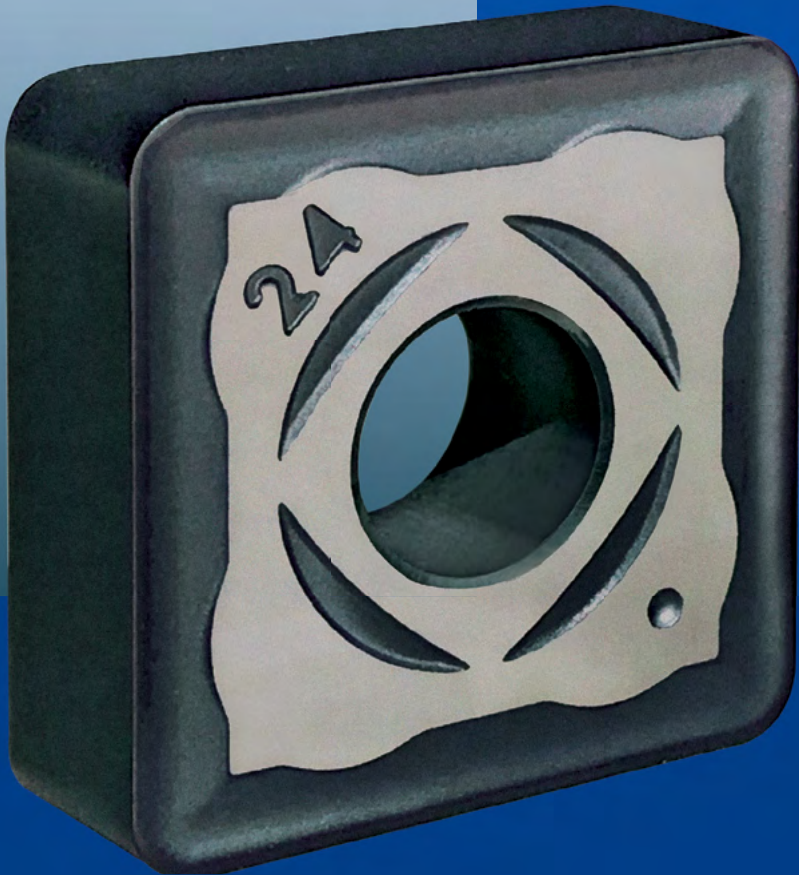


MEGA  **TEC**



**TURNING
INSERTS**

C	N	M	G
1	2	3	4

12	04	08
5	6	7

-	-
8	9

1	Shape	
A		B
C		D
E		H
K		L
M		R
S		T
V		W

2	Clearance angle	
A		3°
B		5°
C		7°
D		15°
E		20°
F		25°
G		30°
N		0°
P		11°

3	Tolerance, mm			
		m	s	d
	A	+/-0,005	+/-0,025	+/-0,025
	C	+/-0,013	+/-0,025	+/-0,025
	E	+/-0,025	+/-0,025	+/-0,025
	F	+/-0,005	+/-0,025	+/-0,013
	G	+/-0,025	+/-0,05 +/-0,13	+/-0,025
	H	+/-0,013	+/-0,025	+/-0,013
	J	+/-0,005	+/-0,025	+/-0,05 +/-0,13
	K	+/-0,013	+/-0,025	+/-0,05 +/-0,13
	L	+/-0,05	+/-0,013	+/-0,025
	M	+/-0,08 +/-0,18	+/-0,13	+/-0,05 +/-0,18
N	+/-0,08 +/-0,18	+/-0,025	+/-0,05 +/-0,13	
U	+/-0,13 +/-0,38	+/-0,05 +/-0,13	+/-0,08 +/-0,32	

4	Clamping and cutting geometry	
A		N
B		Q
C		R
F		T
G		U
H		W
J		X SPECIAL
M		

5	Inscribed circle and cutting edge length, mm												
∅d	A	C	D	E	K	L	M	R	S	T	V	W	
3,97													02
4,76										08			02-03
5,56		05								09			
6,00													03
6,35		06	07	06			06	06	11	11	04		
6,70	10												
7,94								07					
8,00				08									05
9,45	16												
9,52	15-16	09	11	09	16	15	09		09	16	16	06	
10,00								10					06
11,00									11				
11,50						12							
12,00								12					07
12,62						18							
12,70		12	15	12		15-20			12	22			08
15,87		16							15				
19,05		19							19				

6	Thickness	
S	mm	
01	1,59	
T1	1,97	
02	2,38	
T2	2,78	
03	3,18	
T3	3,97	
04	4,76	
05	5,56	
06	6,35	
07	7,94	
09	9,52	

7	Radius	
R	MO (mm)	
	r (mm)	
02	r=0,2	
04	r=0,4	
05	r=0,5	
06	r=0,6	
08	r=0,8	
10	r=1,0	
12	r=1,2	
16	r=1,6	

8	Clamping	
F		
E		
T		
S		

9	Cutting geometry	
R		
L		
N		

MEGATEC Turning Grades for steel

CMK210
(ISO P15, M10, K05)

Cermet. TiCN-based wear-resistant grade designed for continuous steel cutting on high speed. The grade is also suitable for cast iron and stainless steel turning.

MPK115
(ISO P10-P15, K15)

High speed wear-resistant turning grade designed for steel continuous cutting. The grade is also suitable for cast iron turning.

CP115
(ISO P15, M10, K25)

CVD (TiCN/Al₂O₃) coated wear-resistant grade is for continuous steel cutting on high speed. The grade is also suitable for cast iron turning.

MP1125
(ISO P25, M25)

CVD Nano-coated universal turning grade designed for continuous to slightly interrupted turning of steel and easy-to-cut stainless steel. The inserts are being grinded before coating.

CP125
(ISO P25, M20, K30)

CVD (TiCN/Al₂O₃) coated steel turning grade designed for continuous to slightly interrupted cutting on medium to high speed. Cast iron and stainless steel turning is also possible.

CP1125
(ISO P25, M20, K30)

Innovative MT-CVD coated wear-resistant universal grade designed for high-performance steel and cast iron turning. Dry machining is also possible.

CP135
(ISO P35, M25)

CVD coated universal turning grade is for general machining to roughing of steel at medium speed, including machining under unfavorable cutting conditions.

MP140
(ISO P40, M40)

Heavy-duty turning grade designed for high-performance steel turning under interrupted cutting and unfavorable conditions.

MEGATEC Turning Grades for stainless steel

MM220 (ISO M20, S15)

CVD Nano-coated heat resistant and plastic deformation resistant grade for continuous turning austenitic stainless steel at high speed (170-220 m/min). The grade is also suitable for super alloy turning.

CM2220 (ISO M20, K20, S20, N20)

PVD (TiAlN) coated turning grade designed for stainless steel finishing with continuous cutting at medium to high speed. The grade is also suitable for aluminum, cast iron and super alloy finishing.

MM209 (ISO M25, P30)

PVD coated turning grade is for stainless steel general machining at medium speed. Slightly interrupted cutting is also possible.

CM225 (ISO M25, P35)

PVD (TiN/TiAlN) coated turning grade designed for stainless steel general machining and finishing at medium to high speed, including slightly interrupted cutting, with good machined surface quality.

CM2225 (ISO M25, P30)

Innovative CVD (TiCN/Al₂O₃) coated wear-resistant grade designed for stainless steel turning. The grade has high resistance to thermal cracking and very good resistance to plastic deformation.

MM208 (ISO M40, P35, S35)

PVD coated turning grade designed for stainless steel general machining and roughing at medium to low speed, including interrupted cutting. Super alloy turning and steel turning under unfavorable conditions are also possible.

CM235 (ISO M35, P45)

PVD (TiN/TiAlN) coated coarse grain turning grade is for stainless steel general machining and roughing at medium to low speed, including unfavorable cutting conditions.

MM235 (ISO M35, P35)

CVD (TiN/TiCN/TiN) coated wear-resistant turning grade is for stainless steel and steel general machining at medium speed, including unfavorable cutting conditions.

MEGATEC Turning Grades for cast iron

MK3110
(ISO K10)

CVD-coated wear-resistant turning grade designed for high performance cast iron finishing at high speed by continuous cutting.

MK3120
(ISO K20)

CVD coated wear-resistant grade designed for cast iron general machining and roughing, including interrupted cutting. Dry machining is also possible.

CK3310
(ISO K10, P05)

Innovative MT-CVD (TiCN/Al₂O₃) coated grade designed for all cast iron types continuous cutting at high speed. Dry machining is also possible.

CK320
(ISO K20, P10)

CVD (TiCN/Al₂O₃) coated wear-resistant grade designed for all cast iron types continuous cutting at high to medium speed. Light roughing is also possible.

MEGATEC Turning Grades for aluminum

MNB010 (ISO N10)

Uncoated grade is for turning aluminum and other long-chip materials (e.g. copper).

CN410 (ISO N10, K15)

Uncoated micrograin grade designed for turning aluminum and other long-chip materials (e.g. copper).

MU410 (ISO N10, K10, M10)

The grade with ultrathin TiAlN coating is for aluminum and other non-ferrous materials turning. Stainless steel and cast iron finishing is also possible.

CU415 (ISO N15, M15, S15)

PVD (TiAlN) coated submicron turning grade designed for Al- and Cu-based alloys machining. The grade has 1600 HV hardness due to balanced Co and WC content.

MEGATEC Turning Grades for titanium and super alloy

MST10 (ISO S10, M10)

Special grade with innovative CVD (TiBN) coating designed mainly for titanium alloy turning. The grade has very high resistance to thermal shock, wearing and plastic deformation, therefore higher cutting speed is available.

CMS5510 (ISO S10, M15)

PVD (TiAlN) coated special turning grade has very good resistance to thermal shock, wearing and plastic deformation, therefore higher cutting speed is available. The grade is very good for titanium alloy turning.

MS515 (ISO S15, M25, N15)

PVD-coated submicron grade designed for turning of Ni-based super alloy, such as Inconel, Hastelloy, etc. The grade has high resistance to sticking, high cutting edge strength and wear-resistance. It is also suitable for aluminum and stainless steel turning.

CMS5515 (ISO S15, M20)

Special grade designed for Ni-based super alloy (such as Inconel, Hastelloy, etc.) turning. The grade has good resistance to thermal shock, wearing and plastic deformation due to innovative PVD (TiN/TiAlN/TiN) coating, therefore higher cutting speed is available.

MST20 (ISO S20, M20)

PVD-coated fine grain grade designed for Ni-based super alloy (such as Inconel, Hastelloy, etc.) turning. The grade has high resistance to material sticking, high cutting edge strength and wear-resistance. It is also suitable for stainless steel turning.

CMS5535 (ISO S35, M35)

CVD (TiBN) coated high cobalt content grade designed for Fe-based alloy and heat-resistant steel turning. The grade has extremely high resistance to thermal cracking and high resistance to plastic deformation. It is also suitable for austenitic stainless steel turning, especially under unfavorable cutting conditions.

CMS5540 (ISO S40, M40)

High cobalt content grade designed for Ni-based super alloy (such as Inconel, Hastelloy, etc.) turning. The grade has good resistance to thermal shock, wearing and plastic deformation due to innovative CVD (TiN/TiB₂) coating, therefore it is the first choice for coarse turning. It is also recommended for stainless steel roughing.

Legend

Grades available with the chipbreaker

Insert	CP 125	CP 135	CP 1125	CK 320	CK 3310	CMS 5535	CMS 5540
CNMG 120408-NM8				•	○	○	•
CNMG 120412-NM8	•	•	○	○			

In stock (filled circles) **On request** (open circles)

Chipbreaker working area

NM8 **Chipbreaker main destination**

Depth of Cut and Feed rate Diagram

Max. depth of cut (it's also depends on insert size and type)

Min. depth of cut (it's also depends on insert corner radius)

Min. feed when stable chip control is possible

Max. feed

ISO Range

- P, steel
- M, stainless steel
- K, cast iron
- S, super alloy and titanium
- N, aluminum and light alloy

CVD Coating

ISO P25

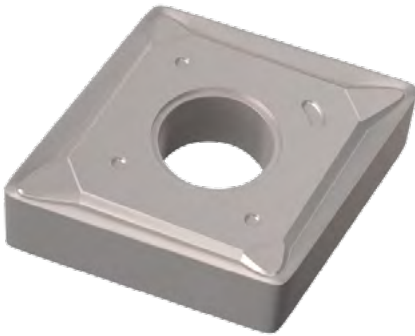
Wide figure - main ISO Range **Thin figure - additional ISO Range** **Cutting Speed Range, Vc**

Cheapbreakers

«-» Negative	«-» Negative single side	«+» Positive	page
-	NF	Steel (Cast Iron, Stainless Steel) finishing	111
-	NF1	Steel (Cast Iron, Stainless Steel) finishing (cermet)	110
-	NF2	Super Alloy (Stainless Steel, Aluminum and Non-ferrous alloy) finishing	135
-	NF32	Stainless Steel (Cast Iron, Non-ferrous alloy, Super Alloy) finishing	124
-	NF4	Steel (Cast Iron, Stainless Steel) finishing to general machining	113
-	NF5	Stainless Steel (Steel, Super Alloy) finishing to general machining	125
-	NFW	Steel (Cast Iron, Stainless Steel) finishing to general machining (wiper)	112
-	NM55	Super Alloy and Titanium (Stainless Steel) general machining	139
-	NM34	Stainless Steel (Steel) general machining	126
-	NM2	Super Alloy (Stainless Steel, Aluminum and Non-ferrous alloy) general machining	136
-	NM3	Super Alloy (Stainless Steel, Aluminum and Non-ferrous alloy) general machining	137
-	NM45	Titanium and Super Alloy (Stainless Steel) general machining	138
-	NM41	Stainless Steel (Steel, Super Alloy) general machining	127
-	NM50	Steel (Cast Iron, Stainless Steel) general machining	114
-	NM6	Stainless Steel (Steel, Super Alloy) general machining to semi-roughing	128
-	NM8	Steel (Cast Iron, Stainless Steel, Super Alloy) general machining to semi-roughing	115
-	NM78	Super Alloy, Titanium, Stainless Steel general machining to roughing	140
-	NR4	Cast Iron general machining to roughing	144
-	NR33	Steel (Cast Iron, Stainless Steel) roughing	116
-	NR78	Steel (Cast Iron, Stainless Steel) roughing, especially for tube chamfering	119
-	NM9	Stainless Steel (Steel, Super Alloy) roughing	129
-	NR2	Stainless Steel (Steel) roughing	130
-	...	Cast Iron (Steel) turning	145
-	NR48	Steel (Cast Iron, Stainless Steel) roughing. Single sided insert	117
-	NR58	Steel (Cast Iron, Stainless Steel) roughing. Single sided insert	118
-	NR98	Steel (Cast Iron, Stainless Steel) heavy duty roughing. Single sided insert	120
+	O1	Stainless Steel (Non-ferrous alloy, Super Alloy) fine turning	131
+	FF1	Steel (Cast Iron, Stainless Steel) finishing	121
+	PM1	Steel, Stainless Steel finishing to general machining (wiper)	122
+	WF	Stainless Steel (Steel, Cast Iron) finishing to general machining	132
+	PM3	Steel (Cast Iron, Stainless Steel) general machining to roughing	123
+	PF4	Stainless Steel (Non-ferrous alloy, Super Alloy) general machining	133
+	PF41	Stainless Steel (Non-ferrous alloy, Super Alloy) general machining to roughing	134
+	PM45	Titanium and Super Alloy (Stainless Steel) general machining	141
+	AL2	Aluminum and Non-ferrous alloy (Stainless Steel, Cast Iron) general machining	142
+	MF	Aluminum and Non-ferrous alloy (Stainless Steel, Cast Iron, Super Alloy) general machining	143

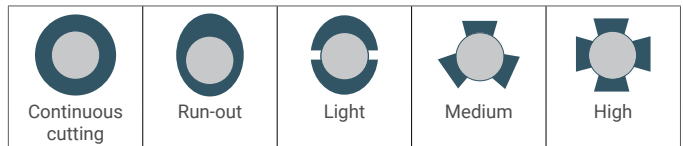
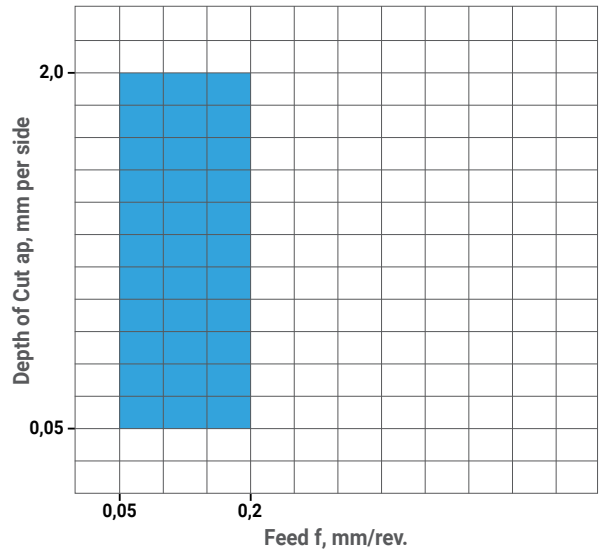
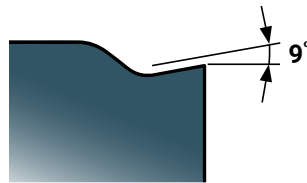
NF1

Steel Finishing



NF1 Geometry for **CMK210** Cermet inserts designed for high-speed steel finishing with uninterrupted cutting. Cast iron and stainless steel machining is also possible.

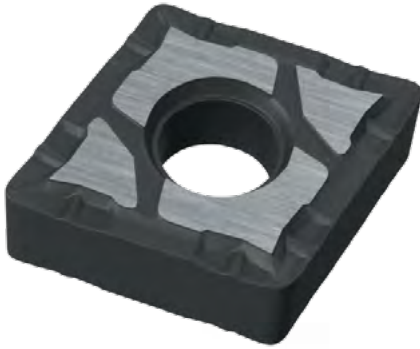
Insert	CMK210
CNMG 120404-NF1	•
CNMG 120408-NF1	•
DNMG 110404-NF1	•
DNMG 150604-NF1	•



ISO Group	Cermet	Cutting Speed, Vc, m/min
01		620
05		570
10		520
15		470
20		420
25		370
30		320
35		270
40		240
45		210
		180
		150
		120
		105
		90
		75
		60
		45
		30
		15

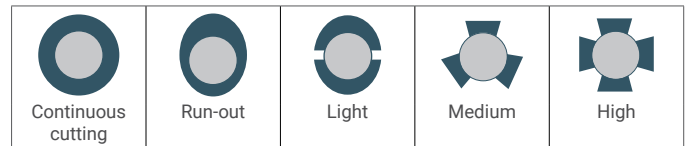
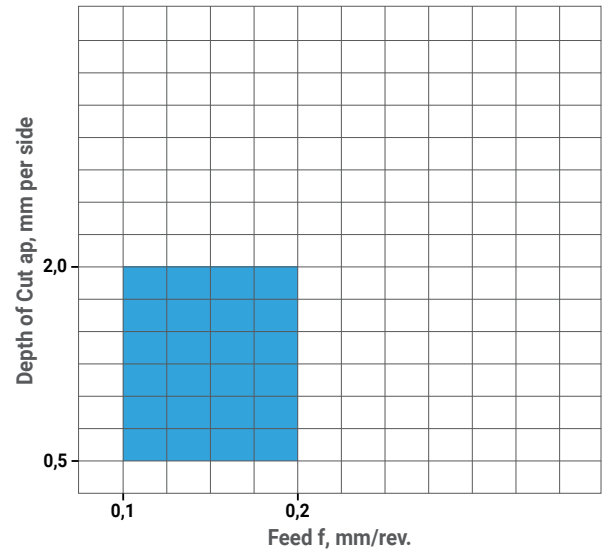
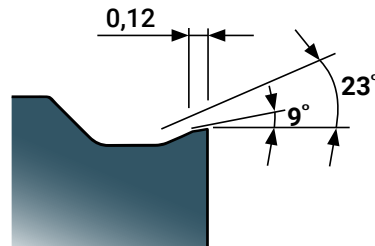
NF

Steel Finishing



NF Geometry designed for finishing and general machining of Steel. Good chip flow, reduced stresses and temperature.

Insert	CP 115	CP 125
CNMG 090304-NF	•	
CNMG 120404-NF	•	•
CNMG 120408-NF	•	•
DNMG 110404-NF	•	•
DNMG 150604-NF	•	
DNMG 150608-NF	•	
VNMG 160404-NF	•	
WNMG 060404-NF	•	
WNMG 080404-NF	•	



ISO Group	CVD Coating	Cutting Speed, Vc, m/min
05		620
10		570
15		520
20		470
25		420
30		370
35		320
40		270
45		240
50		210
		180
		150
		120
		105
		90
		75
		60
		45
		30
		15

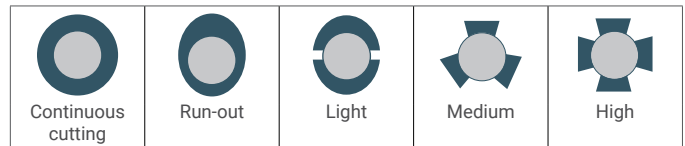
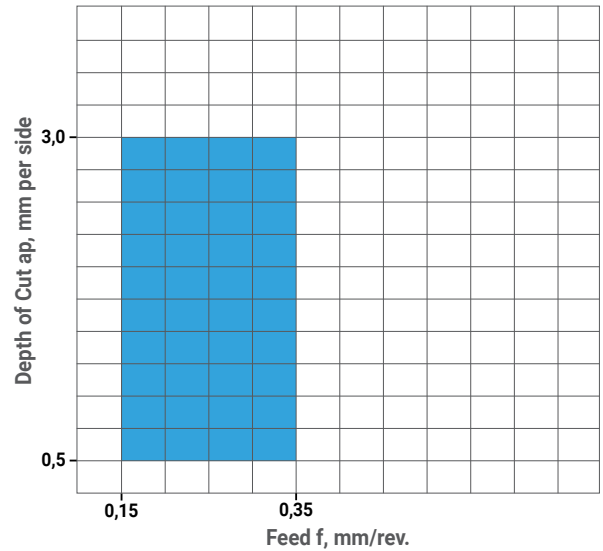
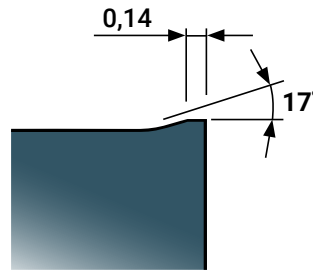
NFW

High Performance Turning for Steel



NFW geometry designed for high-performance finishing and general machining. The wiper cutting edge allows to increase the feed up to two times with the same surface quality, or to obtain two times better roughness on the same feed. **NFW** not recommended for low rigidity system.

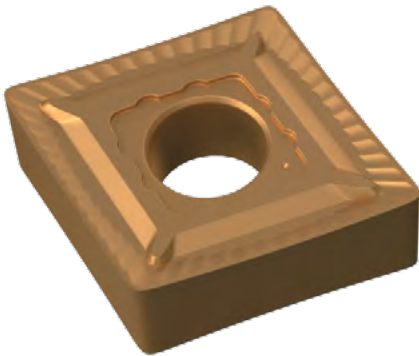
Insert	CP115
CNMX 120404-NFW	•
CNMX 120408-NFW	•
DNMX 150604-NFW	•
DNMX 150608-NFW	•
WNMX 080404-NFW	•
WNMX 080408-NFW	•



ISO Group	CVD Coating	Cutting Speed, Vc, m/min
05		620
10		570
15		520
20		470
25		420
30		370
35		320
40		270
45		240
50		210
		180
		150
		120
		105
		90
		75
		60
		45
		30
		15

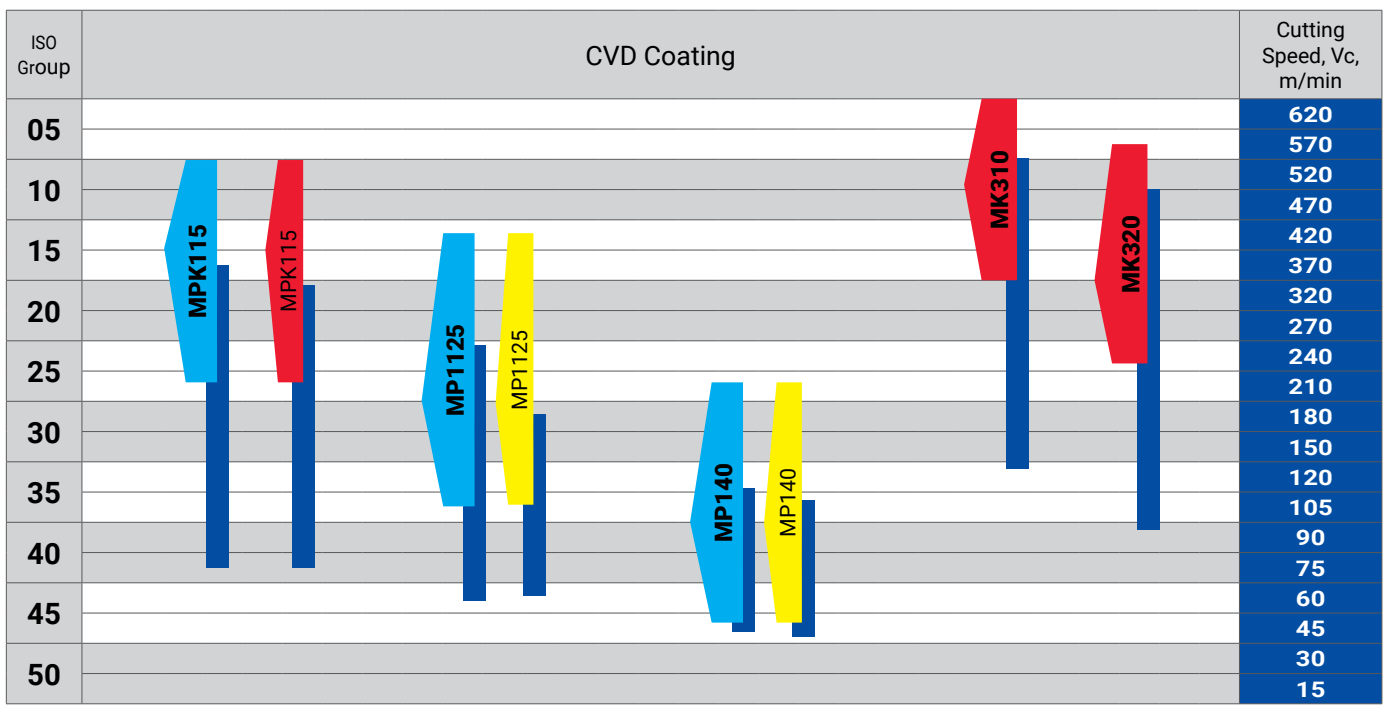
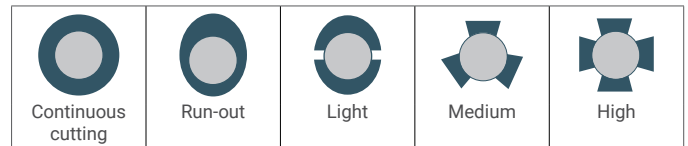
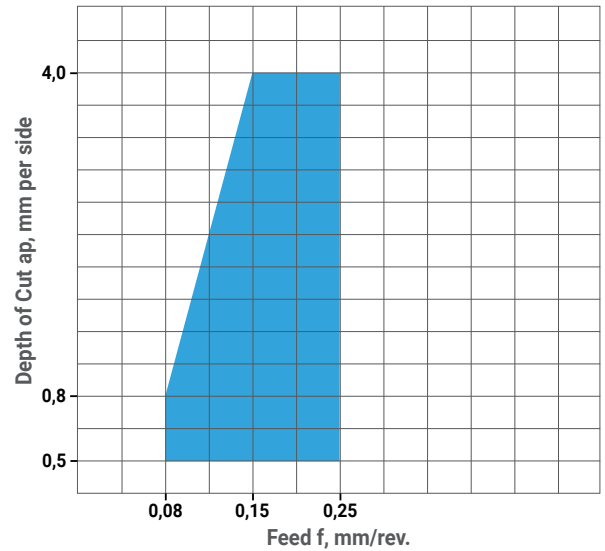
NF4

Light turning



NF4 Geometry is the alternative for steel finishing and general machining when sharp cutting edge needed. Good chip flow and wide cutting depths range.

Insert	MPK115	MP1125	MP140
CNMG 120404-NF4	•	•	
CNMG 120408-NF4	•	•	•
DNMG 110404-NF4	•	•	•
DNMG 110408-NF4	•	•	
DNMG 150408-NF4		•	
DNMG 150604-NF4	•	•	•
DNMG 150608-NF4	•	•	•
SNMG 090304-NF4	•	•	
TNMG 160404-NF4	•	•	•
TNMG 160408-NF4	•	•	•
TNMG 160412-NF4		•	•
VNMG 160408-NF4	•	•	
WNMG 060404-NF4	•	•	•
WNMG 060408-NF4	•	•	•
WNMG 080404-NF4	•	•	•
WNMG 080408-NF4	•	•	•



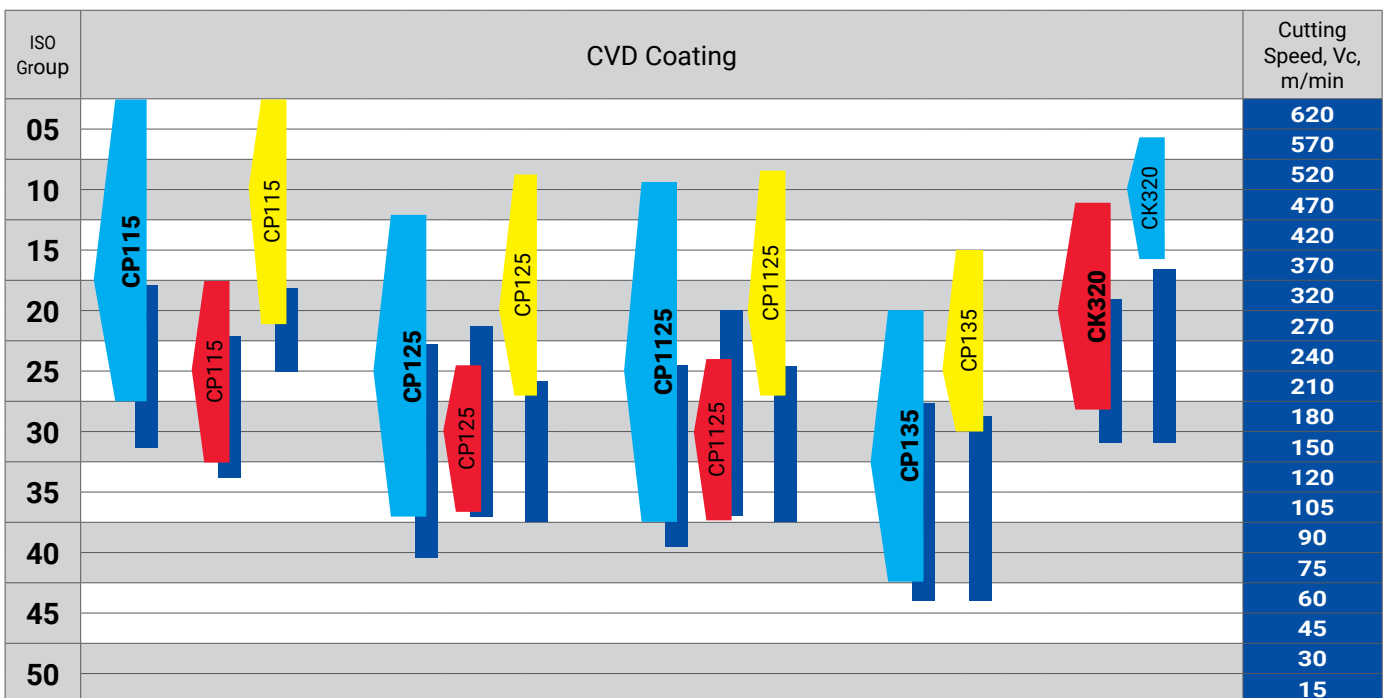
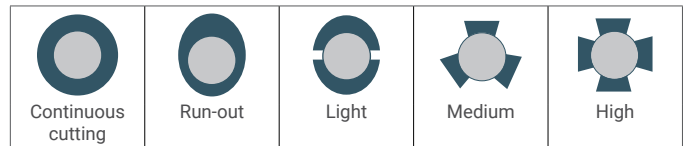
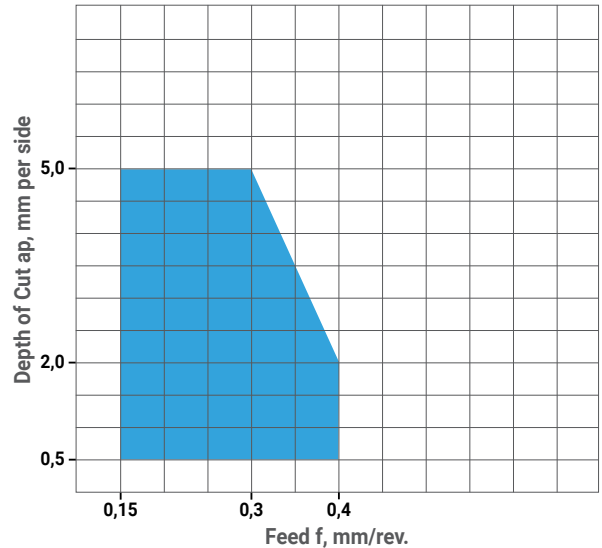
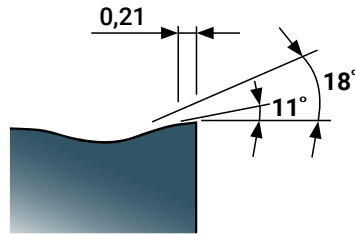
NM50

General Machining of Steel



NM50 Geometry is the First Choice for Steel General Machining: Semi-finishing to Light Roughing.

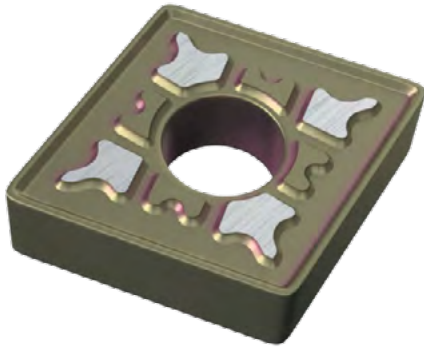
Insert	CP 115	CP 125	CP 135	CP 1125	CK 320
CNMG 120404-NM50	•	•			
CNMG 120408-NM50	•	◦	•	•	•
CNMG 120412-NM50	•	◦	•	•	•
DNMG 110404-NM50	•	•			
DNMG 110408-NM50	•	•	•		
DNMG 150404-NM50		•			
DNMG 150408-NM50		•			
DNMG 150604-NM50	•	•			
DNMG 150608-NM50	•	•	•	•	•
DNMG 150612-NM50	•	•	•	•	•
SNMG 120408-NM50	•	•	•	•	
SNMG 120412-NM50	•	•	•		
TNMG 160404-NM50	•	•			
TNMG 160408-NM50	•	•	•	•	•
TNMG 160412-NM50	•	•		•	
TNMG 220404-NM50		•			
TNMG 220408-NM50		•			•
VNMG 160404-NM50	•	•			
VNMG 160408-NM50	•	•			
WNMG 060404-NM50	•	•			
WNMG 060408-NM50	•	•			
WNMG 080404-NM50	•	•			
WNMG 080408-NM50	•	•	•	•	•
WNMG 080412-NM50	•	•	•	•	•



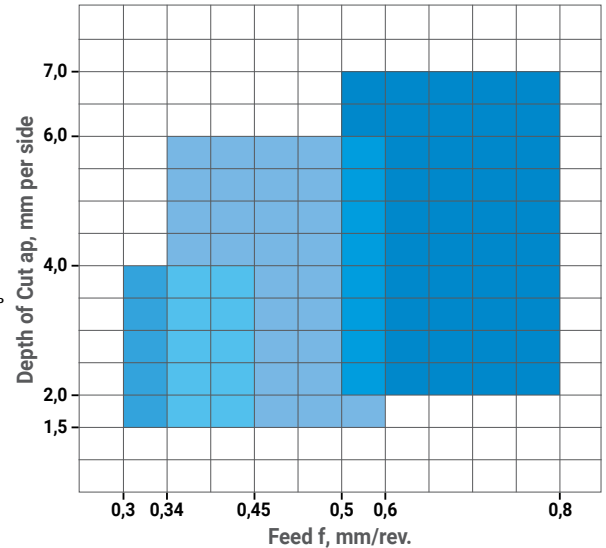
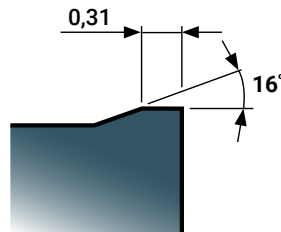
NM8

General Machining, Light Roughing

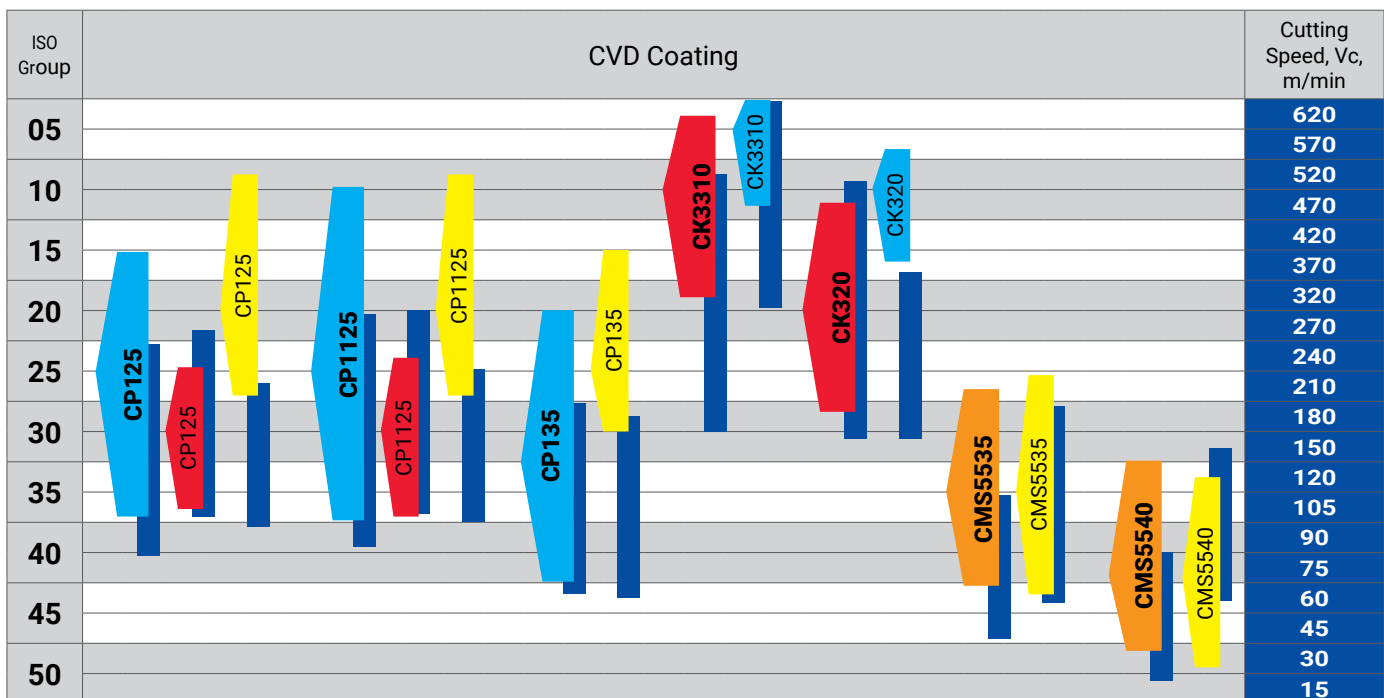
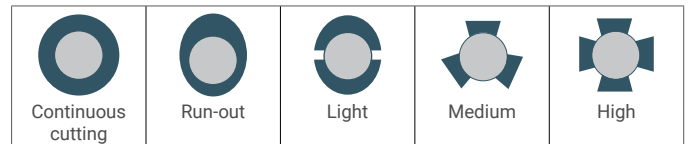
NM8 Geometry is for General Machining of Steel, Cast Iron and Super Alloy, Ferritic and Martensitic Stainless Steel. Light roughing is also possible.



Insert	CP 125	CP 135	CP 1125	CK 3310	CMS 5535	CMS 5540
CNMG 120408-NM8		•		•	•	•
CNMG 120412-NM8				•		
CNMG 160608-NM8		•				
CNMG 160612-NM8	•	•		•		
CNMG 190612-NM8	◦	•	•	•	•	•
CNMG 190616-NM8	•	•			•	•
DNMG 150608-NM8						
SNMG 120408-NM8						
SNMG 120412-NM8				•		
SNMG 150612-NM8	•	•				
SNMG 190612-NM8	•	•				
TNMG 160408-NM8						
TNMG 220412-NM8	•					
WNMG 080408-NM8				•		
WNMG 080412-NM8				•		



CNMG1204.., DNMG1506.., SNMG1204.., TNMG1604.., WNMG0804..
 CNMG1606.., SNMG1506.., TNMG2204..
 CNMG1906.., SNMG1906..



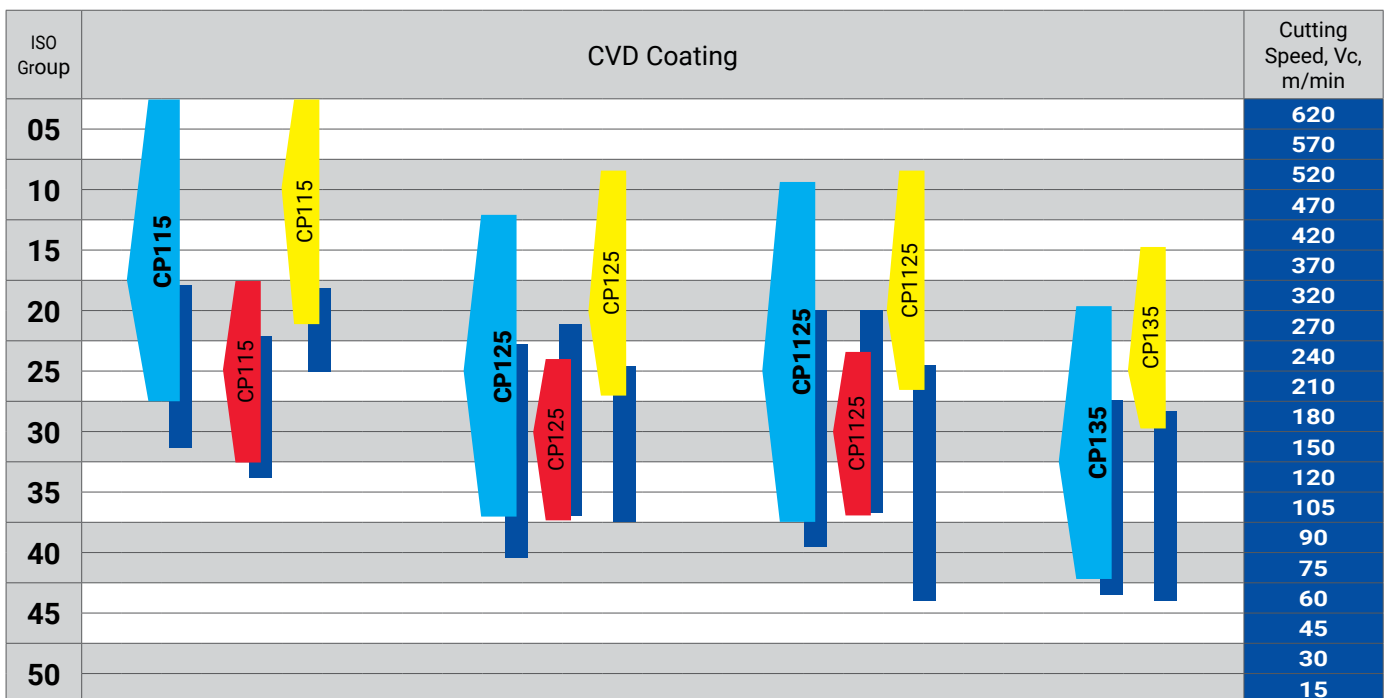
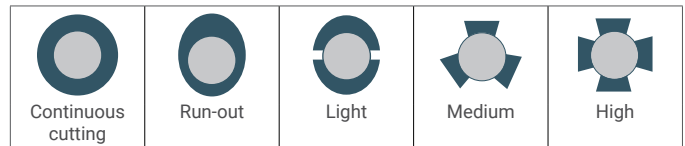
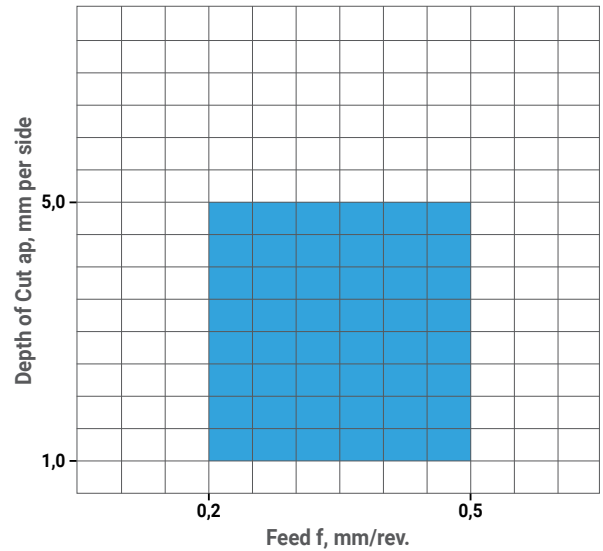
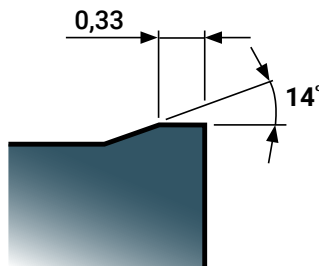
NR33

Steel Roughing



NR33 Geometry is the First Choice for Steel General Machining: Roughing to General Purpose.

Insert	CP 115	CP 125	CP 135	CP 1125
CNMG 120408-NR33	•	○		•
CNMG 120412-NR33		•		
DNMG 150608-NR33	•	•	•	
DNMG 150612-NR33	•	•	•	
SNMG 120408-NR33		•		
SNMG 120412-NR33		•		
TNMG 160408-NR33		•		
TNMG 160412-NR33		•		
WNMG 080408-NR33		•		
WNMG 080412-NR33		•		



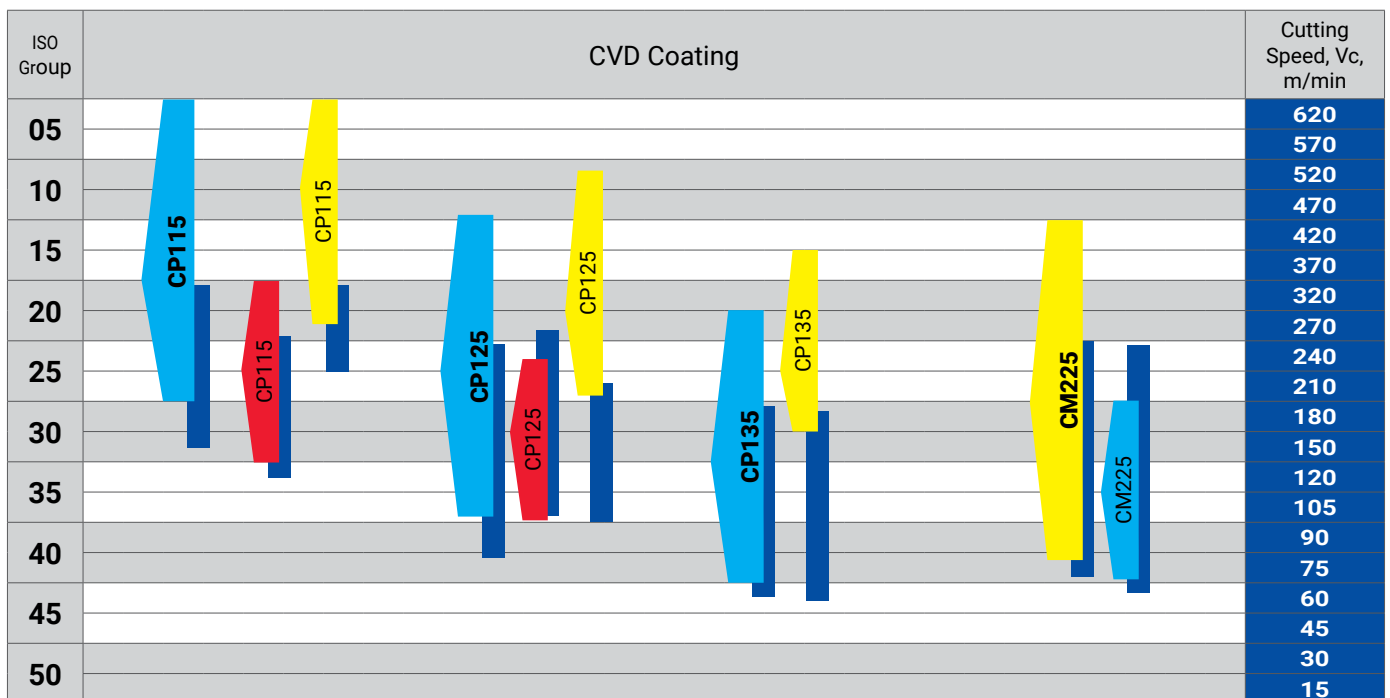
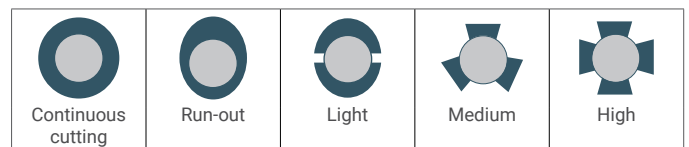
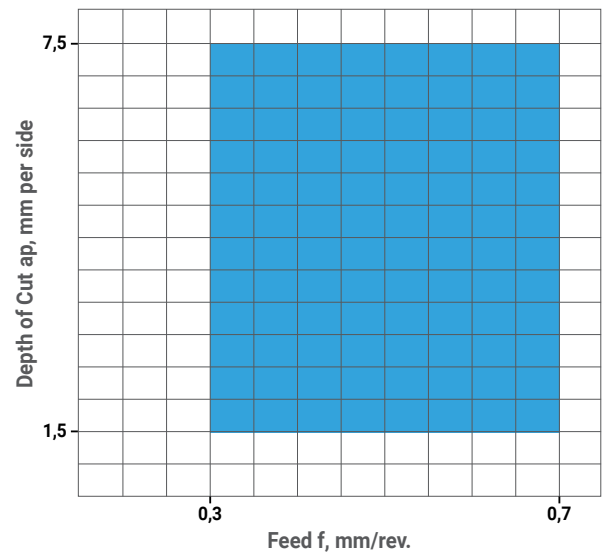
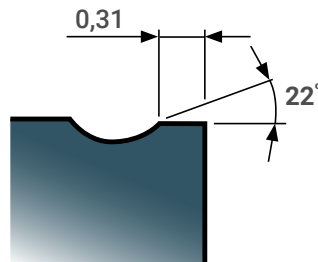
NR48

Steel Turning, Roughing



NR48 Geometry designed for Rough Turning of Steel up to 800 N/mm². Provides good chip flow. Interrupted cutting is possible. **NR48** insert is Single sided.

Insert	CP 115	CP 125	CP 135
CNMM 120408-NR48	•	•	•
CNMM 120412-NR48		•	
DNMM 150608-NR48	•	•	•



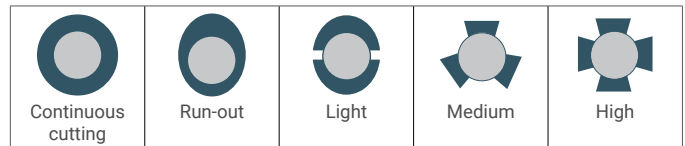
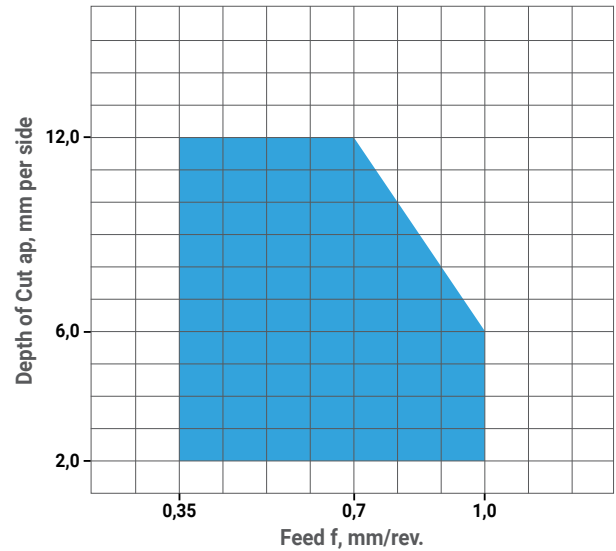
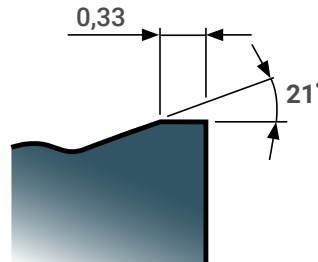
NR58

Coarse Roughing of Steel



NR58 Geometry, single sided, with well cutting edge reliability, designed for Steel Coarse Roughing. Interrupted cutting is possible.

Insert	CP 115	CP 125	CP 135
CNMM 120412-NR58	•	•	•
CNMM 120416-NR58		•	•
CNMM 160612-NR58	•	•	•
CNMM 190612-NR58	•	•	•
CNMM 190616-NR58		•	
CNMM 250724-NR58		•	
CNMM 250924-NR58		•	
DNMM 150612-NR58	•	•	•
SNMM 190612-NR58		•	
SNMM 190616-NR58		•	
SNMM 250724-NR58		•	
SNMM 250924-NR58		•	•



ISO Group	CVD Coating	Cutting Speed, Vc, m/min
05		620
10		570
15		520
20		470
25		420
30		370
35		320
40		270
45		240
50		210
		180
		150
		120
		105
		90
		75
		60
		45
		30
		15

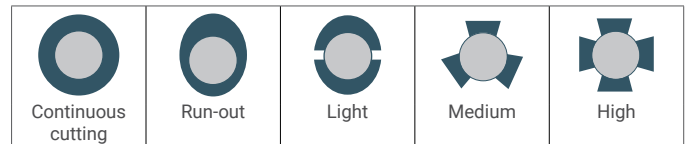
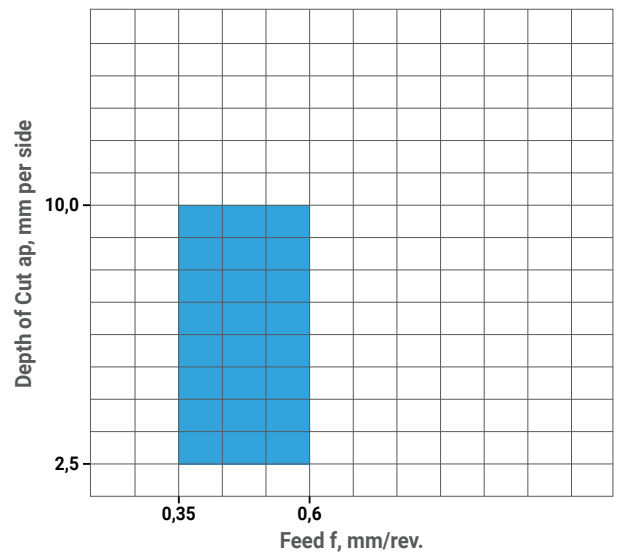
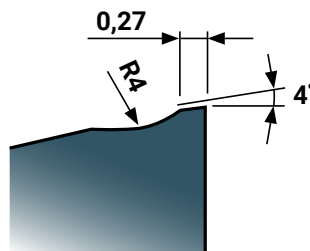
NR78

Steel Tube Turning, Roughing



NR78 Geometry designed for steel tube chamfering – low cutting forces and smooth cutting. Interrupted cut is also possible.

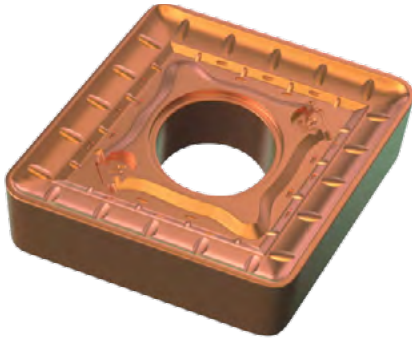
Insert	CP 125
SNMM 190616-NR78	•
SNMM 250924-NR78	•



ISO Group	CVD Coating	Cutting Speed, Vc, m/min
05		620
10		570
15		520
20		470
25		420
30		370
35		320
40		270
45		240
50		210
		180
		150
		120
		105
		90
		75
		60
		45
		30
		15

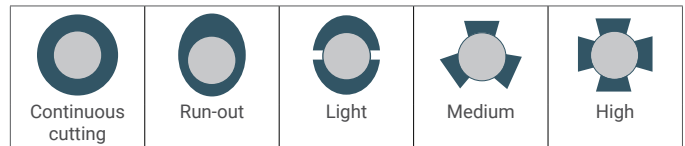
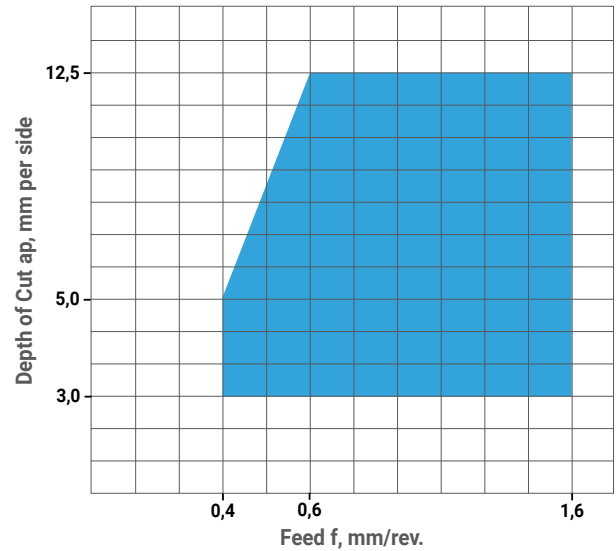
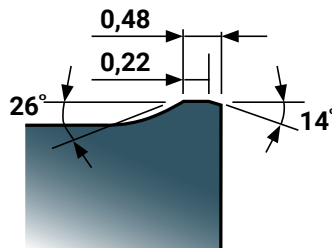
NR98

Heavy Duty Roughing for Steel



NR98 Geometry is especially suitable for Extremely Heavy conditions Turning – Heavy Interrupted Cutting, Thick Peel. **NR98** insert is Single sided.

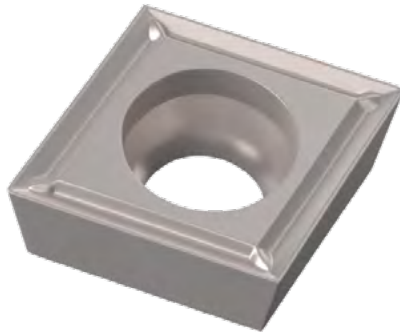
Insert	CP 125	CP 135
	CNMM 190616-NR98	•
CNMM 190624-NR98	•	
CNMM 250924-NR98	•	•
CNMM 250932-NR98	•	
SNMM 190616-NR98	•	
SNMM 190624-NR98	•	
SNMM 250924-NR98	•	•
SNMM 250932-NR98	•	



ISO Group	CVD Coating	Cutting Speed, Vc, m/min
05		620
10		570
15		520
20		470
25		420
30		370
35		320
40		270
45		240
50		210
		180
		150
		120
		105
		90
		75
		60
		45
		30
		15

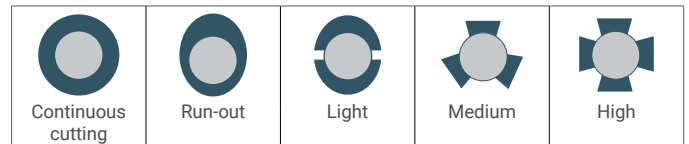
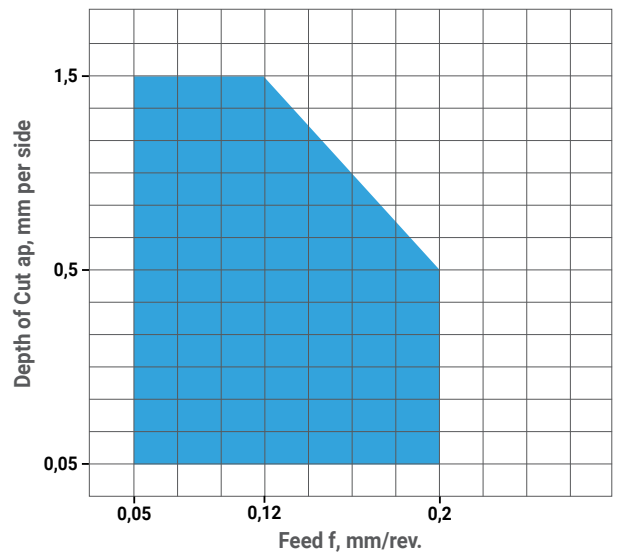
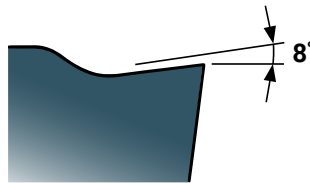
FF1

Steel finishing



FF1 Positive Geometry for **CMK210** Cermet inserts designed for high-speed steel finishing with uninterrupted cutting. Cast iron and stainless steel machining is also possible.

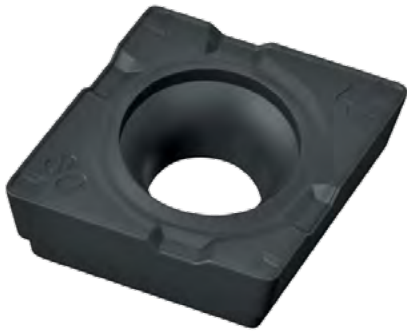
Insert	CMK210
CCMT 060204-FF1	•
CCMT 09T304-FF1	•
DCMT 070204-FF1	•
DCMT 11T304-FF1	•
TCGT 110202-FF1	•
TCMT 110204-FF1	•
WCGT 020102-FF1	•



ISO Group	Cermet	Cutting Speed, Vc, m/min
01		620
05		570
10		520
15		470
20		420
25		370
30		320
35		270
40		240
45		210
		180
		150
		120
		105
		90
		75
		60
		45
		30
		15

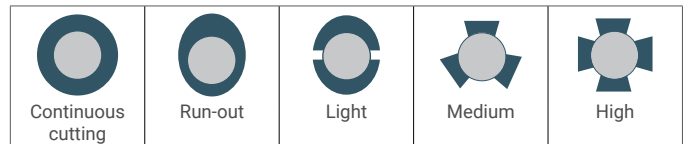
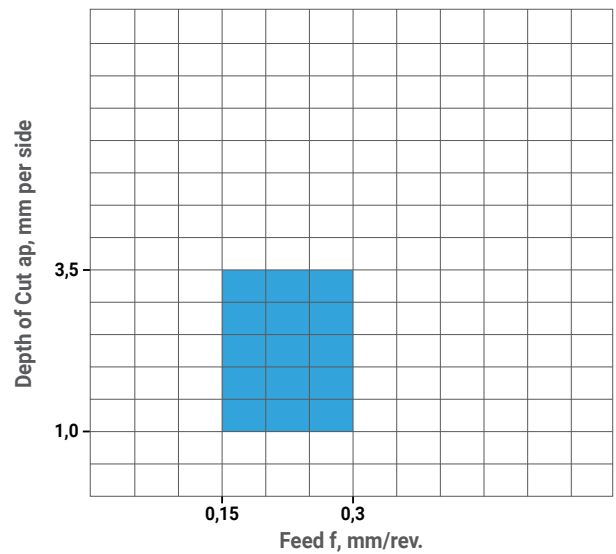
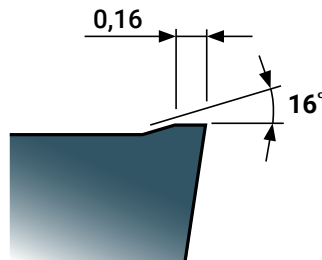
PM1

High Performance Finishing



Positive Geometry PM1 designed for High Performance General Machining and Finishing. Wiper cutting edge allows to increase the feed up to two times with the same surface quality, or to obtain two times better roughness on the same feed. PM1 not recommended for low rigidity system.

Insert	CP 125	CM 235
	CCMX 09T304-PM1	•
CCMX 09T308-PM1	•	•
DCMX 070204-PM1	•	
DCMX 11T304-PM1	•	•
DCMX 11T308-PM1	•	•



ISO Group	CVD Coating	PVD Coating	Cutting Speed, Vc, m/min
05			620
10			570
15			520
20			470
25			420
30			370
35			320
40			270
45			240
50			210
			180
			150
			120
			105
			90
			75
			60
			45
			30
			15

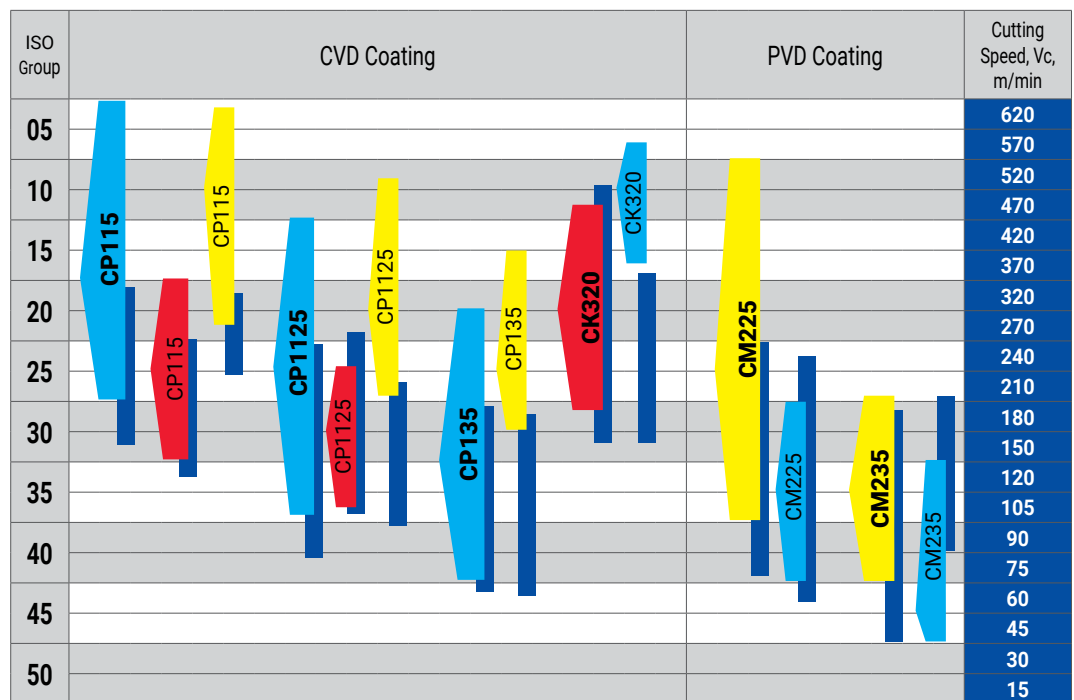
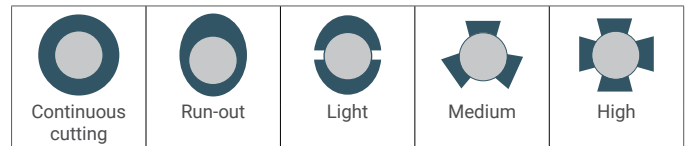
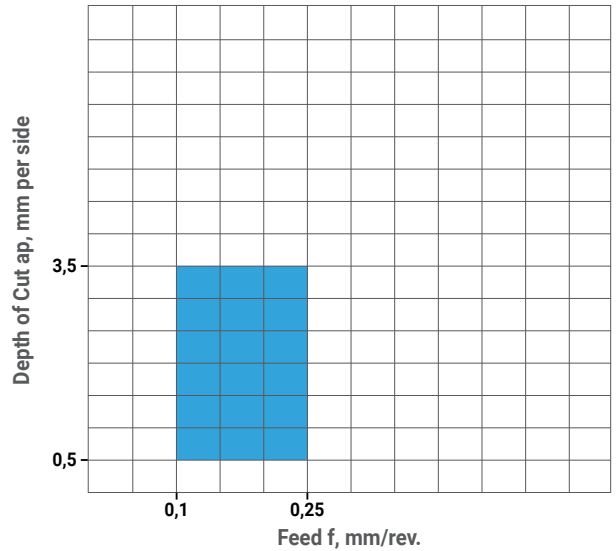
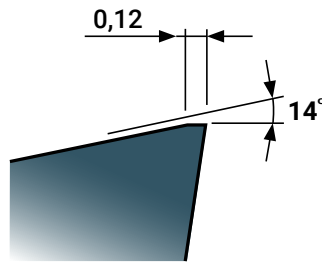
PM3

General Machining, Roughing



Positive Geometry PM3 is the First Choice for steel turning – General Machining to Roughing. Interrupted cutting is also possible. Low cutting forces and good chip flow at all range of feeds and depth.

Insert	Coating				
	CP 115	CP 125	CP 135	CM 225	CK 320
CCMT 060204-PM3	•	•	•	•	•
CCMT 060208-PM3	•	•	•	•	•
CCMT 09T304-PM3	•	•	•	•	•
CCMT 09T308-PM3	•	•	•	•	•
CCMT 120404-PM3	•	•	•	•	•
CCMT 120408-PM3	•	•	•	•	•
CCMT 120412-PM3	•	•	•	•	•
DCMT 070204-PM3	•	•	•	•	•
DCMT 070208-PM3	•	•	•	•	•
DCMT 11T304-PM3	•	•	•	•	•
DCMT 11T308-PM3	•	•	•	•	•
RCMT 0803MO-PM3	•	•	•	•	•
RCMT 1003MO-PM3	•	•	•	•	•
RCMT 1204MO-PM3	•	•	•	•	•
SCMT 09T304-PM3	•	•	•	•	•
SCMT 09T308-PM3	•	•	•	•	•
SCMT 120404-PM3	•	•	•	•	•
SCMT 120408-PM3	•	•	•	•	•
SCMT 120412-PM3	•	•	•	•	•
TCMT 090204-PM3	•	•	•	•	•
TCMT 110204-PM3	•	•	•	•	•
TCMT 110208-PM3	•	•	•	•	•
TCMT 16T304-PM3	•	•	•	•	•
TCMT 16T308-PM3	•	•	•	•	•
TCMT 16T312-PM3	•	•	•	•	•
VBMT 160404-PM3	•	•	•	•	•
VBMT 160408-PM3	•	•	•	•	•
VCMT 110304-PM3	•	•	•	•	•
VCMT 110308-PM3	•	•	•	•	•
VCMT 160404-PM3	•	•	•	•	•
VCMT 160408-PM3	•	•	•	•	•
WCMT 040204-PM3	•	•	•	•	•
WCMT 040208-PM3	•	•	•	•	•
WCMT 050308-PM3	•	•	•	•	•
WCMT 06T304-PM3	•	•	•	•	•
WCMT 06T308-PM3	•	•	•	•	•
WCMT 080404-PM3	•	•	•	•	•
WCMT 080408-PM3	•	•	•	•	•
WCMT 080412-PM3	•	•	•	•	•



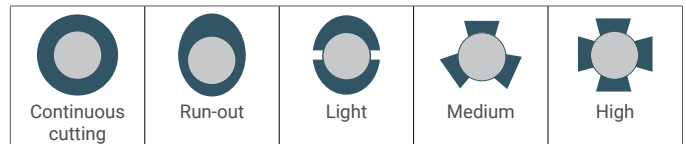
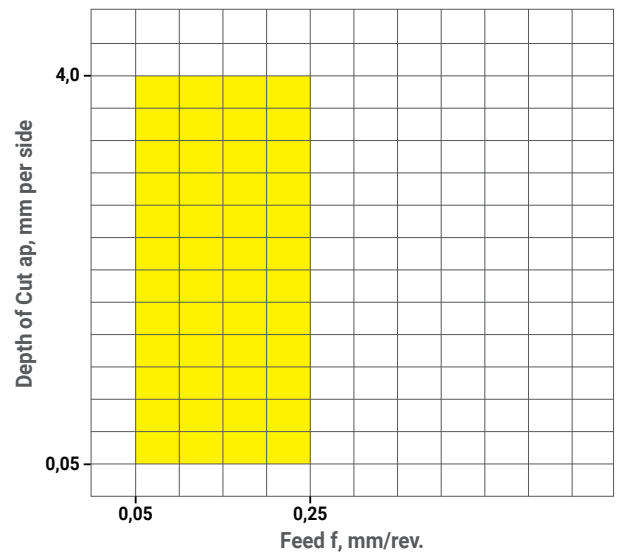
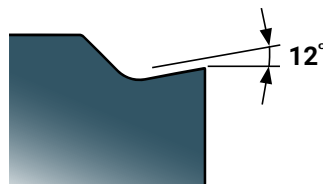
NF32

Stainless Steel Finishing



NF32 Geometry designed for finishing and general machining of Stainless Steel. Thanks to **NF32** sharp cutting edge combined with **CM2220** grade enhanced toughness, cast iron, lighth alloy and super alloy finishing is also possible.

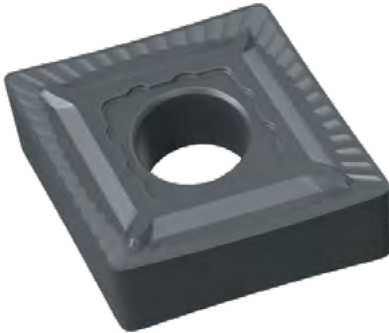
Insert	CM 2220
CNGP 120402-NF32	•
CNGP 120404-NF32	•
CNGP 120408-NF32	•
CNGP 120412-NF32	•
DNGP 150404-NF32	•
DNGP 150602-NF32	•
DNGP 150604-NF32	•
DNGP 150608-NF32	•
VNGP 160402-NF32	•
VNGP 160404-NF32	•
WNGP 080404-NF32	•
WNGP 080408-NF32	•



ISO Group	CVD Coating	Cutting Speed, Vc, m/min
05		620
10		570
15		520
20	CM2220	470
25	CM2220	420
30	CM2220	370
35	CM2220	320
40	CM2220	270
45	CM2220	240
50	CM2220	210
		180
		150
		120
		105
		90
		75
		60
		45
		30
		15

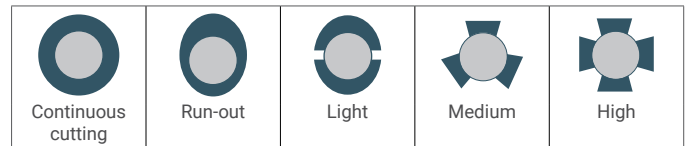
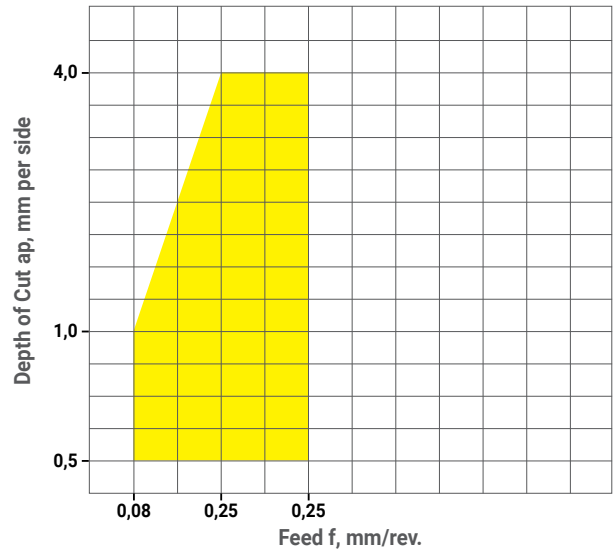
NF5

Stainless Steel Finishing



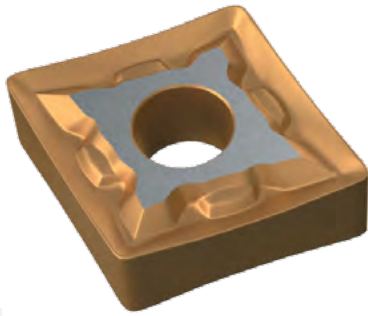
NF5 Geometry is for Stainless Steel General Machining to Finishing by uninterrupted cutting. Good chip flow over the whole application range.

Insert	MM 209	MM 208	MM 235	MM 2220
CNMG 090304-NF5	•		•	•
CNMG 120404-NF5	•		•	
CNMG 120408-NF5	•	◦	•	
CNMG 120412-NF5	•		•	
DNMG 110404-NF5	•		•	
DNMG 110408-NF5	•			
DNMG 150604-NF5	•		•	
DNMG 150608-NF5	•		•	
SNMG 090304-NF5	•		•	
TNMG 160404-NF5	•		•	
TNMG 160408-NF5	•		•	
WNMG 060404-NF5			•	
WNMG 080404-NF5	•		•	
WNMG 080408-NF5	•		•	



ISO Group	PVD Coating	CVD Coating	Cutting Speed, Vc, m/min
05			620
			570
10			520
			470
15			420
			370
20	MM209	MM220	320
	MM209	MM220	270
25			240
			210
30	MM208	MM235	180
	MM208	MM235	150
35			120
			105
40			90
			75
45			60
			45
50			30
			15

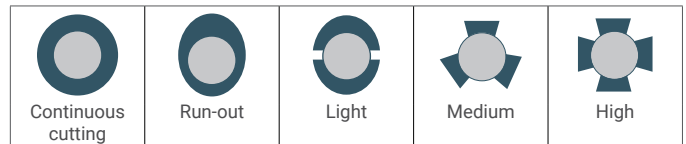
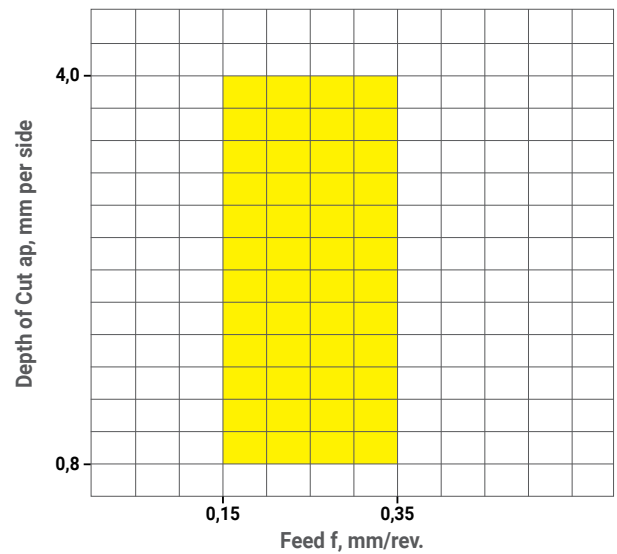
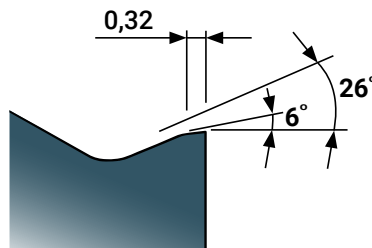
NM34



General Machining of Stainless Steel

NM34 Geometry designed for Stainless Steel General Machining. Balanced sharpness and cutting edge profile provides low cutting forces, good surface quality and reduced formation of burs with good edge lifetime.

Insert	CM225	CM2225
CNMG 090304-NM34	•	
CNMG 090308-NM34	•	
CNMG 120404-NM34	○	•
CNMG 120408-NM34	○	•
DNMG 110404-NM34	•	
DNMG 110408-NM34	•	
DNMG 150404-NM34	•	
DNMG 150408-NM34	•	
DNMG 150604-NM34	○	•
DNMG 150608-NM34	○	•
SNMG 120408-NM34	•	
TNMG 160404-NM34	•	
TNMG 160408-NM34	•	
VNMG 160408-NM34	•	
WNMG 060404-NM34	•	
WNMG 060408-NM34	•	
WNMG 080404-NM34	○	•
WNMG 080408-NM34	○	•
WNMG 080412-NM34	•	



ISO Group	PVD Coating	CVD Coating	Cutting Speed, Vc, m/min
05			620
10			570
15			520
20			470
25			420
30			370
35			320
40			270
45			240
50			210
			180
			150
			120
			105
			90
			75
			60
			45
			30
			15

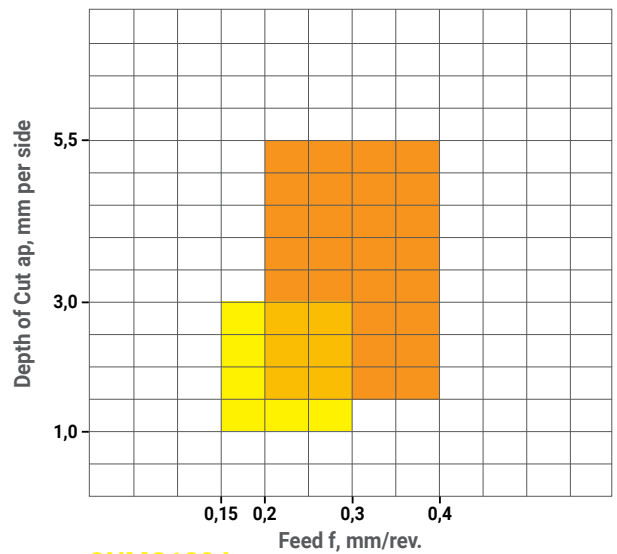
NM41



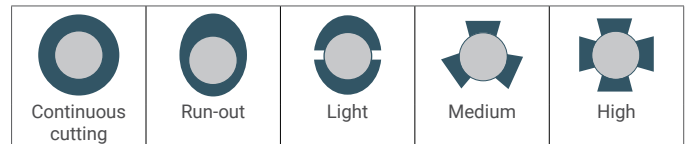
General Machining of Stainless Steel

NM41 Geometry designed for Stainless Steel General Machining. **NM41** has stronger cutting edge compare to **NM34**. Light interrupted cutting is available.

Insert	MM 220	MM 208	MM 209
CNMG 120408-NM41	•	•	•
CNMG 120412-NM41	•	•	•
CNMG 160612-NM41	•	•	•
CNMG 160616-NM41	•	•	•
CNMG 190612-NM41	•	•	•
CNMG 190616-NM41	•	•	•
DNMG 110404-NM41		•	
DNMG 110408-NM41		•	
DNMG 150404-NM41	•	•	
DNMG 150408-NM41	•	•	
DNMG 150604-NM41	•	•	
DNMG 150608-NM41	•	•	•
DNMG 150612-NM41	•	•	•
SNMG 120408-NM41		•	•
SNMG 120412-NM41		•	•
SNMG 150612-NM41	•	•	•
SNMG 150616-NM41	•	•	•
SNMG 190612-NM41	•		•
SNMG 190616-NM41	•		•
WNMG 060404-NM41		•	
WNMG 080408-NM41	•	•	
WNMG 080412-NM41	•	•	
WNMG 080416-NM41		•	



CNMG1204..
CNMG1906..



ISO Group	PVD Coating	CVD Coating	Cutting Speed, Vc, m/min
05			620
10			570
15			520
20			470
25			420
30			370
35			320
40			270
45			240
50			210
			180
			150
			120
			105
			90
			75
			60
			45
			30
			15

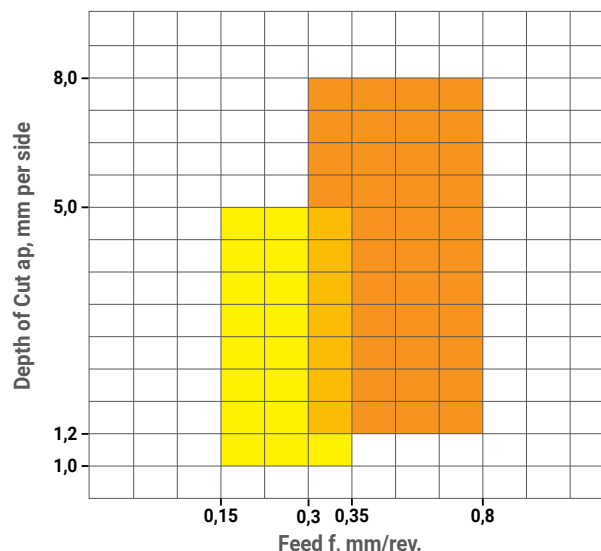
NM6

General Machining, Light Roughing. Stainless Steel

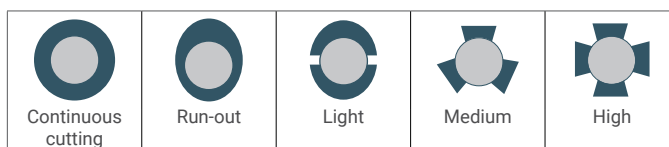


NM6 Geometry is for General Machining of Stainless Steel. Good balance between cutting edge sharpness and toughness. Light roughing is also possible.

Insert	MM 235	MM 208	MM 208
CNMG 120408-NM6	•	•	•
CNMG 120412-NM6	•	•	•
CNMG 160612-NM6	•	•	•
CNMG 160616-NM6		•	•
CNMG 190612-NM6	•	•	•
DNMG 150608-NM6	•	•	•
DNMG 150612-NM6	•	•	•
SNMG 120408-NM6	•		
SNMG 120412-NM6	•		•
SNMG 190612-NM6	•		•
SNMG 190616-NM6			•
WNMG 080408-NM6	•	•	•
WNMG 080412-NM6	•	•	•



CNMG1204..
CNMG1906..



ISO Group	PVD Coating	CVD Coating	Cutting Speed, Vc, m/min
05			620
10			570
15			520
20			470
25			420
30			370
35			320
40			270
45			240
50			210
			180
			150
			120
			105
			90
			75
			60
			45
			30
			15

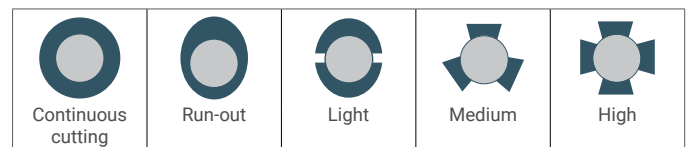
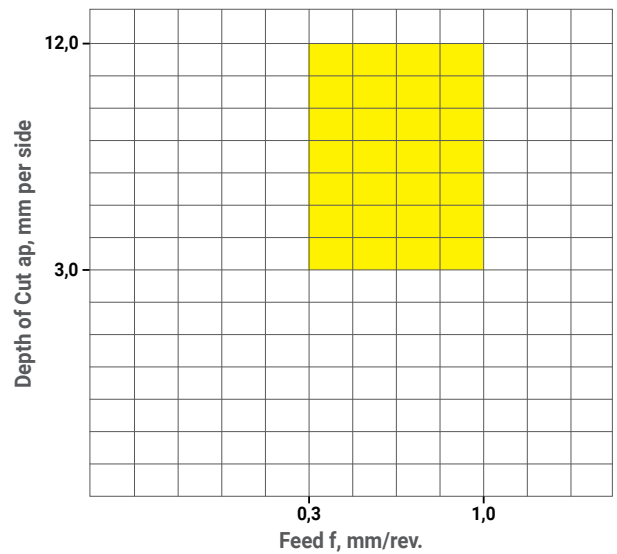
NM9

Stainless Steel Large Parts Roughing



NM9 Geometry designed for Stainless Steel Roughing. The cutting edge provides smooth cutting of Stainless Steel on high feed and high cutting depth. Interrupted cutting is also possible.

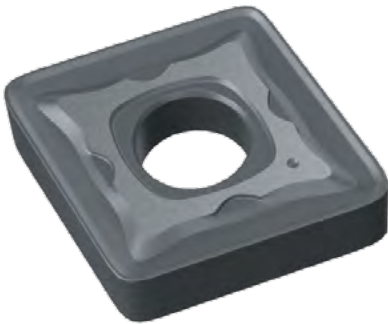
Insert	MM 209	MM 208
CNMG 190612-NM9	•	•
SNMG 250924-NM9	•	•



ISO Group	PVD Coating	Cutting Speed, Vc, m/min
05		620
10		570
15		520
20		470
25		420
30		370
35		320
40		270
45		240
50		210
		180
		150
		120
		105
		90
		75
		60
		45
		30
		15

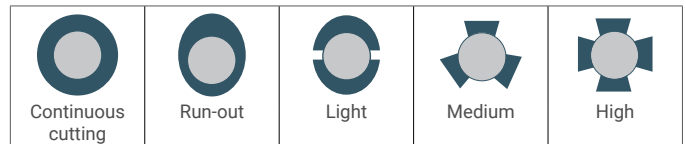
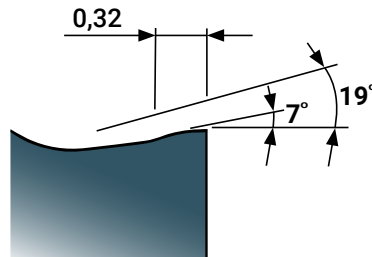
NR2

Stainless Steel Roughing



NR2 Geometry designed for Stainless Steel Roughing. The cutting edge provides smooth cutting of Stainless Steel on high feed and high cutting depth. Interrupted cutting is also possible.

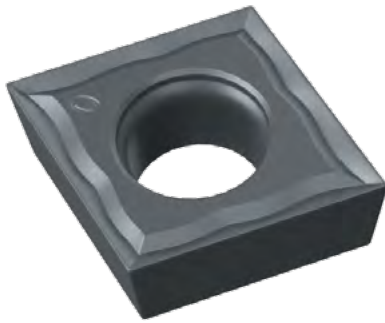
Insert	CM225		CM2225	
	○	●	○	●
CNMG 120408-NR2	○	●		
CNMG 120412-NR2			●	
DNMG 150608-NR2			●	
DNMG 150612-NR2			●	
TNMG 160408-NR2			●	
TNMG 160412-NR2			●	
WNMG 080408-NR2			●	
WNMG 080412-NR2			●	



ISO Group	PVD Coating		CVD Coating		Cutting Speed, Vc, m/min
	CM225	CM2225	CM225	CM2225	
05					620
10					570
15					520
20					470
25					420
30					370
35					320
40					270
45					240
50					210
					180
					150
					120
					105
					90
					75
					60
					45
					30
					15

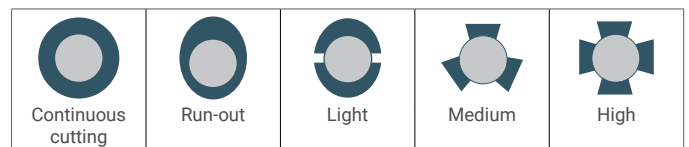
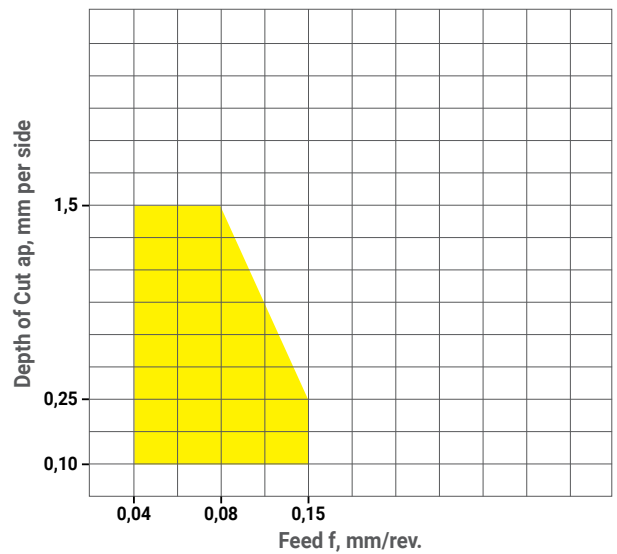
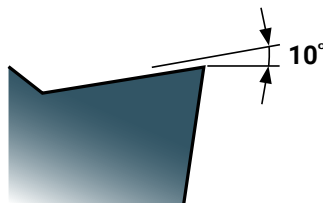
01

Stainless Steel Fine Turning



01 Geometry designed for Stainless Steel Fine Turning. Thanks to 01 sharp cutting edge combined with **CM2220** grade enhanced toughness, light alloy and super alloy Fine Turning is also possible.

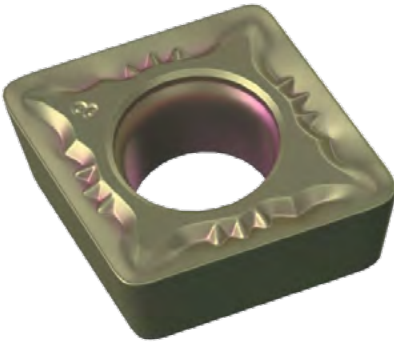
Insert	CM 2220
CCGT 060200-01	•
CCGT 060201-01	•
CCGT 09T300-01	•
CCGT 09T301-01	•
DCGT 070200-01	•
DCGT 070201-01	•
DCGT 11T300-01	•
DCGT 11T301-01	•
VCGT 110300-01	•
VCGT 110301-01	•
VCGT 160400-01	•
VCGT 160401-01	•



ISO Group	PVD Coating	Cutting Speed, Vc, m/min
05		620
10		570
15		520
20	CM2220	470
25	CM2220	420
30	CM2220	370
35	CM2220	320
40	CM2220	270
45	CM2220	240
50	CM2220	210
	CM2220	180
	CM2220	150
	CM2220	120
	CM2220	105
	CM2220	90
	CM2220	75
	CM2220	60
	CM2220	45
	CM2220	30
	CM2220	15

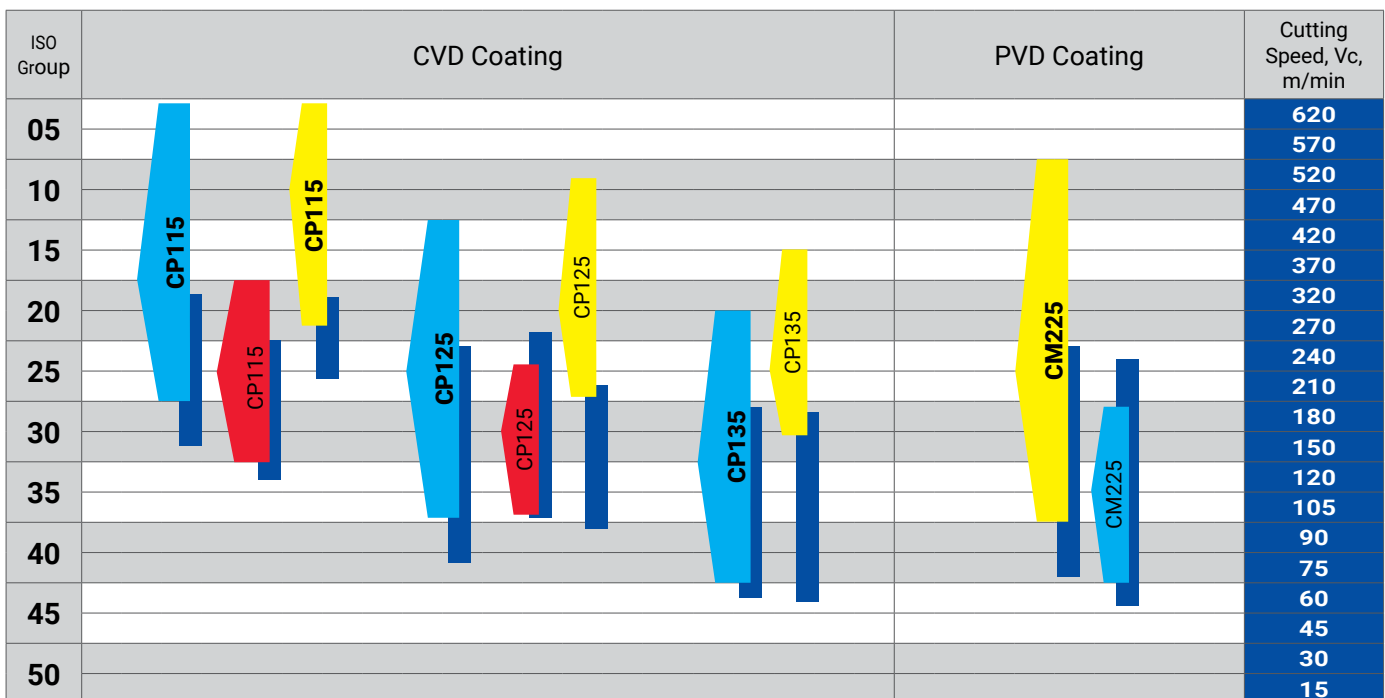
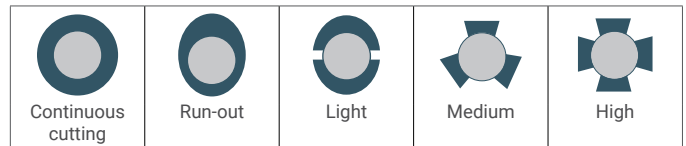
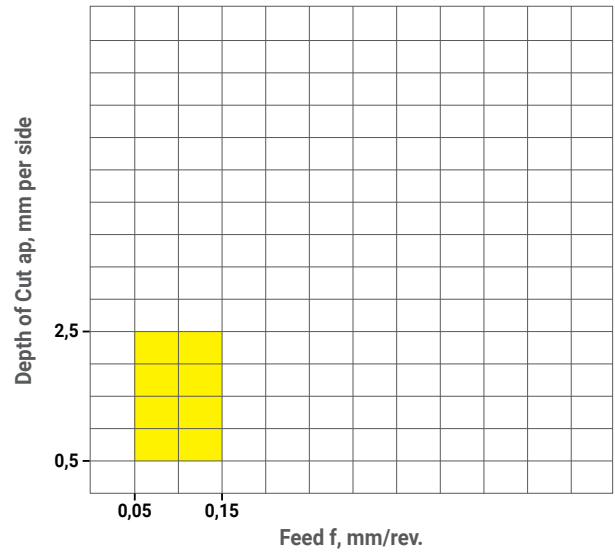
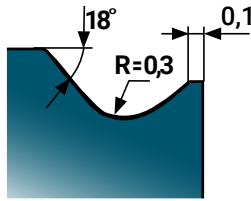
WF

Stainless Steel Finishing



WF Geometry is for Stainless Steel Finishing to General Machining uninterrupted cutting either for Steel Turning with appropriate grades. First Choice for Stainless Steel. Good chip flow over the whole application range, low cutting force.

Insert	CP 115	CP125	CP135	CM225
CCMT 060202-WF		•		•
CCMT 060204-WF	•	•		•
CCMT 09T302-WF		•		•
CCMT 09T304-WF	•	•		•
CCMT 09T308-WF	•	•	•	•
CCMT 120404-WF	•			
DCMT 070202-WF	•	•		•
DCMT 070204-WF	•	•		•
DCMT 11T302-WF	•	•		•
DCMT 11T304-WF		•		•
DCMT 11T308-WF		•		•
TCMT 110202-WF				•
VCMT 110302-WF	•	•		•
VCMT 110304-WF		•		•
VCMT 160404-WF		•		•
VCMT 160408-WF		•		



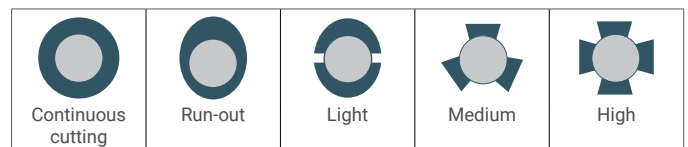
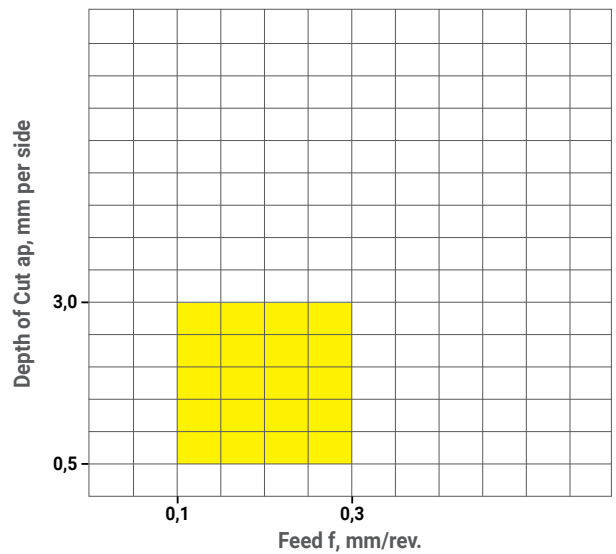
PF4

Stainless Steel General Machining



PF4 Geometry designed for Stainless Steel and Super Alloy General Machining with positive inserts. Light interrupted cutting is also possible.

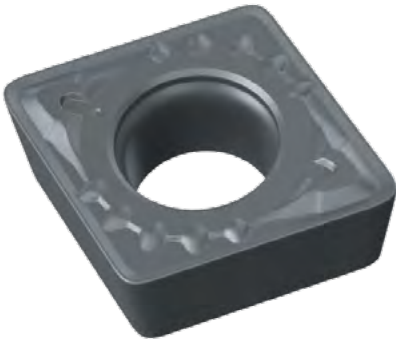
Insert	MM 235	MS515
CCMT 09T304-PF4	•	
CCMT 09T308-PF4	•	
CCMT 120404-PF4	•	
CCMT 120408-PF4	•	
DCMT 11T304-PF4	•	•
DCMT 11T308-PF4	•	
SCMT 120408-PF4	•	
TCMT 110204-PF4	•	
TCMT 110208-PF4	•	
TCMT 16T304-PF4	•	
TCMT 16T308-PF4	•	
VCMT 160404-PF4	•	
VCMT 160408-PF4	•	
VCMT 160412-PF4	•	



ISO Group	PVD Coating	CVD Coating	Cutting Speed, Vc, m/min
05			620
10			570
15	MS515		520
20	MS515		470
25	MS515		420
30			370
35			320
40			270
45			240
50			210
			180
			150
			120
			105
			90
			75
			60
			45
			30
			15

PF41

General Machining and Roughing of Stainless Steel



PF41 Geometry is for Stainless Steel General Machining to Light Rourhing with positive inserts. Good chip flow in whole application range. Light interrupted cutting is also possible.

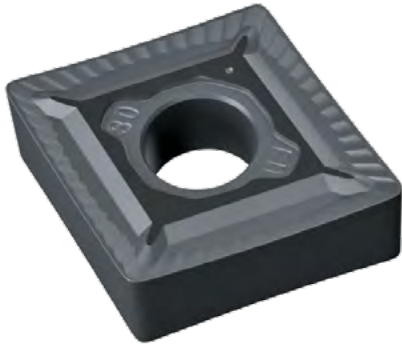
Insert	MM 220	MM 235	MM 209
CCMT 060202-PF41	•	•	•
CCMT 060204-PF41	•	•	•
CCMT 09T304-PF41	•		•
CCMT 09T308-PF41	•		•
CCMT 120404-PF41			•
CCMT 120408-PF41			•
DCMT 070204-PF41		•	•
DCMT 11T304-PF41	•		•
DCMT 11T308-PF41	•		•
VBMT 160404-PF41		•	•
VBMT 160408-PF41		•	•
VCMT 160404-PF41			•
VCMT 160408-PF41			•
VCMT 160412-PF41			•



ISO Group	PVD Coating	CVD Coating	Cutting Speed, Vc, m/min
05			620
10			570
15			520
20			470
25			420
30			370
35			320
40			270
45			240
50			210
			180
			150
			120
			105
			90
			75
			60
			45
			30
			15

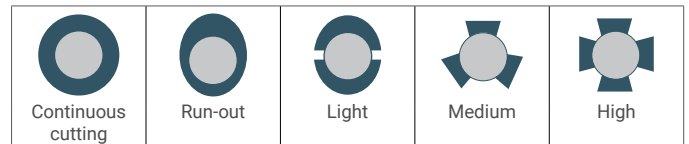
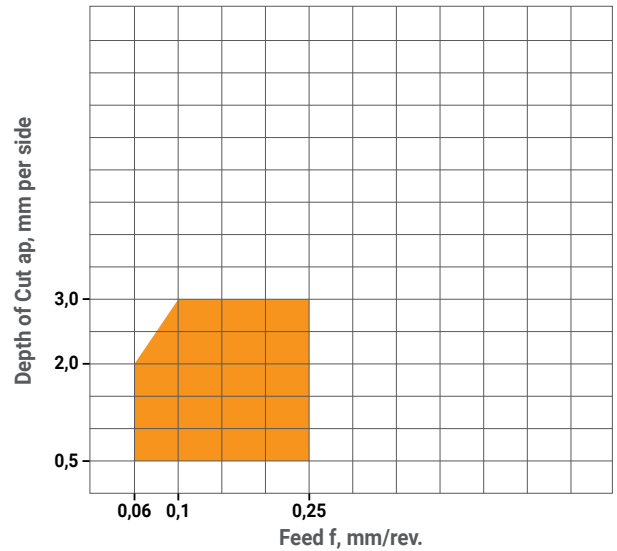
NF2

Super Alloy Finishing



NF2 Sharp Geometry is for Super Alloy General Machining to Finishing with uninterrupted cutting. Very good resistance against sticking.

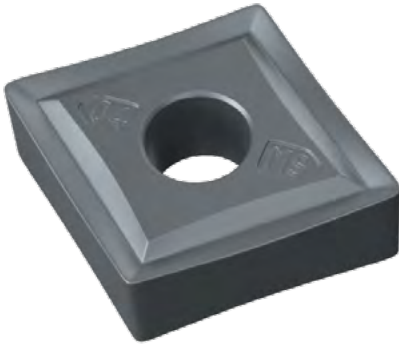
Insert	MS515	MST20
CNGG 120404-NF2	•	•
CNGG 120408-NF2	•	•
CNGG 120412-NF2	•	•
DNGG 150404-NF2	•	•
DNGG 150408-NF2	•	•
DNGG 150412-NF2	•	•
DNGG 150604-NF2	•	•
DNGG 150608-NF2	•	•
DNGG 150612-NF2	•	•
SNMG 120408-NF2	•	
SNMG 120412-NF2	•	
VNMG 160404-NF2	•	
VNMG 160408-NF2	•	
WNGG 060408-NF2	•	
WNGG 080404-NF2	•	
WNGG 080408-NF2	•	
WNGG 080412-NF2	•	



ISO Group	PVD Coating	Cutting Speed, Vc, m/min
05		620
10		570
15		520
20		470
25		420
30		370
35		320
40		270
45		240
50		210
		180
		150
		120
		105
		90
		75
		60
		45
		30
		15

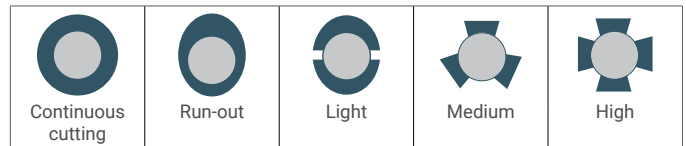
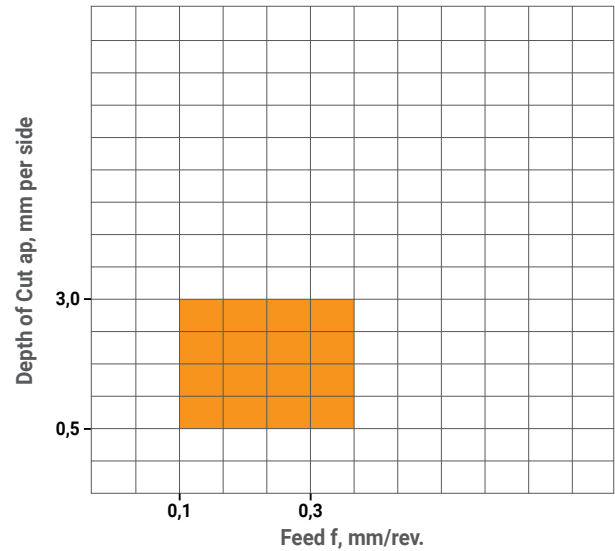
NM2

Super Alloy General Machining



NM2 Geometry designed for Super Alloy General Machining. Balanced sharpness and cutting edge toughness are provides good sticking resistance and good wear resistance. Stainless steel and Aluminium turning are also possible in some cases.

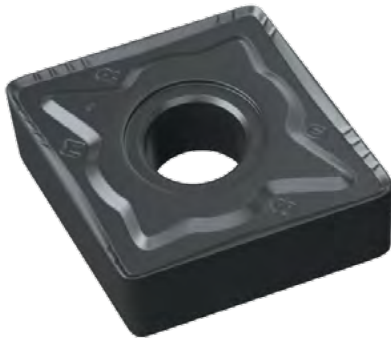
Insert	MS515
CNGG 120404-NM2	•
CNGG 120408-NM2	•
CNGG 120412-NM2	•
CNMG 120404-NM2	•
CNMG 120408-NM2	•
CNMG 120412-NM2	•
DNMG 150404-NM2	•
DNMG 150408-NM2	•
DNMG 150412-NM2	•
DNMG 150604-NM2	•
DNMG 150608-NM2	•
DNMG 150612-NM2	•
WNGG 080404-NM2	•
WNGG 080408-NM2	•
WNGG 080412-NM2	•
WNMG 080404-NM2	•
WNMG 080408-NM2	•
WNMG 080412-NM2	•



ISO Group	PVD Coating	Cutting Speed, Vc, m/min
05		620
10		570
15		520
20		470
25		420
30		370
35		320
40		270
45		240
50		210
		180
		150
		120
		105
		90
		75
		60
		45
		30
		15

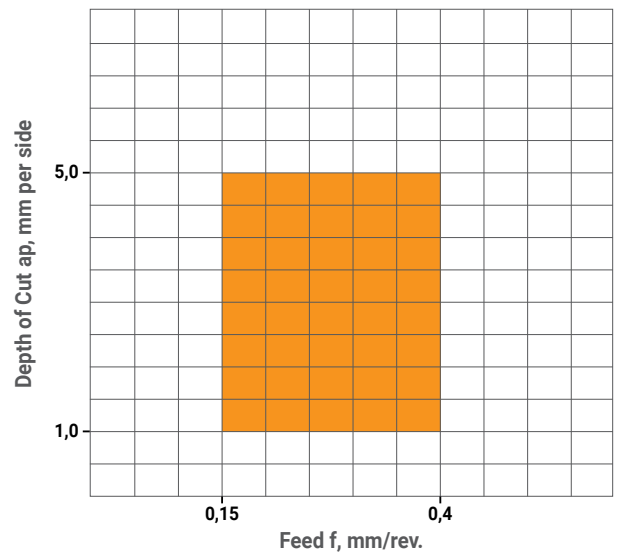
NM3

Super Alloy General Machining



NM3 Geometry designed for high performance General Machining of Super Alloy. The Cutting Edge is sharp and tough enough for high feed and high cutting depth turning without material sticking.

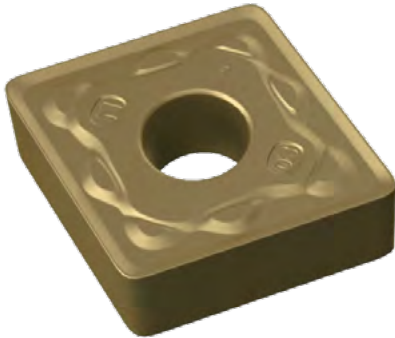
Insert	MS515	MST20
SNMG 120408-NM3	•	
SNMG 120412-NM3	•	
CNGG 120408-NM3	•	•
CNGG 120412-NM3	•	•



ISO Group	PVD Coating	Cutting Speed, Vc, m/min
05		620
10		570
15		520
20		470
25		420
30		370
35		320
40		270
45		240
50		210
		180
		150
		120
		105
		90
		75
		60
		45
		30
		15

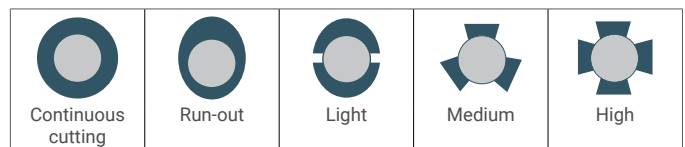
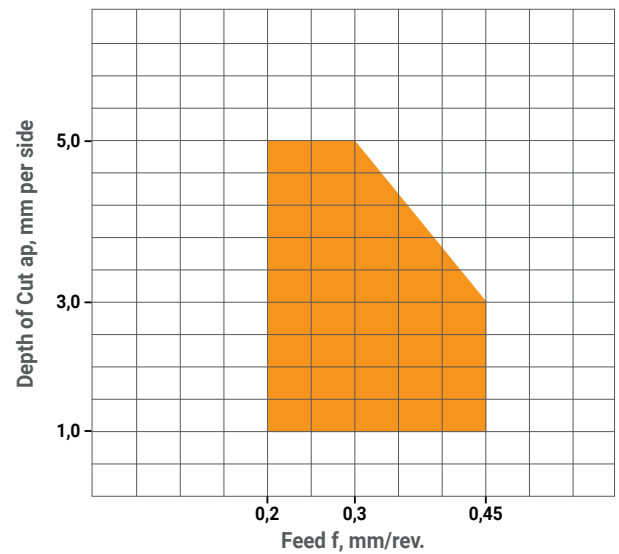
NM45

Titanium Alloy and Super Alloy General Machining



NM45 Geometry is for Titanium Alloy high performance General Machining. **NM45** Geometry is also an alternative choice for Super Alloy turning. It has the strong Cutting Edge. Light interrupted cutting is also possible.

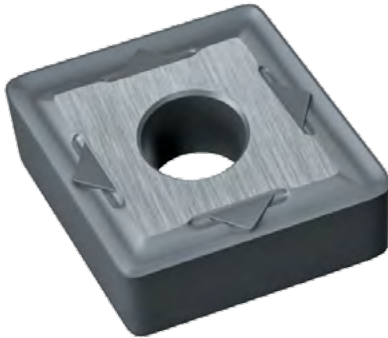
Insert	MST10	MST20
CNMG 120408-NM45	•	•
DNMG 150608-NM45	•	•
WNMG 080408-NM45	•	•



ISO Group	PVD Coating	CVD Coating	Cutting Speed, Vc, m/min
01			620
05			570
10			520
15			470
20			420
25			370
30			320
35			270
40			240
45			210
			180
			150
			120
			105
			90
			75
			60
			45
			30
			15

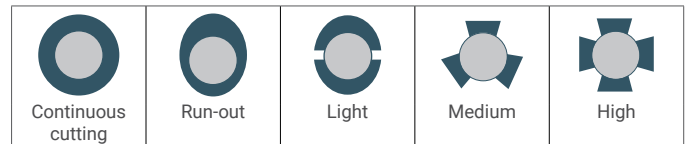
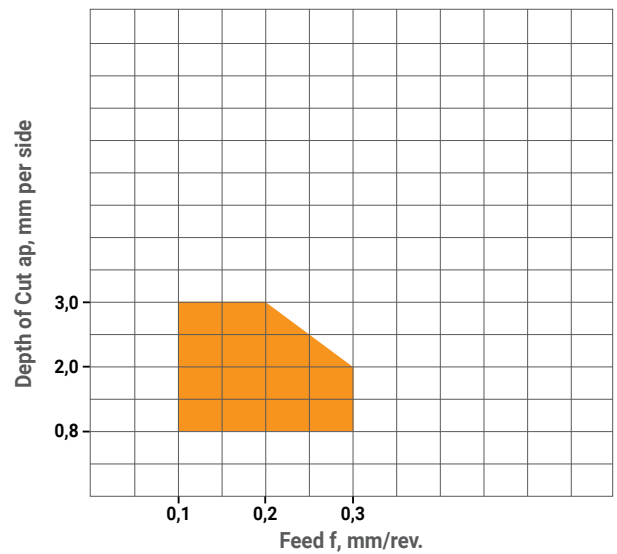
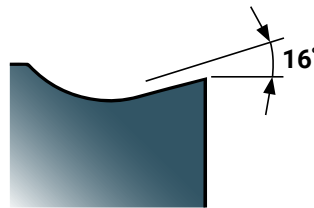
NM55

Super Alloy and Titanium Alloy Semi-Finishing



NM55 Geometry designed for Super Alloy and Titanium Alloy Semi-Finishing. Sharp Cutting Edge provides good chip flow over the whole application range. Light interrupted cutting is possible with **CMS5540** grade.

Insert	CMS5510	CMS5515	CMS5540
CNMG 120404-NM55	•	•	
CNMG 120408-NM55	•	•	•
CNMG 190616-NM55			•
DNMG 150608-NM55	•	•	
SNMG 120408-NM55	•	•	
TNMG 160408-NM55	•	•	
VNMG 160408-NM55	•	•	
WNMG 080408-NM55	•	•	

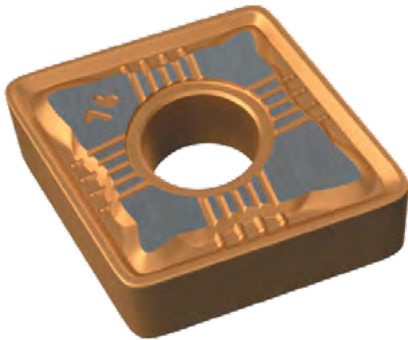


NM55

ISO Group	PVD Coating	CVD Coating	Cutting Speed, Vc, m/min
05			620
10	CMS5510, MST20		570
15	CMS5510, CMS5510		520
20			470
25			420
30			370
35			320
40		CMS5540, CMS5540	270
45			240
50			210
			180
			150
			120
			105
			90
			75
			60
			45
			30
			15

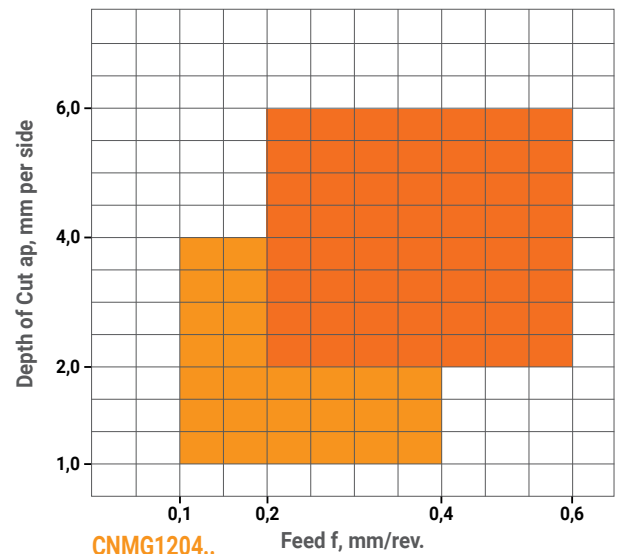
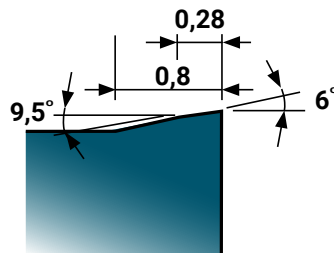
NM78

Super Alloy and Titanium Alloy Universal Turning

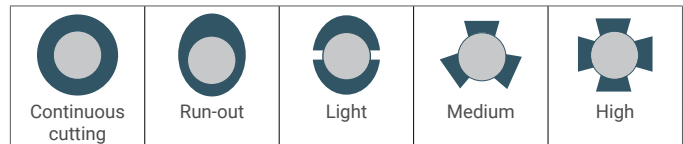


NM78 is the Universal Geometry for Titanium Alloy and Super Alloy Turning - from General Machining to Roughing. **NM78** is also recommended for Stainless Steel Roughing. Interrupted cutting is possible.

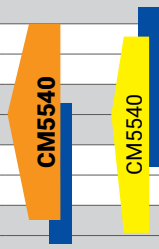
Insert	CMS5540
CNMG 120408-NM78	•
CNMG 120412-NM78	•
CNMG 160612-NM78	•
CNMG 190616-NM78	•
SNMG 150612-NM78	•
SNMG 190616-NM78	•



CNMG1204..
CNMG1906..

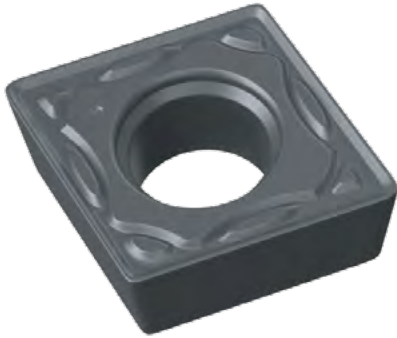


ISO Group	Покрытие CVD	Cutting Speed, Vc, m/min
05		620
		570
10		520
		470
15		420
		370
20		320
		270
25		240
		210
30		180
		150
35		120
		105
40		90
		75
45		60
		45
50		30
		15



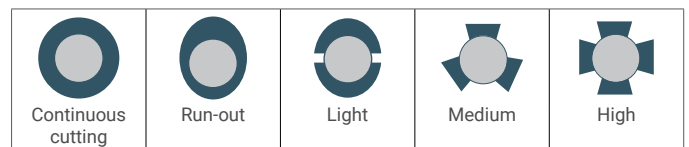
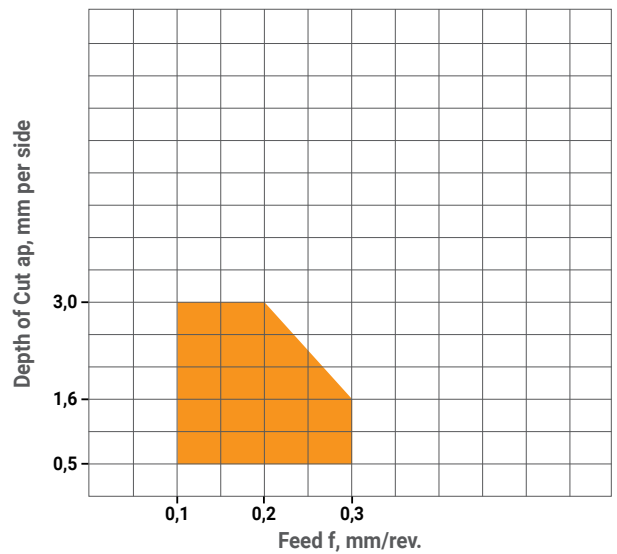
PM45

Titanium Alloy and Super Alloy General Machining



PM45 Geometry is for Titanium Alloy and Super Alloy General Machining with positive insert. It has the strong Cutting Edge. Light interrupted cutting is also possible.

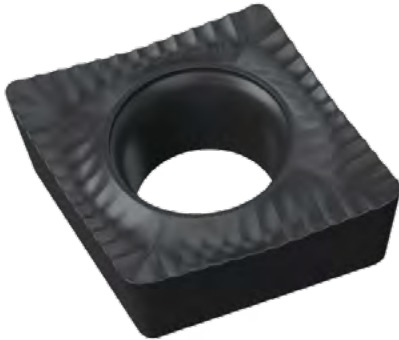
Insert	MST10	MST20
CCMT 09T304-PM45	•	•
DCMT 11T304-PM45	•	•
RCMT 1606-PM45	•	
RCMT 2006-PM45	•	



PM45

ISO Group	PVD Coating	CVD Coating	Cutting Speed, Vc, m/min
01			620
05			570
10			520
15			470
20			420
25			370
30			320
35			270
40			240
45			210
			180
			150
			120
			105
			90
			75
			60
			45
			30
			15

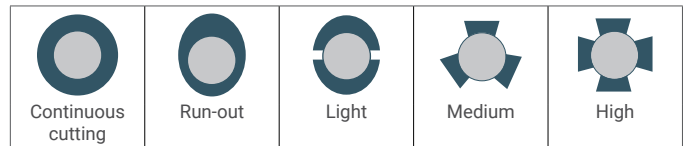
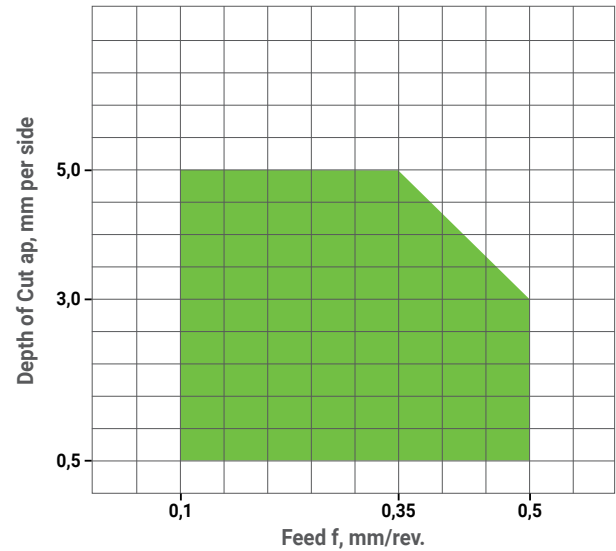
AL2



General Turning of Aluminum and Non-ferrous alloy

AL2 Geometry is for Aluminum and for Non-ferrous alloy Turning. **AL2** Geometry with **MU410** grade is also suitable for Stainless Steel and Cast Iron light finishing.

Insert	MNB010	MU410
	•	•
CCGT 060202-AL2	•	•
CCGT 060204-AL2	•	•
CCGT 09T302-AL2	•	•
CCGT 09T304-AL2	•	•
CCGT 09T308-AL2	•	•
CCGT 120404-AL2	•	•
CCGT 120408-AL2	•	•
DCGT 070202-AL2	•	•
DCGT 070204-AL2	•	•
DCGT 11T302-AL2	•	•
DCGT 11T304-AL2	•	•
DCGT 11T308-AL2	•	•
RCGT 0602MO-AL2	•	•
RCGT 0803MO-AL2	•	•
RCGT 1003MO-AL2	•	•
RCGT 1204MO-AL2	•	•
SCGT 120408-AL2	•	•
TCGT 110204-AL2	•	•
TCGT 16T304-AL2	•	•
VCGT 110302-AL2	•	•
VCGT 110304-AL2	•	•
VCGT 160402-AL2	•	•
VCGT 160404-AL2	•	•
VCGT 160408-AL2	•	•
VCGT 160412-AL2	•	•
VCGT 220530-AL2	•	•
WCGT 06T302-AL2	•	•
WCGT 06T304-AL2	•	•
WCGT 06T308-AL2	•	•
WCGT 080404-AL2	•	•
WCGT 080408-AL2	•	•



ISO Group	PVD Coating		Uncoated	Cutting Speed, Vc, m/min
	MU410	MU410		
01				2000
05				1900
10				1800
15				1700
20				1600
25				1500
30				1400
35				1300
40				1200
45				1100
				1000
				900
				800
				700
				600
				500
				400
				300
				200
				100

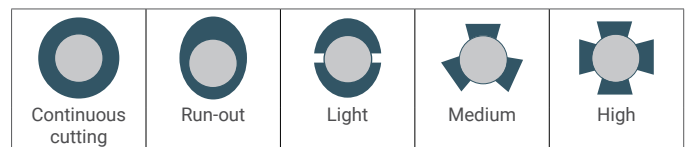
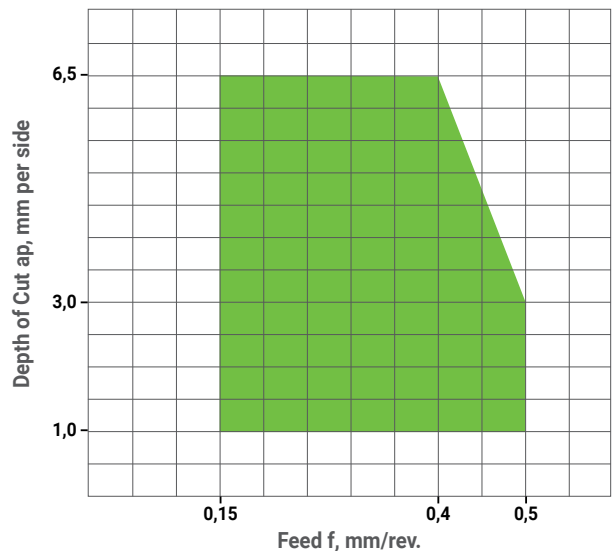
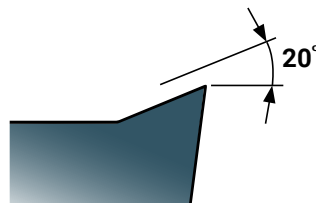
MF

General Turning of Aluminum and Non-ferrous alloy



MF Geometry is the alternative choice or Aluminum and for Non-ferrous alloy Turning. **MF** Geometry with **CU415** grade is also suitable for Stainless Steel and Super Alloy finishing. The Cast Iron Ligth Finishing is also possible with **CN410** grade.

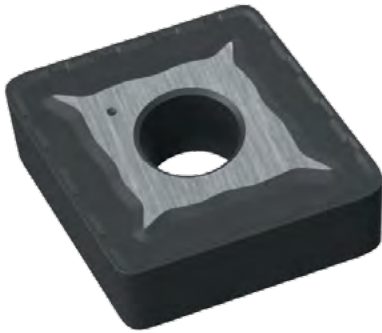
Insert	CN410	CU415
CCGT 060201-MF	•	•
CCGT 060202-MF	•	•
CCGT 060204-MF	•	•
CCGT 09T302-MF	•	•
CCGT 09T304-MF	•	•
CCGT 09T308-MF	•	•
CCGT 120404-MF	•	•
CCGT 120408-MF	•	•
DCGT 070201-MF	•	•
DCGT 070202-MF	•	•
DCGT 070204-MF	•	•
DCGT 070208-MF	•	
DCGT 11T302-MF	•	•
DCGT 11T304-MF	•	•
DCGT 11T308-MF	•	•
SCGT 09T304-MF	•	•
SCGT 09T308-MF	•	•
SCGT 120408-MF		•
TCGT 110204-MF	•	•
TCGT 16T304-MF	•	
TCGT 16T308-MF	•	
VCGT 110302-MF	•	•
VCGT 110304-MF	•	•
VCGT 160404-MF	•	•
VCGT 160408-MF	•	•
VCGT 160412-MF	•	•
VCGT 220530-MF	•	



ISO Group	PVD Coating	Uncoated	Cutting Speed, Vc, m/min
01			2000
			1900
05			1800
			1700
10			1600
			1500
15			1400
			1300
20			1200
			1100
25			1000
			900
30			800
			700
35			600
			500
40			400
			300
45			200
			100

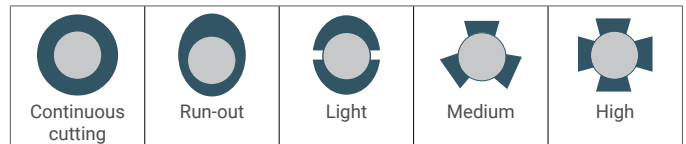
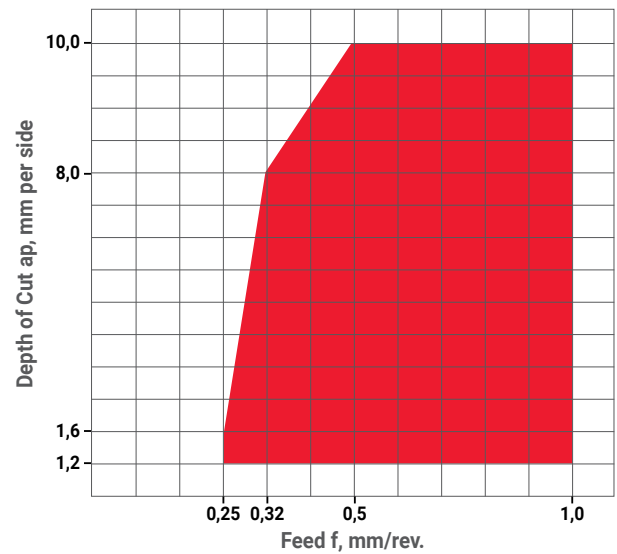
NR4

Roughing to General Machining of Cast Iron



NR4 Geometry is for Roughing to General Machining of Cast Iron in wide range of cutting depth. Interrupted cutting is possible.

Insert	MK3110	MK3120
CNMG 120408-NR4	•	•
CNMG 120412-NR4	•	•
CNMG 120416-NR4	•	•
CNMG 160612-NR4	•	•
CNMG 160616-NR4	•	•
DNMG 150408-NR4	•	•
DNMG 150412-NR4	•	•
DNMG 150608-NR4	•	•
DNMG 150612-NR4	•	•
SNMG 120408-NR4	•	•
SNMG 120412-NR4	•	•
SNMG 190612-NR4	•	
SNMG 190616-NR4	•	•
WNMG 080408-NR4	•	•
WNMG 080412-NR4		•



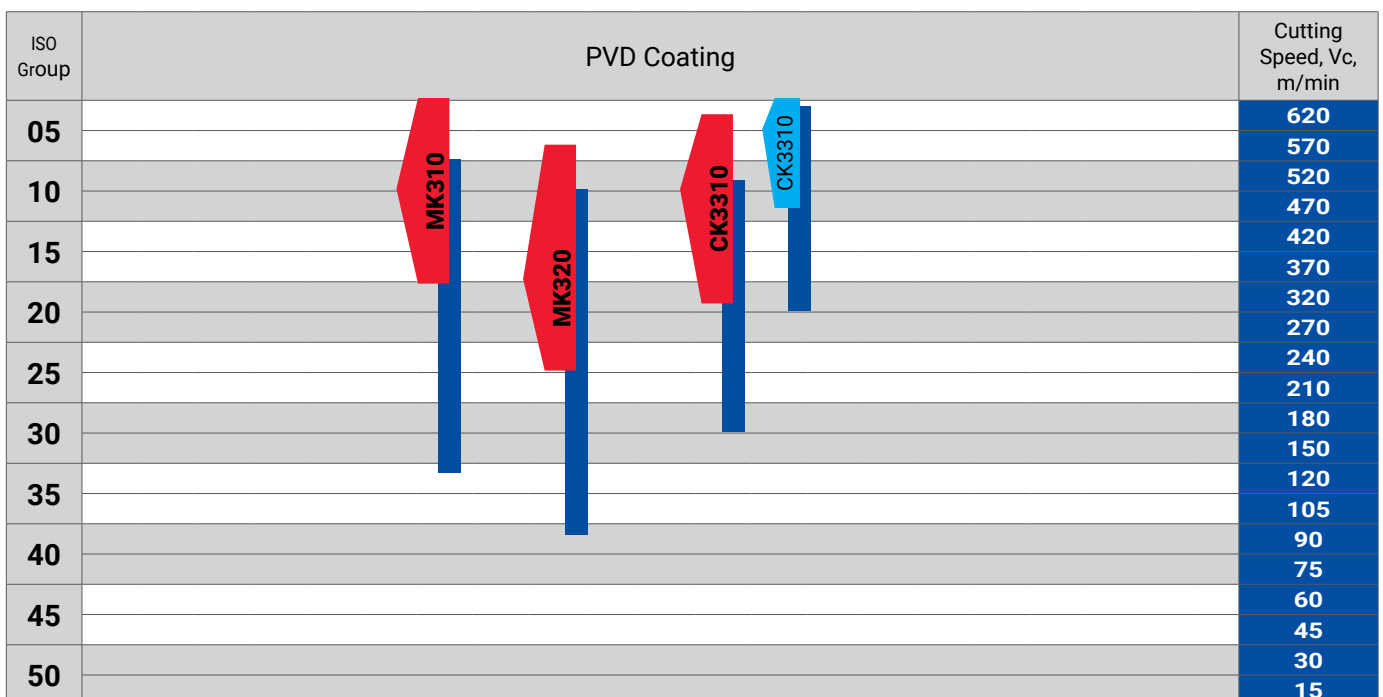
ISO Group	CVD Coating	Cutting Speed, Vc, m/min
05		620
05		570
10		520
10		470
15		420
15		370
20		320
20		270
25		240
25		210
30		180
30		150
35		120
35		105
40		90
40		75
45		60
45		45
50		30
50		15

Flat top inserts for Cast Iron Machining

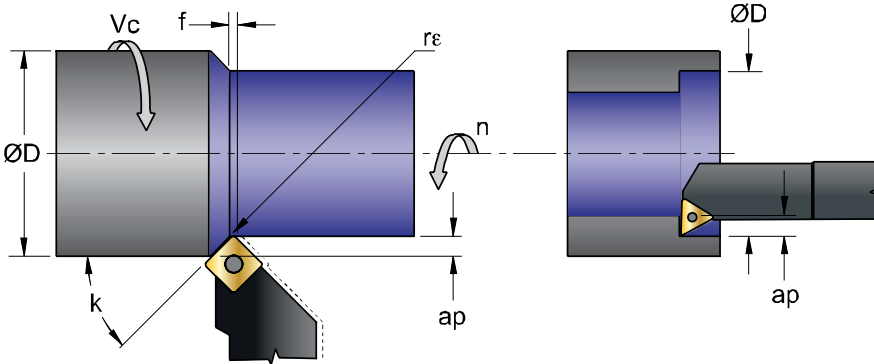


Flat top inserts is suitable for machining of Cast Iron and other short chipping materials. Flat Top inserts have the strongest cutting edge.

Insert	MK310	MK320	CK320	CK3310
CNMA 120408	•	•	•	•
CNMA 120412	•	•		•
CNMA 120416				•
CNMA 190616		•		
CNMA 250924		•		
DNMA 150608		•		
DNMA 150612		•		
SNMA 120408	•	•		•
SNMA 120412	•	•		
SNMA 120416	•	•		
SNMA 190616		•		
TNMA 160408	•	•		•
TNMA 160412	•	•		
TNMA 220416	•	•		
WNMA 080408	•	•		•
WNMA 080412	•	•	•	



Terminology and Formulae



- ap – Depth of cut, mm
- D – Machining diameter, mm
- fn – Feed per revolution, mm/rev
- h – Chip thickness, mm
- k – Approach angle, deg.
- n – Spindle speed, rev/min
- Q – Material removal rate, cm³/min
- rε – Corner radius, mm
- Vc – Cutting Speed, m/min
- Kc – Specific cutting force, N/mm²
- η – Energy conversion efficiency

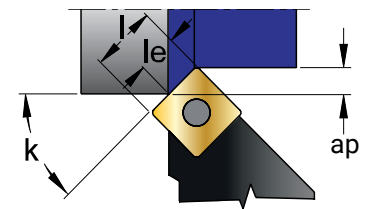
$$Vc \text{ (m/min)} = \frac{3,14 \cdot D \cdot n}{1000}$$

$$Pc \text{ (KW)} = \frac{Vc \cdot fn \cdot ap \cdot Kc}{60.000 \cdot \eta}$$

$$h \text{ (mm)} = fn \cdot \sin k$$

$$Q \text{ (cm}^3\text{/min)} = Vc \cdot fn \cdot ap$$

Maximum depth of cutting depending on insert geometry



le=0,4·d	le=2/3·l	le=2/3·l	le=1/2·l	le=1/2·l	le=1/4·l	le=1/4·l

Theoretical Roughness Table

Ra, μm	rε, mm					
	0.2	0.4	0.8	1.2	1.6	2.4
	fn, rev/min					
50	-	-	-	-	-	1.94
25	-	-	-	0.97	1.12	1.38
12,5	-	-	0.57	0.7	0.81	0.99
6,3	-	0.29	0.42	0.51	0.59	0.72
3,2	0.15	0.21	0.3	0.37	0.42	0.52
1,6	0.1	0.15	0.21	0.26	0.3	0.36
0,8	0.08	0.11	0.16	0.19	0.22	0.27
0,4	0.06	0.08	0.12	0.15	0.17	0.21
0,2	0.05	0.07	0.09	0.12	0.13	0.16