Available cutter	Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)			
				NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510	CT10	CN20	CN30		H01	G10	ST30A	ST20	l(=d)	t	a	b
EN(M) 4000	SNCN	1204ENN		●													●	●	●	12.7	4.76	1.4	1.0
ANH 4000		1504ENN																●		15.875	4.76	1.4	1.0
5000	SNKN	1204ENN		○		○	●				●									12.7	4.76	1.4	1.0
		1504ENN		●		●	○				○									15.875	4.76	1.4	1.0

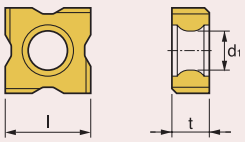
P. 329, 384

● : Stock Item ○ : Under preparing for stock

SNCQ



Geometry



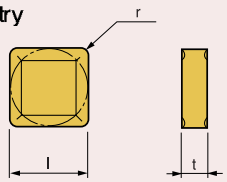
Available cutter	Designation		ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)		
				NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510	PC215K	CT10	CN20	CN30		H01	G10	ST30A	ST20	l(=d)	t	d_1
DRMQ(M) 4000	SNCQ	1205ZNR		○			○				○	○									12.7	5.56	5.8
		1205ZNL																			12.7	5.56	5.8

P. 410, 422

● : Stock Item ○ : Under preparing for stock

SNEF

Geometry



Available cutter	Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)		
				NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510	CT10	CN20	CN30		H01	G10	ST30A	ST20	l(=d)	t	r
PNH 4000	SNEF	435		○			○				●									12.7	4.76	2.0
5000		535		○			○													15.875	4.76	2.0

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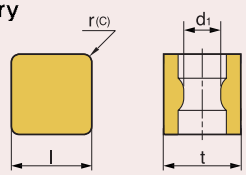
● : Stock Item ○ : Under preparing for stock

SNEX

Geometry



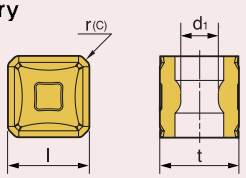
Available cutter	Designation		ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)			
				NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510	PC215K	CT10	CN20	CN30		H01	G10	ST30A	ST20	l(=d)	d_1	t	r(c)
CBMQ(M) 3000	SNEX	101010									●	○									10	4.6	10	1.0
CBMQ(M) 4000		1010ZNN									●	○									10	4.6	10	(1.0)
CBMF(M) 3000		121212									○	○									12.7	5.6	12.7	1.2
CBMF(M) 4000		121212ZNN									○	○									12.7	5.6	12.7	(1.2)
CBME(M) 3000																								
CBME(M) 4000																								
CBMC(M) 3000																								
CBMC(M) 4000																								
CBMA(M) 3000																								
CBMA(M) 4000																								

P. 398~407, 419, 420

● : Stock Item ○ : Under preparing for stock

SNEX-CU1

Geometry



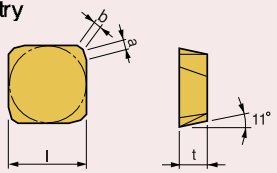
Available cutter	Designation		ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)			
				NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510	PC215K	CT10	CN20	CN30		H01	G10	ST30A	ST20	l(=d)	d_1	t	r(c)
CBMQ(M) 3000	SNEX	101010-CU1									●	○									10	4.6	10	1.0
CBMQ(M) 4000		1010ZNN-CU1									●	○									10	4.6	10	(1.0)
CBMF(M) 3000		121212-CU1									●	○									12.7	5.6	12.7	1.2
CBMF(M) 4000		121212ZNN-CU1									●	○									12.7	5.6	12.7	(1.2)
CBME(M) 3000																								
CBME(M) 4000																								
CBMC(M) 3000																								
CBMC(M) 4000																								
CBMA(M) 3000																								
CBMA(M) 4000																								

P. 398~407, 419, 420

● : Stock Item ○ : Under preparing for stock

SPCN, SPKN

Geometry



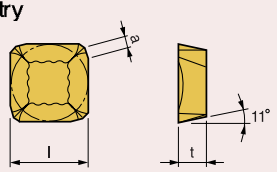
Available cutter	Designation		ASA	Coated Carbide										Cermet	Uncoated Carbide								(mm)			
				NCM325	NCM335	NCM310K	NCM320K	PC3535	PC9530	PC6510	PC130	PC230	PC240	CN30	H10	H01	MA2	G10	ST30A	ST10	ST20	ST30A	ST30N	l(=d)	t	a	b
EP(M)4000 5000	SPCN	1203ED(T)R		●	●	●	●	○			●	●	●	●	●	●		●	●		●			12.7	3.18	1.4	1.0
		1203ED(T)L					●								●			●	●		●			12.7	3.18	1.4	1.0
		1504ED(T)R		●		●	●	○			●	●		●				●	●		●			15.875	4.76	1.4	1.0
		150412T																	●					15.875	4.76	1.4	1.0
		1504EDL																	●					15.875	4.76	1.4	1.0
		1203ED(S)R-RH						●		●														12.7	3.18	1.4	1.0
		1504ED(S)R-RH						●		●														15.875	4.76	1.4	1.0
		1203EDR-S20							●															12.7	3.18	1.4	1.0
		1504EDR-S20							●															15.875	4.76	1.4	1.0
	SPKN	1203ED(T)R						○												●			●	12.7	3.18	1.4	1.0
		1504ED(T)R						○														●		15.875	4.76	1.4	1.0
		1904ED(T)																						19.05	4.76	2.7	1.0
	SPCN	1203EDER-RH						○		●														12.7	3.18	1.63	0.8
		1504EDER-RH						○		●														15.875	4.76	1.64	0.8

P. 330, 331

● : Stock Item ○ : Under preparing for stock

SPCR-MX, SPKR-MX

Geometry



Available cutter	Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)		
				NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510	CT10	CN20	CN30		MA2	G10	ST30A	ST20	l(=d)	t	a
EP(M) 4000 5000	SPCR	1203EDSR-MX	42																	12.7	3.18	1.4
	SPKR	1203EDSL-MX	42	●												●				12.7	3.18	1.4
		1203EDSR-MX	42	●	●		○									●				12.7	3.18	1.4
		1504EDSR-MX	53		●		○									●				15.875	4.76	1.45
		1504EDR-MX	53	●			○													15.875	4.76	1.45

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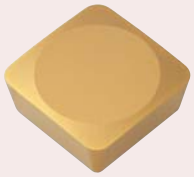
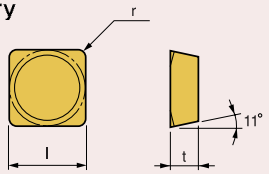
● : Stock Item ○ : Under preparing for stock

SPEN-WC



Geometry



Available cutter	Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)		
				NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510	CT10	CN20	CN30		H01	G10	ST30A	ST20	l(=d)	t	r
PPH 4000	SPEN	120416-WC	434								○						○			12.7	4.76	1.6
		150412-WC	533								○						○			15.875	4.76	1.2
		150416-WC	534																	15.875	4.76	1.6
		150420-WC	535																	15.875	4.76	2.0
		190424-WC	636								○						○			19.05	4.76	2.4

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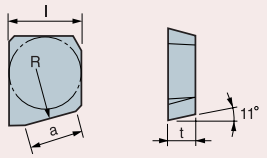
●: Stock Item ○: Under preparing for stock

SPEX

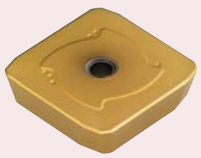
Geometry



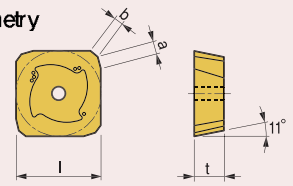
Available cutter	Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)			
				NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510	CT10	CN20	CN30		H01	G10	ST30A	ST20	l(=d)	t	a	R
	SPEX	1203EDR-1	42					○			○						○	○		12.7	3.18	10.2	500
		1203EDL-1	42																	12.7	3.18	10.2	500
		1504EDR-1	53					○			○						○	○		15.875	4.76	10.2	500
		1504EDL-1	53																	15.875	4.76	10.2	500
		1904EDR-1	63					○			○						○	○		19.05	4.76	10.2	500
		1904EDL-1	63																	19.05	4.76	10.2	500

●: Stock Item ○: Under preparing for stock

SPKN-SM



Geometry



Available cutter	Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)			
				NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510	CT10	CN20	CN30		H01	G10	ST30A	ST20	l(=d)	t	a	b
EPN(M) 4000 5000	SPKN	1203EDSR-SM						●	●		○									12.7	3.18	1.66	0.92
		1504EDSR-SM						●	●	○	○									15.875	4.76	1.62	0.93

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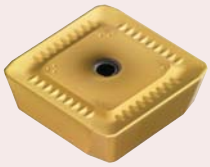
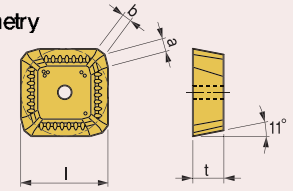
●: Stock Item ○: Under preparing for stock

SPKR-SM



Geometry

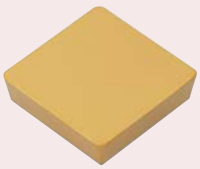


Available cutter	Designation	ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)			
			NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510		CT10	CN20	CN30		H01	G10	ST30A	ST20	l(=d)	t	a	b
EPN(M) 4000 5000	SPKR 1203EDSR-SM		○				●													12.7	3.18	1.66	0.92
	1504EDSR-SM		○				●													15.875	4.76	1.62	0.93

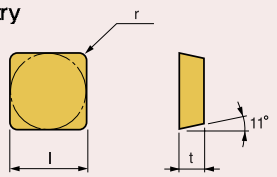
P. 330, 331

● : Stock Item ○ : Under preparing for stock

SPMN



Geometry



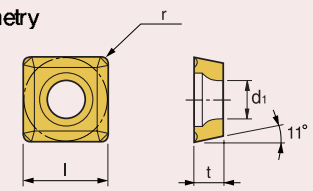
Available cutter	Designation	ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)		
			NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510		CT10	CN20	CN30		H01	G10	ST30A	ST20	l(=d)	t	r
CE	SPMN 120304	421																●		12.7	3.18	0.4
	120308	422	○				○											●		12.7	3.18	0.8
	120312	423	○				○											○		12.7	3.18	1.2
	120408	432	○				○											○		12.7	4.76	0.8
	120412	433	○				○											○		12.7	4.76	1.2
	150408	532	○				○											○		15.875	4.76	0.8
	150412	533	○				○											○		15.875	4.76	1.2
	190408	632	○				○											○		19.05	4.76	0.8
	190412	633	○				○											○		19.05	4.76	1.2

P. 364

● : Stock Item ○ : Under preparing for stock

SPMT

Geometry

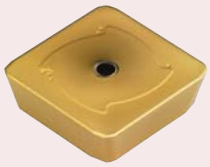


Available cutter	Designation	ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)			
			NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510		CT10	CN20	CN30		H01	G10	ST30A	ST20	l(=d)	t	r	d_1
BRE 20	SPMT 060304	221	●				●											○		6.35	3.18	0.4	2.8
25	120408	432	●				●		○									●		12.7	4.76	0.8	5.6
40																							
50																							
63																							

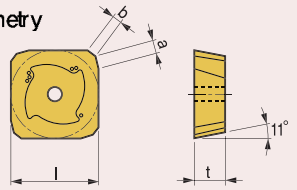
P. 361

● : Stock Item ○ : Under preparing for stock

SPXN-FM



Geometry

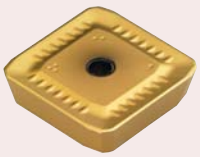


Available cutter	Designation		ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)			
				NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510		CT10	CN20	CN30		H01	G10	ST30A	ST20	l(=d)	t	a	b
EPN(M) 4000 5000	SPXN	1203EDSR-FM						●	●												12.7	3.18	1.41	1.00
		1504EDSR-FM						●	●												15.875	4.76	1.38	1.01

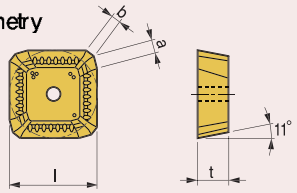
P. 330, 331

● : Stock Item ○ : Under preparing for stock

SPXR-FM



Geometry



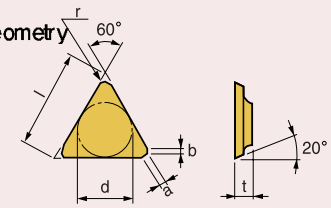
Available cutter	Designation		ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)			
				NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510		CT10	CN20	CN30		H01	G10	ST30A	ST20	l(=d)	t	a	b
EPN(M) 4000 5000	SPXR	1203EDSR-FM							●												12.7	3.18	1.41	1.00
		1504EDSR-FM							●												15.875	4.76	1.38	1.01

P. 330, 331

● : Stock Item ○ : Under preparing for stock

TECN, TEKN, TEEN

Geometry



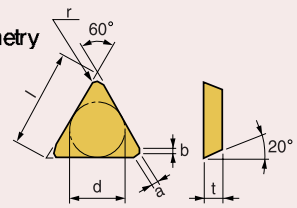
Available cutter	Designation		ASA	Coated Carbide										Cermet			Uncoated Carbide				(mm)						
				NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510	PC230		CT10	CN20	CN30	H01	G10	ST30A	ST20	l	d	t	a	b	r	sharp
PES 4000	TEEN	43R																●			22.0	12.7	4.76	0.5	1.9	-	C
		43TR		●	●					○		●				●			●	●	22.0	12.7	4.76	-	1.5	0.8	R
		43TR-S20								●						●					22.0	12.7	4.76	-	1.5	0.8	R
	TEKN (TECN)	43R																			22.0	12.7	4.76	0.5	1.9	-	C
		43TR																			22.0	12.7	4.76	-	1.5	0.8	R

P. 377

● : Stock Item ○ : Under preparing for stock

TECN, TEKN, TEEN(-Z)

Geometry



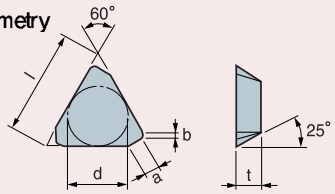
Available cutter	Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)						
				NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510	CT10	CN20	CN30		H01	G10	ST30A	ST20	l	d	t	a	b	r	sharp
PES 2000 3000 4000	TECN	22R															●			11.0	6.35	3.18	0.5	1.0	-	C
		22TR												●				●		11.0	6.35	3.18	-	0.5	0.8	R
		32R									○						●			16.5	9.525	3.18	0.5	1.0	-	C
		32TR			●			○						●				●		16.5	9.525	3.18	-	0.5	0.8	R
	TEEN	22R																		11.0	6.35	3.18	0.5	1.0	-	C
		22TR																		11.0	6.35	3.18	-	0.5	0.8	R
		32R																		16.5	9.525	3.18	0.5	1.0	-	C
		32TR																	●	16.5	9.525	3.18	-	0.5	0.8	R
		43R-Z									○									22.0	12.7	4.76	0.5	1.9	-	C
		43TR-Z			○													●		22.0	12.7	4.76	-	1.5	0.8	R
	TEKN (TECN)	43L-Z																		22.0	12.7	4.76	0.5	1.9	-	C
		43TL-Z																		22.0	12.7	4.76	-	1.5	0.8	R

P. 375~377

● : Stock Item ○ : Under preparing for stock

TFCN

Geometry



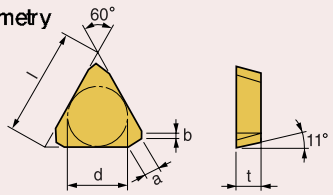
Available cutter	Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)				
				NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510	CT10	CN20	CN30		H01	G10	ST30A	ST20	l	d	t	a	b
PF(M) 4000	TFCN	1603PFR	32													○				16.5	9.525	3.18	1.2	1.1
		1603PFL	32													○				16.5	9.525	3.18	1.2	1.1
	TFCN	2203PFR	42													●				22.0	12.7	3.18	2.5	0.7
		2203PFL	42													●				22.0	12.7	3.18	2.5	0.7

P. 332

● : Stock Item ○ : Under preparing for stock

TPCN

Geometry



Available cutter	Designation		ASA	Coated Carbide								Cermet			Uncoated Carbide					(mm)				
				NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510	CT10	CN20	CN30	ST30N	H10	G10	ST30A	ST20	l	d	t	a	b
PPN(M) 4000	TPCN	1103PPTN	22											●			●	●	●	11.0	6.35	3.18	0.7	0.7
FC		1603PPN	32	●				○			●			●			●	○		16.5	9.525	3.18	1.2	1.0~1.2
HC		1603PPTN	32																	16.5	9.525	3.18	1.2	1.0~1.2
		1603PPR	32	●		●	●	○			○			●	●	●	●	●	●	16.5	9.525	3.18	1.2	1.0~1.2
		1603PPTR	32																	16.5	9.525	3.18	1.2	1.0~1.2
		1603PDR	32	●																16.5	9.525	3.18	1.2	1.0~1.2
		1603PPSR	32		●															16.5	9.525	3.18	1.2	1.0~1.2
		1603PDSR-RH	32					●			●									16.5	9.525	3.18	1.2	1.0~1.2
		1603PDR-S20	32							●										16.5	9.525	3.18	1.2	1.0~1.2
		2204PPN	43																	22.0	12.7	4.76	1.27~1.4	0.7~1.27
		2204PPTN	43																	22.0	12.7	4.76	1.27~1.4	0.7~1.27
		2204PDR	43	●		●	●				○			●			●	●	●	22.0	12.7	4.76	1.27~1.4	0.7~1.27
		2204PDTR	43																	22.0	12.7	4.76	1.27~1.4	0.7~1.27
		2204PDL	43											○				●		22.0	12.7	4.76	1.27~1.4	0.7~1.27
		2204PDSR	43		●															22.0	12.7	4.76	1.27~1.4	0.7~1.27
		2204PDSR-RH	43					●		○	●									22.0	12.7	4.76	1.27~1.4	0.7~1.27
		2204PDR-S20	43							●										22.0	12.7	4.76	1.27~1.4	0.7~1.27
		1603PDER-RH	32								●									16.5	9.525	3.18	1.2	1.0~1.2
		2204PDER-RH	43					○		○	●									22.0	12.7	4.76	1.27~1.4	0.7~1.27

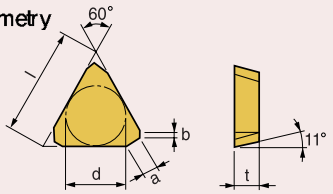
P. 333, 390, 391

※TPC(K)N □□□□P~N → For FC · HC
□□□□P~R → For faceing Cutter

●: Stock Item ○: Under preparing for stock

TPKN

Geometry



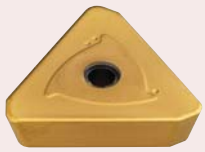
Available cutter	Designation		ASA	Coated Carbide								Cermet			Uncoated Carbide				(mm)				
				NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510	CT10	CN20	CN30	ST30N	G10	ST30A	MA2	l	d	t	a	b
PPN(M) 4000	TPKN	1103PPN	22																11.0	6.35	3.18	0.7	0.7
FC		1103PPTN	22																11.0	6.35	3.18	0.7	0.7
HC		1603PPN	32																16.5	9.525	3.18	1.2	1.0~1.2
		1603PPTN	32																16.5	9.525	3.18	1.2	1.0~1.2
		1603PPR	32	●															16.5	9.525	3.18	1.2	1.0~1.2
		1603PPTR	32												●				16.5	9.525	3.18	1.2	1.0~1.2
		1603PDR	32																16.5	9.525	3.18	1.2	1.0~1.2
		1603PDSR	32	●															16.5	9.525	3.18	1.2	1.0~1.2
		2204PPN	43																22.0	12.7	4.76	1.27~1.4	0.7~1.27
		2204PPTN	43																22.0	12.7	4.76	1.27~1.4	0.7~1.27
		2204PDR	43				○				○					●		●	22.0	12.7	4.76	1.27~1.4	0.7~1.27
		2204PDTR	43	○				○							●		○		22.0	12.7	4.76	1.27~1.4	0.7~1.27
		2204PDSR	43	●															22.0	12.7	4.76	1.27~1.4	0.7~1.27

P. 333, 390, 391

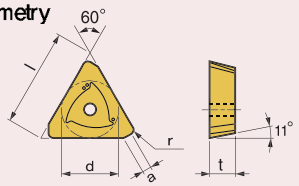
※TPC(K)N □□□□P~N → For FC · HC
□□□□P~R → For faceing Cutter

●: Stock Item ○: Under preparing for stock

TPKN-SM



Geometry



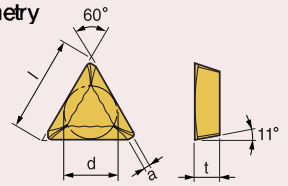
Available cutter	Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)				
				NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510	CT10	CN20	CN30		H01	G10	ST30A	ST20	l	d	t	a	r
PPN(M) 4000	TPKN	1603PDSR-SM		○				●	●		○									16.5	9.525	3.18	1.70	1.0
		2204PDSR-SM		○				●	●		○									22.0	12.7	4.76	1.91	1.0

P. 333

● : Stock Item ○ : Under preparing for stock

TPKR-MX

Geometry



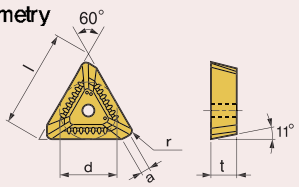
Available cutter	Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)			
				NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510	CT10	CN20	CN30		MA2	G10	ST30A	ST20	l	d	t	a
PPN(M) 4000	TPKR	1603PPR-MX		●												●				16.5	9.525	3.18	1.2
		1603PPSN-MX		●																16.5	9.525	3.18	1.2
		1603PPSR-MX			●															16.5	9.525	3.18	1.2
		2204PDSR-MX			●											●				22.0	12.7	4.76	1.4
		2204PPR-MX																		22.0	12.7	4.76	1.4
		2204PDR-MX		●				○	○											22.0	12.7	4.76	1.4

P. 333

● : Stock Item ○ : Under preparing for stock

TPKR-SM

Geometry



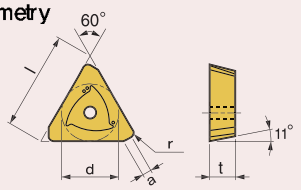
Available cutter	Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)				
				NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510	CT10	CN20	CN30		H01	G10	ST30A	ST20	l	d	t	a	r
PPN(M) 4000	TPKR	1603PDSR-SM						●												16.5	9.525	3.18	1.70	1.0
		2204PDSR-SM						●		○				○						22.0	12.7	4.76	1.91	1.0

P. 333

● : Stock Item ○ : Under preparing for stock

TPXN-FM

Geometry

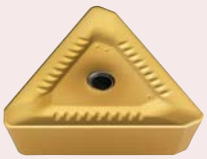


Available cutter	Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)				
				NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510	CT10	CN20	CN30		H01	G10	ST30A	ST20	l	d	t	a	r
PPN(M) 4000	TPXN	1603PDSR-FM						●	●											16.5	9.525	3.18	1.30	1.0
		2204PDSR-FM						●	●											22.0	12.7	4.76	1.51	1.0

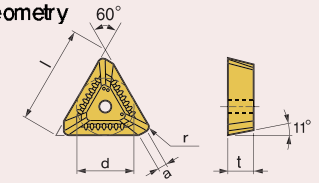
P. 333

●: Stock Item ○: Under preparing for stock

TPXR-FM



Geometry



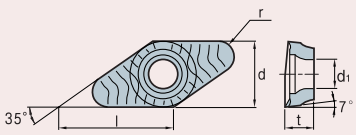
Available cutter	Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)				
				NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510	CT10	CN20	CN30		MA2	G10	ST30A	ST20	l(=d)	d	t	a	r
PPN(M) 4000	TPXR	1603PDSR-FM							●											16.5	9.525	3.18	1.30	1.0
		2204PDSR-FM							●											22.0	12.7	4.76	1.51	1.0

P. 333

●: Stock Item ○: Under preparing for stock

VCKT-MA

Geometry



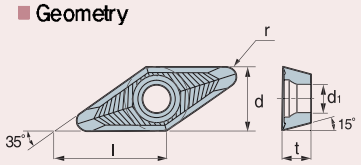
Available cutter	Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)				
				NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510	CT10	CN20	CN30		H01	G10	ST30A	ST20	l	d	t	r	d_1
PAC(M) 4000 PAS	VCKT	220530N-MA														●				22.1	12.7	5.56	3.0	5.6

P. 369

●: Stock Item ○: Under preparing for stock

VDKT-MA

Geometry



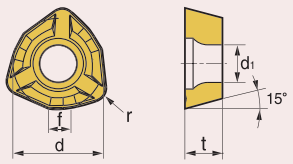
Available cutter	Designation	ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)				
			NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510	CT10	CN20	CN30		H01	G10	ST30A	ST20	l	d	t	r	d_1
PAS 2000 PAM 2000	VDKT 11T210N-MA														●				11.0	6.35	2.87	1.0	2.8

P. 369, 370

● : Stock Item ○ : Under preparing for stock

WDKT-MH

Geometry

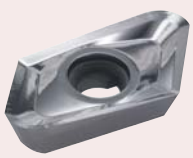


Available cutter	Designation	ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)				
			NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510	CT10	CN20	CN30		MA2	G10	ST30A	ST20	d	t	f	r	d_1
HRMC(M) HRMS	WDKT 080316ZDSR-MH		○				●	●		●									8.0	3.18	1.2	1.6	3.3
	10T320ZDSR-MH		○				●	●		●									10	3.97	1.5	2.0	4.3
	130520ZDSR-MH		○				●	●	●	●									13.5	5.56	2.1	2.0	5.56
	150625ZDSR-MH		○				●	●	●	●									15.0	6.35	3.5	2.5	5.56

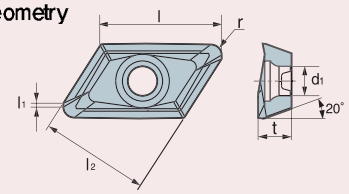
P. 357~359

● : Stock Item ○ : Under preparing for stock

XEKT-MA



Geometry



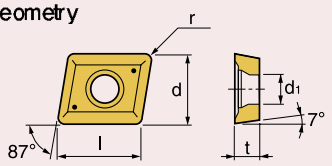
Available cutter	Designation	ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)					
			NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510	CT10	CN20	CN30		H01	G10	ST30A	ST20	l	l_2	l_1	t	r	d_1
PAXC(M) 5000-A PAXS	XEKT 19M504FR-MA														●				18	16.4	1.4	5	0.4	4.4
	19M508FR-MA														●				18	16.4	1.0	5	0.8	4.4
	19M512FR-MA														●				18	16.4	0.6	5	1.2	4.4
	19M516FR-MA														●				17.5	16.4	0.5	5	1.6	4.4
	19M518FR-MA														○				17.5	16.4	0.5	5	1.8	4.4
	19M520FR-MA														●				17.5	16.4	0.5	5	2.0	4.4
	19M530FR-MA														●				17	16.4	0.7	5	3.0	4.4
	19M532FR-MA														●				17	16.4	0.5	5	3.2	4.4
PAXC(M) 5000-B PAXS	19M540FR-MA														●				16.5	16.4	0.5	5	4.0	4.4
	19M550FR-MA														●				16	16.4	0.4	5	5.0	4.4

P. 371, 372

● : Stock Item ○ : Under preparing for stock

ZCMT-ER

Geometry

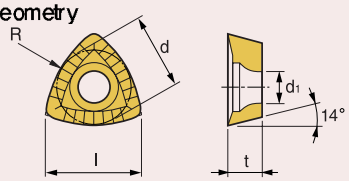


Available cutter	Designation	ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)				
			NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510	CT10	CN20	CN30		H01	G10	ST30A	ST20	l	d	t	r	d_1
	ZCMT 080308-ER		●			●		○											10.4	7.94	3.18	0.8	3.5
	09T308-ER		●			●		○											12.0	9.525	3.97	0.8	4.5

● : Stock Item ○ : Under preparing for stock

ZDMT-R

Geometry



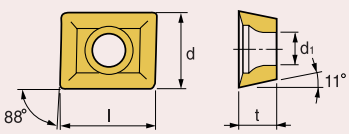
Available cutter	Designation	ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)				
			NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510	CT10	CN20	CN30		MA2	G10	ST30A	ST20	l	d	t	R	d_1
BRE 20R	ZDMT 08T2-R10		●			○	●												8.4	6.75	2.78	10	2.8
25R	1103-R12.5		●			○	●												10.6	8.5	3.18	12.5	2.8
32R	13T3-R16		●			○	●												13.2	10.5	3.97	16	4.4

P. 361

● : Stock Item ○ : Under preparing for stock

ZPMT

Geometry

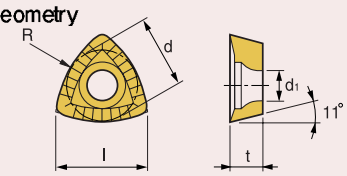


Available cutter	Designation	ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)			
			NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510	CT10	CN20	CN30		MA2	G10	ST30A	ST20	l	d	t	d_1
	ZPMT 1504PPSR		●			○	●								●				15.9	12.7	4.76	5.6

● : Stock Item ○ : Under preparing for stock

ZPMT-R

Geometry



Available cutter	Designation		ASA	Coated Carbide								Cermet				Uncoated Carbide				(mm)				
				NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510	CT10	CN20	CN30		H01	G10	ST30A	ST20	l	d	t	R	d_1
BRE 40R	ZPMT	1604-R20		●			○	●												16.1	12.7	4.76	20	5.6
50R		1604-R25		●			○	●		○										16.9	12.7	4.76	25	5.6
63R		1604-R31.5		●			○	●												17.6	12.7	4.76	31.5	5.6

P. 361

● : Stock Item ○ : Under preparing for stock

Cutter body Series

Shape		Cutter diameter	Approach angle	Available insert	Features
Cutter body **ADN4000, 5000 (ADNM)** P. 324, 325		Ø80~Ø315	45°	SDCN 1203, 1504 AEN SDKR 1203AESN-MX SDKR 1504AESN-MX	• Strong cutting edge • Good chip flow P. 281~284
AE4000, 5000 (AEM) P. 326, 327		Ø80~Ø315	45°	SECN 1203AFN SEKR 1203AFSN-MX SECN 1504AFN SEKR 1504AFSN-MX	• Smooth cutting due to low cutting load P. 286~289
EF4000 (EFM) P. 328		Ø80~Ø315	75°	SF□N 1203EFR/L	• Less build up edge due to high rake angle P. 290
EN4000 (ENM) P. 329		Ø80~Ø315	75°	SN□N 1204ENN	• Economical by using both side of insert P. 291
EPN4000, 5000 (EPNM) P. 330, 331		Ø80~Ø315	75°	SPCN 1203,1504 EDR/L SPKR 1203EDSR-MX SPKR 1504EDSR-MX	• Low cutting load due to double positive insert positioning P. 293~296
PF4000 (PFM) P. 332		Ø80~Ø315	0°	TF□N 2203PFR/L	• Smooth cutting with high rake angle P. 297
PPN4000 (PPNM) P. 333		Ø80~Ø315	0°	TP□N 2204PDR/L TPKR 2204PDSR-MX	• Low cutting force due to double positive insert positioning P. 298~300
AFO4000 (AFOM) P. 334		Ø80~Ø125	45°	OFCW 05T3SN OFKT 05T3SN-MF OFKT 05T3SN-MM OFKT 05T3SN-MA	• Low cutting load due to high rake angle • 8 corner using insert P. 275, 276

Shape		Cutter diameter	Approach angle	Available insert	Features
Cutter body **AFO5000 (AFOM)** P. 335		Ø80~ Ø315	45°	OFCN 0704SN OFKR 0704SN-MF OFKR 0704SN-MM OFKR 0704FN-MA REKR 170400-MM	•Low cutting load due to high rake angle •8 corner using insert P. 275, 276
Aero mill **APD (APDM)** P. 336, 337		Ø80~ Ø315	0°	CDEW 1204R/L-XCF CDEW 1204R/L-XAF(NAF) CDEW 1204R/L-XAW(NAW) BAPDR/S-XAF(NAF) BAPDR/S-XAW(NAW)	•Suitable for high speed cutting due to aluminum cutter body •Using un-coated carbide & PCD insert •G2.5 balance level available P. 270, 271
Alpha mill **AMS** **AMC** **AMCM** P. 338~344		Ø10~ Ø100	0°	APXT 11T3PDSR-MF APXT 11T3PDSR-MM APXT 11T3PDR-MA APXT 1604PDSR-MF APXT 1604PDSR-MM APKT 1604PDFR-MA2	•Multi functional tool can do facing, grooving, square shouldering, etc •3 dimensional chip breaker applied P. 268, 269
Future mill **FMAC-A (FMACM-A)** A type - Aluminum body P. 345		Ø63~ Ø200	45°	SEET 0903AGSN-MF SEXT 0903AGSN-MF SEET 0903AGSN-MM SEXT 0903AGSN-MM SEET 0903AGFN-MA SEET 14M4AGSN-MF SEXT 14M4AGSN-MF SEET 14M4AGSN-MM SEXT 14M4AGSN-MM SEET 14M4AGFN-MA	•Excellent in high speed cutting due to light aluminum body P. 287~290
FMPC-A (FMPCM-A) A type - Aluminum body P. 346		Ø63~ Ø200	0°	SDXT 09M405R-MF SDXT 09M405R-MM SDXT 09M405R-MA SDET 09M402R-MA SDXT 130508R-MF SDXT 130508R-MM SDXT 130508R-MA SDET 130504R-MA	•Excellent in high speed cutting due to light aluminum body P. 284~285
FMAS **FMAC** **FMACM** P. 347, 348		Ø25~ Ø200	45°	SEEW 0903AGN SEET 0903AGSN-MA/MR SEE(X)T 0903AGSN-MF/MF SEEW 14M4AGN SEET 14M4ASN-MA /MR SEE(X)T 14M4AGSN-MF/MM SEEW 14M4AGN-W	•Precise matching of insert and holder guarantee excellent cutting performance P. 287~290
FMPS **FMPC** **FMPCM** P. 349, 350		Ø21~ Ø125	0°	SDXT 09M405R-MA SDXT 09M405R-MF SDXT 09M405R-MM SDXT 130508R-MA SDXT 130508R-MF SDXT 130508R-MM	•4 corner using insert for square shouldering •Strong cutting edge with low cutting load P. 284, 285
FMRM **FMRS** **FMRC** **FMRCM** P. 351~356		Ø21~ Ø125	-	RDHW 0510M0-□ RDKW 0702M0E 06T1M0-□ 0803M0E 0702M0-□ RDCT 10T3M0-MA 0803M0-□ 1204M0-MA 1605M0-□ RDKT 10T3M0-□□ 2006M0-□ 1204M0-□□ RDKW 0501M0E 1605M0-MM 06T1M0E 2006M0-MM	•Powerful clamping by special convex, concave design on insert seat part •Conbinent system for insert cutting edge change P. 278~280

Cutter body Series

Shape		Cutter diameter	Approach angle	Available insert	Features
High feed cutter **HRMC (HRMCM)** Insert size 13/15 P. 357		Ø50~Ø160	-	WDKT 130520ZDSR-MH WDKT 150625ZDSR-MH	• Powerful clamping by double clamping system • Economical 3 corner using insert as a high feed insert • High feed cutting with low cutting load P. 301
HRMS Insert size 08/10/13/15 P. 358, 359		Ø20~Ø63	-	WDKT 080316ZDSR-MH WDKT 10T320ZDSR-MH WDKT 130520ZDSR-MH WDKT 150625ZDSR-MH	• Powerful clamping by double clamping system • Economical 3 corner using insert as a high feed insert • High feed cutting with low cutting load P. 301
Mach mill **BFE** P. 360		Ø16~Ø32	-	RC 16, 20, 25, 30, 32	• Good cutting performance with wavy S type cutting edge P. 278
BRE P. 361		Ø20~Ø63	-	ZDMT 08T2-R10 ZDMT 1103-R12.5 ZDMT 13T3-R16 ZPMT 1604-R20 ZPMT 1604-R25 ZPMT 1604-R31.5 SPMT 060304 SPMT 120408 SDMT 090308	• Right hand direction helix angle provides good chip flow • Strong cutting edge strength P. 283, 295, 302, 303
Laser mill **LBE** P. 362, 363		Ø8~Ø32	-	LBS 080~320 LBH 080~320 LR 100~320-R□□	• Indexable ball endmill for precise finishing of mould • Rigid holder with simple design • MQL is available P. 273, 274
Cen mill **CE** P. 364		Ø7~Ø35	45°	SP□N 120308	• Chamfering up to 8mm P. 295
PM P. 365		Ø40~Ø50	-	EDCW 1604ZDT/FR	• Suitable for various kind of pocketing P. 272
SE P. 366		Ø25~Ø40	-	MPMT 090308 MPMT 120408	• Suitable for copy machining P. 275

Cutter body

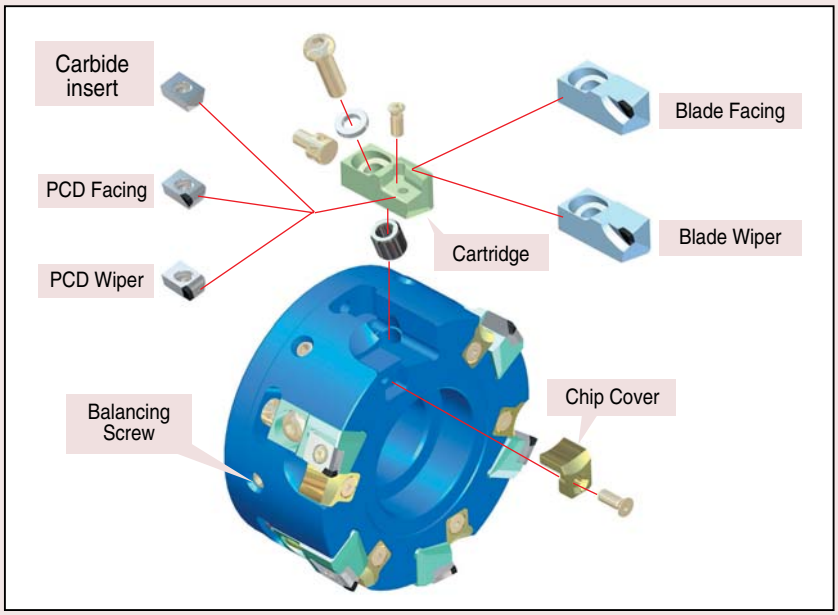
Shape		Cutter diameter	Approach angle	Available insert	Features
Cen mill **TM** P. 367		Ø32~ Ø50	-	MIT 100 MET 150, 200, 300, 400	• For thread turning, internal & external P. 368
Pro A mill **PAM** **PAS** **PAC** **PACM** P. 369, 370		Ø12~ Ø42 Ø32~ Ø100	-	VDKT 11T210N-MA VCKT 220530N-MA	• Special surface treatment on top of insert provides excellent chip flow without build up edge P. 300, 301
Pro X mill **PAXC(M)** **PAXS** P. 371, 372		Ø20~ Ø125	-	XEKT 19M504FR-MA XEKT 19M508FR-MA XEKT 19M512FR-MA XEKT 19M516FR-MA XEKT 19M520FR-MA XEKT 19M530FR-MA XEKT 19M532FR-MA XEKT 19M540FR-MA XEKT 19M550FR-MA	• Powerful clamping system applied • Rigid & strong shank • Square shouldering, machining of curved surface available P. 301
Turbo mill **ADS** P. 373, 374		Ø50~ Ø63	45°	SDCN 1203, 1504AEN SDKR 1203AFN-MX SDKR 1504AFN-MX	• Un-even insert spacing provides chatter free machining P. 281~284
PES P. 375~377		Ø20~ Ø63	0°	TECN 22, 32, 43 TEKN 22R	• Good machinibility due to the high rake angle P. 296, 297

Technical Guide of Aero mill

Special features

- Excellent machining performance can be acquired especially at the high speed cutting due to the light aluminum cutter body that 50% weight of conventional steel cutter body.
- High speed milling cutter can afford to precise machining.
- Special Aluminum material and high rake angle of insert provide rigid & stable machining.
- Cartridge put on cutter body protects the cutter body from scratch & damage of machining.
- Available insert made of un-coated carbide and PCD can cover various cases of aluminum machining.
- High class surface finish can be acquired due to the low cutting load provided from high rake angle.
- Balanceable up to G2.5 level.

Assembly structure of cutter

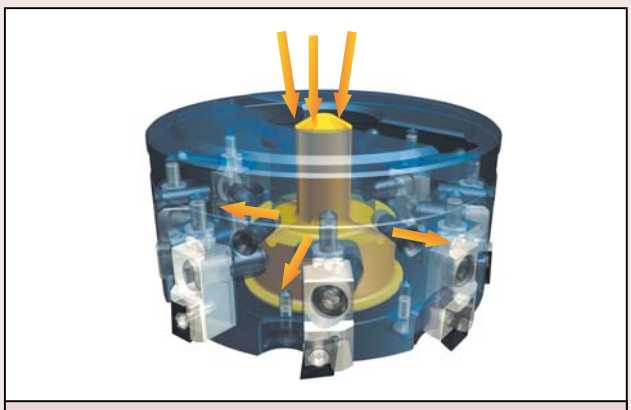


- Light aluminum body make it possible to machine at high speed without damange on barings of spindle of mahcine.
- It is possible to use both insert type & blade type cutting edge.
- Wide chip pocket guarantee smooth chip flow.
- Special aluminum material used for cutter body provides rigid & strong machining.
- Chip cover made of steel have put at chip pocket area, protects aluminum cutter from scratch & damage of machining.

Coolant through system

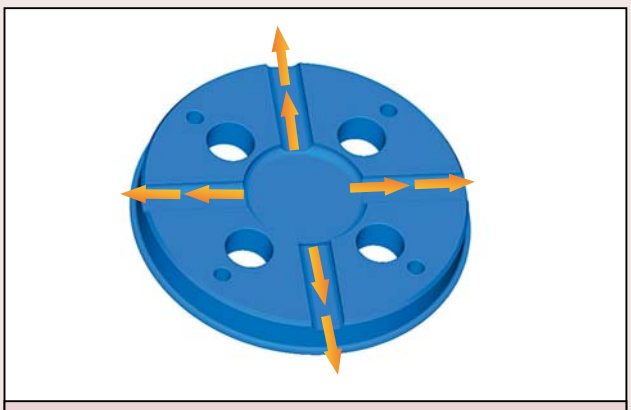
- Specially designed coolant through system provides coolant from the center of the cutter to the insert. It enhances the cooling rate and chip evacuation properity.
- Since shooting direction of coolant have designed directly to the insert cutting edge, it has maximized chip evacuation.
- Coolant bolt applicable upto ø160, coolant cover applicable from ø200 and over. Both coolant devices are sold seperately. For through coolant system, through coolant arbor has to be used.

Coolant Bolt



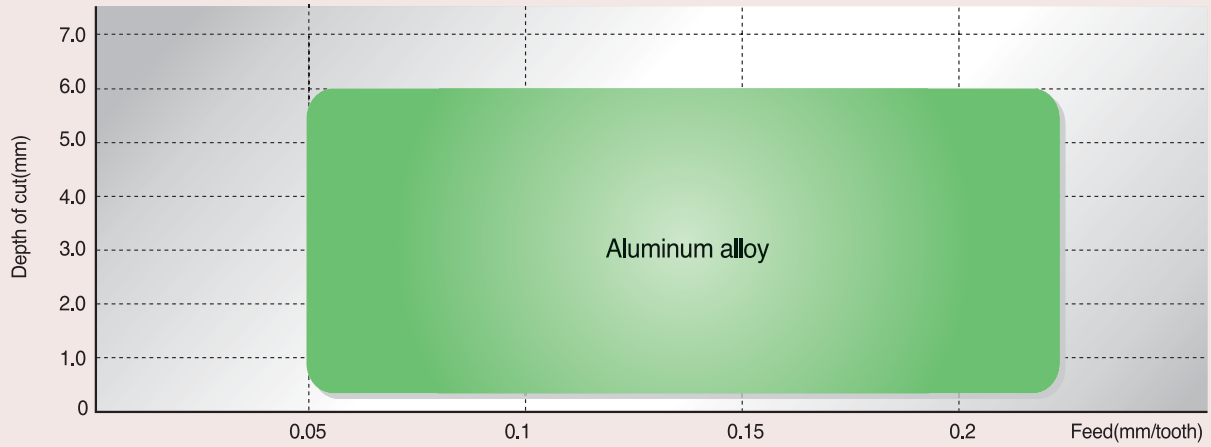
For Ø80 ~ Ø160

Coolant Cover

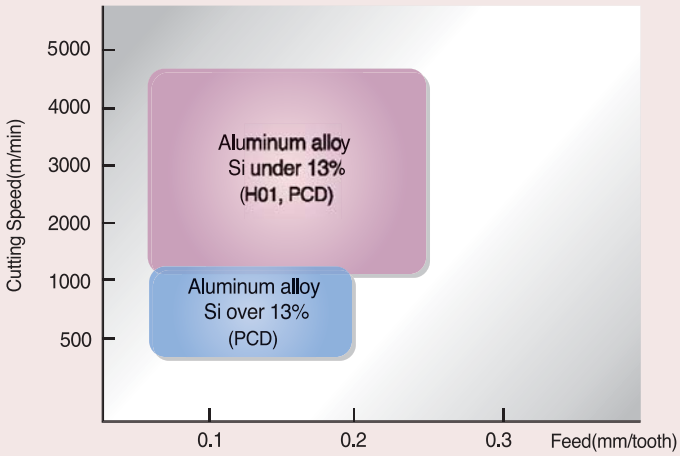


For Ø200 and over

Application range as per work piece



Recommendation



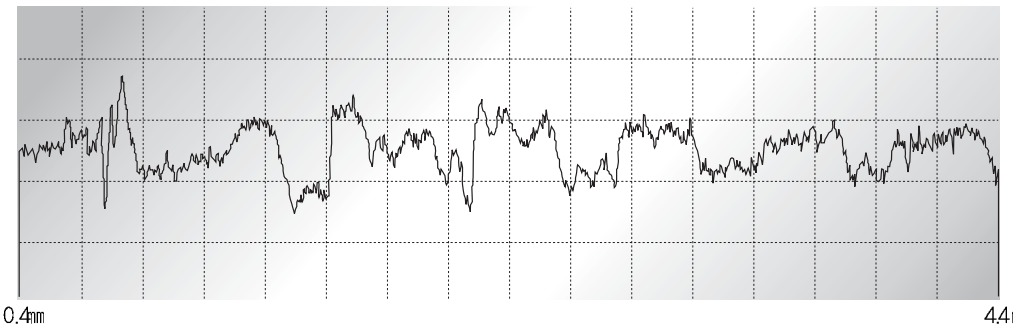
Maximum revolution available

Cutter diameter	Maximum revolution(rpm)
Ø80	16,000
Ø100	15,000
Ø125	12,500
Ø160	10,000
Ø200	8,000
Ø250	6,500
Ø315	5,000

Maximum revolution

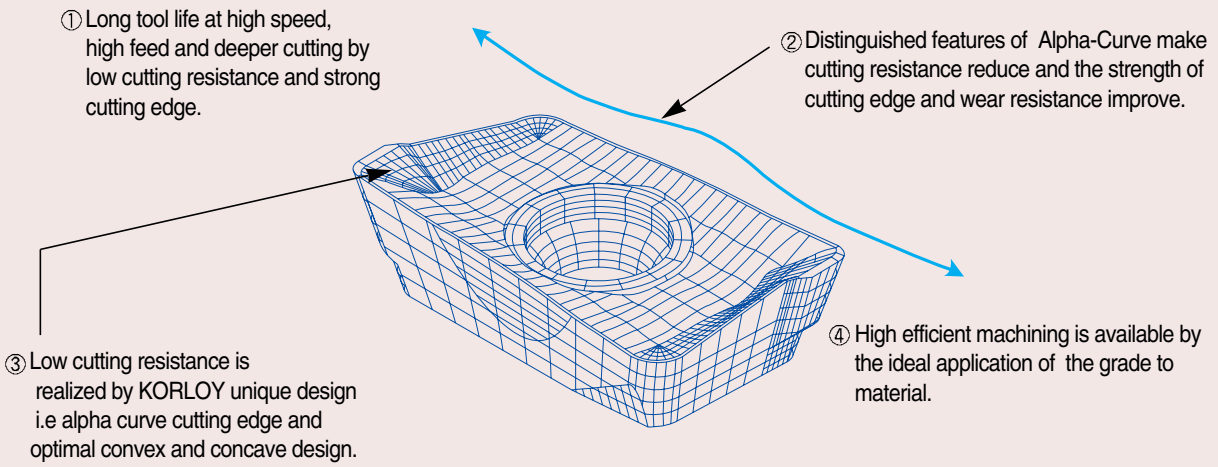
- **Machine**: PCV620
- **Work** : AℓA6061
- **Cutter** : APD100R-A6Z (6 tooth)
- **Insert** : CDEW1204R-XCF(H01)
- **V**=1570m/min
- **f**=0.1mm/tooth d=0.5mm
- **Wet**

- Rmax : 2.1㎛
- Rz : 1.6㎛
- Ra : 0.3㎛



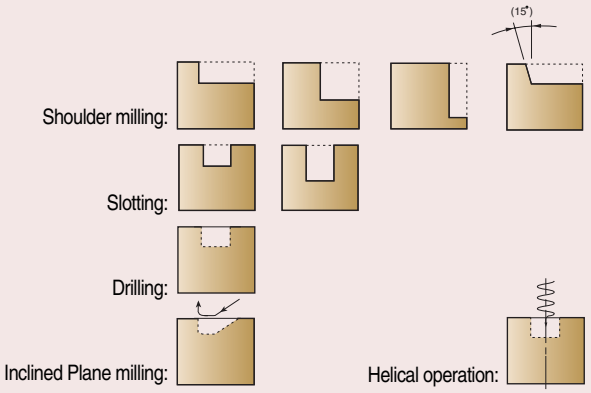
Technical Guide of Alpha mill

Alpha-mill Multifunctional Insert



Inserts Feature & Application

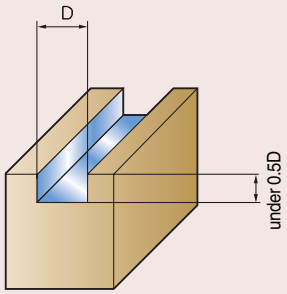
- Innovative curve cutting edge and chip-breaker design ensures ideal 90 degree cutting and lower cutting resistance
- Various applications are available with multi-functional cutters(Facing, Slotting, Square shoulder milling and etc.)
- Improved inserts life time with optimized per each application
- Excellent perfomance ensured at large depth of cutting operations due to strong cutting edge and low cutting resistance



Chip -breaker	Cutting Edge Shape		Recommendation C/B and Grades (●:1st Choice)									
			Low carbon steels Soft Steels		High carbon steels Alloy Steels		Stainless steels		Cast Irons		Aluminum alloys	
			C/B	Grade	C/B	Grade	C/B	Grade	C/B	Grade	C/B	Grade
MF		Low cutting Resistance Type	●	○NCM325 ○PC3535 ●NCM335		●NCM325 ○PC3535 ○NCM335	●	○NCM325 ○PC9530 ●NCM335	●	○NCM310K ●NCM320K ○PC215K	-	-
MM		Reinforced Cutting Edge Type		○NCM325 ○PC3535 ●NCM335	●	●NCM325 ○PC3535 ○NCM335	●	○NCM325 ○PC9530 ●NCM335	●	○NCM310K ●NCM320K ○PC215K	-	-
MA2		Sharp Cutting Edge Type	-	-	-	-	-	-	-	-	●	●H01 ○G10

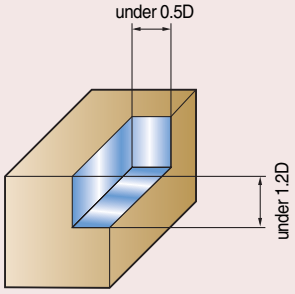
Recommended Depth of Cuts

(D : Cutting Diameter)



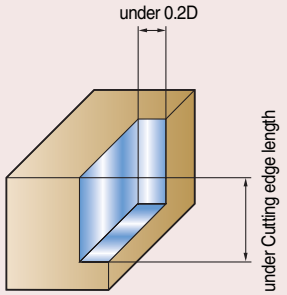
Slotting

①



Square Shoulder Milling

②



Square Shoulder Milling

③

Recommended cutting conditions (for Multi-Edge Type)

Work-piece Material	Grade	Cutting Form	Cutting Diameter							
			Ø20, Ø25		Ø32, Ø40		Ø50, Ø63		Ø80, Ø100	
			V(m/min)	fz(mm/tooth)	V(m/min)	fz(mm/tooth)	V(m/min)	fz(mm/tooth)	V(m/min)	fz(mm/tooth)
Low Carbon Steels, Soft Steels	NCM325 PC3535	①	80~100	0.05~0.08	100~120	0.05~0.08	100~120	0.05~0.08	100~120	0.05~0.08
		②	100~120	0.08~0.1	120~140	0.08~0.1	120~140	0.08~0.1	120~140	0.08~0.1
		③	100~120	0.1~0.15	120~140	0.1~0.15	120~140	0.1~0.15	130~150	0.1~0.15
High Carbon Steels, Alloy Steels	NCM325 PC3535	①	60~80	0.05	80~100	0.05	80~100	0.05	80~100	0.05
		②	80~100	0.05~0.08	100~120	0.08~0.1	100~120	0.08~0.1	100~120	0.08~0.1
		③	80~100	0.1~0.15	110~130	0.1~0.15	100~120	0.1~0.15	110~130	0.1~0.15
Alloy Tool Steels	NCM335 PC3535	①	50~70	0.05	70~90	0.05	70~90	0.05	70~90	0.05
		②	60~80	0.05~0.08	90~120	0.05~0.08	100~120	0.05~0.08	100~120	0.05~0.08
		③	90~110	0.12~0.18	100~130	0.1~0.15	100~120	0.1~0.15	110~130	0.1~0.15
Stainless Steels	NCM335 PC9530	①	50~70	0.054	70~90	0.05	70~90	0.05	70~90	0.05
		②	60~80	0.05~0.08	90~120	0.05~0.08	100~120	0.05~0.08	100~120	0.05~0.08
		③	90~110	0.1~0.15	100~130	0.1~0.15	110~130	0.1~0.15	110~130	0.1~0.15
Cast irons	NCM320K PC215K	①	70~90	0.1~0.12	70~90	0.1~0.12	90~120	0.1~0.12	90~120	0.1~0.12
		②	80~100	0.12	90~120	0.12	100~140	0.12	100~140	0.12
		③	80~100	0.15~0.2	100~130	0.15~0.2	120~150	0.15~0.2	120~150	0.15~0.2
Aluminum Alloy	H01	①	200~800	0.1~0.2	300~900	0.1~0.2	400~1,000	0.1~0.2	400~1,000	0.1~0.2
		②	250~900	0.15~0.3	300~950	0.15~0.3	400~1,000	0.1~0.4	400~1,000	0.1~0.4
		③	250~90	0.15~0.3	300~950	0.15~0.3	400~1,000	0.1~0.4	400~1,000	0.1~0.4

Recommended cutting conditions (for Single-Edge Type)

Work-piece Material	Grade	Cutting Diameter							
		Ø10, Ø15		Ø16, Ø25		Ø32, Ø63		Ø80, Ø100	
		V(m/min)	fz(mm/tooth)	V(m/min)	fz(mm/tooth)	V(m/min)	fz(mm/tooth)	V(m/min)	fz(mm/tooth)
Low Carbon Steels, Soft Steels	NCM325 PC3535	60~120	0.05~0.15	80~180	0.1~0.15	120~250	0.1~0.15	150~250	0.1~0.15
High Carbon Steels, Alloy Steels	NCM325 PC3535	50~100	0.05~0.15	80~150	0.1~0.15	100~200	0.1~0.15	100~200	0.1~0.15
Stainless Steels	NCM335 PC9530	50~100	0.05~0.15	80~150	0.1~0.15	100~180	0.1~0.15	100~180	0.1~0.15
Cast irons	NCM320K PC215K	80~120	0.08~0.2	100~130	0.15~0.2	120~200	0.15~0.2	120~200	0.15~0.2
Aluminum Alloy	H01	250~900	0.15~0.3	300~950	0.15~0.3	400~1,000	0.1~0.4	400~1,000	0.1~0.4

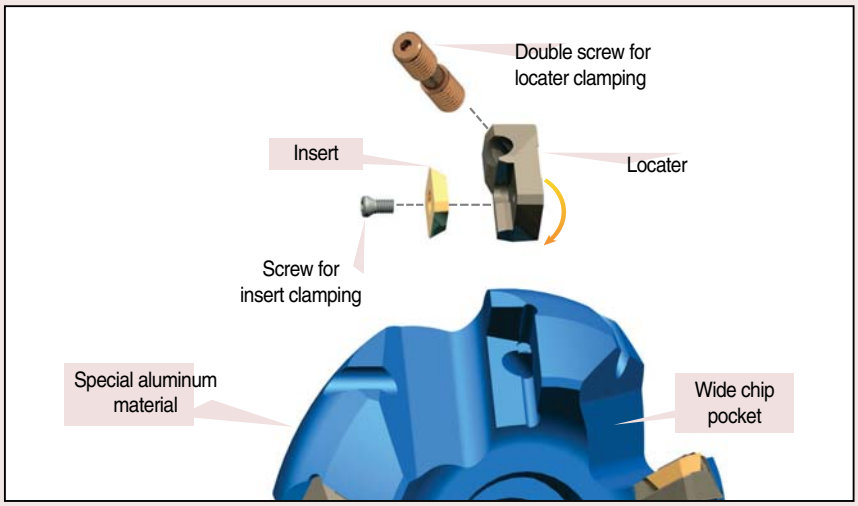
(Standard for side cutting, reduce condition 20~30% for slotting)

Technical Guide of Future mill aluminum body

Special features

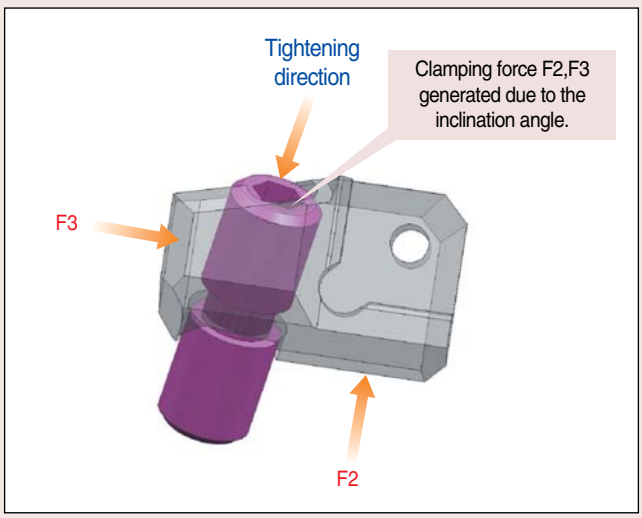
- Light weight of aluminum body (50% of steel body) applicable for small & low horse power machine like tapping center.
- Very easy to handle due to the light weight.
- Comprehensive coverage not only aluminum workpiece but steel and cast iron.
- Special aluminum body having high strength & rigidity employed.
- Locator (steel material) put on insert part provides long-lasting life of aluminum cutter.
- Variety of chip breakers provide wide coverage of applications.
- High class surface finish can be acquired due to the low cutting load provided from high rake angle.

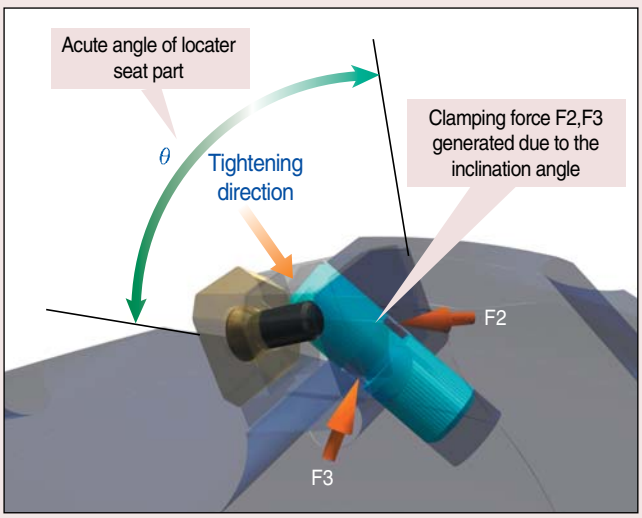
Assembly structure of cutter



- Tight clamping of locater with double screw guarantees stable mounting of insert without movement.
- Acute angle put on cutting edge guarantees stable mounting of insert.
- Wide chip pocket provides good chip evacuation.
- Special aluminum material used for cutter body provides rigid & strong machining.

Assembly structure of locater

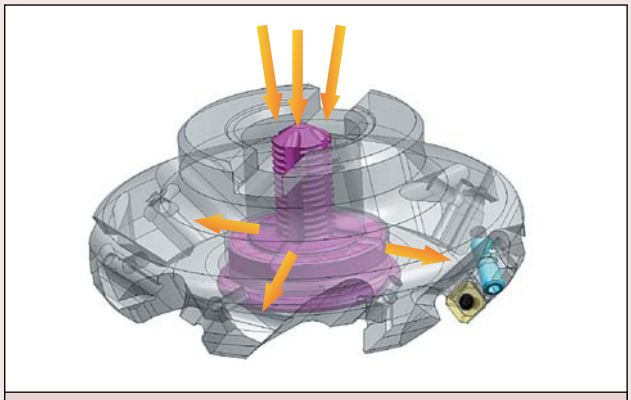




Coolant through system

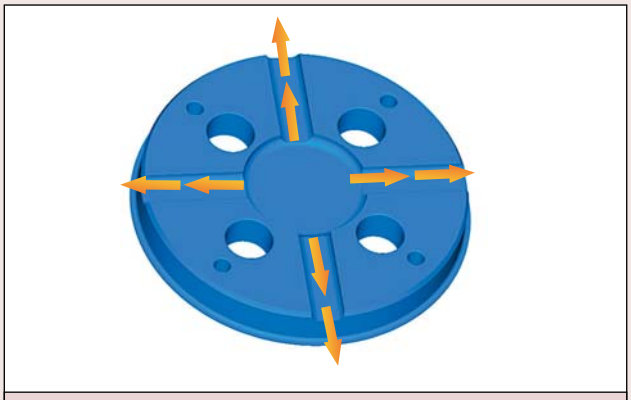
- Specially designed coolant through system provides coolant from the center of the cutter to the insert. It enhances the cooling rate and chip evacuation properity.
- Since shooting direction of coolant have designed directly to the insert cutting edge, it has maximized chip evacuation.
- Coolant bolt applicable upto ∅160, coolant cover applicable from ∅200 and over. Both coolant devices are sold seperately.
- For through coolant system, through coolant arbor has to be used.

Coolant Bolt



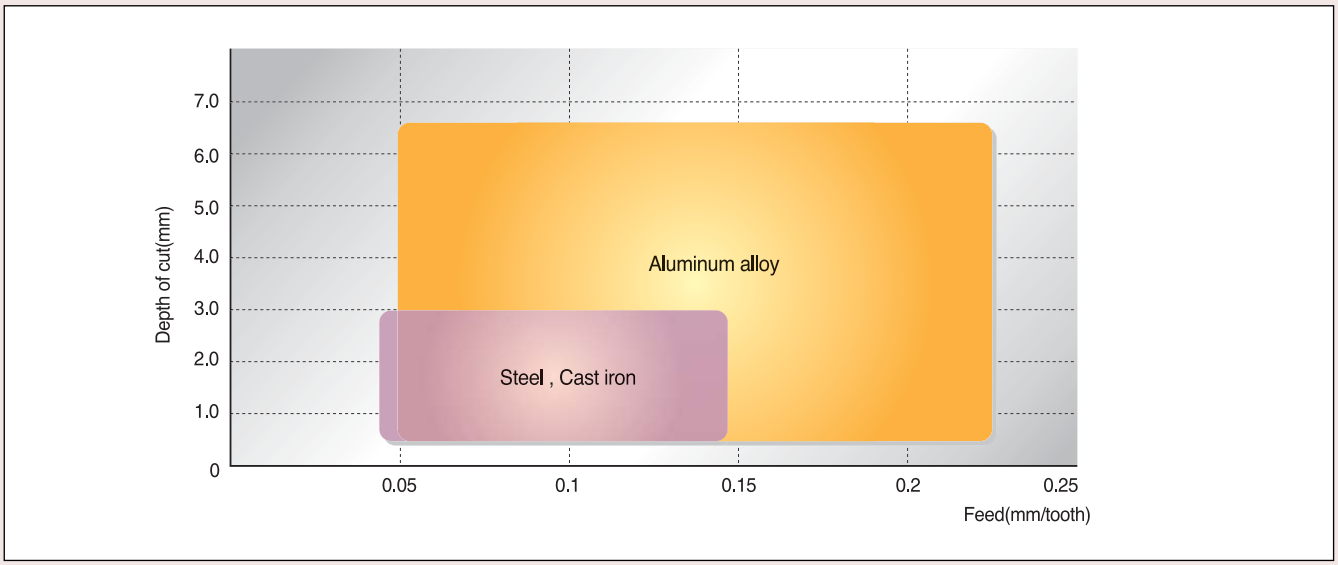
For Ø63 ~ Ø160

Coolant Cover

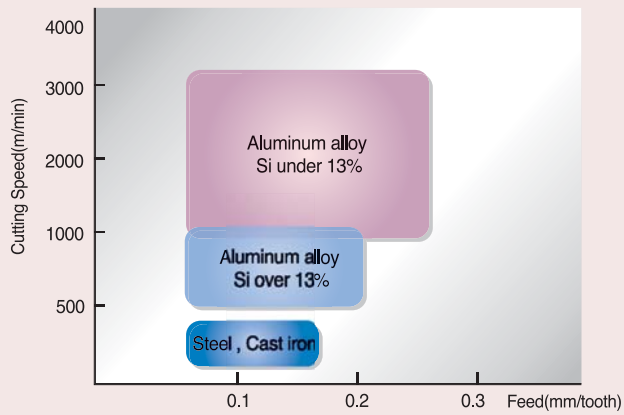


For Ø200 and over

Application range as per work piece



Recommendation



Maximum revolution available

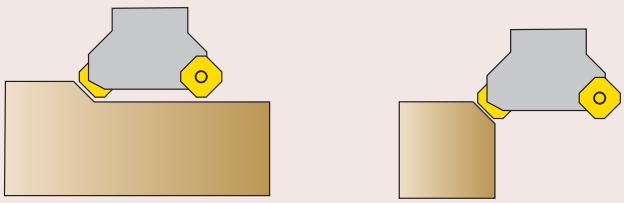
Cutter diameter	Maximum revolution(rpm)
Ø63	20,000
Ø80	16,000
Ø100	13,000
Ø125	10,000
Ø160	8,000
Ø200	6,500
Ø250	5,000
Ø315	4,000

Technical Guide of Future mill (FMA)

Comprehensive Milling Cutter with High Productivity

1. Adjustable pitch of cutter by change the number of insert for specific cutter diameter, and several chip breakers of insert offer wide available application range.
2. Light cutter body allow high speed machining without chattering, thus it is possible to use at the machine having low horse power.
3. Smooth cutting with low cutting force accomplished with high rake angle.

Machining Example



Chip-Breakers

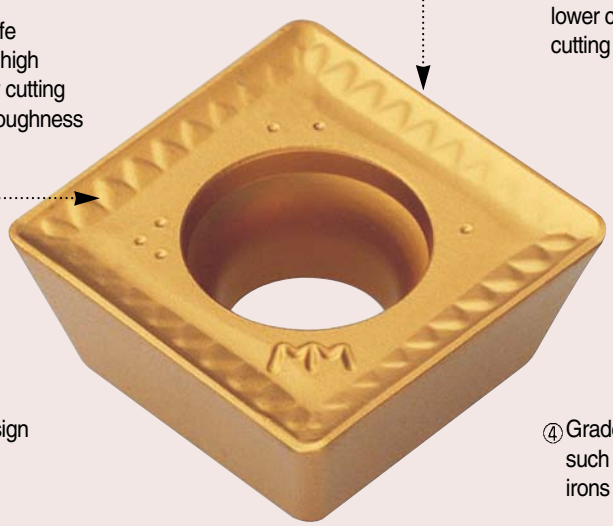
	Chip-Breakers	Cutting edge shape	Use and Features of Chip Breakers
Light cutting	Non C/B		Superior surface roughness at finishing due to ground-type cermet insert.
	MF		Superior cutting quality for light and difficult-to-cut material cutting through the low-cutting-resistance type of chip breaker
General cutting	MM		Suitable for wide range of cutting due to special shape design for general cutting.
Roughing	MR		Tough cutting edge provide stable and consistent cutting performance even at severe intermittent cutting.
For Aluminum	MA		Superior cutting quality for aluminum cutting resulted form applying of proper cutting-edge treatment and buffing of surface.

Recommended cutting condition

ISO	C/B / Grade	MF		MM		MR		MA	
		V(m/min)	fz(mm/tooth)	V(m/min)	fz(mm/tooth)	V(m/min)	fz(mm/tooth)	V(m/min)	fz(mm/tooth)
P	NCM325	200 ~ 300	0.05 ~ 0.2	150 ~ 300	0.1 ~ 0.3	150 ~ 250	0.1 ~ 0.3	-	-
	PC3535	200 ~ 300	0.05 ~ 0.2	150 ~ 300	0.1 ~ 0.3	100 ~ 250	0.1 ~ 0.3	-	-
M	PC9530	100 ~ 180	0.05 ~ 0.15	120 ~ 180	0.1 ~ 0.3	-	-	-	-
	NCM335	120 ~ 200	0.05 ~ 0.15	120 ~ 200	0.1 ~ 0.3	-	-	-	-
K	NCM310K	180 ~ 300	0.05 ~ 0.2	180 ~ 300	0.1 ~ 0.3	-	-	-	-
	PC215K	150 ~ 250	0.05 ~ 0.2	150 ~ 250	0.1 ~ 0.3	-	-	-	-
	NCM320K	150 ~ 250	0.05 ~ 0.2	150 ~ 250	0.1 ~ 0.3	-	-	-	-
Aluminum	H01	-	-	-	-	-	-	350 ~ 1,000	0.1 ~ 0.35

Technical Guide of Future mill (FMP)

Features of FMP Insert



Inserts Feature & Application

- KORLOY Innovative curve cutting edge and chip-breaker design ensures ideal 90 degree cutting and lower cutting resistance
- Various applications are available with multi-functional cutters(Facing, Slotting, Square shoulder milling and etc.)
- Improved inserts life time with optimized per each application
- Excellent perfomance ensured at large depth of cutting operations due to strong cutting edge and low cutting resistance

Chip -breaker	Cutting Edge Shape		Recommendation (●:1st Choice, ○:2nd Choice)									
			Low carbon steels Sofr Steels		High carbon steels Alloy Steels		Stainless steels		Cast Irons		Aluminum alloys	
			C/B	Grade	C/B	Grade	C/B	Grade	C/B	Grade	C/B	Grade
MF		Low cutting Resistance Type	●	○NCM325 ○PC230 ●NCM335		●NCM325 ○PC230 ○NCM335	●	○NCM325 ○PC230 ●NCM335	●	○NCM310K ●NCM320K ○PC215K	-	-
MM		Reinforced Cutting Edge Type		○NCM325 ○PC230 ●NCM335	●	●NCM325 ○PC230 ○NCM335	●	○NCM325 ○PC230 ●NCM335	●	○NCM310K ●NCM320K ○PC215K	-	-
MA		Sharp Cutting Edge Type	-	-	-	-	-	-	-	-	●	●H01 ○G10

Recommended cutting condition

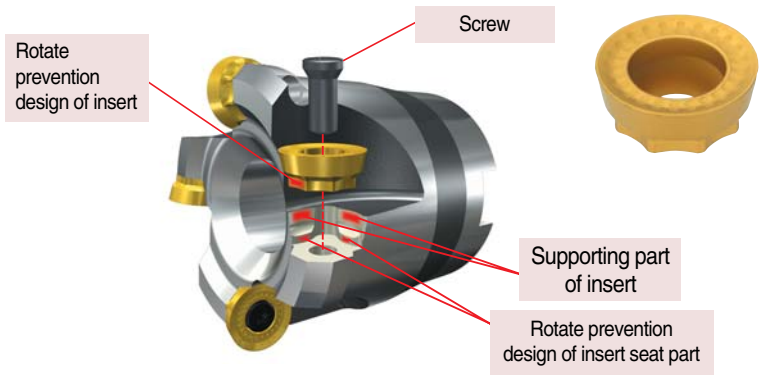
ISO	Cutter diameter (Ø) / Grade	Ø 32~63		Ø 80~125	
		V(m/min)	fz(mm/tooth)	V(m/min)	fz(mm/tooth)
P	NCM325	100~250	0.05~0.3	120~250	0.08~0.3
	NCM335	100~220	0.05~0.25	120~220	0.08~0.25
	PC3535	100~220	0.05~0.25	100~220	0.1~0.25
M	NCM335	80~180	0.05~0.2	80~180	0.1~0.25
K	NCM310K	200~300	0.08~0.25	200~280	0.1~0.25
	NCM320K	180~250	0.08~0.25	180~250	0.1~0.25
	PC215K	150~250	0.08~0.25	150~230	0.1~0.25
Non ferrous material	H01	400~1,000	0.05~0.4	400~1,000	0.1~0.4

Technical Guide of Future mill (FMR)

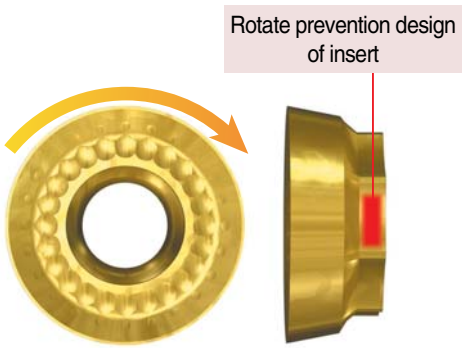
Special features

- Wide coverage for mould material, alloy steel, hardened steel etc.
- 2 step shape of insert provides good positioning & tight clamp of insert.
- 4~8 cutting edge/insert available.
- Un-even insert spacing prevents from chattering.
- Precise design on insert seat part prevents insert from chattering.
- Special design put on insert bottom part prevent movement and chatter of insert.
- Very esay to change cutting edge due to the rotate prevention part of insert.

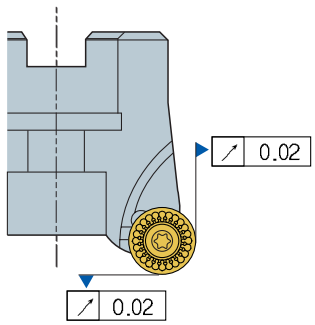
Clamping system



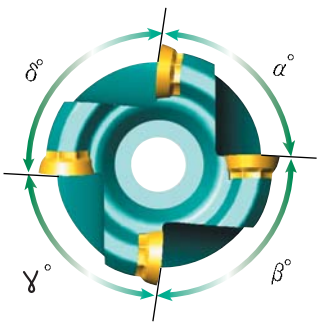
FMR□ 3000 Type FMR□ 5000 Type
FMR□ 4000 Type FMR□ 6000 Type



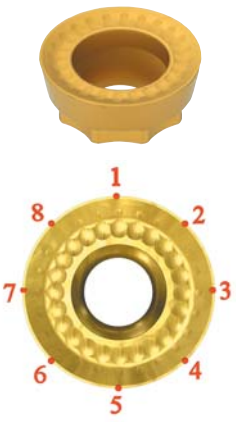
RDKT10T3M0-□□ RDKT1605M0-MM
RDKT1204M0-□□ RDKT2006M0-MM



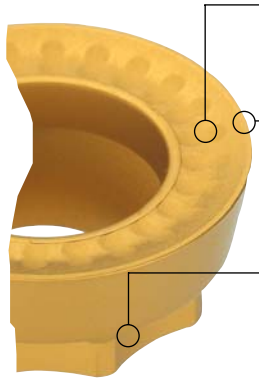
Good surface finish due to the precise design of insert seat part of cutter.



Good performance with out vibration due to the un-even insert spacing.



4~8 cutting edge/insert available.



Special chip breaker design for low cutting load
- Minimized heat generation due to smooth chip flow

Special cutting edge preparation
- Nega-land preparation applied
- Good surface finish due to the low cutting load

Facial contact through curved face
- Rotate prevention of insert during machining
- Stable and tight clamping of insert
- Good positioning of insert repeatedly

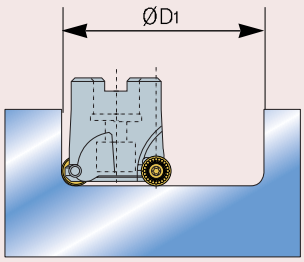
Cutter body

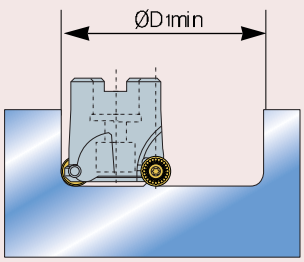
Recommended cutting condition

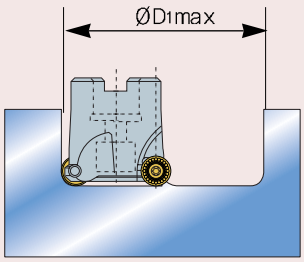
ISO	Grade \ C/B	RDKT10T3M0-□□		RDKT1204M0-□□	
		V(m/min)	fz(mm/tooth)	V(m/min)	fz(mm/tooth)
P	NCM325	100 ~ 300	0.10 ~ 0.40	120 ~ 250	0.15 ~ 0.60
	NCM335	100 ~ 250	0.10 ~ 0.40	120 ~ 220	0.15 ~ 0.60
	PC3535	100 ~ 250	0.10 ~ 0.50	100 ~ 220	0.10 ~ 0.60
M	PC9530	80 ~ 180	0.05 ~ 0.50	80 ~ 180	0.10 ~ 0.60
K	NCM310K	200 ~ 300	0.08 ~ 0.35	200 ~ 280	0.1 ~ 0.55
	NCM320K	180 ~ 250	0.08 ~ 0.35	180 ~ 250	0.1 ~ 0.55
	PC6510	150 ~ 250	0.08 ~ 0.35	150 ~ 230	0.1 ~ 0.55
Aluminum	H01	400 ~ 1,200	0.05 ~ 0.65	400 ~ 1,000	0.1 ~ 0.7

※Designation of insert for aluminum machining is RDKT-MA.

Helical cutting / Plunging





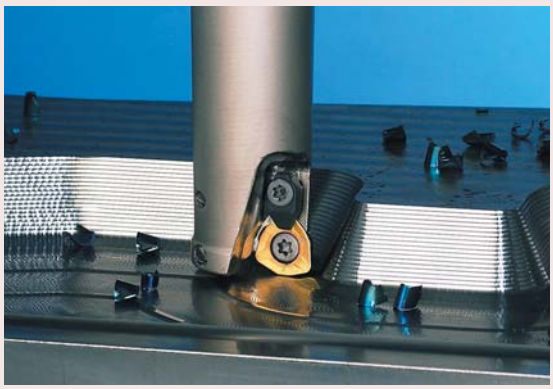


Tools	ØD(Cutter diameter)	ØD1(Normal diameter)	ØD1min	ØD1max	Designation
FMR3000	25	40	32	48	RDKT10T3M0–□□
	32	54	46	62	
	40	70	62	78	
	50	90	82	98	
	63	116	108	124	
	100	190	182	198	
FMR4000	32	52	41	63	RDKT1204M0–□□
	40	68	57	79	
	50	88	77	98	
	63	114	103	125	
	80	148	137	159	
	100	188	177	199	
	125	238	227	249	

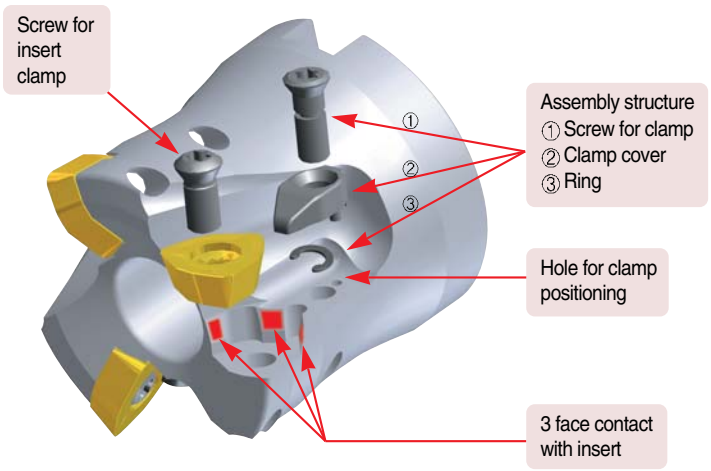
Technical Guide of HRM

Special features

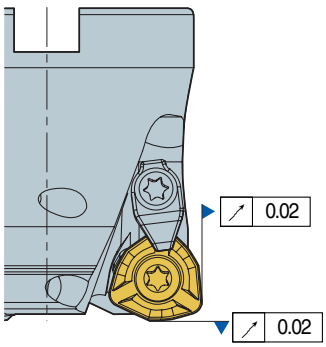
- Double clamp system guarantees powerful machining.
- Special cutting edge design provides high feed rate.
- Special chip breaker design provides effective performance with low cutting load.
- HRM has insert size 08,10,13,15.



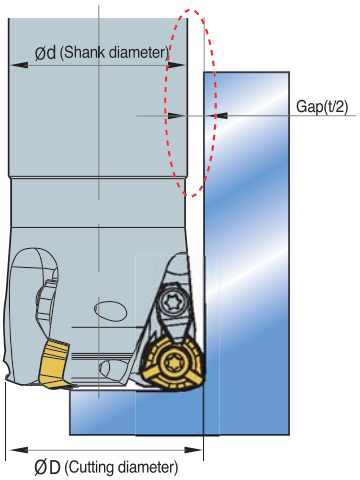
Clamping system



HRM□08/10/13/15 Type



Good surface finish due to the precise design of insert seat part of cutter.

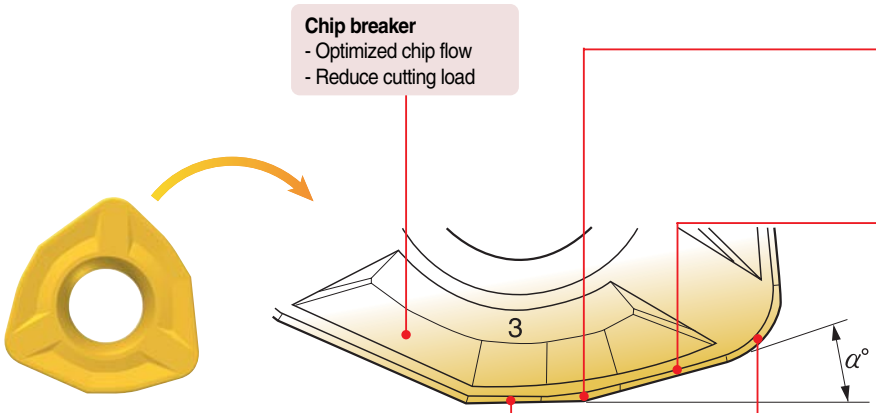


Interference prevent system

Designation	Ød(mm)	ØD(mm)	t
HRMS0821R-2□20	20	21	1
HRMS1026R-2□25	25	26	1
HRMS1333R-2□32	32	33	1
HRMS1335R-2□32	32	35	3
HRMS1340R-3□32	32	40	8
HRMS1550R-3□42	42	50	8
HRMS1563R-4□42	42	63	21

▶ Gap between cutting diameter and shank diameter prevents interference work piece with tool.

Special features of insert



Chip breaker
- Optimized chip flow
- Reduce cutting load

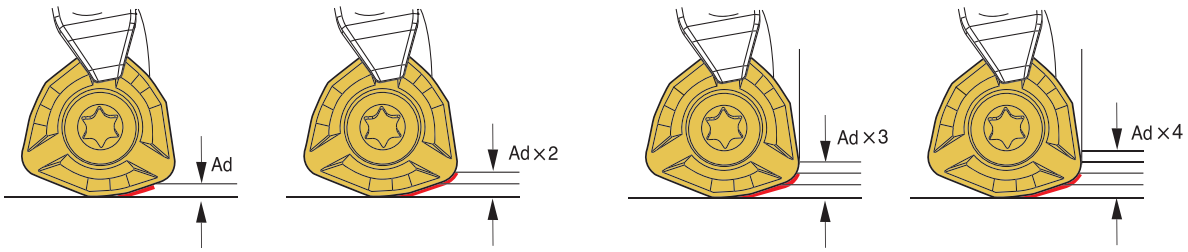
1st cutting edge
- Optimized chip flow
- Reduce cutting load

2nd cutting edge
- Part for increase the cutting edge strength
- High feed rate with low cutting load
- Chip removal rate has been increased due to the 2nd cutting edge

Minor cutting edge
- Provides good surface finish even at high feed rate.
- Special design employed to cut down the cutting load.

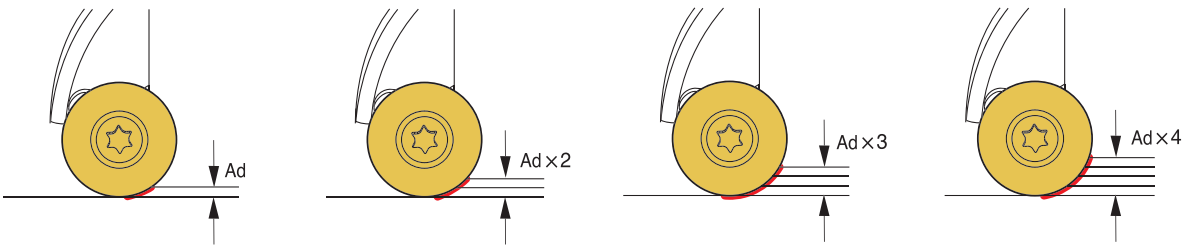
Nose R
- Special design for good performance at taper machining
- Radius style for maximum feed rate

HRM



Deep depth of cut ➞Same cutting load with low depth of cut

Round insert



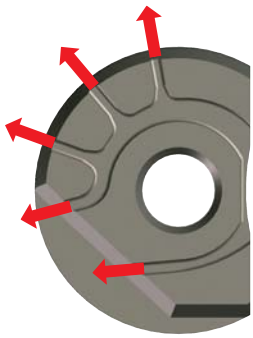
Deep depth of cut ➞Cutting load becomes higher

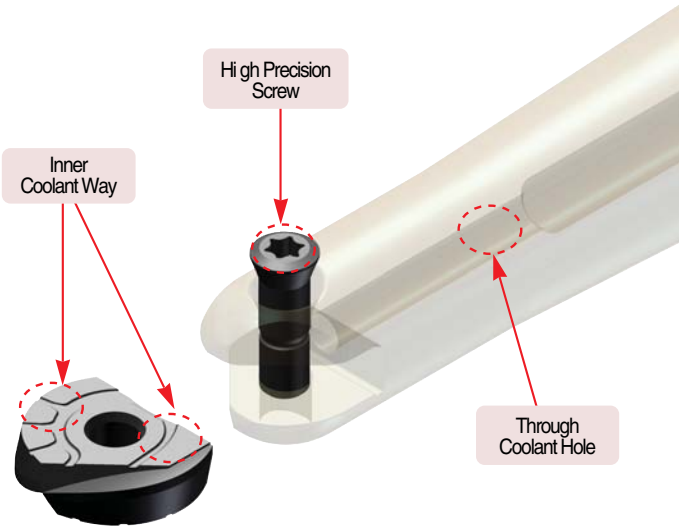
Technical Guide of Laser mill

Special features

- Indexable ball endmill for precise mould finishing.
- Long tool life by combination with various grades.
- Optimum machining is available by applying MQL.
- Simple clamping of insert with a screw.
- Variety of holders including steels shank, carbide shank, modular system.

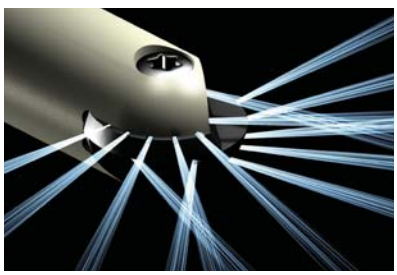
Clamping system





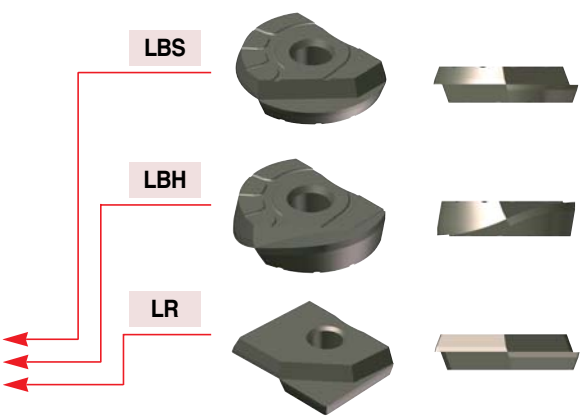
- High quality on precision achieved by insert hole grinding
  - Run-out : under 0.02mm
  - Radius form accuracy : under 0.01mm
- Through coolant system

Special merits of Laser ball endmill



- 3 different type of inserts are available with 1 same holder.
- Same screw is available for 3 different type of insert.
- Variety of holders including steels shank, carbide shank, modular system.
- Long tool life & good surface finish can be acquired by applying MQL.

- Environmental friendly system by applying MQL
- Cost for coolant can be reduced
- Lubrication for cutting edge
- Enhanced quality on chip control
- Supplying coolant directly to the cutting edge
- Longer tool life & better surface finish availalbe

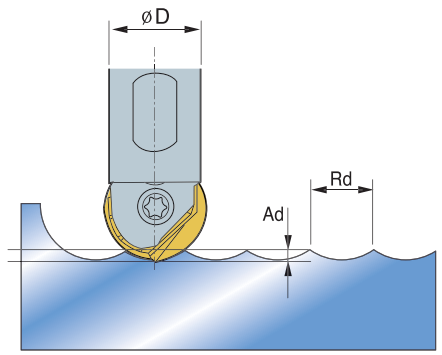


- Straight cutting edge
- Useful for much precise application
- Avaiable with MQL

- Helical cutting edge
- Useful for high feed machining of hard work piece
- Avaiable with MQL

- Straight cutting edge
- Variety of radious for corner radius of insert

Important cutting formula



- V = Cutting speed(m/min)
- D = Cutting diameter(mm)
- F = Feed per a minute(mm/min)
- fz = Feed per tooth(mm/tooth)
- Z_n = Number of tooth
- W = Power requirement(kW)
- H = Horsepower requirement(Hp)
- Q = Chip removal amount(cm^3/min)
- Ad = Axial depth(mm)
- Rd = Radial depth(mm)
- Ks = Specific cutting resistance(kg/mm^2)
- η = Mechanical efficiency(%)

Cutting speed

$$V = \frac{\pi \times D \times N}{1000} \ (m/min)$$

Feed

$$F = fz \times N \times Z_n \ (mm/min)$$

RPM

$$N = \frac{V \times 1000}{\pi \times D} \ (rev/min)$$

Chip removal rate

$$Q = \frac{Ad \times Rd \times F}{1000} \ (cm^3/min)$$

Feed per tooth

$$f_z = \frac{F}{N \times Z_n} \ (mm/tooth)$$

Machine power requirement

$$W = \frac{Q \times Ks}{60 \times 102 \times \eta} \ (kW)$$

$$H = \frac{W}{0.75} \ (Hp)$$

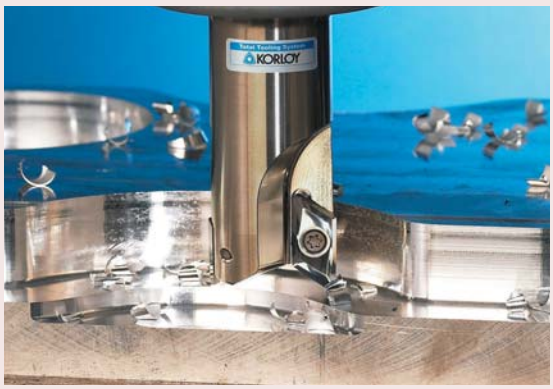
Recommended cutting conditions

Work piece	Hardness (HRC)	Speed V (m/min)	Feed fz (mm/tooth)	Cutter diameter : D(mm)								Depth on axial direction Ad(mm)	Radial depth of cut Rd(mm)
				Ø8	Ø10	Ø12	Ø16	Ø20	Ø25	Ø30	Ø32		
				N	N	N	N	N	N	N	N		
Steel (carbon, alloy)	under 30	100~200	0.2~0.25	6370	5090	4240	3200	2550	2050	1700	1700	D/10	D/10
Steel (carbon, alloy)	30~40	80~150	0.2~0.25	4770	3820	3180	2400	1910	1530	1280	1280	D/15	D/15
Alloy steel for mould	30~40	70~100	0.1~0.15	3180	2550	2120	1600	1280	1020	850	850	D/15	D/15
Cast iron(FC, FCD)	20~30	100~200	0.3~0.35	6370	5090	4240	3200	2550	2050	1700	1700	D/10	D/10
Heat treated steel	55~65	200~250	0.2~0.3	9150	7320	6100	4575	3660	2930	2440	2440	D/30	D/30

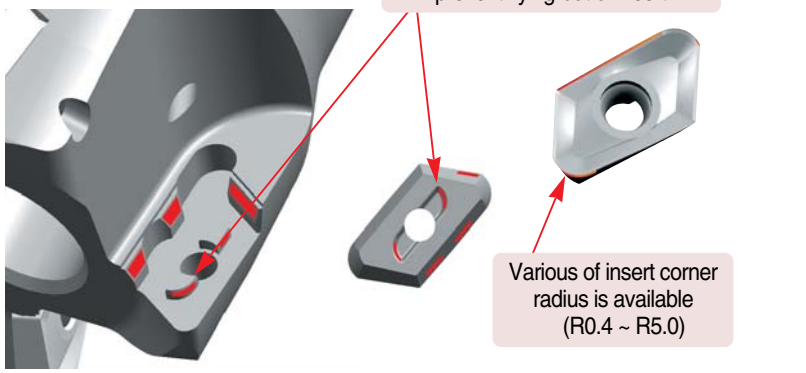
Technical Guide of Pro-X mill

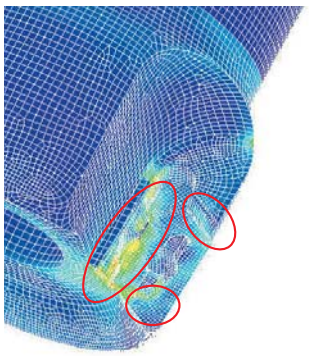
Special features

- Strong clamping due to the concave part of insert bottom side.
- Good chip flow and less build up edge have been acquired due to the special treatment on top of insert.
- High rake angle of insert provides good surface finish and low cutting load
- Specially designed for high speed machining of aluminum.
- Suitable for square shouldering and curved surface machining.



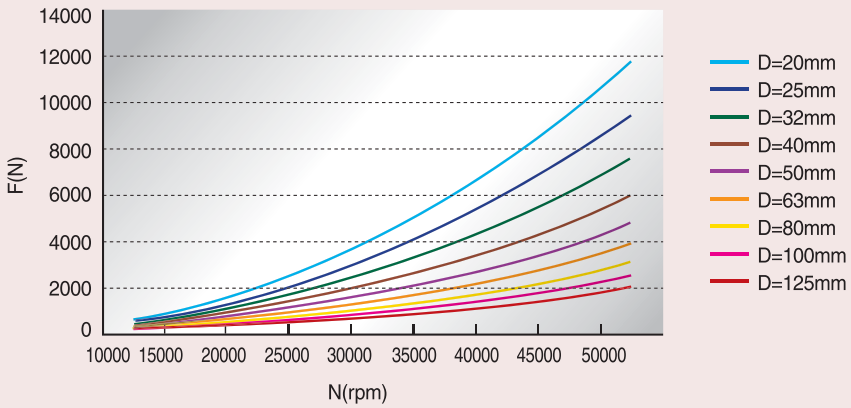
Special clamping system for high speed machining





▶ Clamping design as per FEM analysis. (Cutting load analysis)
▶ Strong clamping of insert

Centrifugal force as per RPM



▶ Marking
[• Designation • Maximum RPM]

Maximum RPM as per cutting diameter

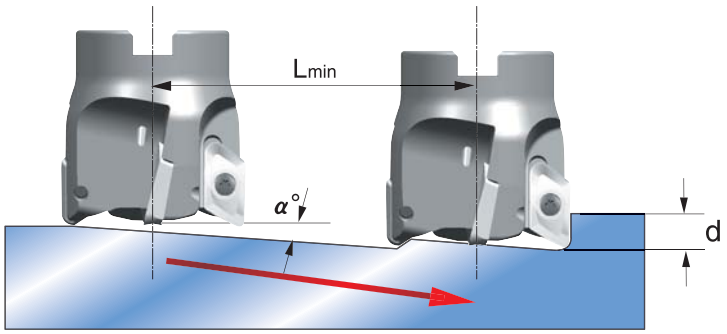
Machining diameter	20	25	32	40	50	63	80	100	125
Maximum RPM	36500	32600	28800	25800	23000	20500	18200	16300	14600

※ The table is a only data for flying-out of insert by centrifugal force at un-loaded condition. In case of actual machining, accidental breakage of insert or tool could happen even under the written RPM. Special cover or door is necessary to prevent damage from broken insert or broken tool.

Recommended cutting condition

Work piece		Cutting speed Vc(m/min)	Feed rate fz(mm/tooth)
Aluminum alloy	Rm < 280 N/mm²	1200	0.3
	Rm > 280 N/mm²	1000	0.25
Cupper alloy	Long chip	400	0.2
Therm-oplastics	-	350	0.15
Aluminum alloys	Si < 12%	1000	0.25
	Si ≥12%	-	-
Cupper alloys	Short chip	500	0.2
Magnesium alloys	-	450	0.2
Duro-plastics	-	200	0.15

Formula for lamping



$$Lmin = \frac{d}{\tan \alpha^{\circ}} \ (mm)$$

※ Lmin : Minimum cutting length for ramping
α° : Ramping angle available
d : Cutting depth

PAXC(M)

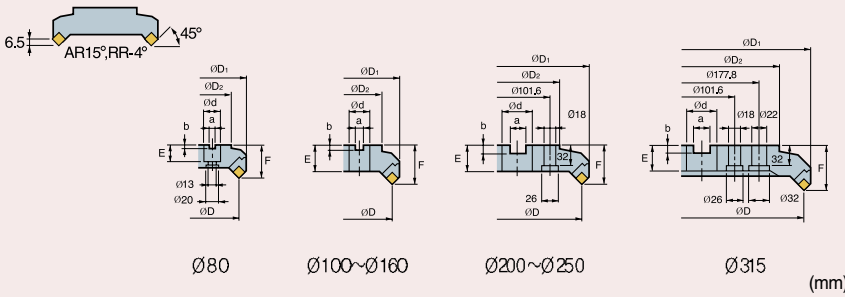
Cutting diameter(Ø)	α°(max)	Lmin
Ø40	11.31	50
Ø50	7.24	78
Ø63	5.10	112
Ø80	3.86	148
Ø100	3.94	145
Ø125	2.14	267

PAXS

Cutting diameter(Ø)	α°(max)	Lmin
Ø20	8.30	68
Ø25	17.95	31
Ø32	12.6	45
Ø40	9.91	57
-	-	-
-	-	-

(In case of d=10mm)

ADN(M)4000

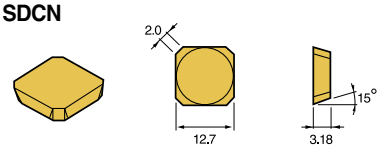


(mm)

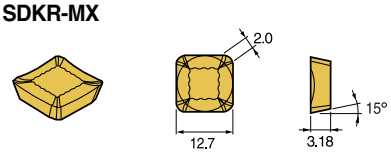
Designation		Stock R	Stock L	øD	øD1	øD2	ød	a	b	E	F		kg
ADN (ADNM)	4080R	●		80	105	57	25.4(27)	9.5(12.4)	6(7)	25(22)	50	4	1.9
	4100R	●	○	100	125	67	31.75(32)	12.7(14.4)	8(8)	32(28)	50	5	2.5
	4125R	●	○	125	149	87	38.1(40)	15.9(16.4)	10(9)	38(30)	63	6	4.3
	4160R	●	○	160	183	107	50.8(40)	19.0(16.4)	11(9)	38(30)	63	8	6.4
	4200R	●	○	200	223	130	47.625(60)	25.4(25.7)	14(14)	38(38)	63	10	8.7
	4250R	●		250	273	180	47.625(60)	25.4(25.7)	14(14)	38(38)	63	12	14.0
	4315R	●		315	338	240	47.625(60)	25.4(25.7)	14(14)	38(38)	63	14	21.0

Available Inserts

SDCN



SDKR-MX



Designation		Coated Insert NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510	Cermet CT10	CN20	CN30		Un-coated Insert H01	G10	ST30A	ST20
SDCN	42M				●										●		
	42MT		●			○											
	42MT-RH																
	42MT-S20							●									
	1203AESN	●															
SDKN	1203AESN-SM					●	●										
SDKR	1203AEN-MX																
	1203AESN-SM					●		○				○					
SDXN	1203AESN-FM					●	●										
SDXR	1203AESN-FM						●										

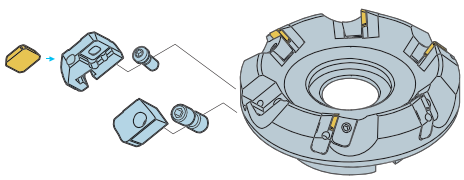
P. 281~284

● : Stock Item ○ : Under preparing for stock

Parts

Locater	Wedge	Wedge Screw	Locater Screw	Wrench
				
LADN4R/L	WEPN4R/L	DHA0821F	LTX0514	HW40

Assembling



Recommended Cutting Condition

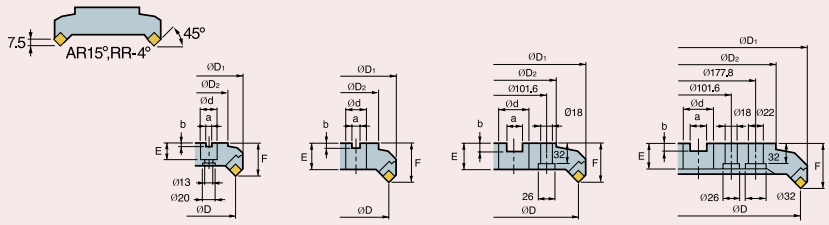
Work piece	Cutting Condition V(m/min)	Cutting Condition fz(mm/tooth)	Grade
P	150 ~ 300	0.05 ~ 0.15	NCM325
	120 ~ 230	0.05 ~ 0.20	PC3535
	100 ~ 200	0.05 ~ 0.20	ST30A
M	50 ~ 200	0.05 ~ 0.20	PC9530
	50 ~ 120	0.05 ~ 0.20	ST30A
K	150 ~ 250	0.05 ~ 0.20	NCM320K
	150 ~ 250	0.05 ~ 0.30	PC6510
	100 ~ 200	0.05 ~ 0.30	G10

Available Arbor & Adapter

Cutter	Arbor	Arbor for NC
ADN 4080R/L	KAFA*□□-3	BT**□□-FMA25.4-□□
4100R/L	KAFA*□□-4	BT**□□-FMA31.75-□□
4125R/L	KAFA*□□-5	BT**□□-FMA38.1-□□
4160R/L	KAFA*□□-6	BT**□□-FMA50.8-□□
4200R/L	KAFA*□□-8, KCP-8***	BT**□□-FMA47.625-□□
4250R/L	KAFA*□□-8, KCP-8***	BT**□□-FMA47.635-□□
4315R/L	KCP-8(Centering plug)	

*□□-NT number **□□-BT number ***Larger than Milling No.5

ADN(M)5000

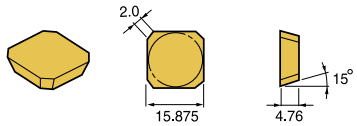


(mm)

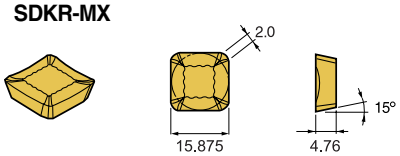
Designation		Stock R	Stock L	øD	øD1	øD2	ød	a	b	E	F		kg
ADN (ADNM)	5080R	●		80	107	57	25.4(27)	9.5(12.4)	6(7)	25(22)	50	4	2.0
	5100R	●	○	100	126	67	31.75(32)	12.7(14.4)	8(8)	32(28)	50	5	2.7
	5125R	●	○	125	150	87	38.1(40)	15.9(16.4)	10(9)	38(30)	63	6	4.3
	5160R	●	○	160	185	107	50.8(40)	19.0(16.4)	11(9)	38(30)	63	8	6.5
	5200R	●	○	200	225	130	47.625(60)	25.4(25.7)	14(14)	38(38)	63	10	9.1
	5250R	●		250	275	180	47.625(60)	25.4(25.7)	14(14)	38(38)	63	12	14.5
	5315R	●		315	340	240	47.625(60)	25.4(25.7)	14(14)	38(38)	63	14	21.0

Available Inserts

SDCN



SDKR-MX



Designation		Coated Insert NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510	Cermet CT10	CN20	CN30	Un-coated Insert H01	G10	ST30A	ST20
SDCN	53M				●									●		
	53MT	●	●			○		○				●			●	
	53MT-RH															
	53MT-S20							●								
	1504AESN															
SDKN	1504AESN-SM					●	●									
SDKR	1504AEN-MX															
	1504AESN-SM					●		○				○				
SDXN	1504AESN-FM					●	●									
SDXR	1504AESN-FM						●									

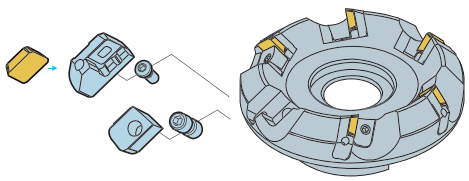
P. 281~284

●: Stock Item ○: Under preparing for stock

Parts

Locater	Wedge	Wedge Screw	Locater Screw	Wrench
				
LADN5R/L	WEPN5R/L	DHA0821F	LTX0514	HW40

Assembling



Recommended Cutting Condition

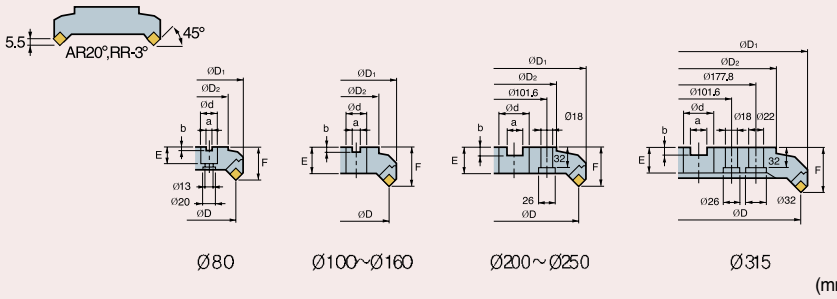
Work piece	Cutting Condition V(m/min)	Cutting Condition fz(mm/tooth)	Grade
P	150 ~ 300	0.05 ~ 0.15	NCM325
	120 ~ 230	0.05 ~ 0.20	PC3535
	100 ~ 200	0.05 ~ 0.20	ST30A
M	50 ~ 200	0.05 ~ 0.20	PC9530
	50 ~ 120	0.05 ~ 0.20	ST30A
K	150 ~ 250	0.05 ~ 0.20	NCM320K
	150 ~ 250	0.05 ~ 0.30	PC6510
	100 ~ 200	0.05 ~ 0.30	G10

Available Arbor & Adapter

Cutter	Arbor	Arbor for NC
ADN 5080R/L	KAFA*□□-3	BT**□□-FMA25.4-□□
5100R/L	KAFA*□□-4	BT**□□-FMA31.75-□□
5125R/L	KAFA*□□-5	BT**□□-FMA38.1-□□
5160R/L	KAFA*□□-6	BT**□□-FMA50.8-□□
5200R/L	KAFA*□□-8, KCP-8***	BT**□□-FMA47.625-□□
5250R/L	KAFA*□□-8, KCP-8***	BT**□□-FMA47.635-□□
5315R/L	KCP-8(Centering plug)	

*□□-NT number **□□-BT number ***Larger than Milling No.5

AE(M)4000

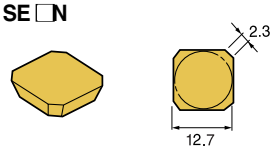


(mm)

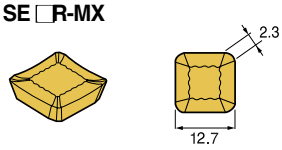
Designation		Stock R	Stock L	ØD	ØD1	ØD2	Ød	a	b	E	F		kg
AE (AEM)	4080R/L	●(○)		80	103	60	25.4(27)	9.5(12.4)	6(7)	25(22)	50	4	1.7
	4100R/L	●(○)		100	122	80	31.75(32)	12.7(14.4)	8(8)	32(28)	50	5	2.9
	4125R/L	●(○)		125	146	100	38.1(40)	15.9(16.4)	10(9)	38(30)	63	6	4.4
	4160R/L	●(○)		160	181	120	50.8(40)	19.0(16.4)	11(9)	38(30)	63	8	6.1
	4200R/L	●(○)		200	220	130	47.625(60)	25.4(25.7)	13.5(14)	38(38)	63	10	8.9
	4250R/L	●(○)		250	270	180	47.625(60)	25.4(25.7)	13.5(14)	38(38)	63	12	15.7
	4315R/L	○(●)		315	335	240	47.625(60)	25.4(25.7)	13.5(14)	38(38)	63	15	25.1

Available Inserts

SE□N



SE□R-MX

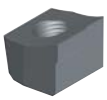


Designation		Coated Insert NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510		Cermet CT10	CN20	CN30		Un-coated Insert H01	G10	ST30A	MA2
SEAN	1203AFFN																	
SECN	1203AFTN					○		○					●				●	
SEKN	1203AFEN			●	●													
	1203AFN																	
	1203AFSN	●	●															
	1203AFTN-S20							●										
SECR	1203AFSN-MX	●	●			●	●	●					●					●
SEKR	1203AFSN-MX	●	●			●	●	●					●					●
	1203AFSN-MF1		●															

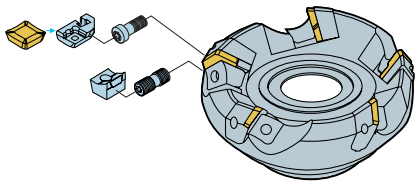
P. 286~289

● : Stock Item ○ : Under preparing for stock

Parts

Locater	Wedge	Wedge Screw	Locater Screw	Wrench
				
LAE4R/L	WAE4R/L	DHA0821F	LTX0512	HW40

Assembling



Recommended Cutting Condition

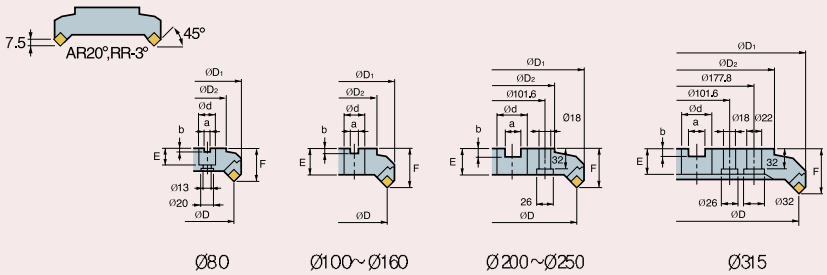
Work piece	Cutting Condition V(m/min)	fz(mm/tooth)	Grade
P	150 ~ 300	0.05 ~ 0.15	NCM325
	120 ~ 230	0.05 ~ 0.20	PC3535
	100 ~ 200	0.05 ~ 0.20	ST30A
M	50 ~ 200	0.05 ~ 0.20	PC9530
	50 ~ 120	0.05 ~ 0.20	ST30A
K	150 ~ 250	0.05 ~ 0.20	NCM320K
	150 ~ 250	0.05 ~ 0.30	PC6510
	100 ~ 200	0.05 ~ 0.30	G10

Available Arbor & Adapter

Cutter	Arbor	Arbor for NC
AE 4080R/L	KAFA*□□-3	BT** □□-FMA25.4-□□
4100R/L	KAFA□□-4	BT □□-FMA31.75-□□
4125R/L	KAFA□□-5	BT □□-FMA38.10-□□
4160R/L	KAFA□□-6	BT □□-FMA50.8-□□
4200R/L	KAFA50.8, KCP-8***	BT □□-FMA47.625-□□
4250R/L	KAFA50.8, KCP-8***	BT □□-FMA47.625-□□
4315R/L	KCP-8(Centering plug)	

*□□-NT number **□□-BT number ***Larger than Milling No.5

AE(M)5000

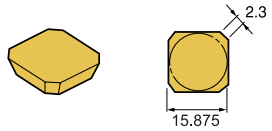


(mm)

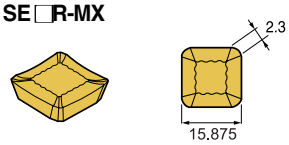
Designation		Stock R	Stock L	øD	øD1	øD2	ød	a	b	E	F		kg
AE (AEM)	5080R/L	○		80	103	60	25.4(27)	9.5(12.4)	6(7)	25(22)	50	4	1.7
	5100R/L	○		100	122	80	31.75(32)	12.7(14.4)	8(8)	32(28)	50	5	2.9
	5125R/L	○		125	146	100	38.1(40)	15.9(16.4)	10(9)	38(30)	63	6	4.4
	5160R/L	○		160	181	120	50.8(40)	19.0(16.4)	11(9)	38(30)	63	8	6.1
	5200R/L	○		200	220	130	47.625(60)	25.4(25.7)	13.5(14)	38(38)	63	10	8.9
	5250R/L			250	270	180	47.625(60)	25.4(25.7)	13.5(14)	38(38)	63	12	15.7
	5315R/L			315	335	240	47.625(60)	25.4(25.7)	13.5(14)	38(38)	63	15	25.1

Available Inserts

SE□N



SE□R-MX

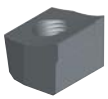


Designation		Coated Insert NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510		Cermet CT10	CN20	CN30		Un-coated Insert H01	G10	ST30A	ST20
SEAN	1504AFFN																	
SECN	1504AFTN								○						○	○		
SEKN	1504AFEN			●	●													
	1504AFSN	●	●															
SEKR	1504AFSN-MX	●	●				○											

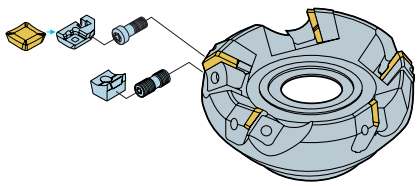
P. 286~289

●: Stock Item ○: Under preparing for stock

Parts

Locater	Wedge	Wedge Screw	Locater Screw	Wrench
				
LAE5R/L	WAE5R/L	DHA0821F	LTX0512	HW40

Assembling



Recommended Cutting Condition

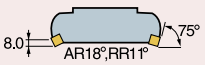
Work piece	Cutting Condition V(m/min)	Cutting Condition fz(mm/tooth)	Grade
P	150 ~ 300	0.05 ~ 0.15	NCM325
	120 ~ 230	0.05 ~ 0.20	PC3535
	100 ~ 200	0.05 ~ 0.20	ST30A
M	50 ~ 200	0.05 ~ 0.20	PC9530
	50 ~ 120	0.05 ~ 0.20	ST30A
K	150 ~ 250	0.05 ~ 0.20	NCM320K
	150 ~ 250	0.05 ~ 0.30	PC6510
	100 ~ 200	0.05 ~ 0.30	G10

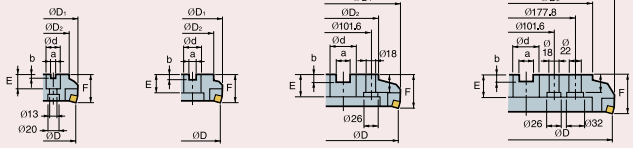
Available Arbor & Adapter

Cutter	Arbor	Arbor for NC
AE 5080R/L	KAFA*□□-3	BT** □□-FMA25.4-□□
5100R/L	KAFA□□-4	BT □□-FMA31.75-□□
5125R/L	KAFA□□-5	BT □□-FMA38.10-□□
5160R/L	KAFA□□-6	BT □□-FMA50.8-□□
5200R/L	KAFA50.8, KCP-8***	BT □□-FMA47.625-□□
5250R/L	KAFA50.8, KCP-8***	BT □□-FMA47.625-□□
5315R/L	KCP-8(Centering plug)	

*□□-NT number **□□-BT number ***Larger than Milling No.5

EF(M)4000





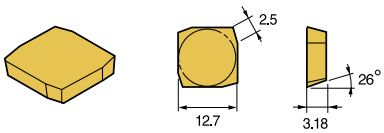
Ø80 Ø100~Ø160 Ø200~Ø250 Ø315

(mm)

Designation		Stock R	Stock L	øD	øD1	øD2	ød	a	b	E	F		kg
EF (EFM)	4080R/L	●		80	89	57	25.4(27)	9.5(12.4)	6(7)	25(22)	50	4	1.5
	4100R/L	●		100	108	70	31.75(32)	12.7(14.4)	8(8)	32(28)	50	5	2.1
	4125R/L	●		125	133	87	38.1(40)	15.9(16.4)	10(9)	38(30)	63	6	3.8
	4160R/L	●		160	168	107	50.8(40)	19.0(16.4)	11(9)	38(30)	63	8	5.5
	4200R/L	●		200	208	130	47.625(60)	25.4(25.7)	13.5(14)	38(38)	63	10	8.2
	4250R/L	●		250	257	180	47.625(60)	25.4(25.7)	13.5(14)	38(38)	63	12	13.4
	4315R/L	●		315	322	240	47.625(60)	25.4(25.7)	13.5(14)	38(38)	63	16	21.2

Available Inserts

SF□N



Designation		Coated Insert NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510	Cermet CT10	CN20	CN30		Un-coated Insert H01	G10	ST30A	ST20
SFAN	1203EFR																
SFCN	1203EFR							○						●	●		

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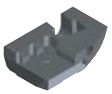
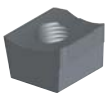
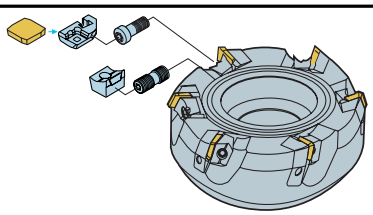
● : Stock Item ○ : Under preparing for stock

Parts

Locater	Wedge	Wedge Screw	Locater Screw	Wrench
				
LEF4R/L LEF4R1*/L1*	WEFR/L	DHA0821F	LTX0512	HW40

* For Ø80~Ø125

Assembling



Recommended Cutting Condition

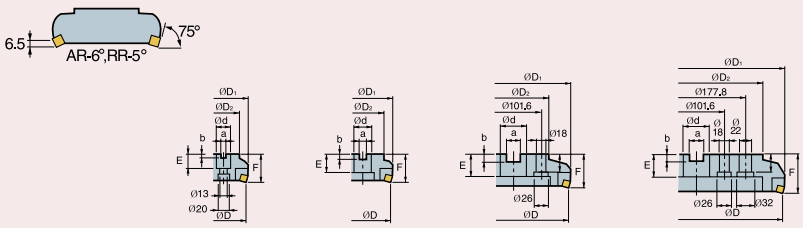
Work piece	Cutting Condition V(m/min)	Cutting Condition fz(mm/tooth)	Grade
P	-	-	-
M	-	-	-
K	400 ~ 500	0.05 ~ 0.20	H01

Available Arbor & Adapter

Cutter	Arbor	Arbor for NC
EF 4080R/L	KAFA*□□-3	BT** □□-FMA25.4-□□
4100R/L	KAFA□□-4	BT □□-FMA31.75-□□
4125R/L	KAFA□□-5	BT □□-FMA38.10-□□
4160R/L	KAFA□□-6	BT □□-FMA50.8-□□
4200R/L	KAFA50.8, KCP-8***	BT □□-FMA47.625-□□
4250R/L	KAFA50.8, KCP-8***	BT □□-FMA47.625-□□
4315R/L	KCP-8(Centering plug)	

*□□-NT number **□□-BT number ***Larger than Milling No.5

EN(M)4000

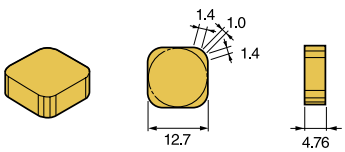


(mm)

Designation		Stock R	Stock L	øD	øD1	øD2	ød	a	b	E	F		kg
EN (ENM)	4080R/L	●		80	87	57	25.4(27)	9.5(12.4)	6(7)	25(22)	50	5	1.4
	4100R/L	●	○	100	107	67	31.75(32)	12.7(14.4)	8(8)	32(28)	50	6	2.1
	4125R/L	●	●	125	132	87	38.1(40)	15.9(16.4)	10(9)	38(30)	63	8	3.8
	4160R/L	●	●	160	167	107	50.8(40)	19.0(16.4)	11(9)	38(30)	63	10	5.7
	4200R/L	●	●	200	207	130	47.625(60)	25.4(25.7)	13.5(14)	38(38)	63	12	8.4
	4250R/L	●		250	257	180	47.625(60)	25.4(25.7)	13.5(14)	38(38)	63	16	13.8
	4315R/L			315	322	240	47.625(60)	25.4(25.7)	13.5(14)	38(38)	63	20	21.6

Available Inserts

SN□N



Designation		Coated Insert NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510	Cermet CT10	CN20	CN30		Un-coated Insert H01	G10	ST30A	ST20
SNCN	1204ENN	●													●	●	●
SNKN	1204ENN	○		○	●				●								

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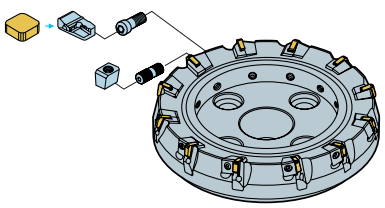
●: Stock Item ○: Under preparing for stock

Parts

Locater	Wedge	Wedge Screw	Locater Screw	Wrench
				
LEN4R/L	WENR/L WENR1*/L1*	DHA0830 DHA0825*	LTX0512	HW40

Assembling



* For Ø80~Ø100

Recommended Cutting Condition

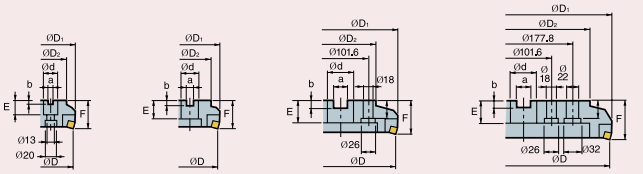
Work piece	Cutting Condition V(m/min)	Cutting Condition fz(mm/tooth)	Grade
P	150 ~ 300	0.10 ~ 0.25	NCM325
	120 ~ 230	0.10 ~ 0.30	PC3535
	100 ~ 180	0.10 ~ 0.30	ST30A
M	50 ~ 200	0.10 ~ 0.25	PC9530
	80 ~ 140	0.10 ~ 0.25	ST30A
K	150 ~ 250	0.10 ~ 0.25	NCM320K
	150 ~ 250	0.10 ~ 0.30	PC6510
	100 ~ 250	0.10 ~ 0.30	G10

Available Arbor & Adapter

Cutter	Arbor	Arbor for NC
EN 4080R/L	KAFA*□□-3	BT** □□-FMA25.4-□□
4100R/L	KAFA□□-4	BT □□-FMA31.75-□□
4125R/L	KAFA□□-5	BT □□-FMA38.10-□□
4160R/L	KAFA□□-6	BT □□-FMA50.8-□□
4200R/L	KAFA50.8, KCP-8***	BT □□-FMA47.625-□□
4250R/L	KAFA50.8, KCP-8***	BT □□-FMA47.625-□□
4315R/L	KCP-8(Centering plug)	

*□□-NT number **□□-BT number ***Larger than Milling No.5

EPN(M)4000

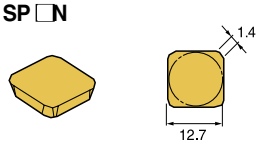


(mm)

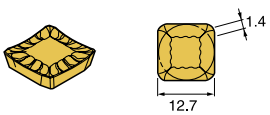
Designation		Stock R	Stock L	ØD	ØD1	ØD2	Ød	a	b	E	F		kg
EPN (EPNM)	4080R/L	●		80	83	57	25.4(27)	9.5(12.4)	6(7)	25(22)	50	5	1.4
	4100R/L	●		100	107	67	31.75(32)	12.7(14.4)	8(8)	32(28)	50	6	2.1
	4125R/L	●		125	132	87	38.1(40)	15.9(16.4)	10(9)	38(30)	63	8	3.8
	4160R/L	●		160	166	107	50.8(40)	19.0(16.4)	11(9)	38(30)	63	10	5.7
	4200R/L	●		200	206	130	47.625(60)	25.4(25.7)	14(14)	38(38)	63	12	8.2
	4250R/L	●		250	256	180	47.625(60)	25.4(25.7)	14(14)	38(38)	63	16	13.5
	4315R/L	●		315	321	240	47.625(60)	25.4(25.7)	14(14)	38(38)	63	20	21.1

Available Inserts

SP□N



SP□R-MX

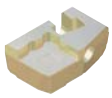


Designation		Coated Insert NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510	Cermet CT10	CN20	CN30		Un-coated Insert H01	G10	ST30A	ST20
SPCN	1203EDR	●	●	●	●	○						●		●	●	●	●
	1203EDR-S20							●									
	1203EDER-RH					○			●								
	1203EDTR-RH																
	1203EDSR-RH					●			●								
SPKN	1203EDSR																
	1203EDSR-SM					●	●		●								
SPKR	1203EDSR-MX																
	1203EDSR-SM	○				●											

P. 293~296

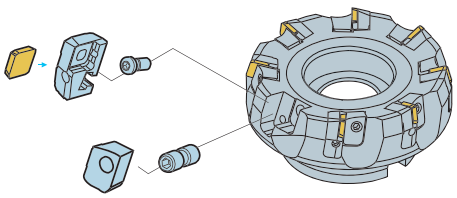
● : Stock Item ○ : Under preparing for stock

Parts

Locater	Wedge	Wedge Screw	Locater Screw	Wrench
				
LEPN4R/L *LEPN4R1/L1	WEPN4R/L	DHA0821F *DHA0818F	LTX0514	HW40

* For Ø80~ Ø100

Assembling



Recommended Cutting Condition

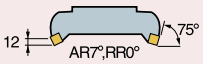
Work piece	Cutting Condition V(m/min)	Cutting Condition fz(mm/tooth)	Grade
P	150 ~ 300	0.05 ~ 0.15	NCM325
	120 ~ 230	0.05 ~ 0.20	PC3535
	100 ~ 200	0.05 ~ 0.20	ST30A
M	50 ~ 200	0.05 ~ 0.20	PC9530
	50 ~ 120	0.05 ~ 0.20	ST30A
K	150 ~ 250	0.05 ~ 0.20	NCM320K
	150 ~ 250	0.05 ~ 0.30	PC6510
	100 ~ 200	0.05 ~ 0.30	G10

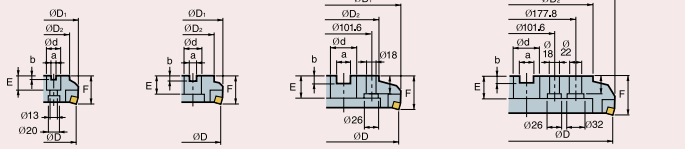
Available Arbor & Adapter

Cutter	Arbor	Arbor for NC
EPN 4080R/L	KAFA*□□-3	BT** □□-FMA25.4-□□
4100R/L	KAFA*□□-4	BT** □□-FMA31.75-□□
4125R/L	KAFA*□□-5	BT** □□-FMA38.1-□□
4160R/L	KAFA*□□-6	BT** □□-FMA50.8-□□
4200R/L	KAFA*□□-8, KCP-8***	BT** □□-FMA47.625-□□
4250R/L	KAFA*□□-8, KCP-8***	BT** □□-FMA47.635-□□
4315R/L	KCP-8(Centering plug)	

*□□-NT number **□□-BT number ***Larger than Milling No.5

EPN(M)5000



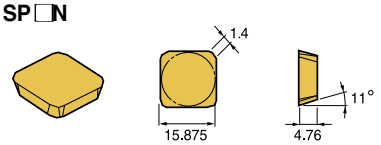


(mm)

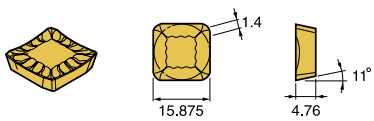
Designation		Stock R	Stock L	øD	øD1	øD2	ød	a	b	E	F		kg
EPN (EPNM)	5080R/L	●		80	91	57	25.4(27)	9.5(12.4)	6(7)	25(22)	50	5	1.5
	5100R/L	●		100	110	67	31.75(32)	12.7(14.4)	8(8)	32(28)	50	6	2.1
	5125R/L	●		125	134	87	38.1(40)	15.9(16.4)	10(9)	38(30)	63	8	3.9
	5160R/L	●		160	169	107	50.8(40)	19.0(16.4)	11(9)	38(30)	63	10	5.7
	5200R/L	●		200	209	130	47.625(60)	25.4(25.7)	14(14)	38(38)	63	12	8.4
	5250R/L	●		250	259	180	47.625(60)	25.4(25.7)	14(14)	38(38)	63	16	13.6
	5315R/L	●		315	324	240	47.625(60)	25.4(25.7)	14(14)	38(38)	63	20	21.6

Available Inserts

SP□N



SP□R-MX

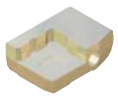


Designation		Coated Insert NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510		Cermet CT10	CN20	CN30		Un-coated Insert H01	G10	ST30A	ST20
SPCN	1504EDR	●		●	●	○							●			●	●	●
	1504EDR-S20																	
	1504EDER-RH																	
	1504EDER-RH					○			●									
	1504EDSR-RH					●			●									
	1504EDSR							●										
SPKN	1504EDSR-SM					●	●	○	○									
SPKR	1504EDSR-MX		●			○												
	1504EDSR-SM																	

P. 293~296

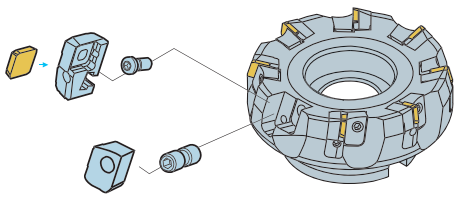
●: Stock Item ○: Under preparing for stock

Parts

Locater	Wedge	Wedge Screw	Locater Screw	Wrench
				
LEPN5R/L *LEPN5R1/L1	WEPN5R/L	DHA0821F *DHA0818F	LTX0514	HW40

* For Ø80~Ø100

Assembling



Recommended Cutting Condition

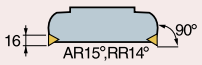
Work piece	Cutting Condition V(m/min)	Cutting Condition fz(mm/tooth)	Grade
P	150 ~ 300	0.05 ~ 0.15	NCM325
	120 ~ 230	0.05 ~ 0.20	PC3535
	100 ~ 200	0.05 ~ 0.20	ST30A
M	50 ~ 200	0.05 ~ 0.20	PC9530
	50 ~ 120	0.05 ~ 0.20	ST30A
K	150 ~ 250	0.05 ~ 0.20	NCM320K
	150 ~ 250	0.05 ~ 0.30	PC6510
	100 ~ 200	0.05 ~ 0.30	G10

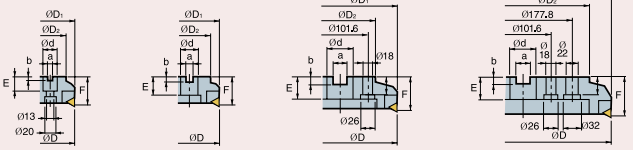
Available Arbor & Adapter

Cutter	Arbor	Arbor for NC
EPN 5080R/L	KAFA*□□-3	BT** □□-FMA25.4-□□
5100R/L	KAFA*□□-4	BT** □□-FMA31.75-□□
5125R/L	KAFA*□□-5	BT** □□-FMA38.1-□□
5160R/L	KAFA*□□-6	BT** □□-FMA50.8-□□
5200R/L	KAFA*□□-8, KCP-8***	BT** □□-FMA47.625-□□
5250R/L	KAFA*□□-8, KCP-8***	BT** □□-FMA47.635-□□
5315R/L	KCP-8(Centering plug)	

*□□-NT number **□□-BT number ***Larger than Milling No.5

PF(M)4000



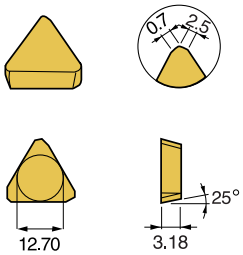


(mm)

Designation		Stock R	Stock L	ØD	ØD1	ØD2	Ød	a	b	E	F		kg
PF (PFM)	4080R/L	●	○	80	78.6	57	25.4(27)	9.5(12.4)	6(7)	25(22)	50	4	1.2
	4100R/L	●	○	100	97	67	31.75(32)	12.7(14.4)	8(8)	32(28)	50	4	1.8
	4125R/L	●	○	125	122	87	38.1(40)	15.9(16.4)	10(9)	38(30)	63	7	3.1
	4160R/L	●	○	160	158	107	50.8(40)	19.0(16.4)	11(9)	38(30)	63	9	5.6
	4200R/L			200	197	130	47.625(60)	25.4(25.7)	13.5(14)	38(38)	63	11	8.8
	4250R/L			250	247	180	47.625(60)	25.4(25.7)	13.5(14)	38(38)	63	15	16
	4315R/L			315	311	240	47.625(60)	25.4(25.7)	13.5(14)	38(38)	63	19	22

Available Inserts

TF□N



Designation		Coated Insert NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510	Cermet CT10	CN20	CN30		Un-coated Insert H01	G10	ST30A	ST20
TFAN	2203PFR																
	2203PFL																
TFCN	2203PFR													●			
	2203PFL													●			

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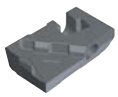
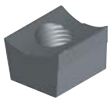
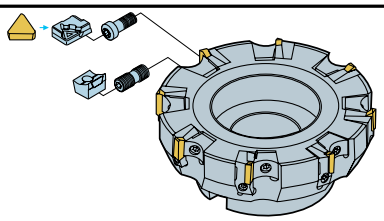
● : Stock Item ○ : Under preparing for stock

Parts

Locater	Wedge	Wedge Screw	Locater Screw	Wrench
				
LPF4R/L LPF4R1**/L1**	WPFR/L	DHA0821F DHA0818F*	LTX0512	HW40

* For Ø80~Ø100 ** For Ø80~Ø125

Assembling



Recommended Cutting Condition

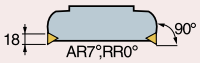
Work piece	Cutting Condition V(m/min)	Cutting Condition fz(mm/tooth)	Grade
P	150 ~ 300	0.05 ~ 0.15	NCM325
	120 ~ 230	0.05 ~ 0.20	PC3535
	100 ~ 200	0.05 ~ 0.20	ST30A
M	50 ~ 200	0.05 ~ 0.20	PC9530
	50 ~ 120	0.05 ~ 0.20	ST30A
K	150 ~ 250	0.05 ~ 0.20	NCM320K
	150 ~ 250	0.05 ~ 0.30	PC6510
	100 ~ 200	0.05 ~ 0.30	G10

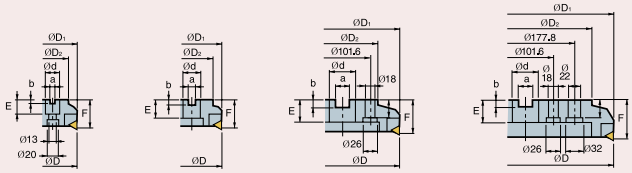
Available Arbor & Adapter

Cutter	Arbor	Arbor for NC
EP 5080R/L	KAFA*□□-3	BT** □□-FMA25.4-□□
5100R/L	KAFA□□-4	BT □□-FMA31.75-□□
5125R/L	KAFA□□-5	BT □□-FMA38.10-□□
5160R/L	KAFA□□-6	BT □□-FMA50.8-□□
5200R/L	KAFA50.8, KCP-8***	BT □□-FMA47.625-□□
5250R/L	KAFA50.8, KCP-8***	BT □□-FMA47.635-□□
5315R/L	KCP-8(Centering plug)	

*□□-NT number **□□-BT number ***Larger than Milling No.5

PPN(M)4000



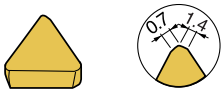


(mm)

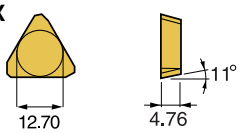
Designation		Stock R	Stock L	øD	øD1	øD2	ød	a	b	E	F		kg
PPN (PPNM)	4080R/L	●(○)		80	79	57	25.4(27)	9.5(12.4)	6(7)	25(22)	50	5	1.3
	4100R/L	●(○)		100	99	67	31.75(32)	12.7(14.4)	8(8)	32(28)	50	6	1.9
	4125R/L	●(○)		125	124	87	38.1(40)	15.9(16.4)	10(9)	38(30)	63	8	3.5
	4160R/L	●(○)		160	158	107	50.8(40)	19.0(16.4)	11(9)	38(30)	63	10	5.6
	4200R/L	●(○)		200	198	130	47.625(60)	25.4(25.7)	14(14)	38(38)	63	12	8.1
	4250R/L	●		250	248	180	47.625(60)	25.4(25.7)	14(14)	38(38)	63	16	13.3
	4315R/L	●		315	313	240	47.625(60)	25.4(25.7)	14(14)	38(38)	63	20	21.4

Available Inserts

TP□N



TPKR-MX

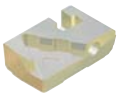


Designation		Coated Insert NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510	Cermet CT10	CN20	CN30	Un-coated Insert H01	G10	ST30A	ST20
TPCN	2204PDR	●		●	●				○			●		●	●	●
	2204PDR-RH					●		○	●							
	2204PDR-S20							●								
	2204PDER-RH					○		○	●							
	2204PDSR-RH					●		○	●							
TPKN	2204PDSR	●														
	2204PDSR-SM	○				●	●		○							
TPKR	2204PDSR-MX		●													
	2204PDSR-SM					●		○				○				
TPXN	2204PDSR-FM					●	●									

P. 298~300

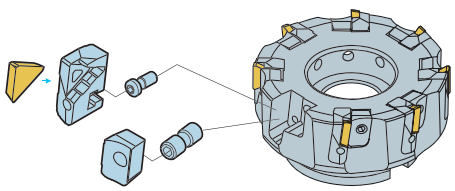
●: Stock Item ○: Under preparing for stock

Parts

Locater	Wedge	Wedge Screw	Locater Screw	Wrench
				
LPPN4R/L *LPPN4R1/L1	WPPN4R/L	DHA081F *DHA0818F	LTX0514	HW40

* For Ø80~Ø100

Assembling



Recommended Cutting Condition

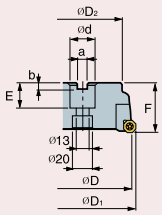
Work piece	Cutting Condition V(m/min)	Cutting Condition fz(mm/tooth)	Grade
P	150 ~ 300	0.05 ~ 0.15	NCM325
	120 ~ 230	0.05 ~ 0.20	PC3535
	100 ~ 200	0.05 ~ 0.20	ST30A
M	50 ~ 200	0.05 ~ 0.20	PC9530
	50 ~ 120	0.05 ~ 0.20	ST30A
K	150 ~ 250	0.05 ~ 0.20	NCM320K
	150 ~ 250	0.05 ~ 0.30	PC6510
	100 ~ 200	0.05 ~ 0.30	G10

Available Arbor & Adapter

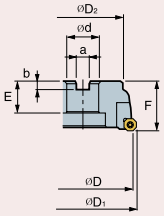
Cutter	Arbor	Arbor for NC
PPN 4080R/L	KAFA*□□-3	BT** □□-FMA25.4-□□
4100R/L	KAFA*□□-4	BT** □□-FMA31.75-□□
4125R/L	KAFA*□□-5	BT** □□-FMA38.1-□□
4160R/L	KAFA*□□-6	BT** □□-FMA50.8-□□
4200R/L	KAFA*□□-8, KCP-8***	BT** □□-FMA47.625-□□
4250R/L	KAFA*□□-8, KCP-8***	BT** □□-FMA47.635-□□
4315R/L	KCP-8(Centering plug)	

*□□-NT number **□□-BT number ***Larger than Milling No.5

AFO(M)4000



Ø100~Ø160



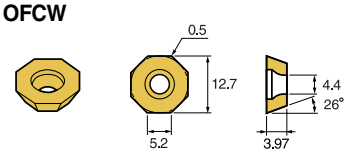
Ø200~Ø250

(mm)

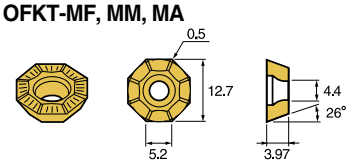
Designation		Stock R	Stock L	ØD	ØD₁	ØD₂	Ød	a	b	E	F		kg
AFO (AFOM)	4080R/L	○(●)		80	88	60	25.4(27)	9.5(12.4)	6(7)	25(22)	50	5	1.4
	4100R/L	○(●)		100	108	80	31.75(32)	12.7(14.4)	8(8)	32(28)	50	6	2.0
	4125R/L	○(●)		125	133	100	38.1(40)	15.9(16.4)	10(9)	38(30)	63	8	3.1

Available Inserts

OFCW



OFKT-MF, MM, MA



Designation		Coated Insert NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510	PC230	Cermet CT10	CN20	CN30		Un-coated Insert H01	G10	ST30A	ST20
OFCW	05T3SN	●				○				○								
	05T3FN																	
	05T308FN	○						○	○	○								
OFKT	05T3SN-MF	●	●		●	○												
	05T308SN-MF																	
	05T3SN-MM	●	●	●	●	○												
	05T308SN-MM																	
	05T3FN-MA														●			
	05T3EN-MA																	

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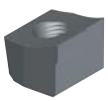
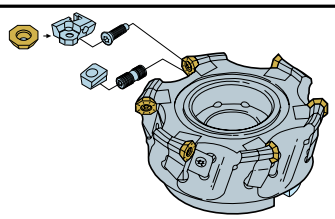
● : Stock Item ○ : Under preparing for stock

Parts

Locater	Wedge	Wedge Screw	Screw	Wrench
				
LAFO4R/L	WAFO4R/L	DHA0815	FTKA0408	TW15S

Assembling



Recommended Cutting Condition

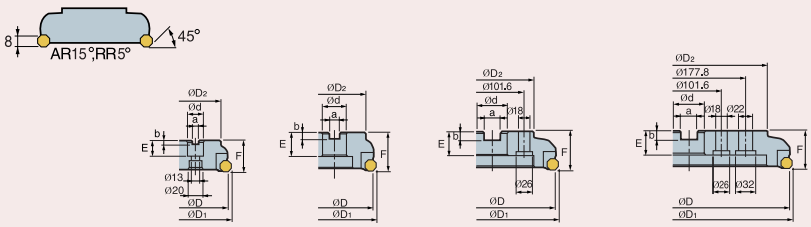
Work piece	Cutting Condition V(m/min)	Cutting Condition fz(mm/tooth)	Grade
P	150 ~ 300	0.05 ~ 0.15	NCM325
	120 ~ 230	0.05 ~ 0.20	PC3535
	100 ~ 200	0.05 ~ 0.20	ST30A
M	50 ~ 200	0.05 ~ 0.20	PC9530
	50 ~ 120	0.05 ~ 0.20	ST30A
K	150 ~ 250	0.05 ~ 0.20	NCM320K
	150 ~ 250	0.05 ~ 0.30	PC6510
	100 ~ 200	0.05 ~ 0.30	G10

Available Arbor & Adapter

Cutter	Arbor	Arbor for NC
AFO 4080R/L	KAFA*□□-3	BT**□□-FMA25.4-□□
4100R/L	KAFA□□-4	BT□□-FMA31.75-□□
4125R/L	KAFA□□-5	BT□□-FMA38.10-□□

*□□-NT number **□□-BT number ***Larger than Milling No.5

AFO(M)5000

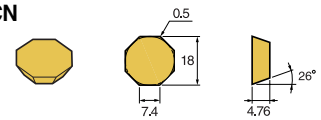


(mm)

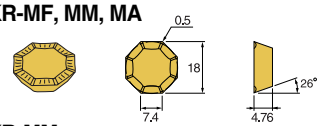
Designation		Stock R	Stock L	ØD	ØD₁	ØD₂	Ød	a	b	E	F		kg
AFO (AFOM)	5080R/L	●(○)		80	91	60	25.4(27)	9.5(12.4)	6(7)	25(22)	50	5	1.4
	5100R/L	●(○)		100	111	80	31.75(32)	12.7(14.4)	8(8)	32(28)	50	6	2.0
	5125R/L	●(○)		125	136	100	38.1(40)	15.9(16.4)	10(9)	38(30)	63	8	3.1
	5160R/L	●(○)		160	171	120	50.8(40)	19.0(16.4)	11(9)	38(38)	63	10	5.2
	5200R/L	●		200	211	130	47.625(60)	25.4(25.7)	13.5(14)	38(38)	63	12	7.5
	5250R/L			250	261	180	47.625(60)	25.4(25.7)	13.5(14)	38(38)	63	16	16.1
	5315R/L			315	326	240	47.625(60)	25.4(25.7)	13.5(14)	38(38)	63	20	22.8

Available Inserts

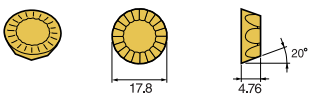
OFCN



OFKR-MF, MM, MA



REKR-MM



Designation		Coated Insert NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510	Cermet CT10	CN20	CN30		Un-coated Insert H01	G10	ST30A	ST20
OFCN	0704SN	●				●	●		●								
	0704FN	○		○		○			○								
	070408SN							○				○					
	070408FN							○				○					
OFKR	0704SN-MF	●	●		●	○		○	○								
	070408SN-MF																
	0704SN-MM	●	●		●	●	●	●	●								
	070408SN-MM																
	0704FN-MA													●			
	0704EN-MA																
REKR	170400-MM	○				○		○	○								

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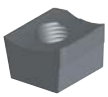
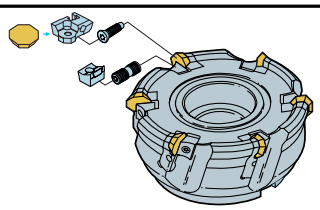
●: Stock Item ○: Under preparing for stock

Parts

Locater	Wedge	Wedge Screw	Screw	Wrench
				
LAFO5R/L *LAFO5R/L-1	WEFR/L	DHA0821F	LTX0512	HW40

* For Ø80~Ø100

Assembling



Recommended Cutting Condition

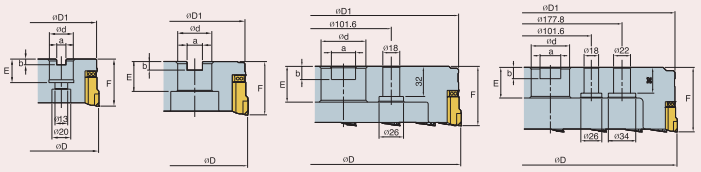
Work piece	Cutting Condition V(m/min)	Cutting Condition fz(mm/tooth)	Grade
P	150 ~ 300	0.05 ~ 0.15	NCM325
	120 ~ 230	0.05 ~ 0.20	PC3535
	100 ~ 200	0.05 ~ 0.20	ST30A
M	50 ~ 200	0.05 ~ 0.20	PC9530
	50 ~ 120	0.05 ~ 0.20	ST30A
K	150 ~ 250	0.05 ~ 0.20	NCM320K
	150 ~ 250	0.05 ~ 0.30	PC6510
	100 ~ 200	0.05 ~ 0.30	G10

Available Arbor & Adapter

Cutter	Arbor	Arbor for NC
AFO 5080R/L	KAFA*□□-3	BT** □□-FMA25.4-□□
5100R/L	KAFA□□-4	BT □□-FMA31.75-□□
5125R/L	KAFA□□-5	BT □□-FMA38.10-□□
5160R/L	KAFA□□-6	BT □□-FMA50.8-□□
5200R/L	KAFA50.8, KCP-8***	BT □□-FMA47.625-□□
5250R/L	KAFA50.8, KCP-8***	BT □□-FMA47.625-□□
5315R/L	KCP-8(Centering plug)	

*□□-NT number **□□-BT number ***Larger than Milling No.5

APD(M) A type



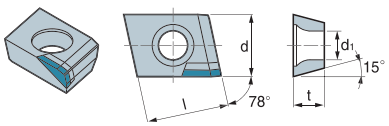
Ø80 Ø100~Ø160 Ø200~Ø250 Ø315

(mm)

Designation		Stock R	Stock L	øD	øD1	ød	a	b	E	F		kg
APD (APDM)	080R/L-A6Z	●(●)		80	76	25.4(27)	9.5(12.4)	6(7)	25(22)	50	6	0.75
	100R/L-A6Z	●(●)		100	95	31.75(32)	12.7(14.4)	8(8)	32(28)	50	6	0.95
	125R/L-A8Z	●(●)		125	120	38.1(40)	15.9(16.4)	10(9)	38(30)	63	8	1.8
	160R/L-A10Z			160	155	50.8(40)	19.0(16.4)	11(9)	38(30)	63	10	2.9
	200R/L-A12Z			200	195	47.625(60)	25.4(25.7)	13.5(14)	38(38)	63	12	4.0
	250R/L-A16Z			250	245	47.625(60)	25.4(25.7)	13.5(14)	38(38)	63	16	6.3
	315R/L-A18Z			315	310	47.625(60)	25.4(25.7)	13.5(14)	38(38)	80	18	11.3

Available Inserts

CDEW



Designation		PCD DP150	PCD DP200	PCD DP2200	Cermet CT10	Cermet CN20	Cermet CN30	Un-coated Insert H01	Un-coated Insert G10	Un-coated Insert ST30A	Un-coated Insert ST20
CDEW	1204R/L-XCF							●			
	1204R/L-XAF		●								
	1204R/L-XAW		●								
	1204R/L-NAF		●								
	1204R/L-NAW		●								

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● : Stock Item ○ : Under preparing for stock

Parts

Cartridge	Chip cover	Screw: For chip cover	Screw: For insert	Screw: For height control	Screw: For cartridge	Wrench: For insert	Wrench: For cartridge
							
LAPDR/L-AJ	CAPDR/L-AJ	PTMA0411	FTNA0411	AZ0514	BHA0616	TW15S	HW50

Recommended Cutting Condition

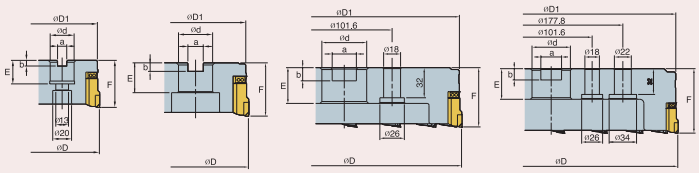
Work piece	Cutting Condition V(m/min)	Cutting Condition fz(mm/tooth)	Grade
Aluminum	1,000 ~ 4,000	0.05 ~ 0.30	DP200
	500 ~ 2,500	0.05 ~ 0.20	H01

Available Arbor & Adapter

Cutter	Arbor	Arbor for NC
APD 080R/L	KAFA*□□-3	BT** □□-FMA25.4-□□
100R/L	KAFA□□-4	BT □□-FMA31.75-□□
125R/L	KAFA□□-5	BT □□-FMA38.10-□□
160R/L	KAFA□□-6	BT □□-FMA50.8-□□
200R/L	KAFA50.8, KCP-8***	BT □□-FMA47.625-□□
250R/L	KAFA50.8, KCP-8***	BT □□-FMA47.625-□□
315R/L	KCP-8(Centering plug)	

*□□-NT number **□□-BT number ***Larger than Milling No.5

APD(M) B type



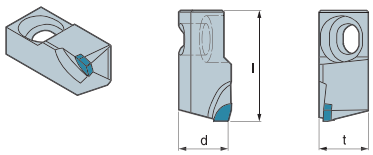
Ø80 Ø100~Ø160 Ø200~Ø250 Ø315

(mm)

Designation		Stock R	Stock L	øD	øD1	ød	a	b	E	F		kg
APD (APDM)	080R/L-B6Z	○		80	76	25.4(27)	9.5(12.4)	6(7)	25(22)	50	6	0.75
	100R/L-B6Z	○		100	95	31.75(32)	12.7(14.4)	8(8)	32(28)	50	6	0.95
	125R/L-B8Z	○		125	120	38.1(40)	15.9(16.4)	10(9)	38(30)	63	8	1.8
	160R/L-B10Z			160	155	50.8(40)	19.0(16.4)	11(9)	38(30)	63	10	2.9
	200R/L-B12Z			200	195	47.625(60)	25.4(25.7)	13.5(14)	38(38)	63	12	4.0
	250R/L-B16Z			250	245	47.625(60)	25.4(25.7)	13.5(14)	38(38)	63	16	6.3
	315R/L-B18Z			315	310	47.625(60)	25.4(25.7)	13.5(14)	38(38)	80	18	11.3

Available Blade

BAPDR/L



Designation		PCD DP150	PCD DP200	PCD DP2200	Cermet CT10	Cermet CN20	Cermet CN30	Un-coated Insert H01	Un-coated Insert G10	Un-coated Insert ST30A	Un-coated Insert ST20
BAPD	R/L-XAF		●								
	R/L-XAW		●								
	R/L-NAF										
	R/L-NAW										

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●: Stock Item ○: Under preparing for stock

Parts

Blade	Chip cover	Screw: For chip cover	Screw: For height control	Screw: For cartridge	Wrench: For cartridge
					
LAPDR/L-AJ	CAPDR/L-AJ	PTMA0411	AZ0514	BHA0616	HW50

Recommended Cutting Condition

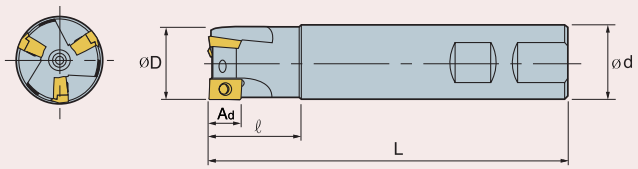
Work piece	Cutting Condition V(m/min)	Cutting Condition fz(mm/tooth)	Grade
Aluminum	1,000 ~ 4,000	0.05 ~ 0.30	DP200
	500 ~ 2,500	0.05 ~ 0.20	H01

Available Arbor & Adapter

Cutter	Arbor	Arbor for NC
APD 080R/L	KAFA*□□-3	BT** □□-FMA25.4-□□
100R/L	KAFA□□-4	BT □□-FMA31.75-□□
125R/L	KAFA□□-5	BT □□-FMA38.10-□□
160R/L	KAFA□□-6	BT □□-FMA50.8-□□
200R/L	KAFA50.8, KCP-8***	BT □□-FMA47.625-□□
250R/L	KAFA50.8, KCP-8***	BT □□-FMA47.625-□□
315R/L	KCP-8(Centering plug)	

*□□-NT number **□□-BT number ***Larger than Milling No.5

AMS2000S/3000S



(mm)

Designation		Stock	ØD	Ød	ℓ	L		Ad	AR	RR
AMS	2010S	●	10	10	20	85	1	11	3°	-25°
	2012S	●	12	16	25	85	1	11	5°	-24°
	2014S	●	14	16	25	90	1	11	7°	-15°
	2016S	●	16	16	25	90	2	11	7°	-15°
	2018S	●	18	16	25	90	2	11	7°	-14°
	2020S	●	20	20	30	100	2	11	9°	-13°
	2022S	●	22	20	35	115	3	11	9°	-13°
	2025S	●	25	25	35	115	3	11	9°	-12°
	2032S	●	32	32	40	125	4	11	9°	-11°
	2040S	●	40	32	42	130	5	11	9°	-10°
	2050S	●	50	32	45	135	6	11	9°	-9°
	2063S	○	63	32	45	135	8	11	9°	-8°
AMS	3025S	●	25	25	35	115	2	16	14°	-18°
	3032S	●	32	32	40	125	3	16	14°	-14°
	3040S	●	40	32	42	130	4	16	14°	-12°
	3050S	●	50	32	45	135	5	16	14°	-11°
	3063S	●	63	32	45	135	6	16	14°	-10°

∗AA:0°

●: Stock Item ○: Under preparing for stock

Parts

Specs	Insert	Screw	Wrench
			
AMS 2000S(Ø10~Ø63) **AMS 3000S(Ø25~Ø63)**	APXT 11T3~ APXT 1604~	FTKA 02565S FTKA 0408 FTKA 0410	TW 08S TW 15S

Available Inserts

Insert \ Grade	Low carbon steel, Soft steel	High carbon steel, Alloy steel	Stainless steel	Cast iron	Aluminum alloy
APXT 11T3PDSR-MF	NCM325, PC3535	NCM325, PC3535	PC9530, NCM335	NCM320K, PC6510	-
APXT 11T3PDSR-MM	NCM325, PC3535	NCM325, PC3535	PC9530, NCM335	NCM320K, PC6510	-
APXT 11T312R-MM	NCM325, PC3535	NCM325, PC3535	PC9530, NCM335	NCM320K, PC6510	-
APXT 11T316R-MM	NCM325, PC3535	NCM325, PC3535	PC9530, NCM335	NCM320K, PC6510	-
APXT 11T324R-MM	NCM325, PC3535	NCM325, PC3535	PC9530, NCM335	NCM320K, PC6510	-
APXT 11T3PDR-MA	-	-	-	-	H01
APXT 11T318R-MA	-	-	-	-	H01
APXT 1604PDSR-MF	NCM325, PC3535	NCM325, PC3535	PC9530, NCM335	NCM320K, PC6510	-
APXT 1604PDSR-MM	NCM325, PC3535	NCM325, PC3535	PC9530, NCM335	NCM320K, PC6510	-
APXT 160416R-MM	NCM325, PC3535	NCM325, PC3535	PC9530, NCM335	NCM320K, PC6510	-
APXT 160432R-MM	NCM325, PC3535	NCM325, PC3535	PC9530, NCM335	NCM320K, PC6510	-

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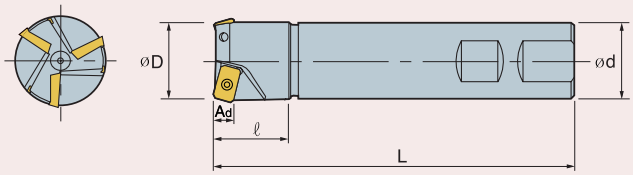
AMS2000SE/3000SE



(mm)

Designation		Stock	øD	ød	ℓ	L		Ad	AR	RR
AMS	2025SE	●	25	25	30	115	2	4	-1°	
	2032SE	●	32	32	40	125	3	4	-1°	
	2040SE	●	40	32	40	130	3	4	-1°	
	2050SE	●	50	32	40	135	4	4	-1°	
	2063SE	●	63	32	40	135	5	4	-1°	
AMS	3050SE	●	50	32	45	135	3	6	-1°	
	3063SE	●	63	32	45	135	4	6	-1°	

*AA:15°

●: Stock Item ○: Under preparing for stock

Parts

Specs	Insert	Screw	Wrench
			
AMS 2000SE AMS 3000SE	APXT 11T3~ APXT 1604~	FTKA 02565S FTKA 0410	TW 08S TW 15S

Available Inserts

Insert \ Grade	Low carbon steel, Soft steel	High carbon steel, Alloy steel	Stainless steel	Cast iron	Aluminum alloy
APXT 11T3PDSR-MF	NCM325, PC3535	NCM325, PC3535	PC9530, NCM335	NCM320K, PC6510	-
APXT 11T3PDSR-MM	NCM325, PC3535	NCM325, PC3535	PC9530, NCM335	NCM320K, PC6510	-
APXT 11T312R-MM	NCM325, PC3535	NCM325, PC3535	PC9530, NCM335	NCM320K, PC6510	-
APXT 11T316R-MM	NCM325, PC3535	NCM325, PC3535	PC9530, NCM335	NCM320K, PC6510	-
APXT 11T324R-MM	NCM325, PC3535	NCM325, PC3535	PC9530, NCM335	NCM320K, PC6510	-
APXT 11T3PDR-MA	-	-	-	-	H01
APXT 11T318R-MA	-	-	-	-	H01
APXT 1604PDSR-MF	NCM325, PC3535	NCM325, PC3535	PC9530, NCM335	NCM320K, PC6510	-
APXT 1604PDSR-MM	NCM325, PC3535	NCM325, PC3535	PC9530, NCM335	NCM320K, PC6510	-
APKT 160416R-MM	NCM325, PC3535	NCM325, PC3535	PC9530, NCM335	NCM320K, PC6510	-
APXT 160432R-MM	NCM325, PC3535	NCM325, PC3535	PC9530, NCM335	NCM320K, PC6510	-
APKT 1604PDFR-MA2	-	-	-	-	H01
APKT 160404PDFR-MA2	-	-	-	-	H01
APKT 160416FR-MA2	-	-	-	-	H01
APKT 160432FR-MA2	-	-	-	-	H01

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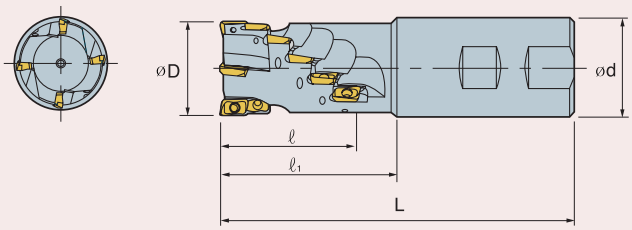
AMS2000M



(mm)

Designation		Stock	øD	ød	ℓ	ℓ1	L	Number of flute	⊙	RR
AMS	2020M	●	20	20	29.4	45	120	1	3	-13°
	2025M	●	25	25	38.9	55	130	2	8	-12°
	2032M	●	32	32	48.5	65	140	2	10	-11°
	2040M	●	40	42	58.0	75	150	2	14	-10°

*AR:7°~9°, RR:-12°~10°

●: Stock Item ○: Under preparing for stock

Parts

Specs	Insert	Screw	Wrench
			
AMS 2000M	APXT 11T3~	FTKA 02565S	TW 08S

Available Inserts

Insert \ Grade	Low carbon steel, Soft steel	High carbon steel, Alloy steel	Stainless steel	Cast iron	Aluminum alloy
APXT 11T3PDSR-MF	NCM325, PC3535	NCM325, PC3535	PC9530, NCM335	NCM320K, PC6510	-
APXT 11T3PDSR-MM	NCM325, PC3535	NCM325, PC3535	PC9530, NCM335	NCM320K, PC6510	-
APXT 11T3PDR-MA	-	-	-	-	H01
APXT 11T318R-MA	-	-	-	-	H01

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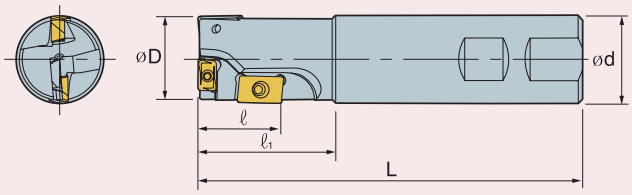
AMS2000MH/3000MH



(mm)

Designation		Stock	øD	ød	ℓ	ℓ1	L		APXT11T3~	APXT1604~
AMS	2025MH	●	25	25	20	40	130	3	3	-
	2032MH	●	32	32	30	50	140	3	1	2
AMS	3040MH	●	40	32	40	60	150	4	-	4

∗AR:7°~9°, RR:-12°~10°

●: Stock Item ○: Under preparing for stock

Parts

Specs	Insert	Screw	Wrench
			
AMS 2025MH	APXT 11T3~	FTKA 02565S	TW 08S
AMS 2032MH	APXT 11T3~	FTKA 02565S	TW 08S
AMS 3040MH	APXT 1604~	FTKA 0410	TW 15S

Available Inserts

Insert \ Grade	Low carbon steel, Soft steel	High carbon steel, Alloy steel	Stainless steel	Cast iron	Aluminum alloy
APXT 11T3PDSR-MF	NCM325, PC3535	NCM325, PC3535	PC9530, NCM335	NCM320K, PC6510	-
APXT 11T3PDSR-MM	NCM325, PC3535	NCM325, PC3535	PC9530, NCM335	NCM320K, PC6510	-
APXT 11T3PDR-MA	-	-	-	-	H01
APXT 11T318R-MA	-	-	-	-	H01
APXT 1604PDSR-MF	NCM325, PC3535	NCM325, PC3535	PC9530, NCM335	NCM320K, PC6510	-
APXT 1604PDSR-MM	NCM325, PC3535	NCM325, PC3535	PC9530, NCM335	NCM320K, PC6510	-
APKT 1604PDFR-MA2	-	-	-	-	H01

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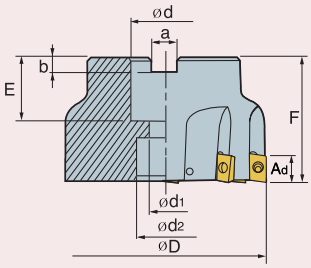
AMC(M)2000S/3000S



(mm)

Designation		Stock	øD	ød	ød1	ød2	a	b	E	F	⊙	Ad
AMC	2040S	○ (●)	40	16(16)	9	14	8.4(8.4)	5.6(5.6)	18(18)	40	5	11
(AMCM)	2050S	● (●)	50	22.225(22)	11	18	8.0(10.4)	5.0(6.3)	20(20)	40	6	11
	2063S	● (●)	63	22.225(22)	11	18	8.0(10.4)	5.0(6.3)	20(20)	40	8	11
	2080S	● (●)	80	25.4(27)	13	20	9.5(12.4)	6.0(7.0)	25(22)	50	8	11
	2100S	● (●)	100	31.75(32)	-	45	12.7(14.4)	8.0(8.0)	32(28)	50	10	11
AMC	3040S	○ (●)	40	16(16)	9	14	8.4(8.4)	5.6(5.6)	18(18)	40	4	16
(AMCM)	3050S	● (●)	50	22.225(22)	11	18	8.0(10.4)	5.0(6.3)	20(20)	40	5	16
	3063S	● (●)	63	22.225(22)	11	18	8.0(10.4)	5.0(6.3)	20(20)	40	6	16
	3080S	● (●)	80	25.4(27)	13	20	9.5(12.4)	6.0(7.0)	25(22)	50	7	16
	3100S	● (●)	100	31.75(32)	-	45	12.7(14.4)	8.0(8.0)	32(28)	50	8	16

*AR:7°~9°, RR:-12°~10°

●: Stock Item ○: Under preparing for stock

Parts

Specs	Insert	Screw	Wrench
			
AMC 2000S **AMC 3000S**	APXT 11T3~ APXT 1604~	FTKA 02565S FTKA 0410	TW 08S TW 15S

Available Inserts

Insert \ Grade	Low carbon steel, Soft steel	High carbon steel, Alloy steel	Stainless steel	Cast iron	Aluminum alloy
APXT 11T3PDSR-MF	NCM325, PC3535	NCM325, PC3535	PC9530, NCM335	NCM320K, PC6510	-
APXT 11T3PDSR-MM	NCM325, PC3535	NCM325, PC3535	PC9530, NCM335	NCM320K, PC6510	-
APXT 11T312R-MM	NCM325, PC3535	NCM325, PC3535	PC9530, NCM335	NCM320K, PC6510	-
APXT 11T316R-MM	NCM325, PC3535	NCM325, PC3535	PC9530, NCM335	NCM320K, PC6510	-
APXT 11T324R-MM	NCM325, PC3535	NCM325, PC3535	PC9530, NCM335	NCM320K, PC6510	-
APXT 11T3PDR-MA	-	-	-	-	H01
APXT 11T318R-MA	-	-	-	-	H01
APXT 1604PDSR-MF	NCM325, PC3535	NCM325, PC3535	PC9530, NCM335	NCM320K, PC6510	-
APXT 1604PDSR-MM	NCM325, PC3535	NCM325, PC3535	PC9530, NCM335	NCM320K, PC6510	-
APXT 160416R-MM	NCM325, PC3535	NCM325, PC3535	PC9530, NCM335	NCM320K, PC6510	-
APXT 160432R-MM	NCM325, PC3535	NCM325, PC3535	PC9530, NCM335	NCM320K, PC6510	-

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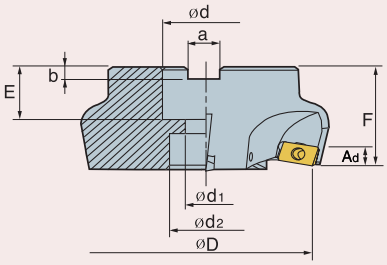
AMC(M)2000SE/3000SE



(mm)

Designation		Stock	øD	ø d	ød_1	ød_2	a	b	E	F		Ad
AMC	2080SE	○ (●)	80	25.4(27)	13	20	9.5(12.4)	6.0(7.0)	25(22)	50	5	4
(AMCM)	2100SE	○ (●)	100	31.75(32)	-	45	12.7(14.4)	8.0(8.0)	32(28)	50	6	4
AMC	3080SE	● (●)	80	25.4(27)	13	20	9.5(12.4)	6.0(7.0)	25(22)	50	4	6
(AMCM)	3100SE	● (●)	100	31.75(32)	-	45	12.7(14.4)	8.0(8.0)	32(28)	50	5	6

*AA:15°, AR:-1°~5°, RR:0°,( ) : data for metric size tool

●: Stock Item ○: Under preparing for stock

Parts

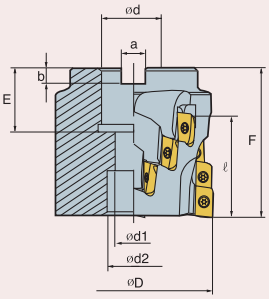
Specs	Insert	Screw	Wrench
			
AMC 2000SE AMC 3000SE	APXT 11T3~ APXT 1604~	FTKA 02565S FTKA 0410	TW 08S TW 15S

Available Inserts

Insert \ Grade	Low carbon steel, Soft steel	High carbon steel, Alloy steel	Stainless steel	Cast iron	Aluminum alloy
APXT 11T3PDSR-MF	NCM325, PC3535	NCM325, PC3535	PC9530, NCM335	NCM320K, PC6510	-
APXT 11T3PDSR-MM	NCM325, PC3535	NCM325, PC3535	PC9530, NCM335	NCM320K, PC6510	-
APXT 11T312R-MM	NCM325, PC3535	NCM325, PC3535	PC9530, NCM335	NCM320K, PC6510	-
APXT 11T316R-MM	NCM325, PC3535	NCM325, PC3535	PC9530, NCM335	NCM320K, PC6510	-
APXT 11T324R-MM	NCM325, PC3535	NCM325, PC3535	PC9530, NCM335	NCM320K, PC6510	-
APXT 11T3PDR-MA	-	-	-	-	H01
APXT 11T318R-MA	-	-	-	-	H01
APXT 1604PDSR-MF	NCM325, PC3535	NCM325, PC3535	PC9530, NCM335	NCM320K, PC6510	-
APXT 1604PDSR-MM	NCM325, PC3535	NCM325, PC3535	PC9530, NCM335	NCM320K, PC6510	-
APXT 160416R-MM	NCM325, PC3535	NCM325, PC3535	PC9530, NCM335	NCM320K, PC6510	-
APKT 1604PDFR-MA2	-	-	-	-	H01
APKT 160404PDFR-MA2	-	-	-	-	H01
APXT 160416FR-MA2	-	-	-	-	H01
APXT 160432FR-MA2	-	-	-	-	H01

P. 269

AMC(M)2000M



(mm)

Designation		Stock	øD	ℓ	ød	ød1	ød2	a	b	E	F	Number of flute		RR	Available Arbor
AMC (AMCM)	2050M	● (●)	50	39	22.225(22)	11	18	8.0(10.4)	5.0(6.3)	29(21)	58	4	16	-9°	BT□□-SMA22.225(BT□□-FMC22)
	2063M	● (●)	63	39	25.4(27)	13.5	20	9.5(12.4)	6.0(7.0)	25(25)	58	4	16	-8°	BT□□-FMA25.4(BT□□-FMC27)
	2080M	● (●)	80	39	31.75(32)	-	45	12.7(14.4)	8.0(8.0)	35(28)	63	5	20	-7°	BT□□-FMA31.75(BT□□-FMC32)
	2100M	○ (●)	100	39	38.1(40)	-	56	15.9(16.4)	10.0(9.0)	38(30)	63	6	24	-5°	BT□□-FMA38.1(BT□□-FMB40)

*AA:0°, AR:9°, ( ) : data for Metric size tool

●: Stock Item ○: Under preparing for stock

Parts

Specs	Insert	Screw	Wrench
			
AMC 2000M	APXT 11T3~	FTKA 02565S	TW 08S

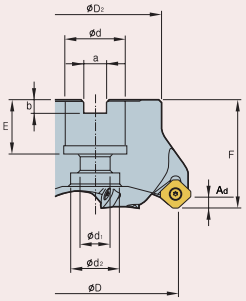
Available Inserts

Insert \ Grade	Low carbon steel, Soft steel	High carbon steel, Alloy steel	Stainless steel	Cast iron	Aluminum alloy
APXT 11T3PDSR-MF	NCM325, PC3535	NCM325, PC3535	PC9530, NCM335	NCM320K, PC6510	-
APT 11T3PDSR-MF	NCM325, PC3535	NCM325, PC3535	PC9530, NCM335	NCM320K, PC6510	-
APXT 11T3PDSR-MM	NCM325, PC3535	NCM325, PC3535	PC9530, NCM335	NCM320K, PC6510	-
APXT 11T3PDR-MA	-	-	-	-	H01
APXT 11T318R-MA	-	-	-	-	H01

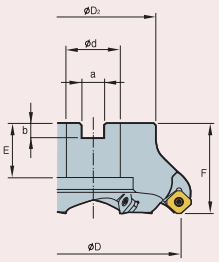
P. 269

FMAC(M)3000/4000-A

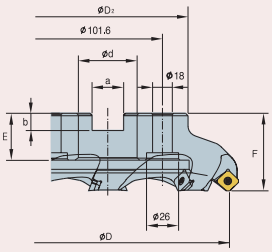
(Approach angle 45°)



Ø63~Ø80



Ø100~Ø160



Over Ø200

(mm)

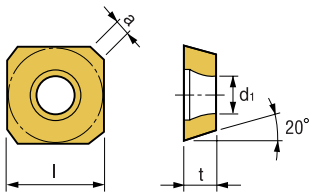
Designation		Stock R	Stock L	ØD	ØD₂	Ød	F	a	b	Ød₁	Ød₂	E		kg	Ad
FMAC (FMACM)	3063R-A	○(●)		63	49	22.225(22)	40	8.0(10.4)	5(6.3)	11	18	20	3	0.5	4
	3080R-A	●(●)		80	57	25.4(27)	50	9.5(12.4)	6(7)	13.5	20	25	4	0.6	4
	3100R-A	●(●)		100	67	31.75(32)	50	12.7(14.4)	8(8)	-	-	32	5	0.8	4
	3100R-25.4-A	●		100	67	25.4	50	9.5	6	-	-	25	5	0.9	4
	3125R-A	●(●)		125	87	38.1(40)	63	15.9(16.4)	10(9)	-	-	38	6	1.6	4
	3125R-25.4-A	●		125	70	25.4	63	9.5	6	-	-	25	6	1.7	4
	4063R-A	○(●)		63	49	22.225(33)	50	8.0(10.4)	5(5.3)	11	18	20	3	0.6	6.5
	4080R-A	●(●)		80	67	25.4(27)	50	9.5(12.4)	6(7)	13.5	20	25	4	0.8	6.5
	4100R-A	●(●)		100	67	31.75(32)	50	12.7(14.4)	8(8)	-	-	32	5	1.1	6.5
	4100R-25.4-A	●		100	67	25.4	50	9.5	6	-	-	25	5	1.2	6.5
	4125R-A	●(●)		125	87	38.1(40)	63	15.9(16.4)	10(9)	-	-	38	6	1.7	6.5
	4125R-25.4-A	●		125	70	25.4	63	9.5	6	-	-	25	6	1.8	6.5
	4160R-A	●(●)		160	107	50.8(40)	63	19.0(16.4)	11(9)	-	-	38	7	2.5	6.5
	4200R-A	●(●)		200	130	47.625(60)	63	25.4(25.7)	14(14)	-	-	38	8	3.2	6.5
	4250R-A			250	180	47.625(60)	63	25.4(25.7)	14(14)	-	-	38	10	4.1	6.5
	4315R-A			315	240	47.625(60)	63	25.4(25.7)	14(14)	-	-	38	12	6.7	6.5

*( ) : data for Metric size tool

● : Stock Item ○ : Under preparing for stock

Available Inserts

SEXT



Designation		Coated Insert NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510	Cermet CT10	CN20	CN30	Un-coated Insert H01	G10	ST30A	ST20
SEET	0903AGSN-MF	●			●			○								
SEXT	0903AGSN-MF	○			●			○								
SEET	0903AGSN-MM	●			●	○		●	○							
SEXT	0903AGSN-MM	●			○	○		○	●							
SEET	0903AGFN-MA															
SEET	14M4AGSN-MF	●			●			●								
SEXT	14M4AGSN-MF	●			●			●								
SEET	14M4AGSN-MM	●			●	○		●	○							
SEXT	14M4AGSN-MM	○			●	●		○	●							
SEET	14M4AGFN-MA															

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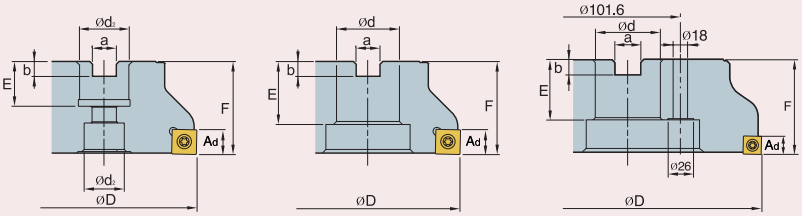
● : Stock Item ○ : Under preparing for stock

Parts

Specs	Insert	Screw	Wrench For insert	Wrench For locater	Locater	Screw for locater
						
FMA(M)3000 FMA(M)4000	SE□T 0903 SE□T 14M4	FTKA0307 FTGA03512	TW09S TW15S	HW30L HW40L	LFMA3R-A LFMA4R-A	DHA620 DHA0830

FMPC(M)3000/4000-A



Ø50~Ø80 Ø100~Ø160 over Ø200

(mm)

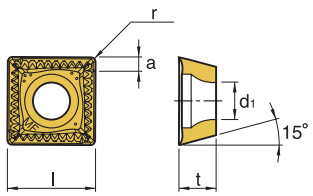
Designation		Stock	øD	ød₂	ød	a	b	E	F		kg	Ad
FMPC (FMPCM)	3063S-A	○ (●)	63	22.225(22)	18	8.0(10.4)	5(6.3)	20	40	3	0.2	4
	3080S-A	● (●)	80	25.4(27)	20	9.5(12.4)	6(7)	25	50	4	0.4	4
	3100S-A	● (●)	100	31.75(32)	-	12.7(14.4)	8(8)	32	50	5	0.6	4
	3100S-25.4-A	●	100	25.4	-	9.5	6	25	50	5	0.7	4
	4063S-A	○ (●)	63	22.225(22)	18	8.0(10.4)	5(6.3)	20	40	3	0.2	6.5
	4080S-A	● (●)	80	25.4(27)	20	9.5(12.4)	6(7)	25	50	4	0.5	6.5
	4100S-A	● (●)	100	31.75(32)	-	12.7(14.4)	8(8)	32	50	5	0.7	6.5
	4100S-25.4-A	●	100	25.4	-	9.5	6	25	50	5	0.8	6.5
	4125S-A	● (●)	125	38.1(40)	-	16.15(16.4)	10(9)	38	63	6	1.3	6.5
	4125S-25.4-A	●	125	25.4	-	9.5	6	25	63	6	1.4	6.5
	4160S-A		160	50.8(40)	-	19.0(16.4)	11(9)	38	63	8	2.0	6.5
	4200S-A		200	47.625(60)	-	25.4(25.7)	14(14)	38	63	10	3.2	6.5
	4250S-A		250	47.625(60)	-	25.4(25.7)	14(14)	38	63	12	5.2	6.5
	4315S-A		315	47.625(60)	-	25.4(25.7)	14(14)	38	63	15	8.4	6.5

*( ) : data for Metric size tool

●: Stock Item ○: Under preparing for stock

Available Inserts

SDXT



Designation		Coated Insert								Cermet				Un-coated Insert			
		NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510	CT10	CN20	CN30		H01	G10	ST30A	ST20
SDXT	09M405R-MF	●	●		●	○		●	○								
	09M405R-MM	●	●		○	●		●	●								
	09M405R-MA													●	○		
	09M402R-MA																
SDXT	130508R-MF	●	●		●	○		●	○								
	130508R-MM	●	●		●	●		●	●								
	130508R-MA													●	○		
	130504R-MA																

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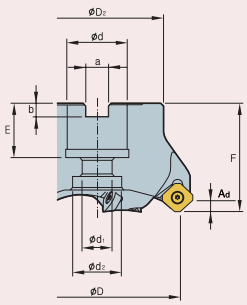
●: Stock Item ○: Under preparing for stock

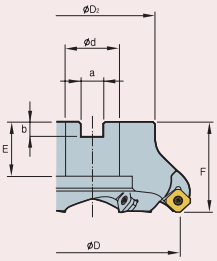
Parts

Specs	Insert	Screw	Wrench		Locater	Chip cover	Screw for chip cover	Screw for locater
			For insert	For locater				
FMPC3063S-A	SDXT09M4	FTGA03508	TW15S	HW30L	LFMP3R-A	CFMP3R14R1-A	PXMA0306	DHA0624
FMPC3080S-A ~3100S-A	SDXT09M4	FTGA03508	TW15S	HW30L	LFMP3R-A	CFMP3R-A	PXMA0306	DHA0624
FMPC4063S-A ~4080S-A	SDXT1305	FTNC04509	TW20S	HW40L	LFMP4R1-A	CFMP3R14R1-A	PXMA0306	DHA0825
FMPC4100S-A ~4315S-A	SDXT1305	FTNC4509	TW20S	HW40L	LFMP4R-A	CFMP3R-A	PXMA0306	DHA0830

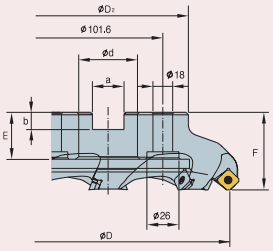
FMAC(M)3000/4000



Ø50~Ø63



Ø80~Ø160



over Ø200

(mm)

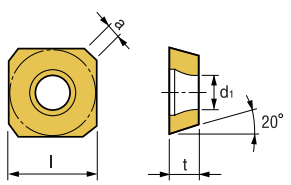
Designation		Stock R	Stock L	øD	øD₂	ød	F	a	b	ød₁	ød₂	E	◎	Ad
FMAC	3050R	●(●)		50	42	22.225(22)	40	8.0(10.4)	5.0(6.3)	11	18	20(20)	4	4
(FMACM)	3063R	●(●)		63	49	22.225(22)	40	8.0(10.4)	5.0(6.3)	11	18	20(20)	5	4
	3080R	●(●)		80	57	25.4(27)	50	9.5(12.4)	6.0(7.0)	-	-	25(22)	6	4
	3100R	●(●)		100	67	31.75(32)	50	12.7(14.4)	8(8.0)	-	-	32(32)	7	4
	3125R	●(●)		125	87	38.1(40)	63	15.9(16.4)	10.0(9.0)	-	-	38(35)	8	4
	3050R-H	●(●)		50	42	22.225(22)	40	8.0(10.4)	5.0(6.3)	11	18	20(20)	6	4
	3063R-H	●(●)		63	49	22.225(22)	40	8.0(10.4)	5.0(6.3)	11	18	20(20)	8	4
	3080R-H	●(●)		80	57	25.4(27)	50	9.5(12.4)	6.0(7.0)	-	-	25(22)	10	4
	3100R-H	●(●)		100	67	31.75(32)	50	12.7(14.4)	8.0(8.0)	-	-	32(32)	12	4
	3125R-H	●(●)		125	87	38.1(40)	63	15.9(16.4)	10.0(9.0)	-	-	38(35)	14	4
FMAC	4050R	●(●)		50	49	22.225(22)	40	8.0(10.4)	5.0(6.3)	11	18	20(20)	3	6.5
(FMACM)	4063R	●(●)		63	49	22.225(22)	40	8.0(10.4)	5.0(6.3)	11	18	20(20)	4	6.5
	4080R	●(●)		80	57	25.4(27)	50	9.5(12.4)	6.0(7.0)	-	-	25(20)	5	6.5
	4100R	●(●)		100	67	31.75(32)	50	12.7(14.4)	8.0(8.0)	-	-	32(20)	5	6.5
	4125R	●(●)		125	87	38.1(40)	63	15.9(16.4)	10.0(9.0)	-	-	38(35)	6	6.5
	4160R	●(●)		160	107	50.8(40)	63	19.0(16.4)	11.0(9.0)	-	-	38(35)	7	6.5
	4200R	●(●)		200	130	47.625(60)	63	25.4(25.7)	14.0(14.0)	-	-	38(32)	8	6.5
	4063R-M	(●)		63	49	22.225(22)	40	8.0(10.4)	5.0(6.3)	11	18	20(20)	5	6.5
	4080R-M	●(●)		80	57	25.4(27)	50	9.5(12.4)	6.0(7.0)	-	-	25(22)	6	6.5
	4100R-M	●(●)		100	67	31.75(32)	50	12.7(14.4)	8.0(8.0)	-	-	32(32)	7	6.5
	4125R-M	●(●)		125	87	38.1(40)	63	15.9(16.4)	10.0(9.0)	-	-	38(35)	8	6.5
	4160R-M	●(●)		160	107	50.8(40)	63	19.0(16.4)	11.0(9.0)	-	-	38(35)	10	6.5
	4200R-M	●(●)		200	130	47.625(60)	63	25.4(25.7)	14.0(14.0)	-	-	38(32)	12	6.5
	4063R-H	(●)		63	49	22.225(22)	40	8.0(10.4)	5.0(6.3)	11	18	20(20)	6	6.5
	4080R-H	●(●)		80	57	25.4(27)	50	9.5(12.4)	6.0(7.0)	-	-	25(22)	8	6.5
	4100R-H	●(●)		100	67	31.75(32)	50	12.7(14.4)	8.0(8.0)	-	-	32(32)	10	6.5
	4125R-H	●(●)		125	87	38.1(40)	63	15.9(16.4)	10.0(9.0)	-	-	38(35)	12	6.5
	4160R-H	●(●)		160	107	50.8(40)	63	19.0(16.4)	11.0(9.0)	-	-	38(35)	16	6.5
	4200R-H	●(●)		200	130	47.625(60)	63	25.4(25.7)	14.0(14.0)	-	-	38(32)	18	6.5

Parts for FMAC3000/4000 is same as FMAS3000/4000. ∗( ) : data for Metric size tool

● : Stock Item ○ : Under preparing for stock

Available Inserts

SEET

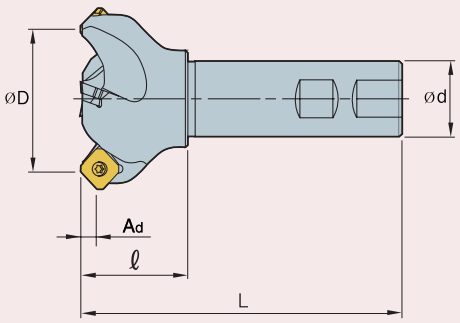


Designation		Coated Insert NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510		Cermet CT10	CN20	CN30		Un-coated Insert H01	G10	ST30A	ST20
SEEW	0903AGTN							○					●					
SEET	0903AGFN-MA																	
	0903AGSN-MF																	
	0903AGSN-MM																	
★SEXT	0903AGSN-MF																	
	0903AGSN-MM																	
	0903AGSN-MR																	
SEEW	14M4AGTN							○					●					
SEET	14M4AGFN-MA																	
	14M4AGSN-MF																	
	14M4AGSN-MM																	
★SEXT	14M4AGSN-MF																	
	14M4AGSN-MM																	
	14M4AGSN-MR																	

P. 287~290

● : Stock Item ○ : Under preparing for stock

FMAS3000



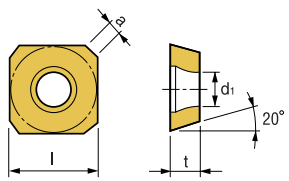
(mm)

Designation		Stock	øD	ød	L	ℓ		Ad
FMAS	3025R	●	25	25	115	35	2	4
	3032R	●	32	25	125	40	3	4
	3040R	●	40	32	130	40	3	4
	3050R	●	50	32	135	40	4	4
	3063R	●	63	32	135	45	5	4
	4050R	●	50	32	135	45	3	6.5
	4063R	●	63	32	135	45	4	6.5

● : Stock Item ○ : Under preparing for stock

Available Inserts

SEET

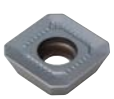
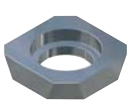


Designation		Coated Insert								Cermet				Un-coated Insert			
		NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510	CT10	CN20	CN30		H01	G10	ST30A	ST20
SEEW	0903AGTN							○				●					
SEET	0903AGFN-MA													●			
	0903AGSN-MF	●			●			●									
	0903AGSN-MM	○			○	●		○	●								
★SEXT	0903AGSN-MF	○			●			○									
	0903AGSN-MM	○			○	●		○	●								
	0903AGSN-MR							○									
SEEW	14M4AGTN							○				●					
SEET	14M4AGFN-MA													●			
	14M4AGSN-MF																
	14M4AGSN-MM	●			●	○		●	○								
★SEXT	14M4AGSN-MF	●			●			●									
	14M4AGSN-MM	○			●	●		○	●								
	14M4AGSN-MR							○									

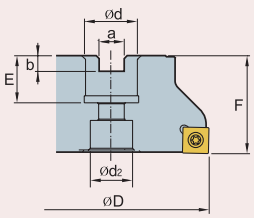
P. 287~290

● : Stock Item ○ : Under preparing for stock

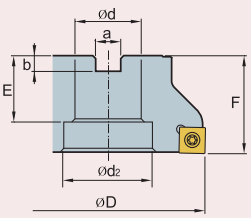
Parts

Specs	Insert	Screw	Wrench for insert	Wrench for shim	Screw for shim	Shim
						
FMAS3000 FMAS4000	SE□□0903 SE□□14M4	FTKA0307 FTGA03512	TW09S TW15S	- HW35L	- SHXN0509F	- SS42SAF

FMPC(M)3000/4000



Ø50~Ø80



Ø100~Ø160

(mm)

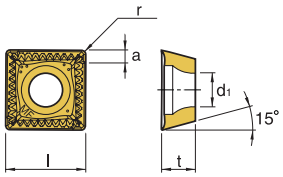
Designation		Stock R	Stock L	øD	ød	ød2	a	b	E	F	
FMPC (FMPCM)	3050S	●(●)		50	22.225(22)	18	8.0(10.4)	5.0(6.3)	20(20.0)	40	5
	3063S	●(●)		63	22.225(22)	18	8.0(10.4)	5.0(6.3)	20(20.0)	40	6
	3080S	●(●)		80	25.40(27)	20	9.5(12.4)	6.0(7.0)	25(22.0)	50	7
	3100S	●(●)		100	31.75(32)	45	12.7(14.4)	8.0(8.0)	32(32.0)	50	8
	4063S	●(●)		63	22.225(22)	18	8.4(10.4)	5.0(6.3)	20(20.0)	40	5
	4080S	●(●)		80	25.40(27)	20	9.5(12.4)	6.0(7.0)	25(22.0)	50	6
	4100S	●(●)		100	31.75(32)	45	12.7(14.4)	8.0(8.0)	32(32.0)	50	7
	4125S	●(●)		125	38.10(40)	56	15.9(16.4)	10.0(9.0)	38(35.0)	63	8

*( ) : data for Metric size tool

● : Stock Item ○ : Under preparing for stock

Available Inserts

SDXT



Designation		Coated Insert NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510	Cermet CT10	CN20	CN30		Un-coated Insert H01	G10	ST30A	ST20
SDXT	09M405R-MF	●	●		●	○		●	○								
	MM	●	●		○	●		●	●								
	MA													●	○		
SDXT	130508R-MF	●	●		●	○		●	○								
	MM	●	●		○	●		●	●					●	○		
	MA													●	○		

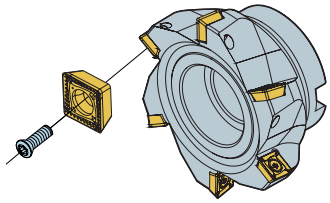
P. 284, 285

● : Stock Item ○ : Under preparing for stock

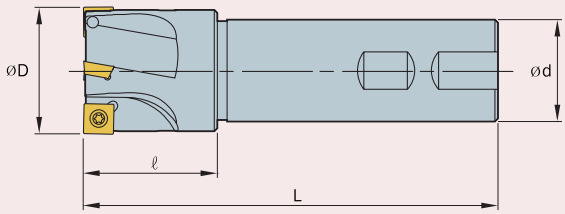
Parts

Specs	Insert	Screw	Wrench
			
FMPC 3000 FMPC 4000	SDXT09M4 SDXT1305	FTGA 03508 FTNC 04511	TW15S TW20S

Assembling



FMPS3000/4000



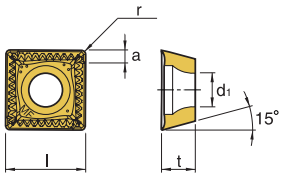
(mm)

Designation		Stock	ØD	L	Ød	ℓ	
FMPS	3025S	●	25	115	25	35	2
	3032S	●	32	125	25	40	3
	3040S	●	40	130	32	40	4
	3050S	●	50	135	32	40	5
	3063S	●	63	135	32	45	6
	4040S	●	40	130	32	40	3
	4050S	●	50	135	32	45	4
	4063S	●	63	135	32	45	5

● : Stock Item ○ : Under preparing for stock

Available Inserts

SDXT



Designation		Coated Insert								Cermet				Un-coated Insert			
		NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510	CT10	CN20	CN30		H01	G10	ST30A	ST20
SDXT	09M405R-MF	●	●		●	○		●	○								
	MM	●	●		○	●		●	●								
	MA													●	○		
SDXT	130508R-MF	●	●		●	○		●	○								
	MM	●	●		○	●		●	●								
	MA													●	○		

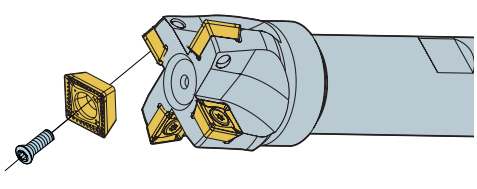
P. 284, 285

● : Stock Item ○ : Under preparing for stock

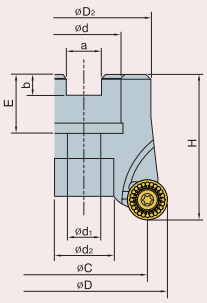
Parts

Specs	Insert	Screw	Wrench
			
FMPS 3000 FMPS 4000	SDXT09M4 SDXT1305	FTGA 03508 FTNC 04511	TW15S TW20S

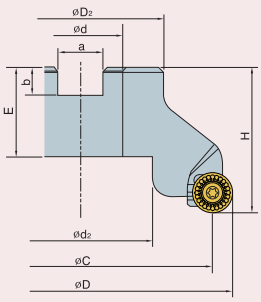
Assembling



FMRC(M)3000/4000



Ø40~Ø80



Ø100~Ø125

(mm)

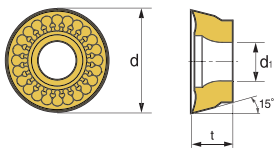
Designation		Stock	øD	øC	øD₂	ød	H	a	b	ød₁	ød₂	E	
FMRC	3040RD	● (●)	40	30	36	15.875(16)	40	8	5.6(5.6)	9	14	18(20)	3
(FMRCM)	3050RD	● (●)	50	40	42	22.225(22)	50	8(10.4)	5(6.3)	11	16.5	20(20)	4
	3063RD	● (●)	63	53	49	22.225(22)	50	8(10.4)	5(6.3)	11	16.5	20(20)	5
	3080RD	● (●)	80	70	57	25.4(27)	50	9.5(12.4)	6(7.0)	14	19	25(22)	6
	3100RD	● (●)	100	90	67	31.75(32)	50	12.7(14.4)	8(8)	-	45	32(32)	7
	3040RD-H	● (●)	40	30	36	15.875(16)	40	8	5.6(5.6)	9	14	18(20)	4
	3050RD-H	● (●)	50	40	42	22.225(22)	50	8(10.4)	5(6.3)	11	16.5	20(20)	5
	3063RD-H	● (●)	63	53	49	22.225(22)	50	8(10.4)	5(6.3)	11	16.5	20(20)	6
	3080RD-H	● (●)	80	70	57	25.4(27)	50	9.5(12.4)	6(7.0)	14	19	25(22)	7
	3100RD-H	● (●)	100	90	67	31.75(32)	50	12.7(14.4)	8(8)	-	45	32(32)	8
FMRC	4050RD	● (●)	50	38	42	22.225(22)	50	8(10.4)	5(6.3)	11	16.5	20(20)	4
(FMRCM)	4063RD	● (●)	63	51	49	22.225(22)	50	8(10.4)	5(6.3)	11	16.5	20(20)	4
	4080RD	● (●)	80	68	57	25.4(27)	50	9.5(12.4)	6(7.0)	14	19	25(22)	5
	4100RD	● (●)	100	88	67	31.75(32)	50	12.7(14.4)	8(8)	-	45	32(32)	6
	4125RD	● (●)	125	113	87	38.10(40)	63	15.9(16.4)	10(9)	-	56	38(35)	7
	4063RD-M	● (●)	63	51	49	22.225(22)	50	8(10.4)	5(6.3)	11	16.5	20(20)	5
	4080RD-M	● (●)	80	68	57	25.4(27)	50	9.5(12.4)	6(7.0)	14	19	25(22)	6
	4100RD-M	● (●)	100	88	67	31.75(32)	50	12.7(14.4)	8(8)	-	45	32(32)	7
	4125RD-M	● (●)	125	113	87	38.10(40)	63	15.9(16.4)	10(9)	-	56	38(35)	8

*( ) : data for Metric size tool

● : Stock Item ○ : Under preparing for stock

Available Inserts

RDC(K)T



Designation		Coated Insert									Cermet				Un-coated Insert			
		NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510	PC8520	CT10	CN20	CN30		H01	G10	ST30A	ST20
RDCT	10T3M0-MA							○	○						●			
	1204M0-MA							○	○						●			
RDKT	10T3M0-MF					●	●	●		●								
	10T3M0-MA																	
	10T3M0-MM	●	●			●	●	●	●	○								
	1204M0-MF					●	●	●		●								
	1204M0-MA																	
	1204M0-MM	●	●			●	●	●	●	○								

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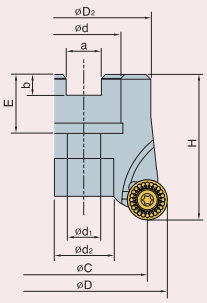
● : Stock Item ○ : Under preparing for stock

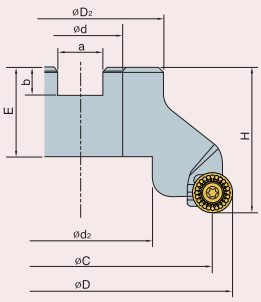
Parts

Specs	Insert	Screw	Wrench
			
FMRC 3000 FMRC 4000	RD□T10T30-M□ RD□T1204M0-M□	FTGA03508(FTGA03507 for ø21) FTKA0410	TW15S TW15S

FMRC(M)5000/6000



Ø50~Ø80



Ø100~Ø160

(mm)

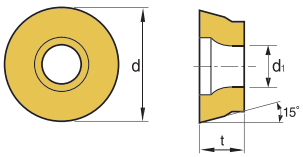
Designation		Stock	ØD	ØC	ØD2	Ød	H	a	b	Ød1	Ød2	E	
FMRC (FMRCM)	5050RD		50	34	42	22.225(22)	50	8.4(10.4)	5(6.3)	11	16.5	20(20)	3
	5063RD		63	47	49	22.225(22)	50	8.4(10.4)	5(6.3)	11	16.5	20(20)	4
	5080RD	●(●)	80	64	57	25.4(27)	50	9.75(12.4)	6(7.0)	14	19	25(22)	5
	5100RD	●(●)	100	84	67	31.75(32)	50	12.95(14.4)	8(8)	-	45	32(32)	6
	5125RD	(●)	125	109	87	38.10(40)	63	16.15(16.4)	10(9)	-	56	38(35)	7
	5063RD-H		63	47	49	22.225(22)	50	8.4(10.4)	5(6.3)	11	16.5	20(20)	5
	5080RD-H		80	64	57	25.4(27)	50	9.75(12.4)	6(7.0)	14	19	25(22)	6
	5100RD-H		100	84	67	31.75(32)	50	12.95(14.4)	8(8)	-	45	32(32)	7
	5125RD-H		125	109	87	38.10(40)	63	16.15(16.4)	10(9)	-	56	38(35)	8
FMRC (FMRCM)	6063RD		63	43	49	22.225(22)	50	8.4(10.4)	5(6.3)	11	16.5	20(20)	3
	6080RD	●(●)	80	60	57	25.4(27)	50	9.75(12.4)	6(7.0)	14	19	25(22)	4
	6100RD	●(●)	100	80	67	31.75(32)	50	12.95(14.4)	8(8)	-	45	32(32)	5
	6125RD	●(●)	125	105	87	38.10(40)	63	16.15(16.4)	10(9)	-	56	38(35)	6
	6160RD	(●)	160	140	107	50.80(40)	63	19.25(16.4)	11(9)	-	78	38(35)	7
	6063RD-M		63	43	49	22.225(22)	50	8.4(10.4)	5(6.3)	11	16.5	20(20)	4
	6080RD-M		80	60	57	25.4(27)	50	9.75(12.4)	6(7.0)	14	19	25(22)	5
	6100RD-M		100	80	67	31.75(32)	50	12.95(14.4)	8(8)	-	45	32(32)	6
	6125RD-M		125	105	87	38.10(40)	63	16.15(16.4)	10(9)	-	56	38(35)	7
	6160RD-M		160	140	107	50.80(40)	63	19.25(16.4)	11(9)	-	78	38(35)	8

*( ) : data for Metric size tool

●: Stock Item ○: Under preparing for stock

Available Inserts

RDHW
RDKT



Designation		Coated Insert								Cermet				Un-coated Insert			
		NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510	PC8520	CT10	CN20	CN30		H01	G10	ST30A	ST20
RDHW	1605M0F							○										
	1605M0E					○		○	○									
	1605M0S							○		○								
	2006M0F							○										
	2006M0E					○		○	○									
	2006M0S							○		○								
RDKT	1605M0-MM																	
	2006M0-MM																	

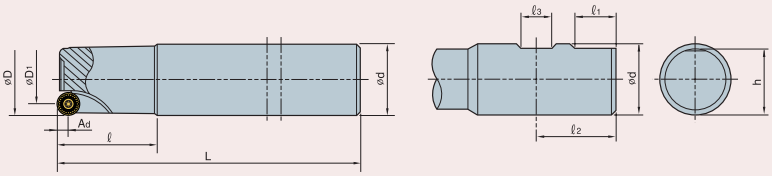
P. 278, 280

●: Stock Item ○: Under preparing for stock

Parts

Specs	Insert	Screw	Wrench
			
FMRC 5000 FMRC 6000	RDHW1605M0□, RDKT1605M0-MM RDHW2006M0□, RDKT2006M0-MM	FTGA03508(FTGA03507 for ø21) FTKA0410	TW15S TW15S

FMRS1000/1500/2000/2500



Type A Type B

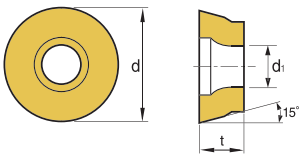
(mm)

Designation		Stock	øD	øD1	L	ød	ℓ	ℓ1	ℓ2	ℓ3	h	Ad	Type		Insert
FMRS	1008RD-M		8	5.5	80	10	30	-	-	-	-	2.5	A	1	
	1008RD-L		8	5.5	100	10	50	-	-	-	-	2.5	A	1	
	1010RD-M		10	5	100	12	44	-	-	-	-	2.5	A	2	
	1010RD-L		10	5	120	12	64	-	-	-	-	2.5	A	2	RDHW0501M0□
	1012RD-M	●	12	7	100	12	44	-	-	-	-	2.5	A	2	RDKW0501M0E
	1012RD-L	●	12	7	160	16	80	-	-	-	-	2.5	A	2	
	1015RD-M		15	10	160	16	80	-	-	-	-	2.5	A	3	
	1015RD-L		15	10	200	16	100	-	-	-	-	2.5	A	3	
	1510RD-M		10	6	100	12	44	-	-	-	-	3.0	A	1	
	1510RD-L		10	6	120	12	64	-	-	-	-	3.0	A	1	
	1512RD-M	●	12	6	110	12	54	-	-	-	-	3.0	A	2	
	1512RD-L	●	12	6	160	16	80	-	-	-	-	3.0	A	2	RDHW06T1M0□
	1516RD-M		16	10	130	16	60	-	-	-	-	3.0	A	3	RDKW06T1M0E
	1516RD-L		16	10	180	20	90	-	-	-	-	3.0	A	3	
	1520RD-M		20	14	150	20	80	-	-	-	-	3.0	A	3	
	1520RD-L		20	14	200	20	90	-	-	-	-	3.0	A	3	
	2015RD-S		15	8	115	16	55	-	24	10	14.2	3.5	B	2	
	2015RD-M	●	15	8	150	20	80	-	-	-	-	3.5	A	2	
	2015RD-L	●	15	8	200	20	90	-	-	-	-	3.5	A	2	RDHW0702M0□
	2020RD-S		20	14	125	20	65	-	25	11	18.2	3.5	B	3	RDKW0702M0E
	2020RD-M		20	14	150	20	80	-	-	-	-	3.5	A	3	
	2020RD-L		20	14	200	25	90	-	-	-	-	3.5	A	3	
	2516RD-S		16	8	115	16	55	-	24	10	14.2	4	B	2	
	2516RD-M	●	16	8	150	16	80	-	-	-	-	4	A	2	
	2516RD-L	●	16	8	200	20	90	-	-	-	-	4	A	2	
	2520RD-S		20	12	125	20	65	-	25	11	18.2	4	B	2	RDHW0803M0□
	2520RD-M	●	20	12	150	20	80	-	-	-	-	4	A	2	RDKW0803M0E
	2520RD-L	●	20	12	200	25	100	-	-	-	-	4	A	2	
	2525RD-S		25	17	125	25	55	17	32	12	23	4	B	3	
	2525RD-M		25	17	200	25	90	-	-	-	-	4	A	3	
	2525RD-L		25	17	250	32	110	-	-	-	-	4	A	3	

● : Stock Item ○ : Under preparing for stock

Available Inserts

RDHW
RDKT



Designation		Coated Insert									Cermet				Un-coated Insert			
		NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510	PC8520	CT10	CN20	CN30		H01	G10	ST30A	ST20
RDHW	0501M0F							○										
	*0501M0E					○		●	○									
	0501M0S							○		○								
	06T1M0F							○										
	*06T1M0E					○		●	○									
	06T1M0S							○		○								
	0702M0F							○										
	*0702M0E					○		●	○									
	0702M0S							○		○								
	0803M0F							○										
	*0803M0E					○		●	○									
	0803M0S							○		○								

* For RDKW Insert

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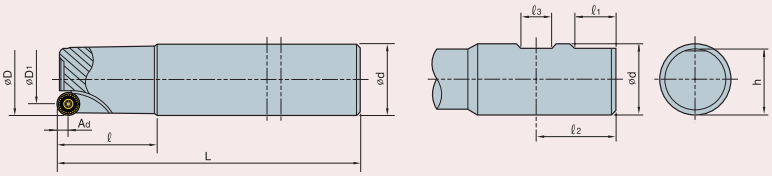
● : Stock Item ○ : Under preparing for stock

FMRS3000/4000



Type A Type B

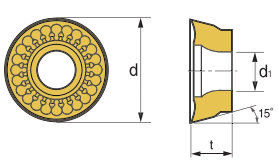
(mm)

Designation		Stock	øD	øD1	L	ød	ℓ	ℓ1	ℓ2	ℓ3	h	Ad	Type	⊙	Insert
FMRS	3021RD-M	●	21	11	150	20	40	-	-	-	-	5	A	1	
	3021RD-M2	●	21	11	150	20	40	-	-	-	-	-	A	2	
	3021RD-L	●	21	11	200	20	50	-	-	-	-	5	A	1	
	3021RD-L2	●	21	11	200	20	50	-	-	-	-	-	A	2	
	3025RD-S	●	25	15	115	25	35	17	32	12	23	5	B	2	
	3025RD-M	●	25	15	200	25	70	-	-	-	-	5	A	2	
	3025RD-L	●	25	15	250	25	100	-	-	-	-	5	A	2	RDCT10T3M0-MA
	3026RD-M	●	26	16	200	25	70	-	-	-	-	5	A	2	RDKT10T3M0-□□
	3026RD-L	●	26	16	250	25	100	-	-	-	-	5	A	2	
	3032RD-S	●	32	22	125	32	40	19	36	14	30	5	B	3	
	3032RD-M	●	32	22	200	32	70	-	-	-	-	5	A	3	
	3032RD-L	●	32	22	300	32	150	-	-	-	-	5	A	3	
	3040RD-S	●	40	30	125	32	40	19	36	14	30	5	B	4	
	3040RD-M	●	40	30	200	32	70	-	-	-	-	5	A	4	
	3040RD-L	●	40	30	300	32	150	-	-	-	-	5	A	4	
	4032RD-S	●	32	20	125	32	40	19	36	14	30	6	B	2	
	4032RD-M	●	32	20	200	32	70	-	-	-	-	6	A	2	
	4032RD-L	●	32	20	300	32	150	-	-	-	-	6	A	2	
	4033RD-S	●	33	21	125	32	40	19	36	14	30	6	B	2	
	4033RD-M	●	33	21	200	32	70	-	-	-	-	6	A	2	
	4033RD-L	●	33	21	300	32	150	-	-	-	-	6	A	2	RDCT1204M0-MA
	4040RD-S	●	40	28	125	32	40	19	36	14	30	6	B	3	RDKT1204M0-□□
	4040RD-M	●	40	28	200	32	70	-	-	-	-	6	A	3	
	4040RD-L	●	40	28	300	32	150	-	-	-	-	6	A	3	
	4050RD-S	●	50	38	150	42	50	19	40	14	40	6	B	4	
	4050RD-M	●	50	38	250	42	100	-	-	-	-	6	A	4	
	4050RD-L	●	50	38	300	42	150	-	-	-	-	6	A	4	

● : Stock Item ○ : Under preparing for stock

Available Inserts

RDC(K)T



Designation		Coated Insert									Cermet				Un-coated Insert			
		NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510	PC8520	CT10	CN20	CN30		H01	G10	ST30A	ST20
RDCT	10T3M0-MA							○	○						●			
	1204M0-MA							○	○						●			
RDKT	10T3M0-MF					●	●	●	○									
	10T3M0-MM	●	●			●	●	●	●	●								
	1204M0-MA							○	○	○								
	1204M0-MF					●	●	●	○									
	1204M0-MM	●	●			●	●	●	●	●								
										○								

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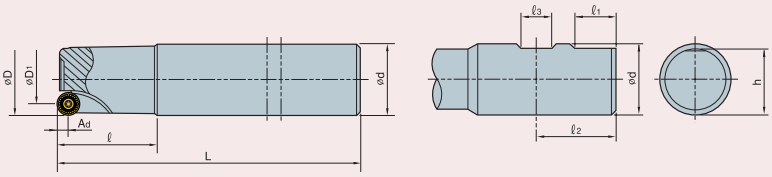
● : Stock Item ○ : Under preparing for stock

FMRS5000/6000



Type A　　Type B

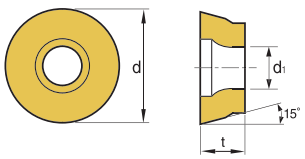
(mm)

Designation		Stock	øD	øD1	L	ød	ℓ	ℓ1	ℓ2	ℓ3	h	Ad	Type	○	Insert
FMRS	5040RD-S		40	24	125	32	40	19	36	14	30	8	B	2	
	5040RD-M		40	24	200	32	70	-	-	-	-	8	A	2	
	5040RD-L		40	24	300	32	150	-	-	-	-	8	A	2	
	5050RD-S		50	34	150	42	50	19	40	14	40	8	B	3	RDHW1605M0□
	5050RD-M		50	34	250	42	100	-	-	-	-	8	A	3	RDKT1605M0-MM
	5050RD-L		50	34	300	42	150	-	-	-	-	8	A	3	
	5063RD-S		63	47	150	42	50	19	40	14	40	8	B	4	
	5063RD-M		63	47	250	42	100	-	-	-	-	8	A	4	
	5063RD-L		63	47	300	42	150	-	-	-	-	8	A	4	
	6050RD-S		50	30	150	42	50	19	40	14	40	10	B	3	
	6050RD-M		50	30	250	42	100	-	-	-	-	10	A	3	
	6050RD-L		50	30	300	42	150	-	-	-	-	10	A	3	RDHW2006M0□
	6063RD-S		63	43	150	42	50	19	40	14	40	10	B	4	RDKT2006M0-MM
	6063RD-M		63	43	250	42	100	-	-	-	-	10	A	4	
	6063RD-L		63	43	300	42	150	-	-	-	-	10	A	4	

● : Stock Item ○ : Under preparing for stock

Available Inserts

RDHW
RDKT



Designation		Coated Insert									Cermet				Un-coated Insert			
		NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510	PC8520	CT10	CN20	CN30		H01	G10	ST30A	ST20
RDHW	1605M0F							○										
	1605M0E					○		○	○									
	1605M0S							○		○								
	2006M0F							○										
	2006M0E					○		○	○									
	2006M0S							○		○								
RDKT	1605M0-MM						●											
	2006M0-MM					●	●											

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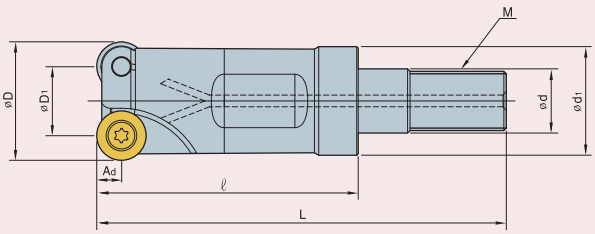
● : Stock Item ○ : Under preparing for stock

Parts

Specs	Screw	Wrench	
			
FMR1000	FTNA0203	TW06P	
FMR1500	FTNA02205	TW06P	
FMR2000	FTKA02555		TW07S
FMR2500	FTNA0305		TW09S
FMR3000	FTGA03508(07)		TW15S
FMR4000	FTKA0410		TW15S
FMR5000	FTGA0513-P		TW20S
FMR6000	FTGA0515-P		TW20S

FMRM1000/1500/2000/2500/3000/4000/5000



Designation		Stock	øD	øD1	L	ℓ	ød	ød1	M	Ad		Insert
FMRM	1008RD-M06		8	5.5	40	25	6.5	9.5	6	2.5	1	
	1010RD-M06		10	5	40	25	6.5	9.5	6	2.5	2	RDH(K)W0501M0
	1012RD-M06	●	12	7	40	25	6.5	11	6	2.5	2	
	1015RD-M08		15	10	47	30	8.5	14.5	8	2.5	3	
	1510RD-M06		10	7	40	25	6.5	9.5	6	3	1	
	1512RD-M06	●	12	6	40	25	6.5	11	6	3	2	RDH(K)W06T1M0
	1516RD-M08	●	16	10	47	30	8.5	14.5	8	3	3	
	1520RD-M10	●	20	14	56	35	10.5	18	10	3	3	
	2015RD-M08		15	8	47	30	8.5	14.5	8	3.5	2	RDH(K)W0702M0
	2020RD-M10		20	13	56	35	10.5	18	10	3.5	3	
	2516RD-M08	●	16	8	47	30	8.5	14.5	8	4	2	
	2520RD-M10	●	20	12	56	35	10.5	18	10	4	2	RDH(K)W0803M0
	2525RD-M12		25	17	69	45	12.5	22.5	12	4	3	
	3021RD-M10		21	11	56	35	10.5	18	10	5	2	
	3025RD-M12	●	25	15	69	45	12.5	22.5	12	5	2	RDC(K)T10T3M0
	3032RD-M16		32	22	77	50	16.5	29	16	5	3	
	3042RD-M16		42	32	77	50	16.5	29	16	5	4	
	4025RD-M12		25	13	69	45	12.5	22.5	12	6	2	
	4032RD-M16	●	32	20	77	50	16.5	29	16	6	2	RDC(K)T1204M0
	4040RD-M16	●	40	28	77	50	16.5	29	16	6	3	
	4042RD-M16		42	28	77	50	16.5	29	16	6	4	
	5040RD-M16		40	24	77	50	16.5	29	16	8	2	RDHW1605M0-□
												RDKT1605M0-MM

● : Stock Item ○ : Under preparing for stock

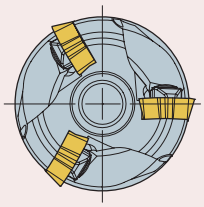
Available shank

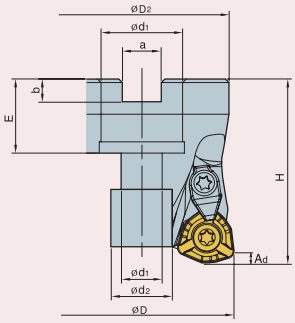
Designation : FMRM1008RD - M06	=	Designation of shank : MAT-M06-020-S10S
Specification for Modular head thread part(M06)		Specification for Shank thread part(M06)

Parts

Specs	Screw	Wrench
		
FMRM	FTGA03508(FTGA03507 for ø21) FTKA0410	TW15S TW15S

HRMC(M)13/15





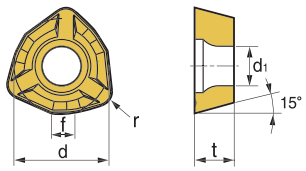
(mm)

Designation		Stock	ØD	ØD2	Ød	H	a	b	Ød1	Ød2	E	Ad		Bolt for cutter
HRMC (HRMCM)	13050R-3	● (◉)	50	47	22.225(22)	50	8(10.4)	5(6.3)	11	16.4	20	2.0	3	M10
	13050R-4	● (◉)	50	47	22.225(22)	50	8(10.4)	5(6.3)	11	16.4	20	2.0	4	M10
	13063R-4	● (◉)	63	60	22.225(22)	50	8(10.4)	5(6.3)	11	17	20	2.0	4	M10
	13080R-5	● (◉)	80	76	31.75(27)	70	12.7(12.4)	8(7.0)	18(13)	26(20)	32(22)	2.0	5	M16(M12)
	15063R-3	● (◉)	63	60	22.225(22)	50	8(10.4)	5(6.3)	11	17	20	2.5	3	M10
	15080R-4	● (◉)	80	76	31.75(27)	70	12.7(12.4)	8(7.0)	18(13)	26(20)	32(22)	2.5	4	M16(M12)
	15100R-5	● (◉)	100	96	31.75(32)	70	12.7(14.4)	8	18	26	32(25)	2.5	5	M16
	15100R-6	● (◉)	100	96	31.75(32)	70	12.7(14.4)	8	18	26	32(25)	2.5	6	M16
	15125R-6	●	125	98	38.1(40)	63	15.9(16.4)	10(9)	-	56	38(35)	2.5	6	M20
	15160R-7	●	160	100	50.8(40)	63	19(16.4)	11(9)	-	72	38(35)	2.5	7	M24(M20)

● : Stock Item ○ : Under preparing for stock

Available Inserts

WDKT



Designation		Coated Insert								Cermet				Un-coated Insert			
		NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510	CT10	CN20	CN30		H01	G10	ST30A	ST20
WDKT	130520ZDSR-MH	○				●	●	●	●								
	150625ZDSR-MH	○				●	●	●	●								

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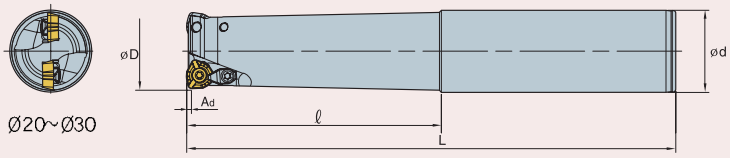
● : Stock Item ○ : Under preparing for stock

Parts

Specs \ Parts		Insert	Screw	Clamp	Screw for clamp	C-ring	Wrench
							
HRM 13	ø32, 33, 35	WDKT130520ZDSR-MH	FTGA0510-P	CHH4.5R1	CTX04513H	CR03	TW20
	ø40	WDKT130520ZDSR-MH	FTGA0512-P	CHH4.5R1	CTX04513H	CR03	TW20
	ø50, 63, 80	WDKT130520ZDSR-MH	FTGA0513-P	CHH4.5R1	CTX04513H	CR03	TW20
HRM 15	ø63, 80, 100 ø125, 160	WDKT150625ZDSR-MH	FTGA0513-P	CHH5.5R1	CTX0515	CR04	TW20

HRMS08/10



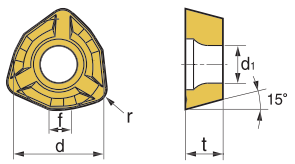
(mm)

	Designation	Stock	øD	L	ød	ℓ	Ad	
HRMS	0820R-2S20	●	20	130	20	50	1.0	2
	0820R-2M20	●	20	180	20	100	1.0	2
	0820R-2L20	●	20	250	20	130	1.0	2
	0821R-2S20	●	21	130	20	50	1.0	2
	0821R-2M20	●	21	180	20	50	1.0	2
	0821R-2L20	●	21	250	20	50	1.0	2
	1025R-2S25	●	25	140	25	60	1.5	2
	1025R-2M25	●	25	200	25	120	1.5	2
	1025R-2L25	●	25	300	25	180	1.5	2
	1026R-2S25	●	26	140	25	60	1.5	2
	1026R-2M25	●	26	200	25	60	1.5	2
	1026R-2L25	●	26	300	25	60	1.5	2
	1030R-2S32	●	30	150	32	70	1.5	2
	1030R-2M32	●	30	200	32	120	1.5	2
	1030R-2L32	●	30	300	32	180	1.5	2

●: Stock Item ○: Under preparing for stock

Available Inserts

WDKT



Designation		Coated Insert								Cermet				Un-coated Insert			
		NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510	CT10	CN20	CN30		H01	G10	ST30A	ST20
WDKT	080316ZDSR-MH	○				●	●		●								
	10T320ZDSR-MH	○				●	●		●								

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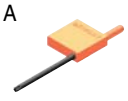
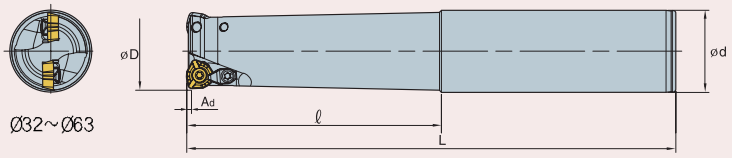
●: Stock Item ○: Under preparing for stock

Parts

Specs \ Parts	Insert	Screw	Clamp	Screw for clamp	C-ring	Wrench	
						A 	B 
HRMS08	WDKT080316ZDSR-MH	FTNA0306	-	-	-	TW09P	A
HRMS10	WDKT10T320ZDSR-MH	FTNA0408	CHH3.5R1	CTX03510	CR03	TW15S	B

HRMS13/15



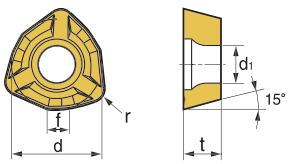
(mm)

	Designation	Stock	øD	L	ød	ℓ	Ad	
HRMS	1332R-2S32	●	32	150	32	70	2.0	2
	1332R-2M32	●	32	200	32	120	2.0	2
	1332R-2L32	●	32	300	32	180	2.0	2
	1333R-2S32	●	33	150	32	70	2.0	2
	1333R-2M32	●	33	200	32	70	2.0	2
	1333R-2L32	●	33	300	32	70	2.0	2
	1335R-2S32	●	35	150	32	50	2.0	2
	1335R-2M32	●	35	200	32	50	2.0	2
	1335R-2L32	●	35	300	32	50	2.0	2
	1340R-3S32	●	40	150	32	50	2.0	3
	1340R-3M32	●	40	250	32	50	2.0	3
	1340R-3L32	●	40	300	32	50	2.0	3
	1340R-3S42	●	40	150	42	60	2.0	3
	1340R-3M42	●	40	250	42	130	2.0	3
	1340R-3L42	●	40	300	42	180	2.0	3
	1550R-3S42	●	50	150	42	50	2.5	3
	1550R-3M42	●	50	250	42	50	2.5	3
	1550R-3L42	●	50	300	42	50	2.5	3
	1563R-4S42	●	63	150	42	50	2.5	4
	1563R-4M42	●	63	250	42	50	2.5	4
	1563R-4L42	●	63	300	42	50	2.5	4

●: Stock Item ○: Under preparing for stock

Available Inserts

WDKT



Designation		Coated Insert								Cermet				Un-coated Insert			
		NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510	CT10	CN20	CN30		H01	G10	ST30A	ST20
WDKT	130520ZDSR-MH	○				●	●	●	●								
	150625ZDSR-MH	○				●	●	●	●								

P. 301

●: Stock Item ○: Under preparing for stock

Parts

Specs \ Parts		Insert	Screw	Clamp	Screw for clamp	C-ring	Wrench
							
HRM 13	ø32, 33, 35	WDKT130520ZDSR-MH	FTGA0510-P	CHH4.5R1	CTX04513H	CR03	TW20
	ø40	WDKT130520ZDSR-MH	FTGA0512-P	CHH4.5R1	CTX04513H	CR03	TW20
	ø50, 63, 80	WDKT130520ZDSR-MH	FTGA0513-P	CHH4.5R1	CTX04513H	CR03	TW20
HRM 15	ø50, 63	WDKT150625ZDSR-MH	FTGA0513-P	CHH5.5R1	CTX0515	CR04	TW20
	ø80, 100,125	WDKT150625ZDSR-MH	FTGA0513-P	CHH5.5R1	CTX0515	CR04	TW20

BFE

Fig 1

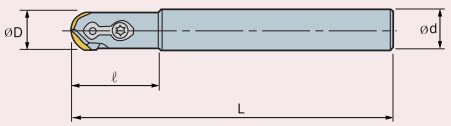
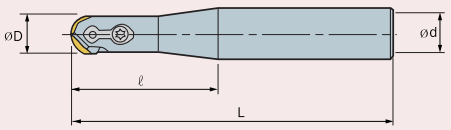


Fig 2



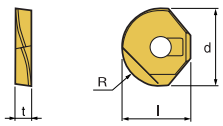
(mm)

Designation		Stock	Fig	øD	ℓ	L	ød	Available Insert	Parts				
									Screw for insert	Clamp	Screw for clamp	C-ring	wrench
BFE	16-S	●	1		36	140	16	RC16	FTGA0513	CBH4.5R1	CTX04513	ER03	TW20
	16-M	●	2	16	65	170	20	RC16	FTGA0513	CBH4.5R1	CTX04513	ER03	TW20
	16-L	●	2		65	200	25	RC16	FTGA0513	CBH4.5R1	CTX04513	ER03	TW20
	20-S	●	1		45	160	20	RC20	FTGA0517	CBH4.5R2	CTX04513	ER03	TW20
	20-M	●	2	20	80	200	25	RC20	FTGA0517	CBH4.5R2	CTX04513	ER03	TW20
	20-L	●	2		80	250	25	RC20	FTGA0517	CBH4.5R2	CTX04513	ER03	TW20
	25-S		1		45	160	25	RC25	FTGA0621	CBH5R1	CTX0517	ER04	TW20
	25-M	●	2	25	90	210	32	RC25	FTGA0621	CBH5R1	CTX0517	ER04	TW20
	25-L	●	2		90	300	32	RC25	FTGA0621	CBH5R1	CTX0517	ER04	TW20
	30-S		2		65	175	32	RC30	FTGA0826	CBH6R1	CTX0621	ER05	TW25
	30-M	●	2	30	100	250	32	RC30	FTGA0826	CBH6R1	CTX0621	ER05	TW25
	30-L		2		100	350	32	RC30	FTGA0826	CBH6R1	CTX0621	ER05	TW25
	32-S		1		56	175	32	RC32	FTGA0826	CBH6R1	CTX0621	ER05	TW25
	32-M	●	1	32	100	250	32	RC32	FTGA0826	CBH6R1	CTX0621	ER05	TW25
	32-L	●	1		100	350	32	RC32	FTGA0826	CBH6R1	CTX0621	ER05	TW25
BFEA	100-S		1		45	160	25.4	RC25.4	FTGA0621	CBH5R1	CTX0517	ER04	TW20
	100-M	○	2	25.4	90	210	31.75	RC25.4	FTGA0621	CBH5R1	CTX0517	ER04	TW20
	100-L	○	2		90	300	31.75	RC25.4	FTGA0621	CBH5R1	CTX0517	ER04	TW20

● : Stock Item ○ : Under preparing for stock

Available Inserts

RC



Designation		Coated Insert									Cermet				Un-coated Insert			
		NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510	PC210F	CT10	CN20	CN30		H01	G10	ST30A	ST20
RC	16							○		●								
	20							○		●								
	25							○		●								
	30							○		●								
	32							○		●								

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● : Stock Item ○ : Under preparing for stock

Parts

Screw for insert	Clamp	Screw for clamp	E-ring	Wrench
				
FTGA0513 FTGA0621 FTGA0517 FTGA0826	CBH4.5R1 CBH5R1 CBH4.5R2 CBH6R1	CTX04513 CTX0517 CTX04513 CTX0621	ER03 ER04 ER03 ER05	TW20 TW25

Recommended Cutting Condition

Work piece	V(m/min)	f(mm/tooth)
Carbon steel(over HB 180) (SS41, SM25C)	150 ~ 250	0.1 ~ 0.3
Alloy steel(under HB 300) (SM55C, SCM)	100 ~ 200	0.1 ~ 0.2
Hardness underHB 300 Cast iron	100 ~ 200	0.1 ~ 0.3

BRE

Fig 1

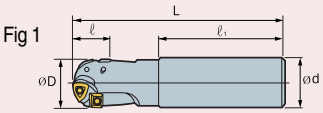


Fig 2

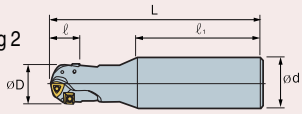
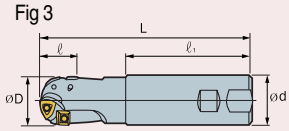


Fig 3



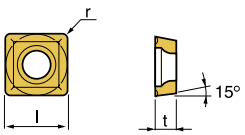
(mm)

Designation		Stock	Fig	øD	ℓ	ℓ1	L	ød	Available insert	
BRE	20-S	●	1	20	20	75	125	20	ZDMT08T2-R10	SPMT060304
	20-M	●	1	20	20	75	150	20	ZDMT08T2-R10	SPMT060304
	20-L		2	20	20	100	200	25	ZDMT08T2-R10	SPMT060304
	20-SL		3	20	20	60	125	25	ZDMT08T2-R10	SPMT060304
	25-S	●	1	25	23	80	150	25	ZDMT1103-R12.5	SPMT060304
	25-M	●	1	25	23	80	175	25	ZDMT1103-R12.5	SPMT060304
	25-L		2	25	23	100	200	32	ZDMT1103-R12.5	SPMT060304
	25-SL		3	25	23	60	135	25	ZDMT1103-R12.5	SPMT060304
	32-S	●	1	32	31	90	175	32	ZDMT13T3-R16	SDMT090308
	32-M	●	1	32	31	100	200	32	ZDMT13T3-R16	SDMT090308
	32-L		1	32	31	100	250	32	ZDMT13T3-R16	SDMT090308
	32-SL		3	32	31	75	150	32	ZDMT13T3-R16	SDMT090308
	40-S	●	1	40	41	90	175	42	ZPMT1604-R20	SPMT120408
	40-M	●	1	40	41	100	200	42	ZPMT1604-R20	SPMT120408
	40-L		1	40	41	100	250	42	ZPMT1604-R20	SPMT120408
	40-SL		3	40	41	80	160	42	ZPMT1604-R20	SPMT120408
	50-S		1	50	45	100	200	42	ZPMT1604-R25	SPMT120408
	50-L		1	50	45	200	300	42	ZPMT1604-R25	SPMT120408
	50-SL	●	3	50	45	150	250	42	ZPMT1604-R25	SPMT120408
	63-S		1	63	52	100	200	42	ZPMT1604-R31.5	SPMT120408
	63-L	○	1	63	52	200	300	42	ZPMT1604-R31.5	SPMT120408
	63-SL	○	3	63	52	150	250	42	ZPMT1604-R31.5	SPMT120408

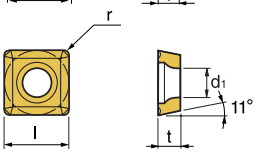
● : Stock Item ○ : Under preparing for stock

Available Inserts

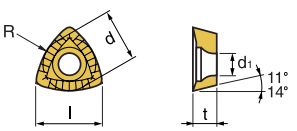
SDMT



SPMT



ZDMT
ZPMT



Designation		Coated Insert									Cermet				Un-coated Insert			
		NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510		CT10	CN20	CN30		H01	G10	ST30A	ST20
SDMT	090308	●				●		○										
SPMT	060304	●				●											○	
	120408	●				●		○									●	
ZDMT	08T2-R10	●			○	●												
	1103-R12.5	●			○	●												
	13T3-R16	●			○	●												
ZPMT	1604-R20	●			○	●												
	1604-R25	●			○	●		○										
	1604-R31.5	●			○	●												

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● : Stock Item ○ : Under preparing for stock

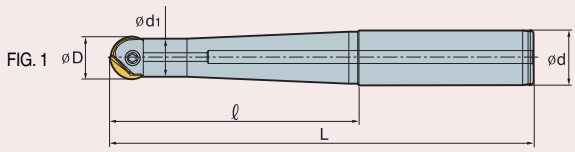
Parts

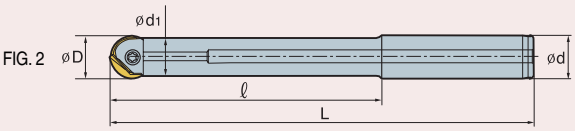
Screw	Wrench	Wrench
		
ETNA02506*, ETNA0408**, ETNA0511	TW15S**, TW20S	TW07P*

∗ for BRE20, BRE25 ∗∗ for BRE32

LBE(Steel Shank)

T stand for Taper type, S stand for Straight type





(mm)

Designation		Stock	Fig	øD	ℓ	L	ød1	ød
LBE	080035T-S12	○	1	8	35	91	7.2	12
	080055T-S12	○	1	8	55	111	7.2	12
	080075T-S12	○	1	8	75	131	7.2	12
	100035T-S12	○	1	10	35	91	9	12
	100055T-S12	○	1	10	55	111	9	12
	100075T-S12	○	1	10	75	131	9	12
	120035S-S12	○	2	12	35	91	10.4	12
	120055T-S12	○	1	12	55	111	10.4	12
	120085T-S16	○	1	12	85	145	10.4	16
	160035S-S16	○	2	16	35	95	14	16
	160065T-S16	○	1	16	65	125	14	16
	160100T-S20	○	1	16	100	170	14	20
	200040S-S20	○	2	20	40	110	17.5	20
	200075T-S20	○	1	20	75	145	17.5	20
	200115T-S25	○	1	20	115	195	17.5	25
	250045S-S25	○	2	25	45	125	22	25
	250090T-S25	○	1	25	90	170	22	25
	250135T-S32	○	1	25	135	225	22	32
	300055S-S32	○	2	30	55	145	27	32
	300105T-S32	○	1	30	105	195	27	32
	300160T-S32	○	1	30	160	250	27	32
	320055S-S32	○	2	32	55	145	29	32
	320105T-S32	○	1	32	105	195	29	32
	320160T-S32	○	1	32	160	250	29	32

● : Stock Item ○ : Under preparing for stock

Available Inserts

Holder		Insert			Part	
LBE		LBS	LBH	LR	Screw	Wrench
LBE	080	LBS080	LBH080	-	ETND02506F	TWP07S
	100	LBS100	LBH100	LR100	ETND0307F	TWP08S
	120	LBS120	LBH120	LR120	ETND03509	TWP10S
	160	LBS160	LBH160	LR160	ETND0413	TWP15S
	200	LBS200	LBH200	LR200	ETKD0516	TWP20
	250	LBS250	LBH250	LR250	ETKD0620	TWP25
	300	LBS300	LBH300	LR300	ETGD0825	TWP40
	320	LBS320	LBH320	LR320	ETGD0825	TWP40

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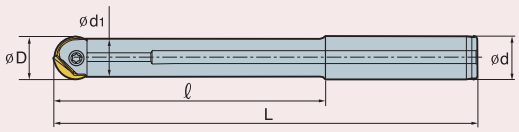
LBE(Carbide Shank)

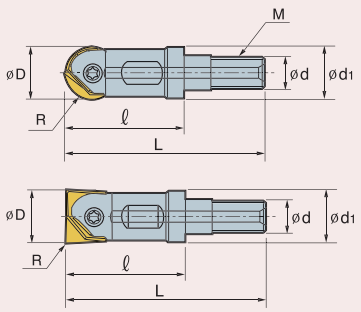


(mm)

Designation		Stock	øD	ℓ	L	ød1	ød	Insert	Screw
LBE	080080S-S08C		08	80	136	7.2	08	LBS080, LBH080	ETND02506F
	080100S-S08C		08	100	156	7.2	08	LBS080, LBH080	ETND02506F
	100080S-S10C		10	80	136	9	10	LBS100, LBH100, LR100-R□□	ETND0307F
	100120S-S10C	○	10	120	176	9	10	LBS100, LBH100, LR100-R□□	ETND0307F
	120100S-S12C		12	100	156	10.4	12	LBS120, LBH120, LR120-R□□	ETND03509
	120150S-S12C	○	12	150	206	10.4	12	LBS120, LBH120, LR120-R□□	ETND03509
	160100S-S16C		16	100	160	14	16	LBS160, LBH160, LR160-R□□	ETND0413
	160150S-S16C	○	16	150	210	14	16	LBS160, LBH160, LR160-R□□	ETND0413
	200120S-S20C	○	20	120	190	17.5	20	LBS200, LBH200, LR200-R□□	ETKD0516
	200170S-S20C	○	20	170	240	17.5	20	LBS200, LBH200, LR200-R□□	ETKD0516
	250140S-S25C		25	140	220	22	25	LBS250, LBH250, LR250-R□□	ETKD0620
	250170S-S25C	○	25	170	250	22	25	LBS250, LBH250, LR250-R□□	ETKD0620
	300140S-S32C		30	140	230	27	32	LBS300, LBH300, LR300-R□□	ETGD0825
	300170S-S32C	○	30	170	260	27	32	LBS300, LBH300, LR300-R□□	ETGD0825
	320140S-S32C		32	140	230	29	32	LBS320, LBH320, LR320-R□□	ETGD0825
	320170S-S32C	○	32	170	260	29	32	LBS320, LBH320, LR320-R□□	ETGD0825

● : Stock Item ○ : Under preparing for stock

LBE(Modular Head)

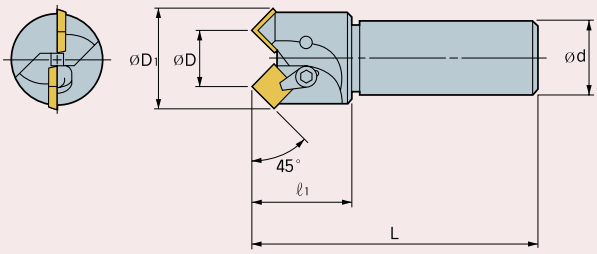


(mm)

Designation		Stock	øD	R	L	ℓ	ød	ød1	M	Insert	Screw
LBEM	100-MHD-06	○	10	5	40	25	6.5	9.5	M06	LBS100, LBH100, LR100-R□□	ETND0307F
	120-MHD-06	○	12	6	40	25	6.5	11	M06	LBS120, LBH120, LR120-R□□	ETND03509
	160-MHD-08	○	16	8	47	30	8.5	14.5	M08	LBS160, LBH160, LR160-R□□	ETND0413
	200-MHD-10	○	20	10	56	35	10.5	18	M10	LBS200, LBH200, LR200-R□□	ETKD0516
	250-MHD-12	○	25	12.5	69	45	12.5	22.5	M12	LBS250, LBH250, LR250-R□□	ETKD0620
	300-MHD-16	○	30	15	77	50	17	28	M16	LBS300, LBH300, LR300-R□□	ETGD0825
	320-MHD-16	○	32	16	77	50	17	29	M16	LBS320, LBH320, LR320-R□□	ETGD0825

● : Stock Item ○ : Under preparing for stock

CE



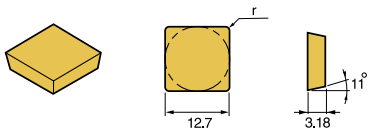
(mm)

Designation		Stock R	Stock L	ØD	ØD1	Ød	L	ℓ1		Maximum depth of cut	Approach Angle	Axial Rake Angle	Radial Rake Angle	Available chamfering range
CE	407R	●		7	23.3	32	120	40	1	8	45°	0°	-12°	ø 8~ ø22
	420R	●		20	37.3	32	120	40	2	8	45°	0°	0°	ø22~ ø37
	425R	○		25	42.3	32	120	40	2	8	45°	0°	0°	ø27~ ø42
	435R	●		35	52.3	32	120	40	2	8	45°	0°	0°	ø36~ ø51

●: Stock Item ○: Under preparing for stock

Available Inserts

SP□N



Designation		Coated Carbide NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510		Cermet CT10	CN20	CN30		Un-coated Carbide H01	G10	ST30A	ST20
SPGN	120308																	
SPMN	120308	○				○											●	
	120312	○				○											○	

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Parts

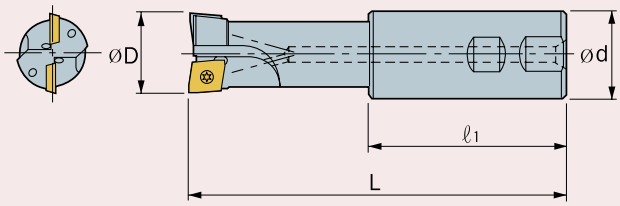
Clamp	Screw	C-ring	Wrench
			
CH6R2	CHX0617L	CR05	HW30L

Recommended Cutting Condition

Work piece	Chamfering V(m/min)	Chamfering f(mm/tooth)	Grade
P	150 ~ 250	0.20 ~ 0.40	NCM325
	120 ~ 200	0.20 ~ 0.50	PC3535
	100 ~ 150	0.20 ~ 0.50	ST30A
M	50 ~ 70	0.10 ~ 0.30	ST30A
K	90 ~ 110	0.20 ~ 0.60	G10

Work piece	Grooving V(m/min)	Grooving f(mm/tooth)	Grade
P	150 ~ 250	0.05 ~ 0.20	NCM325
	120 ~ 200	0.05 ~ 0.25	PC3535
	100 ~ 150	0.05 ~ 0.25	ST30A
M	50 ~ 70	0.05 ~ 0.15	ST30A
K	90 ~ 110	0.05 ~ 0.25	G10

PM



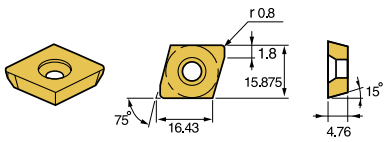
(mm)

Designation		Stock R	Stock L	ØD	ℓ1	L	Ød		Approach Angle	Axial Rake Angle	Radial Rake Angle	Maximum machining diameter	Maximum depth of cut
PM	540R	●		40	90	190	42	2	-	5°	-3°	ø80	70
	540RZ			40	140	240	42	2	-	5°	-3°	ø80	70
	550R	●		50	90	190	42	2	-	5°	-3°	ø100	70
	550RZ			50	140	240	42	2	-	5°	-3°	ø100	70

●: Stock Item ○: Under preparing for stock

Available Inserts

EDCW



Designation	Coated Carbide NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510		Cermet CT10	CN20	CN30		Un-coated Carbide H01	G10	ST30A	ST20
EDCW 1604ZDF/TR					○		○	○								●	

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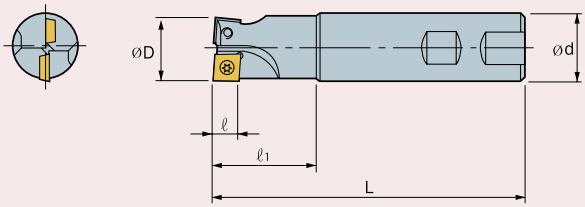
Parts

Screw	Wrench
	
FTNA0513	TW20L

Recommended Cutting Condition

Work piece	Endmilling		
	V(m/min)	f(mm/tooth)	Grade
P	120 ~ 200	0.10 ~ 0.30	PC3535
	80 ~ 150	0.10 ~ 0.30	ST30A
M	50 ~ 150	0.05 ~ 0.20	PC9530
	50 ~ 100	0.05 ~ 0.20	ST30A
K	150 ~ 250	0.10 ~ 0.40	PC6510
	100 ~ 200	0.10 ~ 0.40	G10

SE



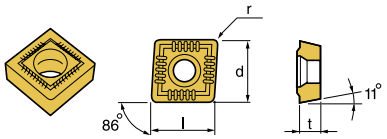
(mm)

Designation		Stock R	Stock L	øD	L	ød	ℓ	ℓ1		Approach Angle	Axial Rake Angle	Radial Rake Angle
SE	325R	●		25	115	25	8	35	2	-	5°	0 °
	432R	●		32	125	32	11	45	2	-	5°	0 °
	440R	●		40	150	42	11	50	2	-	5°	-5°

● : Stock Item ○ : Under preparing for stock

Available Inserts

MPMT



Designation		Coated Carbide NC40	NC500H	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510	Cermet CT10	CN20	CN30		Un-coated Carbide H01	G10	ST30A	ST20
MPMT	090308*	●	○			○			○								
	120408	●	○			○			○								

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*For SE325R

Parts

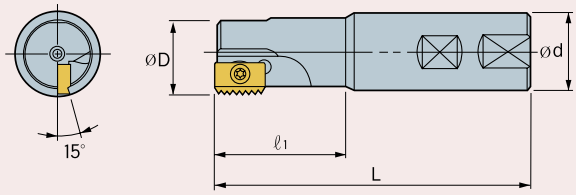
Insert	Screw	Wrench
		
*MPMT090308 / MPMT120408	*FTNA0408 / FTNA0513	*TW15L / TW20L

*For SE325R

Recommended Cutting Condition

V(m/min)	Depth of cut (mm)	Feed f(mm/tooth) Soft steel	Hard steel	Cast iron	Grade
80 ~ 120	2	0.1 ~ 0.25	0.1 ~ 0.2	0.1 ~ 0.3	ST30A
	4	0.1 ~ 0.2	0.1 ~ 0.15	0.1 ~ 0.3	NC40
	6	0.1 ~ 0.15	0.05 ~ 0.1	0.1 ~ 0.2	G10
	8	0.1 ~ 0.15	0.05 ~ 0.1	0.1 ~ 0.15	-

TM



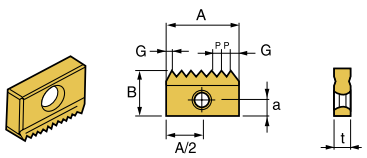
(mm)

Designation		Stock R	Stock L	ØD	Ød	ℓ1	L		Approach Angle	Axial Rake Angle	Radial Rake Angle
TM	632R	●		32	32	50	125	1	-	-	-15°
	740R	●		40	32	55	130	1	-	-	-15°
	950R	○		50	42	65	145	1	-	-	-15°

●: Stock Item ○: Under preparing for stock

Available Inserts

MET/MIT



Designation		Coated Carbide NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510	PC130	Cermet CT10	CN20	CN30		Un-coated Carbide H01	G10	ST30A	ST20
MIT	100									○								
MET	150									○		○						
	200									○		○					○	
	300									○		○					●	
	400									○								

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●: Stock Item ○: Under preparing for stock

Parts

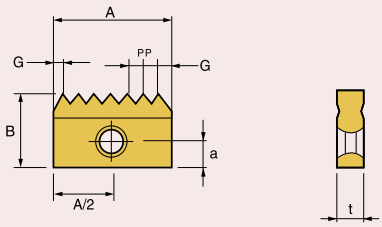
Screw	Wrench
	
*FTNB0411 / FTNA0513	*TW15L / TW20L

* For TM632R

Recommended Cutting Condition

Work piece	V(m/min)	f(mm/tooth)
Carbon steel (under HB 180)	150 ~ 250	0.05 ~ 0.12
Alloy steel (under HB 300)	80 ~ 180	0.03 ~ 0.1
Cast iron (under HB 300)	80 ~ 180	0.05 ~ 0.1
Aluminum alloy	150 ~ 400	0.05 ~ 0.15

MET / MIT



(mm)

Available holder	Designation		Coated Carbide									Cermet				Un-coated Carbide				P	A	B	G	a	t	No. pitch
			NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510	PC130	CT10	CN20	CN30		H01	G10	ST30A	ST20							
TM 632R	MIT	100									○									1.0	19	12	1.0	4.5	4.8	18
	For internal	150									○		○					●		1.5	19	12	1.25	4.5	4.8	12
		200									○		○					●		2.0	19	12	1.5	4.5	4.8	9
TM 740R		300									○		○					●		3.0	22	15	2.0	6.0	4.8	7
TM 950R		400									○									4.0	29	18	2.5	7.0	6.39	7
TM 632R	MET	100									○									1.0	19	12	1.0	4.5	4.8	18
	For external	150									○		○					○		1.5	19	12	1.25	4.5	4.8	12
		200									○		○					○		2.0	19	12	1.5	4.5	4.8	9
TM 740R		300									○		○					○		3.0	22	15	2.0	6.0	4.8	7
TM 950R		400									○									4.0	29	18	2.5	7.0	6.39	7

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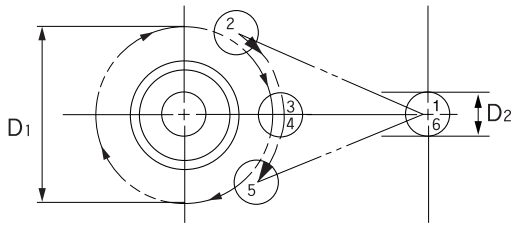
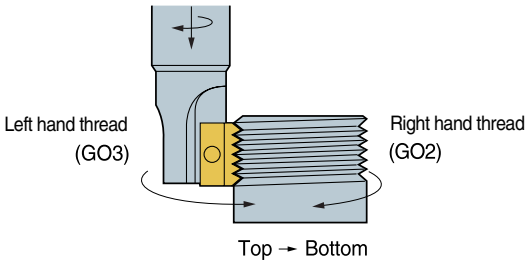
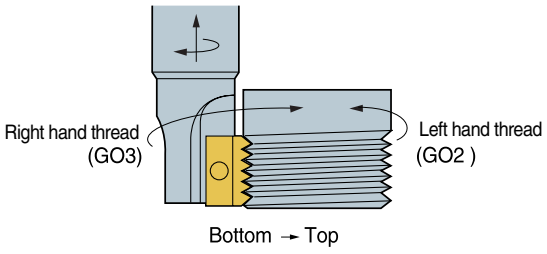
●: Stock Item ○: Under preparing for stock

Machining example of TM

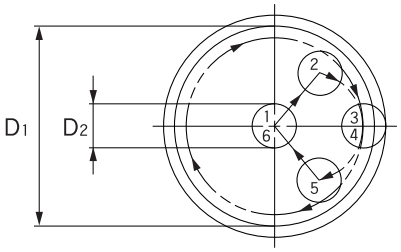
Tool path for external thread machining

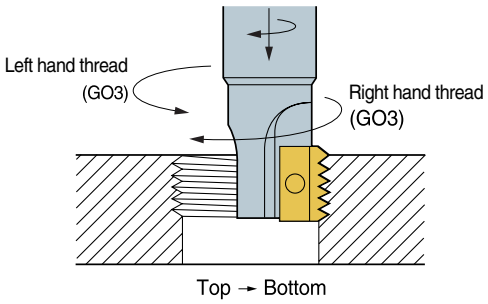


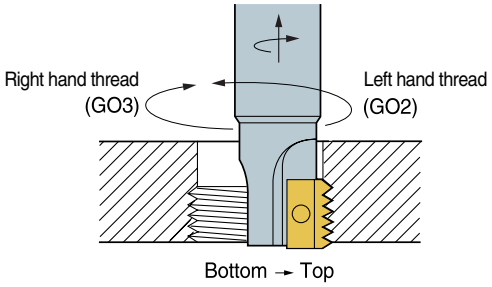




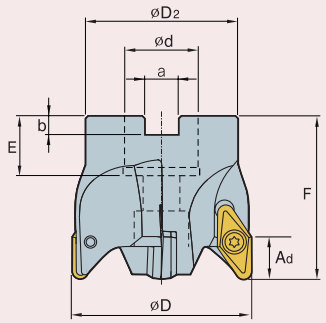
Tool path for internal thread machining







PAC(M)4000



(mm)

Designation		Stock R	Stock L	øD	øD2	ød	F	a	b	E	◎	Ad	Insert	Screw	Wrench
PAC (PACM)	4040R	●		40	32	15.875(16)	55	8.0(8.4)	5(5.6)	20(20.0)	3	15	VCKT220530N-MA	FTNC04509	TW20S
	4050R	○	●	50	40	22.225(22)	55	8.0(10.4)	5(6.3)	20(22.0)	3	15	VCKT220530N-MA	FTNC04511	TW20S
	4063R	○	●	63	50	22.225(22)	60	8.0(10.4)	5(6.3)	20(22.0)	4	15	VCKT220530N-MA	FTNC04511	TW20S
	4080R		●	80	60	25.40(27)	60	9.5(12.4)	6(7.0)	25(22.0)	4	15	VCKT220530N-MA	FTNC04511	TW20S
	4100R		●	100	80	31.75(32)	60	12.7(14.4)	8(8.0)	32(32.0)	5	15	VCKT220530N-MA	FTNC04511	TW20S

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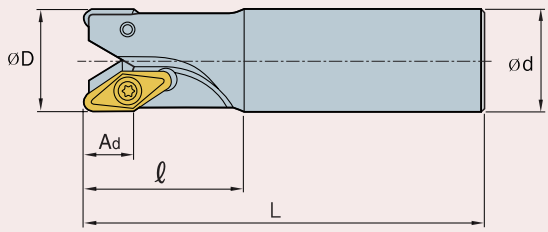
● : Stock Item ○ : Under preparing for stock

PAS2000/4000



(mm)

Designation		Stock R	Stock L	øD	ød	L	l	◎	Ad	Insert	Screw	Wrench
PAS	2012R	○		12	16	85	25	1	8	VDKT11T210N-MA	ETNA02505	TW07S
	2016R	○		16	16	90	25	2	8	VDKT11T210N-MA	ETNA02505	TW07S
	2020R	○		20	20	100	30	2	8	VDKT11T210N-MA	ETNA02506	TW07S
	2025R	○		25	25	115	35	3	8	VDKT11T210N-MA	ETNA02506	TW07S
	2032R			32	32	125	40	4	8	VDKT11T210N-MA	ETNA02506	TW07S
	2042R			42	32	130	42	5	8	VDKT11T210N-MA	ETNA02506	TW07S
	4032R	●		32	32	125	50	2	15	VCKT220530N-MA	FTNC04509	TW20S
	4040R	●		40	32	140	50	3	15	VCKT220530N-MA	FTNC04509	TW20S

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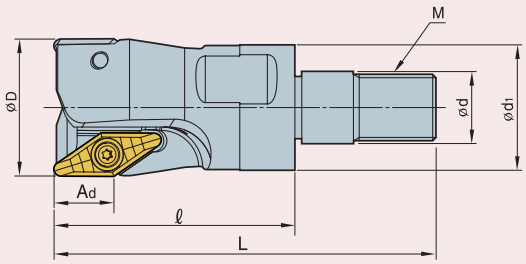
● : Stock Item ○ : Under preparing for stock

PAM2000



(mm)

Designation		Stock	øD	L	ℓ	ød	ød1	M	Ad	
PAM	2012R-M06	●	12	47.5	33	6.5	11	M06	8	1
	2016R-M08	●	16	53.5	36	8.5	14.5	M08	8	2
	2020R-M10	●	20	56	36	10.5	18	M10	8	2
	2025R-M12	●	25	63	41	12.5	22.5	M12	8	3
	2032R-M16		32	69	45	17	28.5	M16	8	4
	2042R-M16		42	69	45	17	28.5	M16	8	5

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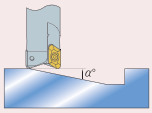
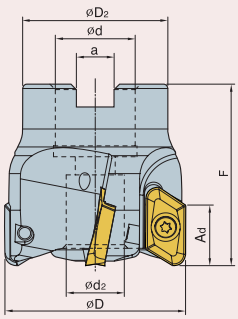
● : Stock Item ○ : Under preparing for stock

Parts

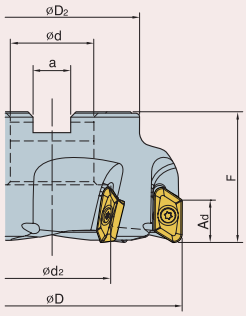
Specs	Insert	Screw	Wrench
			
PAM2000	VDKT11T210N-MA	ETNA20506	TW07S

PAXC(M)





Ø40~Ø80



Ø100~Ø125

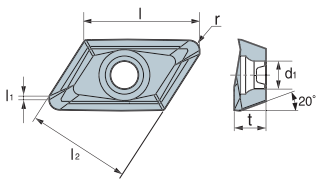
(mm)

형 번		재고 A	재고 B	øD	øD2	ød	ød2	a	F	Ad		α° max	Coolant hole
PAXC(M)	5040NR-A, B	●	●	40	34	15.875(16)	14	8.0(8.4)	40	17	3	11.31	-
	5050NR-A, B	●	●	50	42	22.225(22)	16.5	8.0(10.4)	50	17	4	7.24	-
	5063NR-A, B	●	●	63	49	22.225(22)	16.5	8.0(10.4)	50	17	5(4)	5.10	-
	5080NR-A, B	●	●	80	57	25.4(27)	19	9.5(12.4)	50	17	5	3.86	-
	5100NR-A, B	●	●	100	67	31.75(32)	45	12.7(14.4)	50	17	6	3.94	-
	5125NR-A, B	●	●	125	87	38.1(40)	56	15.9(16.4)	63	17	7	2.14	-
	5040AR-A, B	○		40	34	15.875(16)	14	8.0(8.4)	40	17	3	11.31	○
	5050AR-A, B	○		50	42	22.225(22)	16.5	8.0(10.4)	50	17	4	7.24	○
	5063AR-A, B	○		63	49	22.225(22)	16.5	8.0(10.4)	50	17	5(4)	5.10	○
	5080AR-A, B	○		80	57	25.4(27)	19	9.5(12.4)	50	17	5	3.86	○
	5100AR-A, B	○		100	67	31.75(32)	45	12.7(14.4)	50	17	6	3.94	○
	5125AR-A, B	○		125	87	38.1(40)	56	15.9(16.4)	63	17	7	2.14	○

● : Stock Item ○ : Under preparing for stock

Available Inserts

XEKT



Designation		Coated Carbide NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510	PC130	Cermet CT10	CN20	CN30		Un-coated Carbide H01	G10	ST30A	ST20
XEKT	☆19M504FR-MA														●			
	☆19M508FR-MA														●			
	☆19M512FR-MA														●			
	☆19M516FR-MA														●			
	☆19M518FR-MA																	
	☆19M520FR-MA														●			
	☆19M530FR-MA														●			
	☆19M532FR-MA														●			
	★19M540FR-MA														○			
	★19M550FR-MA														○			

☆ : A ★ : B

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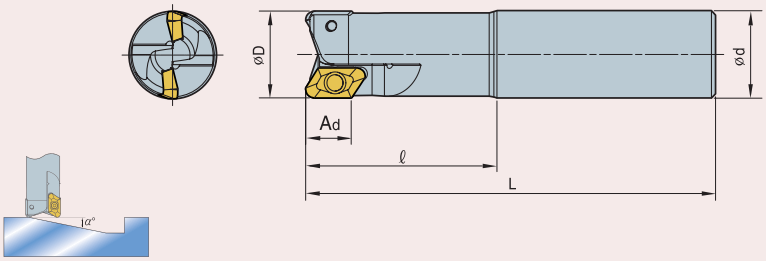
● : Stock Item ○ : Under preparing for stock

PAXS



(mm)

Designation		Stock A	Stock B	øD	ød	ℓ	L	Ad		α° max	Coolant hole
PAXS	5020NR-A, B	●	●	20	20	60	130	17	1	8.30	-
	5025NR-A, B	●	●	25	25	60	140	17	2	17.95	-
	5032NR-A, B	●	●	32	32	70	150	17	2	12.6	-
	5040NR-A, B		●	40	40	70	160	17	3	9.91	-
	5020AR-A, B	○		20	20	60	130	17	1	8.30	○
	5025AR-A, B	○		25	25	60	140	17	2	17.95	○
	5032AR-A, B	○		32	32	70	150	17	2	12.6	○
	5040AR-A, B	○		40	40	70	160	17	3	9.91	○

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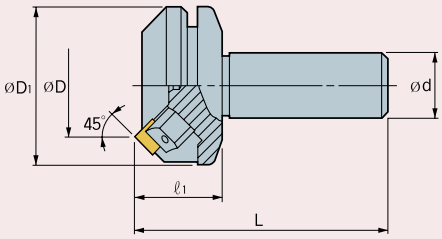
● : Stock Item ○ : Under preparing for stock

Parts

Specs	Insert	Screw	Wrench
			
PAXS, PAXC	XEKT-MA	PTKA0408	TW15S

ADS4000



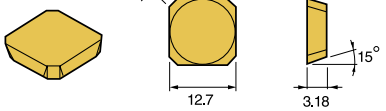
(mm)

Designation		Stock R	Stock L	ØD	ØD1	Ød	ℓ1	L		Maximum depth of cut	Approach Angle	Axial Rake Angle	Radial Rake Angle
ADS	4050R	●		50	75	32	40	120	3	6.5	45°	+15°	-3°
	4050R-S42	○		50	75	42	40	120	3	6.5	45°	+15°	-3°
	4063R	●		63	87	32	40	120	4	6.5	45°	+15°	-3°
	4063R-S42	○		63	87	42	40	120	4	6.5	45°	+15°	-3°

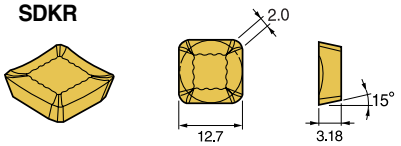
● : Stock Item ○ : Under preparing for stock

Available Inserts

SDCN



SDKR



Designation		Coated Carbide NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510	Cermet CT10	CN20	CN30		Un-coated Carbide H01	G10	ST30A	ST20
SDCN	1203AEFN																
	1203AETN																
	1203AETN-RH																
	1203AETN-S20																
SDKR	1203AESN-MX		○			○						○					
	1203AETN-MX					○		○									

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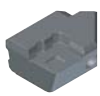
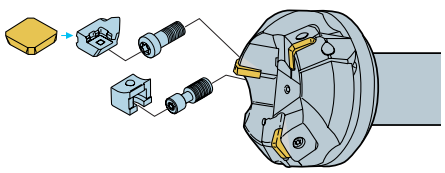
● : Stock Item ○ : Under preparing for stock

Parts

Locater	Wedge	Wedge Screw	Locater Screw	Wrench
				
LAS4R/L	WASR/L	WTX0817	LTX0512	TW25

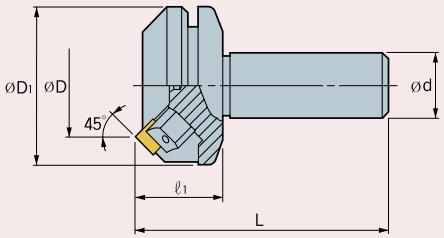
Assembling



Recommended Cutting Condition

Work piece	Cutting Condition V(m/min)	Cutting Condition f(mm/tooth)	Grade
P	150 ~ 250	0.10 ~ 0.25	NCM325
	120 ~ 200	0.10 ~ 0.30	PC3535
	100 ~ 150	0.10 ~ 0.30	ST30A
M	50 ~ 150	0.10 ~ 0.25	PC9530
	50 ~ 120	0.10 ~ 0.30	ST30A
K	150 ~ 250	0.10 ~ 0.25	NCM320K
	130 ~ 200	0.10 ~ 0.30	PC6510
	100 ~ 150	0.10 ~ 0.30	G10

ADS5000



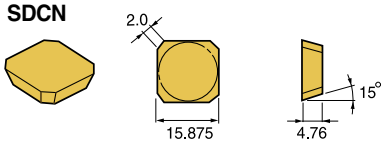
(mm)

Designation		Stock R	Stock L	ØD	ØD1	Ød	ℓ1	L		Maximum depth of cut	Approach Angle	Axial Rake Angle	Radial Rake Angle
ADS	5050R	●		50	75	32	40	120	3	8.5	45°	+15°	-3°
	5050R-S42	○		50	75	42	40	120	3	8.5	45°	+15°	-3°
	5063R	●		63	87	32	40	120	4	8.5	45°	+15°	-3°
	5063R-S42	○		63	87	42	40	120	4	8.5	45°	+15°	-3°

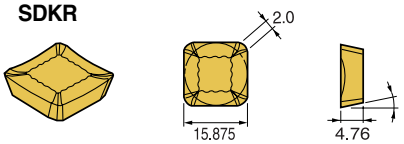
●: Stock Item ○: Under preparing for stock

Available Inserts

SDCN



SDKR

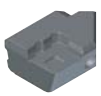


Designation		Coated Carbide NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510		Cermet CT10	CN20	CN30		Un-coated Carbide H01	G10	ST30A	ST20
SDCN	1504AEFN																	
	1504AETN																	
	1504AETN-RH																	
	1504AETN-S20																	
SDKR	1504AESN-MX		●			○							○					
	1504AETN-MX					○		○										

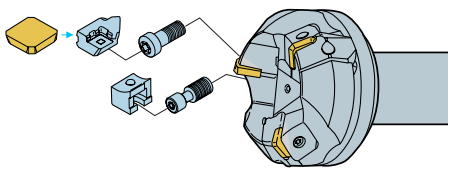
P. 281~284

●: Stock Item ○: Under preparing for stock

Parts

Locater	Wedge	Wedge Screw	Locater Screw	Wrench
				
LASS5R/L	WASR/L	WTX0817	LTX0512	TW25

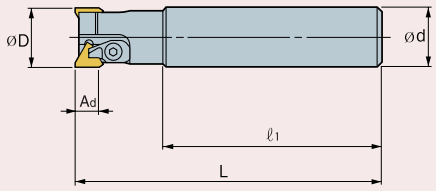
Assembling



Recommended Cutting Condition

Work piece	Cutting Condition V(m/min)	Cutting Condition f(mm/tooth)	Grade
P	150 ~ 250	0.10 ~ 0.25	NCM325
	120 ~ 200	0.10 ~ 0.30	PC3535
	100 ~ 150	0.10 ~ 0.30	ST30A
M	50 ~ 150	0.10 ~ 0.25	PC9530
	50 ~ 120	0.10 ~ 0.30	ST30A
K	150 ~ 250	0.10 ~ 0.25	NCM320K
	130 ~ 200	0.10 ~ 0.30	PC6510
	100 ~ 150	0.10 ~ 0.30	G10

PES2000



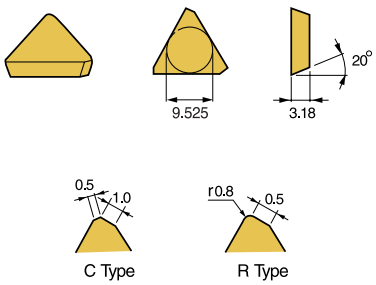
(mm)

Designation		Stock R	Stock L	ØD	Ød	ℓ1	L	Ad	◯	Approach Angle	Axial Rake Angle	Radial Rake Angle
PES	2020R	●		20	20	80	110	8	2	0°	10°	-2°
	2025R	●		25	25	85	120	8	2	0°	15°	-1°

● : Stock Item ○ : Under preparing for stock

Available Inserts

TECN



Designation		Coated Carbide NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510	Cermet CT10	CN20	CN30	Un-coated Carbide H01	G10	ST30A	ST20
TECN	22R															
	22TR											●			●	

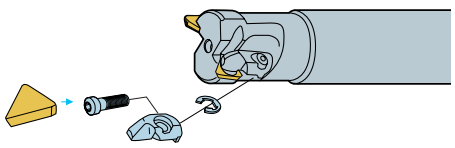
P. 297

● : Stock Item ○ : Under preparing for stock

Parts

Clamp	Locater Screw	Ring	Wrench
			
CH4R1	CHX0407	ER03	HW25L

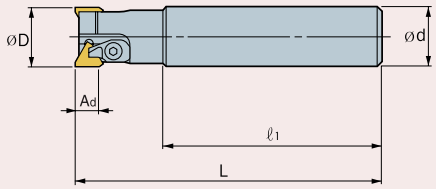
Assembling



Recommended Cutting Condition

Work piece	Cutting Condition V(m/min)	Cutting Condition f(mm/tooth)	Grade
P	150 ~ 250	0.10 ~ 0.25	NCM325
	120 ~ 200	0.10 ~ 0.30	PC3535
	100 ~ 150	0.10 ~ 0.30	ST30A
M	50 ~ 150	0.10 ~ 0.25	PC9530
	50 ~ 120	0.10 ~ 0.30	ST30A
K	150 ~ 250	0.10 ~ 0.25	NCM320K
	130 ~ 200	0.10 ~ 0.30	PC6510
	100 ~ 150	0.10 ~ 0.30	G10

PES3000



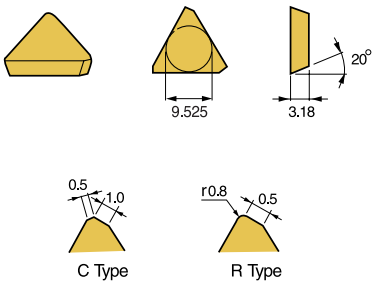
(mm)

Designation		Stock R	Stock L	ØD	Ød	ℓ1	L	Ad		Approach Angle	Axial Rake Angle	Radial Rake Angle
PES	3030R			30	32	115	160	13	2	0°	+15°	-3°
	3032R	●		32	32	115	160	13	2	0°	+15°	-2°
	3033R	○		33	32	115	160	13	2	0°	+15°	-2°
	3035R	○		35	32	115	160	13	2	0°	+15°	-2°
	3036R	○		36	32	115	160	13	2	0°	+15°	-1°
	3040R	●		40	32	115	160	13	2	0°	+15°	0°

●: Stock Item ○: Under preparing for stock

Available Inserts

TECN



Designation		Coated Carbide NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510	Cermet CT10	CN20	CN30		Un-coated Carbide H01	G10	ST30A	ST20
TECN	32R								○						●		
	32TR		●			○						●				●	

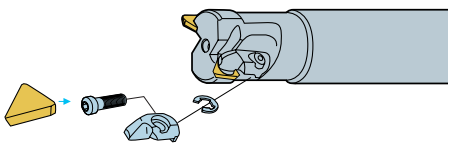
P. 297

●: Stock Item ○: Under preparing for stock

Parts

Clamp	Screw for Locater	Ring	Wrench
			
CH5R1	CHX0510	ER04	HW30L

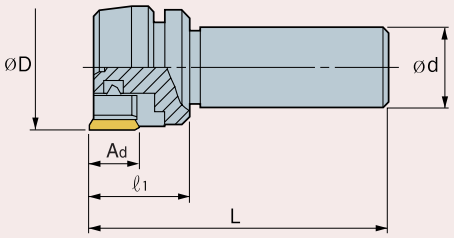
Assembling



Recommended Cutting Condition

Work piece	Cutting Condition V(m/min)	Cutting Condition f(mm/tooth)	Grade
P	150 ~ 250	0.10 ~ 0.25	NCM325
	120 ~ 200	0.10 ~ 0.30	PC3535
	100 ~ 150	0.10 ~ 0.30	ST30A
M	50 ~ 150	0.10 ~ 0.25	PC9530
	50 ~ 120	0.10 ~ 0.30	ST30A
K	150 ~ 250	0.10 ~ 0.25	NCM320K
	130 ~ 200	0.10 ~ 0.30	PC6510
	100 ~ 150	0.10 ~ 0.30	G10

PES4000



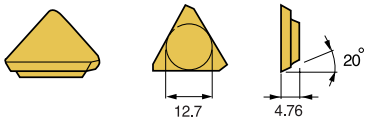
(mm)

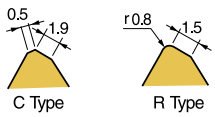
Designation		Stock R	Stock L	ØD	Ød	ℓ_1	L	Ad		Approach Angle	Axial Rake Angle	Radial Rake Angle
PES	4050R	●		50	32	40	120	16.5	3	0°	+15°	+2°
	4063R	●		63	32	40	120	16.5	4	0°	+15°	+3°
	4050R-S42	○		50	42	40	120	16.5	3	0°	+15°	+2°
	4063R-S42	○		63	42	40	120	16.5	4	0°	+15°	+3°

● : Stock Item ○ : Under preparing for stock

Available Inserts

TEEN / TEKN



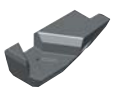
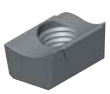


Designation		Coated Carbide NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510	Cermet CT10	CN20	CN30	Un-coated Carbide H01	G10	ST30A	ST20
TEEN	43R													●		
	43TR	●	●					○				●			●	●
	43TR-S20							●								
TEKN (TECN)	43R															
	43R															

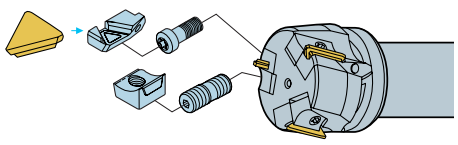
P. 296, 297

● : Stock Item ○ : Under preparing for stock

Parts

Locater	Wedge	Wedge Screw	Screw for Locater	Wrench
				
LPTS4R	WPTSR	DHA0815	LTX0512	HW40

Assembling



Recommended Cutting Condition

Work piece	Cutting Condition V(m/min)	Cutting Condition f(mm/tooth)	Grade
P	150 ~ 250	0.10 ~ 0.25	NCM325
	120 ~ 200	0.10 ~ 0.30	PC3535
	100 ~ 150	0.10 ~ 0.30	ST30A
M	50 ~ 150	0.10 ~ 0.25	PC9530
	50 ~ 120	0.10 ~ 0.30	ST30A
K	150 ~ 250	0.10 ~ 0.25	NCM320K
	130 ~ 200	0.10 ~ 0.30	PC6510
	100 ~ 150	0.10 ~ 0.30	G10

MODULAR ADAPTER

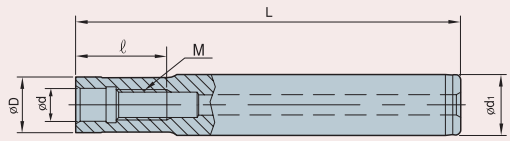


Fig.1 Straight neck adapter

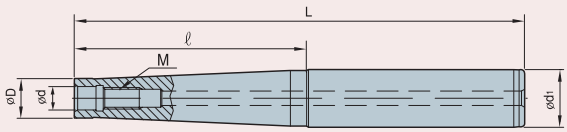


Fig.2 Taper neck adapter

(mm)

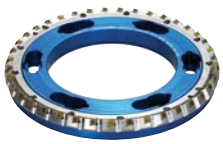
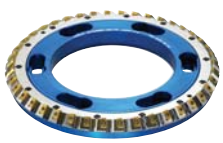
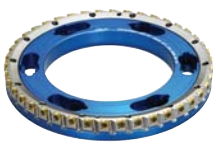
Designation		Stock	Fig	M	øD	ød	ød1	ℓ	L
MAT	M06-020-S10S	●	1	M06	9.5	6.5	10	18	70
	M06-040-S12T	●	2	M06	9.5	6.5	12	40	96
	M06-065-S16T	●	2	M06	11	6.5	16	65	125
	M6B-020-S12S	●	1	M06	11	6.5	12	18	76
	M6B-040-S12S	●	1	M06	11	6.5	12	18	96
	M6B-065-S16T	●	2	M06	11	6.5	16	65	125
	M6B-080-S16T	●	2	M06	11	6.5	16	80	160
	M08-020-S16S	●	1	M08	14.5	8.5	16	20	80
	M08-040-S16T	●	2	M08	14.5	8.5	16	40	100
	M08-065-S16T	●	2	M08	14.5	8.5	16	65	125
	M08-080-S20T	●	2	M08	14.5	8.5	16	80	150
	M08-110-S25T	●	2	M08	14.5	8.5	20	110	190
	M10-030-S20S	●	1	M10	18	10.5	20	25	100
	M10-050-S20T	●	2	M10	18	10.5	20	50	120
	M10-070-S20T	●	2	M10	18	10.5	20	70	140
	M10-090-S25T	●	2	M10	18	10.5	25	90	170
	M10-110-S25T	●	2	M10	18	10.5	25	110	190
	M10-130-S32T	●	2	M10	18	10.5	32	130	220
	M12-030-S25S	●	1	M12	22.5	12.5	25	29	110
	M12-050-S25T	●	2	M12	22.5	12.5	25	50	130
	M12-070-S25T	●	2	M12	22.5	12.5	25	70	150
	M12-090-S25T	●	2	M12	22.5	12.5	25	90	170
	M12-110-S32T	●	2	M12	22.5	12.5	32	110	200
	M12-175-S40T	●	2	M12	22.5	12.5	40	175	300
	M16-035-S32S	●	1	M16	28.5	16.5	32	32	125
	M16-055-S32T	●	2	M16	28.5	16.5	32	55	145
	M16-080-S32T	●	2	M16	28.5	16.5	32	80	170
	M16-120-S32T	●	2	M16	28.5	16.5	32	120	210
	M16-175-S40T	●	2	M16	28.5	16.5	40	175	300

● : Stock Item ○ : Under preparing for stock


Total Tooling System
KORLOY

KORLOY High-feed / Side / Block cutter series

Shape		Cutter diameter	Approach angle	Available insert	Special feature
High feed cutter **ANH4000, 5000** P. 384		Ø100~Ø450	45°	SN□N 12, 1504ENN SNEF □□□	• Excellent cutting strength • Good chip flow P. 291
CDH4000, 5000 P. 385		Ø100~Ø450	65°	SDCN 42, 53R/L	• Double positive rake angle • Minimized cutting load P. 281
DEH5000 P. 386		Ø100~Ø450	60°	HECN 090408	• For aluminum & aluminum alloy • Hexagonal insert P. 272
DPH5000 P. 387		Ø100~Ø450	60°	HPHN 090408 HPEN 090408	• Hexagonal insert • Economical cutter P. 272, 273
PNH4000, 5000 P. 388		Ø125~Ø450	90°	SNEF 435 SNEF 535	• Wiper insert available • Double negative rake angle, Excellent toughness P. 291
PPH4000 P. 389		Ø125~Ø450	90°	SPEN 120416WC	• Using square insert, Wifer insert available • Good surface finish P. 294
Side cutter **FC** P. 390		Ø80~Ø315	0°	TPCN 1103PPN TPCN 1603PPN TPKN 1603PPN	• Good chip evacuation with low cutting load • Effective cutting P. 298
HC P. 391		Ø80~Ø315	0°	TPCN 1103PPN TPCN 1603PPN TPKN 1603PPN	• Good chip evacuation with low cutting load • Effective cutting P. 298

Shape		Cutter diameter	Approach angle	Available insert	Special feature
Side cutter **SPP** **SPPM** P. 392		Ø80~Ø200	0°	**PNEJ1223N ~1275N**	• Economical by using pentagonal insert • Suitable for narrow & deep grooving P. 277
SPB P. 393		Ø80~Ø200	0°	**PNEJ1223N ~1275N**	• Economical by using pentagonal insert • Suitable for narrow & deep grooving P. 277
Block cutter / Cube mill **CBMQ(M) 3000/4000** **CBMF(M) 3000/4000** **CBME(M) 3000/4000** **CBMC(M) 3000/4000** **CBMA(M) 3000/4000** P. 398~407		Normal type (Ø80~Ø315) Quick change type (Ø200~Ø450)	2° 5° 15° 25° 45°	**SNEX 1010ZNN-CU1** (3000 series) **SNEX 1010ZNN** (3000 series) **SNEX 101010-CU1** (3000 series) **SNEX 101010** (3000 series) **SNEX 1212ZNN-CU1** (4000 series) **SNEX 121212-CU1** (4000 series)	• Smooth cutting by 3 dimensional chip breaker insert • Using 8 corners • Max depth of cut for 3000 series : 7mm • Max depth of cut for 4000 series : 10mm P. 292
Block cutter / Dura mill **DRMQ 3000** **DRMQM 3000** P. 410		Normal type (Ø80~Ø315) Quick change type (Ø200~Ø450)	2°	**SNCQ 1205ZNR** **SNCQ 1205ZNL**	• Heavy cutting is possible due to the strong cutting edge with 3 step design. • Using 8 corners P. 291
Block cutter / Storm mill **SQN(M) 3000** **SFN(M) 3000** **SEN(M) 3000** **SAN(M) 3000** P. 413~416		Normal type (Ø80~Ø315) Quick change type (Ø200~Ø450)	2° 5° 15° 45°	**LNE 324-C1.0** **LNE 324-R0.8**	• Conventional cutter • Using 4 corners • Max depth of cut for 3000 series : 13mm P. 274
Block cutter / Couple mill **Cube couple mill 3000/4000** P. 419, 420		Ø355~Ø450	2°~45°	**SNEX 1010ZNN** (3000 series) **SNEX 101010-CU1** (3000 series) **SNEX 101010** (3000 series) **SNEX 1212ZNN-CU1** (4000 series) **SNEX 121212-CU1** (4000 series)	• Since a part of cutter body has been made of aluminum, weight of cutter body has been reduced down to 50%. • Due to the light weight, it' s easy to handle. P. 292
Storm couple mill 3000 P. 421		Ø355~Ø450	2°~45°	**LNE 324-C1.0** **LNE 324-R0.8**	• Since a part of cutter body has been made of aluminum, weight of cutter body has been reduced down to 50%. • Due to the light weight, it' s easy to handle. P. 274
Dura couple mill 4000 P. 422		Ø355~Ø450	2°	**SNCQ 1205ZNR** **SNCQ 1205ZNL**	• Since a part of cutter body has been made of aluminum, weight of cutter body has been reduced down to 50%. • Due to the light weight, it' s easy to handle. P. 291

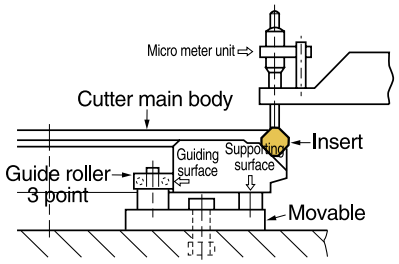
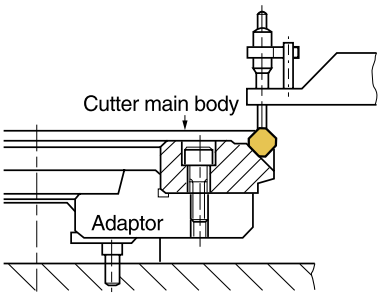
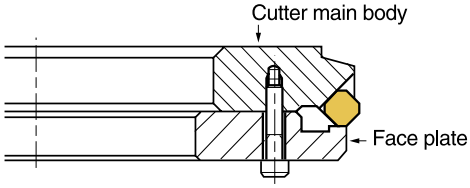
Special features of high feed cutter

Special features

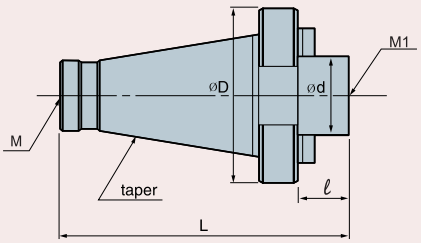
- High feed cutter for cast iron machining
- Sicne the clamping & checking has been done by cutting edge height, good run out can be acquired.
- Quick change type for cutter size under ∅160, 2 piece type for cutter size over ∅200.

Assembling of insert

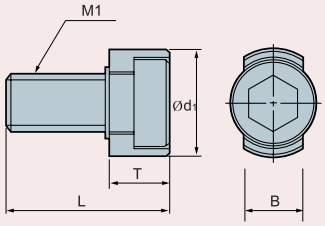
- Sepcial equipment has to be used to get precise run out with high feed cutter.

Roller type		• Since it has 3 adjustable guide roller, variety size of cutter could be assembled.
Adapter type		• Available for fixed size of cutter • Assembling & checking can be done at the same time
Plate type		• Suitalbe for small size cutter due to the simple structure • It's not necessary to un-clamp the cutter from the machine, it's possible to re-assemble the cutter as it mounted on the machine. • Easy to handle

Adapter (Ø100 - Ø160)



Arbor



Center screw

(mm)

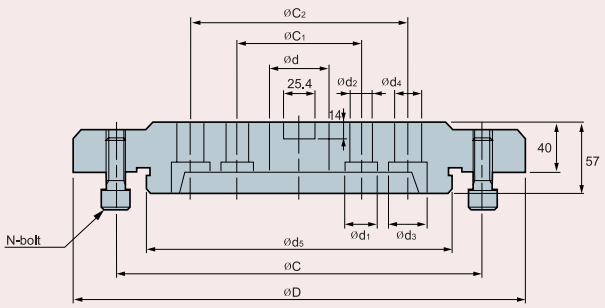
Designation		Stock R	Stock L	Taper	Cutter diameter	ø d	ø D	L	ℓ	M1	M	kg
KAFA	40-31.75Q	○		NT 40	100(4″)	31.75	80	148	20	M16	5/8-11UNC	1.4
	50-31.75Q	○		NT 50	100(4″)	31.75	100	183	20	M16	1-8 UNC	4.0
	40-38.1Q	○		NT 40	125(5″)	38.10	85	151	25	M20	5/8-11UNC	2.0
	50-38.1Q	○		NT 50	125(5″)	38.10	100	186	25	M20	1-8 UNC	4.2
	40-50.8Q	○		NT 40	160(6″)	50.80	100	155	25	M24	5/8-11UNC	2.9
	50-50.8Q	○		NT 50	160(6″)	50.80	100	190	25	M24	1-8 UNC	4.6

● : Stock Item ○ : Under preparing for stock

Center screw

Designation		Specification				
		M1	ø d1	L	T	B
QB	12	M 12	24.5	46	18	11.4
	14	M 14	31	42	16	16
	16	M 16	31	52	16	16
	20	M 20	37	57	21	20.5
	24	M 24	49.5	67	22	26

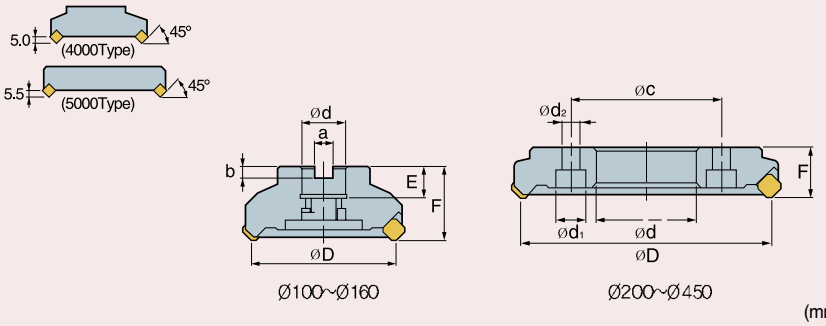
Arbor (Ø200 - Ø450)



(mm)

Designation		Stock R	Stock L	ø D	ø d	ø d1	ø d2	ø d3	ø d4	ø d5	ø C	ø C1	ø C2	N	Available cutter
APR	200			180	47.625	26	18	-	-	80	120	101.6	-	4	Ø200
	250			230	47.625	26	18	-	-	120	170	101.6	-	4	Ø250
	315			295	47.625	26	18	32	22	180	230	101.6	177.8	6	Ø315
	355			335	63.50	26	18	32	22	220	270	101.6	177.8	6	Ø355
	400			370	63.50	26	18	32	22	250	300	101.6	177.8	8	Ø400
	450			420	63.50	26	18	32	22	300	350	101.6	177.8	8	Ø450

ANH4000/5000

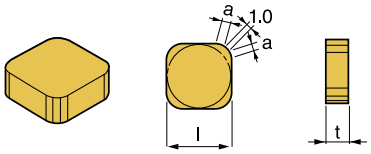


(mm)

Designation		Stock R	Stock L	ØD	a	b	E	F	Ød	Ød1	Ød2	ØC	
ANH □	100R/L			100	12.7	8	22	50	31.75	-	-	-	8
	125R/L			125	15.9	10	27	63	38.1	-	-	-	10
	160R/L			160	19.0	11	27	63	50.8	-	-	-	14
	200R/L			200	-	-	-	40	80	24	14	120	18
	250R/L			250	-	-	-		120	30	18	170	24
	315R/L			315	-	-	-	40	180	30	18	230	30
	355R/L			355	-	-	-		220			270	34
	400R/L			400	-	-	-	40	250	30	18	300	38
	450R/L			450	-	-	-		300			350	44

Available Inserts

SN□N
SNEF



Designation		Coated Insert NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510	Cermet CT10	CN20	CN30	Un-coated Insert H01	G10	ST30A	ST20
SNCN	1204 ENN	●												●	●	●
SNKN	1504 ENN	●		●	●				○							

Designation		l	t	a	Cutter
SNCN	1204 ENN	12.7	4.76	1.4	ANH4000
	1504 ENN	15.875	4.76	1.4	ANH5000

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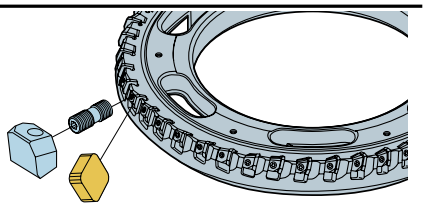
● : Stock Item ○ : Under preparing for stock

Parts

Specs	Wedge	Wedge Screw	Wrench
			
ANH4000 ANH5000	WANH4N WANH5N	DHA0821F	HW40

Assembling



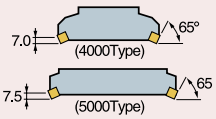
Recommended Cutting Condition

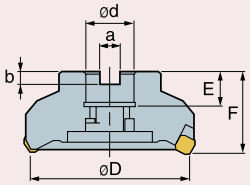
Work piece	Cutting Condition V(m/min)	Cutting Condition f(mm/tooth)	Grade
K	130 ~ 230	0.05 ~ 0.20	NCM320K
	100 ~ 200	0.05 ~ 0.30	PC6510
	80 ~ 150	0.10 ~ 0.30	H01,G10

Available Arbor & Adapter

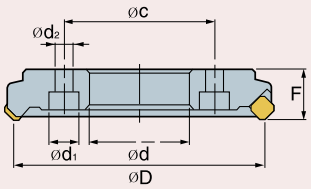
Cutter	Arbor	Adapter
ANH□ 100R/L	KAFA□□	-
125R/L	KAFA□□	-
160R/L	KAFA□□	-
200R/L	-	APR200
250R/L	-	APR250
315R/L	-	APR315
355R/L	-	APR355
400R/L	-	APR400
450R/L	-	APR450

CDH4000/5000





Ø100~Ø160



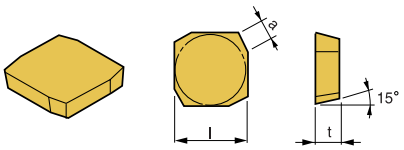
Ø200~Ø450

(mm)

Designation		Stock R	Stock L	øD	a	b	E	F	ød	ød₁	ød₂	øC	
CDH □	100R/L			100	12.7	8	22	50	31.75	-	-	-	8
	125R/L			125	15.9	10	27	63	38.1	-	-	-	10
	160R/L			160	19.0	11		63	50.8	-	-	-	14
	200R/L			200	-	-	-	40	80	24	14	120	18
	250R/L			250	-	-	-	40	120	30	18	170	24
	315R/L			315	-	-	-	40	180	30	18	230	30
	355R/L			355	-	-	-	40	220	30	18	270	34
	400R/L			400	-	-	-	40	250	30	18	300	38
	450R/L			450	-	-	-	40	300	30	18	350	44

Available Inserts

SDCN



Designation		Coated Insert NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510	Cermet CT10	CN20	CN30	Un-coated Insert H10	G10	ST30A	ST20
SDCN	42R								○				○			
	42L								○				●			
	53R															
	53L															

Designation		l	t	a	Cutter
SDCN	42R/L	12.7	3.18	3.5	CDH4000
	53R/L	15.875	4.76	5.0	CDH5000

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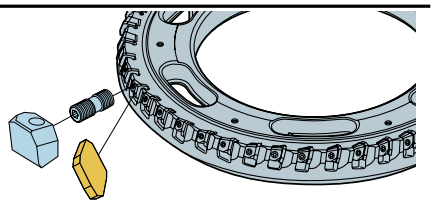
● : Stock Item ○ : Under preparing for stock

Parts

Specs	Wedge	Wedge Screw	Wrench
			
CHD4000 CHD5000	WCDH4R1/L1(Ø100-Ø160) WCDH4R/L (Ø200-Ø450) WCDH5R1/L1 (Ø100-Ø160) WCDH5R/L (Ø200-Ø450)	DHA0821F	HW40

Assembling



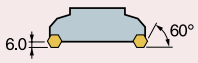
Recommended Cutting Condition

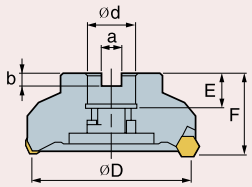
Work piece	Cutting Condition V(m/min)	Cutting Condition f(mm/tooth)	Grade
K	130 ~ 230	0.05 ~ 0.20	NCM320K
	100 ~ 200	0.05 ~ 0.30	PC6510
	80 ~ 150	0.10 ~ 0.30	H01,G10

Available Arbor & Adapter

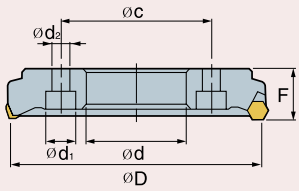
Cutter	Arbor	Adapter
CDH□ 100R/L	KAFA□□	-
125R/L	KAFA□□	-
160R/L	KAFA□□	-
200R/L	-	APR200
250R/L	-	APR250
315R/L	-	APR315
355R/L	-	APR355
400R/L	-	APR400
450R/L	-	APR450

DEH5000





Ø100~Ø160



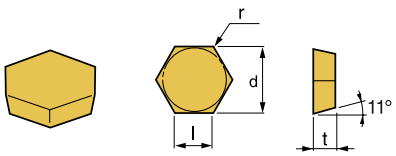
Ø200~Ø450

(mm)

Designation		Stock R	Stock L	ØD	a	b	E	F	Ød	Ød1	Ød2	ØC	
DEH	5100R/L			100	12.7	8	22	50	31.75	-	-	-	6
	5125R/L			125	15.9	10	27	63	38.1	-	-	-	7
	5160R/L			160	19.0	11	27	63	50.8	-	-	-	8
	5200R/L			200	-	-	-	40	80	24	14	120	12
	5250R/L			250	-	-	-	40	120	30	18	170	14
	5315R/L			315	-	-	-	40	180	30	18	230	18
	5355R/L			355	-	-	-	40	220	30	18	270	20
	5400R/L			400	-	-	-	40	250	30	18	300	24
	5450R/L			450	-	-	-	40	300	30	18	350	28

Available Inserts

HECN



Designation		Coated Insert NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510	Cermet CT10	CN20	CN30		Un-coated Insert H01	G10	ST30A	ST20
HECN	090408FN					○			○						○	○	

Designation		l	d	t	r	Cutter
HECN	090408FN	9.0	15.875	4.76	0.8	DEH 5000

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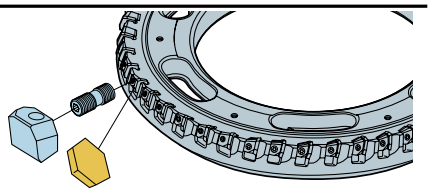
●: Stock Item ○: Under preparing for stock

Parts

Specs	Wedge	Wedge Screw	Wrench
			
DEH5000	WDEHR-1/L-1 (Ø100-Ø200) WDEHR/L (Ø250-Ø450)	DHA0821F	HW40

Assembling



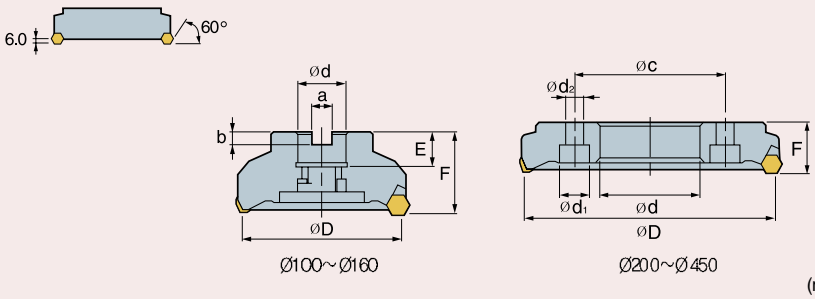
Recommended Cutting Condition

Work piece	Cutting Condition V(m/min)	Cutting Condition f(mm/tooth)	Grade
K	130 ~ 230	0.05 ~ 0.20	NCM320K
	100 ~ 200	0.05 ~ 0.30	PC6510
	80 ~ 150	0.10 ~ 0.30	H01,G10

Available Arbor & Adapter

Cutter	Arbor	Adapter
DEH□ 5100R/L	KAFA□□	-
5125R/L	KAFA□□	-
5160R/L	KAFA□□	-
5200R/L	-	APR200
5250R/L	-	APR250
5315R/L	-	APR315
5355R/L	-	APR355
5400R/L	-	APR400
5450R/L	-	APR450

DPH5000

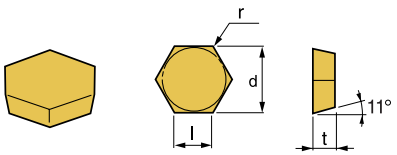


(mm)

Designation		Stock R	Stock L	ØD	a	b	E	F	Ød	Ød1	Ød2	ØC	
DPH	5100R/L			100	12.7	8	22	50	31.75	-	-	-	8
	5125R/L			125	15.9	10	27	63	38.1	-	-	-	10
	5160R/L			160	19.0	11	27	63	50.8	-	-	-	14
	5200R/L			200	-	-	-	40	80	24	14	120	18
	5250R/L			250	-	-	-	40	120	30	18	170	24
	5315R/L			315	-	-	-	40	180	30	18	230	30
	5355R/L			355	-	-	-	40	220	30	18	270	34
	5400R/L			400	-	-	-	40	250	30	18	300	38
	5450R/L			450	-	-	-	40	300	30	18	350	44

Available Inserts

HP□N-□□



Designation		Coated Insert NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510	Cermet CT10	CN20	CN30	Un-coated Insert H01	G10	ST30A	ST20
HPHN	090408															
HPEN	090408															
HPEN	090408-WC					○			○					○	○	

Designation		l	d	t	Cutter
HPHN	090408	9.0	15.875	4.76	DPH 5000
HPEN	090408	9.0	15.875	4.76	DPH 5000
HPEN	090408-WC	9.0	15.875	4.76	

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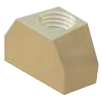
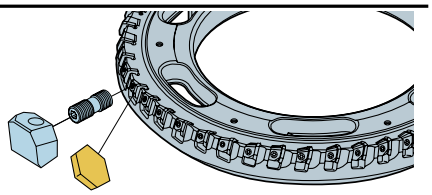
● : Stock Item ○ : Under preparing for stock

Parts

Specs	Wedge	Wedge Screw	Wrench
			
DPH5000	WPPH4R/L	DHA0821F	HW40

Assembling



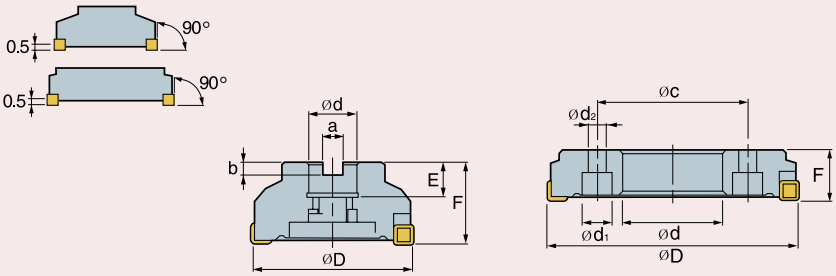
Recommended Cutting Condition

Work piece	Cutting Condition V(m/min)	Cutting Condition f(mm/tooth)	Grade
K	130 ~ 230	0.05 ~ 0.20	NCM320K
	100 ~ 200	0.05 ~ 0.30	PC6510
	80 ~ 150	0.10 ~ 0.30	H01,G10

Available Arbor & Adapter

Cutter	Arbor	Adapter
DPH□ 5100R/L	KAFA□□	-
5125R/L	KAFA□□	-
5160R/L	KAFA□□	-
5200R/L	-	APR200
5250R/L	-	APR250
5315R/L	-	APR315
5355R/L	-	APR355
5400R/L	-	APR400
5450R/L	-	APR450

PNH4000/5000

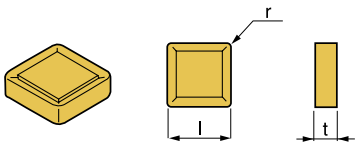


(mm)

Designation		Stock R	Stock L	øD	a	b	E	F	ød	ød1	ød2	øC	
PNH □	125R/L			125	15.9	10	27	63	38.1	-	-	-	10
	160R/L			160	19.0	11	27	63	50.8	-	-	-	14
	200R/L			200	-	-	-	40	80	24	14	120	18
	250R/L			250	-	-	-	40	120	30	18	170	24
	315R/L			315	-	-	-	40	180	30	18	230	30
	355R/L			355	-	-	-	40	220	30	18	270	34
	400R/L			400	-	-	-	40	250	30	18	300	38
	450R/L			450	-	-	-	40	300	30	18	350	44

Available Inserts

SNEF



Designation		Coated Insert NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510	Cermet CT10	CN20	CN30	Un-coated Insert H01	G10	ST30A	ST20
SNEF	435	○			○				●							
	535	○			○											

Designation		l	t	r	Cutter
SNEF	435	12.7	4.76	2.0	PNH 4000
	535	15.875	4.76	2.0	PNH 5000

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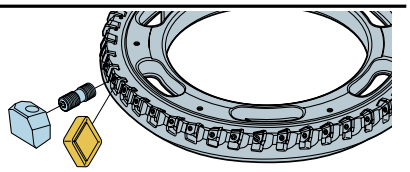
● : Stock Item ○ : Under preparing for stock

Parts

Specs	Wedge	Wedge Screw	Wrench
			
PNH4000 PNH5000	WANH4N WANH5N	DHA0821F	HW40

Assembling



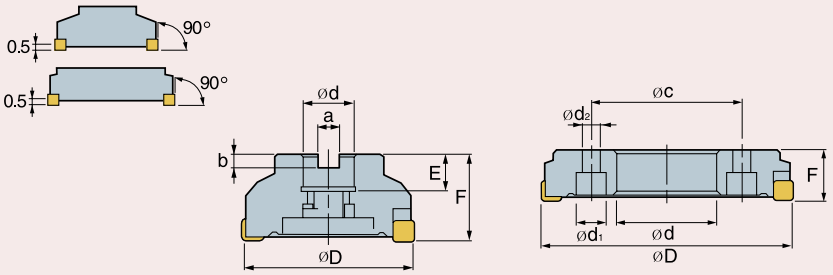
Recommended Cutting Condition

Work piece	Cutting Condition V(m/min)	Cutting Condition f(mm/tooth)	Grade
K	130 ~ 230	0.05 ~ 0.20	NCM320K
	100 ~ 200	0.05 ~ 0.30	PC6510
	80 ~ 150	0.10 ~ 0.30	H01,G10

Available Arbor & Adapter

Cutter	Arbor	Adapter
PNH□ 125R/L	KAFA□□	-
160R/L	KAFA□□	-
200R/L	-	APR200
250R/L	-	APR250
315R/L	-	APR315
355R/L	-	APR355
400R/L	-	APR400
450R/L	-	APR450

PPH4000

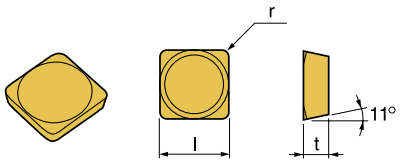


(mm)

Designation		Stock R	Stock L	øD	a	b	E	F	ød	ød1	ød2	øC	
PPH	4125R/L			125	15.9	10	27	63	38.1	-	-	-	10
	4160R/L			160	19.0	11	27	63	50.8	-	-	-	14
	4200R/L			200	-	-	-	40	80	24	14	120	18
	4250R/L			250	-	-	-	40	120	24	14	170	24
	4315R/L			315	-	-	-	40	180	30	18	230	30
	4355R/L			355	-	-	-	40	220	30	18	270	34
	4400R/L			400	-	-	-	40	250	30	18	300	38
	4450R/L			450	-	-	-		300	30	18	350	44

Available Inserts

SPEN-WC



Designation		Coated Insert NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510	Cermet CT10	CN20	CN30	Un-coated Insert H01	G10	ST30A	ST20
SPEN	120416-WC								○							

Designation		l	t	r	Cutter
SPEN	120416-WC	12.7	4.76	1.6	PPH 4000

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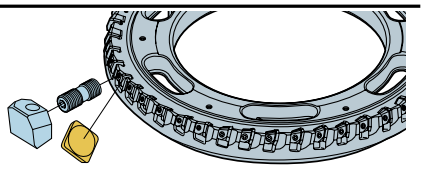
● : Stock Item ○ : Under preparing for stock

Parts

Specs	Wedge	Wedge Screw	Wrench
			
PPH4000	WPPH4R/L	DHA0821F	HW40

Assembling



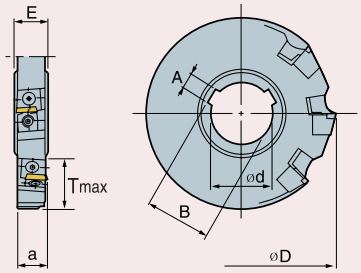
Recommended Cutting Condition

Work piece	Cutting Condition V(m/min)	Cutting Condition f(mm/tooth)	Grade
K	130 ~ 230	0.05 ~ 0.20	NCM320K
	100 ~ 200	0.05 ~ 0.30	PC6510
	80 ~ 150	0.10 ~ 0.30	H01,G10

Available Arbor & Adapter

Cutter		Arbor	Adapter
PPH	4125R/L	KAFA□□	-
	4160R/L	KAFA□□	-
	4200R/L	-	APR200
	4250R/L	-	APR250
	4315R/L	-	APR315
	4355R/L	-	APR355
	4400R/L	-	APR400
	4450R/L	-	APR450

FC

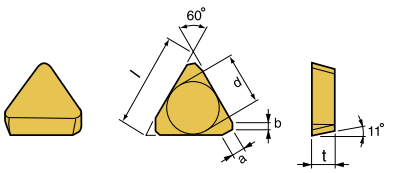


(mm)

Designation		Stock R	Stock L	øD	Tmax	ød	A	B	E	a		Insert
FC	08010			80	17	25.4	6.35	28.04	12	10	6	TPCN1103PPN
	10012	○		100	24	31.75	7.94	35.18	14	12	8	TPCN1103PPN
	12512			125	31.5	38.1	9.53	42.32	14	12	10	TPCN1103PPN
	12520	○		125	31.5	38.1	9.53	42.32	22	20	8	TPCN1603PPN
	16012			160	49	38.1	9.53	42.32	14	12	12	TPCN1103PPN
	16016			160	49	38.1	9.53	42.32	18	16	12	TPCN1103PPN
	16018			160	49	38.1	9.53	42.32	20	18	10	TPCN1603PPN
	16020			160	49	38.1	9.53	43.32	22	20	10	TPCN1603PPN
	20022			200	61	50.8	12.7	55.83	24	22	12	TPCN1603PPN
	25024			250	81	50.8	12.7	55.83	26	24	16	TPCN1603PPN
	31524			315	113.5	50.8	12.7	55.83	26	24	16	TPCN1603PPN

Available Inserts

TP□N



Designation		Coated Insert NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510	Cermet CT10	CN20	CN30		Un-coated Insert H01	G10	ST30A	ST20
TPAN	1103 PPN											●		●	●	●	●
TPCN	1603 PPN	●				○			●			●			●		●
TPKN																	

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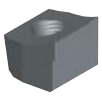
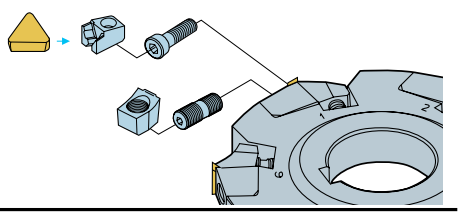
● : Stock Item ○ : Under preparing for stock

Parts

Locater	Wedge	Screw	Locater Screw	Wrench
				
LFC2R/L · LFC3R/L *LFC2R/L-1	WFC2N · WFC3N *WFC2N-1	DHA0617 · DHA0815	MHB0310 · MHB410	HW30L · HW40L

*For FC0810

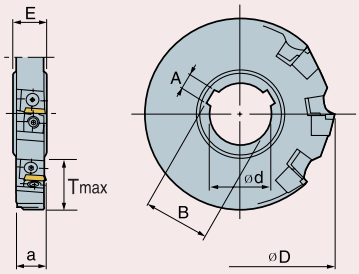
Assembling



Recommended Cutting Condition

Work piece	Cutting Condition V(m/min)	Cutting Condition f(mm/tooth)	Grade
P	150 ~ 250	0.10 ~ 0.25	NCM325
	120 ~ 200	0.10 ~ 0.30	PC3535
	100 ~ 150	0.10 ~ 0.30	ST30A
M	80 ~ 180	0.10 ~ 0.25	PC9530
	80 ~ 150	0.10 ~ 0.30	ST30A
K	150 ~ 250	0.10 ~ 0.25	NCM320K
	130 ~ 200	0.10 ~ 0.35	PC6510
	100 ~ 150	0.10 ~ 0.40	G10

HC

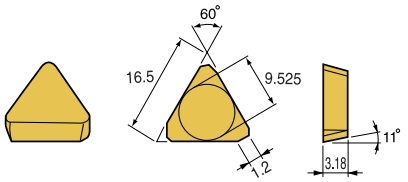


(mm)

Designation		Stock R	Stock L	øD	Tmax	ød	A	B	E	a		Insert
HC	10024R/L			100	24	31.75	7.93	35.18	27	24	6	TPCN1603 PPN
	12524R/L			125	31.5	38.1	9.53	42.32	27	24	8	TPCN1603 PPN
	16024R/L	○		160	49	38.1	9.53	42.32	27	24	10	TPCN1603 PPN
	20024R/L			200	62	50.8	12.7	55.83	27	24	12	TPCN1603 PPN
	25024R/L			250	81	50.8	12.7	55.83	27	24	16	TPCN1603 PPN
	31524R/L			315	113.5	50.8	12.7	55.83	27	24	20	TPCN1603 PPN

Available Inserts

TP□N



Designation		Coated Insert NCM325	NCM335	NCM310K	NCM320K	PC3535	PC3545	PC9530	PC6510	Cermet CT10	CN20	CN30		Un-coated Insert H01	G10	ST30A	ST20
TPAN	1603 PPN	●										●			●		
TPCN		●				○			●			●			●	●	●
TPKN																	

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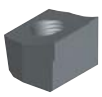
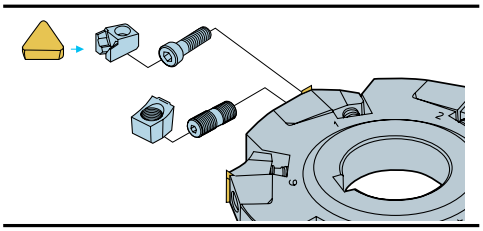
● : Stock Item ○ : Under preparing for stock

Parts

Locater	Wedge	Wedge Screw	Locater Screw	Wrench
				
LFC3R/L	WFC3N	DHA0815	MHB0410	HW40L

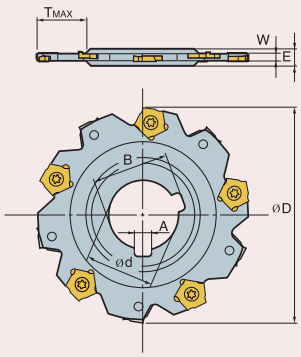
Assembling



Recommended Cutting Condition

Work piece	Cutting Condition V(m/min)	Cutting Condition f(mm/tooth)	Grade
P	150 ~ 250	0.10 ~ 0.25	NCM325
	120 ~ 200	0.10 ~ 0.30	PC3535
	100 ~ 150	0.10 ~ 0.30	ST30A
M	80 ~ 180	0.10 ~ 0.25	PC9530
	80 ~ 150	0.10 ~ 0.30	ST30A
K	150 ~ 250	0.10 ~ 0.25	NCM320K
	130 ~ 200	0.10 ~ 0.35	PC6510
	100 ~ 150	0.10 ~ 0.40	G10

SPP(M)



(mm)

Designation		Stock	ØD	W	TMAX	Ød	A	B	E		Insert	Screw	Wrench
SPP (SPPM)	080-04		80	4	20	25.4	6.35	28.04	8	8	PNEJ1223N	PTMA0403F	TW15S
	080-05		80	5	20	25.4	6.35	28.04	8	8	PNEJ1230N	PTMA0404F	TW15S
	080-06		80	6	20	25.4	6.35	28.04	8	8	PNEJ1235N	PTMA0405F	TW15S
	100-04	○	100	4	24	31.75	7.94	35.18	8	10	PNEJ1223N	PTMA0403F	TW15S
	100-05		100	5	24	31.75	7.94	35.18	8	10	PNEJ1230N	PTMA0404F	TW15S
	100-06		100	6	25	31.75	7.94	35.18	8	10	PNEJ1235N	PTMA0405F	TW15S
	100-07	○	100	7	25	31.75	7.94	35.18	10	10	PNEJ1240N	PTMA0406F	TW15S
	100-08		100	8	25	31.75	7.94	35.18	10	10	PNEJ1245N	PTKA0407F	TW15S
	100-09		100	9	25	31.75	7.94	35.18	12	10	PNEJ1250N	PTKA0408F	TW15S
	100-10		100	10	25	31.75	7.94	35.18	12	10	PNEJ1255N	PTKA0409F	TW15S
	125-04		125	4	30	38.1	9.53	42.32	8	12	PNEJ1223N	PTMA0403F	TW15S
	125-05		125	5	32	38.1	9.53	42.32	8	12	PNEJ1230N	PTMA0404F	TW15S
	125-06		125	6	27	38.1	9.53	42.32	8	12	PNEJ1235N	PTMA0405F	TW15S
	125-07	(●)	125	7	32	38.1(40)	9.53(10)	42.32(43.5)	10	12	PNEJ1240N	PTMA0406F	TW15S
	125-08		125	8	27	38.1	9.53	42.32	10	12	PNEJ1245N	PTKA0407F	TW15S
	125-09		125	9	27	38.1	9.53	42.32	12	12	PNEJ1250N	PTKA0408F	TW15S
	125-10		125	10	27	38.1	9.53	42.32	12	12	PNEJ1255N	PTKA0409F	TW15S
	160-04		160	4	45	38.1	9.53	42.32	8	16	PNEJ1223N	PTMA0403F	TW15S
	160-05		160	5	45	38.1	9.53	42.32	8	16	PNEJ1230N	PTMA0404F	TW15S
	160-06		160	6	48	38.1	9.53	42.32	8	16	PNEJ1235N	PTMA0405F	TW15S
	160-07	(●)	160	7	45	38.1(40)	9.53(10)	42.32(43.5)	10	16	PNEJ1240N	PTMA0406F	TW15S
	160-08		160	8	45	38.1	9.53	42.32	10	16	PNEJ1245N	PTKA0407F	TW15S
	160-09		160	9	45	38.1	9.53	42.32	12	16	PNEJ1250N	PTKA0408F	TW15S
	160-10	○	160	10	45	38.1	9.53	42.32	12	16	PNEJ1255N	PTKA0409F	TW15S
	160-11		160	11	45	38.1	9.53	42.32	14	16	PNEJ1260N	PTKA0410F	TW15S
	160-12		160	12	45	38.1	9.53	42.32	14	16	PNEJ1265N	PTKA0411F	TW15S
	160-13		160	13	45	38.1	9.53	42.32	16	16	PNEJ1270N	PTKA0412F	TW15S
	160-14		160	14	45	38.1	9.53	42.32	16	16	PNEJ1275N	PTKA0413F	TW15S
	200-06		200	6	60	50.8	12.7	55.83	8	18	PNEJ1235N	PTMA 0405F	TW15S
	200-07		200	7	60	50.8	12.7	55.83	10	18	PNEJ1240N	PTMA0406F	TW15S
	200-08		200	8	60	50.8	12.7	55.83	10	18	PNEJ1245N	PTKA0407F	TW15S
	200-09		200	9	60	50.8	12.7	55.83	12	18	PNEJ1250N	PTKA0408F	TW15S
	200-10		200	10	60	50.8	12.7	55.83	12	18	PNEJ1255N	PTKA0409F	TW15S
	200-11		200	11	60	50.8	12.7	55.83	14	18	PNEJ1260N	PTKA0410F	TW15S
	200-12		200	12	60	50.8	12.7	55.83	14	18	PNEJ1265N	PTKA0411F	TW15S
	200-13		200	13	60	50.8	12.7	55.83	16	18	PNEJ1270N	PTKA0412F	TW15S
	200-14		200	14	60	50.8	12.7	55.83	16	18	PNEJ1275N	PTKA0413F	TW15S

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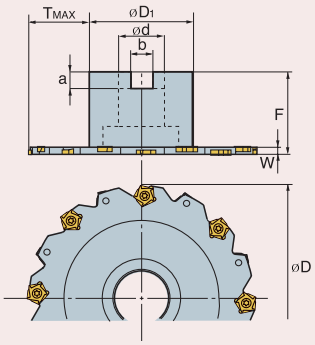
●: Stock Item ○: Under preparing for stock

***How to read designation : S P P 160 – 06 R**

- S — Cutter use(S ⇒ Side cutter)
- P — Shape of insert (P ⇒ Pentagonal Insert Type, Pentagonal insert)
- P — Cutter type(P ⇒ Plane Type, B ⇒ Boss Type)
- 160 — Cutter diameter(ØD)
- 06 — Width of cut(W)
- R — Hand of tool(R/L)

SPB



(mm)

Designation		Stock R	Stock L	øD	W	TMAX	øD1	ød	b	a	F		Insert	Screw	Wrench
SPB	080-04R/L	○		80	4	20	40	25.4	9.5	6	50	8	PNEJ1223N	PTMA0403F	TW15S
	080-05R/L			80	5	20	40	25.4	9.5	6	50	8	PNEJ1230N	PTMA0404F	TW15S
	080-06R/L			80	6	20	40	25.4	9.5	6	50	8	PNEJ1235N	PTMA0405F	TW15S
	100-04R/L			100	4	23	54	31.75	12.7	8	50	10	PNEJ1223N	PTMA0403F	TW15S
	100-05R/L			100	5	23	54	31.75	12.7	8	50	10	PNEJ1230N	PTMA0404F	TW15S
	100-06R/L	○		100	6	23	54	31.75	12.7	8	50	10	PNEJ1235N	PTMA0405F	TW15S
	100-07R/L			100	7	23	54	31.75	12.7	8	50	10	PNEJ1240N	PTMA0406F	TW15S
	100-08R/L			100	8	23	54	31.75	12.7	8	50	10	PNEJ1245N	PTKA0407F	TW15S
	100-09R/L			100	9	23	54	31.75	12.7	8	50	10	PNEJ1250N	PTKA0408F	TW15S
	100-10R/L			100	10	23	54	31.75	12.7	8	50	10	PNEJ1255N	PTKA0409F	TW15S
	125-04R/L			125	4	27	70	38.1	15.9	10	60	12	PNEJ1223N	PTMA0403F	TW15S
	125-05R/L			125	5	27	70	38.1	15.9	10	60	12	PNEJ1230N	PTMA0404F	TW15S
	125-06R/L			125	6	27	70	38.1	15.9	10	60	12	PNEJ1235N	PTMA0405F	TW15S
	125-07R/L			125	7	27	70	38.1	15.9	10	60	12	PNEJ1240N	PTMA0406F	TW15S
	125-08R/L	○		125	8	27	70	38.1	15.9	10	60	12	PNEJ1245N	PTKA0407F	TW15S
	125-09R/L			125	9	27	70	38.1	15.9	10	60	12	PNEJ1250N	PTKA0408F	TW15S
	125-10R/L			125	10	27	70	38.1	15.9	10	60	12	PNEJ1255N	PTKA0409F	TW15S
	160-04R/L			160	4	45	70	38.1	15.9	10	60	16	PNEJ1223N	PTMA0403F	TW15S
	160-05R/L			160	5	45	70	38.1	15.9	10	60	16	PNEJ1230N	PTMA0404F	TW15S
	160-06R/L			160	6	45	70	38.1	15.9	10	60	16	PNEJ1235N	PTMA0405F	TW15S
	160-07R/L			160	7	45	70	38.1	15.9	10	60	16	PNEJ1240N	PTMA0406F	TW15S
	160-08R/L			160	8	45	70	38.1	15.9	10	60	16	PNEJ1245N	PTKA0407F	TW15S
	160-09R/L			160	9	45	70	38.1	15.9	10	60	16	PNEJ1250N	PTKA0408F	TW15S
	160-10R/L	○		160	10	45	70	38.1	15.9	10	60	16	PNEJ1255N	PTKA0409F	TW15S
	160-11R/L			160	11	45	70	38.1	15.9	10	60	16	PNEJ1260N	PTKA0410F	TW15S
	160-12R/L			160	12	45	70	38.1	15.9	10	60	16	PNEJ1265N	PTKA0411F	TW15S
	160-13R/L			160	13	45	70	38.1	15.9	10	60	16	PNEJ1270N	PTKA0412F	TW15S
	160-14R/L			160	14	45	70	38.1	15.9	10	60	16	PNEJ1275N	PTKA0413F	TW15S
	200-06R/L			200	6	55	90	50.8	19.0	11	65	18	PNEJ1235N	PTMA 0405F	TW15S
	200-07R/L			200	7	55	90	50.8	19.0	11	65	18	PNEJ1240N	PTMA0406F	TW15S
	200-08R/L			200	8	55	90	50.8	19.0	11	65	18	PNEJ1245N	PTKA0407F	TW15S
	200-09R/L			200	9	55	90	50.8	19.0	11	65	18	PNEJ1250N	PTKA0408F	TW15S
	200-10R/L			200	10	55	90	50.8	19.0	11	65	18	PNEJ1255N	PTKA0409F	TW15S
	200-11R/L			200	11	55	90	50.8	19.0	11	65	18	PNEJ1260N	PTKA0410F	TW15S
	200-12R/L			200	12	55	90	50.8	19.0	11	65	18	PNEJ1265N	PTKA0411F	TW15S
	200-13R/L			200	13	55	90	50.8	19.0	11	65	18	PNEJ1270N	PTKA0412F	TW15S
	200-14R/L			200	14	55	90	50.8	19.0	11	65	18	PNEJ1275N	PTKA0413F	TW15S

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● : Stock Item ○ : Under preparing for stock

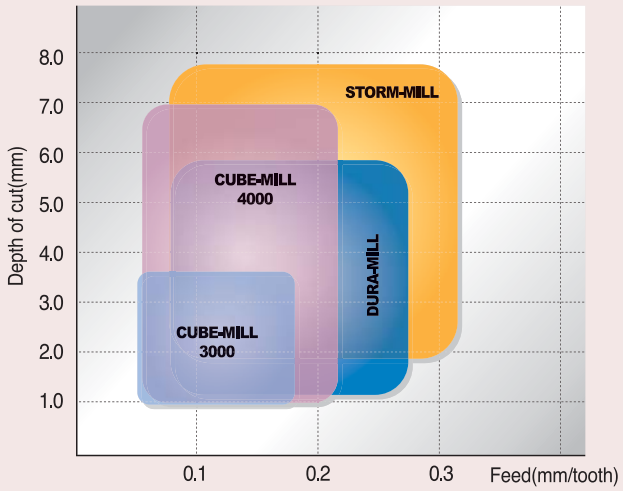
Remarks for insert clamping

- Chip-breaker of insert should face chip pocket of cutter.
- Fasten screw after side face of insert contacts surely on insert seat part.
- Do not make a gap between insert and insert seat part, the gap may cause shot tool life.

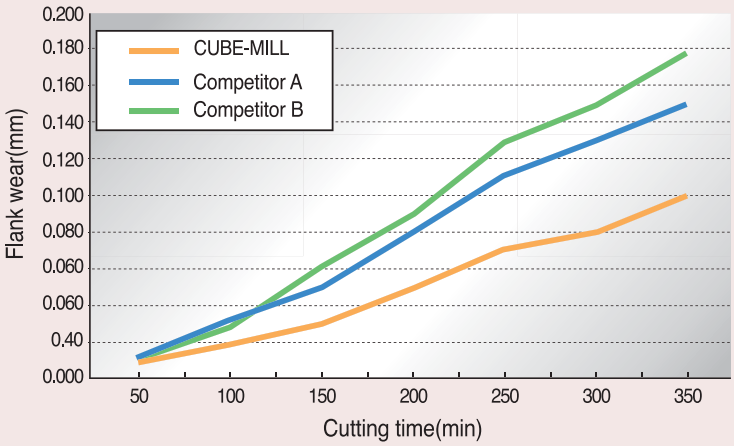

KORLOY DSMC3355R-39ZCP H40MM WT7
KORLOY SAN3355R-42Z-CP H40MM WT8
7KG 2005.02.23
KORLOY
KORLOY
KORLOY

Technical Guide of High feed cutter for cast iron

Application range as per product



Cutting performance



- Work piece : Roughing of front & rear face of Diesel engine
- Cutting condition : V120, f0.13, d50.0, Wet
- Grade : PC6510

For safe use

- Since sharp cutting edge of cutting tools may cut your bare-hand, take gloves when pull out the insert from the case or mount it on the machine.
- Since in-appropriate condition or usage may cause flagmentation and expel of part of tools that may cause injury, please use glasses or safety cover for the safety.
- Since premature wear of cutting edge may bring excessive cutting load on tool, please change the tool at proper time.
- Since chips evacuated during the cutting are so hot and sharp that may cause a burn and a cut, please stop the machine first and take safety glove and use hook to get rid of chips.
- Be aware of fire and explosion may brought by the hot chips and spark generated during the cutting operation. Please be prepared for fire extinguishments.
- Since loose clamping of work-piece may cause the fracture of tool and injure of body, please clamp the work-piece tightly.
- In case of high RPM machining, vibration and chattering may happen due to the balancing trouble of machine. Use glasses or safety cover for the safety.

Technical Guide of Cube mill

Special features

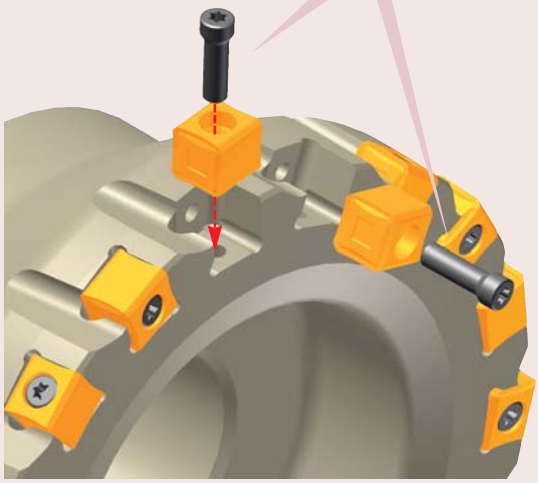
- 8 corner using insert (maximum 16 corner available with 2 cutter, R/L cutter)
- Excellent cutting performance due to the positive rake angle made by 3 dimensional chip breaker.
- Excellent tool life by combination of variety of grades and chip breakers as per working conditions.
- 2 different type of inserts(chamfer / nose R) are available with 1 type cutter.

Cutter

Special design to make actual positive rake angle

Simple screw on system

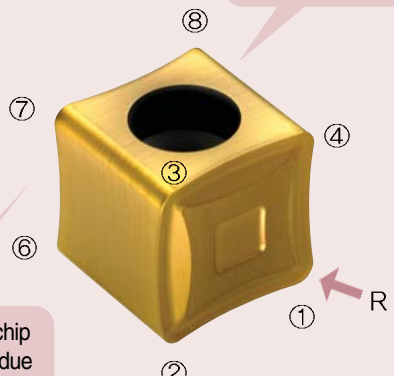
Clamping of insert



2 different direction for insert tightening

Insert (R/L type)

8 corner insert (cost effective)



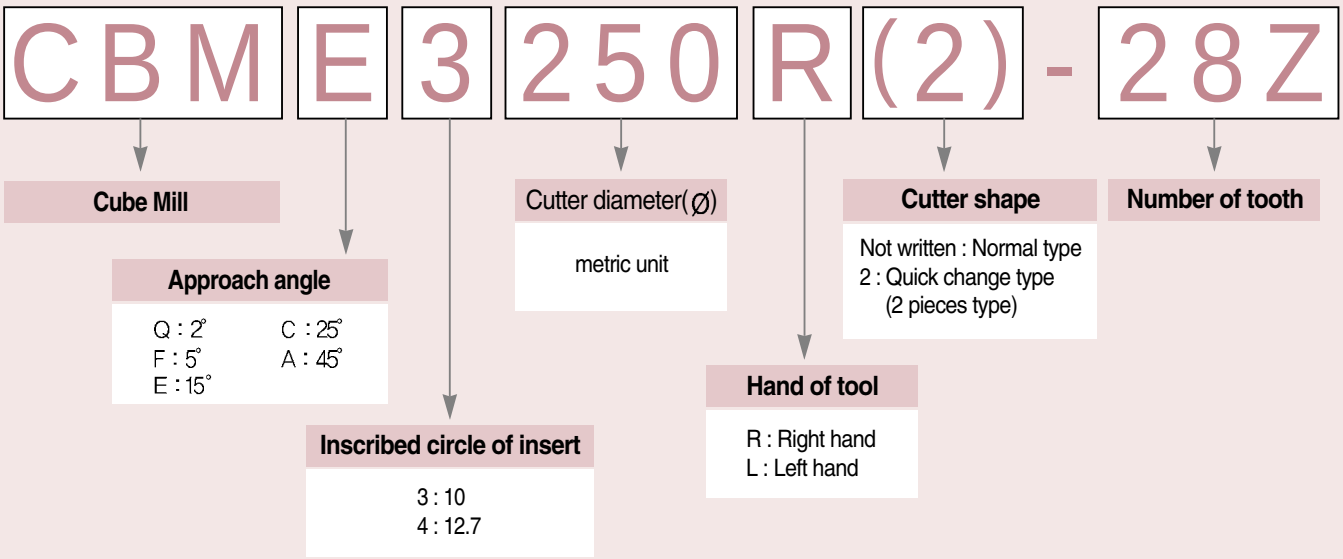
Low cutting load & good chip flow have been achieved due to the 3 dimensional chip breaker

Nose R type

Excellent tool life guaranted by matching of variety of grades as per working conditions.

Chamfer type

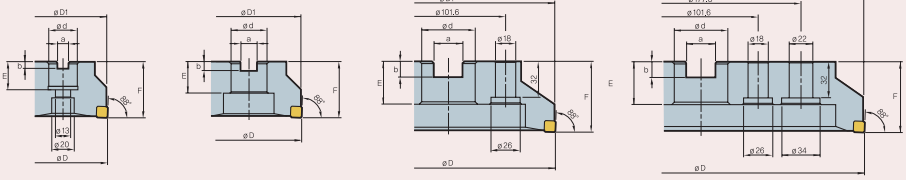
Code system



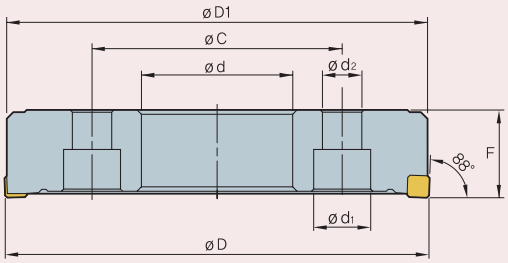
Recommended cutting condition

Work piece / Grade	Gray cast iron		Ductile cast iron	
	GC, FC		GCD, FCD	
	V(m/min)	fz(mm/tooth)	V(m/min)	fz(mm/tooth)
NCM310K	200~300	0.05~0.15	140~200	0.05~0.15
NCM320K	150~250	0.05~0.18	100~180	0.05~0.15
PC6510	150~300	0.08~0.18	100~200	0.08~0.18
PC205K	150~250	0.05~0.15	100~180	0.05~0.15
PC215K	120~210	0.05~0.18	80~150	0.05~0.18
H01	100~200	0.05~0.15	70~140	0.05~0.15
G10	90~120	0.05~0.18	60~130	0.05~0.18

CBMQ(M)3000



Ø80 Ø100~Ø160 Ø200~Ø250 Ø315



Ø200~Ø450(QC type)

Normal type

(mm)

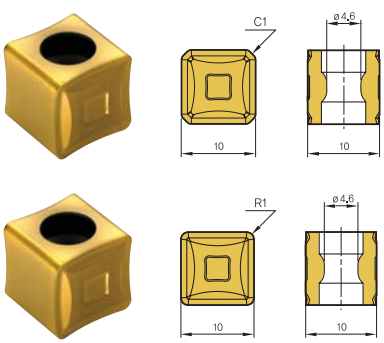
Designation		Stock R	Stock L	øD	øD1	ød	a	b	E	F	kg	Number of tooth Standard	Number of tooth MAX
CBMQ	3080R/L-8Z	●(◉)		80	81	25.40(27)	9.5(12.4)	6.0(7.0)	25.0(22.0)	50	1.3	8	12
(CBMQM)	3100R/L-10Z	●(◉)		100	101	31.75(32)	12.7(14.4)	8.0(8.0)	32.0(28.0)	50	1.8	10	14
	3125R/L-14Z	●(◉)		125	126	38.10(40)	15.9(16.4)	10.0(9.0)	38.0(30.0)	63	3.2	14	18
	3160R/L-18Z	●(◉)		160	161	50.80(40)	19.0(16.4)	11.0(9.0)	38.0(30.0)	63	5.1	18	24
	3200R/L-22Z			200	201	47.625(60)	25.4(25.7)	14.0(14.0)	38.0(38.0)	63	7.4	22	28
	3250R/L-28Z			250	251	47.625(60)	25.4(25.7)	14.0(14.0)	38.0(38.0)	63	12.6	28	36
	3315R/L-34Z			315	316	47.625(60)	25.4(25.7)	14.0(14.0)	38.0(38.0)	63	19.4	34	44

QC (Quick change) type

(mm)

Designation		Stock R	Stock L	øD	øD1	ød	ød1	ød2	øC	F	kg	Number of tooth Standard	Number of tooth MAX
CBMQ	3200R/L2-21Z			200	201	80	24	14	120	40	6	21	28
	3250R/L2-27Z			250	251	120	30	18	170	40	8.4	27	36
	3315R/L2-33Z			315	316	180	30	18	230	40	11.4	33	44
	3355R/L2-39Z			355	356	220	30	18	270	40	13.9	39	52
	3400R/L2-45Z			400	401	250	30	18	300	40	15.8	45	60
	3450R/L2-51Z			450	451	300	30	18	350	40	20	51	68

Available Inserts



Designation	Coated Insert PC205K	PC6510	PC215K	CX1237	Uncoated Insert H01	G10
SNEX1010ZNN-CU1		●	○			
SNEX101010-CU1		●	○			
SNEX101010		●	○			
SNEX1010ZNN		●	○			

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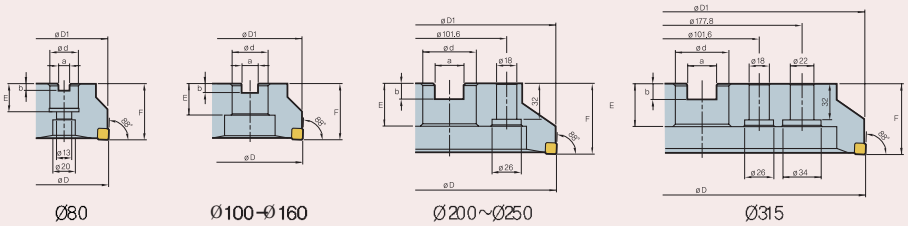
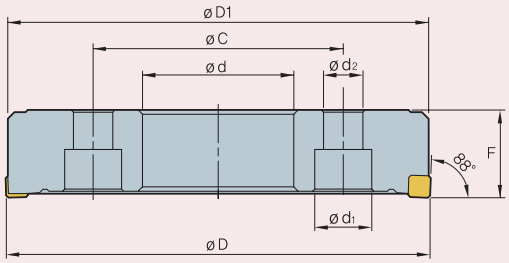
Parts

Screw	Wrench
	
FTGA0417CBM	TW15-100

CBMQ(M)4000



Ø80 Ø100-Ø160 Ø200~Ø250 Ø315



Ø200~Ø450(QC type)

Normal type

(mm)

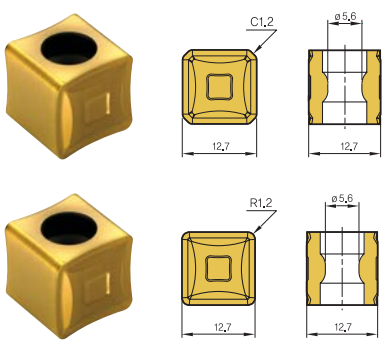
Designation		Stock R	Stock L	ØD	ØD1	Ød	a	b	E	F	kg	Number of tooth Standard	Number of tooth MAX
CBMQ	4080R/L-8Z	●(○)		80	81	25.40(27)	9.5(12.4)	6.0(7.0)	25.0(22.0)	50	1.3	8	
(CBMQM)	4100R/L-10Z	●(○)		100	101	31.75(32)	12.7(14.4)	8.0(8.0)	32.0(28.0)	50	1.8	10	
	4125R/L-14Z	●(○)		125	126	38.10(40)	15.9(16.4)	10.0(9.0)	38.0(30.0)	63	3.4	14	
	4160R/L-18Z	●(○)		160	161	50.80(40)	19.0(16.4)	11.0(9.0)	38.0(30.0)	63	5	18	
	4200R/L-22Z			200	201	47.625(60)	25.4(25.7)	14.0(14.0)	38.0(38.0)	63	7.3	22	
	4250R/L-28Z			250	251	47.625(60)	25.4(25.7)	14.0(14.0)	38.0(38.0)	63	12.4	28	
	4315R/L-34Z			315	316	47.625(60)	25.4(25.7)	14.0(14.0)	38.0(38.0)	63	19.4	34	

QC (Quick change) type

(mm)

Designation		Stock R	Stock L	ØD	ØD1	Ød	Ød1	Ød2	ØC	F	kg	Number of tooth Standard	Number of tooth MAX
CBMQ	4200R/L2-21Z			200	201	80	24	14	120	40	6.1	21	
	4250R/L2-27Z			250	251	120	30	18	170	40	8.5	27	
	4315R/L2-33Z			315	316	180	30	18	230	40	11.6	33	
	4355R/L2-39Z			355	356	220	30	18	270	40	14.1	39	
	4400R/L2-45Z			400	401	250	30	18	300	40	17	45	
	4450R/L2-51Z			450	451	300	30	18	350	40	20	51	

Available Inserts



Designation	Coated Insert PC205K	PC6510	PC215K	CX1237	Uncoated Insert H01	G10
SNEX1212ZNN-CU1		●	○			
SNEX121212-CU1		●	○			

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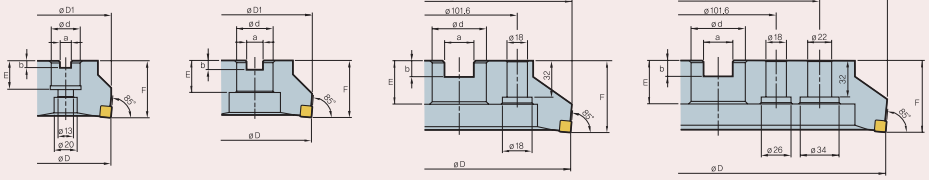
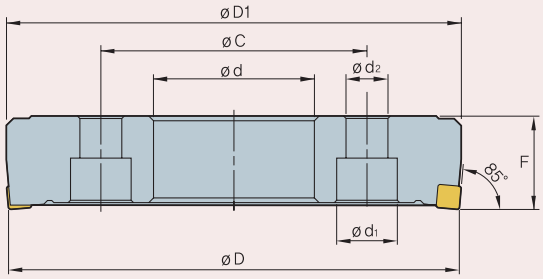
Parts

Screw	Wrench
	
ETGA0520CBM	TW20-100

CBMF(M)3000



Ø80 Ø100~Ø160 Ø200~Ø250 Ø315



Ø200~Ø450(QC type)

Normal type

(mm)

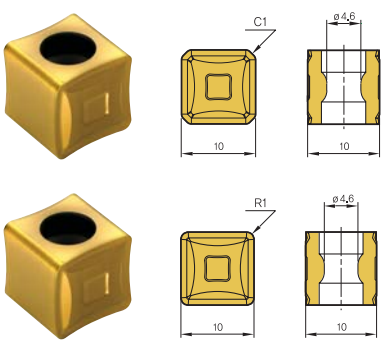
Designation		Stock R	Stock L	øD	øD1	ød	a	b	E	F	kg	Number of tooth Standard	Number of tooth MAX
CBMF (CBMFM)	3080R/L-8Z			80	82	25.40(27)	9.5(12.4)	6.0(7.0)	25.0(22.0)	50	1.4	8	12
	3100R/L-10Z			100	102	31.75(32)	12.7(14.4)	8.0(8.0)	32.0(28.0)	50	1.8	10	14
	3125R/L-14Z			125	127	38.10(40)	15.9(16.4)	10.0(9.0)	38.0(30.0)	63	3.5	14	18
	3160R/L-18Z			160	162	50.80(40)	19.0(16.4)	11.0(9.0)	38.0(30.0)	63	5	18	24
	3200R/L-22Z			200	202	47.625(60)	25.4(25.7)	14.0(14.0)	38.0(38.0)	63	7.3	22	28
	3250R/L-28Z			250	252	47.625(60)	25.4(25.7)	14.0(14.0)	38.0(38.0)	63	12.5	28	36
	3315R/L-34Z			315	317	47.625(60)	25.4(25.7)	14.0(14.0)	38.0(38.0)	63	19.4	34	44

QC (Quick change) type

(mm)

Designation		Stock R	Stock L	øD	øD1	ød	ød1	ød2	øC	F	kg	Number of tooth Standard	Number of tooth MAX
CBMF	3200R/L2-21Z			200	202	80	24	14	120	40	6	21	28
	3250R/L2-27Z			250	252	120	30	18	170	40	8.4	27	36
	3315R/L2-33Z			315	317	180	30	18	230	40	11.4	33	44
	3355R/L2-39Z			355	357	220	30	18	270	40	13.9	39	52
	3400R/L2-45Z			400	402	250	30	18	300	40	15.7	45	60
	3450R/L2-51Z			450	452	300	30	18	350	40	19.9	51	68

Available Inserts



Designation	Coated Insert PC205K	PC6510	PC215K	CX1237	Uncoated Insert H01	G10
SNEX1010ZNN-CU1		●	○			
SNEX101010-CU1		●	○			
SNEX101010		●	○			
SNEX1010ZNN		●	○			

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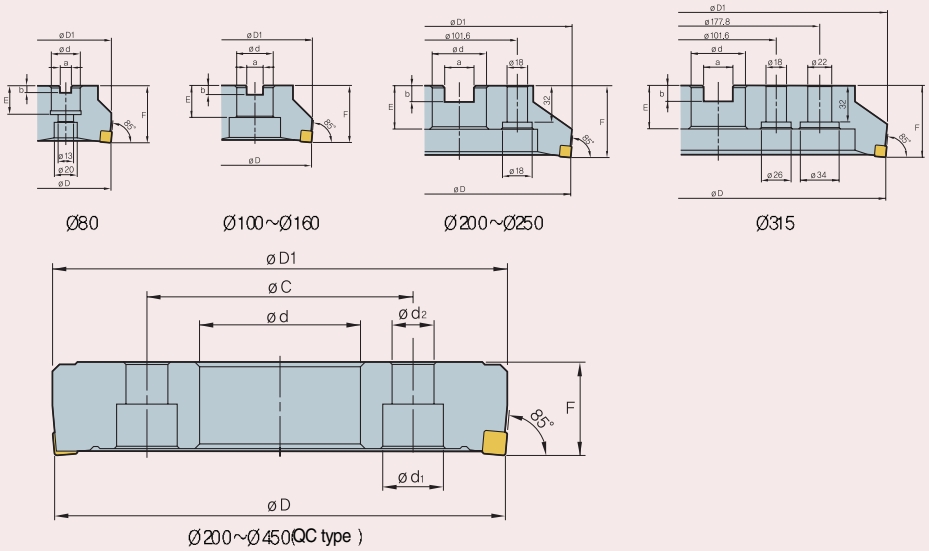
Parts

Screw	Wrench
	
FTGA0417CBM	TW15-100

CBMF(M)4000



Normal type

(mm)

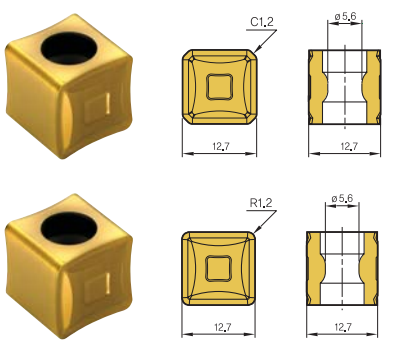
Designation		Stock R	Stock L	ø D	ø D1	ø d	a	b	E	F	kg	Number of tooth Standard	Number of tooth MAX
CBMF	4080R/L-8Z			80	82	25.40(27)	9.5(12.4)	6.0(7.0)	25.0(22.0)	50	1.4	8	
(CBMFM)	4100R/L-10Z			100	102	31.75(32)	12.7(14.4)	8.0(8.0)	32.0(28.0)	50	1.9	10	
	4125R/L-14Z			125	127	38.10(40)	15.9(16.4)	10.0(9.0)	38.0(30.0)	63	3.6	14	
	4160R/L-18Z			160	162	50.80(40)	19.0(16.4)	11.0(9.0)	38.0(30.0)	63	5.3	18	
	4200R/L-22Z			200	202	47.625(60)	25.4(25.7)	14.0(14.0)	38.0(38.0)	63	7.3	22	
	4250R/L-28Z			250	252	47.625(60)	25.4(25.7)	14.0(14.0)	38.0(38.0)	63	12.5	28	
	4315R/L-34Z			315	317	47.625(60)	25.4(25.7)	14.0(14.0)	38.0(38.0)	63	19.4	34	

QC (Quick change) type

(mm)

Designation		Stock R	Stock L	ø D	ø D1	ø d	ø d1	ø d2	ø C	F	kg	Number of tooth Standard	Number of tooth MAX
CBMF	4200R/L2-21Z			200	202	80	24	14	120	40	6.1	21	
	4250R/L2-27Z			250	252	120	30	18	170	40	8.6	27	
	4315R/L2-33Z			315	317	180	30	18	230	40	11.6	33	
	4355R/L2-39Z			355	357	220	30	18	270	40	14.1	39	
	4400R/L2-45Z			400	402	250	30	18	300	40	17.1	45	
	4450R/L2-51Z			450	452	300	30	18	350	40	20	51	

Available Inserts



Designation	Coated Insert PC205K	PC6510	PC215K	CX1237	Uncoated Insert H01	G10
SNEX1212ZNN-CU1		●				
SNEX121212-CU1		●				

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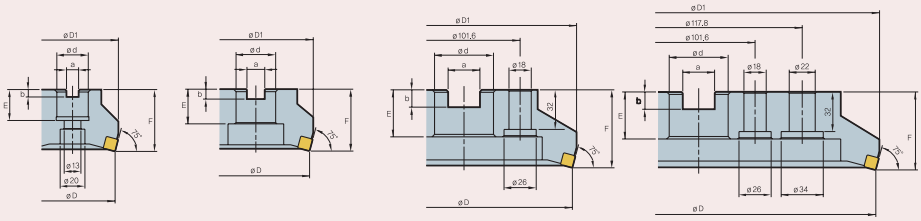
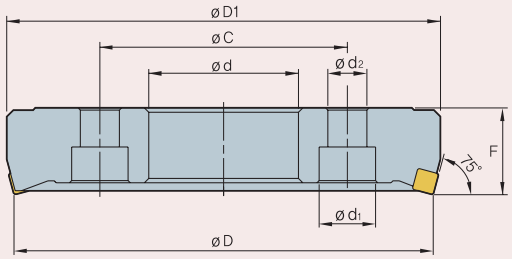
Parts

Screw	Wrench
	
ETGA0520CBM	TW20-100

CBME(M)3000



Ø80 Ø100~Ø160 Ø200~Ø250 Ø315



Ø200~Ø450(QC type)

Normal type

(mm)

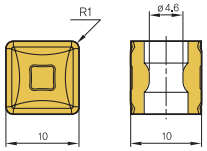
Designation		Stock R	Stock L	øD	øD1	ød	a	b	E	F	kg	Number of tooth Standard	Number of tooth MAX
CBME (CBMEM)	3080R/L-8Z			80	87	25.40(27)	9.5(12.4)	6.0(7.0)	25.0(22.0)	50	1.5	8	12
	3100R/L-10Z			100	107	31.75(32)	12.7(14.4)	8.0(8.0)	32.0(28.0)	50	2	10	14
	3125R/L-14Z			125	132	38.10(40)	15.9(16.4)	10.0(9.0)	38.0(30.0)	63	3.6	14	18
	3160R/L-18Z			160	167	50.80(40)	19.0(16.4)	11.0(9.0)	38.0(30.0)	63	5.4	18	24
	3200R/L-22Z			200	207	47.625(60)	25.4(25.7)	14.0(14.0)	38.0(38.0)	63	7.4	22	28
	3250R/L-28Z			250	257	47.625(60)	25.4(25.7)	14.0(14.0)	38.0(38.0)	63	12.5	28	36
	3315R/L-34Z			315	321	47.625(60)	25.4(25.7)	14.0(14.0)	38.0(38.0)	63	19.4	34	44

QC (Quick change) type

(mm)

Designation		Stock R	Stock L	øD	øD1	ød	ød1	ød2	øC	F	kg	Number of tooth Standard	Number of tooth MAX
CBME	3200R/L2-21Z			200	207	80	24	14	120	40	6.1	21	28
	3250R/L2-27Z			250	257	120	30	18	170	40	8.5	27	36
	3315R/L2-33Z			315	321	180	30	18	230	40	11.4	33	44
	3355R/L2-39Z			355	361	220	30	18	270	40	13.9	39	52
	3400R/L2-45Z			400	405	250	30	18	300	40	15.5	45	60
	3450R/L2-51Z			450	455	300	30	18	350	40	19.4	51	68

Available Inserts



Designation	Coated Insert PC205K	PC6510	PC215K	CX1237	Uncoated Insert H01	G10
SNEX101010-CU1		●	○			
SNEX101010		●	○			

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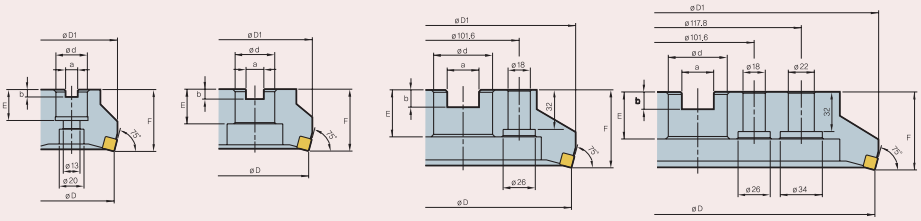
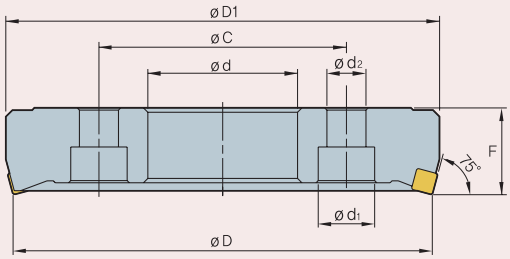
Parts

Screw	Wrench
	
FTGA0417CBM	TW15-100

CBME(M)4000



Ø80 Ø100~Ø160 Ø200~Ø250 Ø315



Ø200~Ø450(QC type)

Normal type

(mm)

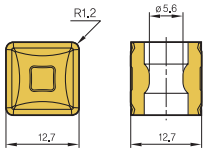
Designation		Stock R	Stock L	ØD	ØD1	Ød	a	b	E	F	kg	Number of tooth Standard	Number of tooth MAX
CBME (CBMEM)	4080R/L-8Z			80	88	25.40(27)	9.5(12.4)	6.0(7.0)	25.0(22.0)	50	1.5	8	
	4100R/L-10Z			100	108	31.75(32)	12.7(14.4)	8.0(8.0)	32.0(28.0)	50	2.1	10	
	4125R/L-14Z			125	133	38.10(40)	15.9(16.4)	10.0(9.0)	38.0(30.0)	63	3.6	14	
	4160R/L-18Z			160	168	50.80(40)	19.0(16.4)	11.0(9.0)	38.0(30.0)	63	5.5	18	
	4200R/L-22Z			200	208	47.625(60)	25.4(25.7)	14.0(14.0)	38.0(38.0)	63	7.7	22	
	4250R/L-28Z			250	258	47.625(60)	25.4(25.7)	14.0(14.0)	38.0(38.0)	63	12.9	28	
	4315R/L-34Z			315	322	47.625(60)	25.4(25.7)	14.0(14.0)	38.0(38.0)	63	19.9	34	

QC (Quick change) type

(mm)

Designation		Stock R	Stock L	ØD	ØD1	Ød	Ød1	Ød2	ØC	F	kg	Number of tooth Standard	Number of tooth MAX
CBME	4200R/L2-21Z			200	208	80	24	14	120	40	6.1	21	
	4250R/L2-27Z			250	258	120	30	18	170	40	8.5	27	
	4315R/L2-33Z			315	322	180	30	18	230	40	11.5	33	
	4355R/L2-39Z			355	362	220	30	18	270	40	13.8	39	
	4400R/L2-45Z			400	406	250	30	18	300	40	16.6	45	
	4450R/L2-51Z			450	456	300	30	18	350	40	19.7	51	

Available Inserts



Designation	Coated Insert PC205K	PC6510	PC215K	CX1237	Uncoated Insert H01	G10
SNEX121212-CU1		●	○			

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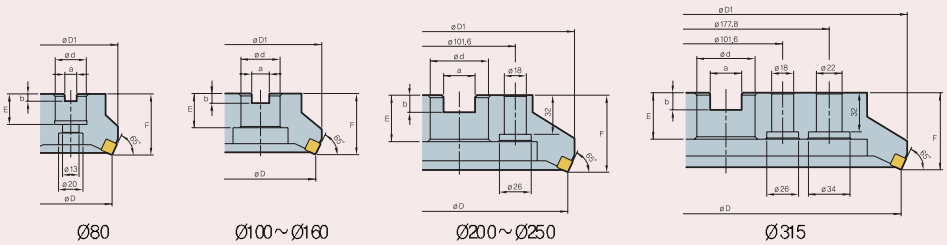
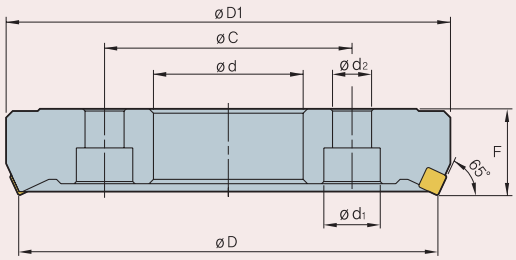
Parts

Screw	Wrench
	
ETGA0520CBM	TW20-100

CBMC(M)3000





Ø200~Ø450(QC type)

Normal type

(mm)

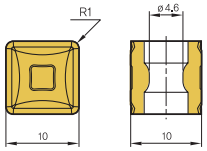
Designation		Stock R	Stock L	øD	øD1	ød	a	b	E	F	kg	Number of tooth Standard	Number of tooth MAX
CBMC (CBMCM)	3080R/L-8Z	●(◉)		80	92	25.40(27)	9.5(12.4)	6.0(7.0)	25.0(22.0)	50	1.5	8	12
	3100R/L-10Z	●(◉)		100	112	31.75(32)	12.7(14.4)	8.0(8.0)	32.0(28.0)	50	2.1	10	14
	3125R/L-14Z	●(◉)		125	137	38.10(40)	15.9(16.4)	10.0(9.0)	38.0(30.0)	63	3.9	14	18
	3160R/L-18Z	●(◉)		160	172	50.80(40)	19.0(16.4)	11.0(9.0)	38.0(30.0)	63	5.6	18	24
	3200R/L-22Z			200	212	47.625(60)	25.4(25.7)	14.0(14.0)	38.0(38.0)	63	7.8	22	28
	3250R/L-28Z			250	262	47.625(60)	25.4(25.7)	14.0(14.0)	38.0(38.0)	63	12.8	28	36
	3315R/L-34Z			315	327	47.625(60)	25.4(25.7)	14.0(14.0)	38.0(38.0)	63	19.9	34	44

QC (Quick change) type

(mm)

Designation		Stock R	Stock L	øD	øD1	ød	ød1	ød2	øC	F	kg	Number of tooth Standard	Number of tooth MAX
CBMC	3200R/L2-21Z			200	212	80	24	14	120	40	6.2	21	28
	3250R/L2-27Z			250	262	120	30	18	170	40	8.4	27	36
	3315R/L2-33Z			315	327	180	30	18	230	40	11.8	33	44
	3355R/L2-39Z			355	367	220	30	18	270	40	15.1	39	52
	3400R/L2-45Z			400	412	250	30	18	300	40	18.4	45	60
	3450R/L2-51Z			450	462	300	30	18	350	40	21.7	51	68

Available Inserts



Designation	Coated Insert PC205K	PC6510	PC215K	CX1237	Uncoated Insert H01	G10
SNEX101010-CU1		●	○			
SNEX101010		●	○			

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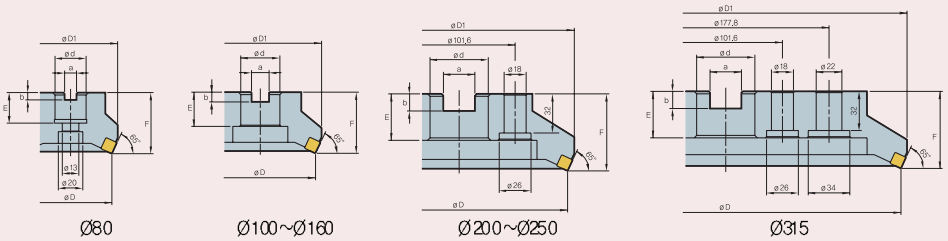
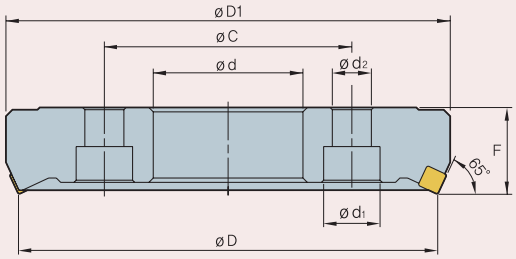
Parts

Screw	Wrench
	
FTGA0417CBM	TW15-100

CBMC(M)4000





Ø200~Ø450(QC type)

Normal type

(mm)

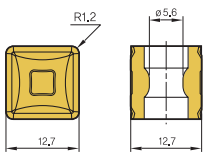
Designation		Stock R	Stock L	ø D	ø D1	ø d	a	b	E	F	kg	Number of tooth Standard	Number of tooth MAX
CBMC	4080R/L-8Z	○		80	94	25.40(27)	9.5(12.4)	6.0(7.0)	25.0(22.0)	50	1.6	8	
(CBMCM)	4100R/L-10Z	○		100	114	31.75(32)	12.7(14.4)	8.0(8.0)	32.0(28.0)	50	2.2	10	
	4125R/L-14Z	○		125	139	38.10(40)	15.9(16.4)	10.0(9.0)	38.0(30.0)	63	3.9	14	
	4160R/L-18Z	○		160	174	50.80(40)	19.0(16.4)	11.0(9.0)	38.0(30.0)	63	6	18	
	4200R/L-22Z			200	214	47.625(60)	25.4(25.7)	14.0(14.0)	38.0(38.0)	63	7.8	22	
	4250R/L-28Z			250	264	47.625(60)	25.4(25.7)	14.0(14.0)	38.0(38.0)	63	13	28	
	4315R/L-34Z			315	329	47.625(60)	25.4(25.7)	14.0(14.0)	38.0(38.0)	63	20.7	34	

QC (Quick change) type

(mm)

Designation		Stock R	Stock L	ø D	ø D1	ø d	ø d1	ø d2	ø C	F	kg	Number of tooth Standard	Number of tooth MAX
CBMC	4200R/L2-21Z			200	214	80	24	14	120	40	6.4	21	
	4250R/L2-27Z			250	264	120	30	18	170	40	8.8	27	
	4315R/L2-33Z			315	329	180	30	18	230	40	11.8	33	
	4355R/L2-39Z			355	369	220	30	18	270	40	14.3	39	
	4400R/L2-45Z			400	414	250	30	18	300	40	17.1	45	
	4450R/L2-51Z			450	464	300	30	18	350	40	20.1	51	

Available Inserts



Designation	Coated Insert PC205K	PC6510	PC215K	CX1237	Uncoated Insert H01	G10
SNEX121212-CU1		●	○			

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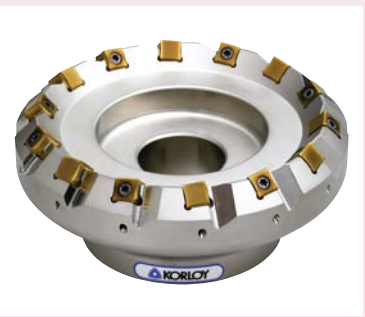
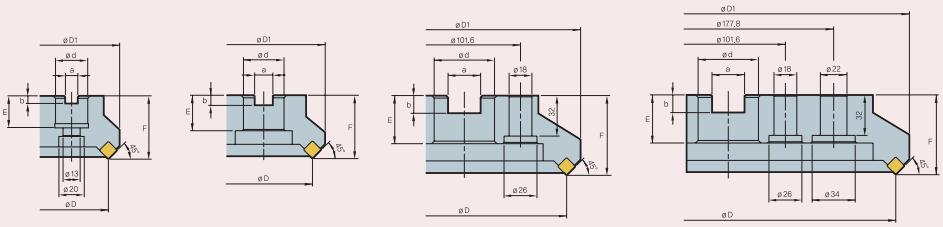
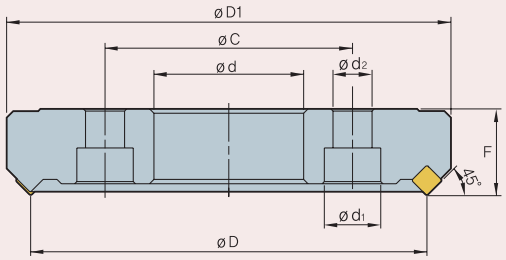
Parts

Screw	Wrench
	
ETGA0520CBM	TW20-100

CBMA(M)3000







Ø200~Ø450(QC type)

Normal type

(mm)

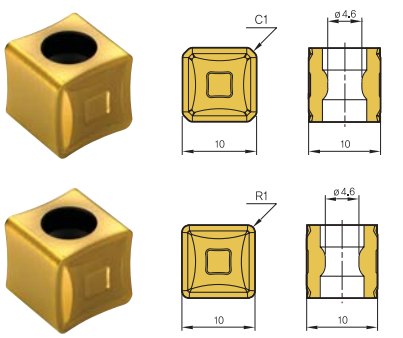
Designation		Stock R	Stock L	øD	øD1	ød	a	b	E	F	kg	Number of tooth Standard	Number of tooth MAX
CBMA	3080R/L-8Z	○		80	100	25.40(27)	9.5(12.4)	6.0(7.0)	25.0(22.0)	50	1.8	8	12
(CBMAM)	3100R/L-10Z	○		100	120	31.75(32)	12.7(14.4)	8.0(8.0)	32.0(28.0)	50	2.4	10	14
	3125R/L-14Z	○		125	145	38.10(40)	15.9(16.4)	10.0(9.0)	38.0(30.0)	63	4.1	14	18
	3160R/L-18Z	○		160	185	50.80(40)	19.0(16.4)	11.0(9.0)	38.0(30.0)	63	6	18	24
	3200R/L-22Z			200	220	47.625(60)	25.4(25.7)	14.0(14.0)	38.0(38.0)	63	7.9	22	28
	3250R/L-28Z			250	270	47.625(60)	25.4(25.7)	14.0(14.0)	38.0(38.0)	63	13	28	36
	3315R/L-34Z			315	335	47.625(60)	25.4(25.7)	14.0(14.0)	38.0(38.0)	63	20	34	44

QC (Quick change) type

(mm)

Designation		Stock R	Stock L	øD	øD1	ød	ød1	ød2	øC	F	kg	Number of tooth Standard	Number of tooth MAX
CBMA	3200R/L2-21Z			200	220	80	24	14	120	40	6.5	21	28
	3250R/L2-27Z			250	270	120	30	18	170	40	9.1	27	36
	3315R/L2-33Z			315	335	180	30	18	230	40	12	33	44
	3355R/L2-39Z			355	375	220	30	18	270	40	15.9	39	52
	3400R/L2-45Z			400	420	250	30	18	300	40	19.3	45	60
	3450R/L2-51Z			450	470	300	30	18	350	40	22.6	51	68

Available Inserts



Designation	Coated Insert PC205K	PC6510	PC215K	CX1237	Uncoated Insert H01	G10
SNEX1010ZNN-CU1		●	○			
SNEX101010-CU1		●	○			
SNEX101010		●	○			
SNEX1010ZNN		●	○			

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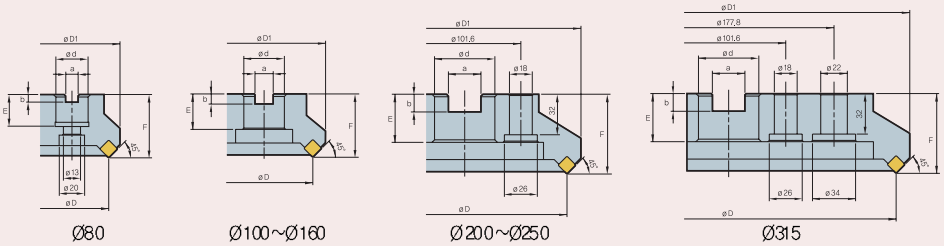
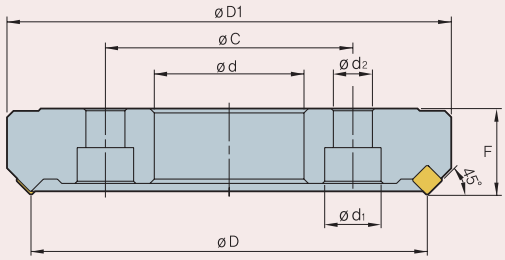
Parts

Screw	Wrench
	
FTGA0417CBM	TW15-100

CBMA(M)4000





Ø200~Ø450(QC type)

Normal type

(mm)

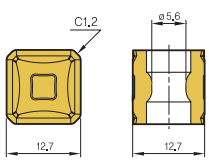
Designation		Stock R	Stock L	ø D	ø D1	ø d	a	b	E	F	kg	Number of tooth Standard	Number of tooth MAX
CBMA	4080R/L-8Z	●(◉)		80	103	25.40(27)	9.5(12.4)	6.0(7.0)	25.0(22.0)	50	1.8	8	
(CBMAM)	4100R/L-10Z	●(◉)		100	123	31.75(32)	12.7(14.4)	8.0(8.0)	32.0(28.0)	50	2.4	10	
	4125R/L-14Z	●(◉)		125	148	38.10(40)	15.9(16.4)	10.0(9.0)	38.0(30.0)	63	4.3	14	
	4160R/L-18Z	●(◉)		160	188	50.80(40)	19.0(16.4)	11.0(9.0)	38.0(30.0)	63	6.2	18	
	4200R/L-22Z			200	223	47.625(60)	25.4(25.7)	14.0(14.0)	38.0(38.0)	63	8.5	22	
	4250R/L-28Z			250	273	47.625(60)	25.4(25.7)	14.0(14.0)	38.0(38.0)	63	13.9	28	
	4315R/L-34Z			315	338	47.625(60)	25.4(25.7)	14.0(14.0)	38.0(38.0)	63	21.2	34	

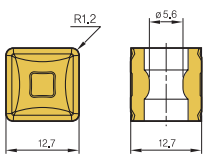
QC (Quick change) type

(mm)

Designation		Stock R	Stock L	ø D	ø D1	ø d	ø d1	ø d2	ø C	F	kg	Number of tooth Standard	Number of tooth MAX
CBMA	4200R/L2-21Z			200	223	80	24	14	120	40	6.8	21	
	4250R/L2-27Z			250	273	120	30	18	170	40	9.4	27	
	4315R/L2-33Z			315	338	180	30	18	230	40	12.6	33	
	4355R/L2-39Z			355	378	220	30	18	270	40	15.2	39	
	4400R/L2-45Z			400	423	250	30	18	300	40	18.1	45	
	4450R/L2-51Z			450	473	300	30	18	350	40	21.3	51	

Available Inserts





Designation	Coated Insert PC205K	PC6510	PC215K	CX1237	Uncoated Insert H01	G10
SNEX1212ZNN-CU1		●	○			
SNEX121212-CU1		●	○			

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Parts

Screw	Wrench
	
ETGA0520CBM	TW20-100

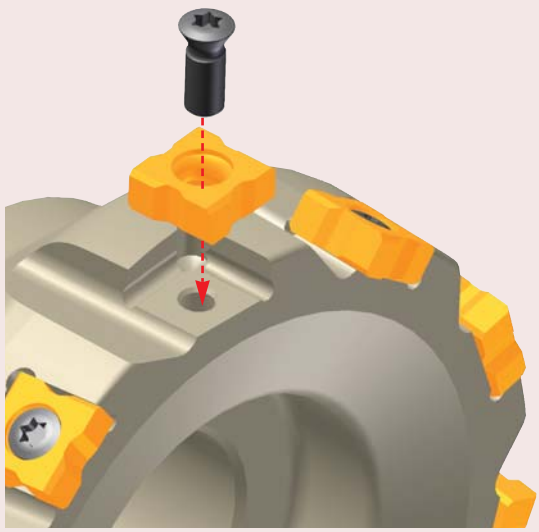
Technical Guide of Dura mill

Special features

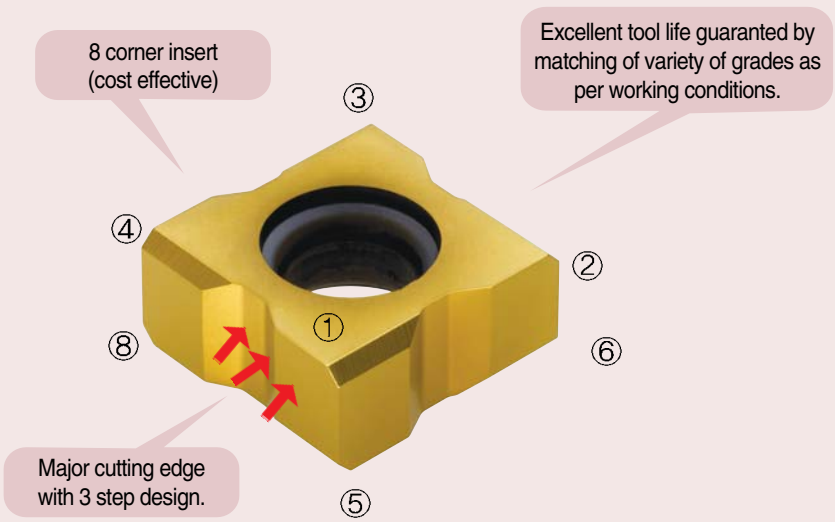
- 8 corner using insert
- Heavy cutting is possible due to the strong cutting edge with 3 step design.
- Excellent tool life guaranted by matching of variety of grades as per working conditions.
- R type / L type insert available, respectively

Cutter

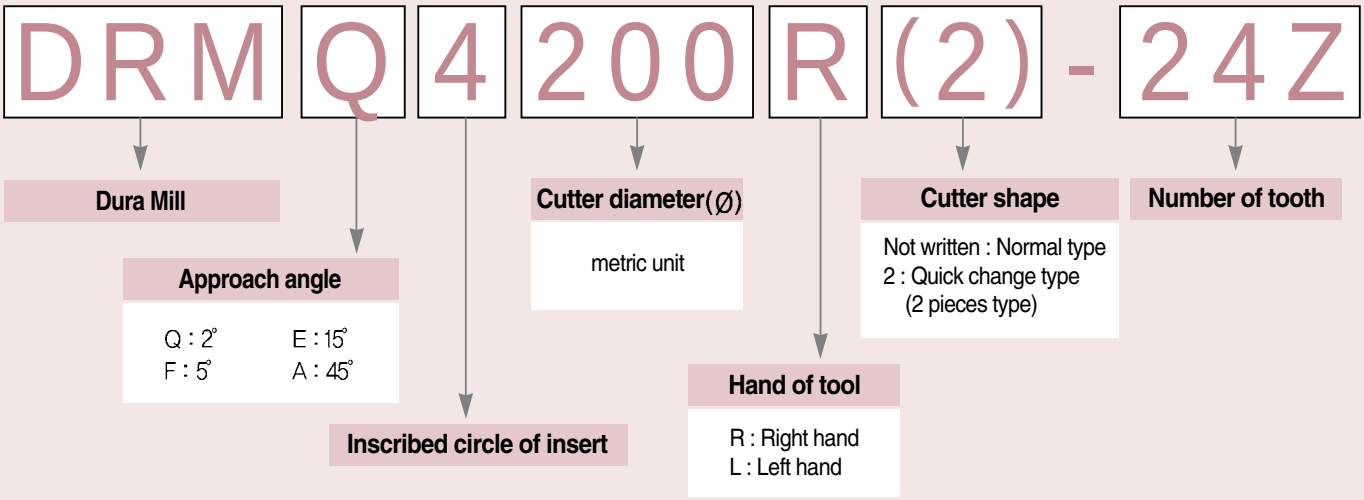
Clamping of insert



Insert



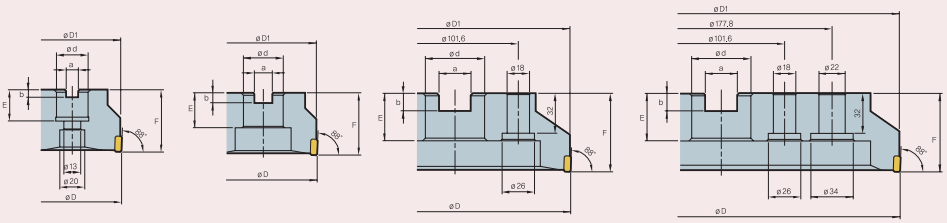
Code system



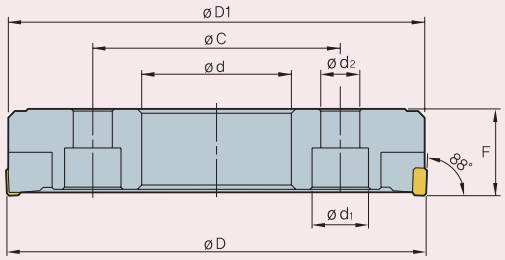
Recommended cutting condition

Work piece / Grade	Gray cast iron GC, FC		Ductile cast iron GCD, FCD	
	V(m/min)	fz(mm/tooth)	V(m/min)	fz(mm/tooth)
NCM310K	200~300	0.08~0.2	140~200	0.08~0.2
NCM320K	150~250	0.08~0.23	100~180	0.08~0.23
PC6510	150~300	0.1~0.23	100~200	0.1~0.23
PC205K	150~250	0.08~0.2	100~180	0.08~0.2
PC215K	120~210	0.08~0.23	80~150	0.08~0.23
H01	100~200	0.08~0.2	70~140	0.08~0.2
G10	90~120	0.08~0.23	60~130	0.08~0.23

DRMQ(M)4000



Ø80 Ø100~Ø160 Ø200~Ø250 Ø315



Ø200~Ø450(QC type)

Normal type

(mm)

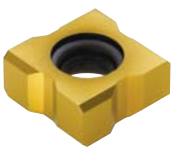
Designation		Stock R	Stock L	øD	øD1	ød	a	b	E	F	kg	Number of tooth Standard	Number of tooth MAX
DRMQ	4080R/L-8Z	○		80	81	25.40(27)	9.5(12.4)	6.0(7.0)	25.0(22.0)	50	1.3	8	
(DRMQM)	4100R/L-10Z	○		100	101	31.75(32)	12.7(14.4)	8.0(8.0)	32.0(28.0)	50	1.7	10	
	4125R/L-14Z	○		125	126	38.10(40)	15.9(16.4)	10.0(9.0)	38.0(30.0)	63	3.2	14	
	4160R/L-18Z	○		160	161	50.80(40)	19.0(16.4)	11.0(9.0)	38.0(30.0)	63	5.2	18	
	4200R/L-22Z			200	201	47.625(60)	25.4(25.7)	14.0(14.0)	38.0(38.0)	63	7.2	24	
	4250R/L-28Z			250	251	47.625(60)	25.4(25.7)	14.0(14.0)	38.0(38.0)	63	12.3	30	
	4315R/L-34Z			315	316	47.625(60)	25.4(25.7)	14.0(14.0)	38.0(38.0)	63	19.2	36	

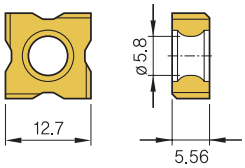
QC (Quick change) type

(mm)

Designation		Stock R	Stock L	øD	øD1	ød	ød1	ød2	øC	F	kg	Number of tooth Standard	Number of tooth MAX
DRMQ	4200R/L2-21Z			200	201	80	24	14	120	40	5.7	24	
	4250R/L2-27Z			250	251	120	30	18	170	40	8	30	
	4315R/L2-33Z			315	316	180	30	18	230	40	10.7	36	
	4355R/L2-39Z			355	356	220	30	18	270	40	13.2	42	
	4400R/L2-45Z			400	401	250	30	18	300	40	14.9	48	
	4450R/L2-51Z			450	451	300	30	18	350	40	19	54	

Available Inserts





Designation	Coated Insert PC205K	PC6510	PC215K	CX1237	Uncoated Insert H01	G10
SNCQ1205ZNR		○	○			
SNCQ1205ZNL						

Parts

Screw	Wrench
	
FTNA0513	TW20

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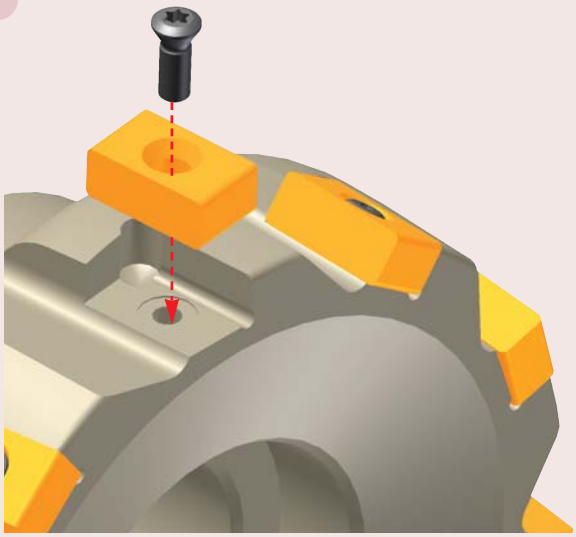
Technical Guide of Storm mill

Special features

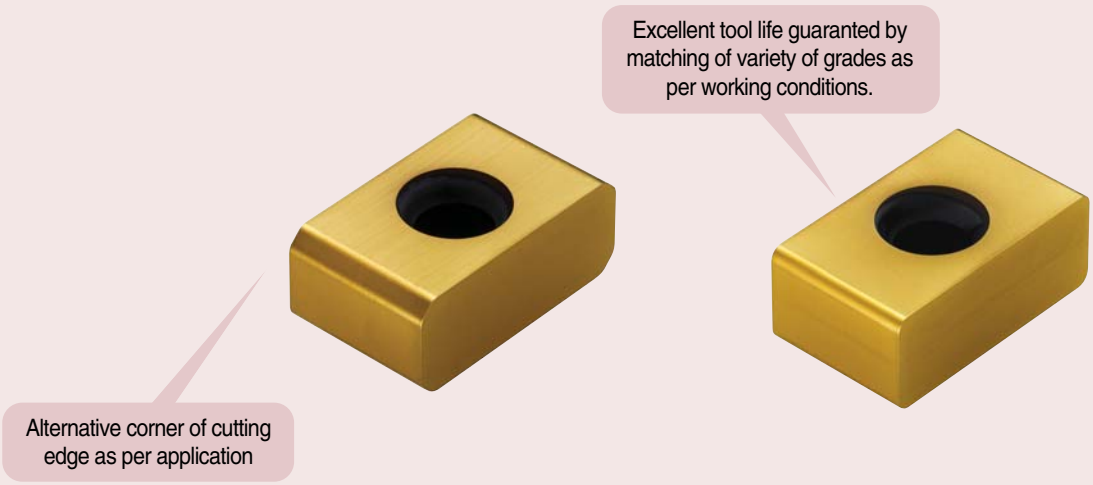
- Conventional cutter with wide coverage
- Using 4 corners (Maximum 8 corner avaiable with R/L type cutter)
- Effective on big depth of cut application due to the long cutting edge
- Excellent tool life guaranted by matching of variety of grades as per working conditions.
- 2 different type of inserts(chamfer / nose R) are available with 1 type of cutter.

Cutter

Clamping of insert



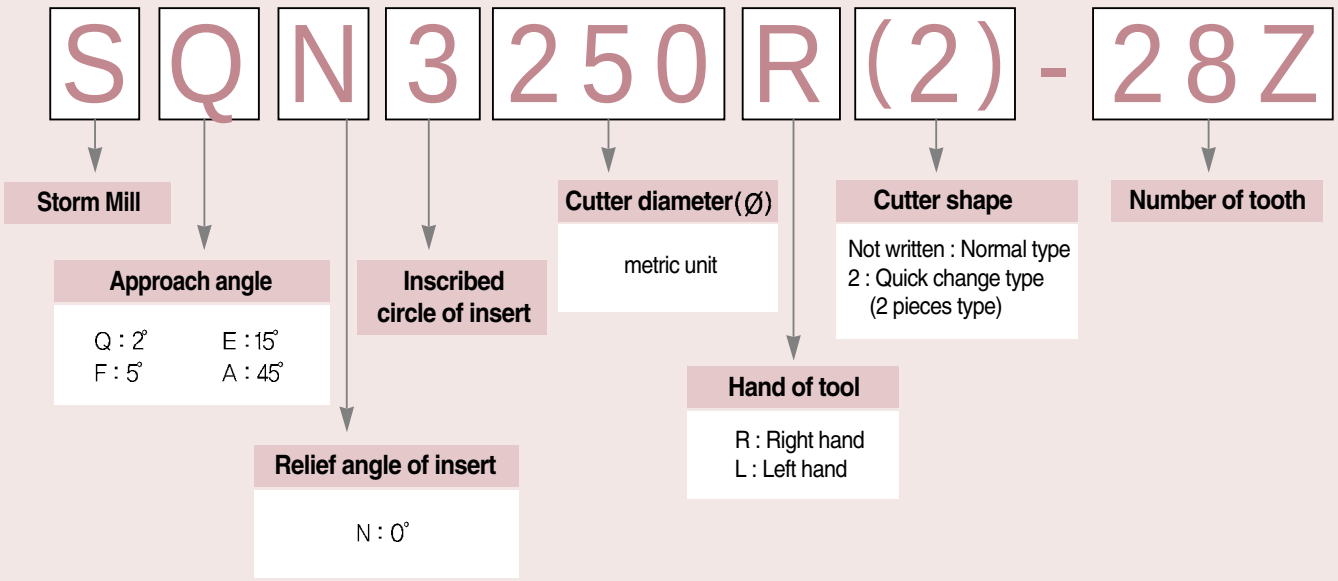
Insert



Chamfer type **Nose R type**

Technical Guide of Storm mill

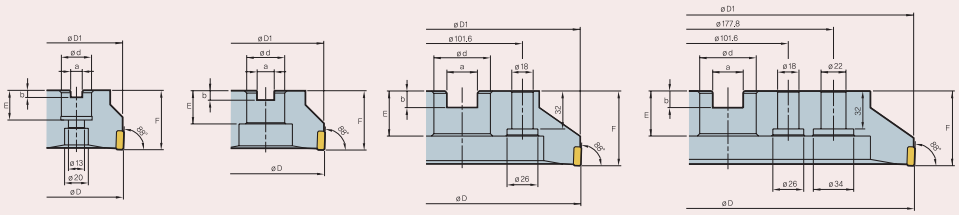
Code system



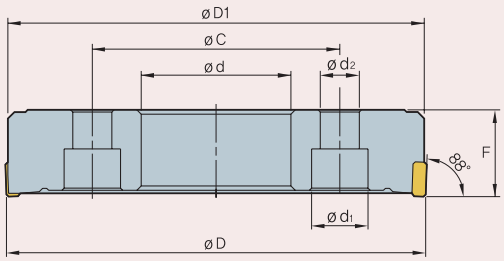
Recommended cutting condition

Work piece / Grade	Gray cast iron GC, FC		Ductile cast iron GCD, FCD	
	V(m/min)	fz(mm/tooth)	V(m/min)	fz(mm/tooth)
NCM310K	200~300	0.08~0.22	140~200	0.08~0.22
NCM320K	150~250	0.08~0.28	100~180	0.08~0.28
PC6510	150~300	0.1~0.28	100~200	0.1~0.28
PC205K	150~250	0.08~0.22	100~180	0.08~0.22
PC215K	120~210	0.08~0.28	80~150	0.08~0.28
H01	100~200	0.08~0.22	70~140	0.08~0.22
G10	90~120	0.08~0.28	60~130	0.08~0.28

SQN(M)3000



Ø80 Ø100~Ø160 Ø200~Ø250 Ø315



Ø200~Ø450(QC Type)

Normal type

(mm)

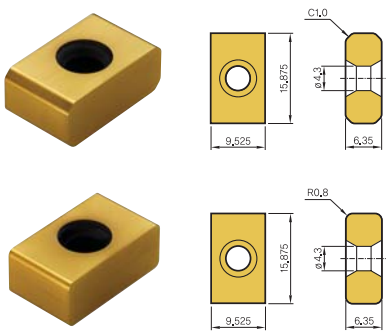
Designation		Stock R	Stock L	ØD	ØD1	Ød	a	b	E	F	kg	Number of tooth Standard	Number of tooth MAX
SQN	3080R/L-8Z	○		80	82	25.40(27)	9.5(12.4)	6.0(7.0)	25.0(22.0)	50	1.3	8	12
(SQNM)	3100R/L-10Z	○		100	102	31.75(32)	12.7(14.4)	8.0(8.0)	32.0(28.0)	50	1.8	10	14
	3125R/L-14Z	○		125	127	38.10(40)	15.9(16.4)	10.0(9.0)	38.0(30.0)	63	3.6	14	18
	3160R/L-18Z	○		160	162	50.80(40)	19.0(16.4)	11.0(9.0)	38.0(30.0)	63	5.1	18	24
	3200R/L-22Z			200	202	47.625(60)	25.4(25.7)	14.0(14.0)	38.0(38.0)	63	7.1	24	32
	3250R/L-30Z			250	252	47.625(60)	25.4(25.7)	14.0(14.0)	38.0(38.0)	63	11.9	30	40
	3315R/L-36Z			315	317	47.625(60)	25.4(25.7)	14.0(14.0)	38.0(38.0)	63	19	36	48

QC (Quick change) type

(mm)

Designation		Stock R	Stock L	ØD	ØD1	Ød	Ød1	Ød2	ØC	F	kg	Number of tooth Standard	Number of tooth MAX
SQN	3200R/L2-24Z			200	202	80	24	14	120	40	5.9	24	32
	3250R/L2-30Z			250	252	120	30	18	170	40	8.1	30	40
	3315R/L2-36Z			315	317	180	30	18	230	40	11.2	36	48
	3355R/L2-42Z			355	357	220	30	18	270	40	14.4	42	56
	3400R/L2-48Z			400	402	250	30	18	300	40	16	48	64
	3450R/L2-54Z			450	452	300	30	18	350	40	20.1	54	72

Available Inserts



Designation	Coated Insert PC205K	PC6510	PC215K	CX1237	Uncoated Insert H01	G10
LNE324-C1.0		○	○			
LNE324-R0.8		○	○			

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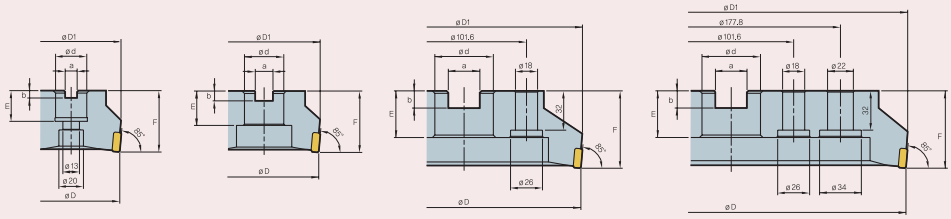
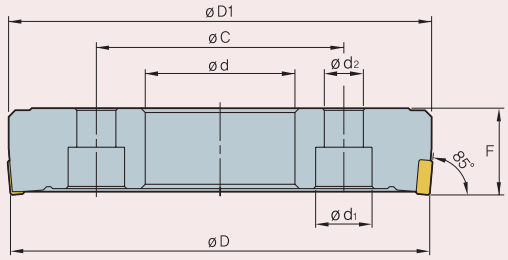
Parts

Screw	Wrench
	
FTNA0411	TW15S

SFN(M)3000





Ø200~Ø450(QC Type)

Normal type

(mm)

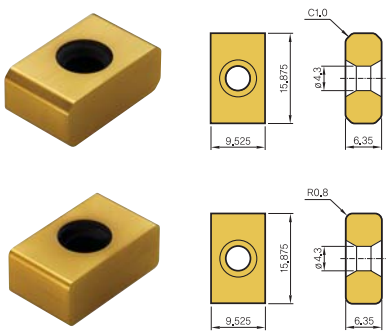
Designation		Stock R	Stock L	øD	øD1	ød	a	b	E	F	kg	Number of tooth Standard	Number of tooth MAX
SFN (SFNM)	3080R/L-8Z			80	83	25.40(27)	9.5(12.4)	6.0(7.0)	25.0(22.0)	50	1.3	8	12
	3100R/L-10Z			100	103	31.75(32)	12.7(14.4)	8.0(8.0)	32.0(28.0)	50	1.8	10	14
	3125R/L-14Z			125	128	38.10(40)	15.9(16.4)	10.0(9.0)	38.0(30.0)	63	3.7	14	18
	3160R/L-18Z			160	163	50.80(40)	19.0(16.4)	11.0(9.0)	38.0(30.0)	63	5.3	18	24
	3200R/L-24Z			200	203	47.625(60)	25.4(25.7)	14.0(14.0)	38.0(38.0)	63	7.5	24	32
	3250R/L-30Z			250	253	47.625(60)	25.4(25.7)	14.0(14.0)	38.0(38.0)	63	12.1	30	40
	3315R/L-36Z			315	318	47.625(60)	25.4(25.7)	14.0(14.0)	38.0(38.0)	63	19.6	36	48

QC (Quick change) type

(mm)

Designation		Stock R	Stock L	øD	øD1	ød	ød1	ød2	øC	F	kg	Number of tooth Standard	Number of tooth MAX
SFN	3200R/L2-24Z			200	203	80	24	14	120	40	6.2	24	32
	3250R/L2-30Z			250	253	120	30	18	170	40	8.2	30	40
	3315R/L2-36Z			315	318	180	30	18	230	40	11.5	36	48
	3355R/L2-42Z			355	358	220	30	18	270	40	14.3	42	56
	3400R/L2-48Z			400	403	250	30	18	300	40	16.1	48	64
	3450R/L2-54Z			450	453	300	30	18	350	40	20.2	54	72

Available Inserts



Designation	Coated Insert PC205K	PC6510	PC215K	CX1237	Uncoated Insert H01	G10
LNE324-C1.0		○	○			
LNE324-R0.8		○	○			

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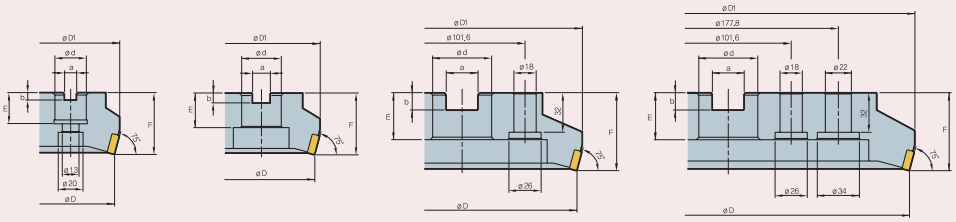
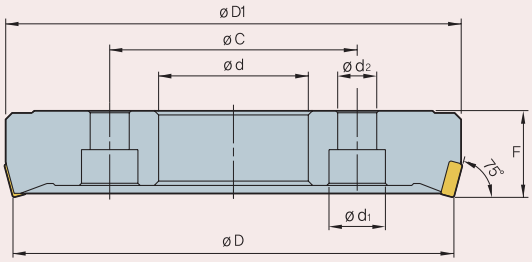
Parts

Screw	Wrench
	
FTNA0411	TW15S

SEN(M)3000





Ø200~Ø450(QC Type)

Normal type

(mm)

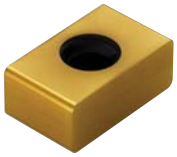
Designation		Stock R	Stock L	ø D	ø D1	ø d	a	b	E	F	kg	Number of tooth Standard	Number of tooth MAX
SEN	3080R/L-8Z			80	88	25.40(27)	9.5(12.4)	6.0(7.0)	25.0(22.0)	50	1.5	8	12
(SENM)	3100R/L-10Z			100	108	31.75(32)	12.7(14.4)	8.0(8.0)	32.0(28.0)	50	2	10	14
	3125R/L-14Z			125	133	38.10(40)	15.9(16.4)	10.0(9.0)	38.0(30.0)	63	3.6	14	18
	3160R/L-18Z			160	168	50.80(40)	19.0(16.4)	11.0(9.0)	38.0(30.0)	63	5.7	18	24
	3200R/L-24Z			200	208	47.625(60)	25.4(25.7)	14.0(14.0)	38.0(38.0)	63	7.7	24	32
	3250R/L-30Z			250	258	47.625(60)	25.4(25.7)	14.0(14.0)	38.0(38.0)	63	12.6	30	40
	3315R/L-36Z			315	323	47.625(60)	25.4(25.7)	14.0(14.0)	38.0(38.0)	63	19.9	36	48

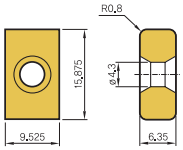
QC (Quick change) type

(mm)

Designation		Stock R	Stock L	ø D	ø D1	ø d	ø d1	ø d2	ø C	F	kg	Number of tooth Standard	Number of tooth MAX
SEN	3200R/L2-24Z			208	202	80	24	14	120	40	6.3	24	32
	3250R/L2-30Z			258	252	120	30	18	170	40	8.4	30	40
	3315R/L2-36Z			323	317	180	30	18	230	40	11.7	36	48
	3355R/L2-42Z			363	357	220	30	18	270	40	14.4	42	56
	3400R/L2-48Z			408	402	250	30	18	300	40	17.3	48	64
	3450R/L2-54Z			458	452	300	30	18	350	40	21	54	72

Available Inserts





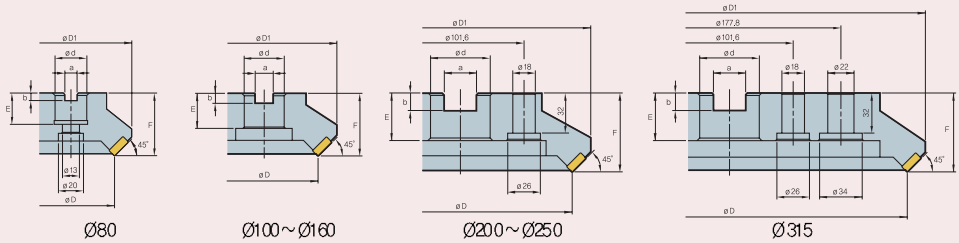
Designation	Coated Insert PC205K	PC6510	PC215K	CX1237	Uncoated Insert H01	G10
LNE324-R0.8		○	○			

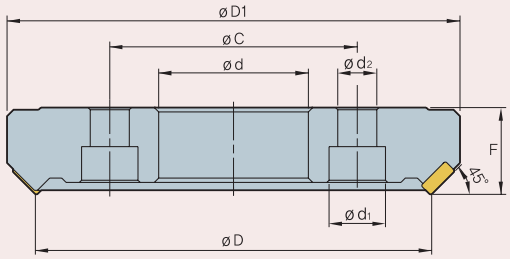
P. 274

Parts

Screw	Wrench
	
FTNA0411	TW15S

SAN(M)3000





Ø200~Ø450(QC Type)

Normal type

(mm)

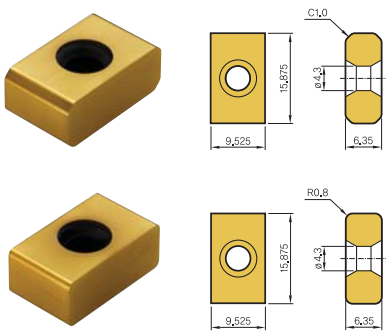
Designation		Stock R	Stock L	øD	øD1	ød	a	b	E	F	kg	Number of tooth Standard	Number of tooth MAX
SAN (SANM)	3080R/L-8Z	○		80	107	25.40(27)	9.5(12.4)	6.0(7.0)	25.0(22.0)	50	1.8	8	12
	3100R/L-10Z	○		100	127	31.75(32)	12.7(14.4)	8.0(8.0)	32.0(28.0)	50	2.4	10	14
	3125R/L-14Z	○		125	152	38.10(40)	15.9(16.4)	10.0(9.0)	38.0(30.0)	63	4.2	14	18
	3160R/L-18Z	○		160	187	50.80(40)	19.0(16.4)	11.0(9.0)	38.0(30.0)	63	6.1	18	24
	3200R/L-24Z			200	227	47.625(60)	25.4(25.7)	14.0(14.0)	38.0(38.0)	63	8.2	24	32
	3250R/L-30Z			250	277	47.625(60)	25.4(25.7)	14.0(14.0)	38.0(38.0)	63	13.1	30	40
	3315R/L-36Z			315	342	47.625(60)	25.4(25.7)	14.0(14.0)	38.0(38.0)	63	20.7	36	48

QC (Quick change) type

(mm)

Designation		Stock R	Stock L	øD	øD1	ød	ød1	ød2	øC	F	kg	Number of tooth Standard	Number of tooth MAX
SAN	3200R/L2-24Z			200	277	80	24	14	120	40	6.7	24	32
	3250R/L2-30Z			250	277	120	30	18	170	40	8.7	30	40
	3315R/L2-36Z			315	342	180	30	18	230	40	13.1	36	48
	3355R/L2-42Z			355	382	220	30	18	270	40	16.4	42	56
	3400R/L2-48Z			400	427	250	30	18	300	40	19.6	48	64
	3450R/L2-54Z			450	477	300	30	18	350	40	23.5	54	72

Available Inserts



Designation	Coated Insert PC205K	PC6510	PC215K	CX1237	Uncoated Insert H01	G10
LNE324-C1.0		○	○			
LNE324-R0.8		○	○			

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Parts

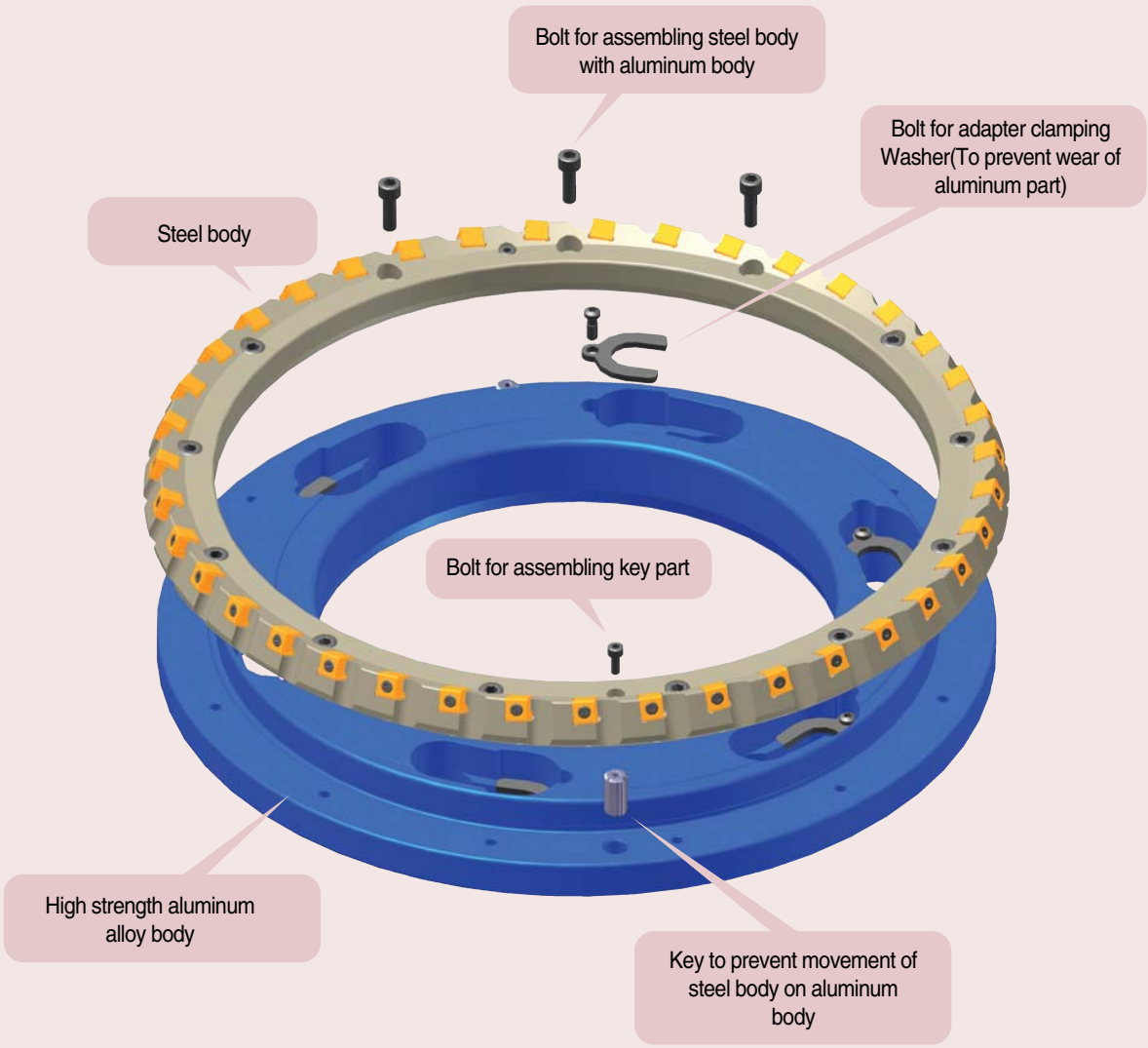
Screw	Wrench
	
FTNA0411	TW15S

Technical Guide of Couple mill

Special features

- Ideal combination of Aluminum body with cast iron high feed cutter
- Since the weight of cutter has been reduced down to 50% of steel cutter, it is very easy to handle and very effective to prevent accident at the field
- Applicable for Cube mill, Dura mill, Strom mill

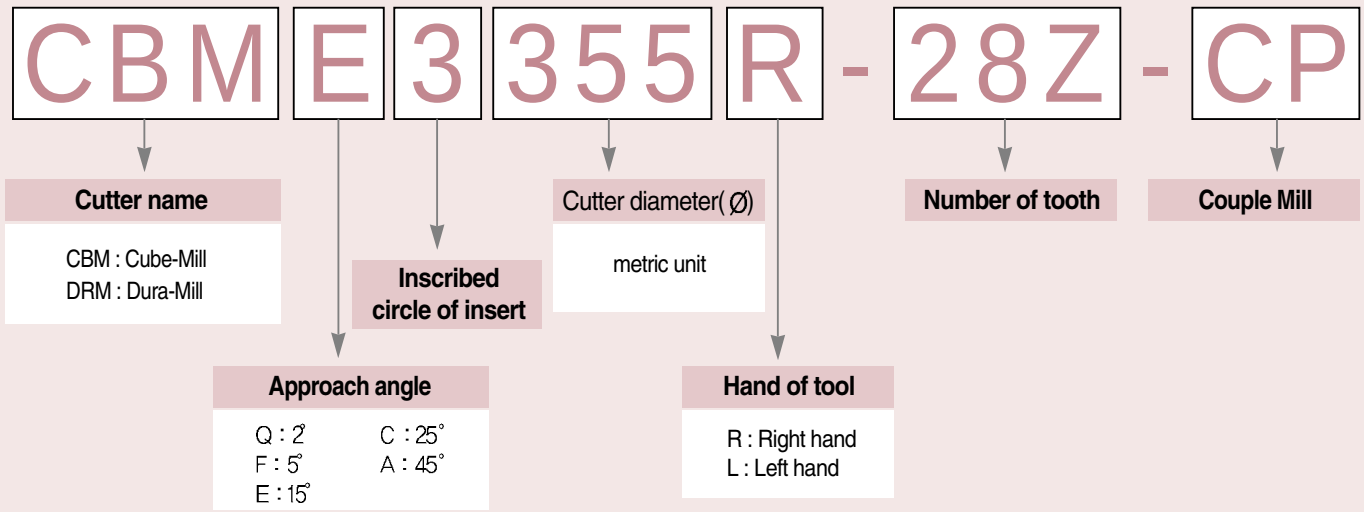
Assembling structure



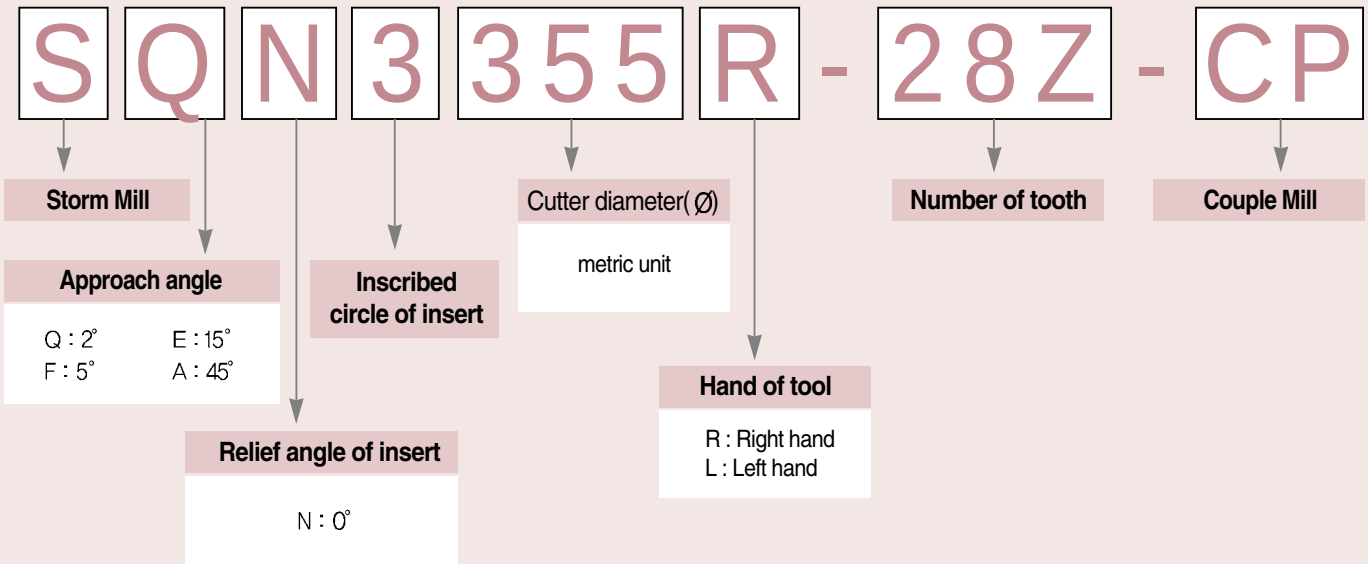
Technical Guide of Couple mill

Code system

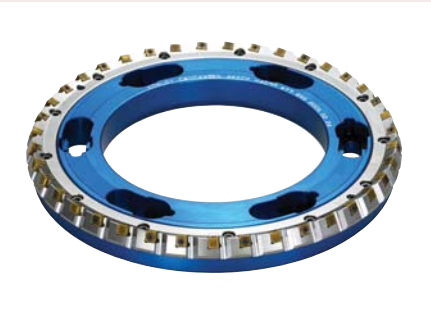
1. Cube couple mill, Dura couple mill

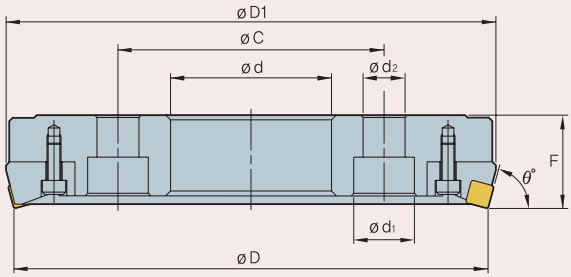


2. Storm couple mill



Cube couple mill 3000





CBMQ

(mm)

Designation		Stock R	Stock L	øD	øD1	ød	ød1	ød2	øC	F	kg	θ°	Number of tooth Standard	Number of tooth MAX
CBMQ	3355R/L-39Z-CP			355	356	220	30	18	270	40	7.7	88°	39	45
	3400R/L-45Z-CP	○		400	401	250	30	18	300	40	9	88°	45	51
	3450R/L-51Z-CP			450	451	300	30	18	350	40	10.7	88°	51	57

CBMF

(mm)

Designation		Stock R	Stock L	øD	øD1	ød	ød1	ød2	øC	F	kg	θ°	Number of tooth Standard	Number of tooth MAX
CBMF	3355R/L-39Z-CP			355	357	220	30	18	270	40	7.5	85°	39	45
	3400R/L-45Z-CP			400	402	250	30	18	300	40	8.9	85°	45	51
	3450R/L-51Z-CP			450	452	300	30	18	350	40	10.4	85°	51	57

CBME

(mm)

Designation		Stock R	Stock L	øD	øD1	ød	ød1	ød2	øC	F	kg	θ°	Number of tooth Standard	Number of tooth MAX
CBME	3355R/L-39Z-CP			355	361	220	30	18	270	40	7.4	75°	39	45
	3400R/L-45Z-CP			400	405	250	30	18	300	40	9.3	75°	45	51
	3450R/L-51Z-CP			450	455	300	30	18	350	40	10.8	75°	51	57

CBMC

(mm)

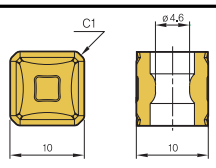
Designation		Stock R	Stock L	øD	øD1	ød	ød1	ød2	øC	F	kg	θ°	Number of tooth Standard	Number of tooth MAX
CBMC	3355R/L-39Z-CP			355	367	220	30	18	270	40	7.6	65°	39	45
	3400R/L-45Z-CP			400	412	250	30	18	300	40	9.3	65°	45	51
	3450R/L-51Z-CP			450	462	300	30	18	350	40	10.8	65°	51	57

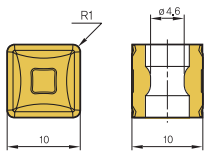
CBMA

(mm)

Designation		Stock R	Stock L	øD	øD1	ød	ød1	ød2	øC	F	kg	θ°	Number of tooth Standard	Number of tooth MAX
CBMA	3355R/L-39Z-CP			355	375	220	30	18	270	40	8.5	45°	39	45
	3400R/L-45Z-CP	○		400	420	250	30	18	300	40	10.1	45°	45	51
	3450R/L-51Z-CP			450	470	300	30	18	350	40	11.7	45°	51	57

Available Inserts





Designation	Coated Insert PC205K	PC6510	PC215K	CX1237	Uncoated Insert H01	G10
SNEX1010ZNN-CU1		●	○			
SNEX101010-CU1		●	○			

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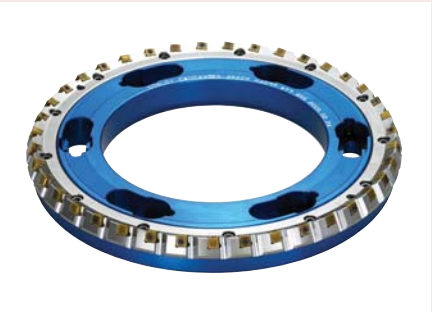
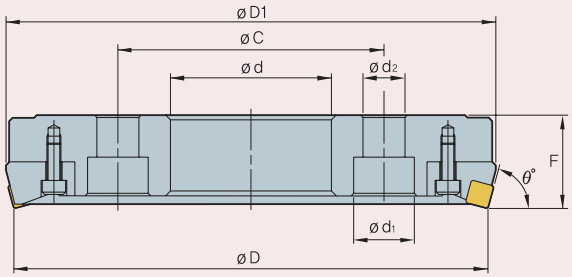
Parts

Screw	Wrench
	
FTGA0417CBM	TW15-100

Cube couple mill 4000





CBMQ

(mm)

Designation		Stock R	Stock L	øD	ø D1	ø d	ø d1	ø d2	øC	F	kg	θ°	Number of tooth Standard	Number of tooth MAX
CBMQ	4355R/L-39Z-CP			355	356	220	30	18	270	40	7.7	88°	39	
	4400R/L-45Z-CP	○		400	401	250	30	18	300	40	9	88°	45	
	4450R/L-51Z-CP			450	451	300	30	18	350	40	10.7	88°	51	

CBMF

(mm)

Designation		Stock R	Stock L	øD	ø D1	ø d	ø d1	ø d2	øC	F	kg	θ°	Number of tooth Standard	Number of tooth MAX
CBMF	4355R/L-39Z-CP			355	357	220	30	18	270	40	7.4	85°	39	
	4400R/L-45Z-CP			400	402	250	30	18	300	40	9	85°	45	
	4450R/L-51Z-CP			450	452	300	30	18	350	40	10.5	85°	51	

CBME

(mm)

Designation		Stock R	Stock L	øD	ø D1	ø d	ø d1	ø d2	øC	F	kg	θ°	Number of tooth Standard	Number of tooth MAX
CBME	4355R/L-39Z-CP			355	362	220	30	18	270	40	7.2	75°	39	
	4400R/L-45Z-CP			400	406	250	30	18	300	40	8.8	75°	45	
	4450R/L-51Z-CP			450	456	300	30	18	350	40	10.4	75°	51	

CBMC

(mm)

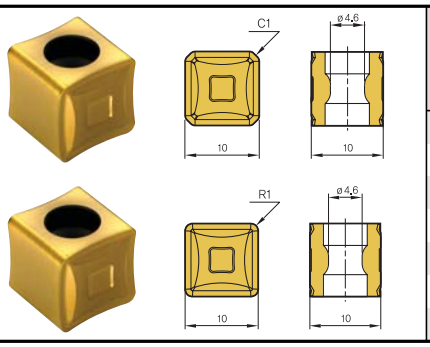
Designation		Stock R	Stock L	øD	ø D1	ø d	ø d1	ø d2	øC	F	kg	θ°	Number of tooth Standard	Number of tooth MAX
CBMC	4355R/L-39Z-CP			355	369	220	30	18	270	40	7.5	65°	39	
	4400R/L-45Z-CP			400	414	250	30	18	300	40	9.2	65°	45	
	4450R/L-51Z-CP			464	464	300	30	18	350	40	10.6	65°	51	

CBMA

(mm)

Designation		Stock R	Stock L	øD	ø D1	ø d	ø d1	ø d2	øC	F	kg	θ°	Number of tooth Standard	Number of tooth MAX
CBMA	4355R/L-39Z-CP			355	378	220	30	18	270	40	8.3	45°	39	
	4400R/L-45Z-CP	○		400	423	250	30	18	300	40	9.9	45°	45	
	4450R/L-51Z-CP			450	473	300	30	18	350	40	11.5	45°	51	

Available Inserts



Designation	Coated Insert PC205K	PC6510	PC215K	CX1237	Uncoated Insert H01	G10
SNEX1212ZNN-CU1		●	○			
SNEX121212-CU1		●	○			

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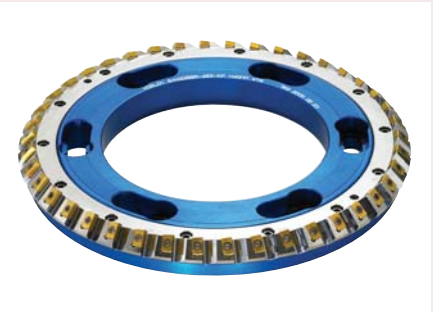
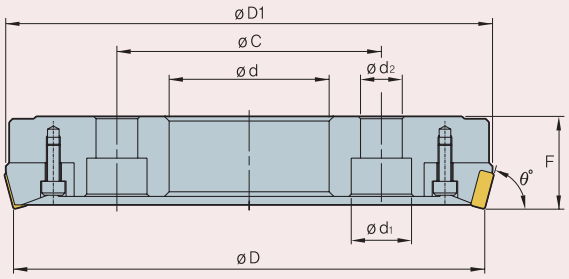
Parts

Screw	Wrench
	
ETGA0520CBM	TW20-100

Storm couple mill 3000





SQN

(mm)

	Designation	Stock R	Stock L	ø D	ø D1	ø d	ø d1	ø d2	ø C	F	kg	θ°	Number of tooth Standard	Number of tooth MAX
SQN	3355R/L-42Z-CP			355	357	220	30	18	270	40	7.7	88°	42	48
	3400R/L-48Z-CP	○		400	402	250	30	18	300	40	9.2	88°	48	54
	3450R/L-54Z-CP			450	452	300	30	18	350	40	10.7	88°	54	60

SFN

(mm)

	Designation	Stock R	Stock L	ø D	ø D1	ø d	ø d1	ø d2	ø C	F	kg	θ°	Number of tooth Standard	Number of tooth MAX
SFN	3355R/L-42Z-CP			355	358	220	30	18	270	40	7.8	85°	42	48
	3400R/L-48Z-CP			400	403	250	30	18	300	40	9.2	85°	48	54
	3450R/L-54Z-CP			450	453	300	30	18	350	40	10.8	85°	54	60

SEN

(mm)

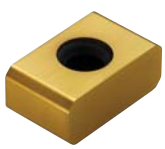
	Designation	Stock R	Stock L	ø D	ø D1	ø d	ø d1	ø d2	ø C	F	kg	θ°	Number of tooth Standard	Number of tooth MAX
SEN	3355R/L-42Z-CP			355	363	220	30	18	270	40	7.9	75°	42	48
	3400R/L-48Z-CP			400	408	250	30	18	300	40	9.3	75°	48	54
	3450R/L-54Z-CP			450	458	300	30	18	350	40	11	75°	54	60

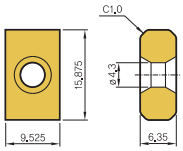
SAN

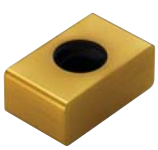
(mm)

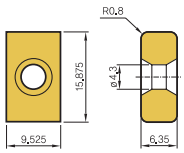
	Designation	Stock R	Stock L	ø D	ø D1	ø d	ø d1	ø d2	ø C	F	kg	θ°	Number of tooth Standard	Number of tooth MAX
SAN	3355R/L-42Z-CP			355	382	220	30	18	270	40	8.7	45°	42	48
	3400R/L-48Z-CP	○		400	427	250	30	18	300	40	10.5	45°	48	54
	3450R/L-54Z-CP			450	477	300	30	18	350	40	12.2	45°	54	60

Available Inserts









Designation	Coated Insert PC205K	Coated Insert PC6510	Coated Insert PC215K	Coated Insert CX1237	Uncoated Insert H01	Uncoated Insert G10
LNE324-C1.0		○	○			
LNE324-R0.8		○	○			

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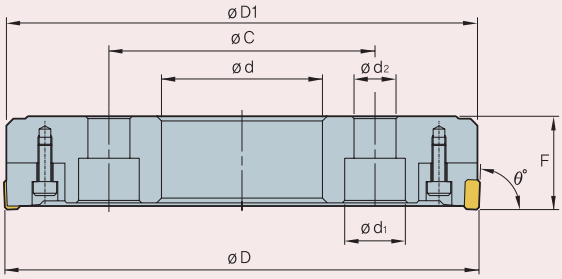
Parts

Screw	Wrench
	
FTNA0513	TW20

Dura couple mill 4000

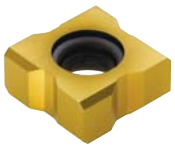


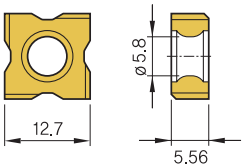
DRMQ

(mm)

Designation		Stock R	Stock L	øD	øD1	ød	ød1	ød2	øC	F	kg	θ°	Number of tooth Standard	Number of tooth MAX
DRMQ	4355R/L-42Z-CP			355	356	220	30	18	270	40	7.1	88°	42	
	4400R/L-48Z-CP	○		400	401	250	30	18	300	40	8.7	88°	48	
	4450R/L-54Z-CP			450	451	300	30	18	350	40	10.2	88°	54	

Available Inserts





Designation	Coated Insert PC205K	Coated Insert PC6510	Coated Insert PC215K	Coated Insert CX1237	Uncoated Insert H01	Uncoated Insert G10
SNCQ1205ZNR		○	○			
SNCQ1205ZNL						

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Parts

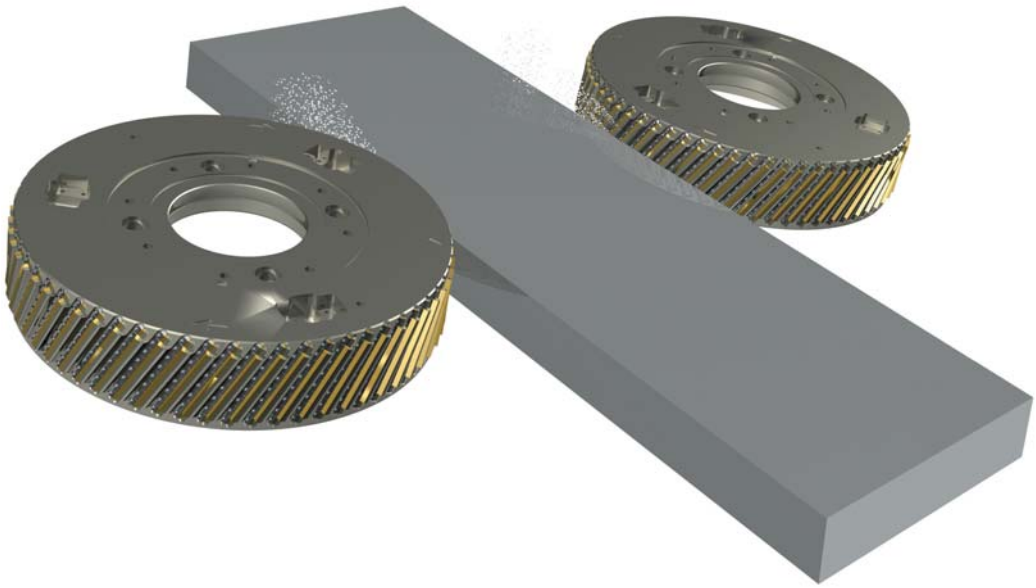
Screw	Wrench
	
FTNA0411	TW15S

Available Arbor & Adapter

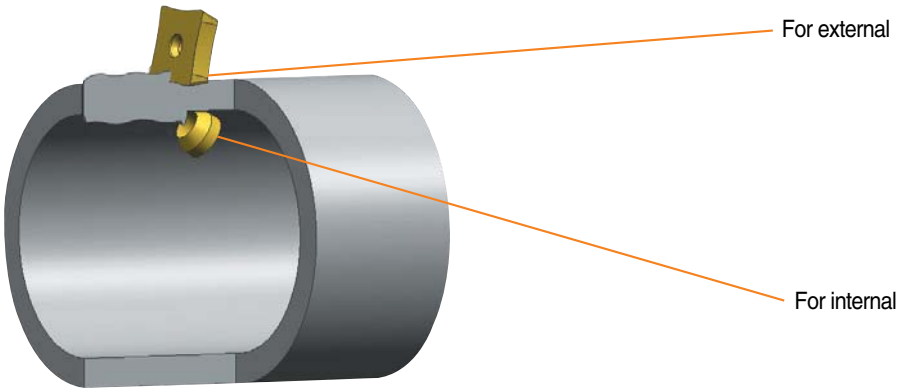
Cutter		Available Arbor & Adapter		
		Arbor for NC machine	Arbor for manual machine	Adapter
CBMQ	3080R/L -00Z	BT□□ - FMA25.4 - □□	KAFA□□ - 3	
(CBMF)	3100R/L -00Z	BT□□ - FMA31.75 - □□	KAFA□□ - 4	
(CBME)	3125R/L -00Z	BT□□ - FMA38.1 - □□	KAFA□□ - 5	
(CBMC)	3160R/L -00Z	BT□□ - FMA50.8 - □□	KAFA□□ - 6	
(CBMA)	3200R/L -00Z	BT□□ - FMA47.625 - □□	KAFA□□ - 8, KCP - 8	
	3250R/L -00Z	BT□□ - FMA47.625 - □□	KAFA□□ - 8, KCP - 8	
	3315R/L -00Z		KCP - 8	
	3200R/L2 -00Z			APR200
	3250R/L2 -00Z			APR250
	3315R/L2 -00Z			APR300
	3355R/L2 -00Z			APR355
	3400R/L2 -00Z			APR400
	3450R/L2 -00Z			APR450
DRMQ	4080R/L -00Z	BT□□ - FMA25.4 - □□	KAFA□□ - 3	
	4100R/L -00Z	BT□□ - FMA31.75 - □□	KAFA□□ - 4	
	4125R/L -00Z	BT□□ - FMA38.1 - □□	KAFA□□ - 5	
	4160R/L -00Z	BT□□ - FMA50.8 - □□	KAFA□□ - 6	
	4200R/L -00Z	BT□□ - FMA47.625 - □□	KAFA□□ - 8, KCP - 8	
	4250R/L -00Z	BT□□ - FMA47.625 - □□	KAFA□□ - 8, KCP - 8	
	4315R/L -00Z		KCP - 8	
	4200R/L2 -00Z			APR200
	4250R/L2 -00Z			APR250
	4315R/L2 -00Z			APR300
	4355R/L2 -00Z			APR355
	4400R/L2 -00Z			APR400
	4450R/L2 -00Z			APR450
SQN	3080R/L -00Z	BT□□ - FMA25.4 - □□	KAFA□□ - 3	
(SFN)	3100R/L -00Z	BT□□ - FMA31.75 - □□	KAFA□□ - 4	
(SEN)	3125R/L -00Z	BT□□ - FMA38.1 - □□	KAFA□□ - 5	
(SAN)	3160R/L -00Z	BT□□ - FMA50.8 - □□	KAFA□□ - 6	
	3200R/L -00Z	BT□□ - FMA47.625 - □□	KAFA□□ - 8, KCP - 8	
	3250R/L -00Z	BT□□ - FMA47.625 - □□	KAFA□□ - 8, KCP - 8	
	3315R/L -00Z		KCP - 8	
	3200R/L2 -00Z			APR200
	3250R/L2 -00Z			APR250
	3315R/L2 -00Z			APR300
	3355R/L2 -00Z			APR355
	3400R/L2 -00Z			APR400
	3450R/L2 -00Z			APR450

Pipe tooling example

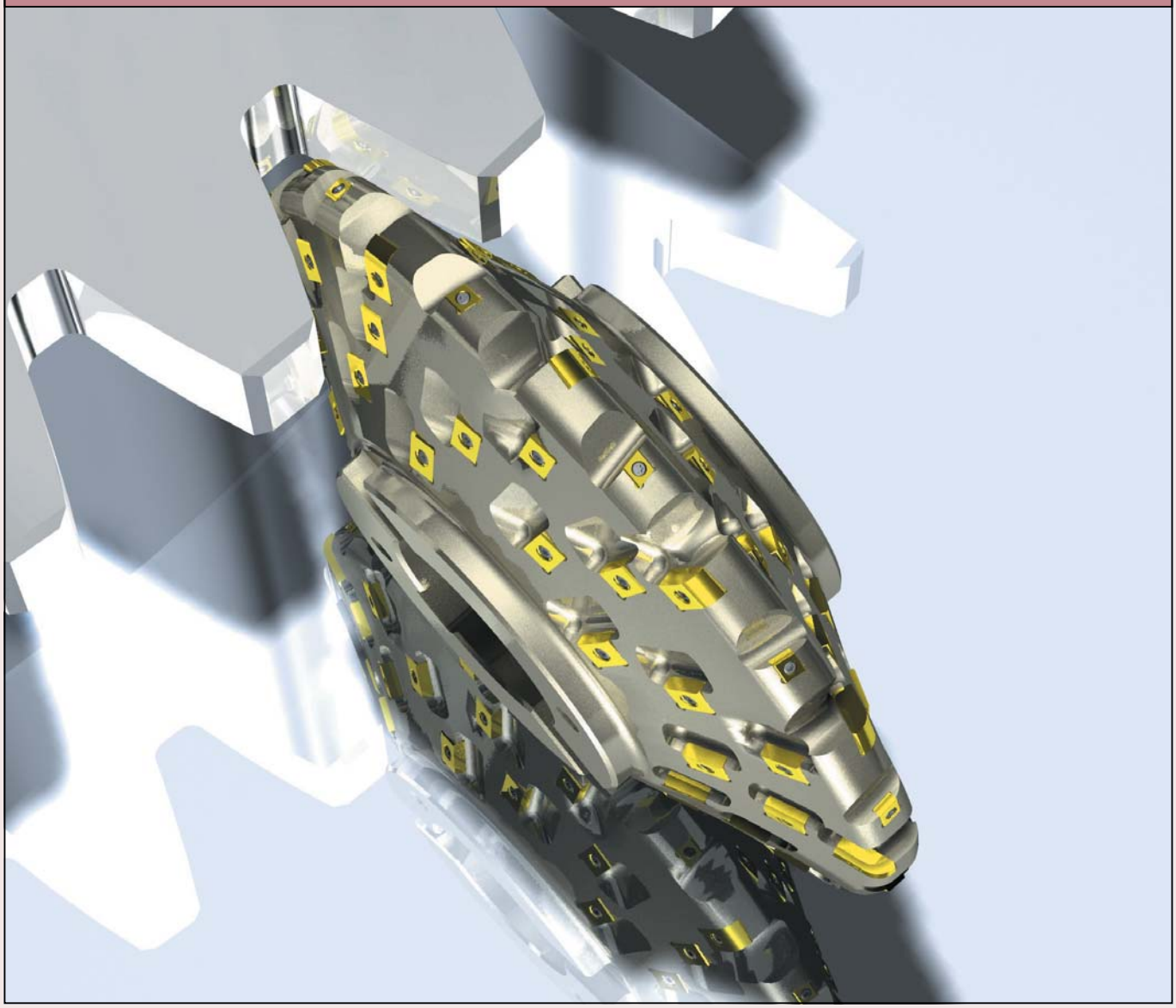
Edge miller



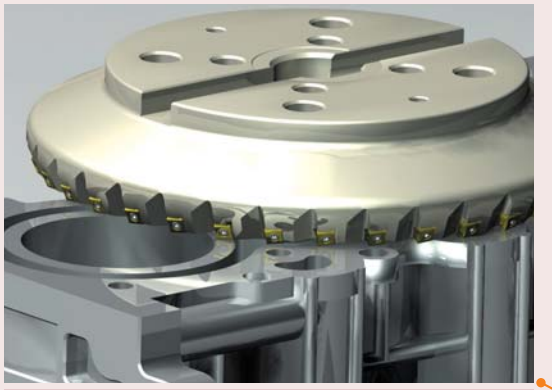
Scalping insert for welded part



Involute Cutter

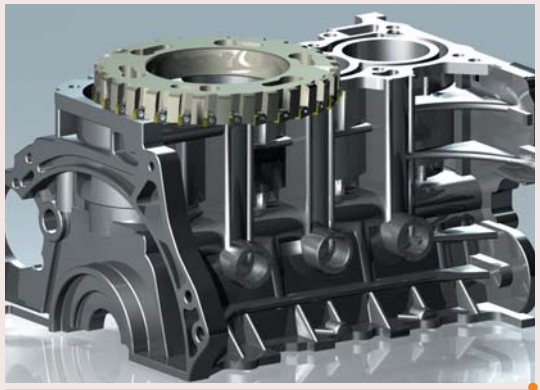


Automobile engine tooling example

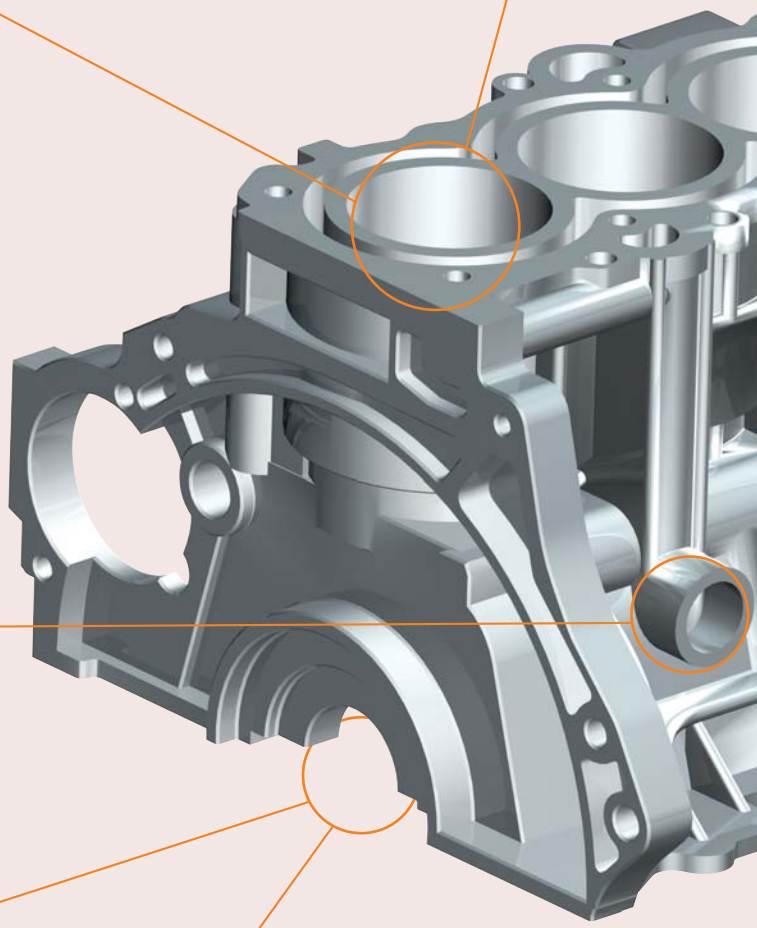


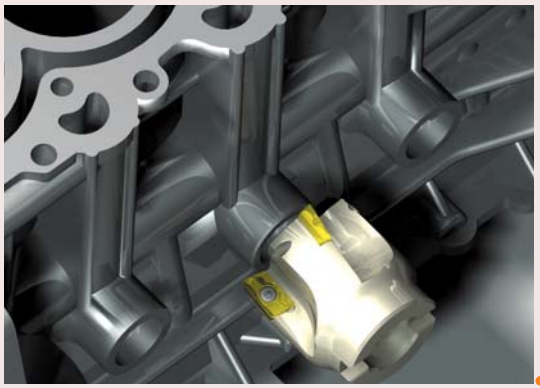
Top Face - Cube Mill(Roughing)

• 8 corner per insert available

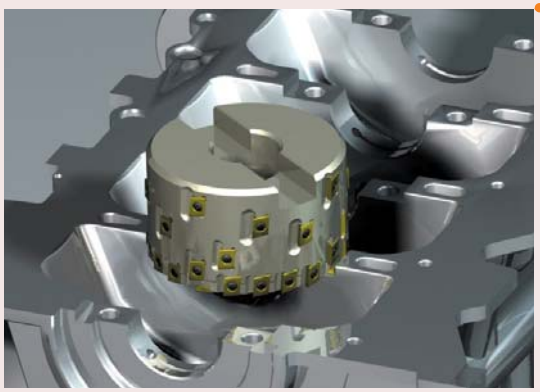


Top Face- High feed Cutter(Finishing)

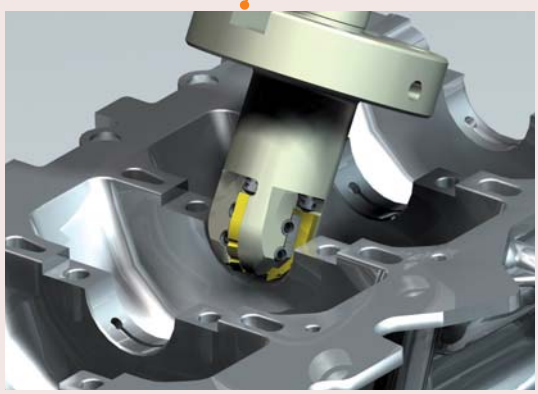




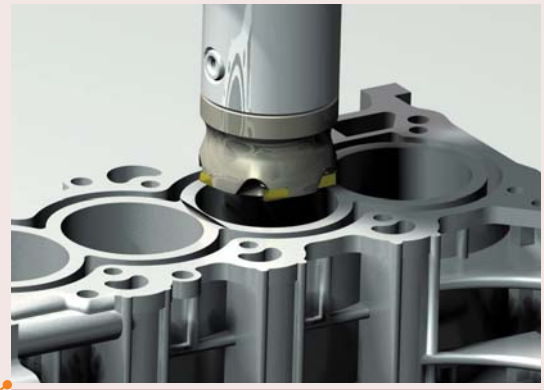
Side Boss Face - Alpha Mill



Bearing Cap Seat Face - Form Cutter

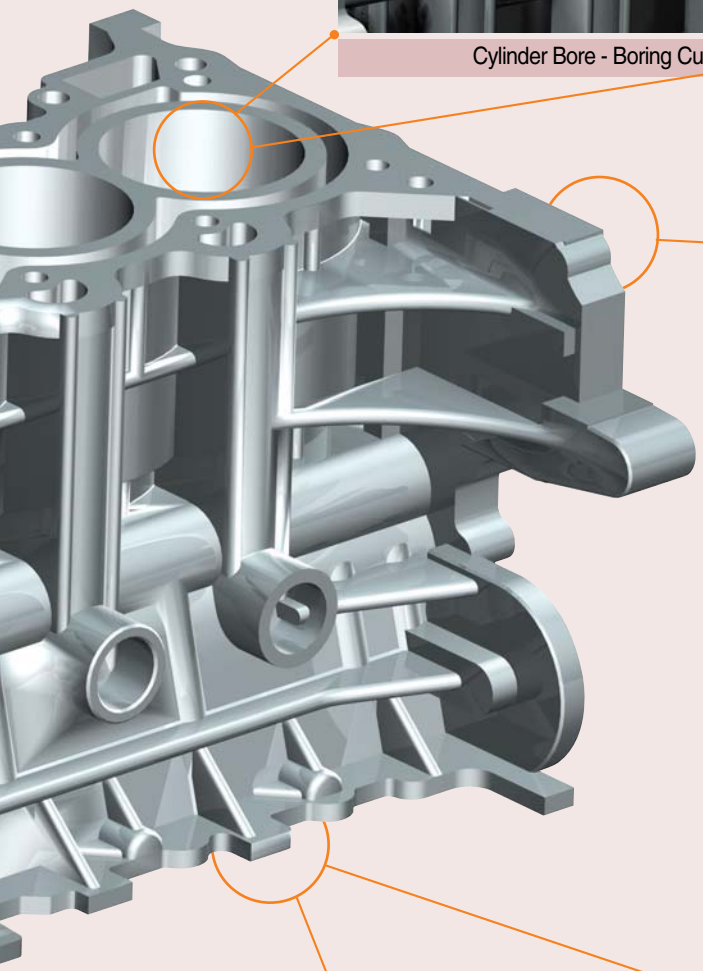


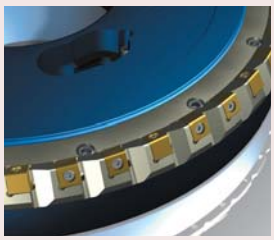
Crank Bore(Crankshaft Bearing Bore) - Form Cutter



Cylinder Bore - Boring Cutter

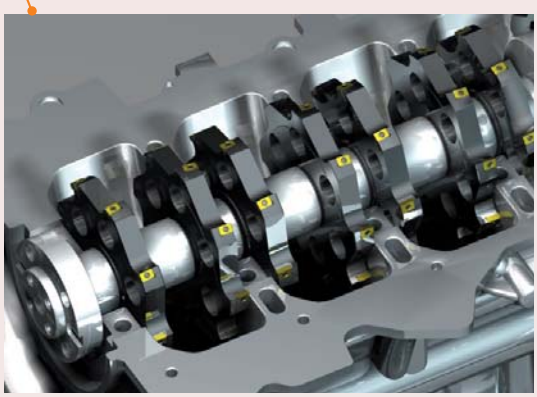
Cylinder Bore - Boring Cutter



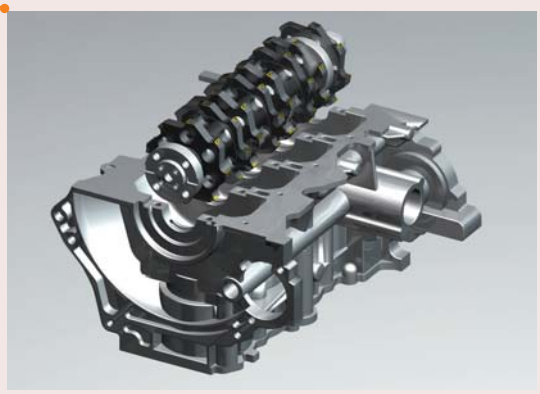


Front & Rear Face - Cube Couple Mill

- High feed cutter made of aluminum
- Due to the light weight, it' s easy to handle & effective to prevent accident

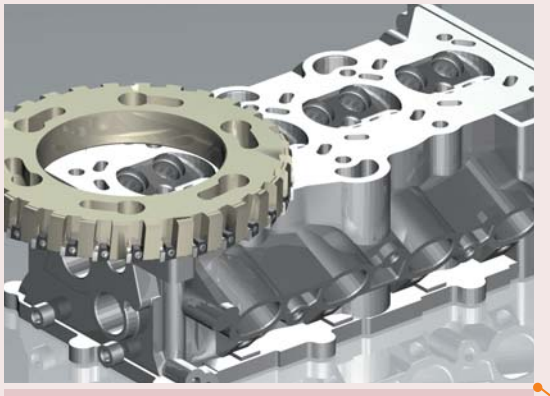


Cheek Faces - Gang Cutter



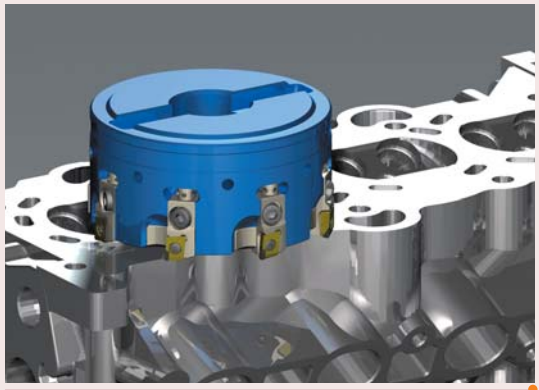
Cheek Faces - Gang Cutter

Automobile engine tooling example(Head)



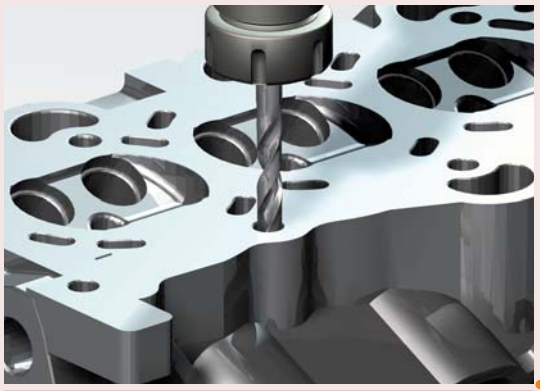
Top Face(Roughing & Finishing) - High Feed Cutter

- Carbide insert, PCD insert

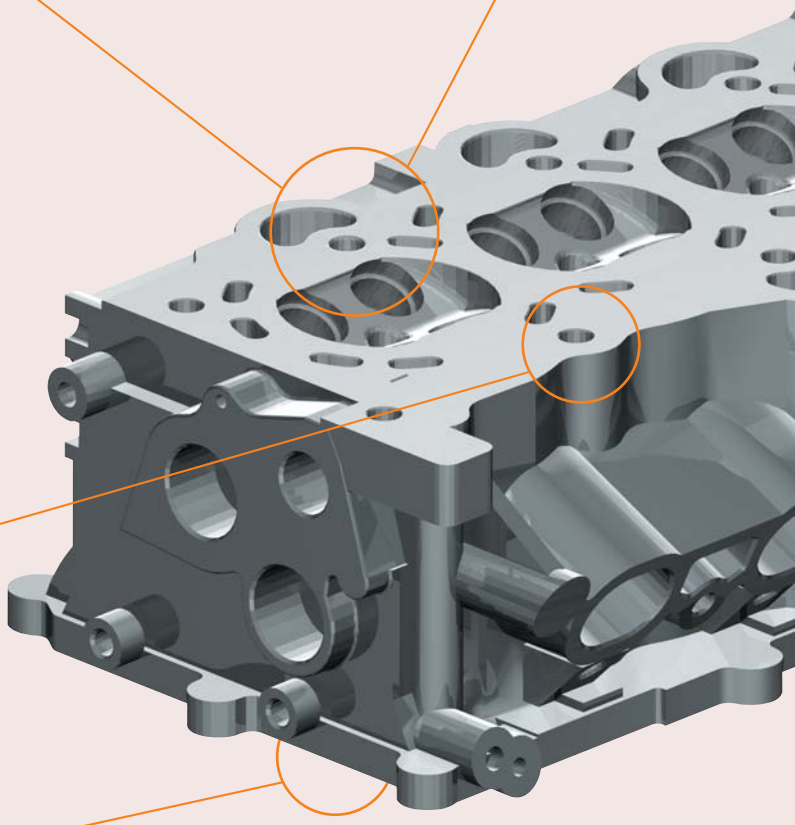


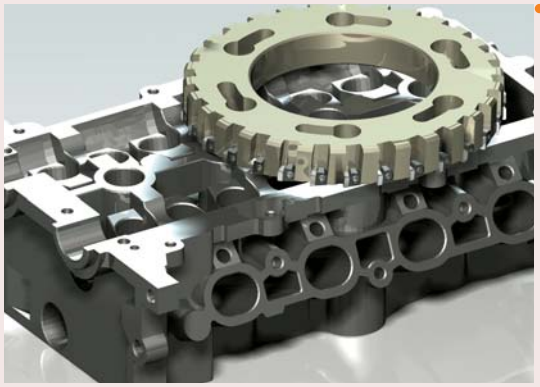
Top Face(Roughing & Finishing) - Aero Mill

- Due to the light weight of aluminum body that about 50% of steel body, excellent cutting performance with high speed machining can be achieved.



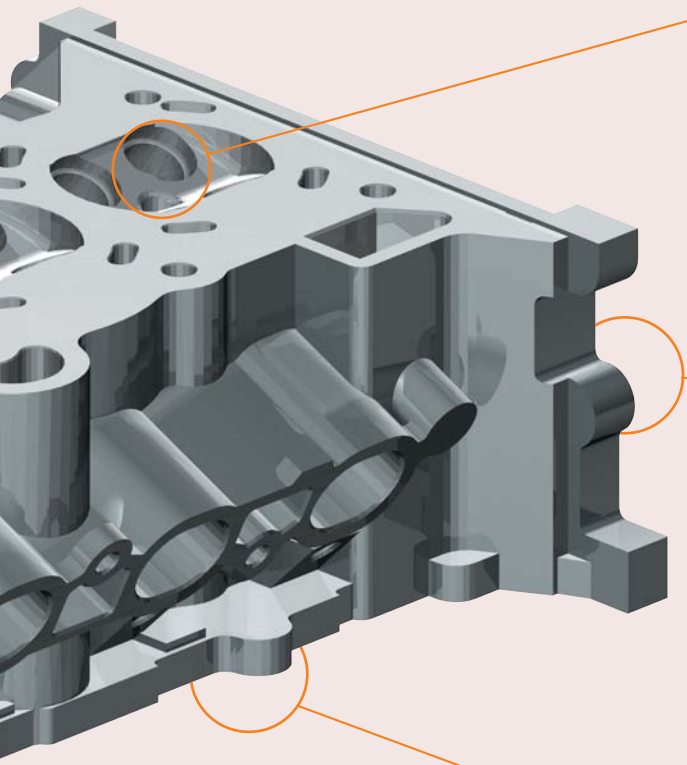
Top Face(Drilling) - Mach Drill

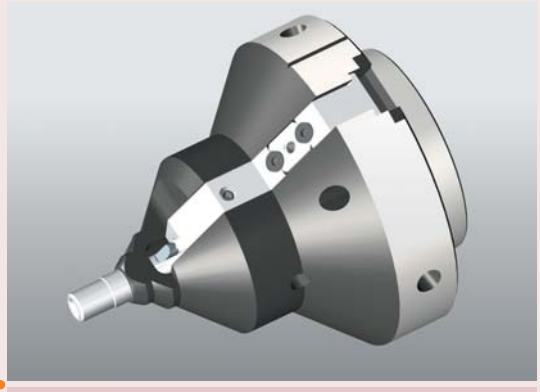




Bottom Face(Roughing & Finishing) - High feed Cutter

- Carbide insert, PCD insert





Valve Seat - Apolo Cutter(Special Boring Holder)

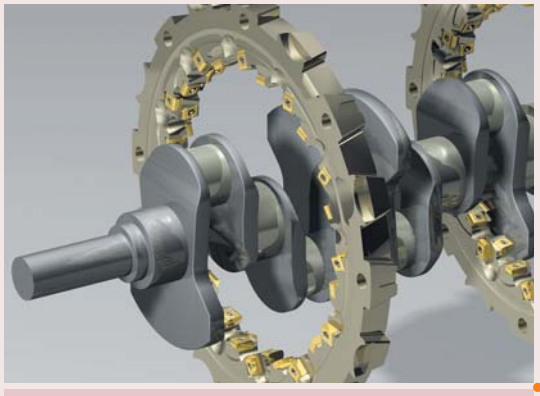
Cam Journal Bore - High Speed Reamer

- Available for high speed machining
- Excellent surface finish & roundness

Cam Shaft Bearing Seat - Line Boring Bar

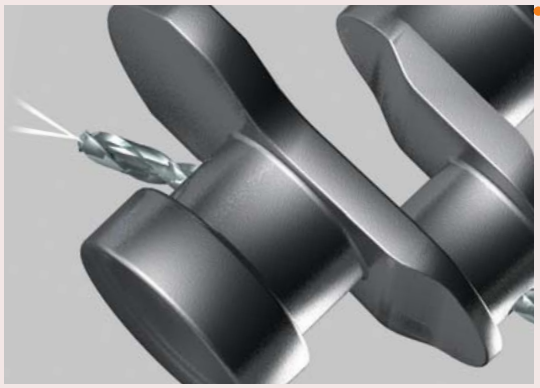
- Stable machining at high speed without chattering

Automobile engine tooling example(Crank shaft)

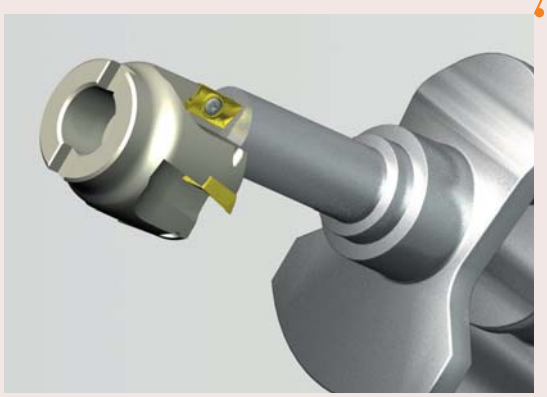


Pin & Journal - Crankshaft Cutter(Internal / External)

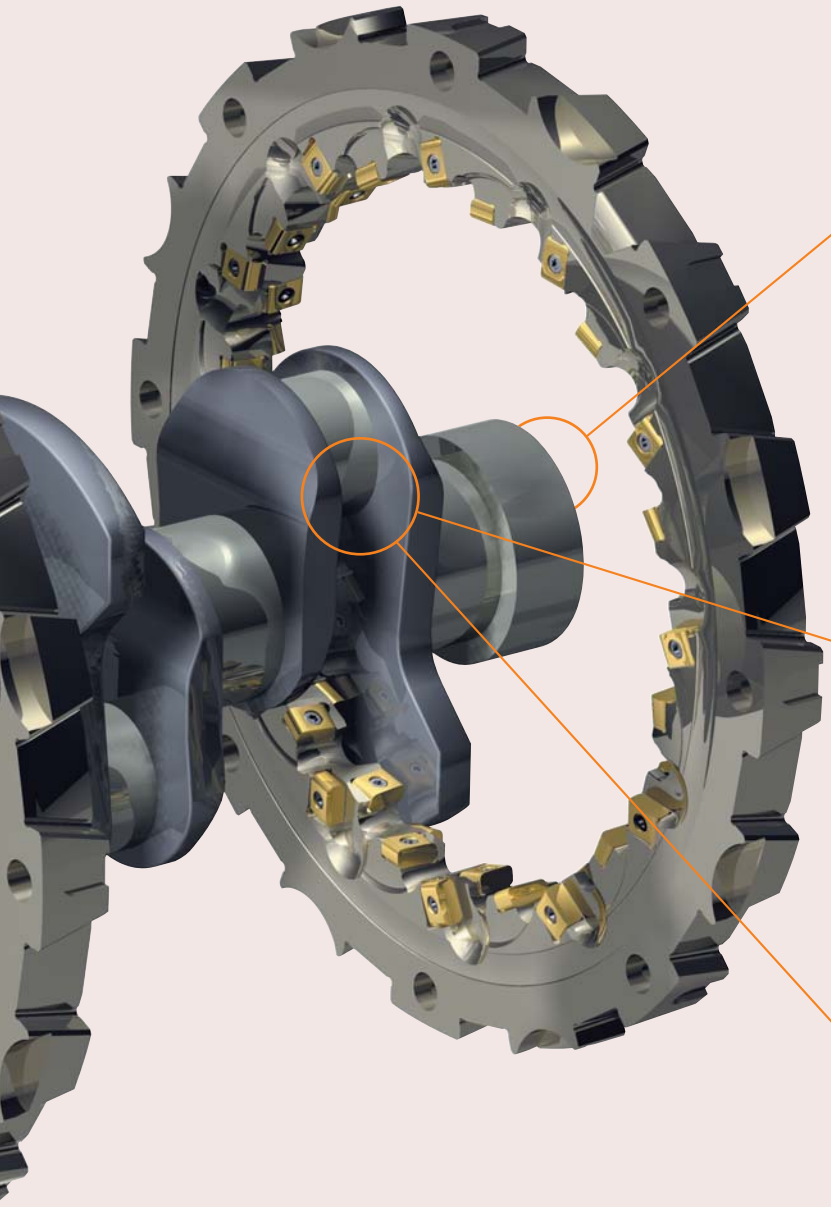
Taper Spline Structure
(Rigidity has been enhanced due to increased contact area)

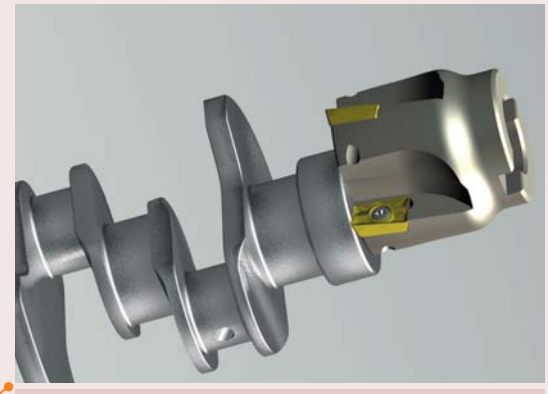


Oil Bore - Mach Long Drill(MLD)

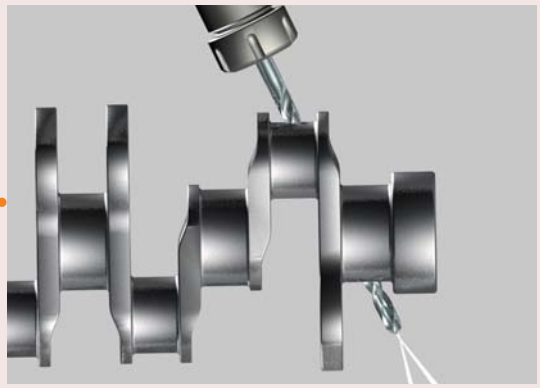


Post End - Alpha Mill

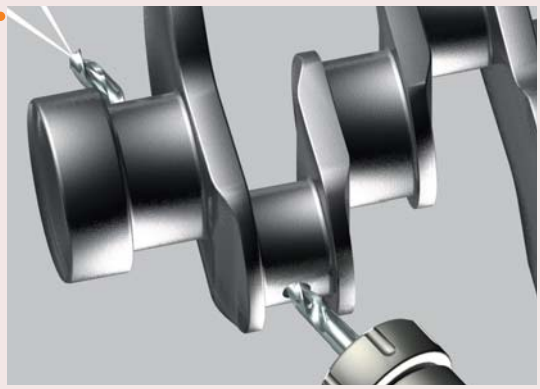




Flange End - Alpha Mill



Oil Bore - Mach Long Drill(MLD)



Oil Bore - Mach Long Drill(MLD)

- Machining without "step feed" operation for deep hole drilling like 20D
- Optimal performance with MQL System

KORLOY Endmill series

Bottom cutting edge shape	Peripheral cutting edge shape	Usage	Designation	Number of cutting edge	Coating	Appearance	Cutting edge length	Page
Square	Straight	General cutting (grooving)	MSE2000	2	○		0.4~1.0	P. 438
		High hardness mold	HSE2000	2	○		1~8	P. 448
			HSE4000	4	○		4~10	
			HSE6000	6	○		6~12	
			HSE8000	8	○		10~20	
		General cutting (side cutting)	SSE2000	2	-		1~20	P. 439
			SSE2000-Q	2	○		1~20	
			SSE3000	3	-		2~20	P. 440
			SSE3000-Q	3	○		3~20	
			SSE4000	4	-		3~20	
			SSE4000-Q	4	○		3~20	
		For aluminum	SSEA2000	2	-		1~20	P. 443
			SSEA3000	3	-		2~15	
			ZSEA200	2	-		15~50	P. 452
		For stainless steel	SSES3000-Q	3	○		3~20	P. 445
		For cast iron, non-ferrous metal	ZSE200	2	-		14~50	P. 450, 451
			ZSE300	3	-		14~50	
			ZSE400	4	-		14~50	P. 451
			ZSE600	6	-		34~50	
			ZSEL200	2	-		14~40	P. 453
			ZSEL400	4	-		14~50	
Ball	Straight	High hardness mold	HSBE2000	2	○		1~20	P. 446
			HSBE4000	4	○		8~20	
		For deep pocketing of mold	LSBE2000	2	-		3~25	P. 442
			LSBE2000-Q	2	○		3~25	
		General cutting (fine finishing)	MSBE2000	2	○		0.4~1.0	P. 438
			SSBE2000	2	-		1~20	P. 441
			SSBE2000-Q	2	○		1~20	
			SSBE4000	4	-		3~20	
			SSBE4000-Q	4	○		3~20	
		For aluminum	SSBEA2000	2	-		1~20	P. 444
		For cast iron, non-ferrous metal	ZSBE200	2	-		13~50	P. 449
Corner Radius	Straight	High hardness mold	HSRE4000	4	○		3~20	P. 447

Under C 0.2%	C 0.25~ 0.4%	Over C 0.45%	Alloy steel	Under HRC 35	HRC 35~45	HRC 45~50	HRC 50~75	Gray cast iron	Copper	Aluminum	Stainless steel	Titanium
○	○		◎	○	○			◎		○		
	○	◎			○	◎	○	○				
	○	◎			○	◎	○	○				
	○	◎			○	◎	○	○				
	○	◎			○	◎	○	○				
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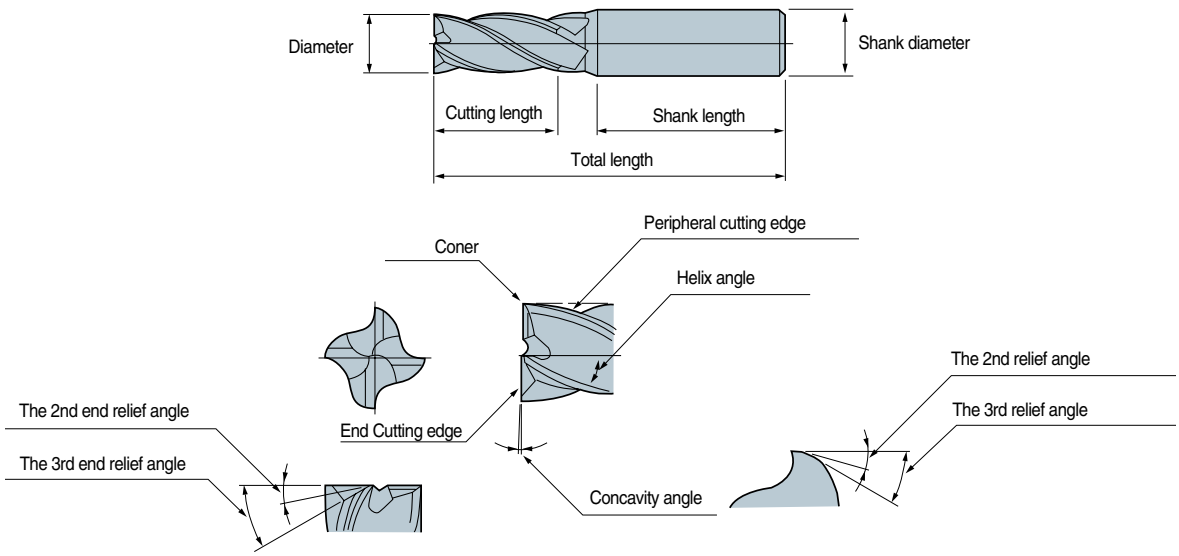
	○	◎			○	◎	○	○				◎

◎ : Superior ○ : Equivalent

Technical Guide of Endmill

Terminology of Endmill



Trouble Shooting for Endmilling

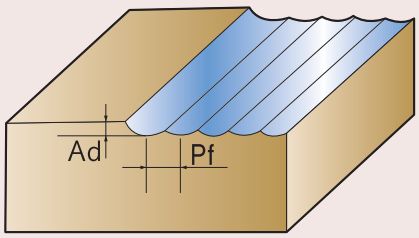
Problems		Cause	Solution																
			Cutting conditions					Tool shape						Grade		The others			
			Cutting speed	Feed rate	Depth of cut	Coolant	Up & Down cut	Relief angle	Lead angle	Cutting length	Numbers of teeth	Honning	Chip pocket	Toughness	Hardness	Mechanical rigidity	Workpiece setting	Mechanical chattering	Overhang
Cutting edge breakage	Excessive wear on periphery	• Improper cutting conditions	↓	↑		◉									↑				
	Chipping	• Improper cutting conditions • Generation of built-up edge • Insufficient tool rigidity • Improper tool grade		↓			↓	↓				◉		↑			↓	↑	↓
	Breakage while cutting	• Improper cutting conditions • Excessive cutting load • Excessive overhang		↓	↓					↓			↑			↑		↑	↓
Poor surface finish		• Generation of built-up edge	↑	↑		◉			↑			◉							
		• Generation of chattering	↓			○	↓			↓						↑	↓	↑	↓
		• Lack of square		↓	↓		↑		↑	↓									↓
Oversize or undersize		• Improper cutting conditions • Improper choice of endmill type	↑	↓			↓			↓	↑					↑	↓		↓
Poor chip control		• Excessive cutting rate • Improper chip bocket • Improper cutting conditions		↓	↓						↓		↑						

↑: Increase ↓: Decrease ○: Application ◉: Proper application

Recommendation of Endmill for high speed machining

HSBE2000 Recommended Cutting Condition

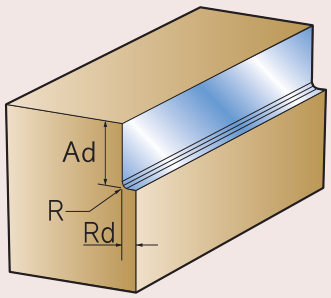
Work piece / Diameter (ø)		Pre-harden steel, Tool steel (High speed cutting condition) (Under HRC48)	(Under HRC52)	(Over HRC53)	Stainless steel Titanium alloy
R0.5~R1.4	V	380~400~420	340~360~380	280~300~320	60~75~90
	f	0.025~0.050	0.025~0.050	0.025~0.050	0.003~0.005
R1.5~R2.5	V	380~400~420	340~360~380	280~300~320	60~75~90
	f	0.040~0.050	0.040~0.050	0.040~0.050	0.007~0.013
R3.0~R6.0	V	380~400~420	340~360~380	280~300~320	60~75~90
	f	0.050~0.080	0.050~0.080	0.050~0.080	0.017~0.033
R7.0~R12.5	V	380~400~420	340~360~380	280~300~320	60~75~90
	f	0.090~0.100	0.090~0.100	0.090~0.100	0.040~0.057



1. High Speed Machining ; Ad=0.015~0.03X Ø, Pf=f(mm/rev)
2. General Performance ; Ad=0.2~0.3X Ø(R ≤1.0,0.2X Ø), Pf=max0.7X Ø(R ≤1.0,0.6X Ø)
3. Using a speed (V) calculated with effective cutting diameter
   Using a maximum RPM, when the machine can't reach up to proper Speed.

HSBE4000 Recommended Cutting Condition

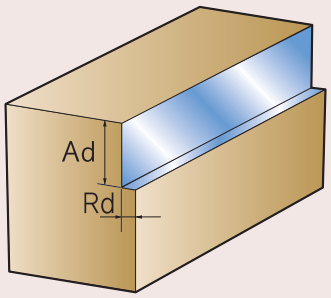
Work piece / Diameter (ø)		Carbon steel, Alloy steel (Under HRC25)	(Under HRC45)	Heat treated steel(Under HRC65)	Cast iron
3.0~5.9	V	80~100~120	50~60~70	20~30~40	100~120~150
	f	0.018~0.036	0.009~0.018	0.009~0.018	0.027~0.060
6.0~12.9	V	80~100~120	50~60~70	20~30~40	100~120~150
	f	0.038~0.070	0.019~0.035	0.019~0.035	0.065~0.157
13.0~20.0	V	80~100~120	50~60~70	20~30~40	100~120~150
	f	0.075~0.125	0.040~0.075	0.010~0.075	0.160~0.250



1. Shoulder cutting ; Ad=1.5X ø, Rd=0.1X ø

HSBE6000 Recommended Cutting Condition

Work piece / Diameter (ø)		Carbon steel, Alloy steel (Under HRC25)	(Under HRC45)	Heat treated steel(Under HRC65)	Cast iron
6.0~12.0	V	80~100~120	50~60~70	20~30~40	100~120~150
	f	0.082~0.120	0.050~0.090	0.020~0.038	0.080~0.220
16.0~25.0	V	80~100~120	50~60~70	20~30~40	100~120~150
	f	0.120~0.130	0.090~0.100	0.038~0.050	0.250~0.350
16.0~25.0	V	80~100~120	50~60~70	20~30~40	100~120~150
	f	0.120~0.130	0.090~0.100	0.038~0.050	0.250~0.350



1. Shoulder cutting ; Ad=1.5X ø, Rd=0.2~0.025X ø

Technical Guide of Endmill

Recommendation for Endmilling

Q-Max, Two flute Endmill - Grooving

Workpiece / Cutting conditions / Cutting diameter(mm)	General steels, Alloy steels (Less than HRC20)		General steels, Alloy steels (HRC20~30)		General steels, Alloy steels (HRC30~40)		General steels, Alloy steels (HRC40)		General cast iron, Special cast Iron		Stainless steels, Titanium alloys	
	Revolution (rpm)	Feed (mm/min)	Revolution (rpm)	Feed (mm/min)	Revolution (rpm)	Feed (mm/min)	Revolution (rpm)	Feed (mm/min)	Revolution (rpm)	Feed (mm/min)	Revolution (rpm)	Feed (mm/min)
1	37,500	185	31,300	150	25,400	130	19,500	80	39,700	370	16,000	45
2	18,800	190	15,800	230	12,700	180	9,700	80	19,800	450	8,000	65
3	12,600	310	10,600	260	8,200	190	6,400	80	12,900	450	5,300	65
4	9,500	310	7,900	260	6,400	190	4,800	80	9,800	450	4,000	65
5	7,500	310	6,300	260	5,400	190	3,900	80	7,600	450	3,200	65
6	6,500	310	5,300	260	4,100	190	3,000	80	7,800	660	2,600	65
8	4,800	310	4,000	260	3,200	190	2,500	80	6,000	710	2,000	65
10	3,700	310	3,100	260	2,600	190	1,900	80	4,800	740	1,600	65
12	3,100	310	2,600	260	2,100	190	1,600	80	3,700	780	1,300	65
14	2,700	310	2,300	260	1,800	190	1,400	80	3,400	820	1,100	65
16	2,400	340	2,000	280	1,500	240	1,200	90	3,000	830	1,000	75
18	2,000	340	1,700	280	1,400	240	1,000	100	2,600	890	880	80
20	1,900	340	1,600	280	1,300	240	900	100	2,400	890	800	80
25	1,600	340	1,300	280	1,100	240	190	100	1,800	970	640	80

• Cutting Diameter under ø 2.5mm : Ad=0.5 ×D, over ø 3.0mm : Rd=0.1 ×D, Ad=0.1 ×D
(D ; Cutting Diameter, Ad : Axial Depth, Rd : Radial Depth)

Q-Max, Four flute Endmill - Side facing

Workpiece / Cutting conditions / Cutting diameter(mm)	General steels, Alloy steels (Less than HRC20)		General steels, Alloy steels (HRC20~30)		General steels, Alloy steels (HRC30~40)		General steels, Alloy steels (HRC40)		General cast iron, Special cast Iron		Stainless steels, Titanium alloys	
	Revolution (rpm)	Feed (mm/min)	Revolution (rpm)	Feed (mm/min)	Revolution (rpm)	Feed (mm/min)	Revolution (rpm)	Feed (mm/min)	Revolution (rpm)	Feed (mm/min)	Revolution (rpm)	Feed (mm/min)
3	12,600	920	10,600	790	8,200	580	6,400	220	12,900	1370	5,300	200
4	9,500	920	7,900	790	6,400	580	4,800	220	9,800	1370	4,000	200
5	7,500	920	6,300	790	5,100	580	3,900	220	7,600	1370	3,200	200
6	6,100	920	5,300	790	4,100	580	3,000	220	7,800	2000	2,600	200
8	4,800	920	4,000	790	3,200	580	2,500	220	6,000	2120	2,000	200
10	3,700	920	3,100	790	2,600	580	1,900	220	4,800	2230	1,600	200
12	3,100	920	2,600	790	2,100	580	1,600	220	3,700	2340	1,300	200
14	2,700	920	2,300	790	1,800	580	1,400	220	3,400	2450	1,100	200
16	2,400	1020	2,000	860	1,500	690	1,200	270	3,000	2520	1,000	225
18	2,000	1020	1,700	860	1,400	690	1,000	340	2,600	2680	880	240
20	1,900	1020	1,600	860	1,300	690	900	340	2,400	2680	800	240
25	1,600	1020	1,300	860	1,100	690	190	340	1,800	2890	640	240

• Cutting Diameter under ø 2.5mm : Ad=0.25 ×D, over ø3.0mm : Rd=1.0 ×D

Recommendation for Endmilling

Un-coated, Two flute Endmill - Grooving

Workpiece / Cutting conditions / Cutting diameter(mm)	General steels, Alloy steels (Less than HRC20)		General steels, Alloy steels (HRC20~30)		General steels, Alloy steels (HRC30~40)		Stainless steels, Titanium alloys		General cast iron Special cast Iron		Aluminum alloy		Copper or Non-ferrous material	
	Revolution (rpm)	Feed (mm/min)	Revolution (rpm)	Feed (mm/min)	Revolution (rpm)	Feed (mm/min)	Revolution (rpm)	Feed (mm/min)	Revolution (rpm)	Feed (mm/min)	Revolution (rpm)	Feed (mm/min)	Revolution (rpm)	Feed (mm/min)
1	11,000	55	9,500	45	8,000	40	16,000	45	13,000	120	32,000	300	24,000	240
2	5,500	80	4,800	70	4,000	55	8,000	65	6,500	150	16,000	320	12,000	240
3	3,700	90	3,200	80	2,600	60	5,300	65	4,200	150	11,000	320	8,000	240
4	2,800	90	2,400	80	2,000	60	4,000	65	3,200	150	8,000	320	6,000	240
5	2,200	90	1,900	80	1,600	60	3,200	65	2,500	150	6,400	320	4,800	240
6	1,800	90	1,600	80	1,000	60	2,600	65	2,100	180	5,300	340	4,000	260
8	1,400	90	1,200	80	1,000	60	1,300	65	1,600	190	4,000	340	3,000	260
10	1,100	90	950	80	800	60	2,000	65	1,300	200	3,200	340	2,400	260
12	900	90	800	80	660	60	1,600	65	1,000	210	2,600	340	2,000	260
14	800	90	700	80	570	60	1,100	65	900	220	2,300	340	1,700	260
16	700	100	600	85	500	75	1,000	75	800	225	2,000	340	1,500	260
18	600	100	530	85	440	75	880	80	700	240	1,800	340	1,300	260
20	550	100	480	85	400	75	800	80	640	240	1,600	340	1.200	260
25	450	100	380	85	320	75	640	80	500	260	1,300	340	1,000	260

- When tools are used under the different r.p.m., please, increase or decrease the feed rate with the same ratio between r.p.m. and feed mentioned in above chart.
- In case of aluminum endmilling, when revolution of machine can't be increased to the recommended r.p.m. mentioned, please, supply coolant oil sufficiently.

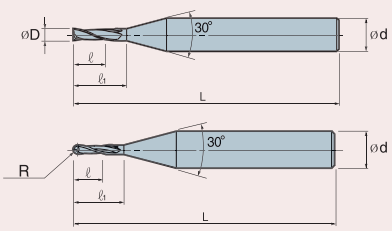
Un-coated, Four flute Endmill - Side facing

Workpiece / Cutting conditions / Cutting diameter(mm)	General steels, Alloy steels (Less than HRC20)		General steels, Alloy steels (HRC20~30)		General steels, Alloy steels (HRC30~40)		Stainless steels, Titanium alloys		General cast iron, Special cast Iron		Aluminum alloy		Copper or Non-ferrous material	
	Revolution (rpm)	Feed (mm/min)	Revolution (rpm)	Feed (mm/min)	Revolution (rpm)	Feed (mm/min)	Revolution (rpm)	Feed (mm/min)	Revolution (rpm)	Feed (mm/min)	Revolution (rpm)	Feed (mm/min)	Revolution (rpm)	Feed (mm/min)
3	3,700	270	3,200	240	2,600	180	5,300	200	4,200	450	11,000	960	8,000	720
4	2,800	270	2,400	240	2,000	180	4,000	200	3,200	450	8,000	960	6,000	720
5	2,200	270	1,900	240	1,600	180	3,200	200	2,500	450	6,400	960	4,800	720
6	1,800	270	1,600	240	1,300	180	2,600	200	2,100	540	5,300	1,020	4,000	780
8	1,400	270	1,200	240	1,000	180	2,000	200	1,600	570	4,000	1,020	3,000	780
10	1,100	270	950	240	800	180	1,600	200	1,300	600	3,200	1,020	2,400	780
12	900	270	800	240	660	180	1,300	200	1,000	630	2,600	1,020	2,000	780
14	800	270	700	240	570	180	1,100	200	900	660	2,300	1,020	1,700	780
16	700	300	600	260	500	220	1,000	225	800	680	2,000	1,020	1,500	780
18	600	300	530	260	440	220	880	240	700	720	1,800	1,020	1,300	780
20	550	300	480	260	400	220	800	240	640	720	1,600	1,020	1,200	780
25	450	300	380	260	320	220	640	240	500	780	1,300	1,020	1,000	780

- When tools are used under the different r.p.m., please, increase or decrease the feed rate with the same ratio between r.p.m. and feed mentioned in above chart.
- In case of aluminum endmilling, when revolution of machine can't be increased to the recommended r.p.m. mentioned, please, supply coolant oil sufficiently.

MSE2000

Miniature Carbide Solid Endmill



Tolerance of Endmill Diameter

MSE	0 ~ -0.02
MSBE	±0.01

MSBE2000

Miniature Carbide Solid Ball Endmill

(mm)

Designation		Stock	⊙	øD	ød	ℓ	ℓ1	L	Helix angle	R
MSE	2004	●	2	0.4	6.0	0.8	1.2	50.0	30°	-
	2004-S	●	2	0.4	3.0	0.8	1.2	45.0	30°	-
	2005	●	2	0.5	6.0	1.0	1.5	50.0	30°	-
	2005-S	●	2	0.5	3.0	1.0	1.5	45.0	30°	-
	2006	●	2	0.6	6.0	1.2	1.8	50.0	30°	-
	2006-S	●	2	0.6	3.0	1.2	1.8	45.0	30°	-
	2007	●	2	0.7	6.0	1.4	2.1	50.0	30°	-
	2007-S	●	2	0.7	3.0	1.4	2.1	45.0	30°	-
	2008	●	2	0.8	6.0	1.6	2..4	50.0	30°	-
	2008-S	●	2	0.8	3.0	1.6	2..4	45.0	30°	-
	2010	●	2	1.0	6.0	2.0	3.0	50.0	30°	-
	2010-S	●	2	1.0	3.0	2.0	3.0	45.0	30°	-
MSBE	2004	●	2	0.4	6.0	0.8	1.2	50.0	30°	0.2
	2004-S	●	2	0.4	3.0	0.8	1.2	45.0	30°	0.2
	2005	●	2	0.5	6.0	1.0	1.5	50.0	30°	0.25
	2005-S	●	2	0.5	3.0	1.0	1.5	45.0	30°	0.25
	2006	●	2	0.6	6.0	1.2	1.8	50.0	30°	0.3
	2006-S	●	2	0.6	3.0	1.2	1.8	45.0	30°	0.3
	2007	●	2	0.7	6.0	1.4	2.1	50.0	30°	0.35
	2007-S	●	2	0.7	3.0	1.4	2.1	45.0	30°	0.35
	2008	●	2	0.8	6.0	1.6	2..4	50.0	30°	0.4
	2008-S	●	2	0.8	3.0	1.6	2..4	45.0	30°	0.4
	2009	●	2	0.9	6.0	1.8	2.7	50.0	30°	0.45
	2009-S	●	2	0.9	3.0	1.8	2.7	45.0	30°	0.45
	2010	●	2	1.0	6.0	2.0	3.0	50.0	30°	0.5
	2010-S	●	2	1.0	3.0	2.0	3.0	45.0	30°	0.5

● : Stock Item ○ : Under preparing for stock

* How to name for order made item : MSE; MSE20◎◎ * Cutting edge length (l) * Endmill total length (L)
MSBE; MSBE20◎◎ * Cutting edge length (l) * Endmill total length (L)

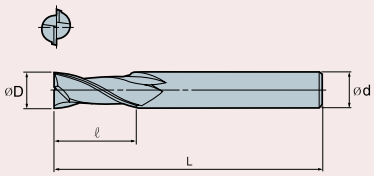
Ex.1) Cutting edge length 0.45, Cutting edge length 1.2, Endmill total length 50 ➡MSE20045 * 1.2 * 55L

Ex.2) Ball R0.225(ϕ0.45), cutting edge length 1.2, Endmill total length 55 ➡MSBE20045 * 1.2 * 55L

* MSE, MSBE is available for endmill diameter under 1.0mm, please refer to SSE-Q, SSBE-Q for the emdmill bigger diameter than 1.0mm.

SSE2000 Carbide solid endmill

SSE2000-Q Q-Max coated solid endmill



■ Tolerance of Endmill Diameter

1< ø D ≤6	-0.010 ~ -0.030
6< ø D ≤10	-0.015 ~ -0.040
10< ø D ≤20	-0.020 ~ -0.050

(mm)

Designation	Stock	Designation	Stock	◎	øD	ød	ℓ	L	Helix angle	Note
SSE 2010	●	SSE 2010-Q	●	2	1.0	6	3	40	30°	
2015	●	2015-Q	●	2	1.5	6	4	40	30°	
2020	●	2020-Q	●	2	2.0	6	6	40	30°	
2025	●	2025-Q	●	2	2.5	6	8	40	30°	
2030	●	2030-Q	●	2	3.0	6	10	45	30°	
2035	●	2035-Q	●	2	3.5	6	10	45	30°	
2040	●	2040-Q	●	2	4.0	6	12	45	30°	
2045	●	2045-Q	●	2	4.5	6	12	45	30°	
2050	●	2050-Q	●	2	5.0	6	15	50	30°	
2055	●	2055-Q	●	2	5.5	6	15	50	30°	
2060	●	2060-Q	●	2	6.0	6	15	50	30°	
2065	●	2065-Q	●	2	6.5	8	20	60	30°	
2070	●	2070-Q	●	2	7.0	8	20	60	30°	
2075	●	2075-Q	●	2	7.5	8	20	60	30°	
2080	●	2080-Q	●	2	8.0	8	20	60	30°	
2085	●	2085-Q	●	2	8.5	10	20	70	30°	
2090	●	2090-Q	●	2	9.0	10	20	70	30°	
2095	●	2095-Q	●	2	9.5	10	20	70	30°	
2100	●	2100-Q	●	2	10.0	10	25	70	30°	
2105	●	2105-Q	●	2	10.5	12	25	75	30°	
2110	●	2110-Q	●	2	11.0	12	25	75	30°	
2115	●	2115-Q	●	2	11.5	12	25	75	30°	
2120	●	2120-Q	●	2	12.0	12	30	75	30°	
2130	●	2130-Q	●	2	13.0	16	30	90	30°	
2140	●	2140-Q		2	14.0	16	35	90	30°	
2150	●	2150-Q		2	15.0	16	40	90	30°	
2160	●	2160-Q		2	16.0	16	40	90	30°	
2180	○	2180-Q		2	18.0	20	45	105	30°	
2200	●	2200-Q		2	20.0	20	45	105	30°	

∗ How to name for order made item : Coated; SSE2◎◎◎-Q ∗ Cutting edge length ∗ Total length L
Non-coated; SSE2◎◎◎ ∗ Cutting edge length ∗ Total length L

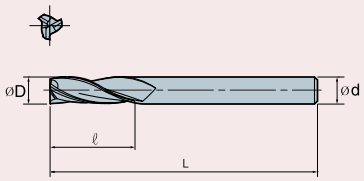
● : Stock Item ○ : Under preparing for stock

Ex.1) General use, Coated, Square, 2Flute, Cutting edge diameter 6.3, Cutting edge length 16, Total length 90 ➡SSE2063-Q ∗ 16 ∗ 90L

Ex.2) General use, Coated, Square, 2Flute, Cutting edge diameter 6.3, Standard type ➡SSE2063-Q

SSE3000/4000

Carbide solid endmill



■ Tolerance of Endmill Diameter

1< øD ≤6	-0.010 ~ -0.030
6< øD ≤10	-0.015 ~ -0.040
10< øD ≤20	-0.020 ~ -0.050

SSE3000-Q/4000-Q

Q-Max coated solid endmill

(mm)

Designation	Stock	Designation	Stock	◎	øD	ød	ℓ	L	Helix angle	Note
SSE 3020		SSE 3020-Q		3	2.0	6	6	40	30°	
3030		3030-Q		3	3.0	6	10	45	30°	
3035		3035-Q		3	3.5	6	10	45	30°	
3040		3040-Q		3	4.0	6	12	45	30°	
3050		3050-Q		3	5.0	6	15	50	30°	
3060		3060-Q		3	6.0	6	15	50	30°	
3070		3070-Q		3	7.0	8	20	60	30°	
3080		3080-Q		3	8.0	8	20	60	30°	
3090		3090-Q		3	9.0	10	20	70	30°	
3100		3100-Q		3	10.0	10	25	70	30°	
3110		3110-Q		3	11.0	12	25	75	30°	
3120		3120-Q		3	12.0	12	30	75	30°	
3013		3013-Q		3	13.0	16	30	90	30°	
3140		3140-Q		3	14.0	16	35	90	30°	
3150		3150-Q		3	15.0	16	40	90	30°	
4025		4025-Q		4	2.5	6	8	40	30°	
4030	●	4030-Q	●	4	3.0	6	10	45	30°	
4040	●	4040-Q	●	4	4.0	6	12	45	30°	
4050	●	4050-Q	●	4	5.0	6	15	50	30°	
4060	●	4060-Q	●	4	6.0	6	15	50	30°	
4070	●	4070-Q	●	4	7.0	8	20	60	30°	
4080	●	4080-Q	●	4	8.0	8	20	60	30°	
4085	○	4085-Q	○	4	8.5	10	20	70	30°	
4090	●	4090-Q	●	4	9.0	10	20	70	30°	
4100	●	4100-Q	●	4	10.0	10	25	70	30°	
4110	●	4110-Q	●	4	11.0	12	25	75	30°	
4120	●	4120-Q	●	4	12.0	12	30	75	30°	
4130	●	4130-Q	●	4	13.0	16	30	90	30°	
4140		4140-Q		4	14.0	16	35	90	30°	
4150		4150-Q		4	15.0	16	40	90	30°	
4160		4160-Q		4	16.0	16	40	90	30°	
4180		4180-Q		4	18.0	20	45	105	30°	
4200		4200-Q		4	20.0	20	45	105	30°	

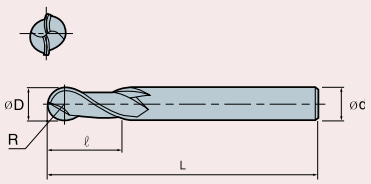
∗ How to name for order made item: Coated; SSE◎◎◎◎-Q ∗ Cutting edge length-Total length L
Non-coated; SSE◎◎◎◎ ∗Cutting edge length-Total length L

●: Stock Item ○: Under preparing for stock

Ex.1) General use, Coated, Square, 3Flute, Cutting edge diameter 6.3, Cutting edge length16, Total length90 ➡ SSE3063-Q ∗ 16 ∗ 90L

Ex.2) General use, Coated, Square, 3Flute, Cutting edge diameter 6.3, Standard type ➡ SSE3063-Q

SSBE2000/4000
Carbide solid endmill



■ Tolerance of Endmill Diameter
Every size 0.000 ~ -0.050

SSBE2000-Q/4000-Q
Q-Max coated solid endmill

(mm)

Designation	Stock	Designation	Stock	◎	øD	ød	ℓ	L	Helix angle	Note
SSBE 2010	●	SSBE 2010-Q	●	2	0.5	6	3	70	30°	
2013		2013-Q		2	0.65	6	4	70	30°	
2015	●	2015-Q	●	2	0.75	6	4	70	30°	
2020	●	2020-Q	●	2	1.0	6	6	70	30°	
2025	●	2025-Q	●	2	1.25	6	8	70	30°	
2030	●	2030-Q	●	2	1.5	6	10	70	30°	
2035	●	2035-Q	●	2	1.75	6	10	70	30°	
2040	●	2040-Q	●	2	2.0	6	12	70	30°	
2050	●	2050-Q	●	2	2.5	6	15	80	30°	
2060	●	2060-Q	●	2	3.0	6	15	80	30°	
2070	●	2070-Q	●	2	3.5	8	20	90	30°	
2080	●	2080-Q	●	2	4.0	8	20	90	30°	
2090	●	2090-Q	●	2	4.5	10	25	100	30°	
2100	●	2100-Q	●	2	5.0	10	25	100	30°	
2110	●	2110-Q	●	2	5.5	12	30	110	30°	
2120	●	2120-Q	●	2	6.0	12	30	110	30°	
2130		2130-Q		2	6.5	16	35	120	30°	
2140		2140-Q		2	7.0	16	35	120	30°	
2150		2150-Q		2	7.5	16	40	120	30°	
2160		2160-Q		2	8.0	16	40	120	30°	
2180		2180 -Q		2	9.0	20	45	130	30°	
2200		2200 -Q		2	10.0	20	45	130	30°	
4060		4060-Q		4	3.0	6	15	80	30°	
4070		4070-Q		4	3.5	8	20	90	30°	
4080		4080-Q		4	4.0	8	20	90	30°	
4090		4090-Q		4	4.5	10	25	100	30°	
4100		4100-Q		4	5.0	10	25	100	30°	
4110		4110-Q		4	5.5	12	30	110	30°	
4120		4120-Q		4	6.0	12	30	110	30°	
4130		4130-Q		4	6.5	16	35	120	30°	
4140		4140-Q		4	7.0	16	35	120	30°	
4150		4150-Q		4	7.5	16	40	120	30°	
4160		4160-Q		4	8.0	16	40	120	30°	
4180		4180-Q		4	9.0	20	45	130	30°	
4200		4200-Q		4	10.0	20	45	130	30°	

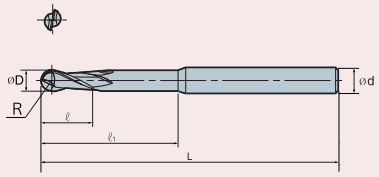
∗ How to name for order made item: Coated; SSBE◎◎◎◎-Q ∗ Cutting edge length-Total length L
Non-coated; SSBE◎◎◎◎ ∗ Cutting edge length-Total length L

● : Stock Item ○ : Under preparing for stock

Ex.1) General use, Coated, Ball, 3Flute, Cutting edge diameter 6.3, Cutting edge length16, Total length90 ➡ SSBE3063-Q ∗ 16 ∗ 90L

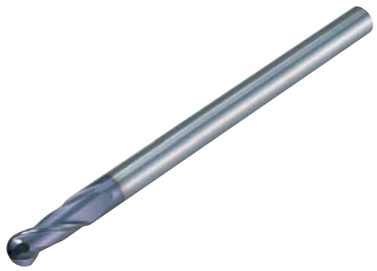
Ex.2) General use, Coated, Ball, 3Flute, Cutting edge diameter 6.3, Standard type ➡ SSBE3063-Q

LSBE2000
Carbide solid Long endmill



■ Tolerance of Endmill Diameter
Every size -0.008 ~ -0.053

LSBE2000-Q
Q-Max coated solid Long endmill



(mm)

Designation	Stock	Designation	Stock	⊙	R	ød	ℓ	ℓ1	L	Note
LSBE 2030	○	LSBE 2030-Q	○	2	1.5	6	4	35	100	
2040	○	2040-Q	○	2	2.0	6	6	35	100	
2050	○	2050-Q	○	2	2.5	8	7	40	115	
2060	○	2060-Q	○	2	3.0	8	8	45	115	
2070		2070-Q		2	3.5	10	10	45	125	
2080	○	2080-Q	○	2	4.0	10	12	55	125	
2090		2090-Q		2	4.5	12	15	65	140	
2100	○	2100-Q	○	2	5.0	12	15	65	140	
2110		2110-Q		2	5.5	16	20	75	150	
2120	○	2120-Q	○	2	6.0	16	28	75	150	
2130		2130-Q		2	6.5	16	32	75	155	
2140		2140-Q		2	7.0	16	32	75	155	
2150		2150-Q		2	7.5	16	36	75	155	
2160		2160-Q		2	8.0	16	36	75	155	
2180		2180-Q		2	9.0	20	40	75	155	
2200		2200-Q		2	10.0	20	46	75	160	
2220		2220-Q		2	11.0	25	50	80	165	
2230		2230-Q		2	11.5	25	50	80	165	
2240		2240-Q		2	12.0	25	55	85	170	
2250		2250-Q		2	12.5	25	55	85	170	

● : Stock Item ○ : Under preparing for stock

∗ How to name for order made item: Coated; LSBE2000-Q ∗Cutting edge length ∗Neck length N ∗Total length L
Non-coated; LSBE2000 ∗Cutting edge length ∗Neck length N ∗Total length L

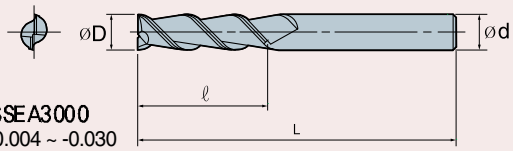
Ex.1) Coated, Ball, 2Flute, Cutting edge diameter 8.3, Cutting edge length 13,Neck length 60 Total length 130 ➡LSBE2083-Q ∗13 ∗60N ∗130L

Ex.2) Coated, Ball, 2Flute, Cutting edge diameter 8.3, Standard type ➡LSBE2083-Q

SSEA2000/3000 Solid endmill for copper & aluminum alloys

■ Tolerance of Endmill Diameter

	SSEA2000	SSEA3000
1< øD ≤6	-0.010 ~ -0.030	-0.004 ~ -0.030
6< øD ≤10	-0.015 ~ -0.040	-0.005 ~ -0.040
10< øD ≤20	-0.020 ~ -0.050	-0.005 ~ -0.050



(mm)

Designation	Stock	◎	øD	ød	ℓ	L	Helix angle	Note
SSEA 2010	●	2	1.0	6	3	40	45°	
2015		2	1.5	6	4	40	45°	
2020	●	2	2.0	6	6	40	45°	
2025		2	2.5	6	8	40	45°	
2030	●	2	3.0	6	10	45	45°	
2035	●	2	3.5	6	10	45	45°	
2040	●	2	4.0	6	12	45	45°	
2050	●	2	5.0	6	15	50	45°	
2060	●	2	6.0	6	15	50	45°	
2070	●	2	7.0	8	20	60	45°	
2080	●	2	8.0	8	20	60	45°	
2090	●	2	9.0	10	20	70	45°	
2100	●	2	10.0	10	25	70	45°	
2110	●	2	11.0	12	25	75	45°	
2120	●	2	12.0	12	30	75	45°	
2130	●	2	13.0	16	30	90	45°	
2140	●	2	14.0	16	35	90	45°	
2150	●	2	15.0	16	40	90	45°	
2160	●	2	16.0	16	40	90	45°	
2180		2	18.0	20	45	110	45°	
2200		2	20.0	20	45	110	45°	
3020		3	2.0	6	6	40	45°	
3030	●	3	3.0	6	10	45	45°	
3035	●	3	3.5	6	10	45	45°	
3040	●	3	4.0	6	12	45	45°	
3050	●	3	5.0	6	15	50	45°	
3060	●	3	6.0	6	15	50	45°	
3070	●	3	7.0	8	20	60	45°	
3080	●	3	8.0	8	20	60	45°	
3090	●	3	9.0	10	20	70	45°	
3100	●	3	10.0	10	25	70	45°	
3110	●	3	11.0	12	25	75	45°	
3120	●	3	12.0	12	30	75	45°	
3130	●	3	13.0	16	30	90	45°	
3140	●	3	14.0	16	35	90	45°	
3150	●	3	15.0	16	40	90	45°	
3160	●							

∗ How to name for order made item: SSEA◎◎◎◎ ∗Cutting edge length ∗ Total length L

Ex.1) 3Flute, Cutting edge diameter 6.3, Cutting edge length 17, Total length 60 ➡ SSEA3063 ∗ 17 ∗ 60L

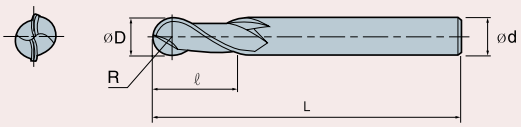
Ex.2) 3Flute, Cutting edge diameter 6.3,Standard type ➡ SSEA3063

● : Stock Item ○ : Under preparing for stock

■ Machining properties of Copper & Aluminum alloys

1. Low cutting load and easy to chip control but tend to make build up edge.
2. Tolerance of machined work piece can be affected by temperature generated during cutting due to its high thermal expansion coefficient.
3. Since it has low hardness, it can be easily affected (scratch) by machined chips.

SSBEA2000 Solid ball endmill for copper & aluminum alloys



■ Tolerance of Endmill Diameter
Every size 0.000 ~ -0.050

(mm)

Designation	Stock	◎	R	ød	ℓ	L	Helix angle	Note
SSBEA 2010	●	2	0.5	6	3	70	30°	
2015	●	2	0.75	6	4	70	30°	
2020	●	2	1.0	6	6	70	30°	
2025		2	1.25	6	8	70	30°	
2030	●	2	1.5	6	10	70	30°	
2035		2	1.75	6	10	70	30°	
2040	●	2	2.0	6	12	70	30°	
2045		2	2.25	6	15	80	30°	
2050	●	2	2.5	6	15	80	30°	
2055		2	2.75	6	15	80	30°	
2060	●	2	3.0	6	15	80	30°	
2065		2	3.25	8	20	90	30°	
2070		2	3.5	8	20	90	30°	
2075		2	3.75	8	20	90	30°	
2080	○	2	4.0	8	20	90	30°	
2085		2	4.25	10	25	100	30°	
2090		2	4.5	10	25	100	30°	
2100	○	2	5.0	10	25	100	30°	
2110		2	5.5	12	30	110	30°	
2120	○	2	6.0	12	30	110	30°	
2130		2	6.5	16	35	120	30°	
2140		2	7.0	16	35	120	30°	
2150		2	7.5	16	40	120	30°	
2160		2	8.0	16	40	120	30°	
2170		2	8.5	20	40	130	30°	
2180		2	9.0	20	45	130	30°	
2190		2	9.5	20	45	130	30°	
2200		2	10.0	20	45	130	30°	

● : Stock Item ○ : Under preparing for stock

∗ How to name for order made item : SSBEA2◎◎◎ ∗ Cutting edge length ∗ Total length L
Ex.1) 2Flute, Cutting edge diameter 6.3, Cutting edge length 17, Total length 60 ➡ SSBEA2063 ∗ 17 ∗ 60L
Ex.2) 2Flute, Cutting edge diameter 6.3,Standard type ➡ SSBEA2063

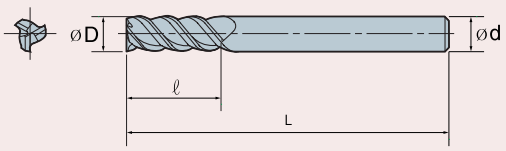
■ Technical guide for Copper & Aluminum alloy machining

1. Use sharp cutting edge with high rake angle to reduce cutting load and prevent build up edge.
2. It is favorable to get better productivity and surface finish of work piece that increase cutting speed, reduce depth of cut.

SSES3000-Q Solid endmill for Stainless steel

■ Tolerance of Endmill Diameter

1< ø D ≤6	-0.018~-0.038
6< ø D ≤10	-0.023~-0.048
10< ø D ≤20	-0.028~-0.058



(mm)

Designation	Stock	⊙	øD	ød	ℓ	L	Helix angle	Note
SSES 3030-Q	○	3	3.0	6	10	45	50°	
3035-Q		3	3.5	6	10	45	50°	
3040-Q	○	3	4.0	6	12	45	50°	
3045-Q		3	4.5	6	12	45	50°	
3050-Q	○	3	5.0	6	15	50	50°	
3055-Q		3	5.5	6	15	50	50°	
3060-Q	○	3	6.0	6	15	50	50°	
3065-Q		3	6.5	8	20	60	50°	
3070-Q		3	7.0	8	20	60	50°	
3075-Q		3	7.5	8	20	60	50°	
3080-Q	○	3	8.0	8	20	60	50°	
3085-Q		3	8.5	10	20	70	50°	
3090-Q		3	9.0	10	20	70	50°	
3095-Q		3	9.5	10	20	70	50°	
3100-Q	○	3	10.0	10	25	70	50°	
3110-Q		3	11.0	12	25	75	50°	
3120-Q	○	3	12.0	12	30	75	50°	
3130-Q		3	13.0	16	30	90	50°	
3140-Q		3	14.0	16	35	90	50°	
3150-Q		3	15.0	16	40	90	50°	
3160-Q		3	16.0	16	40	90	50°	
3170-Q		3	17.0	20	40	100	50°	
3180-Q		3	18.0	20	45	100	50°	
3190-Q		3	19.0	20	45	110	50°	
3200-Q		3	20.0	20	45	110	50°	

● : Stock Item ○ : Under preparing for stock

∗ How to name for order made item: SSES3◎◎◎-Q ∗ Cutting edge length ∗ Total length L

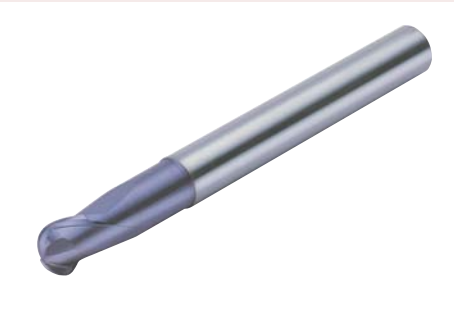
Ex.1) 3Flute, Cutting edge diameter 6.3, Cutting edge length 17, Total length 60 ➡ SSES3063-Q ∗ 17 ∗ 60L

Ex.2) 3Flute, Cutting edge diameter 6.3,Standard type ➡ SSES3063-Q

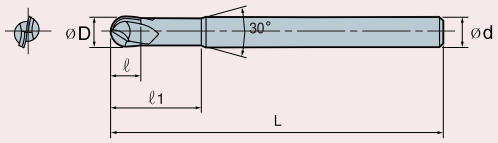
■ Special Features of KORLOY endmill for Stainless steel machining

1. Side cutting and grooving : High rake angle with round shape chip pocket to reinforce the rigidity of endmill.
2. Drilling : Reduce point angle to enhance machine-ability of chisel part, and employing cross-thinning to reduce trust.

HSBE2000/4000 Z-Max ball endmill for high-speed cutting



■ Tolerance of Endmill Diameter
Every size 0.000 ~ -0.030



(mm)

Designation	Stock	◎	øD	ød	ℓ	ℓ1	L	Note
HSBE 2010	●	2	1.0	6	1	2	60	
2015		2	1.5	6	2	4	60	
2020	●	2	2.0	6	2.5	4	60	
2025		2	2.5	6	4	6	60	
2030	●	2	3.0	6	4	6	60	
2035		2	3.5	6	5	8	65	
2040	●	2	4.0	6	5	8	65	
2045		2	4.5	6	6	10	65	
2050	●	2	5.0	6	6	10	65	
2055		2	5.5	6	7	12	75	
2060	●	2	6.0	6	7	12	75	
2065		2	6.5	8	7	15	75	
2070		2	7.0	8	8	20	75	
2080	●	2	8.0	8	9	25	75	
2090		2	9.0	10	10	30	80	
2100	●	2	10.0	10	11	30	80	
2110		2	11.0	12	12	35	85	
2120	●	2	12.0	12	12	36	90	
2130		2	13.0	16	14	36	90	
2140		2	14.0	16	14	36	90	
2150		2	15.0	16	16	36	90	
2160	●	2	16.0	16	16	36	100	
2170		2	17.0	20	18	45	100	
2180		2	18.0	20	18	45	100	
2190		2	19.0	20	20	53	110	
2200		2	20.0	20	20	53	110	
4080	○	4	8.0	8	9	25	75	
4090		4	9.0	10	10	30	80	
4100	○	4	10.0	10	11	30	80	
4120	○	4	12.0	12	12	36	90	
4130		4	13.0	16	14	36	90	
4140		4	14.0	16	14	36	90	
4150		4	15.0	16	16	36	90	
4160	○	4	16.0	16	16	36	100	
4170		4	17.0	20	18	45	100	
4180		4	18.0	20	18	45	100	
4190		4	19.0	20	20	53	110	
4200		4	20.0	20	20	53	110	

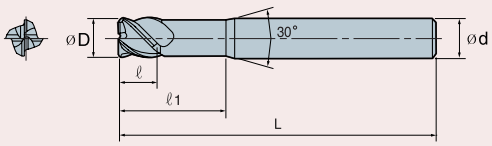
● : Stock Item ○ : Under preparing for stock

* How to name for order made item: HSBE◎◎◎◎ * Cutting edge length * Total length L
Ex.1) 2Flute, Cutting edge diameter 6.3, Cutting edge length 10, Total length 60 ➡ HSBE2063 * 10 * 60L
Ex.2) 2Flute, Cutting edge diameter 6.3,Standard type ➡ HSBE2063

HSRE4000 Z-Max corner radius endmill for high-speed cutting

■ Tolerance of Endmill Diameter

3< ø D ≤6	-0.010 ~ -0.030
6< ø D ≤20	-0.015 ~ -0.040



(mm)

Designation	Stock	⊙	øD	Corner R	ød	ℓ	ℓ1	L	Note
HSRE 4030	●	4	3.0	1.0	6	4	9	60	
4035		4	3.5	1.0	6	5	10	65	
4040	●	4	4.0	1.0	6	5	10	65	
4045		4	4.5	1.0	6	6	13	65	
4050	●	4	5.0	1.0	6	6	13	65	
4055		4	5.5	1.5	6	7	15	75	
4060	●	4	6.0	1.5	6	7	15	75	
4065		4	6.5	1.5	8	7	15	75	
4070		4	7.0	2.0	8	8	15	75	
4075		4	7.5	2.0	8	8	15	75	
4080	●	4	8.0	2.0	8	9	20	75	
4085		4	8.5	2.0	10	9	20	75	
4090		4	9.0	2.5	10	10	20	80	
4095		4	9.5	2.5	10	10	20	80	
4100	●	4	10.0	2.5	10	11	25	80	
4105		4	10.5	2.5	12	11	25	85	
4110		4	11.0	3.0	12	11	25	85	
4115		4	11.5	3.0	12	13	25	90	
4120	●	4	12.0	3.0	12	13	25	90	
4125		4	12.5	3.0	16	13	25	90	
4130		4	13.0	3.5	16	14	25	95	
4135		4	13.5	3.5	16	14	25	95	
4140		4	14.0	3.5	16	14	25	95	
4145		4	14.5	4.0	16	16	25	95	
4150		4	15.0	4.0	16	16	25	100	
4155		4	15.5	4.0	16	17	32	100	
4160	●	4	16.0	4.0	16	17	32	100	
4165		4	16.5	4.0	18	17	32	105	
4170		4	17.0	4.5	18	17	32	105	
4175		4	17.5	4.5	18	18	32	105	
4180		4	18.0	5.0	18	18	32	110	
4185		4	18.5	5.0	20	20	32	110	
4190		4	19.0	5.5	20	20	32	110	
4195		4	19.5	5.5	20	20	32	115	
4200		4	20.0	6.0	20	25	32	115	

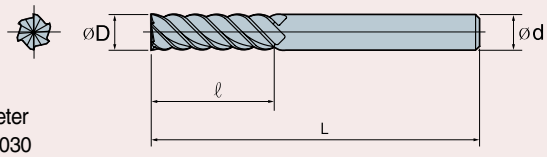
∗ How to name for order made item : HSRE4◎◎◎-R Size ∗Cutting edge length ∗Total length L

Ex.1) 4Flute, Cutting edge diameter 6.3, Cutting edge length 15, Total length 60 ➡HSRE4063-R0.5 ∗15 ∗ 60L

Ex.2) 4Flute, Cutting edge diameter 6.3,Standard type ➡ HSRE4063

● : Stock Item ○ : Under preparing for stock

HSE2000/4000/6000/8000 Z-Max coated endmill for high-speed cutting



■ Tolerance of Endmill Diameter
Every size 0.000 ~ -0.030

(mm)

Designation	Stock	⊙	øD	ød	ℓ	L	Helix angle	Note
HSE 2010	○	2	1.0	6	4	45	45°	
2015		2	1.5	6	4	45	45°	
2020	○	2	2.0	6	6	45	45°	
2025		2	2.5	6	6	45	45°	
2030	○	2	3.0	6	8	50	45°	
2035		2	3.5	6	8	50	45°	
2040	○	2	4.0	6	10	50	45°	
2045		2	4.5	6	10	50	45°	
2050		2	5.0	6	12	50	45°	
2055		2	5.5	6	12	50	45°	
2060	○	2	6.0	6	12	50	45°	
2065		2	6.5	8	12	50	45°	
2070		2	7.0	8	16	60	45°	
2080	○	2	8.0	8	16	60	45°	
4030	●	4	3.0	6	8	50	45°	
4035		4	3.5	6	8	50	45°	
4040	●	4	4.0	6	10	50	45°	
4045		4	4.5	6	10	50	45°	
4050	●	4	5.0	6	12	50	45°	
4055		4	5.5	6	12	50	45°	
4060	○	4	6.0	6	12	50	45°	
4065		4	6.5	8	12	50	45°	
4070		4	7.0	8	16	60	45°	
4080	○	4	8.0	8	16	60	45°	
4090		4	9.0	10	20	70	45°	
4100	○	4	10.0	10	20	70	45°	
6060	●	6	6.0	6	12	50	45°	
6065		6	6.5	8	12	50	45°	
6070		6	7.0	8	16	60	45°	
6075		6	7.5	8	16	60	45°	
6080	●	6	8.0	8	16	60	45°	
6085		6	8.5	10	20	70	45°	
6090		6	9.0	10	20	70	45°	
6100	●	6	10.0	10	20	70	45°	
6110		6	11.0	12	24	75	45°	
6120	●	6	12.0	12	24	75	45°	
8100	○	8	10.0	10	20	70	45°	
8110		8	11.0	12	24	75	45°	
8120	○	8	12.0	12	24	75	45°	
8130		8	13.0	16	28	80	45°	
8140		8	14.0	16	28	80	45°	
8150		8	15.0	16	32	90	45°	
8160	●	8	16.0	16	32	90	45°	
8180		8	18.0	18	35	105	45°	
8200		8	20.0	20	40	105	45°	

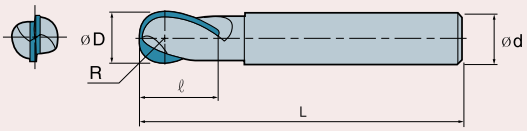
● : Stock Item ○ : Under preparing for stock

∗ How to name for order made item : HSE◎◎◎◎ ∗Cutting edge length ∗Total length L

Ex.1) 6Flute, Cutting edge diameter 6.3, Cutting edge length 15, Total length 60 ➡ HSE6063 ∗ 15 ∗ 60L

Ex.2) 6Flute, Cutting edge diameter 6.3,Standard type ➡ HSE6063

ZSBE200 Brazing spiral ball endmill



■ Tolerance of Endmill Diameter
Every size 0.000 ~ -0.050

(mm)

Designation	Stock	◎	R	øD	ød	ℓ	L	Note
ZSBE 213		2	6.5	13.0	16	30	100	
214	●	2	7.0	14.0	16	30	100	
215	●	2	7.5	15.0	16	35	100	
216	●	2	8.0	16.0	20	35	100	
217		2	8.5	17.0	20	35	110	
218	●	2	9.0	18.0	20	35	110	
219		2	9.5	19.0	20	35	110	
220	●	2	10.0	20.0	20	35	110	
221		2	10.5	21.0	20	35	110	
222		2	11.0	22.0	20	35	110	
223		2	11.5	23.0	25	40	120	
224	○	2	12.0	24.0	25	40	120	
225	●	2	12.5	25.0	25	40	120	
230	●	2	15.0	30.0	32	40	130	
231		2	15.5	31.0	32	40	130	
232	●	2	16.0	32.0	32	50	130	
233		2	16.5	33.0	32	50	140	
234		2	17.0	34.0	32	50	150	
235		2	17.5	35.0	32	50	150	
236		2	18.0	36.0	32	50	150	
237		2	18.5	37.0	32	50	160	
238		2	19.0	38.0	32	50	160	
239		2	19.5	39.0	32	50	160	
240		2	20.0	40.0	32	50	160	
245		2	22.5	45.0	32	50	170	
250		2	25.0	50.0	32	50	170	
235S		2	17.5	35.0	42	50	150	
236S		2	18.0	36.0	42	50	150	
237S		2	18.5	37.0	42	50	160	
238S		2	19.0	38.0	42	50	160	
239S		2	19.5	39.0	42	50	160	
240S		2	20.0	40.0	42	50	160	
245S		2	22.5	45.0	42	50	170	
250S		2	25.0	50.0	42	50	170	

∗ How to name for order made item : ZSBE2◎◎ ∗Cutting edge length ∗Total length L

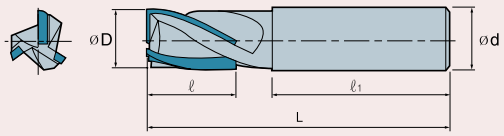
Ex.1) 2Flute, Cutting edge diameter 6.3, Cutting edge length 10, Total length 60 ➡ ZSBE2063 ∗ 10 ∗ 60L

Ex.2) 2Flute, Cutting edge diameter 6.3, Standard type ➡ ZSBE2063

● : Stock Item ○ : Under preparing for stock

ZSE200/300 Brazing spiral endmill

■ Tolerance of Endmill Diameter
Every size 0.000 ~ -0.050



(mm)

Designation	Stock	◎	øD	ød	ℓ	ℓ1	L	Note
ZSE 214	●	2	14.0	16	28	57	95	
215	●	2	15.0	16	28	57	95	
216	●	2	16.0	16	28	57	95	
217	●	2	17.0	20	30	70	115	
218	●	2	18.0	20	30	70	115	
219	●	2	19.0	20	30	70	115	
220	●	2	20.0	20	30	70	115	
221	●	2	21.0	20	35	65	115	
222	●	2	22.0	20	35	65	115	
223	●	2	23.0	25	35	75	125	
224	●	2	24.0	25	35	75	125	
225	●	2	25.0	25	35	75	125	
226	●	2	26.0	25	35	75	125	
227	●	2	27.0	25	35	75	125	
228	●	2	28.0	25	35	75	125	
229	●	2	29.0	32	40	95	150	
230	●	2	30.0	32	40	95	150	
231	●	2	31.0	32	40	95	150	
232	●	2	32.0	32	45	90	150	
233	●	2	33.0	32	45	90	150	
234	●	2	34.0	32	50	85	150	
235	●	2	35.0	32	50	85	150	
236	●	2	36.0	32	50	85	150	
238	●	2	38.0	32	55	80	150	
238S		2	38.0	42	55	80	150	
240	●	2	40.0	32	60	75	150	
240S		2	40.0	42	60	75	150	
242	●	2	42.0	32	60	75	150	
244		2	44.0	32	65	80	160	
245	●	2	45.0	32	65	80	160	
245S		2	45.0	42	65	80	160	
247		2	47.0	32	65	80	160	
248	●	2	48.0	32	65	80	160	
248S		2	48.0	42	65	80	160	
250	●	2	50.0	32	65	80	160	
250S		2	50.0	42	65	80	160	
314	●	3	14.0	16	28	57	95	
315	●	3	15.0	16	28	57	95	
316	●	3	16.0	16	28	55	95	
317	●	3	17.0	20	30	70	115	
318	●	3	18.0	20	30	70	115	
319	●	3	19.0	20	30	70	115	
320	●	3	20.0	20	30	70	115	
322	●	3	22.0	20	35	65	115	
325	●	3	25.0	25	35	75	125	

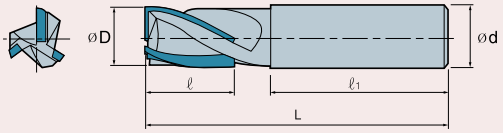
● : Stock Item ○ : Under preparing for stock

∗ How to name for order made item: ZSE◎◎◎◎ ∗Cutting edge length ∗Total length L

Ex.1) 2Flute, Cutting edge diameter 6.3, Cutting edge length 10, Total length 60 ➡ZSBE2063 ∗10 ∗60L

Ex.2) 2Flute, Cutting edge diameter 6.3,Standard type ➡ZSE2063

ZSE300/400/600 Brazing spiral endmill



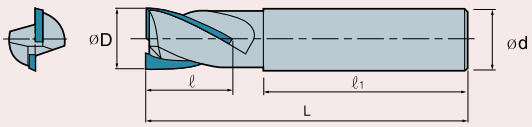
■ Tolerance of Endmill Diameter
Every size 0.000 ~ -0.050

(mm)

Designation	Stock	⊙	øD	ød	ℓ	ℓ1	L	Note
ZSE 326		3	26.0	25	35	75	125	
328	●	3	28.0	25	35	75	125	
330	●	3	30.0	32	40	95	150	
332	●	3	32.0	32	45	90	150	
334		3	34.0	32	50	85	150	
335	●	3	35.0	32	50	85	150	
338	●	3	38.0	32	55	85	150	
338S		3	38.0	42	55	85	150	
340	●	3	40.0	32	60	75	150	
340S		3	40.0	42	60	75	150	
342		3	42.0	32	60	75	150	
345	●	3	45.0	32	65	80	160	
345S		3	45.0	42	65	80	160	
350	●	3	50.0	32	65	80	160	
350S		3	50.0	42	65	80	160	
414	●	4	14.0	16	28	57	95	
415	●	4	15.0	16	28	57	95	
416	●	4	16.0	16	28	55	95	
417	●	4	17.0	20	30	70	115	
418	●	4	18.0	20	30	70	115	
419	●	4	19.0	20	30	70	115	
420	●	4	20.0	20	30	70	115	
421	●	4	21.0	20	35	65	115	
422	●	4	22.0	20	35	65	115	
423	●	4	23.0	25	35	75	125	
424	●	4	24.0	25	35	75	125	
425	●	4	25.0	25	35	75	125	
426	●	4	26.0	25	35	75	125	
427	●	4	27.0	25	35	75	125	
428	●	4	28.0	25	35	75	125	
429	●	4	29.0	25	35	75	125	
430	●	4	30.0	32	40	95	150	
432	●	4	32.0	32	45	90	150	
435	●	4	35.0	32	50	85	150	
438	○	4	38.0	32	55	85	150	
438S		4	38.0	42	55	85	150	
440		4	40.0	32	60	75	150	
440S		4	40.0	42	60	75	150	
445	●	4	45.0	32	65	80	160	
445S		4	45.0	42	65	80	160	
450	●	4	50.0	32	65	80	160	
450S		4	50.0	42	65	80	160	
634		6	34.0	32	50	85	150	
635	●	6	35.0	32	50	85	150	
638		6	38.0	32	55	80	150	
638S		6	38.0	42	55	80	150	
640	●	6	40.0	32	60	75	150	
640S		6	40.0	42	60	75	150	
645		6	45.0	32	65	80	150	
645S		6	45.0	42	65	80	150	
650	●	6	50.0	32	65	80	150	
650S		6	50.0	42	65	80	150	

● : Stock Item ○ : Under preparing for stock

ZSEA200 Brazing spiral endmill for Al, Cu Cutting



■ Tolerance of Endmill Diameter
Every size 0.000 ~ -0.050

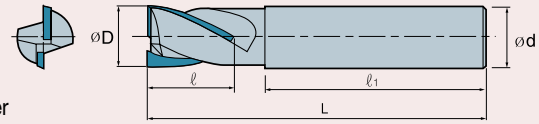
(mm)

Designation	Stock	◎	øD	ød	ℓ	ℓ1	L	Note
ZSEA 215		2	15.0	16	28	57	95	
216	○	2	16.0	16	28	55	95	
218	○	2	18.0	20	30	70	115	
219		2	19.0	20	30	70	115	
220	○	2	20.0	20	30	70	115	
221		2	21.0	20	30	70	115	
222		2	22.0	20	35	65	115	
223		2	23.0	25	35	75	125	
224		2	24.0	25	35	75	125	
225		2	25.0	25	35	75	125	
228		2	28.0	25	35	75	125	
230		2	30.0	32	40	95	150	
232		2	32.0	32	45	90	150	
238		2	38.0	32	55	80	150	
240		2	40.0	32	60	75	150	
250		2	50.0	32	65	80	160	

∗ How to name for order made item: ZSEA2◎◎ ∗ Cutting edge length ∗ Total length L
Ex.1) 2Flute, Cutting edge diameter 16.3, Cutting edge length 28, Total length 95 ➡ ZSEA2163 ∗ 28 ∗ 95L
Ex.2) 2Flute, Cutting edge diameter 17.0,Standard type ➡ ZSEA217

● : Stock Item ○ : Under preparing for stock

ZSEL200/400 Brazing spiral long endmill



■ Tolerance of Endmill Diameter
Every size 0.000 ~ -0.050

(mm)

Designation		Stock		øD	ød	ℓ	ℓ1	L	Note
ZSEL	214	○	2	14.0	16	50	55	120	
	216	○	2	16.0	16	50	55	120	
	218	○	2	18.0	20	60	65	140	
	220	○	2	20.0	20	60	65	140	
	222		2	22.0	20	60	65	140	
	225	○	2	25.0	25	70	65	150	
	230	○	2	30.0	32	80	85	180	
	232	○	2	32.0	32	90	85	190	
	235		2	35.0	32	100	85	200	
	240		2	40.0	42	100	105	220	
	245		2	45.0	42	120	95	230	
	250		2	50.0	42	120	95	230	
	416		4	16.0	16	50	55	120	
	420		4	20.0	20	60	65	140	
	425		4	25.0	25	70	65	150	
	430		4	30.0	32	80	85	180	
	435		4	35.0	32	100	85	200	
	440		4	40.0	42	100	105	220	
ZSEXL	220		2	20.0	20	120	65	200	
	222		2	22.0	20	120	65	200	
	225		2	25.0	25	140	65	220	

∗ How to name for order made item: ZSEL◎◎◎∗Cutting edge length∗Total length L
Ex.1) 2Flute, Cutting edge diameter 16.3, Cutting edge length 28, Total length 95 ➡ ZSEL2163∗28∗95L
Ex.2) 2Flute, Cutting edge diameter 17.0,Standard type ➡ ZSEL217

● : Stock Item ○ : Under preparing for stock


G T
M
D O

Drilling

■ Detail tolerance for drill shank & diameter

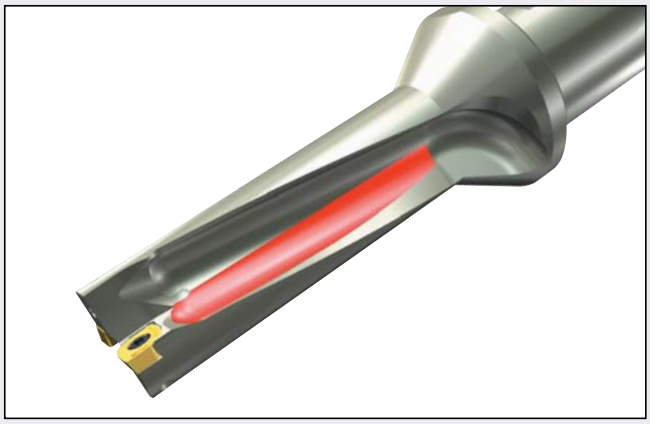
Drill diameter(Ø)		h6	h7	x6
Excess	downward			
-	3	0 ~ -0.006	0 ~ -0.010	+0.020 ~ +0.026
3	6	0 ~ -0.008	0 ~ -0.012	+0.028 ~ +0.036
6	10	0 ~ -0.009	0 ~ -0.015	+0.034 ~ +0.043
10	14	0 ~ -0.011	0 ~ -0.018	+0.040 ~ +0.051
14	18	0 ~ -0.011	0 ~ -0.018	+0.045 ~ +0.056
18	24	0 ~ -0.013	0 ~ -0.021	+0.054 ~ +0.067

Technical Guide of NPD & SPD

Special features

- Excellent chip evacuation due to the special flute design.
- Long tool life due to the special surface treatment on holder.
- Cost effective 4 corner using insert.
- Variety of combination with grades & chip breakers as per application.
- SPD available Ø13~Ø22, NPD available Ø23~Ø60.

Enhanced chip evacuation quality



Chip evacuation quality has been improved by wide flute space.

- Since the flute space has been increased 20% bigger than conventional drill, chip evacuation quality has been improved.
- Excellent chip evacuation even at high feed rate.
- Maintain rigidty of shank.

Special surface treatment

SPD (Superior Piercing Drill)

Available dirlling diameter : Ø 13~ Ø 22(For small diameter)

NPD (New Piercing Drill)

Available dirlling diameter : Ø 23~ Ø 60

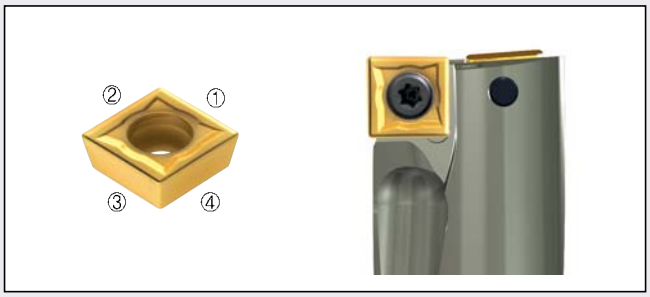
- Damage on surface of flute & shank by chip & work piece has been minimized due to the special hard coating.
- Prolonged tool life.
- Attractive silver color.

4 corner using insert

SPD insert SPM(E)T

- Duet to the carefull design of insert seat part & insert chip breaker, same insert can do different function as per location of holder. Since it makes optimal quality on chip breaking and evacuation of it, SPD is suitable for small diameter drilling.
- Cost effective square insert available 4 corenrs.

Same insert is interchangeable for both position.

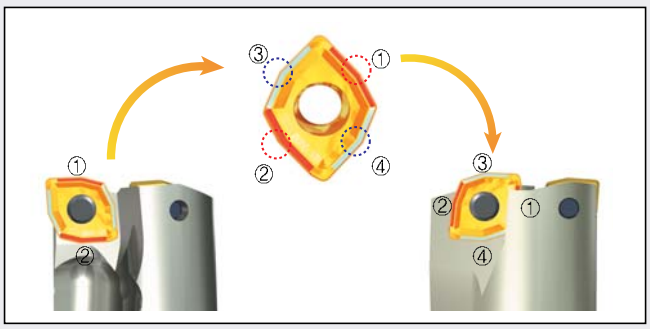


- By using same insert for both position, it's very economical.
- Available grade Steel : PC3535 Cast iron : PC6510
  Stainless steel: PC9530
  Aluminum : H01
- Insert for SPD Ø13~ Ø22.

4 corner using insert

NPD insert NPM(E)T

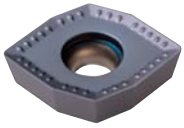
How to use 4 corner



- Use number ①,② corner at outer position first, and then use number ③,④ at the inner position.

NPM(E)T-DM, DS, DR, DA

■ Grade & chip breaker choice as per work piece

DM	DS	DR	DA
			
PC3535 / PC6510	PC9530	PC3535	H01
Steel / Cast iron	Stainless steel	Soft steel	Aluminum

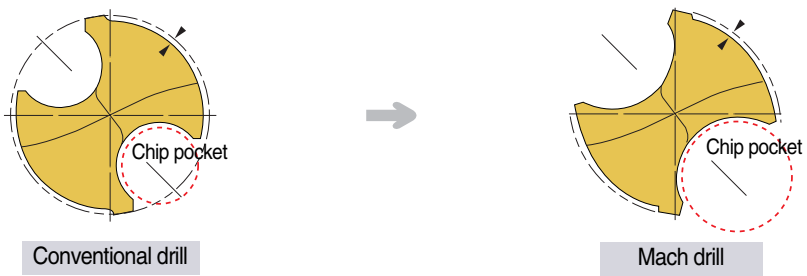
- Insert for NPD Ø23~ Ø60.
- It's useful for high speed, high feed application due to the strong cutting edge.

Technical Guide of Mach drill

Special features

- **Optimal design chip pocket.**
  - Wide and deep chip pocket minimize the friction during operation.
- **Curvilinear edge.**
  - Since curvilinear edge decrease cutting force by dispersing cutting load, excellent wear resistance and shock resistance acquired.
- **Ultra micro grain substrate and New TiAlN coating.**
  - 0.6㎛ of tungsten carbide has been used for carbide substrate.
  - New TiAlN coating film guarantees excellent shock resistance & wear resistance.
- **Standard aspect ratio 3D, 5D, 7D**
  - For example, diameter Φ10mm, and depth of drill 30mm, no through coolant drill, take MSD100-3P!
- **Solid drill (MSD) & Solid drill with coolant hole (MSDH)**
  - Alternative choice for both type.
- **Low cutting resistance type edge**
  - Low cutting resistance type edges guarantees better surface finish and chip breaking.
  - Since it has self centering function, pre-centering cut is not necessary.
- **Rigid neck of drill**
  - Rigid neck design prevent breakage of neck.

En-larged chip pocket



Conventional drill

Mach drill

Optimal chip pocket

- **Wide chip pocket area.**
  - 125% wider chip pocket than VSD, Better chip evacuation.
- **Torsion rigidity increased**
  - Special design has been employed to enhance rigidity of flute part where could be weakened by en-larged chip pocket area.
- **Better lubrication**
  - The new TiAlN's excellent lubrication property provides good chipping resistance on cutting edge and reduced friction during chip evacuation.
- **Post treatment for better chip evacuation**
  - Since special design of cutting edge provides good chip evacuation, drilling without step-process is possible.

Line-up

Line-up as per aspect ratio

MSD□□□-7P

MSD□□□-5P

MSD□□□-3P

- Line-up as per aspect ratio (∅2.5~ ∅20, step 0.1mm)
  - ➜ Various choice as aspect ratio(3D, 5D, 7D)
    - ex) Solid, ∅10.2mm, 50mm through hole machining = 50 ÷10.2 ≒ 5 ➜ MSD102-5P

Line-up as per coolant hole

MSD Type

MSDH Type

- Line-up as per coolant hole
  - ➜ Alternative choice as per coolant hole.
    - With coolant hole - MSDH, with out coolant hole - MSD

Line-up as per work piece

- Line-up as per work piece (the last character shown at designation stand for available work piece)
  - ➜ **P** : For general use, steel
  - **M** : For stainless steel
  - **K** : For cast iron, aluminum
  - **N** : For non-ferrous material, aluminum, copper.

Special cutting edge preparation for low cutting load

Features of special cutting edge preparation

- Uniformity of edge treatment.
  ➜ Uniform edge treatment provides equalized quality.
- Protect machined surface of workpiece
  ➜ Low cutting resistance type edge operate well in medium-finish machining with good surface finish.
- Better chip breaking
  ➜ Due to the careful study on basic drilling process, good chip breaking quality has been acquired regardless of cutting speed.

New TiAlN coating

Sepcial features of New TiAlN coating

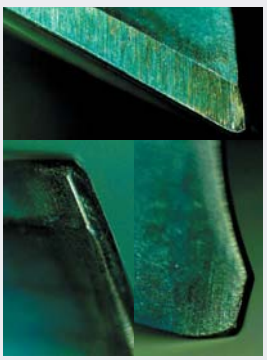
- Decreased of Macro particle after coating ➜ Chipping free from macro particle
- Better hardness and toughness at the same time ➜ covering wide cutting speed and feed rate range.
- Special coating layer at outter most layer ➜ Special coating film with better lubrication prevents build up edge.
- Pre treatment before coating process ➜ Higher adherency by pre treatment.

Machining example of Mach drill

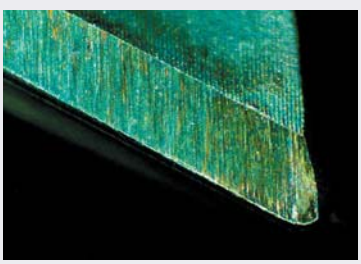
Example for alloy steel machining

- Drill : MSD100-3P
- Work piece : SCM440 (HRC20), 25mmThrough hole
- Speed(V) : 70m/min
- Feed(f) : 0.2mm/rev
- Coolant : Water soluble
- Tool life criteria : Flank wear 0.2mm, Chipping on edge

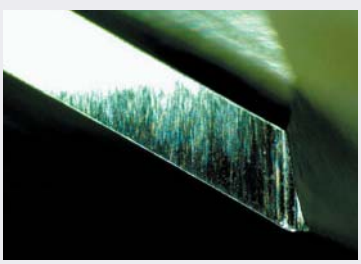
Number of hole / Designation	2000(50m)	3000(75m)	
MSD100-3P			Possible to machine more
Copmetitor A's TiAlN coated carbide drill			Edge Chipping
Competitor B's TiN coated carbide drill			Fracture on cutting edge



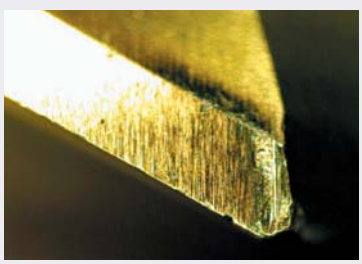
MSD100-3P 3000holes
Cutting edge after machining



MSD100-3P 3000holes
Cutting edge



Copmetitor A's TiAlN coated carbide drill
Cutting edge after 2700 holes machining



Competitor B's TiN coated carbide drill
Cutting edge after 2030 holse machining

Technical Guide of Mach long drill

Special features of MLD

Tool for drilling over 20D

- Special cutting edge preparation for low cutting load provides strong cutting edge.
- Special flute design focused on smooth chip evacuation.
- Rigid drill prevents bending of it when firstly enter the work piece.
- New TiAlN coating provides excellent lubrication property.
- Extremely smooth surface of coated layer by post treatment on top of coating.
- It is possible to drill over 20D depth, at one time with out step.
- Maximum qulaity could be acquired when using MQL system.
- Consistent tool life.

Informations

- Work piece : Carbon steel, alloy steel, mould steel, cast iron
- Recommendation (valid for Ø6 x 120(cutting edge length) x 170(total length))

Work piece / Coolant	Carbon steel (S45C)		Low alloy steel (SCM440)		Cast iron (FC/FCD)	
	V	f	V	f	V	f
MQL	90	0.2	80	0.19	70	0.15

- Code system for Mach long drill (ex. MLD 0590-20A)

MLD	0590	-	20	A
Mach Long-Drill	Drilling diameter : 5.90mm Ø3.0~ Ø15.0		Cutting edge length : 20D 15~25D possible	Design history Record as per customer

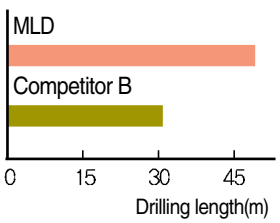
Notice for MLD

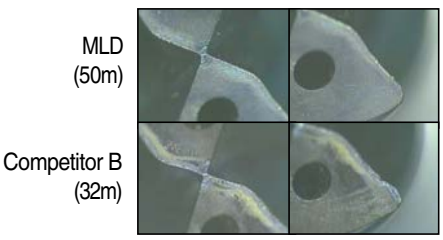
Drill for machining over 20D

- Centering tolerance of Mach long drill from previously machined center of pilot drill should be within 0.01mm.
  - ➜ The tolerance affects sudden facture of long drill.
- Composition for MQL system.
  - ➜ MQL System : Air in, 6bar(0.6Mpa) MQL system : Air in, 6bar(0.6Mpa), Coolant : Water soluble.
- Machining sequence for tilted face : Endmilling to make flat face → Pilot drill → Mach long drill
  - ➜ In case of tilted face, sphere shape, convex or concave face should have endmill process first.

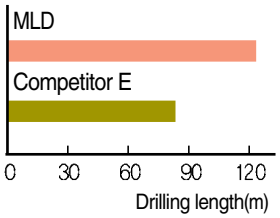
Machining Example of MLD

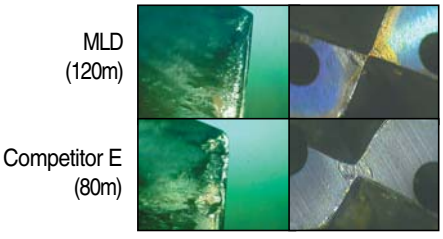
- Drill : MLD0590-20A
  (Ø5.9mm, Aspect ratio=20D)
- Work piece : SCM440 (HRC20)
- Cutting condition : V=80m/min,
  f=0.14mm/rev, d=75mm Through hole
- Coolant : Air pressure for MQL=0.4Mpa
  Oil quantity=15cc/h





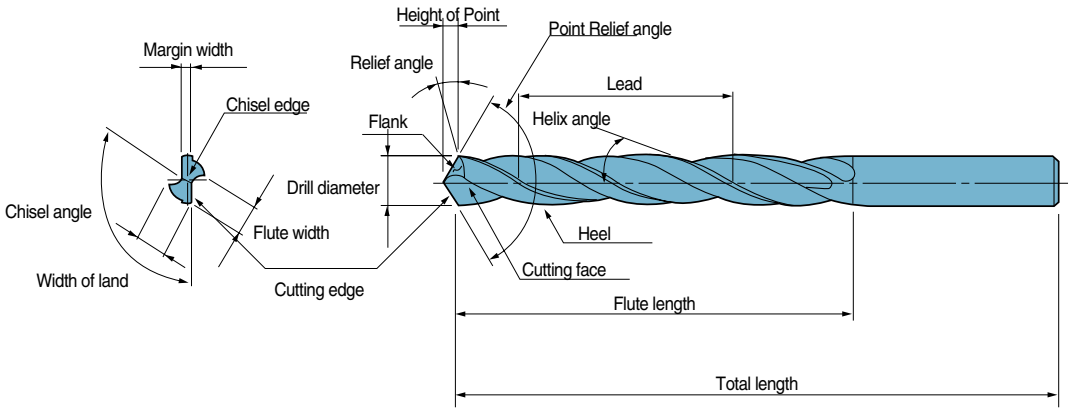
- Drill : MLD0700-22A
  (Ø7.0mm, Aspect ratio=22D)
- Work piece : SCM440 (HRC22)
- Cutting condition : V=80m/min,
  f=0.19mm/rev, d=80mm Through hole
- Coolant : Air pressure for MQL=0.3Mpa
  Oil quantity=20cc/h





Technical Guide of Drilling

Terminology of Drill



Major Cutting Formula

Cutting speed

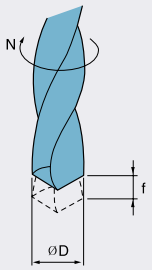
$$V = \frac{\pi \cdot D \cdot N}{1000} \ (m/min)$$

- V : Cutting speed (m/min)
- D : Drill diameter (mm)
- N : Revolution per a minute (rpm)
- π : Circular constant (3.14)

Feed Speed

$$f = \frac{S}{N} \ (mm/rev)$$

- f : Feed per one revolution (mm/rev)
- S : Dept of cut per a minute (mm/min)
- N : Revolution per a minute (rpm)



Helix angle

$$\delta = \tan^{-1}\left(\frac{\pi D}{L}\right)$$

- δ : Helix angle
- D : Cutting diameter (mm/min)
- L : Lead (mm)
- π : Circular constant (3.14)

Cutting torque and thrust

$$Md = KD^2 \times (0.0631 + 1.686 \times f) \ (kg \cdot cm)$$

$$T = 57.95KDf^{0.85} \ (kg)$$

- Md : Torque (kg · cm)
- T : Cutting thrustt (kg)
- D : Cutting diamerter (mm)
- f : Feed per one revolution (mm/rev)
- K : Material factor

Work-piece(SAE)		Tensile strength(kg/mm²)	Hardness(HB)	Material coefficient K
Cast Iron	Cast Iron(General)	21	177	1.00
	Cast Iron	28	198	1.39
	Cast Iron(High Quality)	35	224	1.88
Alloy steel	1020(Carbon Steel C 0.2%)	55	160	2.22
	1112(Easy to machine Steel C 0.12, S 0.2%)	62	183	1.42
	1335(Mn Steel Mn 1.75%)	63	197	1.45
Ni-Cr Steel	3115(Ni 1.25, Cr 0.6, Mn 0.5)	53	163	1.56
	3120(Ni 1.25, Cr 0.6, Mn 0.7)	69	174	2.02
	3140	88	241	2.32
Cr-Mo Steel	4115(Cr 0.5, Mo 0.11, Mn 0.8)	63	167	1.62
	4130(Cr 0.95, Mo 0.2, Mn 0.5)	77	229	2.10
	4140(Cr 0.95, Mo 0.2, Mn 0.85)	94	269	2.41
Ni-Mo Steel	4615(Ni 1.8, Mo 0.25, Mn 0.5)	75	212	2.12
	4820(Ni 3.5, Mo 0.25, Mn 0.6)	140	390	3.44
Cr Steel	5150(Cr 0.8, Mn 0.8)	95	277	2.46
Cr-V Steel	6115(Cr 0.6, Mn 0.6, V 0.12)	58	174	2.08
	6120(Cr 0.8, Mn 0.8, V 0.1)	80	255	2.22

Formula of Torque & Thrust

$Md = K_1 \cdot d^2 \cdot f^m$
$T = K_2 \cdot d \cdot f^n$

- Md : Torque (kg · cm)
- T : Thrust (kg)
- f : Feed (mm/rev)
- d : Diameter (mm)
- K_1, K_2, m, n : Constant

Work-piece	K_1	m	K_2	n
Mild steels	5.9	1.00	125.0	0.88
Rolled steel	3.5	1.00	55.0	0.88
7-3Brass	2.5	0.94	44.4	0.87
Aluminium	1.5	0.90	33.3	0.78
Zinc	1.4	0.88	27.0	0.74
Gun metal	2.0	0.94	21.6	0.75
Galvanized iron	0.3	0.57	6.4	0.55

Trouble Shooting for Drilling

Problems		Cause	Solution															
			Cutting conditions					Tool shape						Grade		The others			
			Cutting speed	Feed rate	Step feed	Initial feed	Cutting fluid	Relief angle	Point angle	Thinning angle	Honning	Change the rate of flute and width	Thinning	Toughness	Hardness	Mechanical rigidity of machine	Drill rigidity	Guide-bush	Clamp of work piece
Chipping		• Improper cutting edge (Too large relief angle) (Too sharp thinning)						⬇		⬇	⬆			⬆					
		• Improper cutting speed	⬇				○												
		• Generation of built-up edge					○	⬇		⬇	⬆			⬆					
		• Generation of chattering and vibration	⬇													⬆	⬇		○
Excessive wear of cutting edge		• Cutting speed too high in relation to insert grade	⬇				○	⬇	◉						⬆				
Break age	In the beginning of operation	• Poor surface conditions of workpiece			○	⬇												○	
		• Insufficient rigidity of tool and workpiece														⬆			○
		• Improper cutting condition	⬇	⬇															
	In the middle of operation	• Deflection of hole							⬆				○				⬇	○	
		• When chips clog in hole		⬇	○							⬆							

⬆ : Increase ⬇ : Decrease ○ : Application ◉ : Proper application

Technical Guide of Drilling

Recommendation of cutting conditions

Drilling (SSD)

• KORLOY' s giade FA1 is applied unless customers specify the grade.

Work Piece material (AISI)	Tensile strength (kg/㎟)	Carbide grade	Point angle(°)	Revolution(r.p.m)							Feed(mm/rev)		Coolant
				Ø5	Ø10	Ø15	Ø20	Ø25	Ø30	Ø40	Ø5~Ø12	Ø15~Ø40	
SM10C~SM45C	50	ST30A	120	2900	1600	1100	1000	800	700	600	0.03~0.06	0.03~0.06	Cutting oil
SM55C	70	ST30A	120	2300	1530	1050	920	765	640	560	0.03~0.06	0.06~0.12	Cutting oil
SM55G · Grude Steel	100	ST30A	120	2200	1500	1000	900	750	650	550	0.03	0.06	Cutting oil
Quenched Steel	150~180	H01	140	700	340	250	190	160	140	120	0.02	0.04	Cutting oil
Cr-Ni steel	100	FA1	120	2200	1200	800	625	550	460	380	0.03	0.06	Cutting oil
Mn-steel	40~110	FA1	140	700	340	260	190	170	150	120	0.04	0.08	Dry
Casting	200~300	FA1	120	2000	1500	800	600	450	400	350	0.03	0.06	Dry
Malleable cast iron	200	H01	120	2400	1500	900	650	500	420	380	0.03	0.06	Dry
Chilled casting	65Hs	H01	140	350	200	150	100	80	70	55	0.01	0.02	Dry
Copper	60~80	H01	120	6000	4000	2500	2000	1400	1000	800	0.06	0.12	Dry
Brass	80~120	H01	120	5000	3500	2000	1500	1400	1200	1000	0.05	0.10	Dry
Bronze casting	60~120	H01	120	3500	2500	1800	1500	1200	1000	900	0.04	0.08	Dry
Al	60~100	H01	130	16000	8500	5700	4500	3700	3100	2800	0.1	0.2	Dry
(Si 13%) Al alloy	40	H01	130	8000	4500	2800	2100	1750	1050	700	0.05	0.15	Dry
Synthetic resin	90~120	H01	80	8000	5400	2800	2100	1750	1050	200	0.05	0.15	Dry

Recommendation of Solid Vulcan Drill

Vulcan Drill P type (Standard type) VSD***MP,SP For High Efficient Machining

Cutting Diameter (mm)	Condition	General, Alloy Steel (under HB320)	Low carbon steel, Alloy Steel (under HB250)	Mold Steel (approx. HB250)	Stainless steel (approx. HB250)	Ductile Cast iron
~Ø15	V	40~60~90	40~65~90	40~50~70	30~45~50	50~70~100
	f	0.1~0.2~0.25	0.15~0.2~0.3	0.1~0.2~0.25	0.1~0.15~0.2	0.2~0.3~0.35
~Ø20	V	40~60~90	40~65~90	40~50~70	30~45~50	50~70~100
	f	0.15~0.25~0.35	0.2~0.3~0.4	0.15~0.25~0.3	0.15~0.2~0.25	0.2~0.35~0.4
~Ø40	V	40~65~90	40~70~90	40~50~70	30~45~50	50~70~100
	f	0.2~0.3~0.4	0.2~0.35~0.45	0.2~0.3~0.35	0.2~0.25~0.3	0.25~0.4~0.5

Recommendation of Solid Vulcan Drill

Vulcan Drill G type (Standard type) VSD***MG,SG For Aluminum, Cast iron

Cutting Diameter (mm)	Condition	General, Alloy Steel (under HB320)	Low carbon steel, Alloy Steel (under HB250)	Cutting Diameter (mm)	Condition	General, Alloy Steel (under HB320)	Low carbon steel, Alloy Steel (under HB250)
~Ø20	V	35~55~80	40~70~90	~Ø40	V	40~60~80	40~80~90
	f	0.15~0.25~0.3	0.2~0.3~0.4		f	0.15~0.3~0.4	0.2~0.35~0.45

V: Speed(m/min), f: Feed(mm/rev)

Recommendation of cutting conditions

Mach drill without coolant hole type (MSD○○○-□P)

Work piece \ Drilling diameter		Ø2.5~Ø5.0		Ø5.1~Ø8.0		Ø8.1~Ø10.0		Ø10.1~Ø12.0		Ø12.1~Ø14.0		Ø14.1~Ø20.0	
		V(m/min)	f(mm/rev)	V(m/min)	f(mm/rev)	V(m/min)	f(mm/rev)	V(m/min)	f(mm/rev)	V(m/min)	f(mm/rev)	V(m/min)	f(mm/rev)
Soft steel Alloy steel Carbon steel Under HRC25	SCM440	40~70 (55)	0.15 ~0.25	50~110 (65)	0.20 ~0.35	50~110 (70)	0.20 ~0.35	50~120 (75)	0.25 ~0.35	50~120 (75)	0.25 ~0.35	60~120 (80)	0.25 ~0.40
	S45C	40~80 (60)	0.15 ~0.25	50~120 (70)	0.20 ~0.30	50~120 (75)	0.20 ~0.30	60~120 (80)	0.20 ~0.30	60~120 (80)	0.25 ~0.35	70~120 (90)	0.30 ~0.40
High carbon steel, high alloy steel (Over HRC25)	SKD11	15~35 (30)	0.08 ~0.15	20~40 (30)	0.10 ~0.20	20~50 (35)	0.10 ~0.20	20~60 (35)	0.15 ~0.25	20~60 (40)	0.15 ~0.25	30~65 (40)	0.15 ~0.25
Stainless steel	SUS	15~30 (25)	0.05 ~0.10	15~45 (25)	0.10 ~0.20	15~50 (30)	0.10 ~0.20	20~60 (35)	0.10 ~0.20	20~65 (35)	0.10 ~0.20	20~70 (40)	0.10 ~0.20
Cast iron	FC	40~90 (70)	0.15 ~0.30	50~120 (80)	0.20 ~0.35	50~120 (80)	0.20 ~0.35	60~130 (90)	0.25 ~0.35	60~130 (95)	0.25 ~0.40	60~140 (95)	0.25 ~0.40
	FCD	40~80 (60)	0.10 ~0.25	50~110 (75)	0.20 ~0.35	50~110 (80)	0.20 ~0.35	50~130 (80)	0.25 ~0.35	50~130 (85)	0.25 ~0.35	60~130 (90)	0.25 ~0.40

Mach drill with coolant hole type (MSDH○○○-□P)

Work piece		V(m/min)	Ø2.5~Ø4.0	Ø4.1~Ø8.0	Ø8.1~Ø12.0	Ø12.1~Ø16.0	Ø16.1~Ø20.0
			f(mm/rev)	f(mm/rev)	f(mm/rev)	f(mm/rev)	f(mm/rev)
Soft steel Alloy steel Carbon steel Under HRC25	SCM440	60~140	0.15~0.35	0.15~0.35	0.20~0.35	0.25~0.40	0.30~0.40
	S45C	60~140	0.15~0.30	0.15~0.30	0.20~0.30	0.25~0.35	0.30~0.40
High carbon steel, high alloy steel (Over HRC25)	SKD11	40~80	0.08~0.20	0.08~0.20	0.10~0.25	0.15~0.25	0.15~0.30
Stainless steel	SUS	25~80	0.05~0.20	0.05~0.20	0.10~0.25	0.10~0.25	0.15~0.30
Cast iron	FC	55~155	0.15~0.35	0.15~0.35	0.20~0.35	0.25~0.40	0.25~0.40
	FCD	55~145	0.10~0.35	0.10~0.35	0.20~0.35	0.25~0.35	0.25~0.40

Note) 1. Reduce cutting speed down to 30%~40% of recommended cutting speed.

2. Adjust cutting conditions(V,f) as per surface condition of work piece, clamping condition, overhang of tool, power and rigidity of spindle.

3. To get longer tool life, use step-feed every 1.5D drilling depth.

4. Clamp the drill properly at shank part. (clamped length of shank should be over 3D)

5. Information for through coolant drill : Oil pressure requirement = 3~5kg/㎠, Oil flow=2~5 ℓ /min.

6. Formula :

$$N = \frac{1000 \times V}{\pi D}, \quad F = N \times f$$

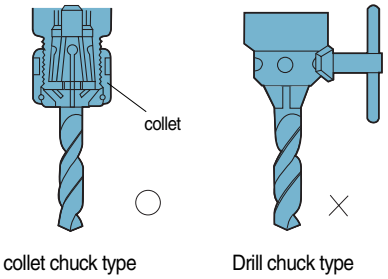
[N : Revolution per minute(RPM), F : Feed per minute(mm/min), D: Drill diameter(mm), π: 3.1416]

[V : Cutting speed(m/min), f : Feed per revolution(mm/rev)]

Usage of Vulcan - Drills

Selection Drill chuck

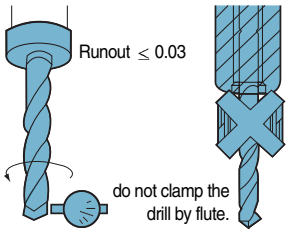
· High accuracy and Rigid clamping is very important factor for carbide drilling. So please use the collet type for high accuracy and rigid.



collet chuck type　　Drill chuck type

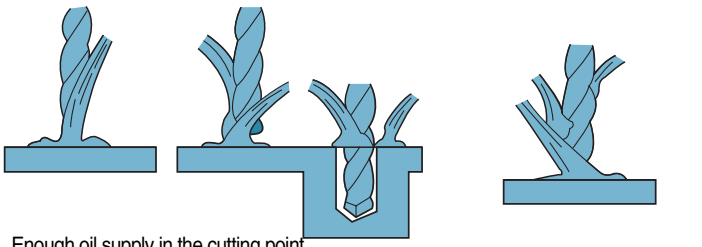
Drill Assembly

· It should be within 0.03mm. The big run out causes over size drilling hole and low rigidith machine causes drill breakage.



Oil Supply

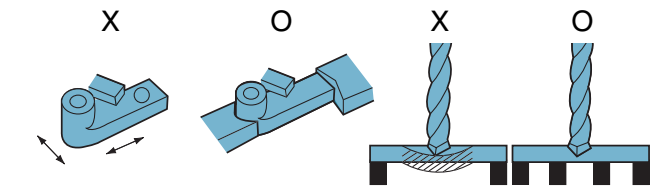
· Internal oil feed system : Higher oil pressure and more amount of oil are desirable (Minimum pressure is 3~5kg/cm2 and minimum amount is 2~5l/min)



Enough oil supply in the cutting point.　　Supply with high pressure

Work-piece Setting

· Reliable rigidity is requirde for high accuracy operations.

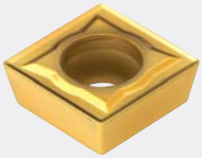


Breakerage of drill caused by instfficiency horizortal word-piece setting.　　Consider every direction.　　Do not allow bending by setting the work-picec properly.

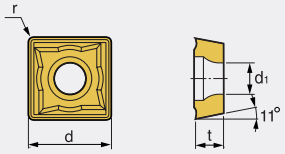
Notice and referance regrinding of valcan drill

1. In case the regrindable flute remains.
2. The depth of wareness shouldn' t be more than 1.5mm.
3. Not in case of crack.
4. Drills can be regrinded by KORLOY and Sumitomo.
5. Users can regrind the drill with SEI made regrinding machine.

SPMT-DM



Geometry



Available Holder	Designation	ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)			
			MCM325	MCM335	MCM310K	MCM320K	PC3535	PC3545	PC9530	PC6510	PC8010	CT10	CN20	CN30		H01	G10	ST30A	ST20	d	t	r	d_1
SPD	SPMT 050203-DM						●		●	●	○									5.3	2.4	0.3	2.3
	060204-DM						●		●	●	○									6.2	2.5	0.4	2.5
	070204-DM						●		●	●	○									7.2	2.5	0.4	2.8

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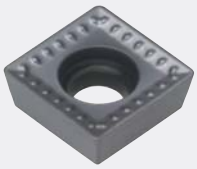
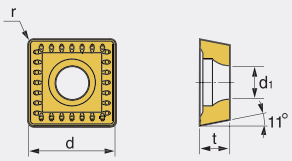
● : Stock Item ○ : Under preparing for stock

SPMT-DS



Geometry



Available Holder	Designation	ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)			
			MCM325	MCM335	MCM310K	MCM320K	PC3535	PC3545	PC9530	PC6510	PC8010	CT10	CN20	CN30		H01	G10	ST30A	ST20	d	t	r	d_1
SPD	SPMT 050203-DS								●		○									5.3	2.4	0.3	2.3
	060204-DS								●		○									6.2	2.5	0.4	2.5
	070204-DS								●		○									7.2	2.5	0.4	2.8

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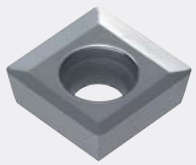
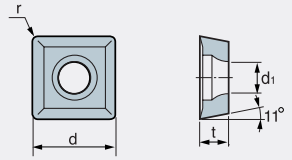
● : Stock Item ○ : Under preparing for stock

SPET-DA



Geometry



Available Holder	Designation	ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)			
			MCM325	MCM335	MCM310K	MCM320K	PC3535	PC3545	PC9530	PC6510		CT10	CN20	CN30		H01	G10	ST30A	ST20	d	t	r	d_1
SPD	SPET 050203-DA															●				5.3	2.4	0.3	2.3
	060204-DA															●				6.2	2.5	0.4	2.5
	070204-DA															●				7.2	2.5	0.4	2.8

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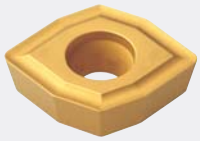
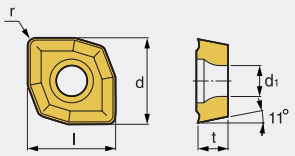
● : Stock Item ○ : Under preparing for stock

NPMT-DM



Geometry



Available Holder	Designation		ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)				
				MCM325	MCM335	MCM310K	MCM320K	PC3535	PC3545	PC9530	PC6510	PC8010	CT10	CN20	CN30		H01	G10	ST30A	ST20	l	d	t	r	d_1
NPD	NPMT	222408-DM						●			●	○									8.3	8.2	2.5	0.8	2.8
		252808-DM						●			●	○									9.3	9.2	3.3	0.8	3.4
		293208-DM						●			●	○									10.3	10.2	3.3	0.8	3.4
		334008-DM						●			●	○									13	12.9	3.97	0.8	4.0
		415008-DM						●			●	○									15.3	15.2	4.76	0.8	4.5
		516012-DM						●			○	○									18.3	18.2	5.18	1.2	5.5

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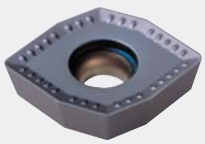
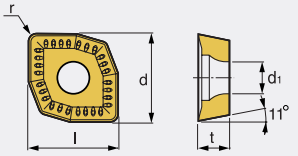
●: Stock Item ○: Under preparing for stock

NPMT-DS



Geometry



Available Holder	Designation		ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)				
				MCM325	MCM335	MCM310K	MCM320K	PC3535	PC3545	PC9530	PC6510	PC8010	CT10	CN20	CN30		H01	G10	ST30A	ST20	l	d	t	r	d_1
NPD	NPMT	222408-DS								●		○									8.3	8.2	2.5	0.8	2.8
		252808-DS								●		○									9.3	9.2	3.3	0.8	3.4
		293208-DS								●		○									10.3	10.2	3.3	0.8	3.4
		334008-DS								●		○									13	12.9	3.97	0.8	4.0
		415008-DS								●		○									15.3	15.2	4.76	0.8	4.5
		516012-DS								●		○									18.3	18.2	5.18	1.2	5.5

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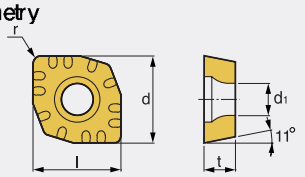
●: Stock Item ○: Under preparing for stock

NPET-DR

Geometry



Available Holder	Designation		ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)				
				MCM325	MCM335	MCM310K	MCM320K	PC3535	PC3545	PC9530	PC6510		CT10	CN20	CN30		H01	G10	ST30A	ST20	l	d	t	r	d_1
NPD	NPET	222408-DR						●													8.3	8.2	2.5	0.8	2.8
		252808-DR						●													9.3	9.2	3.3	0.8	3.4
		293208-DR						●													10.3	10.2	3.3	0.8	3.4
		334008-DR						●													13	12.9	3.97	0.8	4.0
		415008-DR						●													15.3	15.2	4.76	0.8	4.5
		516012-DR						●													18.3	18.2	5.18	1.2	5.5

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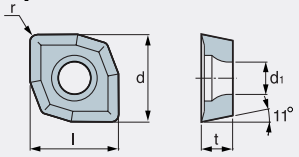
●: Stock Item ○: Under preparing for stock

NPET-DA

Geometry



Available Holder	Designation		ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)				
				MCM325	MCM335	MCM310K	MCM320K	PC3535	PC3545	PC9530	PC6510		CT10	CN20	CN30		H01	G10	ST30A	ST20	l	d	t	r	d_1
NPD	NPET	222408-DA															●				8.3	8.2	2.5	0.8	2.8
		252808-DA															●				9.3	9.2	3.3	0.8	3.4
		293208-DA															●				10.3	10.2	3.3	0.8	3.4
		334008-DA															●				13	12.9	3.97	0.8	4.0
		415008-DA															●				15.3	15.2	4.76	0.8	4.5
		516012-DA															●				18.3	18.2	5.18	1.2	5.5

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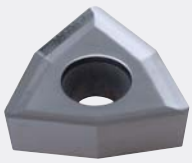
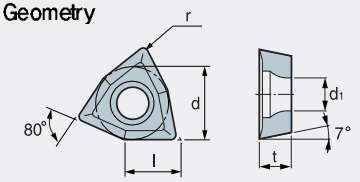
● : Stock Item ○ : Under preparing for stock

WCKT-DA



Geometry

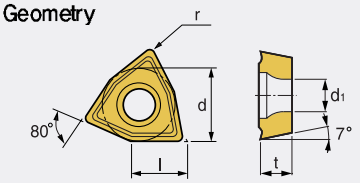


Available Holder	Designation		ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)				
				MCM325	MCM335	MCM310K	MCM320K	PC3535	PC3545	PC9530	PC6510		CT10	CN20	CN30		H01	G10	ST30A	ST20	l	d	t	r	d_1
JD	WCKT	030208-DA															○				3.8	5.56	2.38	0.8	2.8
		040208-DA															○				4.3	6.35	2.38	0.8	3.0
		050308-DA															○				5.4	7.94	3.18	0.8	3.4
		06T308-DA															○				6.5	9.525	3.97	0.8	4.0
		080408-DA															○				8.7	12.7	4.76	0.8	4.3

● : Stock Item ○ : Under preparing for stock

WCMT-C20

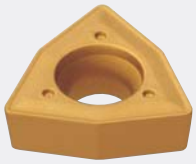
Geometry



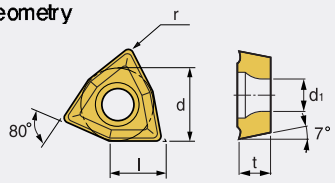
Available Holder	Designation		ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)				
				MCM325	NC3030	PC3530	MCM320K	PC3535	PC3545	PC9530	PC6510	NC3020	CT10	CN20	CN30		H01	G10	ST30A	ST20	l	d	t	r	d_1
JD	WCMT	030208-C20		●				○			○	○									3.8	5.56	2.38	0.8	2.8
		040208-C20		●	●			○			○	○									4.3	6.35	2.38	0.8	3.0
		050308-C20		●				○			○	○									5.4	7.94	3.18	0.8	3.4
		06T308-C20		●		●		○			○	●									6.5	9.525	3.97	0.8	4.0
		080408-C20		●		●		○			○	●									8.7	12.7	4.76	0.8	4.3
		080412-C20		●				○			○	●									8.7	12.7	4.76	1.2	4.3

● : Stock Item ○ : Under preparing for stock

WCMT-C21



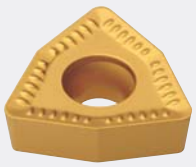
Geometry



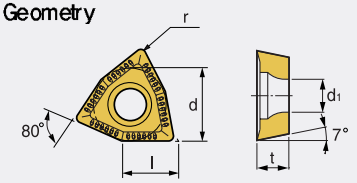
Available Holder	Designation	ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)				
			MCM325	MCM335	MCM310K	MCM320K	PC3535	PC3545	PC9530	PC6510	PC3530	CT10	CN20	CN30		H01	G10	ST30A	ST20	l	d	t	r	d_1
JD	WCMT 030204-C21	1.81.51	●				○			○	●									3.8	5.56	2.38	0.4	2.5
	040204-C21	21.51	●				○			○	●									4.3	6.35	2.38	0.4	2.8
	040208-C21	432	○				○			○	●									4.3	6.35	2.38	0.8	2.8
	080408-C21		●				○			○	●									8.7	12.7	4.76	0.8	4.3

● : Stock Item ○ : Under preparing for stock

WCMT-DS(P)



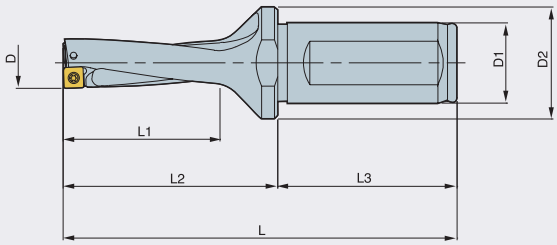
Geometry



Available Holder	Designation	ASA	Coated Carbide									Cermet				Uncoated Carbide				(mm)				
			MCM325	MCM335	MCM310K	MCM320K	PC3535	PC3545	PC9530	PC6510		CT10	CN20	CN30		H01	G10	ST30A	ST20	l	d	t	r	d_1
JD	WCMT 030204-DSP								○											3.8	5.56	2.38	0.4	2.5
	040204-DSP								○											4.3	6.35	2.38	0.4	2.8
	050308-DS								○											5.4	7.94	3.18	0.8	3.4
	06T308-DS								○											6.5	9.525	3.97	0.8	4.0
	080408-DS								○											8.7	12.7	4.76	0.8	4.3
	080412-DS								○											8.7	12.7	4.76	1.2	4.3

● : Stock Item ○ : Under preparing for stock

SPD



(mm)

Designation	Stock	Insert	D	D1	D2	L1	L2	L3	L	Parts	
										Screw	Wrench
SPD130-20-2	●	SPM(E)T050203-□□	13	20	24	26	43	50	93	FTNA0204	TW06P
SPD140-20-2	●	SPM(E)T050203-□□	14	20	24	28	46	50	96	FTNA0204	TW06P
SPD150-20-2	●	SPM(E)T050203-□□	15	20	24	30	49	50	99	FTNA0204	TW06P
SPD160-25-2	●	SPM(E)T060204-□□	16	25	34	32	51	56	107	FTKA02206S	TW07S
SPD170-25-2	●	SPM(E)T060204-□□	17	25	34	34	53	56	109	FTKA02206S	TW07S
SPD180-25-2	●	SPM(E)T060204-□□	18	25	34	36	56	56	112	FTKA02206S	TW07S
SPD190-25-2	●	SPM(E)T060204-□□	19	25	34	38	58	56	114	FTKA02206S	TW07S
SPD200-25-2	●	SPM(E)T070204-□□	20	25	34	40	62	56	118	FTKA02565	TW07S
SPD210-25-2	●	SPM(E)T070204-□□	21	25	34	42	64	56	120	FTKA02565	TW07S
SPD220-25-2	●	SPM(E)T070204-□□	22	25	34	44	66	56	122	FTKA02565	TW07S
SPD130-20-3	●	SPM(E)T050203-□□	13	20	24	39	56	50	106	FTNA0204	TW06P
SPD140-20-3	●	SPM(E)T050203-□□	14	20	24	42	60	50	110	FTNA0204	TW06P
SPD150-20-3	●	SPM(E)T050203-□□	15	20	24	45	64	50	114	FTNA0204	TW06P
SPD160-25-3	●	SPM(E)T060204-□□	16	25	34	48	67	56	123	FTKA02206S	TW07S
SPD170-25-3	●	SPM(E)T060204-□□	17	25	34	51	70	56	126	FTKA02206S	TW07S
SPD180-25-3	●	SPM(E)T060204-□□	18	25	34	54	74	56	130	FTKA02206S	TW07S
SPD190-25-3	●	SPM(E)T060204-□□	19	25	34	57	77	56	133	FTKA02206S	TW07S
SPD200-25-3	●	SPM(E)T070204-□□	20	25	34	60	82	56	138	FTKA02565	TW07S
SPD210-25-3	●	SPM(E)T070204-□□	21	25	34	63	85	56	141	FTKA02565	TW07S
SPD220-25-3	●	SPM(E)T070204-□□	22	25	34	66	88	56	144	FTKA02565	TW07S
SPD130-20-4	●	SPM(E)T050203-□□	13	20	24	52	69	50	119	FTNA0204	TW06P
SPD140-20-4	●	SPM(E)T050203-□□	14	20	24	56	74	50	124	FTNA0204	TW06P
SPD150-20-4	●	SPM(E)T050203-□□	15	20	24	60	79	50	129	FTNA0204	TW06P
SPD160-25-4	●	SPM(E)T060204-□□	16	25	34	64	83	56	139	FTKA02206S	TW07S
SPD170-25-4	●	SPM(E)T060204-□□	17	25	34	68	87	56	143	FTKA02206S	TW07S
SPD180-25-4	●	SPM(E)T060204-□□	18	25	34	72	92	56	148	FTKA02206S	TW07S
SPD190-25-4	●	SPM(E)T060204-□□	19	25	34	76	96	56	152	FTKA02206S	TW07S
SPD200-25-4	●	SPM(E)T070204-□□	20	25	34	80	102	56	158	FTKA02565	TW07S
SPD210-25-4	●	SPM(E)T070204-□□	21	25	34	84	106	56	162	FTKA02565	TW07S
SPD220-25-4	●	SPM(E)T070204-□□	22	25	34	88	110	56	166	FTKA02565	TW07S

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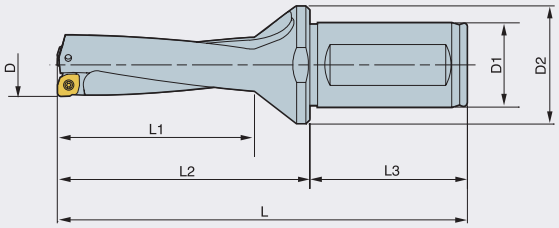
NPD



(mm)

Designation	Stock	Insert	D	D1	D2	L1	L2	L3	L	Parts	
										Screw	Wrench
NPD230-32-2	○	NPM(E)T222408-□□	23	32	44	46	70	60	130	FTKA02565	TW07S
NPD240-32-2	●	NPM(E)T222408-□□	24	32	44	48	72	60	132	FTKA02565	TW07S
NPD250-32-2	●	NPM(E)T252808-□□	25	32	44	50	75	60	135	FTKA0307	TW09S
NPD260-32-2	○	NPM(E)T252808-□□	26	32	44	52	77	60	137	FTKA0307	TW09S
NPD270-32-2	○	NPM(E)T252808-□□	27	32	44	54	80	60	140	FTKA0307	TW09S
NPD280-32-2	●	NPM(E)T252808-□□	28	32	44	56	83	60	143	FTKA0307	TW09S
NPD290-32-2	●	NPM(E)T293208-□□	29	32	44	58	85	60	145	FTKA0307	TW09S
NPD300-32-2	●	NPM(E)T293208-□□	30	32	44	60	89	60	149	FTKA0307	TW09S
NPD310-32-2	○	NPM(E)T293208-□□	31	32	44	62	91	60	151	FTKA0307	TW09S
NPD320-32-2	○	NPM(E)T293208-□□	32	32	44	64	93	60	153	FTKA0307	TW09S
NPD330-40-2	○	NPM(E)T334008-□□	33	40	48	66	98	70	168	FTKA03508	TW15S
NPD340-40-2	○	NPM(E)T334008-□□	34	40	48	68	100	70	170	FTKA03508	TW15S
NPD350-40-2	○	NPM(E)T334008-□□	35	40	48	70	102	70	172	FTKA03508	TW15S
NPD360-40-2	○	NPM(E)T334008-□□	36	40	48	72	105	70	175	FTKA03508	TW15S
NPD400-40-2	○	NPM(E)T334008-□□	40	40	48	80	115	70	185	FTKA03508	TW15S
NPD450-40-2	○	NPM(E)T415008-□□	45	40	58	90	129	70	199	FTKA0410	TW15S
NPD500-40-2	○	NPM(E)T415008-□□	50	40	58	100	142	70	212	FTKA0410	TW15S
NPD550-40-2	○	NPM(E)T516012-□□	55	40	68	110	156	70	226	FTNC04511	TW20S
NPD600-40-2	○	NPM(E)T516012-□□	60	40	68	120	172	70	242	FTNC04511	TW20S
NPD230-32-3	●	NPM(E)T222408-□□	23	32	44	69	93	60	153	FTKA02565	TW07S
NPD240-32-3	●	NPM(E)T222408-□□	24	32	44	72	96	60	156	FTKA02565	TW07S
NPD250-32-3	●	NPM(E)T252808-□□	25	32	44	75	100	60	160	FTKA0307	TW09S
NPD260-32-3	●	NPM(E)T252808-□□	26	32	44	78	103	60	163	FTKA0307	TW09S
NPD270-32-3	●	NPM(E)T252808-□□	27	32	44	81	107	60	167	FTKA0307	TW09S
NPD280-32-3	●	NPM(E)T252808-□□	28	32	44	84	111	60	171	FTKA0307	TW09S
NPD290-32-3	●	NPM(E)T293208-□□	29	32	44	87	114	60	174	FTKA0307	TW09S
NPD300-32-3	●	NPM(E)T293208-□□	30	32	44	90	119	60	179	FTKA0307	TW09S
NPD310-32-3	●	NPM(E)T293208-□□	31	32	44	93	122	60	182	FTKA0307	TW09S
NPD320-32-3	●	NPM(E)T293208-□□	32	32	44	96	125	60	185	FTKA0307	TW09S
NPD330-32-3	●	NPM(E)T334008-□□	33	32	48	99	131	60	201	FTKA03508	TW15S
NPD340-32-3	●	NPM(E)T334008-□□	34	32	48	102	134	60	204	FTKA03508	TW15S
NPD350-32-3	●	NPM(E)T334008-□□	35	32	48	105	137	60	207	FTKA03508	TW15S
NPD360-32-3	●	NPM(E)T334008-□□	36	32	48	108	141	60	211	FTKA03508	TW15S
NPD370-32-3	●	NPM(E)T334008-□□	37	32	48	111	144	60	214	FTKA03508	TW15S
NPD380-32-3	●	NPM(E)T334008-□□	38	32	48	114	148	60	218	FTKA03508	TW15S
NPD390-32-3	●	NPM(E)T334008-□□	39	32	48	117	151	60	221	FTKA03508	TW15S
NPD400-32-3	●	NPM(E)T334008-□□	40	32	48	120	155	60	225	FTKA03508	TW15S
NPD330-40-3	●	NPM(E)T334008-□□	33	40	48	99	131	70	201	FTKA03508	TW15S
NPD340-40-3	●	NPM(E)T334008-□□	34	40	48	102	134	70	204	FTKA03508	TW15S
NPD350-40-3	●	NPM(E)T334008-□□	35	40	48	105	137	70	207	FTKA03508	TW15S
NPD360-40-3	●	NPM(E)T334008-□□	36	40	48	108	141	70	211	FTKA03508	TW15S
NPD400-40-3	●	NPM(E)T334008-□□	40	40	48	120	155	70	225	FTKA03508	TW15S
NPD450-40-3	●	NPM(E)T415008-□□	45	40	58	135	174	70	244	FTKA0410	TW15S
NPD500-40-3	●	NPM(E)T415008-□□	50	40	58	150	192	70	262	FTKA0410	TW15S
NPD550-40-3	○	NPM(E)T516012-□□	55	40	68	165	211	70	281	FTNC04511	TW20S
NPD600-40-3	○	NPM(E)T516012-□□	60	40	68	180	232	70	302	FTNC04511	TW20S

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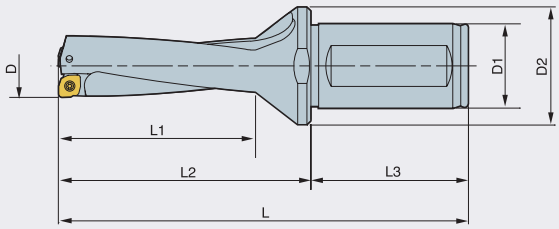
NPD



(mm)

Designation	Stock	Insert	D	D1	D2	L1	L2	L3	L	Parts	
										Screw	Wrench
NPD450-42-3	●	NPM(E)T415008-□□	45	42	58	135	174	70	244	FTKA0410	TW15S
NPD500-42-3	●	NPM(E)T415008-□□	50	42	58	150	192	70	262	FTKA0410	TW15S
NPD230-32-4	○	NPM(E)T222408-□□	23	32	44	92	116	60	176	FTKA02565	TW07S
NPD240-32-4	●	NPM(E)T222408-□□	24	32	44	96	120	60	180	FTKA02565	TW07S
NPD250-32-4	●	NPM(E)T252808-□□	25	32	44	100	125	60	185	FTKA0307	TW09S
NPD260-32-4	○	NPM(E)T252808-□□	26	32	44	104	129	60	189	FTKA0307	TW09S
NPD270-32-4	○	NPM(E)T252808-□□	27	32	44	108	134	60	194	FTKA0307	TW09S
NPD280-32-4	●	NPM(E)T252808-□□	28	32	44	112	139	60	199	FTKA0307	TW09S
NPD290-32-4	●	NPM(E)T293208-□□	29	32	44	116	143	60	203	FTKA0307	TW09S
NPD300-32-4	●	NPM(E)T293208-□□	30	32	44	120	149	60	209	FTKA0307	TW09S
NPD310-32-4	○	NPM(E)T293208-□□	31	32	44	124	153	60	213	FTKA0307	TW09S
NPD320-32-4	○	NPM(E)T293208-□□	32	32	44	128	157	60	217	FTKA0307	TW09S
NPD330-40-4	○	NPM(E)T334008-□□	33	40	48	132	164	70	234	FTKA03508	TW15S
NPD340-40-4	○	NPM(E)T334008-□□	34	40	48	136	168	70	238	FTKA03508	TW15S
NPD350-40-4	○	NPM(E)T334008-□□	35	40	48	140	172	70	242	FTKA03508	TW15S
NPD360-40-4	○	NPM(E)T334008-□□	36	40	48	144	177	70	247	FTKA03508	TW15S
NPD400-40-4	○	NPM(E)T334008-□□	40	40	48	160	195	70	265	FTKA03508	TW15S
NPD450-40-4	○	NPM(E)T415008-□□	45	40	58	180	219	70	289	FTKA0410	TW15S
NPD500-40-4	○	NPM(E)T415008-□□	50	40	58	200	242	70	312	FTKA0410	TW15S
NPD550-40-4	○	NPM(E)T516012-□□	55	40	68	220	266	70	336	FTNC04511	TW20S
NPD600-40-4	○	NPM(E)T516012-□□	60	40	68	240	292	70	362	FTNC04511	TW20S

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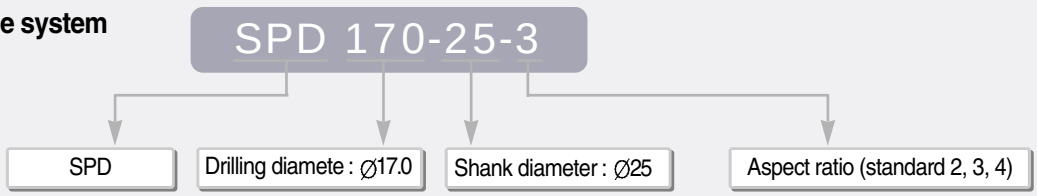
SPD / NPD Code system



∗Choose SPD for diameter 13mm~22mm, NPD for diameter 23mm~60mm. When choose proper drill, please takes into account not only drill diameter but also aspect ratio.

Machining power requirement for drilling

$$P = 425 \times Ks \times V \times f \times D / 10^{7} (KW)$$

- Ks(Kg/mm³) : Specific cutting resistance
- V(m/min) : Cutting speed • f(mm/rev) : Feed • D(mm) : Drilling diameter

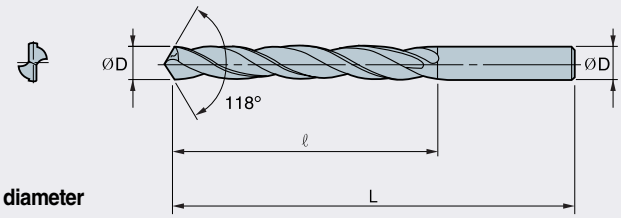
● Example

W.P = SCM440, Ks = 254, V = 100m/min, f = 0.1mm/rev, D = 20mm diameter

P(KW) = 425*254*100*0.1*20/10,000,000 = 2.159KW

SSD

Solid drill(Non-Coated)



Tolerance of drill diameter

1< ø D ≤6	-0.010 ~ -0.030
6< ø D ≤10	-0.015 ~ -0.040
10< øD ≤20	-0.020 ~ -0.050

Helix angle 30°

(mm)

Designation	Stock	øD	ℓ	L	Designation	Stock	øD	ℓ	L
SSD010	●	1.0	10	32	SSD055	●	5.5	38	65
SSD011	●	1.1	10	32	SSD056	●	5.6	40	75
SSD012	●	1.2	10	32	SSD057	●	5.7	40	75
SSD013	●	1.3	10	32	SSD058	●	5.8	40	75
SSD014	●	1.4	10	32	SSD059	●	5.9	40	75
SSD015	●	1.5	13	35	SSD060	●	6.0	40	75
SSD016	●	1.6	13	35	SSD061	●	6.1	40	75
SSD017	●	1.7	13	35	SSD062	●	6.2	40	75
SSD018	●	1.8	13	35	SSD063	●	6.3	40	75
SSD019	●	1.9	13	35	SSD064	●	6.4	40	75
SSD020	●	2.0	18	40	SSD065	●	6.5	40	75
SSD021	●	2.1	18	40	SSD066	●	6.6	46	80
SSD022	●	2.2	18	40	SSD067	●	6.7	46	80
SSD023	●	2.3	18	40	SSD068	●	6.8	46	80
SSD024	●	2.4	18	40	SSD069	●	6.9	46	80
SSD025	●	2.5	22	45	SSD070	●	7.0	46	80
SSD026	●	2.6	22	45	SSD071	●	7.1	46	80
SSD027	●	2.7	22	45	SSD072	●	7.2	46	80
SSD028	●	2.8	22	45	SSD073	●	7.3	46	80
SSD029	●	2.9	22	45	SSD074	●	7.4	46	80
SSD030	●	3.0	25	50	SSD075	●	7.5	46	80
SSD031	●	3.1	25	50	SSD076	●	7.6	46	80
SSD032	●	3.2	25	50	SSD077	●	7.7	46	80
SSD033	●	3.3	25	50	SSD078	●	7.8	46	80
SSD034	●	3.4	25	50	SSD079	●	7.9	46	80
SSD035	●	3.5	25	50	SSD080	●	8.0	50	85
SSD036	●	3.6	30	55	SSD081	●	8.1	50	85
SSD037	●	3.7	30	55	SSD082	●	8.2	50	85
SSD038	●	3.8	30	55	SSD083	●	8.3	50	85
SSD039	●	3.9	30	55	SSD084	●	8.4	50	85
SSD040	●	4.0	30	55	SSD085	●	8.5	50	85
SSD041	●	4.1	34	60	SSD086	●	8.6	50	95
SSD042	●	4.2	34	60	SSD087	●	8.7	50	95
SSD043	●	4.3	34	60	SSD088	●	8.8	50	95
SSD044	●	4.4	34	60	SSD089	●	8.9	50	95
SSD045	●	4.5	34	60	SSD090	●	9.0	50	95
SSD046	●	4.6	38	65	SSD095	●	9.5	50	95
SSD047	●	4.7	38	65	SSD100	●	10.0	50	100
SSD048	●	4.8	38	65	SSD105	●	10.5	60	120
SSD049	●	4.9	38	65	SSD110	●	11.0	60	120
SSD050	●	5.0	38	65	SSD115	●	11.5	65	125
SSD051	●	5.1	38	65	SSD120	●	12.0	65	125
SSD052	●	5.2	38	65	SSD125	●	12.5	65	125
SSD053	●	5.3	38	65	SSD130	●	13.0	65	125
SSD054	●	5.4	38	65	SSD150		15.0	70	130

∗ How to name for order made item : SSD◎◎◎ ∗ Cutting edge length ∗Total length L

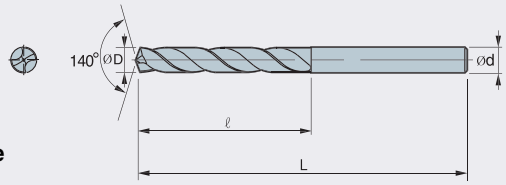
Ex.1) Drill , Cutting edge diameter 8.2, Cutting edge length 60, Total length 900 ➡SSD082 ∗ 60 ∗ 90L

Ex.2) Drill , Cutting edge diameter 8.2, Standard type : 8.2 ➡ SSD082

●: Stock Item ○: Under preparing for stock
Available from diameter 0.6mm (SSD006)

MSD

Mach Solid Drill for Steel Drilling



- New TiAlN coated drill
- 2 flute, helix angle 30 degree
- Without coolant hole type
- Tolerance of drill diameter (h7)
- Tolerance of drill shank (h6)

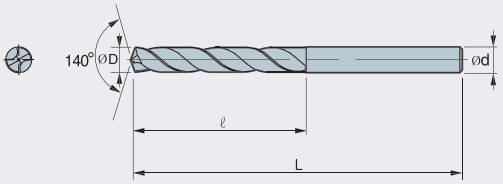
(mm)

Designation	øD	ød	3P			5P			7P		
			Stock	ℓ	L	Stock	ℓ	L	Stock	ℓ	L
MSD025-□P	2.5	3.0	○	20	65		25	70		30	75
MSD026-□P	2.6	3.0		20	65		25	70		30	75
MSD027-□P	2.7	3.0		20	65		25	70		30	75
MSD028-□P	2.8	3.0		20	65		25	70		30	75
MSD029-□P	2.9	3.0	○	20	65		25	70		30	75
MSD030-□P	3.0	3.0	○	20	65		25	70		30	75
MSD031-□P	3.1	4.0		25	71		34	80		40	86
MSD032-□P	3.2	4.0		25	71		34	80		40	86
MSD033-□P	3.3	4.0	○	25	71		34	80		40	86
MSD034-□P	3.4	4.0		25	71		34	80		40	86
MSD035-□P	3.5	4.0	○	25	71		34	80		40	86
MSD036-□P	3.6	4.0		25	71		34	80		40	86
MSD037-□P	3.7	4.0		25	71		34	80		40	86
MSD038-□P	3.8	4.0	○	25	71		34	80		40	86
MSD039-□P	3.9	4.0		25	71		34	80		40	86
MSD040-□P	4.0	4.0	○	25	71		34	80		40	86
MSD041-□P	4.1	5.0		30	77		43	90		50	97
MSD042-□P	4.2	5.0	○	30	77		43	90		50	97
MSD043-□P	4.3	5.0		30	77		43	90		50	97
MSD044-□P	4.4	5.0		30	77		43	90		50	97
MSD045-□P	4.5	5.0	○	30	77		43	90		50	97
MSD046-□P	4.6	5.0		30	77		43	90		50	97
MSD047-□P	4.7	5.0		30	77		43	90		50	97
MSD048-□P	4.8	5.0		30	77		43	90		50	97
MSD049-□P	4.9	5.0		30	77		43	90		50	97
MSD050-□P	5.0	5.0	○	30	77		43	90		50	97
MSD051-□P	5.1	6.0		35	81		48	96		60	108
MSD052-□P	5.2	6.0		35	81		48	96		60	108
MSD053-□P	5.3	6.0		35	81		48	96		60	108
MSD054-□P	5.4	6.0		35	81		48	96		60	108
MSD055-□P	5.5	6.0	○	35	81		48	96		60	108
MSD056-□P	5.6	6.0		35	81		48	96		60	108
MSD057-□P	5.7	6.0		35	81		48	96		60	108
MSD058-□P	5.8	6.0		35	81		48	96		60	108
MSD059-□P	5.9	6.0		35	81		48	96		60	108
MSD060-□P	6.0	6.0	○	35	81		48	96		60	108
MSD061-□P	6.1	7.0		40	84		56	105		70	120
MSD062-□P	6.2	7.0		40	84		56	105		70	120
MSD063-□P	6.3	7.0		40	84		56	105		70	120
MSD064-□P	6.4	7.0		40	84		56	105		70	120
MSD065-□P	6.5	7.0	●	40	84		56	105		70	120
MSD066-□P	6.6	7.0		40	84		56	105		70	120
MSD067-□P	6.7	7.0		40	84		56	105		70	120
MSD068-□P	6.8	7.0	●	40	84		56	105		70	120
MSD069-□P	6.9	7.0		40	84		56	105		70	120
MSD070-□P	7.0	7.0	●	40	84		56	105		70	120
MSD071-□P	7.1	8.0		45	90		60	110		80	130

● : Stock Item ○ : Under preparing for stock

MSD

Mach Solid Drill for Steel Drilling



- New TiAlN coated drill
- 2 flute, helix angle 30 degree
- Without coolant hole type
- Tolerance of drill diameter (h7)
- Tolerance of drill shank (h6)

(mm)

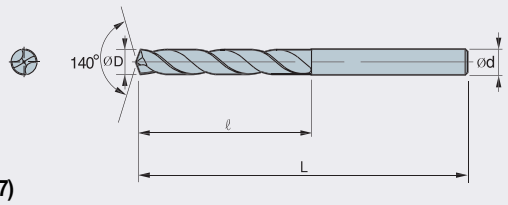
Designation	ØD	Ød	3P			5P			7P		
			Stock	ℓ	L	Stock	ℓ	L	Stock	ℓ	L
MSD072-□P	7.2	8.0		45	90		60	110		80	130
MSD073-□P	7.3	8.0		45	90		60	110		80	130
MSD074-□P	7.4	8.0		45	90		60	110		80	130
MSD075-□P	7.5	8.0	●	45	90		60	110		80	130
MSD076-□P	7.6	8.0		45	90		60	110		80	130
MSD077-□P	7.7	8.0		45	90		60	110		80	130
MSD078-□P	7.8	8.0	●	45	90		60	110		80	130
MSD079-□P	7.9	8.0		45	90		60	110		80	130
MSD080-□P	8.0	8.0	●	45	90		60	110		80	130
MSD081-□P	8.1	9.0		48	97		72	125		90	143
MSD082-□P	8.2	9.0		48	97		72	125		90	143
MSD083-□P	8.3	9.0		48	97		72	125		90	143
MSD084-□P	8.4	9.0		48	97		72	125		90	143
MSD085-□P	8.5	9.0	●	48	97		72	125		90	143
MSD086-□P	8.6	9.0		48	97		72	125		90	143
MSD087-□P	8.7	9.0	●	48	97		72	125		90	143
MSD088-□P	8.8	9.0		48	97		72	125		90	143
MSD089-□P	8.9	9.0		48	97		72	125		90	143
MSD090-□P	9.0	9.0	●	48	97		72	125		90	143
MSD091-□P	9.1	10.0		52	106		75	129		95	150
MSD092-□P	9.2	10.0		52	106		75	129		95	150
MSD093-□P	9.3	10.0		52	106		75	129		95	150
MSD094-□P	9.4	10.0		52	106		75	129		95	150
MSD095-□P	9.5	10.0	●	52	106		75	129		95	150
MSD096-□P	9.6	10.0		52	106		75	129		95	150
MSD097-□P	9.7	10.0		52	106		75	129		95	150
MSD098-□P	9.8	10.0		52	106		75	129		95	150
MSD099-□P	9.9	10.0		52	106		75	129		95	150
MSD100-□P	10.0	10.0	●	52	106		75	129		95	150
MSD101-□P	10.1	12.0		56	111		83	140		105	160
MSD102-□P	10.2	12.0		56	111		83	140		105	160
MSD103-□P	10.3	12.0	●	56	111		83	140		105	160
MSD104-□P	10.4	12.0		56	111		83	140		105	160
MSD105-□P	10.5	12.0	●	56	111		83	140		105	160
MSD106-□P	10.6	12.0		56	111		83	140		105	160
MSD107-□P	10.7	12.0		56	111		83	140		105	160
MSD108-□P	10.8	12.0		56	111		83	140		105	160
MSD109-□P	10.9	12.0		56	111		83	140		105	160
MSD110-□P	11.0	12.0	●	56	111		83	140		105	160
MSD111-□P	11.1	13.0		60	118		90	148		114	172
MSD112-□P	11.2	13.0		60	118		90	148		114	172
MSD113-□P	11.3	13.0		60	118		90	148		114	172
MSD114-□P	11.4	13.0		60	118		90	148		114	172
MSD115-□P	11.5	13.0	●	60	118		90	148		114	172
MSD116-□P	11.6	13.0		60	118		90	148		114	172
MSD117-□P	11.7	13.0		60	118		90	148		114	172
MSD118-□P	11.8	13.0		60	118		90	148		114	172

● : Stock Item ○ : Under preparing for stock

MSD

Mach Solid Drill for Steel Drilling

- New TiAlN coated drill
- 2 flute, helix angle 30 degree
- Without coolant hole type
- Tolerance of drill diameter (h7)
- Tolerance of drill shank (h6)



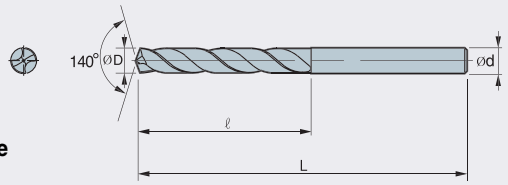
(mm)

Designation	øD	ød	3P			5P			7P		
			Stock	ℓ	L	Stock	ℓ	L	Stock	ℓ	L
MSD119-□P	11.9	12.0		60	118		90	148		114	172
MSD120-□P	12.0	12.0	●	60	118		90	148		114	172
MSD121-□P	12.1	13.0		65	125		98	158		124	184
MSD122-□P	12.2	13.0		65	125		98	158		124	184
MSD123-□P	12.3	13.0		65	125		98	158		124	184
MSD124-□P	12.4	13.0		65	125		98	158		124	184
MSD125-□P	12.5	13.0	●	65	125		98	158		124	184
MSD126-□P	12.6	13.0		65	125		98	158		124	184
MSD127-□P	12.7	13.0		65	125		98	158		124	184
MSD128-□P	12.8	13.0		65	125		98	158		124	184
MSD129-□P	12.9	13.0		65	125		98	158		124	184
MSD130-□P	13.0	13.0	○	65	125		98	158		124	184
MSD131-□P	13.1	14.0		70	132		105	167		133	195
MSD132-□P	13.2	14.0		70	132		105	167		133	195
MSD133-□P	13.3	14.0		70	132		105	167		133	195
MSD134-□P	13.4	14.0		70	132		105	167		133	195
MSD135-□P	13.5	14.0		70	132		105	167		133	195
MSD136-□P	13.6	14.0		70	132		105	167		133	195
MSD137-□P	13.7	14.0		70	132		105	167		133	195
MSD138-□P	13.8	14.0		70	132		105	167		133	195
MSD139-□P	13.9	14.0		70	132		105	167		133	195
MSD140-□P	14.0	14.0	○	70	132		105	167		133	195
MSD141-□P	14.1	15.0		75	139		108	172		138	202
MSD142-□P	14.2	15.0		75	139		108	172		138	202
MSD143-□P	14.3	15.0		75	139		108	172		138	202
MSD144-□P	14.4	15.0		75	139		108	172		138	202
MSD145-□P	14.5	15.0		75	139		108	172		138	202
MSD146-□P	14.6	15.0		75	139		108	172		138	202
MSD147-□P	14.7	15.0		75	139		108	172		138	202
MSD148-□P	14.8	15.0		75	139		108	172		138	202
MSD149-□P	14.9	15.0		75	139		108	172		138	202
MSD150-□P	15.0	15.0	○	75	139		108	172		138	202
MSD151-□P	15.1	16.0		80	146		112	178		144	210
MSD152-□P	15.2	16.0		80	146		112	178		144	210
MSD153-□P	15.3	16.0		80	146		112	178		144	210
MSD154-□P	15.4	16.0		80	146		112	178		144	210
MSD155-□P	15.5	16.0		80	146		112	178		144	210
MSD156-□P	15.6	16.0		80	146		112	178		144	210
MSD157-□P	15.7	16.0		80	146		112	178		144	210
MSD158-□P	15.8	16.0		80	146		112	178		144	210
MSD159-□P	15.9	16.0		80	146		112	178		144	210
MSD160-□P	16.0	16.0	○	80	146		112	178		144	210
MSD161-□P	16.1	17.0		85	151		120	186		153	220
MSD162-□P	16.2	17.0		85	151		120	186		153	220
MSD163-□P	16.3	17.0		85	151		120	186		153	220
MSD164-□P	16.4	17.0		85	151		120	186		153	220
MSD165-□P	16.5	17.0		85	151		120	186		153	220

● : Stock Item ○ : Under preparing for stock

MSD

Mach Solid Drill for Steel Drilling



- New TiAlN coated drill
- 2 flute, helix angle 30 degree
- Without coolant hole type
- Tolerance of drill diameter (h7)
- Tolerance of drill shank (h6)

(mm)

Designation	ØD	Ød	3P			5P			7P		
			Stock	ℓ	L	Stock	ℓ	L	Stock	ℓ	L
MSD166-□P	16.6	17.0		85	151		120	186		153	220
MSD167-□P	16.7	17.0		85	151		120	186		153	220
MSD168-□P	16.8	17.0		85	151		120	186		153	220
MSD169-□P	16.9	17.0		85	151		120	186		153	220
MSD170-□P	17.0	17.0	○	85	151		120	186		153	220
MSD171-□P	17.1	18.0		85	153		120	188		162	230
MSD172-□P	17.2	18.0		85	153		120	188		162	230
MSD173-□P	17.3	18.0		85	153		120	188		162	230
MSD174-□P	17.4	18.0		85	153		120	188		162	230
MSD175-□P	17.5	18.0		85	153		120	188		162	230
MSD176-□P	17.6	18.0		85	153		120	188		162	230
MSD177-□P	17.7	18.0		85	153		120	188		162	230
MSD178-□P	17.8	18.0		85	153		120	188		162	230
MSD179-□P	17.9	18.0		85	153		120	188		162	230
MSD180-□P	18.0	18.0	○	85	153		120	188		162	230
MSD181-□P	18.1	19.0		88	157		124	193		171	240
MSD182-□P	18.2	19.0		88	157		124	193		171	240
MSD183-□P	18.3	19.0		88	157		124	193		171	240
MSD184-□P	18.4	19.0		88	157		124	193		171	240
MSD185-□P	18.5	19.0		88	157		124	193		171	240
MSD186-□P	18.6	19.0		88	157		124	193		171	240
MSD187-□P	18.7	19.0		88	157		124	193		171	240
MSD188-□P	18.8	19.0		88	157		124	193		171	240
MSD189-□P	18.9	19.0		88	157		124	193		171	240
MSD190-□P	19.0	19.0	○	88	157		124	193		171	240
MSD191-□P	19.1	20.0		90	160		130	200		180	250
MSD192-□P	19.2	20.0		90	160		130	200		180	250
MSD193-□P	19.3	20.0		90	160		130	200		180	250
MSD194-□P	19.4	20.0		90	160		130	200		180	250
MSD195-□P	19.5	20.0		90	160		130	200		180	250
MSD196-□P	19.6	20.0		90	160		130	200		180	250
MSD197-□P	19.7	20.0		90	160		130	200		180	250
MSD198-□P	19.8	20.0		90	160		130	200		180	250
MSD199-□P	19.9	20.0		90	160		130	200		180	250
MSD200-□P	20.0	20.0	○	90	160		130	200		180	250

● : Stock Item ○ : Under preparing for stock

∗ How to name for order made item : MSD○○○ × Cutting edge length × Total length L

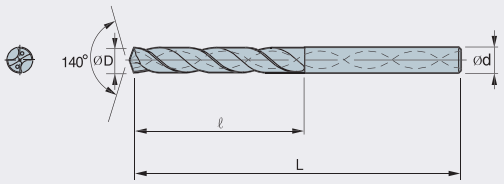
Ex.1) Cutting edge diameter 6.3, Cutting edge length 45, Total length 80 ➡ MSD063 × 45 × 80L

Ex.2) Cutting edge diameter 6.34, Cutting edge length 45, Total length 80 ➡ MSD0634 × 45 × 80L

MSDH

Mach Solid Drill with Oil Hole

- New TiAlN coated drill
- 2 flute, helix angle 30 degree
- With coolant hole type
- Tolerance of drill diameter (h7)
- Tolerance of drill shank (h6)



(mm)

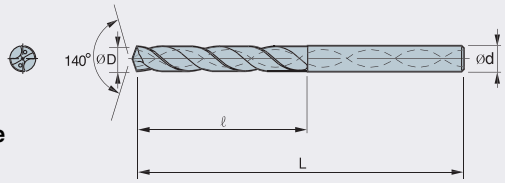
Designation	øD	ød	3P			5P			7P		
			Stock	ℓ	L	Stock	ℓ	L	Stock	ℓ	L
MSDH025-□P	2.5	3.0		20	65		25	70		30	75
MSDH026-□P	2.6	3.0		20	65		25	70		30	75
MSDH027-□P	2.7	3.0		20	65		25	70		30	75
MSDH028-□P	2.8	3.0		20	65		25	70		30	75
MSDH029-□P	2.9	3.0		20	65		25	70		30	75
MSDH030-□P	3.0	3.0		20	65		25	70		30	75
MSDH031-□P	3.1	4.0		25	71		34	80		40	86
MSDH032-□P	3.2	4.0		25	71		34	80		40	86
MSDH033-□P	3.3	4.0		25	71		34	80		40	86
MSDH034-□P	3.4	4.0		25	71		34	80		40	86
MSDH035-□P	3.5	4.0		25	71		34	80		40	86
MSDH036-□P	3.6	4.0		25	71		34	80		40	86
MSDH037-□P	3.7	4.0		25	71		34	80		40	86
MSDH038-□P	3.8	4.0		25	71		34	80		40	86
MSDH039-□P	3.9	4.0		25	71		34	80		40	86
MSDH040-□P	4.0	4.0		25	71		34	80		40	86
MSDH041-□P	4.1	5.0		30	77		43	90		50	97
MSDH042-□P	4.2	5.0		30	77		43	90		50	97
MSDH043-□P	4.3	5.0		30	77		43	90		50	97
MSDH044-□P	4.4	5.0		30	77		43	90		50	97
MSDH045-□P	4.5	5.0		30	77		43	90		50	97
MSDH046-□P	4.6	5.0		30	77		43	90		50	97
MSDH047-□P	4.7	5.0		30	77		43	90		50	97
MSDH048-□P	4.8	5.0		30	77		43	90		50	97
MSDH049-□P	4.9	5.0		30	77		43	90		50	97
MSDH050-□P	5.0	5.0		30	77	○	43	90		50	97
MSDH051-□P	5.1	6.0		35	81		48	96		60	108
MSDH052-□P	5.2	6.0		35	81		48	96		60	108
MSDH053-□P	5.3	6.0		35	81		48	96		60	108
MSDH054-□P	5.4	6.0		35	81		48	96		60	108
MSDH055-□P	5.5	6.0		35	81	○	48	96		60	108
MSDH056-□P	5.6	6.0		35	81		48	96		60	108
MSDH057-□P	5.7	6.0		35	81		48	96		60	108
MSDH058-□P	5.8	6.0		35	81		48	96		60	108
MSDH059-□P	5.9	6.0		35	81		48	96		60	108
MSDH060-□P	6.0	6.0		35	81	○	48	96		60	108
MSDH061-□P	6.1	7.0		40	84		56	105		70	120
MSDH062-□P	6.2	7.0		40	84		56	105		70	120
MSDH063-□P	6.3	7.0		40	84		56	105		70	120
MSDH064-□P	6.4	7.0		40	84		56	105		70	120
MSDH065-□P	6.5	7.0		40	84	●	56	105		70	120
MSDH066-□P	6.6	7.0		40	84		56	105		70	120
MSDH067-□P	6.7	7.0		40	84		56	105		70	120
MSDH068-□P	6.8	7.0		40	84		56	105		70	120
MSDH069-□P	6.9	7.0		40	84		56	105		70	120
MSDH070-□P	7.0	7.0		40	84	●	56	105		70	120
MSDH071-□P	7.1	8.0		45	90		60	105		80	120

● : Stock Item ○ : Under preparing for stock

MSDH

Mach Solid Drill with Oil Hole

- New TiAlN coated drill
- 2 flute, helix angle 30 degree
- With coolant hole type
- Tolerance of drill diameter (h7)
- Tolerance of drill shank (h6)



(mm)

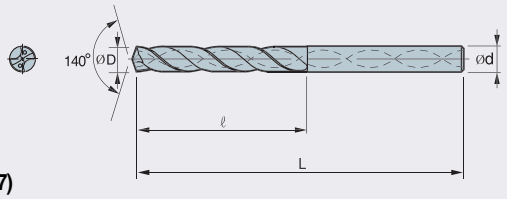
Designation	ØD	Ød	3P			5P			7P		
			Stock	ℓ	L	Stock	ℓ	L	Stock	ℓ	L
MSDH072-□P	7.2	8.0		45	90		60	110		80	130
MSDH073-□P	7.3	8.0		45	90		60	110		80	130
MSDH074-□P	7.4	8.0		45	90		60	110		80	130
MSDH075-□P	7.5	8.0		45	90	●	60	110		80	130
MSDH076-□P	7.6	8.0		45	90		60	110		80	130
MSDH077-□P	7.7	8.0		45	90		60	110		80	130
MSDH078-□P	7.8	8.0		45	90		60	110		80	130
MSDH079-□P	7.9	8.0		45	90		60	110		80	130
MSDH080-□P	8.0	8.0		45	90	●	60	110		80	130
MSDH081-□P	8.1	9.0		48	97		72	125		90	143
MSDH082-□P	8.2	9.0		48	97		72	125		90	143
MSDH083-□P	8.3	9.0		48	97		72	125		90	143
MSDH084-□P	8.4	9.0		48	97		72	125		90	143
MSDH085-□P	8.5	9.0		48	97	●	72	125		90	143
MSDH086-□P	8.6	9.0		48	97		72	125		90	143
MSDH087-□P	8.7	9.0		48	97		72	125		90	143
MSDH088-□P	8.8	9.0		48	97		72	125		90	143
MSDH089-□P	8.9	9.0		48	97		72	125		90	143
MSDH090-□P	9.0	9.0		48	97	●	72	125		90	143
MSDH091-□P	9.1	10.0		52	106		75	129		95	150
MSDH092-□P	9.2	10.0		52	106		75	129		95	150
MSDH093-□P	9.3	10.0		52	106		75	129		95	150
MSDH094-□P	9.4	10.0		52	106		75	129		95	150
MSDH095-□P	9.5	10.0		52	106	○	75	129		95	150
MSDH096-□P	9.6	10.0		52	106		75	129		95	150
MSDH097-□P	9.7	10.0		52	106		75	129		95	150
MSDH098-□P	9.8	10.0		52	106		75	129		95	150
MSDH099-□P	9.9	10.0		52	106		75	129		95	150
MSDH100-□P	10.0	10.0		52	106	○	75	129		95	150
MSDH101-□P	10.1	11.0		56	111		83	140		105	160
MSDH102-□P	10.2	11.0		56	111		83	140		105	160
MSDH103-□P	10.3	11.0		56	111		83	140		105	160
MSDH104-□P	10.4	11.0		56	111		83	140		105	160
MSDH105-□P	10.5	11.0		56	111	○	83	140		105	160
MSDH106-□P	10.6	11.0		56	111		83	140		105	160
MSDH107-□P	10.7	11.0		56	111		83	140		105	160
MSDH108-□P	10.8	11.0		56	111		83	140		105	160
MSDH109-□P	10.9	11.0		56	111		83	140		105	160
MSDH110-□P	11.0	11.0		56	111	○	83	140		105	160
MSDH111-□P	11.1	12.0		60	118		90	148		114	172
MSDH112-□P	11.2	12.0		60	118		90	148		114	172
MSDH113-□P	11.3	12.0		60	118		90	148		114	172
MSDH114-□P	11.4	12.0		60	118		90	148		114	172
MSDH115-□P	11.5	12.0		60	118	○	90	148		114	172
MSDH116-□P	11.6	12.0		60	118		90	148		114	172
MSDH117-□P	11.7	12.0		60	118		90	148		114	172
MSDH118-□P	11.8	12.0		60	118		90	148		114	172

● : Stock Item ○ : Under preparing for stock

MSDH

Mach Solid Drill with Oil Hole

- New TiAlN coated drill
- 2 flute, helix angle 30 degree
- With coolant hole type
- Tolerance of drill diameter (h7)
- Tolerance of drill shank (h6)



(mm)

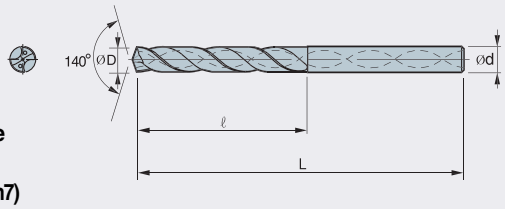
Designation	øD	ød	3P			5P			7P		
			Stock	ℓ	L	Stock	ℓ	L	Stock	ℓ	L
MSDH119-□P	11.9	12.0		60	118		90	148		114	172
MSDH120-□P	12.0	12.0		60	118	○	90	148		114	172
MSDH121-□P	12.1	13.0		65	125		98	158		124	184
MSDH122-□P	12.2	13.0		65	125		98	158		124	184
MSDH123-□P	12.3	13.0		65	125		98	158		124	184
MSDH124-□P	12.4	13.0		65	125		98	158		124	184
MSDH125-□P	12.5	13.0		65	125		98	158		124	184
MSDH126-□P	12.6	13.0		65	125		98	158		124	184
MSDH127-□P	12.7	13.0		65	125		98	158		124	184
MSDH128-□P	12.8	13.0		65	125		98	158		124	184
MSDH129-□P	12.9	13.0		65	125		98	158		124	184
MSDH130-□P	13.0	13.0		65	125	○	98	158		124	184
MSDH131-□P	13.1	14.0		70	132		105	167		133	195
MSDH132-□P	13.2	14.0		70	132		105	167		133	195
MSDH133-□P	13.3	14.0		70	132		105	167		133	195
MSDH134-□P	13.4	14.0		70	132		105	167		133	195
MSDH135-□P	13.5	14.0		70	132		105	167		133	195
MSDH136-□P	13.6	14.0		70	132		105	167		133	195
MSDH137-□P	13.7	14.0		70	132		105	167		133	195
MSDH138-□P	13.8	14.0		70	132		105	167		133	195
MSDH139-□P	13.9	14.0		70	132		105	167		133	195
MSDH140-□P	14.0	14.0		70	132	○	105	167		133	195
MSDH141-□P	14.1	15.0		75	139		108	172		138	202
MSDH142-□P	14.2	15.0		75	139		108	172		138	202
MSDH143-□P	14.3	15.0		75	139		108	172		138	202
MSDH144-□P	14.4	15.0		75	139		108	172		138	202
MSDH145-□P	14.5	15.0		75	139		108	172		138	202
MSDH146-□P	14.6	15.0		75	139		108	172		138	202
MSDH147-□P	14.7	15.0		75	139		108	172		138	202
MSDH148-□P	14.8	15.0		75	139		108	172		138	202
MSDH149-□P	14.9	15.0		75	139		108	172		138	202
MSDH150-□P	15.0	15.0		75	139	○	108	172		138	202
MSDH151-□P	15.1	16.0		80	146		112	178		144	210
MSDH152-□P	15.2	16.0		80	146		112	178		144	210
MSDH153-□P	15.3	16.0		80	146		112	178		144	210
MSDH154-□P	15.4	16.0		80	146		112	178		144	210
MSDH155-□P	15.5	16.0		80	146		112	178		144	210
MSDH156-□P	15.6	16.0		80	146		112	178		144	210
MSDH157-□P	15.7	16.0		80	146		112	178		144	210
MSDH158-□P	15.8	16.0		80	146		112	178		144	210
MSDH159-□P	15.9	16.0		80	146		112	178		144	210
MSDH160-□P	16.0	16.0		80	146	○	112	178		144	210
MSDH161-□P	16.1	17.0		85	151		120	186		153	220
MSDH162-□P	16.2	17.0		85	151		120	186		153	220
MSDH163-□P	16.3	17.0		85	151		120	186		153	220
MSDH164-□P	16.4	17.0		85	151		120	186		153	220
MSDH165-□P	16.5	17.0		85	151		120	186		153	220

● : Stock Item ○ : Under preparing for stock

MSDH

Mach Solid Drill with Oil Hole

- New TiAlN coated drill
- 2 flute, helix angle 30 degree
- With coolant hole type
- Tolerance of drill diameter (h7)
- Tolerance of drill shank (h6)



(mm)

Designation	ØD	Ød	3P			5P			7P		
			Stock	ℓ	L	Stock	ℓ	L	Stock	ℓ	L
MSDH166-□P	16.6	17.0		85	151		120	186		153	220
MSDH167-□P	16.7	17.0		85	151		120	186		153	220
MSDH168-□P	16.8	17.0		85	151		120	186		153	220
MSDH169-□P	16.9	17.0		85	151		120	186		153	220
MSDH170-□P	17.0	17.0		85	151	○	120	186		153	220
MSDH171-□P	17.1	18.0		85	153		120	188		162	230
MSDH172-□P	17.2	18.0		85	153		120	188		162	230
MSDH173-□P	17.3	18.0		85	153		120	188		162	230
MSDH174-□P	17.4	18.0		85	153		120	188		162	230
MSDH175-□P	17.5	18.0		85	153		120	188		162	230
MSDH176-□P	17.6	18.0		85	153		120	188		162	230
MSDH177-□P	17.7	18.0		85	153		120	188		162	230
MSDH178-□P	17.8	18.0		85	153		120	188		162	230
MSDH179-□P	17.9	18.0		85	153		120	188		162	230
MSDH180-□P	18.0	18.0		85	153	○	120	188		162	230
MSDH181-□P	18.1	19.0		88	157		124	193		171	240
MSDH182-□P	18.2	19.0		88	157		124	193		171	240
MSDH183-□P	18.3	19.0		88	157		124	193		171	240
MSDH184-□P	18.4	19.0		88	157		124	193		171	240
MSDH185-□P	18.5	19.0		88	157		124	193		171	240
MSDH186-□P	18.6	19.0		88	157		124	193		171	240
MSDH187-□P	18.7	19.0		88	157		124	193		171	240
MSDH188-□P	18.8	19.0		88	157		124	193		171	240
MSDH189-□P	18.9	19.0		88	157		124	193		171	240
MSDH190-□P	19.0	19.0		88	157	○	124	193		171	240
MSDH191-□P	19.1	20.0		90	160		130	200		180	250
MSDH192-□P	19.2	20.0		90	160		130	200		180	250
MSDH193-□P	19.3	20.0		90	160		130	200		180	250
MSDH194-□P	19.4	20.0		90	160		130	200		180	250
MSDH195-□P	19.5	20.0		90	160		130	200		180	250
MSDH196-□P	19.6	20.0		90	160		130	200		180	250
MSDH197-□P	19.7	20.0		90	160		130	200		180	250
MSDH198-□P	19.8	20.0		90	160		130	200		180	250
MSDH199-□P	19.9	20.0		90	160		130	200		180	250
MSDH200-□P	20.0	20.0		90	160	○	130	200		180	250

∗ How to name for order made item : MSDH○○○×Cutting edge length ×Total length L

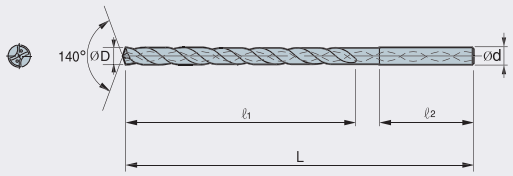
Ex.1) Cutting edge diameter 6.3, Cutting edge length 45, Total length 800 ➡ MSDH063 x 45 x 80L

Ex.2) Cutting edge diameter 6.34, Cutting edge length 45, Total length 80 ➡ MSDH0634 x 45 x 80L

●: Stock Item ○: Under preparing for stock

MLD

Mach Long Drill with oil hole for deep hole machine



Tolerance of drill diameter

Every size Drill diameter h7
Shank diameter h6

(mm)

Designation	øD	ød	20(L / øD=20)			25(L / øD=25)		
			Stock	ℓ_1	L	Stock	ℓ_1	L
MLD0300-□A	3.0	3.0	○	60	110	○	75	120
MLD0400-□A	4.0	4.0	○	80	130	○	100	150
MLD0500-□A	5.0	5.0	○	100	150	○	125	175
MLD0600-□A	6.0	6.0	○	120	170	○	150	200
MLD0700-□A	7.0	7.0	○	140	190	○	175	225
MLD0800-□A	8.0	8.0	○	160	210	○	200	250
MLD0900-□A	9.0	9.0	○	230	230	○	225	275
MLD1000-□A	10.0	10.0	○	250	250	○	250	300

∗ How to name for order made item: MLD○○○○-Aspect ratio

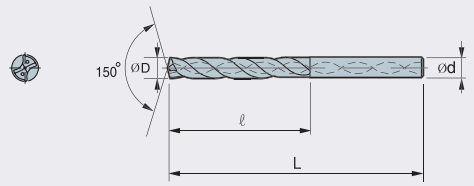
Ex.1) Cutting edge diameter 5.3, Cutting edge length 120, Total length 180 ➡ MLD0530-22A

∗ Last alphabet character is for detail information as per customers.

● : Stock Item ○ : Under preparing for stock

MLDP

Pilot Drill with oil hole for MLD



Tolerance of drill diameter

Every size Drill diameter x6
Shank diameter h6

※ Refer to page 455 for tolerance of shank

(mm)

Designation	øD	ød	5(L / øD=5)			7(L / øD=7)		
			Stock	ℓ	L	Stock	ℓ	L
MLDP0300-□	3.0	3.0	○	25	70	○	30	75
MLDP0400-□	4.0	4.0	○	34	80	○	40	86
MLDP0500-□	5.0	5.0	○	43	90	○	50	97
MLDP0600-□	6.0	6.0	○	48	96	○	60	108
MLDP0700-□	7.0	7.0	○	56	105	○	70	120
MLDP0800-□	8.0	8.0	○	60	110	○	80	130
MLDP0900-□	9.0	9.0	○	72	125	○	90	143
MLDP1000-□	10.0	10.0	○	75	129	○	95	150

∗ How to name for order made item : MLDP○○○○× ℓ -L× ødS

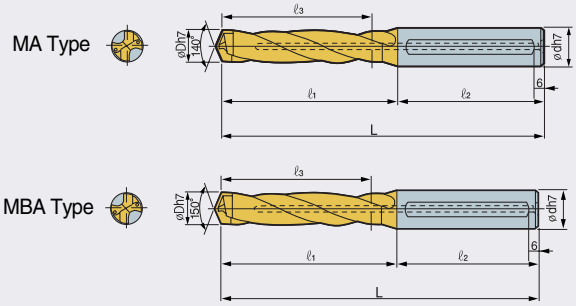
Ex.1) Pilot drill to make pre-hole for long drill ø5.8, Cutting edge length 50, Total length 100, Shank diameter 6 ➡ MLDP0580×50-100×6S

∗ When use MLD, MLDP has to be used at first.

● : Stock Item ○ : Under preparing for stock

VZD

Vulcan drill (MA, MBA)



(mm)

Designation	Stock item	øD	ød	L	ℓ_1	ℓ_2	ℓ_3
VZD126~135MA, MBA	135MA	12.6~13.5	16	110	62	48	44
VZD136~145MA, MBA		13.6~14.5	16	115	67	48	48
VZD146~155MA, MBA		14.6~15.5	20	125	75	50	55
VZD156~165MA, MBA	160MA, 163MA, 165MA	15.6~16.5	20	130	80	50	59
VZD166~175MA, MBA	170MA, 175MBA	16.6~17.5	20	135	85	50	63
VZD176~185MA, MBA		17.6~18.5	20	140	90	50	66
VZD186~195MA, MBA	190MA	18.6~19.5	25	155	99	56	74
VZD196~205MA, MBA	200MA, 205MA	19.6~20.5	25	155	99	56	73
VZD206~215MA, MBA	215MBA	20.6~21.5	25	155	99	56	72
VZD216~225MA, MBA	224MA	21.6~22.5	25	160	104	56	76
VZD226~235MA, MBA		22.6~23.5	25	160	104	56	74
VZD236~245MA, MBA	240MBA, 245MBA	23.6~24.5	32	170	110	60	79
VZD246~255MA, MBA		24.6~25.5	32	170	110	60	78
VZD256~265MA, MBA	260MBA	25.6~26.5	32	175	115	60	82
VZD266~275MA, MBA		26.6~27.5	32	175	115	60	80
VZD276~285MA, MBA		27.6~28.5	32	180	120	60	84
VZD286~295MA, MBA		28.6~29.5	32	185	125	60	88
VZD296~305MA, MBA		29.6~30.5	32	185	125	60	87
VZD306~315MA, MBA		30.6~31.5	40	205	135	70	95
VZD316~325MA, MBA		31.6~32.5	40	210	140	70	98
VZD326~335MA, MBA		32.6~33.5	40	215	145	70	101
VZD336~345MA, MBA		33.6~34.5	40	220	150	70	104
VZD346~355MA, MBA		34.6~35.5	40	225	155	70	107
VZD356~365MA, MBA		35.6~36.5	40	225	155	70	110
VZD366~375MA, MBA		36.6~37.5	40	230	160	70	113
VZD376~385MA, MBA		37.5~38.5	40	235	165	70	116
VZD386~395MA, MBA		38.6~39.5	40	240	170	70	119
VZD396~405MA, MBA		39.6~40.5	40	245	175	70	122

∗ VZD○○○MA : For steel, ductile cast iron
MBA : For soft steel, steel for construction

∗ How to name for order made item : VZD◎◎◎M◎ ∗Cutting edge length ∗Total length L
Ex.1) MA type, Cutting edge diameter 18.6, Cutting edge length 110, Total length 200 ➡ VZD186MA∗ 110∗ 200L
Ex.2) MA type, Cutting edge diameter 18.63, Cutting edge length 110, Total length 200 ➡ VZD1863MA∗ 110∗ 200L
Ex.3) MA type, Cutting edge diameter 18.6, Standard type ➡ VZD186MA

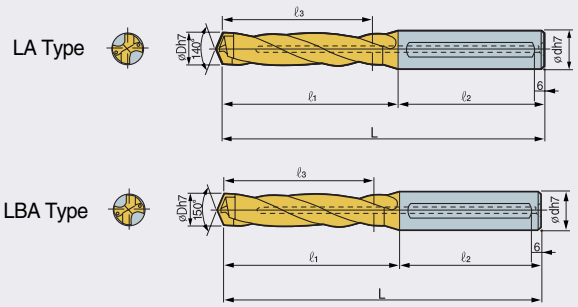
Recommended Cutting condition

Diameter(mm)	Cutting condition	Alloy steel, Carbon steel(Under HB320)	Soft steel, Alloy steel, Carbon steel(Under HB250)	Mould steel(About HB250)	Stainless steel(About HB250)	Ductile cast iron
~ ø15	V	40~60~90	40~65~90	40~50~70	30~45~50	50~70~100
	f	0.1~0.2~0.25	0.15~0.2~0.3	0.1~0.2~0.25	0.1~0.15~0.2	0.2~0.3~0.35
~ ø20	V	40~60~90	40~65~90	40~50~70	30~45~50	50~70~100
	f	0.15~0.25~0.35	0.2~0.3~0.4	0.15~0.25~0.3	0.15~0.2~0.25	0.2~0.35~0.4
~ ø40	V	40~65~90	40~70~90	40~50~70	30~45~50	50~70~100
	f	0.2~0.3~0.4	0.2~0.35~0.45	0.2~0.3~0.35	0.2~0.25~0.3	0.25~0.4~0.5

V: Cutting speed(m/min), f: Feed(mm/rev), Minimum ~ Standard ~ Maximum

VZD

Vulcan drill (LA, LBA)



(mm)

Designation	Stock item	øD	ød	L	ℓ_1	ℓ_2	ℓ_3
VZD126~135LA, LBA		12.6~13.5	16	140	92	48	74
VZD136~145LA, LBA		13.6~14.5	16	145	97	48	78
VZD146~155LA, LBA		14.6~15.5	20	155	105	50	85
VZD156~165LA, LBA		15.6~16.5	20	165	115	50	94
VZD166~175LA, LBA		16.6~17.5	20	170	120	50	98
VZD176~185LA, LBA		17.6~18.5	20	175	125	50	101
VZD186~195LA, LBA		18.6~19.5	25	190	134	56	109
VZD196~205LA, LBA		19.6~20.5	25	195	139	56	113
VZD206~215LA, LBA		20.6~21.5	25	195	139	56	112
VZD216~225LA, LBA		21.6~22.5	25	200	144	56	116
VZD226~235LA, LBA		22.6~23.5	25	210	154	56	124
VZD236~245LA, LBA		23.6~24.5	32	220	160	60	129
VZD246~255LA, LBA		24.6~25.5	32	225	165	60	133
VZD256~265LA, LBA		25.6~26.5	32	230	170	60	137
VZD266~275LA, LBA		26.6~27.5	32	235	175	60	141
VZD276~285LA, LBA		27.6~28.5	32	240	180	60	144
VZD286~295LA, LBA		28.6~29.5	32	245	185	60	148
VZD296~305LA, LBA		29.6~30.5	32	255	195	60	157
VZD306~315LA, LBA		30.6~31.5	40	275	205	70	166
VZD316~325LA, LBA		31.6~32.5	40	280	210	70	172
VZD326~335LA, LBA		32.6~33.5	40	285	215	70	173
VZD336~345LA, LBA		33.6~34.5	40	290	220	70	177
VZD346~355LA, LBA		34.6~35.5	40	295	225	70	181
VZD356~365LA, LBA		35.6~36.5	40	300	230	70	183
VZD366~375LA, LBA		36.6~37.5	40	305	235	70	188
VZD376~385LA, LBA		37.5~38.5	40	315	245	70	193
VZD386~395LA, LBA		38.6~39.5	40	320	250	70	198
VZD396~405LA, LBA		39.6~40.5	40	325	255	70	203

∗ VZD○○○LA : For Steel, Ductile Cast iron
LBA : For Soft steel, Steel for construction

∗Naming Method of Special Item: VZD ◎◎◎L◎ ∗ Cutting edge length ∗ Total length L
Ex.1) LA type, Cutting edge diameter 18.6, Cutting edge length 110, Total length 200 ➡ VZD186LA ∗ 110 ∗ 200L
Ex.2) LA type, Cutting edge diameter 18.63, Cutting edge length 110, Total length 200 ➡ VZD1863LA ∗ 110 ∗ 200L
Ex.3) LA type, Cutting edge diameter 18.6, Standard type ➡ VZD186LA

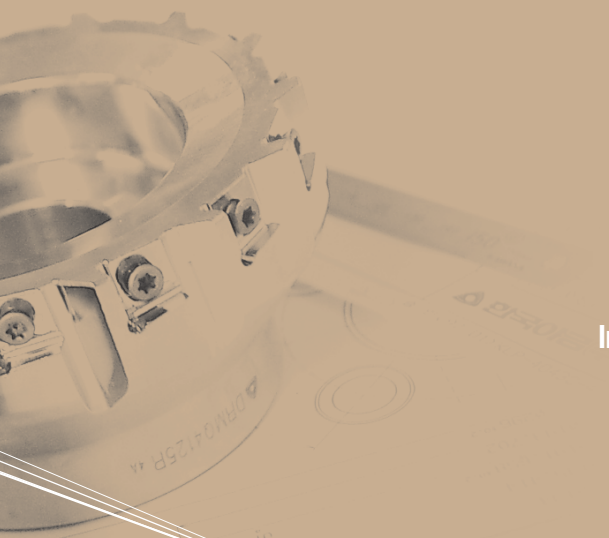
Recommended Cutting condition

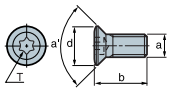
Diameter(mm)	Cutting condition	Soft steel, Alloy steel, Carbon steel(Under HB250)	Soft steel, Alloy steel, Carbon steel(Under HB250)	Diameter(mm)	Cutting condition	Alloy steel, Carbon steel(Under HB320)	Soft steel, Alloy steel, Carbon steel(Under HB250)
~ ø20	V	40~60~80	40~70~90	~ ø40	V	40~65~80	40~80~90
	f	0.15~0.25~0.35	0.2~0.3~0.4		f	0.2~0.3~0.4	0.2~0.35~0.45

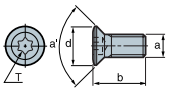
V: Cutting speed(m/min), f: Feed(mm/rev), Minimum ~ Standard ~ Maximum

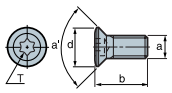
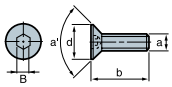
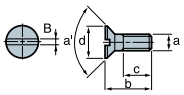
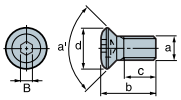
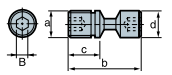
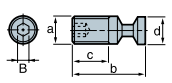
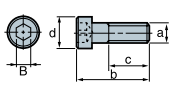

KORLOY
MF-DB128SL-AL

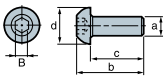
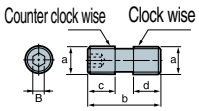
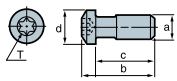
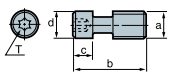
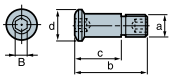
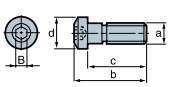
Others

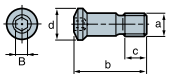
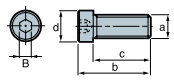
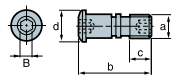
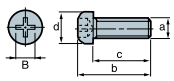
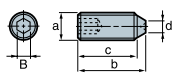


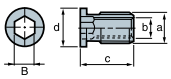
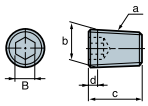
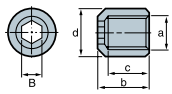
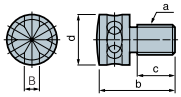
Shape	Designation	Dimension					
		a	b	c	d	B(T)	a′
	ETNA 02506	M2.5 ×0.45	5.7		3.4	7	43°
	04065	M4 × 0.7	6.5		5.1	15	43°
	0408	M4 × 0.7	8.0		5.1	15	43°
	0511	M5 × 0.8	11.0		6.4	20	43°
	ETGA0520CBM	M5 ×0.8	20.0		6.5	20	43°
	FTNA01633	M16 ×0.35	3.3		2.6	6	60°
	0203	M2 × 0.4	3.0		2.7	6	60°
	02033	M2 × 0.4	3.3		2.7	6	60°
	0204	M2 × 0.4	4.3		2.7	6	60°
	0238	M2 × 0.4	3.8		3.0	6	60°
	02205	M2.2 ×0.45	4.5		3.0	6	60°
	0305	M3 × 0.5	5.2		4.2	9	60°
	0306	M3 × 0.5	6.2		4.2	9	60°
	0307	M3 × 0.5	7.2		4.2	9	60°
	0408	M4 × 0.7	8.5		5.5	15	60°
	0411	M4 × 0.7	11.0		5.5	15	60°
	0415	M4 × 0.7	15.0		5.5	15	60°
	0513	M5 × 0.8	13.0		7.0	20	60°
	0516	M5 × 0.8	16.0		7.0	20	60°
	0618	M6 × 1.0	17.2		8.8	20	60°
	FTGA0513	M5 ×0.8	13.2		7	20	61°
	0517	M5 ×0.8	17		7.5	20	61°
	0621	M6 × 1.0	21.5		9	20	61°
	0826	M8 × 1.25	26		11.6	25	61°
	0417CBM	M4 × 0.7	17		5.5	15	62°
	03507	M3.5 ×0.6	7		5.3	15	60°
	03508	M3.5 ×0.6	8.0		5.3	15	60°
	03510	M3.5 ×0.6	10.0		5.3	15	60°
	03512	M3.5 ×0.6	12.0		5.3	15	60°
	0411F	M4 × 0.5	11.0		7.0	15	60°

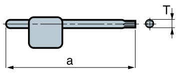
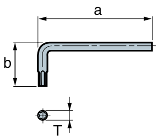
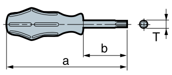
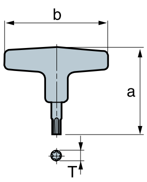
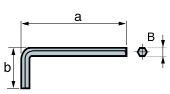
Shape	Designation	Dimension					
		a	b	c	d	B(T)	a′
	FTGA0510-P	M5 ×0.8	10		7.0	20	63°
	0511-P	M5 ×0.8	11.5		7.0	20	63°
	0512-P	M5 ×0.8	12		7.0	20	63°
	0513-P	M5 ×0.8	13		7.0	20	63°
	FTKA02206	M2.2 ×0.45	5.5		3.0	6	60°
	02206S	M2.2 ×0.45	5.6		3.05	7	60°
	02565	M2.5 ×0.45	6.5		3.5	7	60°
	02565S	M2.5 ×0.45	6.5		3.8	8	60°
	0307	M3 ×0.5	7.2		4.2	9	60°
	03508	M3.5 ×0.6	8.4		5.5	15	60°
	03510	M3.5 ×0.6	10.4		5.5	15	60°
	03511A	M3.5 ×0.6	11		5.2	15	60°
	0408	M4 ×0.7	8.4		5.5	15	60°
	0410	M4 ×0.7	10.0		5.5	15	60°
	0413	M4 ×0.7	13		5.5	15	60°
	FTNB0411	M4 ×0.7	10.8		5.7	15	60°
	FTNC04511	M4.5 ×0.75	11.5		6.8	20	55°
	04509	M4.5 ×0.75	9.5		6.8	20	55°
	PTMA03508	M3.5 ×0.6	8.0		6.0	9	90°
	0403F	M4 ×0.5	3.3		6.5	15	91°
	0404F	M4 ×0.5	4.3		6.5	15	91°
	0405F	M4 ×0.5	5.3		6.5	15	91°
	0406F	M4 ×0.5	6.3		6.5	15	91°
	0411	M4 ×0.7	11		6.6	15	90°
	PTKA02508	M2.5 ×0.45	08		3.8	08	92°
	03510	M3.5 ×0.6	10	5.0	5.0	15	92°
	0412	M4 ×0.7	12		5.9	15	92°
	0512	M5 ×0.8	12		6.9	20	92°
	0407F	M4 ×0.5	7.3	3.8	6.5	15	91°
	0408F	M4 ×0.5	8.3		6.5	15	91°

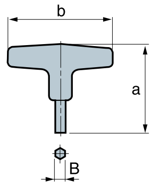
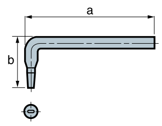
Shape	Designation	Dimension					
		a	b	c	d	B(T)	a′
	**PTKA0409F**	M4 ×0.5	9.3		6.5	15	91°
	0410F	M4 ×0.5	10.3		6.5	15	91°
	0411F	M4 ×0.5	11.3		6.5	15	91°
	0412F	M4 ×0.5	12.3		6.5	15	91°
	0413F	M4 ×0.5	13.3		6.5	15	91°
	**SHX 0310**	M3 ×0.5	10.0		5.9	2	91°
	**PSMA02608**	M2.6 ×0.45	8.0	5.0	4.5	0.6	90°
	**CHX 0623**	M6 ×1.0	23.0	13.8	12	4	90°
	**VHX 0514**	M5 ×0.8	14.5	8.25	5	2	
	0617	M6 ×1.0	17.0	10	6	2.5	
	0821	M8 ×1.0	21.0	10	8	3.0	
	0825	M8 ×1.0	25.0	12	8	3	
	1027	M10 ×1.0	27.2	14.4	9.8	5.0	
	1236	M12 ×1.0	36.0	18.3	11.8	5	
	0512B	M5 ×0.8	12.0	6.5		2.0	
	0509B	M5 ×0.8	9.0	4.15		2.0	
	**VHX0613A**	M6 ×1.0	13.4	9.1	6.0	2.5	
	**MHA 0512**	M5 ×0.8	17.0	10.8	8.0	4.0	
	MHB 1055	M10 ×1.5	65	50	16	8	
	1260	M12 ×1.75	72	55	18	10	
	1680	M16 ×2.0	96	75	24	14	
	0310	M3 ×0.5	13.4	8.0	5.5	2.5	
	0410	M4 ×0.7	14.0	8.0	7.0	3.0	

Shape	Designation	Dimension					
		a	b	c	d	B(T)	a′
	**RHA 0306**	M3 ×0.5	7.5	6.0	5.5	2.0	
	**DHA 0514**	M5 ×0.8	14.0	5.0	7.0	2.5	
	0617	M6 ×1.0	17.0	7.0	7.5	3.0	
	0620	M6 ×1.0	20	8.0	8.0	3.0	
	0624	M6 ×1.0	24.0	12.0	8.5	3.0	
	0627	M6 ×1.0	27.0	15.0	8.5	3.0	
	0815	M8 ×1.25	15.5	6.25	6.25	4.0	
	0820	M8 ×1.25	20.0	8.0	9.0	4.0	
	0821F	M8 ×1.0	21.0	8.5	8.5	4.0	
	0825	M8 ×1.25	25	10.0	9.0	4.0	
	0830	M8 ×1.25	30.0	11.5	11.5	4.0	
	**LTX 0512**	M5 ×0.8	15.1	12.0	7.3	20	
	0514	M5 ×0.8	17.1	14.0	7.3	20	
	**WTX 0813**	M8 ×1.25	17.2	4.9	8.5	25	
	0817	M8 ×1.25	22.0	4.9	8.5	25	
	**CHX 0513**	M5 ×0.8	13.0	8.0	6.4	2.5	
	0616	M6 ×1.0	16.2	10.1	8.5	3.0	
	0617L	M6 ×1.0 Counter clock wise	17.2	10.1	8.5	3.0	
	0621	M6 ×1.0	21.0	10.1	8.5	3.0	
	0822	M8 ×1.25	21.8	13.0	10.5	4.0	
	**CHX 0407**	M4 ×0.7	9.5	7.36	5.7	2.5	
	0510	M5 ×0.8	13.1	10.1	7.7	3.0	

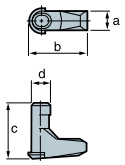
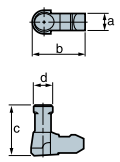
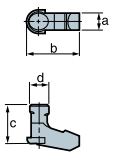
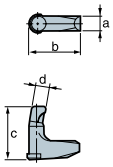
Shape	Designation	Dimension					
		a	b	c	d	B(T)	a′
	CHX 0625	1/4-20UNC	24.8	11.0	10	4.0	
	CTX 03510	M3.5 × 0.6	10.0	4.7	5.3	15	
	04513	M4.5 × 0.75	13.1	6.9	6.8	20	
	04513H	M4.5 × 0.75	13.1	7.2	6.8	20	
	0517	M5 × 0.8	17.5	10	7	20	
	0621	M6 × 1.0	21.2	12.4	9	25	
	CHX 0824	M8 × 1.25	28.0	24.0	12	4.0	
	BHA 0616	M6 × 1.0	22.0	16.0	10	5.0	
	MHX 0523	M5 × 0.8	23.5	9.7	10	2.5	
	0626	M6 × 1.0	25.8	10.0	11	3.0	
	0630	M6 × 1.0	30.0	12.5	10.5	4.0	
	AC 0205	M2 × 0.4	6.2	4.9	3.4	2.2	
	KHD 0510	M5 × 0.8	10.0	9.0	3.0	2.5	

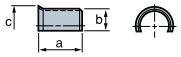
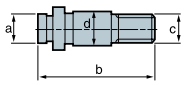
Shape	Designation	Dimension					
		a	b	c	d	B(T)	a′
	SHXN 0509F	M5 × 0.5	M3.5 × 0.6	8.65	6.3	3.5	
	SHXN 0610F	M6 × 0.75	M4 × 0.5	10.0	7.8	4.0	
	PLG 8	PT1/8	9.728	7.0	0.45	5.0	
	4	PT1/4	13.157	8.9	0.7	6.0	
	N 0407	M4 × 0.7	7.5	6.0	7.0	3.0	
	0508	M5 × 0.8	8.3	6.6	7.0	3.0	
	AZ0514	M5 × 0.8	14.0	7.0	9.0	Ø2.5	

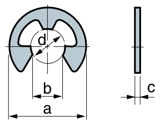
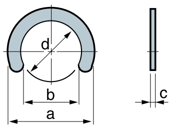
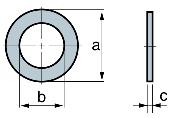
Shape	Designation	Dimension a	b	c	d	B(T)	a′
	TW 06P	63				06	
	07P	63				07	
	08P	71				08	
	09P	75				09	
	10P	78				10	
	15P	82				15	
	20P	86				20	
	TW 15L	60	21			15	
	20L	60	21			20	
	TW 07S	140	60			07	
	08S	150	76			08	
	09S	165	70			09	
	15S	190	90			15	
	20S	195	91			20	
	TW 20	75	80			20	
	25	74	80			25	
	HW 20L	52	18			2.0	
	25L	58.5	20.5			2.5	
	30L	66	23			3.0	
	35L	72	25			3.5	
	40L	74	29			4.0	
	50L	85	33			5.0	

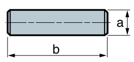
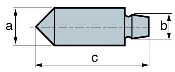
Shape	Designation	Dimension a	b	c	d	B(T)	
	HW 30	75	80			3.0	
	40	82	80			4.0	
	50	96	90			5.0	
							
	SW 15S	150	13				
	50L	70	27.5				

Lever / Shim Pin

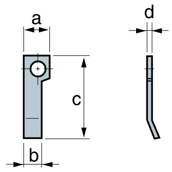
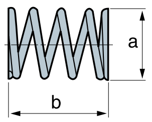
Shape	Designation	Dimension			
		a	b	c	d
	LV 3	3.7	10.0	12	3.6
	3C	3.1	10.0	7.85	3.6
	3D	3.1	11.7	9.5	3.6
	4	4.7	14.55	14	4.7
	5	6.0	17.1	17	6.0
	6	7.5	20.5	21	7.6
	LV 2	2.6	7.75	6.0	2.1
	3B	3.1	10.0	9.5	3.7
	4B	4.7	14.55	15.6	4.7
	LV 4A	4.6	13.24	9.95	4.7
					
	LR 10	3.4	10.8	11.7	3.0
	12	3.7	13.5	13.4	3.5

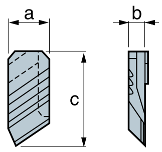
Shape	Designation	Dimension			
		a	b	c	d
	SP 3	5.5	3.5	5.9	
	4	7.0	4.0	7.6	
	5	8.5	4.5	8.8	
	6	11.1	6.0	11.0	
	8	12.0	10.0	15.35	
	10	6.5	3.3	5.8	
	SP 2M	5.0	14.0	M5 ×0.8	6.0
	3M	3.5	19.5	M4 ×0.7	4.0
	4M	5.0	19.0	M5 ×0.8	6.0
	3M-1	3.5	16.5	M4 ×0.7	4.0
	3D2	3.6	12.0	No.10-32UNF	5.5

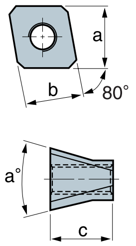
Shape	Designation	Dimension			
		a	b	c	d
	ER 025	6.0	2.1	0.4	2.5
	03	7.0	2.6	0.6	3.0
	04	9.0	3.5	0.6	4.0
	05	11	4.3	0.6	5.0
	06	12	5.2	0.8	6.0
	07	14	6.1	0.8	7.0
	CR 04	6.6	3.6	0.4	4.0
	05	7.6	4.6	0.4	5.0
	06	8.6	5.6	0.4	6.0
	07	9.8	6.5	0.5	7.0
	WA 3	11.0	6.8	0.5 ~1.0	
	4	10.0	5.3	0.5 ~1.0	

Shape	Designation	Dimension			
		a	b	c	d
	PN 0308	3.0	8.0		
	0310	3.0	10.0		
	0312	3.0	12.0		
	0314	3.0	14.0		
					
	PN 0515	4.8	3.3	14.5	

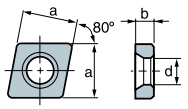
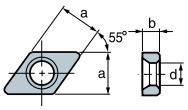
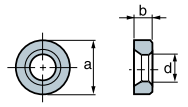
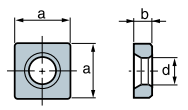
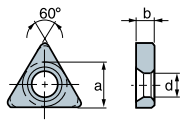
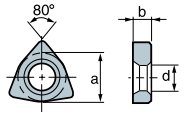
Spring / Breaker Piece

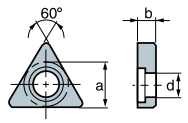
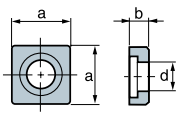
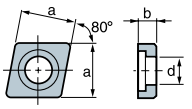
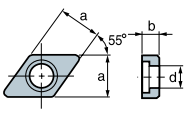
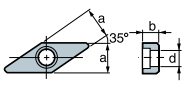
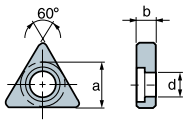
Shape	Designation	Dimension a	Dimension b	Dimension c	Dimension d
	**SR 2**	4.0	2.8	12.6	0.4
	**SR 3**	9.2	12.5		
	4	4.0	11.0		

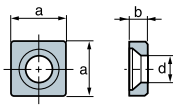
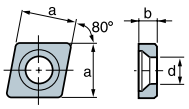
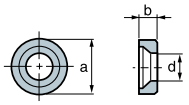
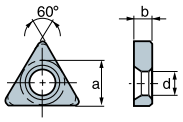
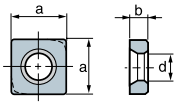
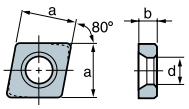
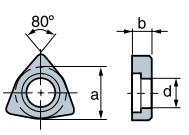
Shape	Designation	Dimension a	Dimension b	Dimension c	Dimension d
	**CB 20**	8.5	3.4	20.0	

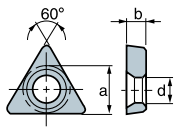
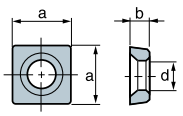
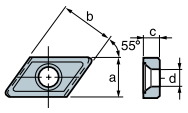
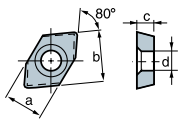
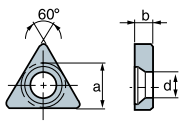
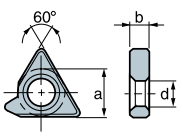
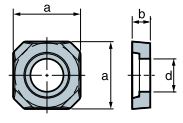
Shape	Designation	Dimension			
		a	b	c	d
	STP 5	11	10.2	11	30°

Shim

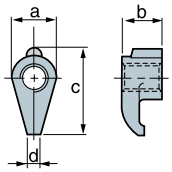
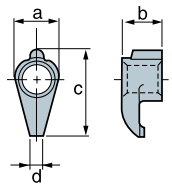
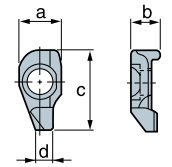
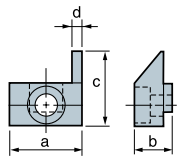
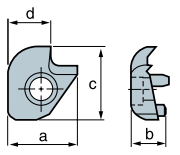
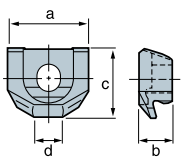
Shape	Designation	Dimension			
		a	b	c	d
	SC 32	8.5	3.18		4.9
	42	12.5	3.18		6.9
	53	15.7	4.76		7.9
	63	18.85	4.76		10.0
	83	24.4	4.76		12.8
	84	24.4	6.35		12.8
	SD 317	9.35	2.7		5.2
	42	12.5	3.18		6.9
	SR 10	8.4	3.18		4.7
	12	10.0	3.18		4.7
	84	22.0	6.35		9.6
	10S	8.8	3.18		5.4
	12S	10.55	3.18		5.4
	SS 32	8.5	3.18		4.9
	42	12.5	3.18		6.9
	53	15.7	4.76		7.9
	63	18.85	4.76		10.0
	83	24..4	4.76		12.8
	84	24.4	6.35		12.8
	317	9.35	2.7		5.2
	ST 317	9.35	2.7		5.0
	42	12.5	3.18		6.9
	53	15.7	4.76		7.9
	63	18.85	4.76		10.0
	84	25.2	6.35		13.3
	SW 317	9.35	2.7		5.0
	42	12.5	3.18		6.9

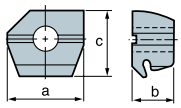
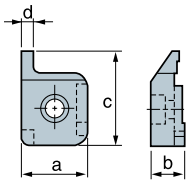
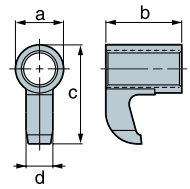
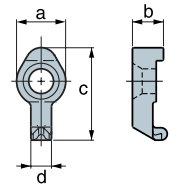
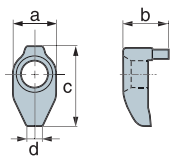
Shape	Designation	Dimension			
		a	b	c	d
	ST 32S	8.5	3.18		5.4
	SS 32S	8.3	3.18		5.4
	42S	11.5	3.18		6.4
	SC 42S	11.5	3.18		6.4
	SD 32S	8.5	3.18		5.4
	SV 32S	8.4	3.18		5.4
	32D2	9.2	3.18		5.8
	ST 32M	8.7	3.18		4.7
	43M	12.5	4.76		6.3

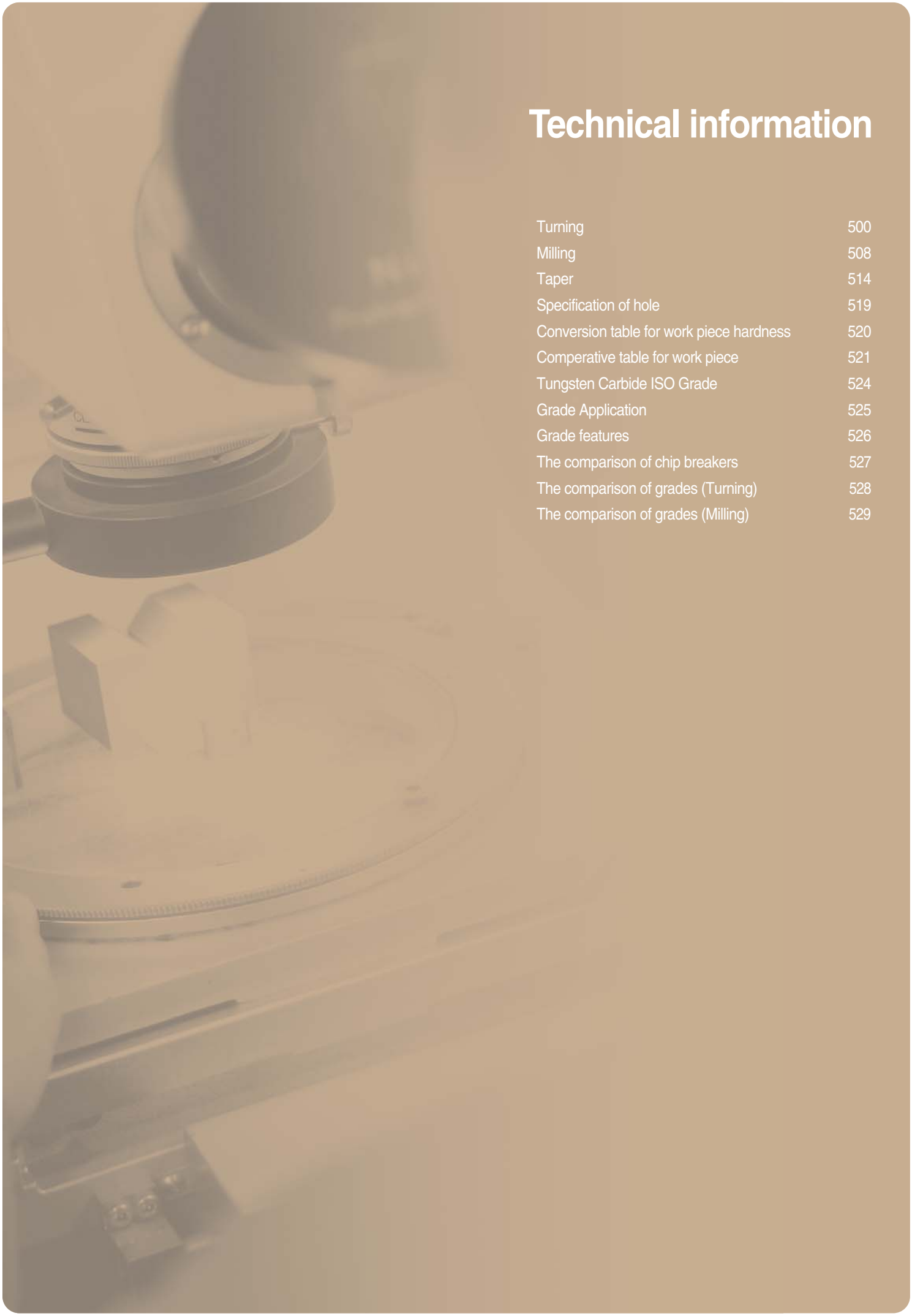
Shape	Designation	Dimension			
		a	b	c	d
	SS 42CC	12.5	3.18		3.5
	SC 42CC	12.5	3.18		3.5
	SR 42CC	12.575	3.18		3.5
	22CC	6.15	3.18		2.5
	32CC	9.325	3.18		3.5
	65CC	18.85	7.97		8.4
	ST 317B	9.35	2.7		5.0
	SS 42B	12.5	3.18		6.9
	SC 42B	12.5	3.18		6.9
	SW 43M	12.5	4.76		6.2

Shape	Designation	Dimension			
		a	b	c	d
	ST 31C	8.1	2.7		4.0
	42C	10.72	3.18		3.5
	SS 31C	8.1	2.7		4.0
	41C	11.25	2.7		4.0
	SK 33C	9.33	14.7	4.8	3.5
	33CL	9.33	14.7	4.8	3.5
	SES 33C	9.1	12	4.76	3.5
	ST 32CC	9.35	3.18		3.5
	ST 32C1	9.13	3.18		4.95
	42C1	12.3	3.18		4.95
	SS42SAF	11.2	3.00		5.5

Clamp

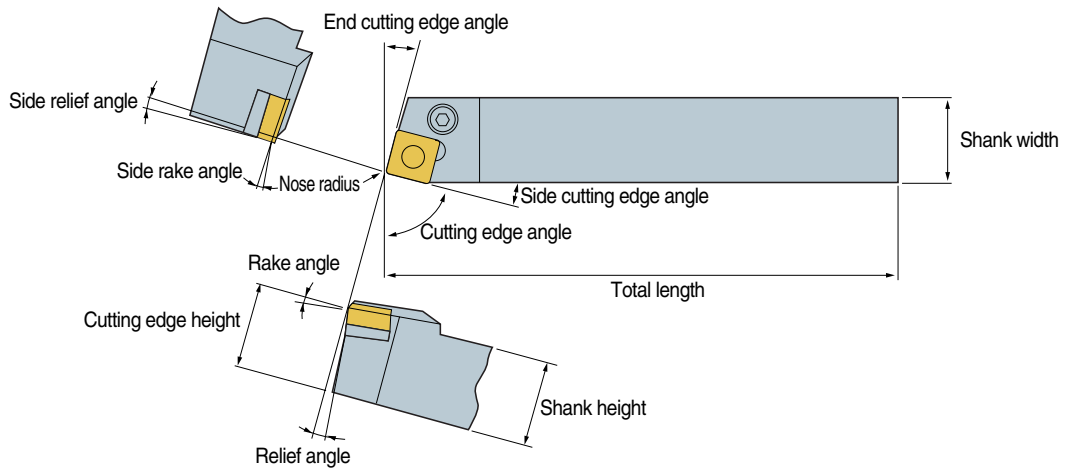
Shape	Designation	Dimension			
		a	b	c	d
	CS 5R1	6.8	7.0	14.5	2.0
	6R1	8.8	8.5	18.1	2.7
	8R1	11.8	10.0	23.0	4.2
	CH 5R2	6.85	7.0	13.8	2.0
	6R2	8.85	8.7	16.5	2.0
	8R2	10.85	11.3	21.25	3.0
	5R3	7.85	7.2	14.8	3.1
	6R3	11.8	10.0	23	4.2
	6R4	12.02	9.0	23.97	3.75
	8R3	16	11.5	32.3	7.21
	CH 4R1	7.4	5.0	14.1	3.1
	5R1	10.0	6.6	20.2	4.5
	CGH 6R1	22.3	11.9	23.2	2.5
	6R2	23.2	11.9	23.2	3.4
	6R3	24.0	11.9	23.2	4.2
	CTH 6R1	23.5	12.0	25.4	14.35
	6R2	21.78	12.9	31.22	17.33
	6L1	23.5	12.0	25.4	14.35
	CMH 5R1	18.5	7.9	16.0	6.26
	6R2	20.0	11.0	17.5	13.8

Shape	Designation	Dimension			
		a	b	c	d
	CMH 6R3	20.0	11.0	17.51	
	6L3	20.0	11.0	17.51	
	CGH 5R1	19.5	9.5	28.8	2.5
	5R2	20.5	9.5	28.8	3.5
	5R3	22.5	9.5	28.8	5.5
	CDS 8N	10.8	17.0	22.2	5.0
	CBH4.5R1	8	5.74	17.7	4
	4.5R2	9.5	6.4	18	4
	4.51	10	7.8	21	5
	5R1	10	7.8	21.3	5
	6R1	12	9.3	26	6
	CHH3.5R1	7.5	6.7	13	2.45
	4.5R1	7.9	7.85	14.1	2.54
	5.5R1	9.8	10	16.4	4.0



Technical information

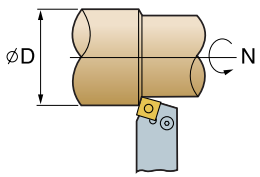
Terminology of Toolholder



Major cutting formula

Cutting speed

$$V=\frac{\pi \cdot D \cdot N}{1000}\ (m/min)$$



- V : Cutting speed (m/min)
- D : Workpiece diameter (mm)
- N : Revolution per minute (rpm)
- π : Circular constant(3.14)

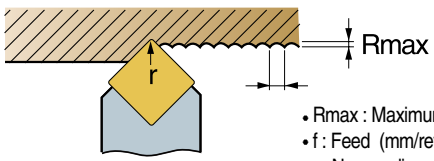
Feed

$$f=\frac{F}{N}\ (mm/rev)$$

- f : Feed per revolution(mm/rev)
- F : Feed per minute (mm/min)
- N : Revolution per minute (rpm)

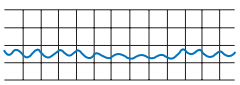
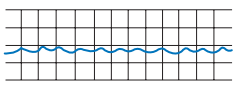
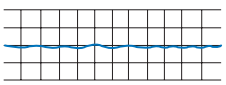
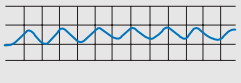
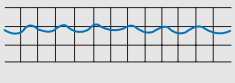
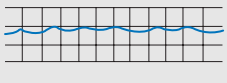
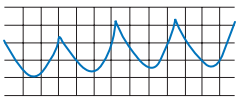
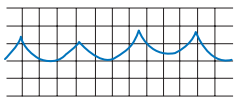
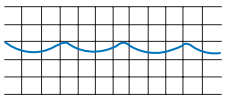
Surface roughness

- Theoretical surface roughness $Rmax=\frac{f^2}{8r}1000(\mu)$
- Actual surface roughness
  Steel : Rmax ×(1.5~3)
  Cast iron : Rmax ×(3~5)



- Rmax : Maximum roughness (μ)
- f : Feed (mm/rev)
- r : Nose radius

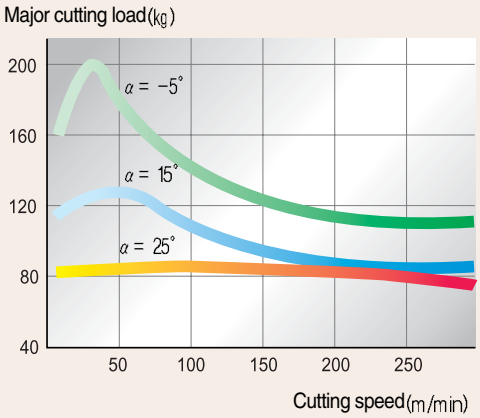
Surface roughness as per nose radius & feed

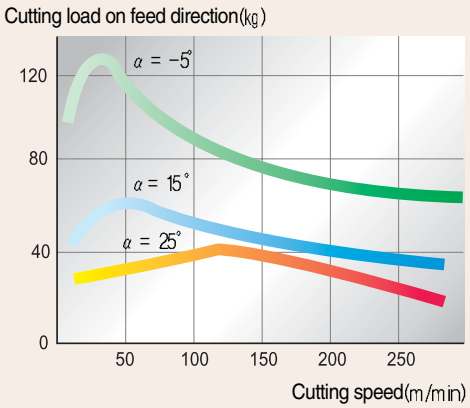
feed \ nose radius	0.4	0.8	1.2
0.15			
0.26			
0.46			

Major factors of cutting edge

Rake angle(α)

- Rake angle affects cutting load, chip control and tool life.





Effects

1. High rake angle results in good surface finish.
2. As the rake angle increased 1degree, machining power necessary to cut decrease 1%.
3. High rake angle could weaken the cutting edge.

Selection way

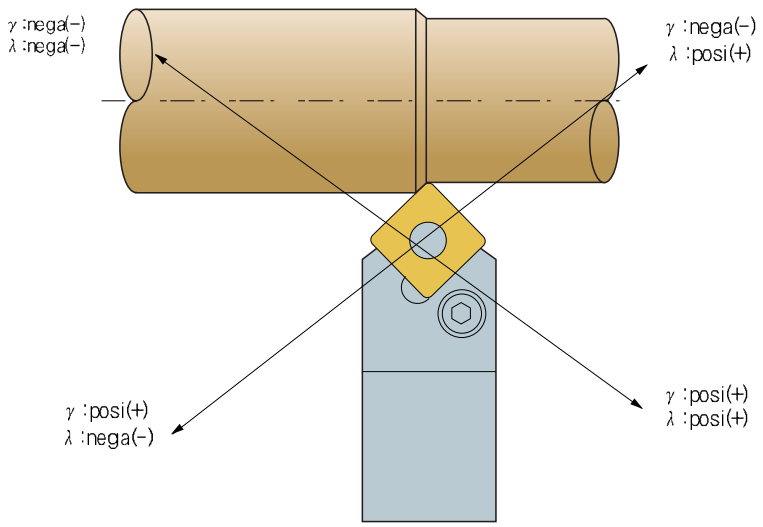
1. For hard work piece
2. For the applications that need strong cutting edge like roughing or intermittent cutting.

→ Low rake angle

1. For soft work piece
2. For easy to cut material
3. When the machine power is low

→ High rake angle

Relationship between rake angle and chip flow direction



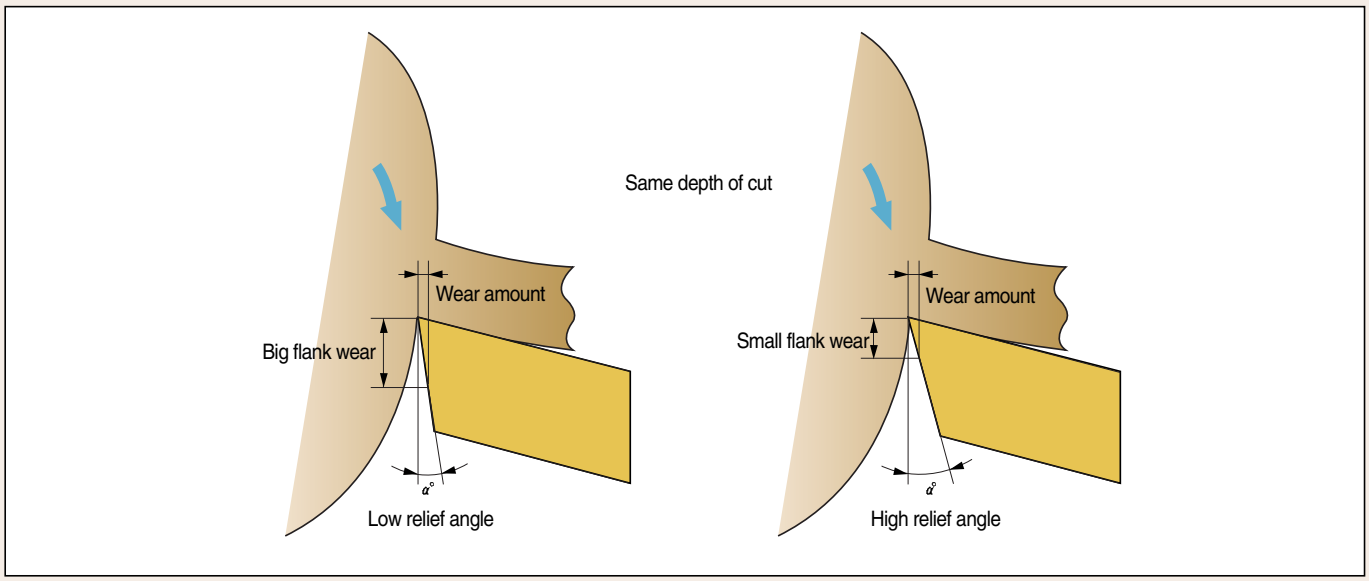
In order to prevent scratch on machined surface, avoid nega, posi combination.

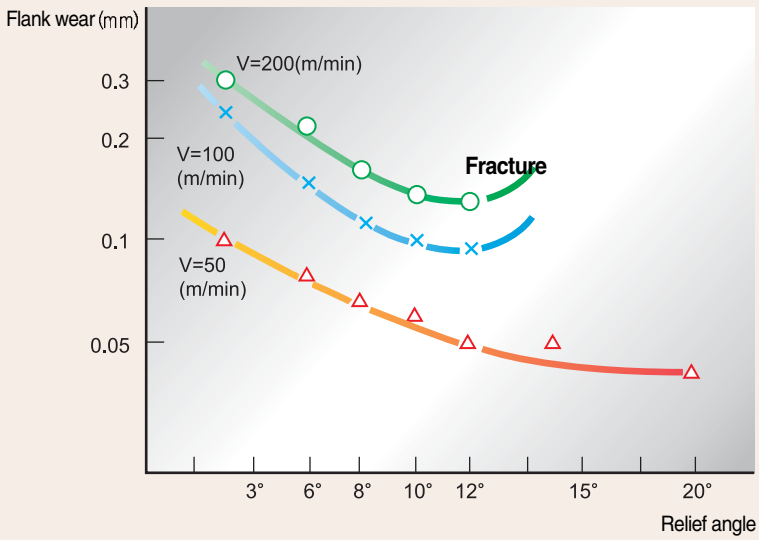
Rake angle : γ
Side rake angle : λ

Relief angle

● Interference between work piece and insert could be prevented by design proper relief

Relationship between relief angle and wear amount





- Work piece : SNCM431(H_B200)
- Insert grade : P20
- d : 1mm
- f : 0.32mm/rev
- T : 20minute

Effects

1. High relief angle will bring small flank wear.
2. High relief angle will weaken the cutting egde.
3. Low relief angle could cause chattering .

Selection way

1. For hard work piece
2. For the applications that need strong cutting edge

→ Low relief angle

1. For soft work piece
2. For the work piece having property to get work hardening

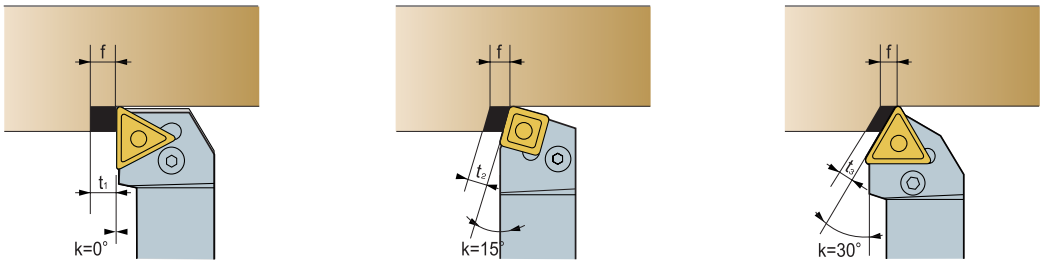
→ High relief angle

Lead angle (Side cutting edge)

● Since the lead angle has big influence on chip flow and cutting load, taking a proper value is very important.

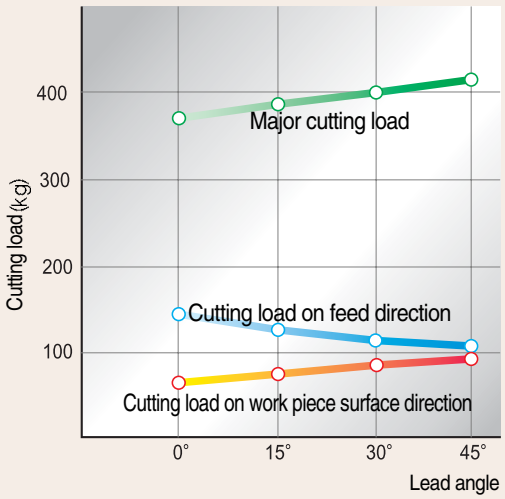
Relationship between lead angle and chip thickness

f=constant



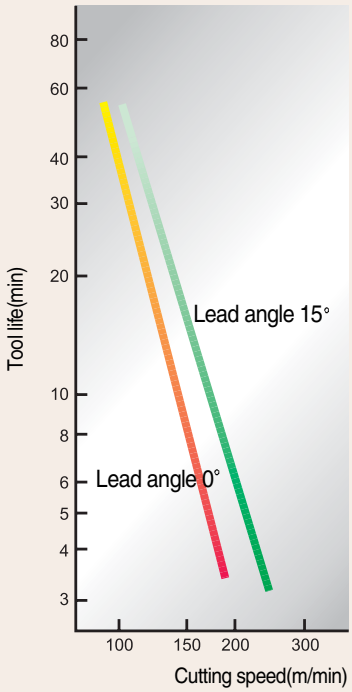
Chip thickness : t1 〉 t2 〉 t3

Cutting load as per lead angle



- Work piece : SCM440(HB250)
- Insert grade : TNGA220412
- V = 100m/min
- d = 4mm
- f = 0.45mm/rev

Tool life as per leas angle



- Work piece : SCM440
- Insert grade : P20
- d : 3mm
- f : 0.2mm/rev

Effects

1. Since the big lead angle makes thin & wide chip, tool life could be increased.
2. Big lead angle for the tool machining long bar could cause bending of work piece.

Selection way

1. For finishing with shallow depth of cut
2. For thin long bar machining
3. When the machine power is low

➡ Low lead angle

1. For hard work piece
2. For the roughing of big diameter work piece
3. When the machine power is enough

➡ High lead angle

End cutting angle

● It affects machined surface by prevent interference between surface of work piece and insert.

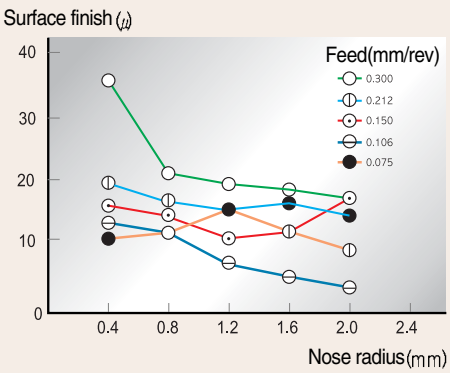
Effects

1. If reduce end cutting angle, cutting edge will be stronger but heat generated by machining will be higher.
2. Small end cutting angle could cause chattering due to the increased cutting force.

Nose radius

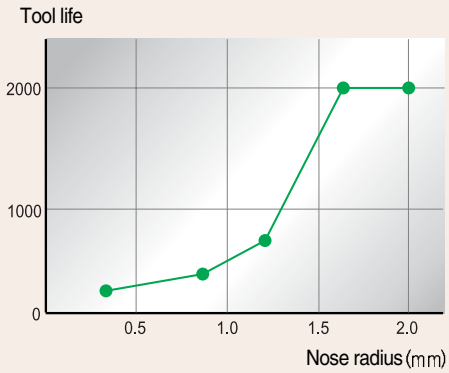
1. Nose radius affects not only surface finish but also strenth of cutting edge.
2. In general, 2~3 times bigger nose radius is preferable.

Relationship between nose radius and surface finish



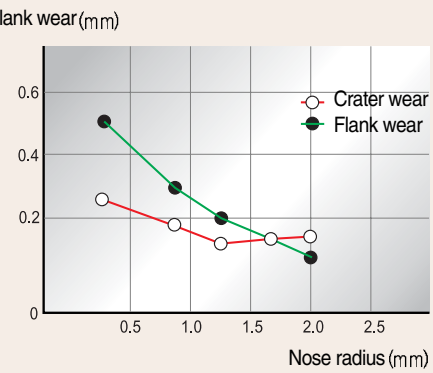
- Work piece : SNCM439, HB200
- Insert grade : P20
- V = 120m/min, d=0.5mm

Relationship between nose radius and tool life



- Work piece : SCM440, HB280
- Insert grade : P10
- V = 100m/min,d=0.5mm
- f = 0.335mm/rev

Relationship between nose radius and wear of tool



- Work piece : SNCM439, HB200
- Insert grade : P10
- V = 140m/min,d=2mm
- f = 0.212mm/rev, T = 10min

Effects of nose radius

1. Big nose radius could improve surface finish.
2. Big nose radius could improve cutting edge strength.
3. Big nose radius could reduce flank wear and crater wear.
4. Too big nose radius could cause chatter due to cutting force.

Selection way

1. For finishing with small depth of cut
2. For narrow and long work piece
3. When the machine power is low

→ Small nose radius

1. For the applications that need strong cutting edge like roughing or intermittent cutting.
2. For roughing of big diameter work piece
3. When the machine power is enough

→ Big nose radius

Selection of Proper tool

● Although it looks like not easy job to select proper tool from variety of tools, it could be simplified by classifying basic factors written below.

Selection of inserts and tool holder

From the basic factors listed A, selection way B can be considered.

Basic factors

- Work piece material
- Work piece shape
- Size of work piece
- Hardness of work piece
- Surface condition of work piece (before machining)
- Surface finish requirement
- Type of lathe machine
- Condition of lathe machine (power, rigidity, etc)
- Horse power of machine
- Clamping method of work piece

Selection way

① Select tool having as big approach angle as possible.
② Select tool having as big shank size as possible.
③ Select insert having as stronger cutting edge strength as possible.
④ Select insert having as big nose radius as possible.
⑤ Select insert having as many available cutting edge as possible for finishing
⑥ Select as small insert as possible.
⑦ Cutting speed has to be cosidered carefully along with the other cutting conditions.
⑧ Select as big depth of cut as possible.
⑨ Select as big feed rate of cut as possible.
⑩ Cutting conditions have to be choosed with in the application range of chip breaker.

Tool life judgement

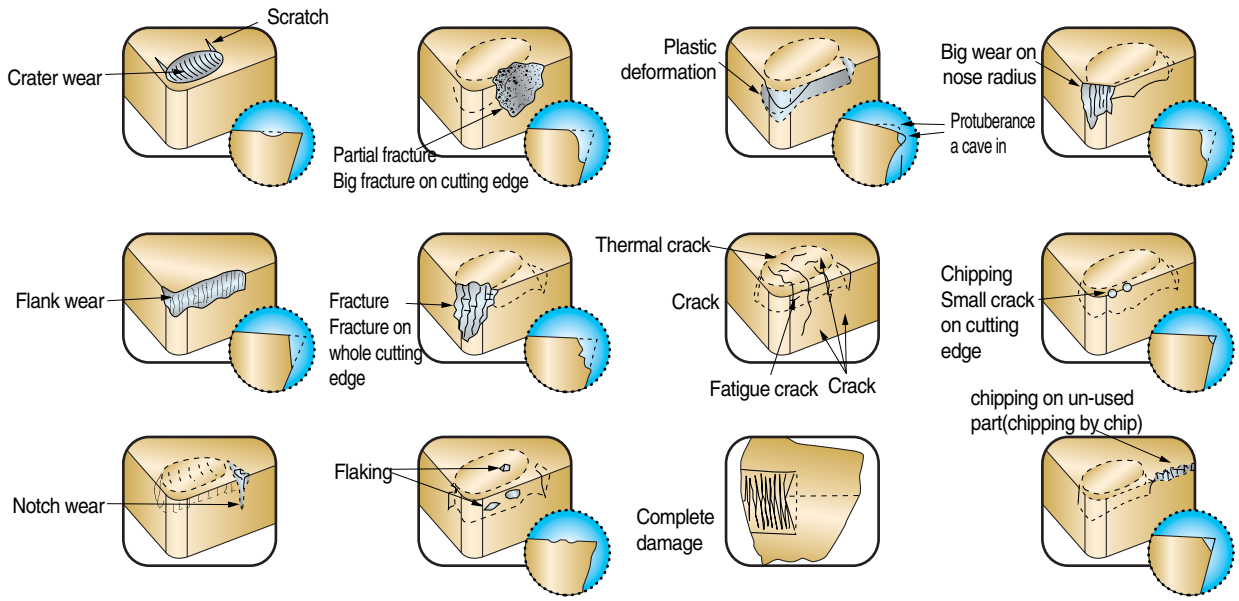
KS BO813

Flank wear	0.2mm	Fine finishing and finishing of non ferrous material
	0.4mm	Machining of special material
	0.7mm	General machining of cast iron, steel
	1~1.25mm	Roughing of cast iron
Crater wear	In general 0.05~0.1 mm	

ISO

Tool life criterion	Application
Completely damaged	Machining of special material
Flank wear V_B = 0.3mm	In case of flank wear generated in uniform, like cemented carbide, ceramic
V_{Bmax} = 0.5mm	In case of flank wear makes un-even
Crater wear KT = 0.06+0.3fmm (f:mm/rev)	Cemented carbide tool.
Surface finish 1, 1.6, 2.5, 4, 6.3, 10㎛Ra	In case of good surface finish required.

Tool failure forms



Tool failure

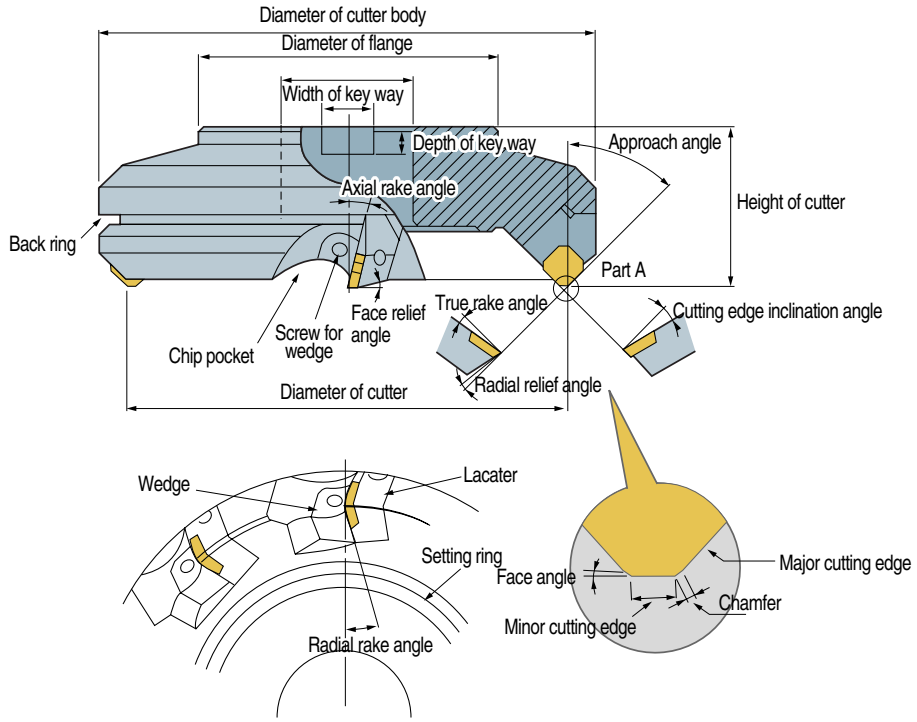
Tool failure		Explanation
Wear	Flank wear	• Mechanical wear due to the friction of relief face and work piece.
	Crater wear	• Thermal wear generated on top face of insert by friction with chips.
	Notch wear	• Wear generated on border part of contact area between insert and work piece.
	Wear on nose radius	• When the hardness of work piece is too high compare with tool. Especially when machining surface-hardened work piece.
Chipping		• Small cutting edge fractures due to mechanical impact, thermal impact.
Partial facture		• Partial fracture on cutting edge.
Fracture		• Fracture on whole cutting edge
Breakage		• Breakage of long tools like end mill and drill.
Flaking		• Flaking off of insert by scratch or crack on the rake and relief face.
Plastic deformation		• Depression of cutting edge due to softening of it because of concentrative heat and pressure.
Crack	Thermal crack	• Thermal crack generated on the rake face. At first, it is generated to the vertical direction and then makes a progress towards the pararell direction.
	Fatigue crack	• Crack generated on top face of insert pararell with cutting edge due to the impact happen repeatedly at intermittent cutting.
Complete breakage		• Unusable condition due to wear off most parts of cutting edge by progress of wear.

Trouble shooting for turning

Problems	Casue	Solution													
		Cutting conditions				Tool shape						Insert grade		etc	
		Cutting speed	Feed	Depth of cut	Coolant	Rake angle	Relief angle	Lead angle	End cutting edge angle	Nose radius	Honning	Tough -ness	Hard -ness	over hang	Rigidity of machine
Flank wear	• Improper grade • Improper cutting condition	↓	↑		○	↑				↑			↑		↑
Crater wear	• Improper grade • Improper cutting condition • Improper coolant	↓	↓	↓	○	↑							↓		↑
Chipping	• Improper cutting condition • Improper setting to tool • Chattering • Build-up edge	↑	↓			↓				↑	↑	↑			
Breakage	• Pile up of chipping • Improper grade • Excessive feed		↓	↓							↑	↑		↓	
Thermal crack	• Improper grade • Improper cutting condition	↓	↓	↓	◉									↑	
Poor surface finish	• Improper cutting condition • Wear of insert • Improper coolant • Improper insert shape	↑	↓	↓	○	↑							↓	↑	
Chattering	• Insufficient mechanical power • Improper cutting condition • Excessive over hang • Excessive nose radius	◉	↓	↓										↓	↑
Burr	• Insufficient mechanical power • Excessive over hang • Improper cutting condition • Excessive nose radius	◉	↑	↓						↓				↓	↑
Plastic deformation	• Improper cutting condition	↓	↓	↓			↑			↓					

↑ : Increase ↓ : Decrease ○ : use ◉ : use carefully

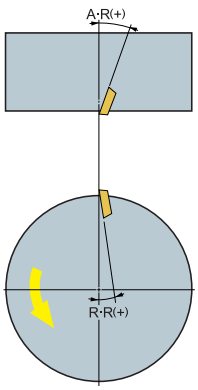
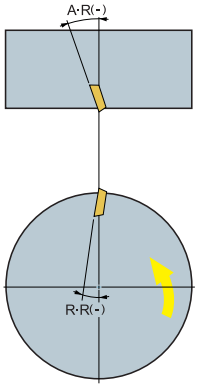
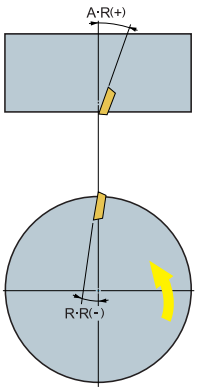
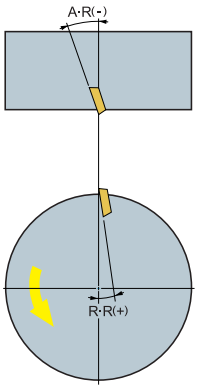
Terminology of MILL MAX



Function of cutting edge angle

	Title	Symbol	Function	Effects
1	**Axial rake angle**	A.R	Chip flow direction, build up edge	
2	**Radial rake angle**	R.R	Affect on thrust	
3	**Approach angle**	A.A	Determine chip thickness and chip flow direction	If increase the angle, chip thickness become thinner, cutting force could be reduced.
4	**True rake angle**	T.A	Actual effective rake angle	If increase the angle, cutting force become smaller, prevent build up edge, but strength of cutting If decrease the angle, strength of cutting edge could be stronger, but easy to make build up edge.
5	**Cutting edge inclination angle**	I.A	Determine chip flow direction	If increase the angle, cutting force become smaller, better chip flow, but strength of insert weaken.
6	**Face angle**	F.A	Determine the surface finish	If decrease, surface finish could be better
7	**Relief angle**		Affect on strength of cutting edge, tool life, chattering of tool.	

Characteristics by combination of rake angle

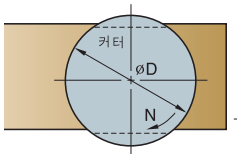
	Double positive angle	Double negative angle	Posi - Negative angle	Nega - Positive angle
				
Application	• General machining of steel, cast iron, stainless steel. • When machining soft steel that easy to make build up edge. • When machining material having tendency to make poor surface.	• Under intermittent cutting condition. • Roughing of cast iron and steel	• When machining hard to cut material like stainless steel, mould steel. • When machining roughing with big depth & width of cut at steel and cast steel.	• When the chip have to flow toward the center of cutter.
Advantage	• It is possible to get good surface finish even at the soft material that esay to make build up edge. • Due to the low cutting load, easy to get smooth cutting.	• Strong cutting edge • Porper for roughing of work piece having bad surface condition like containing sand, oil, etc. • Economical because both side of insert available. • Good chip control	• Good chip flow, good machinibility. • Suitable for machining of hard to cut material • Un-even insert spacing could prevent chattering.	
Disadvantage	• Weak cutting edge strength • Only single sided insert is availalbe • Machine & cutter should have enough power & rigidity	• Machine & cutter should have enough power & rigidity	• Only single sided insert is availalbe	• Since the chips flow into the center of cutter direction, chip could scratch the machined surface. • Bad chip flow

Milling

Major Cutting Formulas

Cutting speed

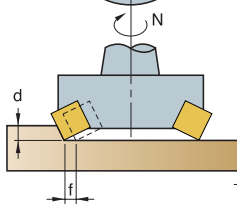
$$V=\frac{\pi \cdot D \cdot N}{1000}\ (m/min)$$



- V : Cutting speed (m/min)
- D : Cuting diameter or tool (mm)
- N : Revolution per minute (rpm)
- π : Circular constant (3.14)

Feed

$$f_z=\frac{F}{Z \cdot N}\ (mm/tooth)$$



- f_z : Feed per tooth (mm/tooth)
- F : Feed per minute (mm/min)
- Z : Number of tooth
- N : Revolution per minute (rpm)

Power requirement

$$W=\frac{Q \times Ks}{60 \times 102 \times \eta}\ (Kw)$$

$$H=\frac{W}{0.75}$$

$$Q=\frac{L \times F \times d}{1000}$$

- W : Power requirement (kw)
- H : Horse power requirement (hp)
- Q : Chip removal amount (cm^3/min)
- L : Width of cut (mm)
- F : Feed per minute (mm/min)
- d : Depth of cut (mm)
- Ks : Specific cutting resistance (kg/mm^2)
- η : Machine efficiency rate

Specific cutting resistance as per work piece material

Material	Tensile strength & Hardness	Specific cutting resistance ks(kg/㎟)				
		0.1(mm/tooth)	0.2(mm/tooth)	0.3(mm/tooth)	0.4(mm/tooth)	0.6(mm/tooth)
Soft steel	52	220	195	182	170	158
Medium steel	62	198	180	173	160	157
Hard steel	72	252	220	204	185	174
Tool steel	67	198	180	173	170	160
Tool steel	77	203	180	175	170	158
Chrome manganese steel	77	230	200	188	175	166
Chrome manganese steel	63	275	230	206	180	178
Chrome molybdenum steel	73	254	225	214	200	180
Chrome molybdenum steel	60	218	200	186	180	167
Nickel chrome molybdenum steel	94	200	180	168	160	150
Nickel chrome molybdenum steel	H_B352	210	190	176	170	153
Cast steel	52	280	250	232	220	204
Hard cast iron	H_RC46	300	270	250	240	220
Cast iron	36	218	200	175	160	147
Gray cast iron	H_B200	175	140	124	105	97
Brass	50	115	95	80	70	63
Aluminum alloy(Aℓ -Mg)	16	58	48	40	35	32
Aluminum alloy(Aℓ - Si)	20	70	60	52	45	39

Chip volume as per horse power(㎤/min)

Work piece		Rated horse power 5HP	10HP	20HP	30HP	40HP	50HP
Steel	Soft	32	75	163	295	425	570
	Medium	26	55	127	212	310	425
	Hard	18	41	93	163	228	310
Cast iron	Soft	52	116	260	455	670	880
	Medium	32	75	163	295	425	570
	Hard	26	55	127	212	310	425
Brass Bronze	Soft	77	163	390	670	980	1,280
	Medium	54	118	275	490	700	910
	Hard	26	55	127	245	325	425
Aluminum		90	195	440	780	1,110	1,500

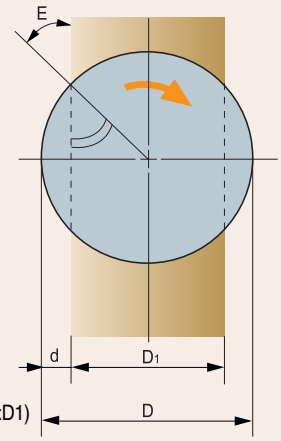
Selection of cutter diameter

Selection by machine power

Machine power	3~5	7.5~10	15~30
Proper cutter diameter	ø80~ ø100	ø100~ ø160	ø160~ ø200

Selection by width of work piece

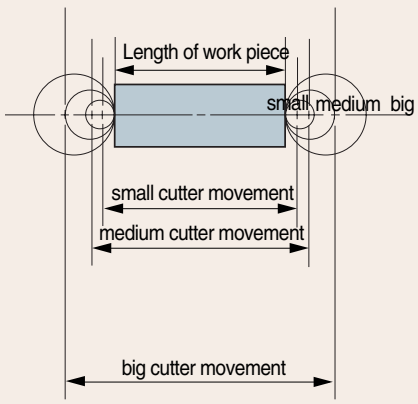
Work piece	E	δ
steel	+20°~ -10°	3:2
Cast iron	+50°under	5:4
Aluminum alloy	+40°under	5:3



D : Diameter of cutter
D1 : Width of work piece
d : Gap between cutter and work piece
E : engage angle
δ : Ratio between cutter and work piece(D:D1)

Selection by machining time

• The bigger size cutter needs longer time to cut same size work piece.



Selection by number of tooth

Work piece	Steel	Cast iron	Aluminum alloy
Number of tooth	D×(1~1.5)	D×(1~4)	D×1+α

ex)D=ø100 ⇒4″×(1~1.5)=4 tooth ~ 6 tooth

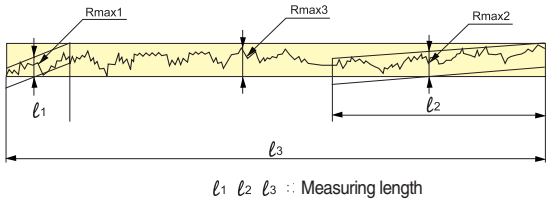
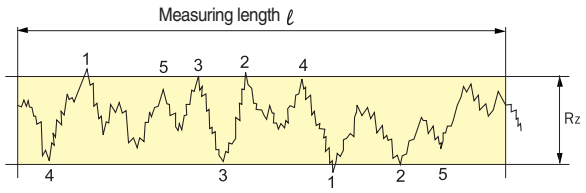
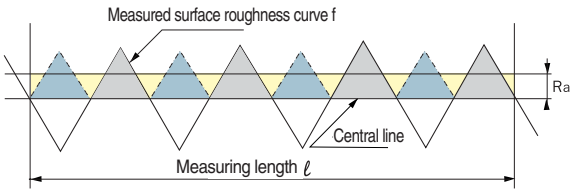
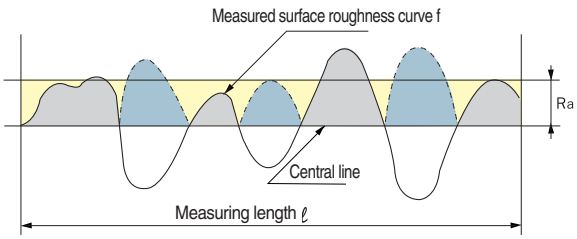
D is size of the cutter converted into inch size.

Trouble shooting for milling

Problems	Cause	Solution										
		Cutting condition				Tool shape					Insert grade	
		Cutting speed	Depth of cut	Feed	Coolant	Rake angle	Relief angle	Approach angle	Chattering of insert	Nose radius	Tough -ness	Hard -ness
Flank wear	• Improper grade • Improper cutting conditions • Chattering	↓		↑			↑	↓		↑		↑
Crater wear	• Improper cutting conditions • Improper grade	↓	↓	↓	○	↑				↓		↑
Chipping	• Lack of toughness of insert • Excessive feed • Excessive cutting load			↓		↓	↓	↓		↑	↑	
Build up edge	• Improper cutting conditions • Improper cutting edge design • Improper grade	↑	↓	↑	○	↑				↓		
Chattering	• Improper cutting conditions • Lack of number of cutting insert • Improper cutting edge design • No good chip flow • Unstable work piece clamping		↓	↓		↑		↑	↓	↓		
No good surface finish	• Build up edge • Improper cutting conditions • Chattering • No good chip flow	↑	↓	↓	○	↑			↓	↑		
Thermal crack	• Improper cutting conditions • Improper grade	↓	↓	↓	◉	↑				↑	↑	
Breakage	• Improper grade • Excessive cutting load • No good chip flow • Chattering, excessive over hang		↓	↓	○						↑	

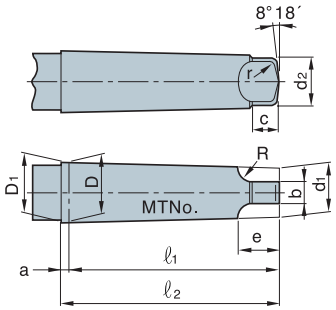
↑ : Increase ↓ : Decrease ○ : Use ◉ : Use carefully

Units of surface roughness

Title	Symbol	Explanation	Diagram
Maximum height	Rmax	Pick up the most highest point and the most lowest point along with the measuring length, respectively. Measure the height between 2 points. (unit ; micro-meter) When pick up the points, reject the value having extra-ordinary number(too big, too low) that looks like groove.	 ℓ1 ℓ2 ℓ3 : Measuring length
Surface finish measured by 10 points	Rz	Take the 3rd highest points from both direction (top to bottom direction & bottom to top direction) along with the measuring length. Measure the height between 2 points. (unit ; micro-meter)	
Surface finish measured by central average	Ra	Measure the width of the every picks from the central line, and make the total width value. And divide the total width value by the measuring length.	 

Symbol	Surface roughness		
	Rmax	Rz	Ra
▽▽▽▽	0.8s	0.8z	0.2a
▽▽▽	6.3s	6.3z	1.6a
▽▽	25s	25z	6.3a
▽	100s	100z	25a
~	Un-specified		

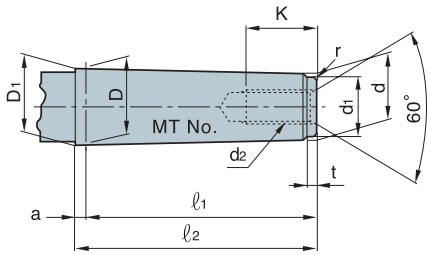
Morse taper (Tang type)



(mm)

MT No.	Taper	Taper angle (α)	D	a	D1	d1	ℓ1	ℓ2	d2	b	c	e	R	r
0	1/19.212	1°29′27″	9.045	3	9.201	6.104	56.5	59.5	6.0	3.9	6.5	10.5	4	1
1	1/20.047	1°25′43″	12.065	3.5	12.240	8.972	62.0	65.5	8.7	5.2	8.5	13.5	5.	1.2
2	1/20.020	1°25′50″	17.780	5	18.030	14.034	75.0	80.0	13.5	6.3	10	16	6	1.6
3	1/19.922	1°26′16″	23.825	5	24.076	19.107	94.0	99.0	18.5	7.9	13	20	7	2
4	1/19.254	1°29′15″	31.267	6.5	31.605	25.164	117.5	124.0	24.5	11.9	16	24	8	2.5
5	1/19.002	1°30′26″	44.399	6.5	4.741	36.531	149.5	156.0	35.7	15.9	19	29	10	3
6	1/19.180	1°29′36″	63.348	8	63.765	52.399	210.0	218.0	51.0	19.0	27	40	13	4
7	1/19.231	1°29′22″	83.058	10	83.578	68.186	286.0	296.0	66.8	28.6	35	54	19	5

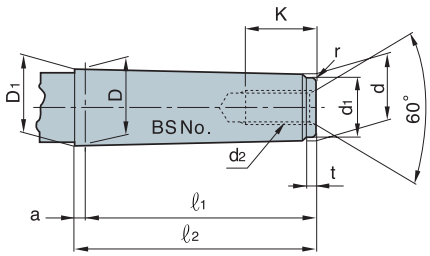
Morse taper (Screw type)



(mm)

MT No.	Taper	Taper angle (α)	D	a	D1	d	ℓ1	ℓ2	d1	d2	k	t	r
0	1/19.212	1°29′27″	9.045	3	9.201	6.442	50	53	6	-		4	0.2
1	1/20.047	1°25′43″	12.065	3.5	12.230	9.396	53.5	57	9	M6	16	5	0.2
2	1/20.020	1°25′50″	17.780	5	18.030	14.583	64	69	14	M10	24	5	0.2
3	1/19.922	1°26′16″	23.825	5	24.076	19.759	81	86	19	M12	28	7	0.6
4	1/19.254	1°29′15″	31.267	6.5	31.605	25.943	02.5	109	25	M16	32	9	1
5	1/19.002	1°30′26″	44.399	6.5	4.741	37.584	129.5	136	35.7	M20	40	9	2.5
6	1/19.180	1°29′36″	63.348	8	63.765	53.859	182	190	51	M24	50	12	4
7	1/19.231	1°29′22″	83.058	10	83.578	70.058	250	260	65	M33	80	18.5	5

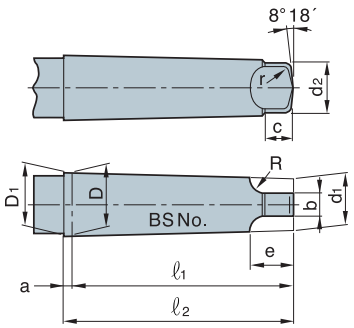
Brown sharp taper (Screw type)



(mm)

B&S No.	D	a	D1	d	d1	ℓ1	ℓ2	t	r	d2	K
4	10.221	2.4	10.321	8.890	8.0	31.0	34.2	2	0.2	-	-
5	13.286	2.4	13.386	11.430	10.0	44.4	46.8	3	0.2	-	-
6	15.229	2.4	15.330	12.700	11.0	60.0	62.7	3	0.2	M 8(1/4)	20
7	18.424	2.4	18.524	15.240	14.0	76.2	78.6	4	0.2	M10(3/8)	24
8	22.828	3.2	22.962	19.090	17.0	90.5	93.7	4	0.6	M12(1/2)	28
9	27.104	3.2	27.238	22.863	21.0	101.6	104.8	4	0.6	M12(1/2)	28
10	32.749	3.2	32.887	26.534	24.0	144.5	147.7	5	1.0	M16(5/8)	32
11	38.905	3.2	39.039	31.749	29.0	171.4	174.6	5	1.0	M16(5/8)	32
12	45.641	3.2	45.774	38.103	35.0	181.0	184.2	6	2.5	M20(3/4)	40
13	52.654	3.2	52.787	44.451	41.0	196.8	200.0	6	3.0	M20(3/4)	40
14	59.533	3.2	59.666	50.800	47.0	209.6	212.8	7	4.0	M24(1)	40
15	66.408	3.2	66.541	57.150	53.0	222.2	225.4	7	4.0	M24(1)	50
16	73.292	3.2	73.425	63.500	59.0	35.0	238.2	8	5.0	M30(11/8)	60

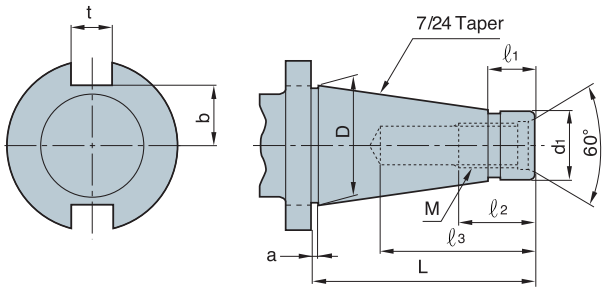
Brown sharp taper (Tang type)



(mm)

B&S No.	D	a	D1	d1	d2	ℓ1	ℓ2	b	c	e	R	r
4	10.221	2.4	10.321	8.458	8.1	42.1	44.5	5.5	8.7	14.4	7.9	1.3
5	13.286	2.4	13.386	10.962	10.7	55.6	58.0	6.3	9.5	16.2	7.9	1.5
6	15.229	2.4	15.330	12.167	11.7	73.0	75.4	7.1	11.1	18.0	7.9	1.5
7	18.424	2.4	18.524	14.675	14.2	89.7	92.1	7.9	11.9	20.3	9.5	1.8
8	22.828	3.2	22.962	18.453.	18.0	104.8	108.0	8.7	12.7	22.0	9.5	2.0
9	28.104	3.2	27.238	22.200	21.8	117.5	120.7	9.5	14.3	25.4	11.1	2.5
10	32.749	3.2	32.887	25.751	25.7	162.7	165.9	11.1	16.7	28.1	11.1	2.8
11	38.905	3.2	39.039	30.985	30.7	189.7	192.9	11.1	16.7	30.0	12.7	3.3
12	45.641	3.2	45.774	37.246	37.1	201.6	204.8	12.7	190	32.5	12.7	3.8
13	52.654	3.2	52.787	43.589	43.4	217.5	220.7	12.7	19.0	35.7	15.9	4.3
14	59.533	3.2	59.666	49.841	49.8	232.6	235.8	14.2	21.4	41.2	19.0	4.8
15	66.408	3.2	66.541	56.186	56.1	245.3	248.5	14.2	21.4	44.4	22.2	5.3
16	73.292	3.2	73.425	62.441	62.2	260.4	263.6	15.8	23.8	50.0	25.4	5.8

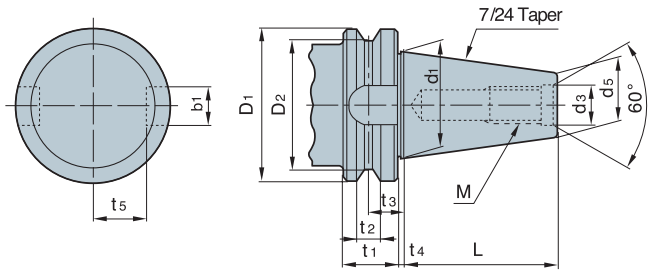
Standard taper of American milling machine



(mm)

NT No.	Mutual designation	D	D1	L	ℓ1	M	ℓ2	ℓ3	a	t	b
30	$1\frac{1}{4}$	31.750	$17.40^{-0.29}_{-0.36}$	70	20	UNC $\frac{1}{2}''$	24	50	1.6	15.9	16
40	$1\frac{3}{4}$	44.450	$25.32^{-0.30}_{-0.384}$	95	25	UNC $\frac{5}{8}''$	30	60	1.6	15.9	22.5
50	$2\frac{3}{4}$	69.850	$39.60^{-0.31}_{-0.41}$	130	25	UNC1″	45	90	3.2	25.4	35
60	$4\frac{1}{4}$	107.950	$60.20^{-0.34}_{-0.46}$	210	45	UNC $\frac{1}{4}''$	56	110	3.2	25.4	60

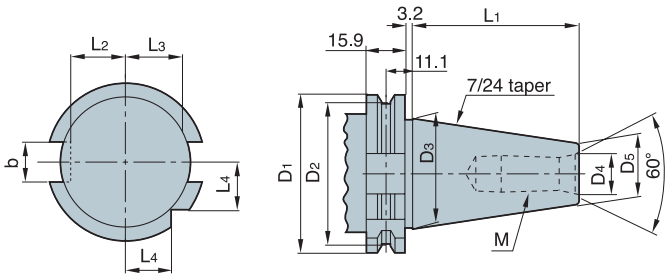
Bottle grip taper



(mm)

BT No.	D1	D2	t1	t2	t3	t4	d1	d3	L	M	b1	t5	d5
35	53	43	22	10	14.6	2	38.1	13	56.5	M12 ×1.75	16.1	19.6	21.62
40	63	52	25	10	16.6	2	44.45	17	65.4	M16 ×2	16.1	22.6	25.3
45	85	73	30	12	21.2	3	57.15	21	82.8	M20 ×25	19.3	29.1	33.1
50	100	85	35	15	23.2	3	69.85	25	101.8	M24 ×3	25.7	35.4	40.1
60	155	135	45	20	28.2	3	107.95	31	161.8	M30 ×3.5	25.7	60.1	60.7

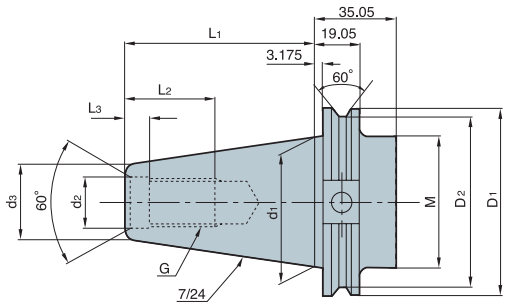
DIN 69871



(mm)

Shank No	D_1	D_2	D_3	D_4	D_5	L_1	L_2	L_3	L	b	M
30	50.0	44.3	31.75	13	17.8	47.8	16.4	19.0	33.5	16.	M12 ×1.75
40	63.5	56.2	44.45	17	24.5	68.4	22.8	25.0	42.5	16.1	M16 ×2
45	82.5	57.2	57.15	21	33.0	82.7	29.1	31.3	52.5	19.3	M20 ×2.5
50	97.5	91.2	68.85	25	40.1	101.7	35.5	37.7	61.5	25.7	M24 ×3

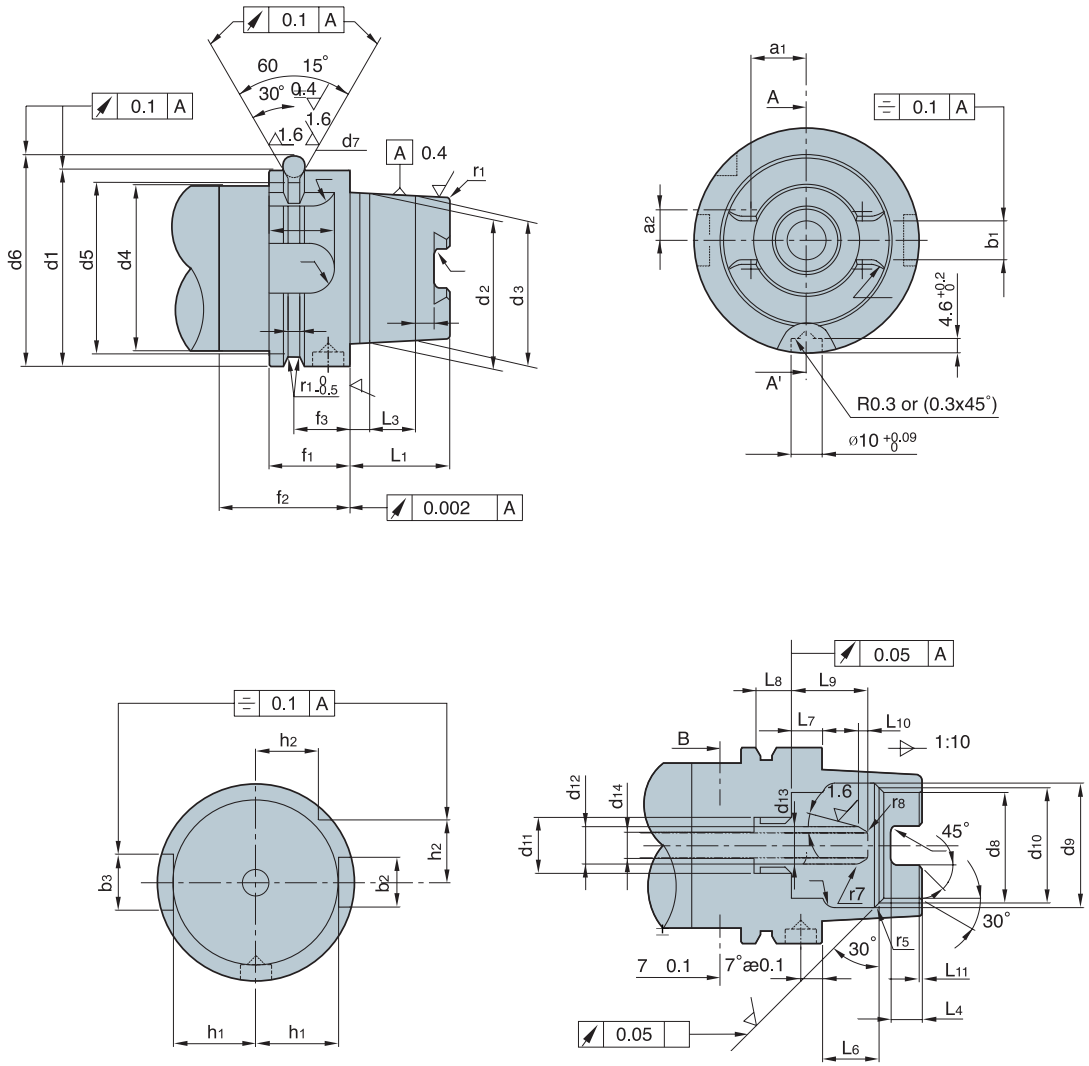
CAT shank



(mm)

Shank No	D_1	D_2	M	d_1	d_2	d_3	L_1	L_2	L_3	G
CAT40	63.5	56.36	44.45	44.45	16.28	21.84	68.25	28.45	4.78	5/8-11
CAT45	82.55	75.41	57.15	57.15	19.46	27.69	82.55	38.1	4.78	3/4-10
CAT50	98.43	91.29	69.85	69.85	26.19	35.05	101.6	44.45	6.35	1-8

HSK shank(DIN 69893)



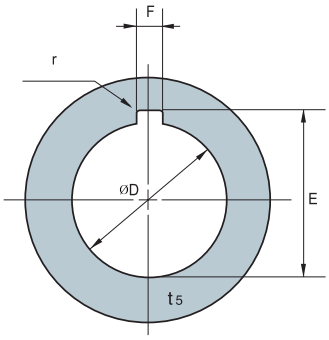
(mm)

Shank No	b_1	b_2	b_3	d_1	d_2	d_3	d_4	d_5	d_6	d_7	d_8	d_9	d_{10}	d_{11}	d_{12}	d_{13}	d_{14}	a_1	a_2
HSK50	10.54	12	14	50	38	36.90	42	43	59.3	7	26	32	29	M16X1	10	6.8	6.8	13.997	7.648
63	12.5	16	14	63	48	46.53	53	55	72.3	7	34	40	37	M18X1	12	8	8.4	17.862	9.25
100	20	20	14	100	75	72,80	85	92	109.75	7	53	63	58	M24X1.5	16	12	12	27.329	15.00

(mm)

Shank No	f_1	f_2	f_3	f_4	b_1	b_2	L_1	L_2	L_3	L_4	L_5	L_6	L_7	L_8	L_9	L_{10}	L_{11}	L_{12}	r_1	r_2	r_3	r_4	r_5	r_6	r_7	r_8
HSK50	26	42	18	3.75	2	15.5	25	5	11	7.5	4.5	14.13	10	10	23	3	1	19	1	1.5	2..38	6	0.5	1	2	6
63	26	42	18	3.75	28.5	20	32	6.3	14.7	10	6	18.13	10	12	24.5	3	1	21	1.2	1.5	3	8	0.6	1.5	3	8
100	29	45	20	3.75	44	31.5	50	10	24	15	10	28.56	12.5	16	28	3	1.5	24	2	2	3	12	1	1.5	3	10

Specification for hole of milling cutter(KSB3203)



Type A

Diameter	øDH7	E	F	r
8	$8^{+0.015}_{0}$	$8.9^{+0.25}_{0}$	$2^{+0.16}_{+0.06}$	0.4
10	$10^{+0.015}_{0}$	$11.5^{+0.25}_{0}$	$3^{+0.16}_{+0.06}$	0.4
13	$13^{+0.018}_{0}$	$14.6^{+0.25}_{0}$	$3^{+0.16}_{+0.06}$	0.6
16	$16^{+0.018}_{0}$	$17.7^{+0.25}_{0}$	$4^{+0.19}_{+0.07}$	0.6
19	$19^{+0.021}_{0}$	$21.1^{+0.25}_{0}$	$5^{+0.19}_{+0.07}$	1
22	$22^{+0.021}_{0}$	$24.1^{+0.25}_{0}$	$6^{+0.19}_{+0.07}$	1
27	$27^{+0.021}_{0}$	$29.8^{+0.25}_{0}$	$7^{+0.23}_{+0.08}$	1.2
32	$32^{+0.025}_{0}$	$34.8^{+0.25}_{0}$	$8^{+0.23}_{+0.08}$	1.2
40	$40^{+0.025}_{0}$	$43.5^{+0.3}_{0}$	$10^{+0.23}_{+0.08}$	1.2
50	$50^{+0.025}_{0}$	$53.5^{+0.3}_{0}$	$12^{+0.275}_{+0.095}$	1.6
60	$60^{+0.030}_{0}$	$64.2^{+0.3}_{0}$	$14^{+0.275}_{+0.095}$	1.6
70	$70^{+0.030}_{0}$	$75.0^{+0.3}_{0}$	$16^{+0.275}_{+0.095}$	2
80	$80^{+0.030}_{0}$	$85.5^{+0.3}_{0}$	$18^{+0.275}_{+0.095}$	2
100	$100^{+0.035}_{0}$	$107.0^{+0.3}_{0}$	$24^{+0.32}_{+0.11}$	2.5

Type B

(mm)

Diameter	øDH7	E	F	r
$\frac{1}{2}$	$12.70^{+0.018}_{0}$	$14.17^{+0.25}_{0}$	$2.38^{+0.31}_{+0.13}$	0.5
$\frac{5}{8}$	$15.875^{+0.018}_{0}$	$17.74^{+0.25}_{0}$	$3.18^{+0.31}_{+0.13}$	0.8
$\frac{3}{4}$	$19.050^{+0.021}_{0}$	$20.89^{+0.25}_{0}$	$3.18^{+0.31}_{+0.13}$	0.8
$\frac{7}{8}$	$22.225^{+0.021}_{0}$	$24.07^{+0.25}_{0}$	$3.18^{+0.31}_{+0.13}$	0.8
1	$25.40^{+0.021}_{0}$	$28.04^{+0.25}_{0}$	$6.35^{+0.31}_{+0.13}$	1.2
$1\frac{1}{4}$	$31.750^{+0.025}_{0}$	$35.18^{+0.25}_{0}$	$7.94^{+0.32}_{+0.14}$	1.6
$1\frac{1}{2}$	$38.10^{+0.025}_{0}$	$42.32^{+0.25}_{0}$	$9.53^{+0.89}_{+0.25}$	1.6
$1\frac{3}{4}$	$44.450^{+0.025}_{0}$	$49.48^{+0.25}_{0}$	$11.11^{+0.89}_{+0.25}$	1.6
2	$50.80^{+0.03}_{0}$	$55.83^{+0.25}_{0}$	$12.7^{+0.89}_{+0.25}$	1.6
$2\frac{1}{2}$	$63.50^{+0.03}_{0}$	$69.42^{+0.25}_{0}$	$15.81^{+0.89}_{+0.25}$	1.6
3	$76.20^{+0.03}_{0}$	$82.93^{+0.25}_{0}$	$19.05^{+0.89}_{+0.25}$	2.4
$3\frac{1}{2}$	$88.90^{+0.035}_{0}$	$98.81^{+0.25}_{0}$	$22.23^{+0.89}_{+0.25}$	2.4
4	$101.60^{+0.035}_{0}$	$111.51^{+0.25}_{0}$	$25.4^{+0.89}_{+0.25}$	2.4
$4\frac{1}{2}$	$114.30^{+0.035}_{0}$	$125.81^{+0.25}_{0}$	$25.58^{+0.89}_{+0.25}$	3.2
5	$127.0^{+0.04}_{0}$	$140.08^{+0.25}_{0}$	$31.75^{+0.89}_{+0.25}$	3.2

The Comparison of Hardness

Conversion table for work piece hardness

Vickers 50kgf HV	Brinell, 3000kgf HB		Rockwell				Shore	Tensile strength (Approximate) MPa (1)
	Standard 10mm	Carbide 10mm	A Scaale 60kgf Diamond Grain HRA	B Scaale 100kgf 1/16in Ball HRB	C Scaale 150kgf Diamond Grain HRC	D Scaale 100kgf Diamond Grain HRD	HS	
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 : Gothic figure folbws table ASTM E 140.

Remark (1) 1MPa=1N/㎟

(2) ( ) unusual figures, only for references.

The Comparison of Work-piece

Comparative table for work-piece standard

ISO	Korea	United Kingdom	America	German	Spain	Italy	Sweden	France	Japan
	KS	BS	AISI/SAE	DIN	UNF	UNI	SS	AFNOR	JIS
P Steels	**Carbon steel**								
	SM15C	080M15	1015	Ck15	C15K	C16	1370	XC12	S15C
	SM25C	-	1025	Ck25	-		-	-	S25C
	SM35C	060A35	1035	C135	-	C36	1572	XC38TS	S35C
	SM45C	080M46	1045	Ck45	C45K	C45	1672	XC42	S45C
	SM50C	060A52	1050	Cf53	-	C53	1674	XC48TS	S50C
	SM55C	070M55	1055	Ck55	C55K	C5	-	XC55	S55C
	SM58C	080A62	1060	Ck60	-	C60	1678	XC60	S58C
	-	212M36	1140	35S20	F210G	-	1957	35MF4	-
	SCMn1	150M28	1330	28Mn6	-	-	-	20M5	SCMn1
	-	230M07	1215	9SMn36	12SMn35	CF9SMn36	-	S300	-
	SMn438(H)	-	1355	36Mn5	36Mn5	-	2120	40M5	SMn738(H)
	sum22	230M07	1213	9SMn28	11SMn28	CF9SMn28	1912	S250	sum22
	Low alloy steels								
	SNC815	655M13;	3310:3415	14NiCr14	-	-	-	12NC15	SNC815(H)
	SNC415	-	3415	14NiCr10	15NiCr11	16NiCr11	-	14NC11	SNC415(H)
	SNC236	640A35	3435	36NiCr6	-	-	-	35NC6	SNC236
	SCM420;SCM430	1717DS110	41300	25CrMo4	55Cr3	25CrMo(KB)	2225	25CD4	SCM420;SCM430
	SCM432;SCCRM3	708A37	4137:4135	34CrMo4	34CrMo4	35CrMo4	2234	35CD4	SCM432;SCCRM3
	SCM415	-	-	15CrMo5	12CrMo4	-	2216	12CD4	SCM415(H)
	SCM440	708M40	4140	42CrMo4	42CrMo4	42CrMo4	2244	42CD4	SCM440(H)
	SCM440	708M40	4140;4142	41CrMo4	42CrMo4	41CrMo4	2244	42CD4TS	SCM440
	-	820A16	-	17CrNiMo6	14NiCrMo13	-	-	18NCD6	-
	-	1503-245-420	4520	16Mo5	16Mo5	16Mo5	-	-	-
	SCMnH1	Z120M12	-	G-X120Mn12	X120Mn12	XG120Mn12	-	Z120M12	SCMnH/1
	SCr415	523M15	5015	15Cr3	-	-	-	12C3	SCr415(H)
	-	(527M20)	5115	16MnCr5	16MnCr5	16MnCr5	2511	16MC5	-
	SCr430	530A32	5132	34Cr4	35Cr4	34Cr4(KB)	-	32C4	SCr430(H)
	SCr440	530M40	3140	41Cr4	42Cr4	41Cr4	-	42C4	SCr440(H)
	SPS	735A50	6150	50CrV4	51CrV4	50CrV4	2230	50CA4	SUP10
	SPS9	527A60	5155	55Cr3	-	-	-	55Cr3	SUP9(A)
	-	905M39	-	41CrAlMo7	41CrAlMo7	41CrAlMo7	2940	40CAD6, 12	-
	SNCM220	805M20	8620	21NiCrMo22	20NiCrMo2	20NiCrMo2	2506	30NCD2	SNCM22(H)
	SNCM240	311-Type7	8740	40NiCrMo22	40NiCrMo2	40NiCrMo2(KB)	-	-	SNCM240
	-	250A53	9255	55Si7	56Si7	55Si8	2085	55S7	-
	-	816M40	9840	36CrNiMo4	35NiCrMo4	38NiCrMo4(KB)	-	40NCD3	-
	SU2	534A99	52100	100Cr6	F.131	100Cr6	2258	100C6	SU2
	SUM22L	-	12L13	9SMnPb28	11SMnPb28	CF9SMnPb28	1914	S250Pb	SUM22L
	-	-	12L14	-SMnPb36	12SMnPb35	CF9SMnPb36	1926	S300Pb	-
	-	150-620Gr27	ASTM A182	13CrMo4 4	14CrMo45	14CrMo4 5	-	15CD3.5	-
	-	1501-622	ASTM A182	10CrMo9 10	TU.H	12CrMo9, 10	2218	12CD9, 10	-
	-	-	ASTM A350LF5	14Ni6	15Ni6	14Ni6	-	16N6	-
	-	1501-240	ASTM A204Gr.A	15Mo3	16Mo3	16Mo3KW	2912	15D3	-
	-	722M24	- 32CrMo12	32CrMo12	F124.A	32Crmo12	2240	30CD12	-
	High alloy steels								
	STD1	BD3	D3	X210Cr12	X210Cr12	X210CrMoV13KU	-	Z200C12	SKD1
	STS12		A2	Z100CnMoV51Z100CDV5	BA2	2260	Z100CnMoV51	Z100CnMoV51KU	SKD12
	-	-	-	X210CrW12	X210CrW12	X215CRW121KU	2312	-	SKD2
	STD61	BH13	H13	X40CrMoV51	X40CrMoV5	X35CrMoVKU	2242	Z40CDV5	SKD5
	-	BH21	H21	X30WCrV93	X30WCrV9	X28W09KU	-	Z30WCV9	SKS31
	STS31	-	-	105WCr6	05WCr5	3KU	2140	105WC13	SKS43
	STS43	BW2	W210	100VI	-	-	-	Y105V	SKT4
	STF4	-	L6	55NiCrMoV6	F.520.S	-	-	55NCDV7	SUH1
	-	401S45	HW3	X45GrSi93	F322	10WCr6	-	Z45CS9	SKH55
	SKH55	-	-	S6-5-2-5	HS6-5-2-5	-	2723	Z85WDKCV2723	SKH3
	SKH3	BT4	T4	S18-1-2-5	HS18-1-1-5	X78WCo1805KU	-	Z80WKCV	SKH9
	SKH51	BM2	M2	S6-5-2	HS6-5-2	X82WMo0650KU	-2722	Z85WDCV	
	-	-	-	M7	HS2-9-2	Z100WCWVHS2-9-2	2782	S2-9-2	
	SKH2	BT1	T1	S18-0-1	HS18-0-1	X75W18KU	-	Z08WCV	SKH2
	-	BS1	S1	45WCrV7	45WCrSi8	45WCrV8KU	2710	-	-

The Comparison of Work-piece

Comparative table for work-piece standard

ISO	Korea	United Kingdom	America	German	Spain	Italy	Sweden	France	Japan
	KS	BS	AISI/SAE	DIN	UNF	UNI	SS	AFNOR	JIS
	Austenite range								
	STS301	-	301	X12CrNi177	-	2331	F.3517	Z12CN17.07X12CrNi1707	SUS301
	STS303	-	303	X12CrNiS188Z10CNF18.09	-	2346	F.3517	X10CrNiS18.09	SUS303
	-		304	X5CrNi189	304S31	X5CrNi18	2332/2333F.3551	Z6CN18.09	SUS304
	STS304	304S15	304	X5CrNi189	F.3551	X5CrNi1810	2332	Z6CN18.09	SUS304
	STS304L		-	Z3CN19.10	304C12	2333	-	-	SUS304L-
	SSC16		304LX2CrNi1819	Z2CrNi1810	304S12	2352	F.3503	X2CrNi1011	SCS16
	STS304L	304S62	304LN	X2CrNiN,1810	-	-	2371	Z2CN1810	NSUS304LN
	STR31		HW3X45CrSi93	Z45CS9	401S45	-	SF322	X45CrSi8	SUH1
	STR309	-	309	X15CrNiSi	-	-	-	Z15CNS2012	SUH309
	STR310	310S24	310S	X12CrNi2521	F.332	X60CrNi2520	2361	Z12CN2520	SUD310
	STS316		316	X5CrNiMo1810	346S16	X5CrNiMo17122347	F.3543	Z6CND1711	SUS316
	STS316LN	-	316LN	X2CrNiMoN	-	-	2375	Z2CND1713	SUS316LN
	STS316L	-	1812	-	-	-	-	-	SUS316L-
	SSC16		316LXCrNiMo	Z2cndCND1712	316S13	2353	-	X2CrNiMo1712	SCS16
	-	320S17	316Ti	Z2CND1915	F.3535	X6CrNiMoTi1712	2350	Z6VDT17.12	-
	STS317L		X2CrNiMo	z2CND1915	317S12	2367	-	X2CrNiMo1816	317L
	-	-	X10CrNi	Z6CNDNb	-	-	-	X6CrNiMoMoNb	318
	-	-	S32304	X2CrNiN,234	-	-	2327	Z2CN23-04AZ	-
		-	S32900	X8CrNiMo.275	-	-	2324	-	-
	-	-	S31803	X2CrNiMoN	-	-	2377	Z2CND22-0503	-
	STS321	351S12	320	X10CrNiTi	F.3553	X6CrNiTi1811	2337	Z6CNT18.10	SUS321
	STS347		347	X10CrNiNb	347S17	X6CrNiNb18.112338	F.3552	Z6CNNb18.10	SUS347
	STS12	BA2	A2	Z100CnMoV51	Z100CnMoV51	Z100CnMoV51KU	2260	Z100CDV5	SKD12
M	**Ferrite range Martensite range**								
	STS403	403S17	403	X7Cr13	F.3110	X6Cr13	2301	Z6C13	SUS403
Stainless	STS405	403S17	405	X10CrA113	F.311	X10CrA112	-	Z10C13	SUS405
	STS410	410S21	410	X10Cr13	F.3401	X12Cr13	2302	Z10C14	SUS410
steel	STS420J2	420S45	-	X46Cr13	F.3405	X40Cr145	2304	Z4CM	SUS420J2
	STS430	430S15	430	X8Cr17	F.3113	X8Cr17	2320	ZBC17	SUS430
	STS430F	-	430F	X12CrMoS17	F.3117	X10CrS17	2383	Z10CF17	SUS430F
	STS431	431S29	431	X22CrNi17	F33427	X16CrNi16	2321	Z15CNi6.02	SUS431
	STS434	434S17	434	X6CrMo17	-	ZX8CrMo17	2325	ZBCD17.01	SUS434
	STR446	-	446	X10CrA124	-	X16Cr26	2322	Z10CAC24	SUH446
	SSC5	425C11	-	X5CrNi134	-	-	-	Z4CND13.4M	SCS5
	STR35,STR36	349S54	EV8	X53CrMnNiN	-	X53CrMnNiNN	-	Z52CMN21.09	SUH35,SUH36
	STR4	443S65	HNW6	X80CrNiSi20	F.320B	X80CrSiNi20	-	Z80CSN20.02	SUH4
	Heat resisting alloys								
	HRSC15	330C11	-	G-X40NiCrSi	-	XG50NiCr	-	-	SCH15
	STR330	-	X12NiCrSi	-	-	-	-	Z12NCS35.16	SUH330330
	-	3072-76	4676	NiCu30Al	-	-	-	-	-
	-	-	5390A	-	-	-	-	NC22FeD	-
	-	3146-3	5391	S-NiCr13A16MoNb	-	-	-	NC12D	-
	-	HR8	5383	NiCr19Fe19NbMo	-	-	-	NC19rNB	-
	-	-	5537C	CoCr20W15Ni	-	-	-	KC20WN	-
	-	-	5660	NiFe35Cr14MoTi	-	-	-	ZSNCDT42	-
		-	5666	NiCr22Mo9Nb	-	-	-	NC22FeDNB	-
	-	-	AMS5397	NiCr15Cr10MoATi	-	-	-	-	-
	-	-	AMS5399	NiCr19Co11MoTi	-	-	-	NC19KDT	-
	-	-	AMS5544	NiCr19Fe19NbMo	-	-	-	NC20K14	-
	-	-	AMS5772	CoCr22W14Ni	-	-	-	KC22WN	-
	-	TA10-13/TA28	AMSR56400	TiAl6V4	-	-	-	T-A6V	-
	-	TA14/17	AMSR54520	TiAl5Sn2.5	-	-	-	T-A5E	-

Comparative table for work-piece standard

ISO	Korea	United Kingdom	America	German	Spain	Italy	Sweden	France	Japan
	KS	BS	AISI/SAE	DIN	UNF	UNI	SS	AFNOR	JIS
K Cast iron · Aluminium	**Gray cast iron**								
	GC100	-	No20B	GG10	-	G10	0110	Ft10D	FC100
	GC150	Grade150	No25B	GG15	-	G14	0115	Ft15D	FC150
	GC200	Grade220	No30B	GG20	-	G20	0120	Ft20D	FC200
	GC250	Grade260	No35B	GG25	-	G25	0125	Ft25D	FC250
	GC300	Grade300	GNo45B	GG30	-	G30	0130	Ft30D	FC300
	GC350	Grade350	No50B	GG35	-	G35	0135	Ft35D	FC350
	GCD400	SNG420/12	060-40-18	GGG40	-	GS400-12	0717-02	FCS400-12	FCD40
	GCD500	SNG500/7	80-55-06	GGG50	-	GS500/7	0727-02	HGS500-7	FCD500
	GCD600	SNG600/3	-	GGG60	-	GS600/3	0732-03	FGS600-3	FCD600
	GCD700	SNG700/2	100-70-03	GGG70	-	GS700/2	0737-01	FGS700-2	FCD700
	Ductile cast iron								
	-	B340/12	32510	GTS-35	-	-	0815	MN35-10	-
	-	P440/7	40010	GTS-45	-	-	0852	-	-
	-	P510/4	50005	GTS-55	-	-	0854	MP50-5	-
	-	P570/3	70003	GTS-65	-	-	0858	MP60-3	-
	Aluminium alloy								
	-	LM6	A413.2	G-AlSi12	-	-	4261	-	-
	-	LM9	A360.2	G-AlSi10Mg(Cu)	-	-	4253	-	-
	-	LM20	A413.1	G-AlSi12(Cu)	-	-	4260	-	-
	-	LM24	A380.1	GD-AlSi8Cu	-	-	4250	3-	-
	-	-	A413.0	GD-AlSi12	-	-	4247	-	-

Tungsten Carbide ISO Grade

KORLOY

ISO	Class of symbol	KORLOY Grade	Hardness	Work-piece	Way of cut	Working condition	High performance direction	
							Cutting condition	Quality of tip
P	P01	ST05	92.0 and over 120 and over	Steels, Cast steels	Precision turning, precision boring	Small cutting area in high cutting speed. Expect good dimension and surface with no vibration.	Cutting Speed / Feed Speed	Hardness / Toughness
	P10	ST10	91.5 and over 150 and over	Steels, Cast steels	Turning, Copy maching, Threading cutting, Surface finish milling	Small cutting area in high cutting speed. or Good working condition.		
	P20	ST20	91.0 and over 165 and over	Steels, Cast steels, Malleable cast iron	Turning, Copy machining, Milling, Planing	Medium cutting area in medium cutting speed. and Small cutting arear in planding.		
	P30	ST30A ST30E	89.5 and over 175 and over	Steels, Cast steels, Malleable cast iron	Turning, Milling, Planing	Medium/lorge cutting area in low/medium cutting speed. or poor woeking condition.		
M	M10	U10	91.5 and over 140 and over	Steels, Cast steels, Cast iron	Turning, Milling	Small/medium cutting area in medium/high cutting speed. or Using in common for castability cast iron.		
	M20	U20	90.5 and over 170 and over	Steels, Cast steels, Cast iron	Turning, Milling	Medium cutting area in medium cutting speed. or No using in common for steels, cast iron. or poor working condition.	Cutting Speed / Feed Speed	Hardness / Toughness
				Hadfield, Steels, Austenite Steels, Special cast iron	Turning, Milling	Medium cutting area in medium cutting speed. or Poor working condition.		
	M40	U40	88.5 and over 220 and over	Steels, Cast steels, Cast iron, Austenite steels, Special cast iron, Heat resisting alloy	Turning, Milling Planing, Cutting-off	Medium/large cutting area in medium cutting speed. or working condition is worse than M20.		
K	K01	H02	92.5 and over 130 and over	Cast iron	Precision Turning, Precision boring, Surface finish milling	Small cutting arear in high cutting speed. or No vibration.		
				High hardness cast iron, Quenched steels	Turning	Small cutting area in exfrom low cutting speed. or No vibration.		
				Black lead, Hard paper, Ceramic High Si-Al		No vibration.		
	K10	H01	92.0 and over 140 and over	Cast iron, Malleable cast iron	Turning, Milling, boring, Reamer	Small/medium cutting area in medium cutting speed. or Generd working in comparating.	Cutting Speed / Feed Speed	Hardness / Toughness
				Quenched steels	Turning	Small cutting area in low cutting speed. or No vibration in comparative.		
				Si-Al alloy, High hardness copper, Glass, Ceramic, Hard rubber, Hard paper, Synthetic resin		No vibration in comparative		
	K20	G10 G2	90.0 and over 160 and over	Cast iron(Hb200 and below)	Turning, Milling, Planing, boring, Reamer, Broach	Medium/large cutting speed in medium cutting speed. or General working demanding high Toughness.		
	K30	G3	89.0 and over 210 and over	Low hardness cast iron, Copper, Aluminium	Turning, Milling, Planing, copy maching	Large cutting area or poor working condition.		
Z	Z10	FA1	91.0 and over 240 and over	Low hardness cast iron, Copper, Aluminium	Milling	Need for depositivity in low/medium cutting speed.		
	Z20	FCC	91.0 and over 190 and over	Steels, Cast steels, Cast iron	Milling	Need for heat resisting in medium/high cutting speed.		

Grade Application

KORLOY

ISO		Coated Carbide		Un- Coated Carbide		Cermet	
		Turning	Milling	Turning	Milling	Turning	Milling
P	P01	NC3010, NC3015, NC3020, NC3030, NC500H	NCM325, PC3535, PC230, PC130, NCM335, PC3545	ST10, ST15, ST20, MA2, ST30A	MA2, ST30A	C105, C115, CN100, CT10, CN200	CN20, CC125, CN30
	P10						
	P20						
	P30						
	P40						
M	M01						
	M10	NC9020, PC9030, NC3030	NCM325, PC9530, NCM335	U10, U20, U40	U10, ST30A, U40		
	M20						
	M30						
	M40						
K	K01	NC305K, NC6010, NC315K	NCM310K, PC205K, PC215K, NCM320K	H02, H01, H05, H10, G10	H01, H05, G10		
	K10						
	K20						
	K30						
	K40						
Z	Z10				FS1, FCC, FA1		
	Z20						

Technical information

Physical properties of KORLOY grade

Applicaion	ISO		KORLOY grade	Specific gravity (g/㎤)	Hardness (HRA)	Deflecive strength (kg /㎟)	Pressure (kg /㎟)	Moduls of elasticity (10^3kg/㎟)	Cofficient of expansion (10^{-6}/℃)	Heat conductivity (cal/㎝·sec·℃)
Cutting tools	P	PO1	ST05	10.6	92.7	140	440	-	-	-
		P10	ST10	10.0	92.1	175	460	48	6.2	25
		P20	ST20	11.8	91.9	200	480	56	5.2	42
		P30	ST30A	12.2	91.3	230	500	53	5.2	-
	M	M10	U10	12.9	92.4	170	500	47	-	-
		M20	U20	13.1	91.1	210	500	-	-	88
		M30	ST30A	12.2	91.3	230	500	53	5.2	-
		M40	U40	13.3	89.2	270	440	-	-	-
	K	K01	H02	14.8	93.2	185	-	61	4.4	105
		K10	H01	13.0	92.9	210	570	66	4.7	109
		K20	G10	14.7	90.9	250	500	63	-	105
Ultra fine Grain Alloy tools	Z	Z10	FA1	14.1	91.4	290	-	58	5.7	-
		Z20	FCC	12.5	91.3	235	-	-	-	-
Wear-resistance tools	V	V1	D1	15.0	92.3	205	520	-	-	-
		V2	D2	14.8	90.9	250	150	-	-	-
		V3	D3	14.6	89.7	310	410	-	-	-
		V4	G5	14.3	89.0	320	380	-	-	-
		V5	G6	14.0	87.7	350	330	-	-	-
Mining, Contructio n tools	E	E1	GR10	14.8	90.9	220	-	-	-	-
		E2	GR20	14.8	90.3	240	-	-	-	-
		E3	GR30	14.8	89.0	270	-	-	-	-
		E4	GR35	14.8	88.2	270	-	-	-	-
		E5	GR50	14.5	87.0	300	-	-	-	-

Physical properties of element

Element	Specific gravity (g/㎤)	Hardness (HRA)	Young's Modulus (×10^3kg/)	Heat conductivity (cal/㎝·sec·℃)	Cofficient of expansion (×10^{-6}/℃)	Melting point (℃)
WC	15.6	2,150	70	0.3	5.1	2,900
TiC	4.94	3,200	45	0.04	7.6	3,200
TaC	14.5	1,800	29	0.05	6.6	3,800
NbC	8.2	2,050	35	0.04	6.8	3,500
TiN	5.43	2,000	26	0.07	9.2	2,950
Al_2O_3	3.98	3,000	42	0.07	8.5	2,050
CBN	3.48	4,500	71	3.1	4.7	-
Diamond	3.52	9,000	99	5.0	3.1	-
Co	8.9	-	10~18	0.165	12.3	1,495
Ni	8.9	-	20	0.22	13.3	1,455

The Comparison of Chip Breaker

The comparison of chip breaker for turning

APPLICATION			KORLOY Main	KORLOY Sub	SUMITO-MO	SANDVIK	KENNA-METAL	KYOCERA	MITSUBI-SHI	ISCAR	TOSHIBA	SECO	WALTER	DIJET	TAEGUTEC
NEGA·TYPE	STEELS	EXTREME FINISHING	HU	D02	FA	QF	FF	GP DP CF	FH	SF	TF			F1 FA	
		FINISHING	VF	GF	SU,SU SK,SP LU	PF	FN FP FW	CQ HQ	SH	NF	TS,AS 11,17	MF2	NF NF5	FT UA	FG SG
		MEDIUM FINISHING	HC	HM	SX UU	SM		CQ HQ	SH	NF RF LF		MF1	NS4 NS8	GP UR PF	ML
		MEDIUM ROUGHING	HM	GM	GU UX UG	PM QM	MN MP MW	GS HS CS	MA MH	TF PP	TM	M3 MR3	NM,NM4 NM5 NM7	UB GG	MP MC MT
		ROUGHING	HR	GR	MU MX	PR	RN	GT HT	GH	NR	TH	MR4 M5	NR5 NR7	UD	RT
		HEAVY	GH HH	B40	HG MP HP	HR	RH	HX	HZ HV HH HX	TNM	TU 57 65	RR9		UC	RH
		WIPER			GUW LUW	WF,WM WR	MW FW	WQ	MW SW	WG	ASW	M3, M5	NF, NM		
	GENERAL		B25	GR	UZ	23	MG		MT, MV	GN				GN	
	STAINLESS STEEL MILD STEEL		HA HS GS	HC HM GR X38	SU EX (GU) MU FL	MF MM,QM MR,QM	FF,FW FP,MP MW,RN	GU,HU XP,XQ XS	FS, FJ SH, MJ MS, GJ GH	PP TF	TF SS SA TU MS	MF1 MF3 M5	NS4 NM4 NR7	SF	FG,ML MP,MT RH
	CAST IRON		GR	B20 B25 HR	UZ UX	KF KM,QM KR,QR	FF,FW MP,MW RN	GC ZS		GN	33 CM	MF3 M5	NS4,NS8 NM4		MT,RT
	ALUMINIUM		HA				F GP MS	AH		PP					
POSI·TYPE	STEEL CAST IRON	FINISHING	HFP	C05	FP FK	PF KF	MT-UF MT-LF GT-LF	GP DP HQ	FV SQ	SM	01 PF	F1	PF5	FT	FG
		MEDIUM FINISHING	HMP		SJ,SU SK	(PM) (KM)	MF	XQ HQ	R/L R/L-F	14,SM 17,19	PS 23 PM	F1 F2	PS4 PS5		
		MEDIUM ROUGHING	C25	HMP	SF MU	(PR) (KR)	MT-MF GM	G	MV MQ	19	24	F2	PM2,PM5 (PR5)		MT
	ALUMINIUM& ALLOY		TA AK MA		AG	AL	HP	A3		AS	PP			ALU ACB	FL
	STAINLESS STEEL MILD STEEL		HMP	AK	MU	MF, MM MR	LF	(XQ)	FV	14,SM 17,19	SS		PS4 PM5		FG MT
	INDEXABLE DRILLIN-DEXABLE		DM DS,DA	C20 C21	S04 R06	51,53 56,58		SU,SP		SW,GF GG,DT		C1,P1 85,86			

The Comparison of Grades(Turning)

ISO		KORLOY			SUMITOMO			KYOCERA			ISCAR			SANDVIK			SECO			KENNAMETAL			TOSHIBA		
		WC	COATED	CERMET	WC	COATED	CERMET	WC	COATED	CERMET	WC	COATED	CERMET	WC	COATED	CERMET	WC	COATED	CERMET	WC	COATED	CERMET	WC	COATED	CERMET
Turning	P	ST05 ST10 ST15 ST20 MA2 ST30 ST30A ST30N ST40	NC3010 NC3020 NC3030 NC500H	CN100 CN10 CC115 ★ CN200 CN20	ST10P ST20E A30 ST40E	AC700G AC900G AC2000 AC3000	T110A T2000Z ★ T1200A T130A CN8000	PW30	CA5505 CR7015 CA5515 CR7025 CA5525 CA5025 CA5535	TN30 PV30 ★ TN60 TN6020 PV60 ★ TN90	IC50M IC54	IC8048 IC9105 IC9015 IC9250 IC9025 IC656 IC9350 IC9054 IC635	IC20N IC520N IC30N IC530N	S1P SM30 S30T S6	GC4005 GC4015 GC4025 GC4225 GC4035	CT5015 CT525 GC1525 ★	TTX TTM TTR	TP1000 TP2000 TP3000	CM C15M	K45 KM K420	KC9105 KC9110 KC9115 KC9125 KC9240 KC9245	HT2 KT125 HT5 KT175 KT195M	TX10S TX20 TX30 TX40	T9005 T9015 T9025 T9035 TC930	NS520 GT530 ★ NS530 NS540 N308
	M	U10 U20 U40	PC8010 ★ NC9020 NC3030 PC9030 ★	CN200	U10E U2 A30 A40	AC304 AC3000			CA6015 PR905 ★ PR915 ★ PR930 ★			IC9025 IC3028 ★		H13A H10F	GC2015 GC2025 GC2035 ★		AT10 AT15 TTR	TP400 CP500 ★		K2885 K2S	KC9215 KC5010 ★ KC9245 KC5025 ★		TU10 TU20 TU40	T6020 T6030	
	K	H02 H01 H05 H10 G10	NC305K NC6010 NC315K		H01 G10E	AC300G EH510Z ★ AC500G EH520Z ★ AC700G		KW10H	CA4010 CA4110 CA4125 CR7015 PR610 ★		IC4 IC20 IC28	IC9015 IC4028		H1P H10F	GC3205 GC3210 GC3215		THM THR	TK1000 TK2000		K68 K8735	KC9315 KC9325 KC7310 ★		TH03 TH10 KS20	T5010 T5020	

ISO		KORLOY			MITSUBISHI			HITACHI			VALENITE			WALTER			TAEGUTEC			NTK			DIJET		
		WC	COATED	CERMET	WC	COATED	CERMET	WC	COATED	CERMET	WC	COATED	CERMET	WC	COATED	CERMET	WC	COATED	CERMET	WC	COATED	CERMET	WC	COATED	CERMET
Turning	P	ST05 ST10 ST15 ST20 MA2 ST30 ST30A ST30N ST40	NC3010 NC3020 NC3030 NC500H	CN100 CN10 CC115 ★ CN200 CN20	STi10T ST20T UT20T	UE6005 UE6010 UC6010 UE6020 UC6025 UE6035	NC1010 NC2525 UP35N ★ AP25N ★ NX335	SRN5 WS20B EX35 EX40 EX45	GM8015 GM8020 GM8035	CH350 CZ25 ★ CH530 CH550 CH570	S1F VC6 VC5 VC56	SV305 SV405 SV310 SV410 SV315 SV415 SV325 SV330 SV235	VC83		WAP01 WPP10 WAP20 WPP20 WAM10 WAP30		P10 P20 P30 P40	TT1500 TT3500 TT5100	PV320 ★ CT320 CT3000 CT420 CT520		ZM3 ★ KM3 ★ CP5	T3N T15 N20 C30 N40		JC110V JC215V JC325V JC450	LN10 CX50 CX75 CX90 CX99
	M	U10 U20 U40	PC8010 ★ NC9020 NC3030 PC9030 ★	CN200	UT20T	US7020 US735		WAM10B EX35	GM25 GX30		VC27 VC28				WAM20		M10 M20 M40	TT2500 TT3500 TT5100			KM3 ★			JC5003 JC110V JC5015	LN10 CX75 CX99
	K	H02 H01 H05 H10 G10	NC305K NC6010 NC315K		HTi10T HT20T	UC5105 GP10H ★ UC5115 UP10H ★ UC6010		WH05 W10 WH20	GM3005 GM8015 GM8020		VC3 VC2 VC1	SV405 SV415 SV515			WAK10 WAK20		K10 K20 K20M K30	TT1300 TT1500	CT320 CT420 CT520		CP2 CP5	T15		JC105V JC110V JC215V	LN10 CX75

※ Coated ★ : PVD
Cermet ★ : cermet+PVD

The Comparison of Grades(Milling)

ISO		KORLOY		SUMITOMO		KYOCERA		ISCAR		SANDVIK		SECO		KENNAMETAL		TOSHIBA	
		COATED	CERMET	COATED	CERMET	COATED	CERMET	COATED	CERMET	COATED	CERMET	COATED	CERMET	COATED	CERMET	COATED	CERMET
Milling	P	NCM325 PC3535 ★ PC230 ★ NCM335 PC3545 ★	CN100 CN20 CN30	AC230 ACZ330 ★	T12A T1200A T250A	PR730 ★ PR630 ★	 TN100M TC60M	IC520M IC635 IC950 ★ IC908 ★	 IC30N	GC1015 ★ GC1025 ★ GC4020 GC4030 GC1120 ★ GC4040		T20M T25M CP200 ★ CP300 ★		KC725M ★ KC792M ★	KT195M	T325 AH330 ★ T3030 AH740 ★	 NC540 N308
	M	PC8520 ★ NCM335 PC9530 ★	CN30	EH510Z ★ EH520Z ★ ACZ350 ★	T250A	PR660 ★		IC328 ★		GC1005 ★ GC2030 GC2040	CT530	CP200 ★ CP500 ★		KC9240 KC705M ★			
	K	NCM310K PC6510 ★ NCM320K PC215K		AC211 ACZ310 ★		PR510 ★		IC4050 IC7150 IC910 ★		GC3020 GC1020 ★ GC3040		T150M		KC992M KC709M ★		T1015 AH110 ★	

ISO		KORLOY		MITSUBISHI		HITACHI		VALENITE		WALTER		TAEGUTEC		NTK		DIJET	
		COATED	CERMET	COATED	CERMET	COATED	CERMET	COATED	CERMET	COATED	CERMET	COATED	CERMET	COATED	CERMET	COATED	CERMET
Milling	P	NCM325 PC3535 ★ PC230 ★ NCM335 PC3545 ★	CN100 CN20 CN30	F7030 GP20M ★ AP20M ★	 NX2525 NX55 NX4545	 CY150 ★ CY250 ★	 CH550 CH570	 SV935 ★ SM245		WQM15 WTL41 WQM25 WTL71 WQM35		 KT7300 TT7030 ★ TT7070 ★	 CT420 CT3000 CT520	QM3	C50	JC5003 JC730V JC5030 JC5015 JC5040	
	M	PC8520 ★ NCM335 PC9530 ★	CN30	VP15TF ★ VP20RT ★		HC844 ★				WQM25		 TT8020 ★					
	K	NCM310K PC6510 ★ NCM320K PC215K		F5010 AP10H ★		 CY10H ★		 V01 VN8		WTA11 WTA21		 TT6030 ★				JC5003 JC600 JC610 JC5015	

※ Coated ★ : PVD
Cermet ★ : cermet+PVD

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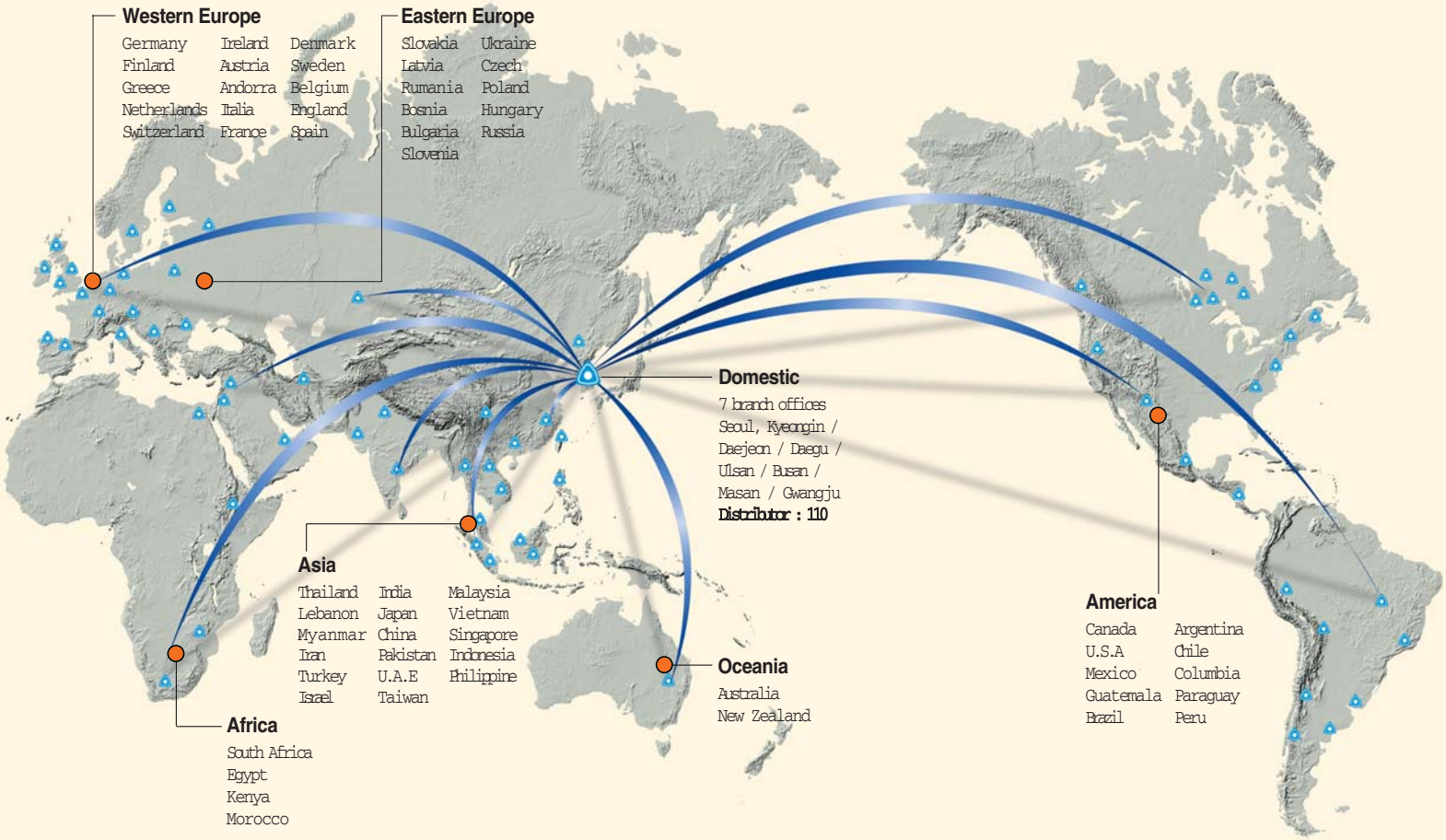

■Coating line of Jin-cheon Factory

■Cheong-ju Factory

■Jin-cheon Factory

■High Technology Analysis facility

■R&D Institute

■Superb Designing facility

CARBIDE CUTTING TOOL REPRESENTATIVE OF KOREA

KORLOY Inc. is a carbide cutting tool manufacturer launched at 1966, now supply its products over 60 countries all over the world and has national wide sales network in KOREA.

We, KORLOY Inc. will always do our best to be the top class manufacturer with ceaseless R&D, high quality product and good service.
KORLOY Inc. will grow as a global leading company.

KORLOY Inc.

www.korloy.com

KORLOY Inc.

www.korloy.com

• HEAD OFFICE
Holystar B/D 953-1, Doksanbon-Dong, Geumcheon-Gu, Seoul, Korea
Phone : +82-2-522-3181 Fax : +82-2-522-3184

• CHEONGJU FACTORY
53-16, Songjeong-Dong, Hungduk-Gu, Cheongju, Chungcheongbuk-Do, Korea
Phone : +82-43-262-0141 Fax : +82-43-262-0146

• JINCHEON FACTORY
767-1, Guangheawon-Ri, Guangheawon-Myon, Jincheon-Gun, Chungcheongbuk-Do, Korea
Phone : +82-43-535-0141 Fax : +82-43-535-0144

Web site : www.korloy.com
E-mail : export@korloy.com