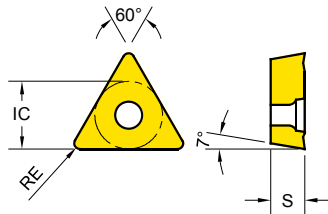





Turning Inserts - Positive TCGT / TCMT (Triangle)

Series	IC	S
TC** 1102	6.350	2.38
TC** 16T3	9.525	3.97



EDP 2200..

● : Stock item ○ : Order made item

TCGT TCMT	Designation	RE	Fn (mm/rev.)	Ap (mm)	K10	P05	P10	P15	P10	P20	P30	P20	M25	M15	M30	M40	S10	P15	M15	N20	N20		
					K20	K30	YG3010	YG3015	YG3115	YG3020	YG3030	YG801	YG2025	YG211	YG213	YG214	YG401	YT100	K15	YG100	YG10		
-AL  Aluminum	TCGT 110204 - AL	0.4	0.03 ~ 0.30	0.5 ~ 2.0																		1333	
	TCGT 16T302 - AL	0.2	0.02 ~ 0.05	0.5 ~ 1.0																		●	●
	TCGT 16T304 - AL	0.4	0.05 ~ 0.25	0.5 ~ 2.0																		●	●
	TCGT 16T308 - AL	0.8	0.10 ~ 0.35	1.0 ~ 3.0																		●	●
-UF  Finishing	TCMT 110204 - UF	0.4	0.05 ~ 0.20	0.5 ~ 2.0			○		●	●	●				○	○	○						
	TCMT 16T304 - UF	0.4	0.05 ~ 0.25	0.5 ~ 2.0			○		●	●	●	○			○	○							
	TCMT 16T308 - UF	0.8	0.05 ~ 0.25	0.8 ~ 2.0			○		●	●	●												
-UG  General	TCMT 110204 - UG	0.4	0.10 ~ 0.25	0.5 ~ 2.0	●	○	○		●	●	●	○											
	TCMT 110208 - UG	0.8	0.10 ~ 0.25	0.8 ~ 2.0	●		○		●	●	●												
	TCMT 16T304 - UG	0.4	0.15 ~ 0.30	0.5 ~ 2.5	●	○	○		●	●	●												
	TCMT 16T308 - UG	0.8	0.15 ~ 0.30	0.8 ~ 2.5	●	○	○		●	●	●	○					○						

TURNING

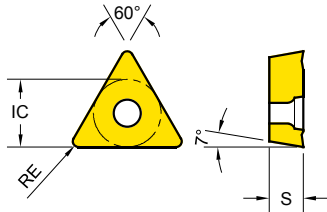
PARTING & GROOVING

MILLING

DRILLING

TECHNICAL INFORMATION





Turning Inserts - Positive TCMT (Triangle)



Series	IC	S
TC** 1102	6.350	2.38
TC** 16T3	9.525	3.97

EDP 2200..

● : Stock item ○ : Order made item

TCMT	Designation	RE	Fn (mm/rev.)	Ap (mm)	K10	P05	P10	P15	P10	P20	P30	P20	M25	M15	M30	M40	S10	P15	M15	N20	N20		
					YG1010	YG1001	YG3010	YG3015	YG3115	YG3020	YG3030	YG801	YG2025	YG211	YG213	YG214	YG401	YT100	YG100	YG10	K20	K30	S30
NEW -MF  Stainless steel Finishing	TCMT 110204 - MF	0.4	0.07 ~ 0.20	0.20 ~ 2.0																			●
	TCMT 110208 - MF	0.8	0.07 ~ 0.20	0.30 ~ 2.0																			●
	TCMT 16T304 - MF	0.4	0.06 ~ 0.25	0.10 ~ 2.0										●	●	●	●	●	●	●	●	●	●
	TCMT 16T308 - MF	0.8	0.08 ~ 0.30	0.15 ~ 2.0										●	●	●	●	●	●	●	●	●	●
NEW -MM  Stainless steel Medium	TCMT 16T304 - MM	0.4	0.08 ~ 0.25	0.25 ~ 3.0									●	●	●	●	●	●	●	●	●	●	
	TCMT 16T308 - MM	0.8	0.10 ~ 0.30	0.50 ~ 3.0									●	●	●	●	●	●	●	●	●	●	
													●	●	●	●	●	●	●	●	●	●	
													●	●	●	●	●	●	●	●	●	●	
NEW -PF  Cermet Medium	TCMT 16T304 - PF	0.4	0.06 ~ 0.25	0.10 ~ 2.0																		●	
	TCMT 16T308 - PF	0.8	0.08 ~ 0.30	0.15 ~ 2.0																		●	
NEW -PM  Cermet Medium	TCMT 16T304 - PM	0.4	0.08 ~ 0.25	0.25 ~ 3.0																		●	
	TCMT 16T308 - PM	0.8	0.10 ~ 0.30	0.50 ~ 3.0																		●	

TURNING

PARTING & GROOVING

MILLING

DRILLING

TECHNICAL INFORMATION

Insert ISO Code System

*Metric : According to ISO 1832

page 14

page 12

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

TURNING

PARTING & GROOVING

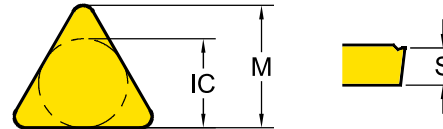
MILLING

DRILLING

TECHNICAL INFORMATION

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	



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

2 - Relief Angle (AN)

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

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

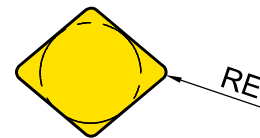
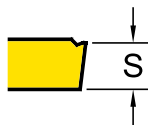
1	2	3	4	5	6	7	8	9
C	N	M	G	4	3	2	-UG	YG3115
Shape	Clearance	Tolerance	Clamping & Chipbreaker	Insert Size	Insert Thickness	Corner Radius	Chipbreaker Geometry	Grade

page 14

page 12

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

TURNING	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
PARTING & GROOVING	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

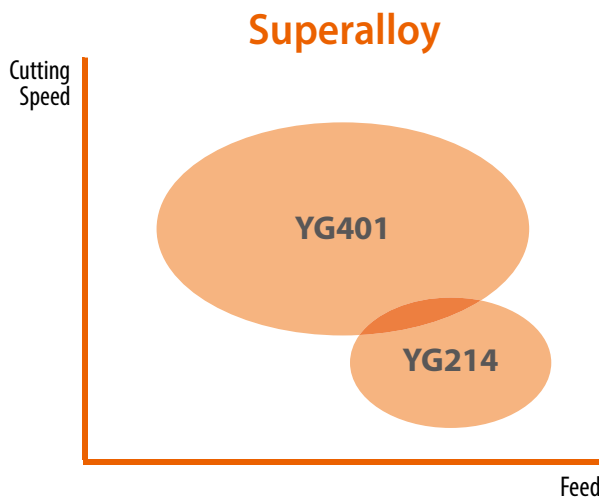
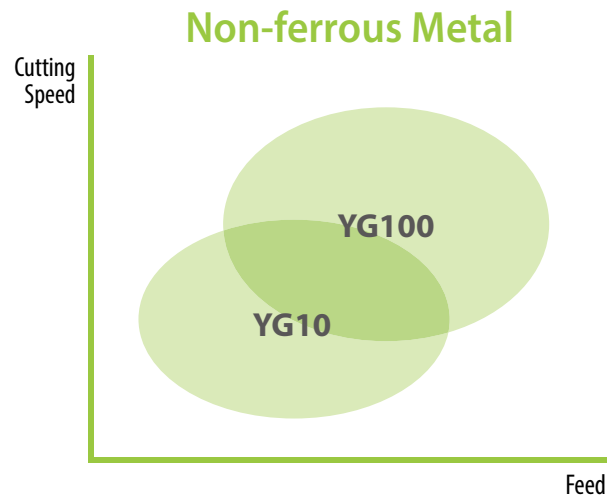
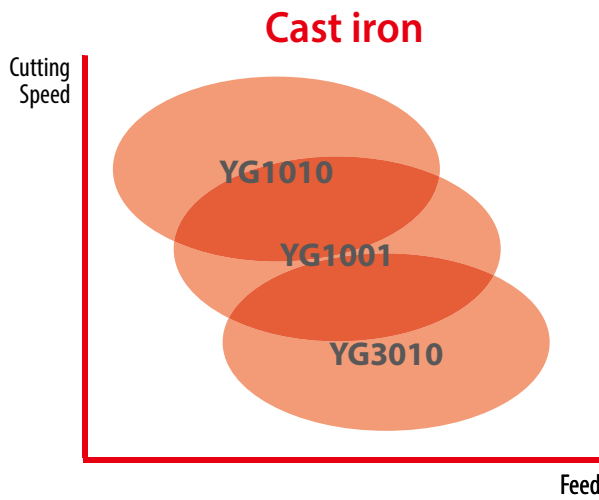
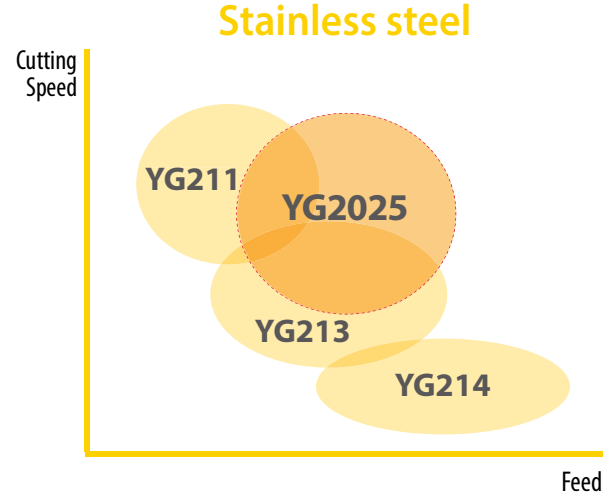
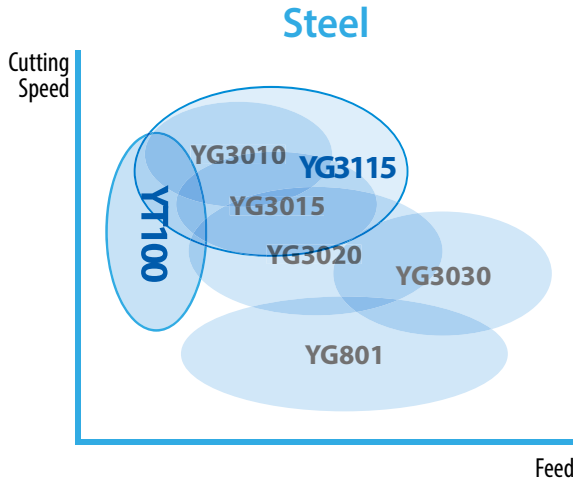
Symbol	
05	<p>Wear Resistant Grade Stable Application Continuous Cut Finishing</p>
10	
15	
20	<p>Balanced Grade High Versatility General Application</p>
25	
30	
35	<p>Tougher Grade Unstable Application Interrupted Cut Chipping Resistance Roughing</p>
40	
45	

(6) - (Minor Variation)

G - Gold Coated Version

Turning Grades Map

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



- TURNING
- PARTING & GROOVING
- MILLING
- DRILLING
- TECHNICAL INFORMATION

Turning Grades

TURNING	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
DRILLING	Cermet	YT100	YT100				YT100		YT100						
	DLC	YG100										100			
	-	YG10										10			

TECHNICAL INFORMATION	YG1010	
	K05 - K15	<p>CVD TiCN - Al₂O₃</p>
	First Choice for Cast Iron	<ul style="list-style-type: none"> Effective coating structure enables high speed machining Special post treatment for improved chipping resistance
	YG1001	
	P01 - P10 K10 - K25	<p>CVD TiCN - Al₂O₃</p>
	Stable Machining of Cast Iron	<ul style="list-style-type: none"> Substrate especially designed for high wear resistance Thick Al₂O₃ layer ensures good wear resistance at high cutting speeds including dry machining
YG3010		
P05 - P20 K15 - K35	<p>CVD TiCN - Al₂O₃</p>	
First choice for Finishing Steels, and Ductile Cast iron	<ul style="list-style-type: none"> Finishing and light machining of steel under in stable condition New Al₂O₃ coating technology and excellent surface smoothness increase wear resistance and chipping resistance 	
YG3015		
P10 - P25	<p>CVD TiCN - Al₂O₃</p>	
Balanced Productivity for Continuous cut	<ul style="list-style-type: none"> High wear resistance and improved toughness ensures high productivity with less trouble 	
NEW	YG3115	
P15 - P25	<p>CVD MT-TiCN - Al₂O₃</p>	
First choice grade for high cutting speed in Steels	<ul style="list-style-type: none"> 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 	

Turning Grades

YG3020 P15 - P30	 CVD TiCN - Al ₂ O ₃	First Choice Grade for General Steel Application <ul style="list-style-type: none"> • Substrate especially designed for good toughness • Excellent surface smoothness increases wear resistance and reliability
YG3030 P20 - P35	 CVD TiCN - Al ₂ O ₃	Interrupted Cutting of Steel and Stainless steel <ul style="list-style-type: none"> • Substrate for heavy roughing in mild steel and low carbon alloy steel • New Al₂O₃ technology and optimized surface treatment achieves a good balance between wear resistance and chipping resistance
YG801 P10 - P30	 PVD - TiAlN	for Carbon Steel with Low Cutting Speed <ul style="list-style-type: none"> • Recommended for mild steel and boring application • Substrate and special PVD coating for excellent wear resistance
NEW YG2025 M15 - M35	 CVD TiCN - Al ₂ O ₃	CVD grade for High Cutting Speed for Stainless steel <ul style="list-style-type: none"> • 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	 PVD - TiAlN	High wear Resistance Grade for Stainless steel <ul style="list-style-type: none"> • Finishing Stainless steel
YG213 M20 - M35	 PVD - TiAlN	First Choice Grade on Low Cutting Speed of Stainless steel <ul style="list-style-type: none"> • First choice on Stainless steel for Low cutting speed • For Medium to low cutting speed
YG214 M30 - M40 S25 - S30	 PVD - TiAlN	Heavy Interrupted cut for Stainless steel <ul style="list-style-type: none"> • For Heavy Interrupted cut on Stainless steel • Minimize risk of Mechanical fracture or Chipping
YG401 S10 - S20	 PVD - TiAlSiN	PVD Turning Grade for HRSA <ul style="list-style-type: none"> • 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	 Cermet	New Generation Cermet Grade <ul style="list-style-type: none"> • Enhanced wear resistance & chipping resistance • Excellent fracture resistance • Superior surface finish with special edge preparation
YG100 N05 - N25	 DLC	First Choice Grade for Aluminum with DLC Coating <ul style="list-style-type: none"> • 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	Uncoated Grade for General Aluminum <ul style="list-style-type: none"> • Substrate consisted of submicron carbide for high wear resistance • Shining surface to prevent built up edge

TURNING

PARTING & GROOVING

MILLING

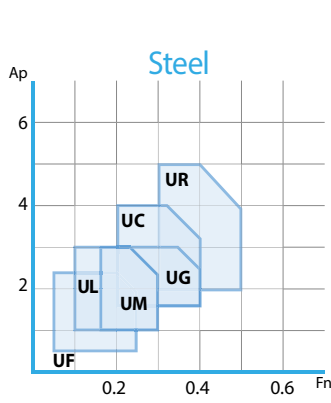
DRILLING

TECHNICAL INFORMATION

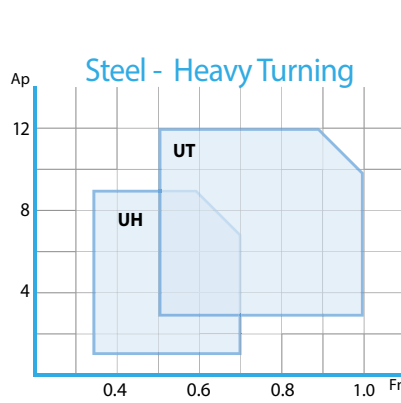
Turning Chipbreakers - Negative

	Material					Feed	Fn (mm/rev.)								
	P	M	K	N	S		0	0.1	0.2	0.3	0.4	0.5	0.6		
TURNING	P					UF	Finishing			Fn: 0.05~0.25 Ap: 0.5~2.5					
	PARTING & GROOVING	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					
MILLING	P					NEW PWM	Wiper-Medium			Fn: 0.1~0.5 Ap: 0.5~3.5					
	DRILLING	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					
TECHNICAL INFORMATION			K			..MA	Cast iron Heavy Roughing			Fn: 0.15~0.50 Ap: 1.0~5.0					

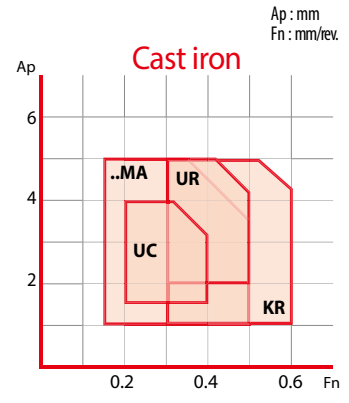
Depth of Cut Ap (mm)



*Insert : CNMG120408



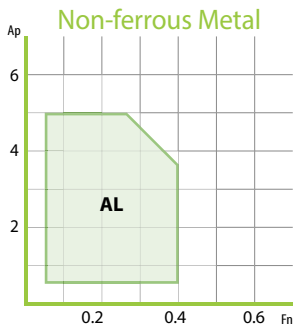
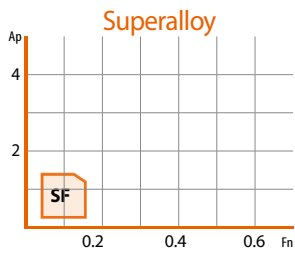
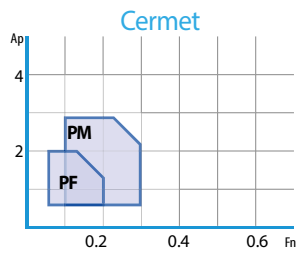
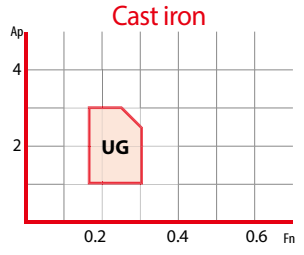
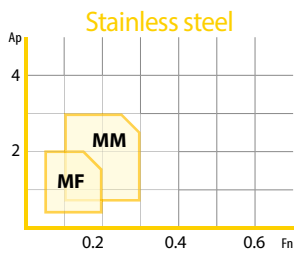
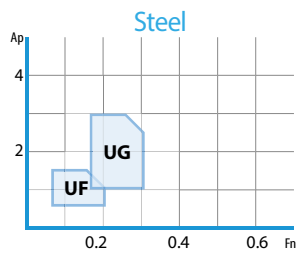
*Insert : CNMM190624



*Insert : CNMG120408

Turning Chipbreakers - Positive

	Material					Application	Diagram	Feed						Fn (mm/rev.)
	P	M	K	N	S			0	0.1	0.2	0.3	0.4	0.5	
TURNING				N		AL	Aluminum application		Fn 0.05~0.40		Ap 0.5~5.0			
	P	M				UF	Finishing application		Fn 0.05~0.20		Ap 0.5~1.5			
	P		K			UG	Medium application		Fn 0.15~0.30		Ap 1.0~3.0			
PARTING & GROOVING						NEW MF	Stainless steel Finishing		Fn 0.05~0.20		Ap 0.5~2.0			
						NEW MM	Stainless steel Medium		Fn 0.10~0.30		Ap 0.5~3.0			
						NEW SF	HRSA Finishing		Fn 0.02~0.15		Ap 0.1~1.5			
MILLING	P	M	K			NEW PF	Cermet Finishing		Fn 0.05~0.20		Ap 0.5~2.0			
	P	M	K			NEW PM	Cermet Medium		Fn 0.10~0.30		Ap 0.5~3.0			
DRILLING														
TECHNICAL INFORMATION														



*Insert : CCMT09T308