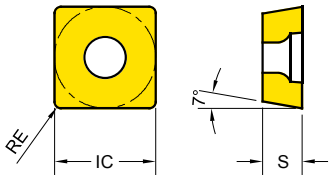
Turning Inserts - Positive

SCGT / SCMT (Square)



Series	IC	S
SC** 09T3	9.525	3.97
SC** 1204	12.700	4.76

EDP 2200.. ●: Stock item ○: Order made item

SCGT SCMT		Designation	RE	Fn (mm/rev.)	Ap (mm)	K10	P05 K20	P10 K30	P15	P10	P20	P30	P20	M25	M15	M30	M40 S30	S10	P15 M15 K15	N20	N20
						YG1010	YG1001	YG3010	YG3015	YG3115	YG3020	YG3030	YG801	YG2025	YG211	YG213	YG214	YG401	YT100	YG100	YG10
-AL	Aluminium	SCGT 09T304 - AL	0.4	0.05 ~ 0.25	0.5 ~ 2.0																● 1516
		SCGT 09T308 - AL	0.8	0.10 ~ 0.35	1.0 ~ 3.0																● 1517
-UF	Finishing	SCMT 09T304 - UF	0.4	0.05 ~ 0.25	0.5 ~ 2.0			○ 0386		● 2628	● 0387	● 0783									
		SCMT 09T308 - UF	0.8	0.05 ~ 0.25	1.0 ~ 2.0	● 2083		○ 1021		● 2629	● 1022	● 0997									
-UG	General	SCMT 09T304 - UG	0.4	0.15 ~ 0.30	0.5 ~ 2.5	● 1834	○ 0455	○ 0482		● 2414	● 0916	● 1171	○ 0025								
		SCMT 09T308 - UG	0.8	0.15 ~ 0.30	0.8 ~ 2.5	● 1835	○ 0456	○ 0159		● 2383	● 0160	● 0161	○ 0026				○ 1904				
		SCMT 120408 - UG	0.8	0.15 ~ 0.35	0.8 ~ 3.0	● 1836	○ 0674	○ 0255		● 2393	● 0256	● 0257					○ 1911				
		SCMT 120412 - UG	1.2	0.15 ~ 0.35	1.5 ~ 3.0	● 2098															
NEW -MF	Stainless steel Finishing	SCMT 09T308 - MF	0.8	0.09 ~ 0.35	0.3 ~ 2.0													● 2564			
NEW -MM	Stainless steel Medium	SCMT 120408 - MM	0.8	0.10 ~ 0.30	0.6 ~ 4.0									● 2519	● 1973	● 1974	● 1975	● 1976			
NEW -PM	Cermet Medium	SCMT 120408 - PM	0.8	0.10 ~ 0.30	0.6 ~ 4.0														● 2530		

Insert ISO Code System

*Metric : According to ISO 1832

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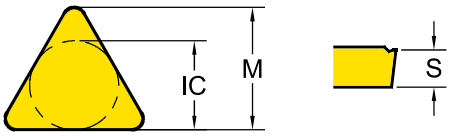
1	2	3	4	5	6	7	8	9
C	N	M	G	12	04	08	-UG	YG3115
Shape	Clearance	Tolerance	Clamping & Chipbreaker	Insert Size	Insert Thickness	Corner Radius	Chipbreaker Geometry	Grade

1 - Shape

Symbol	Shape	
H	Hexagonal	
O	Octagonal	
P	Pentagonal	
S	Square	
T	Triangular	
C	Rhombic 80°	
D	Rhombic 55°	
V	Rhombic 35°	
W	Trigon	
L	Rectangular	
K	Parallelogram 55°	
R	Round	

2 - Relief Angle (AN)

Symbol	Relief Angle (AN)	
N	No Relief Angle	
B	Relief 5°	AN
C	Relief 7°	
P	Relief 11°	
D	Relief 15°	
E	Relief 20°	
F	Relief 25°	
O	Special	



3 - Tolerance Class

Symbol	Inner Circle IC (mm)	Nose Height M (mm)	Thickness S (mm)
C	± 0.025	± 0.013	± 0.025
E	± 0.025	± 0.025	± 0.025
G	± 0.025	± 0.025	± 0.13
H	± 0.013	± 0.013	± 0.025
K*	± 0.05~0.15*	± 0.013	± 0.025
M*	± 0.05~0.15*	± 0.08~0.2*	± 0.13
U*	± 0.08~0.25*	± 0.13~0.38*	± 0.13

* Tolerance is different by insert IC size. Please see ISO 1832

4 - Clamping & Chipbreaker

Symbol	Clamping	Chipbreaker	Figure
N	No clamping hole	X	
R		One Face	
A	Cylindrical Clamping hole	X	
M		One Face	
G		Both Faces	
W	Screw Hole	X	
T		One Face	
U		Both Faces	
X	Special		

Insert ISO Code System

*Inch

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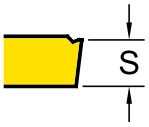
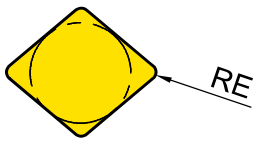
1	2	3	4	5	6	7	8	9
C	**N**	**M**	**G**	**4**	**3**	**2**	**-UG**	**YG3115**
Shape	Clearance	Tolerance	Clamping & Chipbreaker	Insert Size	Insert Thickness	Corner Radius	Chipbreaker Geometry	Grade

5 - Insert Size

Metric							Inner Circle IC (mm)	Inch
S	T	C	D	V	W	R		
06	**11**	**06**	**07**	**11**			6.35	**2**
07	**13**	**08**	**09**	**13**	**15**		7.94	**2.5**
09	**16**	**09**	**11**	**16**	**06**	**09** (00)	9.525	**3**
12	**22**	**12**	**15**	**22**	**08**	**12** (00)	12.7	**4**
15	**27**	**16**	**19**	**27**	**10**		15.875	**5**
19	**33**	**19**	**23**	**33**	**13**		19.05	**6**
25		**25**					25.4	**8**
						06 (M0)	6	
						08 (M0)	8	
						10 (M0)	10	
						12 (M0)	12	
						16 (M0)	16	





6 - Insert Thickness (S)

Metric	Thickness - S (mm)	Inch
T1	1.98	**1.2**
02	2.38	**1.5**
03	3.18	**2**
T3	3.97	**2.5**
04	4.76	**3**
05	5.56	**3.5**
06	6.35	**4**
07	7.94	**5**
09	9.525	**6**

7 - Corner Radius (RE)

Metric	Corner Radius - RE (mm)	Inch
01	0.1	**03**
02	0.2	**05**
04	0.4	**1**
08	0.8	**2**
12	1.2	**3**
16	1.6	**4**
20	2.0	**5**
24	2.4	**6**

Grade Naming System

1	2	3	4	5	(6)	
YG	**3**	**1**	**1**	**5**	**(G)**	
YG Brand	Workpiece Material	Grade Version	Application Range (1st Digit)	Application Range (2nd Digit)	Minor Variation	
Carbide CVD (4 Digits)	●	●	●	●	**YG3115**	
Carbide PVD (3 Digits)	●	●	●		**YG211**	
Carbide Uncoated (2 Digits)	●	●			**YG10**	

1 - YG Brand

2 - Workpiece Material

Symbol	Workpiece Material	Turning	Milling	Drilling	Parting
1	K Cast Iron or N Non-Ferrous	●			
2	M Stainless Steel	●			
3	P Steel	●			
4	S Superalloys	●			
5	K Cast Iron or N Non-Ferrous		●	●	●
6	M Stainless Steel or Universal		●	●	●
7	P Steel		●	●	●
8	Universal	●			
0	Hardened Steel		●		

3 - Grade Version

4 & 5 - Application Range

Symbol	
05	Stable: Wear Resistant Grade, Stable Application, Continuous Cut, Finishing
10	
15	
20	General: Balanced Grade, High Versatility, General Application
25	
30	
35	
40	Unstable: Tougher Grade, Unstable Application, Interrupted Cut, Chipping Resistance, Roughing
45	

(6) - (Minor Variation)

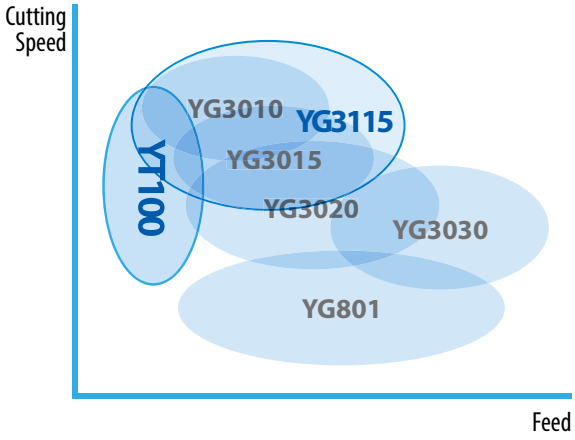
G - Gold Coated Version

Product Overview

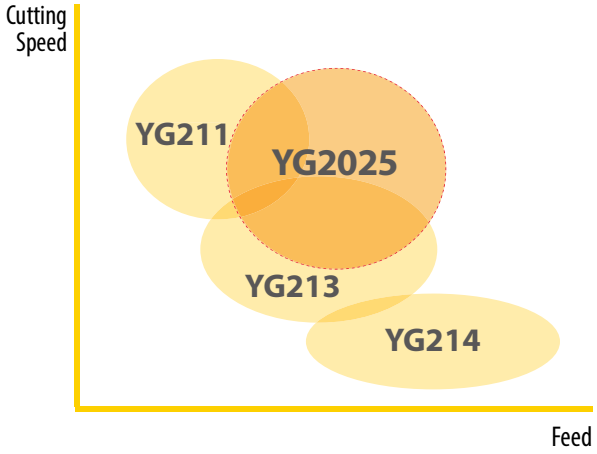
Turning Grades Map

Speed : Vc (m/min.)
Feed : Fn (mm/rev.)

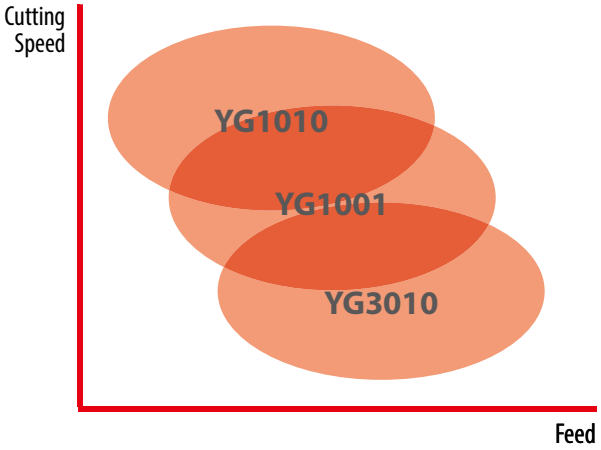
Steel



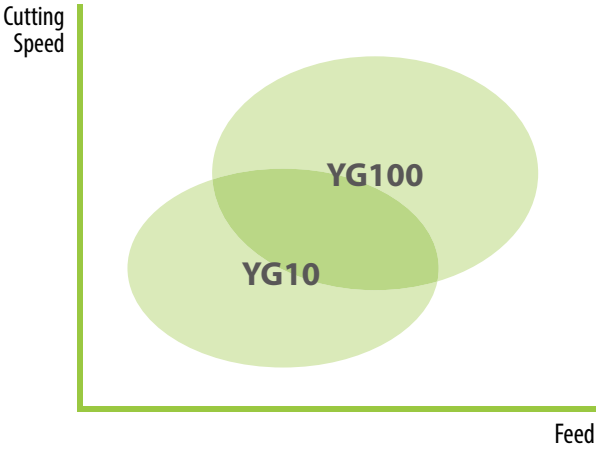
Stainless steel



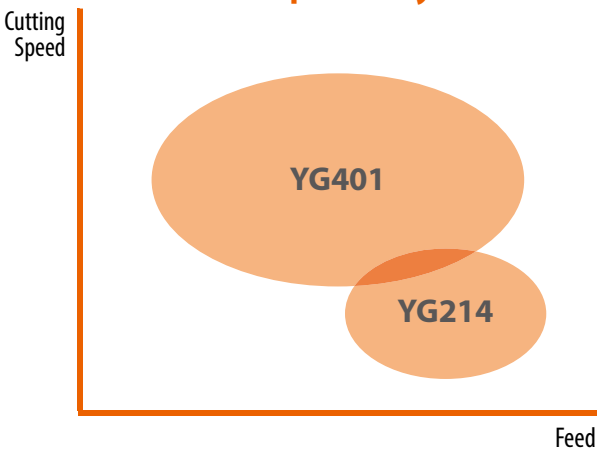
Cast iron



Non-ferrous Metal



Superalloy

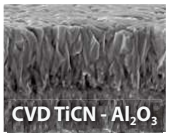


Turning Grades

Turning Grades		P Steel				M Stainless steel			K Cast iron			N Non-ferrous		S Superalloys	
		P10	P20	P30	P40	M10	M20	M30	K10	K20	K30	N10	N20	S10	S20
CVD	YG1010								1010						
	YG1001	1001								1001					
	YG3010		3010							3010					
	YG3015		3015												
	YG3115		3115												
	YG3020			3020											
	YG3030			3030											
	YG2025						2025								
PVD	YG801		801												
	YG211					211									
	YG213						213								
	YG214							214							214
	YG401													401	
Cermet	YT100		YT100				YT100			YT100					
DLC	YG100												100		
-	YG10												10		

YG1010

K05 - K15

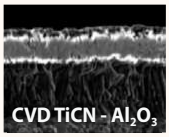


First Choice for Cast Iron

- Effective coating structure enables high speed machining
- Special post treatment for improved chipping resistance

YG1001

P01 - P10
K10 - K25

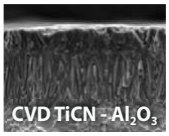


Stable Machining of Cast Iron

- Substrate especially designed for high wear resistance
- Thick Al_2O_3 layer ensures good wear resistance at high cutting speeds including dry machining

YG3010

P05 - P20
K15 - K35

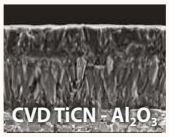


First choice for Finishing Steels, and Ductile Cast iron

- Finishing and light machining of steel under in stable condition
- New Al_2O_3 coating technology and excellent surface smoothness increase wear resistance and chipping resistance

YG3015

P10 - P25



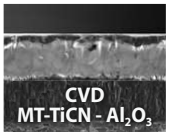
Balanced Productivity for Continuous cut

- High wear resistance and improved toughness ensures high productivity with less trouble

NEW

YG3115

P15 - P25

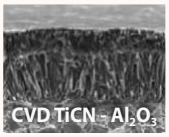
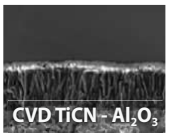
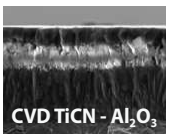
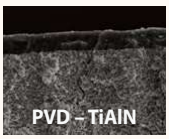
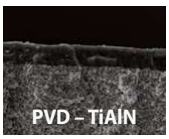
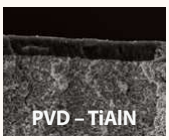
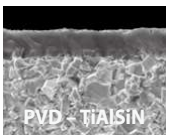
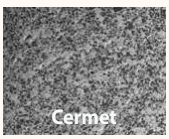
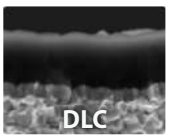
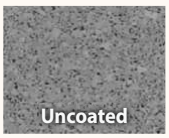


First choice garde for high cutting speed in Steels

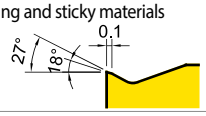
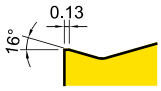
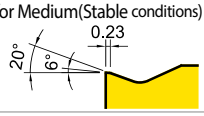
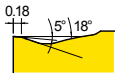
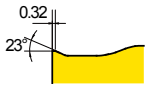
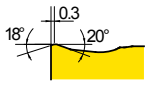
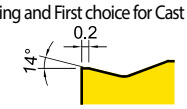
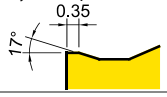
- Suitable for mass production due to stable and predictable tool life
- Minimizing built up edge due to new post surface treatment in mild steels, low carbon steel and low carbon alloy steel.
- Best choice for both continuous as well as interrupted cuts

Product Overview

Turning Grades

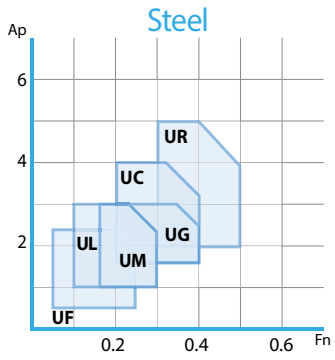
YG3020 P15 - P30		**First Choice Grade for General Steel Application** • Substrate especially designed for good toughness • Excellent surface smoothness increases wear resistance and reliability
YG3030 P20 - P35		**Interrupted Cutting of Steel and Stainless steel** • Substrate for heavy roughing in mild steel and low carbon alloy steel • New Al_2O_3 technology and optimized surface treatment achieves a good balance between wear resistance and chipping resistance
YG801 P10 - P30		**for Carbon Steel with Low Cutting Speed** • Recommended for mild steel and boring application • Substrate and special PVD coating for excellent wear resistance
NEW **YG2025** M15 - M35		**CVD grade for High Cutting Speed for Stainless steel** • Utilizing a new carbide substrate and new coating • Excellent combination of wear resistance and chipping resistance • Minimized built up edge due to post surface treatment
YG211 M05 - M25		**High wear Resistance Grade for Stainless steel** • Finishing Stainless steel
YG213 M20 - M35		**First Choice Grade on Low Cutting Speed of Stainless steel** • First choice on Stainless steel for Low cutting speed • For Medium to low cutting speed
YG214 M30 - M40 S25 - S30		**Heavy Interrupted cut for Stainless steel** • For Heavy Interrupted cut on Stainless steel • Minimize risk of Mechanical fracture or Chipping
YG401 S10 - S20		**PVD Turning Grade for HRSA** • Highly heat-resistant TiAlSiN structure for excellent wear resistance • Greatly improved film coating realizes excellent boundary defect resistance • Top coating layer provides a smooth surface and lubricant effect
NEW **YT100** P10 - P20 M10 - M20 K10 - K20		**New Generation Cermet Grade** • Enhanced wear resistance & chipping resistance • Excellent fracture resistance • Superior surface finish with special edge preparation
YG100 N05 - N25		**First Choice Grade for Aluminum with DLC Coating** • Submicron carbide for high wear resistance • DLC coating minimizes Built Up Edge tendency. • Improve tool life in sticky non-ferrous alloy
YG10 N05 - N25		**Uncoated Grade for General Aluminum** • Substrate consisted of submicron carbide for high wear resistance • Shining surface to prevent built up edge

Turning Chipbreakers - Negative

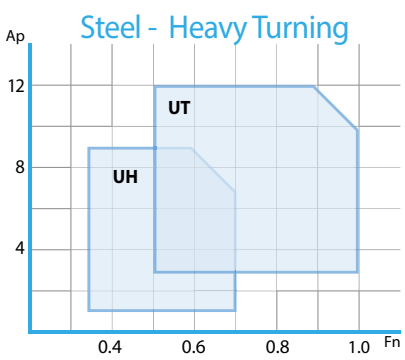
P	M	K	N	S				Feed / Fn (mm/rev.)
P					UF		Finishing 	Fn 0.05~0.25 Ap 0.5~2.5
P					UL		Semi Finishing and sticky materials 	Fn 0.1~0.3 Ap 1.0~3.0
P					UM		Medium & Unstable conditions 	Fn 0.15~0.3 Ap 1.0~3.0
P					UG		First Choice for Medium(Stable conditions) 	Fn 0.2~0.4 Ap 1.5~3.0
P					NEW PWM		Wiper-Medium 	Fn 0.1~0.5 Ap 0.5~3.5
P					NEW UH		Low cutting force 	Fn 0.35~0.7 Ap 1.0~9.0 →
P					NEW UT		Heavy roughing 	Fn 0.5~1.0 → Ap 3.0~12.0 →
P	K				UC		Medium Roughing and First choice for Cast iron 	Fn 0.2~0.4 Ap 1.5~4.0
P	K				UR		Roughing and Heavy interrupted cut 	Fn 0.3~0.5 Ap 2.0~5.0
		K			..MA		Cast iron Heavy Roughing 	Fn 0.15~0.50 Ap 1.0~5.0

Depth of Cut / Ap (mm): 0 1 2 3 4 5 6

Ap : mm
Fn : mm/rev.



*Insert : CNMG120408



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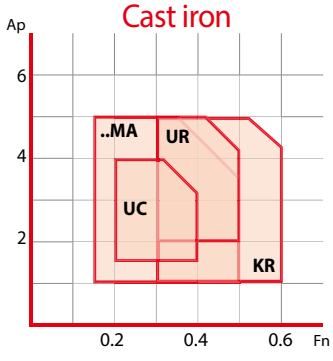
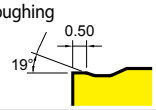
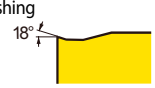
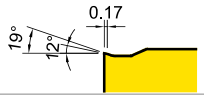
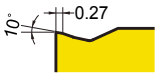
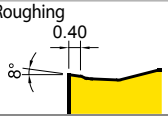
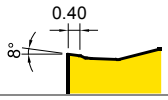
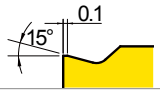
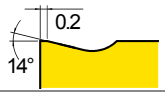


*Insert : CNMG120408

Product Overview

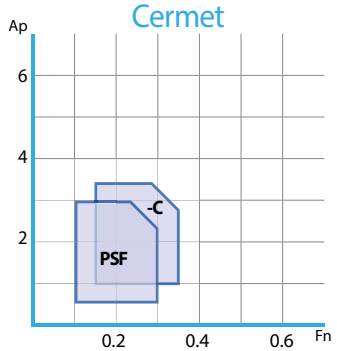
Turning Chipbreakers - Negative

P	M	K	N	S			Cast Iron Heavy Roughing	Fn 0.3~0.6 / Ap 1.0~5.0
		K			KR			
	M			S	MF		Stainless steel Finishing 	Fn 0.07~0.30 / Ap 0.2~1.5
P	M			S	MM		Stainless steel Medium and Low Carbon Steel 	Fn 0.20~0.35 / Ap 1.0~3.5
	M			S	MG		Stainless steel General 	Fn 0.20~0.40 / Ap 1.0 ~ 4.0
	M			S	MR		Stainless steel Roughing 	Fn 0.30~0.55 / Ap 1.8~5.5
				S	SF		HRSA Finishing 	Fn 0.10~0.25 / Ap 0.2~1.0
				S	SM		HRSA Medium 	Fn 0.10~0.25 / Ap 0.5~3.0
				S	SR		Roughing for HRSA 	Fn 0.20~0.35 / Ap 1.0~4.5
P	M	K			NEW PSF		Cermet Finishing 	Fn 0.10~0.30 / Ap 0.5~3.0
P	M	K			NEW -C		Cermet Medium 	Fn 0.15~0.35 / Ap 1.0~3.5

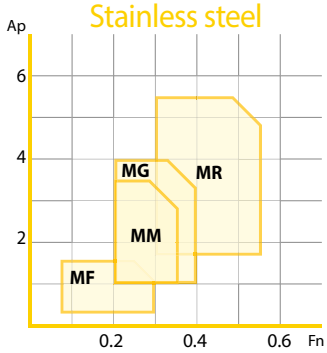
Feed 0 0.1 0.2 0.3 0.4 0.5 0.6 Fn (mm/rev.)

Depth of Cut 0 1 2 3 4 5 6 Ap (mm)

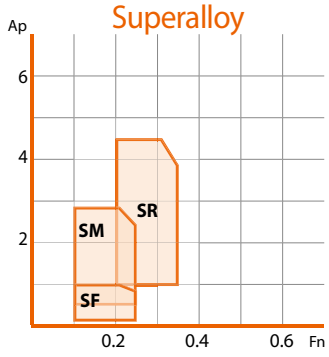
Ap : mm
Fn : mm/rev.



*Insert : CNMG120408 / TNGG160408

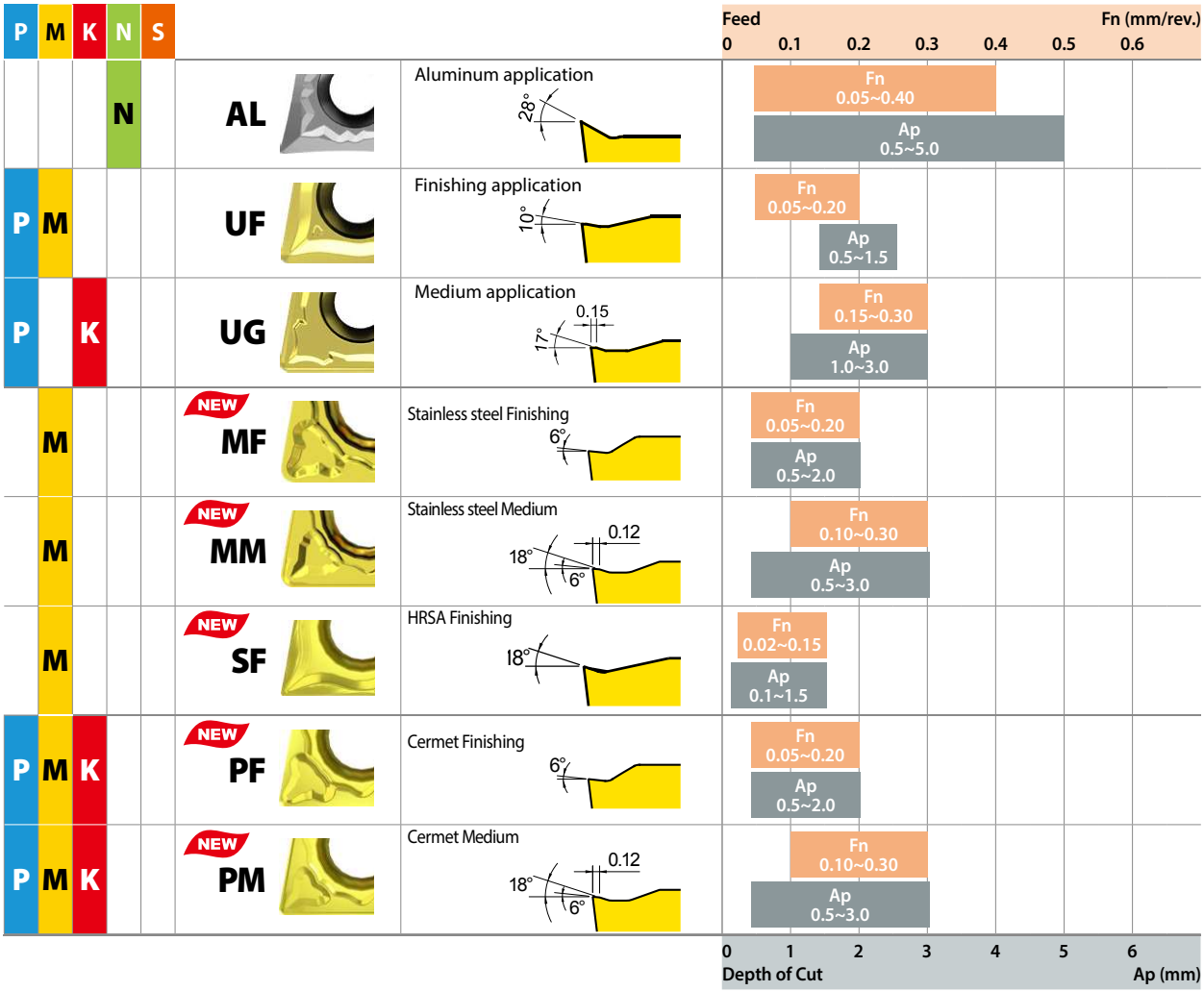


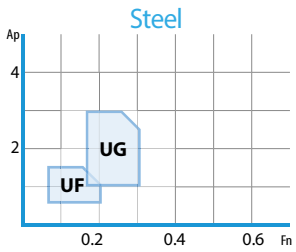
*Insert : CNMG120408

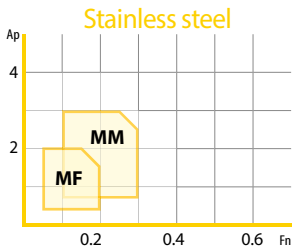


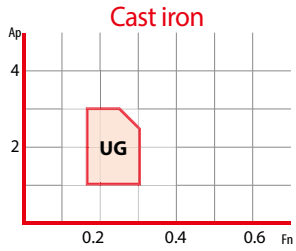
*Insert : CNMG120408

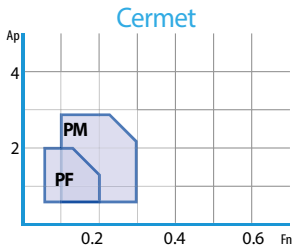
Turning Chipbreakers - Positive

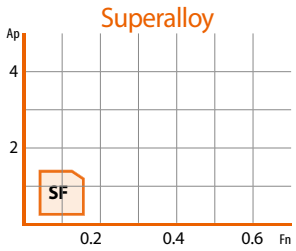


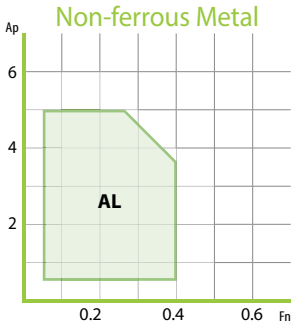












*Insert : CCMT09T308