



Turning Indexable Inserts

B1~B115

B



Turning Indexable Inserts Identification System B2

Insert Color B3

Chipbreaker Selection B4~B14

Chipbreaker shape of Negative Inserts B4

Chipbreaker shape of Positive Inserts B12

How to read pages of "Turning Inserts" B15

Cermet / Coated Carbide / Carbide Lineup B16~B104

Turning Negative Inserts	CN□□ 80° Rhombic	B16
	DN□□ 55° Rhombic	B23
	KN□□ 55° Parallelogram	B31
	RN□□ Round	B31
	SN□□ 90° Square	B32
	TN□□ 60° Triangle	B36
	VN□□ 35° Rhombic	B44
	WN□□ 80° Trigon	B46
	Small Double Sided Tools	B50
Turning Positive Inserts	CC□□, CP□□ 80° Rhombic	B53
	DC□□, DP□□ 55° Rhombic	B62
	JC□□ 70° Rhombic	B73
	RC□□ Round	B74
	SC□□, SP□□ 90° Square	B75
	TB□□, TC□□, TP□□ 60° Triangle	B76
	VB□□, VC□□, VP□□ 35° Rhombic	B89
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Inserts for Back Turning	TKFB	B100
	ABS15 / ABW15 / ABW23	B102
Bearing Machining	R□MT-BB / SNMF	B103
Solid Tip-Bars		B104

Ceramic Inserts Identification System B105



Ceramic Lineup B106~B115

Turning Negative Inserts	CN□□ 80° Rhombic	B106
	DN□□ 55° Rhombic	B107
	EN□□ 75° Rhombic	B107
	RN□□ Round	B108
	SN□□ 90° Square	B109
	TN□□ 60° Triangle	B111
	VN□□ 35° Rhombic	B112
Turning Positive Inserts	RP□□ Round	B113
	SP□□ 90° Square	B113
	TB□□, TC□□, TP□□ 60° Triangle	B113
Inserts for Hardened Roll Materials	RBG / RCGX / RPGX	B114
Grooving Inserts	GH	B115

Turning Indexable Inserts Identification System

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	80° Trigon
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	Relief Angle
A	3°
B	5°
C	7°
D	15°
E	20°
F	25°
G	30°
N	0°
P	11°

(2) Relief Angle

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			
J	±0.005	±0.025	±0.05~±0.15
K*	±0.013		
L*	±0.025		
M*	±0.08~±0.18		
N*		±0.025	
U*		±0.13~±0.38	

* Insert's periphery is as fired.

Tolerance difference is depending on insert size.

(3) Tolerance

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

(3) Tolerance

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

(4) Hole / Chipbreaker

ISO
(metric)

C
(1)

N
(2)

M
(3)

G
(4)

12
(5)

04
(6)

08
(7)

PG
(8)

ANSI
(inch)

C
(1)

N
(2)

M
(3)

G
(4)

4
(5)

3
(6)

2
(7)

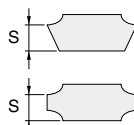
PG
(8)

(5) Edge Length (ISO)						I.C. Size (mm)	(5) I.C. Size (ANSI)	
							IC 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		5.56	7/32	18
		06				6		
06	07		06	11	11	6.35	1/4	2
08	09		07	13		7.94	5/16	25
		08				8		
09	11	09	09	16	16	9.525	3/8	3
	12	10				10		
		12				12		
12	15	12	12	22	22	12.7	1/2	4
16	19	15	15	27	27	15.875	5/8	5
		16				16		
19	23	19	19	33	33	19.05	3/4	6
		20				20		
22	27		22	38		22.225	7/8	7
		25				25		
25	31	25	25	44	44	25.4	1	8
32	38	31	31	54	54	31.75	1-1/4	10
		32				32		

· Expressed as edge length for ISO.

· ANSI expresses the inscribed circle diameter in inches.

(6) Thickness			
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)			
ISO		ANSI	
Corner-R (RE) (mm)	Symbol	Corner-R (RE) (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.

Positive Inserts Identification System

CCGT060201 M F P - SK				CCET060201 M F R - U SF			
Minus tolerance on Corner-R(RE)				Minus tolerance on Corner-R(RE)			
Sharp edge				Sharp edge			
Polished		Chipbreakers		Insert Hand		Chipbreakers	
						Super Fine (High Quality Ground Insert)	

When a minus tolerance is specified for the corner-R(RE)

If a minus tolerance is specified for the corner-R(RE) as shown in the Fig. 1, using an insert with corner-R(RE)=0.2 mm may result in larger radius than specified.

Use an insert the corner of which R(RE) has a minus tolerance.

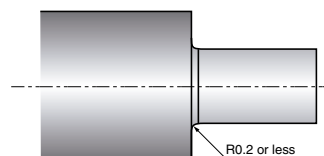


Fig. 1 Example of a specified corner-R in the drawing

Insert Color

● Cermet, CVD Coated Cermet, MEGACOAT NANO Cermet, MEGACOAT Cermet and PVD Coated Cermet

Grades	Cermet									CVD Coated Cermet	MEGACOAT NANO Cermet		MEGACOAT Cermet		PVD Coated Cermet
	TN610	TN620	TN620M	TN6020	TN60	TN90	TN100M	TC40N	TC60M	NEW CCX	PV710	PV720	PV7005	PV7040	PV90
Insert Color															

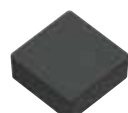
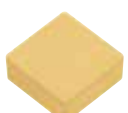
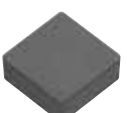
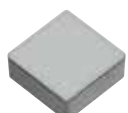
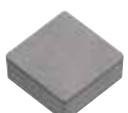
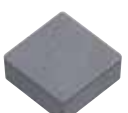
● CVD Coated Carbide

Grades	CVD Coated Carbide														
	CA310	CA315	CA320	CA415D	CA520D	CA420M	CA45 series	CA510	CA515	NEW CA025P	CA525	CA530	CA55 series	CA65 series	CR9025
Insert Color															

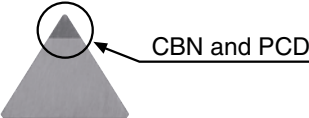
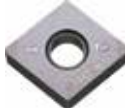
● PVD Coated Carbide

Grades	MEGACOAT NANO						MEGACOAT NANO PLUS	MEGACOAT HARD	MEGACOAT						PVD Coated Carbide								
	PR1425	PR1510	PR1515	PR1525	PR1535	PR1625	PR1725	PR005S	PR015S	PR1210	PR1215	PR1225	PR1230	PR1305	PR1310	PR1325	PR830	PR905	PR915	PR930	PR1005	PR1025	PR1115
Insert Color																							

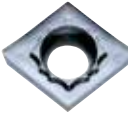
● Ceramic

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	NEW KS6015	KS6050	CS7050	KS6030	KS6040	CF1
Insert Color											

● CBN and PCD

Grades	CBN				PCD			MEGACOAT CBN	PVD Coated CBN
	KBN475	KBN510	KBN525	KBN570	KPD001	KPD010	KPD230	KBN..M	KBN900
Insert Color									

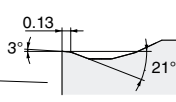
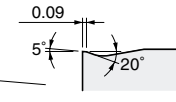
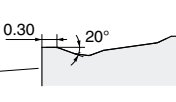
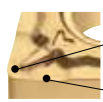
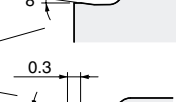
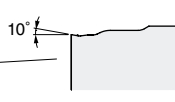
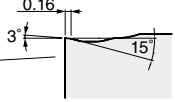
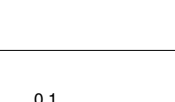
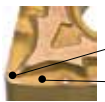
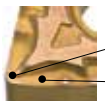
● DLC Coated Carbide ● Carbide

Grades	DLC Coated Carbide		Carbide				
	PDL010	PDL025	GW05	GW15	GW25	KW10	SW05
Insert Color							

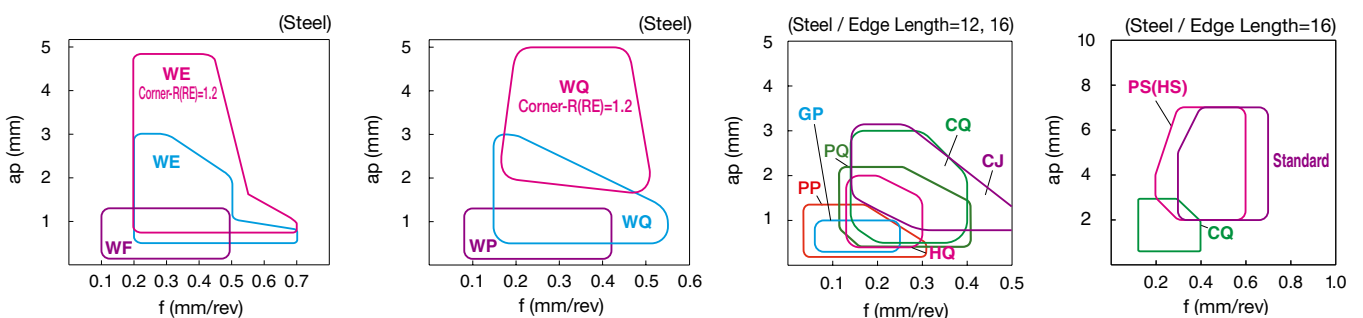
Chipbreaker Selection (Negative Inserts)

Steel

1 Molded Chipbreaker

Cutting Range	Name	Design			Advantages
Finishing (With Wiper Edge)	WF				- Wiper insert - Good chip control in finishing operations - Excellent surface roughness by controlling adhesion - Less cutting force due to sharp cutting edge
	WP				- Wiper insert - Good chip control at small machining
	WE				- Wiper insert - Good surface finish at high feed machining - High productivity with smooth chip control in a wide range of applications
	WQ				- Wiper insert - Double feed rate possible while maintaining a smooth finish - High efficiency and good chip control
Finishing	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
	PQ				- Stable chip control in a wide feed rate range by breaking chips effectively - The well-balanced edge sharpness and toughness
	GP				- Finishing to light machining - Good chip control
	HQ				Sharp cutting performance with 3-D rake angle and double projection design
Finishing - Medium	CQ				- Good chip control for varied ap such as copying - Applicable to up facing

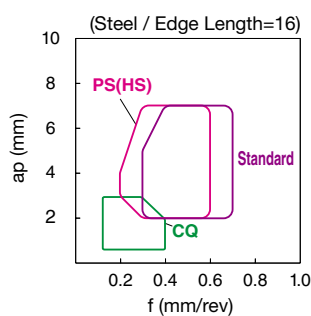
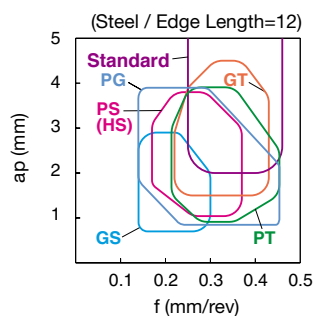
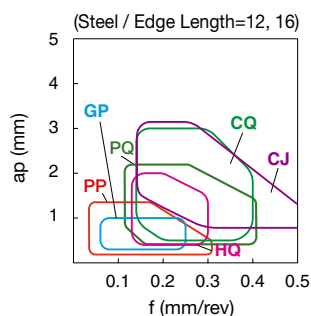
● Applicable Chipbreaker Range (ap indicates radius)



Cutting Range	Name	Design	Advantages
Finishing - Medium (Up Facing)	CJ		- Improved chip curing at small machining and high feed rate machining - Improved chip evacuation at copying and up facing
Medium - Roughing	PG		- Stable machining with good balance of edge sharpness and strength - Prevent chip clogging at high feed rate - Good chip control at low feed rate - Stable machining with wide chip control range
Medium - Roughing	GS		- Strong edge chipbreaker - Stable for continuous machining and light interrupted machining
Medium - Roughing	PS		- General purpose chipbreaker - More stable due to large contact surface

Cutting Range	Name	Design	Advantages
Medium - Roughing	HS		- General purpose chipbreaker - Applicable to copying
Medium - Roughing / High Feed Rate	PT		- Low cutting force at high feed machining - Land support structure
Medium - Roughing / High Feed Rate	GT		- Strong edge chipbreaker - Wide land design and smooth chip control even at high feed rate machining
Roughing	Standard (Without Indication)		Low cutting force and applicable to large ap roughing

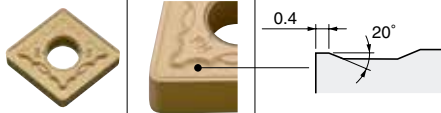
● Applicable Chipbreaker Range (ap indicates radius)

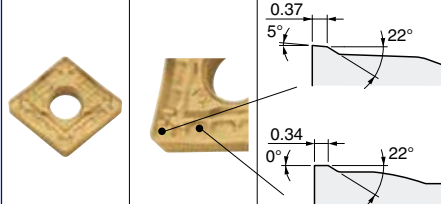


Chipbreaker Selection (Negative Inserts)

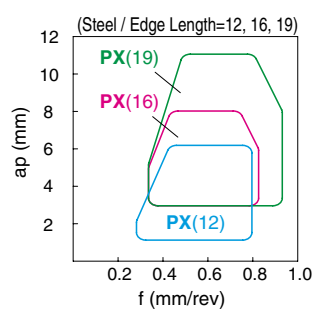
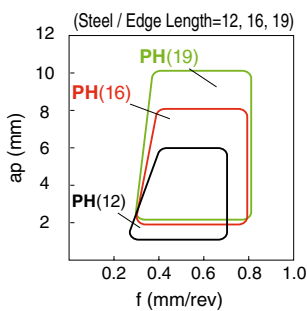
Steel

1 Molded Chipbreaker

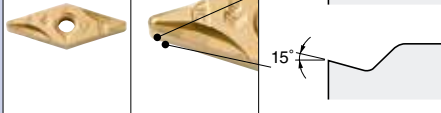
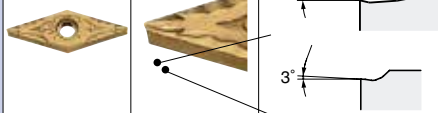
Cutting Range	Name	Design	Advantages
Roughing	PH		- For roughing of steel - Suitable for heavy interrupted machining and for workpieces with scale due to strong cutting edge

Cutting Range	Name	Design	Advantages
Single-sided Roughing (High Feed Rate)	PX		- Roughing and high feed rate operation - Low cutting force chipbreaker

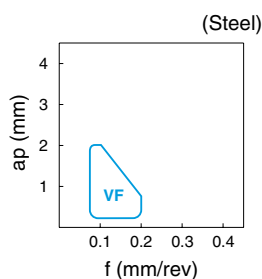
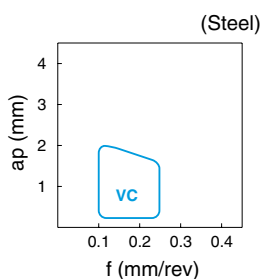
● Applicable Chipbreaker Range (ap indicates radius)



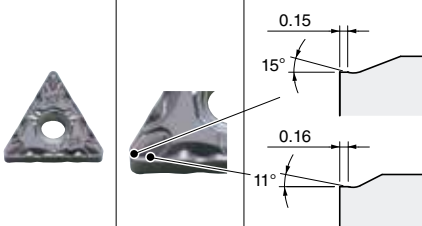
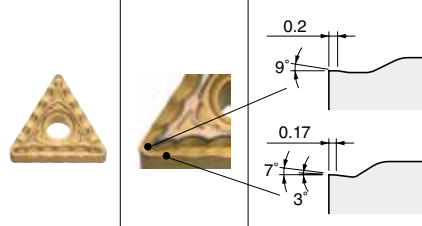
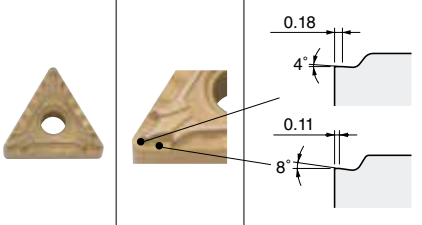
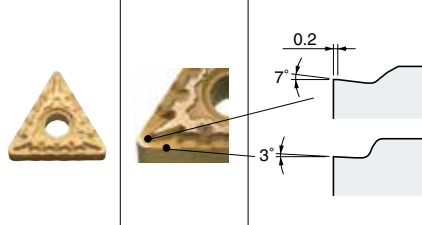
Steel (Copying / Undercutting , Varied ap)

Cutting Range	Name	Design	Advantages
Finishing - Medium	VC		- Handed chipbreaker for copying - Good chip control at varied ap because of the large space on the main cutting edge side
Finishing - Medium	VF		Good chip control at varied ap such as copying and undercutting

● Applicable Chipbreaker Range (ap indicates radius)

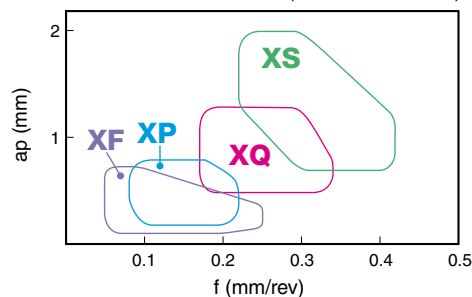


Low Carbon Steel (Pipe / Rolled Plate / Rolled Steel)

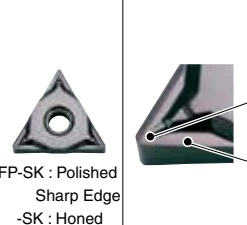
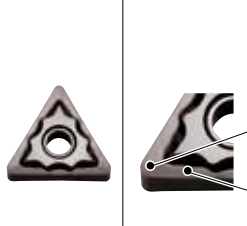
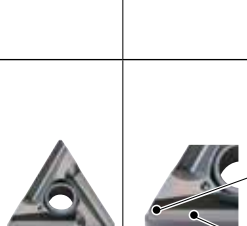
Cutting Range	Name	Design	Advantages	Cutting Range	Name	Design	Advantages
Finishing	XF		·Excellent chip control at high speed and small ap machining of low carbon steel	Medium	XQ		·Consistent chip breaking at medium machining due to moderate rake face and special design
Finishing	XP		·Short chips when finishing due to sharp cutting and special design	Roughing	XS		·Consistent chip breaking when roughing due to special rake face and rake angle design

● Applicable Chipbreaker Range (ap indicates radius)

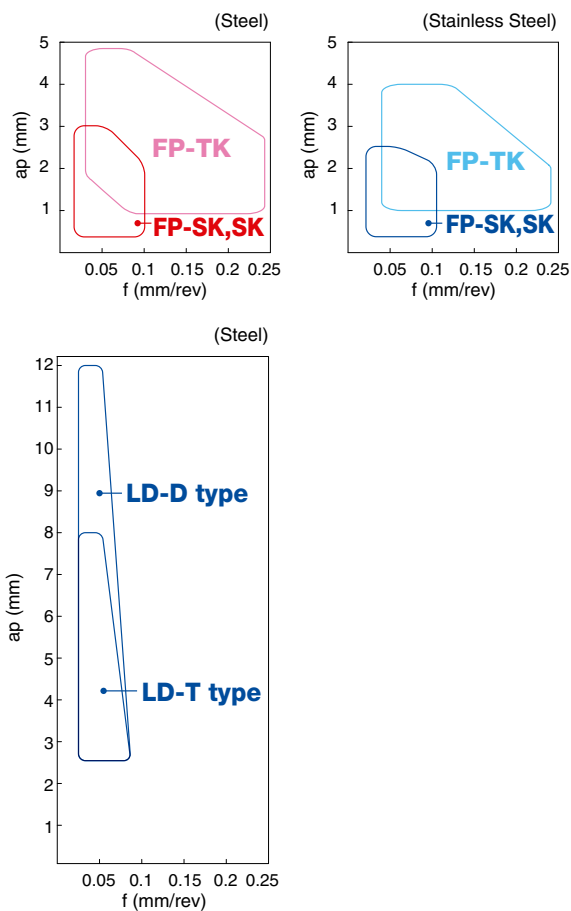
(Low Carbon Steel)



Steel / Stainless Steel (for automatic lathe)

Cutting Range	Name	Design	Advantages
Finishing - Medium	SK	 FP-SK : Polished Sharp Edge -SK : Honed	·For finishing to medium machining in automatic lathes ·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 large ap in automatic lathes (When machining workpieces of medium to large dia.) ·Superior cutting performance achieved by sharp edge and polished surface ·Smooth chipbreaker geometry improves chip flow with less adhesion ·Large curled chips
Large D.O.C	LD		·Available for greater depths of cut than many conventional chipbreakers ·Achieves high-precision machining in a single pass ·Chipbreaker shape optimized for various depths of cut ·Stable chip control in a wide range of machining applications

● Applicable Chipbreaker Range (ap indicates radius)



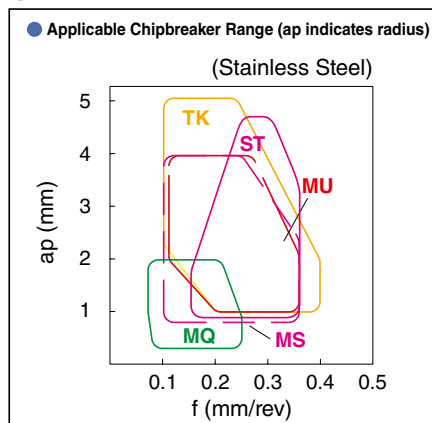
Chipbreaker Selection (Negative Inserts)

Stainless Steel / Heat-Resistant Alloys / Titanium Alloy

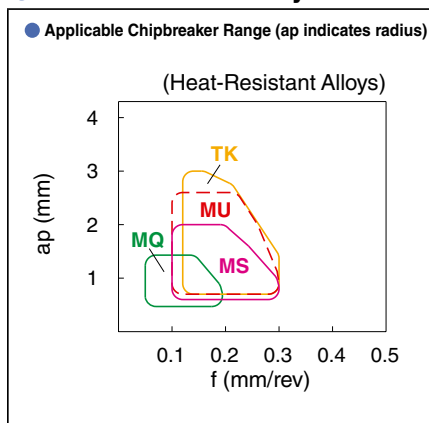
Cutting Range	Name	Design	Advantages
Finishing	MQ		- Large rake angle - Low cutting force and good chip control
Medium - Roughing	MS		- Superior cutting edge sharpness and strength achieved by a positive land - Extra strength of cutting edge inhibits damage from wall shouldering
Medium - Roughing	MU		- Large rake angle reduces cutting force - Less burring achieved by diminishing damage from notching

Cutting Range	Name	Design	Advantages
Medium - Roughing	TK		- Smooth chipbreaker geometry improves chip flow with less adhesion - Large curled chips
Medium - Roughing	ST		- Less cutting force due to large rake angle - Less notching by special design

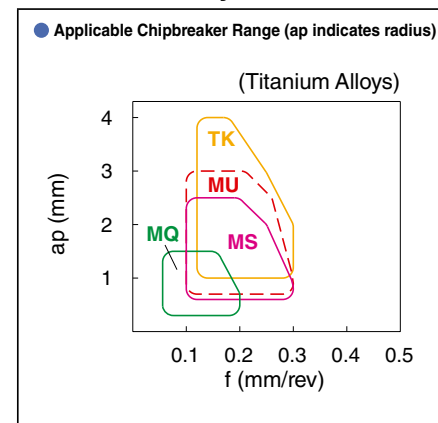
Stainless Steel



Heat-Resistant Alloys

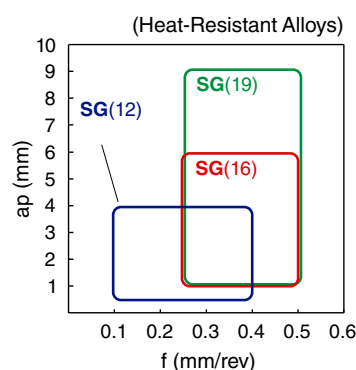
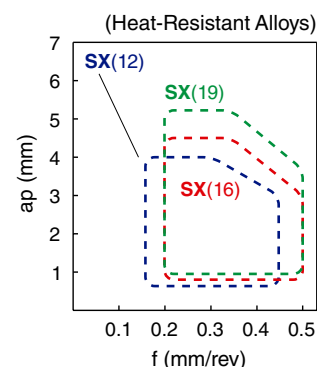
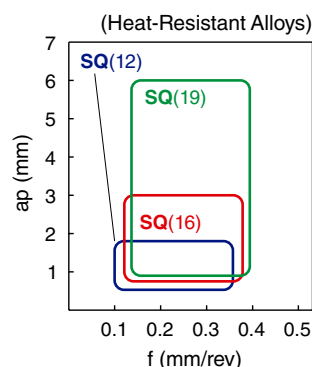


Titanium Alloys

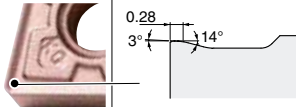
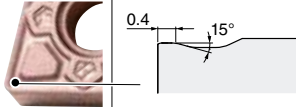


Heat-Resistant Alloys

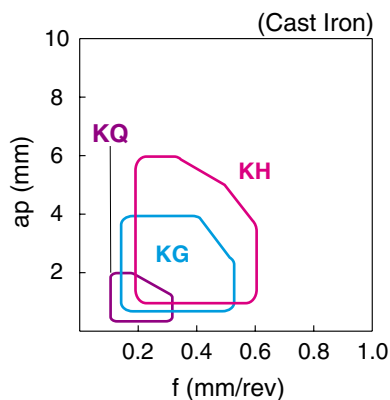
Cutting Range	Name	Design	Advantages
Finishing - Medium	SQ		Effective for burr suppression and reducing notching by slant cutting edge (inclined in (-) direction)
Roughing	SG		- Provides well-balanced edge strength and cutting force reduction to maintain stable machining at high-load cutting - Shallow and gently curved breaker controls chips smoothly
Roughing	SX		- Slant cutting edge reduces cutting force - Less burring achieved by unique cutting edge design



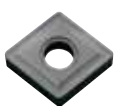
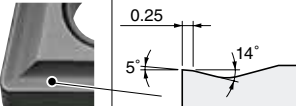
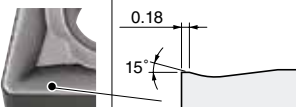
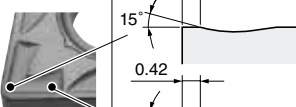
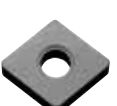
Cast Iron (K series)

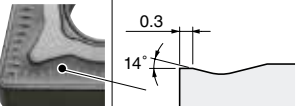
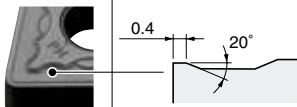
Cutting Range	Name	Design		Advantages
Sharp Cutting Oriented	KQ		 0.18 5° 18°	- Sharp cutting chipbreaker - Edge geometry is suitable for workpieces that require sharpness such as thin-walled
Roughing	KG		 0.28 3° 14°	- Excellent balance of sharpness and strength - Realized stability at continuous machining
Roughing	KH		 0.4 15°	- Good for heavily interrupted machining - Strong edge chipbreaker - Improved locating / seating in the toolholder pocket, high reliability achieved

● Applicable Chipbreaker Range (ap indicates radius)

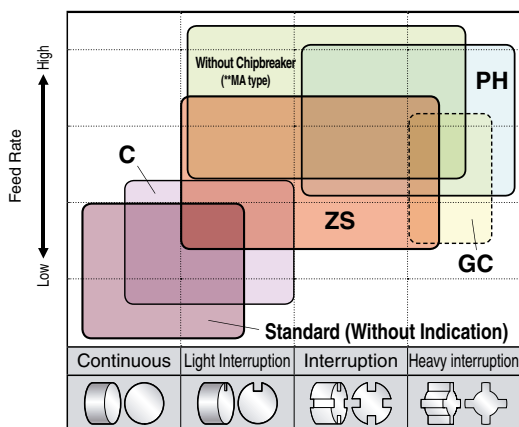


Cast Iron

Cutting Range	Name	Design		Advantages
Sharp Cutting Oriented	Standard (Without Indication)		 0.25 5° 14°	Standard chipbreaker for continuous to light interrupted machining of cast iron (Low cutting force)
	C		 0.18 15°	High feed rate chipbreaker for continuous to light interrupted machining of cast iron
	ZS		 0.42 15° 0.42 15°	Standard chipbreaker for light interrupted to interrupted machining of cast iron (Stability oriented)
	Without Chipbreaker			High feed rate chipbreaker for light interrupted to interrupted machining of cast iron

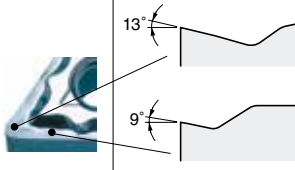
Cutting Range	Name	Design		Advantages
Stability Oriented	GC		 0.3 14°	Chipbreaker for heavy interrupted machining of cast iron (Tough edge chipbreaker)
	PH		 0.4 20°	Chipbreaker for roughing of cast iron Suitable for heavy interrupted machining and for workpieces with scale due to strong cutting edge

Chipbreaker Selection (Negative Inserts)

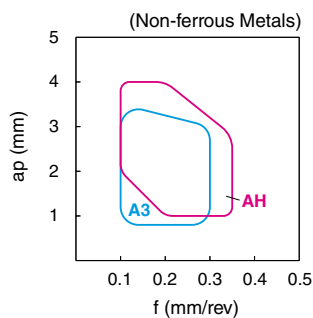


Chipbreaker Selection (Negative Inserts)

Non-ferrous Metals

Cutting Range	Name	Design		Advantages
Finishing - Medium	A3			- Large rake angle and smooth surface - Good chip control and less adhesion
Medium - Roughing	AH		 G Class : Sharp Edge M Class : Horned Edge Prep.	- Polished chipbreaker - Smooth chip control and less adhesion

Applicable Chipbreaker Range (ap indicates radius)



A3 Chipbreaker



$a_p=2\text{mm}$

$f=0.2\text{mm/rev}$

$a_p=2\text{mm}$

$f=0.3\text{mm/rev}$

AH Chipbreaker



$a_p=2\text{mm}$

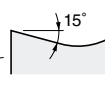
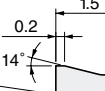
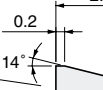
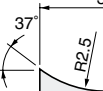
$f=0.2\text{mm/rev}$

$a_p=2\text{mm}$

$f=0.3\text{mm/rev}$

Steel

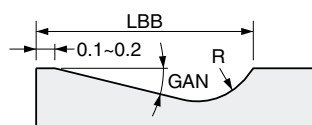
2 Ground Chipbreaker

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 machining at feed rate 0.15 to 0.25mm/rev
Medium - Roughing	C				Suitable for general purpose machining at feed rate 0.20 to 0.35mm/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

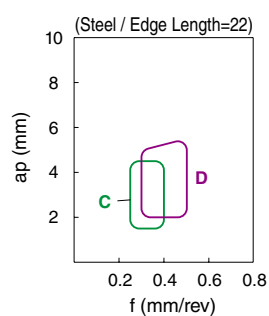
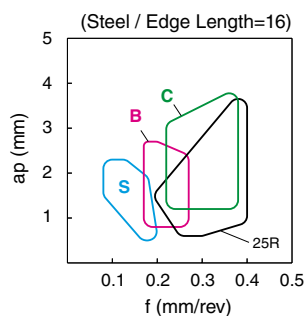
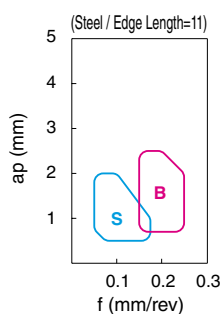
- (1) Lower cutting force and improve edge
- (2) Improved adhesion resistance
- (3) Improved dimension accuracy and finishing surface accuracy
- (4) Controlled chip evacuation direction

● Specification of B, C and parallel ground chipbreaker



Insert Type	Size	Chipbreaker Name	LBB	GAN	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
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

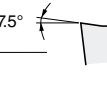
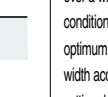
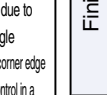
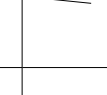
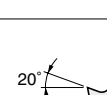
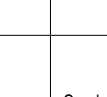
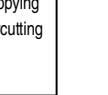
● Applicable Chipbreaker Range (ap indicates radius)



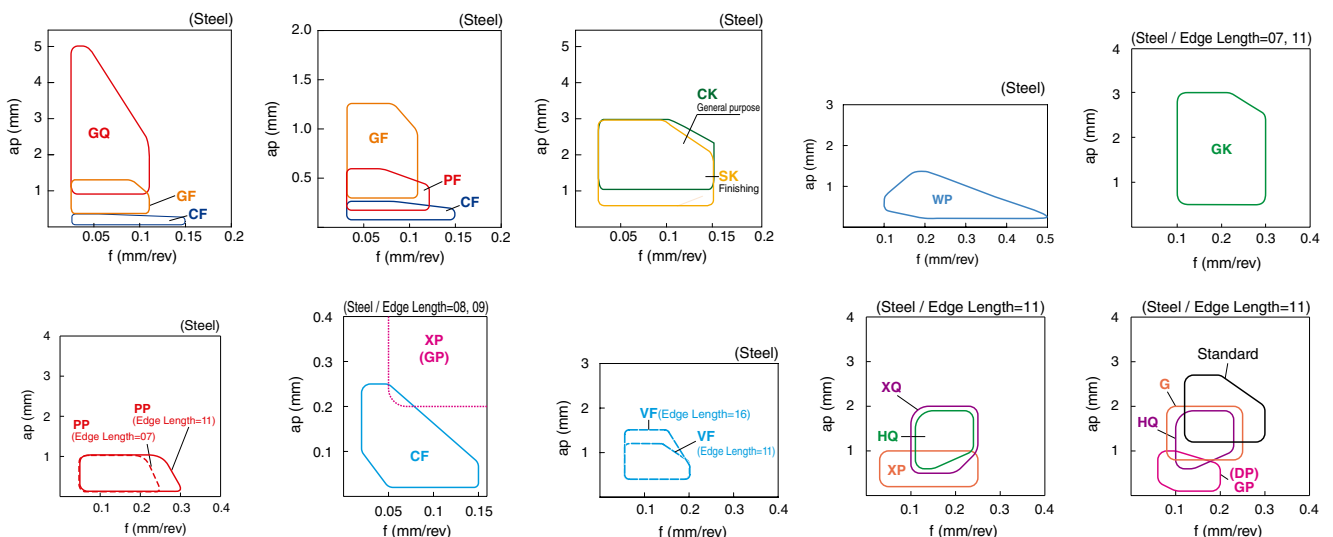
Chipbreaker Selection (Positive Inserts)

Steel

1 Molded Chipbreaker

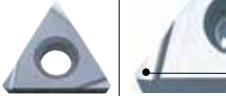
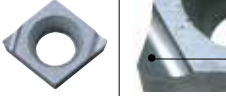
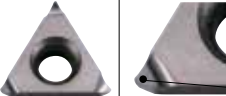
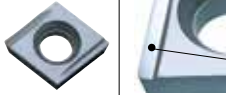
Cutting Range	Name	Design	Advantages
Minute ap	CF		Available for minute ap (0.02 to 0.2mm) finishing
Finishing	PF		Chipbreaker for finishing boring available from ap 0.15~0.6mm
Finishing	GF		Chips fragmented in small pieces in machining of small ap
Finishing - Medium	GQ		Enables machining over a wide range of conditions by using the optimum chipbreaker width according to the cutting depth
Finishing	SK		Sharp cutting performance due to large rake angle Large dot to the corner edge improved chip control in a wide feed rate range
Finishing	CK		Good cutting performance Applicable without hand for two direction machining on automatic lathe
Finishing	WP		Wiper insert Good surface finish and good chip control at high feed machining Reduces surface finish galling
Finishing - Medium	GK		Good chip evacuation at wide range by breaker dot and wide chip pocket
Cutting Range	Name	Design	Advantages
Finishing	PP		1st Recommendation at steel finishing Stable chip control in a wide feed rate range Stable tool life due to special edge design with sharpness and improved strength
Finishing	DP		Consistent chip breaking performance for finishing
Finishing	GP		Good chip control
Finishing	VF		Good chip control for varied ap such as copying and undercutting
Finishing - Medium	HQ		General purpose chipbreaker for medium machining
Medium	G		Chipbreaker for short chips at medium machining
Medium	Standard (Without Indication)		Strong edge chipbreaker for medium machining range

● Applicable Chipbreaker Range (ap indicates radius)



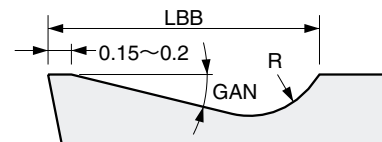
Steel

2 Ground Chipbreaker

Cutting Range	Name	Design	Advantages
Finishing	Lead (Without Indication)		Good chip control at finishing to light machining with low cutting force
Finishing	F		Good chip control at finishing to light machining with low cutting force
Finishing	P		- Flows chips towards the inlet of hole - Sharp edge
Medium	Y		Sharp cutting performance and good surface finish
Low Feed	J		- Slant chipbreaker width and chip control at various ap - Applicable to automatic lathes
Low Feed	U		Good chip control at low feed rate and varied ap with low cutting force

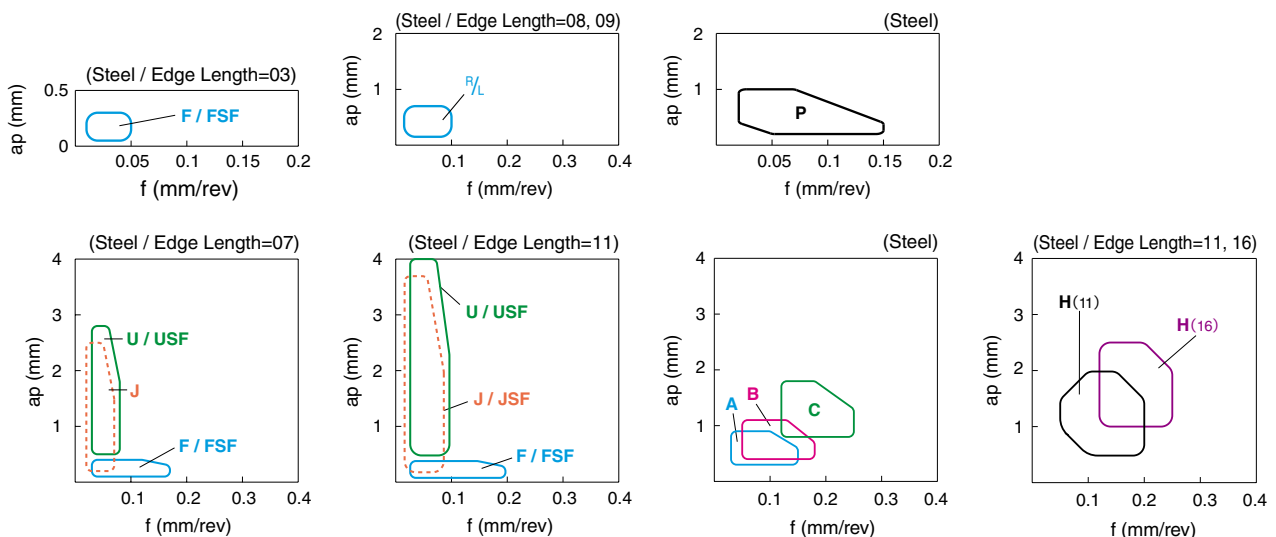
Cutting Range	Name	Design	Advantages
Finishing	A		- Large rake angle and low cutting force - Narrow chipbreaker width and consistent chip control
Finishing - Medium	B		- General purpose chipbreaker for medium machining - Good balance between chip control and sharp cutting
Medium	C		- Applicable to high load machining - 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	LBB	GAN	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

● Applicable Chipbreaker Range (ap indicates radius)



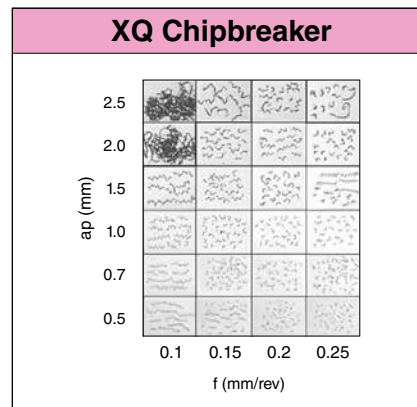
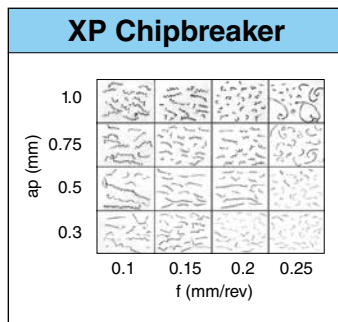
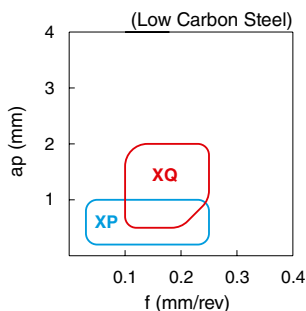
Chipbreaker Selection (Positive Inserts)

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

Cutting Range	Name	Design	Advantages
Finishing	XP		Consistent chip breaking performance even 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

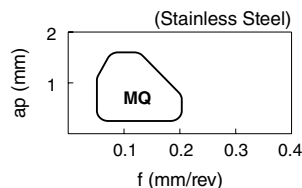
Applicable Chipbreaker Range (ap indicates radius)



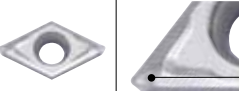
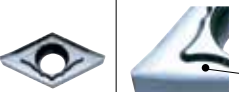
Stainless Steel

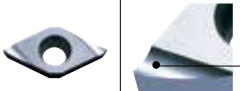
Cutting Range	Name	Design	Advantages
Finishing	MQ		- Good chip evacuation at internal turning - Small curled chips - Prevents chip entanglement with toolholder and stabilizes surface roughness

Applicable Chipbreaker Range (ap indicates radius)

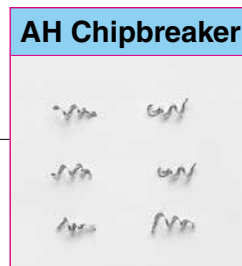
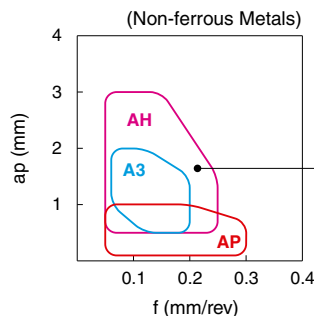


Non-ferrous Metals

Cutting Range	Name	Design	Advantages
Finishing	AP		- Curved edge and shape of chipbreaker lead good chip control for finishing - Sharp cutting edge provides excellent surface finish - Polished chipbreaker
Finishing - Medium	AH		- Positive chip groove and good chip control with low cutting force - Polished surface reduces adhesion

Cutting Range	Name	Design	Advantages
Finishing - Medium	A3		- Large rake angle, smooth chip flow and less adhesion - Superior cutting performance achieved by sharp edge

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	Recommended grades for each applications are shown here.
✱: Interruption / 1st Choice	
✱✱: Interruption / 2nd Choice	
●: Light Interruption / 1st Choice	
○: Light Interruption / 2nd Choice	
●: Continuous / 1st Choice	
○: Continuous / 2nd Choice	
(In case hardness is 45HRC or under)	

Insert's ISO Classification of usage
(Workpiece materials are written on the right side)

Insert Dimensions

Insert Grades
(Red characters mean new)

Turning Indexable Inserts

How to read pages of "Turning Inserts" See Page **B15**

80° Rhombic / Negative with Hole

Insert Corner-R(RE)

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
See Page B3 for insert color

Applicable chipbreaker range map No.

B16 Inserts are sold in 10 piece boxes

●: Std. Item ○: Check Availability □: Deleted from the next catalog

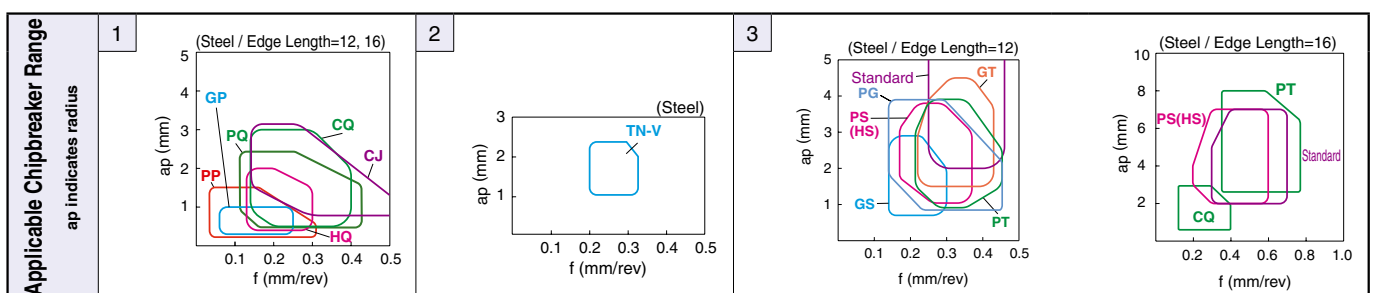
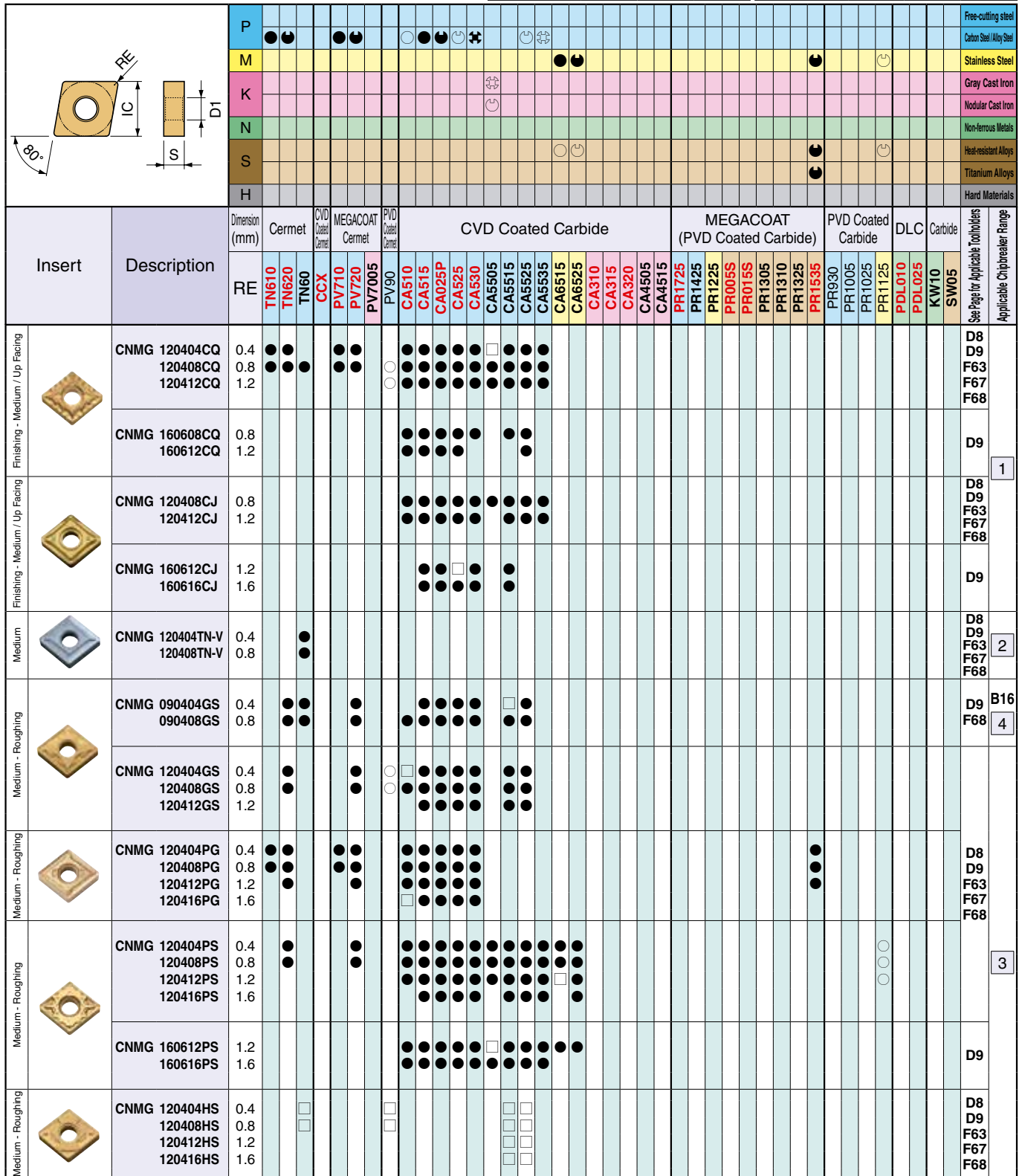
Purchase unit

Stock

Applicable Toolholder

Applicable chipbreaker range map No.

Description	IC	S	D1	Description	IC	S	D1
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

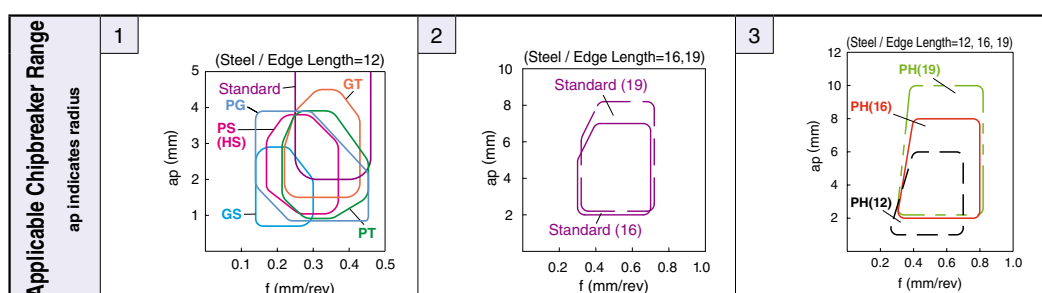


B17

How to read pages of “Turning Inserts” See Page **B15**

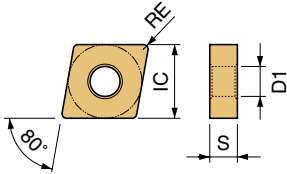
80° Rhombic / Negative with Hole

(mm)				(mm)			
Description	IC	S	D1	Description	IC	S	D1
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

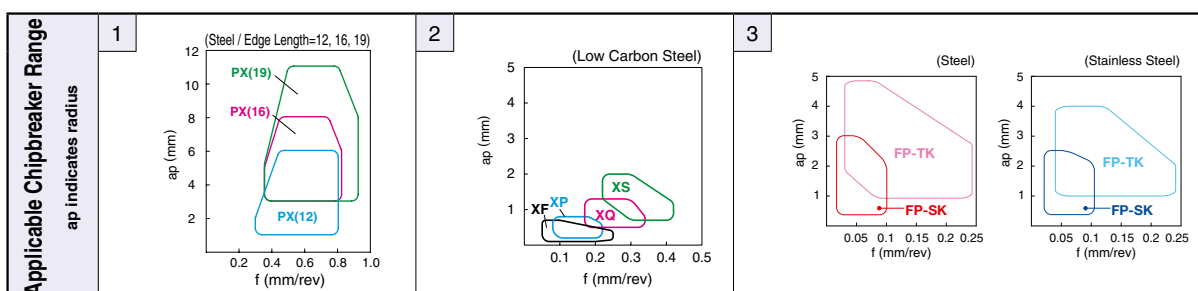
[illegible]

80° Rhombic / Negative with Hole

(mm)				(mm)			
Description	IC	S	D1	Description	IC	S	D1
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

[illegible]

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



Inserts are sold in 10 piece boxes

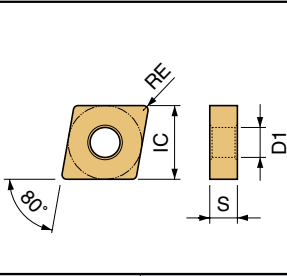
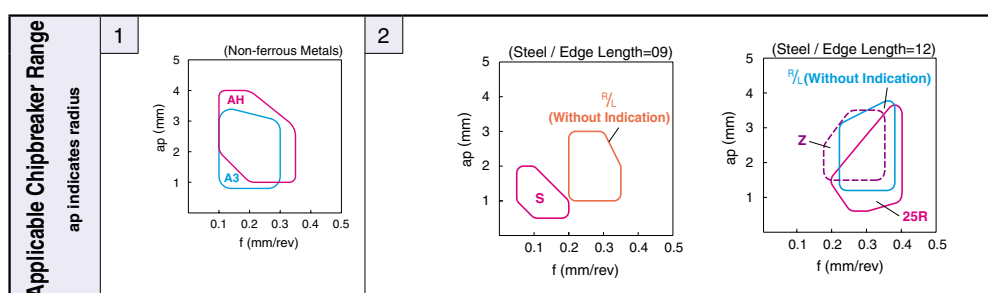
(mm)

B21

How to read pages of “Turning Inserts” See Page **B15**

80° Rhombic / Negative with Hole

(mm)				(mm)			
Description	IC	S	D1	Description	IC	S	D1
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

[illegible]

Description	IC	S	D1
DN_1104_	9.525	4.76	3.81
DN_1504_	12.70	4.76	5.16

A	B	C	D	E	F	G	H	J	K	L	M	N	P	R	T
Insert Grades	Turning Invisible Inserts	CBN & PCD Tools	External	Small Parts Machining	Boring	Grooving	Cut-off	Threading	Drilling	Solid Tools	Milling	Tools for Turnin Mill	Spare Parts	Technical	Index



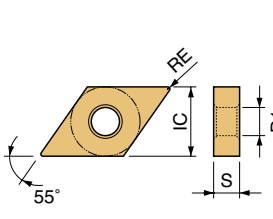
B23

Turning Indexable Inserts

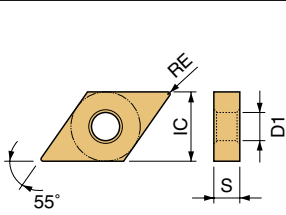
How to read pages of "Turning Inserts" See Page [B15](#)

55° Rhombic / Negative with Hole

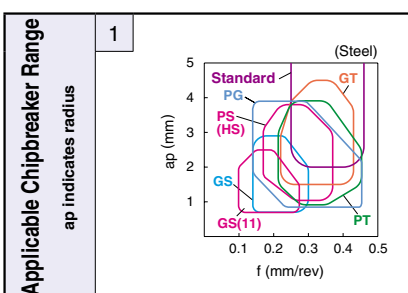
Description	IC	S	D1	(mm)
DN_1104_	9.525	4.76	3.81	
DN_1504_	12.70	4.76	5.16	
Description	IC	S	D1	(mm)
DN_1506_	12.70	6.35	5.16	

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55° Rhombic / Negative with Hole



Description	IC	S	D1
DN_1104_	9.525	4.76	3.81
DN_1504_	12.70	4.76	5.16

[illegible]

Inserts are sold in 10 piece boxes

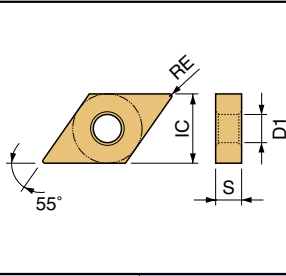
Turning Indexable Inserts

How to read pages of "Turning Inserts" ➡ See Page **B15**

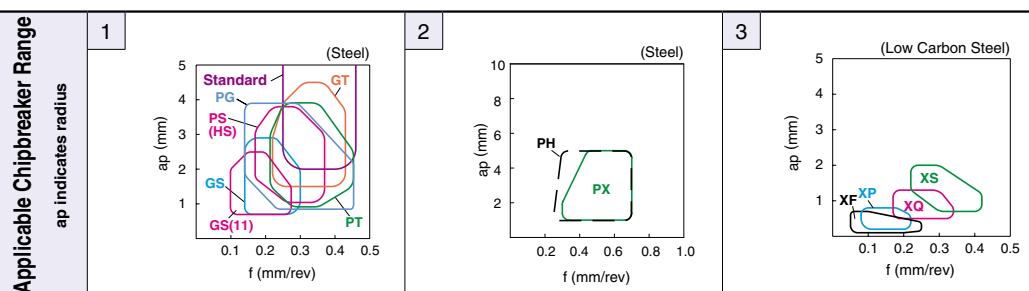
55° Rhombic / Negative with Hole

Description	IC	S	D1	(mm)
DN_1104_	9.525	4.76	3.81	
DN_1504_	12.70	4.76	5.16	

Description	IC	S	D1	(mm)
DN_1506_	12.70	6.35	5.16	



Insert	Description	Dimension (mm)	Cermets			CVD Coated Cermets		MEGACOAT Cermets		PVD Coated Cermets	CVD Coated Carbide										MEGACOAT (PVD Coated Carbide)					PVD Coated Carbide			DLC		Carbide		Applicable Chipbreaker Range												
			RE	TN610	TN620	TN60	CCX	PV710	PV720		PV7005	PV90	CA510	CA515	CA025P	CA525	CA530	CA505	CA5515	CA5525	CA5535	CA6515	CA6525	CA310	CA315	CA320	CA4505	CA4515	PR1725	PR1425	PR1225	PR005S		PR015S	PR1305	PR1310	PR1325	PR1535	PR930	PR1005	PR1025	PR1125	PDL010	PDL025	KW10
Roughing		DNMG 150404 150408 150412	0.4 0.8 1.2	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	○ □ ●	● ● ●	● ● ●	● ● ●	● ● ●	□ ● ●	□ ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	D12 D13 F64 F70 F71	
		DNMG 150604 150608 150612	0.4 0.8 1.2	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● □ ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● □ ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	D12 D13 F64		
Roughing		DNMG 150408PH 150412PH 150416PH	0.8 1.2 1.6	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● □	● ● □	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	D12 D13 F64 F70 F71		
		DNMG 150608PH 150612PH 150616PH	0.8 1.2 1.6	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● □	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	D12 D13 F64		
Single-sided / Roughing / High Feed Rate		DNMM 150408PX 150412PX 150416PX	0.8 1.2 1.6	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● □	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● □	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	D12 D13 F64 F70 F71		
		DNMM 150608PX 150612PX 150616PX	0.8 1.2 1.6	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● □ ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	D12 D13 F64		
Low Carbon Steel Finishing / Small ap		DNMG 150404XF 150408XF	0.4 0.8	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	D12 D13 F64 F70 F71
Low Carbon Steel Finishing		DNMG 150404XP 150408XP	0.4 0.8	● ●	● ●	● ●	● ●	● ●	● ●	○ ○	● ●	● ●	● ●	● ●	□ ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	D12 D13 F64 F70 F71
		DNMG 150604XP 150608XP	0.4 0.8	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	D12 D13 F64
Low Carbon Steel Medium		DNMG 150404XQ 150408XQ	0.4 0.8	● ●	● ●	● ●	● ●	● ●	○ ○	□ □	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●	D12 D13 F64 F70 F71
Low Carbon Steel Roughing		DNMG 150408XS	0.8	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	D12 D13 F64 F70 F71



Inserts are sold in 10 piece boxes

● : Std. Item ○ : Check Availability □ : Deleted from the next catalog

55° Rhombic / Negative with Hole

Description	IC	S	D1	Description	IC	S	D1
DN_1104_	9.525	4.76	3.81	DN_1506_	12.70	6.35	5.16
DN_1504_	12.70	4.76	5.16				

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Description	IC	S	D1
DN_1104_	9.525	4.76	3.81
DN_1504_	12.70	4.76	5.16

A	B	C	D	E	F	G	H	J	K	L	M	N	P	R	T
Insert Grades	Turning Invisible Inserts	CBN & PCD Tools	External	Small Parts Machining	Boring	Grooving	Cut-off	Threading	Drilling	Solid Tools	Milling	Tools for Turnin Mill	Spare Parts	Technical	Index



B29

B30

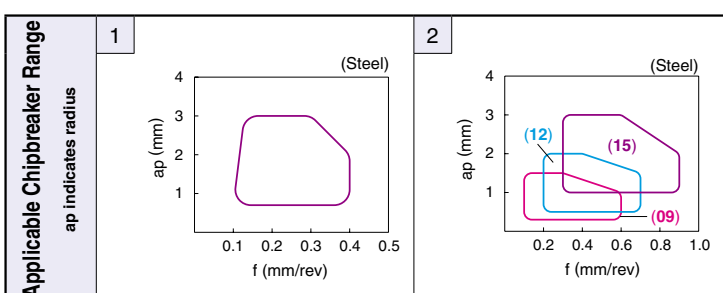
55° Parallelogram / Negative without Hole

(mm)			
Description	IC	S	D1
KNMX1604_	9.525	4.76	-

[illegible]

Round / Negative with Hole

(mm)				(mm)			
Description	IC	S	D1	Description	IC	S	D1
RN_0903_	9.525	3.18	3.81	RN_1506_	15.875	6.35	6.35
RN_1204_	12.70	4.76	5.16				

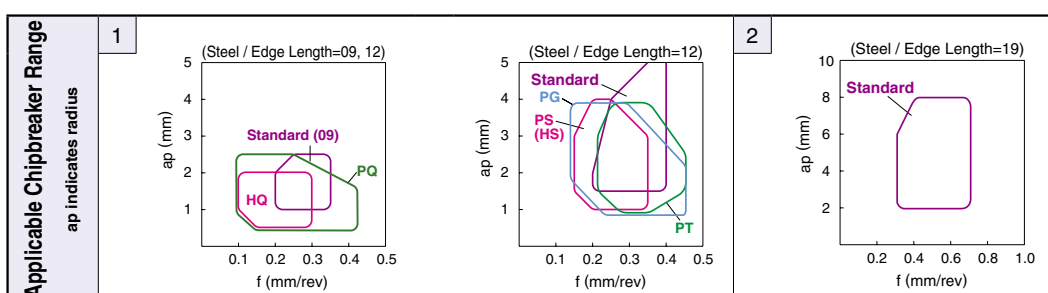
[illegible]

Inserts are sold in 10 piece boxes

How to read pages of “Turning Inserts” ➡ See Page **B15**

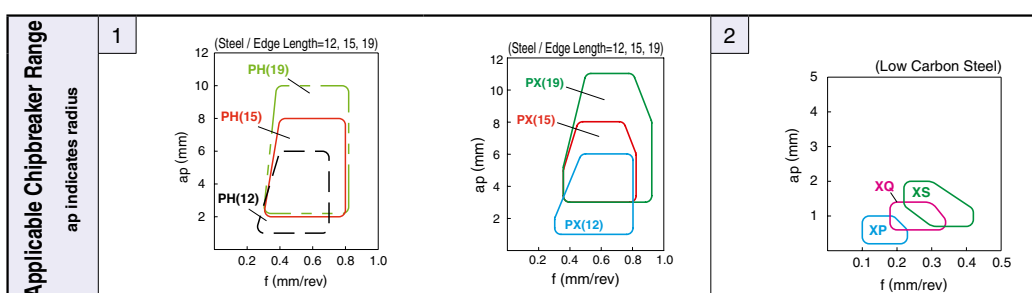
90° Square / Negative with Hole

(mm)				(mm)			
Description	IC	S	D1	Description	IC	S	D1
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

[illegible]

90° Square / Negative with Hole

(mm)				(mm)			
Description	IC	S	D1	Description	IC	S	D1
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

[illegible]

Turning Indexable Inserts

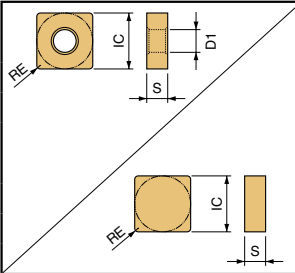
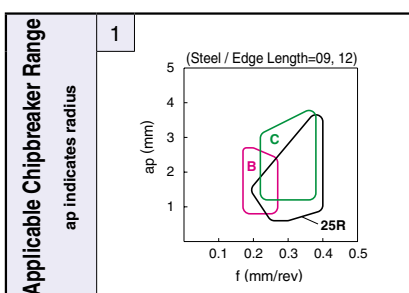
How to read pages of "Turning Inserts" ➡ See Page **B15**

90° Square / Negative with Hole

(mm)				(mm)			
Description	IC	S	D1	Description	IC	S	D1
SN_1204_	12.70	4.76	5.16	SN_1906_	19.05	6.35	7.94
SN_1506_	15.875	6.35	6.35	SNMN1204_	12.70	4.76	-

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

(mm)				Description	IC	S	D1
Description	IC	S	D1	SN_1204_	12.70	4.76	5.16
SN_0903_	9.525	3.18	3.81	SNMN1204_	12.70	4.76	-

[illegible]

Inserts are sold in 10 piece boxes

(mm)

(mm)

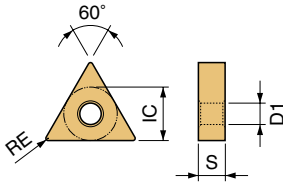
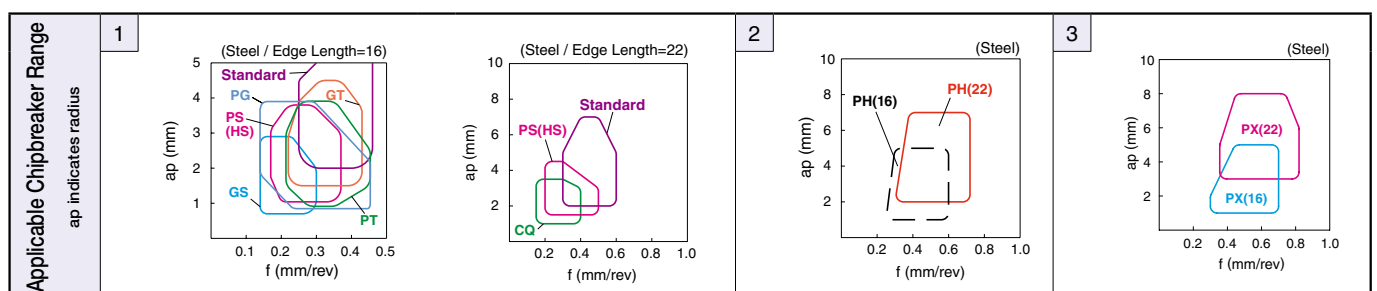
Description	IC	S	D1
TN_1603_	9.525	3.18	3.81
TN_1604_	9.525	4.76	3.81
TN 2204	12.70	4.76	5.16



● : Std. Item ○ : Check Availability □ : Deleted from the next catalog

(mm)

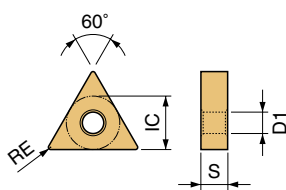
Description	IC	S	D1
TN_1603_	9.525	3.18	3.81
TN_1604_	9.525	4.76	3.81
TN_2204_	12.70	4.76	5.16

[illegible]

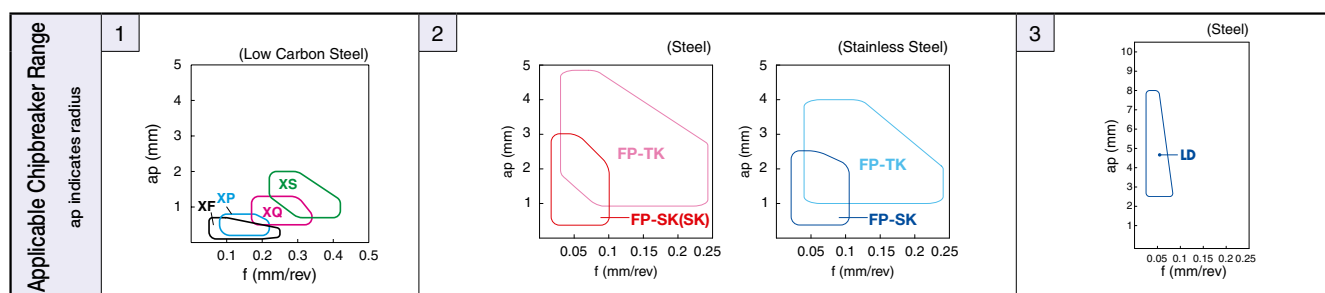
How to read pages of “Turning Inserts” ➡ See Page **B15**

60° Triangle / Negative with Hole

				(mm)			
Description	IC	S	D1	Description	IC	S	D1
TN_1103_	6.35	3.18	2.26	TN_1603_	9.525	3.18	3.81
TN_1104_	6.35	4.76	2.26	TN_1604_	9.525	4.76	3.81
				TN_2204_	12.70	4.76	5.16

[illegible]

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



(mm)	Description	10	2	D1
------	-------------	----	---	----

Applicable Chipbreaker Range

ap indicates radius

1

Heat-Resistant Alloys
Titanium Alloys

See Page B8

(Stainless Steel)

ap (mm)

f (mm/rev)

TK

MU

MQ

MS

(Stainless Steel)

ap (mm)

f (mm/rev)

HU

ST

GU

2

(Heat-Resistant Alloys)

ap (mm)

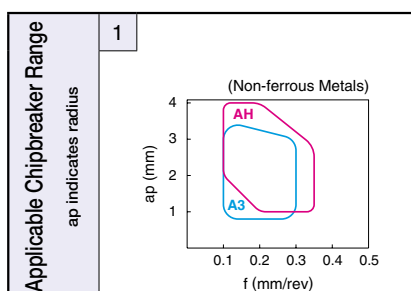
f (mm/rev)

SG(22)

SG(16)

Inserts are sold in 10 piece boxes

(mm)

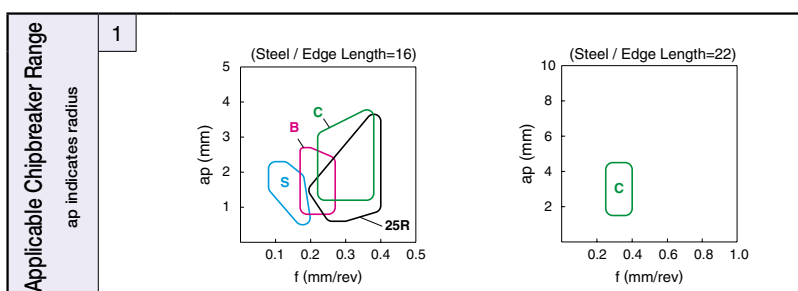
[illegible]

Inserts are sold in 10 piece boxes

● : Std. Item ○ : Check Availability

60° Triangle / Negative with Hole

(mm)				Description	IC	S	D1
Description	IC	S	D1	TN_1603_	9.525	3.18	3.81
TN_1103_	6.35	3.18	2.26	TN_1604_	9.525	4.76	3.81
TN_1104_	6.35	4.76	2.26	TN_2204_	12.70	4.76	5.16

[illegible]

Inserts are sold in 10 piece boxes

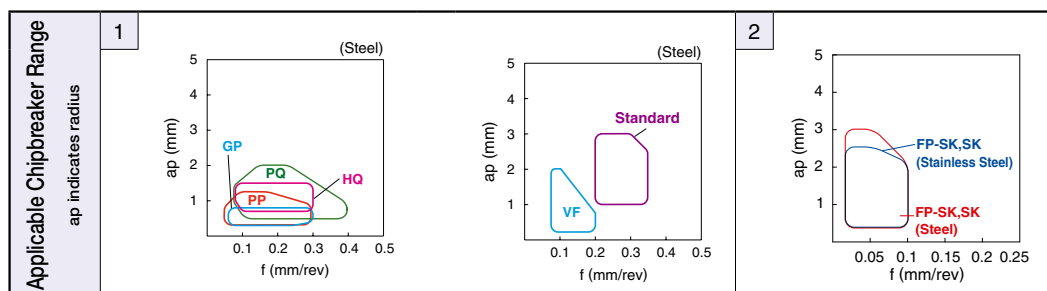
How to read pages of “Turning Inserts” ➡ See Page **B15**

35° Rhombic / Negative with Hole

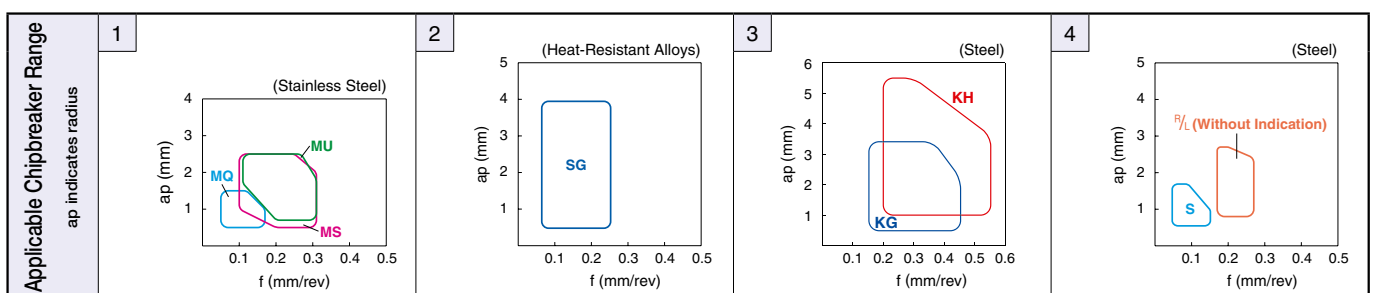
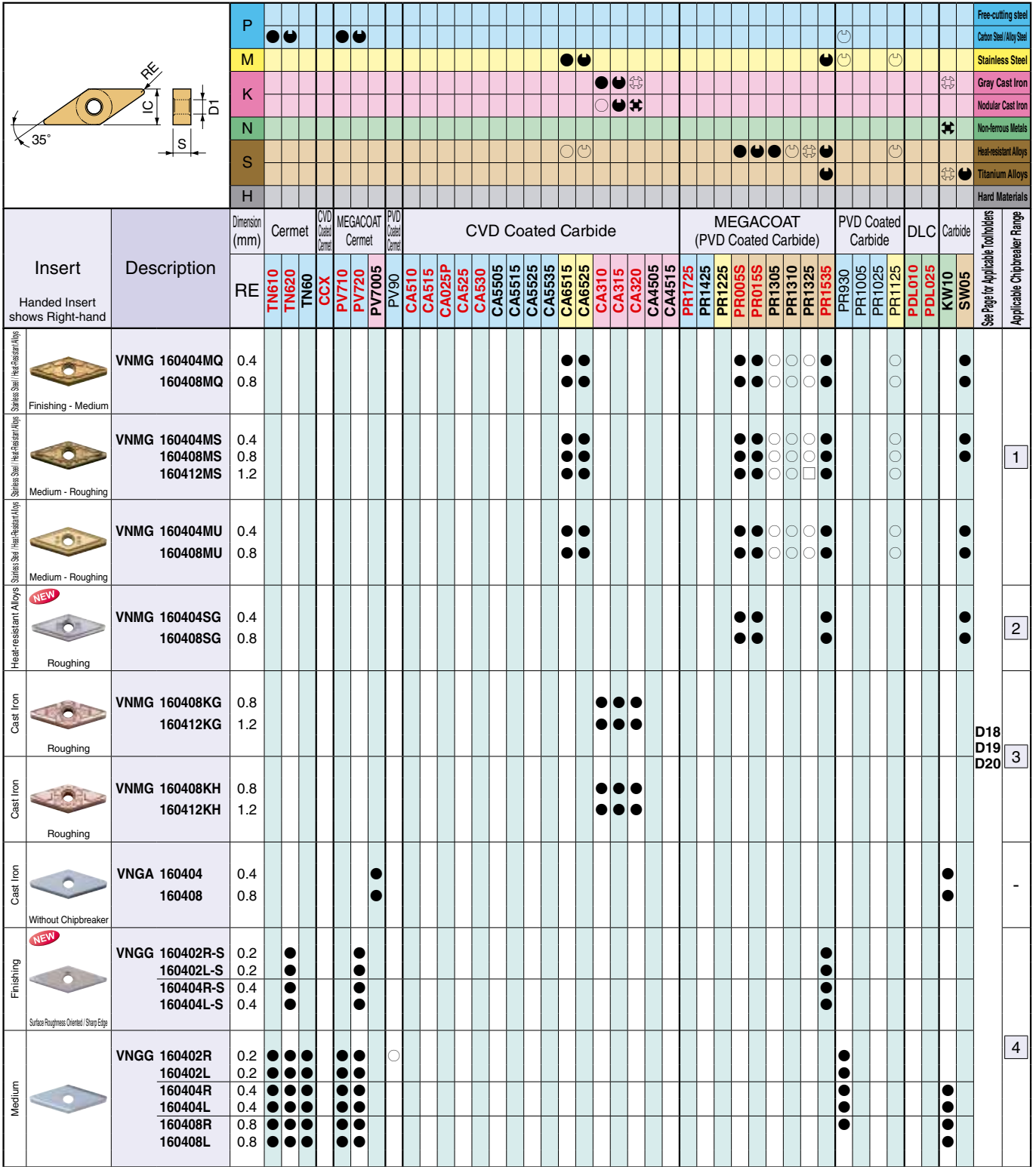
(mm)			
Description	IC	S	D1
VN_1604_	9.525	4.76	3.81

[illegible]

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



	(mm)		
Description	IC	S	D1
VN_1604_	9.525	4.76	3.81



B45

Description	IC	S	D1
WN_06T3_	9.525	3.97	3.81
WN_0604_	9.525	4.76	3.81

Insert Grades	A	Turning Internal Inserts CBN & PCD Tools External Small Parts Machining Boring Grooving Cut-off Threading Drilling Solid Tools Milling Tools for Turned Mill Spare Parts Technical Index	B
	C		
	D		
	E		
	F		
	G		
	H		
	J		
	K		
	L		
M		N	
P		R	
T			



B47

Description	IC	S	D1
WN_06T3_	9.525	3.97	3.81
WN_0604_	9.525	4.76	3.81

A	B	C	D	E	F	G	H	J	K	L	M	N	P	R	T
Insert Grades	Turning Invisible Inserts	CBN & PCD Tools	External	Small Parts Machining	Boring	Grooving	Cut-off	Threading	Drilling	Solid Tools	Milling	Tools for Turnin Mill	Spare Parts	Technical	Index



B49

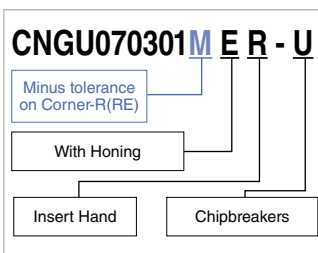
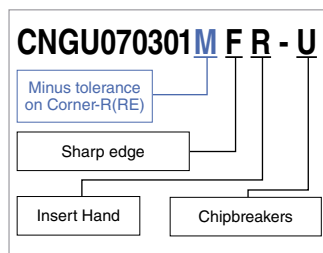
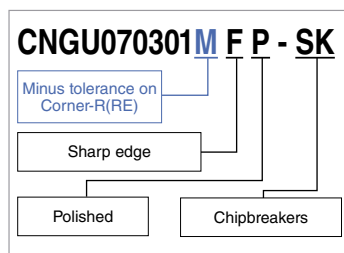
Small Double Sided Tools / 80° Rhombic

(mm)			
Description	IC	S	D1
CN_U0703_	7.5	3.18	3.6

[illegible]

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

● Small Double Sided Tools Identification System



● **When a minus tolerance is specified for the corner-R(RE)**

If a minus tolerance is specified for the corner-R(RE) as shown in the Fig. 1, using an insert with corner-R(RE)=0.2 mm may result in larger radius than specified.

Use an insert the corner of which R(RE) has a minus tolerance.

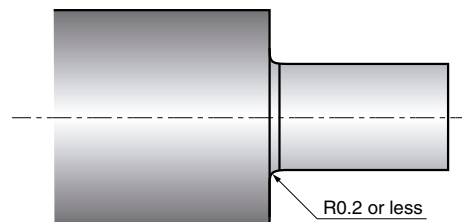


Fig. 1 Example of a specified corner-R in the drawing

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

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		Good chip evacuation at wide range by breaker dot and wide chip pocket.
Finishing	F		Good chip control at finishing with low cutting force.
Low Feed	U		Good chip control at low feed rate and varied ap with low cutting force.

Turning Indexable Inserts

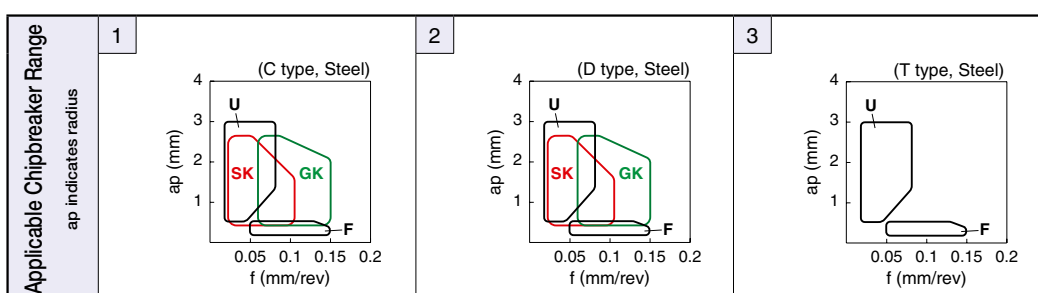
How to read pages of “Turning Inserts” ➡ See Page **B15**

Small Double Sided Tools / 60° Triangle

(mm)			
Description	IC	S	D1
TN_U0903_	5.56	3.18	3.0

[illegible]

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



Inserts are sold in 10 piece boxes

● : Std. Item ○ : Check Availability □ : Deleted from the next catalog

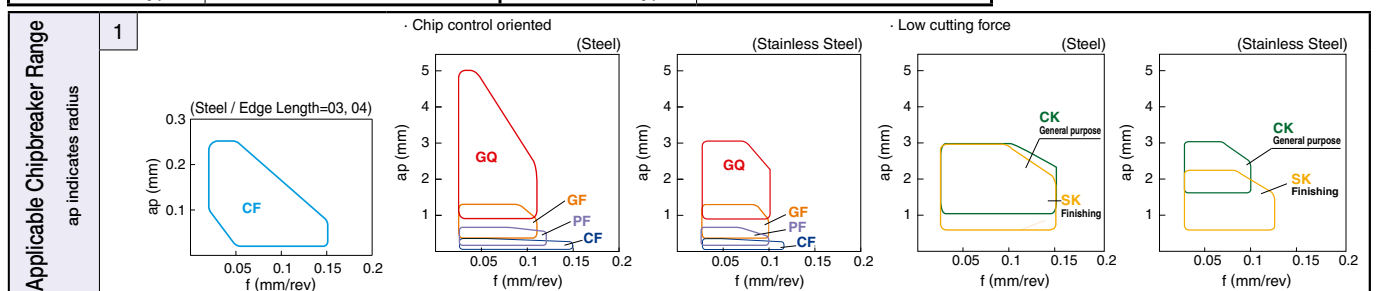
[illegible]

Insert		Description	Dimension (mm)	Cermet	CVD Coated Cermet	MEGACOAT Cermet	CVD Coated Carbide																MEGACOAT (PVD Coated Carbide)					PVD Coated Carbide		DLC	Carbide	See Page for Applicable Toolholders	Applicable Chipbreaker Range
			RE	TN610 TN620	TN60	CCX	PV710 PV720	PV700S	PV90	CA510 CA515	CA025P CA525	CA530	CA550S CA551S	CA552S CA553S	CA651S CA652S	CA310 CA315	CA320 CA450S	CA451S	PR172S PR142S	PR122S PR005S	PR015S PR130S	PR1310 PR132S	PR153S	PR930 PR100S	PR102S PR112S	PDL010 PDL02S	KW10 SW05						
Minute ap		*CCGT 030101M-CF 030102M-CF	<0.1 <0.2																														
		*CCGT 040101M-CF 040102M-CF	<0.1 <0.2																														
Minute ap		*CCGT 030101MP-CF 030102MP-CF	<0.1 <0.2															● ●	○ ○	● ●			● ●				● ●						
		*CCGT 040101MP-CF 040102MP-CF	<0.1 <0.2																● ●	○ ○	● ●			● ●			● ●						
Finishing		*CCGT 030101MFP-PF 030102MFP-PF	<0.1 <0.2															● ●	○ ○				● ●										
		*CCGT 040101MFP-PF 040102MFP-PF	<0.1 <0.2																● ●	○ ○				● ●									
		CCGT 060201MFP-PF 060202MFP-PF 060204MFP-PF	<0.1 <0.2 <0.4																● ●	○ ○ ○ ○ ○ ○				● ●									
Finishing		CCGT 060201MF-GF 060202MF-GF	<0.1 <0.2																														
		CCGT 09T301MF-GF 09T302MF-GF 09T304MF-GF	<0.1 <0.2 <0.4																														
Finishing		CCGT 060201MFP-GF 060202MFP-GF 060204MFP-GF	<0.1 <0.2 <0.4															● ●	○ ○ ○ ○ ○ ○				● ●										
		CCGT 09T301MFP-GF 09T302MFP-GF 09T304MFP-GF	<0.1 <0.2 <0.4																● ●	○ ○ ○ ○ ○ ○				● ●									
Finishing		CCGT 060201MFP-SK 060202MFP-SK 060204MFP-SK	<0.1 <0.2 <0.4															● ●	○ ○ ○ ○ ○ ○				● ●				● ●						
		CCGT 09T301MFP-SK 09T302MFP-SK 09T304MFP-SK	<0.1 <0.2 <0.4																● ●	○ ○ ○ ○ ○ ○				● ●			● ●						
Finishing		CCGT 060201MP-CK 060202MP-CK	<0.1 <0.2															● ●	○ ○	● ●			● ●				● ●						
		CCGT 09T301MP-CK 09T302MP-CK	<0.1 <0.2																● ●	○ ○	● ●			● ●			● ●						
Finishing - Medium		CCGT 060201MF-GQ 060202MF-GQ 060204MF-GQ	<0.1 <0.2 <0.4																														
		CCGT 09T301MF-GQ 09T302MF-GQ 09T304MF-GQ	<0.1 <0.2 <0.4																														

Ref. to the table below

1

Insert Description	See Page for Applicable Toolholders	Insert Description	See Page for Applicable Toolholders
CC..0602 type	E22,E23,E37,F19,F39	CC..09T3 type	E22,E23,E37,F39,F65



Inserts are sold in 10 piece boxes

B

Turning Indexable Inserts

Chip
breakers

Positive



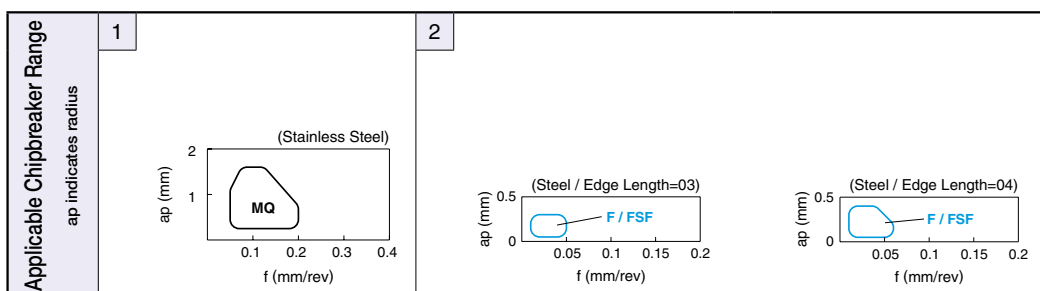
Ⓡ

S



[illegible][illegible]

A	B	C	D	E	F	G	H	J	K	L	M	N	P	R	T
Insert Grades	Turning Inconel Inserts	CBN & PCD Tools	External	Small Parts Machining	Boring	Grooving	Cut-off	Threading	Drilling	Solid Tools	Milling	Tools for Turnin Mill	Spare Parts	Technical	Index



B55

B

Turning Indexable Inserts

Chip breakers

Positive

C

1

©

9

4

4

Q.

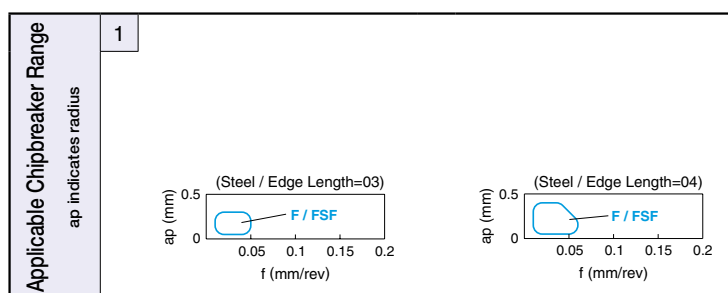
1

*Thickness of CC 0301 and CC 0401 are different (mm)

Description	IC	S	D1
*CC_0301_	3.5	1.4	1.9
*CC_0401_	4.3	1.8	2.3

[illegible]

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



Inserts are sold in 10 piece boxes

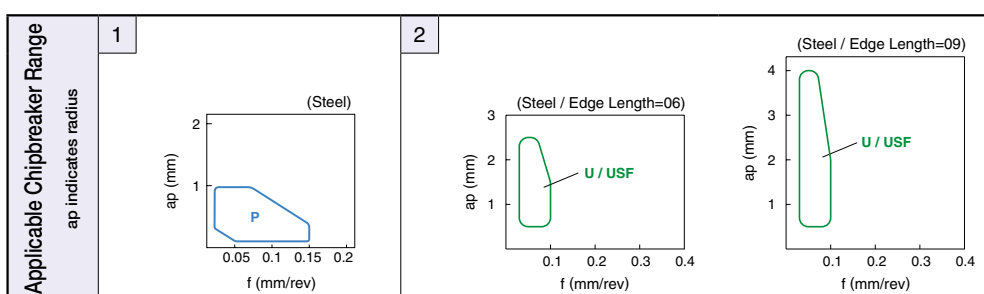
● : Std. Item ○ : Check Availability □ : Deleted from the next catalog

80° Rhombic / Positive with Hole

Description	IC	S	D1
CC_0602_	6.35	2.38	2.8
CC_09T3_	9.525	3.97	4.4
CC_1204_	12.7	4.76	5.5

[illegible]

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



Inserts are sold in 10 piece boxes

B

Turning Indexable Inserts

Chip breakers

Positive

/ c

①

9

A

△

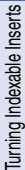
4.

Cox

10

1

1

B

Chip
break

Positive

/ c

Sharp Edge

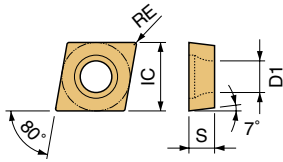
• Insert whose corner-R(RE) dimension expressed with less than sign (e.g. < 0.05 , < 0.1 , < 0.2 etc.) indicate models with minus tolerance on corner-R(RE).



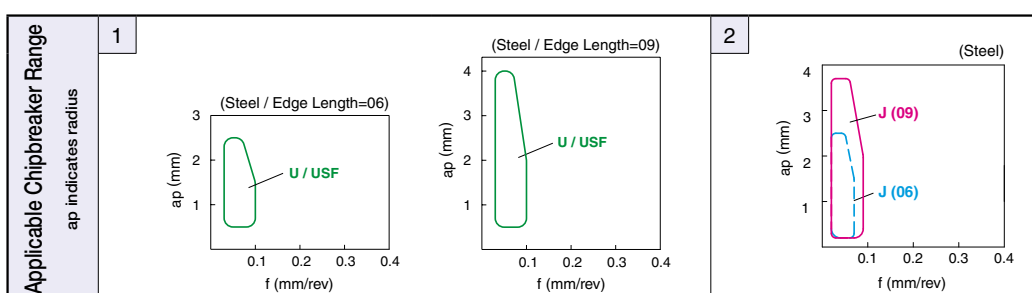
● : Std. Item ○ : Check Availability □ : Deleted from the next catalog

80° Rhombic / Positive with Hole

Description	IC	S	D1
CC_0602_	6.35	2.38	2.8
CC_09T3_	9.525	3.97	4.4
CC_1204_	12.7	4.76	5.5

[illegible]

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

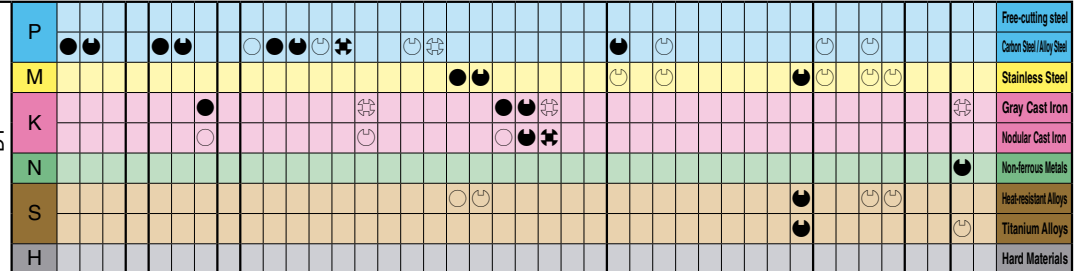


Inserts are sold in 10 piece boxes

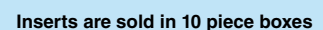
● : Std. Item □ : Deleted from the next catalog

(mm)

(mm)



A	Insert Grades
B	Turning Inadequate Inserts
C	CBN & PCD Tools
D	External
E	Small Parts Machining
F	Boring
G	Grooving
H	Cut-off
J	Threading
K	Drilling
L	Solid Tools
M	Milling
N	Tools for Turning Mill
P	Spare Parts
R	Technical Information
T	Index



B

Turning Indexable Inserts

Chip

Positive

C

(F)

2

/



14

Cer

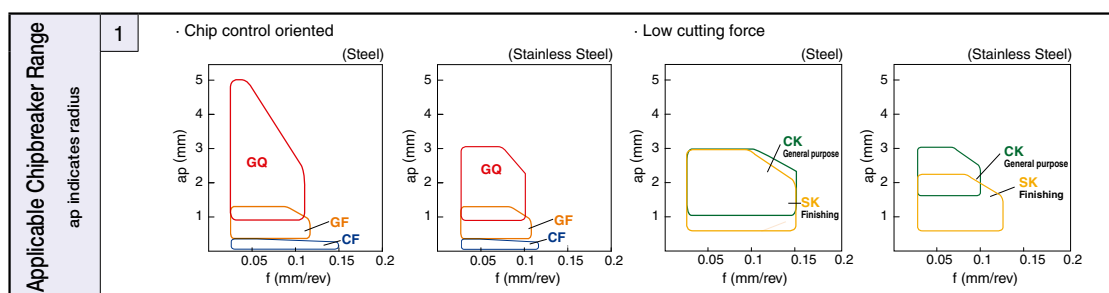
1

Insert Description	See Page for Applicable Toolholders
DC..07 type	E24~E27,E38,F43~F45
DC..11 type	E20,E24~E27,E38,F43~F45,F65

Description	IC	S	D1
DC_0702_	6.35	2.38	2.8
DC_11T3_	9.525	3.97	4.4

[illegible]

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



Inserts are sold in 10 piece boxes

● : Std. Item ○ : Check Availability

Insert Description	See Page for Applicable Toolholders
DC..07 type	E24~E27,E38,F43~F45
DC..11 type	E20,E24~E27,E38,F43~F45,F65

A	B	C	D	E	F	G	H	J	K	L	M	N	P	R	T
Insert Grades	Turning Invisible Inserts	CBN & PCD Tools	External	Small Parts Machining	Boring	Grooving	Cut-off	Threading	Drilling	Solid Tools	Milling	Tools for Turnin Mill	Spare Parts	Technical	Index

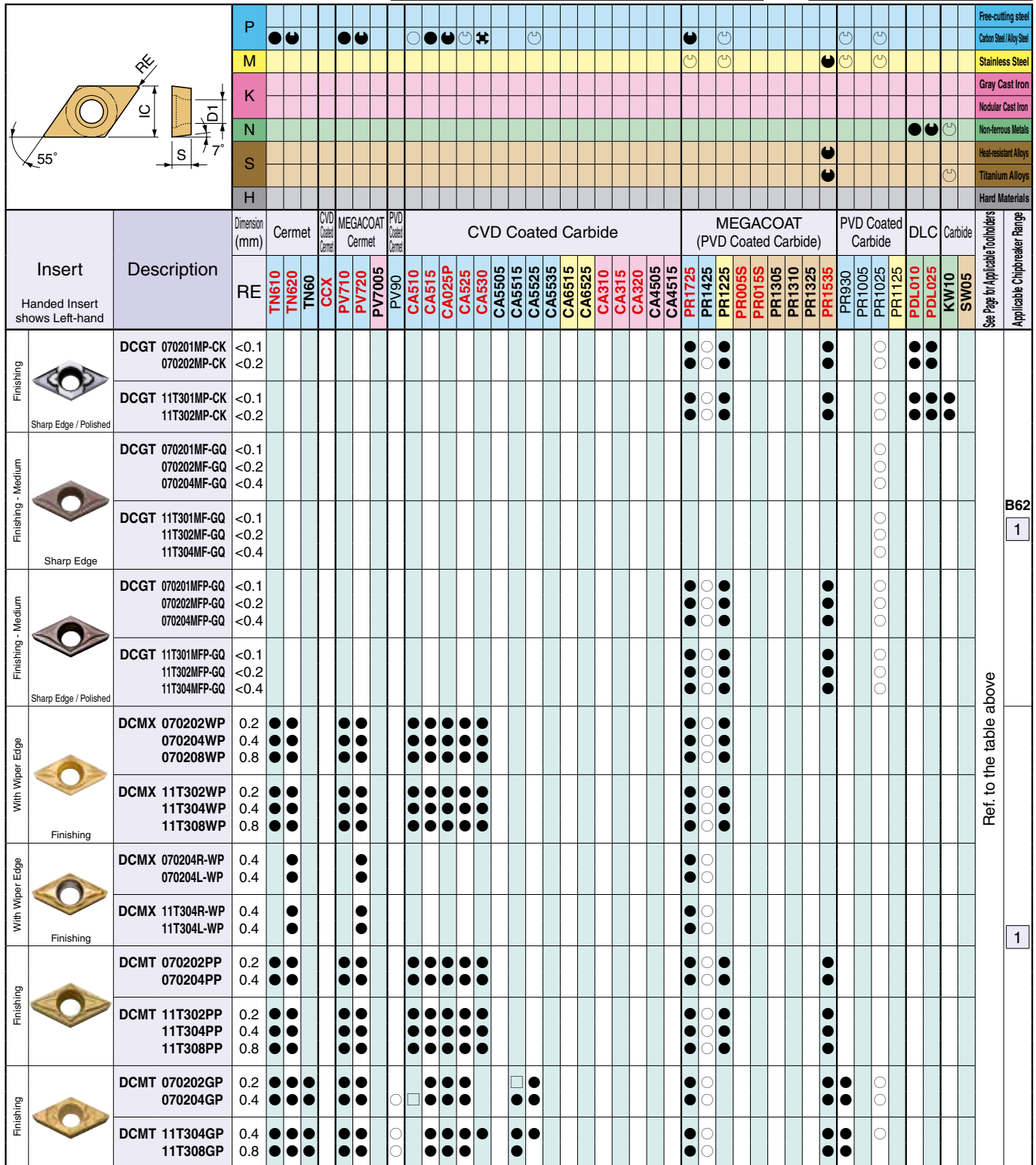


Figure 1: Applicable Chipbreaker Range. The figure shows six plots of chipbreaker radius (a_p in mm) versus feed (f in mm/rev) for different chipbreaker types and standards. The plots are arranged in two rows. The top row shows results for Steel, and the bottom row shows results for Steel / Edge Length=07 and Steel / Edge Length=11. The plots are labeled as follows:

- Top Left: Steel (WP)
- Top Middle: Steel (PP(07) and PP(11))
- Top Right: Steel (GK)
- Bottom Left: Steel / Edge Length=07 (Standard, HQ, XP(GP))
- Bottom Right: Steel / Edge Length=11 (Standard, HQ, XO, XP(GP))

The y-axis for all plots is a_p (mm) and the x-axis is f (mm/rev). The plots show the range of applicable chipbreaker radius for different feed rates. The plots are labeled with the chipbreaker type or standard name.

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(mm)

Description	IC	S	D1
DC_0702_	6.35	2.38	2.8
DC 11T3	9.525	3.97	4.4

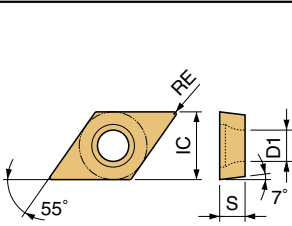
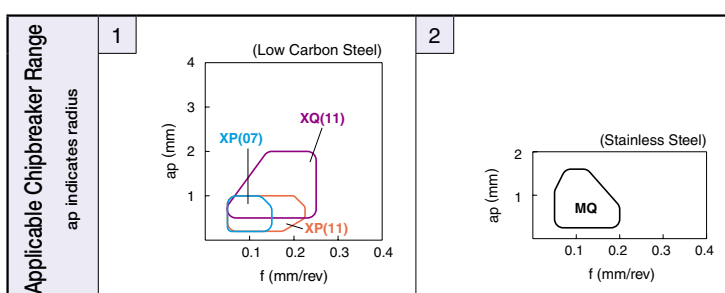
· Insert whose corner-R(RE) dimension expressed with less than sign (e.g. < 0.05 , < 0.1 , < 0.2 etc.) indicate models with minus tolerance on corner-R(RE).



55° Rhombic / Positive with Hole

Insert Description	See Page for Applicable Toolholders
DC..07 type	E24~E27,E38,F43~F45
DC..11 type	E20,E24~E27,E38,F43~F45,F65

Description	IC	S	D1
DC_0702_	6.35	2.38	2.8
DC_11T3_	9.525	3.97	4.4

[illegible]

Inserts are sold in 10 piece boxes

(mm)

Description	IC	S	D1
DC_0702_	6.35	2.38	2.8
DC_11T3_	9.525	3.97	4.4

Ref. to the table above

1

(Steel / Edge Length=07)

(Steel / Edge Length=11)

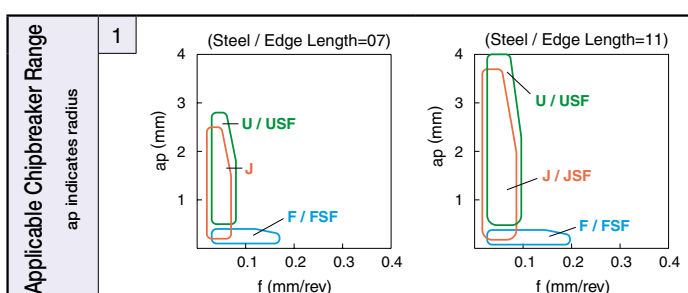
● : Std. Item ○ : Check Availability □ : Deleted from the next catalog

55° Rhombic / Positive with Hole

Insert Description	See Page for Applicable Toolholders	Description	IC	S	D1
DC..07 type	E24~E27,E38,F43~F45	DC_0702_	6.35	2.38	2.8
DC..11 type	E20,E24~E27,E38,F43~F45,F65	DC_11T3_	9.525	3.97	4.4

[illegible]

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



● : Std. Item ○ : Check Availability

Inserts are sold in 10 piece boxes

Turning Indexable Inserts

How to read pages of “Turning Inserts” ➡ See Page **B15**

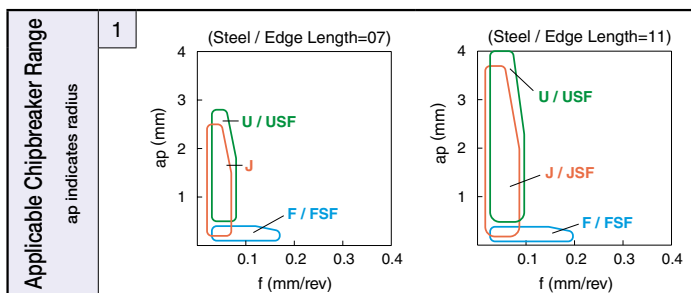
55° Rhombic / Positive with Hole

Insert Description	See Page for Applicable Toolholders
DC..07 type	E24~E27,E38,F43~F45
DC..11 type	E20,E24~E27,E38,F43~F45,F65

Description	IC	S	D1
DC_0702_	6.35	2.38	2.8
DC_11T3_	9.525	3.97	4.4

[illegible]

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



Inserts are sold in 10 piece boxes

● : Std. Item ○ : Check Availability □ : Deleted from the next catalog

Description	IC	S	D1
DC_0702_	6.35	2.38	2.8
DC_11T3_	9.525	3.97	4.4

Figure 10 consists of two graphs showing the relationship between chipbreaker radius (a_p) and feed (f) for different chipbreaker types (U, J, F) and edge lengths (07 and 11 mm). The y-axis represents a_p (mm) and the x-axis represents f (mm/rev). The graphs are titled "Steel / Edge Length=07" and "Steel / Edge Length=11".

The left graph (Steel / Edge Length=07) shows the applicable chipbreaker range for a_p values from 0 to 4 mm and f values from 0 to 0.4 mm/rev. The right graph (Steel / Edge Length=11) shows the applicable chipbreaker range for a_p values from 0 to 4 mm and f values from 0 to 0.4 mm/rev.

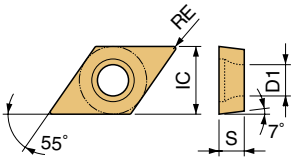
The graphs indicate the applicable chipbreaker range for different chipbreaker types (U, J, F) and edge lengths (07 and 11 mm). The legend indicates that a_p indicates radius.

B69

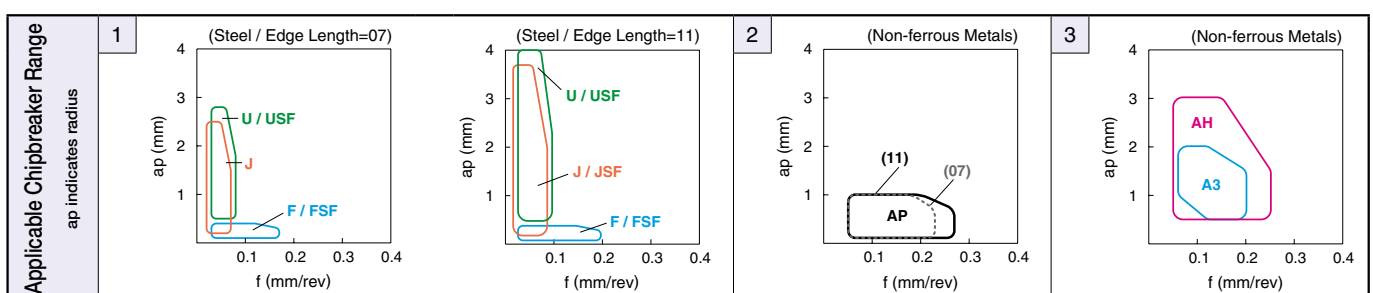
55° Rhombic / Positive with Hole

Insert Description	See Page for Applicable Toolholders
DC..07 type	E24~E27,E38,F43~F45
DC..11 type	E20,E24~E27,E38,F43~F45,F65

Description	IC	S	D1
DC_0702_	6.35	2.38	2.8
DC_11T3_	9.525	3.97	4.4

[illegible]

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



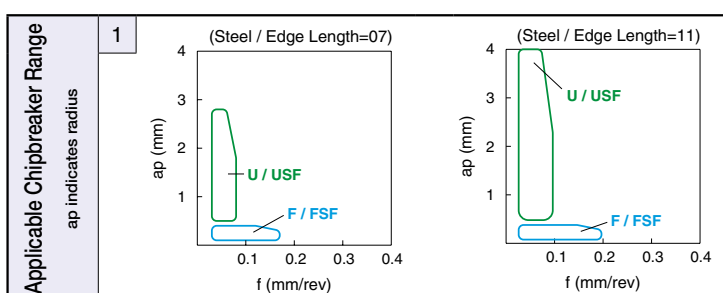
Inserts are sold in 10 piece boxes

55° Rhombic / Positive with Hole

Description	IC	S	D1
DP_0702_	6.35	2.38	2.8
DP_11T3_	9.525	3.97	4.4

[illegible]

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



Inserts are sold in 10 piece boxes

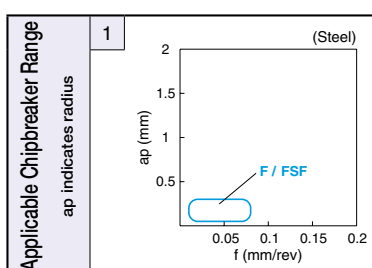
● : Std. Item ○ : Check Availability □ : Deleted from the next catalog

70° Rhombic / Positive with Hole

Description	IC	S	D1
JC_0301_	3.5	1.4	1.9

[illegible]

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



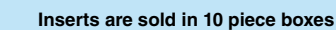
● : Std. Item ○ : Check Availability

Inserts are sold in 10 piece boxes

(mm)

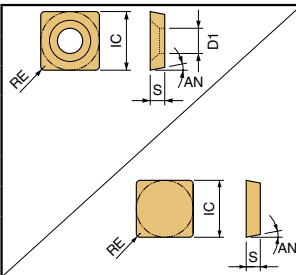
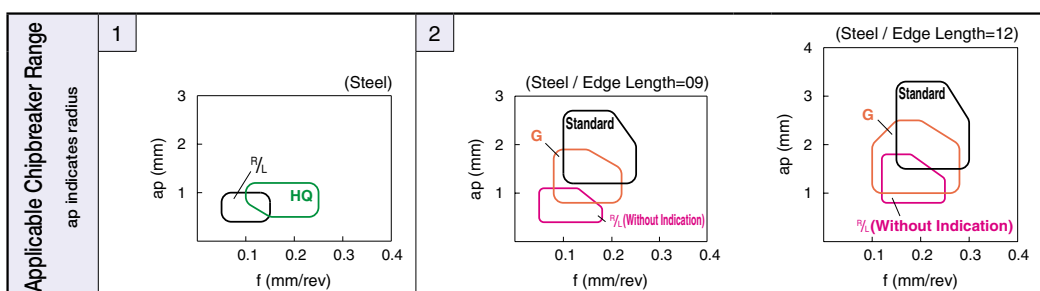
Description	IC	S	D1
RC_1003_	10.0	3.18	3.6
RC_1204_	12.0	4.76	4.2

*Chipbreaker shape of RCMX... varies by grade (cermet / PVD coated cermet / CVD coated carbide)



90° Square / Positive with Hole
90° Square / Positive without Hole

(mm)					Description	IC	S	D1	AN
Description	IC	S	D1	AN	SP_0903_	9.525	3.18	-	11°
SC_09T3_	9.525	3.97	4.4	7°	SP_1203_	12.7	3.18	-	11°
SP_0903_	9.525	3.18	4.5	11°	SP_1204_	12.7	4.76	-	11°

[illegible]

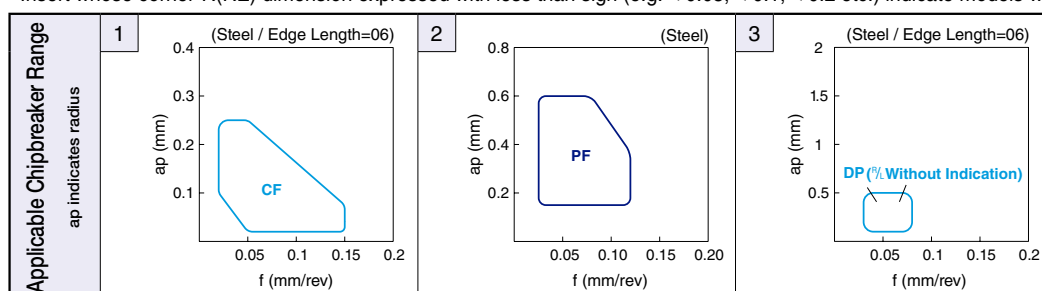
How to read pages of “Turning Inserts” ➡ See Page **B15**

60° Triangle / Positive with Hole

			(mm)
Description	IC	S	D1
TB_0601_	3.97	1.59	2.3

[illegible]

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



Inserts are sold in 10 piece boxes

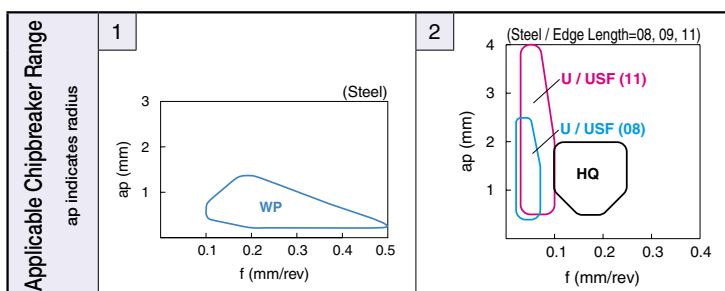
● : Std. Item ○ : Check Availability

60° Triangle / Positive with Hole

				(mm)			
Description	IC	S	D1	Description	IC	S	D1
TC_0802_	4.76	2.38	2.3	TC_1102_	6.35	2.38	2.8
TC_0902_	5.56	2.38	2.5	TC_1103_	6.35	3.18	2.8
				TC_16T3	9.525	3.97	4.4

[illegible]

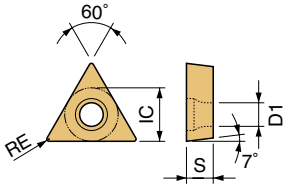
· Insert whose corner-R(RE) dimension expressed with less than sign (e.g. < 0.05 , < 0.1 , < 0.2 etc.) indicate models with minus tolerance on corner-R(RE).



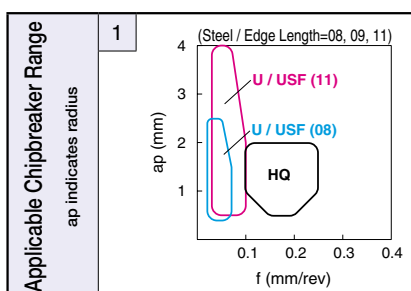
Inserts are sold in 10 piece boxes

60° Triangle / Positive with Hole

Description	IC	S	D1
TC_0802_	4.76	2.38	2.3
TC_1103_	6.35	3.18	2.8

[illegible]

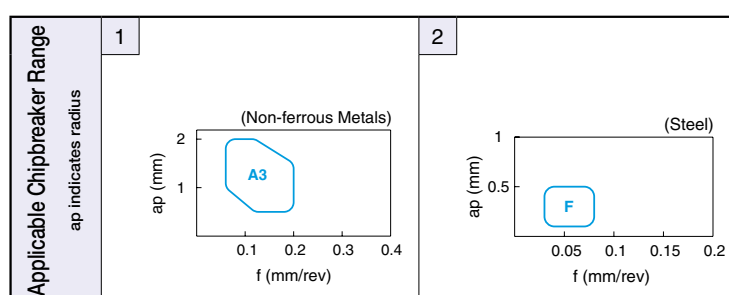
· Insert whose corner-R(RE) dimension expressed with less than sign (e.g. < 0.05 , < 0.1 , < 0.2 etc.) indicate models with minus tolerance on corner-R(RE).



Inserts are sold in 10 piece boxes

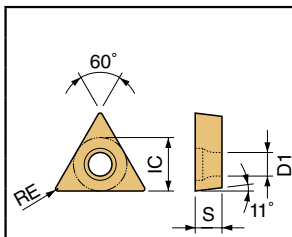
● : Std. Item ○ : Check Availability □ : Deleted from the next catalog

(mm)				(mm)			
Description	IC	S	D1	Description	IC	S	D1
TCG_0601_	3.97	1.59	-	TC_1103_	6.35	3.18	2.8
TC 0802	4.76	2.38	2.3				

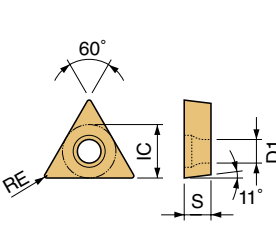
[illegible]

Inserts are sold in 10 piece boxes

60° Triangle / Positive with Hole



(mm)				Description	IC	S	D1
				TP_H0902_	5.56	2.38	3.2
				TP_0802_	4.76	2.38	2.3
				TPMT1603_	9.525	3.18	4.4
				TP_T(X)0902_	5.56	2.38	2.8

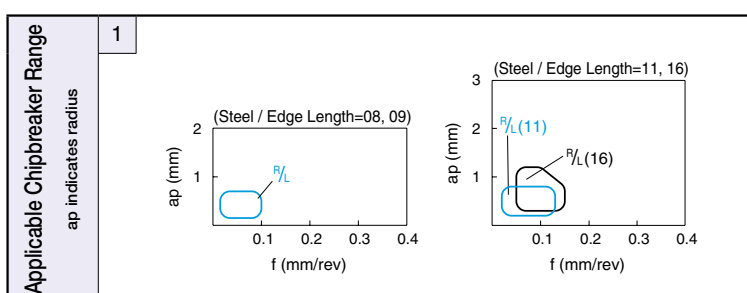
			P	●●		●●		●●		○●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●	
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Ref. to the table below B80

B80
1

60° Triangle / Positive with Hole

(mm)				(mm)			
Description	IC	S	D1	Description	IC	S	D1
TP_0802_	4.76	2.38	2.3	TP_1103_	6.35	3.18	3.3
TP_H0902_	5.56	2.38	3.2	TP_1603_	9.525	3.18	4.7
TP_1102_	6.35	2.38	3.7	TPGT1604_	9.525	4.76	4.5

[illegible]

Inserts are sold in 10 piece boxes

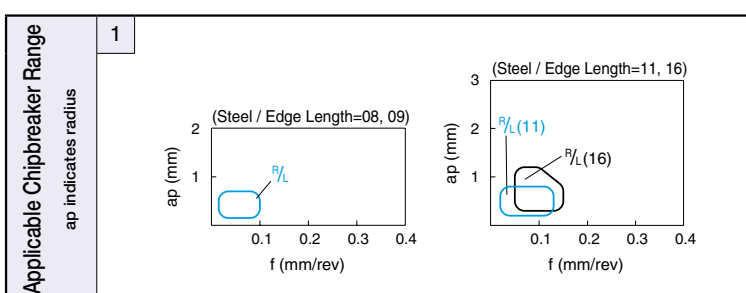
● : Std. Item ○ : Check Availability □ : Deleted from the next catalog

60° Triangle / Positive with Hole

(mm)				(mm)			
Description	IC	S	D1	Description	IC	S	D1
TP_0802_	4.76	2.38	2.3	TP_1103_	6.35	3.18	3.3
TP_H0902_	5.56	2.38	3.2	TP_1603_	9.525	3.18	4.7
TP_1102_	6.35	2.38	3.7	TPGT1604_	9.525	4.76	4.5

[illegible]

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



○ : Check Availability □ : Deleted from the next catalog

Inserts are sold in 10 piece boxes

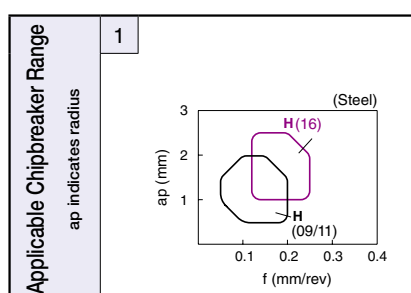
How to read pages of “Turning Inserts” ➡ See Page **B15**

60° Triangle / Positive with Hole

(mm)				(mm)			
Description	IC	S	D1	Description	IC	S	D1
TP_0802_	4.76	2.38	2.3	TP_1103_	6.35	3.18	3.3
TP_H0902_	5.56	2.38	3.2	TP_1603_	9.525	3.18	4.7
TP_1102_	6.35	2.38	3.7	TPGT1604_	9.525	4.76	4.5

[illegible]

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



Inserts are sold in 10 piece boxes

● : Std. Item ○ : Check Availability □ : Deleted from the next catalog

(mm) _____ (mm)

A	Insert Grades
B	Turning
C	CBN & PCD Tools
D	External
E	Small Parts
F	Boring
G	Grooving
H	Cut-off
J	Threading
K	Drilling
L	Solid Tools
M	Milling
N	Tools for Thin Wall
P	Spare Parts
R	Technical Index
T	

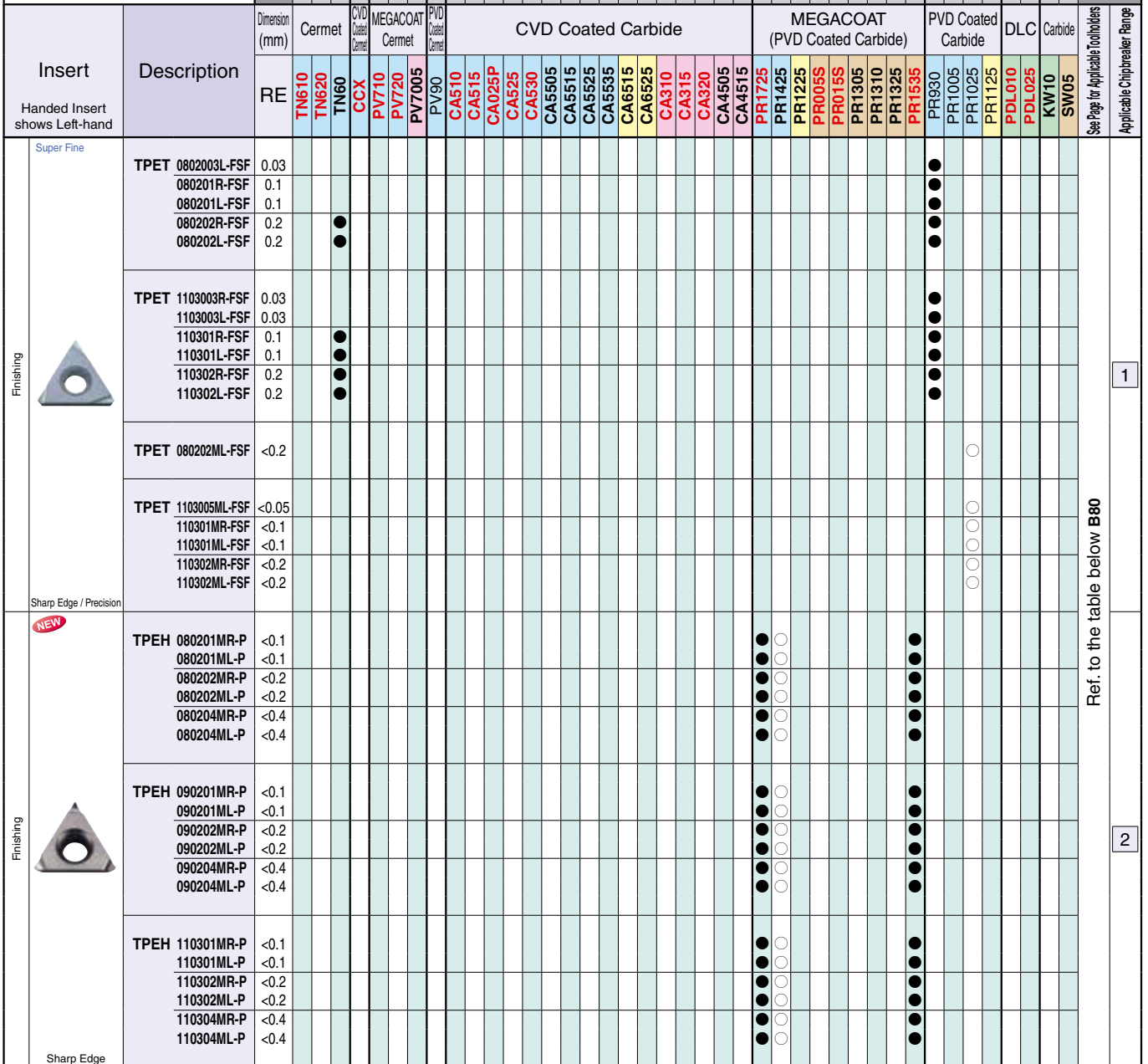


Figure 10 consists of three graphs showing the relationship between chipbreaker radius (f) and chipbreaker height (ap) for different materials and edge lengths. The y-axis represents ap (mm) and the x-axis represents f (mm/rev).

- Graph 1 (Steel / Edge Length=08):** Shows two regions: USF (green) and FSF (blue). The USF region is bounded by $ap \approx 2.5$ mm and $f \approx 0.1$ mm/rev. The FSF region is bounded by $ap \approx 1$ mm and $f \approx 0.1$ mm/rev.
- Graph 2 (Steel / Edge Length=11):** Shows two regions: USF (green) and FSF (blue). The USF region is bounded by $ap \approx 4$ mm and $f \approx 0.1$ mm/rev. The FSF region is bounded by $ap \approx 1$ mm and $f \approx 0.1$ mm/rev.
- Graph 3 (Non-ferrous Metals):** Shows a single region: AP (black). The AP region is bounded by $ap \approx 1$ mm and $f \approx 0.1$ mm/rev.

B85

How to read pages of “Turning Inserts” ➡ See Page **B15**

60° Triangle / Positive with Hole

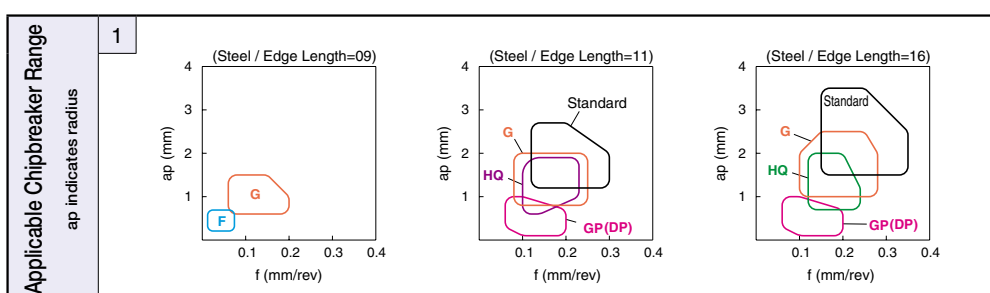
(mm)				(mm)			
Description	IC	S	D1	Description	IC	S	D1
TP_0802	4.76	2.38	2.3	TPGT1102_	6.35	2.38	3.7
TP_0902_	5.56	2.38	2.8	TP_1103_	6.35	3.18	3.3
TPGB0902_	5.56	2.38	3.2	TP_1603_	9.525	3.18	4.7

[illegible]

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

60° Triangle / Positive without Hole

Description	(mm)		
	IC	S	D1
TP_0902_	5.56	2.38	-
TP_1103_	6.35	3.18	-
TP_1603_	9.525	3.18	-

[illegible]

(mm)

Description	IC	S	D1
TP_0902_	5.56	2.38	-
TP_1103_	6.35	3.18	-
TP_1603_	9.525	3.18	-

● : Std. Item ○ : Check Availability □ : Deleted from the next catalog

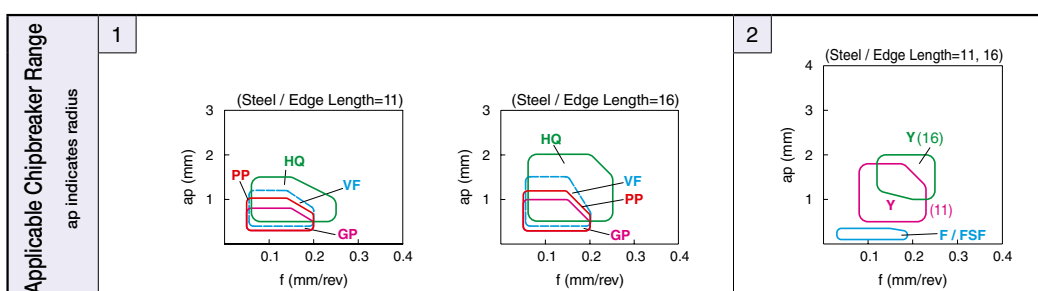
35° Rhombic / Positive with Hole

Description	IC	S	D1
VB_1103_	6.35	3.18	2.8
VB_1604_	9.525	4.76	4.4

[illegible]

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

Insert Description	See Page for Applicable Toolholders
VB..1103 type	E30,E31,E32,E39,F52,F54,F57
VB..1604 type	E31,E32,F52,F54,F57



● : Std. Item ○ : Check Availability

Inserts are sold in 10 piece boxes

● : Std. Item ○ : Check Availability

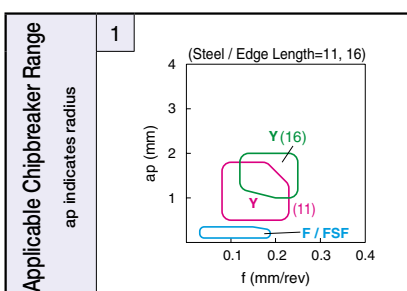
35° Rhombic / Positive with Hole

Description	IC	S	D1
VB_1103_	6.35	3.18	2.8
VB_1604_	9.525	4.76	4.4

[illegible]

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

Insert Description	See Page for Applicable Toolholders
VB..1103 type	E30,E31,E32,E39,F52,F54,F57
VB..1604 type	E31,E32,F52,F54,F57

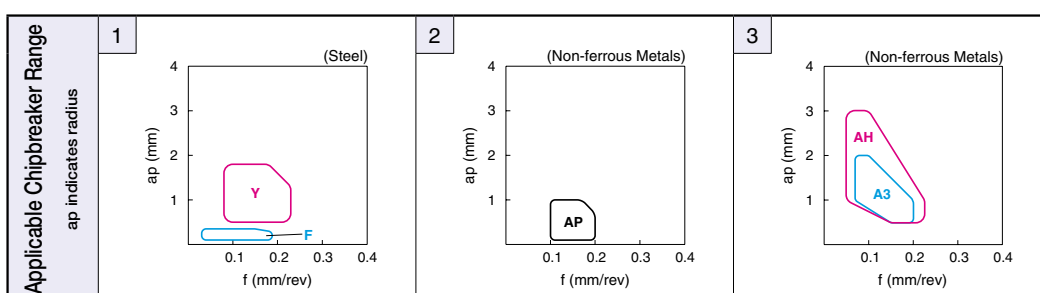


Inserts are sold in 10 piece boxes

_____ (mm)

[illegible]

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



● : Std. Item ○ : Check Availability

Inserts are sold in 10 piece boxes

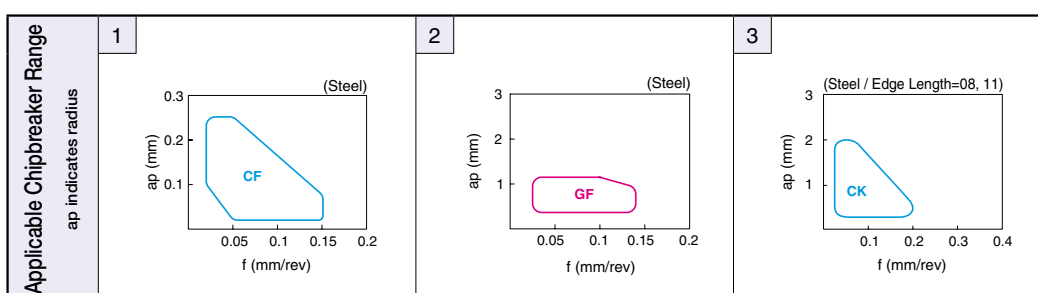
35° Rhombic / Positive with Hole

Description	IC	S	D1
VP_0802_	4.76	2.38	2.3
VP_1103_	6.35	3.18	2.8

[illegible]

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

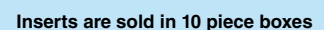
Insert Description	See Page for Applicable Toolholders
VP..0802 type	E35,E36,F52
VP..1103 type	E21,E35,E36



Inserts are sold in 10 piece boxes

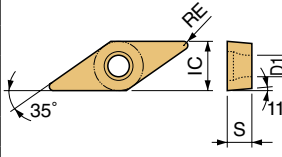
(mm)

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

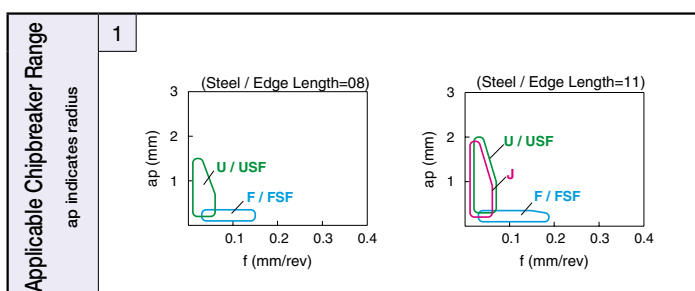


35° Rhombic / Positive with Hole

Description	IC	S	D1
VP_0802_	4.76	2.38	2.3
VP_1103_	6.35	3.18	2.8

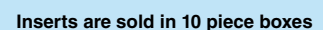
[illegible]

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



(mm)

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



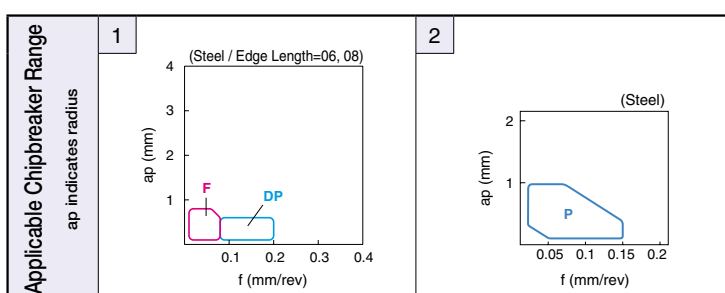
How to read pages of “Turning Inserts” ➡ See Page **B15**

80° Trigon / Positive with Hole

Description	IC	S	D1
WB_0601_	3.97	1.59	2.3
WB_0802_	4.76	2.38	2.3

[illegible]

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

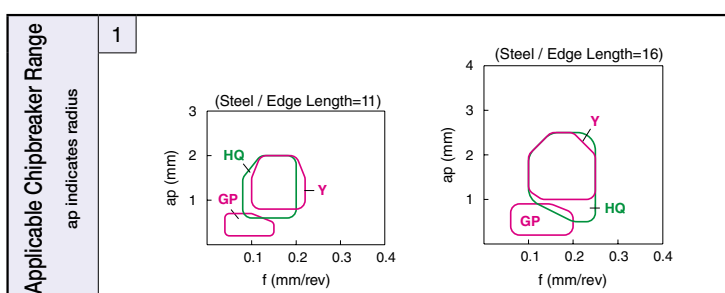


80° Trigon / Positive with Hole

Description	IC	S	D1
WP_1102_	6.35	2.38	2.8
WP_1603_	9.525	3.18	4.4

[illegible]

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



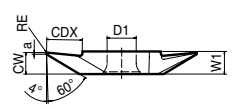
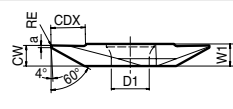
Inserts are sold in 10 piece boxes

Inserts for Back Turning (Small Parts Machining)

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					
	Titanium Alloys					
H	Hard Materials					

Applicable Toolholders

● For KTKF toolholder

Insert		Description	Dimension (mm)							MEGACOAT NANO			PVD Coated Carbide	Carbide	See Page for
			CW	a	CDX	RE	W1	S	D1	PR1425	PR1535	PR1225	PR1025	KW10	
Photo shows Right-hand															
	 ● Right-hand shown	TKFB 12R15005M	1.5	0.25	2.6	<0.05	3.0	8.7	5.2	●	●	●	○	●	E12
		12R28005M	2.8	0.3	4.6	<0.05				●	●	●	○	●	
		<0.1				●				●	●	○	●		
		12R28010M	3.8	0.3	6.3	<0.05	4.0	9.5	5.2	●	●	●	○	●	
		16R38005M				<0.1				●	●	●	○	●	
		16R38010M				●				●	●	○	●		
	 ● Left-hand shown	TKFB 12L28005MR	2.8	0.3	4.6	<0.05	3.0	8.7	5.2		●	●			
		12L28010MR				<0.1					●	●			
		TKFB 16L38005MR	3.8	0.3	6.3	<0.05	4.0	9.5	5.2		●	●			
						<0.1					●	●			

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

● Inserts Identification System (Ref. to Tables 1 and 2)

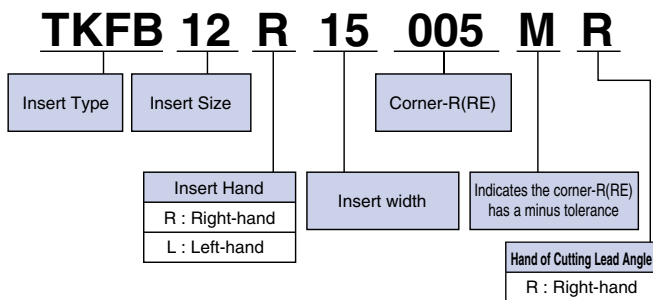


Table 1

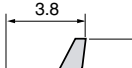
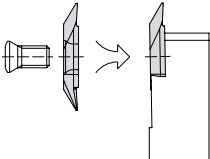
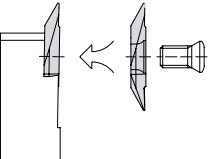
Small machining	General purpose	Large machining
 TKFB12R15..	 TKFB12R28..	 TKFB16R38..

Table 2

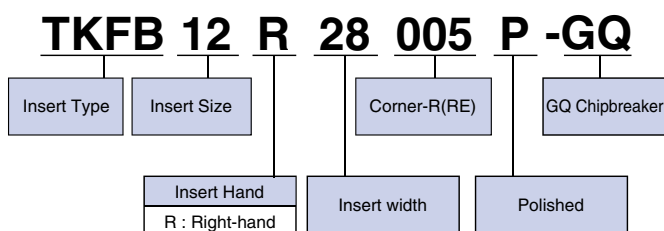
Toolholder	Right-hand	Toolholder	Left-hand
Insert	Right-hand	Insert	Left-hand
Lead angle	Right-hand	Lead angle	Right-hand
			

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	☹	☹	☹
	Titanium Alloys	☹	☹	☹
H	Hard Materials			

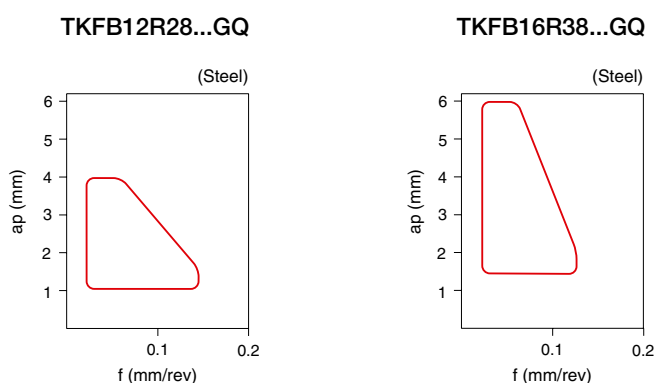
● For KTKF toolholder (GQ Chipbreaker)

Insert	Description	Dimension (mm)									MEGACOAT MEGACOAT NANO			See Page for Applicable Toolholders
		CW	a	CDX	RE	W1	S	D1	θ		PR1425	PR1535	PR1225	
 Polished	TKFB 12R28005P-GQ	2.8	1.5	4.6	0.05	3.0	8.7	5.2	74°		●	●	●	E12
	12R28015P-GQ				0.15						●	●	●	
	TKFB 16R38005P-GQ	3.8	1.8	6.3	0.05	4.0	9.5	5.2	72°		●	●	●	
	16R38015P-GQ				0.15						●	●	●	
 Polished	TKFB 12R28005-GQ	2.8	1.5	4.6	0.05	3.0	8.7	5.2	74°		●	●	●	
	12R28015-GQ				0.15						●	●	●	
	TKFB 16R38005-GQ	3.8	1.8	6.3	0.05	4.0	9.5	5.2	72°		●	●	●	
	16R38015-GQ				0.15						●	●	●	

● Inserts Identification System



● Applicable Chipbreaker Range



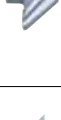
Inserts for Back Turning (Small Parts Machining)

B

Turning Indexable Inserts

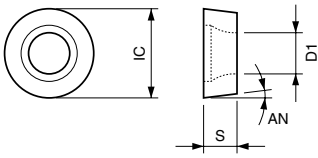
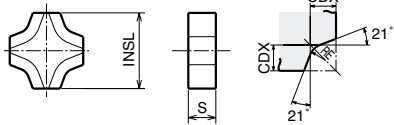
● For AABS / SABS / AABW / SABW toolholders

● For AABS / SABS / AABW / SABW toolholders	P	Free-cutting steel									See Page for Applicable Toolholders
		Carbon Steel / Alloy Steel		●	☐	☐		☐			
	M	Stainless Steel		☐	●	☐		☐			
	K	Gray Cast Iron								●	
		Nodular Cast Iron							☐		
	N	Non-ferrous Metals								●	
S	Heat-resistant Alloys		☐	●							
	Titanium Alloys								●		
H	Hard Materials										

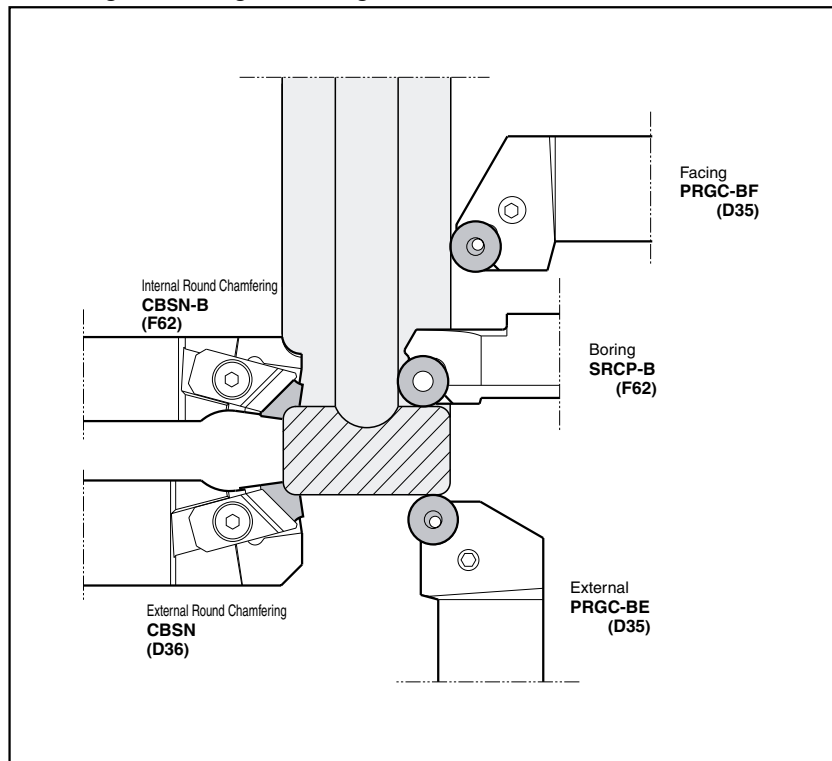
Insert	Description	Dimension (mm)	Cermet	MEGACOAT		PVD Coated Carbide			Carbide		
		RE	TC60M	PR1425	PR1225	PR930	PR1005	PR1025	KW10		
Handed Insert shows Right-hand											
	ABS 15R4005	0.05	●				●			●	E17
	15R4015	0.15	●				●			●	
	ABS 15R4005M	<0.05		●	●		●		○		E18
	15R4015M	<0.15		●	●		●		○		
	ABW 15R4005	0.05	●				●			●	E18
	15R4015	0.15	●				●			●	
	ABW 15R4005M	<0.05		●	●		●		○		E19
	15R4015M	<0.15		●	●		●		○		
	ABW 23R5005	0.05	●				●			●	E19
	23R5015	0.15	●				●			●	
	ABW 23R5005M	<0.05		●	●				○		E19
	23R5015M	<0.15		●	●		●		○		

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

Bearing Machining

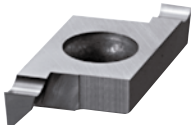
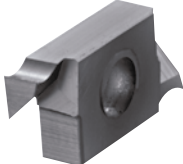
Insert	Description	Dimension (mm)				Relief Angle	Cermet	See Page for Applicable Toolholders
		IC	S	D1	RE	AN	TN90	
External/Boring/Facing  	RCMT 1204M0-BB 1606M0-BB	12.0 16.0	4.76 6.35	4.2 5.5	-	7°	●	D35
	RPMT 1203M0-BB 1604M0-BB	12.0 16.0	3.18 4.76	4.4 5.5	-	11°	●	F62
Round Chamfering  	SNMF 120406-21 120410-21 120416-21 120421-21 120426-21	INSL	S	CDX	RE			
		12.70	4.76	1.5 3.0 3.1 3.2 3.3	0.6 1.0 1.6 2.1 2.6	-	●	D36 F62

Tooling for Bearing Machining



Micro Boring

● Twin-Bars

Micro Boring	Micro Face Grooving
TWB Twin-Bars ⚙️ F36	TWFG Twin-Bars ⚙️ G82
	
TWBT Twin-Bars ⚙️ F37	TWFGT Twin-Bars ⚙️ G83
	

● EZ Bars / System Tip-Bars

Micro Boring		Micro Back Boring
EZB EZ Bars ⚙️ F14	EZVB EZ Bars ⚙️ F22	EZBT EZ Bars ⚙️ F15
		
VNB-S / VNB System Tip-Bars ⚙️ F30	VNBX-S System Tip-Bars ⚙️ F34	VNBT System Tip-Bars ⚙️ F31
		

Solid Tip-Bars [Grooving / Threading]

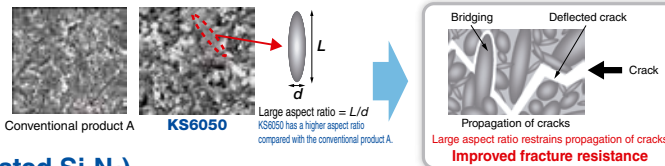
Micro Grooving	Micro Face Grooving	Micro Internal Threading
EZG EZ Bars ⚙️ G51	EZFG EZ Bars ⚙️ G78	EZT EZ Bars ⚙️ J30
		
VNG System Tip-Bars ⚙️ G53	VNFG System Tip-Bars ⚙️ G80	VNT System Tip-Bars ⚙️ J34
		

■ KS6015

Crystallization of Grain Boundary Phase Improves Thermal Conductivity
Excellent Wear Resistance with Reduced Heat at the Cutting Edge

- Improved fracture resistance by high aspect ratio constituents
- Anti-chipping in scale processing and interrupted machining

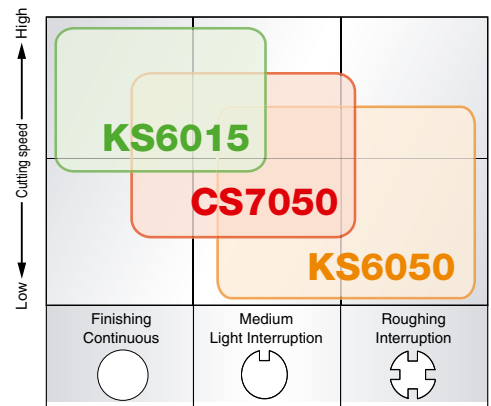
■ KS6050



■ CS7050 (Coated Si₃N₄)

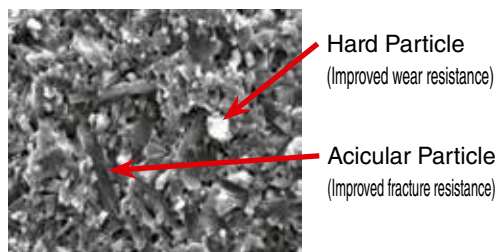
Superior wear resistance attained with strong coating adherence
Applicable to high speed machining

■ Application Map



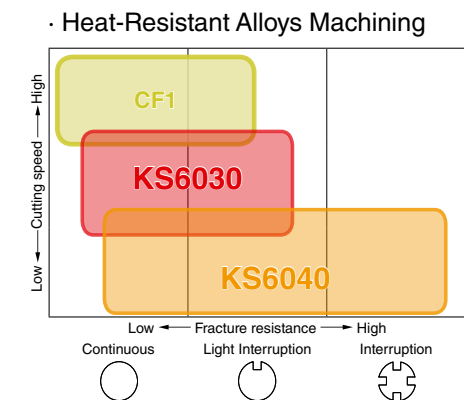
Heat-Resistant Alloys Machining **SiAlON Ceramic KS6030/KS6040**

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



Superior balance in heat resistant alloys machining achieves optimum balance between wear and fracture resistance

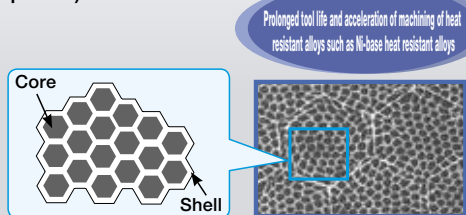
■ Application Map



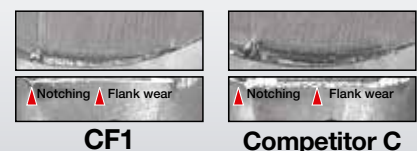
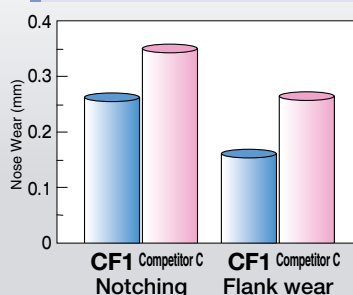
Heat-Resistant Alloys Machining **Honeycomb structure Ceramic CF1**

What is Honeycomb structure Ceramic?

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



Wear Resistance Comparison (Internal evaluation)

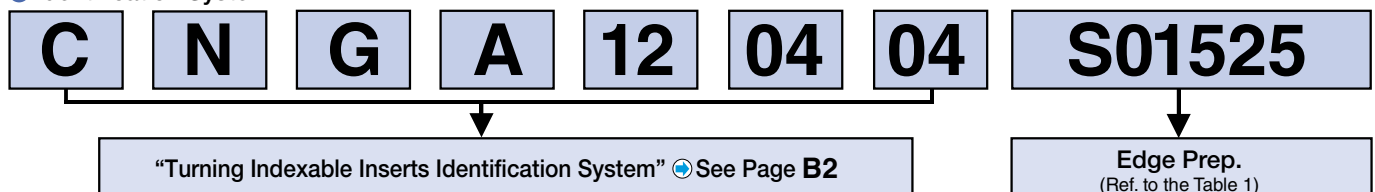


<Cutting Conditions>

Workpiece Material Ni-base heat-resistant alloys
Tool geometry : RGN120400
 $V_c = 150\text{m/min}$ $a_p = 1\text{mm}$
 $f = 0.15\text{mm/rev}$ Wet

■ Ceramic Inserts Identification System

● Identification System



● Edge Preparation Identification System

Table 1

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

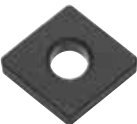
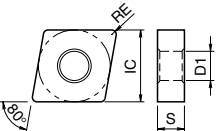
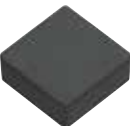
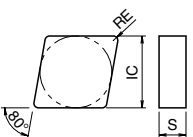
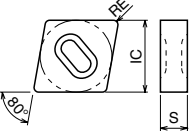
● See Page B3 for insert color

Turning Indexable Inserts

How to read pages of "Turning Inserts" See Page **B15**

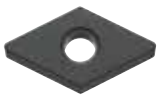
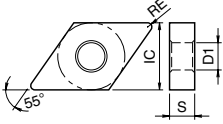
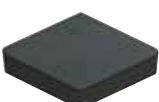
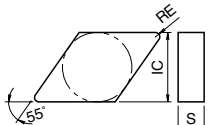
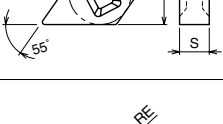
80° Rhombic / Negative

Description	IC	S	D1	(mm)	Description	IC	S	D1	(mm)
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	-						

Edge Prep.				K	Material														See Page for Applicable Toolholders														
Symbol	Cutting Edge Spec.	Example			Material																												
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)																												
T	Chamfered Cutting Edge	T01525	0.15mm x 25° Chamfered Cutting Edge	Nodular Cast Iron (With Scale)																													
				Nodular Cast Iron (Without Scale)																													
				S	Heat-resistant Alloys														H	Hard Materials													
Insert				Description				Edge Prep.		Dimension (mm)	Aluminum Oxide Ceramic			PVD Coated Ceramic	MEGACOAT Ceramic	Silicon Nitride Ceramic	CVD Coated Silicon Nitride Ceramic	SiAlON Ceramic	KS6030	KS6040	CF1												
										RE	KA30	A65	KT66	A66N	PT600M	KS6015	KS6050	CS7050	KS6030	KS6040	CF1												
		CNGA	120412S01025	S01025	1.2	●																											
		CNGA	120404S01525	S01525	0.4				●																								
		120408S01525	0.8					●																									
		120412S01525	1.2					●																									
		CNGA	120404S02025	S02025	0.4					●																							
		120408S02025	0.8						●																								
		120412S02025	1.2						●																								
CNGA	120404S03030	S03030	0.4				●																										
120408S03030	0.8					●																											
120412S03030	1.2					●																											
CNGA	120404T02025	T02025	0.4			●		●		●																							
120408T02025	0.8			●	●	●		●	●	●																							
120412T02025	1.2			●	●	●		●	●	●																							
CNMA	120408S01525	S01525	0.8					●																									
CNMA	120408S03030	S03030	0.8				●																										
120412S03030	1.2			●			●																										
		CNGN	120408S01025	S01025	0.8	●																											
		120412S01025	1.2		●																												
		CNGN	120408T01020	T01020	0.8														□	●	●												
		120412T01020	1.2																□	●	●												
		CNGN	120408T02025	T02025	0.8					●	●	□	□		●	●	□		□	●													
		120412T02025	1.2						●	●	●	●	□		●	●	□		□	●													
		120416T02025	1.6						●	●	●	●	●		●	●	●		□	●													
		120708S01525	0.8						●	●																							
		120712S01525	1.2					●	●																								
		CNGN	120708T01020	T01020	0.8																●	●											
120712T01020	1.2																		●	●													
CNGN	120704T02025	T02025	0.4		●																												
120708T02025	0.8			●	●																												
120712T02025	1.2			●	●	●																											
120716T02025	1.6			●	●	●	●																										
CNGN	160708T02025	T02025	0.8		●																												
160712T02025	1.2			●	●																												
160716T02025	1.6			●	●	●																											
CNMN	120708T02025	T02025	0.8		●																												
120712T02025	1.2			●	●																												
		CNGX	120712T01020	T01020	1.2															□													
		120716T01020	1.6																□														
		CNGX	120708T02025	T02025	0.8																□												
		120712T02025	1.2																	□													
120716T02025	1.6																		□														

55° Rhombic / 75° Rhombic / Negative

Description	IC	S	D1	Description	IC	S	D1
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					

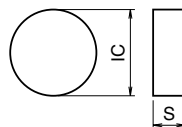
Edge Prep.				K											S	H											See Page for Applicable Toolholders			
Symbol	Cutting Edge Spec.	Example																												
S	Chamfered and Honed Cutting Edge	S01225	0.12mm x 25° Chamfered and Honed Cutting Edge																											
T	Chamfered Cutting Edge	T01215	0.12mm x 15° Chamfered Cutting Edge																											
				S	Heat-resistant Alloys																									
				H	Hard Materials																									
Insert				Description			Edge Prep.		Dimension (mm)	Aluminum Oxide Ceramic			PVD Coated Ceramic	MEGACOAT Ceramic	Silicon Nitride Ceramic	SiC Coated Silicon Nitride Ceramic	SiC/NiC Ceramic	SiC/NiC Ceramic	SiC/NiC Ceramic	SiC/NiC Ceramic	SiC/NiC Ceramic	SiC/NiC Ceramic	SiC/NiC Ceramic	SiC/NiC Ceramic	SiC/NiC Ceramic	SiC/NiC Ceramic				
									RE	KA30	A65	KT66	A66N	PT600M	KS6015	KS6050	CS7050	KS6030	KS6040	CF1										
		DNGA 150408S01025		S01025	0.8	●																					D12 D13 F64 F70 F71			
		DNGA 150404S01525		S01525	0.4								●																	
		150408S01525		S01525	0.8								●																	
		DNGA 150404S02025		S02025	0.4									●																
		150408S02025		S02025	0.8									●																
		DNGA 150408S03030		S03030	0.8									●																
		DNGA 150404T02025		T02025	0.4		●						●													D12 D13 F64				
		150408T02025		T02025	0.8		●						●																	
		150412T02025		T02025	1.2		●						●																	
		DNGA 150604T02025		T02025	0.4								●																	
		150608T02025		T02025	0.8								●																	
		150612T02025		T02025	1.2								●																	
		DNGN 150704S01525		S01525	0.4								●													D25				
		150708S01525		S01525	0.8								●																	
		150712S01525		S01525	1.2								●																	
		DNGN 150708S02025		S02025	0.8								●																	
		DNGN 150704T02025		T02025	0.4		●																							
		150708T02025		T02025	0.8		●																							
		DNGX 120708T02025		T02025	0.8																					-				
		120712T02025		T02025	1.2																									
		DNGX 150708T02025		T02025	0.8																									
		150712T02025		T02025	1.2																									
		ENGX 130708S01525		S01525	0.8								●																	
		130712S01525		S01525	1.2								●																	
		ENGX 130704T02025		T02025	0.4		●																			D25 F79				
		130708T02025		T02025	0.8		●																							
		130712T02025		T02025	1.2		●																							
		130716T02025		T02025	1.6		●																							
		130720T02025		T02025	2.0		●																							

Turning Indexable Inserts

How to read pages of "Turning Inserts" See Page **B15**

Round / Negative

Description	IC	S	D1	Description	IC	S	D1
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		

Edge Prep.				K	Gray Cast Iron (With Scale)												●	⚙	⌚					
Symbol	Cutting Edge Spec.	Example			Gray Cast Iron (Without Scale)												⌚	⚙	⌚	●				
S	Chamfered and Honed Cutting Edge	S01225	0.12mm x 25° Chamfered and Honed Cutting Edge		Nodular Cast Iron (With Scale)												⌚	⚙	⌚					
					Nodular Cast Iron (Without Scale)												⌚	⚙	⌚					
T	Chamfered Cutting Edge	T01215	0.12mm x 15° Chamfered Cutting Edge	S	Heat-resistant Alloys															●	⚙	⌚		
				H	Hard Materials														○	●				
Insert				Description			* Edge Prep.	Dimension (mm)	Aluminum Oxide Ceramic			PVD Coated Ceramic	MEGACOAT Ceramic	Silicon Nitride Ceramic	SiC Coated Silicon Nitride Ceramic	SiAlON Ceramic	Hyperbore Sintered Ceramic	See Page for Applicable Toolholders						
								RE	KA30	A65	KT66	A66N	PT600M	KS6015	KS6050	CS7050	KS6030		KS6040	CF1				
 				RNGN	090300E003	E003	-										●		D31					
					090300T01020	T01020	-											●						
				RNGN	090400S01525	S01525	-					●										-		
					090400S02025	S02025	-						●											
					090400T01020	T01020	-													●				
					090400T02025	T02025	-		●				●											
				RNGN	090700T01020	T01020	-														●	D29 D31		
				RNGN	120400E003	E003	-													●				
					120400S01525	S01525	-						●											
					120400S02025	S02025	-							●										
					120400T01020	T01020	-												●	□	●			
					120400T02025	T02025	-			●	●			●	●	●	●							
				RNGN	120700E003	E003	-													●		D29		
					120700E005	E005	-														●			
					120700K15015	K15015	-							●										
					120700S01525	S01525	-						●											
					120700S02025	S02025	-							●										
					120700T01020	T01020	-												●	●	●			
					120700T02025	T02025	-			●	●			●	●	●	□							
				RNGN	150700S01525	S01525	-						●									-		
					150700S02025	S02025	-							●										
					150700T02025	T02025	-		●															
				RNGN	190700E003	E003	-													●		-		
					190700E005	E005	-														□			
					190700T01020	T01020	-													●	●			

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

Edge Prep.			
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.

90° Square / Negative

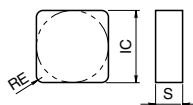
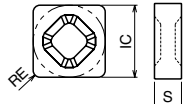
Insert Grades	A	Turning Infeedable Inserts	CAN & PCO Tools	External	Small Parts Machining	Boring	Grooving	Cut-off	Threading	Drilling	Solid Tools	Milling	Tools for Turning Mill	Spare Parts	Technical Information	Index		
	B		C	D	E	F	G	H	J	K	L	M		N	P		R	T

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

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90° Square / Negative

(mm)				(mm)			
Description	IC	S	D1	Description	IC	S	D1
SN_N1207_	12.70	7.94	-	SNGX1207_	12.70	7.94	-
SNGN1507_	15.875	7.94	-	SNGX1507_	15.875	7.94	-

Edge Prep.				K													See Page for Applicable Toolholders		
Symbol	Cutting Edge Spec.	Example																	
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)															
T	Chamfered Cutting Edge	T01215	0.12mm x 15° Chamfered Cutting Edge	S	Heat-resistant Alloys												⚡		
				H	Hard Materials							●							
Insert				Description		Edge Prep.		Dimension (mm)	Aluminum Oxide Ceramic			PVD Coated Ceramic	MEGACOAT Ceramic	Silicon Nitride Ceramic	CVD Coated Silicon Nitride Ceramic	SiAlON Ceramic	Hybrid Structure Ceramic		
								RE	KA30	A65	KT66	A66N	PT600M	KS6015	KS6050	CS7050	KS6030	KS6040	CF1
		SNGN 120704T02025		T02025		0.4	●						●						
		120708T02025				0.8	●					●							
		120712T02025				1.2	●					●							
		120716T02025				1.6	●					●	●						
		120720T02025				2.0	●					●							
		SNGN 120716T02025		T02025		1.6	●												
		SNGN 150712T02025		T02025		1.2	●					●							
		150716T02025				1.6	●												
		SNGX 120712T01020		T01020		1.2													
		120716T01020				1.6													
		SNGX 120712T02025		T02025		1.2													
		120716T02025				1.6													
		SNGX 150716T02025		T02025		1.6													

(mm) (mm)

Insert Grades	A	Turning Inadequate Inserts	CAN & FCD Tools	External Machining	Small Parts Boring	Grooving	Cut-off	Threading	Drilling	Solid Tools	Milling	Tools for Turning Mill	Spare Parts	Technical Information	Index
	B														
	C														
	D														
	E														
	F														
	G														
	H														
	J														
	K														
L															
M															
N															
P															
R															
T															

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

B111

How to read pages of “Turning Inserts” ➡ See Page **B15**

How to read pages of “Turning Inserts” ➡ See Page **B15**

35° Rhombic / Negative

(mm)

Description	IC	S	D1
VN A1604	9.525	4.76	3.81

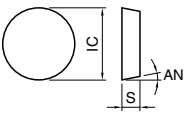
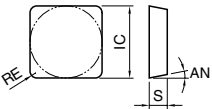
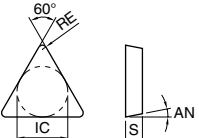
[illegible]

Inserts are sold in 10 piece boxes

● : Std. Item

Positive

				(mm)			
(mm)				Description	IC	S	AN
Description	IC	S	AN	TBGN 0601_	3.97	1.59	5°
RPGN 0903_	9.525	3.18	11°	TCGN 1604_	9.525	4.76	7°
RPGN 1204_	12.70	4.76		TPGN 0902_	5.56	2.38	11°
SPGN 0903_	9.525	3.18		1103_	6.35	3.18	
SPGN 1203_	12.70	3.18		1603_	9.525		

Edge Prep.				K	Gray Cast Iron (With Scale)											
Symbol	Cutting Edge Spec.	Example			Gray Cast Iron (Without Scale)											
S	Chamfered and Honed Cutting Edge	S01525	0.15mm x 25° Chamfered and Honed Cutting Edge		Nodular Cast Iron (With Scale)											
					Nodular Cast Iron (Without Scale)											
T	Chamfered Cutting Edge	T01525	0.15mm x 25° Chamfered Cutting Edge	S	Heat-resistant Alloys											
				H	Hard Materials											
Insert			Description		*Edge Prep.	Dimension (mm)	Aluminum Oxide Ceramic	PVD Coated Ceramic	MEGACOAT Ceramic	Silicon Nitride Ceramic	CrN Coated Silicon Nitride Ceramic	SiAlON Ceramic	Hardmetal Inlay Ceramic	See Page for Applicable Toolholders		
RE	KA30	A65	KT66	A66N	PT600M	KS6015	KS6050	CS7050	KS6030	KS6040	CF1					
		RPGN	090300E003	E003	-									-		
			090300T01020	T01020	-											
		RPGN	120400E003	E003	-										-	
			120400E005	E005	-											
			120400T01020	T01020	-											
		SPGN	090308T00820	T00820	0.8		●		●					F60		
		SPGN	120308S00820	S00820	0.8				●	●						
		SPGN	120308T00820 120312T00820	T00820	0.8 1.2		● ●									
		TBGN	060104S00820 060108S00820	S00820	0.4 0.8			● ●	● ●					-		
		TCGN	160408T00820	T00820	0.8		●									
		TPGN	090204T00820 090208T00820	T00820	0.4 0.8			●		● ●					F61	
		TPGN	110304S00820 110308S00820	S00820	0.4 0.8				● ●	● ●						
		TPGN	110304T00820 110308T00820	T00820	0.4 0.8		● ●			● ●						
		TPGN	160304S00820 160308S00820 160312S00820	S00820	0.4 0.8 1.2				● ● ●	● ● ●						
		TPGN	160304T00820 160308T00820 160312T00820	T00820	0.4 0.8 1.2		● ● ●			● ● ●						

Inserts for Hardened Roll

Edge Prep.				K	Gray Cast Iron (With Scale)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
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*For cutting edge "E", "K" and "P" please refer to the table below.

Edge Prep.			
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 and Honed Cutting Edge	P20015	2.00mm x 15° Chamfered and Honed Cutting Edge
Note : Symbol "K" and "P" describe only the largest chamfer width and its angle.			

B

Turning Indexable Inserts

Chip breakers

Positive

C

D

R

S

T

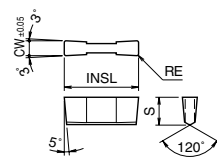
V

W

Ceramic

See Page for Applicable Toolholders

Grooving Inserts

Edge Prep.				K	Gray Cast Iron (With Scale)																	
Symbol	Cutting Edge Spec.	Example			Gray Cast Iron (Without Scale)			○		●												
S	Chamfered and Honed Cutting Edge	S01525	0.15mm x 25° Chamfered and Honed Cutting Edge		Nodular Cast Iron (With Scale)																	
					Nodular Cast Iron (Without Scale)																	
T	Chamfered Cutting Edge	T01525	0.15mm x 25° Chamfered Cutting Edge		S	Heat-resistant Alloys																
				H	Hard Materials					○	●											
Insert			Description		Edge Prep.	Dimension (mm)				Aluminum Oxide Ceramic		PVD Coated Ceramic	MEGACOAT Ceramic	Silicon Nitride Ceramic	DIC Coated Silicon Nitride Ceramic	SiAlON Ceramic	Honeycomb alumina Ceramic	See Page for Applicable Toolholders				
						CW	RE	INSL	S	KA30	A65	KT66	A66N	PT600M	KS6015	KS6050	CS7050		KS6030	KS6040	CF1	
		GH	4020-05	S01020	4.0	0.5	20	7.5					○									
			4020-05	T01020									○									
			5020-05	S01020	5.0																	
			5020-05	T01020																		
			6020-05	T01020	6.0																	
			7020-05	T01020	7.0																	