



# TURNING TOOLS



XIAMEN GOLDEN EGRET SPECIAL ALLOY CO.,LTD.

# About GESAC

Xiamen Golden Egret Special Alloy Co., Ltd. (GESAC) is a Sino-foreign joint venture company established in 1989. It is designated by the State as a high-tech enterprise. GESAC is the largest subsidiary of the Shanghai Stock Exchange listed company: Xiamen Tunsten Co., LTD. (Stock code: SH600549) Its main products are tungsten metal powder, tungsten carbide powder, cemented carbide, cutting tools and other tungsten related products. GESAC is the largest producer and exporter of tungsten metal powder and tungsten carbide powder in China and also enjoys good reputation in manufacturing high quality cemented carbide and precision cutting tools.

GESAC has a team of talented staff constantly striving to be stronger. GESAC is equipped with the world's most advanced technologies, manufacturing equipment and testing facilities. The "Golden Egret" brand products are renowned for high quality and excellent service. Our clients are spread across more than forty developed countries and regions all over the world.

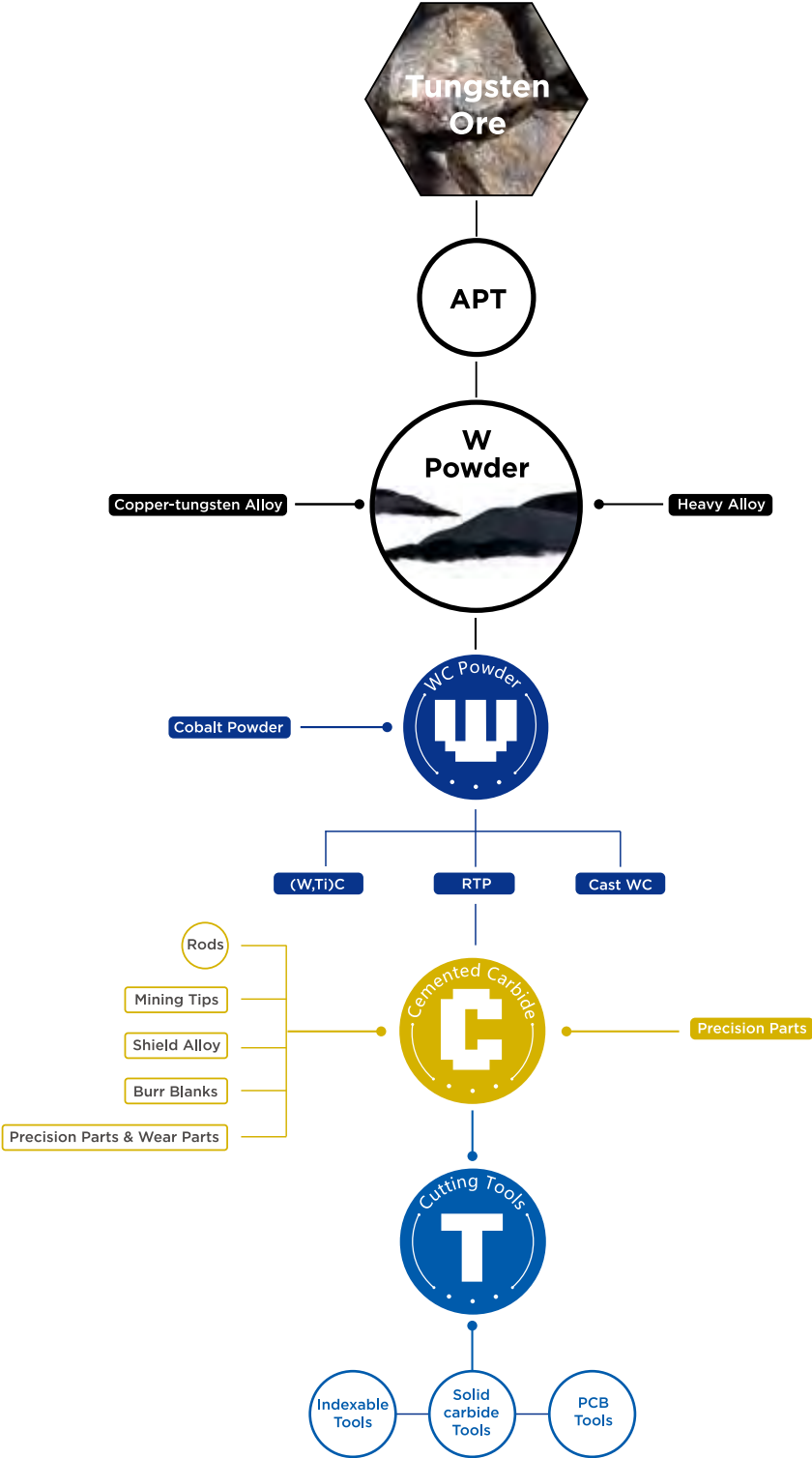
GESAC owns a national level R&D center, and has undertaken and finished many national and provincial research projects independently, such as National Science and Technology Support Plan project, National major special science and technology project, National Key Technologies R&D Program, National Torch Program, National Important New Products project etc. GESAC has received numerous awards such as "National Standard High-tech Enterprise", "Enterprise with Advanced Technology" and "Export-oriented Enterprise" from the state government.

GESAC adheres to the philosophy of "sincerity and dependability are our essence" and strives to develop into a modern enterprise with "first class equipment, first class technology, first class management, first class quality and first class service".



# Product Chain

GESAC has a complete tungsten product chain from tungsten ore to tungsten powder, cemented carbide products and cutting tools.



# Contents

## General Turning —A

ISO Turning Indexable Inserts Identification System	002
Application Summary of Turning Grades	004
CVD Coated Carbide	006
PVD Coated Carbide	008
Cermet	009
Carbide	010
The Working Conditions of Turning Inserts	011
Features of Turning Inserts	012
Turning Inserts ( Negative )	024
Turning Inserts ( Positive )	041
Recommended Cutting Datas	056

## PCBN/PCD Turning —B

PCBN/PCD Turning Inserts Identification System	062
Application Summary of PCBN Grades	064
Application Summary of PCD Grades	065
Range of PCBN Turning Inserts	066
PCBN Inserts (Negative)	068
PCBN Inserts (Positive)	076
PCD Inserts (Positive)	081
Recommended Cutting Datas	087

## Turning Toolholders —C

Summary of Turning Toolholders	089
External Turning Toolholders Identification System	090
External Turning Toolholder	092
Internal Turning Toolholders Identification System	104
Internal Turning Toolholder	106

## Parting and Grooving Tools —D

Parting and Grooving Inserts Identification System	114
Parting and Grooving Tools Identification System	115
Overview of Parting and Grooving Inserts	116
Application Summary of Grades	116
Parting and Grooving Inserts	117
Parting and Grooving Tools	119
Recommended Cutting Datas	123

## Threading Tools —E

Threading Inserts Identification System	126
Overview of Threading Tools	127
Information of Geometry and Grade	128
Thread Turning inserts	129
Recommended Cutting Datas	138

## G-Notch Series Tools —F

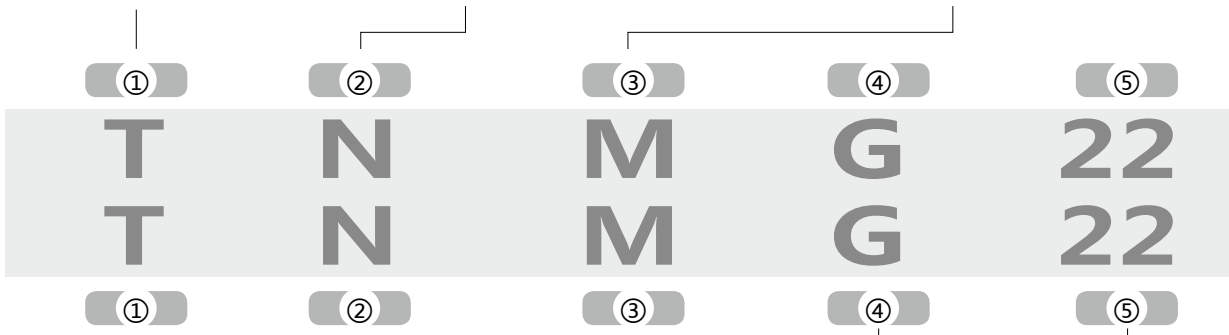
G-Notch Series Inserts Identification System	145
G-Notch Series Tools Identification System	146
Overview of G-Notch Series Tools	149
Application Summary of Grades	149
G-Notch Series Inserts	150
G-Notch Series Tools	153
Recommended Cutting Datas	155

# GENERAL TURNING



# ISO Turning Indexable Inserts Identification System

Symbol	Shape	Corner Angle	Figure	Symbol	Relief Angle Others	Tolerance(mm)			Tolerance (inch)		
						Corner Height (m)	Thickness	I.C.Dia. (Ød)	Corner Height (m)	Thickness (s)	I.C.Dia. (Ød)
H	Hexagon	120°		A	3°	±0.005	±0.025	±0.025	±0.0002	±0.001	±0.001
O	Octagon	135°		B	5°	±0.005	±0.025	±0.013	±0.0002	±0.001	±0.0005
P	Pentagon	108°		C	7°	±0.013	±0.025	±0.025	±0.0005	±0.001	±0.001
S	Square	90°		D	15°	±0.013	±0.025	±0.013	±0.0005	±0.001	±0.0005
T	Triangle	60°		E	20°	±0.025	±0.025	±0.025	±0.001	±0.001	±0.001
C	Rhombus	80°		F	25°	±0.025	±0.13	±0.025	±0.001	±0.005	±0.001
D		55°		G	30°	±0.025	±0.13	±0.025	±0.001	±0.005	±0.001
E		75°		N	0°	±0.025	±0.13	±0.025	±0.001	±0.005	±0.001
F		50°		P	11°	±0.025	±0.13	±0.025	±0.001	±0.005	±0.001
M		86°		O	Others	±0.025	±0.13	±0.025	±0.001	±0.005	±0.001
V		35°				±0.025	±0.13	±0.025	±0.001	±0.005	±0.001
W	Hexagon	80°		L		±0.08-±0.18	±0.13	±0.05-±0.13	±0.001	±0.001	±0.002-±0.005
L	Rectangle	90°		M		±0.08-±0.18	±0.13	±0.05-±0.13	±0.003-±0.007	±0.005	±0.002-±0.005
A	Parallelogram	85°		N		±0.08-±0.18	±0.25	±0.05-±0.13	±0.003-±0.007	±0.001	±0.002-±0.005
B		82°		U		±0.13-±0.38	±0.13	±0.08-±0.25	±0.005-±0.015	±0.005	±0.003-±0.01
K		55°				±0.13-±0.38	±0.13	±0.08-±0.25	±0.005-±0.015	±0.005	±0.003-±0.01
R	Round	—		②Relief Angle Symbol		③Tolerance Symbol					



④Hole/Chip-breaker Symbol				
Symbol	Hole	Hole Shape	Chip-breaker	Shape
N	Without	—	Without	
R			Single-sided	
F			Double-sided	
A	With	With Hole	Without	
M			Single-sided	
G			Double-sided	
W			Without	
T			Single-sided	
Q			Double-sided	
U	With	With Hole and two countersinks 40°-90°	Without	
B			Single-sided	
H			Double-sided	
C	With	With Hole and one countersink 40°-60°	Without	
J			Double-sided	
X	—	—	—	

⑤ISO Edge Length Symbol(mm)															
P		S		C		W		T		D		K		I.C.Dia. (mm)	
Symbol	Length	Symbol	Length	Symbol	Length	Symbol	Length	Symbol	Length	Symbol	Length	Symbol	Length	Symbol	Length
		03	3.97	03	4.0			06	6.9	4	4.8				3.97
		04	4.76	04	4.8			08	8.2	5	5.8				4.76
05	5	--	--	--	--	--	--	--	--	--	--	--	--	--	5
		05	5.56	05	5.6	03	3.8	09	9.6	6	6.8				5.56
06	6	--	--	--	--	--	--	--	--	--	--	--	--	--	6
		06	6.35	06	6.5	04	4.3	11	11	7	7.8	11	11.2		6.35
		07	7.94	08	8.1	05	5.4	13	13.8	9	9.7				7.94
08	8	--	--	--	--	--	--	--	--	--	--	--	--	--	8
09	9.525	09	9.525	09	9.7	06	6.5	16	16.5	11	11.6	16	16.6	16	19.7
10	10	--	--	--	--	--	--	--	--	--	--	--	--	--	10
12	12	--	--	--	--	--	--	--	--	--	--	--	--	--	12
12	12.7	12	12.7	12	12.9	08	8.7	22	22	15	15.5	22	22.1		12.7
15	15.875	15	15.875	16	16.1	10	10.9	27	27.5	19	19.4				15.875
16	16	--	--	--	--	--	--	--	--	--	--	--	--	--	16
19	19.05	19	19.05	19	19.3	13	13	33	33	23	23.3				19.05
20	20	--	--	--	--	--	--	--	--	--	--	--	--	--	20
		22	22.225	22	22.6			38	38.5	27	27.1				22.225
25	25	--	--	--	--	--	--	--	--	--	--	--	--	--	25
25	25.4	25	25.4	25	25.8			44	44	31	31				25.4
31	31.75	31	31.75	32	32.2			55	55	38	38.8				31.75
31	32	--	--	--	--	--	--	--	--	--	--	--	--	--	32

Insert Shape : H,O,P,S,T,C,E,M,W,R									
I.C.Size (mm)	Tolerance of I.C.Size(Ød) (mm)		Tolerance of corner height (m) (mm)		I.C.Size (inch)	Tolerance of I.C.Size(Ød) (mm)		Tolerance of corner height (m) (mm)	
	Class J,K, L,M,N	Class U	Class J,K, L,M,N	Class U		Class J,K, L,M,N	Class U	Class J,K, L,M,N	Class U
6.35	±0.05	±0.08	±0.08	±0.13	0.250	±0.002	±0.003	±0.003	±0.005
9.525					0.375				
12.7	±0.08	±0.13	±0.13	±0.2	0.500	±0.003	±0.005	±0.005	±0.008
15.875					0.625				
19.05	±0.1	±0.18	±0.15	±0.27	0.750	±0.004	±0.007	±0.006	±0.011
25.4					1.000				
31.75	±0.15	±0.25	±0.18	±0.38	1.250	±0.005	±0.010	±0.007	±0.015
32					1.260				

Symbol	Corner Height (mm)
01	1.59
02	2.38
T2	2.78
03	3.18
T3	3.97
04	4.76
05	5.56
06	6.35
07	7.94
09	9.52
©Corner Height Symbol	

Insert Shape : D					
Inscribed Circle Size(Ød)		Tolerance of I.C.Size		Tolerance of corner height	
mm	in	mm	in	mm	in
6.35	0.250	±0.05	±0.002	±0.11	±0.004
9.525	0.375	±0.05	±0.002	±0.11	±0.004
12.7	0.500	±0.08	±0.003	±0.15	±0.006
15.875	0.625	±0.10	±0.004	±0.18	±0.007
19.05	0.750	±0.10	±0.004	±0.18	±0.007

Insert Shape : V					
Inscribed Circle Size(Ød)		Tolerance of I.C.Size		Tolerance of corner height	
mm	in	mm	in	mm	in
6.35	0.250	±0.05	±0.002	±0.15	±0.006
9.525	0.375	±0.05	±0.002	±0.15	±0.006
12.7	0.500	±0.08	±0.003	±0.20	±0.008
15.875	0.625	±0.10	±0.004	±0.27	±0.011
19.05	0.750	±0.10	±0.004	±0.27	±0.011

⑥

**04**

**04**

⑥

⑦

**08**

**08**

⑦

⑧

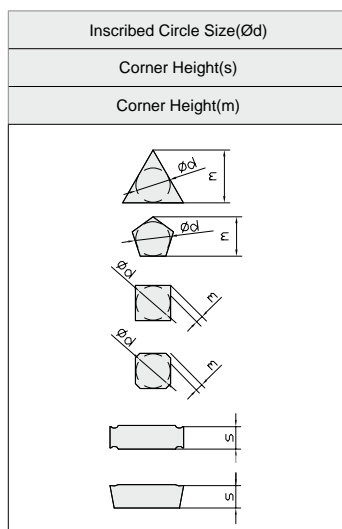
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**-**

⑧

**HK**

**HK**



⑦Corner Re Symbol	
Symbol	Corner-R (mm)
00	0.03
02	0.2
04	0.4
08	0.8
12	1.2
16	1.6
20	2.0
24	2.4
28	2.8
32	3.2

⑧Chipbreaker Symbol
Indicates the cutting properties and chipbreaker

### Application Summary of Turning Grades

Workpiece	ISO	Coated		Uncoated
		CVD	PVD	
<b>P</b> Steel	01	GP1105		
	10	GP1115		
	20	NEW GP1120		
	30	GP1225	GP3125	
	40	NEW GP1135		
	50			
<b>M</b> Stainless Steel	01			
	10	GM1115		
	20	NEW GM1125		
	30		GS3115	
	40		GM3215	GS3125
	50			GM3225
<b>K</b> Cast Iron	01			
	10	GK1115		
	20	GK1120		
	30	GK1125		
	40	GK1130		
	50			
<b>N</b> Nonferrous Metal	01			GN9115
	10			
	20			
	30			GN9120
	40			NEW GN9130
	50			
<b>S</b> HRSA	01			
	10			
	20		GS3115	
	30		GS3125	GS9125
	40			
	50			
<b>H</b> Hardened Material	01			
	10			
	20			
	30			
	40			
	50			



	Cermet	CBN	Coated CBN	PCD
	GP91TF			
	GP91TM			
	NEW			
	GP91TF			
	GP91TM			
	NEW			
	GP91TF	BKN115P		
	GP91TM	BKN115S		
	NEW			
		BKN125S		
		BKN135S		
				DNN105P
				DNN125P
				DNN130P
				DNN135P
		BHN115P		
		BHN125P		
		BHN135P		
		BHN105S		
		BHN115S		
		BHN125S		
			BHC125P	
			NEW	
			BHC135P	
			NEW	

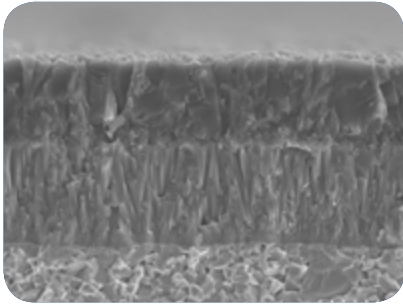
## COATED CARBIDE ( CVD )

• Fine grain Al<sub>2</sub>O<sub>3</sub> coating improve wear-resistance and breakage failure resistance

Workpiece	Cutting Mode	Recommended Grade	Recommended Cutting Speed (m/min)	ISO	Application Range
<b>P</b> Steel	Continuous Cutting	GP1105	200-380	P01	
		GP1115	150-360	P10	
		GP1120	150-360	P20	
	Interrupted Cutting	GP1225	120-280	P30	
		GP1135	80-180	P40	
<b>M</b> Stainless Steel	Continuous Cutting	GM1115	200-300	M01	
				M10	
				M20	
	Interrupted Cutting	GM1125	180-280	M30	
				M40	
<b>K</b> Cast Iron	Continuous Cutting	GK1115	200-400	K01	
				K10	
		GK1120			
	Interrupted Cutting	GK1125	150-300	K20	
				K30	
		GK1130	K40		

**NEW**

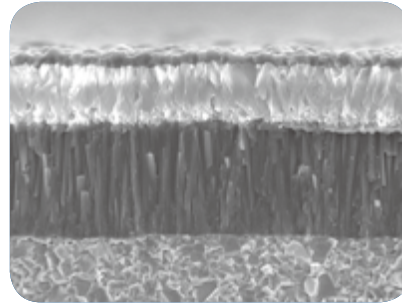
Extremely wear-resistance Steel Turning CVD Grade-GP1105



- Superfine Al<sub>2</sub>O<sub>3</sub> and MT-TiCN coating on gradient carbide substrate provide excellent wear resistance.
- Suitable for finishing of steel & alloy steel under stable condition.

**NEW**

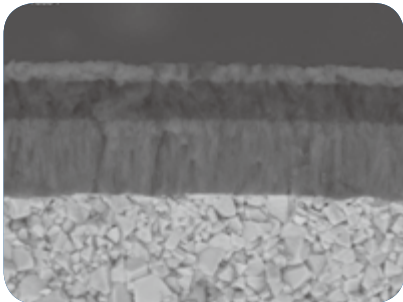
High versatility Steel Turning CVD Grade-GP1120



- Perfect combination with nano columnar MT-TiCN and Al<sub>2</sub>O<sub>3</sub>, TiN coating.
- Special edge treatment technology.
- Suitable for continuous to light interrupted cutting of steel & alloy steel.

**NEW**

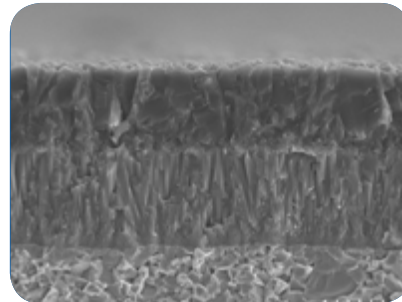
High abrasive wear resistance Stainless Steel Turning CVD Grade-GM1115



- New thinner Al<sub>2</sub>O<sub>3</sub> and Nano MT-TiCN coating, including bright yellow TiN coating, on good toughness gradient carbide substrate, with good wear resistance, superior adhesion resistance and longer tool life.
- Application: Suitable for machining of stainless steels in high-speed continuous finishing conditions.

**NEW**

High versatility Cast Iron Turning CVD Grade-GK1120



- MT-TiCN and thick Al<sub>2</sub>O<sub>3</sub> coated on micro-grain carbide substrate. Special post-processing with excellent edge strength and ensure the stability of cutting.
- Application: Suitable for continuous and light interrupted cutting action of nodular cast iron.

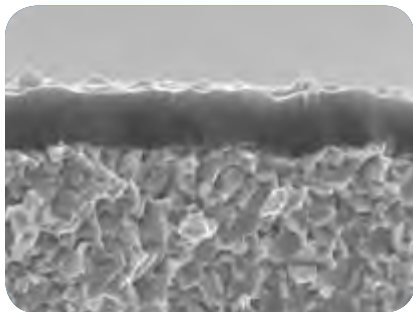
## COATED CARBIDE

• Exclusive PVD nano-coating improve comprehensive properties of cutting insert.

Workpiece	Cutting Mode	Recommended Grade	Recommended Cutting Speed (m/min)	ISO	Application Range
P	Steel	GP3125	100-250	P01	GP3125
				P10	
	Interrupted Cutting			P20	
				P30	
				P40	
M	Stainless Steel	GS3115	120-250	M01	GS3115, GM3215, GM3225
				Interrupted Cutting	
	GM3215	M20			
		GM3225	M30		
	GM3225		M40		
		S	Heat Resistance Alloy	GS3115	
Interrupted Cutting	S10				
	GS3125		S20		
			S30		
S40					

**NEW**

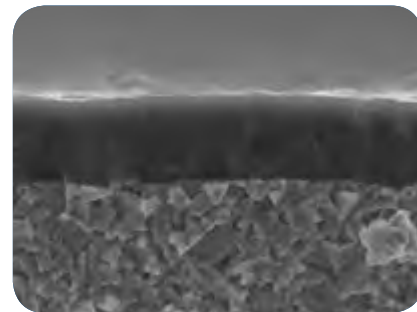
High abrasive wear resistance Stainless Steel Turning PVD Grade-GM3215



- New TiAlN coating on submicron substrate with strong adhesion, superior wear resistance and good heat resistance.
- Application: Suitable for finishing stainless steel and high-temperature alloy on stable conditions.

**NEW**

High versatility Stainless Steel Turning PVD Grade-GM3225



- Optimized combination of TiAlN coating and micro-grain carbide substrate with high Co content provide superior adhesion resistance and toughness.
- Application: Suitable for semi-finishing of stainless steels and threading of general materials.

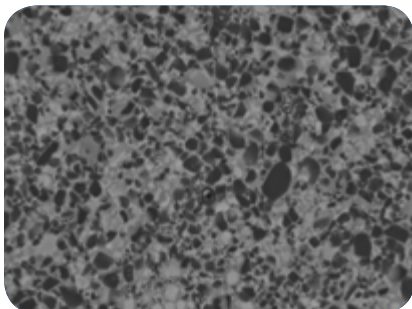
## Cermet

• The specially optimized matrix largely improves wear resistance and anti-breakage property .Great surface quality in high speed application.

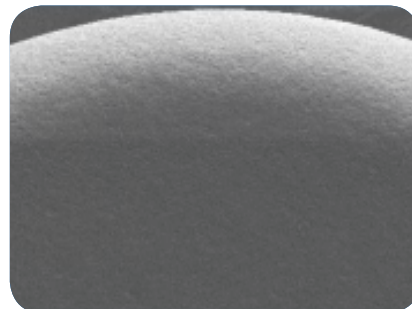
Workpiece	Cutting Mode	Recommended Grade	Recommended Cutting Speed (m/min)	ISO	Application Range	
<b>P</b> Steel	Continuous Cutting	GP91TF	(260) 180-380	P01	GP91TF	
				P10		GP91TM
	Interrupted Cutting	GP91TM	(230) 150-350	P20	NEW GP91TM	
				P30		
<b>M</b> Stainless Steel	Finishing	GP91TF	(200) 150-280	M01	GP91TF	
		GP91TM	(180) 130-250	M10		NEW GP91TM
				M20		
<b>K</b> Cast Iron	Finishing	GP91TF	(230) 130-330	K01	GP91TF	
		GP91TM	(210) 100-300	K10		NEW GP91TM
				K20		

**NEW**

### Finishing and Semi-finishing Machining Turning Grade-GP91TM



- TiCN-based cermet
- Achieving stability and longer tool life with excellent wear resistance and fracture resistance.



- Special surface treatment
- Improved micro-chipping resistance lead to better surface roughness, and enhance wear resistance.

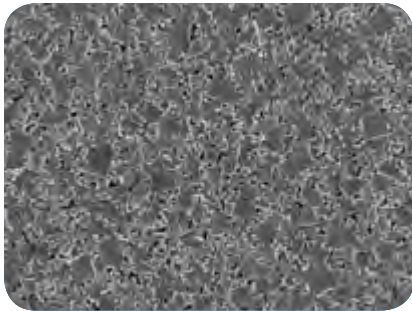
## CARBIDE

- Cemented carbide substrate with special surface treatment suitable for cutting of copper, aluminum alloys and non-metal materials

Workpiece	Cutting Mode	Recommended Grade	Recommended Cutting Speed (m/min)	ISO	Application Range
N Nonferrous Metals	Continuous Cutting	GN9115	800-1600	P01	
		GN9120	700-1500	P10	
	Interrupted Cutting	GN9130	650-1400	P20	
				P30	
				P40	

**NEW**

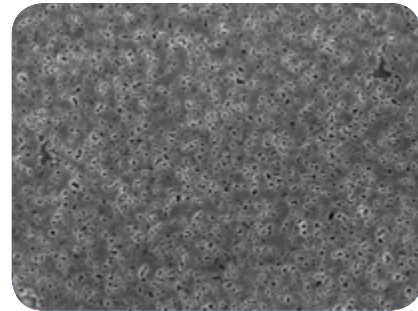
High versatility aluminum alloys Turning Grade-GN9120



- Fine grain cemented carbide substrate with special surface treatment have superior wear resistance and adhesion resistance.
- Application: Suitable for cutting of copper, aluminum alloys and non-ferrous materials in high speed conditions.




**NEW**

High toughness aluminum alloys Turning Grade-GN9130



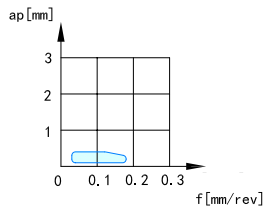
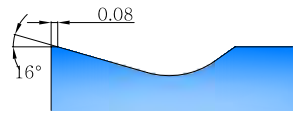
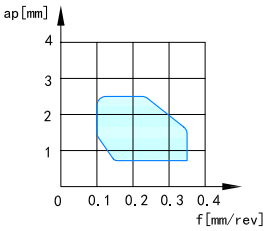
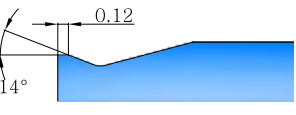
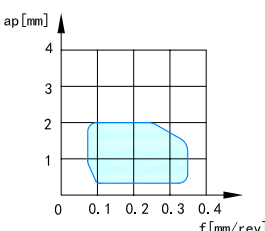
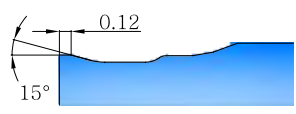
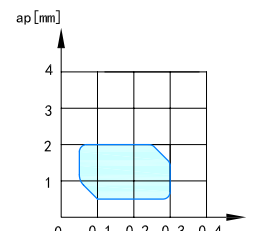
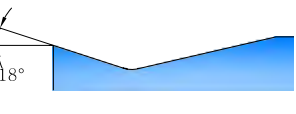
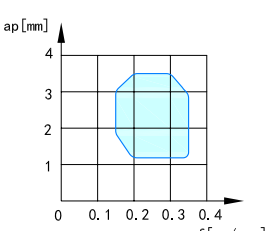
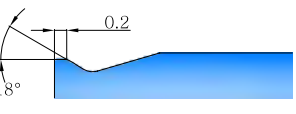
- Micro-fine grain cemented carbide substrate have balance between superior wear resistance and toughness.
- Application: Suitable for roughing of copper, aluminum alloys And non-metallic material.

## The Working Conditions of Turning Inserts










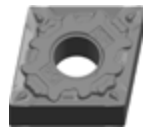
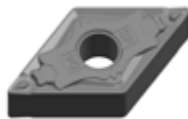








Workpiece material	Geometry		Working Condition		
					
			Continuous	Light Interrupted	Interrupted
<b>P</b>	Negative	PS	GP91TF		
		GF	GP1115/GP91TF	GP1115/GP1225	GP1225
		QF	GP1105/GP1115/GP91TF/ GP91TM	GP1115/GP1120/GP1225/GP91TM	GP1120/GP1225
		GM	GP1115	GP1115/GP1225	GP1225
		QM	GP1105/GP1115/GP91TF/ GP91TM	GP1115/GP1120/GP1225/GP91TM	GP1120/GP1225
		TS	GP91TM	GP91TM	
		SV	GP1115/GP91TF/GP91TM	GP1115/GP1120/GP1225/GP91TM	GP1120/GP1225
		QR	GP1105/GP1115	GP1225	GP1135
		QH	GP1105/GP1115	GP1225	GP1135
	Positive	PS	GP91TF		
		GS	GP91TF		
		MM	GP1105/GP91TF/GP91TM	GP1115/GP91TM	GP1225/GP3125
		GP	GP1115/GP91TF/GP91TM	GP1115/GP1120/GP1225/GP3125/ GP91TM	GP1120/GP1225/ GP3125
		KM	GP1115	GP1115/GP1225	GP1225
	<b>M</b>	Negative	PS	GS3115/GS3125	
SF			GS3115		
SM			GM1115/GM1125/GP91TF/ GP91TM	GM3215/GM3225/GP91TM	GM3225
Positive		PS	GS3125	GM3215/GM3225	GM3225
		GS	GS3125		
		MM	GM1115/GM1125	GM3215/GM3225	GM3225
		GP	GM1115/GM1125	GM3215/GM3225	GM3225
<b>K</b>	Negative	UK	GK1115	GK1115/GK1120	GK1125/GK1130
		HK	GK1115	GK1115/GK1120	GK1125/GK1130
		Flat	GK1115	GK1115/GK1120	GK1125/GK1130
	Positive	GP	GK1115	GK1115/GK1125	GK1125
		KM	GK1115	GK1115/GK1125	GK1125
<b>N</b>	Positive	AL	GN9115	GN9120/GN9130	GN9120/GN9130

## Features of Turning Inserts

### Turning Inserts ( Negative )

Geometry	Features	Application Range	Cross Section Geometry
PS	<ul style="list-style-type: none"> <li>• PS for finishing of steel(mild steel) and stainless steel.</li> <li>• Sharp edge reduces cutting force, enables high quality surface.</li> <li>• Low feed,small cutting depth.</li> </ul>		
GF	<ul style="list-style-type: none"> <li>• GF for finishing of general steel and alloy steel.</li> <li>• Sharp tool nose and strong cutting edge.</li> <li>• Good chip control under small cutting depth.</li> </ul>		
QF	<ul style="list-style-type: none"> <li>• QF for finishing of general steel and alloy steel.</li> <li>• Variable range angle provides enough edge strength at different depth of cut.</li> <li>• Curved edge,sharp cutting edge,good chip control and fine surface finish due to curved edge.</li> </ul>		
SF	<ul style="list-style-type: none"> <li>• SF for stainless steel and Heat Resistance Super Alloy ( HRSA )</li> <li>• Sharp edge due to results in low cutting forces particularly for thin wall structures and extended shafts.</li> </ul>		
GM	<ul style="list-style-type: none"> <li>• GM for semi-finishing of general steel and alloy steel.</li> <li>• Strong flat cutting edge.</li> </ul>		



























	80° Rhombic	55° Rhombic	90° Square	60° Regular Triangle	35° Rhombic	80° Trigon
						
				TNG <sub>Gr/L</sub> -PS P035		
						
	CNMG-GF P024	DNMG-GF P028	SNMG-GF P031	TNMG-GF P035	VNMG-GF P038	WNMG-GF P039
						
	CNMG-QF P024	DNMG-QF P028	SNMG-QF P031	TNMG-QF P035	VNMG-QF P038	WNMG-QF P039
						
	CNMG-SF P024	DNMG-SF P028	SNMG-SF P031	TNMG-SF P035	VNMG-SF P038	WNMG-SF P039
						
	CNMG-GM P024	DNMG-GM P028	SNMG-GM P031	TNMG-GM P035	VNMG-GM P038	WNMG-GM P039

## Features of Turning Inserts

### Turning Inserts ( Negative )


Geometry	Features	Application Range	Cross Section Geometry
QM	<ul style="list-style-type: none"> <li>• QM for semi-finishing of general steel and alloy steel.</li> <li>• Gradient and waved hump wide applicable geometry range.</li> </ul>		
TS	<ul style="list-style-type: none"> <li>• TS for semi-finishing of general steel and alloy steel.</li> <li>• Big rake, smooth chip evacuation.</li> <li>• Variable groove depth design, with super chip removal.</li> </ul>		
SV	<ul style="list-style-type: none"> <li>• SV for semi-finishing of general steel and alloy steel.</li> <li>• Throughout groove and wide chip groove make cutting available in unstable working conditions.</li> <li>• Long chip groove allows high depth of cuts.</li> </ul>		
SM	<ul style="list-style-type: none"> <li>• SM for medium cutting of stainless steel and mild steel.</li> <li>• Sharp cutting edge.</li> </ul>		
UK	<ul style="list-style-type: none"> <li>• UK for machining cast iron.</li> <li>• Medium cutting for general conditions.</li> </ul>		

	80° Rhombic	55° Rhombic	90° Square	60° Regular Triangle	35° Rhombic	80° Trigon
						
	CNMG-QM P025	DNMG-QM P029	SNMG-QM P032	TNMG-QM P036	VNMG-QM P038	WNMG-QM P039
						
		DNMG <sub>R/L</sub> -TS P029		TNMG <sub>R/L</sub> -TS P036		
						
	CNMG <sub>R/L</sub> -SV P025	DNMG <sub>R/L</sub> -SV P029	SNMG <sub>R/L</sub> -SV P032	TNMG <sub>R/L</sub> -SV P036		
						
	CNMG-SM P025	DNMG-SM P029	SNMG-SM P032	TNMG-SM P036	VNMG-SM P038	WNMG-SM P040
						
	CNMG-UK P026	DNMG-UK P030	SNMG-UK P033	TNMG-UK P036	VNMG-UK P038	WNMG-UK P040

## Features of Turning Inserts

### Turning Inserts ( Negative )

Geometry	Features	Application Range	Cross Section Geometry
QR	<ul style="list-style-type: none"> <li>• QR for rough cutting action of carbon steel, cast steel and alloy steel.</li> <li>• Variable rake angle and land provides enough edge sharpness and strength at different depth of cut.</li> </ul>		
HK	<ul style="list-style-type: none"> <li>• HK for cast iron heavy cutting.</li> <li>• Strong cutting edge and wide land for improved performance.</li> </ul>		
QH	<ul style="list-style-type: none"> <li>• QH for heavy cutting action of carbon steel, cast steel and alloy steel.</li> <li>• Single-sided Chip breaker.</li> <li>• Variable land and progressive chip breaker space, generating lower cutting force.</li> <li>• Straight edgeline with reinforcement balances strength and cutting action.</li> </ul>		
None	<ul style="list-style-type: none"> <li>• Without chipbreaker.</li> <li>• Flat-top.</li> <li>• Stable placement.</li> <li>• Strong edge design for intermittent cutting conditions.</li> </ul>		

	80° Rhombic	55° Rhombic	90° Square	60° Regular Triangle	35° Rhombic	80° Trigon
						
	CNMG-QR P026	DNMG-QR P030	SNMG-QR P033	TNMG-QR P037		WNMG-QR P040
						
	CNMG-HK P026	DNMG-HK P030	SNMG-HK P033	TNMG-HK P037	VNMG-HK P038	WNMG-HK P040
						
	CNMM-QH P027		SNMM-QH P034			
						
	CNMA P027	DNMA P030	SNMA P034	TNMA P037		WNMA P040

## Features of Turning Inserts

### Turning Inserts ( Positive )

5° Clearance Angle

Geometry	Features	Application Range	Cross Section Geometry
PS	<ul style="list-style-type: none"> <li>• PS for finishing of steels(mild steels) and stainless steel.</li> <li>• Sharp edge reduces cutting force, enables high quality surface.</li> <li>• Low feed, small cutting depth.</li> </ul>		
GS	<ul style="list-style-type: none"> <li>• GS for finishing of steels(mild steels) and stainless steel.</li> <li>• Sharp edge reduces cutting force, enables high quality surface.</li> <li>• Low feed, large cutting depth</li> </ul>		
MM	<ul style="list-style-type: none"> <li>• MM for light cutting of general steel, alloy steel and stainless steel.</li> <li>• Sharp cutting edge, enables high surface quality.</li> <li>• Double rake angle, ensure sharp cutting edge and enough strength.</li> </ul>		
GP	<ul style="list-style-type: none"> <li>• GP for light cutting of general steel, alloy steel, stainless steel and cast iron.</li> <li>• Strong tool nose due to flat cutting edge and sharp cutting edge due to double rake angle.</li> <li>• Steady chip control when the depth of cut is less than 1mm due to Peninsula-shaped chip breaker.</li> </ul>		
KM	<ul style="list-style-type: none"> <li>• KM for Semi-finishing and roughing of general steel, alloy steel and cast iron.</li> <li>• Variable land design, combine sharpness with fracture resistance.</li> <li>• Large shallow groove design, smooth cutting, easily evacuate chips.</li> </ul>		

	80° Rhombic	55° Rhombic	90° Square	60° Regular Triangle	35° Rhombic	80° Trigon
						
					VBET <sub>R/L</sub> -PS P052	
						
					VBET <sub>R/L</sub> -GS P052	
						
					VBMT-MM P052	
						
					VBMT-GP P052	
						
					VBMT-KM P052	


## Features of Turning Inserts

### Turning Inserts ( Positive )

7° Clearance Angle

Geometry	Features	Application Range	Cross Section Geometry
PS	<ul style="list-style-type: none"> <li>• PS for finishing of steels(mild steels) and stainless steel.</li> <li>• Sharp edge reduces cutting force, enables high quality surface.</li> <li>• Low feed, small cutting depth.</li> </ul>		
GS	<ul style="list-style-type: none"> <li>• GS for finishing of steels(mild steels) and stainless steel.</li> <li>• Sharp edge reduces cutting force, enables high quality surface.</li> <li>• Low feed, large cutting depth.</li> </ul>		
MM	<ul style="list-style-type: none"> <li>• MM for light cutting of general steel, alloy steel and stainless steel.</li> <li>• Sharp cutting edge, enables high surface quality.</li> <li>• Double rake angle, ensure sharp cutting edge and enough strength.</li> </ul>		
GP	<ul style="list-style-type: none"> <li>• GP for light cutting of general steel, alloy steel, stainless steel and cast iron.</li> <li>• Strong tool nose due to flat cutting edge and sharp cutting edge due to double rake angle.</li> <li>• Steady chip control when the depth of cut is less than 1mm due to Peninsula-shaped chip breaker.</li> </ul>		
KM	<ul style="list-style-type: none"> <li>• KM for Semi-finishing and roughing of general steel, alloy steel and cast iron.</li> <li>• Variable land design, combine sharpness with fracture resistance.</li> <li>• Large shallow groove design, smooth cutting, easily evacuate chips.</li> </ul>		
AL	<ul style="list-style-type: none"> <li>• AL for aluminum alloy cutting.</li> <li>• Sharp tool nose due to large rake angle.</li> </ul>		









	80° Rhombic	55° Rhombic	90° Square	60° Regular Triangle	35° Rhombic	80° Trigon
						
	CCET R/L-PS P041	DCET R/L-PS P044		TCET R/L-PS P048	VCET R/L-PS P053	
						
	CCET R/L-GS P041	DCET R/L-GS P044		TCET R/L-GS P048	VCET R/L-GS P053	
						
	CCMT-MM P042	DCMT-MM P045	SCMT-MM P046	TCMT-MM P049		
						
	CCMT-GP P042	DCMT-GP P045	SCMT-GP P046	TCMT-GP P049	VCMT-GP P053	WCMT-GP P055
						
	CCMT-KM P042	DCMT-KM P045	SCMT-KM P046	TCMT-KM P049	VCMT-KM P053	
						
	CCGX-AL P042	DCGX-AL P045	SCGX-AL P046	TCGX-AL P049	VCGX-AL P053	

## Features of Turning Inserts

### Turning Inserts ( Positive )

11° Clearance Angle

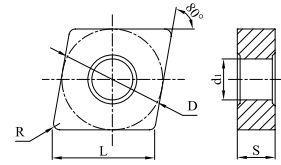
Geometry	Features	Application Range	Cross Section Geometry
PS	<ul style="list-style-type: none"> <li>• PS for finishing of steels(mild steels) and stainless steel.</li> <li>• Sharp edge reduces cutting force,enables high quality surface.</li> <li>• Low feed,small cutting depth.</li> </ul>		
GS	<ul style="list-style-type: none"> <li>• GS for finishing of steels(mild steels) and stainless steel.</li> <li>• Sharp edge reduces cutting force,enables high quality surface.</li> <li>• Low feed,large cutting depth</li> </ul>		
MM	<ul style="list-style-type: none"> <li>• MM for light cutting of general steel, alloy steel and stainless steel.</li> <li>• Sharp cutting edge, enables high surface quality.</li> <li>• Double rake angle,ensure sharp cutting edge and enough strength.</li> </ul>		
GP	<ul style="list-style-type: none"> <li>• GP for light cutting of general steel, alloy steel, stainless steel and cast iron</li> <li>• Strong tool nosedue to flat cutting edge and sharp cutting edge due to double rake angle.</li> <li>• Steady chip control when the depth of cut is less than 1mmdue to peninsula-shaped chip breaker.</li> <li>• Sharp tool nose due to 11°clearance angle.</li> </ul>		

	80° Rhombic	55° Rhombic	90° Square	60° Regular Triangle	35° Rhombic	80° Trigon
						
				TPET <sub>R/L</sub> -PS TPEH <sub>R-PS</sub> P050	VPET <sub>R/L</sub> -PS P054	
						
				TPET <sub>R/L</sub> -GS TPEH <sub>R/L</sub> -GS P050	VPET <sub>R/L</sub> -GS P054	
						
				TPMT-MM P051		
						
	CPMT-GP CPGT-GP P043		SPMT-GP P047	TPMT-GP P051		

Turning Inserts(Negative)

**CN□□**

Rhombic 80° with Hole



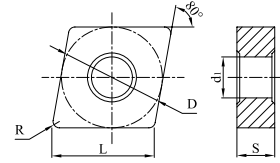
Ordering Code	Dimension(mm)					Coated													Uncoated			Cermet						
	L	D	S	d1	R	GP1105	GP1115	GP1120	GP1225	GP1135	GP3125	GM1115	GM1125	GM3215	GM3225	GS3115	GS3125	GK1115	GK1120	GK1125	GK1130	GN9115	GN9120	GN9130	GP91TF	GP91TM		
	CNMG090308-GF	9.7	9.525	3.18	3.81	0.8	●																					
	CNMG120404-GF	12.9	12.7	4.76	5.16	0.4	●																			○		
	CNMG120408-GF	12.9	12.7	4.76	5.16	0.8	●		○																		○	
	CNMG120412-GF	12.9	12.7	4.76	5.16	1.2	○																					
	CNMG090304-QF	9.7	9.525	3.18	3.81	0.4	○		●																	○	○	
	CNMG090308-QF	9.7	9.525	3.18	3.81	0.8	○		●																	○	○	
	CNMG120404-QF	12.9	12.7	4.76	5.16	0.4	●	●	●	●									○							●	●	
	CNMG120408-QF	12.9	12.7	4.76	5.16	0.8	●	●	●	●									○							○	●	
	CNMG120404-SF	12.9	12.7	4.76	5.16	0.4										●												
	CNMG120408-SF	12.9	12.7	4.76	5.16	0.8										●												
	CNMG090308-GM	9.7	9.525	3.18	3.81	0.8	●		●																			
	CNMG120404-GM	12.9	12.7	4.76	5.16	0.4	●		●																			
	CNMG120408-GM	12.9	12.7	4.76	5.16	0.8	●		●																			
	CNMG120412-GM	12.9	12.7	4.76	5.16	1.2	●		●																			
	CNMG120416-GM	12.9	12.7	4.76	5.16	1.6	●		●																			
	CNMG160608-GM	16.1	15.875	6.35	6.35	0.8	●		○																			
	CNMG160612-GM	16.1	15.875	6.35	6.35	1.2	●		●																			
	CNMG160616-GM	16.1	15.875	6.35	6.35	1.6	●																					
	CNMG190608-GM	19.3	19.05	6.35	7.94	0.8			●																			
	CNMG190612-GM	19.3	19.05	6.35	7.94	1.2	●		●																			
	CNMG190616-GM	19.3	19.05	6.35	7.94	1.6	●		●																			




● Stock ○ Available Upon Order

Turning Inserts(Negative)

**CN□□**

Rhombic 80° with Hole



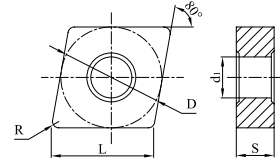
Ordering Code	Dimension(mm)					Coated													Uncoated			Cermet						
	L	D	S	d1	R	GP1105	GP1115	GP1120	GP1225	GP1135	GP3125	GM1115	GM1125	GM3215	GM3225	GS3115	GS3125	GK1115	GK1120	GK1125	GK1130	GN9115	GN9120	GN9130	GP91TF	GP91TM		
	CNMG090304-QM	9.7	9.525	3.18	3.81	0.4	●	●																		○	○	
	CNMG090308-QM	9.7	9.525	3.18	3.81	0.8	●	●																		○	○	
	CNMG120404-QM	12.9	12.7	4.76	5.16	0.4	●	●	○	●			○														●	●
	CNMG120408-QM	12.9	12.7	4.76	5.16	0.8	●	●	●	●			○						○								●	●
	CNMG120412-QM	12.9	12.7	4.76	5.16	1.2	●	●	●	●			○						○									
	CNMG120416-QM	12.9	12.7	4.76	5.16	1.6	●	●		○																		
	CNMG160608-QM	16.1	15.875	6.35	6.35	0.8	○	●		●																		
	CNMG160612-QM	16.1	15.875	6.35	6.35	1.2	●	●	○	○			○															
	CNMG190608-QM	19.3	19.05	6.35	7.94	0.8		●		●																		
	CNMG190612-QM	19.3	19.05	6.35	7.94	1.2	●	○		●																		
	CNMG190616-QM	19.3	19.05	6.35	7.94	1.6		●		○																		
	CNMG120408R-SV	12.9	12.7	4.76	5.16	0.8				●																○	○	
	CNMG120408L-SV	12.9	12.7	4.76	5.16	0.8				●																○	○	
	CNMG090304-SM	9.7	9.525	3.18	3.81	0.4						○	○	○	●													
	CNMG09T304-SM	9.7	9.525	3.97	3.81	0.4						○	○	○	○													
	CNMG090308-SM	9.7	9.525	3.18	3.81	0.8						○	○	○	●													
	CNMG09T308-SM	9.7	9.525	3.97	3.81	0.8						○	○	○	○													
	CNMG120404-SM	12.9	12.7	4.76	5.16	0.4						●	○	●	●											○	●	
	CNMG120408-SM	12.9	12.7	4.76	5.16	0.8						●	●	○	●	○										○	○	
	CNMG120412-SM	12.9	12.7	4.76	5.16	1.2						●	●	○	●													
	CNMG120416-SM	12.9	12.7	4.76	5.16	1.6						○	○	○	○													
	CNMG160608-SM	16.1	15.875	6.35	6.35	0.8						○	○	○	○													
	CNMG160612-SM	16.1	15.875	6.35	6.35	1.2						○	○	○	●													
	CNMG160616-SM	16.1	15.875	6.35	6.35	1.6						○	○	○	●													
	CNMG190608-SM	19.3	19.05	6.35	7.94	0.8						○	○	○	○													
	CNMG190612-SM	19.3	19.05	6.35	7.94	1.2						○	○	○	●													
CNMG190616-SM	19.3	19.05	6.35	7.94	1.6						●	○	○	●														




●Stock ○Available Upon Order

Turning Inserts(Negative)

**CN□□**

Rhombic 80° with Hole



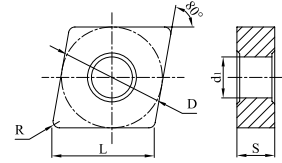
Ordering Code	Dimension(mm)					Coated												Uncoated	Cermet								
	L	D	S	d <sub>1</sub>	R	GP1105	GP1115	GP1120	GP1225	GP1135	GP3125	GM1115	GM1125	GM3215	GM3225	GS3115	GS3125	GK1115	GK1120	GK1125	GK1130	GN9115	GN9120	GN9130	GP91TF	GP91TM	
	CNMG120404-UK	12.9	12.7	4.76	5.16	0.4												●	●	●							
	CNMG120408-UK	12.9	12.7	4.76	5.16	0.8												●	●	●	●						
	CNMG120412-UK	12.9	12.7	4.76	5.16	1.2												●	●	●	○						
	CNMG120416-UK	12.9	12.7	4.76	5.16	1.6												●	○	●	○						
	CNMG160608-UK	16.1	15.875	6.35	6.35	0.8												●	●	●	○						
	CNMG160612-UK	16.1	15.875	6.35	6.35	1.2												●	●	●	○						
	CNMG160616-UK	16.1	15.875	6.35	6.35	1.6												●	○	●	○						
	CNMG190612-UK	19.3	19.05	6.35	7.94	1.2												●	○	●	○						
	CNMG190616-UK	19.3	19.05	6.35	7.94	1.6												●	○	●	○						
	CNMG120408-QR	12.9	12.7	4.76	5.16	0.8	●	●	●	●																	
	CNMG120412-QR	12.9	12.7	4.76	5.16	1.2	●	●	●	●																	
	CNMG120416-QR	12.9	12.7	4.76	5.16	1.6			●																		
	CNMG160608-QR	16.1	15.875	6.35	6.35	0.8			●																		
	CNMG160612-QR	16.1	15.875	6.35	6.35	1.2	●	●	●	●																	
	CNMG160616-QR	16.1	15.875	6.35	6.35	1.6	●		●	●																	
	CNMG190608-QR	19.3	19.3	6.35	7.94	0.8			●	●																	
	CNMG190612-QR	19.3	19.3	6.35	7.94	1.2			●	●																	
	CNMG190616-QR	19.3	19.3	6.35	7.94	1.6			●	●																	
	CNMG190624-QR	19.3	19.3	6.35	7.94	2.4		○		●	○																
CNMG250924-QR	25.8	25.4	9.52	9.21	2.4			●																			
	CNMG120408-HK	12.9	12.7	4.76	5.16	0.8												●	●	●	○						
	CNMG120412-HK	12.9	12.7	4.76	5.16	1.2												●	●	●	○						
	CNMG120416-HK	12.9	12.7	4.76	5.16	1.6												●	●	●	○						
	CNMG160612-HK	16.1	15.875	6.35	6.35	1.2												●	●	●	○						
	CNMG160616-HK	16.1	15.875	6.35	6.35	1.6												●	●	●	●						
	CNMG190612-HK	19.3	19.05	6.35	7.94	1.2												●	●	●	○						
CNMG190616-HK	19.3	19.05	6.35	7.94	1.6												●	○	●	○							



● Stock ○ Available Upon Order

Turning Inserts(Negative)

**CN□□**

Rhombic 80° with Hole



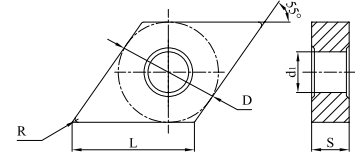
Ordering Code	Dimension(mm)					Coated														Uncoated		Cermet					
	L	D	S	d <sub>1</sub>	R	GP1105	GP1115	GP1120	GP1225	GP1135	GP3125	GM1115	GM1125	GM3215	GM3225	GS3115	GS3125	GK1115	GK1120	GK1125	GK1130	GN9115	GN9120	GN9130	GP91TF	GP91TM	
	CNMM190616-QH	19.3	19.05	6.35	7.94	1.6	●			●	●																
	CNMM190624-QH	19.3	19.05	6.35	7.94	2.4				●	●																
	CNMM250924-QH	25.8	25.4	9.52	9.12	2.4	●	●		●	●																
	CNMA120404	12.9	12.7	4.76	5.16	0.4												●		●							
	CNMA120408	12.9	12.7	4.76	5.16	0.8												●	●	●	○						
	CNMA120412	12.9	12.7	4.76	5.16	1.2												●	●	●	○						
	CNMA120416	12.9	12.7	4.76	5.16	1.6												●	●	●	○						
	CNMA160612	16.1	15.875	6.35	6.35	1.2												●	○	●	○						
	CNMA160616	16.1	15.875	6.35	6.35	1.6												●	○	●	○						
	CNMA160620	16.1	15.875	6.35	6.35	2.0												●	○	●	○						
	CNMA190612	19.3	19.05	6.35	7.94	1.2												●	○	●	○						
	CNMA190616	19.3	19.05	6.35	7.94	1.6												●	○	●	●						
	CNMA190624	19.3	19.05	6.35	7.94	2.4												●	○	●	○						

●Stock ○Available Upon Order

Turning Inserts(Negative)

# DN□□

Rhombic 55° with Hole



Ordering Code	Dimension(mm)					Coated												Uncoated	Cermet									
	L	D	S	d <sub>1</sub>	R	GP1105	GP1115	GP1120	GP1225	GP1135	GP3125	GM1115	GM1125	GM3215	GM3225	GS3115	GS3125	GK1115	GK1120	GK1125	GK1130	GN9115	GN9120	GN9130	GP91TF	GP91TM		
	DNMG110404-GF	11.6	9.525	4.76	3.81	0.4	●																					
	DNMG110408-GF	11.6	9.525	4.76	3.81	0.8	●	●																				
	DNMG150404-GF	15.5	12.7	4.76	5.16	0.4	●	○																				
	DNMG150408-GF	15.5	12.7	4.76	5.16	0.8	●																					
	DNMG150604-GF	15.5	12.7	6.35	5.16	0.4	●																					
	DNMG150608-GF	15.5	12.7	6.35	5.16	0.8	●																					
	DNMG110404-QF	11.6	9.525	4.76	3.81	0.4	●	●																		○	○	
	DNMG110408-QF	11.6	9.525	4.76	3.81	0.8	●	●																		○	○	
	DNMG150404-QF	15.5	12.7	4.76	5.16	0.4	●	●																		●	●	
	DNMG150408-QF	15.5	12.7	4.76	5.16	0.8	●	●	●										○							○	●	
	DNMG150604-QF	15.5	12.7	6.35	5.16	0.4	●	●																		○	●	
	DNMG150608-QF	15.5	12.7	6.35	5.16	0.8	●	●	●										○							○	○	
	DNMG110404-SF	11.6	9.525	4.76	3.81	0.4										○												
	DNMG110408-SF	11.6	9.525	4.76	3.81	0.8										○												
	DNMG150404-SF	15.5	12.7	4.76	5.16	0.4											●											
	DNMG150408-SF	15.5	12.7	4.76	5.16	0.8											●											
	DNMG150604-SF	15.5	12.7	6.35	5.16	0.4											●											
	DNMG150608-SF	15.5	12.7	6.35	5.16	0.8											○											
	DNMG110404-GM	11.6	9.525	4.76	3.81	0.4	○	●																				
	DNMG110408-GM	11.6	9.525	4.76	3.81	0.8	●	●																				
	DNMG150404-GM	15.5	12.7	4.76	5.16	0.4	○	●																				
	DNMG150408-GM	15.5	12.7	4.76	5.16	0.8	○	●																				
	DNMG150412-GM	15.5	12.7	4.76	5.16	1.2			●																			
	DNMG150604-GM	15.5	12.7	6.35	5.16	0.4	○	○																				
	DNMG150608-GM	15.5	12.7	6.35	5.16	0.8			○																			
	DNMG150612-GM	15.5	12.7	6.35	5.16	1.2	●	●																				
	DNMG150616-GM	15.5	12.7	6.35	5.16	1.6	○	○																				

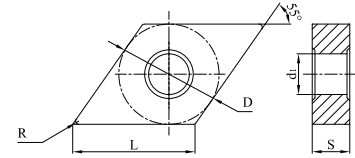
● Stock ○ Available Upon Order



Turning Inserts(Negative)

# DN□□

Rhombic 55° with Hole



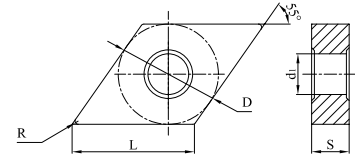
Ordering Code	Dimension(mm)					Coated												Uncoated			Cermet						
	L	D	S	d <sub>1</sub>	R	GP1105	GP1115	GP1120	GP1225	GP1135	GP3125	GM1115	GM1125	GM3215	GM3225	GS3115	GS3125	GK1115	GK1120	GK1125	GK1130	GN9115	GN9120	GN9130	GP91TF	GP91TM	
	DNMG110404-QM	11.6	9.525	4.76	3.81	0.4	○	●																		○	○
	DNMG110408-QM	11.6	9.525	4.76	3.81	0.8	●	●	●																	○	○
	DNMG110412-QM	11.6	9.525	4.76	3.81	1.2	●	○																			
	DNMG150404-QM	15.5	12.7	4.76	5.16	0.4			●																	●	●
	DNMG150408-QM	15.5	12.7	4.76	5.16	0.8	●	●	●	●								○								●	●
	DNMG150412-QM	15.5	12.7	4.76	5.16	1.2		●	●	●																	
	DNMG150604-QM	15.5	12.7	6.35	5.16	0.4	●	○	○			○														○	●
	DNMG150608-QM	15.5	12.7	6.35	5.16	0.8	●	●	●	●			○					○								○	○
	DNMG150612-QM	15.5	12.7	6.35	5.16	1.2	●	○	○	●			○					○									
	DNMG150404R -TS	15.5	12.7	4.76	5.16	0.4																					●
	DNMG150404L -TS	15.5	12.7	4.76	5.16	0.4																					●
	DNMG150408R -TS	15.5	12.7	4.76	5.16	0.8																					○
	DNMG150408L -TS	15.5	12.7	4.76	5.16	0.8																					○
	DNMG150604R-SV	15.5	12.7	4.76	5.16	0.4			●			○														○	○
	DNMG150604L-SV	15.5	12.7	6.35	5.16	0.4			●			○														○	○
	DNMG150608R-SV	15.5	12.7	6.35	5.16	0.8			●			○														○	○
	DNMG150608L-SV	15.5	12.7	6.35	5.16	0.8			●			○														○	○
	DNMG110404-SM	11.6	9.525	4.76	3.81	0.4						●	●	○	●												
	DNMG110408-SM	11.6	9.525	4.76	3.81	0.8						●	○	○	●												
	DNMG110412-SM	11.6	9.525	4.76	3.81	1.2						○	○	○	○												
	DNMG150404-SM	15.5	12.7	4.76	5.16	0.4						●	○	●	●												
	DNMG150408-SM	15.5	12.7	4.76	5.16	0.8						●	●	○	●												
	DNMG150412-SM	15.5	12.7	4.76	5.16	1.2						○	○	○	○												
	DNMG150604-SM	15.5	12.7	6.35	5.16	0.4						●	○	●	●												
	DNMG150608-SM	15.5	12.7	6.35	5.16	0.8						●	●	○	●												
	DNMG150612-SM	15.5	12.7	6.35	5.16	1.2						○	○	○	●												

●Stock ○Available Upon Order

Turning Inserts(Negative)

# DN□□

Rhombic 55° with Hole

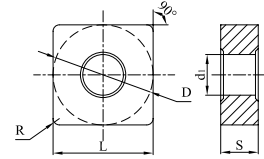


Ordering Code	Dimension(mm)					Coated										Uncoated	Cermet									
	L	D	S	d <sub>1</sub>	R	GP1105	GP1115	GP1120	GP1225	GP1135	GP3125	GM1115	GM1125	GM3215	GM3225	GS3115	GS3125	GK1115	GK1120	GK1125	GK1130	GN9115	GN9120	GN9130	GP91TF	GP91TM
	DNMG150404-UK	15.5	12.7	4.76	5.16	0.4													●	●						
	DNMG150408-UK	15.5	12.7	4.76	5.16	0.8													●	●	●	○				
	DNMG150412-UK	15.5	12.7	4.76	5.16	1.2													●	○	●	○				
	DNMG150604-UK	15.5	12.7	6.35	5.16	0.4													●	●	●					
	DNMG150608-UK	15.5	12.7	6.35	5.16	0.8													●	●	●	○				
	DNMG150612-UK	15.5	12.7	6.35	5.16	1.2													●	○	●	○				
	DNMG150616-UK	15.5	12.7	6.35	5.16	1.6													●	●						
	DNMG150408-QR	15.5	12.7	4.76	5.16	0.8			●																	
	DNMG150412-QR	15.5	12.7	4.76	5.16	1.2			●																	
	DNMG150608-QR	15.5	12.7	6.35	6.35	0.8	●		●	●																
	DNMG150612-QR	15.5	12.7	6.35	6.35	1.2	●	●	○	●																
	DNMG150616-QR	15.5	12.7	6.35	6.35	1.6	○		●	●																
	DNMG150408-HK	15.5	12.7	4.76	5.16	0.8												●	●	●	●					
	DNMG150412-HK	15.5	12.7	4.76	5.16	1.2												●	○	●	○					
	DNMG150608-HK	15.5	12.7	6.35	5.16	0.8												●	●	●	○					
	DNMG150612-HK	15.5	12.7	6.35	5.16	1.2												●	○	●	○					
	DNMA150404	15.5	12.7	4.76	5.16	0.4												●	●							
	DNMA150408	15.5	12.7	4.76	5.16	0.8												●	●	●	○					
	DNMA150412	15.5	12.7	4.76	5.16	1.2												●	○	●	○					
	DNMA150416	15.5	12.7	4.76	5.16	1.6													●	○	●	○				
	DNMA150604	15.5	12.7	6.35	5.16	0.4													●	●						
	DNMA150608	15.5	12.7	6.35	5.16	0.8													●	●	●	○				
	DNMA150612	15.5	12.7	6.35	5.16	1.2													●	○	●	○				

● Stock ○ Available Upon Order

Turning Inserts(Negative)

**SN□□**  
Square 90° with Hole

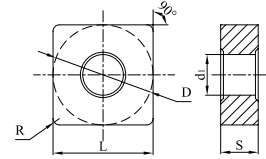





Ordering Code	Dimension(mm)					Coated														Uncoated		Cermet					
	L	D	S	d1	R	GP1105	GP1115	GP1120	GP1225	GP1135	GP3125	GM1115	GM1125	GM3215	GM3225	GS3115	GS3125	GK1115	GK1120	GK1125	GK1130	GN9115	GN9120	GN9130	GP91TF	GP91TM	
	SNMG090304-GF	9.525	9.525	3.18	3.81	0.4	●																				
	SNMG090308-GF	9.525	9.525	3.18	3.81	0.8	●																				
	SNMG120404-GF	12.7	12.7	4.76	5.16	0.4	●																				
	SNMG120408-GF	12.7	12.7	4.76	5.16	0.8	●																				
	SNMG090304-QF	9.525	9.525	3.18	3.81	0.4	●	●																		○	○
	SNMG090308-QF	9.525	9.525	3.18	3.81	0.8	●	●																		○	○
	SNMG120404-QF	12.7	12.7	4.76	5.16	0.4	●	●																		○	○
	SNMG120408-QF	12.7	12.7	4.76	5.16	0.8	●	●	●										○							○	○
	SNMG120404-SF	12.7	12.7	4.76	5.16	0.4										○											
	SNMG120408-SF	12.7	12.7	4.76	5.16	0.8										●											
	SNMG090304-GM	9.525	9.525	3.18	3.81	0.4			○																		
	SNMG090308-GM	9.525	9.525	3.18	3.81	0.8			●																		
	SNMG120404-GM	12.7	12.7	4.76	5.16	0.4	●	●																			
	SNMG120408-GM	12.7	12.7	4.76	5.16	0.8	○	●																			
	SNMG120412-GM	12.7	12.7	4.76	5.16	1.2	●	●																			
	SNMG120416-GM	12.7	12.7	4.76	5.16	1.6			●																		
	SNMG150608-GM	15.875	15.875	6.35	6.35	0.8			●																		
	SNMG150612-GM	15.875	15.875	6.35	6.35	1.2	○	●	●																		
	SNMG150616-GM	15.875	15.875	6.35	6.35	1.6			●	●																	
	SNMG190612-GM	19.05	19.05	6.35	7.94	1.2			●																		
	SNMG190616-GM	19.05	19.05	6.35	7.94	1.6			○																		

●Stock ○Available Upon Order

Turning Inserts(Negative)

**SN□□**  
Square 90° with Hole



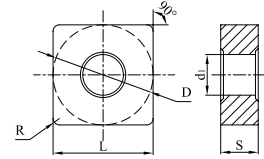
Ordering Code	Dimension(mm)					Coated														Uncoated	Cermet							
	L	D	S	d <sub>1</sub>	R	GP1105	GP1115	GP1120	GP1225	GP1135	GP3125	GM1115	GM1125	GM3215	GM3225	GS3115	GS3125	GK1115	GK1120	GK1125	GK1130	GN9115	GN9120	GN9130	GP91TF	GP91TM		
	SNMG090304-QM	9.525	9.525	3.18	3.81	0.4	●	●																		○	○	
	SNMG090308-QM	9.525	9.525	3.18	3.81	0.8	●	●																		○	○	
	SNMG120404-QM	12.7	12.7	4.76	5.16	0.4	●	●	●																	○	●	
	SNMG120408-QM	12.7	12.7	4.76	5.16	0.8	●	○	●	●								○								○	○	
	SNMG120412-QM	12.7	12.7	4.76	5.16	1.2	●		●																			
	SNMG120416-QM	12.7	12.7	4.76	5.16	1.6	○			●																		
	SNMG150608-QM	15.875	15.875	6.35	6.35	0.8	●		●																			
	SNMG150612-QM	15.875	15.875	6.35	6.35	1.2	●		○																			
	SNMG190612-QM	19.05	19.05	6.35	7.94	1.2	●		○																			
	SNMG120404R-SV	12.7	12.7	4.76	5.16	0.4			●																			
	SNMG120408R-SV	12.7	12.7	4.76	5.16	0.8			●																			
	SNMG120408L-SV	12.7	12.7	4.76	5.16	0.8			●																			
	SNMG090304-SM	9.525	9.525	3.18	3.81	0.4						○	○	○	○													
	SNMG090308-SM	9.525	9.525	3.18	3.81	0.8						○	○	○	○													
	SNMG120404-SM	12.7	12.7	4.76	5.16	0.4						●	○	●	●											○	○	
	SNMG120408-SM	12.7	12.7	4.76	5.16	0.8						●	●	●	●											○	○	
	SNMG120412-SM	12.7	12.7	4.76	5.16	1.2						●	○	○	●													
	SNMG120416-SM	12.7	12.7	4.76	5.16	1.6						○	○	○	○													
	SNMG150608-SM	15.875	15.875	6.35	6.35	0.8						○	○	○	○													
	SNMG150612-SM	15.875	15.875	6.35	6.35	1.2						○	○	○	●	○												
	SNMG150616-SM	15.875	15.875	6.35	6.35	1.6						○	○	○	○													
	SNMG190612-SM	19.05	19.05	6.35	7.94	1.2						○	○	○	●													
	SNMG190616-SM	19.05	19.05	6.35	7.94	1.6						○	○	○	●	○												

●Stock ○Available Upon Order

Turning Inserts(Negative)

**SN□□**

Square 90° with Hole

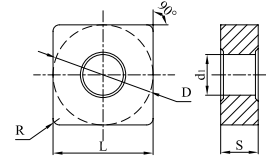




Ordering Code	Dimension(mm)					Coated												Uncoated			Cermet					
	L	D	S	d <sub>1</sub>	R	GP1105	GP1115	GP1120	GP1225	GP1135	GP3125	GM1115	GM1125	GM3215	GM3225	GS3115	GS3125	GK1115	GK1120	GK1125	GK1130	GN9115	GN9120	GN9130	GP91TF	GP91TM
	SNMG120408-UK	12.7	12.7	4.76	5.16	0.8												●	●	●	○					
	SNMG120412-UK	12.7	12.7	4.76	5.16	1.2												●	●	●	○					
	SNMG150412-UK	15.875	15.875	4.76	6.35	1.2												●	○	●	○					
	SNMG150612-UK	15.875	15.875	6.35	6.35	1.2												●	○	●	○					
	SNMG150616-UK	15.875	15.875	6.35	6.35	1.6												●	○	●	○					
	SNMG190612-UK	19.05	19.05	6.35	7.94	1.2												●	○	●	○					
	SNMG190616-UK	19.05	19.05	6.35	7.94	1.6												●	○	●	○					
	SNMG120408-QR	12.7	12.7	4.76	5.16	0.8			●	●																
	SNMG120412-QR	12.7	12.7	4.76	5.16	1.2			●	●																
	SNMG120416-QR	12.7	12.7	4.76	5.16	1.6			●																	
	SNMG150608-QR	15.875	15.875	6.35	6.35	0.8			●																	
	SNMG150612-QR	15.875	15.875	6.35	6.35	1.2			●	●																
	SNMG150616-QR	15.875	15.875	6.35	6.35	1.6	●		●	●																
	SNMG150624-QR	15.875	15.875	6.35	6.35	2.4			●																	
	SNMG190608-QR	19.05	19.05	6.35	7.94	0.8			●																	
	SNMG190612-QR	19.05	19.05	6.35	7.94	1.2			●	●																
	SNMG190616-QR	19.05	19.05	6.35	7.94	1.6			●																	
	SNMG190624-QR	19.05	19.05	6.35	7.94	2.4	○		●																	
	SNMG250724-QR	25.4	25.4	7.94	9.21	2.4	●		●																	
	SNMG250924-QR	25.4	25.4	9.52	9.21	2.4	●		○																	
	SNMG120408-HK	12.7	12.7	4.76	5.16	0.8												●	●	●	○					
	SNMG120412-HK	12.7	12.7	4.76	5.16	1.2												●	●	●	○					
	SNMG120416-HK	12.7	12.7	4.76	5.16	1.6												●	○	●	○					
	SNMG150612-HK	15.875	15.875	6.35	6.35	1.2												●	○	●	○					
	SNMG150616-HK	15.875	15.875	6.35	6.35	1.6												●	○	●	○					
	SNMG190612-HK	19.05	19.05	6.35	7.94	1.2												●	○	●	○					
	SNMG190616-HK	19.05	19.05	6.35	7.94	1.6												●	○	●	○					

●Stock ○Available Upon Order

Turning Inserts(Negative)

**SN□□**  
Square 90° with Hole

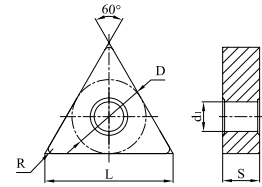


Ordering Code	Dimension(mm)					Coated														Uncoated	Cermet						
	L	D	S	d <sub>1</sub>	R	GP1105	GP1115	GP1120	GP1225	GP1135	GP3125	GM1115	GM1125	GM3215	GM3225	GS3115	GS3125	GK1115	GK1120	GK1125	GK1130	GN9115	GN9120	GN9130	GP91TF	GP91TM	
	SNMM150616-QH	15.875	19.05	6.35	7.94	1.6	●	●	○																		
	SNMM190612-QH	19.05	19.05	6.35	7.94	1.2			●																		
	SNMM190616-QH	19.05	19.05	6.35	7.94	1.6			●																		
	SNMM190624-QH	19.05	19.05	6.35	7.94	2.4			●	●																	
	SNMM250724-QH	25.4	25.4	7.94	9.12	2.4	●	●	●	●																	
	SNMM250732-QH	25.4	25.4	7.94	9.12	3.2			●																		
	SNMM250924-QH	25.4	25.4	9.52	9.12	2.4	●	●	●	●																	
	SNMM250932-QH	25.4	25.4	9.52	9.12	3.2			●	●																	
	SNMA090304	9.525	9.525	3.18	3.81	0.4											●	●									
	SNMA090308	9.525	9.525	3.18	3.81	0.8											●	●									
	SNMA090312	9.525	9.525	3.18	3.81	1.2											●	●									
	SNMA120404	12.7	12.7	4.76	5.16	0.4												●	●								
	SNMA120408	12.7	12.7	4.76	5.16	0.8												●	●	●	○						
	SNMA120412	12.7	12.7	4.76	5.16	1.2												●	●	●	○						
	SNMA120416	12.7	12.7	4.76	5.16	1.6												●	●	●	○						
	SNMA190612	19.05	19.05	6.35	7.94	1.2												●	○	●	○						
	SNMA190616	19.05	19.05	6.35	7.94	1.6												●	●	●	●						

●Stock ○Available Upon Order

Turning Inserts(Negative)

**TN□□**  
Triangle 60° with Hole

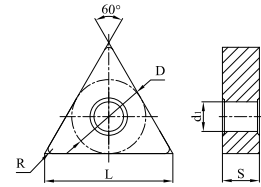


Ordering Code	Dimension(mm)					Coated												Uncoated			Cermet						
	L	D	S	d <sub>1</sub>	R	GP1105	GP1115	GP1120	GP1225	GP1135	GP3125	GM1115	GM1125	GM3215	GM3225	GS3115	GS3125	GK1115	GK1120	GK1125	GK1130	GN9115	GN9120	GN9130	GP91TF	GP91TM	
	TNGG160402R-PS	16.5	9.525	4.76	3.81	0.2										●	●									●	
	TNGG160402L-PS	16.5	9.525	4.76	3.81	0.2										●	●									●	
	TNGG160404R-PS	16.5	9.525	4.76	3.81	0.4										●	●									●	
	TNGG160404L-PS	16.5	9.525	4.76	3.81	0.4										●	●									●	
	TNGG160408R-PS	16.5	9.525	4.76	3.81	0.8										○	○									○	
	TNGG160408L-PS	16.5	9.525	4.76	3.81	0.8										○	○									○	
	TNMG110304-GF	11	6.35	3.18	2.26	0.4	●																				
	TNMG160304-GF	16.5	9.525	3.18	3.81	0.4	●																				
	TNMG160308-GF	16.5	9.525	3.18	3.81	0.8	●																				
	TNMG160404-GF	16.5	9.525	4.76	3.81	0.4	●		○																		
	TNMG160408-GF	16.5	9.525	4.76	3.81	0.8	●																				
	TNMG220404-GF	22	12.7	4.76	5.16	0.4	●																				
	TNMG220408-GF	22	12.7	4.76	5.16	0.8	●																				
	TNMG160404-QF	16.5	9.525	4.76	3.81	0.4	●	●	●	●								○							●	●	
	TNMG160408-QF	16.5	9.525	4.76	3.81	0.8	●	●	●	●								○							○	●	
	TNMG220404-QF	22	12.7	4.76	5.16	0.4	●		●																		
	TNMG220408-QF	22	12.7	4.76	5.16	0.8	●		●																		
		TNMG160404-SF	16.5	9.525	4.76	3.81	0.4										●										
TNMG160408-SF		16.5	9.525	4.76	3.81	0.8										●											
	TNMG160304-GM	16.5	9.525	3.18	3.81	0.4	●		●																		
	TNMG160308-GM	16.5	9.525	3.18	3.81	0.8			●																		
	TNMG160312-GM	16.5	9.525	3.18	3.81	1.2			●																		
	TNMG160404-GM	16.5	9.525	4.76	3.81	0.4	●		●																		
	TNMG160408-GM	16.5	9.525	4.76	3.81	0.8	●		●																		
	TNMG160412-GM	16.5	9.525	4.76	3.81	1.2	●		●																		
	TNMG220404-GM	22	12.7	4.76	5.16	0.4			●																		
	TNMG220408-GM	22	12.7	4.76	5.16	0.8	●		●																		
	TNMG220412-GM	22	12.7	4.76	5.16	1.2	●		●																		
	TNMG220416-GM	22	12.7	4.76	5.16	1.6			●																		
	TNMG270608-GM	27.5	15.875	6.35	6.35	0.8			●																		

●Stock ○Available Upon Order

Turning Inserts(Negative)

**TN□□**  
Triangle 60° with Hole



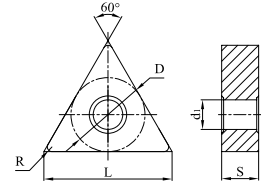
Ordering Code	Dimension(mm)					Coated												Uncoated			Cermert						
	L	D	S	d <sub>1</sub>	R	GP1105	GP1115	GP1120	GP1225	GP1135	GP3125	GM1115	GM1125	GM3215	GM3225	GS3115	GS3125	GK1115	GK1120	GK1125	GK1130	GN9115	GN9120	GN9130	GP91TF	GP91TM	
	TNMG270612-GM	27.5	15.875	6.35	6.35	1.2			●																		
	TNMG330608-GM	33	19.05	6.35	7.94	0.8			●																		
	TNMG330612-GM	33	19.05	6.35	7.94	1.2			●																		
	TNMG110304-QM	11	6.35	3.18	2.26	0.4	●		●				○													○	
	TNMG110308-QM	11	6.35	3.18	2.26	0.8	●		●																	○	
	TNMG160404-QM	16.5	9.525	4.76	3.81	0.4	●	●	●				○					○							●	●	
	TNMG160408-QM	16.5	9.525	4.76	3.81	0.8	●	●	●	●			○					○							●	●	
	TNMG160412-QM	16.5	9.525	4.76	3.81	1.2	●	●	●	●			○					○								●	●
	TNMG220408-QM	22	12.7	4.76	5.16	0.8	●		●																		
	TNMG220412-QM	22	12.7	4.76	5.16	1.2	●		○	●																	
	TNMG160404R-TS	16.5	9.525	4.76	3.81	0.4																				●	
	TNMG160404L-TS	16.5	9.525	4.76	3.81	0.4																				●	
	TNMG160408R-TS	16.5	9.525	4.76	3.81	0.8																				●	
	TNMG160408L-TS	16.5	9.525	4.76	3.81	0.8																				○	
	TNMG160404R-SV	16.5	9.525	4.76	3.81	0.4		●	●				○													●	●
	TNMG160404L-SV	16.5	9.525	4.76	3.81	0.4		●	●				○													●	●
	TNMG160408R-SV	16.5	9.525	4.76	3.81	0.8		●	●				○													○	●
	TNMG160408L-SV	16.5	9.525	4.76	3.81	0.8		●	●				○													○	○
	TNMG160404-SM	16.5	9.525	4.76	3.81	0.4						●	●	●	●	○										○	●
	TNMG160408-SM	16.5	9.525	4.76	3.81	0.8						●	●	●	●	○										○	○
	TNMG160412-SM	16.5	9.525	4.76	3.81	1.2						●	○	○	●												
	TNMG220408-SM	22	12.7	4.76	5.16	0.8						○	○	○	○												
	TNMG220412-SM	22	12.7	4.76	5.16	1.2						○	○	○	○												
	TNMG220416-SM	22	12.7	4.76	5.16	1.6						○	○	○	○												
	TNMG160404-UK	16.5	9.525	4.76	3.81	0.4												●	●								
	TNMG160408-UK	16.5	9.525	4.76	3.81	0.8											●	●	●								
	TNMG160412-UK	16.5	9.525	4.76	3.81	1.2											●	○	●								
	TNMG160416-UK	16.5	9.525	4.76	3.81	1.6											●	○	●								
	TNMG220408-UK	22	12.7	4.76	5.16	0.8											●	○	●	○							
	TNMG220412-UK	22	12.7	4.76	5.16	1.2											●	○	●	○							
	TNMG220416-UK	22	12.7	4.76	5.16	1.6											●	○	●	○							

●Stock ○Available Upon Order



Turning Inserts(Negative)

**TN□□**  
Triangle 60° with Hole



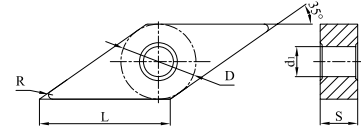
Ordering Code	Dimension(mm)					Coated												Uncoated			Cermet							
	L	D	S	d <sub>1</sub>	R	GP1105	GP1115	GP1120	GP1225	GP1135	GP3125	GM1115	GM1125	GM3215	GM3225	GS3115	GS3125	GK1115	GK1120	GK1125	GK1130	GN9115	GN9120	GN9130	GP91TF	GP91TM		
	TNMG160408-QR	16.5	9.525	4.76	3.81	0.8			●	●																		
	TNMG160412-QR	16.5	9.525	4.76	3.81	1.2			●	●																		
	TNMG220408-QR	22	12.7	4.76	5.16	0.8			●																			
	TNMG220412-QR	22	12.7	4.76	5.16	1.2			●	●																		
	TNMG220416-QR	22	12.7	4.76	5.16	1.6			●																			
	TNMG270608-QR	27.5	15.875	6.35	6.35	0.8			●																			
	TNMG270612-QR	27.5	15.875	6.35	6.35	1.2			○	●																		
	TNMG270616-QR	27.5	15.875	6.35	6.35	1.6			○																			
	TNMG330716-QR	33	19.05	7.94	7.94	1.6			●																			
	TNMG330924-QR	33	19.05	9.52	7.94	2.4			●																			
	TNMG160408-HK	16.5	9.525	4.76	3.81	0.8												●	●	●								
	TNMG160412-HK	16.5	9.525	4.76	3.81	1.2												●	●	●								
	TNMG220408-HK	22	12.7	4.76	5.16	0.8												●	○	●	○							
	TNMG220412-HK	22	12.7	4.76	5.16	1.2												●	●	●	○							
	TNMG220416-HK	22	12.7	4.76	5.16	1.6												●	●	●	○							
	TNMG270612-HK	27.5	15.875	6.35	6.35	1.2												●	○	●	○							
TNMG270616-HK	27.5	15.875	6.35	6.35	1.6												●	○	●	○								
	TNMA110304	11	6.35	3.18	2.26	0.4												●	●									
	TNMA110308	11	6.35	3.18	2.26	0.8												●	●									
	TNMA160308	16.5	9.525	3.18	3.81	0.8												●	●									
	TNMA160404	16.5	9.525	4.76	3.81	0.4												●	●									
	TNMA160408	16.5	9.525	4.76	3.81	0.8												●	●	●	○							
	TNMA160412	16.5	9.525	4.76	3.81	1.2												●	●	●	○							
	TNMA160416	16.5	9.525	4.76	3.81	1.6												●	○	●	○							
	TNMA220404	22	12.7	4.76	5.16	0.4												●	●									
	TNMA220408	22	12.7	4.76	5.16	0.8												●	○	●	○							
	TNMA220412	22	12.7	4.76	5.16	1.2												●	●	●	○							
TNMA220416	22	12.7	4.76	5.16	1.6												●	●	●	○								

●Stock ○Available Upon Order

Turning Inserts(Negative)

**VN□□**

Rhombic 35° with Hole



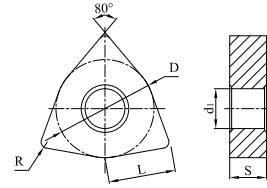
Ordering Code	Dimension(mm)					Coated												Uncoated	Cermet								
	L	D	S	d <sub>1</sub>	R	GP1105	GP1115	GP1120	GP1225	GP1135	GP3125	GM1115	GM1125	GM3215	GM3225	GS3115	GS3125	GK1115	GK1120	GK1125	GK1130	GN9115	GN9120	GN9130	GP91TF	GP91TM	
	VNMG160404-GF	16.6	9.525	4.76	3.81	0.4	●																				
	VNMG160408-GF	16.6	9.525	4.76	3.81	0.8	●																				
	VNMG220404-GF	22.1	12.7	4.76	5.16	0.4	●	○																			
	VNMG220408-GF	22.1	12.7	4.76	5.16	0.8	●																				
	VNMG160404-QF	16.6	9.525	4.76	3.81	0.4	●	●	●									○							●	●	
	VNMG160408-QF	16.6	9.525	4.76	3.81	0.8	●	●	●									○							○	○	
	VNMG220404-QF	22.1	12.7	4.76	5.16	0.4	●		●																		
	VNMG220408-QF	22.1	12.7	4.76	5.16	0.8	●		●																		
	VNMG160404-SF	16.6	9.525	4.76	3.81	0.4										●											
	VNMG160408-SF	16.6	9.525	4.76	3.81	0.8										●											
	VNMG160404-GM	16.6	9.525	4.76	3.81	0.4			●																		
	VNMG160408-GM	16.6	9.525	4.76	3.81	0.8	●		●																		
	VNMG160412-GM	16.6	9.525	4.76	3.81	1.2	●		●																		
	VNMG220408-GM	22.1	12.7	4.76	5.16	0.8			●																		
	VNMG160404-QM	16.6	9.525	4.76	3.81	0.4	●	●	●									○							●	●	
	VNMG160408-QM	16.6	9.525	4.76	3.81	0.8	●	●	●									○							○	○	
	VNMG160412-QM	16.6	9.525	4.76	3.81	1.2	●	○	●									○									
	VNMG160404-SM	16.6	9.525	4.76	3.81	0.4					●	●	●	●											○	●	
	VNMG160408-SM	16.6	9.525	4.76	3.81	0.8					●	●	●	●											○	○	
	VNMG160404-UK	16.6	9.525	4.76	3.81	0.4												●	●	●							
	VNMG160408-UK	16.6	9.525	4.76	3.81	0.8												●	●	●	○						
	VNMG160412-UK	16.6	9.525	4.76	3.81	1.2												●	●	●	○						
	VNMG160408-HK	16.6	9.525	4.76	3.81	0.8												●	●	●	○						
	VNMG160412-HK	16.6	9.525	4.76	3.81	1.2												●	●	○	○						

●Stock ○Available Upon Order

Turning Inserts(Negative)

**WN**□□

Trigon 80° with Hole



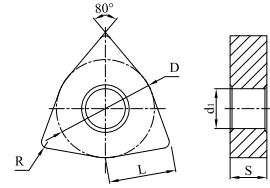
Ordering Code	Dimension(mm)					Coated													Uncoated	Cermet								
	L	D	S	d <sub>1</sub>	R	GP1105	GP1115	GP1120	GP1225	GP1135	GP3125	GM1115	GM1125	GM3215	GM3225	GS3115	GS3125	GK1115	GK1120	GK1125	GK1130	GN9115	GN9120	GN9130	GP91TF	GP91TM		
	WNMG06T304-GF	6.5	9.525	3.97	3.81	0.4	●	○																				
	WNMG060404-GF	6.5	9.525	4.76	3.81	0.4	●																					
	WNMG06T308-GF	6.5	9.525	3.97	3.81	0.8	●	○																				
	WNMG060408-GF	6.5	9.525	4.76	3.81	0.8	●																					
	WNMG080404-GF	8.7	12.7	4.76	5.16	0.4	●																					
	WNMG080408-GF	8.7	12.7	4.76	5.16	0.8	●	●																				
	WNMG060404-QF	6.5	9.525	4.76	3.81	0.4	●	●																	○	○		
	WNMG060408-QF	6.5	9.525	4.76	3.81	0.8	●	●																	○	○		
	WNMG080404-QF	8.7	12.7	4.76	5.16	0.4	●	●	●	●								○							●	●		
	WNMG080408-QF	8.7	12.7	4.76	5.16	0.8	●	●	●	●								○							●	●		
	WNMG060404-SF	6.5	9.525	4.76	3.81	0.4										●												
	WNMG060408-SF	6.5	9.525	4.76	3.81	0.8										●												
	WNMG080404-SF	8.7	12.7	4.76	5.16	0.4										●												
	WNMG080408-SF	8.7	12.7	4.76	5.16	0.8										●												
	WNMG06T304-GM	6.5	9.525	3.97	3.81	0.4	●	●																				
	WNMG06T308-GM	6.5	9.525	3.97	3.81	0.8	●	●																				
	WNMG06T312-GM	6.5	9.525	3.97	3.81	1.2	●	●																				
	WNMG060404-GM	6.5	9.525	4.76	3.81	0.4	●	●																				
	WNMG060408-GM	6.5	9.525	4.76	3.81	0.8				●																		
	WNMG080404-GM	8.7	12.7	4.76	5.16	0.4				●																		
	WNMG080408-GM	8.7	12.7	4.76	5.16	0.8	●	●																				
	WNMG080412-GM	8.7	12.7	4.76	5.16	1.2	●	●																				
WNMG080416-GM	8.7	12.7	4.76	5.16	1.6	○	●																					
	WNMG060404-QM	6.5	9.525	4.76	3.81	0.4	●	●										○							○	○		
	WNMG060408-QM	6.5	9.525	4.76	3.81	0.8	●	●																	○	○		
	WNMG060412-QM	6.5	9.525	4.76	3.81	1.2	●	○																				
	WNMG080404-QM	8.7	12.7	4.76	5.16	0.4	●	●	○	●			○					○							●	●		
	WNMG080408-QM	8.7	12.7	4.76	5.16	0.8	●	●	●	●			○					○							●	●		
	WNMG080412-QM	8.7	12.7	4.76	5.16	1.2	●	●	●	●			○					○										
WNMG080416-QM	8.7	12.7	4.76	5.16	1.6	●		●																				

●Stock ○Available Upon Order

Turning Inserts(Negative)

**WN□□**

Trigon 80° with Hole



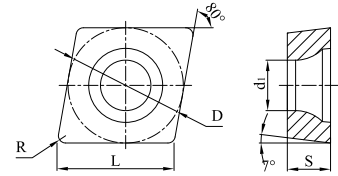
Ordering Code	Dimension(mm)					Coated												Uncoated			Cermet						
	L	D	S	d <sub>1</sub>	R	GP1105	GP1115	GP1120	GP1225	GP1135	GP3125	GM1115	GM1125	GM3215	GM3225	GS3115	GS3125	GK1115	GK1120	GK1125	GK1130	GN9115	GN9120	GN9130	GP91TF	GP91TM	
	WNMG06T304-SM	6.5	9.525	3.97	3.81	0.4						○	○	○	○												
	WNMG06T308-SM	6.5	9.525	3.97	3.81	0.8						●	○	●	●												
	WNMG06T312-SM	6.5	9.525	3.97	3.81	1.2						●	○	○	●												
	WNMG060404-SM	6.5	9.525	4.76	3.81	0.4						○	○	○	○												
	WNMG060408-SM	6.5	9.525	4.76	3.81	0.8						●	●	○	●												
	WNMG060412-SM	6.5	9.525	4.76	3.81	1.2						●	○	○	●	○											
	WNMG080404-SM	8.7	12.7	4.76	5.16	0.4						●	●	●	●											○	●
	WNMG080408-SM	8.7	12.7	4.76	5.16	0.8						●	●	●	●	○										○	●
	WNMG080412-SM	8.7	12.7	4.76	5.16	1.2						●	●	○	●												
	WNMG080404-UK	8.7	12.7	4.76	5.16	0.4												●	●	●							
	WNMG080408-UK	8.7	12.7	4.76	5.16	0.8												●	●	●	○						
	WNMG080412-UK	8.7	12.7	4.76	5.16	1.2												●	●	●	○						
	WNMG080408-QR	8.7	12.7	4.76	5.16	0.8	●	●		●	●																
	WNMG080412-QR	8.7	12.7	4.76	5.16	1.2	●	○		●	●																
	WNMG080416-QR	8.7	12.7	4.76	5.16	1.6	●			●	○																
	WNMG06T308-HK	6.5	9.525	3.97	3.81	0.8												●	●	○							
	WNMG060408-HK	6.5	9.525	4.76	3.81	0.8												●	○	●							
	WNMG080408-HK	8.7	12.7	4.76	5.16	0.8												●	●	●	○						
	WNMG080412-HK	8.7	12.7	4.76	5.16	1.2												●	●	●	●						
	WNMA06T304	6.5	9.525	3.97	3.81	0.4												○									
	WNMA060404	6.5	9.525	4.76	3.81	0.4												●		●							
	WNMA060408	6.5	9.525	4.76	3.81	0.8												●		●							
	WNMA080404	8.7	12.7	4.76	5.16	0.4												●		●							
	WNMA080408	8.7	12.7	4.76	5.16	0.8												●	●	●	○						
	WNMA080412	8.7	12.7	4.76	5.16	1.2												●	●	●	○						
	WNMA080416	8.7	12.7	4.76	5.16	1.6												●	●	●	○						

● Stock ○ Available Upon Order

Turning Inserts(Positive)



Rhombic 80° with Hole



Ordering Code	Dimension(mm)					Coated												Uncoated	Cermet								
	L	D	S	d <sub>1</sub>	R	GP1105	GP1115	GP1120	GP1225	GP1135	GP3125	GM1115	GM1125	GM3215	GM3225	GS3115	GS3125	GK1115	GK1120	GK1125	GK1130	GN9115	GN9120	GN9130	GP91TF	GP91TM	
CCET0602005R-PS	6.5	6.35	2.38	2.8	<0.05												○									○	
CCET0602005L-PS	6.5	6.35	2.38	2.8	<0.05												○									○	
CCET060201R-PS	6.5	6.35	2.38	2.8	0.1												○									○	
CCET060201L-PS	6.5	6.35	2.38	2.8	0.1												○									○	
CCET060202R-PS	6.5	6.35	2.38	2.8	0.2												○									●	
CCET060202L-PS	6.5	6.35	2.38	2.8	0.2												○									○	
CCET060204R-PS	6.5	6.35	2.38	2.8	0.4												○									○	
CCET060204L-PS	6.5	6.35	2.38	2.8	0.4												○									○	
CCET09T3005R-PS	9.7	9.525	3.97	4.4	<0.05												○									○	
CCET09T3005L-PS	9.7	9.525	3.97	4.4	<0.05												○									○	
CCET09T301R-PS	9.7	9.525	3.97	4.4	0.1												○									○	
CCET09T301L-PS	9.7	9.525	3.97	4.4	0.1												○									○	
CCET09T302R-PS	9.7	9.525	3.97	4.4	0.2												○									●	
CCET09T302L-PS	9.7	9.525	3.97	4.4	0.2												○									○	
CCET09T304R-PS	9.7	9.525	3.97	4.4	0.4												○									○	
CCET09T304L-PS	9.7	9.525	3.97	4.4	0.4												○									○	
CCET0602005R-GS	6.5	6.35	2.38	2.8	<0.05												○									○	
CCET0602005L-GS	6.5	6.35	2.38	2.8	<0.05												○									○	
CCET060201R-GS	6.5	6.35	2.38	2.8	0.1												○									○	
CCET060201L-GS	6.5	6.35	2.38	2.8	0.1												○									○	
CCET060202R-GS	6.5	6.35	2.38	2.8	0.2												○									○	
CCET060202L-GS	6.5	6.35	2.38	2.8	0.2												○									○	
CCET060204R-GS	6.5	6.35	2.38	2.8	0.4												○									○	
CCET060204L-GS	6.5	6.35	2.38	2.8	0.4												○									○	
CCET09T3005R-GS	9.7	9.525	3.97	4.4	<0.05												○									○	
CCET09T3005L-GS	9.7	9.525	3.97	4.4	<0.05												○									○	
CCET09T301R-GS	9.7	9.525	3.97	4.4	0.1												○									○	
CCET09T301L-GS	9.7	9.525	3.97	4.4	0.1												○									○	
CCET09T302R-GS	9.7	9.525	3.97	4.4	0.2												○									○	
CCET09T302L-GS	9.7	9.525	3.97	4.4	0.2												○									○	
CCET09T304R-GS	9.7	9.525	3.97	4.4	0.4												○									○	
CCET09T304L-GS	9.7	9.525	3.97	4.4	0.4												○									○	

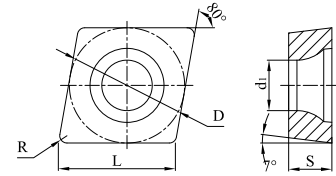


● Stock ○ Available Upon Order

Turning Inserts(Positive)



Rhombic 80° with Hole



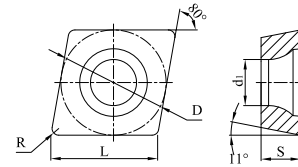
Ordering Code	Dimension(mm)					Coated													Uncoated			Cermet						
	L	D	S	d <sub>1</sub>	R	GP1105	GP1115	GP1120	GP1225	GP1135	GP3125	GM1115	GM1125	GM3215	GM3225	GS3115	GS3125	GK1115	GK1120	GK1125	GK1130	GN9115	GN9120	GN9130	GP91TF	GP91TM		
	CCMT060202-MM	6.5	6.35	2.38	2.8	0.2	●	●	●	●	●	○	○	○	○	○												
	CCMT060204-MM	6.5	6.35	2.38	2.8	0.4	●	●	●	●	●	●	○	●	●											○	○	
	CCMT09T302-MM	9.7	9.525	3.97	4.4	0.2	●	●	●	●	○	○	○	○	○											○	○	
	CCMT09T304-MM	9.7	9.525	3.97	4.4	0.4	●	●	●	●	●	●	●	●	○											●	●	
	CCMT09T308-MM	9.7	9.525	3.97	4.4	0.8	●	●	●	●	●	●	●	●	●											○	●	
	CCMT060202-GP	6.5	6.35	2.38	2.8	0.2	●	○			○	○					●									○	○	
	CCMT060204-GP	6.5	6.35	2.38	2.8	0.4	●	●	●	●	●	●	○	●			●	●								●	●	
	CCMT060208-GP	6.5	6.35	2.38	2.8	0.8	○	●			○	○					●									○	○	
	CCMT09T302-GP	9.7	9.525	3.97	4.4	0.2	●	●			○	○					●									●	○	
	CCMT09T304-GP	9.7	9.525	3.97	4.4	0.4	●	●	●	●	●	●	○	●	○		●									●	●	
	CCMT09T308-GP	9.7	9.525	3.97	4.4	0.8	●	●	●	●	●	●	○	●			●	●								●	●	
	CCMT120404-GP	12.9	12.7	4.76	5.56	0.4	●	●			●	●					●									○	●	
	CCMT120408-GP	12.9	12.7	4.76	5.56	0.8	●	●			●	●					●	●								○	○	
	CCMT120412-GP	12.9	12.7	4.76	5.56	1.2	○	○			○	○					●											
	CCGT060202-GP	6.5	6.35	2.38	2.8	0.2					○		○	○														
	CCGT060204-GP	6.5	6.35	2.38	2.8	0.4					○		○	○														
	CCGT060208-GP	6.5	6.35	2.38	2.8	0.8					○		○	○														
	CCGT09T302-GP	9.7	9.525	3.97	4.4	0.2					○		○	○	○													
	CCGT09T304-GP	9.7	9.525	3.97	4.4	0.4					○		○	○														
	CCGT09T308-GP	9.7	9.525	3.97	4.4	0.8					○		○	○	○													
CCGT120404-GP	12.9	12.7	4.76	5.56	0.4					○		○	○															
CCGT120408-GP	12.9	12.7	4.76	5.56	0.8					○		○	○															
	CCMT09T304-KM	9.7	9.525	3.97	4.4	0.4			●								●											
	CCMT09T308-KM	9.7	9.525	3.97	4.4	0.8			●								●	○	○									
	CCMT120408-KM	12.9	12.7	4.76	5.56	0.8			●								●											
	CCMT120412-KM	12.9	12.7	4.76	5.56	1.2			●								●											
	CCGX060202-AL	6.5	6.35	2.38	2.8	0.2																	○					
	CCGX060204-AL	6.5	6.35	2.38	2.8	0.4																	○	○	○			
	CCGX060208-AL	6.5	6.35	2.38	2.8	0.8																	○	○	○			
	CCGX09T302-AL	9.7	9.525	3.97	4.4	0.2																		○	○	○		
	CCGX09T304-AL	9.7	9.525	3.97	4.4	0.4																		○	●	○		
	CCGX09T308-AL	9.7	9.525	3.97	4.4	0.8																		○	●	○		
	CCGX120402-AL	12.9	12.7	4.76	5.5	0.2																		●	○			
	CCGX120404-AL	12.9	12.7	4.76	5.5	0.4																		○	●	○		
CCGX120408-AL	12.9	12.7	4.76	5.5	0.8																		○	●	○			

● Stock ○ Available Upon Order

Turning Inserts(Positive)

**CP□□**

Rhombic 80° with Hole



Ordering Code	Dimension(mm)					Coated										Uncoated	Cermet										
	L	D	S	d <sub>1</sub>	R	GP1105	GP1115	GP1120	GP1225	GP1135	GP3125	GM1115	GM1125	GM3215	GM3225	GS3115	GS3125	GK1115	GK1120	GK1125	GK1130	GN9115	GN9120	GN9130	GP91TF	GP91TM	
CPMT120412-GP	12.9	12.7	4.76	5.56	1.2				●			○	○	○	○			●									
CPGT060204-GP	6.5	6.35	2.38	2.8	0.4						○			○	○												
CPGT060208-GP	6.5	6.35	2.38	2.8	0.8						○			○	○												
CPGT09T302-GP	9.7	9.525	3.97	4.4	0.2						○			○	○												
CPGT09T304-GP	9.7	9.525	3.97	4.4	0.4						○			○	○												
CPGT09T308-GP	9.7	9.525	3.97	4.4	0.8						○			○	○												
CPGT120404-GP	12.9	12.7	4.76	5.56	0.4						○			○	○												
CPGT120408-GP	12.9	12.7	4.76	5.56	0.8						○			○	○												

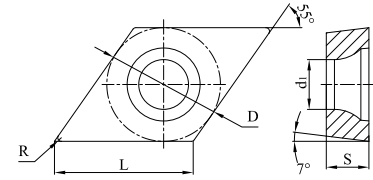




●Stock ○Available Upon Order

Turning Inserts(Positive)

**DC** □ □

Rhombic 55° with Hole



Ordering Code	Dimension(mm)					Coated										Uncoated	Cermet									
	L	D	S	d1	R	GP1105	GP1115	GP1120	GP1225	GP1135	GP3125	GM1115	GM1125	GM3215	GM3225	GS3115	GS3125	GK1115	GK1120	GK1125	GK1130	GN9115	GN9120	GN9130	GP91TF	GP91TM
	DCET0702005R-PS	7.8	6.35	2.38	2.8	<0.05											○									○
	DCET0702005L-PS	7.8	6.35	2.38	2.8	<0.05											○									○
	DCET070201R-PS	7.8	6.35	2.38	2.8	0.1											○									○
	DCET070201L-PS	7.8	6.35	2.38	2.8	0.1											○									○
	DCET070202R-PS	7.8	6.35	2.38	2.8	0.2											○									○
	DCET070202L-PS	7.8	6.35	2.38	2.8	0.2											○									○
	DCET070204R-PS	7.8	6.35	2.38	2.8	0.4											○									○
	DCET070204L-PS	7.8	6.35	2.38	2.8	0.4											○									○
	DCET11T3005R-PS	11.6	9.525	3.97	4.4	<0.05											○									○
	DCET11T3005L-PS	11.6	9.525	3.97	4.4	<0.05											○									○
	DCET11T301R-PS	11.6	9.525	3.97	4.4	0.1											○								●	○
	DCET11T301L-PS	11.6	9.525	3.97	4.4	0.1											○								○	○
	DCET11T302R-PS	11.6	9.525	3.97	4.4	0.2											○								●	○
	DCET11T302L-PS	11.6	9.525	3.97	4.4	0.2											○								○	○
	DCET11T304R-PS	11.6	9.525	3.97	4.4	0.4											○								○	○
	DCET11T304L-PS	11.6	9.525	3.97	4.4	0.4											○								○	○
	DCET0702005R-GS	7.8	6.35	2.38	2.8	<0.05										○									○	
	DCET0702005L-GS	7.8	6.35	2.38	2.8	<0.05										○									○	
	DCET070201R-GS	7.8	6.35	2.38	2.8	0.1										○									○	
	DCET070201L-GS	7.8	6.35	2.38	2.8	0.1										○									○	
	DCET070202R-GS	7.8	6.35	2.38	2.8	0.2										○									○	
	DCET070202L-GS	7.8	6.35	2.38	2.8	0.2										○									○	
	DCET070204R-GS	7.8	6.35	2.38	2.8	0.4										○									○	
	DCET070204L-GS	7.8	6.35	2.38	2.8	0.4										○									○	
	DCET11T3005R-GS	11.6	9.525	3.97	4.4	<0.05										○									○	
	DCET11T3005L-GS	11.6	9.525	3.97	4.4	<0.05										○									○	
	DCET11T301R-GS	11.6	9.525	3.97	4.4	0.1										○								●	○	
	DCET11T301L-GS	11.6	9.525	3.97	4.4	0.1										○								○	○	
	DCET11T302R-GS	11.6	9.525	3.97	4.4	0.2										○								●	○	
	DCET11T302L-GS	11.6	9.525	3.97	4.4	0.2										○								○	○	
	DCET11T304R-GS	11.6	9.525	3.97	4.4	0.4										○								●	○	
	DCET11T304L-GS	11.6	9.525	3.97	4.4	0.4										○								○	○	

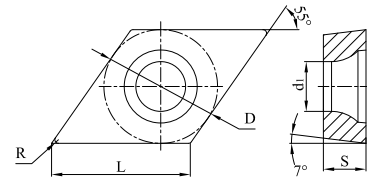
●Stock ○Available Upon Order



Turning Inserts(Positive)

**DC□□**

Rhombic 55° with Hole

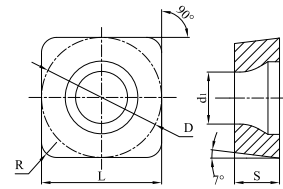






Ordering Code	Dimension(mm)					Coated													Uncoated	Cermet							
	L	D	S	d <sub>1</sub>	R	GP1105	GP1115	GP1120	GP1225	GP1135	GP3125	GM1115	GM1125	GM3215	GM3225	GS3115	GS3125	GK1115	GK1120	GK1125	GK1130	GN9115	GN9120	GN9130	GP91TF	GP91TM	
	DCMT070202-MM	7.8	6.35	2.38	2.8	0.2	●	●				●	○	○	●	○											
	DCMT070204-MM	7.8	6.35	2.38	2.8	0.4	●	●				●	●	○	●	○										●	●
	DCMT11T302-MM	11.6	9.525	3.97	4.4	0.2	●	●				●	●	○	●	○										●	●
	DCMT11T304-MM	11.6	9.525	3.97	4.4	0.4	●	●	●			●	●	●	●	●										●	●
	DCMT11T308-MM	11.6	9.525	3.97	4.4	0.8	●	●	●			●	●	●	●	●										●	●
	DCMT070202-GP	7.8	6.35	2.38	2.8	0.2	○	○				○	○					●								○	○
	DCMT070204-GP	7.8	6.35	2.38	2.8	0.4	○	●			●	●	●	○	●			●								●	●
	DCMT070208-GP	7.8	6.35	2.38	2.8	0.8	○	●				○	○					●								○	●
	DCMT11T302-GP	11.6	9.525	3.97	4.4	0.2	○	○				○	○					●								●	●
	DCMT11T304-GP	11.6	9.525	3.97	4.4	0.4	●	●	●			●	●	○	●			●		●						●	●
	DCMT11T308-GP	11.6	9.525	3.97	4.4	0.8	●	●	●			●	●	○	●			●		○						●	●
	DCMT150404-GP	15.5	12.7	4.76	5.56	0.4	○	○				○	○					●									
	DCMT150408-GP	15.5	12.7	4.76	5.56	0.8	○	○				○	○			○		●									
	DCMT150412-GP	15.5	12.7	4.76	5.56	1.2	○	○				○	○					●									
	DCGT070202-GP	7.8	6.35	2.38	2.8	0.2						○		○	○												
	DCGT070204-GP	7.8	6.35	2.38	2.8	0.4						○		○	○												
	DCGT070208-GP	7.8	6.35	2.38	2.8	0.8					●		○	●													
	DCGT11T302-GP	11.6	9.525	3.97	4.4	0.2						○		○	○												
	DCGT11T304-GP	11.6	9.525	3.97	4.4	0.4						○		○	○												
	DCGT11T308-GP	11.6	9.525	3.97	4.4	0.8					●		○	●													
	DCMT11T304-KM	11.6	9.525	3.97	4.4	0.4			●									●									
	DCMT11T308-KM	11.6	9.525	3.97	4.4	0.8			●									●									
	DCGX070202-AL	7.8	6.35	2.38	2.8	0.2																	○				
	DCGX070204-AL	7.8	6.35	2.38	2.8	0.4																	○	●	○		
	DCGX070208-AL	7.8	6.35	2.38	2.8	0.8																	○	○	○		
	DCGX11T302-AL	11.6	9.525	3.97	4.4	0.2																	○	●	○		
	DCGX11T304-AL	11.6	9.525	3.97	4.4	0.4																	○	●	○		
	DCGX11T308-AL	11.6	9.525	3.97	4.4	0.8																	○	○	○		

●Stock ○Available Upon Order

Turning Inserts(Positive)

**SC□□**  
Square 90° with Hole

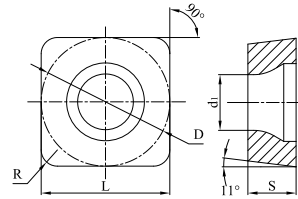



Ordering Code	Dimension(mm)					Coated												Uncoated	Cermet									
	L	D	S	d <sub>1</sub>	R	GP1105	GP1115	GP1120	GP1225	GP1135	GP3125	GM1115	GM1125	GM3215	GM3225	GS3115	GS3125	GK1115	GK1120	GK1125	GK1130	GN9115	GN9120	GN9130	GP91TF	GP91TM		
	SCMT09T308-MM	9.525	9.525	3.97	4.4	0.8	●	●				●	○	○	●	○												
	SCMT09T304-GP	9.525	9.525	3.97	4.4	0.4	○	●				●	●					●								○	○	
	SCMT09T308-GP	9.525	9.525	3.97	4.4	0.8	●	●				●	●					●								○	○	
	SCMT120404-GP	12.7	12.7	4.76	5.56	0.4	○	●				○	○					○								○	○	
	SCMT120408-GP	12.7	12.7	4.76	5.56	0.8	○	●				○	○					●								○	○	
	SCMT09T308-KM	9.525	9.525	3.97	4.4	0.8			●									●										
	SCMT120408-KM	12.7	12.7	4.76	5.56	0.8			●									●										
	SCGX09T304-AL	9.525	9.525	3.97	4.4	0.4																	○	●	○			
	SCGX09T308-AL	9.525	9.525	3.97	4.4	0.8																	○	●	○			
	SCGX120404-AL	12.7	12.7	4.76	5.5	0.4																	○	●	○			
	SCGX120408-AL	12.7	12.7	4.76	5.5	0.8																	○	●	○			

●Stock ○Available Upon Order

Turning Inserts(Positive)

**SP**□□  
Square 90° with Hole

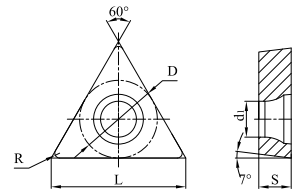


Ordering Code	Dimension(mm)					Coated												Uncoated	Cermet									
	L	D	S	d <sub>1</sub>	R	GP1105	GP1115	GP1120	GP1225	GP1135	GP3125	GM1115	GM1125	GM3215	GM3225	GS3115	GS3125	GK1115	GK1120	GK1125	GK1130	GN9115	GN9120	GN9130	GP91TF	GP91TM		
 SPMT090304-GP	9.525	9.525	3.18	4.4	0.4																							

●Stock ○Available Upon Order

Turning Inserts(Positive)

**TC** □ □  
Triangle 60° with Hole

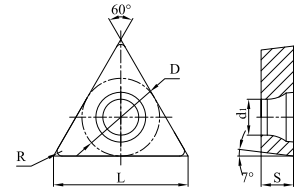


Ordering Code	Dimension(mm)					Coated												Uncoated			Cermet						
	L	D	S	d <sub>1</sub>	R	GP1105	GP1115	GP1120	GP1225	GP1135	GP3125	GM1115	GM1125	GM3215	GM3225	GS3115	GS3125	GK1115	GK1120	GK1125	GK1130	GN9115	GN9120	GN9130	GP91TF	GP91TM	
	TCET080201R-PS	8.2	4.76	2.38	2.3	0.1																					○
	TCET080201L-PS	8.2	4.76	2.38	2.3	0.1																					○
	TCET080202R-PS	8.2	4.76	2.38	2.3	0.2																					○
	TCET080202L-PS	8.2	4.76	2.38	2.3	0.2																					○
	TCET080204R-PS	8.2	4.76	2.38	2.3	0.4																					○
	TCET080204L-PS	8.2	4.76	2.38	2.3	0.4																					○
	TCET110201R-PS	11	6.35	2.38	2.8	0.1																					○
	TCET110201L-PS	11	6.35	2.38	2.8	0.1																					○
	TCET110202R-PS	11	6.35	2.38	2.8	0.2																					○
	TCET110202L-PS	11	6.35	2.38	2.8	0.2																					●
	TCET110204R-PS	11	6.35	2.38	2.8	0.4																					○
TCET110204L-PS	11	6.35	2.38	2.8	0.4																					●	
	TCET080201R-GS	8.2	4.76	2.38	2.3	0.1																				○	
	TCET080201L-GS	8.2	4.76	2.38	2.3	0.1																				○	
	TCET080202R-GS	8.2	4.76	2.38	2.3	0.2																				○	
	TCET080202L-GS	8.2	4.76	2.38	2.3	0.2																				○	
	TCET080204R-GS	8.2	4.76	2.38	2.3	0.4																				○	
	TCET080204L-GS	8.2	4.76	2.38	2.3	0.4																				○	
	TCET110201R-GS	11	6.35	2.38	2.8	0.1																				○	
	TCET110201L-GS	11	6.35	2.38	2.8	0.1																				○	
	TCET110202R-GS	11	6.35	2.38	2.8	0.2																				○	
	TCET110202L-GS	11	6.35	2.38	2.8	0.2																				○	
	TCET110204R-GS	11	6.35	2.38	2.8	0.4																				○	
TCET110204L-GS	11	6.35	2.38	2.8	0.4																				○		

● Stock ○ Available Upon Order

Turning Inserts(Positive)

**TC□□**  
Triangle 60° with Hole



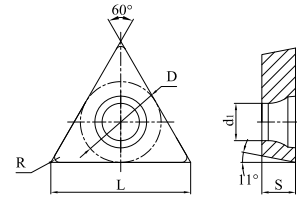
Ordering Code	Dimension(mm)					Coated													Uncoated		Cermet						
	L	D	S	d <sub>1</sub>	R	GP1105	GP1115	GP1120	GP1225	GP1135	GP3125	GM1115	GM1125	GM3215	GM3225	GS3115	GS3125	GK1115	GK1120	GK1125	GK1130	GN9115	GN9120	GN9130	GP91TF	GP91TM	
	TCMT110202-MM	11	6.35	2.38	2.8	0.2	●	●	●	●	○	○	○	○	○	○										○	○
	TCMT110204-MM	11	6.35	2.38	2.8	0.4	●	●	●	●	○	○	○	○	○	○										●	●
	TCMT090204-GP	9.6	5.56	2.38	2.5	0.4	●	●			●	●					●									○	○
	TCMT110202-GP	11	6.35	2.38	2.8	0.2	○	●			○	○					●									○	○
	TCMT110204-GP	11	6.35	2.38	2.8	0.4	●	●	●	●	●	○	●				●									●	●
	TCMT110208-GP	11	6.35	2.38	2.8	0.8	○	●			●	●					●									○	○
	TCMT16T304-GP	16.5	9.525	3.97	4.4	0.4	○	●	●	●	●	○	●				●	●								●	●
	TCMT16T308-GP	16.5	9.525	3.97	4.4	0.8	●	●	●	●	●	○	●				●	●	●							●	●
	TCMT16T312-GP	16.5	9.525	3.97	4.4	1.2			○		○	○					●	○									
	TCMT220408-GP	22	12.7	4.76	5.56	0.8	○	○			○	○					●										
	TCGT090204-GP	9.6	5.56	2.38	2.5	0.4					○		○	○													
	TCGT110202-GP	11	6.35	2.38	2.8	0.2					●		○	○													
	TCGT110204-GP	11	6.35	2.38	2.8	0.4					●		○	●													
	TCGT110208-GP	11	6.35	2.38	2.8	0.8					●		○	●													
	TCGT16T304-GP	16.5	9.525	3.97	4.4	0.4					●		○	○													
	TCGT16T308-GP	16.5	9.525	3.97	4.4	0.8					●		○	●													
TCGT220408-GP	22	12.7	4.76	5.16	0.8						○	○	○	○													
	TCMT110204-KM	11	6.35	2.38	2.8	0.4			●								●										
	TCMT16T304-KM	16.5	9.525	3.97	4.4	0.4			●								●										
	TCMT16T308-KM	16.5	9.525	3.97	4.4	0.8			●								●										
	TCGX090204-AL	9.6	5.56	2.38	2.5	0.4																○	●	○			
	TCGX110202-AL	11	6.35	2.38	2.8	0.2																○	○				
	TCGX110204-AL	11	6.35	2.38	2.8	0.4																○	○	○			
	TCGX110208-AL	11	6.35	2.38	2.8	0.8																○	●	○			
	TCGX16T302-AL	16.5	9.525	3.97	4.4	0.2																○	○				
	TCGX16T304-AL	16.5	9.525	3.97	4.4	0.4																○	○				
	TCGX16T308-AL	16.5	9.525	3.97	4.4	0.8																○	○				

●Stock ○Available Upon Order

Turning Inserts(Positive)

**TP□□**

Triangle 60° with Hole

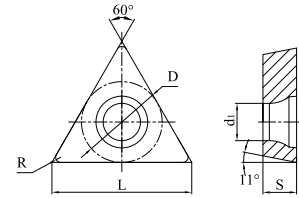


Ordering Code	Dimension(mm)					Coated												Uncoated			Cermet							
	L	D	S	d <sub>1</sub>	R	GP1105	GP1115	GP1120	GP1225	GP1135	GP3125	GM1115	GM1125	GM3215	GM3225	GS3115	GS3125	GK1115	GK1120	GK1125	GK1130	GN9115	GN9120	GN9130	GP91TF	GP91TM		
	TPET080201R-PS	8.2	4.76	2.38	2.3	0.1												○								○		
	TPET080201L-PS	8.2	4.76	2.38	2.3	0.1												○								○		
	TPET080202R-PS	8.2	4.76	2.38	2.3	0.2												○								○		
	TPET080202L-PS	8.2	4.76	2.38	2.3	0.2												●								●		
	TPET080204R-PS	8.2	4.76	2.38	2.3	0.4												○								○		
	TPET080204L-PS	8.2	4.76	2.38	2.3	0.4												●								●		
	TPET080201R-GS	8.2	4.76	2.38	2.3	0.1												○								○		
	TPET080201L-GS	8.2	4.76	2.38	2.3	0.1												○								○		
	TPET080202R-GS	8.2	4.76	2.38	2.3	0.2												○								○		
	TPET080202L-GS	8.2	4.76	2.38	2.3	0.2												○								○		
	TPET080204R-GS	8.2	4.76	2.38	2.3	0.4												○								○		
	TPET080204L-GS	8.2	4.76	2.38	2.3	0.4												○								○		
	TPEH090201R-PS	9.6	5.56	2.38	3.0	0.1												○								○		
	TPEH090201L-PS	9.6	5.56	2.38	3.0	0.1												○								○		
	TPEH090202R-PS	9.6	5.56	2.38	3.0	0.2												○								○		
	TPEH090202L-PS	9.6	5.56	2.38	3.0	0.2												●								●		
	TPEH090204R-PS	9.6	5.56	2.38	3.0	0.4												○								○		
	TPEH090204L-PS	9.6	5.56	2.38	3.0	0.4												●								●		
	TPEH110301R-PS	11	6.35	3.18	3.4	0.1													○								○	
	TPEH110301L-PS	11	6.35	3.18	3.4	0.1													○								○	
	TPEH110302R-PS	11	6.35	3.18	3.4	0.2													○								○	
	TPEH110302L-PS	11	6.35	3.18	3.4	0.2													●								●	
TPEH110304R-PS	11	6.35	3.18	3.4	0.4													○								○		
TPEH110304L-PS	11	6.35	3.18	3.4	0.4													●								●		
	TPEH090202R-GS	9.6	5.56	2.38	3.0	0.2												○								○		
	TPEH090202L-GS	9.6	5.56	2.38	3.0	0.2												○								○		
	TPEH090204R-GS	9.6	5.56	2.38	3.0	0.4												○								○		
	TPEH090204L-GS	9.6	5.56	2.38	3.0	0.4												○								○		
	TPEH110302R-GS	11	6.35	3.18	3.4	0.2													○								○	
	TPEH110302L-GS	11	6.35	3.18	3.4	0.2													○								○	
	TPEH110304R-GS	11	6.35	3.18	3.4	0.4													○								○	
	TPEH110304L-GS	11	6.35	3.18	3.4	0.4													○								○	

●Stock ○Available Upon Order

Turning Inserts(Positive)

**TP□□**  
Triangle 60° with Hole



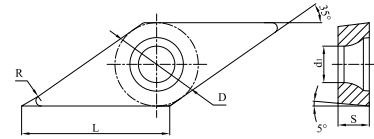
Ordering Code	Dimension(mm)					Coated												Uncoated		Cermet								
	L	D	S	d <sub>1</sub>	R	GP1105	GP1115	GP1120	GP1225	GP1135	GP3125	GM1115	GM1125	GM3215	GM3225	GS3115	GS3125	GK1115	GK1120	GK1125	GK1130	GN9115	GN9120	GN9130	GP91TF	GP91TM		
	TPMT110202-MM	11	6.35	2.38	2.8	0.2	●	●				●	○	○	●	○											○	
	TPMT110204-MM	11	6.35	2.38	2.8	0.4	●	●				●	○	○	●	○											○	
	TPMT110304-MM	11	6.35	3.18	3.4	0.4																					○	
	TPGT110204-GP	11	6.35	2.38	2.8	0.4					●		○	●														
	TPGT110208-GP	11	6.35	2.38	2.8	0.8					○		○	○														
	TPGT16T304-GP	16.5	9.525	3.97	4.4	0.4					●		○	●														
	TPGT16T308-GP	16.5	9.525	3.97	4.4	0.8					●		○	●														

●Stock ○Available Upon Order

Turning Inserts(Positive)

**VB□□**

Rhombic 35° with Hole



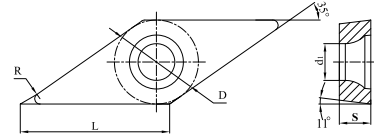
Ordering Code	Dimension(mm)					Coated												Uncoated		Cermet							
	L	D	S	d1	R	GP1105	GP1115	GP1120	GP1225	GP1135	GP3125	GM1115	GM1125	GM3215	GM3225	GS3115	GS3125	GK1115	GK1120	GK1125	GK1130	GN9115	GN9120	GN9130	GP91TF	GP91TM	
	VBET1103005R-PS	11.2	6.35	3.18	2.8	<0.05																					
	VBET1103005L-PS	11.2	6.35	3.18	2.8	<0.05																					
	VBET110301R-PS	11.2	6.35	3.18	2.8	0.1																					
	VBET110301L-PS	11.2	6.35	3.18	2.8	0.1																					
	VBET110302R-PS	11.2	6.35	3.18	2.8	0.2																					
	VBET110302L-PS	11.2	6.35	3.18	2.8	0.2																					
	VBET1103005R-GS	11.2	6.35	3.18	2.8	<0.05																					
	VBET1103005L-GS	11.2	6.35	3.18	2.8	<0.05																					
	VBET110301R-GS	11.2	6.35	3.18	2.8	0.1																					
	VBET110301L-GS	11.2	6.35	3.18	2.8	0.1																					
	VBET110302R-GS	11.2	6.35	3.18	2.8	0.2																					
	VBET110302L-GS	11.2	6.35	3.18	2.8	0.2																					
	VBMT160404-MM	16.6	9.525	4.76	4.4	0.4	●	●	●	●	●	○	○	●	○										○	○	
	VBMT160402-MM	16.6	9.525	4.76	4.4	0.2					●	○	○	●	○											○	○
	VBMT160404-MM	16.6	9.525	4.76	4.4	0.4	●	●	●	●	●	●	●	●	●	●									●	●	
	VBMT160408-MM	16.6	9.525	4.76	4.4	0.8	●	●	●	●	●	●	●	●	●	●										○	○
	VBMT160404-GP	16.6	9.525	4.76	4.4	0.4	●	●	●	●	●	○	●					●								●	●
	VBMT160408-GP	16.6	9.525	4.76	4.4	0.8	●	●	●	●	●	○	●					●								○	●
	VBMT160412-GP	16.6	9.525	4.76	4.4	1.2			○																		
	VBMT160408-KM	16.6	9.525	4.76	4.4	0.8			●									●									

●Stock ○Available Upon Order



Turning Inserts(Positive)

**VC□□**  
Rhombic 35° with Hole



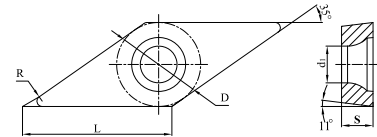
Ordering Code	Dimension(mm)					Coated										Uncoated			Cermet									
	L	D	S	d <sub>1</sub>	R	GP1105	GP1115	GP1120	GP1225	GP1135	GP3125	GM1115	GM1125	GM3215	GM3225	GS3115	GS3125	GK1115	GK1120	GK1125	GK1130	GN9115	GN9120	GN9130	GP91TF	GP91TM		
	VCET1103005R-PS	11.2	6.35	3.18	2.8	<0.05																						
	VCET1103005L-PS	11.2	6.35	3.18	2.8	<0.05																						
	VCET110301R-PS	11.2	6.35	3.18	2.8	0.1																						
	VCET110301L-PS	11.2	6.35	3.18	2.8	0.1																						
	VCET110302R-PS	11.2	6.35	3.18	2.8	0.2																						
	VCET110302L-PS	11.2	6.35	3.18	2.8	0.2																						
	VCET1103005R-GS	11.2	6.35	3.18	2.8	<0.05																						
	VCET1103005L-GS	11.2	6.35	3.18	2.8	<0.05																						
	VCET110301R-GS	11.2	6.35	3.18	2.8	0.1																						
	VCET110301L-GS	11.2	6.35	3.18	2.8	0.1																						
	VCET110302R-GS	11.2	6.35	3.18	2.8	0.2																						
	VCET110302L-GS	11.2	6.35	3.18	2.8	0.2																						
	VCMT110304-GP	11.2	6.35	3.18	2.8	0.4	○	●			●	●						●								●	●	
	VCMT110308-GP	11.2	6.35	3.18	2.8	0.8			○		●	●						○								○	○	
	VCMT160404-GP	16.6	9.525	4.76	4.4	0.4	●	●			●	●						●								●	●	
	VCMT160408-GP	16.6	9.525	4.76	4.4	0.8	●	●			●	●							●								●	●
	VCGT110304-GP	11.2	6.35	3.18	2.8	0.4					○			○	○													
	VCGT160404-GP	16.6	9.525	4.76	4.4	0.4					○			○	○													
	VCGT160408-GP	16.6	9.525	4.76	4.4	0.8					○			○	○													
	VCMT160404-KM	16.6	9.525	4.76	4.4	0.4			●									●										
	VCMT160408-KM	16.6	9.525	4.76	4.4	0.8			●									●										
	VCGX110302-AL	11.2	6.35	3.18	2.8	0.2																	○					
	VCGX110304-AL	11.2	6.35	3.18	2.8	0.4																	○	●	○			
	VCGX110308-AL	11.2	6.35	3.18	2.8	0.8																	○	●	○			
	VCGX160402-AL	16.6	9.525	4.76	4.4	0.2																	○	○				
	VCGX160404-AL	16.6	9.525	4.76	4.4	0.4																	○	●	○			
	VCGX160408-AL	16.6	9.525	4.76	4.4	0.8																	○	●	○			
	VCGX160412-AL	16.6	9.525	4.76	4.4	1.2																	○	●	○			
	VCGX220512-AL	22.1	12.7	5.56	5.6	1.2																	○	●	○			
	VCGX220516-AL	22.1	12.7	5.56	5.6	1.6																	○	●	○			
VCGX220530-AL	22.1	12.7	5.56	5.6	3																	○	●	○				

●Stock ○Available Upon Order

Turning Inserts(Positive)

**VP□□**

Rhombic 35° with Hole

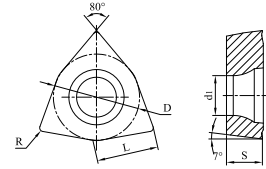



Ordering Code	Dimension(mm)					Coated												Uncoated			Cermet						
	L	D	S	d <sub>1</sub>	R	GP1105	GP1115	GP1120	GP1225	GP1135	GP3125	GM1115	GM1125	GM3215	GM3225	GS3115	GS3125	GK1115	GK1120	GK1125	GK1130	GN9115	GN9120	GN9130	GP91TF	GP91TM	
	VPET1103005R-PS	11.2	6.35	3.18	2.8	<0.05												○									○
	VPET1103005L-PS	11.2	6.35	3.18	2.8	<0.05												○									○
	VPET110301R-PS	11.2	6.35	3.18	2.8	0.1												○									○
	VPET110301L-PS	11.2	6.35	3.18	2.8	0.1												○									○
	VPET110302R-PS	11.2	6.35	3.18	2.8	0.2												○									○
	VPET110302L-PS	11.2	6.35	3.18	2.8	0.2												○									○
	VPET1103005R-GS	11.2	6.35	3.18	2.8	<0.05												○									○
	VPET1103005L-GS	11.2	6.35	3.18	2.8	<0.05												○									○
	VPET110301R-GS	11.2	6.35	3.18	2.8	0.1												○									○
	VPET110301L-GS	11.2	6.35	3.18	2.8	0.1												○									○
	VPET110302R-GS	11.2	6.35	3.18	2.8	0.2												●								●	○
	VPET110302L-GS	11.2	6.35	3.18	2.8	0.2												○									○

● Stock ○ Available Upon Order

Turning Inserts(Positive)

**WC□□**  
Trigon 60° with Hole



Ordering Code	Dimension(mm)					Coated												Uncoated	Cermet								
	L	D	S	d <sub>1</sub>	R	GP1105	GP1115	GP1120	GP1225	GP1135	GP3125	GM1115	GM1125	GM3215	GM3225	GS3115	GS3125	GK1115	GK1120	GK1125	GK1130	GN9115	GN9120	GN9130	GP91TF	GP91TM	
	WCMT06T304-GP	6.5	9.525	3.97	4.4	0.4	●	●			○	○						●								○	○
	WCMT06T308-GP	6.5	9.525	3.97	4.4	0.8	●	●			○	○						○								○	○

● Stock ○ Available Upon Order

## Recommended Cutting Data ( Negative )

ISO	Workpiece material	Hardness	Cutting Range	Purpose	Geometry	Grade	Min-Optimum-Max					
							Cutting Speed Vc(m/min)	Depth of Cut ap(mm)	Feed rate f(mm/rev)			
P	Low Carbon Steel	≤HB180	Superfinishing & Finishing	Continu-ous	PS	GP91TF	220-300-380	0.08-0.15-0.30	0.03-0.08-0.15			
			Finishing	Continu-ous	QF	GP91TF	220-300-380	0.40-0.80-1.50	0.04-0.12-0.22			
						GP91TM	200-280-350	0.40-1.00-2.00	0.08-0.15-0.30			
						GP1105	220-280-380	0.40-0.80-2.00	0.08-0.15-0.35			
						GP1115	200-260-360	0.40-0.80-2.00	0.08-0.15-0.35			
						GP1120	200-260-360	0.40-0.80-2.00	0.08-0.15-0.35			
			Semi-finishing	Continu-ous	QM	GP91TF	200-280-350	0.50-1.20-3.00	0.15-0.15-0.30			
						GP91TM	200-260-330	0.50-1.50-3.00	0.15-0.20-0.35			
						GP1105	200-260-360	0.80-2.00-4.00	0.15-0.20-0.40			
						GP1115	180-230-320	0.80-2.00-4.00	0.15-0.20-0.40			
						GP1120	180-230-320	0.80-2.00-4.00	0.15-0.20-0.40			
			Heavy Cutting	Continu-ous	QH	GP1105	100-150-240	3.00-6.00-12.00	0.35-0.60-1.10			
						GP1225	90-140-210	3.00-6.00-12.00	0.35-0.60-1.10			
						GP1135	80-130-190	3.00-6.00-12.00	0.35-0.60-1.10			
						Roughing	Continu-ous	QR	GP1105	130-190-270	1.50-3.50-6.00	0.20-0.30-0.60
									GP1225	120-170-250	1.50-3.50-6.00	0.20-0.30-0.60
			Finishing	Interru-pted	QF	GP91TF	200-270-350	0.40-0.80-1.50	0.04-0.12-0.22			
						GP91TM	180-250-330	0.40-1.00-2.00	0.08-0.15-0.30			
	GP1105	200-250-340				0.40-0.80-2.00	0.08-0.15-0.35					
	GP1115	180-230-320				0.40-0.80-2.00	0.08-0.15-0.35					
	GP1120	180-230-320				0.40-0.80-2.00	0.08-0.15-0.35					
	Carbon Steel & Alloy Steel	HB180-280	Finishing & Semi-finishing	Continu-ous	QM	GP91TF	180-250-330	0.50-1.20-3.00	0.15-0.12-0.30			
						GP91TM	180-230-310	0.50-1.50-3.00	0.15-0.15-0.35			
						GP1105	160-230-320	0.80-2.00-4.00	0.15-0.22-0.40			
						GP1115	140-210-300	0.80-2.00-4.00	0.15-0.20-0.40			
						GP1120	140-210-300	0.80-2.00-4.00	0.15-0.20-0.40			
						GP1225	120-190-280	0.80-2.00-4.00	0.15-0.20-0.40			
			Heavy Cutting	Continu-ous	QH	GP91TF	180-250-330	0.50-1.20-3.00	0.15-0.12-0.30			
						GP91TM	180-230-310	0.50-1.50-3.00	0.15-0.15-0.35			
						GP1105	160-230-320	0.80-2.00-4.00	0.15-0.22-0.40			
GP1115						140-210-300	0.80-2.00-4.00	0.15-0.20-0.40				
GP1120						140-210-300	0.80-2.00-4.00	0.15-0.20-0.40				
GP1225						120-190-280	0.80-2.00-4.00	0.15-0.20-0.40				
Roughing	Continu-ous	QR	GP91TF	180-250-330	0.50-1.20-3.00	0.15-0.12-0.30						
			GP91TM	180-230-310	0.50-1.50-3.00	0.15-0.15-0.35						
			GP1105	160-230-320	0.80-2.00-4.00	0.15-0.22-0.40						
			GP1115	140-210-300	0.80-2.00-4.00	0.15-0.20-0.40						
			GP1120	140-210-300	0.80-2.00-4.00	0.15-0.20-0.40						
			GP1225	120-190-280	0.80-2.00-4.00	0.15-0.20-0.40						

## Recommended Cutting Data ( Negative )

ISO	Workpiece material	Hardness	Cutting Range	Purpose	Geometry	Grade	Min-Optimum-Max			
							Cutting Speed Vc(m/min)	Depth of Cut ap(mm)	Feed rate f(mm/rev)	
P	Carbon Steel & Alloy Steel	HB180-280	Roughing	Continuous	QR	GP1105	120-180-260	1.50-3.50-6.00	0.20-0.30-0.60	
				Interru-pted		GP1225	110-160-240	1.50-3.50-6.00	0.20-0.30-0.60	
			Heavy Cutting	Continuous	QH	GP1105	90-140-230	3.00-6.00-12.00	0.35-0.60-1.10	
				Interru-pted		GP1225	80-130-200	3.00-6.00-12.00	0.35-0.60-1.10	
				Continuous		GP1135	100-140-220	1.50-3.50-6.00	0.20-0.30-0.60	
				Interru-pted		GP1135	70-120-180	3.00-6.00-12.00	0.35-0.60-1.10	
	Carbon Steel & Alloy Steel	HB280-350	Finishing	Continuous	QF	GP91TF	180-250-320	0.40-0.80-1.50	0.04-0.12-0.22	
						GP91TM	170-230-300	0.40-1.00-2.00	0.08-0.15-0.30	
						GP1105	160-200-270	0.40-0.80-2.00	0.08-0.15-0.35	
				GP1115		150-180-250	0.40-0.80-2.00	0.08-0.15-0.35		
				GP1120		150-180-250	0.40-0.80-2.00	0.08-0.15-0.35		
				GP1225		130-150-230	0.40-0.80-2.00	0.08-0.15-0.35		
			Semi-finishing	Continuous	QM	GP91TF	160-230-310	0.50-1.20-3.00	0.15-0.15-0.30	
						GP91TM	160-210-300	0.50-1.50-3.00	0.15-0.20-0.35	
						GP1105	120-180-250	0.80-2.00-4.00	0.15-0.20-0.40	
				GP1115		110-170-240	0.80-2.00-4.00	0.15-0.20-0.40		
				GP1120		110-170-240	0.80-2.00-4.00	0.15-0.20-0.40		
				GP1225		100-150-220	0.80-2.00-4.00	0.15-0.20-0.40		
				Continuous	TS	GP91TM	150-210-280	0.50-1.20-3.00	0.10-0.15-0.35	
						SV	GP91TF	140-190-270	1.00-1.50-3.50	0.18-0.15-0.35
							GP91TM	140-180-260	1.00-1.50-3.50	0.18-0.20-0.40
				GP1120	110-160-240		1.00-2.50-4.50	0.18-0.25-0.45		
				Interru-pted		GP1225	100-140-220	1.00-2.50-4.50	0.18-0.25-0.45	
						Roughing	QR	GP1105	100-150-210	2.00-3.50-6.50
			GP1225					90-140-200	2.00-3.50-6.50	0.20-0.30-0.60
			GP1135	80-120-180	2.00-3.50-6.50	0.20-0.30-0.60				
			Heavy Cutting	Continuous	QH	GP1105	80-110-190	3.00-6.00-12.00	0.35-0.60-1.10	
						GP1225	70-100-170	3.00-6.00-12.00	0.35-0.60-1.10	
						GP1135	60-90-150	3.00-6.00-12.00	0.35-0.60-1.10	

## Recommended Cutting Data ( Negative )

ISO	Workpiece material	Hardness	Cutting Range	Purpose	Geometry	Grade	Min-Optimum-Max		
							Cutting Speed Vc(m/min)	Depth of Cut ap(mm)	Feed rate f(mm/rev)
M	stainless steel 304 and 316, etc.	≤HB300	superfinishing & Finishing	Continuous	PS	GS3115	120-190-250	0.08-0.15-0.30	0.03-0.08-0.15
						GS3125	100-170-230	0.08-0.15-0.30	0.03-0.08-0.15
			Finishing	Continuous	SF	GS3115	120-190-250	0.10-0.80-1.50	0.08-0.10-0.30
						Semi-finishing	Continuous	SM	GM1115
			GM1125	180-230-280	0.50-1.80-3.00				0.10-0.20-0.40
			GM3215	100-160-220	1.00-2.50-4.00				0.10-0.20-0.40
			Interru- pted	Interru- pted	SM	GM3225	100-160-220	1.00-2.50-4.00	0.10-0.20-0.40
Finishing & Semi-finishing	Continuous	UK				GK1115	230-350-500	0.50-1.50-3.00	0.10-0.20-0.40
			GK1125	220-320-480	0.50-1.50-3.00	0.10-0.20-0.40			
K	Gray cast iron FC200 , FC250etc.	≤HB250	Roughing	Continuous	HK	GK1115	220-320-480	0.50-2.00-4.00	0.10-0.25-0.50
						GK1125	210-300-450	0.50-2.00-4.00	0.10-0.25-0.50
			Interru- pted	Interru- pted	HK	GK1115	210-300-450	1.00-2.50-6.00	0.20-0.30-0.60
						GK1125	200-280-430	1.00-2.50-6.00	0.20-0.30-0.60
			Heavy Cutting	Continuous	Flat	GK1115	210-300-450	1.00-2.50-6.00	0.20-0.30-0.60
						GK1125	200-280-430	1.00-2.50-6.00	0.20-0.30-0.60
	Ductile cast iron FCD450, FCD600 etc.	≤HB270	Finishing & Semi-finishing	Continuous	UK	GK1120	180-260-380	0.50-1.50-3.00	0.10-0.20-0.40
						GK1130	160-230-350	0.50-1.50-3.00	0.10-0.20-0.40
			Interru- pted	Interru- pted	UK	GK1120	180-260-380	0.50-1.50-3.00	0.10-0.20-0.40
						GK1130	160-230-350	0.50-1.50-3.00	0.10-0.20-0.40
			Roughing	Continuous	HK	GK1120	180-240-360	0.50-2.00-4.00	0.10-0.25-0.50
						GK1130	160-210-340	0.50-2.00-4.00	0.10-0.25-0.50
Interru- pted	Interru- pted	HK	GK1120	180-240-360	0.50-2.00-4.00	0.10-0.25-0.50			
			GK1130	160-210-340	0.50-2.00-4.00	0.10-0.25-0.50			
Heavy Cutting	Continuous	Flat	GK1120	180-220-350	1.00-2.50-6.00	0.20-0.30-0.60			
			GK1130	160-200-330	1.00-2.50-6.00	0.20-0.30-0.60			
Interru- pted	Interru- pted	Flat	GK1120	180-220-350	1.00-2.50-6.00	0.20-0.30-0.60			
			GK1130	160-200-330	1.00-2.50-6.00	0.20-0.30-0.60			

## Recommended Cutting Data ( Positive )

ISO	Workpiece material	Hardness	Cutting Range	Purpose	Geometry	Grade	Min-Optimum-Max				
							Cutting Speed Vc(m/min)	Depth of Cut ap(mm)	Feed rate f(mm/rev)		
P	Low Carbon Steel	≤HB180	Superfinishing & Finishing	Continuous	PS	GP91TF	220-300-380	0.08-0.15-0.30	0.03-0.08-0.15		
				Continuous	GS	GP91TF	220-300-380	0.20-0.30-1.50	0.02-0.05-0.08		
			Finishing	Continuous	MM	GP91TF	220-280-340	0.10-0.50-1.00	0.03-0.10-0.20		
						GP91TM	200-250-310	0.10-0.60-1.50	0.03-0.10-0.20		
						GP1105	190-240-320	0.10-0.60-1.50	0.05-0.10-0.20		
						GP1115	180-220-300	0.10-0.60-1.50	0.05-0.10-0.20		
						GP3125	160-200-260	0.10-0.60-1.50	0.05-0.10-0.20		
						GP1225	170-200-280	0.10-0.60-1.50	0.05-0.10-0.20		
			Finishing & Semi-finishing	Continuous	GP	GP91TF	200-250-300	0.30-0.80-1.50	0.05-0.10-0.22		
						GP91TM	180-230-300	0.30-1.00-1.80	0.05-0.12-0.22		
						GP1115	170-200-280	0.40-1.00-2.50	0.07-0.12-0.30		
						GP1120	170-200-280	0.40-1.00-2.50	0.07-0.12-0.30		
						GP3125	140-180-230	0.40-1.00-2.50	0.07-0.12-0.30		
						GP1225	150-180-260	0.40-1.00-2.50	0.07-0.12-0.30		
			Roughing	Continuous	KM	GP1225	140-160-240	1.00-2.00-3.50	0.13-0.20-0.40		
				Interrupted		GP1225	130-150-230	1.00-2.00-3.50	0.13-0.20-0.40		
			Carbon Steel & Alloy Steel	HB180-280	Superfinishing & Finishing	Continuous	PS	GP91TF	200-250-330	0.08-0.15-0.30	0.03-0.08-0.15
						Continuous	GS	GP91TF	200-250-330	0.20-0.30-1.50	0.02-0.05-0.08
	Finishing	Continuous			MM	GP91TF	200-250-330	0.10-0.50-1.00	0.03-0.08-0.20		
						GP91TM	180-230-300	0.10-0.60-1.50	0.03-0.10-0.20		
						GP1105	160-200-270	0.10-0.60-1.50	0.05-0.10-0.20		
						GP1115	150-180-260	0.10-0.60-1.50	0.05-0.10-0.20		
						GP3125	130-160-220	0.10-0.60-1.50	0.05-0.10-0.20		
						GP1225	140-160-240	0.10-0.60-1.50	0.05-0.10-0.20		
	Finishing & Semi-finishing	Continuous			GP	GP91TF	180-210-280	0.30-0.80-1.50	0.05-0.10-0.22		
						GP91TM	160-190-270	0.30-1.00-1.80	0.05-0.12-0.22		
						GP1115	140-160-240	0.40-1.00-2.50	0.07-0.12-0.30		
						GP1120	140-160-240	0.40-1.00-2.50	0.07-0.12-0.30		
						GP3125	110-140-210	0.40-1.00-2.50	0.07-0.12-0.30		
						GP1225	120-140-220	0.40-1.00-2.50	0.07-0.12-0.30		
	Roughing	Continuous			KM	GP1225	110-130-200	1.00-2.00-3.50	0.13-0.20-0.40		
		Interrupted				GP1225	100-120-190	1.00-2.00-3.50	0.13-0.20-0.40		
	HB280-350	Finishing			Continuous	MM	GP91TF	160-220-300	0.10-0.50-1.00	0.03-0.08-0.20	
							GP91TM	140-200-280	0.10-0.60-1.50	0.03-0.10-0.20	
			GP1105	140-180-240			0.10-0.60-1.50	0.05-0.10-0.20			
			GP1115	130-160-230			0.10-0.60-1.50	0.05-0.10-0.20			
GP3125			110-140-200	0.10-0.60-1.50			0.05-0.10-0.20				
GP1225			120-140-210	0.10-0.60-1.50			0.05-0.10-0.20				
Finishing & Semi-finishing		Continuous	GP	GP91TF	160-200-270	0.30-0.80-1.50	0.05-0.10-0.22				
				GP91TM	130-160-250	0.30-1.00-1.80	0.05-0.12-0.22				
				GP1115	120-160-210	0.40-1.00-2.50	0.07-0.12-0.30				
				GP1120	120-160-210	0.40-1.00-2.50	0.07-0.12-0.30				
				GP3125	110-140-200	0.40-1.00-2.50	0.07-0.12-0.30				
				GP1225	120-140-210	0.40-1.00-2.50	0.07-0.12-0.30				

## Recommended Cutting Data ( Positive )








ISO	Workpiece material	Hardness	Cutting Range	Purpose	Geometry	Grade	Min-Optimum-Max		
							Cutting Speed Vc(m/min)	Depth of Cut ap(mm)	Feed rate f(mm/rev)
P	Carbon Steel & Alloy Steel	HB280-350	Finishing & Semi-finishing	Interrupted	GP	GP3125	90-140-210	0.40-1.00-2.50	0.07-0.12-0.30
				Continuous		GP1225	100-140-220	0.40-1.00-2.50	0.07-0.12-0.30
			Roughing	Continuous	KM	GP1225	90-110-180	1.00-2.00-3.50	0.13-0.20-0.40
				Interrupted		GP1225	80-100-170	1.00-2.00-3.50	0.13-0.20-0.40
M	stainless steel 304 and 316, etc.	≤HB300	Superfinishing & Finishing	Continuous	PS	GS3125	100-170-230	0.08-0.15-0.30	0.03-0.08-0.15
				Continuous		GS	GS3125	100-170-230	0.20-0.30-1.50
			Finishing	Continuous	MM	GS3115	150-200-270	0.50-0.70-1.50	0.05-0.10-0.20
						GM1115	200-250-300	0.50-0.70-1.50	0.05-0.10-0.20
						GM1125	180-230-280	0.50-0.70-1.50	0.05-0.10-0.20
						GM3215	100-160-220	0.50-0.70-1.50	0.05-0.10-0.20
			Semi-finishing	Continuous	GP	GM3225	100-160-220	0.50-0.70-1.50	0.05-0.10-0.20
						GM1115	200-250-300	0.40-1.00-2.50	0.07-0.12-0.30
						GM1125	180-230-280	0.40-1.00-2.50	0.07-0.12-0.30
						GM3215	100-160-220	0.40-1.00-2.50	0.07-0.12-0.30
			Semi-finishing	Interrupted	GP	GM3225	100-160-220	0.40-1.00-2.5	0.07-0.12-0.30
						GK1115	180-280-380	0.30-0.80-2.00	0.05-0.12-0.25
GK1125	160-250-350	0.30-0.80-2.00				0.05-0.12-0.25			
GK1115	180-260-360	1.00-2.00-4.00				0.13-0.20-0.40			
K	Gray cast iron FC200 , FC250 etc.	≤HB250	Finishing & Semi-finishing	Continuous	GP	GK1115	180-280-380	0.30-0.80-2.00	0.05-0.12-0.25
				Interrupted		GK1125	160-250-350	0.30-0.80-2.00	0.05-0.12-0.25
			Roughing	Continuous	KM	GK1115	180-260-360	1.00-2.00-4.00	0.13-0.20-0.40
				Interrupted		GK1125	160-230-340	1.00-2.00-4.00	0.13-0.20-0.40
K	Ductile cast iron FCD450, FCD600 etc.	≤HB270	Finishing & Semi-finishing	Continuous	GP	GK1115	160-250-350	0.30-0.80-2.00	0.05-0.12-0.25
				Interrupted		GK1125	140-230-330	0.30-0.80-2.00	0.05-0.12-0.25
			Roughing	Continuous	KM	GK1115	160-230-330	1.00-2.00-4.00	0.13-0.20-0.40
				Interrupted		GK1125	140-200-310	1.00-2.00-4.00	0.13-0.20-0.40
N	Titanium Alloy	HB90-100	Finishing & Semi-finishing	Continuous	AL	GN9115	250-700-970	0.50-1.20-3.00	0.05-0.10-0.30
				Interrupted		GN9120	250-680-960	0.50-1.20-3.50	0.05-0.10-0.30
				Continuous		GN9130	250-650-950	0.50-1.20-4.00	0.05-0.10-0.30
		HB60-90		Continuous		GN9115	1000-1400-2100	0.50-1.20-3.00	0.05-0.10-0.30
				Interrupted		GN9120	950-1300-2000	0.50-1.20-3.50	0.05-0.10-0.30
				Interrupted		GN9130	950-1200-1950	0.50-1.20-4.00	0.05-0.10-0.30



# PCBN/PCD TURNING



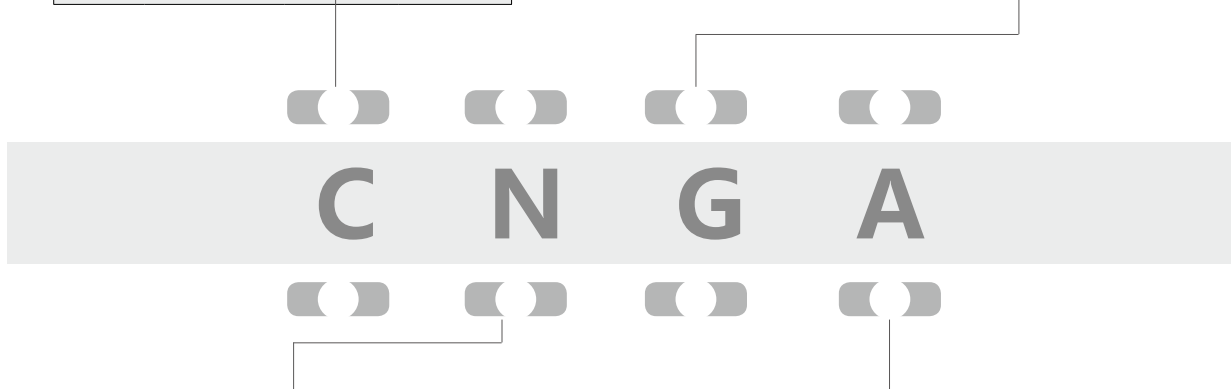
## PCBN/PCD Turning Inserts Identification System


Symbol	Shape	Corner Angle(°)	Figure
S	Square	90°	
T	Triangle	60°	
C	Rhombic	80°	
D		55°	
V		35°	
W	Trigon	80°	
L	Rectangle	90°	
A	Parallelogram	85°	
R	Round	--	

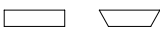


Shape Symbol

Symbol	Tolerance(mm)		
	Corner Height	Thickness	I.C. size (Ød)
A	±0.005 ±0.005	±0.025 ±0.025	±0.025 ±0.013
C	±0.013	±0.025	±0.025
H	±0.013	±0.025	±0.013
E	±0.025	±0.025	±0.025
G	±0.025	±0.13	±0.025
K	±0.013	±0.025	±0.05~ ±0.13
L	±0.025	±0.025	±0.05~ ±0.13
M	±0.08~ ±0.18	±0.13	±0.05~ ±0.13

Tolerance Symbol



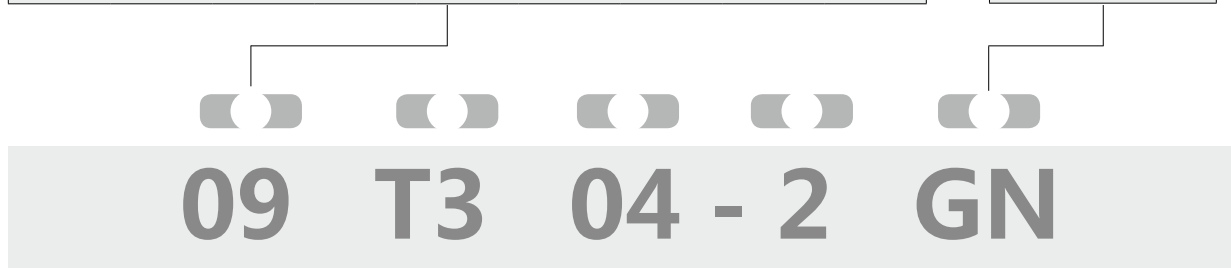
Clearance Angle Symbol	
	
Symbol	Clearance Angle(°)
A	3°
B	5°
C	7°
D	15°
E	20°
F	25°
G	30°
N	0°
P	11°
O	Other

Chipbreaker / Hole Symbol				
Symbol	Hole	Hole Shape	Chipbreaker	Shape
N	Without	—	Without	
A(G)	With	With Hole	Without	
W(T)	With	With hole and countersink 40°-60	Without	
X	—	—	—	

								I.C. Size (mm)
Symbol	Symbol	Symbol	Symbol	Symbol	Symbol	Symbol	Symbol	
	03	03		06	04			3.97
	04	04		08	05			4.76
05								5
	05	05	03	09	06			5.56
06								6
	06	06	04	11	07	11		6.35
	07	08	05	13	09			7.94
08								8
09	09	09	06	16	11	16	16	9.525
10								10
12								12
12	12	12	08	22	15	22		12.7
15	15	16	10	27	19			15.875
16								16
19	19	19	13	33	23			19.05
20								20
	22	22		38	27			22.225
25								25
25	25	25		44	31			25.4
31	31	32		55	38			31.75
31							—	32
Cotting Edge Length Symbol ( mm )								

Indicates the cutting properties and chipbreaker

PCBN Geometry Symbol



**Thickness Symbol**

Symbol	Thickness
01	1.59
02	2.38
T2	2.78
03	3.18
T3	3.97
04	4.76
05	5.56
06	6.35
07	7.94
09	9.52

**Corner Symbol**

Symbol	Corner Rc (mm)
00	0.03
02	0.2
04	0.4
08	0.8
12	1.2
16	1.6
20	2.0
24	2.4
28	2.8
32	3.2

**NO. of Cutting Edge**

Symbol	Edge
1	1
2	2
3	3
4	4
6	6
8	8

**PCD Rake Angle Symbol**

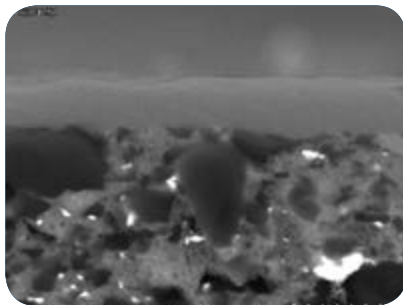
Symbol	Rake Angle (°)
GN	0°
GB	5°
GC	7°
GT	10°

## Application of PCBN Grades

Workpiece Material	Cutting Mode	Recommended Grade	Recommended Cutting Speed (m/min)	ISO	Application Range
<b>K</b> Cast Iron	Continuous Cutting	BKN115P	400-1500	K01	
		BKN115S	100-800	K10	
	Interrupted Cutting	BKN125S	400-1000	K20	
		BKN135S	400-1000	K30	
<b>H</b> Hardened Material	Continuous Cutting	BHN105S	120-200	H01	
		BHN115P/BHN115S	120-220	H10	
	Interrupted Cutting	BHN125P/BHN125S/BHC125P	100-200	H20	
		BHN135P/ BHC135P	50-130	H30	

**NEW**

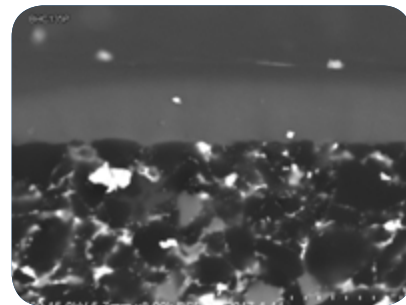
### General-purpose Coated PCBN Grade-BHC125P



- Suitable for general hardened steel machining.
- A latest ALTIN+ layer with Excellent heat and oxidation resistance.
- Multi-modal grained CBN substrate with superior toughness and greatly improved wear resistance.

**NEW**

### Heavy Interrupted Machining Coated PCBN Grade-BHC135P

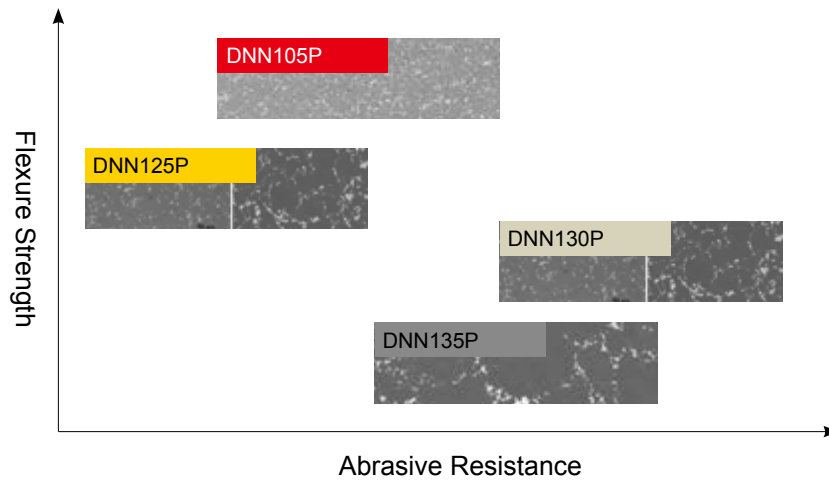


- Applicable to heavy interrupted machining for hardened steel.
- A latest ALTIN+ layer with Excellent heat and oxidation resistance.
- High-content CBN substrate with excellent impact resistance and chemical stability.

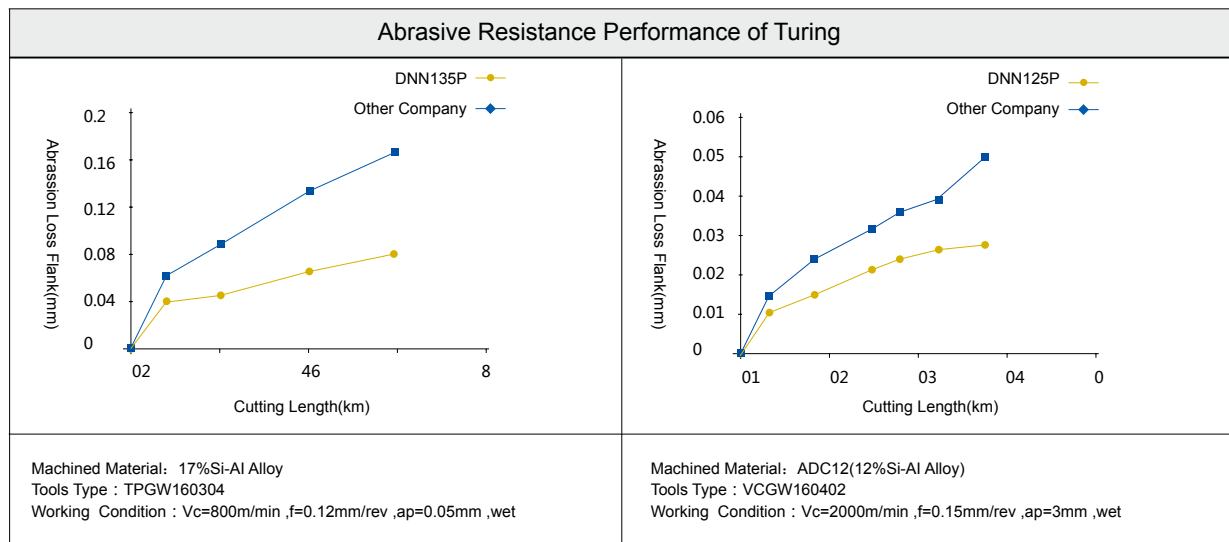
### Application of PCD Grades

Workpiece Material	Cutting Mode	Recommended Grade	Recommended Cutting Speed (m/min)	ISO	Application Range
N Nonferrous metal	Continuous Cutting	DNN105P	300~3000	N01	
		DNN125P	300~3600	N10	
	Interrupted Cutting	DNN130P	300~2400	N20	
		DNN135P	300~2000	N30	

### Application of PCD products

















### Cutting Performance of PCD Grades






## Range of PCBN Turning Inserts

### PCBN (Negative)

TYPE	Advantages	Rhombic 80°	Rhombic 55°	Square 90°	Triangle 60°	Rhombic 35°	Trigon 80°	Round 360°
Brazed	<ul style="list-style-type: none"> <li>• Higher precision and longer cutting life</li> <li>• Wide range of insert types</li> <li>• Smaller PCBN tip , space more economical</li> </ul>							
		CNGA	DNGA		TNGA	VNGA	WNGA	
		P068	P069		P071	P072	P073	
Solid	<ul style="list-style-type: none"> <li>• Higher impact resistance</li> <li>• Both sides of the insert can be used for cutting</li> <li>• Suitable for roughing at large cutting depth</li> <li>• Space more economical</li> </ul>							
		CNGN		SNGN			WNGN	RNGN
		P074		P074			P075	P075
Solid welding	<ul style="list-style-type: none"> <li>• More cutting edges, both sides of the insert can be used for cutting</li> <li>• Standard hole for easy use in existing tool holders</li> <li>• Higher productive efficiency depth , improving the productive efficiency</li> </ul>							
		CNGA	DNGA		TNGA	VNGA	WNGA	
		P068	P070		P071	P072	P073	

## Range of PCBN Turning Inserts

PCD (Positive)

TYPE	Advantages	Rhombic 80°	Rhombic 55°	Square 90°	Triangle 60°	Rhombic 35°	Trigon 80°	Round 360°
Brazed	<ul style="list-style-type: none"> <li>• Higher precision and longer cutting life</li> <li>• Wide range of insert types</li> <li>• Smaller PCBN tip , space more economical</li> </ul>							
		CCGW	DCGW		TCGW	VBGW		
		P076	P076		P077	P079		
					TPGW	VCGW		
					P078	P079		
Solid	<ul style="list-style-type: none"> <li>• Higher impact resistance</li> <li>• Both sides of the insert can be used for cutting</li> <li>• Suitable for roughing at large cutting depth</li> <li>• Space more economical</li> </ul>							
				SCGN				
				P080				

## Range of PCD Turning Inserts

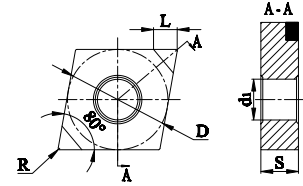
PCD(Positive)


TYPE	Advantages	Rhombic 80	Rhombic 55°	Triangle 60°	Rhombic 35°
Brazed	<ul style="list-style-type: none"> <li>• More cutting edges, both side of the insert can be used for cutting</li> <li>• Standard hole for easy use in existing tool holders</li> <li>• Higher productive efficiency depth , improving the productive efficiency</li> </ul>				
		CCGW	DCGW	TCGW	VCGW
		P081	P083	P084	P086
		CPGW		TPGW	
		P082		P085	

PCBN Turning Insert ( Negative )

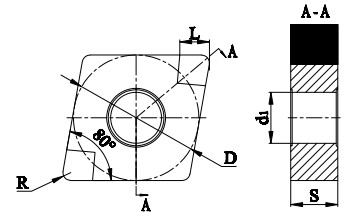
# CNGA


Rhombic 80°, With Hole



Ordering Code	Edge	Dimension ( mm )					Grades of the PCBN						
		L	D	S	d <sub>1</sub>	R	BKN115P	BHN115P	BHN125P	BHN135P	BHC125P	BHC135P	
	CNGA120402-2	2	2.5	12.7	4.76	5.16	0.2	○	○	○		○	
	CNGA120404-2	2	2.5	12.7	4.76	5.16	0.4	○	○	○		○	
	CNGA120404-4	4	2.5	12.7	4.76	5.16	0.4					○	
	CNGA120408-2	2	2.5	12.7	4.76	5.16	0.8	○	○	○	●	●	○
	CNGA120408-4	4	2.5	12.7	4.76	5.16	0.8					○	
	CNGA120412-2	2	2.5	12.7	4.76	5.16	1.2	○	○	○	○	●	○
	CNGA120412-4	4	2.5	12.7	4.76	5.16	1.2					○	
	CNGA120416-2	2	2.5	12.7	4.76	5.16	1.6						

● Stock ○ Available upon Order



Ordering Code	Edge	Dimension ( mm )					Grades of the PCBN							
		L	D	S	d <sub>1</sub>	R	BKN115S	BKN125S	BKN135S	BHN105S	BHN115S	BHN125S	BHN135S	
	CNGA120404-4	4	2.2	12.7	4.76	5.16	0.4	●	○		○	○		
	CNGA120408-4	4	2.2	12.7	4.76	5.16	0.8	○	○		●	○	○	●
	CNGA120412-4	4	2.2	12.7	4.76	5.16	1.2	○	○		●	○	○	○
	CNGA120416-4	4	2.2	12.7	4.76	5.16	1.6	○	○					

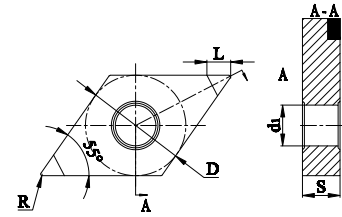
● Stock ○ Available upon Order



PCBN Turning Insert ( Negative )

# DNGA

Rhombic 55°, With Hole



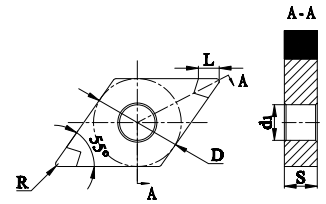
Ordering Code	Edge	Dimension ( mm )					Grades of the PCBN						
		L	D	S	d <sub>1</sub>	R	BKN115P	BHN115P	BHN125P	BHN135P	BHC125P	BHC135P	
	DNGA150402-2	2	2.5	12.7	4.76	5.16	0.2	○	○	○		○	
	DNGA150404-2	2	2.5	12.7	4.76	5.16	0.4	●	○	○		○	
	DNGA150404-4	4	2.5	12.7	4.76	5.16	0.4					○	
	DNGA150408-2	2	2.5	12.7	4.76	5.16	0.8	○	●	●	●	●	○
	DNGA150408-4	4	2.5	12.7	4.76	5.16	0.8					○	
	DNGA150412-2	2	2.5	12.7	4.76	5.16	1.2	○	○	○	○	○	○
	DNGA150416-2	2	2.5	12.7	4.76	5.16	1.6	○					
	DNGA150412-4	4	2.5	12.7	4.76	5.16	1.2					○	
	DNGA150604-2	2	2.5	12.7	6.35	5.16	0.4	○	○	○		○	
	DNGA150604-4	4	2.5	12.7	6.35	5.16	0.4					○	
	DNGA150608-2	2	2.2	12.7	6.35	5.16	0.8	○	○	○		○	
	DNGA150608-4	4	2.2	12.7	6.35	5.16	0.8					○	
	DNGA150612-2	2	2.2	12.7	6.35	5.16	1.2	○	○	○		○	
	DNGA150612-4	4	2.2	12.7	6.35	5.16	1.2					○	
	DNGA150616-2	2	2.2	12.7	6.35	5.16	1.6	○					


● Stock ○ Available upon Order

PCBN Turning Insert ( Negative )

# DNGA

Rhombic 55°, With Hole



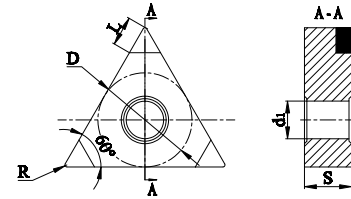
Ordering Code	Edge	Dimension ( mm )					Grades of the PCBN							
		L	D	S	d <sub>1</sub>	R	BKN115S	BKN125S	BKN135S	BHN105S	BHN115S	BHN125S	BHN135S	
	DNGA150404-4	4	2.2	12.7	4.76	5.16	0.4	○	○		○	○		
	DNGA150408-4	4	2.2	12.7	4.76	5.16	0.8	●	●		○	○	○	○
	DNGA150412-4	4	2.2	12.7	4.76	5.16	1.2	○	○		○	○	○	○
	DNGA150604-4	4	2.2	12.7	6.35	5.16	0.4				○	○		
	DNGA150608-4	4	2.2	12.7	6.35	5.16	0.8				○	○	○	○
	DNGA150612-4	4	2.2	12.7	6.35	5.16	1.2				○	○	○	○


● Stock ○ Available upon Order

PCBN Turning Insert ( Negative )

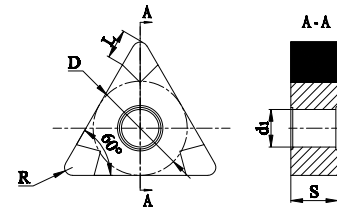
# TNGA


Triangle 60°, With Hole



Ordering Code	Edge	Dimension ( mm )					Grades of the PCBN						
		L	D	S	d <sub>1</sub>	R	BKN115P	BHN115P	BHN125P	BHN135P	BHC125P	BHC135P	
	TNGA160402-3	3	2.5	9.525	4.76	3.81	0.2	○	○	○		○	
	TNGA160404-3	3	2.5	9.525	4.76	3.81	0.4	○	○	○		●	○
	TNGA160408-3	3	2.5	9.525	4.76	3.81	0.8	○	●	●	●	●	●
	TNGA160412-3	3	2.2	9.525	4.76	3.81	1.2	○	○	○	○	○	○
	TNGA160416-3	3	2.2	9.525	4.76	3.81	1.6	○					

● Stock ○ Available upon Order



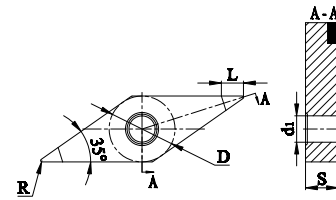
Ordering Code	Edge	Dimension ( mm )					Grades of the PCBN							
		L	D	S	d <sub>1</sub>	R	BKN115S	BKN125S	BKN135S	BHN105S	BHN115S	BHN125S	BHN135S	
	TNGA160404-6	6	2.2	9.525	4.76	3.81	0.4	●	○		○	○		
	TNGA160408-6	6	2.2	9.525	4.76	3.81	0.8	●	○		○	●	○	○
	TNGA160412-6	6	2.2	9.525	4.76	3.81	1.2	○	○		○	○	○	○
	TNGA160416-6	6	2.2	9.525	4.76	3.81	1.6	○	○					

● Stock ○ Available upon Order

PCBN Turning Insert ( Negative )

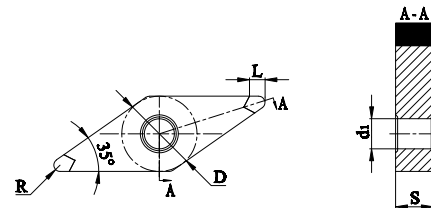
# VNGA

Rhombic 35°, With Hole



Ordering Code	Edge	Dimension ( mm )					Grades of the PCBN						
		L	D	S	d <sub>1</sub>	R	BKN115P	BHN115P	BHN125P	BHN135P	BHC125P	BHC135P	
	VNGA160402-2	2	3.0	9.525	4.76	3.81	0.2	○	○	○		○	
	VNGA160404-2	2	2.5	9.525	4.76	3.81	0.4	○	●	●		●	○
	VNGA160404-4	4	2.5	9.525	4.76	3.81	0.4					○	
	VNGA160408-2	2	2.2	9.525	4.76	3.81	0.8	○	●	●	●	●	●
	VNGA160408-4	4	2.2	9.525	4.76	3.81	0.8					○	
	VNGA160412-2	2	2	9.525	4.76	3.81	1.2	○	●	●	○	○	○
	VNGA160412-4	4	2	9.525	4.76	3.81	1.2					○	
	VNGA160416-2	2	2	9.525	4.76	3.81	1.6	○					

● Stock ○ Available upon Order



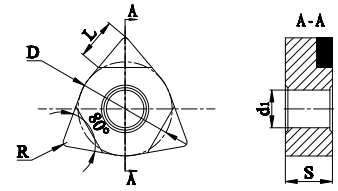
Ordering Code	Edge	Dimension ( mm )					Grades of the PCBN							
		L	D	S	d <sub>1</sub>	R	BKN115S	BKN125S	BKN135S	BHN105S	BHN115S	BHN125S	BHN135S	
	VNGA160404-4	4	2.2	9.525	4.76	3.81	0.4	○	○		○	●		
	VNGA160408-4	4	2.2	9.525	4.76	3.81	0.8	○	○		○	●	○	○
	VNGA160412-4	4	2.2	9.525	4.76	3.81	1.2	○	○		○	○	○	○
	VNGA160416-4	4	2.2	9.525	4.76	3.81	1.6	○	○					

● Stock ○ Available upon Order

PCBN Turning Insert ( Negative )

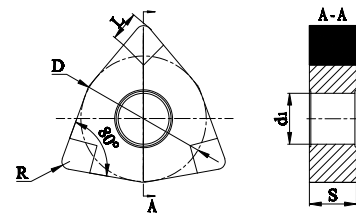
# WNGA

Trigon 80°, With Hole



Ordering Code	Edge	Dimension ( mm )					Grades of the PCBN							
		L	D	S	d <sub>1</sub>	R	BKN115P	BHN115P	BHN125P	BHN135P	BHC125P	BHC135P		
	WNGA060402-3	3	2.5	9.525	4.76	3.81	0.2	○						
	WNGA060404-3	3	2.5	9.525	4.76	3.81	0.4	○						
	WNGA060408-3	3	2.5	9.525	4.76	3.81	0.8	●						
	WNGA060412-3	3	2.2	9.525	4.76	3.81	1.2	○						
	WNGA060416-3	3	2.2	9.525	4.76	3.81	1.6	○						
	WNGA080402-3	3	2.5	12.7	4.76	3.81	0.2	○						
	WNGA080404-3	3	2.5	12.7	4.76	3.81	0.4	○						
	WNGA080408-3	3	2.5	12.7	4.76	3.81	0.8	○						
	WNGA080412-3	3	2.2	12.7	4.76	3.81	1.2	○						
	WNGA080416-3	3	2.2	12.7	4.76	3.81	1.6	○						

● Stock ○ Available upon Order



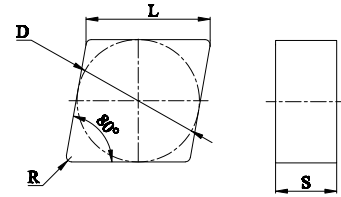
Ordering Code	Edge	Dimension ( mm )					Grades of the PCBN							
		L	D	S	d <sub>1</sub>	R	BKN115S	BKN125S	BKN135S	BHN105S	BHN115S	BHN125S	BHN135S	
	WNGA080404-6	6	2.2	12.7	4.76	3.81	0.4	●	○		○	○		
	WNGA080408-6	6	2.2	12.7	4.76	3.81	0.8	●	○		○	●	○	○
	WNGA080412-6	6	2.2	12.7	4.76	3.81	1.2	○	○		○	○	○	○
	WNGA080416-6	6	2.2	12.7	4.76	3.81	1.6	○	○					

● Stock ○ Available upon Order

PCBN Turning Insert ( Negative )

# CNGN

Rhombic 80°, Without hole

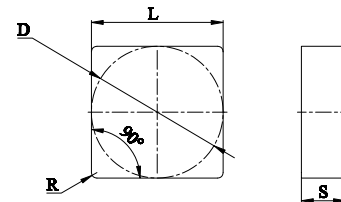


Ordering Code	Edge	Dimension ( mm )				Grades of the PCBN							
		L	D	S	R	BKN115S	BKN125S	BKN135S	BHN105S	BHN115S	BHN125S	BHN135S	
	CNGN120404-4	4	12.7	12.7	4.76	0.4	○	○	○				
	CNGN120408-4	4	12.7	12.7	4.76	0.8	○	○	○				
	CNGN120412-4	4	12.7	12.7	4.76	1.2	○	○	○				
	CNGN120704-4	4	12.7	12.7	7.94	0.4	○	○	○				
	CNGN120708-4	4	12.7	12.7	7.94	0.8	○	○	●			○	
	CNGN120712-4	4	12.7	12.7	7.94	1.2	●	●	●		○	○	
	CNGN120716-4	4	12.7	12.7	7.94	1.6	○	○	○				

● Stock ○ Available upon Order

# SNGN

Square 90°, Without hole



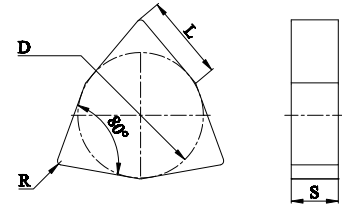
Ordering Code	Edge	Dimension ( mm )				Grades of the PCBN							
		L	D	S	R	BKN115S	BKN125S	BKN135S	BHN105S	BHN115S	BHN125S	BHN135S	
	SNGN090404-8	8	9.525	9.525	4.76	0.4	○	○	○				
	SNGN090408-8	8	9.525	9.525	4.76	0.8	○	○	○				
	SNGN090412-8	8	9.525	9.525	4.76	1.2	●	●	○				
	SNGN120404-8	8	12.7	12.7	4.76	0.4	○	○	○				
	SNGN120408-8	8	12.7	12.7	4.76	0.8	○	○	○				
	SNGN120412-8	8	12.7	12.7	4.76	1.2	○	○	○				
	SNGN120708-8	8	12.7	12.7	7.94	0.8	○	○	●				
	SNGN120712-8	8	12.7	12.7	7.94	1.2	○	○	○				
	SNGN120716-8	8	12.7	12.7	7.94	1.6	○	○	○				
	SNGN150708-8	8	15.875	15.875	7.94	0.8						○	
	SNGN150712-8	8	15.875	15.875	7.94	1.2						○	

● Stock ○ Available upon Order

PCBN Turning Insert ( Negative )

# WNGN

Trigon 80°, Without hole

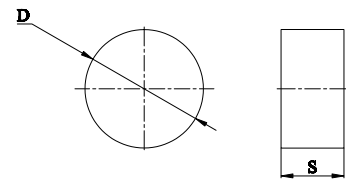


Ordering Code	Edge	Dimension ( mm )				Grades of the PCBN							
		L	D	S	R	BKN115S	BKN125S	BKN135S	BHN105S	BHN115S	BHN125S	BHN135S	
	WNGN080404-6	6	8.72	12.7	4.76	0.4	○	○	○				
	WNGN080408-6	6	8.72	12.7	4.76	0.8	○	○	○				
	WNGN080412-6	6	8.72	12.7	4.76	1.2	○	○	○				
	WNGN080416-6	6	8.72	12.7	4.76	1.6	○	○	○				
	WNGN080604-6	6	8.72	12.7	6.35	0.4	○	○	○				
	WNGN080608-6	6	8.72	12.7	6.35	0.8	○	○	○				
	WNGN080612-6	6	8.72	12.7	6.35	1.2	○	●	○				
	WNGN080616-6	6	8.72	12.7	6.35	1.6	○	○	○				

● Stock ○ Available upon Order

# RNGN

Round 360°, Without hole



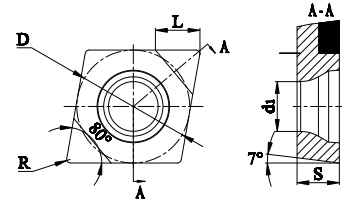
Ordering Code	Edge	Dimension ( mm )		Grades of the PCBN							
		D	S	BKN115S	BKN125S	BKN135S	BHN105S	BHN115S	BHN125S	BHN135S	
	RNGN060300	/	6	3.18				○	○	○	
	RNGN090300		9.525	3.18	○	○	○	○	○	○	
	RNGN120400		12.7	4.76	○	○	○				
	RNGN120700		12.7	7.94	○	○	○				
	RNGN150700		15.875	7.94	○	○	○				
	RNGN201000		20	10				○		○	


● Stock ○ Available upon Order

PCBN Turning Insert ( Positive )

# CCGW

Rhombic 80°, With Hole

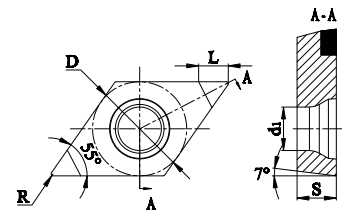



Ordering Code	Edge	Dimension ( mm )					Grades of the PCBN						
		L	D	S	d <sub>1</sub>	R	BKN115P	BHN115P	BHN125P	BHN135P	BHC125P	BHC135P	
	CCGW060202-2	2	2.5	6.35	2.38	2.8	0.2	○	○	○		○	
	CCGW060204-2	2	2.5	6.35	2.38	2.8	0.4	○	○	○		●	
	CCGW060208-2	2	2.5	6.35	2.38	2.8	0.8	○	○	○		○	
	CCGW09T302-2	2	2.5	9.525	3.97	4.4	0.2	○	○	○		○	
	CCGW09T304-2	2	2.5	9.525	3.97	4.4	0.4	○	●	●		●	
	CCGW09T308-2	2	2.5	9.525	3.97	4.4	0.8	○	●	●		●	

● Stock ○ Available upon Order

# DCGW

Rhombic 55°, With Hole



Ordering Code	Edge	Dimension ( mm )					Grades of the PCBN						
		L	D	S	d <sub>1</sub>	R	BKN115P	BHN115P	BHN125P	BHN135P	BHC125P	BHC135P	
	DCGW070202-2	2	2.5	6.35	2.38	2.8	0.2	○	○	○		○	
	DCGW070204-2	2	2.5	6.35	2.38	2.8	0.4	○	○	○		○	
	DCGW070208-2	2	2.5	6.35	2.38	2.8	0.8	○	○	○		○	
	DCGW11T302-2	2	2.5	9.525	3.97	4.4	0.2	○	○	○		○	
	DCGW11T304-2	2	2.5	9.525	3.97	4.4	0.4	●	●	●		●	
	DCGW11T308-2	2	2.2	9.525	3.97	4.4	0.8	○	●	●		●	
	DCGW11T312-2	2	2.2	9.525	3.97	4.4	1.2		○	○		○	

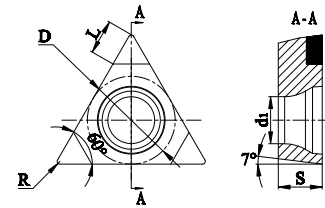
● Stock ○ Available upon Order




PCBN Turning Insert ( Positive )

# TCGW

Triangle 60°, With Hole



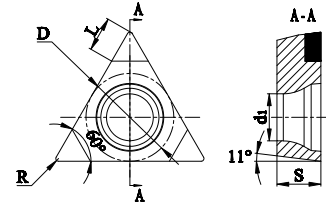
Ordering Code	Edge	Dimension ( mm )					Grades of the PCBN						
		L	D	S	d <sub>1</sub>	R	BKN115P	BHN115P	BHN125P	BHN135P	BHC125P	BHC135P	
	TCGW110302-3	3	2.5	6.35	3.18	3.4	0.2	○	○	○		○	
	TCGW110304-3	3	2.5	6.35	3.18	3.4	0.4	○	●	○		●	
	TCGW110308-3	3	2.2	6.35	3.18	3.4	0.8	○	●	○		●	

● Stock ○ Available upon Order

PCBN Turning Insert ( Positive )

# TPGW

Triangle 60°, With Hole



Ordering Code	Edge	Dimension ( mm )					Grades of the PCBN					
		L	D	S	d <sub>1</sub>	R	BKN115P	BHN115P	BHN125P	BHN135P	BHC125P	BHC135P
TPGW080202-3	3	2.5	4.76	2.38	2.34	0.2		○	○		○	
TPGW080204-3	3	2.5	4.76	2.38	2.34	0.4		○	○		○	
TPGW080208-3	3	2.2	4.76	2.38	2.34	0.8		○	○		○	
TPGW090202-3	3	2.5	5.56	2.38	2.8	0.2		○	○		○	
TPGW090204-3	3	2.5	5.56	2.38	2.8	0.4		○	○		○	
TPGW090208-3	3	2.2	5.56	2.38	2.8	0.8		○	○		○	
TPGW110202-3	3	2.5	6.35	3.18	2.8	0.2	○					
TPGW110204-3	3	2.5	6.35	3.18	2.8	0.4	○					
TPGW110208-3	3	2.2	6.35	3.18	2.8	0.8	○					
TPGW110302-3	3	2.5	6.35	3.18	3.4	0.2	○	○	○		○	
TPGW110304-3	3	2.5	6.35	3.18	3.4	0.4	○	●	○		●	
TPGW110308-3	3	2.2	6.35	3.18	3.4	0.8	○	●	○		●	
TPGW160302-3	3	2.5	9.525	3.18	4.4	0.2		○	○		○	
TPGW160304-3	3	2.5	9.525	3.18	4.4	0.4		○	○		○	
TPGW160308-3	3	2.2	9.525	3.18	4.4	0.8		○	○		○	
TPGW160402-3	3	2.5	9.525	4.76	4.4	0.2		○	○		○	
TPGW160404-3	3	2.5	9.525	4.76	4.4	0.4		○	○		○	
TPGW160408-3	3	2.2	9.525	4.76	4.4	0.8		○	○		○	

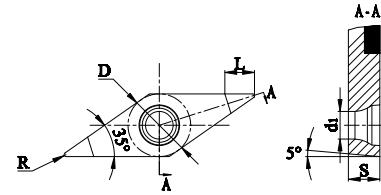



● Stock ○ Available upon Order

PCBN Turning Insert ( Positive )

# VBGW

Rhombic 35°, With Hole

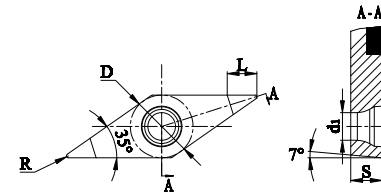



Ordering Code	Edge	Dimension ( mm )					Grades of the PCBN						
		L	D	S	d <sub>1</sub>	R	BKN115P	BHN115P	BHN125P	BHN135P	BHC125P	BHC135P	
	VBGW110302-2	2	3.0	6.35	3.18	2.8	0.2	○	○	○		○	
	VBGW110304-2	2	2.5	6.35	3.18	2.8	0.4	○	○	○		○	
	VBGW110308-2	2	2.2	6.35	3.18	2.8	0.8	○	○	○		○	
	VBGW160402-2	2	3.0	9.525	4.76	4.4	0.2	○	○	○		○	
	VBGW160404-2	2	2.5	9.525	4.76	4.4	0.4	○	●	●		●	
	VBGW160408-2	2	2.2	9.525	4.76	4.4	0.8	○	●	●		●	

● Stock ○ Available upon Order

# VCGW

Rhombic 35°, With Hole



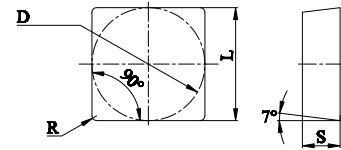
Ordering Code	Edge	Dimension ( mm )					Grades of the PCBN						
		L	D	S	d <sub>1</sub>	R	BKN115P	BHN115P	BHN125P	BHN135P	BHC125P	BHC135P	
	VCGW110302-2	2	3.0	6.35	3.18	2.8	0.2	○	○			○	
	VCGW110304-2	2	2.5	6.35	3.18	2.8	0.4	○	○	○		○	
	VCGW110308-2	2	2.5	6.35	3.18	2.8	0.8	○					
	VCGW160402-2	2	2.5	9.525	4.76	4.4	0.2	○					
	VCGW160404-2	2	2.5	9.525	4.76	4.4	0.4	○	●	●		○	
	VCGW160408-2	2	2.2	9.525	4.76	4.4	0.8	○	●	●		○	

● Stock ○ Available upon Order

PCBN Turning Insert ( Positive )

# SCGN

Square 90°, Without hole



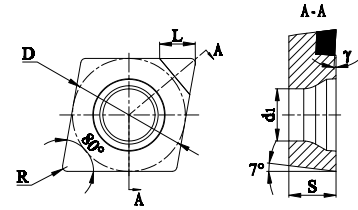
Ordering Code		Edge	Dimension ( mm )				Grades of the PCBN						
			L	D	S	R	BKN115S	BKN125S	BKN135S	BHN105S	BHN115S	BHN125S	BHN135S
	SCGN090404-4	4	9.525	9.525	4.76	0.4	○	○	○				
	SCGN090408-4	4	9.525	9.525	4.76	0.8	○	○	○				
	SCGN090412-4	4	9.525	9.525	4.76	1.2	○	○	○				

●Stock ○Available upon Order

PCD Turning Insert ( Positive )

# CCGW

Rhombic 80°, With Hole



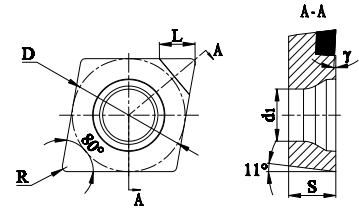
Ordering Code	Edge	Dimension ( mm )						Grades of the PCD			
		L	D	S	d <sub>1</sub>	R	γ ( ° )	DNN105P	DNN125P	DNN130P	DNN135P
CCGW060201-1GN	1	2.5	6.35	6.35	2.8	0.1	0	○	○	○	○
CCGW060202-1GN	1	2.5	6.35	6.35	2.8	0.2	0	○	○	○	○
CCGW060201-1GC	1	2.5	6.35	6.35	2.8	0.1	7	○	○	○	○
CCGW060202-1GC	1	2.5	6.35	6.35	2.8	0.2	7	○	○	○	○
CCGW09T302-1GN	1	3.0	9.525	3.97	4.4	0.2	0	●	●	○	○
CCGW09T304-1GN	1	3.0	9.525	3.97	4.4	0.4	0	●	●	○	○
CCGW09T308-1GN	1	3.0	9.525	3.97	4.4	0.8	0	●	●	○	○
CCGW09T302-1GC	1	3.0	9.525	3.97	4.4	0.2	7	●	●	○	○
CCGW09T304-1GC	1	3.0	9.525	3.97	4.4	0.4	7	●	●	○	○
CCGW09T308-1GC	1	3.0	9.525	3.97	4.4	0.8	7	●	●	○	○
CCGW09T301-1GT	1	3.0	9.525	3.97	4.4	0.1	10	●	●	○	○
CCGW09T302-1GT	1	3.0	9.525	3.97	4.4	0.2	10	○	●	○	○
CCGW09T304-1GT	1	3.0	9.525	3.97	4.4	0.4	10	○	○	○	○
CCGW09T308-1GT	1	3.0	9.525	3.97	4.4	0.8	10	○	○	○	○
CCGW120402-1GN	1	3.0	12.7	4.76	5.5	0.2	0	○	○	○	○
CCGW120404-1GN	1	3.0	12.7	4.76	5.5	0.2	0	○	●	○	○
CCGW120408-1GN	1	3.0	12.7	4.76	5.5	0.2	0	○	●	○	○
CCGW120412-1GN	1	3.0	12.7	4.76	5.5	0.2	0	○	○	○	○
CCGW120402-1GC	1	3.0	12.7	4.76	5.5	0.2	7	○	○	○	○
CCGW120404-1GC	1	3.0	12.7	4.76	5.5	0.2	7	●	●	○	○
CCGW120408-1GC	1	3.0	12.7	4.76	5.5	0.2	7	●	●	○	○
CCGW120412-1GC	1	3.0	12.7	4.76	5.5	0.2	7	●	●	○	○

● Stock ○ Available upon Order

## PCD Turning Insert ( Positive )

**CPGW**

Rhombic 80°, With Hole



Ordering Code	Edge	Dimension ( mm )							Grades of the PCD			
		L	D	S	d <sub>1</sub>	R	γ ( ° )	DNN105P	DNN125P	DNN130P	DNN135P	
CPGW060201-1GN	1	2.5	6.35	6.35	2.8	0.1	0	○	○	○	○	
CPGW060202-1GN	1	2.5	6.35	6.35	2.8	0.2	0	○	○	○	○	
CPGW09T302-1GN	1	3.0	9.525	3.97	4.4	0.2	0	○	○	○	○	
CPGW09T304-1GN	1	3.0	9.525	3.97	4.4	0.4	0	●	●	○	○	
CPGW09T308-1GN	1	3.0	9.525	3.97	4.4	0.8	0	●	●	○	○	
CPGW09T302-1GC	1	3.0	9.525	3.97	4.4	0.2	7	●	●	○	○	
CPGW09T304-1GC	1	3.0	9.525	3.97	4.4	0.4	7	●	●	○	○	
CPGW09T308-1GC	1	3.0	9.525	3.97	4.4	0.8	7	○	○	○	○	
CPGW09T301-1GT	1	3.0	9.525	3.97	4.4	0.1	10	○	○	○	○	
CPGW09T302-1GT	1	3.0	9.525	3.97	4.4	0.2	10	○	○	○	○	
CPGW09T304-1GT	1	3.0	9.525	3.97	4.4	0.4	10	○	○	○	○	
CPGW09T308-1GT	1	3.0	9.525	3.97	4.4	0.8	10	○	○	○	○	
CPGW120402-1GN	1	3.0	12.7	4.76	5.5	0.2	0	○	○	○	○	
CPGW120404-1GN	1	3.0	12.7	4.76	5.5	0.2	0	●	●	○	○	
CPGW120408-1GN	1	3.0	12.7	4.76	5.5	0.2	0	○	○	○	○	
CPGW120412-1GN	1	3.0	12.7	4.76	5.5	0.2	0	○	○	○	○	
CPGW120402-1GC	1	3.0	12.7	4.76	5.5	0.2	7	○	○	○	○	
CPGW120404-1GC	1	3.0	12.7	4.76	5.5	0.2	7	○	○	○	○	
CPGW120408-1GC	1	3.0	12.7	4.76	5.5	0.2	7	●	●	○	○	
CPGW120412-1GC	1	3.0	12.7	4.76	5.5	0.2	7	○	○	○	○	

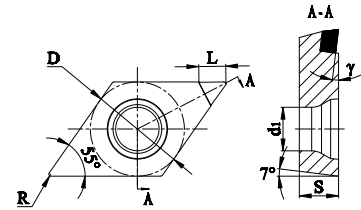


●Stock ○Available upon Order

PCD Turning Insert ( Positive )

# DCGW

Rhombic 55°, With Hole



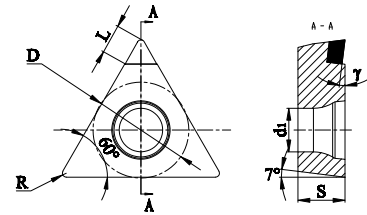
Ordering Code	Edge	Dimension ( mm )						Grades of the PCD				
		L	D	S	d <sub>1</sub>	R	γ ( ° )	DNN105P	DNN125P	DNN130P	DNN135P	
	DCGW11T302-1GN	1	3.0	9.525	3.97	4.4	0.2	0	●	●	○	○
	DCGW11T304-1GN	1	3.0	9.525	3.97	4.4	0.4	0	●	●	○	○
	DCGW11T308-1GN	1	3.0	9.525	3.97	4.4	0.8	0	●	●	○	○
	DCGW11T302-1GC	1	3.0	9.525	3.97	4.4	0.2	7	●	●	○	○
	DCGW11T304-1GC	1	3.0	9.525	3.97	4.4	0.4	7	●	●	○	○
	DCGW11T308-1GC	1	3.0	9.525	3.97	4.4	0.8	7	●	●	○	○
	DCGW11T301-1GT	1	3.0	9.525	3.97	4.4	0.1	10	●	●	○	○
	DCGW11T302-1GT	1	3.0	9.525	3.97	4.4	0.2	10	●	●	○	○
	DCGW11T304-1GT	1	3.0	9.525	3.97	4.4	0.4	10	○	○	○	○
	DCGW11T308-1GT	1	3.0	9.525	3.97	4.4	0.8	10	○	○	○	○


● Stock ○ Available upon Order

## PCD Turning Insert ( Positive )

**TCGW**

Triangle 60°, With Hole



Ordering Code	Edge	Dimension ( mm )							Grades of the PCD			
		L	D	S	d <sub>1</sub>	R	γ ( ° )	DNN105P	DNN125P	DNN130P	DNN135P	
	TCGW110302-1GN	1	3.0	6.35	3.18	2.8	0.2	0	●	●	○	○
	TCGW110304-1GN	1	3.0	6.35	3.18	2.8	0.4	0	○	○	○	○
	TCGW110308-1GN	1	3.0	6.35	3.18	2.8	0.8	0	○	○	○	○
	TCGW110302-1GC	1	3.0	6.35	3.18	2.8	0.2	7	●	●	○	○
	TCGW110304-1GC	1	3.0	6.35	3.18	2.8	0.4	7	●	●	○	○
	TCGW110308-1GC	1	3.0	6.35	3.18	2.8	0.8	7	○	○	○	○
	TCGW160402-1GN	1	3.0	9.525	4.76	4.4	0.2	0	○	○	○	○
	TCGW160404-1GN	1	3.0	9.525	4.76	4.4	0.4	0	●	●	○	○
	TCGW160408-1GN	1	3.0	9.525	4.76	4.4	0.8	0	●	●	○	○
	TCGW160402-1GC	1	3.0	9.525	4.76	4.4	0.2	7	●	●	○	○
	TCGW160404-1GC	1	3.0	9.525	4.76	4.4	0.4	7	●	●	○	○
	TCGW160408-1GC	1	3.0	9.525	4.76	4.4	0.8	7	●	●	○	○

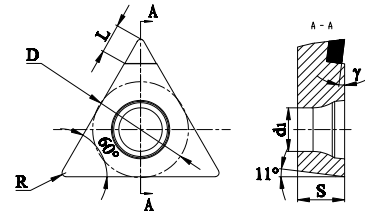
●Stock ○Available upon Order



PCD Turning Insert ( Positive )

# TPGW

Triangle 60°, With Hole



Ordering Code	Edge	Dimension ( mm )							Grades of the PCD			
		L	D	S	d <sub>1</sub>	R	γ ( ° )	DNN105P	DNN125P	DNN130P	DNN135P	
TPGW110302-1GN	1	3.0	6.35	3.18	2.8	0.2	0	●	●	○	○	
TPGW110304-1GN	1	3.0	6.35	3.18	2.8	0.4	0	●	●	○	○	
TPGW110308-1GN	1	3.0	6.35	3.18	2.8	0.8	0	○	○	○	○	
TPGW110302-1GC	1	3.0	6.35	3.18	2.8	0.2	7	○	○	○	○	
TPGW110304-1GC	1	3.0	6.35	3.18	2.8	0.4	7	●	●	○	○	
TPGW110308-1GC	1	3.0	6.35	3.18	2.8	0.8	7	○	○	○	○	
TPGW160402-1GN	1	3.0	9.525	4.76	4.4	0.2	0	○	●	○	○	
TPGW160404-1GN	1	3.0	9.525	4.76	4.4	0.4	0	○	●	○	○	
TPGW160408-1GN	1	3.0	9.525	4.76	4.4	0.8	0	○	○	○	○	
TPGW160402-1GC	1	3.0	9.525	4.76	4.4	0.2	7	○	●	○	○	
TPGW160404-1GC	1	3.0	9.525	4.76	4.4	0.4	7	○	●	○	○	
TPGW160408-1GC	1	3.0	9.525	4.76	4.4	0.8	7	○	○	○	○	

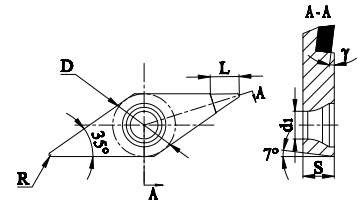


● Stock ○ Available upon Order

## PCD Turning Insert ( Positive )

**VCGW**

Rhombic35°, With Hole



Ordering Code	Edge	Dimension ( mm )							Grades of the PCD			
		L	D	S	d <sub>1</sub>	R	γ ( ° )	DNN105P	DNN125P	DNN130P	DNN135P	
VCGW110302-1GN	1	3.0	6.35	3.18	2.8	0.2	0	●	●	○	○	
VCGW110304-1GN	1	3.0	6.35	3.18	2.8	0.4	0	●	●	○	○	
VCGW110308-1GN	1	3.0	6.35	3.18	2.8	0.8	0	○	○	○	○	
VCGW110302-1GC	1	3.0	6.35	3.18	2.8	0.2	7	○	○	○	○	
VCGW110304-1GC	1	3.0	6.35	3.18	2.8	0.4	7	●	●			
VCGW110308-1GC	1	3.0	6.35	3.18	2.8	0.8	7	○	○	○	○	
VCGW110302-1GT	1	3.0	6.35	3.18	2.8	0.2	10	○	○	○	○	
VCGW110304-1GT	1	3.0	6.35	3.18	2.8	0.4	10	○	○	○	○	
VCGW110308-1GT	1	3.0	6.35	3.18	2.8	0.8	10	○	○	○	○	
VCGW160402-1GN	1	3.0	9.525	4.76	4.4	0.2	0	●	●	○	○	
VCGW160404-1GN	1	3.0	9.525	4.76	4.4	0.4	0	●	●	○	○	
VCGW160408-1GN	1	3.0	9.525	4.76	4.4	0.8	0	●	●	○	○	
VCGW160412-1GN	1	3.0	9.525	4.76	4.4	1.2	0	●	●	○	○	
VCGW160402-1GC	1	3.0	9.525	4.76	4.4	0.2	7	○	○	○	○	
VCGW160404-1GC	1	3.0	9.525	4.76	4.4	0.4	7	●	●	○	○	
VCGW160408-1GC	1	3.0	9.525	4.76	4.4	0.8	7	●	●	○	○	
VCGW160412-1GC	1	3.0	9.525	4.76	4.4	1.2	7	○	○	○	○	
VCGW160402-1GT	1	3.0	9.525	4.76	4.4	0.2	10	○	○	○	○	
VCGW160404-1GT	1	3.0	9.525	4.76	4.4	0.4	10	○	○	○	○	
VCGW160408-1GT	1	3.0	9.525	4.76	4.4	0.8	10	○	○	○	○	
VCGW160412-1GT	1	3.0	9.525	4.76	4.4	1.2	10	○	○	○	○	

●Stock ○Available upon Order



## PCBN Recommended Cutting Data

ISO	Workpiece material	Hardness	Cutting Range	Purpose	Grade	Min-Optimum-Max			
						Cutting Speed Vc(m/min)	Depth of cut ap(mm)	Feed rate f(mm/rev)	
K	Gray cast iron	≥HB200	Superfinishing & Finishing	General	BKN115P	600-800-1500	0.05-0.20-0.50	0.05-0.10-0.50	
			Finishing	General	BKN115P	400-600-1200	0.05-0.20-0.50	0.05-0.10-0.50	
				Continuous	BKN115S	100-600-1200	0.05-0.20-0.50	0.10-0.20-5.00	
				Interrupted	BKN125S	400-500-1200	0.05-0.10-1.00	0.10-0.20-5.00	
			Semi-finishing	Interrupted	BKN125S	400-600-1000	0.05-0.40-1.00	0.10-0.50-5.00	
	Roughing	Continuous	BKN135S	400-500-800	0.10-0.30-0.50	0.10-0.50-5.00			
	Alloy cast iron	≥HRC40	Finishing & Semi-Finishing	Interrupted	BKN135S	10-50-100	0.10-0.30-2.00	0.10-0.50-10.0	
	Power metallurgy	≥HB200	Finishing	Continual	BKN115P	80-120-200	0.05-0.10-0.20	0.05-0.10-1.00	
	H	Hardened Material	≥HRC50	Superfinishing & Finishing	General	BHC125P	100-180-200	0.05-0.10-0.20	0.05-0.08-0.20
					Continual	BHN115P	120-180-220	0.05-0.10-0.20	0.05-0.08-0.20
Finishing				General	BHC125P	100-150-200	0.05-0.10-0.20	0.05-0.10-0.50	
				Continual	BHN105S	100-120-200	0.05-0.10-0.20	0.05-0.10-0.50	
				Interrupted	BHN125P	90-140-180	0.05-0.10-0.20	0.05-0.10-0.50	
Semi-finishing				General	BHC125P	100-150-200	0.05-0.20-0.20	0.05-0.20-0.50	
				General	BHN115S	100-150-220	0.10-0.20-0.50	0.05-0.20-1.00	
				Interrupted	BHN135P	60-120-130	0.05-0.20-0.40	0.05-0.20-0.40	
				Interrupted	BHN125S	50-100-160	0.10-0.20-0.50	0.05-0.20-1.00	
				Interrupted	BHN135S	50-100-150	0.10-0.20-0.50	0.05-0.20-1.00	
				Interrupted	BHC135P	80-100-150	0.05-0.20-0.20	0.05-0.20-0.40	
Roughing				General	BHC125P	100-150-200	0.05-0.5-0.20	0.05-0.20-0.50	
				General	BHN115S	100-150-220	0.10-0.5-0.50	0.05-0.20-1.00	
				Interrupted	BHN125S	50-100-160	0.10-0.5-0.50	0.05-0.20-1.00	
				Interrupted	BHN135S	50-100-150	0.10-0.5-0.50	0.05-0.20-1.00	



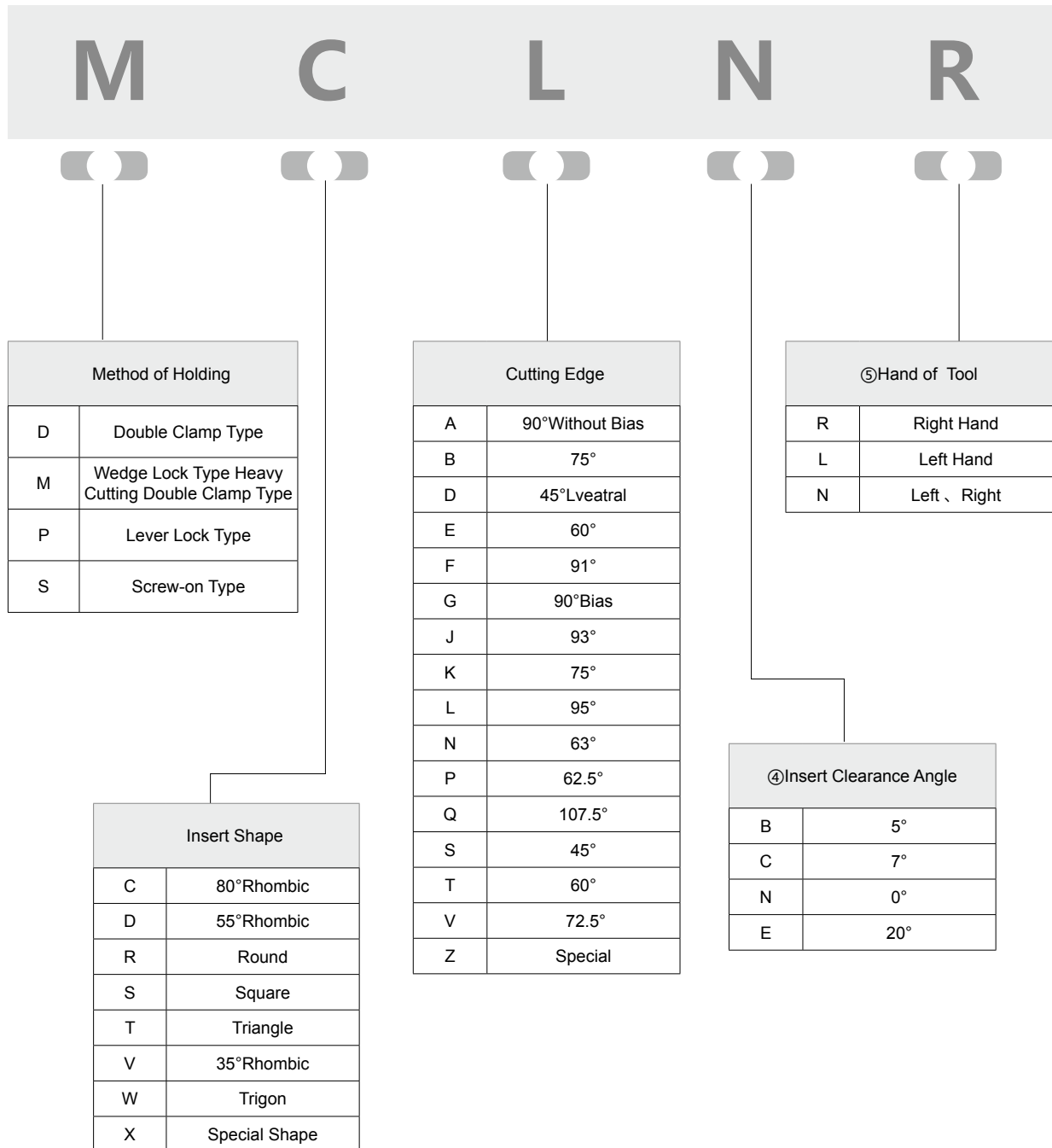
TURNING TOOLHOLDERS

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## Features of Turning Toolholders

MCBNR	MCLNR	MDJNR	MDPNN	MDQNR
P092	P092	P093	P093	P094
				
MSBNR	MSKNR	MSSNR	MTENN	MTFNR
P094	P095	P095	P096	P097
				
MTGNR	MTJNR	MVJNR	MVQNR	MWLNR
P097	P097	P098	P098	P099
				
SCLCR	SDJCR	SSDCN	STGCR	SVJCR
P100	P100	P101	P101	P102
				
SWLCR	SCLCR	SCKCR	SCLCR-A16	SDUCR
P103	P106	P106	P107	P107
				
SDQCR	SDXCR	STUCR	STWCR	STFCR
P108	P108	P109	P109	P110
				
SVUCR	SSKCR	SWLCR	SCLPR	STFPR
P110	P111	P111	P112	P112
				

## External Turning Toolholders Identification System



**25      25      M      12**



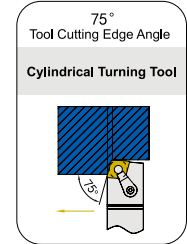
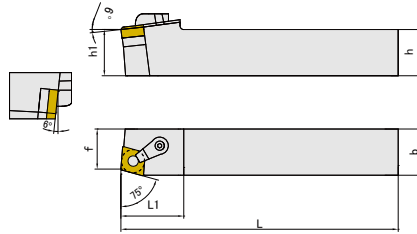
Tool Section	
8	8
10	10
12	12
16	16
20	20
25	25
32	32

⑦ Tool Length (mm)	
D	60
E	70
F	80
H	100
K	125
M	150
P	170
Q	180
R	200

⑧ Cutting Edge Length (mm)						
Insert I.C. (mm)	Insert Shape					
	Square	Triangle	Round	80° Rhombic	55° Rhombic	35° Rhombic
6	-	-	06	-	-	-
6.35		11		06	07	11
7.94	-	13	-	-	-	-
8			08			
9.525	09	16	-	09	11	16
10	-	-	10	-	-	-
12	-	-	12	-	-	-
12.7	-	22	-	12	15	-
15.875	15	27	-	16	-	-
16	-	-	16	-	-	-
19.05	19	-	19	-	-	-
20	-	-	20	-	-	-
25	-	-	25	-	-	-
25.4	25	-	-	-	-	-
32	-	-	32	-	-	-

External Turning Toolholder(Negative)

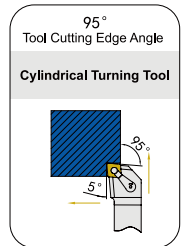
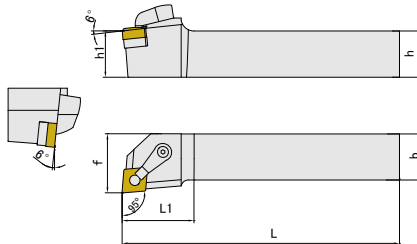
# MCBNR



Ordering Code	Stock		Dimension(mm)						Insert	Spare Parts				
	R	L	h	b	L	L1	h1	f		Shim	Pin	Clamp	Screw	Wrench
MCBNR/L2020K12	●	○	20	20	125	32	20	17	CN**1204**	720500 763036	730109 001566	720500 762965	730100 460063	720301 260453/ 720301 260455
MCBNR/L2525M12	●	○	25	25	150	32	25	22						
MCBNR/L3232P12	●	○	32	32	170	32	32	27						
MCBNR/L2525M16	●	○	25	25	150	32	25	33	CN**1606**	720500 763037	730109 001574	720500 762969	730100 460070	720301 260456/ 720301 260458
MCBNR/L3232P19	○	○	32	32	170	40	32	29	CN**1906**	720500 763038	730109 001577	720500 762969	730100 460070	720301 260456

●Stock ○Available Upon Order

# MCLNR



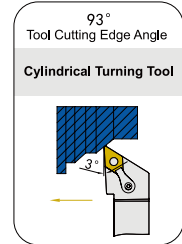
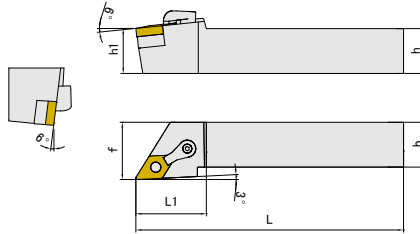
Ordering Code	Stock		Dimension(mm)						Insert	Spare Parts				
	R	L	h	b	L	L1	h1	f		Shim	Pin	Clamp	Screw	Wrench
MCLNR/L2020K12	●	○	20	20	125	25	20	32	CN**1204**	720500 763036	730109 001566	720500 762965	730100 460063	720301 260453/ 720301 260455
MCLNR/L2525M12	●	○	25	25	150	32	25	32						
MCLNR/L3232P12	●	○	32	32	170	40	32	32						
MCLNR/L2525M16	●	○	25	25	150	32	25	33	CN**1606**	720500 763037	730109 001574	720500 762969	730100 460070	720301 260456/ 720301 260458
MCLNR/L3232P19	○	○	32	32	170	38	32	40	CN**1906**	720500 763038	730109 001577	720500 762969	730100 460070	720301 260456/ 720301 260458

●Stock ○Available Upon Order



External Turning Toolholder(Negative)

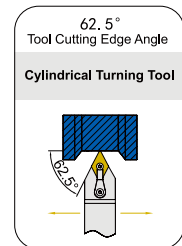
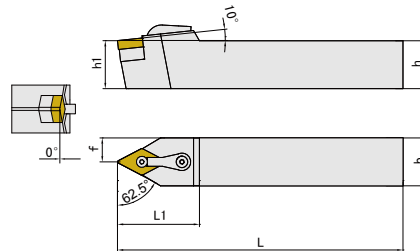
# MDJNR



Ordering Code	Stock		Dimension(mm)						Insert	Spare Parts				
	R	L	h	b	L	L1	h1	f		Shim	Pin	Clamp	Screw	Wrench
MDJNR/L2020K11	●	○	20	20	125	34	20	25	DN**1104**	720500 763039	730109 001565	720500 762965	730100 460063	720301 260452/ 720301 260455
MDJNR/L2020K1504	●	○	20	20	125	38	20	25	DN**1504**	720500 763040	730109 001567	720500 762967	730100 460063	720301 260453/ 720301 260455
MDJNR/L2525M1504	●	○	25	25	150	38	25	32						
MDJNR/L3232P1506	○	○	32	32	170	38	32	40	DN**1506**	720500 763041				

●Stock ○Available Upon Order

# MDPNN

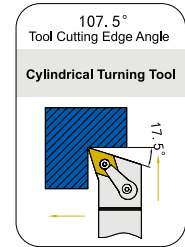
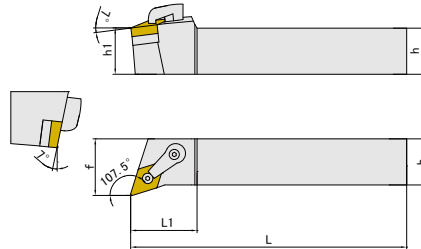


Ordering Code	Stock		Dimension(mm)						Insert	Spare Parts				
	R	L	h	b	L	L1	h1	f		Shim	Pin	Clamp	Screw	Wrench
MDPNN2020K11	●	○	20	20	125	36	20	10	DN**1104**	720500 763039	730109 001565	720500 762965	730100 460063	720301 260452/ 720301 260455
MDPNN2020K1504	●	○	20	20	125	42	20	10	DN**1504**	720500 763040	730109 001567	720500 762967	730100 460063	720301 260453/ 720301 260455
MDPNN2525M1504	●	○	25	25	150	42	25	12.5						
MDPNN3232P1506	○	○	32	32	170	42	32	16	DN**1506**	720500 763041				

●Stock ○Available Upon Order

External Turning Toolholder(Negative)

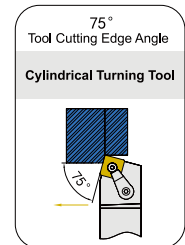
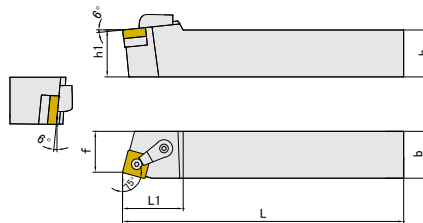
# MDQNR



Ordering Code	Stock		Dimension(mm)						Insert	Spare Parts				
	R	L	h	b	L	L1	h1	f		Shim	Pin	Clamp	Screw	Wrench
MDQNR/L2020K11	●	○	20	20	125	32	20	25	DN**1104**	720500 763039	730109 001565	720500 762965	730100 460063	720301 260452/ 720301 260455
MDQNR/L2020K1504	●	○	20	20	125	36	20	25	DN**1504**	720500 763040	730109 001567	720500 762967	730100 460063	720301 260453/ 720301 260455
MDQNR/L2525M1504	●	○	25	25	150	36	25	32						
MDQNR/L3232P1506	○	○	32	32	170	36	32	40	DN**1506**	720500 763041				720301 260455

●Stock ○Available Upon Order

# MSBNR

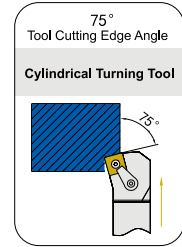
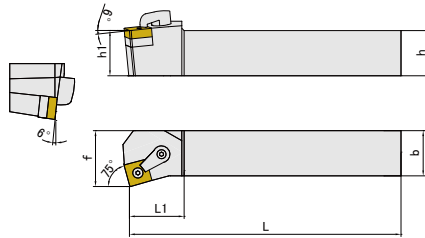


Ordering Code	Stock		Dimension(mm)						Insert	Spare Parts				
	R	L	h	b	L	L1	h1	f		Shim	Pin	Clamp	Screw	Wrench
MSBNR/L2020K12	●	○	20	20	125	32.5	20	17	SN**1204**	720500 763042	730109 001566	720500 762965	730100 460063	720301 260453/ 720301 260455
MSBNR/L2525M12	●	○	25	25	150	32.5	25	22						
MSBNR/L3232P12	●	○	32	32	170	32.5	32	27						
MSBNR/L2525M15	○	○	25	25	150	38	25	22	SN**1506**	720500 763043	730109 001574	720500 762969	730100 460070	720301 260455/ 720301 260456
MSBNR/L3232P19	○	○	32	32	170	42	32	27	SN**1906**	720500 763044	730109 001577	720500 762969	730100 460070	720301 260456

●Stock ○Available Upon Order

External Turning Toolholder(Negative)

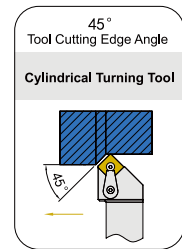
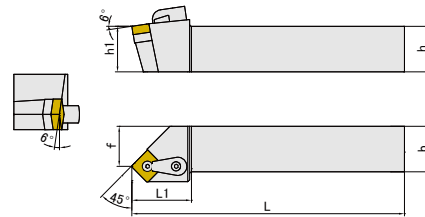
# MSKNR



Ordering Code	Stock		Dimension(mm)						Insert	Spare Parts				
	R	L	h	b	L	L1	h1	f		Shim	Pin	Clamp	Screw	Wrench
MSKNR/L2020K12	●	○	20	20	125	29	20	25	SN**1204**	720500 763042	730109 001566	720500 762965	730100 460063	720301
MSKNR/L2525M12	●	○	25	25	150	29	25	32						260453/ 720301 260455
MSKNR/L3232P12	○	○	32	32	170	29	32	40						
MSKNR/L2525M15	○	○	25	25	150	34	25	32	SN**1506**	720500 763043	730109 001574	720500 762969	730100 460070	720301 260455/ 720301 260456
MSKNR/L3232P19	○	○	32	32	170	35	32	40	SN**1906**	720500 763044	730109 001577	720500 762969	730100 460070	720301 260456

●Stock ○Available Upon Order

# MSSNR

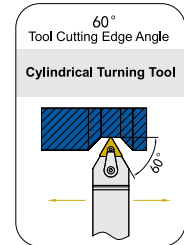
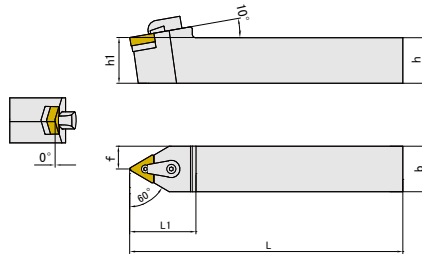


Ordering Code	Stock		Dimension(mm)						Insert	Spare Parts				
	R	L	h	b	L	L1	h1	f		Shim	Pin	Clamp	Screw	Wrench
MSSNR/L2020K12	●	○	20	20	125	32	20	17	SN**1204**	720500 763042	730109 001566	720500 762965	730100 460063	720301
MSSNR/L2525M12	●	○	25	25	150	32	25	22						260453/ 720301 260455
MSSNR/L3232P12	●	○	32	32	170	32	32	27						
MSSNR/L2525M15	●	○	25	25	150	40	25	32	SN**1506**	720500 763043	730109 001574	720500 762969	730100 460070	720301 260455/ 720301 260456
MSSNR/L3232P19	○	○	32	32	170	43	32	40	SN**1906**	720500 763044	730109 001577	720500 762969	730100 460070	720301 260456

●Stock ○Available Upon Order

External Turning Toolholder(Negative)

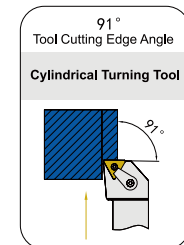
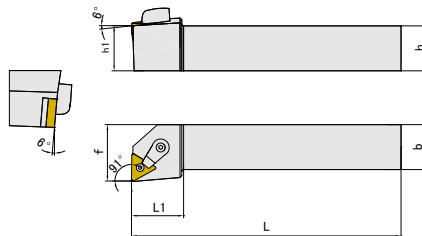
# MTENN



Ordering Code	Stock	Dimension(mm)						Insert	Spare Parts				
		h	b	L	L1	h1	f		Shim	Pin	Clamp	Screw	Wrench
MTENN2020K16	●	20	20	125	35	20	10	TN**1604**	720500 763045	730109 001565	720500 762965	730100 460063	720301
MTENN2525M16	●	25	25	150	35	25	12.5						260452/ 720301
MTENN3232P16	○	32	32	170	35	32	16						260455
MTENN3232P22	○	32	32	170	38	32	16	TN**2204**	720500 763046	730109 001574	720500 762966	730100 460070	720301 260453/ 720301 260456

●Stock ○Available Upon Order

# MTFNR

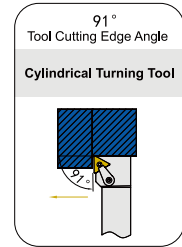
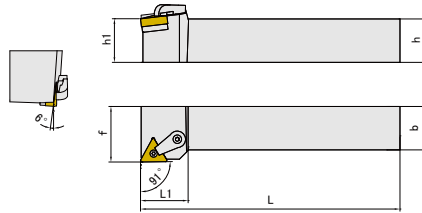


Ordering Code	Stock		Dimension(mm)						Insert	Spare Parts				
	R	L	h	b	L	L1	h1	f		Shim	Pin	Clamp	Screw	Wrench
MTFNR/L2020K16	●	○	20	20	125	28	20	25	TN**1604**	720500 763045	730109 001565	720500 762965	730100 460063	720301
MTFNR/L2525M16	●	○	25	25	150	28	25	32						260452/ 720301/ 260455
MTFNR/L3232P16	○	○	32	32	170	28	32	40						260455
MTFNR/L3232P22	○	○	32	32	170	32	32	32	TN**2204**	720500 763046	730109 001574	720500 762966	730100 460070	720301 260453/ 720301 260456

●Stock ○Available Upon Order

External Turning Toolholder(Negative)

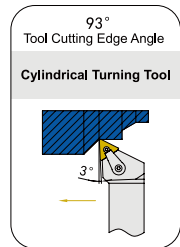
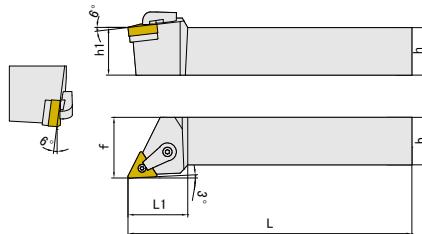
# MTGNR



Ordering Code	Stock		Dimension(mm)						Insert	Spare Parts				
	R	L	h	b	L	L1	h1	f		Shim	Pin	Clamp	Screw	Wrench
MTGNR/L2020K16	●	○	20	20	125	28	20	25	TN**1604**	720500 763045	730109 001565	720500 762965	730100 460063	720301
MTGNR/L2525M16	●	○	25	25	150	28	25	32						260452/ 720301
MTGNR/L3232P16	○	○	32	32	170	34	32	40						260455
MTGNR/L3232P22	○	○	32	32	170	32	32	40	TN**2204**	720500 763046	730109 001574	720500 762966	730100 460070	720301 260453/ 720301 260456

●Stock ○Available Upon Order

# MTJNR

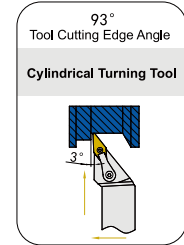
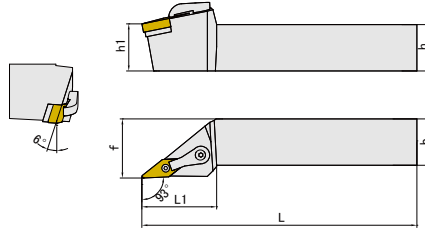


Ordering Code	Stock		Dimension(mm)						Insert	Spare Parts				
	R	L	h	b	L	L1	h1	f		Shim	Pin	Clamp	Screw	Wrench
MTJNR/L2020K16	●	○	20	20	125	32	20	25	TN**1604**	720500 763045	730109 001565	720500 762965	730100 460063	720301
MTJNR/L2525M16	●	○	25	25	150	32	25	32						260452/ 720301
MTJNR/L3232P16	○	○	32	32	170	32	32	40						260455
MTJNR/L3232P22	○	○	32	32	170	38	32	16	TN**2204**	720500 763046	730109 001574	720500 762966	730100 460070	720301 260453/ 720301 260456

●Stock ○Available Upon Order

External Turning Toolholder(Negative)

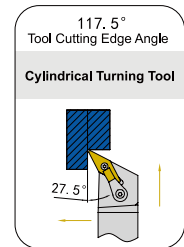
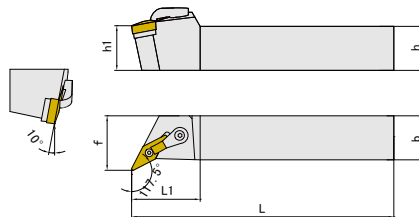
# MVJNR



Ordering Code	Stock		Dimension(mm)						Insert	Spare Parts				
	R	L	h	b	L	L1	h1	f		Shim	Pin	Clamp	Screw	Wrench
MVJNR/L2020K16	●	○	20	20	125	42	20	20	VN**1604**	720500 763034	730109 001565	720500 762968	730100 460063	720301 260452/ 720301 260455
MVJNR/L2525M16	●	○	25	25	150	42	25	25						
MVJNR/L3232P16	○	○	32	32	170	42	32	32						

●Stock ○Available Upon Order

# MVQNR

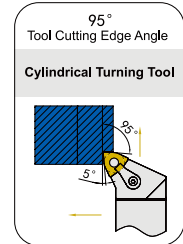
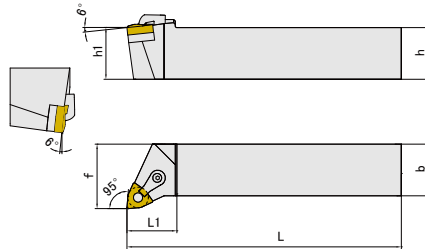


Ordering Code	Stock		Dimension(mm)						Insert	Spare Parts				
	R	L	h	b	L	L1	h1	f		Shim	Pin	Clamp	Screw	Wrench
MVQNR/L2020K16	●	○	20	20	125	40	20	25	VN**1604**	720500 763034	730109 001565	720500 762968	730100 460063	720301 260452/ 720301 260455
MVQNR/L2525M16	●	○	25	25	150	40	25	32						
MVQNR/L3232P16	○	○	32	32	170	40	32	40						

●Stock ○Available Upon Order

External Turning Toolholder(Negative)

**MWLN**R

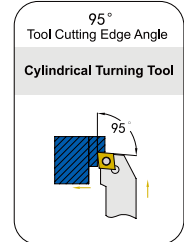
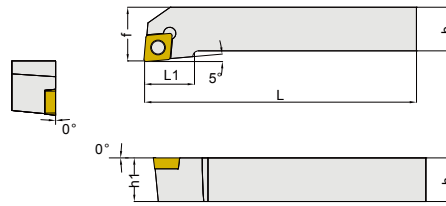


Ordering Code	Stock		Dimension(mm)						Insert	Spare Parts				
	R	L	h	b	L	L1	h1	f		Shim	Pin	Clamp	Screw	Wrench
MWLN R/L2020K06	●	○	20	20	125	25	20	32	WN**0604**	720500 763047	730109 001565	720500 762965	730100 460063	720301 260452/ 720301 260455
MWLN R/L2020K08	●	○	20	20	125	25	20	32	WN**0804**	720500 763048	730109 001566	720500 762965	730100 460063	720301 260453/ 720301 260455
MWLN R/L2525M08	●	○	25	25	150	32	25	32						
MWLN R/L3232P08	●	○	32	32	170	40	32	32						

●Stock ○Available Upon Order

External Turning Toolholder(Positive)

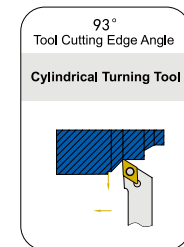
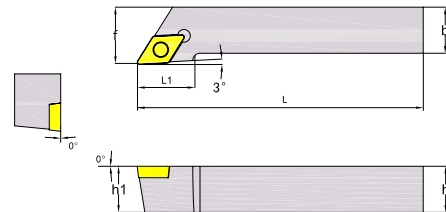
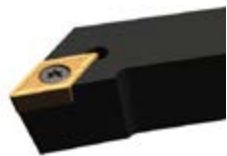
# SCLCR



Ordering Code	Stock		Dimension(mm)						Insert	Spare Parts	
	R	L	h	b	L	L1	h1	f		Screw	Wrench
SCLCR/L1010F06	○	○	10	10	80	12	10	10	CC**0602**	730100 961040	720300 960508
SCLCR/L1212H09	○	○	12	12	100	16	12	16		CC**09T3**	730100 961128
SCLCR/L1616H09	●	○	16	16	100	20	16	20	CC**1204**		730100 961205
SCLCR/L2020K09	●	○	20	20	125	25	20	25		CC**1204**	730100 961205
SCLCR/L2525M12	●	○	25	25	150	32	25	32			

●Stock ○Available Upon Order

# SDJCR



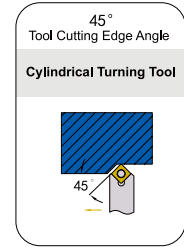
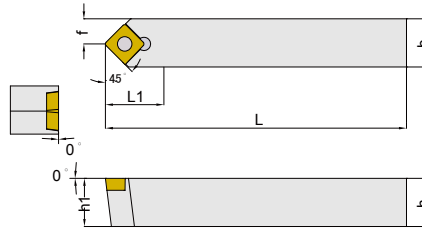
Ordering Code	Stock		Dimension(mm)						Insert	Spare Parts		
	R	L	h	b	L	L1	h1	f		Screw	Wrench	
SDJCR/L1010E07	○	○	10	10	70	12	10	15	DC**0702**	730100 961040	720300 960508	
SDJCR/L1212F07	○	○	12	12	80	16	12	15		DC**11T3**	730100 961128	720300 960510
SDJCR/L1616H11	●	○	16	16	100	20	16	24	DC**11T3**		730100 961128	720300 960510
SDJCR/L2020K11	●	○	20	20	125	20	20	24				
SDJCR/L2525M11	●	○	25	25	150	23	25	29				

●Stock ○Available Upon Order



External Turning Toolholder(Positive)

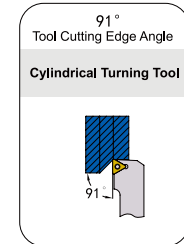
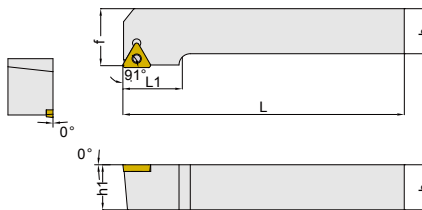
# SSDCN



Ordering Code	Stock	Dimension(mm)						Insert	Spare Parts	
		h	b	L	L1	h1	f		Screw	Wrench
SSDCN1212F09	○	12	12	80	16	12	6	SC**09T3**	730100 961128	720300 960510
SSDCN1616H09	●	16	16	100	16	16	8			
SSDCN2020K09	●	20	20	125	16	20	10			
SSDCN2525M12	○	25	25	150	22	25	12.5	SC**1204**	730100 961205	720300 960515

●Stock ○Available Upon Order

# STGCR

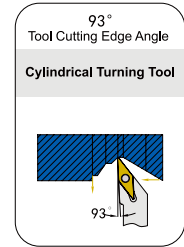
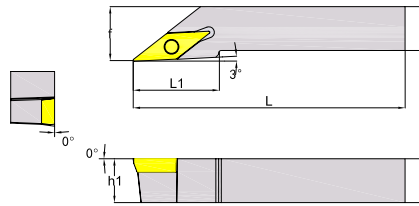


Ordering Code	Stock		Dimension(mm)						Insert	Spare Parts	
	R	L	h	b	L	L1	h1	f		Screw	Wrench
STGCR/L1010E09	○	○	10	10	70	12	10	11	TC**0902**	730100 961030	720300 960506
STGCR/L1212F11	○	○	12	12	80	16	12	16	TC**1102**	730100 961040	720300 960508
STGCR/L1616H11	●	○	16	16	100	20	16	20			
STGCR/L2020K16	●	○	20	20	125	25	20	25	TC**16T3**	730100 961128	720300 960510
STGCR/L2525M16	●	○	25	25	150	27	25	32			

●Stock ○Available Upon Order

External Turning Toolholder(Positive)

**SVJCR**

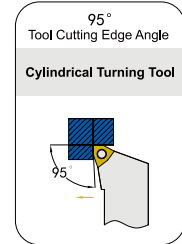
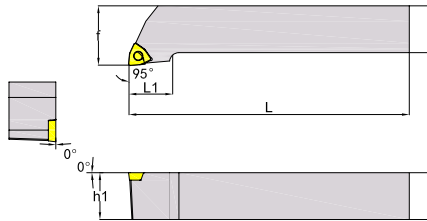


Ordering Code	Stock		Dimension(mm)						Insert	Spare Parts	
	R	L	h	b	L	L1	h1	f		Screw	Wrench
SVJCR/L1212F11	○	○	12	12	80	24	12	16	VC**11T3**	730100 961040	720300 960508
SVJCR/L1616H11	●	○	16	16	100	26	16	20			
SVJCR/L2020K16	●	○	20	20	125	32	20	25	VC**1604**	730100 961128	720300 960510
SVJCR/L2525M16	●	○	25	25	150	32	25	32			

●Stock ○Available Upon Order

External Turning Toolholder(Positive)

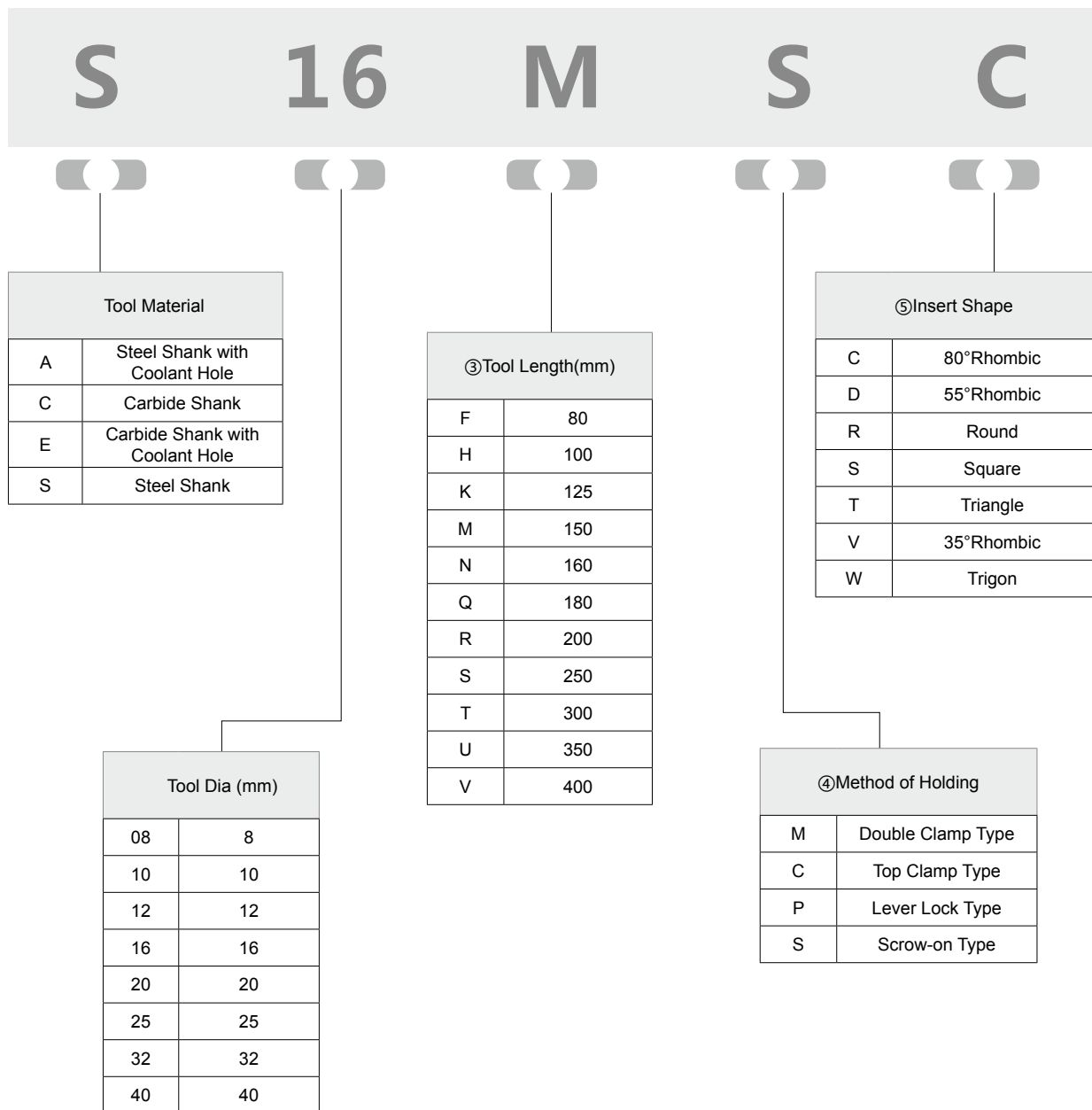
**SWLCR**



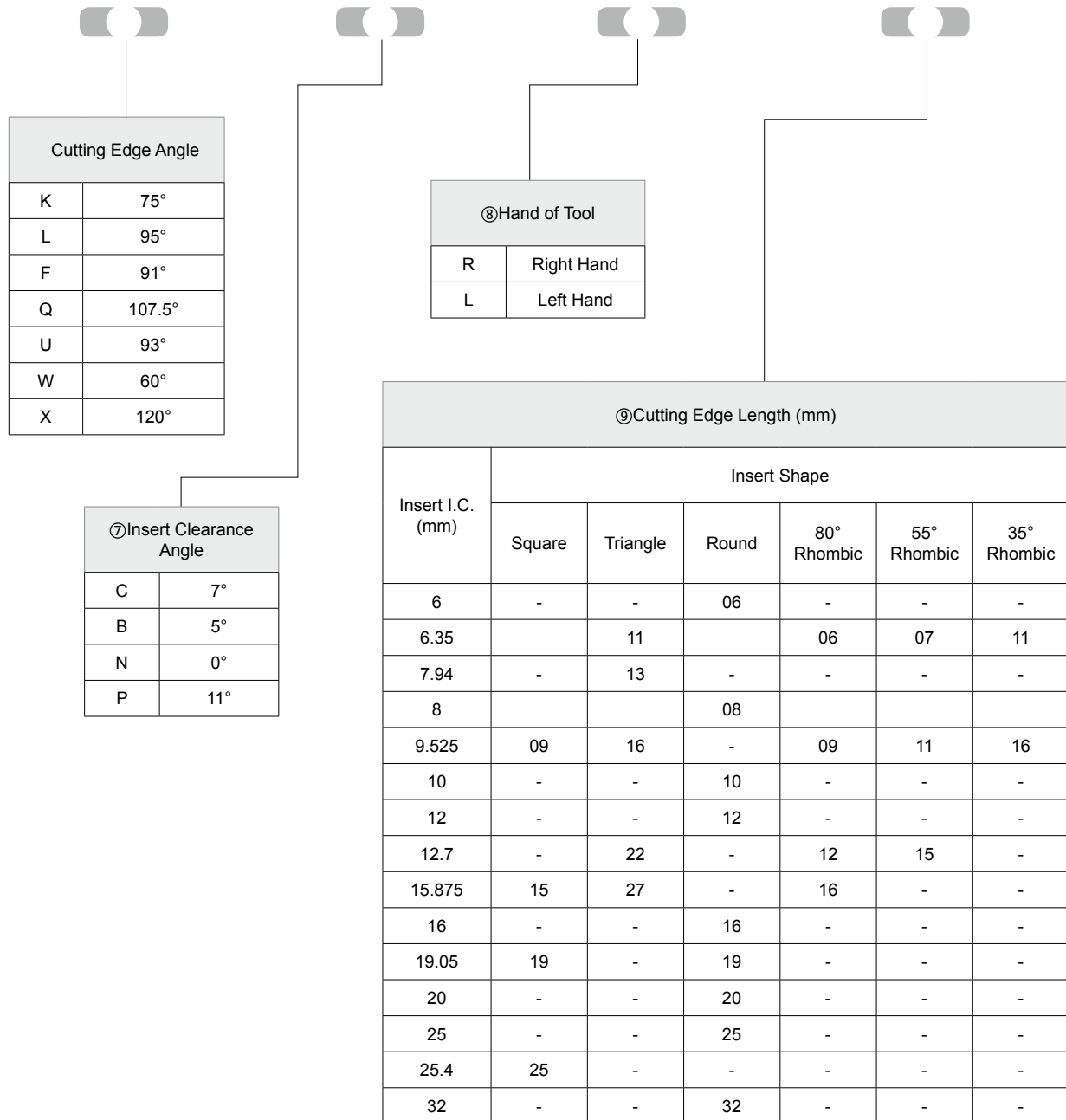
Ordering Code	Stock		Dimension(mm)						Insert	Spare Parts	
	R	L	h	b	L	L1	h1	f		Screw	Wrench
SWLCR/L1212F06	●	○	12	12	80	14	12	16	WC**06T3**	730100 961128	720300 960510
SWLCR/L1616H06	●	○	16	16	100	14	16	20			
SWLCR/L2020K06	●	○	20	20	125	15	20	25			
SWLCR/L2525M06	●	○	25	25	150	17	25	32			

●Stock ○Available Upon Order

## Internal Turning Toolholders Identification System

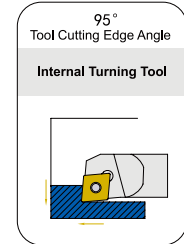
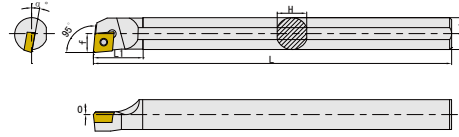


**L                      C                      R                      09**



Internal Turning Toolholder

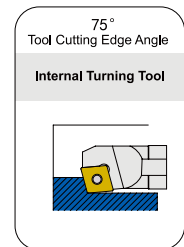
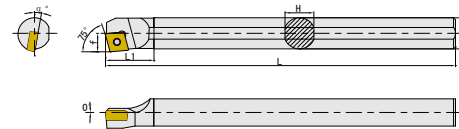
# SCLCR



Ordering Code	Stock		Dimension(mm)							Insert	Spare Parts	
	R	L	ΦDmin	Φd	f	L	L1	H	α°		Screw	Wrench
S08K-SCLCR/L06	●	○	10	8	5.5	125	12	7	13	CC**0602**	730100 961040	720300 960508
S10K-SCLCR/L06	●	○	12	10	6	125	15	9	12			
S12M-SCLCR/L06	●	○	14	12	7	150	16	11	10			
S12M-SCLCR/L09	●	○	15	12	8	150	20	11	12	CC**09T3**	730100 961128	720300 960510
S16Q-SCLCR/L09	●	○	18	16	9.5	180	25	14.8	10			
S20R-SCLCR/L09	●	○	22	20	11.5	200	28	18.4	8			
S25S-SCLCR/L09	○	○	27	25	14	250	30	23.4	6	CC**1204**	730100 961205	720300 960515
S25S-SCLCR/L12	○	○	28	25	14.5	250	35	23.4	8			

●Stock ○Available Upon Order

# SCKCR

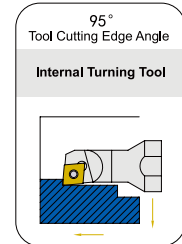
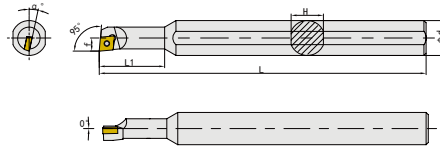


Ordering Code	Stock		Dimension(mm)							Insert	Spare Parts	
	R	L	ΦDmin	Φd	f	L	L1	H	α°		Screw	Wrench
S08K-SCKCR/L06	●	○	10	8	5.5	125	13	7	13	CC**0602**	730100 961040	720300 960508
S10K-SCKCR/L06	●	○	12	10	6	125	14	9	12			
S12M-SCKCR/L06	●	○	14	12	7	150	16	11	10			
S12M-SCKCR/L09	●	○	15	12	8	150	23	11	12	CC**09T3**	730100 961128	720300 960510
S16Q-SCKCR/L09	●	○	18	16	9.5	180	25	14.8	10			
S20R-SCKCR/L09	○	○	22	20	11.5	200	28	18.4	8			
S25S-SCKCR/L09	○	○	27	25	14	250	30	23.4	6			

●Stock ○Available Upon Order

Internal Turning Toolholder

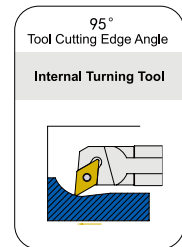
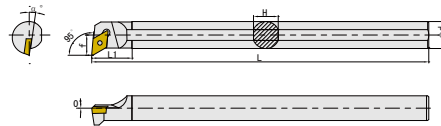
# SCLCR-A16



Ordering Code	Stock		Dimension(mm)							Insert	Spare Parts	
	R	L	ΦDmin	Φd	f	L	L1	H	α°		Screw	Wrench
S07M-SCLCR/L06-A16	●	○	9	7	4.9	150	25	14.8	15	CC**0602**	730100 961040	720300 960508
S08M-SCLCR/L06-A16	●	○	10	8	5.5	150	28	14.8	13			
S10M-SCLCR/L06-A16	●	○	12	10	6	150	30	14.8	12			
S12M-SCLCR/L06-A16	●	○	14	12	7	150	33	14.8	10			

●Stock ○Available Upon Order

# SDUCR

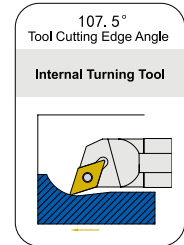
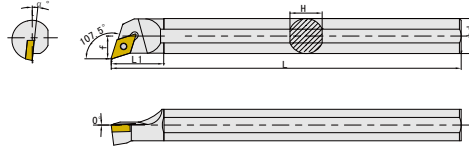


Ordering Code	Stock		Dimension(mm)							Insert	Spare Parts	
	R	L	ΦDmin	Φd	f	L	L1	H	α°		Screw	Wrench
S10K-SDUCR/L07	●	○	14	10	8	125	16	9	10	DC**0702**	730100 961040	720300 960508
S12M-SDUCR/L07	●	●	16	12	9	150	18	11	8			
S16Q-SDUCR/L07	●	○	20	16	11	180	20	14.8	6			
S16Q-SDUCR/L11	●	○	20	16	11	180	18	14.8	6	DC**11T3**	730100 961128	720300 960510
S20R-SDUCR/L11	●	○	24	20	13	200	28	18.4	6			
S25S-SDUCR/L11	○	○	29	25	16	250	28	23.4	4			

●Stock ○Available Upon Order

Internal Turning Toolholder

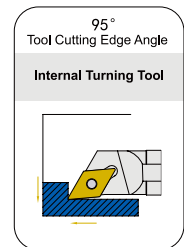
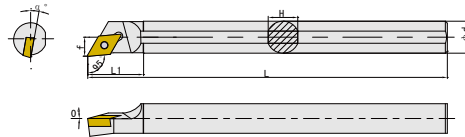
**SDQCR**



Ordering Code	Stock		Dimension(mm)							Insert	Spare Parts	
	R	L	ΦDmin	Φd	f	L	L1	H	α°		Screw	Wrench
S10K-SDQCR/L07	●	○	13	10	7	125	18	9	10	DC**0702**	730100 961040	720300 960508
S12M-SDQCR/L07	●	○	16	12	9	150	18	11	8			
S16Q-SDQCR/L07	●	○	20	16	11	180	24	14.8	6			
S16Q-SDQCR/L11	●	○	20	16	10.5	180	26	14.8	6	DC**11T3**	730100 961128	720300 960510
S20R-SDQCR/L11	●	○	24	20	13	200	30	18.4	6			
S25S-SDQCR/L11	○	○	29	25	16	250	35	23.4	4			

●Stock ○Available Upon Order

**SDXCR**



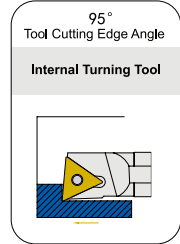
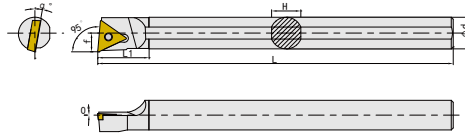
Ordering Code	Stock		Dimension(mm)							Insert	Spare Parts	
	R	L	ΦDmin	Φd	f	L	L1	H	α°		Screw	Wrench
S08K-SDXCR/L07	●	○	10	8	5.5	125	18	7	12	DC**0702**	730100 961040	720300 960508
S10K-SDXCR/L07	●	○	12	10	6	125	18	9	10			
S12M-SDXCR/L07	●	○	14	12	7	150	21	11	8			
S16Q-SDXCR/L07	●	○	18	16	9	180	22	14.8	6	DC**11T3**	730100 961128	720300 960510
S20R-SDXCR/L11	○	○	22	20	11.5	200	30	18.4	6			
S25S-SDXCR/L11	○	○	27	25	14	250	35	23.4	4			

●Stock ○Available Upon Order



Internal Turning Toolholder

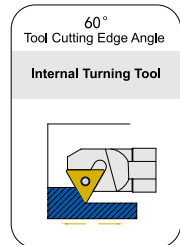
# STUCR



Ordering Code	Stock		Dimension(mm)							Insert	Spare Parts	
	R	L	ΦDmin	Φd	f	L	L1	H	α°		Screw	Wrench
S08K-STUCR/L09	●	○	10	8	5.5	125	14	7	15	TC**0902**	730100 961040	720300 960508
S10K-STUCR/L09	●	○	12	10	6	125	15	9	13			
S10K-STUCR/L11	●	○	12	10	6	125	17	9	12	TC**1102**		
S12M-STUCR/L11	●	○	14	12	7	150	20	11	10			
S16Q-STUCR/L11	●	○	18	16	9	180	20	14.8	8			
S20R-STUCR/L11	○	○	22	20	11	200	22	18.4	6			
S20R-STUCR/L16	○	○	22	20	11.5	200	25	18.4	4	TC**16T3**	730100 961128	720300 960510
S25S-STUCR/L16	○	○	28	25	14	250	30	23.4	6			

●Stock ○Available Upon Order

# STWCR

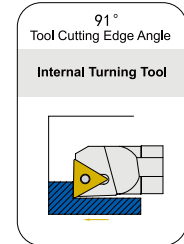
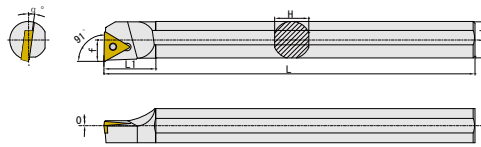


Ordering Code	Stock		Dimension(mm)							Insert	Spare Parts	
	R	L	ΦDmin	Φd	f	L	L1	H	α°		Screw	Wrench
S08K-STWCR/L09	●	○	11	8	6	125	15	7	15	TC**0902**	730100 961050	720300 960508
S10K-STWCR/L11	●	○	14	10	8	125	18	9	10			
S12M-STWCR/L11	●	○	16	12	9	150	18	11	8	TC**1102**		
S16Q-STWCR/L11	○	○	20	16	11	180	27	14.8	6			
S20R-STWCR/L11	○	○	24	20	13	200	26	18.4	4			
S20R-STWCR/L16	○	○	25	20	14.5	200	32	18.4	8		TC**16T3**	
S25S-STWCR/L16	○	○	30	25	17	250	30	23.4	6			

●Stock ○Available Upon Order

Internal Turning Toolholder

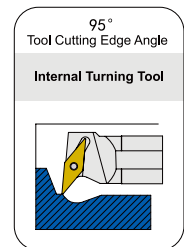
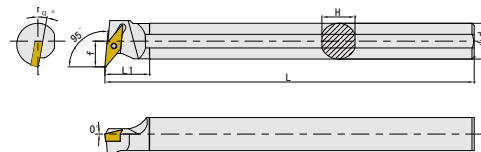
# STFCR



Ordering Code	Stock		Dimension(mm)							Insert	Spare Parts	
	R	L	$\Phi$ Dmin	$\Phi$ d	f	L	L1	H	$\alpha^\circ$		Screw	Wrench
S08K-STFCR/L09	●	○	10	8	5.5	125	14	7	15	TC**0902**	730100 961040	720300 960508
S10K-STFCR/L09	●	○	12	10	6	125	15	9	13			
S12M-STFCR/L09	●	○	14	12	7	150	17	11	10			
S12M-STFCR/L11	●	○	14	12	7	150	20	11	10	TC**1102**		
S16Q-STFCR/L11	●	○	18	16	9	180	20	14.8	8			
S20R-STFCR/L11	○	○	22	20	11	200	22	18.4	6	TC**16T3**	730100 961135	720300 960510
S20R-STFCR/L16	○	○	22	20	11.5	200	25	18.4	4			
S25S-STFCR/L16	○	○	27	25	14	250	30	23.4	6			

●Stock ○Available Upon Order

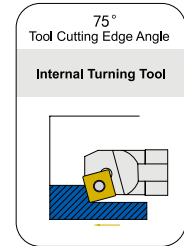
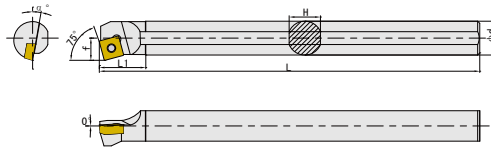
# SVUCR



Ordering Code	Stock		Dimension(mm)							Insert	Spare Parts	
	R	L	$\Phi$ Dmin	$\Phi$ d	f	L	L1	H	$\alpha^\circ$		Screw	Wrench
S16Q-SVUCR/L11	○	○	20	16	11.5	180	20	14.8	10	VC**1103**	730100 961050	720300 960508
S20R-SVUCR/L11	○	○	25	20	14	200	25	18.4	8			
S25S-SVUCR/L16	○	○	33	25	20	250	25	23.4	8	VC**1604**	730100 961135	720300 960510

Internal Turning Toolholder

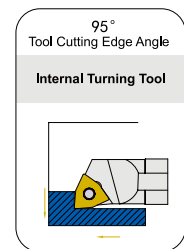
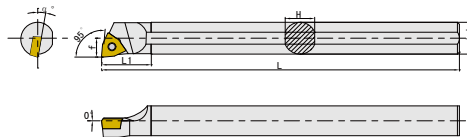
# SSKCR



Ordering Code	Stock		Dimension(mm)							Insert	Spare Parts	
	R	L	ΦDmin	Φd	f	L	L1	H	α°		Screw	Wrench
S12M-SSKCR/L09	●	○	15	12	8.5	150	11	11	10	SC**09T3**	730100 961050	720300 960508
S16Q-SSKCR/L09	●	○	19	16	10.5	180	22	14.8	10			
S20R-SSKCR/L09	○	○	23	20	12.5	200	25	18.4	8			
S25S-SSKCR/L12	○	○	28	25	15	250	40	23.4	6	SC**1204**	730100 961135	720300 960510

●Stock ○Available Upon Order

# SWLCR

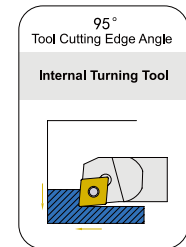
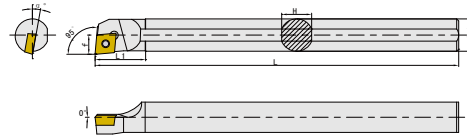


Ordering Code	Stock		Dimension(mm)							Insert	Spare Parts	
	R	L	ΦDmin	Φd	f	L	L1	H	α°		Screw	Wrench
S12M-SWLCR/L06	○	○	14	12	7.5	150	20	11	12	WC**06T3**	730100 961135	720300 960510
S16Q-SWLCR/L06	○	○	18	16	9.5	180	25	14.8	10			
S20R-SWLCR/L06	○	○	22	20	11.5	200	28	18.4	8			
S25S-SWLCR/L06	○	○	27	25	14	250	30	23.4	6			

●Stock ○Available Upon Order

## Internal Turning Toolholder

## SCLPR

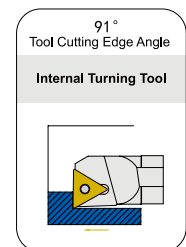
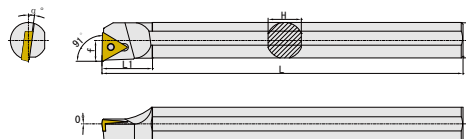


Ordering Code	Stock		Dimension(mm)							Insert	Spare Parts	
	R	L	ΦDmin	Φd	f	L	L1	H	α°		Screw	Wrench
S08K-SCLPR/L06	○	○	10	8	5.5	125	12	7	13	CP**0602**	730100 961040	720300 960508
S10K-SCLPR/L06	○	○	12	10	6	125	15	9	12			
S12M-SCLPR/L06	○	○	14	12	7	150	16	11	10			
S12M-SCLPR/L09	○	○	15	12	8	150	20	11	12	CP**09T3**	730100 961128	720300 960510
S16Q-SCLPR/L09	○	○	18	16	9.5	180	25	14.8	10			
S20R-SCLPR/L09	○	○	22	20	11.5	200	28	18.4	8			
S25S-SCLPR/L09	○	○	27	25	14	250	30	23.4	6			

●Stock ○Available Upon Order

## Internal Turning Toolholder

## STFPR



Ordering Code	Stock		Dimension(mm)							Insert	Spare Parts	
	R	L	ΦDmin	Φd	f	L	L1	H	α°		Screw	Wrench
S10K-STFPR/L11	○	○	12	10	6	125	17	9	12	TP**1102**	730100 961040	720300 960508
S12M-STFPR/L11	○	○	14	12	7	150	20	11	10			
S16Q-STFPR/L11	○	○	18	16	9	180	20	14.8	8			
S20R-STFPR/L11	○	○	22	20	11	200	22	18.4	6			
S20R-STFPR/L16	○	○	22	20	11.5	200	25	18.4	4	TP**16T3**	730100 961128	720300 960510
S25S-STFPR/L16	○	○	27	25	14	250	30	23.4	6			

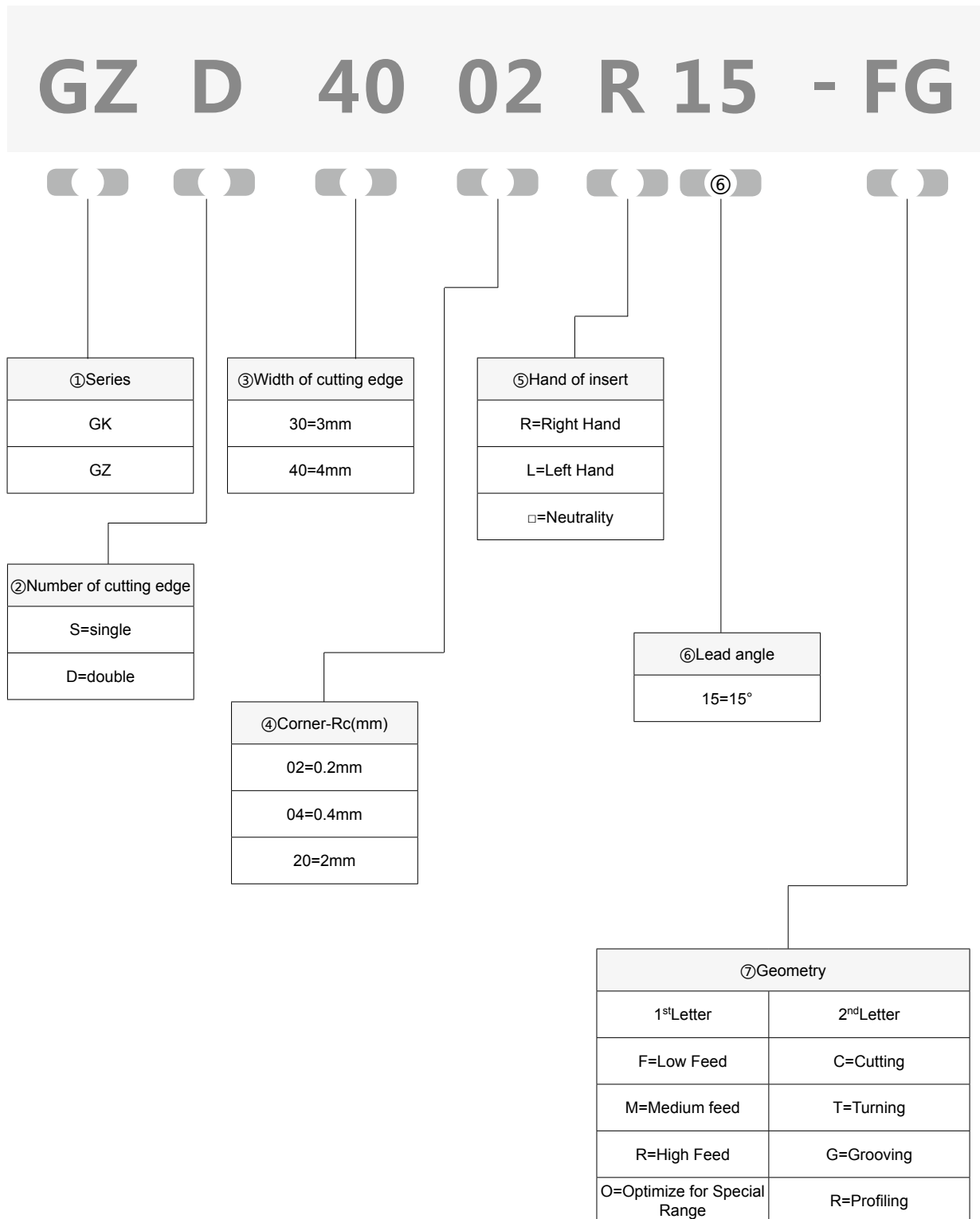
●Stock ○Available Upon Order

D

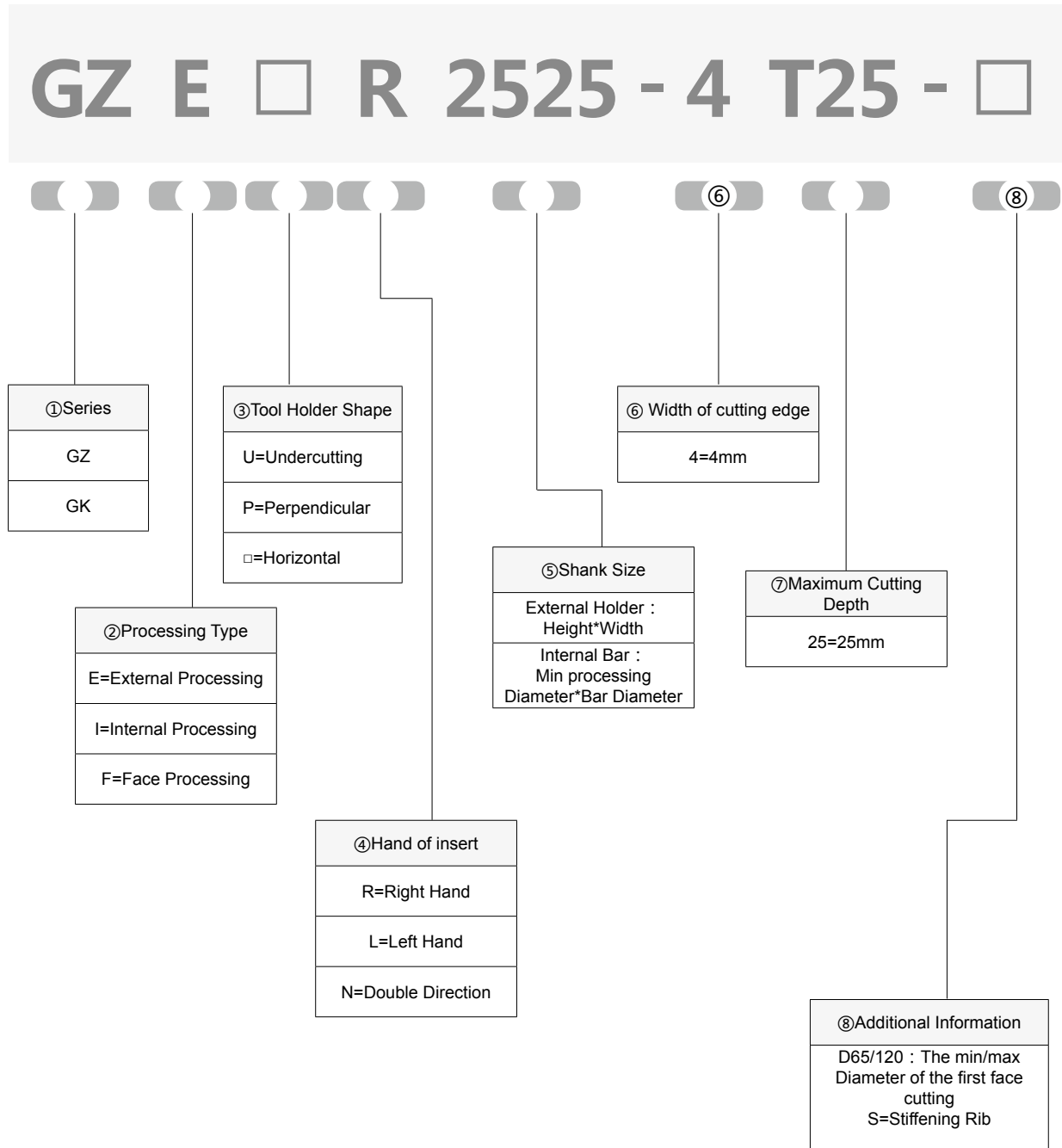
# PARTING AND GROOVING TOOLS






## Parting and Grooving Inserts Identification System



### Parting and Grooving Tools Identification System



## Overview of Parting and Grooving Inserts

Shape	Geometry	Application	Width	Page
	MT	Grooving and turning	2.0-8.0(mm)	<a href="#">P117</a>
	FG	Precision grooving and turning	3.0-6.0(mm)	<a href="#">P117</a>
	OR	Precision profiling	3.0-6.0(mm)	<a href="#">P118</a>

## Application Summary of Grades

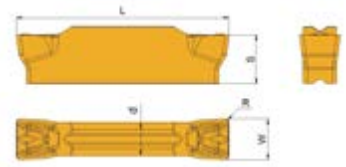
Workpiece Material	<b>P</b> Steel						<b>M</b> Stainless Steel					<b>K</b> Cast Iron					<b>S</b> HRSA / Titanium				
	ISO	01	10	20	30	40	50	01	10	20	30	40	01	10	20	30	40	10	20	30	40
Coated	CVD		GP1225											GK1115							
	PVD	GA4230						GA4230						GA4230				GS3115		GS3125	
Uncoated								GS3125										GS9125			



Parting and Grooving Inserts

# MT

Grooving and turning inserts



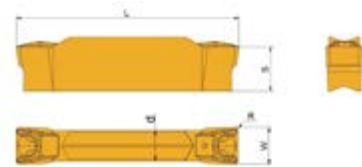
Ordering Code		Dimension					Stock		
		W	R	L	d	S	GP1225	GA4230	GK1115
	GKD2002-MT	2.0	0.2	16.0	1.2	3.5	●	●	●
	GKD2502-MT	2.5	0.2	18.5	2.0	3.85	●	●	●
	GKD3004-MT	3.0	0.4	21.2	2.35	4.8	●	●	●
	GKD4004-MT	4.0	0.4	21.0	3.3	4.8	●	●	●
	GKD5004-MT	5.0	0.4	26.0	4.1	5.8	●	●	●
	GKD5008-MT	5.0	0.8	26.0	4.1	5.8	●	●	●
	GKD6004-MT	6.0	0.4	26.0	5.0	5.8	●	●	●
	GKD6008-MT	6.0	0.8	26.0	5.0	5.8	●	●	●
	GKD8008-MT	8.0	0.8	31.0	6.0	6.5	●	○	●

•For tools, see page119, 120 and page122

●Stock ○Available upon order

# FG

Precision grooving and turning inserts



Ordering Code		Dimension					Stock	
		W	R	L	d	S	GS3125	GS9125
	GZD3002-FG	3.0	0.2	20.4	2.3	4.6	●	●
	GZD3004-FG	3.0	0.4	20.4	2.3	4.6	●	●
	GZD4002-FG	4.0	0.2	24.0	3.3	4.8	●	●
	GZD4004-FG	4.0	0.4	24.0	3.3	4.8	●	●
	GZD5002-FG	5.0	0.2	24.0	3.3	4.8	●	●
	GZD5004-FG	5.0	0.4	24.0	3.3	4.8	●	●
	GZD6002-FG	6.0	0.2	26.0	4.2	4.8	●	●
	GZD6004-FG	6.0	0.4	26.0	4.2	4.8	●	●

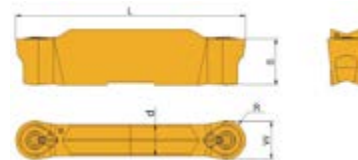
•For tools, see page121


●Stock ○Available upon order

## Parting and Grooving Inserts

**OR**

Precision profiling inserts



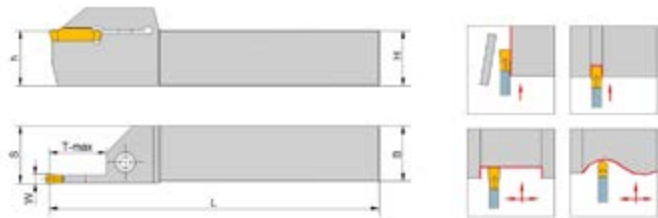
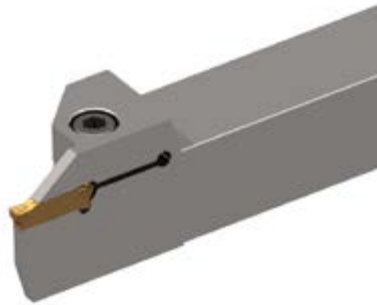
Ordering Code		Dimension					Stock
		W	R	L	d	S	GS3115
	GZD3015-OR	3.0	1.5	21.0	2.3	4.6	●
	GZD4020-OR	4.0	2.0	24.0	3.3	4.8	●
	GZD5025-OR	5.0	2.5	24.0	3.3	4.8	●
	GZD6030-OR	6.0	3.0	21.0	4.2	4.8	●

● For tools, see page 121

● Stock ○ Available upon order

GK Seris

External Holders for Parting, Grooving, Turning and Profiling



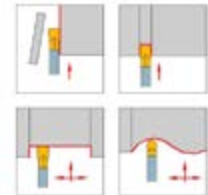
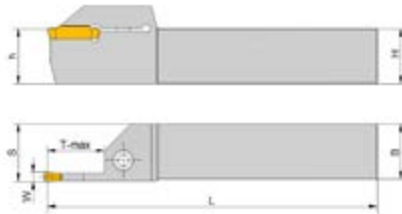
Ordering Code	Stock		Insert	Dimension(mm)						Screw	Wrench
	R	L		W	T-max	H=h	B	L	S		
GKER/L1616-2T14	●	●	GKD20...	2	14	16	16	100	17	SCAM5X12	TH40L
GKER/L2020-2T14	●	●	GKD20...	2	14	20	20	125	21	SCAM5X20	TH40L
GKER/L2525-2T14	●	●	GKD20...	2	14	25	25	150	26	SCAM6X20	TH50L
GKER/L1616-2.5T16	●	●	GKD25...	2.5	16	16	16	100	17	SCAM5X12	TH40L
GKER/L2020-2.5T16	●	●	GKD25...	2.5	16	20	20	125	21	SCAM5X20	TH40L
GKER/L2525-2.5T16	●	●	GKD25...	2.5	16	25	25	150	26	SCAM6X20	TH50L
GKER/L1616-3T18	●	●	GKD30...	3	18	16	16	100	17	SCAM5X12	TH40L
GKER/L2020-3T18	●	●	GKD30...	3	18	20	20	125	21	SCAM5X20	TH40L
GKER/L2020-3T10	○	○	GKD30...	3	10	20	20	125	21	SCAM5X20	TH40L
GKER/L2525-3T18	●	●	GKD30...	3	18	25	25	150	26	SCAM6X20	TH50L
GKER/L2525-3T10	○	○	GKD30...	3	10	25	25	150	26	SCAM6X20	TH50L
GKER/L3225-3T18	●	●	GKD30...	3	18	32	25	170	26	SCAM6X20	TH50L
GKER/L3232-3T18	●	●	GKD30...	3	18	32	32	170	33	SCAM6X20	TH50L
GKER/L3232-3T10	○	○	GKD30...	3	10	32	32	170	33	SCAM6X20	TH50L
GKER/L2020-4T18	●	●	GKD40...	4	18	20	20	125	21	SCAM5X20	TH40L
GKER/L2020-4T10	○	○	GKD40...	4	10	20	20	125	21	SCAM5X20	TH40L
GKER/L2525-4T18	●	●	GKD40...	4	18	25	25	150	26	SCAM6X20	TH50L
GKER/L2525-4T10	○	○	GKD40...	4	10	25	25	150	26	SCAM6X20	TH50L
GKER/L3225-4T18	●	●	GKD40...	4	18	32	25	170	26	SCAM6X20	TH50L
GKER/L3232-4T18	●	●	GKD40...	4	18	32	32	170	33	SCAM6X20	TH50L
GKER/L3232-4T10	○	○	GKD40...	4	10	32	32	170	33	SCAM6X20	TH50L

●For Inserts, see page117

●Stock ○Available upon order

GK Seris

External Holders for Parting, Grooving, Turning and Profiling



Continue

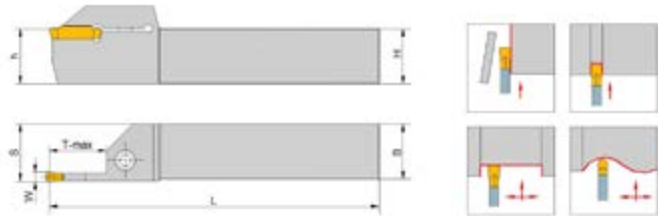
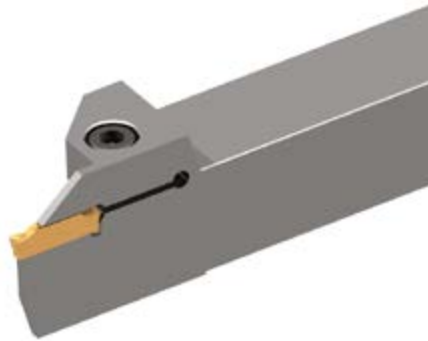
Ordering Code	Stock		Insert	Dimension(mm)						Screw	Wrench
	R	L		W	T-max	H=h	B	L	S		
GKER/L2020-5T23	●	●	GKD50...	5	23	20	20	125	21	SCAM5X20	TH40L
GKER/L2020-5T15	○	○	GKD50...	5	15	20	20	125	21	SCAM5X20	TH40L
GKER/L2525-5T23	●	●	GKD50...	5	23	25	25	150	26	SCAM6X20	TH50L
GKER/L2525-5T15	○	○	GKD50...	5	15	25	25	150	26	SCAM6X20	TH50L
GKER/L3225-5T23	●	●	GKD50...	5	23	32	25	170	26	SCAM6X20	TH50L
GKER/L3232-5T23	●	●	GKD50...	5	23	32	32	170	33	SCAM6X20	TH50L
GKER/L3232-5T15	○	○	GKD50...	5	15	32	32	170	33	SCAM6X20	TH50L
GKER/L2020-6T23	●	●	GKD60...	6	23	20	20	125	21	SCAM5X20	TH40L
GKER/L2020-6T15	○	○	GKD60...	6	15	20	20	125	21	SCAM5X20	TH40L
GKER/L2525-6T23	●	●	GKD60...	6	23	25	25	150	26	SCAM6X20	TH50L
GKER/L2525-6T15	○	○	GKD60...	6	15	25	25	150	26	SCAM6X20	TH50L
GKER/L3225-6T23	●	●	GKD60...	6	23	32	25	170	26	SCAM6X20	TH50L
GKER/L3232-6T23	●	●	GKD60...	6	23	32	32	170	33	SCAM6X20	TH50L
GKER/L3232-6T15	○	○	GKD60...	6	15	32	32	170	33	SCAM6X20	TH50L
GKER/L2525-8T28	●	●	GKD80...	8	28	25	25	150	26.5	SCAM6X20	TH50L
GKER/L2525-8T15	○	○	GKD80...	8	15	25	25	150	26.5	SCAM6X20	TH50L
GKER/L3232-8T28	●	●	GKD80...	8	28	32	32	170	33.5	SCAM6X20	TH50L
GKER/L3232-8T15	○	○	GKD80...	8	15	32	32	170	33.5	SCAM6X20	TH50L

●Stock ○Available upon order

●For inserts, see page117

GZ Seris

External Holders for Parting, Grooving, Turning and Profiling



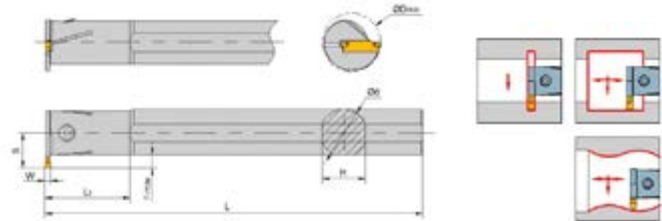
Ordering Code	Stock		Insert	Dimension(mm)						Screw	Wrench
	R	L		W	T-max	H=h	B	L	S		
GZER/L2020-3T20	●	●	GZD30...	3	20	20	20	125	21	SCAM5X20	TH40L
GZER/L2525-3T20	●	●	GZD30...	3	20	25	25	150	26	SCAM6X20	TH50L
GZER/L3225-3T20	●	●	GZD30...	3	20	32	25	170	26	SCAM6X20	TH50L
GZER/L2020-4T25	●	●	GZD40...	4	25	20	20	125	21	SCAM5X20	TH40L
			GZD50...	5	25	20	20	125	21.5		
GZER/L2525-4T25	●	●	GZD40...	4	25	25	25	150	26	SCAM6X20	TH50L
			GZD50...	5	25	25	25	150	26.5		
GZER/L3225-4T25	●	●	GZD40...	4	25	32	25	170	26	SCAM6X20	TH50L
			GZD50...	5	25	32	25	170	26.5		
GZER/L2525-6T32	●	●	GZD60...	6	32	25	25	150	26	SCAM6X30	TH50L
GZER/L3225-6T32	●	●	GZD60...	6	32	32	25	170	26	SCAM6X30	TH50L

\*For Inserts, see page117 and page118

●Stock ○Available upon order

GK serie

## Internal Bars for Grooving, Turning and Profiling



Ordering Code	Stock		Insert	Dimension(mm)								Screw	Wrench
	R	L		W	T-max	ΦDmin	Φd	S	L	L1	H		
GKIR/L2016-2T04	●	●	GKD20...	2	4	20	16	12	125	35	15	SCAM4X10	TH30L
GKIR/L2520-2T05	●	●	GKD20...	2	5	25	20	14.5	150	45	18	SCAM4X12	TH30L
GKIR/L2925-2T05	●	●	GKD20...	2	5	29	25	17	200	45	23	SCAM5X12	TH40L
GKIR/L2520-2.5T05	●	●	GKD25...	2.5	5	25	20	14.5	150	45	18	SCAM4X12	TH30L
GKIR/L2925-2.5T05	●	●	GKD25...	2.5	5	29	25	17	200	45	23	SCAM5X12	TH40L
GKIR/L2520-3T06	●	●	GKD30...	3	6	25	20	15.5	150	45	18	SCAM4X12	TH30L
GKIR/L3125-3T06	●	●	GKD30...	3	6	31	25	18.5	200	45	23	SCAM5X12	TH40L
GKIR/L3732-3T06	●	●	GKD30...	3	6	37	32	21.5	250	65	30	SCAM5X20	TH40L
GKIR/L2520-4T06	●	●	GKD40...	4	6	25	20	15.5	150	45	18	SCAM4X12	TH30L
GKIR/L3125-4T06	●	●	GKD40...	4	6	31	25	18.5	200	45	23	SCAM5X12	TH40L
GKIR/L3732-4T06	●	●	GKD40...	4	6	37	32	21.5	250	65	30	SCAM5X20	TH40L
GKIR/L3125-5T08	●	●	GKD50...	5	8	31	25	19.5	200	45	23	SCAM5X12	TH40L
GKIR/L3732-5T08	●	●	GKD50...	5	8	37	32	21.5	250	65	30	SCAM5X20	TH40L
GKIR/L3125-6T08	●	●	GKD60...	6	8	31	25	19.5	200	45	23	SCAM5X12	TH40L
GKIR/L3732-6T08	●	●	GKD60...	6	8	37	32	21.5	250	65	30	SCAM5X20	TH40L
GKIR/L3732-8T10	●	●	GKD80...	8	10	37	32	23.4	250	65	30	SCAM5X20	TH40L
GKIR/L4540-8T10	●	●	GKD80...	8	10	45	40	27.2	300	70	37	SCAM5X20	TH40L

●For Inserts, see page117

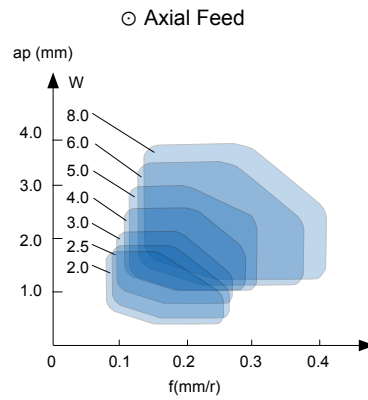
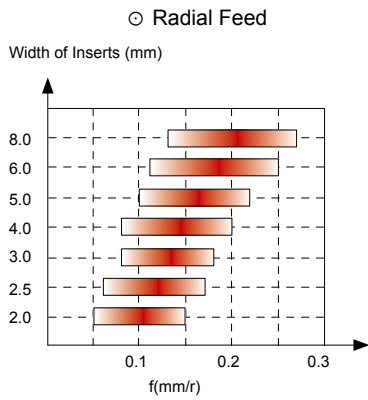
●Stock ○Available upon order

## Recommended Cutting Speed

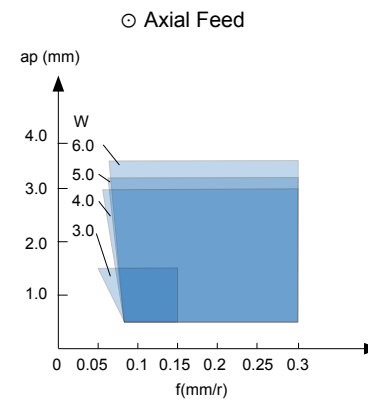
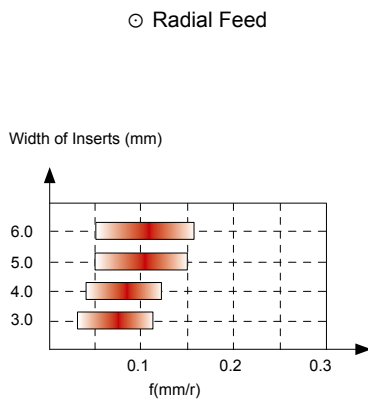
Workpiece material		Hardness ( HB )	Speed Vc ( m/min )					
			GA4230	GP1225	GK1115	GS3115	GS3125	GS9125
<b>P</b>	Low carbon steel	80 – 170	110 (70-180)	120 (80-220)		70 ( 50-100 )	70 ( 50-100 )	
	High Carbon steel	170 –250	110 (70-150)	120 (80-220)				
	Low alloy steel	140– 260	110 (40-150)	110 ( 60-180 )		70 ( 50-100 )	70 ( 50-100 )	
	High alloy steel	180– 300	110 (40-150)	110 ( 60-180 )				
	Cast steel	180– 300	110 (40-150)	110 ( 60-180 )				
<b>M</b>	Ferritic/ Martensitic	150– 270	110 (40-180)			90 ( 50-150 )	90 ( 30-180 )	
	Austenitic	150– 270	110 (40-180)			90 ( 50-150 )	90 ( 30-180 )	
<b>K</b>	Malleable Cast Iron	150– 230	110 (50-180)		130 (50-200)			
	Gray Cast Iron	150– 230	110 (50-180)		130 (50-200)			
	Nodular Cast Iron	160– 260	100 (50-150)		100 (50-150)			
<b>S</b>	Heat-resistant alloy	130– 400				35 ( 15-60 )	35 ( 15-70 )	
	Titanium Alloys	130– 400				35 ( 15-60 )	35 ( 15-70 )	35 ( 15-60 )

## Recommended Feed

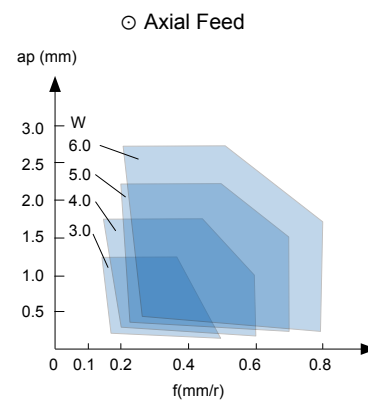
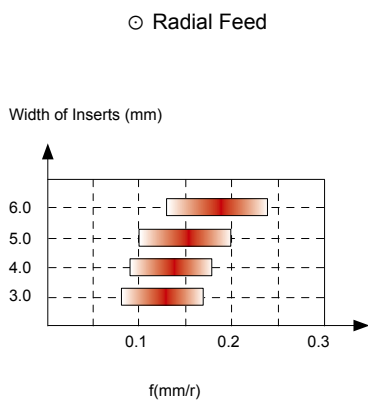
### MT



### FG



### OR



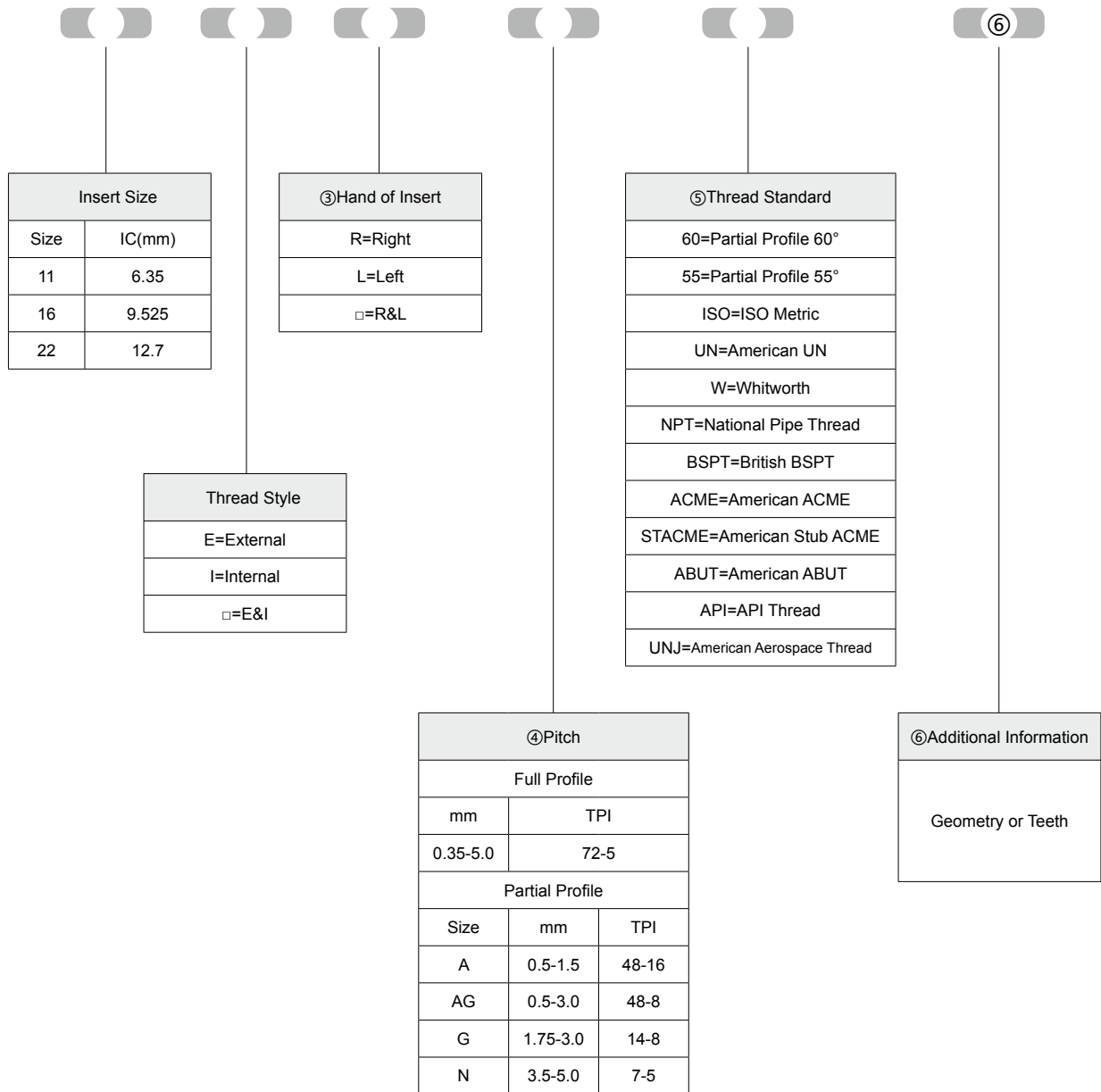


# THREADING TOOLS

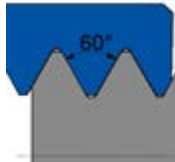
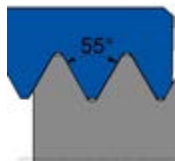
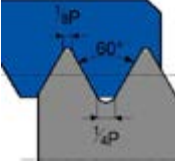
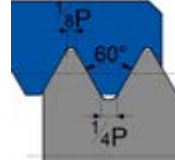
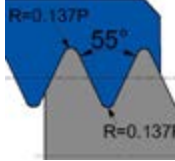
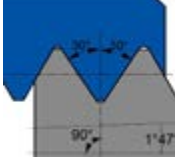
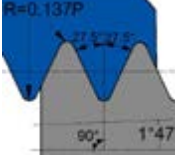
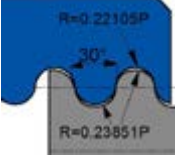


# Threading Inserts Identification System

## 16 E R 1.50 ISO - TC



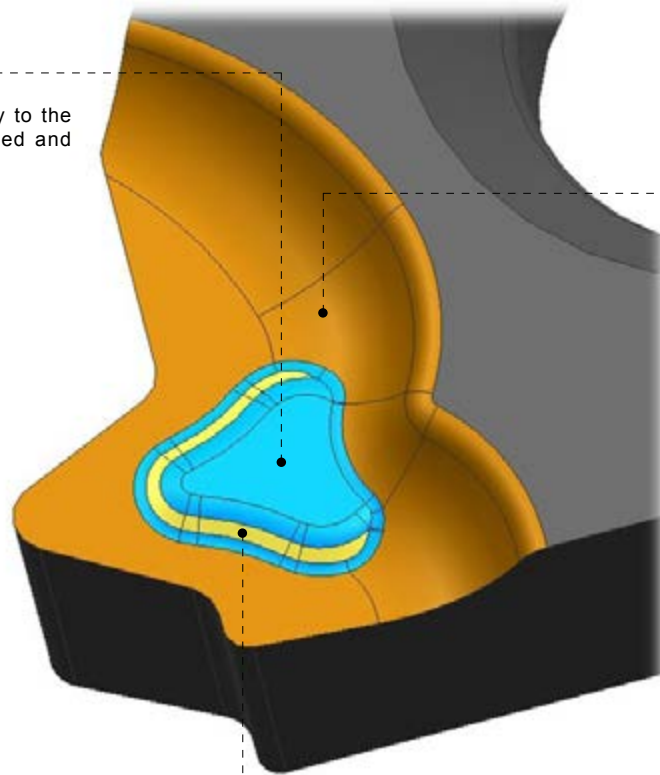
## Overview of Threading Tools

Application	Thread Type	Thread Sketch	Thread Code	Pitch	Page
For general industry	Partial Profile 60°		60	0.5-5.0 (mm)	<a href="#">P129</a>
	Partial Profile 55°		55	48-5 (TPI)	<a href="#">P130</a>
	ISO Metric		ISO	1.0-5.0 (mm)	<a href="#">P131</a>
	UN		UN	24-8 (TPI)	<a href="#">P133</a>
Thread for pipe fittings and couplings for gas, water and sewage	Whitworth		W	19-11 (TPI)	<a href="#">P134</a>
	NPT		NPT	27-8 (TPI)	<a href="#">P136</a>
Thread for pipe fittings and couplings for gas, steam and water lines	BSPT		BSPT	28-11 (TPI)	<a href="#">P135</a>
Thread for pipe couplings in food and firefighting industry	Round (DIN 405)		RD	10-4 (TPI)	<a href="#">P137</a>

## TC — Special Geometry

### Raised Platform

Good chip control, apply to the radial infeed, flank infeed and incremental infeed



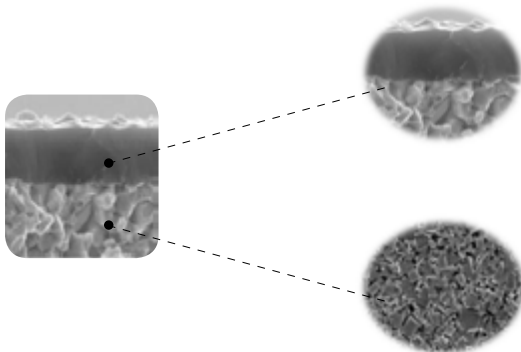
### Wide Chip Room

Smooth chip discharge due to wide chip room

### Curved Surface

Increase the cooling area to avoid the crater wear

## GM3225-General Grade for Thread Turning



### New TiAlN nano-structure coating

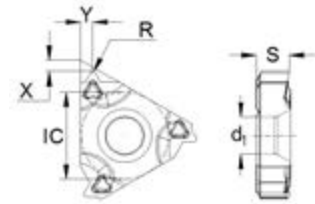
New TiAlN nano-structure coating with excellent heat resistance and bonding resistance

### Micro-grain carbide substrate

Micro-grain carbide substrate with high wear resistance and good roughness, suitable for thread turning of general material.

## Partial Profile 60°

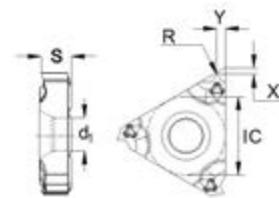
► External



Ordering Code	Pitch (mm)	Dimensions (mm)						Stock	
		X	Y	R	IC	S	d1	GM3225	
	16 ERA60-TC	0.5-1.5	0.8	0.9	0.08	9.525	3.47	4	●
	16 ERAG60-TC	0.5-3.0	1.1	1.5	0.08	9.525	3.47	4	●
	16 ERG60-TC	1.75-3.0	1.2	1.7	0.25	9.525	3.47	4	●
	22 ERN60-TC	3.5-5.0	1.7	2.5	0.51	12.7	4.71	5	●

● Stock ○ Available Upon Order

► Internal

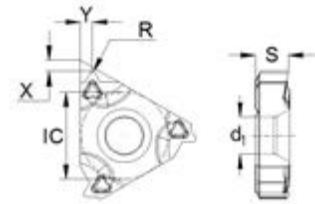



Ordering Code	Pitch (mm)	Dimensions (mm)						Stock	
		X	Y	R	IC	S	d1	GM3225	
	11 IRA60-TC	0.5-1.5	0.8	0.9	0.08	6.35	3	3.2	●
	16 IRA60-TC	0.5-1.5	0.8	0.9	0.08	9.525	3.47	4	●
	16 IRAG60-TC	0.5-3.0	1.1	1.5	0.08	9.525	3.47	4	●
	16 IRG60-TC	1.75-3.0	1.2	1.7	0.13	9.525	3.47	4	●
	22 IRN60-TC	3.5-5.0	1.7	2.5	0.25	12.7	4.71	5	●

● Stock ○ Available Upon Order

## Partial Profile 55°

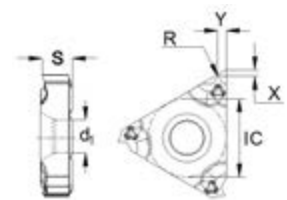
► External




Ordering Code	Pitch (TPI)	Dimensions (mm)						Stock	
		X	Y	R	IC	S	d1	GM3225	
	16 ERA55-TC	48-16	0.8	0.9	0.08	9.525	3.47	4	●
	16 ERAG55-TC	48-8	1.1	1.5	0.08	9.525	3.47	4	●
	16 ERG55-TC	14-8	1.2	1.7	0.21	9.525	3.47	4	●
	22 ERN55-TC	7-5	1.7	2.5	0.44	12.7	4.71	5	●

● Stock ○ Available Upon Order

► Internal

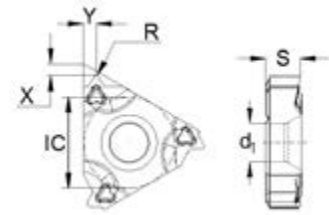



Ordering Code	Pitch (TPI)	Dimensions (mm)						Stock	
		X	Y	R	IC	S	d1	GM3225	
	11 IRA55-TC	48-16	0.8	0.9	0.08	6.35	3	3.2	●
	16 IRA55-TC	48-16	0.8	0.9	0.08	9.525	3.47	4	●
	16 IRAG55-TC	48-8	1.1	1.5	0.08	9.525	3.47	4	●
	16 IRG55-TC	14-8	1.2	1.7	0.21	9.525	3.47	4	●
	22 IRN55-TC	7-5	1.7	2.5	0.44	12.7	4.71	5	●

● Stock ○ Available Upon Order

# Metric 60°

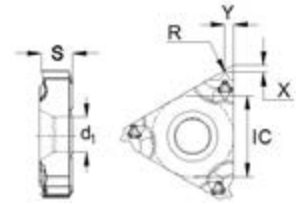
► External



Ordering Code	Pitch (mm)	Dimensions (mm)						Stock	
		X	Y	R	IC	S	d1	GM3225	
	16 ER1.00ISO-TC	1.00	0.8	0.7	0.14	9.525	3.47	4	●
	16 ER1.25ISO-TC	1.25	0.8	0.9	0.18	9.525	3.47	4	●
	16 ER1.50ISO-TC	1.50	0.8	1.0	0.22	9.525	3.47	4	●
	16 ER1.75ISO-TC	1.75	1.2	1.2	0.25	9.525	3.47	4	●
	16 ER2.00ISO-TC	2.00	1.2	1.3	0.29	9.525	3.47	4	●
	16 ER2.50ISO-TC	2.50	1.2	1.5	0.36	9.525	3.47	4	●
	16 ER3.00ISO-TC	3.00	1.2	1.5	0.43	9.525	3.47	4	●
	22 ER3.50ISO-TC	3.50	1.6	2.3	0.45	12.7	4.71	5	●
	22 ER4.00ISO-TC	4.00	1.6	2.3	0.52	12.7	4.71	5	●
	22 ER4.50ISO-TC	4.50	1.7	2.4	0.58	12.7	4.71	5	●
22 ER5.00ISO-TC	5.00	1.7	2.5	0.63	12.7	4.71	5	●	

● Stock ○ Available Upon Order

## ► Internal



Ordering Code	Pitch (mm)	Dimensions (mm)						Stock
		X	Y	R	IC	S	d1	GM3225
11 IR1.00ISO-TC	1.00	0.8	0.7	0.07	6.35	3	3.2	●
11 IR1.25ISO-TC	1.25	0.8	0.9	0.09	6.35	3	3.2	●
11 IR1.50ISO-TC	1.50	0.8	1.0	0.11	6.35	3	3.2	●
11 IR1.75ISO-TC	1.75	0.9	1.1	0.13	6.35	3	3.2	●
11 IR2.00ISO-TC	2.00	0.9	1.1	0.15	6.35	3	3.2	●
16 IR1.00ISO-TC	1.00	0.8	0.7	0.07	9.525	3.47	4	●
16 IR1.25ISO-TC	1.25	0.8	0.9	0.09	9.525	3.47	4	●
16 IR1.50ISO-TC	1.50	0.8	1.0	0.11	9.525	3.47	4	●
16 IR1.75ISO-TC	1.75	1.2	1.2	0.13	9.525	3.47	4	●
16 IR2.00ISO-TC	2.00	1.2	1.3	0.15	9.525	3.47	4	●
16 IR2.50ISO-TC	2.50	1.2	1.5	0.18	9.525	3.47	4	●
16 IR3.00ISO-TC	3.00	1.2	1.5	0.22	9.525	3.47	4	●
22 IR3.50ISO-TC	3.50	1.6	2.3	0.22	12.7	4.71	5	●
22 IR4.00ISO-TC	4.00	1.6	2.3	0.25	12.7	4.71	5	●
22 IR4.50ISO-TC	4.50	1.6	2.4	0.28	12.7	4.71	5	●
22 IR5.00ISO-TC	5.00	1.6	2.3	0.32	12.7	4.71	5	●

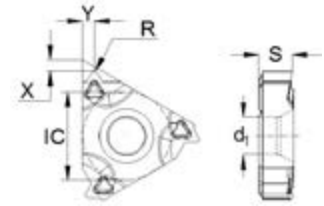


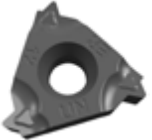
●Stock ○Available Upon Order



UN 60°

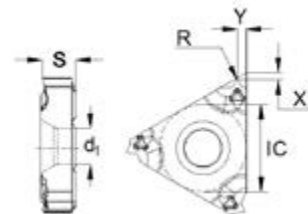
► External

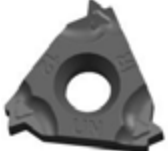


Ordering Code	Pitch (TPI)	Dimensions (mm)						Stock	
		X	Y	R	IC	S	d1	GM3225	
	16 ER24UN-TC	24	0.8	0.8	0.15	9.525	3.47	4	●
	16 ER20UN-TC	20	0.8	0.9	0.18	9.525	3.47	4	●
	16 ER18UN-TC	18	0.8	1.0	0.20	9.525	3.47	4	●
	16 ER16UN-TC	16	0.9	1.1	0.23	9.525	3.47	4	●
	16 ER14UN-TC	14	1.2	1.5	0.26	9.525	3.47	4	●
	16 ER12UN-TC	12	1.2	1.5	0.31	9.525	3.47	4	●
	16 ER10UN-TC	10	1.2	1.5	0.37	9.525	3.47	4	○
	16 ER8UN-TC	8	1.3	1.7	0.46	9.525	3.47	4	●

●Stock ○Available Upon Order

► Internal

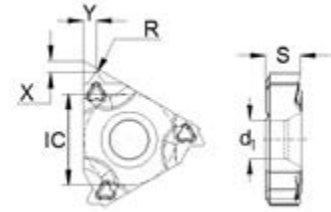


Ordering Code	Pitch (TPI)	Dimensions (mm)						Stock	
		X	Y	R	IC	S	d1	GM3225	
	11 IR20UN-TC	20	0.8	0.9	0.09	6.35	3	3.2	●
	11 IR18UN-TC	18	0.8	1.0	0.10	6.35	3	3.2	●
	16 IR24UN-TC	24	0.8	0.8	0.08	9.525	3.47	4	●
	16 IR20UN-TC	20	0.8	0.9	0.09	9.525	3.47	4	●
	16 IR18UN-TC	18	0.8	1.0	0.10	9.525	3.47	4	●
	16 IR16UN-TC	16	0.9	1.1	0.12	9.525	3.47	4	●
	16 IR14UN-TC	14	1.2	1.5	0.13	9.525	3.47	4	●
	16 IR12UN-TC	12	1.2	1.5	0.16	9.525	3.47	4	●
	16 IR10UN-TC	10	1.2	1.5	0.19	9.525	3.47	4	○
	16 IR8UN-TC	8	1.3	1.7	0.23	9.525	3.47	4	●

●Stock ○Available Upon Order

## Whitworth 55°

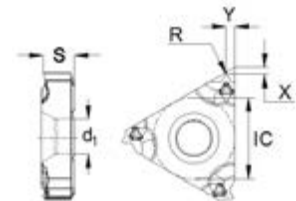
► External




Ordering Code	Pitch (TPI)	Dimensions (mm)							Stock
		X	Y	R	IC	S	d1	GM3225	
	16 ER19W-TC	19	0.8	1.0	0.17	9.525	3.47	4	●
	16 ER14W-TC	14	1.2	1.5	0.24	9.525	3.47	4	●
	16 ER11W-TC	11	1.2	1.5	0.30	9.525	3.47	4	●

● Stock ○ Available Upon Order

► Internal

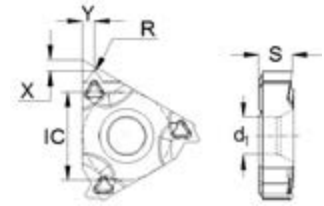



Ordering Code	Pitch (TPI)	Dimensions (mm)							Stock
		X	Y	R	IC	S	d1	GM3225	
	16 IR19W-TC	19	0.8	1.0	0.17	9.525	3.47	4	●
	16 IR14W-TC	14	1.2	1.5	0.24	9.525	3.47	4	●
	16 IR11W-TC	11	1.2	1.5	0.30	9.525	3.47	4	●

● Stock ○ Available Upon Order

## BSPT 55°

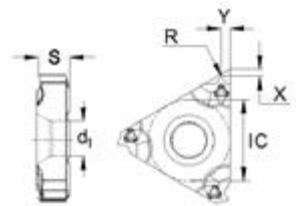
► External




Ordering Code	Pitch (TPI)	Dimensions (mm)						Stock	
		X	Y	R	IC	S	d1	GM3225	
	16 ER28BSPT-TC	28	0.7	0.8	0.11	9.525	3.47	4	●
	16 ER19BSPT-TC	19	0.8	1.0	0.17	9.525	3.47	4	●
	16 ER14BSPT-TC	14	1.2	1.5	0.24	9.525	3.47	4	●
	16 ER11BSPT-TC	11	1.2	1.5	0.30	9.525	3.47	4	●

● Stock ○ Available Upon Order

► Internal

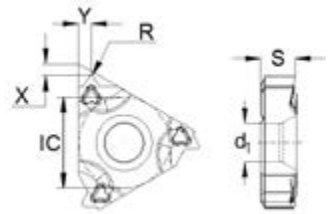



Ordering Code	Pitch (TPI)	Dimensions (mm)						Stock	
		X	Y	R	IC	S	d1	GM3225	
	11 IR19BSPT-TC	19	0.8	1.0	0.18	6.35	3	3.2	●
	11 IR14BSPT-TC	14	0.9	1.1	0.24	6.35	3	3.2	●
	16 IR28BSPT-TC	28	0.7	0.8	0.11	9.525	3.47	4	●
	16 IR19BSPT-TC	19	0.8	1.0	0.17	9.525	3.47	4	●
	16 IR14BSPT-TC	14	1.2	1.5	0.24	9.525	3.47	4	●
	16 IR11BSPT-TC	11	1.2	1.5	0.30	9.525	3.47	4	●

● Stock ○ Available Upon Order

## NPT 60°

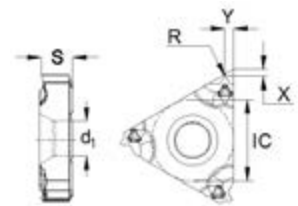
► External




Ordering Code	Pitch (TPI)	Dimensions (mm)						Stock	
		X	Y	R	IC	S	d1	GM3225	
	16 ER27NPT-TC	27	0.7	0.8	0.13	9.525	3.47	4	●
	16 ER18NPT-TC	18	0.8	1.0	0.20	9.525	3.47	4	●
	16 ER14NPT-TC	14	1.2	1.5	0.22	9.525	3.47	4	●
	16 ER11.5NPT-TC	11.5	1.2	1.5	0.25	9.525	3.47	4	●
	16 ER8NPT-TC	8	1.3	1.8	0.30	9.525	3.47	4	●

● Stock ○ Available Upon Order

► Internal

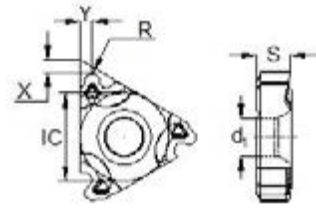



Ordering Code	Pitch (TPI)	Dimensions (mm)						Stock	
		X	Y	R	IC	S	d1	GM3225	
	11 IR18NPT-TC	18	0.8	1.0	0.20	6.35	3	3.2	●
	16 IR27NPT-TC	27	0.7	0.8	0.13	9.525	3.47	4	●
	16 IR18NPT-TC	18	0.8	1.0	0.20	9.525	3.47	4	●
	16 IR14NPT-TC	14	1.2	1.5	0.22	9.525	3.47	4	●
	16 IR11.5NPT-TC	11.5	1.2	1.5	0.25	9.525	3.47	4	●
	16 IR8NPT-TC	8	1.3	1.8	0.30	9.525	3.47	4	●

● Stock ○ Available Upon Order

### Round30°

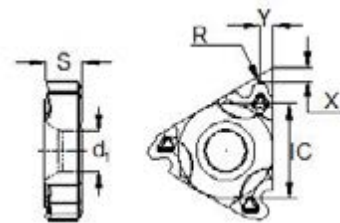
► External




Ordering Code	Pitch (TPI)	Dimensions (mm)						Stock	
		X	Y	R	IC	S	d1	GM3225	
	16 ER10RD-TC	10	1.1	1.2	0.60	9.525	3.47	4	○
	16 ER8RD-TC	8	1.4	1.3	0.75	9.525	3.47	4	●
	16 ER6RD-TC	6	1.4	1.5	1.00	9.525	3.47	4	●
	22 ER4RD-TC	4	2.2	2.3	1.51	12.7	4.71	5	○

● Stock ○ Available Upon Order

► Internal



Ordering Code	Pitch (TPI)	Dimensions (mm)						Stock	
		X	Y	R	IC	S	d1	GM3225	
	16 IR10RD-TC	10	1.1	1.2	0.55	9.525	3.47	4	○
	16 IR8RD-TC	8	1.4	1.3	0.70	9.525	3.47	4	●
	16 IR6RD-TC	6	1.4	1.5	0.936	9.525	3.47	4	●
	22 IR4RD-TC	4	2.2	2.3	1.40	12.7	4.71	5	○

● Stock ○ Available Upon Order

## Cutting Speed Recommendation Table

Workpiece Material			Material Hardness	Cutting Speed Vc ( m/min )	
				Grade	
				GM3225	
<b>P</b>	Carbon Steel	Low-carbon ( C=0.1-0.25% )	HB125	160 ( 120-230 )	
		Medium-carbon ( C=0.25-0.55% )	HB150	150 ( 100-195 )	
		High-carbon ( C=0.55-0.80% )	HB170	140 ( 90-180 )	
	Low-alloy Steel	Non-hardened	HB180	130 ( 100-180 )	
		Hardened and tempered	HB275	100 ( 75-140 )	
		Hardened and tempered	HB350	80 ( 60-130 )	
	High-alloy Steel	Annealed	HB200	110 ( 80-140 )	
		Hardened and tempered	HB325	90 ( 70-115 )	
	Cast Steel	Unalloyed	HB180	200 ( 180-220 )	
		Low-alloy	HB200	110 ( 70-150 )	
		High-alloy	HB225	100 ( 60-120 )	
		Manganese steel ( 12-14% Mn )	HB250	40 ( 40-50 )	
<b>M</b>	Stainless Steel	Austenitic	HB180	120 ( 90-140 )	
		Ferrite/Martensite	HB200	140 ( 70-170 )	
		Duplex stainless steel	HB230	90 ( 60-120 )	
<b>K</b>	Malleable Cast Iron	Ferrite	HB130	130 ( 110-170 )	
		Pearlite	HB230	100 ( 85-145 )	
	Gray Cast Iron	Low tensile strength	HB180	120 ( 100-160 )	
		High tensile strength	HB260	100 ( 80-140 )	
	Nodular Cast Iron	Ferrite	HB160	125 ( 110-160 )	
		Pearlite	HB250	100 ( 80-120 )	
<b>N</b>	Wrought Aluminum Alloys	Non aging	HB60	500 ( 350-700 )	
		Aged	HB100	400 ( 300-500 )	
	Cast Aluminum Alloys	Non aging	HB75	450 ( 300-500 )	
		Aged	HB90	290 ( 200-400 )	
		Containing silicon ( 13-22% Si )	HB130	200 ( 100-300 )	
	Copper and Copper Alloys	Brass	HB90	220 ( 100-300 )	
		Bronze and non-lead copper	HB100	180 ( 80-255 )	
<b>S</b>	Heat-resistant Alloys	Iron base	Annealed	HB200	45 ( 35-60 )
			Aged	HB280	35 ( 25-50 )
		Nickel base and cobalt base	Annealed	HB250	25 ( 15-30 )
			Aged	HB350	15 ( 10-25 )
	Titanium Alloys	Cast	HB320	13 ( 10-20 )	
		Commercial pure ( 99.5% Ti )	400Rm	150 ( 140-170 )	
	$\alpha + \beta$ alloys	1050Rm	60 ( 50-70 )		
<b>H</b>	High Hardness Materials	Hardened steel	HRC55	45 ( 40-50 )	
		Chilled cast iron	HB400	40 ( 30-50 )	

## Cutting Passes and Radial Infeed Recommendation Table

### ► ISO Metric / External

Pitch (mm)	1.00	1.25	1.50	1.75	2.00	2.50	3.00	3.50	4.00	4.50	5.00
Total infeed(mm)	0.65	0.79	0.95	1.11	1.26	1.56	1.88	2.18	2.49	2.79	3.10
Total passes	5	6	6	8	8	10	12	12	13	14	14
No. of infeed	Radial infeed per pass (mm)										
1	0.16	0.17	0.20	0.17	0.20	0.20	0.20	0.24	0.24	0.27	0.29
2	0.15	0.15	0.19	0.17	0.19	0.19	0.19	0.23	0.22	0.25	0.28
3	0.14	0.14	0.18	0.16	0.18	0.18	0.19	0.22	0.22	0.24	0.27
4	0.12	0.13	0.16	0.15	0.17	0.17	0.18	0.21	0.21	0.23	0.26
5	0.08	0.12	0.14	0.14	0.16	0.17	0.17	0.21	0.21	0.23	0.25
6		0.08	0.08	0.13	0.15	0.16	0.17	0.20	0.20	0.22	0.25
7				0.11	0.13	0.15	0.16	0.18	0.19	0.21	0.24
8				0.08	0.08	0.14	0.15	0.17	0.18	0.20	0.23
9						0.12	0.14	0.16	0.17	0.19	0.22
10						0.08	0.13	0.15	0.16	0.18	0.20
11							0.12	0.13	0.15	0.17	0.19
12							0.08	0.08	0.14	0.16	0.17
13									0.12	0.14	0.15
14									0.18	0.10	0.10

### ► ISO Metric / External

Pitch (mm)	1.00	1.25	1.50	1.75	2.00	2.50	3.00	3.50	4.00	4.50	5.00
Total infeed(mm)	0.63	0.77	0.92	1.05	1.20	1.48	1.78	2.03	2.31	2.61	2.88
Total passes	5	6	6	8	8	10	12	12	13	14	14
No. of infeed	Radial infeed per pass (mm)										
1	0.15	0.16	0.20	0.16	0.19	0.19	0.19	0.22	0.21	0.23	0.26
2	0.14	0.15	0.18	0.15	0.18	0.18	0.18	0.21	0.21	0.23	0.26
3	0.13	0.14	0.17	0.15	0.17	0.17	0.18	0.20	0.20	0.22	0.25
4	0.12	0.13	0.15	0.14	0.16	0.17	0.17	0.20	0.19	0.22	0.24
5	0.08	0.11	0.13	0.13	0.15	0.16	0.16	0.19	0.19	0.21	0.24
6		0.08	0.08	0.12	0.14	0.15	0.16	0.18	0.18	0.20	0.23
7				0.11	0.12	0.14	0.15	0.17	0.18	0.20	0.22
8				0.08	0.08	0.13	0.14	0.16	0.17	0.19	0.21
9						0.12	0.14	0.15	0.16	0.18	0.20
10						0.08	0.12	0.14	0.15	0.17	0.19
11							0.11	0.12	0.14	0.16	0.18
12							0.08	0.08	0.13	0.15	0.16
13									0.12	0.14	0.15
14									0.08	0.10	0.10

## ► UN / External

Pitch (TPI)	24	20	18	16	14	12	10	8
Total infeed(mm)	0.70	0.84	0.92	1.04	1.17	1.35	1.62	2.02
Total passes	5	6	6	7	8	8	10	12
No. of infeed	Radial infeed per pass (mm)							
1	0.18	0.18	0.20	0.19	0.18	0.22	0.21	0.22
2	0.16	0.17	0.18	0.18	0.18	0.21	0.20	0.21
3	0.15	0.15	0.17	0.17	0.17	0.20	0.19	0.20
4	0.13	0.14	0.15	0.16	0.16	0.19	0.18	0.20
5	0.08	0.12	0.13	0.14	0.15	0.17	0.17	0.19
6		0.08	0.08	0.12	0.14	0.15	0.16	0.18
7				0.08	0.12	0.13	0.15	0.17
8					0.08	0.08	0.14	0.16
9							0.12	0.15
10							0.08	0.14
11								0.12
12								0.08

## ► UN / Internal

Pitch (TPI)	24	20	18	16	14	12	10	8
Total infeed(mm)	0.66	0.78	0.86	0.96	1.07	1.25	1.48	2.03
Total passes	5	6	6	7	8	8	10	12
No. of infeed	Radial infeed per pass (mm)							
1	0.16	0.16	0.18	0.17	0.16	0.20	0.19	0.22
2	0.15	0.16	0.17	0.16	0.16	0.19	0.18	0.21
3	0.14	0.14	0.16	0.15	0.15	0.18	0.17	0.20
4	0.12	0.13	0.14	0.14	0.14	0.17	0.17	0.20
5	0.08	0.12	0.13	0.13	0.14	0.16	0.16	0.19
6		0.08	0.08	0.12	0.13	0.14	0.15	0.18
7				0.08	0.11	0.13	0.14	0.17
8					0.08	0.08	0.13	0.16
9							0.12	0.15
10							0.08	0.14
11								0.12
12								0.08



► Whitworth / External & Internal

Pitch (TPI)	19	14	11
Total infeed(mm)	0.90	1.20	1.51
Total passes	6	8	9
No. of infeed	Radial infeed per pass (mm)		
1	0.19	0.19	0.22
2	0.18	0.18	0.21
3	0.17	0.17	0.20
4	0.15	0.16	0.19
5	0.13	0.15	0.18
6	0.08	0.14	0.16
7		0.12	0.15
8		0.08	0.13
9			0.08

► BSPT / External & Internal

Pitch (TPI)	28	19	14	11
Total infeed(mm)	0.62	0.90	1.20	1.51
Total passes	5	6	8	9
No. of infeed	Radial infeed per pass (mm)			
1	0.15	0.19	0.19	0.22
2	0.14	0.18	0.18	0.21
3	0.13	0.17	0.17	0.20
4	0.12	0.15	0.16	0.19
5	0.08	0.13	0.15	0.18
6		0.08	0.14	0.16
7			0.12	0.15
8			0.08	0.13
9				0.08

## ► NPT /External&amp; Internal

Pitch (TPI)	27	18	14	11.5	8
Total infeed(mm)	0.76	1.11	1.42	1.73	2.48
Total passes	6	8	10	12	15
No. of infeed	Radial infeed per pass (mm)				
1	0.15	0.17	0.18	0.18	0.21
2	0.15	0.17	0.17	0.17	0.21
3	0.14	0.16	0.16	0.17	0.20
4	0.13	0.15	0.16	0.16	0.20
5	0.11	0.14	0.15	0.16	0.19
6	0.08	0.13	0.14	0.15	0.18
7		0.11	0.14	0.15	0.18
8		0.08	0.13	0.14	0.17
9			0.11	0.13	0.17
10			0.08	0.12	0.16
11				0.11	0.15
12				0.08	0.14
13					0.13
14					0.11
15					0.08

## ► Round / External

Pitch (TPI)	10	8	6	4
Total infeed(mm)	1.30	1.63	2.17	2.95
Total passes	8	10	12	14
No. of infeed	Radial infeed per pass (mm)			
1	0.21	0.21	0.24	0.30
2	0.20	0.20	0.23	0.29
3	0.19	0.19	0.22	0.28
4	0.18	0.19	0.21	0.27
5	0.16	0.18	0.20	0.26
6	0.15	0.17	0.19	0.25
7	0.13	0.15	0.18	0.24
8	0.08	0.14	0.17	0.23
9		0.12	0.16	0.22
10		0.08	0.15	0.21
11			0.13	0.19
12			0.08	0.18
13				0.15
14				0.10

► Round / Internal

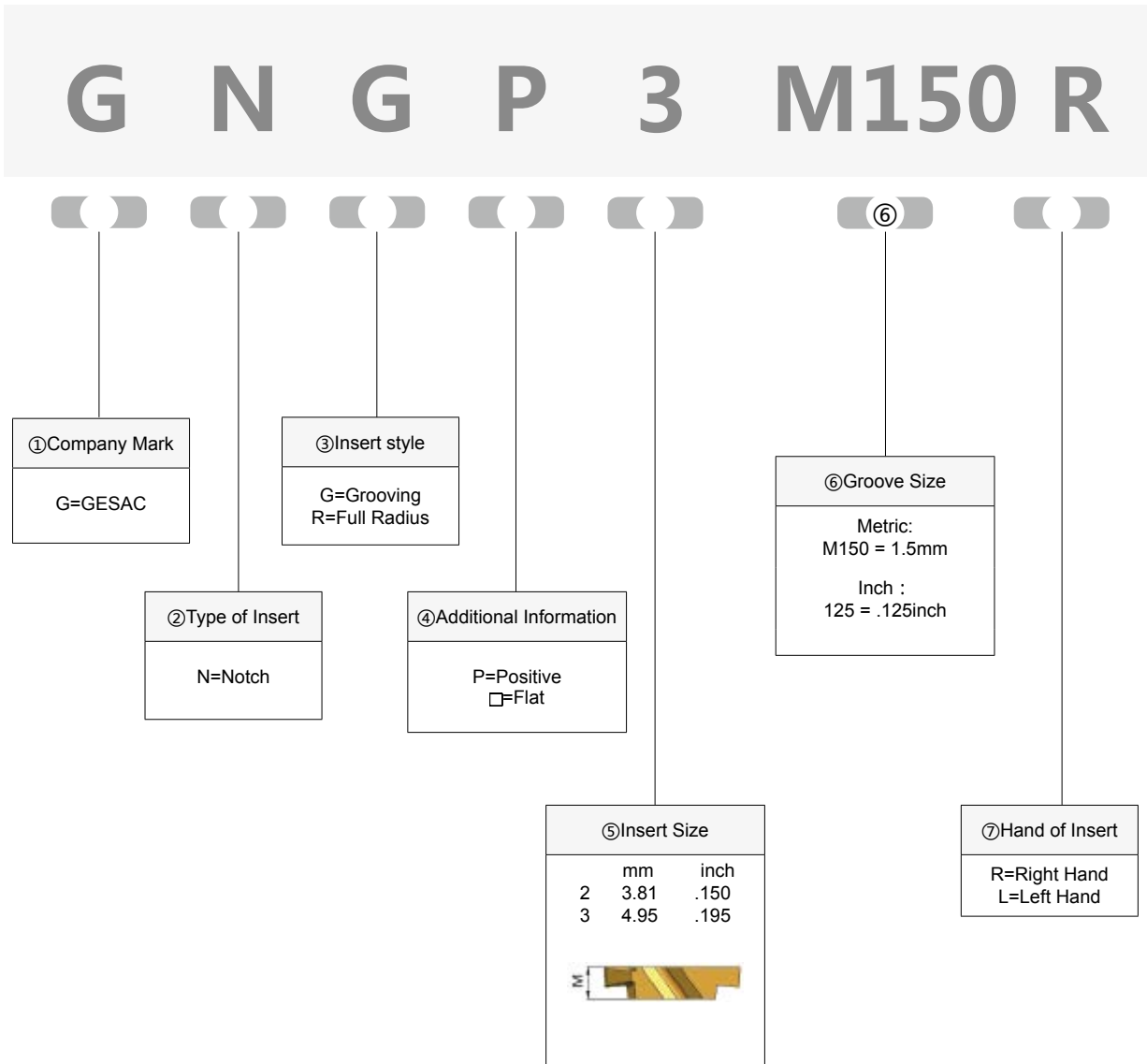
Pitch (TPI)	10	8	6	4
Total infeed(mm)	1.34	1.64	2.18	2.98
Total passes	8	10	12	14
No. of infeed	Radial infeed per pass (mm)			
1	0.22	0.21	0.24	0.30
2	0.21	0.20	0.23	0.29
3	0.20	0.20	0.22	0.29
4	0.18	0.19	0.21	0.28
5	0.17	0.18	0.21	0.27
6	0.15	0.17	0.20	0.26
7	0.13	0.16	0.19	0.25
8	0.08	0.14	0.17	0.24
9		0.12	0.16	0.23
10		0.08	0.15	0.21
11			0.13	0.20
12			0.08	0.18
13				0.16
14				0.10

Attention: Generally, the radial feed shall not be less than 0.05mm. When machining austenitic stainless steel, the radial feed shall not be less than 0.08mm.

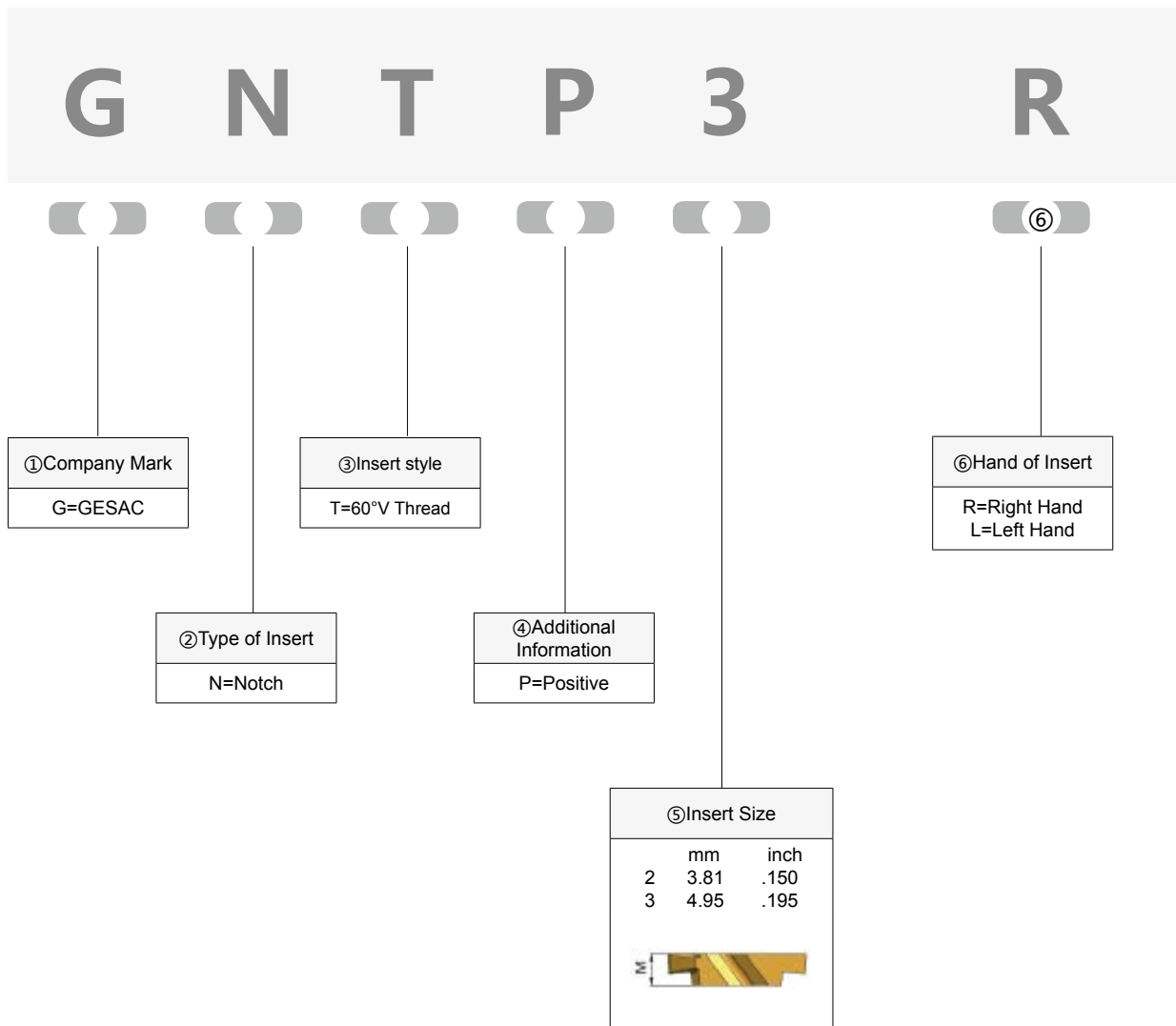
# G-NOTCH SERIES TOOLS



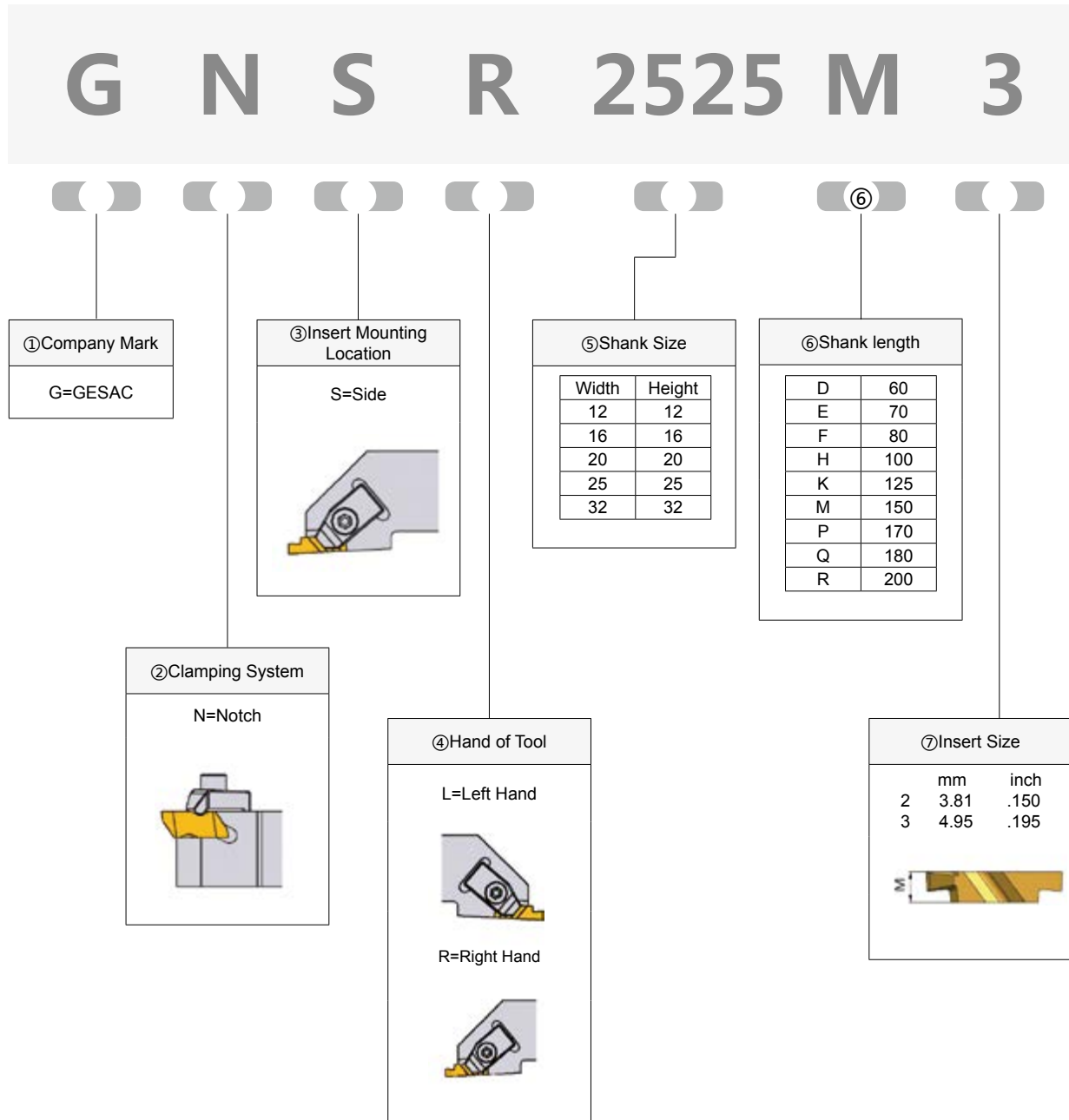
## G-Notch Series Grooving Inserts Identification System



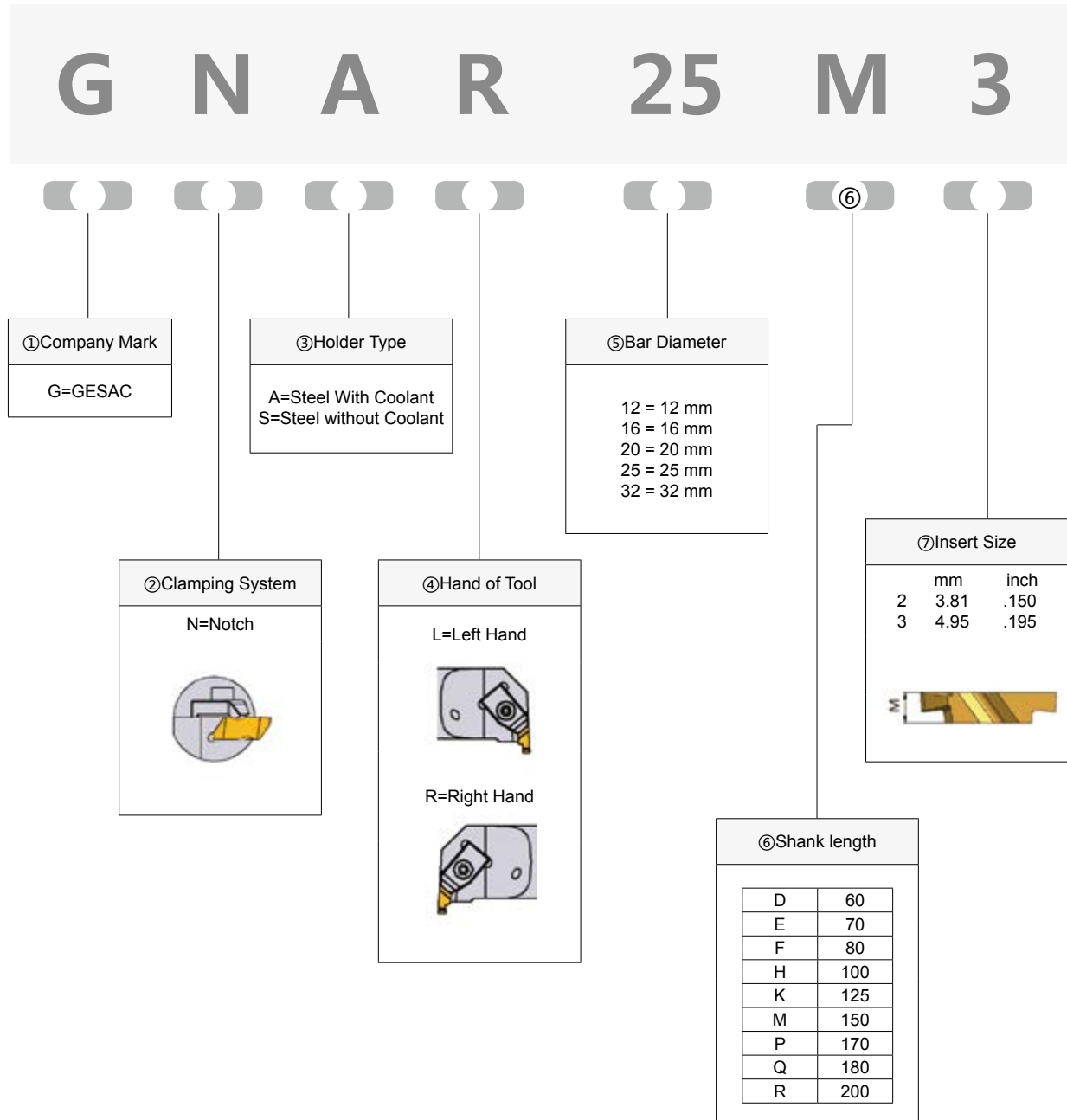
## G-Notch Series Threading Inserts Identification System



## G-Notch External Holder Identification System






## G-Notch Internal Bar Identification System



Note: Left hand bars use right hand inserts, Right hand bars use left hand inserts.



## Overview of G-Notch Series Tools

Application	Style	Shape	Width/Pitch	Page
Precision grooving	GNGP		1.00-3.50 (mm)	<a href="#">P150</a>
Precision grooving and profiling	GNR		2.00-3.18 (mm)	<a href="#">P152</a>
Threading	Gntp		0.70-5.00(mm) 36-5(TPI)	<a href="#">P152</a>

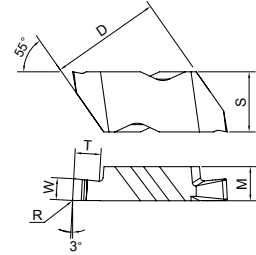
## Application Summary of Grades

Workpiece Material	<b>P</b> Steel					<b>M</b> Stainless Steel					<b>K</b> Cast Iron					<b>S</b> HRSA / Titanium								
	ISO	01	10	20	30	40	50	01	10	20	30	40	01	10	20	30	40	10	20	30	40			
Coated PVD		<a href="#">GM3125</a>						<a href="#">GM3125</a>						<a href="#">GM3125</a>										
		<a href="#">GA4230</a>						<a href="#">GA4230</a>						<a href="#">GA4230</a>								<a href="#">GS3115</a>		
								<a href="#">GS3115</a>																

Grooving Inserts

# GNGP

## Grooving Positive Rake Inserts



Ordering Code	Dimensions(mm)						Insert Size	Stock		
	W	R	T	S	M	D		GM3125	GA4230	GS3115
GNGP2M100L	1.00	0.09	1.27	5.56	3.81	8.74	2		○	○
GNGP2M100R	1.00	0.09	1.27	5.56	3.81	8.74	2		○	○
GNGP2047L	1.19	0.09	1.27	5.56	3.81	8.74	2	●		
GNGP2047R	1.19	0.09	1.27	5.56	3.81	8.74	2	●		
GNGP2M150L	1.50	0.19	2.79	5.56	3.81	8.74	2		○	○
GNGP2M150R	1.50	0.19	2.79	5.56	3.81	8.74	2		○	○
GNGP2062L	1.57	0.19	2.79	5.56	3.81	8.74	2	●		
GNGP2062R	1.57	0.19	2.79	5.56	3.81	8.74	2	●		
GNGP2M170L	1.70	0.19	2.79	5.56	3.81	8.74	2		○	○
GNGP2M170R	1.70	0.19	2.79	5.56	3.81	8.74	2		○	○
GNGP2070L	1.78	0.19	2.79	5.56	3.81	8.74	2	○		
GNGP2078L	1.98	0.19	2.79	5.56	3.81	8.74	2	○		
GNGP2078R	1.98	0.19	2.79	5.56	3.81	8.74	2	○		
GNGP2M200L	2.00	0.19	2.79	5.56	3.81	8.74	2		○	○
GNGP2M200R	2.00	0.19	2.79	5.56	3.81	8.74	2		○	○
GNGP2M220L	2.20	0.19	2.79	5.56	3.81	8.74	2		○	
GNGP2M220R	2.20	0.19	2.79	5.56	3.81	8.74	2		○	
GNGP2094L	2.38	0.19	2.79	5.56	3.81	8.74	2	●		
GNGP2094R	2.38	0.19	2.79	5.56	3.81	8.74	2	●	○	○
GNGP2M250L	2.50	0.19	2.79	5.56	3.81	8.74	2		○	○
GNGP2M250R	2.50	0.19	2.79	5.56	3.81	8.74	2		○	○
GNGP2125L	3.18	0.19	2.79	5.56	3.81	8.74	2	●		
GNGP2125R	3.18	0.19	2.79	5.56	3.81	8.74	2	●		
GNGP3031L	0.79	0.09	1.27	8.74	4.95	16.1	3	○		
GNGP3031R	0.79	0.09	1.27	8.74	4.95	16.1	3	○		
GNGP3M100L	1.00	0.19	1.91	8.74	4.95	16.1	3	●	○	
GNGP3M100R	1.00	0.19	1.91	8.74	4.95	16.1	3	●	○	
GNGP3047L	1.19	0.19	1.91	8.74	4.95	16.1	3	●		
GNGP3047R	1.19	0.19	1.91	8.74	4.95	16.1	3	●		



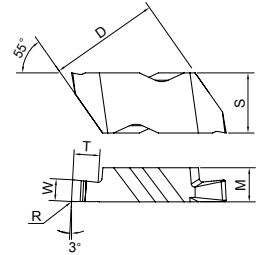
Continue>>

●Stock ○Available upon Order

Grooving Inserts

# GNGP

## Grooving Positive Rake Inserts



Ordering Code	Dimensions(mm)						Insert Size	Stock		
	W	R	T	S	M	D		GM3125	GA4230	GS3115
GNGP3M150L	1.50	0.19	2.39	8.74	4.95	16.1	3		○	
GNGP3M150R	1.50	0.19	2.39	8.74	4.95	16.1	3	●	○	○
GNGP3062L	1.58	0.19	2.39	8.74	4.95	16.1	3	●		
GNGP3062R	1.58	0.19	2.39	8.74	4.95	16.1	3	●		
GNGP3070L	1.78	0.19	2.39	8.74	4.95	16.1	3	○		
GNGP3078L	1.98	0.19	2.39	8.74	4.95	16.1	3	○		
GNGP3078R	1.98	0.19	2.39	8.74	4.95	16.1	3	○		
GNGP3M200L	2.00	0.19	2.39	8.74	4.95	16.1	3	●		
GNGP3M200R	2.00	0.19	2.39	8.74	4.95	16.1	3	●		
GNGP3094L	2.39	0.19	3.81	8.74	4.95	16.1	3	●		
GNGP3094R	2.39	0.19	3.81	8.74	4.95	16.1	3	●	○	○
GNGP3M250L	2.50	0.19	3.81	8.74	4.95	16.1	3	●		
GNGP3M250R	2.50	0.19	3.81	8.74	4.95	16.1	3	●		
GNGP3M300L	3.00	0.19	3.81	8.74	4.95	16.1	3	●		
GNGP3M300R	3.00	0.19	3.81	8.74	4.95	16.1	3	●		
GNGP3125L	3.18	0.19	3.81	8.74	4.95	16.1	3	●		
GNGP3125R	3.18	0.19	3.81	8.74	4.95	16.1	3	●	○	○
GNGP3M350L	3.50	0.19	3.81	8.74	4.95	16.1	3	●		
GNGP3M350R	3.50	0.19	3.81	8.74	4.95	16.1	3	●		

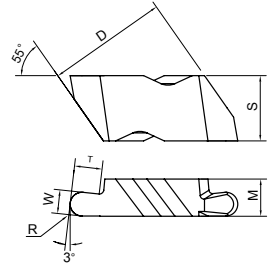



● Stock ○ Available upon Order

Grooving Inserts and Threading Inserts

# GNR

Full Radius Inserts



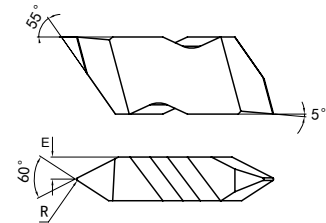
Full Radius Inserts	Dimensions(mm)						Insert Size	Stock			
	W	R	T	S	M	D		GM3125	GA4230	GS3115	
	GNR3M100L	2.00	1.00	2.39	8.74	4.95	16.10	3		○	
	GNR3M100R	2.00	1.00	2.39	8.74	4.95	16.10	3	●	○	
	GNR3M150L	3.00	1.50	3.81	8.74	4.95	16.10	3		○	
	GNR3M150R	3.00	1.50	3.81	8.74	4.95	16.10	3	●	○	
	GNR3062L	3.18	1.59	3.81	8.74	4.95	16.10	3		○	
	GNR3062R	3.18	1.59	3.81	8.74	4.95	16.10	3	●	○	


● Stock ○ Available upon Order

# GNTP

60° Partial Profile Threading

Inserts With Positive Top Rake

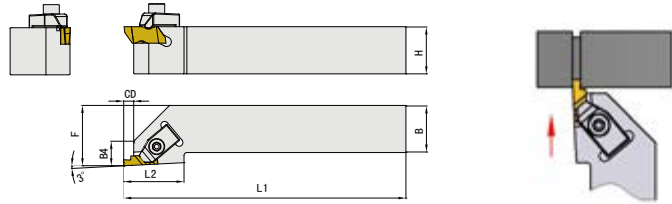


Ordering Code	Dimensions(mm)						Insert Size	Stock			
	R	E	Pitch					GM3125	GA4230	GS3115	
			External (mm)	Internal (mm)	External TPI	Internal TPI					
	GNTP2L	0.10	1.91	0.70-3.00	1.25-3.50	8-36	7-20	2	●	○	
	GNTP2R	0.10	1.91	0.70-3.00	1.25-3.50	8-36	7-20	2	●	○	
	GNTP3L	0.17	2.49	1.25-4.00	2.00-5.00	4-20	5-12	3	●	○	
	GNTP3R	0.17	2.49	1.25-4.00	2.00-5.00	4-20	5-12	3	●	○	
	GNTP3004L	0.10	2.49	1.25-4.00	2.00-5.00	5-36	5-12	3		○	
	GNTP3004R	0.10	2.49	1.25-4.00	2.00-5.00	5-36	5-12	3		○	

● Stock ○ Available upon Order

G-Notch series

External Holders

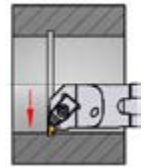
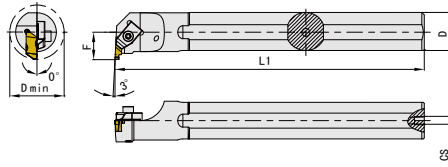


Ordering Code	Dimensions(mm)							Insert	Spare Parts			Stock
	H	B	F	L1	L2	B4	CD		Clamp	Screw	Wrench	
GNSR1616H2	16	16	20	100	19	9	3.5	GN.2R	720500762978	730109003291	720309000813	●
GNSR2020K2	20	20	25	125	19	9	3.5	GN.2R	720500762978	730109003291	720309000813	●
GNSR2525M2	25	25	32	150	19	9	3.5	GN.2R	720500762978	730109003291	720309000813	●
GNSR2020K3	20	20	25	125	32	13	5.3	GN.3R	720500762980	730109003295	720309000814	●
GNSR2525M3	25	25	32	150	32	13	5.3	GN.3R	720500762980	730109003295	720309000814	●
GNSL1616H2	16	16	20	100	19	9	3.5	GN.2L	720500762979	730109003291	720309000813	●
GNSL2020K2	20	20	25	125	19	9	3.5	GN.2L	720500762979	730109003291	720309000813	●
GNSL2525M2	25	25	32	150	19	9	3.5	GN.2L	720500762979	730109003291	720309000813	●
GNSL2020K3	25	20	25	125	32	13	5.3	GN.3L	720500762981	730109003295	720309000814	●
GNSL2525M3	25	25	32	150	32	13	5.3	GN.3L	720500762981	730109003295	720309000814	●

● Stock ○ Available upon Order

## G-Notch series

## Internal Bars



Ordering Code	Dimensions(mm)					Insert	Spare Parts			Stock
	D	D min	L1	F	CS		Clamp	Screw	Wrench	
GNAR20Q2	20	26	180	13	1/8-27 NPT	GN.2L	720500762979	730109003290	720309000813	●
GNAR25R2	25	34	200	17	1/4-18 NPT		720500762979	730109003290	720309000813	●
GNAR25R3	25	34	200	17	1/4-18 NPT	GN.3L	720500762981	730109003294	720309000814	●
GNAL20Q2	20	26	180	13	1/8-27 NPT	GN.2R	720500762978	730109003290	720309000813	●
GNAL25R2	25	34	200	17	1/4-18 NPT		720500762978	730109003290	720309000813	●
GNAL25R3	25	34	200	17	1/4-18 NPT	GN.3R	720500762980	730109003294	720309000814	●

Note: Left hand bars use right hand inserts, Right hand bars use left hand inserts.

● Stock ○ Available upon Order

## Recommended Cutting Speed

Workpiece Material		Hardness ( HB )	Speed Vc ( m/min )		
			GM3125	GA4230	GS3115
<b>P</b>	Low Carbon Steel	80 – 170	105 (60-170)	110 (70-180)	
	Low Alloy Steel	170 –250	105 (60-160)	110 (70-160)	
	Low Alloy Steel	140– 260	105 (50-160)	110 (60-160)	
	High Alloy Steel	180– 300	105 (50-160)	110 (60-160)	
<b>M</b>	Ferritic/ Martensitic	150– 270	90 (40-140)	100 (40-180)	90 ( 50-150 )
	Austenitic	150– 270	90 (40-140)	100 (40-180)	90 ( 50-150 )
<b>K</b>	Malleable Cast Iron	150– 230	160 (60-300)	180 (70-300)	
	Gray Cast Iron	150– 230	160 (60-300)	180 (70-300)	
	Nodular Cast Iron	160– 260	140 (50-250)	160 (60-300)	
<b>S</b>	Heat-resistant Alloy	130– 400			35 ( 15-60 )
	Titanium Alloy	130– 400			35 ( 15-60 )

## Recommended Feed

Width of Inserts(mm)	Feed(mm/r)
0.79-1.50	0.08 (0.03-0.12)
1.50-2.50	0.10 (0.04-0.16)
2.50-3.50	0.12 (0.05-0.20)
3.50-4.50	0.14 (0.05-0.25)









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