

# Turning Indexable Inserts

**B1~B88**



# B



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KN□□...55° Parallelogram **B27**

RN□□...Round **B27**

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VB□□, VC□□, VP□□...35° Rhombic **B69**

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**Turning Negative Inserts** CN□□...80° Rhombic **B80**

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**Grooving Inserts** GH / GS **B88**

# Turning Indexable Inserts Identification System

B



Insert (Turning)

Symbol	Shape
H	Hexagon
O	Octagon
P	Pentagon
S	Square
T	Triangle
C	80° Rhombic
D	55° Rhombic
E	75° Rhombic
F	50° Rhombic
M	86° Rhombic
V	35° Rhombic
W	Hexagon
L	Rectangle
A	85° Parallelogram
B	82° Parallelogram
K	55° Parallelogram
R	Round

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

(1) Shape Symbol

Symbol	Relief Angle
A	3°
B	5°
C	7°
D	15°
E	20°
F	25°
G	30°
N	0°
P	11°

(2) Relief Angle Symbol

Symbol (Class)	Tolerance (mm)		
	Corner Height	Thickness	I.C. Size
A	±0.005	±0.025	±0.025
F			±0.013
C	±0.013		±0.025
H			±0.013
E	±0.025	±0.13	±0.025
G			±0.025
J	±0.005	±0.05~±0.15	±0.05~±0.15
K*	±0.013		
L*	±0.025		
M*	±0.08~±0.18		
N*	±0.13~±0.38	±0.13	±0.08~±0.25
U*		±0.13	

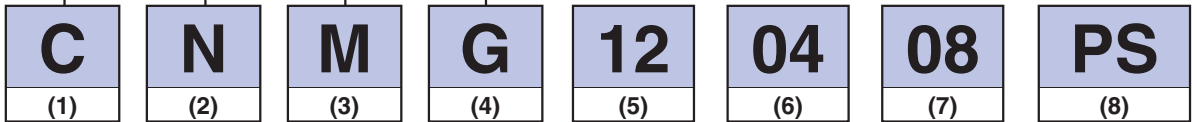
\* Insert's periphery is as fired. Tolerance difference is depending on insert size.

(3) Tolerance Symbol

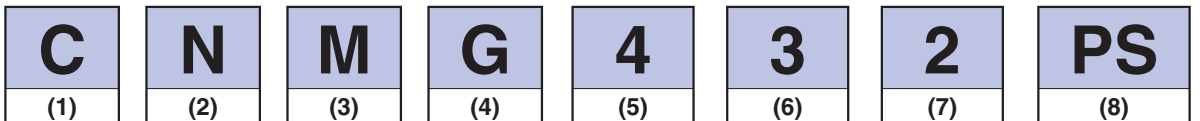
Symbol	Hole	Hole Shape	Insert Chipbreaker	Shape
N	No	-	No	Two Sides
R			One Sides	
F			Two Sides	
A	Yes	With Hole	No	Two Sides
M			One Sides	
G			Two Sides	
W			With Hole and One Countersink 40°-60°	One Sides
T			No	
Q			With Hole and Two Countersink 40°-60°	No
U			Two Sides	
B			With Hole and One Countersink 70°-90°	No
H			One Sides	
C			With Hole and Two Countersink 70°-90°	No
J	Two Sides			
X	-	-	-	-

(4) Hole / Chipbreaker Symbol

ISO  
(metric)



ANSI  
(inch)



(5) Edge Length Symbol (ISO)							I.C. Size (mm)	(5) I.C. Size (ANSI)	
C	D	R	S	T	V	W		I.C. Size (inch)	Symbol
03	04		03	06			3.97	5/32	12
04	05		04	08	08		4.76	3/16	15
		05					5		
05	06		05	09		03	5.56	7/32	18
		06					6		
06	07		06	11	11	04	6.35	1/4	2
08	09		07	13		05	7.94	5/16	25
		08					8		
09	11	09	09	16	16	06	9.525	3/8	3
		12	10				10		
		12					12		
12	15	12	12	22	22	08	12.7	1/2	4
16	19	15	15	27	27	10	15.875	5/8	5
		16					16		
19	23	19	19	33	33	13	19.05	3/4	6
		20					20		
22	27		22	38			22.225	7/8	7
		25					25		
25	31	25	25	44	44	17	25.4	1	8
32	38	31	31	54	54	21	31.75	1-1/4	10
		32					32		

(6) Thickness Symbol			
ISO		ANSI	
Thickness (mm)	Symbol	Thickness (inch)	Symbol
1.59	01	1/16	1
1.98	T1	5/64	12
2.38	02	3/32	15
2.78	T2	-	-
3.18	03	1/8	2
3.97	T3	5/32	25
4.76	04	3/16	3
5.56	05	7/32	35
6.35	06	1/4	4
7.94	07	5/16	5
9.525	09	3/8	6

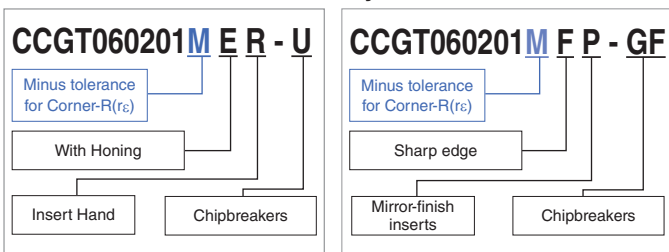
Thickness displayed as the distance between bottom surface and highest point on cutting edge.

(7) Corner-R(re) Symbol			
ISO		ANSI	
Corner-R (r <sub>c</sub> ) (mm)	Symbol	Corner-R (r <sub>c</sub> ) (inch)	Symbol
Sharp Corner	00	.000	00
0.03	003	.001	01
0.05	005	.002	013
0.1	01	.004	02
0.2	02	.008	05
0.4	04	1/64	1
0.8	08	1/32	2
1.2	12	3/64	3
1.6	16	1/16	4
2.0	20	5/64	5
2.4	24	3/32	6
2.8	28	7/64	7
3.2	32	1/8	8
Round insert	00 (inch) or M0 (metric)	Round insert	0

(8) Manufacturer's Option  
Hand Symbol  
Chipbreaker  
Symbol, etc.

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

● Positive Insert Identification System



● When a minus tolerance is specified for the corner-R(r<sub>c</sub>)

If a minus tolerance is specified for the corner-R(r<sub>c</sub>) as shown in the Fig.1, using an insert with corner-R(r<sub>c</sub>)=0.2 mm may result in larger radius than specified. Use an insert the corner of which R(r<sub>c</sub>) has a minus tolerance.

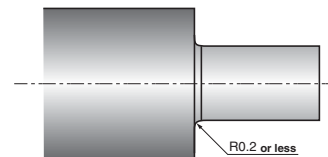


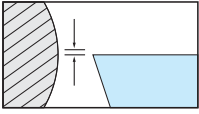
Fig.1 Example of a specified corner-R in the drawing

● Features of insert with tolerance symbol of “E” Class

**“E” Class Turning Insert**

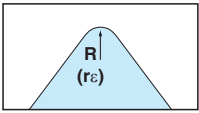
- Accuracy of index position after insert replacement

Thickness Tolerance



Conventional:  $\pm 0.13\text{mm}$  →  $\pm 0.025\text{mm}$

Corner-R ( $r_c$ ) Tolerance



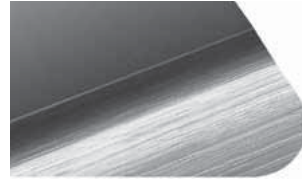
Conventional:  $\pm 0.1\text{mm}$  →  $\pm 0.02\text{mm}$

● High Quality Ground Insert “Super Fine”

- Applicable for mechatronics, electronics and high precision machined parts
- Sub-micron accuracy possible




**High Quality Ground Insert**

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




■ Insert Color





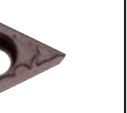





● Cermet, MEGACOAT Cermet and PVD Coated Cermet

Grades	Cermet						MEGACOAT Cermet				PVD Coated Cermet	
	TN6010	TN6020	TN60	TN100M	TC40N	TC60M	PV7005	PV7010	PV7025	PV7040	PV7020	PV90
Insert Color												


● MEGACOAT (PVD Coated Carbide)

Grades	MEGACOAT						
	PR1210	PR1215	PR1225	PR1230	PR1305	PR1310	PR1325
Insert Color							

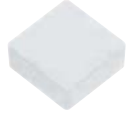
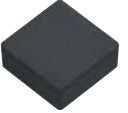


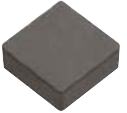
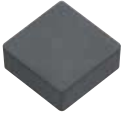
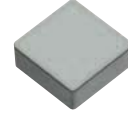
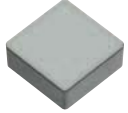

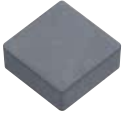
● CVD Coated Carbide and PVD Coated Carbide

Grades	CVD Coated Carbide						PVD Coated Carbide						
	CA45 series	CA40/CA41 series	NEW CA515 CA525	CA55 series	CA65 series	PR660	PR830	PR905	PR915	PR930	PR1005	PR1025	PR1115
Insert Color													

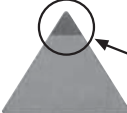


● MEGACOAT NANO (PVD Coated Carbide)

Grades	MEGACOAT NANO			
	PR1425	PR1510	PR1525	PR1535
Insert Color				

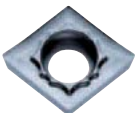
● Ceramic

Grades	Aluminum Oxide ceramic			PVD Coated Ceramic	MEGACOAT Ceramic	Silicon Nitride Ceramic		CVD Coated Silicon Nitride Ceramic	SiAlON Ceramic	Honeycomb structure Ceramic
	KA30	A65	KT66	A66N	PT600M	KS6000	KS6050	CS7050	NEW KS6040	CF1
Insert Color										

● CBN and PCD

Grades	CBN				PCD			MEGACOAT CBN	PVD Coated CBN
	KBN65B	KBN510	KBN525	NEW KBN570	KPD001	KPD010	KPD230	KBN-M	KBN900
Insert Color									

● Carbide

Grades	Carbide				
	GW15	GW25	KW10	PW30	SW05
Insert Color					



# Chipbreaker Selection (Negative Inserts)

## Steel

### 1 Molded Chipbreaker

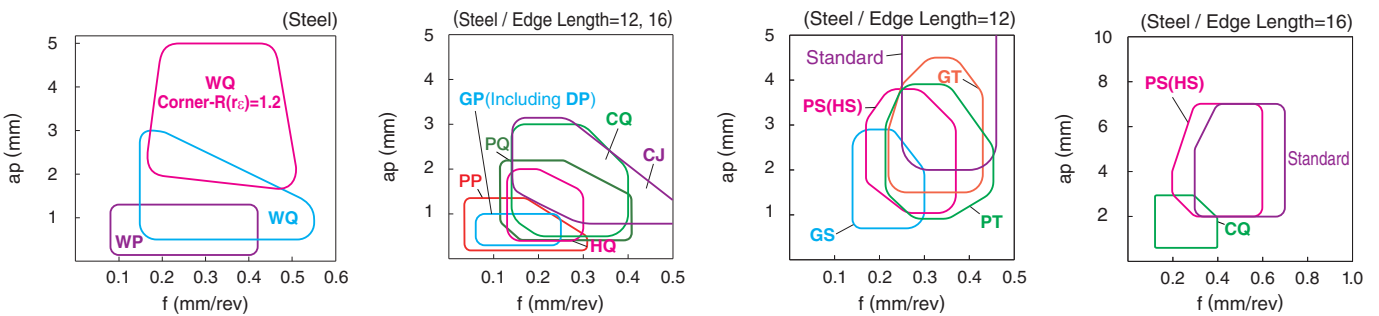
B



Insert (Turning)

Cutting Range	Name	Design	Advantages
Finishing (With Wiper Edge)	WP		Wiper Insert. Double feed rate is available for finishing to light cutting, while maintaining a smooth finish.
	WQ		Wiper Insert. Double feed rate possible while maintaining a smooth finish. High efficiency and good chip control.
	PP		3-step dot structure realizes stable chip control at a wide range of feed rate. Less cutting force due to sharp cutting edge and smooth rake face.
	GP		Finishing to light cutting. Good chip control.
Finishing-Medium	PQ		Stable chip control in a wide feed rate range by breaking chips effectively. The well-balanced edge sharpness and toughness.
	HQ		Sharp cutting performance and wide range chip control with 3-D rake angle and double projection design.
	CQ		Good chip control for varied ap such as copying. Applicable for up facing.
	CJ		Improved chip curing at small cutting and high feed rate cutting. Improved chip evacuation at copying and up facing.

### ● Applicable Chipbreaker Range (ap indicates radius)

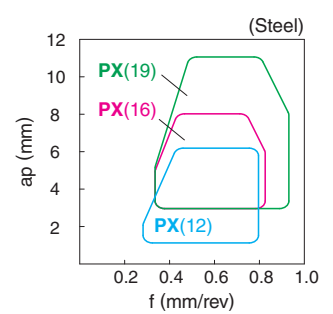
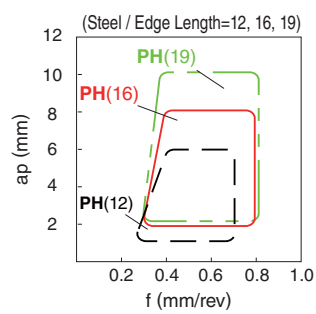
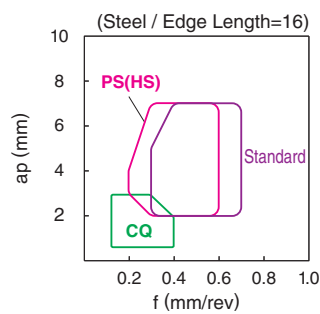
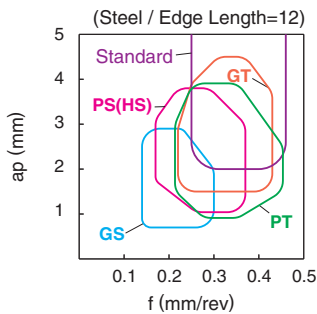




Cutting Range	Name	Design	Advantages
Medium - Roughing	GS		Strong edge chipbreaker. Stable for continuous cutting and light interrupted cutting.
Medium - Roughing	PS		General purpose chip breaker. More stable due to large contact surface.
Medium - Roughing	HS		General purpose chip breaker. Applicable to copying.
Medium-Roughing (High Feed Rate)	PT		Low cutting force at high feed cutting. Land support structure.

Cutting Range	Name	Design	Advantages
Medium-Roughing (High Feed Rate)	GT		Strong edge chipbreaker. Wide land design and smooth chip control even at high feed rate cutting.
Roughing	Standard (without Symbol)		Low cutting force and suitable for large ap roughing.
Roughing	PH		For roughing of steel. Suitable for heavy interrupted cutting and for workpieces with scale due to strong cutting edge.
Single Sided Roughing (High Feed Rate)	PX		Roughing and high feed rate operation. Low cutting force chipbreaker.

● Applicable Chipbreaker Range (ap indicates radius)



# Chipbreaker Selection (Negative Inserts)

## Stainless Steel / Heat-Resistant Alloy / Titanium Alloy

B



Insert (Turning)

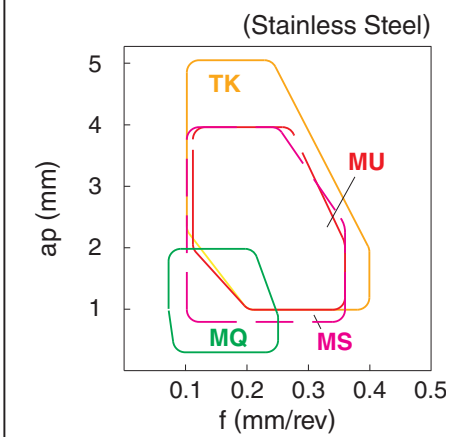
Cutting Range	Name	Design	Advantages
Finishing	MQ	23° 15°	Large rake angle and circular edge line. Low cutting force and good chip control.
Medium - Roughing	MS	0.25 12° 19° 0.25 9° 19°	Superior cutting edge sharpness and strength achieved by a positive land. Extra strength of cutting edge inhibits damage from wall shouldering.
Medium - Roughing	MU	15° 15°	Large rake angle reduces cutting force. Less burring achieved by diminishing damage from notching.
Medium - Roughing	TK	13° 9°	Smooth chipbreaker geometry improves chip flow with less adhesion. Large curled chips.

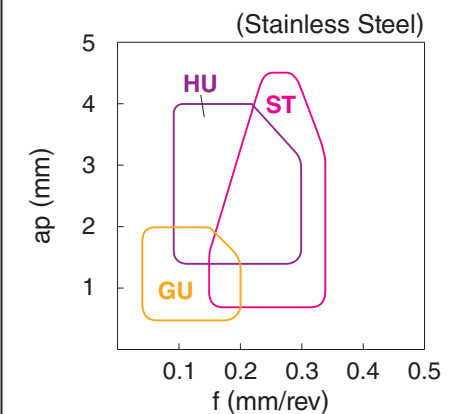
Cutting Range	Name	Design	Advantages
Finishing	GU	0.15 20° 5°	Sharp cutting performance and low cutting force due to 3-D rake angle. Applicable to small shaft cutting.
Medium - Roughing	HU	0.2 20° 20°	Sharp cutting performance and strong edge due to 3-D rake angle.
Medium - Roughing	ST	14°	Less cutting force due to large rake angle. Less notching by special design.

### Stainless Steel

#### Applicable Chipbreaker Range (ap indicates radius)

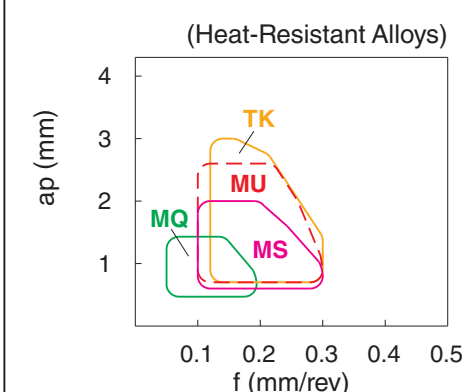


#### Applicable Chipbreaker Range (ap indicates radius)



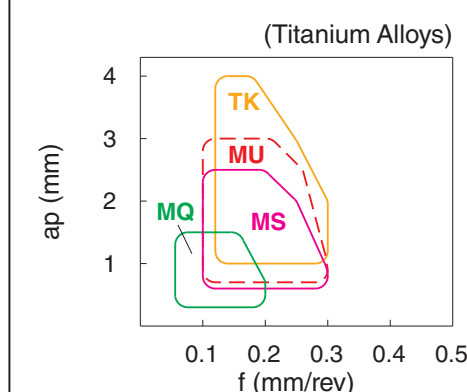
### Heat-Resistant Alloys (PR13 Series)

#### Applicable Chipbreaker Range (ap indicates radius)


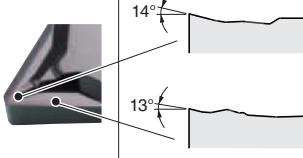

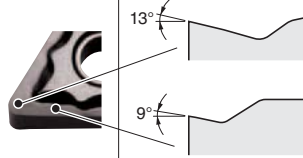


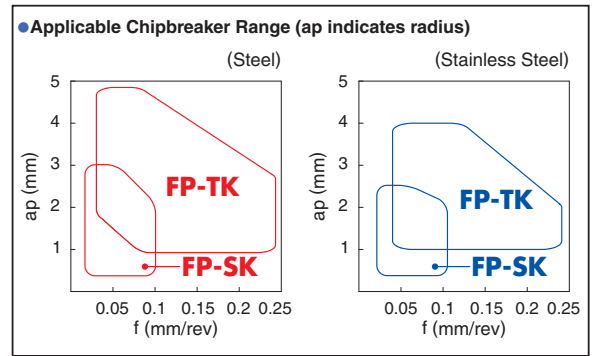
### Titanium Alloys (SW Series)

#### Applicable Chipbreaker Range (ap indicates radius)


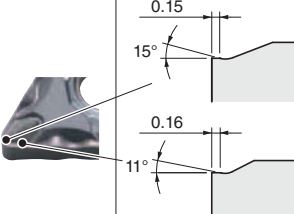

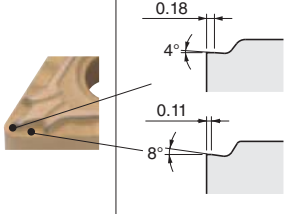

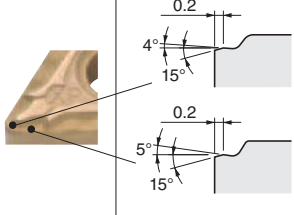



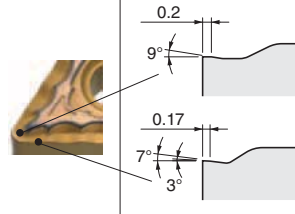

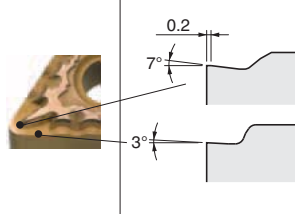
## Steel / Stainless Steel (for automatic lathe)

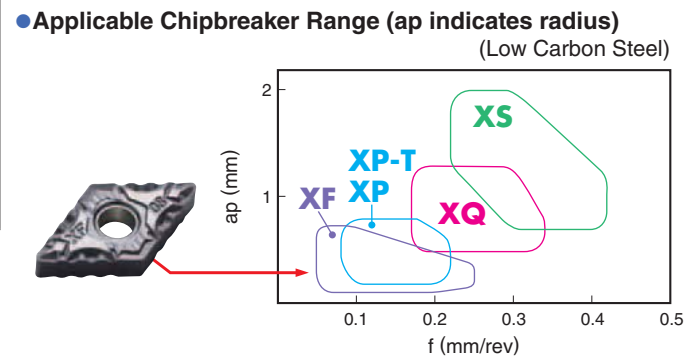
Cutting Range	Name	Design		Advantages
Finishing-Medium	FP-SK			For finishing to medium cutting in automatic lathes. Sharp edge and polished finish realizes sharp cutting performance equivalent to positive inserts. 2-step dot design provides reliable chip control at various ap.
Medium - Roughing	FP-TK			For medium to high feed rate in automatic lathes (When cutting workpieces of medium to large dia.) Sharp Edge / Polished: Sharp cutting Smooth chipbreaker geometry improves chip flow with less adhesion. Large curled chips.



## Low Carbon Steel (Pipe / Rolled Plate / Rolled Steel)

Cutting Range	Name	Design		Advantages
Finishing	XF			Excellent chip control at high speed and small ap cutting of low carbon steel
Finishing	XP			Short chips when finishing due to sharp cutting and special design.
Finishing	XP-T			Tough edge type for finishing. Recommended for interrupted cutting and unstable finishing cutting.

Cutting Range	Name	Design		Advantages
Medium	XQ			Consistent chip breaking at medium cutting due to moderate rake face and special design.
Roughing	XS			Consistent chip breaking when roughing due to special rake face and rake angle design.



# Chipbreaker Selection (Negative Inserts)

## Cast Iron

B

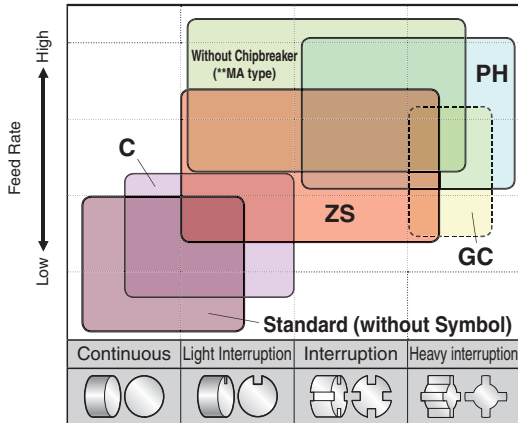


Insert (Turning)

Cutting Range	Name	Design	Advantages
Sharp Cutting Oriented	Standard (without Symbol)		Standard chipbreaker for continuous to light interrupted cutting of cast iron. (Low cutting force)
	C		High feed rate chipbreaker for continuous to light interrupted cutting of cast iron.
	ZS		Standard chipbreaker for light interrupted to interrupted cutting of cast iron. (High stability)
	Without Chipbreaker		High feed rate chipbreaker for light interrupted cutting of cast iron.

Cutting Range	Name	Design	Advantages
Stability Oriented	GC		Chipbreaker for heavy interrupted cutting of cast iron. (Tough edge chipbreaker)
	PH		Chipbreaker for roughing of cast iron. Suitable for heavy interrupted cutting and for workpieces with scale due to strong cutting edge.

## Chipbreaker Selection (Negative Inserts)

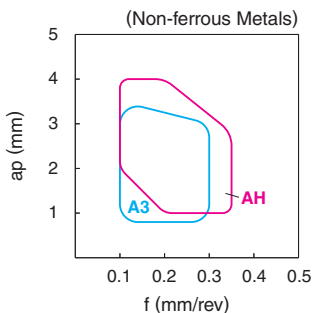


## Non-ferrous Metals

Cutting Range	Name	Design	Advantages
Finishing-Medium	A3		Large rake angle and smooth surface. Good chip control and less adhesion.

Cutting Range	Name	Design	Advantages
Medium - Roughing	AH		Polished chipbreaker. Smooth chip control and less adhesion. G Class: Sharp Edge Prep. M Class: Horning Edge Prep.

### Applicable Chipbreaker Range (ap indicates radius)




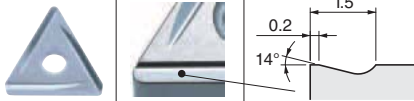
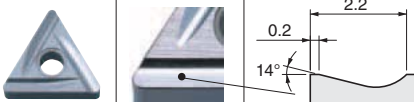
A3 Chipbreaker	
	ap=2mm f=0.2mm/rev
	ap=2mm f=0.3mm/rev

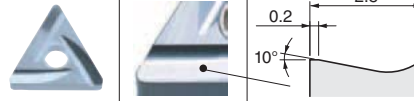
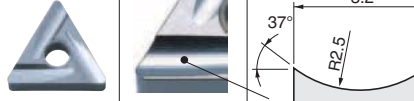
AH Chipbreaker	
	ap=2mm f=0.2mm/rev
	ap=2mm f=0.3mm/rev



# Steel

## 2 Ground Chipbreaker

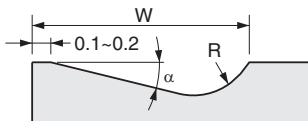
Cutting Range	Name	Design	Advantages
Finishing	S		Sharp edge and less cutting force. Good chip control and smooth chip evacuation.
Finishing-Medium	B		Suitable for general purpose cutting at feed rate 0.15 to 0.25mm/rev.
Medium - Roughing	C		Suitable for general purpose cutting at feed rate 0.20 to 0.35mm/rev.

Cutting Range	Name	Design	Advantages
Roughing	D		Suitable for general purpose cutting at feed rate 0.30 to 0.45mm/rev.
Medium-Roughing / Low Cutting Force	25R		Applicable to sticky material such as low carbon steel. Large rake angle and suitable for stainless steel.

### Effectiveness of ground chipbreaker

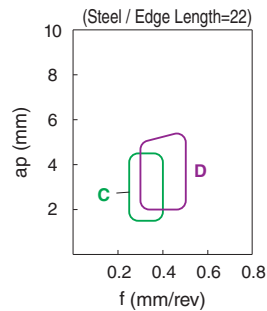
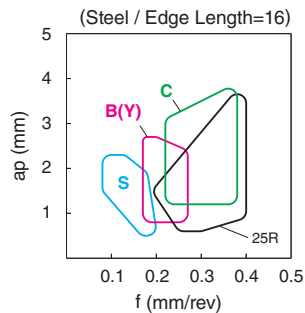
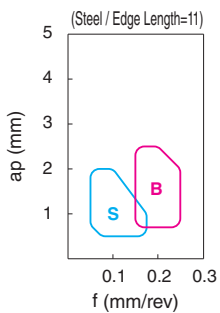
- (1) Lower cutting force and improve edge
- (2) Improved adhesion resistance
- (3) Improved dimension accuracy and finishing surface accuracy
- (4) Controlled chip evacuation direction

### Specification of B, C, D and parallel ground chipbreaker



Insert Type	Size	Chipbreaker Name	W	$\alpha$	R
CNGG	09,12	Without Indication (Similar to C)	2.2	14°	1.0
WNGG	06	Without Indication (Similar to C)	2.2	14°	1.0
TNGG	11,16	B	1.5	14°	0.5
	16,22	C	2.2	14°	1.0
	16,22	D	2.8	10°	1.5
DNGG	11,15	Without Indication (Similar to C)	2.5	14°	2.0
VNGG	16	Without Indication (Similar to B)	1.5	14°	0.5
SNGG	09,12	B	1.5	14°	0.5
	12	C	2.2	14°	1.0

### Applicable Chipbreaker Range (ap indicates radius)



# Chipbreaker Selection (Positive Inserts)

## Steel

### 1 Molded Chipbreaker

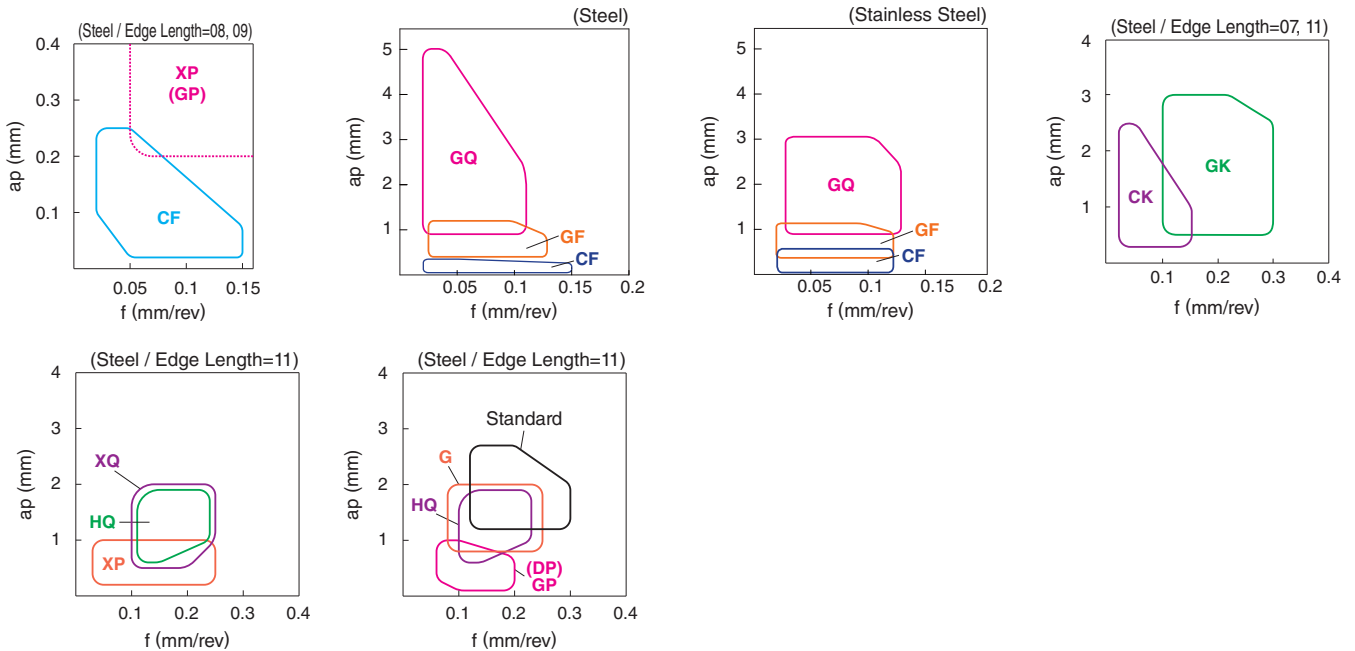
B



Insert (Turning)

Cutting Range	Name	Design		Advantages	Cutting Range	Name	Design		Advantages
Minute ap	CF			Available for minute ap (0.02 to 0.2mm) finishing.	Finishing	DP			Consistent chip breaking performance for finishing.
Finishing	GF			Dot located close to ridge line of cutting edge on corner. Chips fragmented in small pieces in cutting of small ap.	Finishing-Medium	HQ			General purpose chipbreaker for medium cutting.
Finishing-Medium	GQ			Enables cutting over a wide range of conditions by using the optimum chipbreaker width according to the cutting depth.	Finishing	XP			Wide chip control range and sharp cutting performance. Suitable for low carbon steel and sticky material.
Finishing	CK			Good cutting performance. Applicable without hand for two direction cutting on automatic lathe.	Finishing-Medium	XQ			Wide chip control range and sharp cutting performance. Suitable for low carbon steel and sticky material.
Finishing-Medium	GK			Good chip evacuation at wide range by breaker dot and wide chip pocket.	Medium	G			Chipbreaker for short chips at medium cutting.
Finishing	GP			Good chip control at finishing. Applicable to sticky material like low carbon steel, pipe material.	Medium	Standard (without Symbol)			Strong edge chipbreaker for medium cutting range.

### ● Applicable Chipbreaker Range (ap indicates radius)

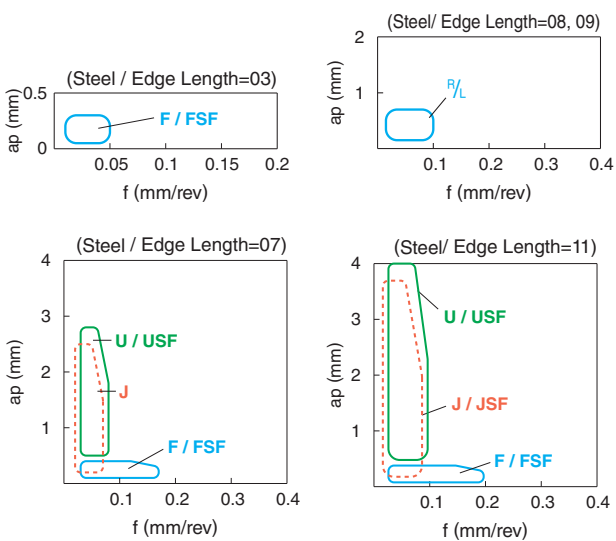


# Steel

## 2 Ground Chipbreaker

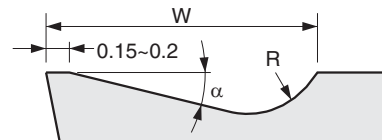
Cutting Range	Name	Design		Advantages
Finishing	Lead (Without Indication)			Good chip control at finishing to light cutting with low cutting force.
Finishing	F			Good chip control at finishing to light cutting with low cutting force.
Medium	Y			Sharp cutting performance and good surface finish.
Low Feed	J			Slant chipbreaker width and chip control at various ap. Suitable for automatic lathes.
Low Feed	U			Good chip control at low feed rate and varied ap with low cutting force.

### ● Applicable Chipbreaker Range (ap indicates radius)

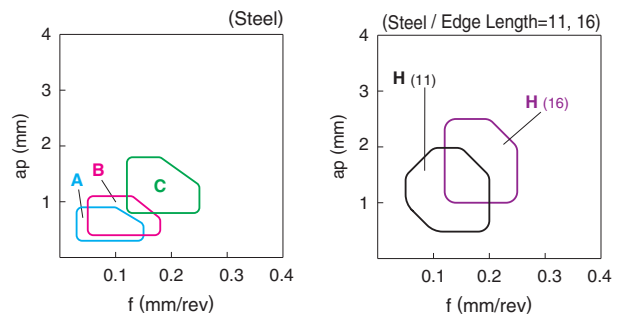


Cutting Range	Name	Design		Advantages
Finishing	A			Large rake angle and low cutting force. Narrow chipbreaker width and consistent chip control.
Finishing-Medium	B			General purpose chipbreaker for medium cutting. Good balance between chip control and sharp cutting.
Medium	C			Applicable to high load cutting. Good chip flow and less resistance.
Medium	H			Sharp cutting performance and small curled chips.

### ● Specification of A, B, C and parallel ground chipbreaker



Insert Type	Size	Chipbreaker Name	W	$\alpha$	R
TPGR	11	A	1.0	17°	0.5
	11,16	B	1.5	14°	0.5
	16	C	2.2	14°	1.0
SPGR	09	Without Indication (Similar to B)	1.5	14°	0.5
	12	Without Indication (Similar to C)	2.2	14°	1.0



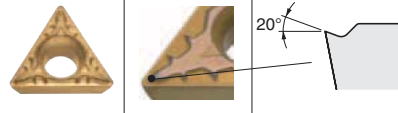
# Chipbreaker Selection (Positive Inserts)

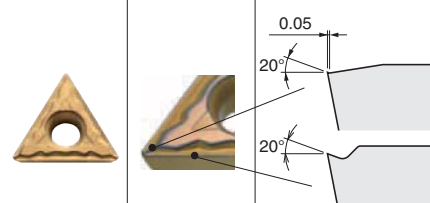
## Low Carbon Steel (Pipe / Rolled Plate / Rolled Steel)

B

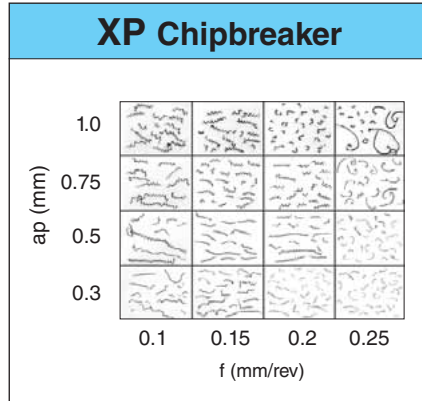
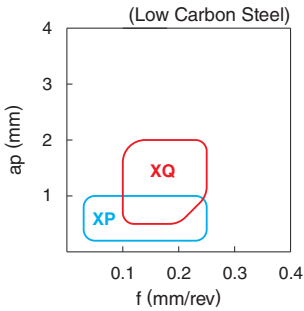


Insert (Turning)

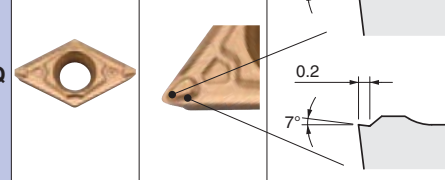
Cutting Range	Name	Design	Advantages
Finishing	XP		Wide chip control range and sharp cutting performance. Suitable for low carbon steel and sticky material.

Cutting Range	Name	Design	Advantages
Finishing-Medium	XQ		Wide chip control range and sharp cutting performance. Suitable for low carbon steel and sticky material.

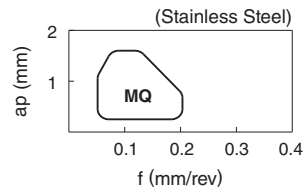
### Applicable Chipbreaker Range (ap indicates radius)



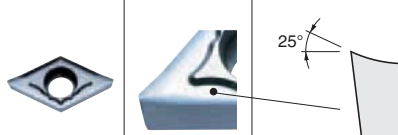
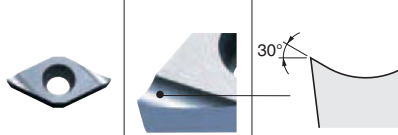
## Stainless Steel

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

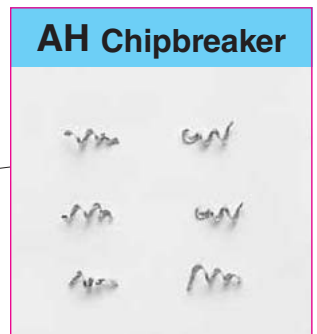
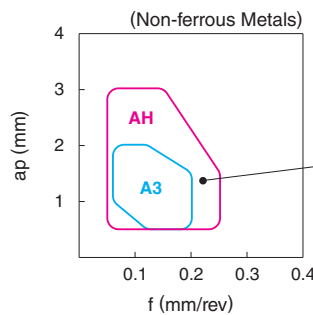
### Applicable Chipbreaker Range (ap indicates radius)



## Non-ferrous Metals

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

### Applicable Chipbreaker Range (ap indicates radius)



# How to read pages of "Turning Inserts"

## How to read pages of "Turning Inserts"

- Ref. to below for page contents of "Turning Inserts"
- Some contents are same in Chapter C

**Classification of usage**

✱ : Interruption / 1st Choice  
 ✳ : Interruption / 2nd Choice  
 ● : Light Interruption / 1st Choice  
 ○ : Light Interruption / 2nd Choice  
 ● : Continuous / 1st Choice  
 ○ : Continuous / 2nd Choice  
 (In case hardness is under 45HRC)

**Recommended grades for each applications are shown here.**

### Turning Indexable Inserts

How to read pages of "Turning Inserts" B13

**80° Rhombic / Negative with Hole**

	(mm)			(mm)			
Description	A	T	$\phi d$	Description	A	T	$\phi d$
CN 0904	9.525	4.76	3.81	CN 1606	15.875	6.35	6.35
CN 1204	12.70	4.76	5.16	CN 1906	19.05	6.35	7.94

Insert Corner-R( $r_c$ )

Insert Shape

Insert descriptions

Explanation for inserts

**Example**

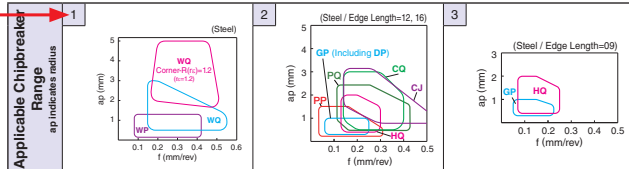
Handed Insert shows Right-hand		Handed insert shows Left-hand	

Application / Recommended workpiece material

Insert Appearance Image Ref. Page B3 for insert color.

Applicable Chipbreaker Range No.

Insert	Description	Dimension (mm)	Material / Coating																	Applicable Chipbreaker Range			
			Cermet	PVD Cermet	MEGACOAT Cermet	CVD Coated Carbide					PVD Coated Carbide	MEGACOAT		Carbide	Ref. Page for Applicable Toolholder	Applicable Chipbreaker Range							
CNMG Finishing	120404WP	0.4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	1
	120408WP	0.8	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	1
	120404WQ 120408WQ 120412WQ	0.4 0.8 1.2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	1
CNGG Finishing	120404DP	0.4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	2
	120408DP	0.8	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	2
	120402PP 120404PP 120408PP 120412PP	0.2 0.4 0.8 1.2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	2
CNMG Finishing-Medium	090404GP	0.4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	3
	090408GP	0.8	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	3
	120402GP 120404GP 120408GP	0.2 0.4 0.8	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	2
CNMG Finishing-Medium	120404PQ	0.4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	2
	120408PQ	0.8	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	2
	120412PQ	1.2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	2
CNMG Finishing-Medium	090404HQ	0.4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	3
	090408HQ	0.8	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	3
	120404HQ 120408HQ 120412HQ	0.4 0.8 1.2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	2
CNMG Finishing-High	120404CQ	0.4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	2
	120408CQ	0.8	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	2
	120412CQ	1.2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	2
CNMG Finishing-High	160608CQ	0.8	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	D8
	160612CQ	1.2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	D8



**B14** ●: Std. Item R : Std. Item (Right-hand Only) L : Std. Item (Left-hand Only) □ : Deleted from the next catalogue

Inserts are sold in 10 piece boxes

Stock

Purchase unit

Applicable Toolholder

Applicable range map No.

**B**



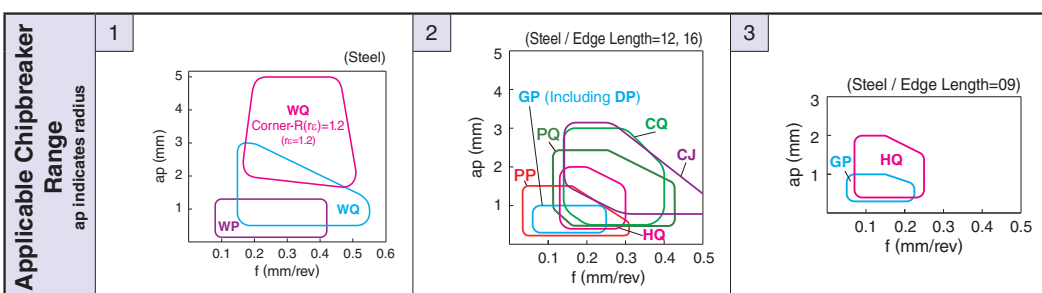
Insert (Turning)

## 80° Rhombic / Negative with Hole

Description	(mm)			Description	(mm)		
	A	T	$\phi d$		A	T	$\phi d$
CN_0904_	9.525	4.76	3.81	CN_1606_	15.875	6.35	6.35
CN_1204_	12.70	4.76	5.16	CN_1906_	19.05	6.35	7.94

Material	P	M	K	N	S	H
Free-cutting steel	●					
Carbon Steel / Alloy Steel	●	●	●	●	●	●
Stainless Steel	●	●	●	●	●	●
Gray Cast Iron			●	●	●	●
Nodular Cast Iron			●	●	●	●
Non-ferrous Metals					●	
Heat-resistant Alloys					●	
Titanium Alloys					●	
Hard Materials						

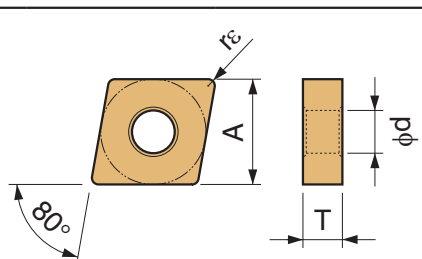
Insert	Description	Dimension (mm)	Material													Ret. Page for Applicable Toolholders	Applicable Chipbreaker Range																			
			Cermets			CVD Coated Carbide				PVD Coated Carbide		MEGACOAT MEGACOAT NANO		Carbide																						
$r_e$			TN6010	TN6020	TN60	PV90	PV7020	PV7005	PV7010	PV7025	CA515	CA525	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA4505	CA4515	CA4010	CA4115	CA4120	PR930	PR1005	PR1025	PR1125	PR1425	PR1225	PR1305	PR1310	PR1325	KW10	SW05		
With Wiper Edge	Finishing	0.4	●			●	●	●	●	●	●	●	●	●	●																					
0.8		●			●	●	●	●	●	●	●	●	●	●	●	●																				
With Wiper Edge	Finishing-Medium	0.4	●	●	●	●	●	●	●	●	●	●	●	●	●																					
0.8		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●																	
1.2		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●																	
Finishing	Finishing	0.4		●																																
0.8			●																																	
Finishing	Finishing	0.2	●	●																																
0.4		●	●																																	
0.8		●	●																																	
1.2		●	●																																	
Finishing	Finishing	0.4		●	●																															
0.8			●	●																																
0.2		●	●																																	
0.4		●	●																																	
Finishing-Medium	Finishing-Medium	0.4	●	●																																
0.8		●	●																																	
0.8		●	●																																	
1.2		●	●																																	
Finishing-Medium	Finishing-Medium	0.4		●	●																															
0.8			●	●																																
0.8			●	●																																
1.2			●	●																																
Finishing-Medium / Up Facing	Finishing-Medium / Up Facing	0.4	●	●	●	●																														
0.8		●	●	●	●																															
0.8		●	●	●	●																															
1.2		●	●	●	●																															
Finishing-Medium / Up Facing	Finishing-Medium / Up Facing	0.8																																		
1.2																																				



Inserts are sold in 10 piece boxes

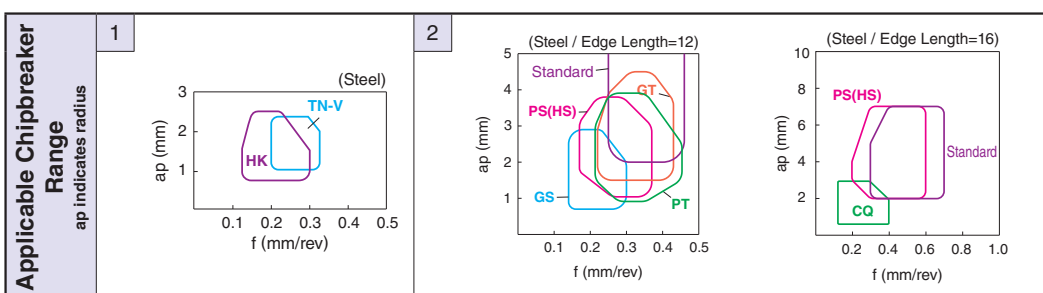
80° Rhombic / Negative with Hole

Description	(mm)			Description	(mm)		
	A	T	φd		A	T	φd
CN_0904_	9.525	4.76	3.81	CN_1606_	15.875	6.35	6.35
CN_1204_	12.70	4.76	5.16	CN_1906_	19.05	6.35	7.94



Material	P	M	K	N	S	H
Free-cutting steel	●					
Carbon Steel / Alloy Steel	○					
Stainless Steel		●				
Gray Cast Iron			●			
Nodular Cast Iron			○			
Non-ferrous Metals				●		
Heat-resistant Alloys					○	
Titanium Alloys						○
Hard Materials						

Insert	Description	Dimension (mm)	Material														Rel. Page for Applicable Toolholders	Applicable Chipbreaker Range																			
			Cermet			PVD Cermet		MEGACOAT Cermet		CVD Coated Carbide						PVD Coated Carbide			MEGACOAT MEGACOAT NANO		Carbide																
rε			TN6010	TN6020	TN60	PV90	PV7020	PV7005	PV7010	PV7025	CA515	CA525	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA4505	CA4515	CA4010	CA4115	CA4120	PR930	PR1005	PR1025	PR1125	PR1425	PR1225	PR1305	PR1310	PR1325	KW10	SW05			
Finishing-Medium / Up Facing	CNMG 120408CJ 120412CJ	0.8									●	●	●	●	●	●																				D8 F60 F64	B14 2
		1.2										●	●	●	●	●	●																			D8	
Medium	CNMG 120404HK 120408HK	0.4			●																															D8	1
		0.8			●																															F60	
Medium	CNMG 120404TN-V 120408TN-V	0.4			●																															F64	1
		0.8			●																																
Medium-Roughing	CNMG 090404GS 090408GS	0.4			●	●					●	●	●	●	●	●																				D8	F64
		0.8			●	●						●	●	●	●	●	●																			F64	
Medium-Roughing	CNMG 120404PS 120408PS 120412PS 120416PS	0.4	●						●	●	●	●	●	●	●	●	●	●	●																	D8	F60 F64
		0.8	●						●	●	●	●	●	●	●	●	●	●	●	●																	
Medium-Roughing	CNMG 120404HS 120408HS 120412HS 120416HS	0.4		●	●	●	●							●	●	●																				D8	F60 F64
		0.8		●	●	●	●							●	●	●																				F64	
Medium-Roughing	CNMG 160612HS	1.2																																		D8	2
		1.6																																			
Medium-Roughing / High Feed Rate	CNMG 120408PT 120412PT	0.8									●	●	●	●	●	●	●	●	●																	D8	F60 F64
		1.2										●	●	●	●	●	●	●	●	●																F64	
Medium-Roughing / High Feed Rate	CNMG 160608PT 160612PT 160616PT	0.8									●	●	●	●	●	●	●	●	●																	D8	
		1.2										●	●	●	●	●	●	●	●	●																	
Medium-Roughing / High Feed Rate	CNMG 120408GT 120412GT	0.8				●	●				●	●	●	●	●	●																				D8	F60 F64
		1.2				●	●					●	●	●	●	●	●																			F64	



● : Std. Item R : Std. Item (Right-hand Only) L : Std. Item (Left-hand Only) □ : Deleted from the next catalogue

Inserts are sold in 10 piece boxes

# Turning Indexable Inserts

How to read pages of "Turning Inserts" B13

## 80° Rhombic / Negative with Hole

	(mm)			(mm)			
Description	A	T	φd	Description	A	T	φd
CN_0904_	9.525	4.76	3.81	CN_1606_	15.875	6.35	6.35
CN_1204_	12.70	4.76	5.16	CN_1906_	19.05	6.35	7.94

B



Negative

C

D

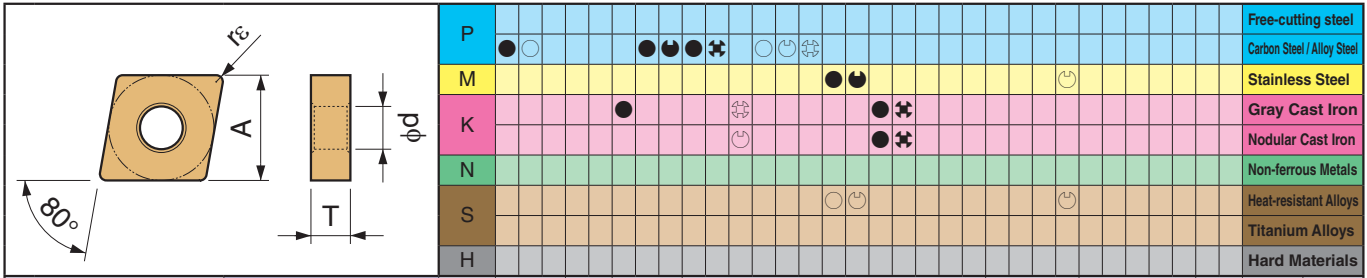
R


S

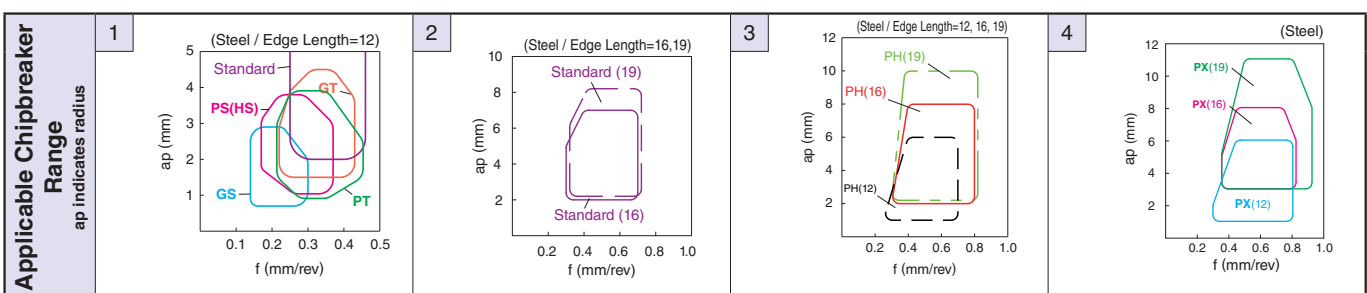
T

W

Insert (Turning)



Insert	Description	Dimension (mm)	rε	Cermet										CVD Coated Carbide										Carbide		Rel. Page for Applicable Toolholders	Applicable Chipbreaker Range														
				TN6010	TN6020	TN60	PV90	PV7020	PV7005	PV7010	PV7025	CA515	CA525	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA4505	CA4515	CA4010	CA4115	CA4120	PR30			PR1005	PR1025	PR1125	PR1425	PR1225	PR1305	PR1310	PR1325	KW10	SW05				
	CNMG 120404 120408 120412 120416	0.4 0.8 1.2 1.6	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○					●									D8	1			
			CNMG 160608 160612 160616	0.8 1.2 1.6						●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○															D8	
				CNMG 190608 190612 190616	0.8 1.2 1.6							●	●	●	●	●	●	●	●	●	●	●	●	○	○	○															-
					CNMG 120408PH 120412PH 120416PH	0.8 1.2 1.6							●	●	●	●	●	●	●	●	●	●	●	●	○	○	○														
	CNMG 160608PH 160612PH 160616PH	0.8 1.2 1.6									●	●	●	●	●	●	●	●	●	●	●	○	○	○															D8		
		CNMG 190608PH 190612PH 190616PH 190624PH	0.8 1.2 1.6 2.4									●	●	●	●	●	●	●	●	●	●	●	○	○	○															-	
	CNMM 120408PX 120412PX 120416PX		0.8 1.2 1.6										●	●	●	●	●	●	●	●	●	●	○	○	○																D8 F60 F64
				CNMM 160608PX 160612PX 160616PX			0.8 1.2 1.6								●	●	●	●	●	●	●	●	●	○	○	○															
		CNMM 190608PX 190612PX 190616PX 190624PX			0.8 1.2 1.6 2.4								●	●	●	●	●	●	●	●	●	●	○	○	○																-

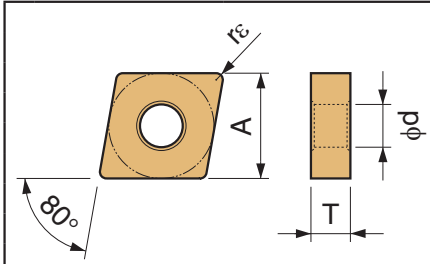









Inserts are sold in 10 piece boxes



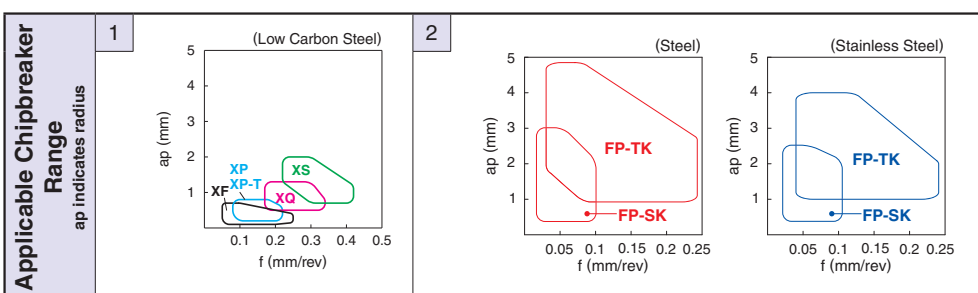
80° Rhombic / Negative with Hole

Description	(mm)			Description	(mm)		
	A	T	φd		A	T	φd
CN_0904_	9.525	4.76	3.81	CN_1606_	15.875	6.35	6.35
CN_1204_	12.70	4.76	5.16	CN_1906_	19.05	6.35	7.94



Insert	Description	Dimension (mm)													Rel. Page for Applicable Toolholders	Applicable Chipbreaker Range																			
		Cermert			PVD Cermert		MEGACOAT Cermert		CVD Coated Carbide								PVD Coated Carbide		MEGACOAT MEGACOAT NANO		Carbide														
		rn6010	tn6020	tn60	pn90	pv7020	pv7005	pv7010	pv7025	ca515	ca525	ca5505	ca5515	ca5525			ca5535	ca6515	ca6525	ca4505	ca4515	ca4010	ca4115	ca4120	pr930	pr1005	pr1025	pr1125	pr1425	pr1225	pr1305	pr1310	pr1325	kw10	sw05
Low Carbon Steel	 <p><b>NEW</b> Finishing / Small ap</p>	0.4	•					•	•																								D8 F60 F64	1	
		0.8	•					•	•																										
	 <p>Finishing</p>	0.4	•	•	•	•	•	•	•	•																									
		0.8	•	•	•	•	•	•	•	•	•	•	•																						
	 <p>Finishing / Tough Edge</p>	0.4		•	•																														
		0.8		•	•																														
 <p>Medium</p>	0.4	•	•	•	•		•	•	•	•	•	•	•																						
	0.8	•	•	•	•		•	•	•	•	•	•	•																						
 <p>Roughing</p>	0.8	•	•	•	•		•	•	•	•	•																								
	0.4	•																																	
Finishing-Medium	 <p><b>NEW</b> Sharp Edge / Polished</p>	<0.2																															D8 E40 F60 F64	2	
		<0.4																																	
Medium-Roughing	 <p>Sharp Edge / Polished</p>	0.4																																	
		0.8																																	

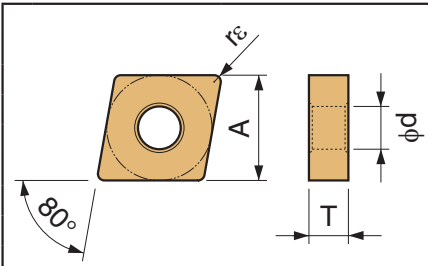
Insert whose corner-R (r<sub>c</sub>) dimension expressed with less than sign (e.g. <0.05, <0.1, <0.2 etc.) indicate models with minus tolerance for corner-R (r<sub>c</sub>).



# Turning Indexable Inserts

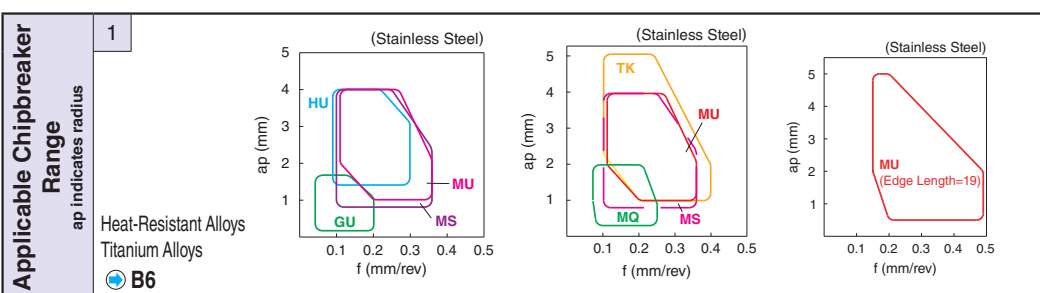
## 80° Rhombic / Negative with Hole

Description	(mm)			Description	(mm)		
	A	T	φd		A	T	φd
CN_0904_	9.525	4.76	3.81	CN_1606_	15.875	6.35	6.35
CN_1204_	12.70	4.76	5.16	CN_1906_	19.05	6.35	7.94



	P	M	K	N	S	H	
Free-cutting steel							
Carbon Steel / Alloy Steel							
Stainless Steel		●	●				
Gray Cast Iron							
Nodular Cast Iron							
Non-ferrous Metals							
Heat-resistant Alloys					○	○	●
Titanium Alloys							●
Hard Materials							

Insert	Description	Dimension (mm)	Material													Ret. Page for Applicable Toolholders	Applicable Chipbreaker Range																						
			Cermet			PVD Cermet		MEGACOAT Cermet		CVD Coated Carbide								PVD Coated Carbide		MEGACOAT MEGACOAT NANO		Carbide																	
		rε	TN6010	TN6020	TN60	PV90	PV7020	PV7005	PV7010	PV7025	CA515	CA525	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA4505	CA4515	CA4010	CA4115	CA4120	PR930	PR1005	PR1025	PR1125	PR1425	PR1225	PR1305	PR1310	PR1325	KW10	SW05					
Heat-Resistant Alloys	CNGG 120404TK 120408TK	0.4																																				D8 F60 F64	1
		0.8																																					
Stainless Steel	CNMG 120404TK 120408TK	0.4 0.8															●	●																			D8 F64	1	
Stainless Steel	CNMG 120404GU 120408GU	0.4 0.8															●	●																					
Stainless Steel	CNMG 120408HU 120412HU	0.8 1.2													●		●	●																			D8 F64	1	
Stainless Steel	CNMG 120404MQ 120408MQ	0.4 0.8															●	●																					
Heat-Resistant Alloys	CNMG 120404MS 120408MS 120412MS 120416MS	0.4															●	●																			D8 F64	1	
		0.8																●	●																				
		1.2																	●	●																			
		1.6																		●	●																		
Stainless Steel	CNMG 120404MU 120408MU 120412MU	0.4																●	●																		D8	-	
		0.8																	●	●																			
		1.2																		●	●																		
		1.6																			●	●																	
Heat-Resistant Alloys	CNMG 160608MU 160612MU 160616MU	0.8																●	●																		D8	-	
		1.2																		●	●																		
		1.6																			●	●																	
		1.6																				●	●																
Heat-Resistant Alloys	CNMG 190612MU 190616MU	1.2																																			-	-	
		1.6																																					

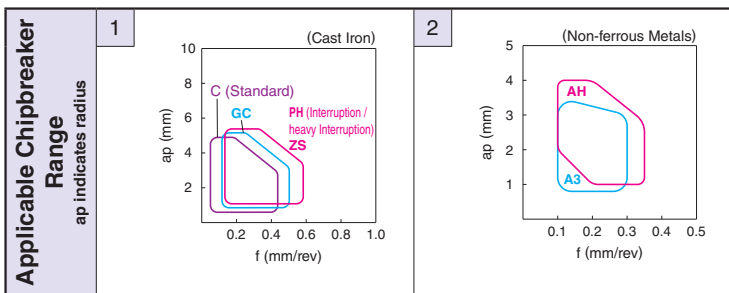


Inserts are sold in 10 piece boxes

80° Rhombic / Negative with Hole

Description	(mm)			Description	(mm)		
	A	T	$\phi d$		A	T	$\phi d$
CN_0904_	9.525	4.76	3.81	CN_1606_	15.875	6.35	6.35
CN_1204_	12.70	4.76	5.16	CN_1906_	19.05	6.35	7.94

Insert	Description	Dimension (mm)	$r_{\epsilon}$	Material																		Ref. Page for Applicable Toolholders	Applicable Chipbreaker Range													
				Cermet						CVD Coated Carbide						PVD Coated Carbide		MEGACOAT MEGACOAT NANO		Carbide																
				TN6010	TN6020	TN60	PV90	PV7020	PV7005	PV7010	PV7025	CA515	CA525	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA4505	CA4515			CA4010	CA4115	CA4120	PR930	PR1005	PR1025	PR1125	PR1425	PR1225	PR1305	PR1310	PR1325	KW10
Cast Iron Roughing	CNMG 120404C 120408C 120412C 120416C	0.4																																D8		
		0.8																																F60		
		1.2																																F64		
		1.6																																		
Cast Iron Roughing	CNMG 160612C	1.2																																D8		
Cast Iron Roughing	CNMG 120408ZS 120412ZS	0.8																																1		
		1.2																																		
Cast Iron Roughing	CNMG 120408GC 120412GC	0.8																																		
		1.2																																		
Cast Iron Without Chipbreaker	CNGA 120404 120408	0.4																																		
		0.8																																		
	CNMA 120404 120408 120412 120416	0.4																																		
		0.8																																		
Non-ferrous Metals Finishing-Medium / Sharp Edge	CNGG 120404 <sup>PH</sup> -A3 120408 <sup>PH</sup> -A3	0.4																																		
		0.8																																		
Non-ferrous Metals Medium-Roughing / Sharp Edge	CNGG 120404AH 120408AH	0.4																																		
		0.8																																		
Non-ferrous Metals Medium-Roughing / With Horning	CNMG 120404AH 120408AH	0.4																																		
		0.8																																		



● : Std. Item R : Std. Item (Right-hand Only) L : Std. Item (Left-hand Only) □ : Deleted from the next catalogue

Inserts are sold in 10 piece boxes

# Turning Indexable Inserts

How to read pages of "Turning Inserts" B13

## 80° Rhombic / Negative with Hole

Description	(mm)			Description	(mm)		
	A	T	φd		A	T	φd
CN_0904_	9.525	4.76	3.81	CN_1606_	15.875	6.35	6.35
CN_1204_	12.70	4.76	5.16	CN_1906_	19.05	6.35	7.94

B

Negative

C

D

R

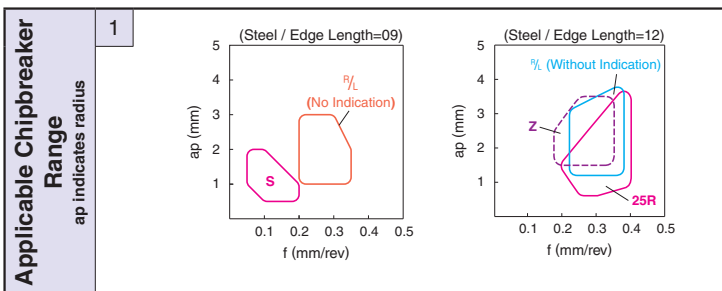
S

T

W

Insert (Turning)

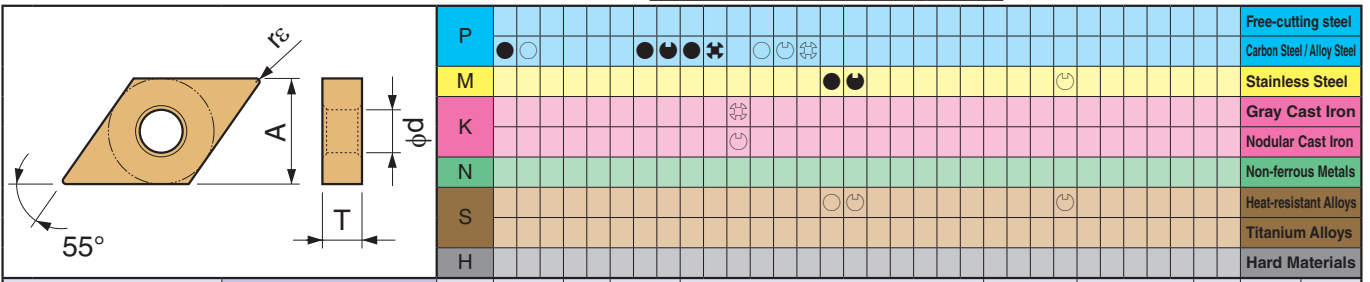
Insert	Description	Dimension (mm)	Material																								Rel. Page for Applicable Toolholders	Applicable Chipbreaker Range						
			Cermet						PVD MEGACOAT						CVD Coated Carbide						PVD MEGACOAT		Carbide											
			TN6010	TN6020	TN60	PV90	PV7020	PV7005	PV7010	PV7025	CA515	CA525	CA505	CA515	CA525	CA535	CA6515	CA6525	CA4505	CA4515	CA4010	CA4115	CA4120	PR930	PR1005	PR1025			PR1125	PR1425	PR1225	PR1305	PR1310	PR1325
	CNGG 090402 <sup>R/L</sup> -S	0.2	●																															D8 F64
	CNGG 090404 <sup>R/L</sup> -S	0.4	●		●	R																											D8 F64	
	CNGG 090408 <sup>R/L</sup> -S	0.8	●		●	R																												
	CNGG 120404 <sup>R/L</sup>	0.4																																
	CNGG 090404 <sup>R/L</sup>	0.4																																1
	CNGG 120404 <sup>R/L</sup>	0.8	●	●	●																													
	CNGG 120404 <sup>R/L</sup> -25R	0.4	●		●																													D8 F60 F64
	CNGG 120408 <sup>R/L</sup> -25R	0.8	●		●																													
	CNGG 120404Z	0.4			●																													



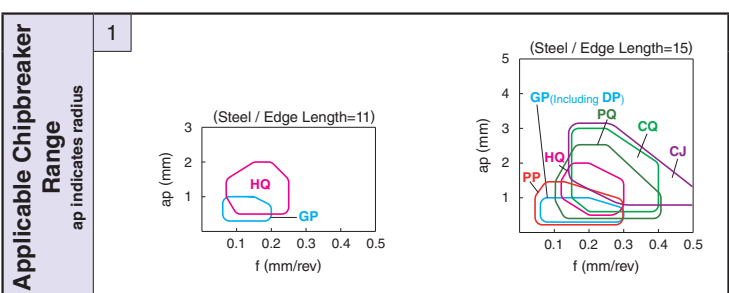
Inserts are sold in 10 piece boxes

55° Rhombic / Negative with Hole

Description	(mm)			Description	(mm)		
	A	T	$\phi d$		A	T	$\phi d$
DN_1104_	9.525	4.76	3.81	DN_1506_	12.70	6.35	5.16
DN_1504_	12.70	4.76	5.16				



Insert	Description	Dimension (mm)	Material													Rel. Page for Applicable Toolholders	Applicable Chipbreaker Range																			
			Cermet			PVD Cermet		MEGACOAT Cermet		CVD Coated Carbide								PVD Coated Carbide		MEGACOAT MEGACOAT NANO		Carbide														
r $\epsilon$			TN6010	TN6020	TN60	PV90	PV7020	PV7005	PV7010	PV7025	CA515	CA525	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA4505	CA4515	CA4010	CA4115	CA4120	PR930	PR1005	PR1025	PR1125	PR1425	PR1225	PR1305	PR1310	PR1325	KW10	SW05		
Finishing		DNMG 150404DP 150408DP	0.4 0.8		•																															D10 D11 F61 F66
Finishing		DNMG 150602PP 150604PP 150608PP 150612PP	0.2 0.4 0.8 1.2	•	•			•	•	•	•	•	•	•	•																				D10 D11 F61	
Finishing		DNMG 110404GP 110408GP	0.4 0.8		•	•					•	•	•	•																					D11 F65	
Finishing		DNMG 150602GP 150604GP 150608GP	0.2 0.4 0.8	•	•	•	•		•	•	•	•	•	•	•																				D10 D11 F61 F66	
Finishing-Medium		DNMG 150602GP 150604GP 150608GP	0.2 0.4 0.8	•	•	•		•	•																										D10 D11 F61	
Finishing-Medium		DNMG 150404PQ 150408PQ 150412PQ	0.4 0.8 1.2	•	•				•	•	•	•	•	•	•																				D10 D11 F61 F66	
Finishing-Medium		DNMG 150604PQ 150608PQ 150612PQ	0.4 0.8 1.2	•	•				•	•	•	•	•	•	•																				D10 D11 F61	
Finishing-Medium		DNMG 110402HQ 110404HQ	0.2 0.4		•	•					•	•	•	•																					D11 F65	
Finishing-Medium		DNMG 150404HQ 150408HQ 150412HQ	0.4 0.8 1.2	•	•	•	•		•	•	•	•	•	•	•	•	•	•									•								D10 D11 F61 F66	
Finishing-Medium		DNMG 150604HQ 150608HQ 150612HQ	0.4 0.8 1.2	•	•				•	•	•	•	•	•	•	•	•	•									•								D10 D11 F61	



B

Negative

C

D

R

S

T

V

W

Insert (Turning)

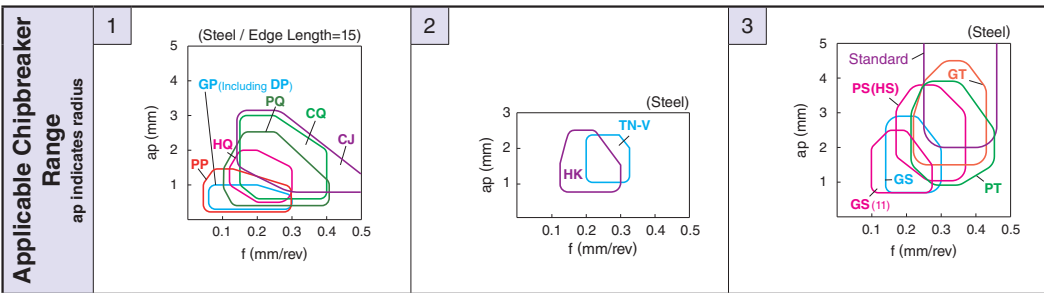
# Turning Indexable Inserts

How to read pages of "Turning Inserts" B13

## 55° Rhombic / Negative with Hole

Description	(mm)			Description	(mm)		
	A	T	φd		A	T	φd
DN_1104_	9.525	4.76	3.81	DN_1506_	12.70	6.35	5.16
DN_1504_	12.70	4.76	5.16				

Insert	Description	Dimension (mm)	CVD Coated Carbide												Carbide	Rel. Page for Applicable Toolholders	Applicable Chipbreaker Range																				
			Cermet			PVD Cermet		MEGACOAT Cermet		CVD Coated Carbide								PVD Coated Carbide		MEGACOAT MEGACOAT NANO																	
		rε	TN6010	TN6020	TN60	PV90	PV7020	PV7005	PV7010	PV7025	CA515	CA525	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA4505	CA4515	CA4010	CA4115	CA4120	PR930	PR1005	PR1025	PR1125	PR1425	PR1225	PR1305	PR1310	PR1325	KW10	SW05			
	DNMG 150404CQ 150408CQ 150412CQ	0.4 0.8 1.2	●●●	●●●	●●●	●●●	●●●	●●●	●●●	●●●	●●●	●●●	●●●	●●●	●●●	●●●																				D10 D11 F61 F66	1
	DNMG 150604CQ 150608CQ 150612CQ	0.4 0.8 1.2	●						●			●●●	●●●	●●●	●●●	●●●																				D10 D11 F61	
	DNMG 150408CJ 150412CJ	0.8 1.2									●●●	●●●	●●●	●●●	●●●																					D10 D11 F61 F66	2
	DNMG 150608CJ 150612CJ	0.8 1.2									●●●	●●●	●●●	●●●	●●●																					D10 D11 F61	
	DNMG 150404HK 150408HK	0.4 0.8			●																															D10 D11 F61 F66	3
	DNMG 150404TN-V 150408TN-V	0.4 0.8			●																															D10 D11 F61 F66	
	DNMG 110404GS 110408GS	0.4 0.8			●●						●●	●●	●●	●●	●●																					D11 F65	3
	DNMG 150404GS 150408GS 150412GS	0.4 0.8 1.2			●●	●●				●●	●●	●●	●●	●●	●●																					D10 D11 F61 F66	
	DNMG 150604GS 150608GS	0.4 0.8			●							●																								D10 D11 F61	
	DNMG 150404PS 150408PS 150412PS 150416PS	0.4 0.8 1.2 1.6	●						●●●	●●●	●●●	●●●	●●●	●●●	●●●	●●●	●●●	●●●										●								D10 D11 F61 F66	3
	DNMG 150604PS 150608PS 150612PS 150616PS	0.4 0.8 1.2 1.6	●						●●●	●●●	●●●	●●●	●●●	●●●	●●●	●●●	●●●	●●●	●●●									●								D10 D11 F61 F66	



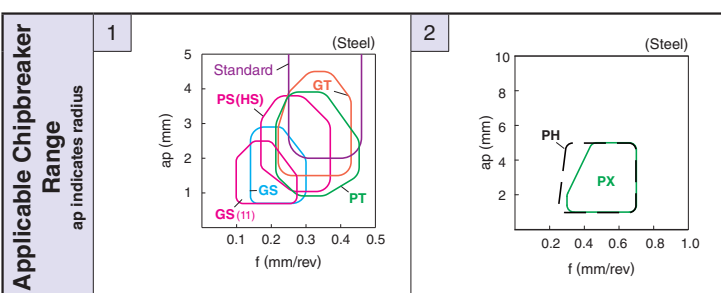
Inserts are sold in 10 piece boxes

■ 55° Rhombic / Negative with Hole

	(mm)			(mm)			
Description	A	T	φd	Description	A	T	φd
DN_1104_	9.525	4.76	3.81	DN_1506_	12.70	6.35	5.16
DN_1504_	12.70	4.76	5.16				

Material	Availability
Free-cutting steel	● ○
Carbon Steel / Alloy Steel	
Stainless Steel	
Gray Cast Iron	●
Nodular Cast Iron	●
Non-ferrous Metals	
Heat-resistant Alloys	
Titanium Alloys	
Hard Materials	

Insert	Description	Dimension (mm)	CVD Coated Carbide													Rel. Page for Applicable Toolholders	Applicable Chipbreaker Range																				
			Cermet			PVD Cermet			MEGACOAT Cermet			PVD Coated Carbide			MEGACOAT MEGACOAT NANO			Carbide																			
rε			TN6010	TN6020	TN60	PV90	PV7020	PV7005	PV7010	PV7025	CA515	CA525	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA4505	CA4515	CA4010	CA4115	CA4120	PR930	PR1005	PR1025	PR1125	PR1425	PR1225	PR1305	PR1310	PR1325	KW10	SW05			
Medium-Roughing	 DNMG 150404HS 150408HS 150412HS	0.4	●	●	●									●	●																						
		0.8	●	●	●										●	●																					
		1.2	●	●	●										●	●																					
	 DNMG 150604HS 150608HS 150612HS	0.4			●																																
		0.8			●																																
		1.2			●																																
Medium-Roughing / High Feed Rate	 DNMG 150408PT 150412PT	0.8												●	●																						
		1.2												●	●																						
	 DNMG 150608PT 150612PT	0.8												●	●																						
		1.2												●	●																						
Medium-Roughing / High Feed Rate	 DNMG 150408GT 150412GT	0.8			●								●	●																							
		1.2			●									●	●																						
	 DNMG 150608GT 150612GT	0.8				□								●	●																						
		1.2												●	●																						
Roughing	 DNMG 150404 150408 150412	0.4	●	●	●															●	●																
		0.8	●	●	●																●	●															
		1.2	●	●	●																●	●															
	 DNMG 150604 150608 150612	0.4					●														●	●															
0.8						●														●	●																
1.2						●														●	●																
Roughing	 DNMG 150408PH 150412PH 150416PH	0.8																		●	●																
		1.2																		●	●																
		1.6																			●	●															
	 DNMG 150608PH 150612PH 150616PH	0.8																		●	●																
1.2																			●	●																	
1.6																			●	●																	
Single Side / Roughing / High Feed Rate	 DNMM 150408PX 150412PX 150416PX	0.8																																			
		1.2																																			
		1.6																																			
	 DNMM 150608PX 150612PX 150616PX	0.8																																			
1.2																																					
1.6																																					



Inserts are sold in 10 piece boxes

# Turning Indexable Inserts

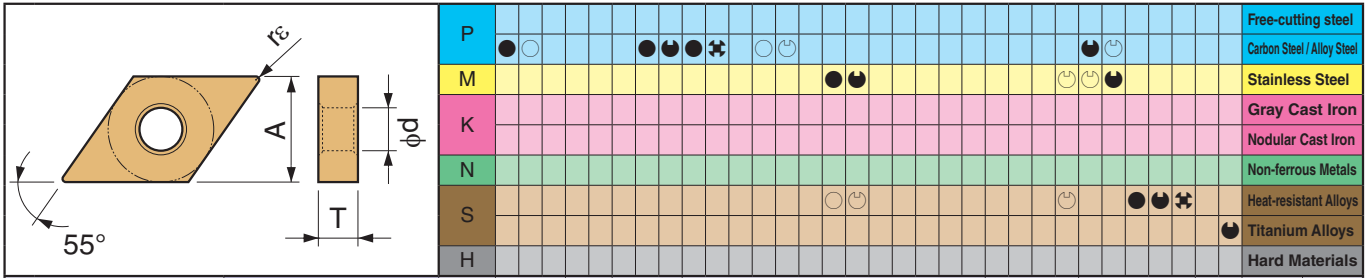
How to read pages of "Turning Inserts" **B13**

## 55° Rhombic / Negative with Hole

Description	A	T	$\phi d$
DN_1104_	9.525	4.76	3.81
DN_1504_	12.70	4.76	5.16

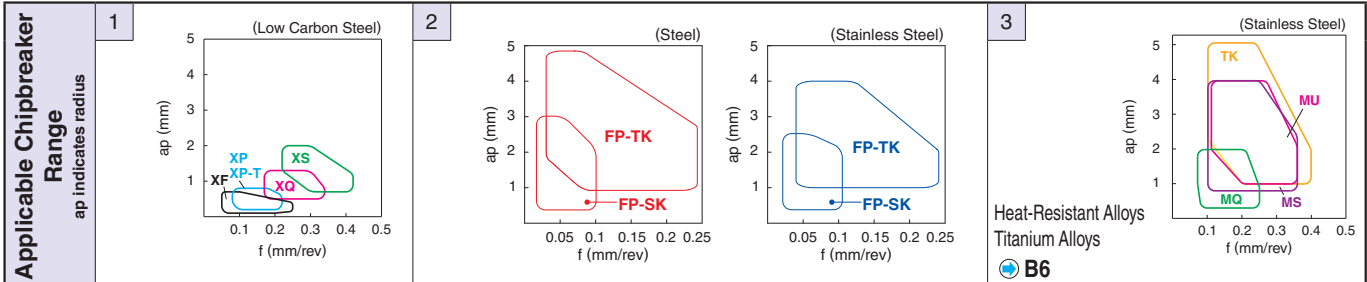
Description	A	T	$\phi d$
DN_1506_	12.70	6.35	5.16

- B
- Negative
- C
- D
- R
- S
- T
- V
- W
- Insert (Turning)



Insert	Description	Dimension (mm)	CVD Coated Carbide														Carbide	Ret. Page for Applicable Toolholders	Applicable Chipbreaker Range																		
			Cermet			PVD Cermet		MEGACOAT Cermet		CVD Coated Carbide																											
$r_e$			TN6010	TN6020	TN60	PV90	PV7020	PV7005	PV7010	PV7025	CA515	CA525	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA4505	CA4515	CA4010	CA4115	CA4120	PR930	PR1005	PR1025	PR1125	PR1425	PR1225	PR1305	PR1310	PR1325	KW10	SW05			
Low Carbon Steel	<b>NEW</b> Finishing / Small ap	DNMG 150404XF 150408XF	0.4 0.8	●				●	●																										D10 D11 F61 F66		
Low Carbon Steel	Finishing	DNMG 150404XP 150408XP	0.4 0.8	●	●	●	●	●	●	●	●	●	●	●	●																				D10 D11 F61		
Low Carbon Steel	Finishing / Tough Edge	DNMG 150404XP-T 150408XP-T	0.4 0.8			●	●																												D10 D11 F61 F66	1	
Low Carbon Steel	Medium	DNMG 150404XQ 150408XQ	0.4 0.8	●	●	●	●	●	●	●	●	●	●	●	●																				D10 D11 F61		
Low Carbon Steel	Roughing	DNMG 150408XS	0.8	●	●		●	●		●	●	●	●																								
Finishing-Medium	<b>NEW</b> Sharp Edge / Polished	DNGG 150402MFP-SK 150404MFP-SK	<0.2 <0.4																																D10 D11 F61 F66	2	
Medium-Roughing	Sharp Edge / Polished	DNGG 150404FP-TK 150408FP-TK	0.4 0.8																																		
Medium-Roughing / Sharp Edge		DNGG 150404TK 150408TK	0.4 0.8																																	D10 D11 F61	
Stainless Steel / Heat-Resistant Alloys	Medium-Roughing	DNGG 150604TK 150608TK	0.4 0.8																																	D10 D11 F61	
Stainless Steel	Medium-Roughing	DNMG 150404TK 150408TK	0.4 0.8														●	●																		D10 D11 F61 F66	3
Stainless Steel	Medium-Roughing	DNMG 150604TK 150608TK	0.4 0.8														●	●																		D10 D11 F61	

Insert whose corner-R ( $r_c$ ) dimension expressed with less than sign (e.g. <0.05, <0.1, <0.2 etc.) indicate models with minus tolerance for corner-R ( $r_c$ ).



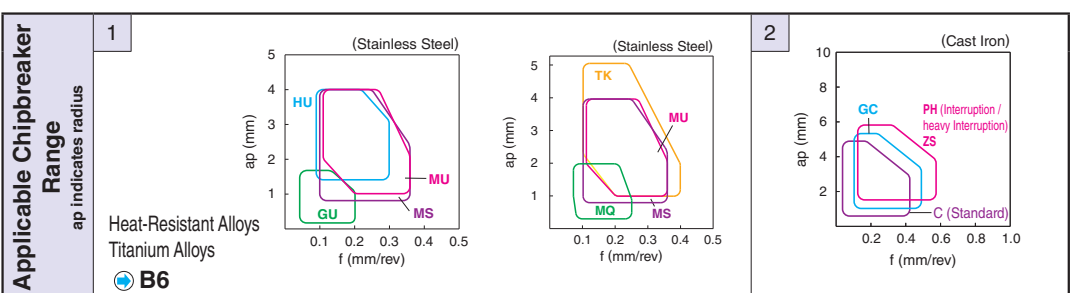
Inserts are sold in 10 piece boxes



55° Rhombic / Negative with Hole

Description	(mm)			Description	(mm)		
	A	T	φd		A	T	φd
DN_1104_	9.525	4.76	3.81	DN_1506_	12.70	6.35	5.16
DN_1504_	12.70	4.76	5.16				

Insert	Description	Dimension (mm)	Material																Ret. Page for Applicable Toolholders	Applicable Chipbreaker Range															
			Cermet			PVD Cermet		MEGACOAT Cermet		CVD Coated Carbide						PVD Coated Carbide		MEGACOAT MEGACOAT NANO			Carbide														
			TN6010	TN6020	TN60	PV90	PV7020	PV7005	PV7010	PV7025	CA515	CA525	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525			CA4505	CA4515	CA4010	CA4115	CA4120	PR930	PR1005	PR1025	PR1125	PR1425	PR1225	PR1305	PR1310	PR1325	KW10
Stainless Steel Finishing	DNMG 150404GU 150408GU	0.4 0.8															●	●																	D10 D11 F61 F66
	DNMG 150604GU 150608GU	0.4 0.8															●	●																	D10 D11 F61
Stainless Steel Medium-Roughing	DNMG 150408HU	0.8															●	●																D10 D11 F61 F66	
	DNMG 150608HU	0.8																●																D10 D11 F61	
Stainless Steel / Heat-Resistant Alloys Finishing-Medium	DNMG 150404MQ 150408MQ	0.4 0.8																●	●															D10 D11 F61 F66	
	DNMG 150604MQ 150608MQ	0.4 0.8																	●	●														D10 D11 F61	
Stainless Steel / Heat-Resistant Alloys Medium-Roughing	DNMG 150404MS 150408MS 150412MS	0.4 0.8 1.2																	●	●														D10 D11 F61 F66	
	DNMG 150604MS 150608MS 150612MS	0.4 0.8 1.2																		●	●													D10 D11 F61	
Stainless Steel / Heat-Resistant Alloys Medium-Roughing	DNMG 150404MU 150408MU	0.4 0.8																		●	●													D10 D11 F61 F66	
	DNMG 150604MU 150608MU	0.4 0.8																			●	●												D10 D11 F61	
Cast Iron Roughing	DNMG 150404C 150408C 150412C	0.4 0.8 1.2																		●	●													D10 D11 F61 F66	
	DNMG 150604C 150608C 150612C	0.4 0.8 1.2																			●	●												D10 D11 F61	



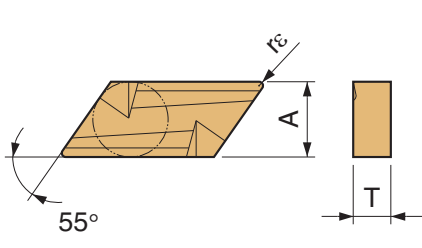
Inserts are sold in 10 piece boxes




55° Parallelogram / Negative with Hole

(mm)

Description	A	T	φd
KNMX1604_	9.525	4.76	-

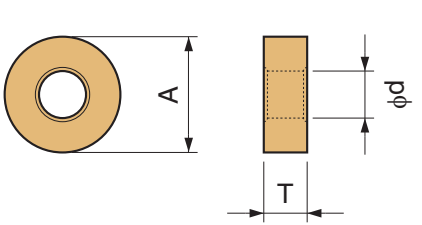


P																																								Free-cutting steel
																																						Carbon Steel / Alloy Steel		
M																																						Stainless Steel		
K																																						Gray Cast Iron		
																																						Nodular Cast Iron		
N																																						Non-ferrous Metals		
S																																						Heat-resistant Alloys		
H																																						Titanium Alloys		
																																							Hard Materials	
Insert Handed Insert shows Right-hand	Description	Dimension (mm)	Cermet		PVD Cermet	MEGACOAT Cermet	CVD Coated Carbide											PVD Coated Carbide		MEGACOAT MEGACOAT NANO		Carbide		Ref. Page for Applicable Toolholders	Applicable Chipbreaker Range															
		rε	TN6010	TN6020	TN60	PV90	PV7020	PV7005	PV7010	PV7025	CA515	CA525	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA4505	CA4515	CA4010	CA4115	CA4120			PR930	PR1005	PR1025	PR1125	PR1425	PR1225	PR1305	PR1310	PR1325	KW10	SW05				
Medium-Roughing	KNMX 160405 <sup>°</sup> / <sub>L</sub> -1 160410 <sup>°</sup> / <sub>L</sub> -1	0.5																																						
		1.0																																				1		

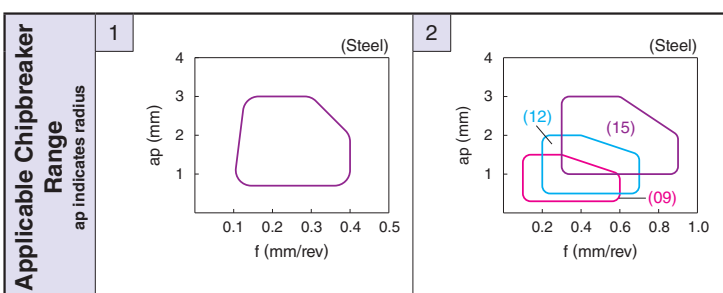
Round / Negative with Hole

(mm)

Description	A	T	φd	Description	A	T	φd
RN_0903_	9.525	3.18	3.81	RN_1506_	15.875	6.35	6.35
RN_1204_	12.70	4.76	5.16				



P																																							Free-cutting steel
																																						Carbon Steel / Alloy Steel	
M																																						Stainless Steel	
K																																						Gray Cast Iron	
																																						Nodular Cast Iron	
N																																						Non-ferrous Metals	
S																																						Heat-resistant Alloys	
H																																						Titanium Alloys	
																																						Hard Materials	
Insert	Description	Dimension (mm)	Cermet		PVD Cermet	MEGACOAT Cermet	CVD Coated Carbide											PVD Coated Carbide		MEGACOAT MEGACOAT NANO		Carbide		Ref. Page for Applicable Toolholders	Applicable Chipbreaker Range														
		rε	TN6010	TN6020	TN60	PV90	PV7020	PV7005	PV7010	PV7025	CA515	CA525	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA4505	CA4515	CA4010	CA4115	CA4120			PR930	PR1005	PR1025	PR1125	PR1425	PR1225	PR1305	PR1310	PR1325	KW10	SW05			
Medium-Roughing	RNMG 090300	-																																					D19
	RNMG 120400	-																																				2	
	RNMG 150600	-																																					



# Turning Indexable Inserts

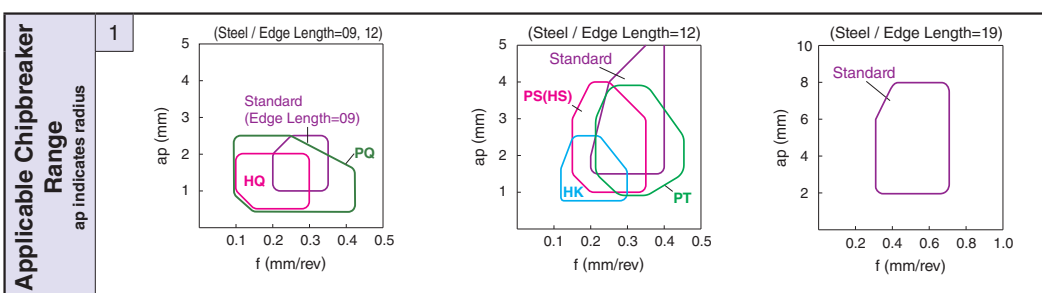
How to read pages of "Turning Inserts" **B13**

## 90° Square / Negative with Hole

Description	(mm)			Description	(mm)		
	A	T	φd		A	T	φd
SN_0903_	9.525	3.18	3.81	SN_1506_	15.875	6.35	6.35
SN_1204_	12.70	4.76	5.16	SN_1906_	19.05	6.35	7.94

- B**
- 
- Negative**
- 
- C**
- 
- D**
- 
- R**
- 
- S**
- 
- T**
- 
- V**
- 
- W**
- Insert (Turning)**

Insert	Description	Dimension (mm)	Material																Ret. Page for Applicable Toolholders	Applicable Chipbreaker Range																		
			Cermet				PVD Cermet		MEGACOAT Cermet		CVD Coated Carbide										PVD Coated Carbide		MEGACOAT MEGACOAT NANO		Carbide													
			TN6010	TN6020	TN60	TN90	PV7020	PV7005	PV7010	PV7025	CA515	CA525	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525			CA4505	CA4515	CA4010	CA4115	CA4120	PR930	PR1005	PR1025	PR1125	PR1425	PR1225	PR1305	PR1310	PR1325	KW10	SW05		
		rε																																				
Finishing-Medium		0.4																																				
		0.8																																				
Finishing-Medium		0.4																																				
		0.8																																				
		1.2																																				
Medium		0.4																																				
		0.8																																				
		1.2																																				
Medium-Roughing		0.8																																				
		1.2																																				
		1.6																																				
Medium-Roughing		0.8																																				
		1.2																																				
		1.6																																				
Medium-Roughing High Feed/High		0.8																																				
		1.2																																				
Roughing		0.4																																				
		0.8																																				
		0.4																																				
		0.8																																				
	1.2																																					
	1.6																																					

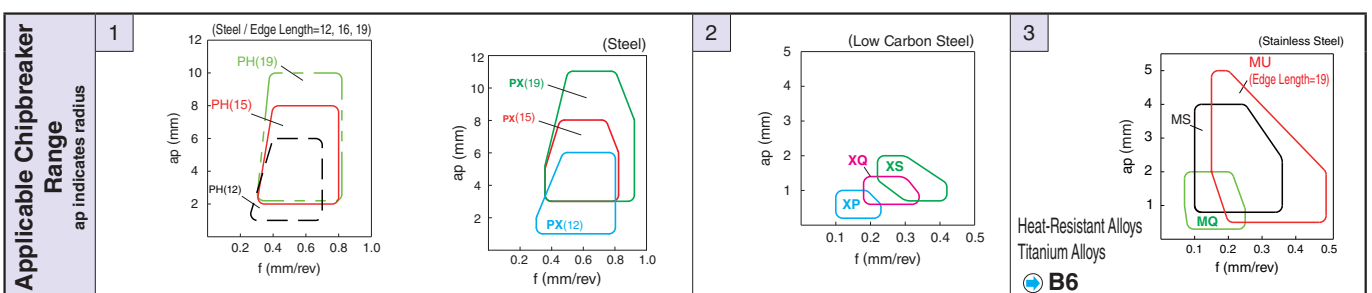


Inserts are sold in 10 piece boxes

90° Square / Negative with Hole

Description	A	T	φd	Description	A	T	φd
SN_0903_	9.525	3.18	3.81	SN_1506_	15.875	6.35	6.35
SN_1204_	12.70	4.76	5.16	SN_1906_	19.05	6.35	7.94

Insert	Description	Dimension (mm)	Material																	Refr. Page for Applicable Toolholders	Applicable Chipbreaker Range															
			rε	Cermet			PVD Cermet	MEGACOAT Cermet	CVD Coated Carbide								PVD Coated Carbide	MEGACOAT MEGACOAT NANO	Carbide																	
				TN6010	TN6020	TN60	PV90	PV7020	PV7010	PV7025	CA515	CA525	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA4505			CA4515	CA4010	CA4115	CA4120	PR930	PR1005	PR1025	PR1125	PR1425	PR1225	PR1305	PR1310	PR1325	KW10	SW05
Roughing	SNMG 120408PH 120412PH 120416PH	0.8						●	●	●	●	●	●	●																						D12
		1.2							●	●	●	●	●	●	●																					D13
		1.6							●	●	●	●	●	●	●																					
Single Steel / Roughing / High Feed Rate	SNMM 120408PX 120412PX 120416PX	0.8						●	●	●	●	●	●	●																					D12	
		1.2							●	●	●	●	●	●	●																				D13	
		1.6							●	●	●	●	●	●	●																					-
Low Carbon Steel	SNMG 120408XP Finishing	0.8	●	●	●	●		●	●	●	●	●																								
		0.8	●	●	●	●		●	●	●	●	●	●																							
Low Carbon Steel	SNMG 120408XQ Medium	0.8	●	●	●	●		●	●	●	●	●																								
		0.8	●	●	●	●		●	●	●	●	●	●																							
Low Carbon Steel	SNMG 120408XS Roughing	0.8	●	●				●	●	●	●	●																								
		0.8	●	●				●	●	●	●	●	●																							
Stainless Steel / Heat-Resistant Alloys	SNMG 120404MQ 120408MQ Finishing-Medium	0.4												●	●											●	●	●	●	●						
		0.8													●	●										●	●	●	●	●						
	SNMG 120404MS 120408MS 120412MS 120416MS Medium-Roughing	0.4													●	●										●	●	●	●	●						
Stainless Steel / Heat-Resistant Alloys	SNMG 190612MU 190616MU Medium-Roughing	1.2																								●	●									
		1.6																								●	●									



● : Std. Item R : Std. Item (Right-hand Only) L : Std. Item (Left-hand Only) □ : Deleted from the next catalogue

Inserts are sold in 10 piece boxes

B

Negative

C

D

R

S

T

V

W

Insert (Turning)

# Turning Indexable Inserts

How to read pages of "Turning Inserts" B13

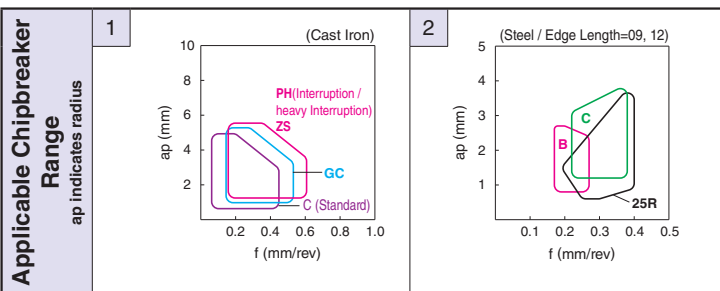
(mm)

(mm)

## 90° Square / Negative / with Hole / without Hole

Description	A	T	$\phi d$	Description	A	T	$\phi d$
SN_0903_	9.525	3.18	3.81	SN_1906_	19.05	6.35	7.94
SN_1204_	12.70	4.76	5.16	SNMN1204_	12.70	4.76	-

Insert Handed Insert shows Right-hand	Description	Dimension (mm)		Material															Applicable Chipbreaker Range																				
		r $\epsilon$	Dimension (mm)	Cermet					CVD Coated Carbide					PVD Coated Carbide		MEGACOAT MEGACOAT NANO				Carbide																			
				TN6010	TN6020	TN60	PV90	PV7005	PV7010	PV7025	CA515	CA525	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525		CA4505	CA4515	CA4010	CA4115	CA4120	PR930	PR1005	PR1025	PR1125	PR1425	PR1225	PR1305	PR1310	PR1325	KW10	SW05	Ret. Page for Applicable Toolholders	Applicable Chipbreaker Range		
Cast Iron Roughing	SNMG 120408C 120412C	0.8 1.2																																					
Cast Iron Roughing	SNMG 120408ZS 120412ZS	0.8 1.2																																				1	
Cast Iron Roughing	SNMG 120408GC 120412GC	0.8 1.2																																			D12 D13		
Cast Iron Without Chipbreaker	SNGA 120404 120408	0.4 0.8																																					
Cast Iron Without Chipbreaker	SNMA 120404 120408 120412 120416 120420	0.4 0.8 1.2 1.6 2.0																																					
Cast Iron Without Chipbreaker	SNMN 120408 120412	0.8 1.2																																			D25 D34 D35 F71		
Finishing-Medium / Medium-Roughing	SNGG 090304 <sup>R/L</sup> -B 090308 <sup>R/L</sup> -B	0.4 0.8																																					
Finishing-Medium / Medium-Roughing	SNGG 120404 <sup>R/L</sup> -C 120408 <sup>R/L</sup> -C	0.4 0.8																																					
Finishing-Medium / Medium-Roughing	SNMG 120404 <sup>R/L</sup> -C 120408 <sup>R/L</sup> -C	0.4 0.8																																				D12 D13	
Medium-Roughing Low Cutting Force	SNGG 120404 <sup>R/L</sup> -25R 120408 <sup>R/L</sup> -25R	0.4 0.8																																					

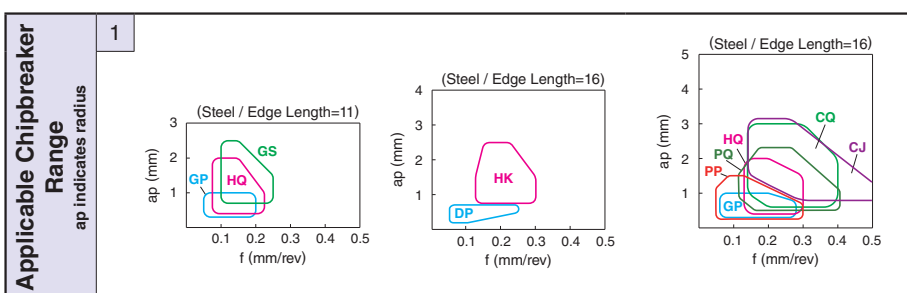


Inserts are sold in 10 piece boxes

60° Triangle / Negative with Hole

Description	A	T	φd
TN_1603_	9.525	3.18	3.81
TN_1604_	9.525	4.76	3.81
TN_1104_	6.35	4.76	2.26
TN_2204_	12.70	4.76	5.16

Insert	Description	Dimension (mm)	Material													Ref. Page for Applicable Toolholders	Applicable Chipbreaker Range																						
			Cermet	PVD Cermet	MEGACOAT Cermet	CVD Coated Carbide						PVD Coated Carbide	MEGACOAT MEGACOAT NANO	Carbide																									
		rε	TN6010	TN6020	TN60	PV90	PV7020	PV7005	PV7010	PV7025	CA515	CA525	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA4505	CA4515	CA4010	CA4115	CA4120	PR930	PR1005	PR1025	PR1125	PR1425	PR1225	PR1305	PR1310	PR1325	KW10	SW05					
Finishing	TNMG 160404DP 160408DP	0.4 0.8	●	○				●	●	●	●	○	○	○	○																								
	TNMG 160404DP 160408DP	0.4 0.8	●	●	●			●																												D14 D15 F61 F68			
Finishing	NEW TNMG 160402PP 160404PP 160408PP 160412PP	0.2	●	●				●	●	●	●	●	●	●																							D14 F61 F68		
		0.4	●	●					●	●	●	●	●	●	●																								
		0.8	●	●					●	●	●	●	●	●	●																								
		1.2	●	●					●	●	●	●	●	●	●																								
Finishing	TNMG 110404GP 110408GP	0.4		●	●																															D14 F68			
		0.8		●	●																																		
Finishing-Medium	NEW TNMG 160404PQ 160408PQ 160412PQ	0.4	●	●					●	●	●	●	●	●																							D14 D15 F61 F68		
		0.8	●	●					●	●	●	●	●	●																									
		1.2	●	●					●	●	●	●	●	●																									
Finishing-Medium	TNMG 110404HQ 110408HQ	0.4		●	●						●	●	●	●																							D14 F68		
		0.8	●	●	●	●				●	●	●	●	●	●	●	●	●	●																			D14 D15 F61 F68	
		1.2	●	●	●	●				●	●	●	●	●	●	●	●	●	●																				
Finishing-Medium Up-Facing	TNMG 160404CQ 160408CQ 160412CQ	0.4	●	●	●	●			●	●	●	●	●	●	●																						F61 F68		
		0.8	●	●	●	●				●	●	●	●	●	●	●																							
Medium	TNMG 220408CQ 220412CQ	0.8									●	●	●	●																						D14			
		1.2										●	●	●	●																								
Medium	TNMG 160404HK 160408HK 160412HK	0.4		●																																D14 D15 F61 F68			
		0.8		●																																			
Medium	TNMG 220404HK 220408HK	0.4		●																																D14			
		0.8		●																																			



● : Std. Item R : Std. Item (Right-hand Only) L : Std. Item (Left-hand Only) □ : Deleted from the next catalogue

Inserts are sold in 10 piece boxes

## 60° Triangle / Negative with Hole

Description	A	T	φd
TN_1103_	6.35	3.18	2.26
TN_1104_	6.35	4.76	2.26

Description	A	T	φd
TN_1603_	9.525	3.18	3.81
TN_1604_	9.525	4.76	3.81
TN_2204_	12.70	4.76	5.16

Insert	Description	Dimension (mm)	Material																Ref. Page for Applicable Toolholders	Applicable Chipbreaker Range																			
			P	M	K	N	S	H	Cermet	PVD Cermet	MEGACOAT Cermet	CVD Coated Carbide						PVD Coated Carbide			MEGACOAT MEGACOAT NANO	Carbide																	
			ε	TN6010	TN6020	TN60	PV90	PV7020	PV7005	PV7010	PV7025	CA515	CA525	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA4505	CA4515	CA4010	CA4115	CA4120	PR930	PR1005	PR1025	PR1125	PR1425	PR1225	PR1305	PR1310	PR1325	KW10	SW05				
Medium-Roughing	TNMG 110404GS 110408GS	0.4 0.8	●	○				●	●	●	●	●	●	○	○	○																						D14 F68	
	TNMG 160404GS 160408GS 160412GS	0.4 0.8 1.2			●	●			●	●	●	●	●	●	●	●	●																						D14 D15 F61 F68
Medium-Roughing	TNMG 160404PS 160408PS 160412PS	0.4 0.8 1.2	●					●	●	●	●	●	●	●	●	●	●												●									D14	
	TNMG 220404PS 220408PS 220412PS 220416PS	0.4 0.8 1.2 1.6						●	●	●	●	●	●	●	●	●	●																						D14
Medium-Roughing	TNMG 160404HS 160408HS 160412HS	0.4 0.8 1.2		●	●	●	●							●	●	●	●																					D14 D15 F61 F68	
	TNMG 220404HS 220408HS 220412HS	0.4 0.8 1.2		●		●								●																								D14	
Medium-Roughing/High FeedRate	TNMG 160408PT 160412PT	0.8 1.2							●	●	●	●	●	●	●	●	●	●	●																				D14 D15 F61 F68
	TNMG 160408GT 160412GT	0.8 1.2				●	●		●	●	●	●	●	●	●	●	●																						D14 D15 F61 F68
Roughing	TNMG 160404 160408 160412 160416 160420	0.4 0.8 1.2 1.6 2.0		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		D14
	TNMG 220404 220408 220412	0.4 0.8 1.2		●								●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		D14

**B**

Negative

C

D

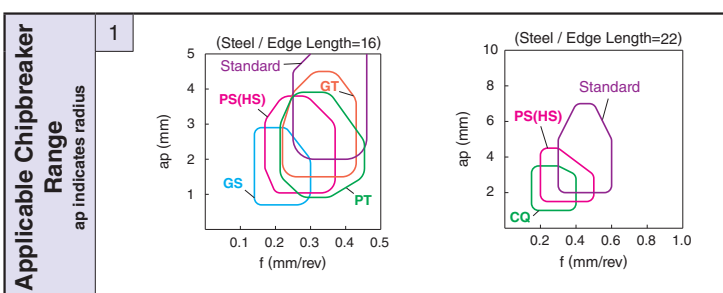
R

S

T

W

**Insert (Turning)**



Inserts are sold in 10 piece boxes



60° Triangle / Negative with Hole

(mm)

(mm)

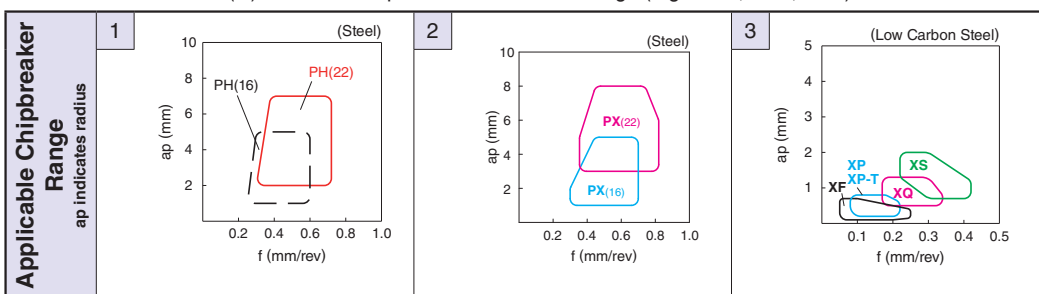
Description	A	T	φd
TN_1103_	6.35	3.18	2.26
TN_1104_	6.35	4.76	2.26

Description	A	T	φd
TN_1603_	9.525	3.18	3.81
TN_1604_	9.525	4.76	3.81
TN_2204_	12.70	4.76	5.16

Insert	Description	Dimension (mm)	Material														Ref. Page for Applicable Toolholders	Applicable Chipbreaker Range																				
			Cermet	PVD Cermet	MEGACOAT Cermet	CVD Coated Carbide						PVD Coated Carbide	MEGACOAT MEGACOAT NANO	Carbide																								
		rε	TN6010	TN6020	TN60	PV90	PV7020	PV7005	PV7010	PV7025	CA515	CA525	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA4505	CA4515	CA4010	CA4115	CA4120	PR930	PR1005	PR1025	PR1125	PR1425	PR1225	PR1305	PR1310	PR1325	KW10	SW05				
Roughing	TNMG 160408PH 160412PH	0.8 1.2									●	●	●	●	●	●			●	●																D14 D15 F61 F68	1	
	TNMG 220408PH 220412PH 220416PH	0.8 1.2 1.6									●	●	●	●	●	●	●			●	●															D14		
Single Side / Roughing / High Feed Rate	TNMM 160408PX 160412PX	0.8 1.2									●	●	●	●	●	●																				D14 D15 F61 F68	2	
	TNMM 220408PX 220412PX 220416PX	0.8 1.2 1.6									●	●	●	●	●	●	●																			D14		
Low Carbon Steel Finishing / Small ap	TNMG 160404XF 160408XF	0.4 0.8	●					●	●																													
Low Carbon Steel Finishing	TNMG 160404XP 160408XP	0.4 0.8	●	●	●	●		●	●	●	●	●	●	●	●	●																						
Low Carbon Steel Finishing / Tough Edge	TNMG 160404XP-T 160408XP-T	0.4 0.8		●	●			●	●																												D14 D15 F61 F68	3
Low Carbon Steel Medium	TNMG 160404XQ 160408XQ	0.4 0.8	●	●	●	●		●	●	●	●	●	●	●	●	●																						
Low Carbon Steel Roughing	TNMG 160408XS	0.8	●	●	●	●		●	●	●	●	●	●	●																								
Finishing-Medium Sharp Edge / Polished	TNGG 160401MFP-SK 160402MFP-SK 160404MFP-SK	<0.1 <0.2 <0.4																										●	●								D14 D15 E41 F61 F68	1

Insert whose corner-R (rε) dimension expressed with less than sign (e.g.<0.05, <0.1, <0.2) indicate models with minus tolerance for corner-R (rε).



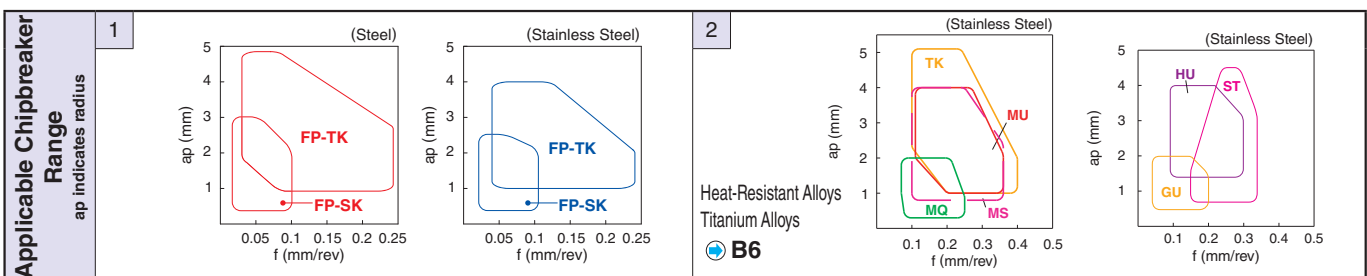
# Turning Indexable Inserts

How to read pages of "Turning Inserts" **B13** (mm)

## 60° Triangle / Negative with Hole

Description	A	T	φd
TN_1103_	6.35	3.18	2.26
TN_1104_	6.35	4.76	2.26

Insert	Description	Dimension (mm)	Material														Ref. Page for Applicable Toolholders	Applicable Chipbreaker Range																	
			Cermet	PVD Cermet	MEGACOAT Cermet	CVD Coated Carbide								PVD Coated Carbide	MEGACOAT MEGACOAT NANO	Carbide																			
		rε	TN6010	TN6020	TN60	PV90	PV7020	PV7005	PV7010	PV7025	CA515	CA525	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA4505	CA4515	CA4010	CA4115	CA4120	PR930	PR1005	PR1025	PR1125	PR1425	PR1225	PR1305	PR1310	PR1325	KW10	SW05	
Medium-Roughing	TNGG 160404FP-TK 160408FP-TK	0.4 0.8																																	D14 D15 E41 F61 F68
Stainless Steel / Heat-Resistant Alloys	TNGG 160404TK 160408TK	0.4 0.8																																	
Stainless Steel	TNMG 160404TK 160408TK	0.4 0.8																																	
Stainless Steel	TNMG 160404GU 160408GU	0.4 0.8																																	
Stainless Steel	TNMG 160408HU 160412HU	0.8 1.2																																	D14 D15 F61 F68
Stainless Steel / Heat-Resistant Alloys	TNMG 160404MQ 160408MQ	0.4 0.8																																	
Stainless Steel / Heat-Resistant Alloys	TNMG 160404MS 160408MS 160412MS	0.4 0.8 1.2																																	
Stainless Steel	TNMG 160404MU 160408MU	0.4 0.8																																	
	TNMG 160404 <sup>L</sup> -ST 160408 <sup>L</sup> -ST	0.4 0.8																																	



Inserts are sold in 10 piece boxes

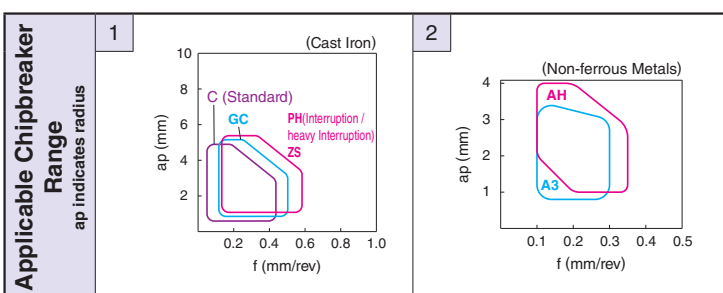
# 60° Triangle / Negative with Hole

(mm)

Description	A	T	φd
TN_1103_	6.35	3.18	2.26
TN_1104_	6.35	4.76	2.26

Description	A	T	φd
TN_1603_	9.525	3.18	3.81
TN_1604_	9.525	4.76	3.81
TN_2204_	12.70	4.76	5.16

Insert		Description	Dimension (mm)	Cermet	PVD Cermet	MEGACOAT Cermet	CVD Coated Carbide										PVD Coated Carbide	MEGACOAT MEGACOAT NANO	Carbide	Ref. Page for Applicable Toolholders	Applicable Chipbreaker Range																						
Handed Insert shows Right-hand	rε	TN6010		TN6020	TN60	PV90	PV7020	PV7005	PV7010	PV7025	CA515	CA525	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA4505	CA4515	CA4010	CA4115	CA4120	PR930	PR1005	PR1025	PR1125	PR1425	PR1225	PR1305	PR1310	PR1325	KW10	SW05									
		Cast Iron	rε	TNMG 160404C 160408C 160412C	0.4																●	●																					
0.8													●							●	●																						
1.2																					●	●																					
Cast Iron	rε	TNMG 160408ZS 160412ZS	0.8																●	●																							
			1.2																		●	●																					
Cast Iron	rε	TNMG 160408GC 160412GC	0.8																	●	●																						
			1.2																		●	●																					
Cast Iron	rε	TNGA 110304 160404 160408 TNMA 160404 160408 160412 160416 160420	0.4																																								
			0.4					●																																			
			0.8						●																																		
			0.8					●																																			
			2.0					●															●	●																			
Non-ferrous Metals	rε	TNGG 160404 <sup>PH</sup> -A3 160408 <sup>PH</sup> -A3	0.4																																								
			0.8																																								
Non-ferrous Metals	rε	TNGG 160404AH 160408AH	0.4																																								
			0.8																																								
Non-ferrous Metals	rε	TNMG 160404AH 160408AH	0.4																																								
			0.8																																								



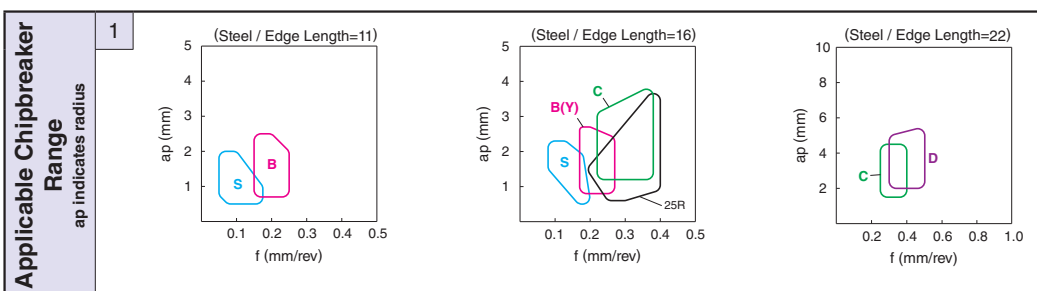
# Turning Indexable Inserts

How to read pages of "Turning Inserts" **B13** (mm)

## 60° Triangle / Negative with Hole

Description	A	T	φd
TN_1103_	6.35	3.18	2.26
TN_1104_	6.35	4.76	2.26

Insert	Description	Dimension (mm)	Material																Ref. Page for Applicable Toolholders	Applicable Chipbreaker Range																
			Cermets				CVD Coated Carbide								PVD Coated Carbide		MEGACOAT MEGACOAT NANO				Carbide															
Handed Insert shows Right-hand		rε	TN6010	TN6020	TN60	PV90	PV7020	PV7005	PV7010	PV7025	CA515	CA525	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA4505	CA4515	CA4010	CA4115	CA4120	PR930	PR1005	PR1025	PR1125	PR1425	PR1225	PR1305	PR1310	PR1325	KW10	SW05		
Finishing 	TNGG 110402%/-S	0.2		●																															D14	
	TNGG 110404%/-S	0.4		●																																F68
	TNGG 110408%/-S	0.8		●																																
Finishing 	TNEG 160402%/-SSF	0.2					●			●																										D14
	TNEG 160404%/-SSF	0.4					●			●																										F61
																																			F68	
Finishing-Medium / Medium-Roughing 	TNGG 110302%/-B	0.2	●																																D14	
	TNGG 110304%/-B	0.4	●																																-	
	TNGG 160402%/-B	0.2	●	●			●		●	●																●									D14	
	TNGG 160404%/-B	0.4	●	●			●		●	●															●										D15	
	TNGG 160408%/-B	0.8	●	●			●		●	●														●											F61	
	TNGG 160412%/-C	1.2	●	●			●		●	●														●											F68	
	TNGG 160416%/-C	1.6	●	●			●		●	●														●												
	TNGG 220404%/-C	0.4		●					●																										D14	
	TNGG 220408%/-C	0.8		●					●																											
	TNGG 110402%/L	0.2			●																															D14
TNGG 110404%/L	0.4			●																															F68	
TNGG 110408%/L	0.8			●																																
TNMG 160404%/-C	0.4		●	●			●		●	●																										D14
TNMG 160408%/-C	0.8		●	●			●		●	●																										D15
TNMG 160412%/-C	1.2		●	●			●		●	●																									F61	
TNGG 160404%/-25R	0.4		●	●			●		●	●														●											F68	
TNGG 160408%/-25R	0.8		●	●			●		●	●														●												



Inserts are sold in 10 piece boxes



## 35° Rhombic / Negative with Hole

(mm)

Description	A	T	φd
VN_1604_	9.525	4.76	3.81

**B**

Negative

C

D

R

S

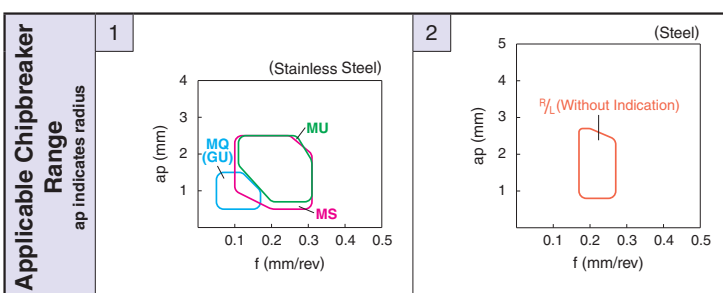
T

V

W

**Insert (Turning)**

Insert	Description	Dimension (mm)	Material																				Rel. Page for Applicable Toolholders	Applicable Chipbreaker Range							
			Cermet					PVD Cermet					MEGACOAT Cermet					CVD Coated Carbide							PVD Coated Carbide		MEGACOAT MEGACOAT NANO		Carbide		
			TN6010	TN6020	TN60	PV90	PV7020	PV7005	PV7010	PV7025	CA515	CA525	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA4505	CA4515	CA4010	CA4115			CA4120	PR930	PR1005	PR1025	PR1125	PR1425	PR1225
		rε																													
Stainless Steel	 Finishing	0.4 0.8																													
Stainless Steel / Heat-Resistant Alloys	 Finishing-Medium	0.4 0.8																						D16 D17 D18							
	 Medium-Roughing	0.4 0.8 1.2																													
	 Medium-Roughing	0.4 0.8																													
Cast Iron	 Without Chipbreaker	0.4 0.8																						-							
Medium		0.2 0.4 0.8																						2							

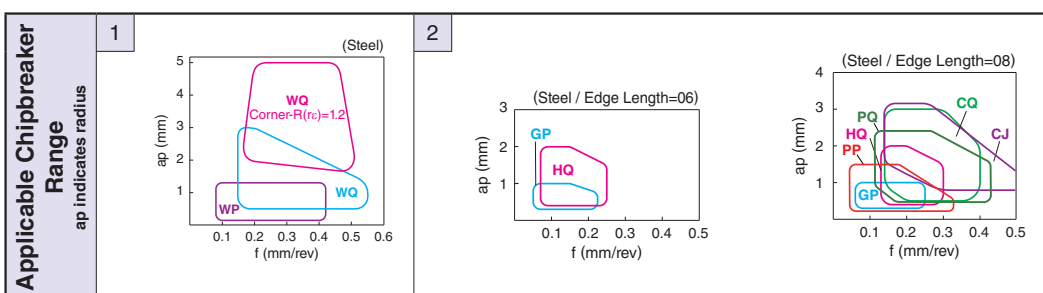


Inserts are sold in 10 piece boxes

80° Trigon / Negative with Hole

Description	A	T	φd	Description	A	T	φd
WN_06T3_	9.525	3.97	3.81	WN_0804_	12.70	4.76	5.16
WN_0604_	9.525	4.76	3.81				

Insert	Description	Dimension (mm)	Material													Ref. Page for Applicable Toolholders	Applicable Chipbreaker Range																																																																																			
			Cermet	PVD Cermet	MEGACOAT Cermet	CVD Coated Carbide							PVD Coated Carbide	MEGACOAT MEGACOAT NANO	Carbide																																																																																					
			rε	TN6010	TN6020	TN60	PV90	PV7020	PV7010	PV7025	CA515	CA525	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA4505	CA4515	CA4010	CA4115	CA4120	PR930	PR1005	PR1025	PR1125	PR1425	PR1225	PR1305	PR1310	PR1325	KW10	SW05																																																																		
			<table border="1"> <thead> <tr> <th>Material</th> <th>P</th> <th>M</th> <th>K</th> <th>N</th> <th>S</th> <th>H</th> </tr> </thead> <tbody> <tr> <td>Free-cutting steel</td> <td>●</td> <td>○</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Carbon Steel / Alloy Steel</td> <td>●</td> <td>○</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Stainless Steel</td> <td></td> <td>●</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Gray Cast Iron</td> <td></td> <td></td> <td>●</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Nodular Cast Iron</td> <td></td> <td></td> <td>○</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Non-ferrous Metals</td> <td></td> <td></td> <td></td> <td>●</td> <td></td> <td></td> </tr> <tr> <td>Heat-resistant Alloys</td> <td></td> <td></td> <td></td> <td></td> <td>○</td> <td></td> </tr> <tr> <td>Titanium Alloys</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Hard Materials</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>																												Material	P	M	K	N	S	H	Free-cutting steel	●	○					Carbon Steel / Alloy Steel	●	○					Stainless Steel		●					Gray Cast Iron			●				Nodular Cast Iron			○				Non-ferrous Metals				●			Heat-resistant Alloys					○		Titanium Alloys							Hard Materials						
Material	P	M	K	N	S	H																																																																																														
Free-cutting steel	●	○																																																																																																		
Carbon Steel / Alloy Steel	●	○																																																																																																		
Stainless Steel		●																																																																																																		
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Heat-resistant Alloys					○																																																																																															
Titanium Alloys																																																																																																				
Hard Materials																																																																																																				
With Wiper Edge Finishing	WNMG 080404WP 080408WP	0.4 0.8	●	●		●	●	●	●	●	●	●	●	●	●	●																																																																																				
With Wiper Edge Finishing-Medium	WNMG 080404WQ 080408WQ 080412WQ	0.4 0.8 1.2	●	●		●	●	●	●	●	●	●	●	●	●	●																																																																																				
NEW Finishing	WNMG 080402PP 080404PP 080408PP 080412PP	0.2 0.4 0.8 1.2	●	●				●	●	●	●	●	●	●	●	●																																																																																				
Finishing	WNMG 060404GP 060408GP	0.4 0.8			●	●																																																																																														
Finishing	WNMG 080404GP 080408GP	0.4 0.8	●	●	●	●	●	●	●	●	●	●	●	●	●	●																																																																																				
NEW Finishing-Medium	WNMG 080404PQ 080408PQ 080412PQ	0.4 0.8 1.2	●	●				●	●	●	●	●	●	●	●	●																																																																																				
Finishing-Medium	WNMG 06T304HQ 06T308HQ	0.4 0.8			●								●																																																																																							
Finishing-Medium	WNMG 060404HQ 060408HQ	0.4 0.8			●	●				●	●	●	●	●	●	●																																																																																				
Finishing-Medium	WNMG 080404HQ 080408HQ 080412HQ	0.4 0.8 1.2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●								●																																																																									
Finishing-Medium / Up Facing	WNMG 080404CQ 080408CQ 080412CQ	0.4 0.8 1.2	●	●		●	●	●	●	●	●	●	●	●	●	●																																																																																				
Finishing-Medium / Up Facing	WNMG 080408CJ 080412CJ	0.8 1.2							●	●	●	●	●	●	●	●																																																																																				



● : Std. Item R : Std. Item (Right-hand Only) L : Std. Item (Left-hand Only) □ : Deleted from the next catalogue

Inserts are sold in 10 piece boxes

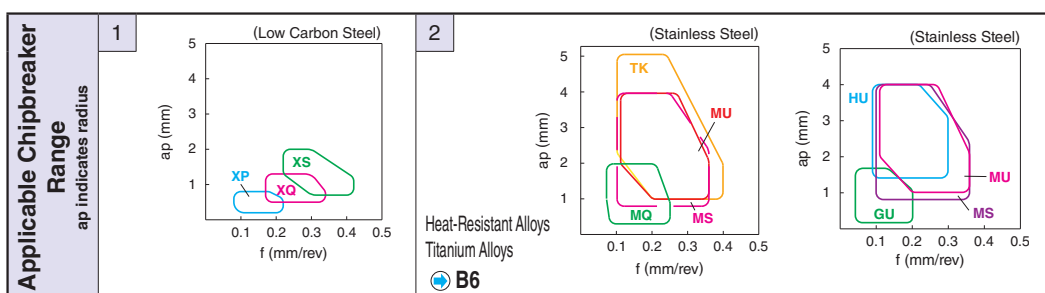




80° Trigon / Negative with Hole

Description	(mm)			Description	(mm)		
	A	T	φd		A	T	φd
WN_06T3_	9.525	3.97	3.81	WN_0804_	12.70	4.76	5.16
WN_0604_	9.525	4.76	3.81				

Insert	Description	Dimension (mm)	Material Compatibility													Ref. Page for Applicable Toolholders	Applicable Chipbreaker Range																			
			Cermet	PVD Cermet	MEGACOAT Cermet	CVD Coated Carbide							PVD Coated Carbide	MEGACOAT MEGACOAT NANO	Carbide																					
		rε	TN6010	TN6020	TN60	PV90	PV7020	PV7005	PV7010	CA515	CA525	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA4505	CA4515	CA4010	CA4115	CA4120	PR930	PR1005	PR1025	PR1125	PR1425	PR1225	PR1305	PR1310	PR1325	KW10	SW05			
Low Carbon Steel	Finishing	0.4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
		0.8	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Low Carbon Steel	Medium	0.4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
		0.8	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Low Carbon Steel	Roughing	0.8	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Medium-Roughing / Sharp Edge	WNGG 080404TK 080408TK	0.4																																	●	
		0.8																																	●	
Stainless Steel / Heat-Resistant Alloys	Medium-Roughing	0.4																																	●	
		0.8																																	●	
Stainless Steel	Finishing	0.4																																	●	
Stainless Steel	Medium-Roughing	0.4																																	●	
		0.8																																	●	
Stainless Steel	Medium-Roughing	0.8																																		●
		1.2																																		●
Stainless Steel / Heat-Resistant Alloys	Finishing-Medium	0.4																																	●	
		0.8																																	●	



● : Std. Item R : Std. Item (Right-hand Only) L : Std. Item (Left-hand Only) □ : Deleted from the next catalogue

Inserts are sold in 10 piece boxes

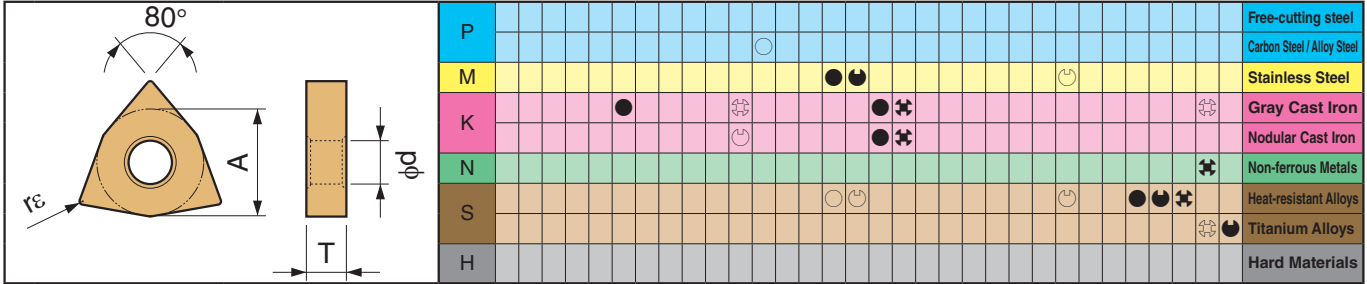
# Turning Indexable Inserts

How to read pages of "Turning Inserts" **B13**

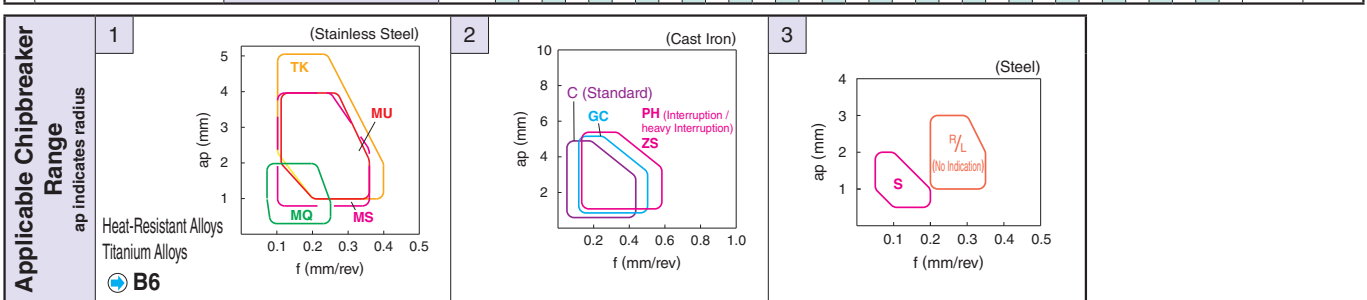
## 80° Trigon / Negative with Hole

Description	A	T	$\phi d$
WN_06T3_	9.525	3.97	3.81
WN_0604_	9.525	4.76	3.81

Description	A	T	$\phi d$
WN_0804_	12.70	4.76	5.16



Insert	Description	Dimension (mm)	Material Compatibility													Ref. Page for Applicable Toolholders	Applicable Chipbreaker Range																			
			Cermet	PVD Cermet	MEGACOAT Cermet	CVD Coated Carbide						PVD Coated Carbide		MEGACOAT MEGACOAT NANO	Carbide																					
rε	rε	rε	TN6010	TN6020	TN60	PV90	PV7020	PV7005	PV7010	PV7025	CA515	CA525	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA4505	CA4515	CA4010	CA4115	CA4120	PR930	PR1005	PR1025	PR1125	PR1425	PR1225	PR1305	PR1310	PR1325	KW10	SW05		
			Handed Insert shows Right-hand																																	
Medium-Roughing	WNMG 080404MS 080408MS 080412MS	0.4 0.8 1.2															●	●										●							●	
Medium-Roughing	WNMG 080404MU 080408MU	0.4 0.8															●	●										●							●	
Roughing	WNMG 080404C 080408C 080412C	0.4 0.8 1.2											●							●	●			□	□											
Roughing	WNMG 080408ZS 080412ZS	0.8 1.2											●	●						●	●	□	□	□												
Roughing	WNMG 080408GC 080412GC	0.8 1.2											●							●	●	□	□	□												
Without Chipbreaker	WNMA 080408 080412	0.8 1.2						●					●							●	●	□	□	□												
Roughing	WNMG 080408PH 080412PH	0.8 1.2																		●	●															
Surface Roughness Oriented	WNGG 060402 <sup>rε</sup> / <sub>L</sub> -S 060404 <sup>rε</sup> / <sub>L</sub> -S 060408 <sup>rε</sup> / <sub>L</sub> -S	0.2 0.4 0.8		●	●	●	R																													●
Medium	WNGG 060404 <sup>rε</sup> / <sub>L</sub>	0.4		●																															●	



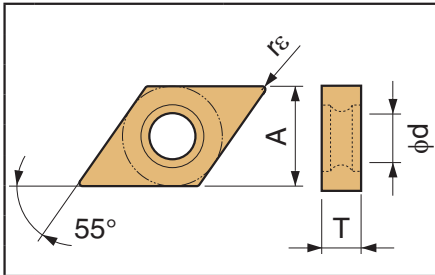
Inserts are sold in 10 piece boxes



## Small Double Sided Tools

(mm)

Description	A	T	$\phi d$
DN_U0803_	7.0	3.18	3.6



Material	P	M	K	N	S	H	Material																			Free-cutting steel	Carbon Steel / Alloy Steel	Stainless Steel	Gray Cast Iron	Nodular Cast Iron	Non-ferrous Metals	Heat-resistant Alloys	Titanium Alloys	Hard Materials																			
Free-cutting steel																										•																											
Carbon Steel / Alloy Steel																										•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•								
Stainless Steel																										•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•								
Gray Cast Iron																										•																											
Nodular Cast Iron																										•																											
Non-ferrous Metals																										•																											
Heat-resistant Alloys																										•																											
Titanium Alloys																										•																											
Hard Materials																										•																											

Insert	Description	Dimension (mm)	Material																			Ret. Page for Applicable Toolholders	Applicable Chipbreaker Range														
			Cermet			PVD Cermet	MEGACOAT Cermet	CVD Coated Carbide										PVD Coated Carbide		MEGACOAT MEGACOAT NANO	Carbide																
Handed Insert shows Right-hand		$r_\epsilon$	TN6010	TN6020	TN60	PV90	PV7020	PV7005	PV7010	PV7025	CA515	CA525	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA4505	CA4515	CA4010	CA4115	CA4120	PR930	PR1005	PR1025	PR1125	PR1425	PR1225	PR1305	PR1310	PR1325	KW10	SW05			
Finishing-Medium Sharp Edge	DNGU 080301MF-SK	<0.1																								•											
	DNGU 080302MF-SK	<0.2																								•											
	DNGU 080304MF-SK	<0.4																								•											
Finishing-Medium Sharp Edge / Polished	DNGU 080301MFP-SK	<0.1																										•	•								
	DNGU 080302MFP-SK	<0.2																										•	•								
	DNGU 080304MFP-SK	<0.4																										•	•								
Medium-Roughing With Honing	DNMU 080302E-GK	0.2																								•	•										
	DNMU 080304E-GK	0.4																								•	•										
Finishing Sharp Edge	DNGU 0803005MF%-F	<0.05																									R										
	DNGU 080301MF%-F	<0.1																									R										
	DNGU 080302MF%-F	<0.2																									R										
	DNGU 080304MF%-F	<0.4																									R										
Low Feed Sharp Edge	DNGU 0803005MF%-U	<0.05																									R										
	DNGU 080301MF%-U	<0.1																									R										
	DNGU 080302MF%-U	<0.2																									R										
	DNGU 080304MF%-U	<0.4																									R										
Low Feed With Honing	DNGU 080301ME%-U	<0.1																									R										
	DNGU 080302ME%-U	<0.2																									R										
	DNGU 080304ME%-U	<0.4																									R										

• Insert whose corner-R ( $r_\epsilon$ ) dimension expressed with less than sign (e.g. <0.05, <0.1, <0.2 etc.) indicate models with minus tolerance for corner-R ( $r_\epsilon$ ).

## Chipbreaker Selection (Negative Inserts)

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

Small Double Sided Tools

			(mm)																																		
			Description	A	T	φd																															
			TN_U0903_	5.56	3.18	3.0																															
	P						●	Free-cutting steel																													
							⌚	●	Carbon Steel / Alloy Steel																												
	M						⌚	⌚	Stainless Steel																												
									Gray Cast Iron																												
	K								Nodular Cast Iron																												
									Non-ferrous Metals																												
N								Heat-resistant Alloys																													
S								Titanium Alloys																													
H								Hard Materials																													
Insert <small>Handed Insert shows Right-hand</small>	Description	Dimension (mm)	Cermet										CVD Coated Carbide					PVD Coated Carbide		MEGACOAT MEGACOAT NANO		Carbide		Ref. Page for Applicable Toolholders	Applicable Chipbreaker Range												
		rε	TN6010	TN6020	TN60	PV90	PV7020	PV7005	PV7010	PV7025	CA515	CA525	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA4505	CA4515	CA4010	CA4115	CA4120			PR930	PR1005	PR1025	PR1125	PR1425	PR1225	PR1305	PR1310	PR1325	KW10	SW05	
Finishing	 Sharp Edge	TNGU 0903005MF <sup>R/L</sup> -F 090301MF <sup>R/L</sup> -F 090302MF <sup>R/L</sup> -F 090304MF <sup>R/L</sup> -F	<0.05																																		
Low Feed	 Sharp Edge	TNGU 0903005MF <sup>R/L</sup> -U 090301MF <sup>R/L</sup> -U 090302MF <sup>R/L</sup> -U 090304MF <sup>R/L</sup> -U	<0.05																																		
Low Feed	 With Honing	TNGU 090301ME <sup>R/L</sup> -U 090302ME <sup>R/L</sup> -U 090304ME <sup>R/L</sup> -U	<0.1																																		

• Insert whose corner-R (rε) dimension expressed with less than sign (e.g. <0.05, <0.1, <0.2 etc.) indicate models with minus tolerance for corner-R (rε).

Applicable Chipbreaker Range <small>ap indicates radius</small>	1	2	3

● : Std. Item R : Std. Item (Right-hand Only) L : Std. Item (Left-hand Only) □ : Deleted from the next catalogue

Inserts are sold in 10 piece boxes

B

Positive

C

D

R

S

T

W

Insert (Turning)

# Turning Indexable Inserts

How to read pages of "Turning Inserts" B13 (mm)

## 80° Rhombic / Positive with Hole

Description	(mm)			
	A	T	φd	α
CC_0301_	3.5	1.4	1.9	7°
CC_0401_	4.3	1.8	2.3	7°

Description	(mm)			
	A	T	φd	α
CC_0602_	6.35	2.38	2.8	7°
CC_09T3_	9.525	3.97	4.4	7°
CC_1204_	12.7	4.76	5.5	7°

**B**

Positive

**C**

D

R

S

T

V

W

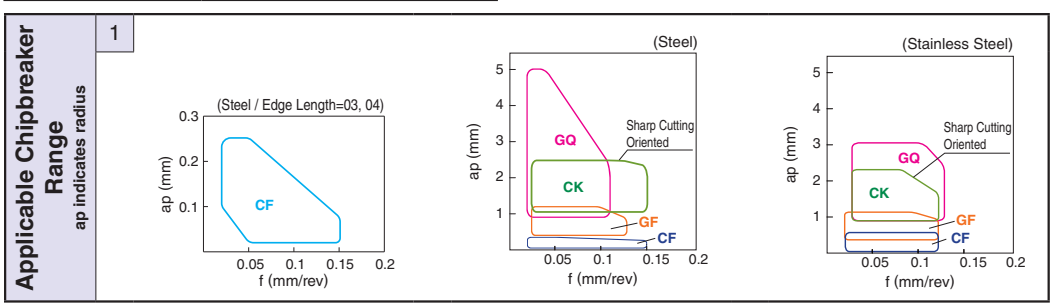
**Insert (Turning)**

P																						Free-cutting steel
M																						Carbon Steel / Alloy Steel
K																						Stainless Steel
N																						Gray Cast Iron
S																						Nodular Cast Iron
H																						Non-ferrous Metals
																						Heat-resistant Alloys
																						Titanium Alloys
																						Hard Materials

Insert	Description	Dimension (mm)	rε	Material																		Ref. Page for Applicable Toolholders	Applicable Chipbreaker Range												
				Cermets			PVD Cermets			MEGACOAT Cermets			CVD Coated Carbide						PVD Coated Carbide		MEGACOAT MEGACOAT NANO			Carbide											
				TN6010	TN6020	TN60	PV90	PV7020	PV7005	PV7010	PV7025	CA515	CA525	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA4505	CA4515			CA4010	CA4115	CA4120	PR930	PR1005	PR1025	PR1125	PR1425	PR1255	PR1305	PR1310	PR1325
Minute ap Sharp Edge	CCGT 030101M-CF	<0.1																																	F37
	CCGT 040101M-CF	<0.1																																	
Minute ap Sharp Edge / Polished	CCGT 030101MP-CF	<0.1																																	F37
	CCGT 040101MP-CF	<0.1																																	
Finishing Sharp Edge	CCGT 060201MF-GF	<0.1																																Ref. to the table below	
	CCGT 09T301MF-GF	<0.1																																	
Finishing Sharp Edge / Polished	CCGT 060201MFP-GF	<0.1																																1	
	CCGT 09T301MFP-GF	<0.1																																	
Finishing Sharp Edge / Polished	CCGT 060201MP-CK	<0.1																																Ref. to the table below	
	CCGT 09T301MP-CK	<0.1																																	
Finishing-Medium Sharp Edge	CCGT 060201MF-GQ	<0.1																																Ref. to the table below	
	CCGT 09T301MF-GQ	<0.1																																	
Finishing-Medium Sharp Edge / Polished	CCGT 060201MFP-GQ	<0.1																																Ref. to the table below	
	CCGT 09T301MFP-GQ	<0.1																																	

Insert whose corner-R (rε) dimension expressed with less than sign (e.g. <0.05, <0.1, <0.2 etc.) indicate models with minus tolerance for corner-R (rε).

Insert Description	Ref. Page for Applicable Toolholders
CC..0602 type	E22,E23,E34,F37
CC..09T3 type	E22,E23,E34,F37,F62



Inserts are sold in 10 piece boxes

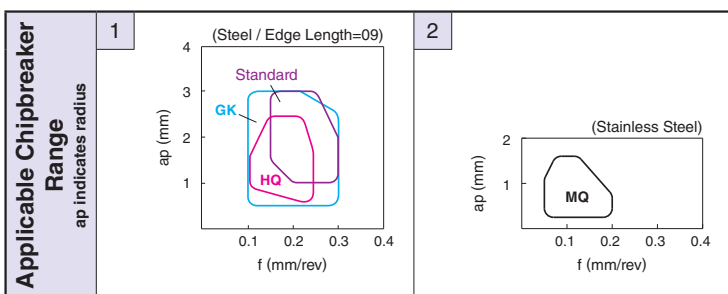
80° Rhombic / Positive with Hole

Description	(mm)			
	A	T	φd	α
CC_0301_	3.5	1.4	1.9	7°
CC_0401_	4.3	1.8	2.3	7°

Material	Material Compatibility															
	P	M	K	N	S	H	Free-cutting steel	Carbon Steel / Alloy Steel	Stainless Steel	Gray Cast Iron	Nodular Cast Iron	Non-ferrous Metals	Heat-resistant Alloys	Titanium Alloys	Hard Materials	
●	○		●	●	●	●	●	●	●	●	●	●	●	●	●	●

Insert	Description	Dimension (mm)	Material Compatibility																Ref. Page for Applicable Toolholders	Applicable Chipbreaker Range																			
			Cermet	PVD Cermet	MEGACOAT Cermet	CVD Coated Carbide								PVD Coated Carbide	MEGACOAT MEGACOAT NANO	Carbide																							
			TN6010	TN6020	TN60	PV90	PV7005	PV7010	PV7025	CA515	CA525	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA4505	CA4010	CA4115	CA4120	PR930	PR1005	PR1025	PR1125	PR1425	PR1225	PR1305	PR1310	PR1325	KW10	SW05							
Finishing-Medium	CCMT 060202GK 060204GK	0.2	●	●			●	●	●	●	●	●	●	●	●	●	●	●	●				●	●	●	●													
		0.4	●	●			●	●	●	●	●	●	●	●	●	●	●	●	●	●				●	●	●	●												
	CCMT 09T302GK 09T304GK	0.2	●	●			●	●	●	●	●	●	●	●	●	●	●	●	●	●				●	●	●	●												
		0.4	●	●			●	●	●	●	●	●	●	●	●	●	●	●	●	●	●				●	●	●	●											
Finishing-Medium	CCMT 120404GK 120408GK 120412GK	0.4	●	●			●	●	●	●	●	●	●	●	●	●	●	●	●	●				●	●	●	●												
		0.8	●	●			●	●	●	●	●	●	●	●	●	●	●	●	●	●	●				●	●	●	●											
	CCMT 060202HQ 060204HQ	0.2	●	●	●	●		●	●	●	●	●	●	●	●	●	●	●	●	●				●	●	●	●												
		0.4	●	●	●	●		●	●	●	●	●	●	●	●	●	●	●	●	●	●				●	●	●	●											
Medium	CCGT 060201 060202 060204	0.1	●	●	●	●		●	●	●	●	●	●	●	●	●	●	●	●	●				●	●	●	●												
		0.2	●	●	●	●		●	●	●	●	●	●	●	●	●	●	●	●	●	●				●	●	●	●											
	CCMT 09T308	0.1	●	●	●	●		●	●	●	●	●	●	●	●	●	●	●	●	●	●				●	●	●	●											
		0.2	●	●	●	●		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●				●	●	●	●										
Medium	CCGT 09T301 09T302 09T304	0.1	●	●	●	●		●	●	●	●	●	●	●	●	●	●	●	●	●	●				●	●	●	●											
		0.2	●	●	●	●		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●				●	●	●	●										
	CCGT 0602005M 060201M 060202M 060204M	<0.05	●	●	●	●		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●				●	●	●	●										
		<0.1	●	●	●	●		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●				●	●	●	●									
Medium	CCGT 09T3005MF 09T301MF 09T302MF 09T304MF	<0.05	●	●	●	●		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●				●	●	●	●										
		<0.1	●	●	●	●		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●				●	●	●	●									
	CCMT 09T304MQ 09T308MQ	0.4																																					
		0.8																																					

Insert whose corner-R (r<sub>c</sub>) dimension expressed with less than sign (e.g. <0.05, <0.1, <0.2 etc.) indicate models with minus tolerance for corner-R (r<sub>c</sub>).









# Turning Indexable Inserts

How to read pages of "Turning Inserts" **B13** (mm)



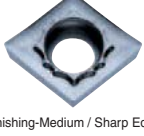
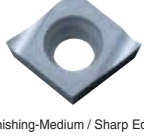
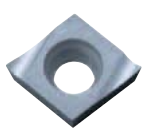
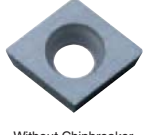
## 80° Rhombic / Positive with Hole

Description	A	T	φd	α
CC_0301_	3.5	1.4	1.9	7°
CC_0401_	4.3	1.8	2.3	7°

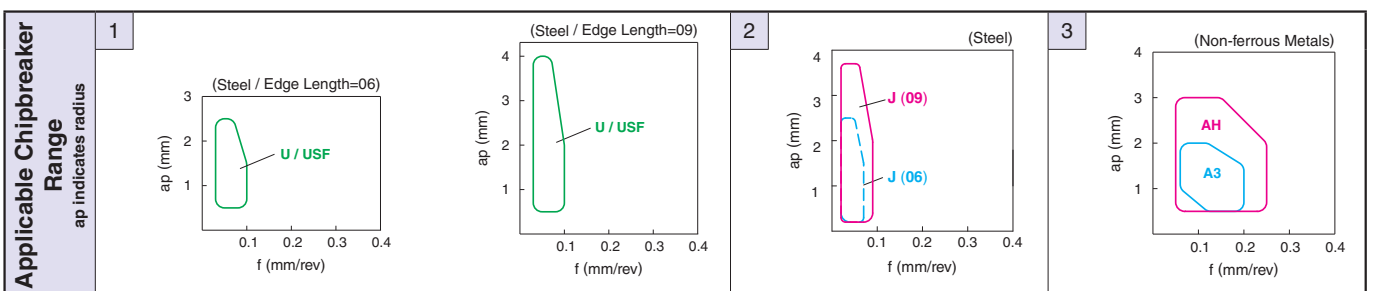
  

Description	A	T	φd	α
CC_0602_	6.35	2.38	2.8	7°
CC_09T3_	9.525	3.97	4.4	7°
CC_1204_	12.7	4.76	5.5	7°

- B
- Positive
- C
- D
- R
- S
- T
- V
- W
- Insert (Turning)

Insert	Description	Dimension (mm)	CVD Coated Carbide													PVD Coated Carbide	MEGACOAT MEGACOAT NANO	Carbide	Ref. Page for Applicable Toolholders	Applicable Chipbreaker Range																	
			Cermet			PVD Cermet		MEGACOAT Cermet		CVD Coated Carbide																											
Handed Insert shows Left-hand		rε	TN6010	TN6020	TN60	PV90	PV7005	PV7010	PV7025	CA515	CA525	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA4505	CA4515	CA4010	CA4115	CA4120	PR930	PR1005	PR1025	PR1125	PR1425	PR1225	PR1305	PR1310	PR1325	KW10	SW05				
Low Feed  With Honing	CCGT 060201E <sup>R/L</sup> -U	0.1	●	●	●				●														●												1		
	CCGT 060202E <sup>R/L</sup> -U	0.2	●	●	●				●														●														
	CCGT 060204E <sup>R/L</sup> -U	0.4	●	●	●				●														●														
	CCGT 09T301E <sup>R/L</sup> -U	0.1	●	●	●				●														●														
Low Feed  Sharp Edge	CCGT 09T302E <sup>R/L</sup> -U	0.2	●	●	●				●														●												2		
	CCGT 09T304E <sup>R/L</sup> -U	0.4	●	●	●				●														●														
	CCGT 09T301ME <sup>R/L</sup> -U	<0.1																					●														
Non-ferrous Metals  Finishing-Medium / Sharp Edge	CCGT 09T302ME <sup>R/L</sup> -U	<0.2																					●												3		
	CCGT 09T304ME <sup>R/L</sup> -U	<0.4																					●														
Non-ferrous Metals  Finishing-Medium / Sharp Edge	CCGT 060201MF <sup>R/L</sup> -J	<0.05																																	E23		
	CCGT 060201MF <sup>R/L</sup> -J	<0.1																																			
	CCGT 060202MF <sup>R/L</sup> -J	<0.2																																			
Non-ferrous Metals  Finishing-Medium / Sharp Edge	CCGT 09T301MF <sup>R/L</sup> -J	<0.1																																		Ref. to the table below B46	
	CCGT 09T302MF <sup>R/L</sup> -J	<0.2																																			
Cast Iron  Without Chipbreaker	CCGT 09T304AH	0.4																																	Ref. to the table below B46		
	CCGT 09T308AH	0.8																																			
Cast Iron	CCGT 09T302 <sup>R/L</sup> -A3	0.2																																	Ref. to the table below B46		
	CCGT 09T304 <sup>R/L</sup> -A3	0.4																																			
Cast Iron	CCGT 120402 <sup>R/L</sup> -A3	0.2																																			
	CCGT 120404 <sup>R/L</sup> -A3	0.4																																			
Cast Iron	CCGT 120408 <sup>R/L</sup> -A3	0.8																																			
	CCGW 060201	0.1																																			
Cast Iron	CCGW 060202	0.2																																			
	CCGW 09T300	0.0																																			
	CCGW 09T301	0.1																																			
	CCGW 09T302	0.2																																			
Cast Iron	CCGW 09T303	0.2																																			
	CCGW 09T304	0.4																																			






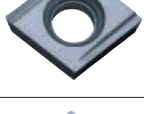

· Insert whose corner-R (rε) dimension expressed with less than sign (e.g. <0.05, <0.1, <0.2 etc.) indicate models with minus tolerance for corner-R (rε).

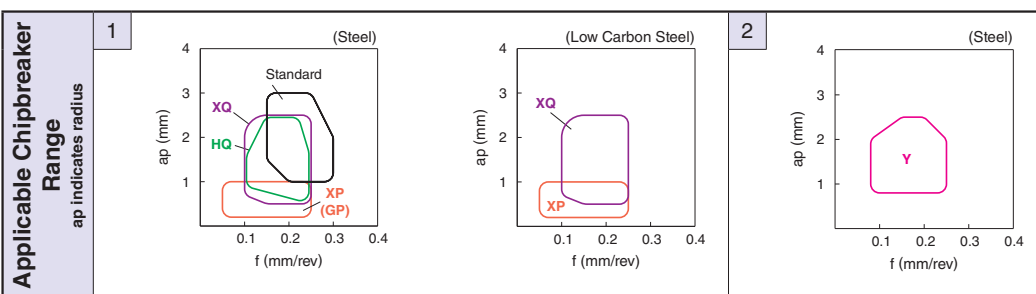


Inserts are sold in 10 piece boxes

80° Rhombic / Positive with Hole

	(mm)				(mm)				
Description	A	T	φd	α	Description	A	T	φd	α
CPMT0802_	7.94	2.38	3.3	11°	CP_0802_	7.94	2.38	3.5	11°
CPMT0903_	9.525	3.18	4.4	11°	CP_0903_	9.525	3.18	4.5	11°

Insert <small>Handed Insert shows Left-hand</small>	Description	Dimension (mm) rε	Material																Rel. Page for Applicable Toolholders	Applicable Chipbreaker Range															
			Cermet			PVD Cermet		MEGACOAT Cermet		CVD Coated Carbide								PVD Coated Carbide			MEGACOAT MEGACOAT NANO		Carbide												
			TN6010	TN6020	TN60	PV90	PV7020	PV7005	PV7010	PV7025	CA515	CA525	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525			CA4505	CA4515	CA4010	CA4115	CA4120	PR930	PR1005	PR1025	PR1125	PR1425	PR1225	PR1305	PR1310	PR1325	KW10
	CPMT 080204GP	0.4	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	F39	1
	CPMT 090304GP 090308GP	0.4 0.8	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●		
	CPMH 080204HQ 080208HQ	0.4 0.8	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	F39	1	
	CPMH 090304HQ 090308HQ	0.4 0.8	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●			●●●●
	CPMH 080204 080208	0.4 0.8	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	F39	1	
	CPMH 090304 090308	0.4 0.8	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●			●●●●
	CPMT 080204XP	0.4	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	F39	1	
	CPMT 090304XP 090308XP	0.4 0.8	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●			●●●●
	CPMT 090304XQ 090308XQ	0.4 0.8	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	F39	1	
	CPMH 080204 <sup>ε</sup> /L-Y 080208 <sup>ε</sup> /L-Y	0.4 0.8	●L	●●	●●	●L	●●	●●																								F39	2		
	CPMH 090304 <sup>ε</sup> /L-Y 090308 <sup>ε</sup> /L-Y	0.4 0.8	●L	●L	●●	●L	●L																												
	CPMB 080202 080204 080208	0.2 0.4 0.8																														-			
	CPMB 090302	0.2																																	
	CPMB 090304	0.4																																	
	CPMB 090308	0.8																																	



# Turning Indexable Inserts

How to read pages of "Turning Inserts" B13

## 55° Rhombic / Positive with Hole

Insert Description	Ref. Page for Applicable Toolholders
DC..07 type	E24~E27,E35,F41~F43
DC..11 type	E20,E24~E27,E35,F41~F43,F62

Description	A	T	φd	α
DC_0702_	6.35	2.38	2.8	7°
DC_11T3_	9.525	3.97	4.4	7°

(mm)

**B**



**Positive**

**C**

**D**

**R**

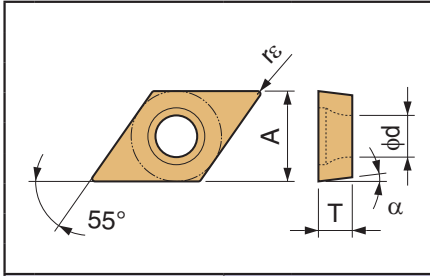
**S**

**T**

**V**

**W**

**Insert (Turning)**

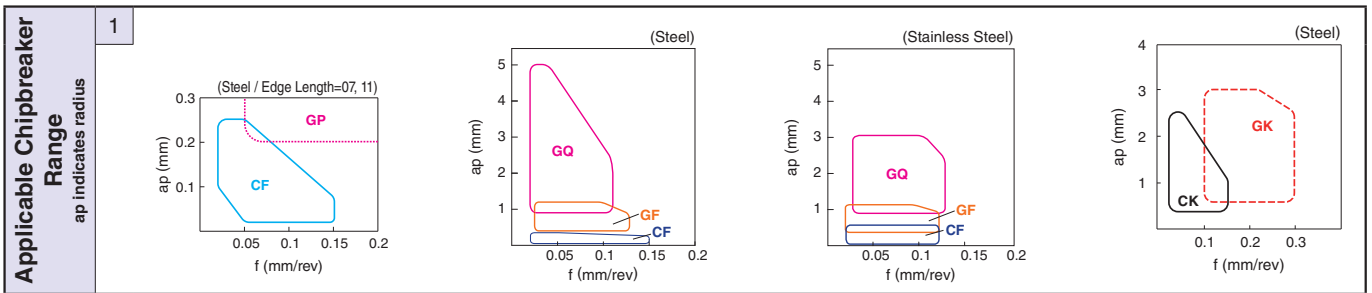


P	M	K	N	S	H
●					
○					
●	●	●	●	●	●
●	●	●	●	●	●
●	●	●	●	●	●
●	●	●	●	●	●
●	●	●	●	●	●
●	●	●	●	●	●
●	●	●	●	●	●
●	●	●	●	●	●
●	●	●	●	●	●
●	●	●	●	●	●
●	●	●	●	●	●
●	●	●	●	●	●
●	●	●	●	●	●

Insert	Description	Dimension (mm)	Cermet	PVD Cermet	MEGACOAT Cermet	CVD Coated Carbide																PVD Coated Carbide	MEGACOAT MEGACOAT NANO	Carbide	Ref. Page for Applicable Toolholders	Applicable Chipbreaker Range								
						TN6010	TN6020	TN60	PV90	PV7020	PV7010	PV7025	CA515	CA525	CA505	CA515	CA525	CA535	CA615	CA625	CA4505						CA4515	CA4010	CA4115	CA4120	PR930	PR1005	PR1025	PR1125
Minute ap		DCGT 070202CF	0.2																		●													
			DCGT 11T302CF	0.2																			●											
Minute ap		DCGT 070201M-CF	<0.1																			●	●											
			DCGT 070202M-CF	<0.2																				●	●									
Minute ap		DCGT 11T301M-CF	<0.1																			●	●											
			DCGT 11T302M-CF	<0.2																				●	●									
Finishing		DCGT 070201MF-GF	<0.1																			●	●											
			DCGT 070202MF-GF	<0.2																				●	●									
Finishing		DCGT 11T301MF-GF	<0.1																			●	●											
			DCGT 11T302MF-GF	<0.2																				●	●									
Finishing		DCGT 11T304MF-GF	<0.4																															
			DCGT 070204MFP-GF	<0.4																				●	●									
Finishing		DCGT 11T301MFP-GF	<0.1																				●	●										
			DCGT 11T302MFP-GF	<0.2																					●	●								
Finishing		DCGT 11T304MFP-GF	<0.4																															
			DCGT 070204MFP-GF	<0.4																					●	●								
Finishing		DCGT 070201MCK	<0.1																				●	●										
			DCGT 070202MCK	<0.2																					●	●								
Finishing		DCGT 11T301MCK	0.1																				●	●										
			DCGT 11T302MCK	0.2																					●	●								
Finishing		DCGT 070201MPCK	<0.1																				●	●										
			DCGT 070202MPCK	<0.2																					●	●								
Finishing		DCGT 11T301MPCK	<0.1																				●	●										
			DCGT 11T302MPCK	<0.2																					●	●								
Finishing		DCMT 070202GP	0.2	●	●	●	●	●	●	●	●	●										●	●											
			DCMT 070204GP	0.4	●	●	●	●	●	●	●	●	●	●										●	●									
Finishing		DCMT 11T304GP	0.4	●	●	●	●	●	●	●	●	●											●	●										
			DCMT 11T308GP	0.8	●	●	●	●	●	●	●	●	●	●											●	●								

Ref. to the table above **1**

Insert whose corner-R (rε) dimension expressed with less than sign (e.g. <0.05, <0.1, <0.2 etc.) indicate models with minus tolerance for corner-R (rε).



Inserts are sold in 10 piece boxes

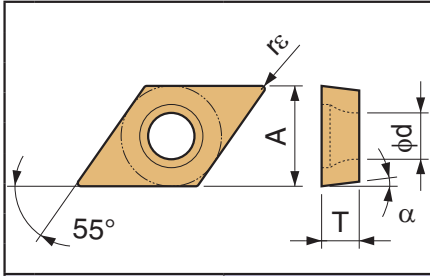


# Turning Indexable Inserts

## 55° Rhombic / Positive with Hole

Insert Description	Ref. Page for Applicable Toolholders
DC..07 type	E24~E27,E35,F41~F43
DC..11 type	E20,E24~E27,E35,F41~F43,F62

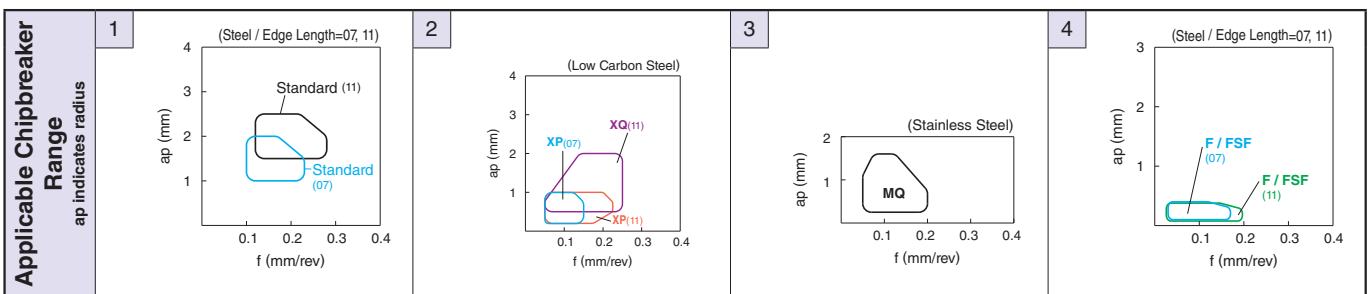
Description	A	T	$\phi d$	$\alpha$
DC_0702_	6.35	2.38	2.8	7°
DC_11T3_	9.525	3.97	4.4	7°



Material	P	M	K	N	S	H
Free-cutting steel	●	○	○	○	○	○
Carbon Steel / Alloy Steel	●	○	○	○	○	○
Stainless Steel	○	●	○	○	○	○
Gray Cast Iron	○	○	●	○	○	○
Nodular Cast Iron	○	○	○	●	○	○
Non-ferrous Metals	○	○	○	○	○	○
Heat-resistant Alloys	○	○	○	○	○	○
Titanium Alloys	○	○	○	○	○	○
Hard Materials	○	○	○	○	○	○

Insert	Description	Dimension (mm)	Material														Ref. Page for Applicable Toolholders	Applicable Chipbreaker Range																	
			Cermet				PVD Cermet		MEGACOAT Cermet		CVD Coated Carbide								PVD Coated Carbide		MEGACOAT MEGACOAT NANO		Carbide												
Handed Insert shows Left-hand		$r_{\epsilon}$	TN6010	TN6020	TN60	PV90	PV7020	PV7010	PV7025	CA515	CA525	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA4505	CA4515	CA4010	CA4115	CA4120	PR930	PR1005	PR1025	PR1125	PR1425	PR1225	PR1305	PR1310	PR1325	KW10	SW05		
Medium Sharp Edge	DCGT 0702005MF	<0.05																																	1
	DCGT 070201MF	<0.1																																	
	DCGT 070202MF	<0.2																																	
	DCGT 070204MF	<0.4																																	
Low Carbon Steel Finishing	DCMT 070204XP	0.4																																	2
	DCMT 11T3005MF	<0.05																																	
	DCMT 11T301MF	<0.1																																	
	DCMT 11T302MF	<0.2																																	
Low Carbon Steel Finishing-Medium	DCMT 11T304MF	<0.4																																	3
	DCMT 070202MQ	0.2																																	
	DCMT 070204MQ	0.4																																	
	DCMT 11T302MQ	0.2																																	
Stainless Steel / Heat-Resistant Alloys Finishing-Medium	DCMT 11T304MQ	0.4																																	4
	DCMT 11T308MQ	0.8																																	
	DCMT 11T308MQ	0.8																																	
	DCMT 11T308MQ	0.8																																	
Super Fine Finishing Sharp Edge / Precision	DCET 0702003%/-FSF	0.03																																	4
	DCET 070201%/-FSF	0.1																																	
	DCET 070202%/-FSF	0.2																																	
	DCET 070204%/-FSF	0.4																																	
	DCET 11T3003%/-FSF	0.03																																	
	DCET 11T301%/-FSF	0.1																																	
	DCET 11T302%/-FSF	0.2																																	
	DCET 11T304%/-FSF	0.4																																	

· Insert whose corner-R ( $r_{\epsilon}$ ) dimension expressed with less than sign (e.g. <0.05, <0.1, <0.2 etc.) indicate models with minus tolerance for corner-R ( $r_{\epsilon}$ ).


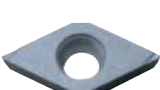



Inserts are sold in 10 piece boxes

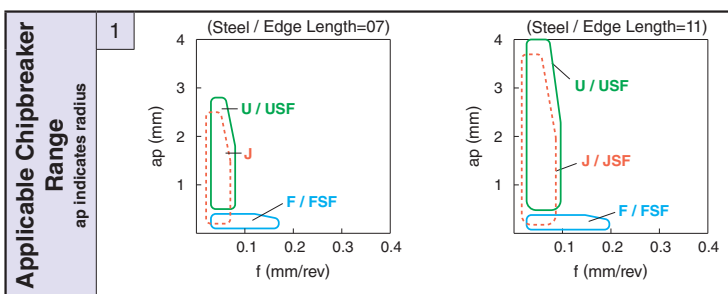
55° Rhombic / Positive with Hole

Insert Description	Ref. Page for Applicable Toolholders
DC..07 type	E24~E27,E35,F41~F43
DC..11 type	E20,E24~E27,E35,F41~F43,F62

Description	A	T	φd	α
DC_0702_	6.35	2.38	2.8	7°
DC_11T3_	9.525	3.97	4.4	7°

Insert Handed Insert shows Left-hand	Description	Dimension (mm)	Material															Ref. Page for Applicable Toolholders	Applicable Chipbreaker Range																							
			Cermet			PVD Cermet		MEGACOAT Cermet		CVD Coated Carbide							PVD Coated Carbide			MEGACOAT MEGACOAT NANO		Carbide																				
			TN6010	TN6020	TN60	PV90	PV7020	PV7005	PV7010	PV7025	CA515	CA525	CA5505	CA5515	CA5525	CA5535	CA6515			CA6525	CA4505	CA4515	CA4010	CA4115	CA4120	PR930	PR1005	PR1025	PR1125	PR1425	PR1255	PR1305	PR1310	PR1325	KW10	SW05						
Finishing  Sharp Edge	NEW DCET 0702005M%-F 070201M%-F 070202M%-F 070204M%-F DCET 11T3005M%-F 11T301M%-F 11T302M%-F 11T304M%-F	rε <0.05 <0.1 <0.2 <0.4	●																														R	Ref. to the table above								
			Finishing  Sharp Edge	DCGT 0702003%-F 070201%-F 070202%-F 070204%-F DCGT 11T3003%-F 11T301%-F 11T302%-F 11T304%-F DCGT 0702005M%-F 070201M%-F 070202M%-F 070204M%-F DCGT 11T3005M%-F 11T301M%-F 11T302M%-F 11T304M%-F	rε 0.03 0.1 0.2 0.4 0.03 0.1 0.2 0.4 <0.05 <0.1 <0.2 <0.4 <0.05 <0.1 <0.2 <0.4	●																														R						
						Super Fine  Low Feed	DCET 0702003F%-USF 070201F%-USF 070202F%-USF DCET 11T3003F%-USF 11T301F%-USF 11T302F%-USF DCET 0702005MF%-USF 070201MF%-USF 070202MF%-USF DCET 11T3005MF%-USF 11T301MF%-USF 11T302MF%-USF	rε 0.03 0.1 0.2 0.03 0.1 0.2 <0.05 <0.1 <0.2 <0.05 <0.1 <0.2	●																														R			
									●																																	

• Insert whose corner-R (rε) dimension expressed with less than sign (e.g. <0.05, <0.1, <0.2 etc.) indicate models with minus tolerance for corner-R (rε).



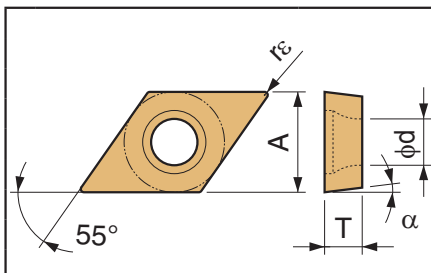




55° Rhombic / Positive with Hole

Insert Description	Ref. Page for Applicable Toolholders
DC..07 type	E24~E27,E35,F41~F43
DC..11 type	E20,E24~E27,E35,F41~F43,F62

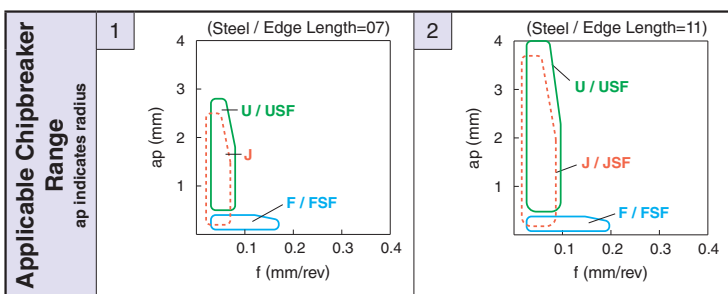
(mm)				
Description	A	T	φd	α
DC_0702_	6.35	2.38	2.8	7°
DC_11T3_	9.525	3.97	4.4	7°



Insert	Description	Dimension (mm)	Cermet		PVD Cermet	MEGACOAT Cermet	CVD Coated Carbide															PVD Coated Carbide	MEGACOAT MEGACOAT NANO		Carbide		Ret. Page for Applicable Toolholders	Applicable Chipbreaker Range			
			TN6010	TN6020	TN60	PV90	PV7020	PV7005	PV7010	PV7025	CA515	CA525	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA4505	CA4515	CA4010	CA4115	CA4120	PR930	PR1005	PR1025			PR1125	PR1425	PR1225

Low Feed	Super Fine 	DCET 11T3003F%-JSF 11T301F%-JSF 11T302F%-JSF	0.03 0.1 0.2	Cermet		PVD Cermet	MEGACOAT Cermet	CVD Coated Carbide															PVD Coated Carbide	MEGACOAT MEGACOAT NANO		Carbide		Ret. Page for Applicable Toolholders	Applicable Chipbreaker Range								
				TN6010	TN6020	TN60	PV90	PV7020	PV7005	PV7010	PV7025	CA515	CA525	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA4505	CA4515	CA4010	CA4115	CA4120	PR930	PR1005	PR1025			PR1125	PR1425	PR1225	PR1305	PR1310	PR1325	KW10	SW05
Low Feed	Sharp Edge / Precision 	DCET 11T3005MF%-JSF 11T301MF%-JSF 11T302MF%-JSF	<0.05 <0.1 <0.2	Cermet		PVD Cermet	MEGACOAT Cermet	CVD Coated Carbide															PVD Coated Carbide	MEGACOAT MEGACOAT NANO		Carbide		Ref. to the table above	2								
				TN6010	TN6020	TN60	PV90	PV7020	PV7005	PV7010	PV7025	CA515	CA525	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA4505	CA4515	CA4010	CA4115	CA4120	PR930	PR1005	PR1025			PR1125	PR1425	PR1225	PR1305	PR1310	PR1325	KW10	SW05
				PR930	PR1005	PR1025	PR1125	PR1425	PR1225	PR1305	PR1310	PR1325	KW10	SW05																							
Low Feed	NEW Sharp Edge 	DCET 0702005MF%-J 070201MF%-J 070202MF%-J	<0.05 <0.1 <0.2	Cermet		PVD Cermet	MEGACOAT Cermet	CVD Coated Carbide															PVD Coated Carbide	MEGACOAT MEGACOAT NANO		Carbide		Ref. to the table above	1								
				TN6010	TN6020	TN60	PV90	PV7020	PV7005	PV7010	PV7025	CA515	CA525	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA4505	CA4515	CA4010	CA4115	CA4120	PR930	PR1005	PR1025			PR1125	PR1425	PR1225	PR1305	PR1310	PR1325	KW10	SW05
				PR930	PR1005	PR1025	PR1125	PR1425	PR1225	PR1305	PR1310	PR1325	KW10	SW05																							
Low Feed	Sharp Edge 	DCGT 11T3003F%-J 11T301F%-J 11T302F%-J	0.03 0.1 0.2	Cermet		PVD Cermet	MEGACOAT Cermet	CVD Coated Carbide															PVD Coated Carbide	MEGACOAT MEGACOAT NANO		Carbide		Ref. to the table above	2								
				TN6010	TN6020	TN60	PV90	PV7020	PV7005	PV7010	PV7025	CA515	CA525	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA4505	CA4515	CA4010	CA4115	CA4120	PR930	PR1005	PR1025			PR1125	PR1425	PR1225	PR1305	PR1310	PR1325	KW10	SW05
				PR930	PR1005	PR1025	PR1125	PR1425	PR1225	PR1305	PR1310	PR1325	KW10	SW05																							
Low Feed	With Honing 	DCGT 11T3003E%-J 11T301E%-J 11T302E%-J 11T304E%-J	0.03 0.1 0.2 0.4	Cermet		PVD Cermet	MEGACOAT Cermet	CVD Coated Carbide															PVD Coated Carbide	MEGACOAT MEGACOAT NANO		Carbide		Ref. to the table above	2								
				TN6010	TN6020	TN60	PV90	PV7020	PV7005	PV7010	PV7025	CA515	CA525	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA4505	CA4515	CA4010	CA4115	CA4120	PR930	PR1005	PR1025			PR1125	PR1425	PR1225	PR1305	PR1310	PR1325	KW10	SW05
				PR930	PR1005	PR1025	PR1125	PR1425	PR1225	PR1305	PR1310	PR1325	KW10	SW05																							

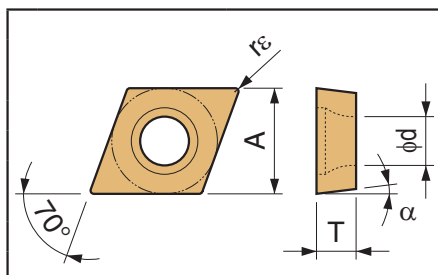
• Insert whose corner-R (rε) dimension expressed with less than sign (e.g. <0.05, <0.1, <0.2 etc.) indicate models with minus tolerance for corner-R (rε).



Inserts are sold in 10 piece boxes



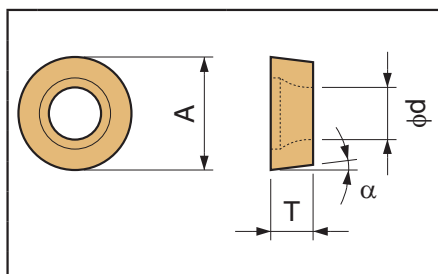
70° Rhombic / Positive with Hole



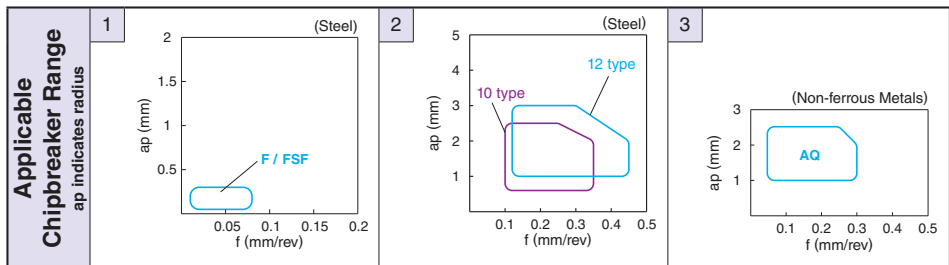
Insert	Description	Dimension (mm)	Material																Rel. Page for Applicable Toolholders	Applicable Chipbreaker Range															
			Cermet	PVD Cermet	MEGACOAT Cermet	CVD Coated Carbide										PVD Coated Carbide	MEGACOAT MEGACOAT NANO	Carbide																	
		r <sub>ε</sub>	TN6010	TN6020	TN60	PV90	PV7020	PV7005	PV7010	PV7025	CA515	CA525	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA4505	CA4010	CA4115	CA4120	PR930	PR1005	PR1025	PR1125	PR1425	PR1225	PR1305	PR1310	PR1325	KW10	SW05		
Finishing Super Fine	JCET 030101 <sup>R</sup> /L-FSF	0.1																																	
	JCET 030102 <sup>R</sup> /L-FSF	0.2																																	
	JCET 030104 <sup>R</sup> /L-FSF	0.4																																	
Finishing Sharp Edge / Precision	JCET 030101 <sup>M</sup> /L-FSF	<0.1																																	
	JCET 030102 <sup>M</sup> /L-FSF	<0.2																																	
Finishing NEW Sharp Edge	JCET 030102 <sup>M</sup> /L-F	<0.2																																	
	JCET 030104 <sup>M</sup> /L-F	<0.4																																	
Finishing Sharp Edge	JCGT 030101 <sup>R</sup> /L-F	0.1																																	
	JCGT 030102 <sup>R</sup> /L-F	0.2																																	
	JCGT 030104 <sup>R</sup> /L-F	0.4																																	
	JCGT 030101 <sup>M</sup> /L-F	<0.1																																	

Insert whose corner-R (r<sub>ε</sub>) dimension expressed with less than sign (e.g. <0.05, <0.1, <0.2 etc.) indicate models with minus tolerance for corner-R (r<sub>ε</sub>). (mm)

Round / Positive with Hole



Insert	Description	Dimension (mm)	Material																Rel. Page for Applicable Toolholders	Applicable Chipbreaker Range															
			Cermet	PVD Cermet	MEGACOAT Cermet	CVD Coated Carbide										PVD Coated Carbide	MEGACOAT MEGACOAT NANO	Carbide																	
		r <sub>ε</sub>	TN6010	TN6020	TN60	PV90	PV7020	PV7005	PV7010	PV7025	CA515	CA525	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA4505	CA4010	CA4115	CA4120	PR930	PR1005	PR1025	PR1125	PR1425	PR1225	PR1305	PR1310	PR1325	KW10	SW05		
Medium	RCMX 1003M0	-																																	
	RCMX 1204M0	-																																	
Non-ferrous Metals Finishing-Medium	RCGX 1003M0-AQ	-																																	



● : Std. Item R : Std. Item (Right-hand Only) L : Std. Item (Left-hand Only) □ : Deleted from the next catalogue

Inserts are sold in 10 piece boxes

# Turning Indexable Inserts

## 90° Square / Positive with Hole

## 90° Square / Positive without Hole

Description	(mm)					Description	(mm)				
	A	T	φd	α	A		T	φd	α		
SC_09T3_	9.525	3.97	4.4	7°	SP_0903_	9.525	3.18	-	11°		
SP_0903_	9.525	3.18	4.5	11°	SP_1203_	12.7	3.18	-	11°		
SP_1203_	12.7	3.18	5.5	11°	SP_1204_	12.7	4.76	-	11°		

B

Positive

C

D

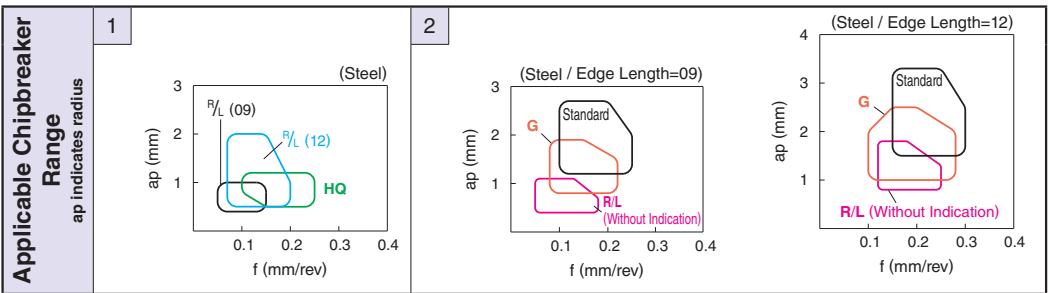
R

S

T

Insert (Turning)

Insert	Description	Dimension (mm)	CVD Coated Carbide											PVD Coated Carbide	MEGACOAT MEGACOAT NANO		Carbide	Ref. Page for Applicable Toolholders	Applicable Chipbreaker Range																			
			TN6010	TN6020	TN60	PV90	PV7020	PV7010	PV7025	CA515	CA525	CA5505	CA5515		CA5525	CA5535				CA6515	CA6525	CA4505	CA4515	CA4010	CA4115	CA4120	PR930	PR1005	PR1025	PR1125	PR1125	PR1225	PR1305	PR1310	PR1325	KW10	SW05	
	SCMT 09T304HQ	0.4	●																																		-	
	SCMT 09T308HQ	0.8	●																																			
	SPGH 090304 <sup>F/L</sup>	0.4		L																																		F56
	SPMR 090304G	0.4		●	●		●	●																														
	SPMR 090308G	0.8		●	●		●	●																														
	SPMR 120304G	0.4		●	●		●	●																														
	SPMR 120308G	0.8		●	●		●	●																														
	SPMR 090304	0.4							●	●	●																	●										
	SPMR 090308	0.8							●	●	●																	●										
	SPGR 090304 <sup>F/L</sup>	0.4	●	●			●																															
	SPGR 090308 <sup>F/L</sup>	0.8	●	●			●																															
	SPGR 120304 <sup>F/L</sup>	0.4	●	●			●																															
	SPGR 120308 <sup>F/L</sup>	0.8	●	●			●																															
	SPGN 090304	0.4							●																													
	SPGN 090308	0.8							●																													
	SPGN 120304	0.4							●																													
	SPGN 120308	0.8							●																													
	SPMN 090308	0.8							●																													
	SPMN 120304	0.4																																				
	SPMN 120308	0.8	●	●			●					●																										
	SPMN 120312	1.2	●	●			●																															
SPMN 120408	0.8																																					
SPMN 120412	1.2																																					





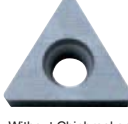



Inserts are sold in 10 piece boxes

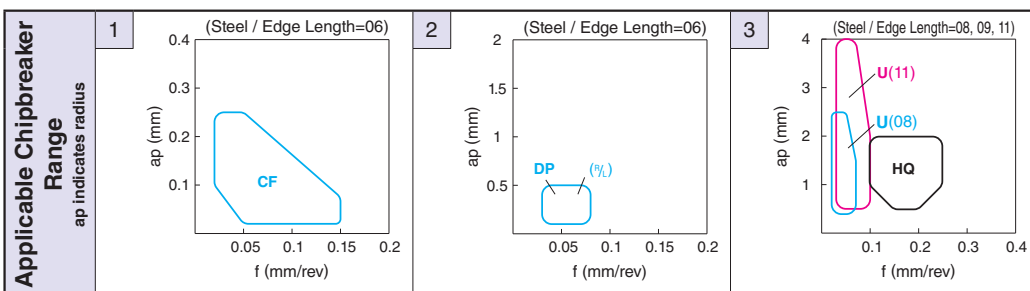
60° Triangle / Positive with Hole

Description	A	T	$\phi d$	$\alpha$
TB_0601	3.97	1.59	2.3	5°
TC_0902_	5.56	2.38	2.5	7°

Description	A	T	$\phi d$	$\alpha$
TC_1102_	6.35	2.38	2.8	7°
TC_16T3_	9.525	3.97	4.4	7°

Insert	Description	Dimension (mm)	Cermet	PVD Cermet	MEGACOAT Cermet	CVD Coated Carbide													PVD Coated Carbide	MEGACOAT MEGACOAT NANO	Carbide	Ref. Page for Applicable Toolholders	Applicable Chipbreaker Range																																																																																																																																																																																																																																																																																																																																															
						TN6010	TN6020	TN60	PV90	PV7020	PV7005	PV7010	PV7025	CA515	CA525	CA5505	CA5515	CA5525						CA5535	CA6515	CA6525	CA4505	CA4515	CA4010	CA4115	CA4120	PR930	PR1005	PR1025	PR1125	PR1425	PR1225	PR1305	PR1310	PR1325	KW10	SW05																																																																																																																																																																																																																																																																																																																												
			<table border="1"> <thead> <tr> <th colspan="21">Material Compatibility</th> </tr> <tr> <th>P</th><th>M</th><th>K</th><th>N</th><th>S</th><th>H</th> <th colspan="13"></th> <th>P</th><th>M</th><th>K</th><th>N</th><th>S</th><th>H</th> </tr> </thead> <tbody> <tr> <td>●</td><td>○</td><td></td><td></td><td></td><td></td> <td>●</td><td>●</td><td>●</td><td>●</td><td>●</td><td>●</td><td>●</td><td>●</td><td>●</td><td>●</td><td>●</td><td>●</td><td>●</td><td>●</td><td>●</td><td>●</td><td>●</td><td>●</td><td>●</td><td>●</td><td>●</td><td>●</td><td>●</td><td>●</td><td>●</td><td>●</td> </tr> <tr> <td>○</td><td>○</td><td></td><td></td><td></td><td></td> <td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td> </tr> <tr> <td></td><td></td><td></td><td></td><td></td><td></td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td></td><td></td><td></td><td></td><td></td><td></td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td></td><td></td><td></td><td></td><td></td><td></td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td></td><td></td><td></td><td></td><td></td><td></td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td></td><td></td><td></td><td></td><td></td><td></td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td></td><td></td><td></td><td></td><td></td><td></td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td></td><td></td><td></td><td></td><td></td><td></td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> </tbody> </table>																			Material Compatibility																					P	M	K	N	S	H														P	M	K	N	S	H	●	○					●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○					○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○																																																																																																																																																																																																																																		
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Minute ap		TBGT 060101MP-CF 060102MP-CF	<0.1 <0.2																																																																																																																																																																																																																																																																																																																																																																			
Finishing		TBMT 060102DP 060104DP	0.2 0.4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●																																																																																																																																																																																																																																																																																																																																
Finishing		NEW TBET 0601005M <sup>3/4</sup> L 060101M <sup>3/4</sup> L 060102M <sup>3/4</sup> L 060104M <sup>3/4</sup> L	<0.05 <0.1 <0.2 <0.4																																																																																																																																																																																																																																																																																																																																																																			
		TBGT 0601003 <sup>3/4</sup> L 060101 <sup>3/4</sup> L 060102 <sup>3/4</sup> L 060104 <sup>3/4</sup> L	0.03 0.1 0.2 0.4		L		L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L																																																																																																																																																																																																																																																																																																																																	
		TBGT 0601005M <sup>3/4</sup> L 060101M <sup>3/4</sup> L 060102M <sup>3/4</sup> L 060104M <sup>3/4</sup> L	<0.05 <0.1 <0.2 <0.4																																																																																																																																																																																																																																																																																																																																																																			
Cast Iron		TBGW 060102 060104	0.2 0.4	●	●																																																																																																																																																																																																																																																																																																																																																																	
Finishing-Medium		TCMT 090202HQ 090204HQ	0.2 0.4	●	●		●	●																																																																																																																																																																																																																																																																																																																																																														
		TCMT 110202HQ 110204HQ 110208HQ	0.2 0.4 0.8	●	●		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●																																																																																																																																																																																																																																																																																																																																
		TCMT 16T304HQ 16T308HQ 16T312HQ	0.4 0.8 1.2				●																																																																																																																																																																																																																																																																																																																																																															

• Insert whose corner-R ( $r_c$ ) dimension expressed with less than sign (e.g. <0.05, <0.1, <0.2 etc.) indicate models with minus tolerance for corner-R ( $r_c$ ).



# Turning Indexable Inserts

How to read pages of "Turning Inserts" B13 (mm)

## 60° Triangle / Positive with Hole

Description	A	T	φd	α
TC_0802_	4.76	2.38	2.3	7°
TC_0902_	5.56	2.38	2.5	7°

Description	A	T	φd	α
TC_1102_	6.35	2.38	2.8	7°
TC_1103_	6.35	3.18	2.8	7°
TC_16T3_	9.525	3.97	4.4	7°

**B**

Positive

C

D

R






S

T

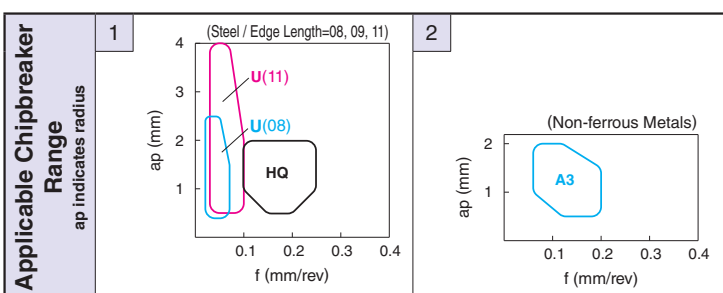
V

W

Insert (Turning)

Insert Handed Insert shows Left-hand	Description	Dimension (mm)	CVD Coated Carbide												Carbide		Rel. Page for Applicable Toolholders	Applicable Chipbreaker Range																					
			Cermet			PVD Cermet	MEGACOAT Cermet												PVD Coated Carbide	MEGACOAT MEGACOAT NANO																			
		rε	TN6010	TN6020	TN60	PV90	PV7005	PV7010	PV7025	CA515	CA525	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA4505	CA4515	CA4010	CA4115	CA4120	PR930	PR1005	PR1025	PR1125	PR1425	PR1225	PR1305	PR1310	PR1325	KW10	SW05						
Super Fine  Low Feed	TCET 0802003F <sup>R/L</sup> -USF	0.03																																					
	TCET 080201F <sup>R/L</sup> -USF	0.1																																					
	TCET 080202F <sup>R/L</sup> -USF	0.2																																					
Sharp Edge / Precision  Low Feed	TCET 1103003F <sup>R/L</sup> -USF	0.03																																					
	TCET 110301F <sup>R/L</sup> -USF	0.1			R																																		
	TCET 110302F <sup>R/L</sup> -USF	0.2			R																																		
Sharp Edge  Low Feed	TCGT 0802003F <sup>R/L</sup> -U	0.03																																					
	TCGT 080201F <sup>R/L</sup> -U	0.1																																					
	TCGT 080202F <sup>R/L</sup> -U	0.2		R																																			
	TCGT 0802005MF <sup>R/L</sup> -U	<0.05																																					
	TCGT 080201MF <sup>R/L</sup> -U	<0.1																																					
With Honing  Low Feed	TCGT 080202E <sup>R/L</sup> -U	0.2																																					
	TCGT 110301E <sup>R/L</sup> -U	0.1																																					
	TCGT 110302E <sup>R/L</sup> -U	0.2																																					
	TCGT 110304E <sup>R/L</sup> -U	0.4																																					
Finishing-Medium / Sharp Edge  Non-ferrous Metals	TCGT 080202ME <sup>R/L</sup> -U	<0.2																																					
	TCGT 110301ME <sup>R/L</sup> -U	<0.1																																					
	TCGT 110302ME <sup>R/L</sup> -U	<0.2																																					
	TCGT 110304ME <sup>R/L</sup> -U	<0.4																																					
	TCGT 110302 <sup>R/L</sup> -A3	0.2																																					
	TCGT 110304 <sup>R/L</sup> -A3	0.4																																					

· Insert whose corner-R (rε) dimension expressed with less than sign (e.g. <0.05, <0.1, <0.2 etc.) indicate models with minus tolerance for corner-R (rε).



Inserts are sold in 10 piece boxes

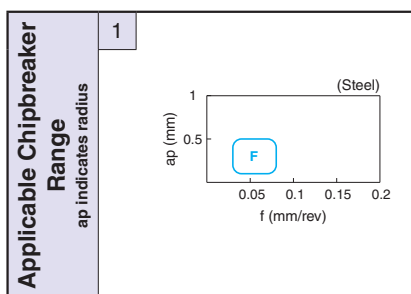
60° Triangle / Positive with Hole  
60° Triangle / Positive without Hole

Description	(mm)			
	A	T	φd	α
TCGN_0601_	3.97	1.59	-	7°
TC_0802_	4.76	2.38	2.3	7°

Description	(mm)			
	A	T	φd	α
TC_1103_	6.35	3.18	2.8	7°

Insert		Description		Dimension (mm)																Ret. Page for Applicable Toolholders		Applicable Chipbreaker Range																	
rε	Dimension (mm)	Description		Cermet								CVD Coated Carbide								PVD Coated Carbide		MEGACOAT MEGACOAT NANO		Carbide															
				TN6010	TN6020	TN60	PV90	PV7020	PV7005	PV7010	PV7025	CA515	CA525	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA4505	CA4515	CA4010	CA4115	CA4120	PR930	PR1005	PR1025	PR1125	PR11425	PR1225	PR1305	PR1310	PR1325	KW10	SW05				
Cast Iron	0.1 0.2	Without Chipbreaker	TCGW 080201	TCGW 080202																																			
			TCGW 110301	TCGW 110302																																			
Finishing	0.2 0.4	Sharp Edge	TCGR 060102 <sup>F/L</sup> -F	TCGR 060104 <sup>F/L</sup> -F			L	L																															
			TCGN 060102	TCGN 060104			●	●																															

Insert whose corner-R (rε) dimension expressed with less than sign (e.g. <0.05, <0.1, <0.2 etc.) indicate models with minus tolerance for corner-R (rε).



# Turning Indexable Inserts

How to read pages of "Turning Inserts" **B13** (mm)

## 60° Triangle / Positive with Hole

Description	A	T	φd	α
TP_0802_	4.76	2.38	2.3	11°
TPMT0902_	5.56	2.38	2.8	11°

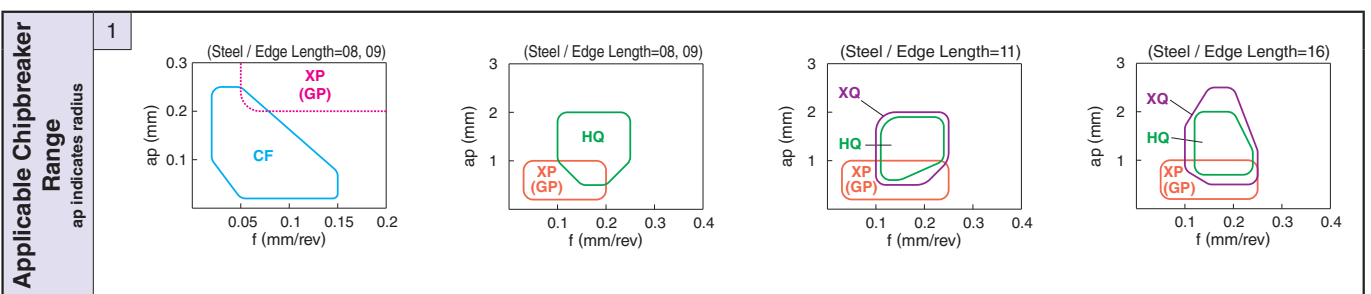
- B
- Positive
- C
- D
- R
- S
- T
- V
- W
- Insert (Turning)

Insert	Description	Dimension (mm)	CVD Coated Carbide																	Ret. Page for Applicable Toolholders	Applicable Chipbreaker Range										
			TN6010	TN6020	TN60	PV90	PV7020	PV7005	PV7010	PV7025	CA515	CA525	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA4505			CA4515	CA4010	CA4115	CA4120	PR930	PR1005	PR1025	PR1125	PR1425	PR1225
	<b>P</b> Free-cutting steel <b>M</b> Carbon Steel / Alloy Steel <b>K</b> Stainless Steel <b>N</b> Gray Cast Iron <b>S</b> Nodular Cast Iron <b>H</b> Non-ferrous Metals <b>H</b> Heat-resistant Alloys <b>H</b> Titanium Alloys <b>H</b> Hard Materials	r <sub>ε</sub>																		Ref. to the table below	1										
			Handed Insert shows Left-hand Minute ap Sharp Edge	TPGT 080202CF	0.2																										
				TPGT 090202CF	0.2																										
				TPGT 080201M-CF 080202M-CF	<0.1 <0.2																										
				TPGT 090201M-CF 090202M-CF	<0.1 <0.2																										
TPGT 080201MP-CF 080202MP-CF	<0.1 <0.2																														
Minute ap Sharp Edge / Polished	TPGT 090201MP-CF 090202MP-CF	<0.1 <0.2																													
	TPMT 090202GP 090204GP	0.2 0.4																													
Finishing	TPMT 110304GP 110308GP	0.4 0.8																													
	TPMT 160304GP	0.4																													
	TPMT 090202HQ 090204HQ	0.2 0.4																													
Finishing-Medium	TPMT 110302HQ 110304HQ 110308HQ	0.2 0.4 0.8																													
	TPMT 160302HQ 160304HQ 160308HQ	0.2 0.4 0.8																													
	Low Carbon Steel Finishing	TPMT 090204XP 110304XP 110308XP	0.4 0.4 0.8																												
		TPMT 160304XP 160308XP	0.4 0.8																												
Low Carbon Steel Finishing-Medium		TPMT 110304XQ 110308XQ	0.4 0.8																												
	TPMT 160304XQ 160308XQ	0.4 0.8																													

Insert whose corner-R (r<sub>ε</sub>) dimension expressed with less than sign (e.g. <0.05, <0.1, <0.2 etc.) indicate models with minus tolerance for corner-R (r<sub>ε</sub>).

Insert Description	Ref. Page for Applicable Toolholders
TP..0802 type	<b>E29,F49</b>
TP..0902 type	<b>F47,F49</b>

Insert Description	Ref. Page for Applicable Toolholders
TP..1103 type	<b>E29,F47,F48</b>
TP..1603 type	<b>F47,F48</b>



Inserts are sold in 10 piece boxes

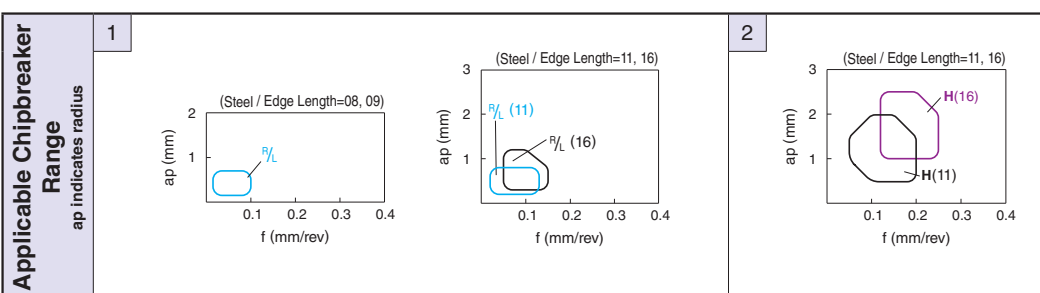


60° Triangle / Positive with Hole

	(mm)				(mm)				
Description	A	T	φd	α	Description	A	T	φd	α
TP_0802_	4.76	2.38	2.3	11°	TP_1103_	6.35	3.18	3.3	11°
TP_0902_	5.56	2.38	3.0	11°	TP_1603_	9.525	3.18	4.5	11°
TP_1102_	6.35	2.38	3.5	11°	TP_1604_	9.525	4.76	4.4	11°

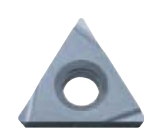

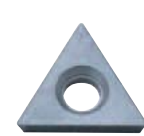
Insert	Description	Dimension (mm)	rε	Material															Ref. Page for Applicable Toolholders	Applicable Chipbreaker Range																			
				Cermet	PVD Cermet	MEGACOAT Cermet	CVD Coated Carbide										PVD Coated Carbide	MEGACOAT MEGACOAT NANO			Carbide																		
				TN6010	TN6020	TN60	PV90	PV7020	PV7005	PV7010	PV7025	CA515	CA525	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA4505	CA4515	CA4010	CA4115	CA4120	PR930	PR1005	PR1025	PR1125	PR1425	PR1225	PR1305	PR1310	PR1325	KW10	SW05				
Finishing		TPGH	080201 <sup>R/L</sup>	0.1	●	○			●	●																													
			080202 <sup>R/L</sup>	0.2	L	●	●	L	●	●	L	●																●											
			080204 <sup>R/L</sup>	0.4	L	●	●	L	●	●	L	●																●											
			090201 <sup>R/L</sup>	0.1	L	●	L			●	●	L	●																●										
			090202 <sup>R/L</sup>	0.2	L	●	L			●	●	L	●															●											
			090204 <sup>R/L</sup>	0.4	L	●	L			●	●	L	●															●											
			110202 <sup>R/L</sup>	0.2	L	●	L			●	●	L	●															●											
			110204 <sup>R/L</sup>	0.4	L	●	L			●	●	L	●															●											
			110302 <sup>R/L</sup>	0.2	L	●	●	L	●	●	L	●																●											
			110304 <sup>R/L</sup>	0.4	L	●	●	L	●	●	L	●																●											
			110308 <sup>R/L</sup>	0.8	●																							●											
			Medium		TPGH	160302 <sup>R/L</sup>	0.2	●	●			L	L																●										
160304 <sup>R/L</sup>	0.4	●				●	L	L		L	L																●												
160308 <sup>R/L</sup>	0.8	L				●																						●											
080201M <sup>R/L</sup>	<0.1																											●											
080202M <sup>R/L</sup>	<0.2																											●											
080204M <sup>R/L</sup>	<0.4																											●											
090201M <sup>R/L</sup>	<0.1																											●											
090202M <sup>R/L</sup>	<0.2																											●											
090204M <sup>R/L</sup>	<0.4																												●										
110202M <sup>R/L</sup>	<0.2																											●											
110204M <sup>R/L</sup>	<0.4																											●											
Sharp Edge		TPGH				110302 <sup>R/L</sup>	<0.2																						●										
			110304 <sup>R/L</sup>	<0.4																							●												
			110308 <sup>R/L</sup>	<0.8																								●											
			160302M <sup>R/L</sup>	<0.2																								●											
			160304M <sup>R/L</sup>	<0.4																								●											
			160308M <sup>R/L</sup>	<0.8																									●										
			110302M <sup>R/L</sup>	<0.2																								●											
			110304M <sup>R/L</sup>	<0.4																									●										
			110308M <sup>R/L</sup>	<0.8																										●									
			160402 <sup>R/L</sup>	0.2	L		L																					●											
			160404 <sup>R/L</sup>	0.4	L		L																					●											
			160408 <sup>R/L</sup>	0.8			L																						●										
110302M <sup>R/L</sup>	<0.2																									●													
110304M <sup>R/L</sup>	<0.4																									●													
160304M <sup>R/L</sup>	<0.4																									●													
160308M <sup>R/L</sup>	<0.8																									●													

Insert whose corner-R (rε) dimension expressed with less than sign (e.g. <0.05, <0.1, <0.2 etc.) indicate models with minus tolerance for corner-R (rε).

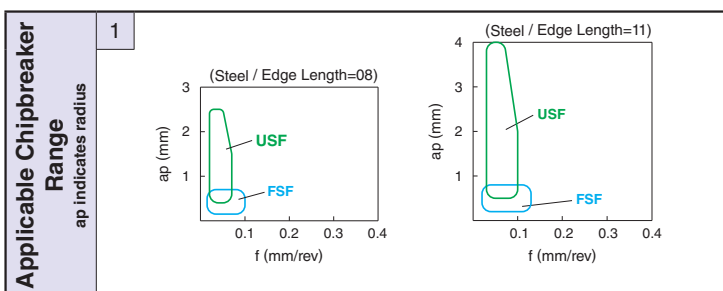


## 60° Triangle / Positive with Hole

Description	(mm)				Description	(mm)			
	A	T	φd	α		A	T	φd	α
TP_0802_	4.76	2.38	2.3	11°	TP_1102_	6.35	2.38	3.5	11°
TP_0902_	5.56	2.38	3.0	11°	TP_1103_	6.35	3.18	3.3	11°
					TP_1603_	9.525	3.18	4.5	11°

Insert Handed Insert shows Left-hand	Description	Dimension (mm)		Material																	Ref. Page for Applicable Toolholders	Applicable Chipbreaker Range																		
		rε	Dimension (mm)	Cermet	PVD Cermet	MEGACOAT Cermet	CVD Coated Carbide											PVD Coated Carbide	MEGACOAT MEGACOAT NANO	Carbide																				
							TN6010	TN6020	TN60	PV90	PV7020	PV7005	PV7010	PV7025	CA515	CA525	CA5505						CA5515	CA5525	CA5535	CA6515	CA6525	CA4505	CA4515	CA4010	CA4115	CA4120	PR930	PR1005	PR1025	PR1125	PR1425	PR1225	PR1305	PR1310
Finishing  Sharp Edge / Precision	TPET 0802003 <sup>B/L</sup> -FSF	0.03																																						
	TPET 080201 <sup>B/L</sup> -FSF	0.1																																						
	TPET 080202 <sup>B/L</sup> -FSF	0.2																																						
	TPET 1103003 <sup>B/L</sup> -FSF	0.03																																						
	TPET 110301 <sup>B/L</sup> -FSF	0.1																																						
Low Feed  Sharp Edge / Precision	TPET 080202M <sup>B/L</sup> -FSF	<0.2																																						
	TPET 1103005M <sup>B/L</sup> -FSF	<0.05																																						
	TPET 110301M <sup>B/L</sup> -FSF	<0.1																																						
	TPET 110302M <sup>B/L</sup> -FSF	<0.2																																						
	TPET 080201F <sup>B/L</sup> -USF	0.1																																						
Cast Iron  Without Chipbreaker	TPGB 080202	0.2																																						
	TPGB 080204	0.4																																						
	TPGB 080208	0.8																																						
	TPGB 090202	0.2																																						
	TPGB 090204	0.4																																						
	TPGB 1102005	0.05																																						
	TPGB 110201	0.1																																						
	TPGB 110202	0.2																																						
	TPGB 110204	0.4																																						
	TPGB 1103005	0.05																																						
TPGB 160304	0.4																																							







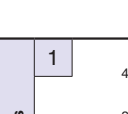

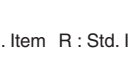
· Insert whose corner-R (rε) dimension expressed with less than sign (e.g. <0.05, <0.1, <0.2 etc.) indicate models with minus tolerance for corner-R (rε).



(mm)

60° Triangle / Positive without Hole

Description	A	T	φd	α
TP_0902_	5.56	2.38	-	11°
TP_1103_	6.35	3.18	-	11°
TP_1603_	9.525	3.18	-	11°

Insert	Description	Dimension (mm)	Material													Ref. Page for Applicable Toolholders	Applicable Chipbreaker Range																			
			Cermet	PVD Cermet	MEGACOAT Cermet	CVD Coated Carbide												PVD Coated Carbide	MEGACOAT MEGACOAT NANO	Carbide																
		rε	TN6010	TN6020	TN60	PV90	PV7020	PV7005	PV7010	PV7025	CA515	CA525	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA4505	CA4515	CA4010	CA4115	CA4120	PR930	PR1005	PR1025	PR1125	PR1425	PR1225	PR1305	PR1310	PR1325	KW10	SW05		
Finishing		0.4	●	○																																
		0.8	●	○																																
Finishing		0.4	●	○																																
		0.8	●	○																																
Finishing-Medium		0.4	●	○	●	●																														
		0.8	●	○	●	●																														
Finishing-Medium		0.4	●	○	●	●																														
		0.8	●	○	●	●																														
Medium		0.4	●	○	●	●																														
		0.8	●	○	●	●																														
Medium		0.2			●																															
		0.4			●																															
Medium		0.4	●	○	●	●																														
		0.8	●	○	●	●																														
Medium		0.4	●	○	●	●																														
		0.8	●	○	●	●																														
Medium		0.4	●	○	●	●																														
		0.8	●	○	●	●																														
Medium		0.4	●	○	●	●																														
		0.8	●	○	●	●																														
Finishing	 Sharp Edge	0.2			●																															
		0.4			●																															

B

Positive

C

D

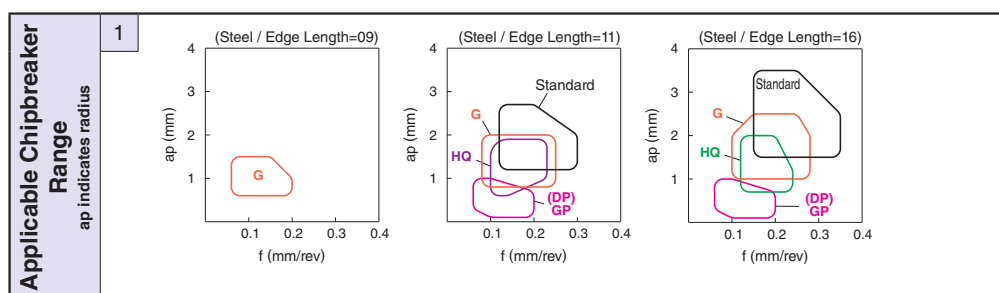
R

S

T

W

Insert (Turning)



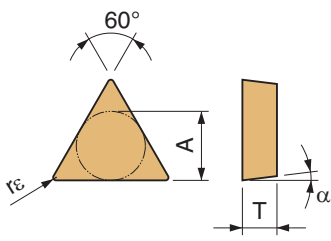
● : Std. Item R : Std. Item (Right-hand Only) L : Std. Item (Left-hand Only) □ : Deleted from the next catalogue

Inserts are sold in 10 piece boxes

(mm)

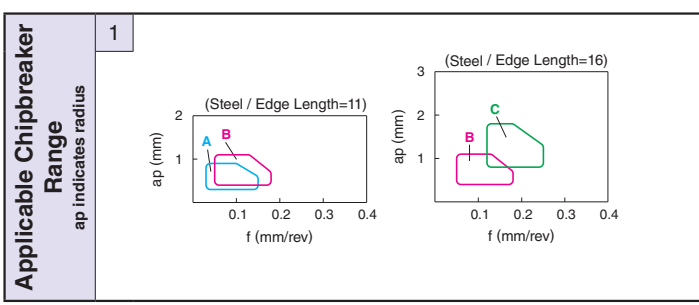
## 60° Triangle / Positive without Hole

Description	A	T	φd	α
TP_0902_	5.56	2.38	-	11°
TP_1103_	6.35	3.18	-	11°
TP_1603_	9.525	3.18	-	11°



- B
- Positive
- C
- D
- R
- S
- T
- V
- W
- Insert (Turning)

Insert	Description	Dimension (mm)	Cermet		PVD	MEGACOAT	CVD Coated Carbide												PVD	MEGACOAT	Carbide	Ref. Page for Applicable Toolholders	Applicable Chipbreaker Range														
			rε		Cermet	Cermet													Coated Carbide	MEGACOAT NANO																	
			TN6010	TN6020	TN60	PV90	PV7020	PV7005	PV7010	PV7025	CA515	CA525	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA4505	CA4515	CA4010			CA4115	CA4120	PR930	PR1005	PR1025	PR1125	PR1425	PR1225	PR1305	PR1310	PR1325	KW10	SW05	
Finishing / Finishing-Medium / Medium  -A: Finishing -B: Finishing-Medium -C: Medium	TPGR 110302 <sup>F/L</sup> -A 110304 <sup>F/L</sup> -A	0.2 0.4	R L ● R L ●		L L L L																													E43 F57	1		
	TPGR 110304 <sup>F/L</sup> -B 110308 <sup>F/L</sup> -B	0.4 0.8	R L ● R ●		L L L																																
	TPGR 160302 <sup>F/L</sup> -B 160304 <sup>F/L</sup> -B 160308 <sup>F/L</sup> -B	0.2 0.4 0.8	● L ● ● L ● ● L ●		L L L L L L L L L																																
	TPGR 160304 <sup>F/L</sup> -C 160308 <sup>F/L</sup> -C	0.4 0.8	● L ● ● L ●		L L L L																																
Cast Iron  Without Chipbreaker	TPGN 090202 090204 090208	0.2 0.4 0.8	● ● ●																															F57			
	TPGN 110302 110304 110308	0.2 0.4 0.8	● ● ●		● ● ●																														E43 F57		
	TPGN 160304 160308 160312	0.4 0.8 1.2	● ● ●		● ● ●																																
	TPMN 110304 110308	0.4 0.8									● ●																										
	TPMN 160304 160308 160312	0.4 0.8									● ●																										
		1.2									● ●																										



Inserts are sold in 10 piece boxes

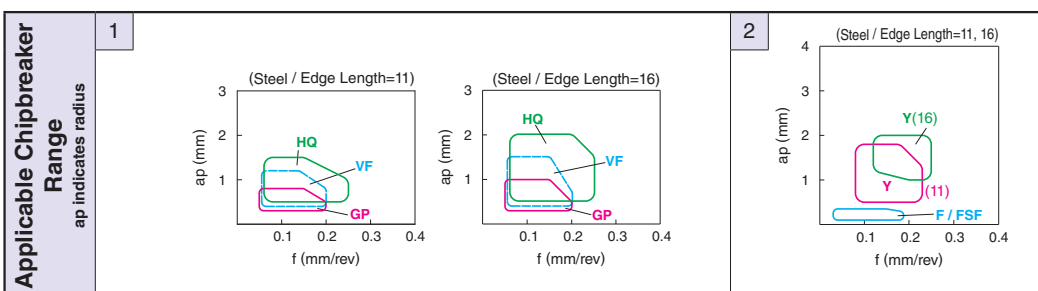
35° Rhombic / Positive with Hole

Description	A	T	$\phi d$	$\alpha$
VB_1103_	6.35	3.18	2.8	5°
VB_1604_	9.525	4.76	4.4	5°

Insert	Description	Dimension (mm)	Cermet		PVD Cermet	MEGACOAT Cermet	CVD Coated Carbide													PVD Coated Carbide	MEGACOAT MEGACOAT NANO	Carbide		Ref. Page for Applicable Toolholders	Applicable Chipbreaker Range									
			TN6010	TN6020	TN60	PV90	PV7020	PV7005	PV7010	PV7025	CA515	CA525	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA4505	CA4515	CA4010	CA4115	CA4120			PR930	PR1005	PR1025	PR1125	PR1425	PR1225	PR1305	PR1310	PR1325
Finishing		VBMT 110304GP	0.4	●	○	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	1
		VBMT 160404GP 160408GP	0.4 0.8	●	○	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
Finishing		VBMT 110302VF	0.2	●	○	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	2	
		110304VF 110308VF	0.4 0.8	●	○	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○		○
		VBMT 160402VF	0.2	●	○	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○		○
		160404VF 160408VF 160412VF	0.4 0.8 1.2	●	○	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○		○
Finishing-Medium		VBMT 110304HQ	0.4	●	○	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	Ref. to the table below		
		110308HQ	0.8	●	○	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○		○	
Finishing		VBET 1103003%/L-FSF	0.03	○	○	R																										1		
		110301%/L-FSF	0.1	○	○	●																												
		110302%/L-FSF	0.2	○	○	●																												
Finishing		VBET 1103005M%/L-FSF	<0.05	○	○																											2		
		110301M%/L-FSF	<0.1	○	○																													
		110302M%/L-FSF	<0.2	○	○																													
Finishing		VBET 1103005M%/F	<0.05	○	○																											2		
		110301M%/F	<0.1	○	○																													
		110302M%/F	<0.2	○	○																													
Finishing		VBGT 1103003%/F	0.03	○	○																											Ref. to the table below		
		110301%/F	0.1	○	○																													
		110302%/F	0.2	○	○	○		○																										
Finishing		VBGT 1103005M%/F	<0.05	○	○																											Ref. to the table below		
		110301M%/F	<0.1	○	○																													
		110302M%/F	<0.2	○	○																													

• Insert whose corner-R ( $r_c$ ) dimension expressed with less than sign (e.g. <0.05, <0.1, <0.2 etc.) indicate models with minus tolerance for corner-R ( $r_c$ ).

Insert Description	Ref. Page for Applicable Toolholders
VB..1103 type	E30,E31,E36,F51,F53
VB..1604 type	E30,E31,F51,F53



# Turning Indexable Inserts

How to read pages of "Turning Inserts" **B13** (mm)

Description	A	T	φd	α
VB_1103_	6.35	3.18	2.8	5°
VB_1604_	9.525	4.76	4.4	5°
VC_0802_	4.76	2.38	2.3	7°
VC_1604_	9.525	4.76	4.4	7°

## 35° Rhombic / Positive with Hole

B



Positive

C

D

R

S

T

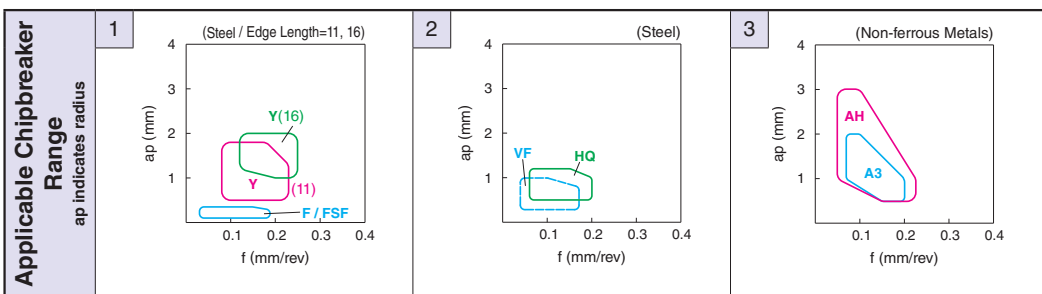
V

W

Insert (Turning)

Insert	Description	Dimension (mm)	CVD Coated Carbide																PVD Coated Carbide	MEGACOAT MEGACOAT NANO	Carbide	Ref. Page for Applicable Toolholders	Applicable Chipbreaker Range								
			Cermet		PVD Cermet	MEGACOAT Cermet																		PVD	MEGACOAT	Carbide					
			TN6010	TN6020	TN60	PV90	PV7020	PV7005	PV7025	CA515	CA525	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA4505						CA4515	CA4010	CA4115	CA4120	PR930	PR1005	PR1025	PR1125
		rε																													
Finishing-Medium Sharp Edge	<b>VBET</b> 1103005M <sup>Y</sup> -Y <b>NEW</b> 110301M <sup>Y</sup> -Y 110302M <sup>Y</sup> -Y 110304M <sup>Y</sup> -Y	<0.05																													
		<0.1																													
		<0.2																													
		<0.4																													
		<0.8																													
Finishing-Medium	<b>VBGT</b> 1103003 <sup>Y</sup> -Y 110301 <sup>Y</sup> -Y 110302 <sup>Y</sup> -Y 110304 <sup>Y</sup> -Y 110308 <sup>Y</sup> -Y	0.03																													
		0.1																													
		0.2																													
		0.4																													
		0.8																													
	<b>VBGT</b> 160402 <sup>Y</sup> -Y 160404 <sup>Y</sup> -Y 160408 <sup>Y</sup> -Y	0.2																													
		0.4																													
		0.8																													
		<b>VBGT</b> 1103005M <sup>Y</sup> -Y 110301M <sup>Y</sup> -Y 110302M <sup>Y</sup> -Y 110304M <sup>Y</sup> -Y 110308M <sup>Y</sup> -Y	<0.05																												
			<0.1																												
<0.2																															
<0.4																															
<0.8																															
Finishing	<b>VCMT</b> 080202VF 080204VF	0.2																													
		0.4																													
Finishing-Medium	<b>VCMT</b> 080202HQ 080204HQ	0.2																													
		0.4																													
Non-ferrous Metals Finishing-Medium / Sharp Edge	<b>VCGT</b> 160404AH	0.4																													
Non-ferrous Metals Finishing-Medium / Sharp Edge	<b>VCGT</b> 160404 <sup>Y</sup> -A3 160408 <sup>Y</sup> -A3	0.4																													
		0.8																													

· Insert whose corner-R (rε) dimension expressed with less than sign (e.g. <0.05, <0.1, <0.2 etc.) indicate models with minus tolerance for corner-R (rε).

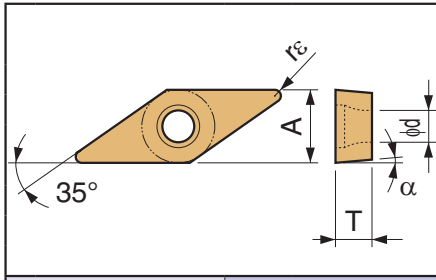


Inserts are sold in 10 piece boxes

(mm)

35° Rhombic / Positive with Hole

Description	A	T	φd	α
VP_0802_	4.76	2.38	2.3	11°
VP_1103_	6.35	3.18	2.8	11°

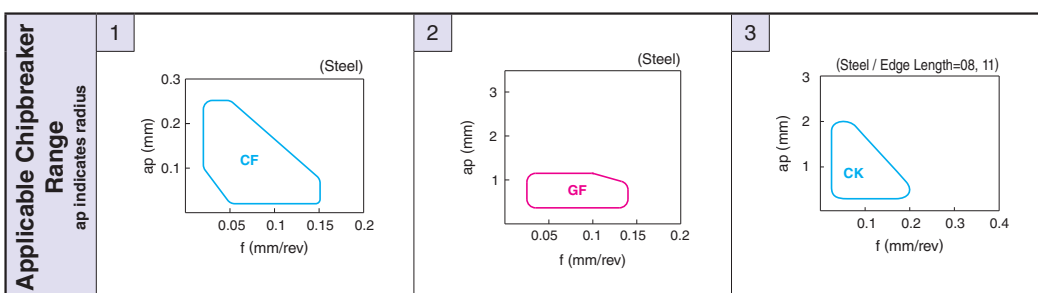


Material Group	P	M	K	N	S	H
Free-cutting steel	●					
Carbon Steel / Alloy Steel	●					
Stainless Steel	●					
Gray Cast Iron	●					
Nodular Cast Iron	●					
Non-ferrous Metals						
Heat-resistant Alloys						
Titanium Alloys						
Hard Materials						

Insert Handed Insert shows Left-hand	Description	Dimension (mm) rε	Material																	Ref. Page for Applicable Toolholders	Applicable Chipbreaker Range						
			Cermet	PVD Cermet			MEGACOAT Cermet			CVD Coated Carbide								PVD Coated Carbide				MEGACOAT MEGACOAT NANO			Carbide		
Minute ap Sharp Edge	VPGT 110302CF	0.2																		●							1
	VPGT 110301M-CF 110302M-CF	<0.1 <0.2																		●	●						
Minute ap Sharp Edge / Polished	VPGT 110301MP-CF 110302MP-CF	<0.1 <0.2																		●	●						2
																				●	●						
Finishing Sharp Edge	VPGT 110301MF-GF 110302MF-GF	<0.1 <0.2																		●	●						3
																				●	●						
Finishing With Honing	VPGT 080201CK 080202CK	0.1 0.2																		●	●						
	VPGT 110301CK 110302CK	0.1 0.2																		●	●						
Finishing Sharp Edge / Polished	VPGT 080201M-CK 080202M-CK	<0.1 <0.2																		●	●						
	VPGT 110301M-CK 110302M-CK	<0.1 <0.2																		●	●						
Finishing	VPGT 080201MP-CK 080202MP-CK	<0.1 <0.2																		●	●						
	VPGT 110301MP-CK 110302MP-CK	<0.1 <0.2																		●	●						

Insert whose corner-R (rε) dimension expressed with less than sign (e.g. <0.05, <0.1, <0.2 etc.) indicate models with minus tolerance for corner-R (rε).

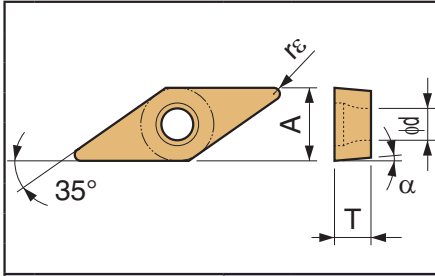
Insert Description	Ref. Page for Applicable Toolholders
VP..0802 type	E32,E33,F51
VP..1103 type	E21,E32,E33



Inserts are sold in 10 piece boxes

## 35° Rhombic / Positive with Hole

Description	A	T	φd	α
VP_0802_	4.76	2.38	2.3	11°
VP_1103_	6.35	3.18	2.8	11°



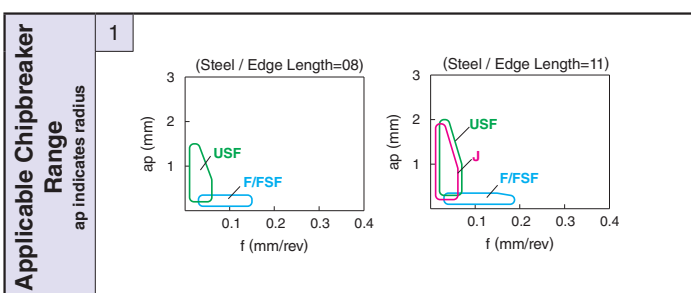
P	M	K	N	S	H	Free-cutting steel	Carbon Steel / Alloy Steel	Stainless Steel	Gray Cast Iron	Nodular Cast Iron	Non-ferrous Metals	Heat-resistant Alloys	Titanium Alloys	Hard Materials

Insert Handed Insert shows Left-hand	Description	Dimension (mm) rε	Cermet		PVD Cermet	MEGACOAT Cermet	CVD Coated Carbide													PVD Coated Carbide	MEGACOAT MEGACOAT NANO	Carbide	Applicable Chipbreaker Range															
			TN6010	TN6020	TN60	PV90	PV7020	PV7010	PV7025	CA515	CA525	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA4505	CA4515	CA4010	CA4115	CA4120		PR930	PR1005	PR1025	PR1125	PR1425	PR1225	PR1305	PR1310	PR1325	KW10	SW05				
Finishing Super Fine	VPET 080201 <sup>F</sup> /L-FSF	0.1			●																																	
	VPET 080202 <sup>F</sup> /L-FSF	0.2			●																																	
	VPET 1103003 <sup>F</sup> /L-FSF	0.03																																				
	VPET 110301 <sup>F</sup> /L-FSF	0.1			●																																	
Finishing Sharp Edge / Precision	VPET 080201 <sup>M</sup> /L-FSF	<0.1																																				
	VPET 080202 <sup>M</sup> /L-FSF	<0.2																																				
	VPET 1103005 <sup>M</sup> /L-FSF	<0.05																																				
	VPET 110301 <sup>M</sup> /L-FSF	<0.1																																				
Low Feed Super Fine	VPET 080201 <sup>F</sup> /L-USF	0.1			L																																	
	VPET 080202 <sup>F</sup> /L-USF	0.2			●																																	
	VPET 1103003 <sup>F</sup> /L-USF	0.03																																				
	VPET 110301 <sup>F</sup> /L-USF	0.1			●																																	
Low Feed Sharp Edge / Precision	VPET 080201 <sup>M</sup> /L-USF	<0.1																																				
	VPET 080202 <sup>M</sup> /L-USF	<0.2																																				
	VPET 1103005 <sup>M</sup> /L-USF	<0.05																																				
	VPET 110301 <sup>M</sup> /L-USF	<0.1																																				
Low Feed Sharp Edge	VPET 080201 <sup>M</sup> /L-U	<0.1																																				
	VPET 080202 <sup>M</sup> /L-U	<0.2																																				
	VPET 1103005 <sup>M</sup> /L-U	<0.05																																				
Low Feed Sharp Edge	VPET 110301 <sup>M</sup> /L-U	<0.1																																				
	VPET 110302 <sup>M</sup> /L-U	<0.2																																				
	VPET 110305 <sup>M</sup> /L-J	<0.05																																				
Low Feed Sharp Edge	VPET 110301 <sup>M</sup> /L-J	<0.1																																				
	VPET 110302 <sup>M</sup> /L-J	<0.2																																				
	VPET 110305 <sup>M</sup> /L-J	<0.05																																				

Ref. to the table below B71

1

• Insert whose corner-R (rε) dimension expressed with less than sign (e.g. <0.05, <0.1, <0.2 etc.) indicate models with minus tolerance for corner-R (rε).



Inserts are sold in 10 piece boxes





# Turning Indexable Inserts

How to read pages of "Turning Inserts" **B13** (mm)

## 80° Trigon / Positive with Hole

Description	A	T	φd	α
WP_1102_	6.35	2.38	2.8	11°
WP_1603_	9.525	3.18	4.4	11°

**B**

**Positive**

**C**






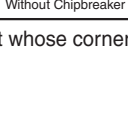
**D**

**R**

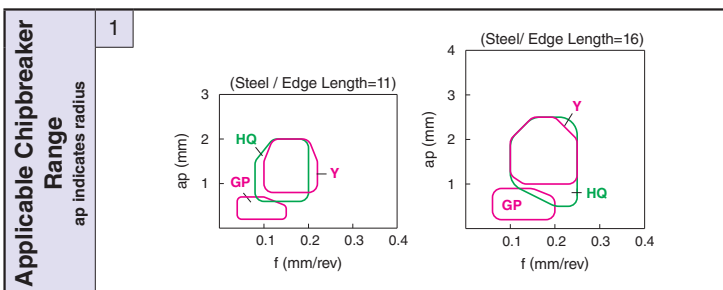
**S**

**T**

**W**


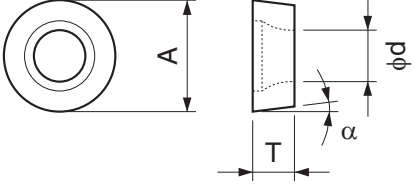

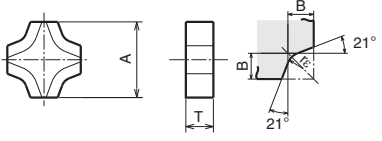
Insert	Description	Dimension (mm)	rε	Cermet		PVD Cermet	MEGACOAT Cermet	CVD Coated Carbide												PVD Coated Carbide	MEGACOAT MEGACOAT NANO	Carbide		Rel. Page for Applicable Toolholders	Applicable Chipbreaker Range																				
				TN6010	TN6020	TN60	PV90	PV7020	PV7010	PV7025	CA515	CA525	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA4505	CA4515	CA4010	CA4115	CA4120			PR930	PR1005	PR1025	PR1125	PR1425	PR1225	PR1305	PR1310	PR1325	KW10	SW05									
Finishing		WPMT 110204GP	0.4																																										
		WPMT 160304GP	0.4																																										
Finishing-Medium		WPMT 110202HQ 110204HQ	0.2 0.4																																										
		WPMT 160304HQ 160308HQ	0.4 0.8																																										
Finishing-Medium		WPGT 110202 <sup>β</sup> L-Y 110204 <sup>β</sup> L-Y	0.2 0.4		L	L																	L																						
		WPGT 160304 <sup>β</sup> L-Y 160308 <sup>β</sup> L-Y	0.4 0.8		L		L																	L																					
	WPGT 110204M <sup>β</sup> L-Y	<0.4																						●	L																				
	WPGT 160304M <sup>β</sup> L-Y	<0.4																																											
Cast Iron		WPGW 110202 110204	0.2 0.4																																										
		WPGW 160304 160308	0.4 0.8																																										

Insert whose corner-R (rε) dimension expressed with less than sign (e.g. <0.05, <0.1, <0.2 etc.) indicate models with minus tolerance for corner-R (rε).



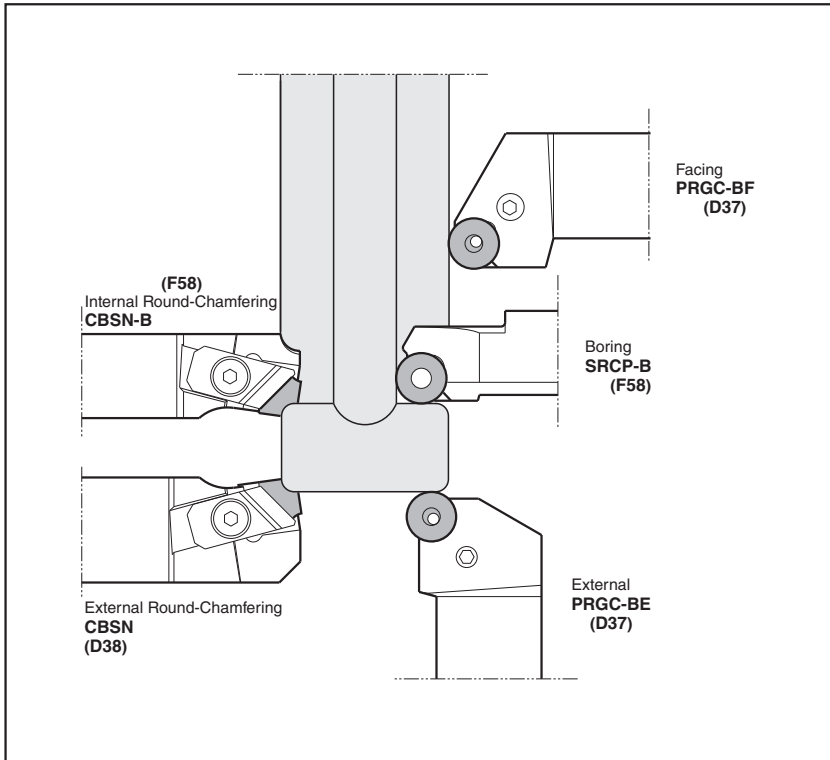
Inserts are sold in 10 piece boxes

## Bearing Machining

Insert	Description	Dimension (mm)				Angle	Cermet	Ref. Page for Applicable Toolholders	
		A	T	$\phi d$	$r\epsilon$	$\alpha$			
·External/Boring/Facing 		RCMT 1204M0-BB	4.76	4.2	-	7°	●	D37	
		RCMT 1606M0-BB	6.35	5.5	-	7°	●		
·Round Chamfering 		SNMF	12.70	4.76	B	$r\epsilon$	-	●	D38
					120406-21	1.5			
120410-21	3.0	1.0							
120416-21	3.1	1.6							
120421-21	3.2	2.1							
120426-21	3.3	2.6							

B  
  
 Turning Indexable Inserts

### Tooling for Bearing Machining



## Insert for Back Turning (Small Tools)

B


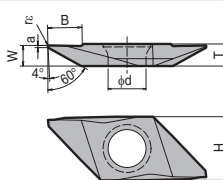
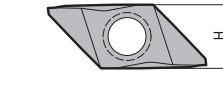


Turning Indexable Inserts

**NEW**

P	Free-cutting steel				
	Carbon Steel / Alloy Steel				
M	Stainless Steel				
K	Gray Cast Iron				
	Nodular Cast Iron				
N	Non-ferrous Metals				
S	Heat-resistant Alloys				
H	Titanium Alloys				
	Hard Materials				

### For KTKF toolholder

Insert	Description	Dimension (mm)							MEGACOAT		PVD	Carbide	Ref. Page for Applicable Toolholders			
		W	a	B	$r_\epsilon$	T	H	$\phi d$	MEGACOAT 425	MEGACOAT NANO	Coated Carbide	KW10				
 Photo shows Right-hand.  •Right-hand shown  •Left-hand shown	TKFB 12R15005M	1.5	0.25	2.6	<0.05	3.0	8.7	5.2					E12			
	TKFB 12R28005M	2.8	0.3	4.6	<0.05											
	TKFB 12R28010M				<0.1											
	TKFB 16R38005M	3.8	0.3	6.3	<0.05	4.0	9.5	5.2								
	TKFB 16R38010M				<0.1											
	TKFB 12L28005MR	2.8	0.3	4.6	<0.05	3.0	8.7	5.2								
TKFB 12L28010MR	<0.1															
TKFB 16L38005MR	3.8	0.3	6.3	<0.05	4.0	9.5	5.2									
TKFB 16L38010MR				<0.1												

• Insert whose corner-R ( $r_\epsilon$ ) dimension expressed with less than sign (e.g. <0.05, <0.1, <0.2 etc.) indicate models with minus tolerance for corner-R ( $r_\epsilon$ ).

### Insert Identification System (Ref. to Tables 1 and 2)

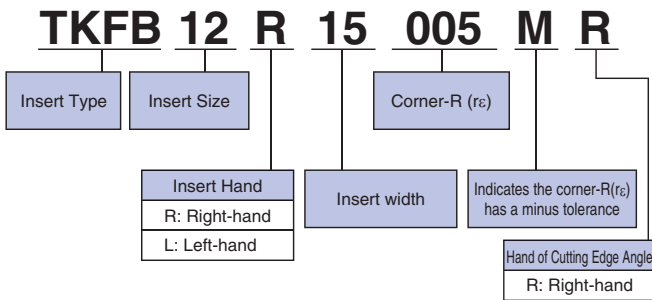


Table 1

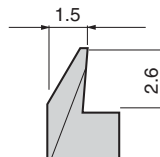
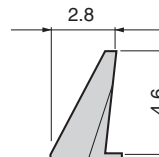
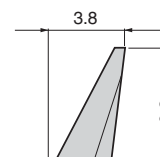
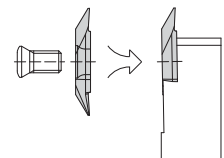
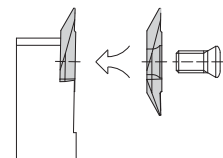

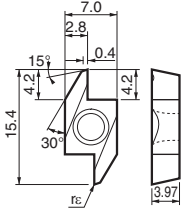

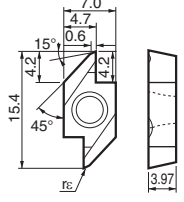

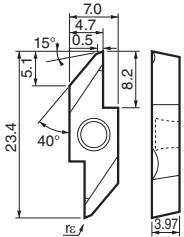
Small cutting	General Purpose	Large cutting
		
TKFB12R15..	TKFB12R28..	TKFB16R38..

Table 2

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

■ Insert for Back Turning (Small Tools)

● For AABS / SABS / AABW / SABW toolholders

Insert <small>Handed Insert shows Right-hand</small>	Description	Dimension (mm) $r_\epsilon$	NEW		PVD Coated Carbide			Ref. Page for Applicable Toolholders
			Cermet	MEGACOAT MEGACOAT NANO	PR930	PR1005	PR1025	
			TC60M	PR1425	PR1225			
 	ABS 15R4005 15R4015	0.05 0.15	● ●			● ●		E17
	ABS 15R4005M 15R4015M	<0.05 <0.15		● ●	● ●	● ●	● ●	
 	ABW 15R4005 15R4015	0.05 0.15	● ●			● ●		E18
	ABW 15R4005M 15R4015M	<0.05 <0.15		● ●	● ●	● ●	● ●	
 	ABW 23R5005 23R5015	0.05 0.15	● ●			● ●		E19
	ABW 23R5005M 23R5015M	<0.05 <0.15		● ●	● ●	● ●	● ●	

· Insert whose corner-R ( $r_\epsilon$ ) dimension expressed with less than sign (e.g. <0.05, <0.1, <0.2 etc.) indicate models with minus tolerance for corner-R ( $r_\epsilon$ ).



# Turning Indexable Inserts

## Micro Boring

• Twin-Bars

Micro Boring	Micro Face Grooving
TWB Twin-Bars <b>F30</b>	TWFG Twin-Bars <b>G72</b>
TWBT Twin-Bars <b>F31</b>	TWFGT Twin-Bars <b>G73</b>

• EZ Bars / System Tip-Bars / Tip-Bars

Micro Boring		Micro Back Boring
EZB EZ Bars <b>F14</b>	-	-
	-	-
VNB-S/VNB System Tip-Bars <b>F24</b>	VNBX-S System Tip-Bars <b>F28</b>	VNBT System Tip-Bars <b>F25</b>
HPB 2-Edge Tip-Bars <b>F32</b>	-	HPBT 2-Edge Tip-Bars <b>F32</b>
	-	
PSB-S Tip-Bars <b>F34</b>	-	PSBT-S Tip-Bars <b>F34</b>
	-	

## Solid Tip-Bars [Grooving / Threading]

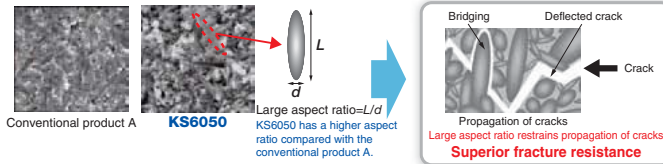
Micro Grooving	Micro Face Grooving	Micro Internal Threading
EZG EZ Bars <b>G45</b>	EZFG EZ Bars <b>G68</b>	EZT EZ Bars <b>J24</b>
VNG System Tip-Bars <b>G47</b>	VNFG System Tip-Bars <b>G70</b>	VNT System Tip-Bars <b>J31</b>
HPG 2-Edge Tip-Bars <b>G48</b>	HPFG 2-Edge Tip-Bars <b>G71</b>	HPT 2-Edge Tip-Bars <b>J28</b>
PSG Tip-Bars <b>G48</b>	PSFG Tip-Bars <b>G71</b>	PST Tip-Bars <b>J31</b>



# High Speed Cutting for Cast Iron **KS6050/CS7050**

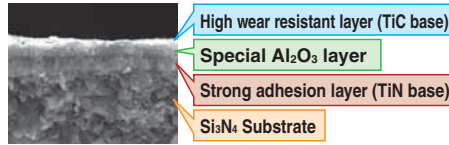
- Improved fracture resistance by high aspect ratio constituents
- Anti-chipping in scale processing and interrupted cutting
- High speed cutting of cast iron by controlling grain boundary phase (good wear resistance)

## ■ KS6050

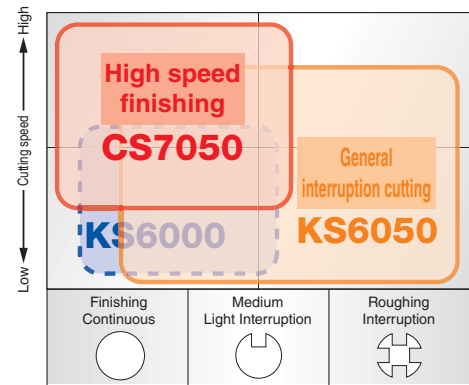


## ■ CS7050 (Coated Si<sub>3</sub>N<sub>4</sub>)

Superior wear resistance attained with strong coating adherence  
Applicable to high speed cutting

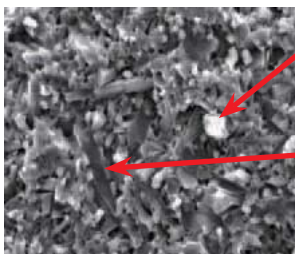


## ■ Application Map



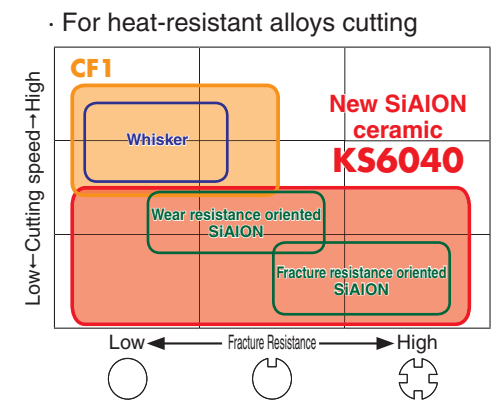
# Heat-Resistant Alloys Cutting **SiAlON Ceramic KS6040**

- Improved wear and fracture resistance due to the mixture of the hard and acicular particles



Superior balance in heat resistant alloys cutting  
Achieves optimum balance between wear and fracture resistance.

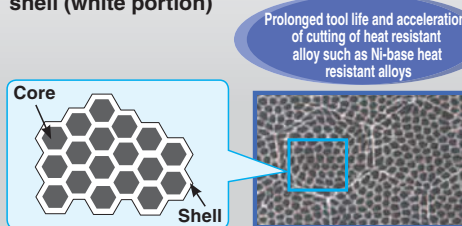
## ■ Application Map



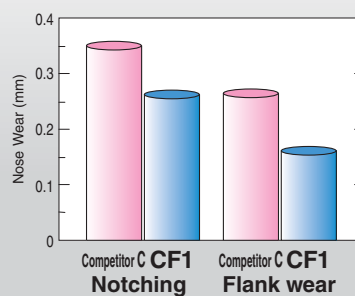
# Heat-Resistant Alloys Cutting **Honeycomb structure Ceramic CF1**

## What is Honeycomb structure Ceramic?

Honeycomb structure Ceramic is a composite material consisting of a core (gray portion) and shell (white portion)



## Comparison of Wear Resistance

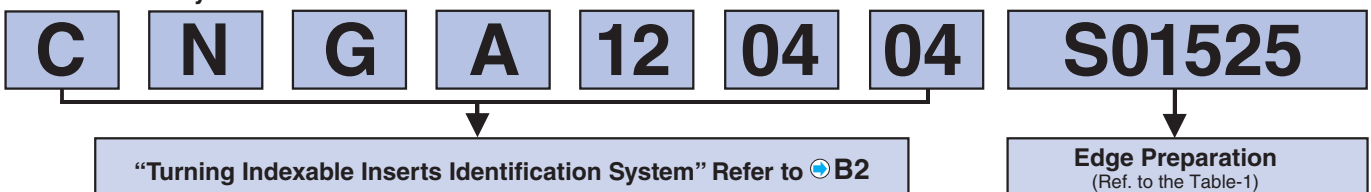


### <Cutting Conditions>

Workpiece Material Ni-base heat-resistant alloys,  
Tool geometry; RGN120400  
V<sub>c</sub> = 150m/min, a<sub>p</sub> = 1mm  
Feed Rate f = 0.15mm/rev Wet Cutting

## ■ Ceramic Inserts Identification System

### ● Identification System



### ● How to identify edge preparation

Table-1

Edge Preparation	Symbol	Cutting Edge Spec.	Example	Shape
Edge Preparation	S	Chamfered and Honed Cutting Edge	S01525 0.15mm X 25° Chamfered and Honed Cutting Edge	
	T	Chamfered Cutting Edge	T02025 0.20mm X 25° Chamfered Cutting Edge	

● Ref. Page B3 for insert color.

# Turning Indexable Inserts

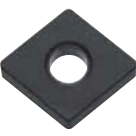

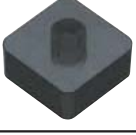
How to read pages of "Turning Inserts" B13

## 80° Rhombic / Negative

Description	(mm)			Description	(mm)		
	A	T	φd		A	T	φd
CN_A 1204_	12.70	4.76	5.16	CNGN1607_	15.875	7.94	-
CN_N 1204_	12.70	4.76	-	CNGX1207_	12.70	7.94	-
1207_		7.94					

Turning Indexable Inserts

B

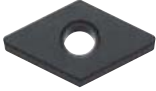


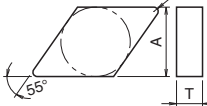
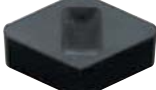
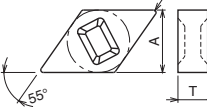


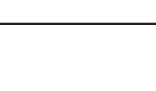
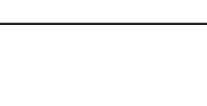
Edge Preparation				K	Material Compatibility											Ref. Page for Applicable Toolholders			
Symbol	Cutting Edge Spec.	Example			Gray Cast Iron (With Scale)	Gray Cast Iron (Without Scale)	Nodular Cast Iron (With Scale)	Nodular Cast Iron (Without Scale)	S	H	Aluminum Oxide Ceramic	PVD Coated Ceramic	MEGACOAT Ceramic	Silicon Nitride Ceramic	AlN Coated Silicon Nitride Ceramic		SAION Ceramic	Hydroxyapatite Ceramic	
S	Chamfered and Honed Cutting Edge	S01525	0.15mm X 25° Chamfered and Honed Cutting Edge		●	☺	☺	☺	☺	☺	☺	☺	☺	☺	☺	☺	☺		
T	Chamfered Cutting Edge	T01525	0.15mm X 25° Chamfered Cutting Edge														☺		
Insert	Description	(Previous Description)	Edge Preparation	Dimension (mm)	Aluminum Oxide Ceramic	PVD Coated Ceramic	MEGACOAT Ceramic	Silicon Nitride Ceramic	AlN Coated Silicon Nitride Ceramic	SAION Ceramic	Hydroxyapatite Ceramic								
				Γε	KA30	A65	KT66	A66N	PT600M	KS6000	KS6050	CS7050	KS6040	CF1					
	CNGA 120412S01025	CNGA 120412	S01025	1.2	●														
	CNGA 120404S01525	CNGA 120404	S01525	0.4			●												
	120408S01525	120408		0.8			●												
	120412S01525	120412		1.2			●												
	CNGA 120404S02025	-	S02025	0.4				●											
	120408S02025	-		0.8				●											
	120412S02025	-		1.2				●											
	CNGA 120404S03030	CNGA 120404-T30	S03030	0.4				●											
	120408S03030	120408-T30		0.8				●											
	120412S03030	120412-T30		1.2				●											
CNGA 120412T00520	CNGA 120412-T05	T00520	1.2	●															
CNGA 120404T02025	-	T02025	0.4				●												
120408T02025	CNGA 120408		0.8		●	●		●	●	●	●								
120412T02025	120412		1.2		●	●		●	●	●	●								
CNMA 120408S01525	CNMA 120408	S01525	0.8				●												
CNMA 120408S03030	CNMA 120408-T30	S03030	0.8				●												
120412S03030	120412-T30		1.2				●												
	CNGN 120408S01025	CNGN 120408	S01025	0.8	●														
	120412S01025	120412		1.2	●														
	CNGN 120408T01020	CNGN 120408	T01020	0.8									●	●					
	120412T01020	120412	1.2										●	●					
	CNGN 120404T02025	CNGN 120404	T02025	0.4				●											
	120408T02025	120408		0.8				●	●	●	●	●							
	120412T02025	120412		1.2				●	●	●	●	●							
	120416T02025	120416		1.6				●	●	●	●	●							
	CNGN 120708S01525	CNGN 120708	S01525	0.8				●											
	120712S01525	120712		1.2				●											
CNGN 120708T01020	CNGN 120708	T01020	0.8											●	●				
120712T01020	120712		1.2											●	●				
CNGN 120704T02025	CNGN 120704	T02025	0.4		●														
120708T02025	120708		0.8		●														
120712T02025	120712		1.2		●														
120716T02025	120716		1.6		●														
CNGN 160708T02025	CNGN 160708	T02025	0.8		●														
160712T02025	160712		1.2		●														
160716T02025	160716		1.6		●														
CNMN 120708T02025	CNMN 120708	T02025	0.8		●														
120712T02025	120712		1.2		●														
	CNGX 120712T01020	-	T01020	1.2										●					
	120716T01020	-		1.6											●				
	CNGX 120708T02025	-	T02025	0.8				●	●	●	●								
	120712T02025	-		1.2				●	●	●	●								
120716T02025	-	1.6					●	●	●	●									

Inserts are sold in 10 piece boxes



55° Rhombic / 75° Rhombic / Negative

(mm)				(mm)			
Description	A	T	φd	Description	A	T	φd
DNGA 1504_	12.70	4.76	5.16	DNGX 1207_	10.00	7.94	-
1506_		6.35		DNGX 1507_	12.70	7.94	-
DNGN 1504_	12.70	4.76	-	ENGX 1307_	12.70	7.94	-
1507_		7.94					

Edge Preparation														Ref. Page for Applicable Toolholders					
Symbol	Cutting Edge Spec.	Example		K	Material														
S	Chamfered and Honed Cutting Edge	S01225	0.12mm X 25° Chamfered and Honed Cutting Edge		Gray Cast Iron (With Scale)	Gray Cast Iron (Without Scale)	Nodular Cast Iron (With Scale)	Nodular Cast Iron (Without Scale)	Heat-resistant Alloys	Hard Materials	Aluminum Oxide Ceramic	PVD Coated Ceramic	MEGACOAT Ceramic		Silicon Nitride Ceramic	OD Coated Silicon Nitride Ceramic	SiAlON Ceramic	Hexacorn structural Ceramic	
T	Chamfered Cutting Edge	T01215	0.12mm X 15° Chamfered Cutting Edge	S	H	Aluminum Oxide Ceramic	PVD Coated Ceramic	MEGACOAT Ceramic	Silicon Nitride Ceramic	OD Coated Silicon Nitride Ceramic	SiAlON Ceramic	Hexacorn structural Ceramic	CF1						
Insert		Description		(Previous Description)	Edge Preparation	Dimension (mm)	KA30	A65	KT66	A66N	PT600M	KS6000	KS6050	CS7050	KS6040	CF1			
		DNGA 150408S01025	DNGA 150408	S01025	0.8	●													
		DNGA 150412S01025	DNGA 150412	S01025	1.2	●													
		DNGA 150404S01525	DNGA 150404	S01525	0.4					●									
		DNGA 150408S01525	DNGA 150408	S01525	0.8					●									
		DNGA 150404S02025	-	S02025	0.4						●								
		DNGA 150408S02025	-	S02025	0.8						●								
		DNGA 150408S03030	DNGA 150408-T30	S03030	0.8						●								
		DNGA 150404T02025	DNGA 150404	T02025	0.4		●				●								
		DNGA 150408T02025	DNGA 150408	T02025	0.8		●					●							
		DNGA 150412T02025	-	T02025	1.2			●				●							
		DNGA 150604T02025	-	T02025	0.4							●							
		DNGA 150608T02025	-	T02025	0.8							●							
		DNGA 150612T02025	-	T02025	1.2							●							
		DNGN 150704S01525	DNGN 150704	S01525	0.4							●							
		DNGN 150708S01525	DNGN 150708	S01525	0.8						●								
		DNGN 150712S01525	DNGN 150712	S01525	1.2							●							
		DNGN 150704S02025	-	S02025	0.4							●							
		DNGN 150708S02025	-	S02025	0.8							●							
		DNGN 150712S02025	-	S02025	1.2							●							
		DNGN 150704T02025	DNGN 150704	T02025	0.4		●												
		DNGN 150708T02025	DNGN 150708	T02025	0.8		●												
		DNGX 120708T02025	-	T02025	0.8							●							
		DNGX 120712T02025	-	T02025	1.2								●						
		DNGX 150708T02025	-	T02025	0.8								●	●	●				
		DNGX 150712T02025	-	T02025	1.2								●	●	●				
		ENGX 130708S01525	ENGX 130708	S01525	0.8								●						
		ENGX 130712S01525	ENGX 130712	S01525	1.2								●						
		ENGX 130708S02025	-	S02025	0.8								●						
		ENGX 130712S02025	-	S02025	1.2							●							
		ENGX 130704T02025	ENGX 130704	T02025	0.4		●						●						
		ENGX 130708T02025	ENGX 130708	T02025	0.8		●						●						
		ENGX 130712T02025	ENGX 130712	T02025	1.2		●						●						
		ENGX 130716T02025	ENGX 130716	T02025	1.6		●						●						
		ENGX 130720T02025	ENGX 130720	T02025	2.0		●						●						
		ENGX 130730T02025	ENGX 130730	T02025	3.0		●						●						



Turning Indexable Inserts

# Turning Indexable Inserts


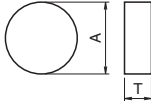
How to read pages of "Turning Inserts" **B13**

## Round / Negative

(mm)				(mm)			
Description	A	T	φd	Description	A	T	φd
RNGN 0903_		3.18		RNGN 1207_	12.70		
0904_	9.525	4.76		1507_	15.875	7.94	
0907_		7.94		1907_	19.05		
1204_	12.70	4.76		2507_	25.40		

Turning Indexable Inserts

B

Edge Preparation				Material Compatibility												Ref. Page for Applicable Toolholders					
Symbol	Cutting Edge Spec.	Example		K	Gray Cast Iron (With Scale)				Gray Cast Iron (Without Scale)				Nodular Cast Iron (With Scale)				Nodular Cast Iron (Without Scale)				
S	Chamfered and Honed Cutting Edge	S01225	0.12mm X 25° Chamfered and Honed Cutting Edge		Heat-resistant Alloys				Hard Materials												
T	Chamfered Cutting Edge	T01215	0.12mm X 15° Chamfered Cutting Edge																		
Insert		Description		(Previous Description)	*Edge Preparation	Dimension (mm)	Aluminum Oxide Ceramic	PVD Coated Ceramic	MEGACOAT Ceramic	Silicon Nitride Ceramic	ODI Coated Silicon Nitride Ceramic	SiAlON Ceramic	Hexacorn Structural Ceramic								
						r <sub>ε</sub>	KA30	A65	KT66	A66N	PT600M	KS6000	KS6050	CS7050	KS6040	CF1					
		RNGN 090300E005	-	E005	-																
		090300T01020	-	T01020	-																
		RNGN 090400S01525	RNGN 090400	S01525	-														D33		
		090400S02025	-	S02025	-																
		090400T01020	-	T01020	-																
		090400T02025	RNGN 090400	T02025	-																
		RNGN 090700T01020	-	T01020	-																
		RNGN 120400E005	-	E005	-																
		120400S01525	RNGN 120400	S01525	-															D27	
		120400S02025	-	S02025	-																
		120400T01020	-	T01020	-																
		120400T02025	RNGN 120400	T02025	-																
		RNGN 120700E005	-	E005	-															D27	
		120700K15015	RNGN 120700K	K15015	-															D33	
		120700S01525	RNGN 120700	S01525	-																
		120700S02025	-	S02025	-																
		120700T01020	-	T01020	-																
		120700T02025	RNGN 120700	T02025	-																
		RNGN 150700S01525	RNGN 150700	S01525	-															D27	
		150700S02025	-	S02025	-																
150700T02025	RNGN 150700	T02025	-																		
RNGN 190700E005	-	E005	-																		
190700T01020	-	T01020	-																		
RNGN 250700E005	-	E005	-																		
250700T01020	-	T01020	-																		

\*For cutting edge "E" and "K", please refer to the table below.


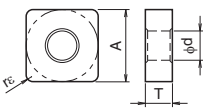

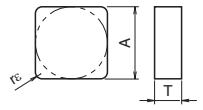
Edge Preparation			
Symbol	Cutting Edge Spec.	Example	
E	R-honed Cutting Edge	E005	R0.05mm Honed
K	Double Chamfered Cutting Edges	K15015	1.5mm X 15° Chamfered Cutting Edge

Note: Symbol "K" describe only the largest chamfer width and its angle.

Inserts are sold in 10 piece boxes

90° Square / Negative

Description	A	T	φd
SN_A1204_	12.70	4.76	5.16
SNGN1204_			-
SNGN1207_		7.94	-

Edge Preparation				K	Material Compatibility										Ref. Page for Applicable Toolholders		
Symbol	Cutting Edge Spec.	Example			Gray Cast Iron (With Scale)	Gray Cast Iron (Without Scale)	Nodular Cast Iron (With Scale)	Nodular Cast Iron (Without Scale)	S	H	Aluminum Oxide Ceramic	PVD Coated Ceramic	MEGACOAT Ceramic	Silicon Nitride Ceramic		AlN Coated Silicon Nitride Ceramic	SiAlON Ceramic
S	Chamfered and Honed Cutting Edge	S01225	0.12mm X 25° Chamfered and Honed Cutting Edge		●	☺	☺	☺	☺	☺	☺	☺	☺	☺	☺	☺	
T	Chamfered Cutting Edge	T01215	0.12mm X 15° Chamfered Cutting Edge													☺	
Insert	Description	(Previous Description)	Edge Preparation	Dimension (mm)	KA30	A65	KT66	A66N	PT600M	KS6000	KS6050	CS7050	KS6040	CF1			
 	SNGA 120408S01525 120412S01525	SNGA 120408 120412	S01525	0.8 1.2				●									D12 D13
	SNGA 120408S02025 120412S02025	- -	S02025	0.8 1.2				●									
	SNGA 120408T02025 120412T02025 120416T02025	SNGA 120408 120412 120416	T02025	0.8 1.2 1.6	●	●			●	●	●	●					
	SNMA 120408S03030	SNMA 120408-T30	S03030	0.8				●									
 	SNGN 120408S01025 120412S01025 120416S01025 120420S01025	SNGN 120408 120412 120416 120420	S01025	0.8 1.2 1.6 2.0	●												D25 D34 D35 F71
	SNGN 120408S01525 120412S01525 120416S01525	SNGN 120408 120412 120416	S01525	0.8 1.2 1.6				●									
	SNGN 120408S02025 120412S02025 120416S02025	- - -	S02025	0.8 1.2 1.6				●									
	SNGN 120416S03030	SNGN 120416-T30	S03030	1.6				●									
	SNGN 120408T00520	SNGN 120408-T05	T00520	0.8	●	●											
	SNGN 120408T01020 120412T01020 120416T01020 120420T01020	- - - -	T01020	0.8 1.2 1.6 2.0										●	●	●	
	SNGN 120404T02025 120408T02025 120412T02025 120416T02025 120420T02025	SNGN 120404 120408 120412 120416 120420	T02025	0.4 0.8 1.2 1.6 2.0	●	●	●		●	●	●	●	●	●	●		
	SNGN 120708S01025 120712S01025 120716S01025	SNGN 120708 120712 120716	S01025	0.8 1.2 1.6	●	●											
	SNGN 120704S01525 120708S01525 120712S01525 120716S01525 120720S01525	SNGN 120704 120708 120712 120716 120720	S01525	0.4 0.8 1.2 1.6 2.0				●									
	SNGN 120708S02025 120712S02025 120716S02025 120720S02025	- - - -	S02025	0.8 1.2 1.6 2.0				●									
	SNGN 120708T01020 120712T01020 120716T01020 120720T01020	- - - -	T01020	0.8 1.2 1.6 2.0										●	●	●	

B



Turning Indexable Inserts

● : Std. Item □ : Deleted from the next catalogue

Inserts are sold in 10 piece boxes

# Turning Indexable Inserts

How to read pages of "Turning Inserts" B13

## 90° Square / Negative

(mm)

(mm)

Description	A	T	φd	Description	A	T	φd
SN_N1207_	12.70	7.94	-	SNGX1207_	12.70	7.94	-
SNGN1507_	15.875	7.94	-	SNGX1507_	15.875	7.94	-

B





Turning Indexable Inserts

Edge Preparation				K	Material Compatibility										Ref. Page for Applicable Toolholders			
Symbol	Cutting Edge Spec.	Example			Gray Cast Iron (With Scale)	Gray Cast Iron (Without Scale)	Nodular Cast Iron (With Scale)	Nodular Cast Iron (Without Scale)	Heat-resistant Alloys	Hard Materials	Aluminum Oxide Ceramic	PVD Coated Ceramic	MEGACOAT Ceramic	Silicon Nitride Ceramic		SiC Coated Silicon Nitride Ceramic	SIALON Ceramic	Hydroxyapatite Ceramic
S	Chamfered and Honed Cutting Edge	S01225	0.12mm X 25° Chamfered and Honed Cutting Edge															
T	Chamfered Cutting Edge	T01215	0.12mm X 15° Chamfered Cutting Edge	S														
				H														
Insert	Description	(Previous Description)	Edge Preparation	Dimension (mm)	Material Compatibility										Ref. Page for Applicable Toolholders			
					Aluminum Oxide Ceramic	PVD Coated Ceramic	MEGACOAT Ceramic	Silicon Nitride Ceramic	SiC Coated Silicon Nitride Ceramic	SIALON Ceramic	Hydroxyapatite Ceramic							
				Γε	KA30	A65	KT66	A66N	PT600M	KS6000	KS6050	CS7050	KS6040	CF1				
		SNGN 120704T02025	SNGN 120704	T02025	0.4	●										D25		
		120708T02025	120708		0.8	●											D34	
		120712T02025	120712		1.2	●											D35	
		120716T02025	120716		1.6	●						●	●				F71	
		120720T02025	120720		2.0	●												
		SNMN 120716T02025	SNMN 120716	T02025	1.6	●												
		SNGN 150712T02025	SNGN 150712	T02025	1.2	●			●							D25		
		150716T02025	150716		1.6	●												
		SNGX 120712T01020	-	T01020	1.2											D30		
		120716T01020	-		1.6												D31	
		SNGX 120712T02025	-	T02025	1.2						●	●	●	●			F72	
		120716T02025	-		1.6							●	●	●	●			
		SNGX 150716T02025	-	T02025	1.6					●						D30 D31		

Inserts are sold in 10 piece boxes

60° Triangle / Negative

(mm)				(mm)			
Description	A	T	φd	Description	A	T	φd
TNGA 1604_	9.525	4.76	3.81	TNGN 1604_	9.525	4.76	-
TNGN 1103_	6.35	3.18	-	1607_	-	7.94	-

Edge Preparation				Material Compatibility										Ref. Page for Applicable Toolholders							
Symbol	Cutting Edge Spec.	Example		K	Gray Cast Iron (With Scale)		Gray Cast Iron (Without Scale)		Nodular Cast Iron (With Scale)		Nodular Cast Iron (Without Scale)		S		Heat-resistant Alloys		H	Hard Materials			
S	Chamfered and Honed Cutting Edge	S01525	0.15mm X 25° Chamfered and Honed Cutting Edge		●	☺	☺	☺	☺	☺	☺	☺			☺	☺		☺	☺	☺	☺
T	Chamfered Cutting Edge	T01525	0.15mm X 25° Chamfered Cutting Edge																		
Insert	Description	(Previous Description)	Edge Preparation	Dimension (mm)	Aluminum Oxide Ceramic				PVD Coated Ceramic	MEGACOAT Ceramic	Silicon Nitride Ceramic		CVD Coated Silicon Nitride Ceramic	SiAlON Ceramic	Hardness structure Ceramic						
					Γε	KA30	A65	KT66			A66N	PT600M				KS6000	KS6050	CS7050	KS6040	CF1	
	TNGA 160408S01025	TNGA 160408	S01025	0.8	●														D14 D15 F61 F68		
	TNGA 160404S01525 160408S01525 160412S01525	TNGA 160404 160408 160412	S01525	0.4 0.8 1.2				●													
	TNGA 160404S02025 160408S02025 160412S02025	- - -	S02025	0.4 0.8 1.2					●												
	TNGA 160408S03030 160412S03030	TNGA 160408-T30 160412-T30	S03030	0.8 1.2				●													
	TNGA 160408T00520	TNGA 160408-T05	T00520	0.8	●																
	TNGA 160404T02025 160408T02025 160412T02025	TNGA 160404 160408 160412	T02025	0.4 0.8 1.2		●	●		●		●	●	●	●							
	TNGN 110304T00520 110308T00520 110312T00520	TNGN 110304 110308 110312	T00520	0.4 0.8 1.2		●				●									D36 F73		
	TNGN 160404S01025 160408S01025 160412S01025 160416S01025 160420S01025	TNGN 160404 160408 160412 160416 160420	S01025	0.4 0.8 1.2 1.6 2.0		●															
	TNGN 160404S01525 160408S01525 160412S01525	TNGN 160404 160408 160412	S01525	0.4 0.8 1.2					●												
	TNGN 160404S02025 160408S02025 160412S02025	- - -	S02025	0.4 0.8 1.2						●											
	TNGN 160404T00520 160408T00520 160412T00520	TNGN 160404-T05 160408-T05 160412-T05	T00520	0.4 0.8 1.2		●	●													D26	
	TNGN 160404T02025 160408T02025 160412T02025	TNGN 160404 160408 160412	T02025	0.4 0.8 1.2		●			●		●										
	TNGN 160708S01525	TNGN 160708	S01525	0.8					●												
	TNGN 160708S02025	-	S02025	0.8						●											
	TNGN 160704T02025 160708T02025 160712T02025 160716T02025 160720T02025	TNGN 160704 160708 160712 160716 160720	T02025	0.4 0.8 1.2 1.6 2.0		●	●				●										

B



Turning Indexable Inserts

# Turning Indexable Inserts

How to read pages of "Turning Inserts" B13

## 35° Rhombic / Negative

B

(mm)

Description	A	T	φd
VN_A1604_	9.525	4.76	3.81



Turning Indexable Inserts

Edge Preparation				K	Material Compatibility										Ref. Page for Applicable Toolholders			
Symbol	Cutting Edge Spec.	Example			Gray Cast Iron (With Scale)	Gray Cast Iron (Without Scale)	Nodular Cast Iron (With Scale)	Nodular Cast Iron (Without Scale)	Heat-resistant Alloys	Hard Materials	Aluminum Oxide Ceramic	PVD Coated Ceramic	MEGACOAT Ceramic	Silicon Nitride Ceramic		SiC Coated Silicon Nitride Ceramic	SIALON Ceramic	Hydroxyapatite Ceramic
S	Chamfered and Honed Cutting Edge	S01525	0.15mm X 25° Chamfered and Honed Cutting Edge															
T	Chamfered Cutting Edge	T01525	0.15mm X 25° Chamfered Cutting Edge															
Insert	Description	(Previous Description)	Edge Preparation	Dimension (mm)	Aluminum Oxide Ceramic		PVD Coated Ceramic	MEGACOAT Ceramic	Silicon Nitride Ceramic	SiC Coated Silicon Nitride Ceramic	SIALON Ceramic	Hydroxyapatite Ceramic	CF1	Ref. Page for Applicable Toolholders				
					KA30	A65									KT66	A66N	PT600M	KS6000
	VNGA 160404S01525 160408S01525	VNGA 160404 160408	S01525	0.4 0.8			●							D16 D17 D18				
	VNGA 160404S02025 160408S02025	- -	S02025	0.4 0.8			●											
	VNGA 160404T02025 160408T02025 160412T02025	VNGA 160404 160408 -	T02025	0.4 0.8 1.2	●	●	●	●										
	VNMA 160408S01525	VNMA 160408	S01525	0.8			●											

Inserts are sold in 10 piece boxes

Positive

Description	(mm)			α
	A	T	α	
TBGN 0601_	3.97	1.59	5°	11°
TCGN 1604_	9.525	4.76	7°	
TPGN 0902_	5.56	2.38	11°	
SPGN 0903_	9.525	3.18		11°
SPGN 1203_	12.70	3.18		

Edge Preparation				K											Ref. Page for Applicable Toolholders			
Symbol	Cutting Edge Spec.	Example			S													
S	Chamfered and Honed Cutting Edge	S01525	0.15mm X 25° Chamfered and Honed Cutting Edge	Gray Cast Iron (With Scale)										H				
				Gray Cast Iron (Without Scale)														
T	Chamfered Cutting Edge	T01525	0.15mm X 25° Chamfered Cutting Edge	Nodular Cast Iron (With Scale)										H				
				Nodular Cast Iron (Without Scale)														
				Heat-resistant Alloys										Hard Materials				
Insert		Description		(Previous Description)	Edge Preparation	Dimension (mm)	Aluminum Oxide Ceramic			PVD Coated Ceramic	MEGACOAT Ceramic	Silicon Nitride Ceramic	CVD Coated Silicon Nitride Ceramic	SIATON Ceramic	HiSpeed Structural Ceramic	CF1		
						rε	KA30	A65	KT66	A66N	PT600M	KS6000	KS6050	CST7050	KS6040			
		RPGN 090300E005	-	E005	-													
		RPGN 090300T01020	-	T01020	-													
		RPGN 120400E005	-	E005	-													
		RPGN 120400T01020	-	T01020	-													
		SPGN 090308T00820	SPGN 090308	T00820	0.8		●			●								
		SPGN 120308S00820	SPGN 120308	S00820	0.8					●	●						E42	
		SPGN 120308T00820 120312T00820	SPGN 120308 120312	T00820	0.8 1.2		●			●	●						F56	
		TBGN 060104S00820 060108S00820	TBGN 060104 060108	S00820	0.4 0.8					●	●							
		TCGN 160404T00820 160408T00820	TCGN 160404 160408	T00820	0.4 0.8		●											
		TPGN 090204T00820 090208T00820	- -	T00820	0.4 0.8				●		●	●						F57
		TPGN 110304S00820 110308S00820	TPGN 110304 110308	S00820	0.4 0.8						●	●						
		TPGN 110304T00820 110308T00820	TPGN 110304 110308	T00820	0.4 0.8			●			●	●						
		TPGN 160304S00820 160308S00820 160312S00820	TPGN 160304 160308 160312	S00820	0.4 0.8 1.2						●	●	●					E43
		TPGN 160304T00820 160308T00820 160312T00820	TPGN 160304 160308 160312	T00820	0.4 0.8 1.2			●			●	●						F57

\*For cutting edge "E", please refer to the table below.

Edge Preparation			
Symbol	Cutting Edge Spec.	Example	
E	R-honed Cutting Edge	E005	R0.05mm Honed



## Inserts for High Hardened Roll



Turning Indexable Inserts

Edge Preparation				K	Material										Ref. Page for Applicable Toolholders								
Symbol	Cutting Edge Spec.	Example			Gray Cast Iron (With Scale)	Gray Cast Iron (Without Scale)	Nodular Cast Iron (With Scale)	Nodular Cast Iron (Without Scale)	S	H	Aluminum Oxide Ceramic	PVD Coated Ceramic	MEGACOAT Ceramic	Silicon Nitride Ceramic		CrD Coated Silicon Nitride Ceramic	SiAlON Ceramic	Highstrength structural Ceramic					
S	Chamfered and Honed Cutting Edge	S01525	0.15mm X 25° Chamfered and Honed Cutting Edge		Gray Cast Iron (With Scale)	Gray Cast Iron (Without Scale)	Nodular Cast Iron (With Scale)	Nodular Cast Iron (Without Scale)	Heat-resistant Alloys	Hard Materials	Aluminum Oxide Ceramic	PVD Coated Ceramic	MEGACOAT Ceramic	Silicon Nitride Ceramic		CrD Coated Silicon Nitride Ceramic	SiAlON Ceramic	Highstrength structural Ceramic					
T	Chamfered Cutting Edge	T01525	0.15mm X 25° Chamfered Cutting Edge		Heat-resistant Alloys	Hard Materials	Aluminum Oxide Ceramic	PVD Coated Ceramic	MEGACOAT Ceramic	Silicon Nitride Ceramic	CrD Coated Silicon Nitride Ceramic	SiAlON Ceramic	Highstrength structural Ceramic										
Insert		Description		(Previous Description)	Edge Preparation	Dimension (mm)					Aluminum Oxide Ceramic	PVD Coated Ceramic	MEGACOAT Ceramic	Silicon Nitride Ceramic	CrD Coated Silicon Nitride Ceramic	SiAlON Ceramic	Highstrength structural Ceramic	Ref. Page for Applicable Toolholders					
						φD	φd	A	B	F	KA30	A65	KT66	A66N	PT600M	KS6000	KS6050		CS7050	KS6040	CF1		
		RBG 12K20003	-	K20003	12	6	6	3	0.2														
		16K20003	RBG 16W	K20003	16	8	8	5	0.2		●												
		20K20003	RBG 20W	K20003	20	10	10	5	0.3		●												
		RCGX 060600E005	-	E005	6.35	-	6.35	-	-														
		060600T01020	T01020																				
		090700E005	E005																				
		090700P20015	P20015									●											
		090700S01020	S01020																			●	
		090700T01020	T01020																				
		120700E005	E005																				
120700P20015	P20015																						
120700S01020	S01020																				●		
120700T01020	T01020																						
		RPGX 060600E005	-	E005	6.35	-	6.35	-	-														
		060600T01020	T01020																				
		090700E005	E005																				
		090700T01020	T01020																				
		120700E005	E005																				
120700T01020	T01020																						

\*For cutting edge "E", "K" and "P" please refer to the table below.

Edge Preparation			
Symbol	Cutting Edge Spec.	Example	
E	R-honed Cutting Edge	E005	R0.05mm Honed
K	Double Chamfered Cutting Edges	K20003	2.00mm X 3° Chamfered Cutting Edge
P	Double Chamfered + Honed Cutting Edge	P20015	2.00mm X 15° Chamfered + Honed Cutting Edge

Note: Symbol "K" and "P" describe only the largest chamfer width and its angle.

## Grooving Inserts

Edge Preparation				K	Material										Ref. Page for Applicable Toolholders							
Symbol	Cutting Edge Spec.	Example			Gray Cast Iron (With Scale)	Gray Cast Iron (Without Scale)	Nodular Cast Iron (With Scale)	Nodular Cast Iron (Without Scale)	S	H	Aluminum Oxide Ceramic	PVD Coated Ceramic	MEGACOAT Ceramic	Silicon Nitride Ceramic		CrD Coated Silicon Nitride Ceramic	SiAlON Ceramic	Highstrength structural Ceramic				
S	Chamfered and Honed Cutting Edge	S01525	0.15mm X 25° Chamfered and Honed Cutting Edge		Gray Cast Iron (With Scale)	Gray Cast Iron (Without Scale)	Nodular Cast Iron (With Scale)	Nodular Cast Iron (Without Scale)	Heat-resistant Alloys	Hard Materials	Aluminum Oxide Ceramic	PVD Coated Ceramic	MEGACOAT Ceramic	Silicon Nitride Ceramic		CrD Coated Silicon Nitride Ceramic	SiAlON Ceramic	Highstrength structural Ceramic				
T	Chamfered Cutting Edge	T01525	0.15mm X 25° Chamfered Cutting Edge		Heat-resistant Alloys	Hard Materials	Aluminum Oxide Ceramic	PVD Coated Ceramic	MEGACOAT Ceramic	Silicon Nitride Ceramic	CrD Coated Silicon Nitride Ceramic	SiAlON Ceramic	Highstrength structural Ceramic									
Insert		Description		(Previous Description)	Edge Preparation	Dimension (mm)				Aluminum Oxide Ceramic	PVD Coated Ceramic	MEGACOAT Ceramic	Silicon Nitride Ceramic	CrD Coated Silicon Nitride Ceramic	SiAlON Ceramic	Highstrength structural Ceramic	Ref. Page for Applicable Toolholders					
						W	r <sub>ε</sub>	L	H	KA30	A65	KT66	A66N	PT600M	KS6000	KS6050		CS7050	KS6040	CF1		
		GH 4020-05	-	S01020	4.0																	
		4020-05	T01020																			
		5020-05	S01020																			
		5020-05	T01020																			
		6020-05	T01020																			
		7020-05	T01020																			