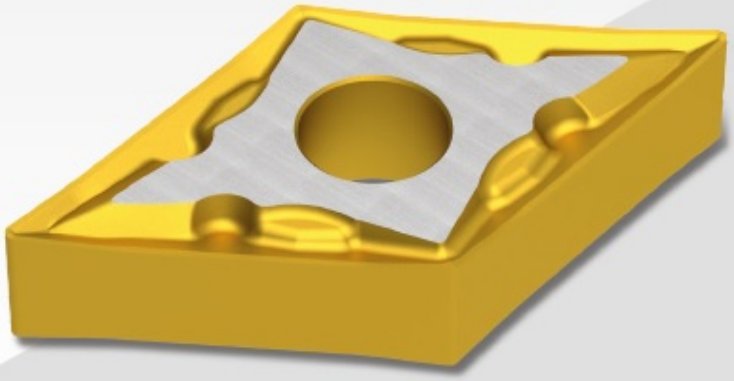
Cutting Tool Solutions

2023

Inserts for turning

Metric



CARBIDEN

Hard material for your success
Hard materials in general and hard materials in particular are applied wherever tools or components are exposed to high wear. They improve the quality of the tools and parts, extend the life of the tool and ensure secure processes.

High pressure and temperature, the application of abrasive or aggressive materials, and the machining of hard materials are just some examples of factors that cause wear, and to which our hard materials and hard metals are resistant

From carbide blanks and semi-finished products to coated and packaged inserts or tool holders, e.g. for milling, turning, drilling, parting and grooving – all private label products satisfy individual customer needs and offer top quality.

The experts of the competence brand provide their partners with advice so that the right tooling solution can always be optimally positioned in the respective market segment. The products developed here are the benchmark in their industry in terms of both price and performance.

Our product portfolio

Milling

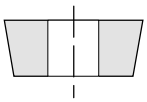
Drilling

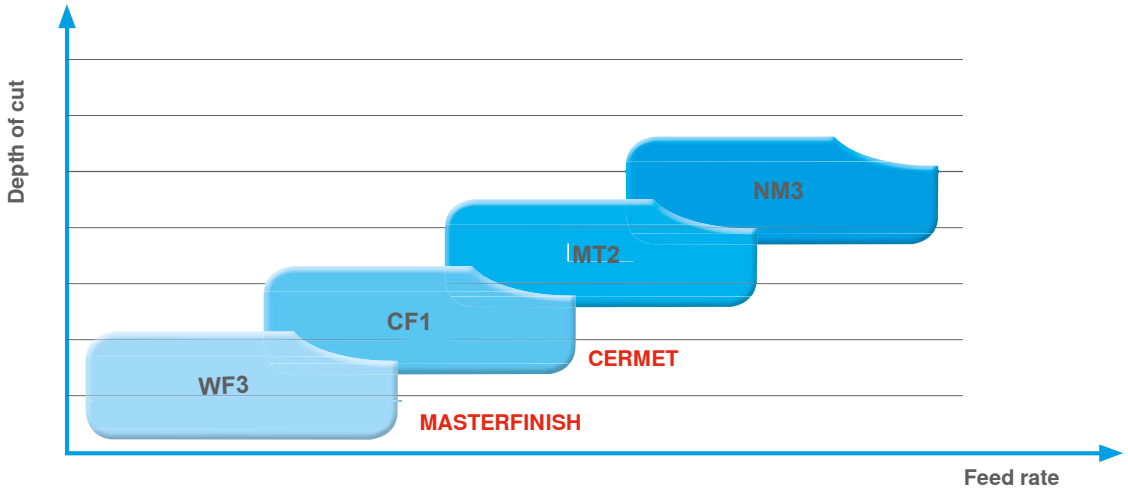
Multicut

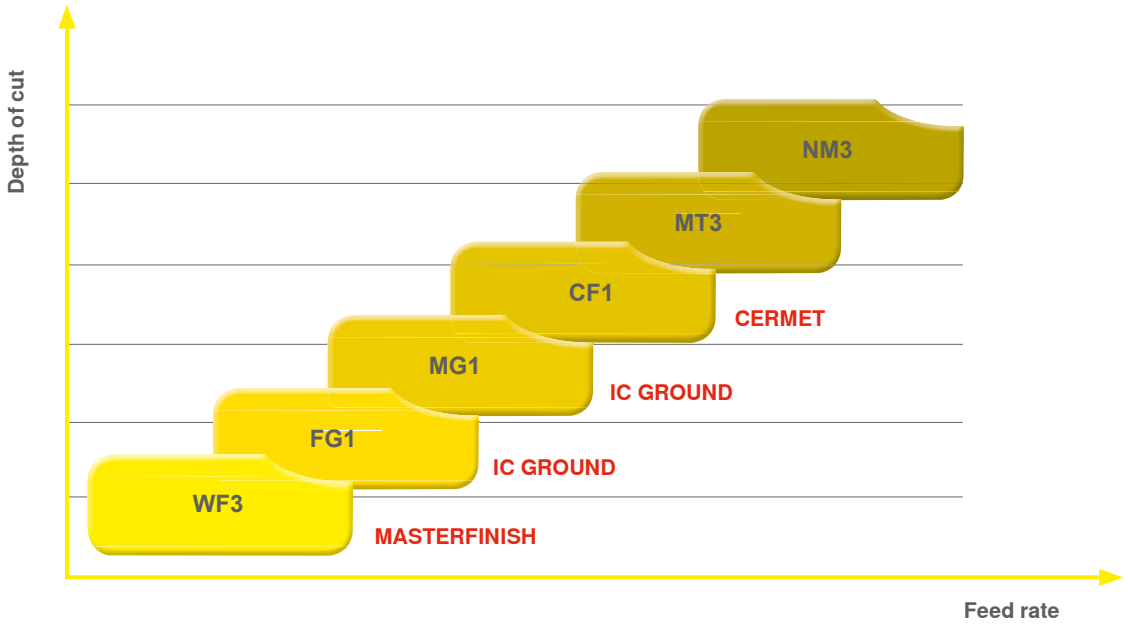
Turning

Grooving

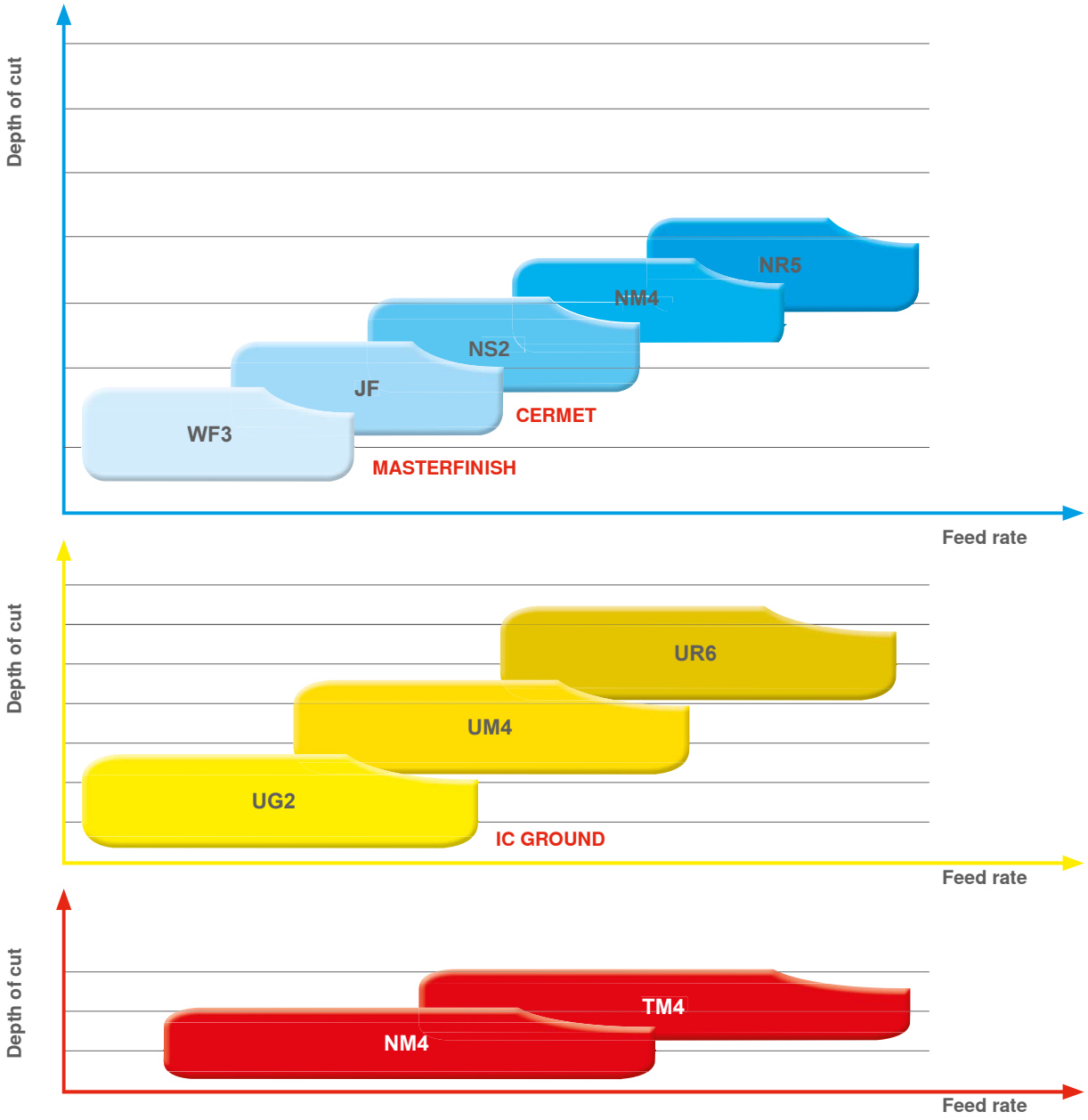
PST – Positive Size Turning




Depth of cut
NM3
MT2
CF1
CERMET
WF3
MASTERFINISH
Feed rate

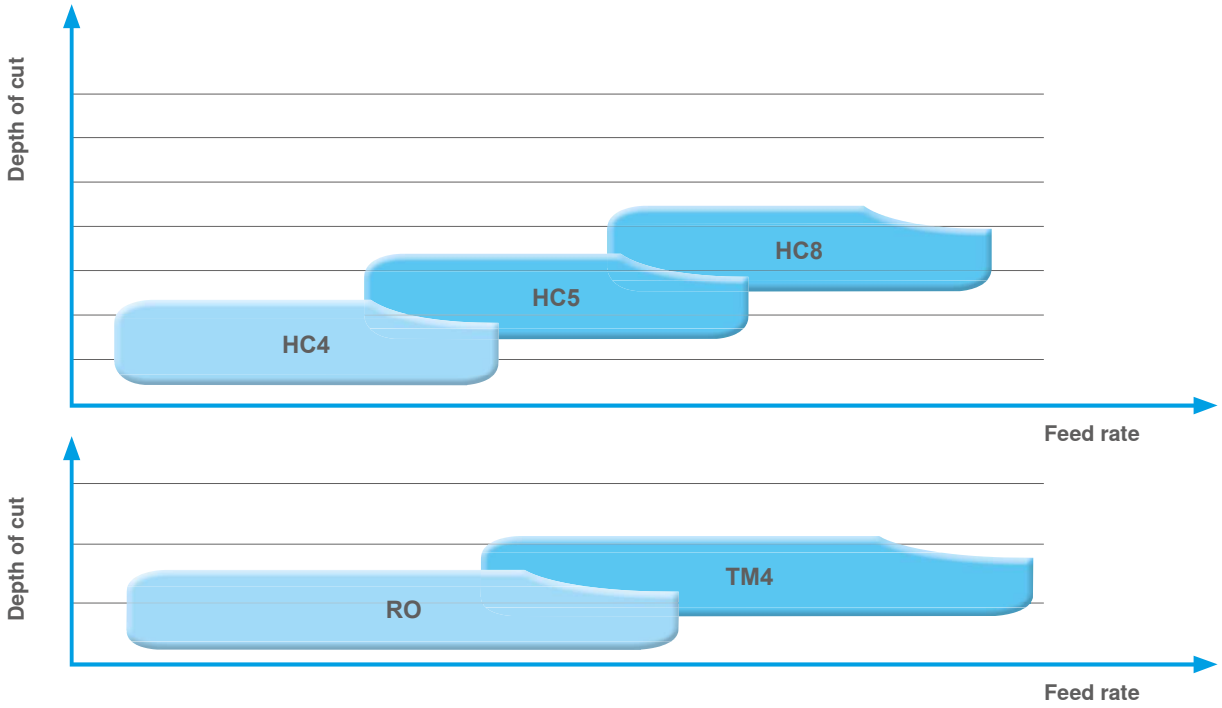

Depth of cut
NM3
MT3
CF1
CERMET
MG1
IC GROUND
FG1
IC GROUND
WF3
MASTERFINISH
Feed rate

NST – Negative Size Turning


Depth of cut
NR5
NM4
NS2
JF
WF3
CERMET
MASTERFINISH
Feed rate
Depth of cut
UR6
UM4
UG2
IC GROUND
Feed rate
Depth of cut
TM4
NM4
Feed rate

HDT – Heavy Duty Turning

Miscellaneous


Depth of cut
HC8
HC5
HC4
Feed rate
Depth of cut
TM4
RO
Feed rate

NEW P25
PMK25CU

Applications

NEW

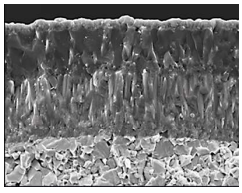
▲ New PREMIUM choice for the universal turning of steels
▲ Highly wear-resistant grade
▲ Designed for maximum cutting parameters / high productivity, long tool life, dry machining

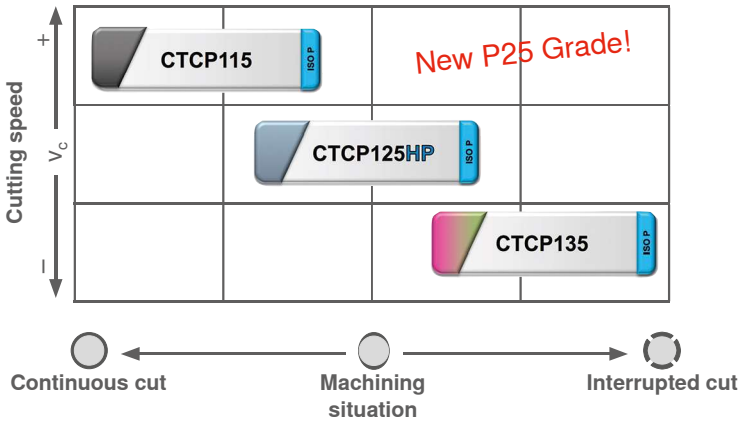
Your advantages

▲ Available from standard range
▲ Easy wear detection with special top layer on coating

Your benefits

▲ High productivity
▲ Increased tool life

PMK25CU	HC-P25 | HC-K30 | HC-K20
	**Specification:** Composition: Co 7.6%; mixed carbides 7.0%; others 0.4%; WC balance | Grain size: 1-2μm | Hardness: HV_{30} 1470 | Coating specification: CVD TiCN-Al_2O_3 top layer **Recommended application:** The first and premium choice for the universal machining of steel



Please see pages 26 (positive) / 58 (negative) for Chip Breaker WM+ or page 40 for WSF+.

Applications

NEW

The MP20CU is suitable for:
- ▲ High cutting parameters in wet cutting
- ▲ Better resistance to plastic deformation and higher heat resistance in operation
- ▲ Continuous to slightly interrupted cut

Your advantages

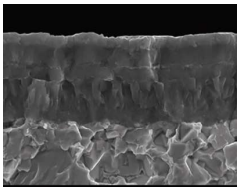
- ▲ Two grades for everything in stainless steel
- ▲ Easy selection of inserts
- ▲ Easy wear detection with yellow top layer on coating
- ▲ Tool life increased

Your benefits

- ▲ Productivity
- ▲ Reduced warehousing costs

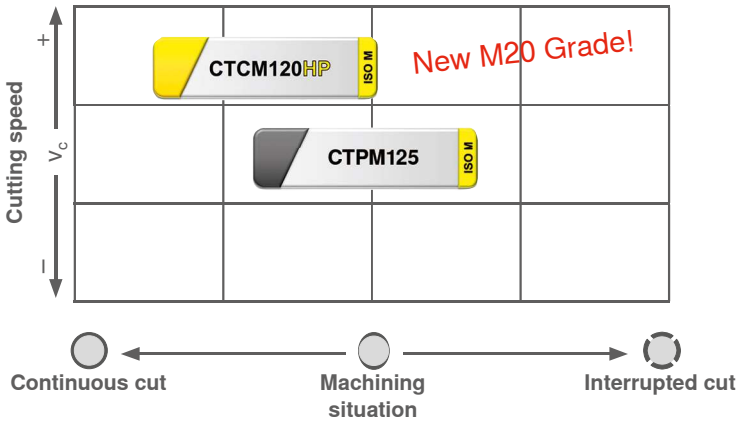
MP20CU

HC-M20 | HC-P30



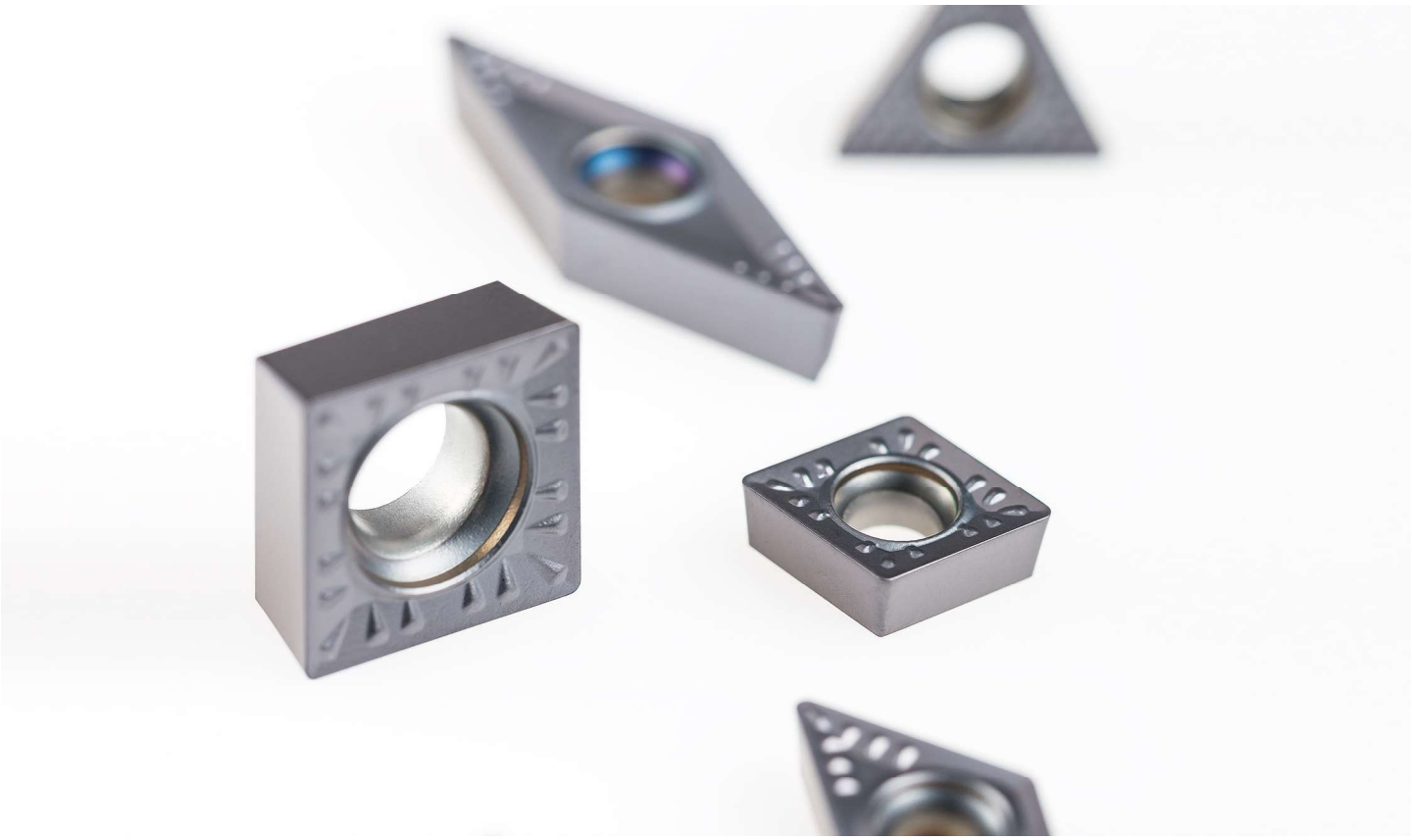
Specification:
Composition: Co 7.6%; mixed carbides 7.0%; others 0.4%; WC balance | Grain size: 1-2μm | Hardness: HV_{30} 1470 | Coating specification: CVD TiCN-Al_2O_3-Top layer.

Recommended application:
It brings advantages to dry machining, at even higher cutting speeds, and makes long tool life possible.



Please see pages 72 for Chip Breaker IPK+.

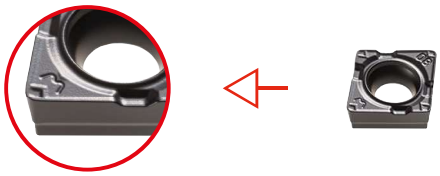
Positive Size Turning
PST



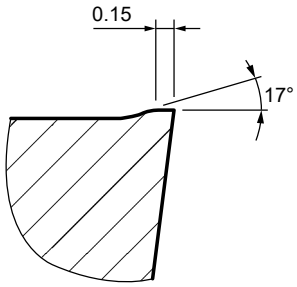
New chipbreaker

Optimised by FEM:

- ▲ Positive **Masterfinish** geometry
- ▲ High surface quality



Example: CCMX 09T308-WF3



Cutting data

General cutting parameters depending on the application

Work piece material		Type of treatment / alloy	Hardness HB	PMK25C v_c [m/min]
P	Steel	Non-alloyed steel 0 – 0.45% C	150 – 250	170 – 240
		Low-alloyed steel	250 – 300	100 – 190
		High-alloyed steel	200	130 – 210
		Corrosion-resistant steel	200	130 – 210
M	Stainless steel	Ferritic	200	140 – 210
		Austenitic	180	100 – 210
		Duplex	230 – 260	–
		Martensitic	330	70 – 100
K	Cast iron	Grey cast iron	180	130 – 210
		Spheroidal cast iron	160	120 – 240
		Malleable/tempered iron	130	150 – 250

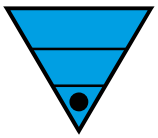
Application Chip groove	Depth of cut / feed rate a_p [mm]	f [mm]
WF3	1 to 3.5	0.3 to 0.15

Ex: CCMX 09T308-WF3 for CK60
Different in each application

Consistent cutting depth	Inconsistent cutting depth	Interrupted cut
●	○	X

Available range

MASTERFINISH



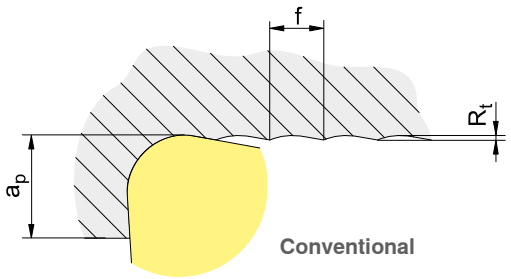
Steel extreme finishing – Masterfinish

Insert	Designation	Chipbreaker	Material number	Available
	CCMX 09T304-WF3 PMK25C	…-WF3	12078108	●
	CCMX 09T308-WF3 PMK25C		12078100	●
	DCMX 070204-WF3 PMK25C		12078103	●
	DCMX 11T304-WF3 PMK25C		12078101	●
	DCMX 11T308-WF3 PMK25C		12086875	●

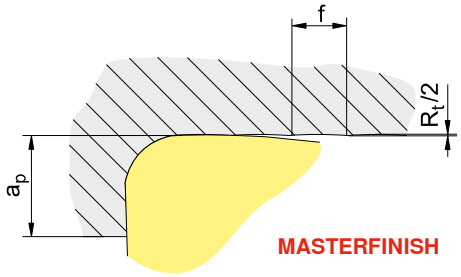
Operating principle

Improved surface finish

With the same feed rate an insert with Masterfinish cutting edge reaches a roughness value R_a which is many times higher than the one of a conventional insert.



Conventional



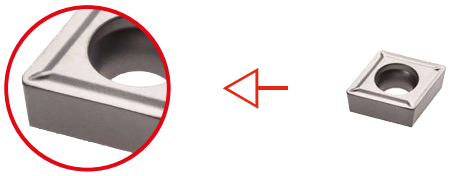
MASTERFINISH

● available from stock, ○ available upon request

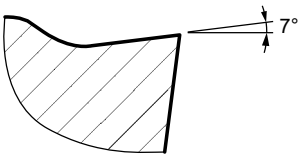
New chipbreaker

Optimised by FEM:

- ▲ Increase life time
- ▲ Reduce temperature and stress



Example: DCMT 11T304-CF1



Cutting data

General cutting parameters depending on the application

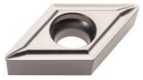
Work piece material		Type of treatment / alloy	Hardness HB	Cermet PMKC15 v_c [m/min]
P	Steel	Non-alloyed steel 0 – 0.45% C	150 – 250	230 – 270
		Low-alloyed steel	250 – 300	180 – 230
		High-alloyed steel	200	160 – 200
		Corrosion-resistant steel	200	230 – 270
M	Stainless steel	Ferritic	200	170 – 240
		Austenitic	180	200 – 240
		Duplex	230 – 260	–
		Martensitic	330	130 – 160
K	Cast iron	Grey cast iron	180	–
		Spheroidal cast iron	160	220 – 300
		Malleable/tempered iron	130	250 – 350

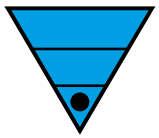
Application Chip groove	Depth of cut / feed rate a_p [mm]	f [mm]
CF1	0.10 to 1.65	0.20 to 0.05

Ex: CCMT 09T304-CF1
Different in each application

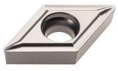
Consistent cutting depth	Inconsistent cutting depth	Interrupted cut
●	X	X

Available range





Turning steel pos finishing CERMET

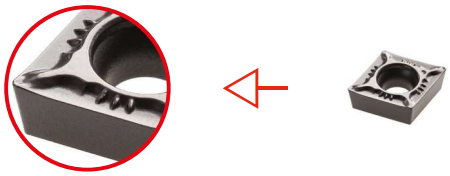
Insert	Designation	Chipbreaker	Material number	Available
	CCMT 060204-CF1 PMKC15	… CF1	11619142	●
	CCMT 09T304-CF1 PMKC15		11619132	●
	DCMT 070204-CF1 PMKC15		11619127	●
	DCMT 11T304-CF1 PMKC15		11619131	●
	TCGT 110202-CF1 PMKC15		11622263	●
	TCMT 110204-CF1 PMKC15		11619126	●
	WCGT 020102-CF1 PMKC15		11619140	●

● available from stock, ○ available upon request

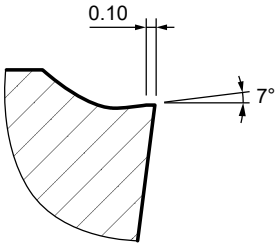
New chipbreaker

MT2:

▲ To optimise chip control



Example: CCMT 09T308-MT2



Cutting data

General cutting parameters depending on the application

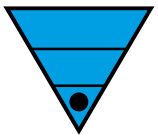
Work piece material		Type of treatment / alloy	Coated carbide Hardness HB	PMK20C v_c [m/min]	PMK20CU v_c [m/min]	PMK25C v_c [m/min]	PMS35C v_c [m/min]
P	Steel	Non-alloyed steel 0 – 0.45% C	150 – 250	220 – 400	200 – 270	170 – 240	170 – 190
		Low-alloyed steel	250 – 300	200 – 320	115 – 210	100 – 190	90 – 150
		High-alloyed steel	200	180 – 320	150 – 240	130 – 210	120 – 200
		Corrosion-resistant steel	200	200 – 320	150 – 240	130 – 210	140 – 180
M	Stainless steel	Ferritic	200	220 – 320	160 – 240	140 – 210	140 – 200
		Austenitic	180	–	115 – 240	100 – 210	110 – 190
		Duplex	230 – 260	–	–	–	80 – 150
		Martensitic	330	–	80 – 115	70 – 100	55 – 75
K	Cast iron	Grey cast iron	180	140 – 370	150 – 240	130 – 210	–
		Spheroidal cast iron	160	190 – 430	140 – 270	120 – 240	–
		Malleable/tempered iron	130	180 – 520	170 – 290	150 – 250	–

Application Chip groove	Depth of cut / feed rate a_p [mm]	f [mm]
MT2	0.50 to 2.25	0.14 to 0.07

Ex: CCMT 09T304-MT2 for CK60
Different in each application

Consistent cutting depth	Inconsistent cutting depth	Interrupted cut
X	○	X

Available range



Turning steel pos finishing "P15"

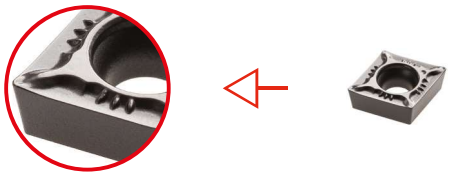
Insert	Designation	Chipbreaker	Material number	Available
	CCMT 060204-MT2 PMK20C		12030470	●
	CCMT 09T304-MT2 PMK20C		12030511	●
	CCMT 09T308-MT2 PMK20C		12030567	●
	CCMT 120404-MT2 PMK20C	…-MT2	12030568	●
	DCMT 070204-MT2 PMK20C		12030692	●
	DCMT 11T304-MT2 PMK20C		12167861	●

● available from stock, ○ available upon request

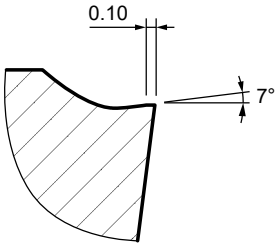
New chipbreaker

MT2:

▲ To optimise chip control



Example: CCMT 09T308-MT2



Cutting data

General cutting parameters depending on the application

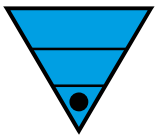
Work piece material		Type of treatment / alloy	Hardness HB	Coated carbide PMK20C v_c [m/min]	PMK25CU v_c [m/min]	PMK25C v_c [m/min]	PMS35C v_c [m/min]
P	Steel	Non-alloyed steel 0 – 0.45% C	150 – 250	220 – 400	200 – 270	170 – 240	170 – 190
		Low-alloyed steel	250 – 300	200 – 320	115 – 210	100 – 190	90 – 150
		High-alloyed steel	200	180 – 320	150 – 240	130 – 210	120 – 200
		Corrosion-resistant steel	200	200 – 320	150 – 240	130 – 210	140 – 180
M	Stainless steel	Ferritic	200	220 – 320	160 – 240	140 – 210	140 – 200
		Austenitic	180	–	115 – 240	100 – 210	110 – 190
		Duplex	230 – 260	–	–	–	80 – 150
		Martensitic	330	–	80 – 115	70 – 100	55 – 75
K	Cast iron	Grey cast iron	180	140 – 370	150 – 240	130 – 210	–
		Spheroidal cast iron	160	190 – 430	140 – 270	120 – 240	–
		Malleable/tempered iron	130	180 – 520	170 – 290	150 – 250	–

Application Chip groove	Depth of cut / feed rate a_p [mm]	f [mm]
MT2	0.50 to 2.25	0.14 to 0.07

Ex: CCMT 09T304-MT2 for CK60
Different in each application

Consistent cutting depth	Inconsistent cutting depth	Interrupted cut
X	○	X

Available range



Turning steel pos finishing "P25"

Insert	Designation	Chipbreaker	Material number	Available
	CCMT 060202-MT2 PMK25C	…-MT2	11684867	●
	CCMT 060204-MT2 PMK25C		11684913	●
	CCMT 09T302-MT2 PMK25C		11684916	●
	CCMT 09T304-MT2 PMK25C		11684923	●
	CCMT 09T308-MT2 PMK25C		11684931	●
	DCMT 070202-MT2 PMK25C		11684952	●
	DCMT 070204-MT2 PMK25C		11684953	●
	DCMT 11T302-MT2 PMK25C		11812677	●
	DCMT 11T304-MT2 PMK25C		11686178	●
	DCMT 11T308-MT2 PMK25C		11686185	●
	VCMT 110302-MT2 PMK25C		11812680	●
	VCMT 110304-MT2 PMK25C		11855132	●
	VCMT 160404-MT2 PMK25C		11812683	●
	VCMT 160408-MT2 PMK25C		12077363	●

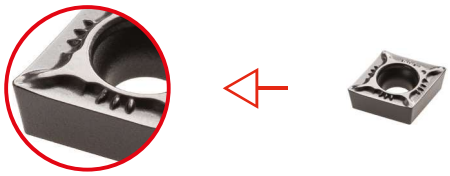
● available from stock, ○ available upon request

New chipbreaker

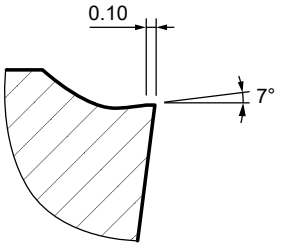
NEW

MT2:

▲ To optimise chip control



Example: CCMT 09T308-MT2



Cutting data

General cutting parameters depending on the application

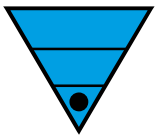
Work piece material		Type of treatment / alloy	Hardness HB	Coated carbide PMK20C v_c [m/min]	PMK25CU v_c [m/min]	PMK25C v_c [m/min]	PMS35C v_c [m/min]
P	Steel	Non-alloyed steel 0 – 0.45% C	150 – 250	220 – 400	200 – 270	170 – 240	170 – 190
		Low-alloyed steel	250 – 300	200 – 320	115 – 210	100 – 190	90 – 150
		High-alloyed steel	200	180 – 320	150 – 240	130 – 210	120 – 200
		Corrosion-resistant steel	200	200 – 320	150 – 240	130 – 210	140 – 180
M	Stainless steel	Ferritic	200	220 – 320	160 – 240	140 – 210	140 – 200
		Austenitic	180	–	115 – 240	100 – 210	110 – 190
		Duplex	230 – 260	–	–	–	80 – 150
		Martensitic	330	–	80 – 115	70 – 100	55 – 75
K	Cast iron	Grey cast iron	180	140 – 370	150 – 240	130 – 210	–
		Spheroidal cast iron	160	190 – 430	140 – 270	120 – 240	–
		Malleable/tempered iron	130	180 – 520	170 – 290	150 – 250	–

Application	Depth of cut / feed rate	
Chip groove	a_p [mm]	f [mm]
MT2	0.50 to 2.25	0.14 to 0.07

Ex: CCMT 09T304-MT2 for CK60
Different in each application

Consistent cutting depth	Inconsistent cutting depth	Interrupted cut
X	○	X

Available range



Turning steel pos finishing "P25"

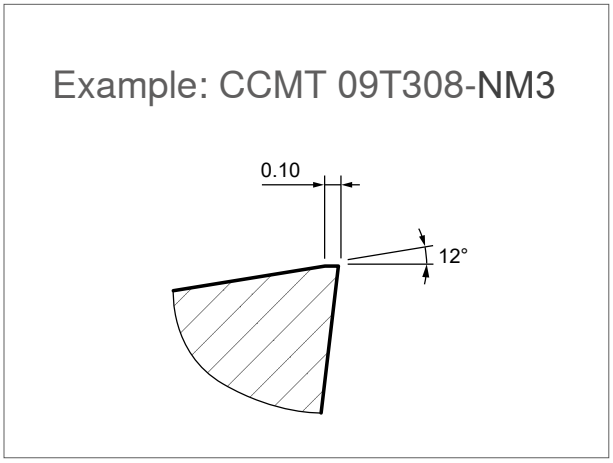
Insert	Designation	Chipbreaker	Material number	Available
	CCMT 060202-MT2 PMK25CU	...-MT2	14659047	●
	CCMT 060204-MT2 PMK25CU		14659053	●
	CCMT 09T302-MT2 PMK25CU		14659058	●
	CCMT 09T304-MT2 PMK25CU		14659061	●
	CCMT 09T308-MT2 PMK25CU		14659065	●
	DCMT 070202-MT2 PMK25CU		14659070	●
	DCMT 070204-MT2 PMK25CU		14659109	●
	DCMT 11T302-MT2 PMK25CU		14659133	●
	DCMT 11T304-MT2 PMK25CU		14659135	●
	DCMT 11T308-MT2 PMK25CU		14659138	●

● available from stock, ○ available upon request

New chipbreaker

Optimised by FEM:

- Increase life time
- Reduce temperature and stress
- Universal application



Cutting data

General cutting parameters depending on the application

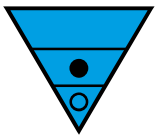
Work piece material		Type of treatment / alloy	Hardness HB	Coated carbide PMK20C v_c [m/min]	PMK25CU v_c [m/min]	PMK25C v_c [m/min]	PMS35C v_c [m/min]
P	Steel	Non-alloyed steel 0 – 0.45% C	150 – 250	220 – 400	200 – 270	170 – 240	170 – 190
		Low-alloyed steel	250 – 300	200 – 320	115 – 210	100 – 190	90 – 150
		High-alloyed steel	200	180 – 320	150 – 240	130 – 210	120 – 200
		Corrosion-resistant steel	200	200 – 320	150 – 240	130 – 210	140 – 180
M	Stainless steel	Ferritic	200	220 – 320	160 – 240	140 – 210	140 – 200
		Austenitic	180	–	115 – 240	100 – 210	110 – 190
		Duplex	230 – 260	–	–	–	80 – 150
		Martensitic	330	–	80 – 115	70 – 100	55 – 75
K	Cast iron	Grey cast iron	180	140 – 370	150 – 240	130 – 210	–
		Spheroidal cast iron	160	190 – 430	140 – 270	120 – 240	–
		Malleable/tempered iron	130	180 – 520	170 – 290	150 – 250	–

Application	Depth of cut / feed rate	
Chip groove	a_p [mm]	f [mm]
NM3	0.50 to 3.00	0.21 to 0.12

Ex: CCMT 09T304-NM3 for CK60 Different in each application

Consistent cutting depth	Inconsistent cutting depth	Interrupted cut
●	○	X

Available range



Turning steel pos semi finishing "P15"

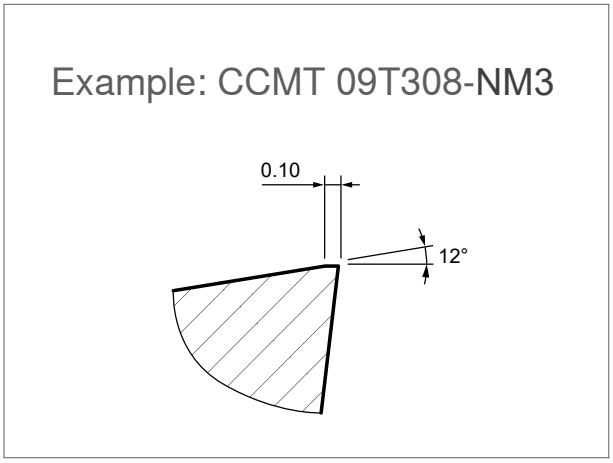
Insert	Designation	Chipbreaker	Material number	Available
	CCMT 060204-**NM3** PMK20C	…NM3	11865625	●
	CCMT 060208-**NM3** PMK20C		12064721	●
	CCMT 09T304-**NM3** PMK20C		11888980	●
	CCMT 09T308-**NM3** PMK20C		11888982	●
	DCMT 11T304-**NM3** PMK20C		11865628	●
	DCMT 11T308-**NM3** PMK20C		11865630	●
	SCMT 120404-**NM3** PMK20C		11865632	●
	TCMT 110204-NM3 PMK20C		12030597	●
	VBMT 160404-XM1+ PMK20C	…-XM1+	12057972	●

● available from stock, ○ available upon request

New chipbreaker

Optimised by FEM:

- Increase life time
- Reduce temperature and stress
- Universal application



Cutting data

General cutting parameters depending on the application

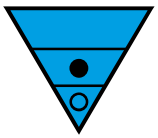
Work piece material		Type of treatment / alloy	Hardness HB	Coated carbide PMK20C v_c [m/min]	PMK25CU v_c [m/min]	PMK25C v_c [m/min]	PMS35C v_c [m/min]
P	Steel	Non-alloyed steel 0 – 0.45% C	150 – 250	220 – 400	200 – 270	170 – 240	170 – 190
		Low-alloyed steel	250 – 300	200 – 320	115 – 210	100 – 190	90 – 150
		High-alloyed steel	200	180 – 320	150 – 240	130 – 210	120 – 200
		Corrosion-resistant steel	200	200 – 320	150 – 240	130 – 210	140 – 180
M	Stainless steel	Ferritic	200	220 – 320	160 – 240	140 – 210	140 – 200
		Austenitic	180	–	115 – 240	100 – 210	110 – 190
		Duplex	230 – 260	–	–	–	80 – 150
		Martensitic	330	–	80 – 115	70 – 100	55 – 75
K	Cast iron	Grey cast iron	180	140 – 370	150 – 240	130 – 210	–
		Spheroidal cast iron	160	190 – 430	140 – 270	120 – 240	–
		Malleable/tempered iron	130	180 – 520	170 – 290	150 – 250	–

Application	Depth of cut / feed rate	
Chip groove	a_p [mm]	f [mm]
NM3	0.50 to 3.00	0.21 to 0.12

Ex: CCMT 09T304-NM3 for CK60
Different in each application

Consistent cutting depth	Inconsistent cutting depth	Interrupted cut
●	●	○

Available range



Turning steel pos medium "P25"

Insert	Designation	Chipbreaker	Material number	Available
	CCMT 060204-NM3 PMK25C		11748108	●
	CCMT 060208-NM3 PMK25C		11748110	●
	CCMT 09T304-NM3 PMK25C		11748112	●
	CCMT 09T308-NM3 PMK25C		11748114	●
	CCMT 120404-NM3 PMK25C		11748116	●
	CCMT 120408-NM3 PMK25C		11748118	●
	CCMT 120412-NM3 PMK25C		11748120	●
	DCMT 070204-NM3 PMK25C		11748124	●
	DCMT 070208-NM3 PMK25C		11748127	●
	DCMT 11T304-NM3 PMK25C		11748129	●
	DCMT 11T308-NM3 PMK25C		11748131	●
	SCMT 09T304-NM3 PMK25C		11748539	●
	SCMT 09T308-NM3 PMK25C		11748556	●
	SCMT 120404-NM3 PMK25C	…-NM3	11748562	●
	SCMT 120408-NM3 PMK25C		11748566	●
	SCMT 120412-NM3 PMK25C		11748579	●
	TCMT 090204-NM3 PMK25C		11748602	●
	TCMT 110204-NM3 PMK25C		11748607	●
	TCMT 110208-NM3 PMK25C		11748609	●
	TCMT 16T304-NM3 PMK25C		11748620	●
	TCMT 16T308-NM3 PMK25C		11748622	●
	TCMT 16T312-NM3 PMK25C		11748625	●
	VCMT 110304-NM3 PMK25C		11749275	●
	VCMT 110308-NM3 PMK25C		11749283	●
	VCMT 160404-NM3 PMK25C		11687010	●
	VCMT 160408-NM3 PMK25C		11687012	●
	VBMT 160404-XM1+ PMK25C		11687006	●
	VBMT 160408-XM1+ PMK25C	…-XM1+	11687008	●
	WCMT 040204-NM3 PMK25C		11749299	●
	WCMT 040208-NM3 PMK25C		11749304	●
	WCMT 06T304-NM3 PMK25C		11749313	●
	WCMT 06T308-NM3 PMK25C	…-NM3	11749317	●
	WCMT 080404-NM3 PMK25C		11749333	●
	WCMT 080408-NM3 PMK25C		11749336	●
	WCMT 080412-NM3 PMK25C		11749340	●

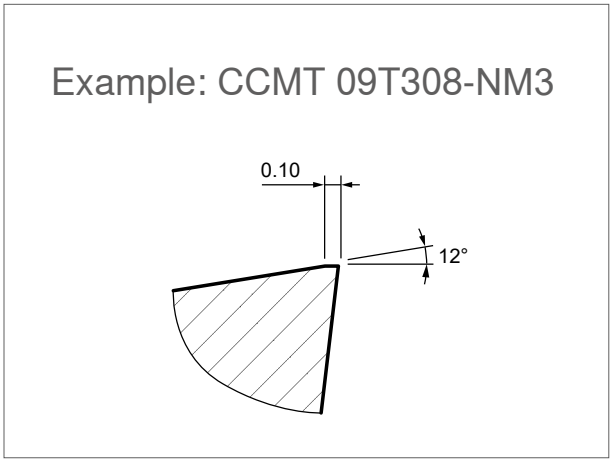
● available from stock, ○ available upon request

New chipbreaker

NEW

Optimised by FEM:

- Increase life time
- Reduce temperature and stress
- Universal application



Cutting data

General cutting parameters depending on the application

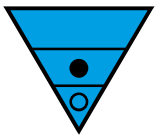
Work piece material		Type of treatment / alloy	Hardness HB	Coated carbide PMK20C v_c [m/min]	PMK25CU v_c [m/min]	PMK25C v_c [m/min]	PMS35C v_c [m/min]
P	Steel	Non-alloyed steel 0 – 0.45% C	150 – 250	220 – 400	200 – 270	170 – 240	170 – 190
		Low-alloyed steel	250 – 300	200 – 320	115 – 210	100 – 190	90 – 150
		High-alloyed steel	200	180 – 320	150 – 240	130 – 210	120 – 200
		Corrosion-resistant steel	200	200 – 320	150 – 240	130 – 210	140 – 180
M	Stainless steel	Ferritic	200	220 – 320	160 – 240	140 – 210	140 – 200
		Austenitic	180	–	115 – 240	100 – 210	110 – 190
		Duplex	230 – 260	–	–	–	80 – 150
		Martensitic	330	–	80 – 115	70 – 100	55 – 75
K	Cast iron	Grey cast iron	180	140 – 370	150 – 240	130 – 210	–
		Spheroidal cast iron	160	190 – 430	140 – 270	120 – 240	–
		Malleable/tempered iron	130	180 – 520	170 – 290	150 – 250	–

Application	Depth of cut / feed rate	
Chip groove	a_p [mm]	f [mm]
NM3	0.50 to 3.00	0.21 to 0.12

Ex: CCMT 09T304-NM3 for CK60
Different in each application

Consistent cutting depth	Inconsistent cutting depth	Interrupted cut
●	●	○

Available range



Turning steel pos medium "P25"

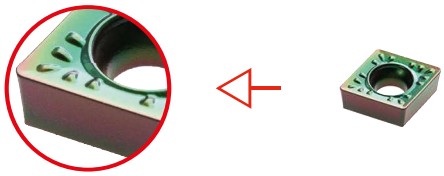
Insert	Designation	Chipbreaker	Material number	Available
	CCMT 060204-NM3 PMK25CU		14658964	●
	CCMT 09T304-NM3 PMK25CU		12360829	●
	CCMT 09T308-NM3 PMK25CU		12360832	●
	CCMT 120404-NM3 PMK25CU		14658965	●
	CCMT 120408-NM3 PMK25CU	…-NM3	12310818	
	CCMT 120412-NM3 PMK25CU		14658969	●
	DCMT 070204-NM3 PMK25CU		14659032	●
	DCMT 11T304-NM3 PMK25CU		14659038	●
	DCMT 11T308-NM3 PMK25CU		14659043	●

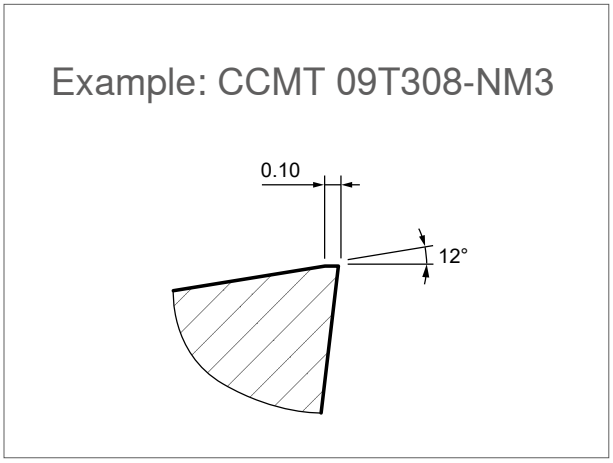
● available from stock, ○ available upon request

New chipbreaker

Optimised by FEM:

- Increase life time
- Reduce temperature and stress
- Universal application





Cutting data

General cutting parameters depending on the application

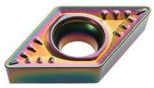
Work piece material		Type of treatment / alloy	Hardness HB	Coated carbide PMK20C v_c [m/min]	PMK25CU v_c [m/min]	PMK25C v_c [m/min]	PMS35C v_c [m/min]
P	Steel	Non-alloyed steel 0 – 0.45% C	150 – 250	220 – 400	200 – 270	170 – 240	170 – 190
		Low-alloyed steel	250 – 300	200 – 320	115 – 210	100 – 190	90 – 150
		High-alloyed steel	200	180 – 320	150 – 240	130 – 210	120 – 200
		Corrosion-resistant steel	200	200 – 320	150 – 240	130 – 210	140 – 180
M	Stainless steel	Ferritic	200	220 – 320	160 – 240	140 – 210	140 – 200
		Austenitic	180	–	115 – 240	100 – 210	110 – 190
		Duplex	230 – 260	–	–	–	80 – 150
		Martensitic	330	–	80 – 115	70 – 100	55 – 75
K	Cast iron	Grey cast iron	180	140 – 370	150 – 240	130 – 210	–
		Spheroidal cast iron	160	190 – 430	140 – 270	120 – 240	–
		Malleable/tempered iron	130	180 – 520	170 – 290	150 – 250	–

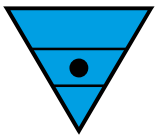
Application	Depth of cut / feed rate	
Chip groove	a_p [mm]	f [mm]
NM3	0.50 to 3.00	0.21 to 0.12

Ex: CCMT 09T304-NM3 for CK60
Different in each application

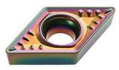
Consistent cutting depth	Inconsistent cutting depth	Interrupted cut
●	●	○

Available range





Turning steel pos medium "P35"

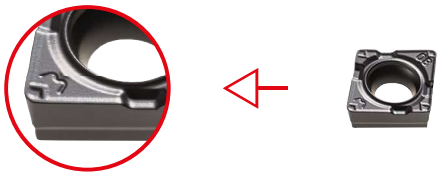
Insert	Designation		Chipbreaker	Material number	Available
	CCMT 060204-NM3	PMS35C	…-NM3	11854303	●
	CCMT 060208-NM3	PMS35C		11854307	●
	CCMT 09T304-NM3	PMS35C		11854315	●
	CCMT 09T308-NM3	PMS35C		11854322	●
	DCMT 070204-NM3	PMS35C		11854804	●
	DCMT 070208-NM3	PMS35C		11854807	●
	DCMT 11T304-NM3	PMS35C		11854850	●
	DCMT 11T308-NM3	PMS35C		11854863	●
	RCMT 0803MO-NM3	PMS35C		11882921	●
	RCMT 1003MO-NM3	PMS35C		11882920	●
	RCMT 1204MO-NM3	PMS35C		11855077	●
	SCMT 09T308-NM3	PMS35C		11855088	●
	SCMT 120408-NM3	PMS35C		11855090	●
	SCMT 120412-NM3	PMS35C		11855099	●
	TCMT 110204-NM3	PMS35C		11873284	●
	TCMT 110208-NM3	PMS35C		11873281	●
	TCMT 16T304-NM3	PMS35C		11855125	●
	TCMT 16T308-NM3	PMS35C		11855126	●
	VCMT 110304-NM3	PMS35C		11873280	●
	VCMT 110308-NM3	PMS35C		11873279	●
	VCMT 160404-NM3	PMS35C		11855136	●
	VCMT 160408-NM3	PMS35C		11855137	●

● available from stock, ○ available upon request

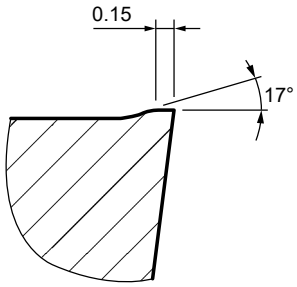
New chipbreaker

Optimised by FEM:

- ▲ Positive **Masterfinish** geometry
- ▲ High surface quality



Example: CCMX 09T308-WF3



Cutting data

General cutting parameters depending on the application

Work piece material		Type of treatment / alloy	Hardness HB	PMK25C v_c [m/min]	PMS35C v_c [m/min]
P	Steel	Non-alloyed steel 0 – 0.45% C	150 – 250	170 – 240	170 – 190
		Low-alloyed steel	250 – 300	100 – 190	90 – 150
		High-alloyed steel	200	130 – 210	120 – 200
		Corrosion-resistant steel	200	130 – 210	140 – 180
M	Stainless steel	Ferritic	200	140 – 210	140 – 200
		Austenitic	180	100 – 210	110 – 190
		Duplex	230 – 260	–	80 – 150
		Martensitic	330	70 – 100	55 – 75
K	Cast iron	Grey cast iron	180	130 – 210	–
		Spheroidal cast iron	160	120 – 240	–
		Malleable/tempered iron	130	150 – 250	–

Application Chip groove	Depth of cut / feed rate a_p [mm]	f [mm]
WF3	1 to 3.50	0.30 to 0.15

Ex: CCMX 09T308-WF3 for 304
Different in each application

Consistent cutting depth	Inconsistent cutting depth	Interrupted cut
●	○	X

Available range

MASTERFINISH

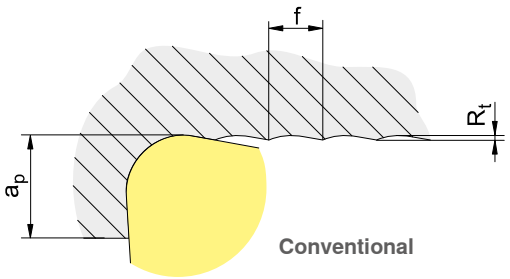
Heavy turning steel pos "P35" – Masterfinish

Insert	Designation		Chipbreaker	Material number	Available
	CCMX 09T304-WF3	MP35P	…-WF3	12078102	●
	CCMX 09T308-WF3	MP35P		12078097	●
	DCMX 11T304-WF3	MP35P		12078099	●
	DCMX 11T308-WF3	MP35P		12078094	●

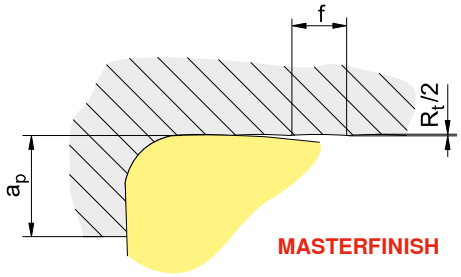
Operating principle

Improved surface finish

With the same feed rate an insert with Masterfinish cutting edge reaches a roughness value R_a which is many times higher than the one of a conventional insert.



Conventional

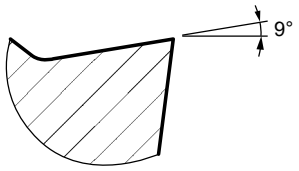


MASTERFINISH

● available from stock, ○ available upon request

Cutting data

Example: CCGT 09T301FG1



General cutting parameters depending on the application

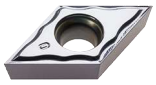
Work piece material		Type of treatment / alloy	Hardness HB	Coated carbide MK20P v_c [m/min]
M	Stainless steel	Ferritic	200	150 – 200
		Austenitic	180	120 – 200
		Duplex	230 – 260	90 – 160
		Martensitic	330	60 – 80
K	Cast iron	Grey cast iron	180	120 – 160
		Spheroidal cast iron	160	120 – 160
		Malleable/tempered iron	130	140 – 220
	Non Ferrous		100	100 – 400
			130	100 – 400
			90	100 – 600
			100	100 – 400
	Exotic materials	Fe base	200	20 – 50
		Nickel or cobalt base	280	20 – 50
		Nickel or cobalt base	250	15 – 40
		Nickel or cobalt base		20 – 35
		Titanium	Rm 440*	80 – 140

Application Chip groove	Depth of cut / feed rate a_p [mm]	f [mm]
FG1	0.05 to 1.35	0.02 to 0.10

Ex: CCGT 09T0301FG1 for 304
Different in each application

Consistent cutting depth	Inconsistent cutting depth	Interrupted cut
●	X	X

Available range



Turning stainless steel pos "Extreme finishing"

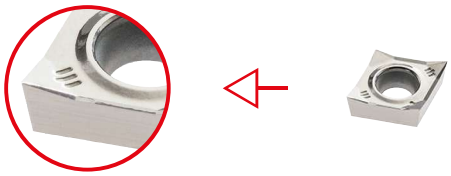
Insert	Designation		Chipbreaker	Material number	Available
	CCGT 060200FG1	MK20P	...FG1	11204029	●
	CCGT 060201FG1	MK20P		11203024	●
	CCGT 09T300FG1	MK20P		11204030	●
	CCGT 09T301FG1	MK20P		11203027	●
	DCGT 070200FG1	MK20P		11204031	●
	DCGT 070201FG1	MK20P		11203028	●
	DCGT 11T300FG1	MK20P		11204035	●
	DCGT 11T301FG1	MK20P		11203030	●
	VCGT 110300FG1	MK20P		11204036	●
	VCGT 110301FG1	MK20P		11203033	●
	VCGT 160400FG1	MK20P		11204037	●
	VCGT 160401FG1	MK20P		11203034	●

● available from stock, ○ available upon request

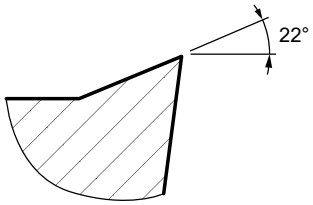
New chipbreaker

Optimised by FEM:

- Increased tool life
- Small feed rate when bar turning



Example: CCGT 120408FN-MG1



Cutting data

General cutting parameters depending on the application

Work piece material		Type of treatment / alloy	Hardness HB	Coated carbide MS15P v_c [m/min]
K	Cast iron	Grey cast iron	180	–
		Spheroidal cast iron	160	–
		Malleable/tempered iron	130	–
	Non Ferrous		100	100 – 2000
			130	100 – 800
			90	100 – 600
			100	100 – 300
	Exotic materials	Fe base	200	30 – 45
		Nickel or cobalt base	280	20 – 35
		Nickel or cobalt base	250	20 – 35
		Nickel or cobalt base		18 – 30
		Titanium	Rm 440*	60 – 120

Application	Depth of cut / feed rate	
Chip groove	a_p [mm]	f [mm]
MG1	0.05 to 1.35	0.02 to 0.10

Ex: CCGT 120408FN-MG1 for 304
Different in each application

Consistent cutting depth	Inconsistent cutting depth	Interrupted cut
●	●	○

Available range

Turning stainless steel pos finishing "M15"

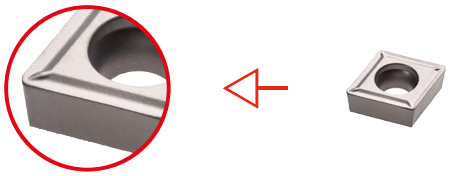
Insert	Designation	Chipbreaker	Material number	Available
	CCGT 060201AN-MG1 MS15P		11973505	●
	CCGT 060202AN-MG1 MS15P		11969606	●
	CCGT 060202AN-MG1 MS15P		11969605	●
	CCGT 09T302AN-MG1 MS15P		11969607	●
	CCGT 09T304AN-MG1 MS15P		11969604	●
	CCGT 09T308AN-MG1 MS15P		11969600	●
	CCGT 120404AN-MG1 MS15P		11969598	●
	CCGT 120408AN-MG1 MS15P		11969596	●
	DCGT 070201AN-MG1 MS15P		11969599	●
	DCGT 070202AN-MG1 MS15P		11969597	●
	DCGT 070204AN-MG1 MS15P		11969595	●
	DCGT 11T302AN-MG1 MS15P		11969591	●
	DCGT 11T304AN-MG1 MS15P		11969585	●
	DCGT 11T308AN-MG1 MS15P	…-MG1	11969579	●
	SCGT 09T304AN-MG1 MS15P		11969578	●
	SCGT 09T308AN-MG1 MS15P		12042223	●
	SCGT 120408AN-MG1 MS15P		12049241	●
	TCGT 110204AN-MG1 MS15P		12044368	●
	VCGT 110302AN-MG1 MS15P		11969577	●
	VCGT 110304AN-MG1 MS15P		11969575	●
	VCGT 130302AN-MG1 MS15P		11969568	●
	VCGT 130304AN-MG1 MS15P		11969566	●
	VCGT 160404AN-MG1 MS15P		11969535	●
	VCGT 160408AN-MG1 MS15P		11969529	●
	VCGT 160412AN-MG1 MS15P		11969360	●

● available from stock, ○ available upon request

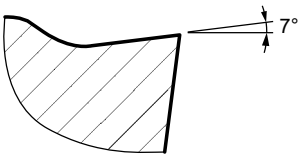
New chipbreaker

Optimised by FEM:

- Increased tool life
- Small feed rate when bar turning



Example: DCMT 11T304-CF1



Cutting data

General cutting parameters depending on the application

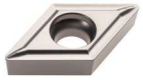
Work piece material		Type of treatment / alloy	Hardness HB	Cermet PMKC15 v_c [m/min]
P	Steel	Non-alloyed steel 0 – 0.45% C	150 – 250	230 – 270
		Low-alloyed steel	250 – 300	180 – 230
		High-alloyed steel	200	160 – 200
		Corrosion-resistant steel	200	230 – 270
M	Stainless steel	Ferritic	200	170 – 240
		Austenitic	180	200 – 240
		Duplex	230 – 260	–
		Martensitic	330	130 – 160
K	Cast iron	Grey cast iron	180	–
		Spheroidal cast iron	160	220 – 300
		Malleable/tempered iron	130	250 – 350

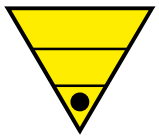
Application Chip groove	Depth of cut / feed rate a_p [mm]	f [mm]
CF1	0.10 to 1.65	0.20 to 0.05

Ex: CCMT 09T304-CF1
Different in each application

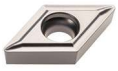
Consistent cutting depth	Inconsistent cutting depth	Interrupted cut
●	X	X

Available range





Turning stainless steel pos finishing "CERMET"

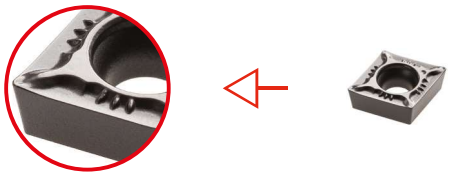
Insert	Designation	Chipbreaker	Material number	Available
	CCMT 060204-CF1 PMKC15	… -CF1	11619142	●
	CCMT 09T304-CF1 PMKC15		11619132	●
	DCMT 070204-CF1 PMKC15		11619127	●
	DCMT 11T304-CF1 PMKC15		11619131	●
	TCGT 110202-CF1 PMKC15		11622263	●
	TCMT 110204-CF1 PMKC15		11619126	●
	WCGT 020102-CF1 PMKC15		11619140	●

● available from stock, ○ available upon request

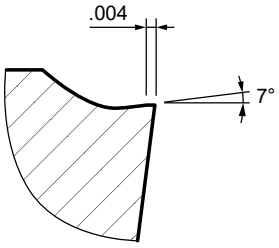
New chipbreaker

MT2:

▲ To optimise chip control



Example: CCMT 09T308-MT2



Cutting data

General cutting parameters depending on the application

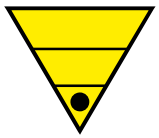
Work piece material		Type of treatment / alloy	Hardness HB	Coated carbide MP20CU v_c [m/min]	MPS25P v_c [m/min]	MP35P v_c [m/min]
P	Steel	non-alloyed steel 0 – 0.45% C	150 – 250	150 – 250	130 – 250	150 – 190
		low-alloyed steel	250 – 300	100 – 200	60 – 180	90 – 150
		high-alloyed steel	200	120 – 220	80 – 200	120 – 200
		corrosion-resistant steel	200	120 – 220	100 – 200	140 – 180
M	Stainless steel	Ferritic	200	190 – 250	120 – 250	140 – 200
		Austenitic	180	140 – 220	100 – 220	110 – 190
		Duplex	230 – 260	110 – 170	60 – 160	80 – 150
		Martensitic	330	40 – 100	40 – 100	55 – 75

Application Chip groove	Depth of cut / feed rate a_p [mm]	f [mm]
MT2	0.15 to 2.25	0.20 to 0.07

Ex: CCMT 09T304MT2+ for 304
Different in each application

Consistent cutting depth	Inconsistent cutting depth	Interrupted cut
●	○	X

Available range



Turning steel pos finishing "M20"

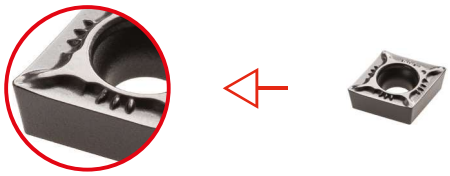
Insert	Designation		Chipbreaker	Material number	Available
	CCMT 060202-MT2	PMK25CU	…-MT2	141573467	●
	CCMT 060204-MT2	PMK25CU		141573469	●
	CCMT 09T302-MT2	PMK25CU		141573473	●
	CCMT 09T304-MT2	PMK25CU		141573477	●
	DCMT 070202-MT2	PMK25CU		141573478	●
	DCMT 070204-MT2	PMK25CU		141573482	●
	DCMT 11T302-MT2	PMK25CU		141573483	●
	DCMT 11T304-MT2	PMK25CU		141573486	●
	VCMT 110302-MT2	PMK25CU		141573491	●
	VCMT 110304-MT2	PMK25CU		141573494	●
	VCMT 160404-MT2	PMK25CU		141573495	●
	VCMT 160408-MT2	PMK25CU		141573497	

● available from stock, ○ available upon request

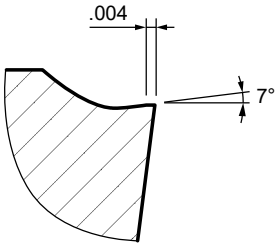
New chipbreaker

MT2:

▲ To optimise chip control



Example: CCMT 09T308-MT2



Cutting data

General cutting parameters depending on the application

Work piece material		Type of treatment / alloy	Hardness HB	Coated carbide MP20CU v_c [m/min]	MPS25P v_c [m/min]	MP35P v_c [m/min]
P	Steel	non-alloyed steel 0 – 0.45% C	150 – 250	150 – 250	130 – 250	150 – 190
		low-alloyed steel	250 – 300	100 – 200	60 – 180	90 – 150
		high-alloyed steel	200	120 – 220	80 – 200	120 – 200
		corrosion-resistant steel	200	120 – 220	100 – 200	140 – 180
M	Stainless steel	Ferritic	200	190 – 250	120 – 250	140 – 200
		Austenitic	180	140 – 220	100 – 220	110 – 190
		Duplex	230 – 260	110 – 170	60 – 160	80 – 150
		Martensitic	330	40 – 100	40 – 100	55 – 75

Application	Depth of cut / feed rate	
Chip groove	a_p [mm]	f [mm]
MT2	0.15 to 2.25	0.20 to 0.07

Ex: CCMT 09T304-MT2 for 304
Different in each application

Consistent cutting depth	Inconsistent cutting depth	Interrupted cut
●	○	X

Available range

Turning steel pos finishing "M25"

Insert	Designation		Chipbreaker	Material number	Available
	CCMT 060202-MT2	MPS25P		11782035	●
	CCMT 060204-MT2	MPS25P		11782037	●
	CCMT 09T302-MT2	MPS25P		11782051	●
	CCMT 09T304-MT2	MPS25P		11782052	●
	CCMT 09T308-MT2	MPS25P		11782054	●
	DCMT 070202-MT2	MPS25P		11782055	●
	DCMT 070204-MT2	MPS25P		11782056	●
	DCMT 11T302-MT2	MPS25P		11812678	●
	DCMT 11T304-MT2	MPS25P	…-MT2	11782058	●
	DCMT 11T308-MT2	MPS25P		11782059	●
	TCMT 110202-MT2	MPS25P		11906411	●
	VCMT 110302-MT2	MPS25P		11812682	●
	VCMT 110304-MT2	MPS25P		11855134	●
	VCMT 160404-MT2	MPS25P		11812684	●

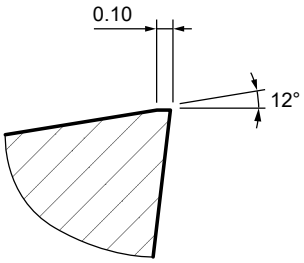
● available from stock, ○ available upon request

New chipbreaker

Optimised by FEM:

- Increase life time
- Reduce temperature and stress
- Universal application

Example: CCMT 09T308-NM3



Cutting data

General cutting parameters depending on the application

Work piece material		Type of treatment / alloy	Hardness HB	Coated carbide MP20CU v_c [m/min]	MPS25P v_c [m/min]	MP35P v_c [m/min]
P	Steel	non-alloyed steel 0 – 0.45% C	150 – 250	150 – 250	130 – 250	150 – 190
		low-alloyed steel	250 – 300	100 – 200	60 – 180	90 – 150
		high-alloyed steel	200	120 – 220	80 – 200	120 – 200
		corrosion-resistant steel	200	120 – 220	100 – 200	140 – 180
M	Stainless steel	Ferritic	200	190 – 250	120 – 250	140 – 200
		Austenitic	180	140 – 220	100 – 220	110 – 190
		Duplex	230 – 260	110 – 170	60 – 160	80 – 150
		Martensitic	330	40 – 100	40 – 100	55 – 75

Application	Depth of cut / feed rate	
Chip groove	a_p [mm]	f [mm]
NM3	0.15 to 2.25	0.20 to 0.07

Ex: CCMT 09T304-NM3 for 304
Different in each application

Consistent cutting depth	Inconsistent cutting depth	Interrupted cut
●	○	X

Available range

Turning stainless steel pos "M20"

Insert	Designation		Chipbreaker	Material number	Available
	CCMT 060204-NM3	MP20CU		14600568	●
	CCMT 060208-NM3	MP20CU		14600574	●
	CCMT 09T304-NM3	MP20CU		14600569	●
	CCMT 09T308-NM3	MP20CU		14600577	●
	CCMT 120404-NM3	MP20CU		14600578	●
	CCMT 120408-NM3	MP20CU		14600581	●
	DCMT 070204-NM3	MP20CU		14600571	●
	DCMT 070208-NM3	MP20CU		14600550	●
	DCMT 11T304-NM3	MP20CU		14600584	●
	DCMT 11T308-NM3	MP20CU		14600586	●
	SCMT 09T304-NM3	MP20CU	…-NM3	14600587	●
	SCMT 09T308-NM3	MP20CU		12440389	●
	SCMT 120404-NM3	MP20CU		14620552	●
	SCMT 120408-NM3	MP20CU		14600588	●
	TCMT 090204-NM3	MP20CU		14479036	●
	TCMT 16T304-NM3	MP20CU		14600590	●
	TCMT 16T308-NM3	MP20CU		14479037	●
	VCMT 110304-NM3	MP20CU		14600591	●
	VCMT 110308-NM3	MP20CU		14620553	●
	VCMT 160404-NM3	MP20CU		14600594	●
	VCMT 160408-NM3	MP20CU		14600572	●

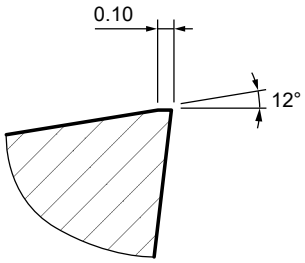
● available from stock, ○ available upon request

New chipbreaker

Optimised by FEM:

- ▲ Increase life time
- ▲ Reduce temperature and stress
- ▲ Universal application

Example: CCMT 09T308-NM3



Cutting data

General cutting parameters depending on the application

Work piece material		Type of treatment / alloy	Hardness HB	Coated carbide MP20CU v_c [m/min]	MPS25P v_c [m/min]	MP35P v_c [m/min]
P	Steel	non-alloyed steel 0 – 0.45% C	150 – 250	150 – 250	130 – 250	150 – 190
		low-alloyed steel	250 – 300	100 – 200	60 – 180	90 – 150
		high-alloyed steel	200	120 – 220	80 – 200	120 – 200
		corrosion-resistant steel	200	120 – 220	100 – 200	140 – 180
M	Stainless steel	Ferritic	200	190 – 250	120 – 250	140 – 200
		Austenitic	180	140 – 220	100 – 220	110 – 190
		Duplex	230 – 260	110 – 170	60 – 160	80 – 150
		Martensitic	330	40 – 100	40 – 100	55 – 75

Application	Depth of cut / feed rate	
Chip groove	a_p [mm]	f [mm]
NM3	0.15 to 2.25	0.20 to 0.07

Ex: CCMT 09T304-NM3 for 304
Different in each application

Consistent cutting depth	Inconsistent cutting depth	Interrupted cut
●	○	X

Available range

Turning stainless steel pos "M25"

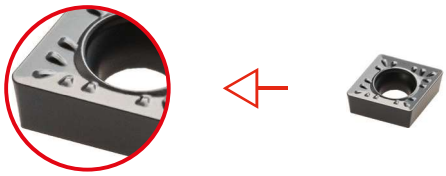
Insert	Designation	Chipbreaker	Material number	Available
	CCMT 060204-NM3 MPS25P		11748109	●
	CCMT 060208-NM3 MPS25P		11748111	●
	CCMT 09T304-NM3 MPS25P		11748113	●
	CCMT 09T308-NM3 MPS25P		11748115	●
	CCMT 120404-NM3 MPS25P		11748117	●
	CCMT 120408-NM3 MPS25P		11748119	●
	CCMT 120412-NM3 MPS25P		11748121	●
	DCMT 070204-NM3 MPS25P		11748126	●
	DCMT 070208-NM3 MPS25P		11748128	●
	DCMT 11T304-NM3 MPS25P		11748130	●
	DCMT 11T308-NM3 MPS25P		11748132	●
	SCMT 09T304-NM3 MPS25P		11748548	●
	SCMT 09T308-NM3 MPS25P		11748559	●
	SCMT 120404-NM3 MPS25P		11748564	●
	SCMT 120408-NM3 MPS25P		11748568	●
	SCMT 120412-NM3 MPS25P		11748592	●
	TCMT 090204-NM3 MPS25P	…-NM3	11748606	●
	TCMT 110204-NM3 MPS25P		11748608	●
	TCMT 110208-NM3 MPS25P		11748618	●
	TCMT 16T304-NM3 MPS25P		11748621	●
	TCMT 16T308-NM3 MPS25P		11748624	●
	TCMT 16T312-NM3 MPS25P		11748626	●
	VCMT 110304-NM3 MPS25P		11749277	●
	VCMT 110308-NM3 MPS25P		11749294	●
	VCMT 160404-NM3 MPS25P		11749295	●
	VCMT 160408-NM3 MPS25P		11749296	●
	WCMT 040204-NM3 MPS25P		11749303	●
	WCMT 040208-NM3 MPS25P		11749307	●
	WCMT 06T304-NM3 MPS25P		11749314	●
	WCMT 06T308-NM3 MPS25P		11749331	●
	WCMT 080404-NM3 MPS25P		11749335	●
	WCMT 080408-NM3 MPS25P		11749337	●
	WCMT 080412-NM3 MPS25P		11747968	●

● available from stock, ○ available upon request

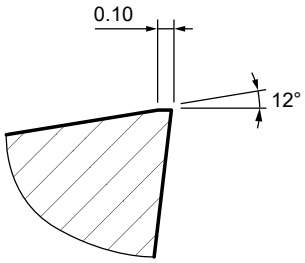
New chipbreaker

Optimised by FEM:

- ▲ Increase life time
- ▲ Reduce temperature and stress
- ▲ Universal application



Example: CCMT 09T308-NM3



Cutting data

General cutting parameters depending on the application

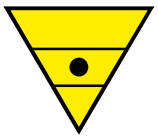
Work piece material		Type of treatment / alloy	Hardness HB	Coated carbide MP20CU v_c [m/min]	Coated carbide MPS25P v_c [m/min]	Coated carbide MP35P v_c [m/min]
P	Steel	non-alloyed steel 0 – 0.45% C	150 – 250	150 – 250	130 – 250	150 – 190
		low-alloyed steel	250 – 300	100 – 200	60 – 180	90 – 150
		high-alloyed steel	200	120 – 220	80 – 200	120 – 200
		corrosion-resistant steel	200	120 – 220	100 – 200	140 – 180
M	Stainless steel	Ferritic	200	190 – 250	120 – 250	140 – 200
		Austenitic	180	140 – 220	100 – 220	110 – 190
		Duplex	230 – 260	110 – 170	60 – 160	80 – 150
		Martensitic	330	40 – 100	40 – 100	55 – 75

Application Chip groove	Depth of cut / feed rate a_p [mm]	f [mm]
NM3	0.15 to 2.25	0.20 to 0.07

Ex: CCMT 09T304-NM3 for 304
Different in each application

Consistent cutting depth	Inconsistent cutting depth	Interrupted cut
●	○	X

Available range



Turning stainless steel pos "M35"

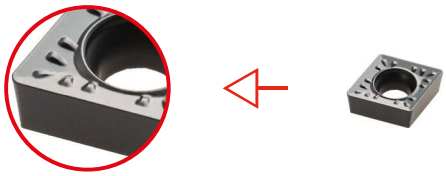
Insert	Designation	Chipbreaker	Material number	Available
	CCMT 09T304-NM3 MP35P		11854319	●
	CCMT 09T308-NM3 MP35P		11854326	●
	DCMT 11T304-NM3 MP35P		11854853	●
	DCMT 11T308-NM3 MP35P		11854898	●
	TCMT 110204-NM3 MP35P	…-NM3	11855120	●
	TCMT 110208-NM3 MP35P		11855122	●
	VCMT 110304-NM3 MP35P		11855131	●
	VCMT 110308-NM3 MP35P		11855135	●

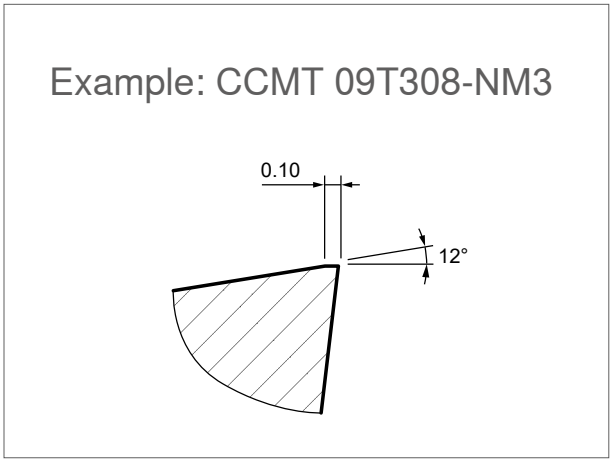
● available from stock, ○ available upon request

New chipbreaker

Optimised by FEM:

- Increase life time
- Reduce temperature and stress
- Universal application





Cutting data

General cutting parameters depending on the application

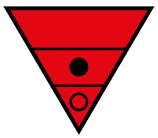
Work piece material		Type of treatment / alloy	Hardness HB	Coated carbide KP20C v_c [m/min]
P	Steel	Non-alloyed steel 0 – 0.45% C	150 – 250	200 – 340
		Low-alloyed steel	250 – 300	150 – 290
		High-alloyed steel	200	150 – 290
		Corrosion-resistant steel	200	160 – 290
K	Cast iron	Grey cast iron	180	150 – 400
		Spheroidal cast iron	160	200 – 450
		Malleable/tempered iron	130	200 – 550

Application	Depth of cut / feed rate	
Chip groove	a_p [mm]	f [mm]
NM3	1.00 to 3.00	0.41 to 0.22

Ex: CCMT 09T308-NM3 for GG25
Different in each application

Consistent cutting depth	Inconsistent cutting depth	Interrupted cut
●	●	X

Available range



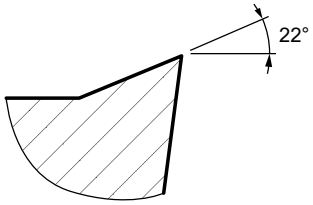
Turning cast iron pos "K20"

Insert	Designation	Chipbreaker	Material number	Available
	CCMT 060204-NM3 KP20C		11865626	●
	CCMT 09T304-NM3 KP20C		11821845	●
	CCMT 09T308-NM3 KP20C		11821847	●
	CCMT 120408-NM3 KP20C		11865627	●
	DCMT 070204-NM3 KP20C		11905454	●
	DCMT 11T304-NM3 KP20C		11821849	●
	DCMT 11T308-NM3 KP20C		11821857	●
	SCMT 09T304-NM3 KP20C	…-NM3	12001751	●
	SCMT 09T308-NM3 KP20C		11855086	●
	SCMT 120408-NM3 KP20C		11855089	●
	TCMT 090204-NM3 KP20C		11905457	●
	TCMT 110204-NM3 KP20C		11905458	●
	TCMT 110208-NM3 KP20C		11905456	●
	TCMT 16T304-NM3 KP20C		11821858	●
	TCMT 16T308-NM3 KP20C		11780842	●

● available from stock, ○ available upon request

Cutting data

Example: CCGT 120408AN-MG1



General cutting parameters depending on the application

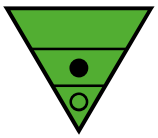
Work piece material		Type of treatment / alloy	Hardness HB	Uncoated polished carbide NK15S v_c [m/min]
K	Cast iron	Grey cast iron	180	120 – 160
		Spheroidal cast iron	160	130 – 170
		Malleable/tempered iron	130	140 – 200
N	Non Ferrous	Aluminium wrought alloys	100	100 – 2000
		Aluminium cast alloys	130	100 – 800
		Copper and copper alloys	90	100 – 600
		Non-metall materials	100	100 – 300
S	Exotic materials	Fe base	200	30 – 45
		Nickel or cobalt base	280	20 – 35
		Nickel or cobalt base	250	20 – 35
		Nickel or cobalt base	–	18 – 30
		Titanium	Rm 440*	60 – 120

Application Chip groove	Depth of cut / feed rate a_p [mm]	f [mm]
MG1	1,5 to 6,5	0,50 to 0,20

Ex: CCGT 120408AN-MG1+ for AlMg
1 Different in each application

Consistent cutting depth	Inconsistent cutting depth	Interrupted cut
●	●	○

Available range



Turning non-ferrous pos "K15"

Insert	Designation	Chipbreaker	Material number	Available
	CCGT 060201AN-MG1 NK15S		11818995	●
	CCGT 060202AN-MG1 NK15S		11812686	●
	CCGT 060204AN-MG1 NK15S		11796649	●
	CCGT 09T302AN-MG1 NK15S		11812687	●
	CCGT 09T304AN-MG1 NK15S		11559390	●
	CCGT 09T308AN-MG1 NK15S		11587908	●
	CCGT 120404AN-MG1 NK15S		11568607	●
	CCGT 120408AN-MG1 NK15S		11796647	●
	DCGT 070201AN-MG1 NK15S		11816442	●
	DCGT 070202AN-MG1 NK15S		11780860	●
	DCGT 070204AN-MG1 NK15S		11780861	●
	DCGT 070208AN-MG1 NK15S		11782068	●
	DCGT 11T302AN-MG1 NK15S		11818615	●
	DCGT 11T304AN-MG1 NK15S		11568602	●
	DCGT 11T308AN-MG1 NK15S	…-MG1	11780859	●
	SCGT 09T304AN-MG1 NK15S		11879045	●
	SCGT 09T308AN-MG1 NK15S		12042222	●
	TCGT 110204AN-MG1 NK15S		12044373	●
	TCGT 16T304AN-MG1 NK15S		12037327	●
	TCGT 16T308AN-MG1 NK15S		12037326	●
	VCGT 110302AN-MG1 NK15S		11815996	●
	VCGT 110304AN-MG1 NK15S		11818617	●
	VCGT 130302AN-MG1 NK15S		11816588	●
	VCGT 130304AN-MG1 NK15S		11818611	●
	VCGT 160404AN-MG1 NK15S		11556414	●
	VCGT 160408AN-MG1 NK15S		11556416	●
	VCGT 160412AN-MG1 NK15S		11556417	●
	VCGT 220530AN-MG1 NK15S		12044457	●

● available from stock, ○ available upon request

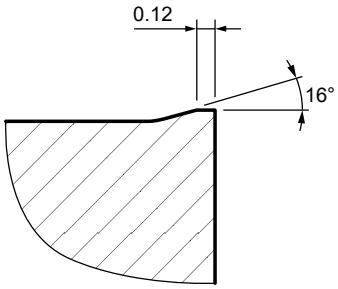
Negative Size Turning
NST

New chipbreaker

Optimised by FEM:

- ▲ **Masterfinish** geometry
- ▲ High surface quality

Example: CNMX 120408-WF3



Cutting data

General cutting parameters depending on the application

Work piece material		Type of treatment / alloy	Hardness HB	Coated carbide PMK20C v_c [m/min]	PMK25 v_c [m/min]	PMS35C v_c [m/min]
P	Steel	Non-alloyed steel 0 – 0.45% C	150 – 250	220 – 400	170 – 240	170 – 190
		Low-alloyed steel	250 – 300	200 – 320	100 – 190	90 – 150
		High-alloyed steel	200	180 – 320	130 – 210	120 – 200
		Corrosion-resistant steel	200	200 – 320	130 – 210	140 – 180
M	Stainless steel	Ferritic	200	220 – 320	140 – 210	140 – 200
		Austenitic	180	–	100 – 210	110 – 190
		Duplex	230 – 260	–	–	80 – 150
		Martensitic	330	–	70 – 100	55 – 75
K	Cast iron	Grey cast iron	180	140 – 370	130 – 210	–
		Spheroidal cast iron	160	190 – 430	120 – 240	–
		Malleable/tempered iron	130	180 – 520	150 – 250	–

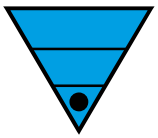
Application	Depth of cut / feed rate	
Chip groove	a_p [mm]	f [mm]
WF3	0.50 to 3.00	0.35 to 0.15

Ex: CNMX 120408-WF3
Different in each application

Consistent cutting depth	Inconsistent cutting depth	Interrupted cut
●	●	○

Available range

MASTERFINISH



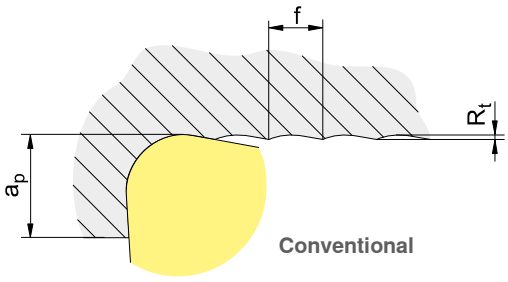
Heavy turning steel neg "P15" – Masterfinish

Insert	Designation		Chipbreaker	Material number	Available
	CNMX 120404-WF3	PMK20C		12078117	●
	CNMX 120408-WF3	PMK20C		12078114	●
	DNMX 150604-WF3	PMK20C	…-WF3	12078116	●
	DNMX 150608-WF3	PMK20C		12078110	●
	WNMX 080404-WF3	PMK20C		12078112	●
	WNMX 080408-WF3	PMK20C		12078109	●

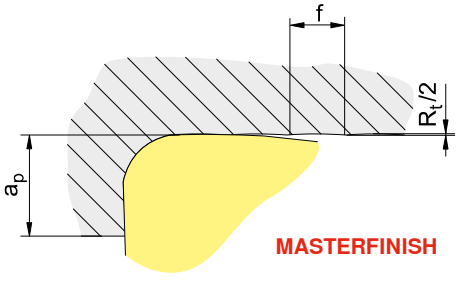
Operating principle

Improved surface finish

With the same feed rate an insert with Masterfinish cutting edge reaches a roughness value R_a which is many times higher than the one of a conventional insert.



Conventional

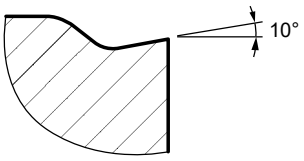


MASTERFINISH

● available from stock, ○ available upon request

Cutting data

Example: CNMG 120408UN-CF1



General cutting parameters depending on the application

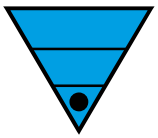
Work piece material		Type of treatment / alloy	Hardness HB	Cermet PMKC15 v_c [m/min]
P	Steel	Non-alloyed steel 0 – 0.45% C	150 – 250	230 – 270
		Low-alloyed steel	250 – 300	180 – 230
		High-alloyed steel	200	160 – 200
		Corrosion-resistant steel	200	230 – 270
M	Stainless steel	Ferritic	200	170 – 240
		Austenitic	180	200 – 240
		Duplex	230 – 260	–
		Martensitic	330	130 – 160
K	Cast iron	Grey cast iron	180	–
		Spheroidal cast iron	160	220 – 300
		Malleable/tempered iron	130	250 – 350

Application Chip groove	Depth of cut / feed rate a_p [mm]	f [mm]
CF1	0.10 to 2.00	0.20 to 0.05

Ex: CNMG 120404UN-CF1
Different in each application

Consistent cutting depth	Inconsistent cutting depth	Interrupted cut
●	X	X

Available range



Turning steel neg finishing CERMET

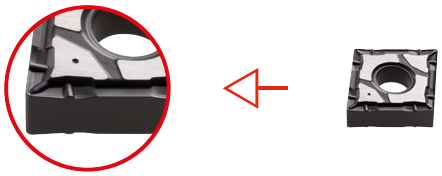
Insert	Designation	Chipbreaker	Material number	Available
	CNMG 120404UN-CF1 PMKC15	…-CF1	11882894	●
	CNMG 120408UN-CF1 PMKC15		11882895	●
	DNMG 110404UN-CF1 PMKC15		11882708	●
	DNMG 150604UN-CF1 PMKC15		11882698	●

● available from stock, ○ available upon request

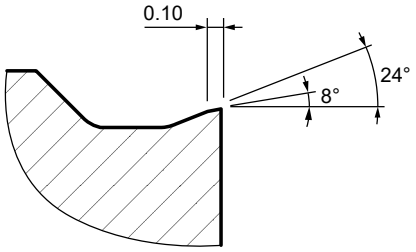
New chipbreaker

Optimised by FEM:

- ▲ Increase life time
- ▲ Reduce temperature and stress



Example: CNMG 120408UN-NS2



Cutting data

General cutting parameters depending on the application

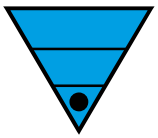
Work piece material		Type of treatment / alloy	Hardness HB	Coated carbide PMK20C v_c [m/min]	Coated carbide PMK25C v_c [m/min]
P	Steel	Non-alloyed steel 0 – 0.45% C	150 – 250	220 – 400	170 – 240
		Low-alloyed steel	250 – 300	200 – 320	100 – 190
		High-alloyed steel	200	180 – 320	130 – 210
		Corrosion-resistant steel	200	200 – 320	130 – 210
M	Stainless steel	Ferritic	200	220 – 320	140 – 210
		Austenitic	180	–	100 – 210
		Duplex	230 – 260	–	–
		Martensitic	330	–	70 – 100
K	Cast iron	Grey cast iron	180	–	–
		Spheroidal cast iron	160	–	–
		Malleable/tempered iron	130	–	–

Application Chip groove	Depth of cut / feed rate a_p [mm]	f [mm]
NS2	0.50 to 2.00	0.20 to 0.10

Ex: CNMX 120408-NS2+ for CK60 Different in each application

Consistent cutting depth	Inconsistent cutting depth	Interrupted cut
●	○	X

Available range



Heavy turning steel neg "P15"

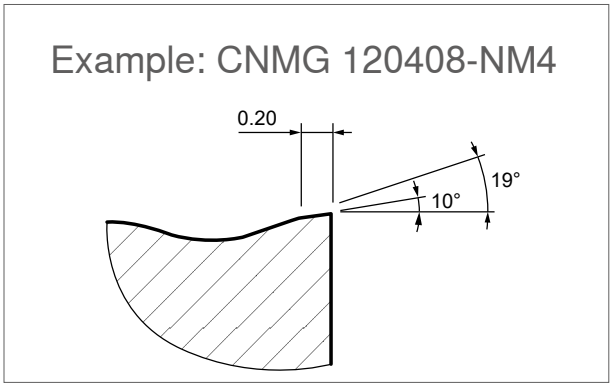
Insert	Designation	Chipbreaker	Material number	Available
	CNMG 090304UN-NS2 PMK20C	…-NS2	12044441	●
	CNMG 120404UN-NS2 PMK20C		12044444	●
	CNMG 120408UN-NS2 PMK20C		12044454	●
	DNMG 110404UN-NS2 PMK20C		12041499	●
	DNMG 150604UN-NS2 PMK20C		12041505	●
	DNMG 150608UN-NS2 PMK20C		12067233	●
	VNMG 160404UN-NS2 PMK20C		12046214	●
	WNMG 060404UN-NS2 PMK20C		12046215	●
	WNMG 080404UN-NS2 PMK20C		12046216	●

Heavy turning steel neg "P25"

Insert	Designation	Chipbreaker	Material number	Available
	CNMG 120404UN-NS2 PMK20C	…-NS2	12044450	●
	CNMG 120408UN-NS2 PMK20C		12044455	●
	DNMG 110404UN-NS2 PMK20C		12041502	●

● available from stock, ○ available upon request

Cutting data



General cutting parameters depending on the application

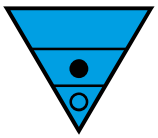
Work piece material		Type of treatment / alloy	Hardness HB	Coated carbide PMK20C v_c [m/min]	PMK25CU v_c [m/min]	PMK25C v_c [m/min]	PMS35C v_c [m/min]
P	Steel	Non-alloyed steel 0 – 0.45% C	150 – 250	220 – 400	200 – 270	170 – 240	170 – 190
		Low-alloyed steel	250 – 300	200 – 320	115 – 210	100 – 190	90 – 150
		High-alloyed steel	200	180 – 320	150 – 240	130 – 210	120 – 200
		Corrosion-resistant steel	200	200 – 320	150 – 240	130 – 210	140 – 180
M	Stainless steel	Ferritic	200	220 – 320	160 – 240	140 – 210	140 – 200
		Austenitic	180	–	115 – 240	100 – 210	110 – 190
		Duplex	230 – 260	–	–	–	80 – 150
		Martensitic	330	–	80 – 115	70 – 100	55 – 75
K	Cast iron	Grey cast iron	180	140 – 370	150 – 240	130 – 210	–
		Spheroidal cast iron	160	190 – 430	140 – 270	120 – 240	–
		Malleable/tempered iron	130	180 – 520	170 – 290	150 – 250	–

Application Chip groove	Depth of cut / feed rate a_p [mm]	f [mm]
NM4	1.00 to 4.00	0.44 to 0.22

Ex: CNMG 120408-NM4 for CK60
Different in each application

Consistent cutting depth	Inconsistent cutting depth	Interrupted cut
●	●	○

Available range

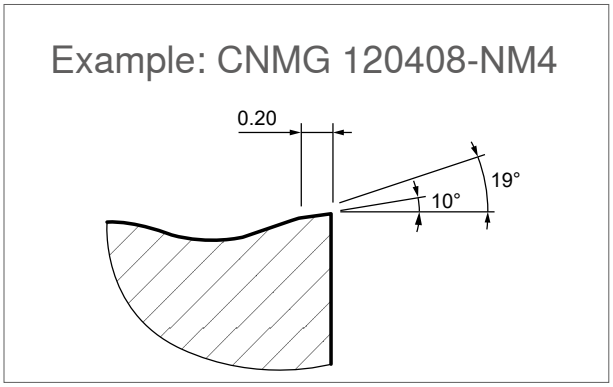


Turning steel neg semi finishing "P15"

Insert	Designation	Chipbreaker	Material number	Available
	CNMG 120404-NM4 PMK20C		11854331	●
	CNMG 120408-NM4 PMK20C		11854338	●
	CNMG 120412-NM4 PMK20C		11861944	●
	DNMG 110404-NM4 PMK20C		12067234	●
	DNMG 110408-NM4 PMK20C		12032128	●
	DNMG 150604-NM4 PMK20C		11855030	●
	DNMG 150608-NM4 PMK20C		11855070	●
	DNMG 150612-NM4 PMK20C		11861919	●
	SNMG 120408-NM4 PMK20C		11861932	●
	SNMG 120412-NM4 PMK20C		11861936	●
	TNMG 160404-NM4 PMK20C	…-NM4	11861915	●
	TNMG 160408-NM4 PMK20C		11861899	●
	TNMG 160412-NM4 PMK20C		11861913	●
	VNMG 160404-NM4 PMK20C		11861933	●
	VNMG 160408-NM4 PMK20C		11861935	●
	WNMG 060404-NM4 PMK20C		11861939	●
	WNMG 060408-NM4 PMK20C		11861942	●
	WNMG 080404-NM4 PMK20C		11855139	●
	WNMG 080408-NM4 PMK20C		11855141	●
	WNMG 080412-NM4 PMK20C		11861917	●

● available from stock, ○ available upon request

Cutting data



General cutting parameters depending on the application

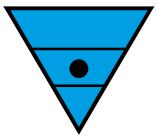
Work piece material		Type of treatment / alloy	Hardness HB	Coated carbide PMK20C v_c [m/min]	PMK25CU v_c [m/min]	PMK25C v_c [m/min]	PMS35C v_c [m/min]
P	Steel	Non-alloyed steel 0 – 0.45% C	150 – 250	220 – 400	200 – 270	170 – 240	170 – 190
		Low-alloyed steel	250 – 300	200 – 320	115 – 210	100 – 190	90 – 150
		High-alloyed steel	200	180 – 320	150 – 240	130 – 210	120 – 200
		Corrosion-resistant steel	200	200 – 320	150 – 240	130 – 210	140 – 180
M	Stainless steel	Ferritic	200	220 – 320	160 – 240	140 – 210	140 – 200
		Austenitic	180	–	115 – 240	100 – 210	110 – 190
		Duplex	230 – 260	–	–	–	80 – 150
		Martensitic	330	–	80 – 115	70 – 100	55 – 75
K	Cast iron	Grey cast iron	180	140 – 370	150 – 240	130 – 210	–
		Spheroidal cast iron	160	190 – 430	140 – 270	120 – 240	–
		Malleable/tempered iron	130	180 – 520	170 – 290	150 – 250	–

Application	Depth of cut / feed rate	
Chip groove	a_p [mm]	f [mm]
NM4	1.00 to 4.00	0.44 to 0.22

Ex: CNMG 120408-NM4 for CK60
Different in each application

Consistent cutting depth	Inconsistent cutting depth	Interrupted cut
●	●	○

Available range

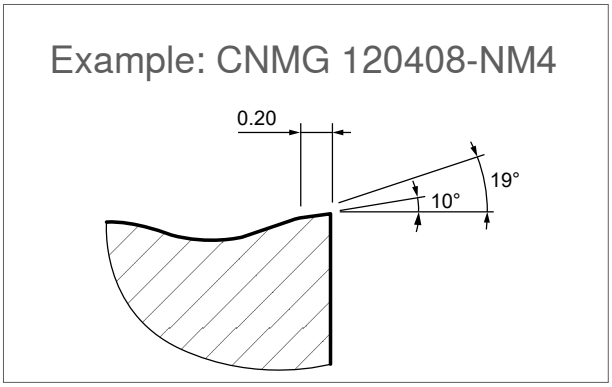


Turning steel neg medium "P25"

Insert	Designation	Chipbreaker	Material number	Available
	CNMG 120404-NM4 PMK25C		11562085	●
	CNMG 120408-NM4 PMK25C		11557291	●
	CNMG 120412-NM4 PMK25C		11577562	●
	DNMG 110404-NM4 PMK25C		11562091	●
	DNMG 110408-NM4 PMK25C		11562093	●
	DNMG 150404-NM4 PMK25C		11752699	●
	DNMG 150408-NM4 PMK25C		11752701	●
	DNMG 150604-NM4 PMK25C		11562094	●
	DNMG 150608-NM4 PMK25C		11562097	●
	DNMG 150612-NM4 PMK25C		11581880	●
	SNMG 120408-NM4 PMK25C		11560890	●
	SNMG 120412-NM4 PMK25C		11579855	●
	TNMG 160404-NM4 PMK25C	…-NM4	11562100	●
	TNMG 160408-NM4 PMK25C		11557290	●
	TNMG 160412-NM4 PMK25C		11581881	●
	TNMG 220404-NM4 PMK25C		11562102	●
	TNMG 220408-NM4 PMK25C		11562105	●
	VNMG 160404-NM4 PMK25C		11562107	●
	VNMG 160408-NM4 PMK25C		11560889	●
	WNMG 060404-NM4 PMK25C		11562108	●
	WNMG 060408-NM4 PMK25C		11562111	●
	WNMG 080404-NM4 PMK25C		11562112	●
	WNMG 080408-NM4 PMK25C		11560888	●
	WNMG 080412-NM4 PMK25C		11577559	●

● available from stock, ○ available upon request

Cutting data



NEW

General cutting parameters depending on the application

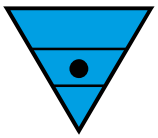
Work piece material		Type of treatment / alloy	Hardness HB	Coated carbide PMK20C v_c [m/min]	PMK25CU v_c [m/min]	PMK25C v_c [m/min]	PMS35C v_c [m/min]
P	Steel	Non-alloyed steel 0 – 0.45% C	150 – 250	220 – 400	200 – 270	170 – 240	170 – 190
		Low-alloyed steel	250 – 300	200 – 320	115 – 210	100 – 190	90 – 150
		High-alloyed steel	200	180 – 320	150 – 240	130 – 210	120 – 200
		Corrosion-resistant steel	200	200 – 320	150 – 240	130 – 210	140 – 180
M	Stainless steel	Ferritic	200	220 – 320	160 – 240	140 – 210	140 – 200
		Austenitic	180	–	115 – 240	100 – 210	110 – 190
		Duplex	230 – 260	–	–	–	80 – 150
		Martensitic	330	–	80 – 115	70 – 100	55 – 75
K	Cast iron	Grey cast iron	180	140 – 370	150 – 240	130 – 210	–
		Spheroidal cast iron	160	190 – 430	140 – 270	120 – 240	–
		Malleable/tempered iron	130	180 – 520	170 – 290	150 – 250	–

Application	Depth of cut / feed rate	
Chip groove	a_p [mm]	f [mm]
NM4	1.00 to 4.00	0.44 to 0.22

Ex: CNMG 120408-NM4+ for CK60 Different in each application

Consistent cutting depth	Inconsistent cutting depth	Interrupted cut
●	●	○

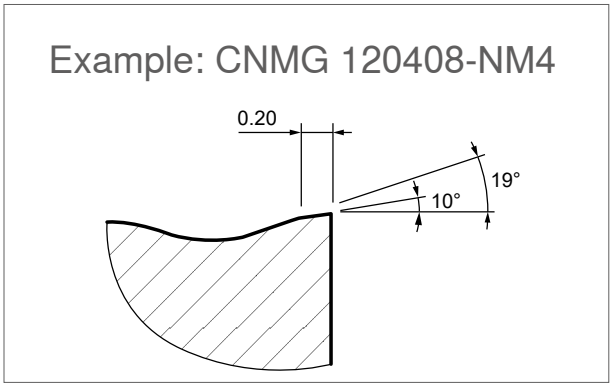
Available range



Insert	Designation	Chipbreaker	Material number	Available
	CNMG 120404-NM4 PMK25CU	…-NM4	14659139	●
	CNMG 120408-NM4 PMK25CU		12245949	●
	CNMG 120412-NM4 PMK25CU		12245954	●
	DNMG 110408-NM4 PMK25CU		14659140	●
	DNMG 150404-NM4 PMK25CU		14659141	●
	DNMG 150408-NM4 PMK25CU		14659143	●
	DNMG 150604-NM4 PMK25CU		14659149	●
	DNMG 150608-NM4 PMK25CU		12245956	●
	DNMG 150612-NM4 PMK25CU		14659151	●
	TNMG 160408-NM4 PMK25CU		12245955	●
	SNMG 120408-NM4 PMK25CU		12245950	●
	WNMG 080404-NM4 PMK25CU		14659152	●
	WNMG 080408-NM4 PMK25CU		12245952	●
	WNMG 080412-NM4 PMK25CU		12245953	●

● available from stock, ○ available upon request

Cutting data



General cutting parameters depending on the application

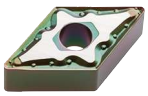
Work piece material		Type of treatment / alloy	Hardness HB	Coated carbide PMK20C v_c [m/min]	PMK25C v_c [m/min]	PMS35C v_c [m/min]
P	Steel	Non-alloyed steel 0 – 0.45% C	150 – 250	220 – 400	170 – 240	170 – 190
		Low-alloyed steel	250 – 300	200 – 320	100 – 190	90 – 150
		High-alloyed steel	200	180 – 320	130 – 210	120 – 200
		Corrosion-resistant steel	200	200 – 320	130 – 210	140 – 180
M	Stainless steel	Ferritic	200	220 – 320	140 – 210	140 – 200
		Austenitic	180	–	100 – 210	110 – 190
		Duplex	230 – 260	–	–	80 – 150
		Martensitic	330	–	70 – 100	55 – 75
K	Cast iron	Grey cast iron	180	140 – 370	130 – 210	–
		Spheroidal cast iron	160	190 – 430	120 – 240	–
		Malleable/tempered iron	130	180 – 520	150 – 250	–

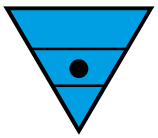
Application	Depth of cut / feed rate	
Chip groove	a_p [mm]	f [mm]
NM4	1.00 to 4.00	0.44 to 0.22

Ex: CNMG 120408-NM4 for CK60
Different in each application

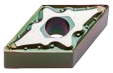
Consistent cutting depth	Inconsistent cutting depth	Interrupted cut
●	●	●

Available range





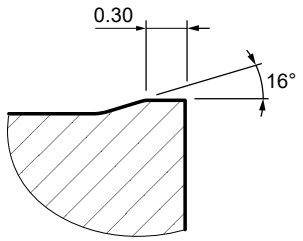
Turning steel neg medium roughing "P35"

Insert	Designation	Chipbreaker	Material number	Available
	CNMG 120408-NM4 PMS35C		11854341	●
	CNMG 120412-NM4 PMS35C		11854345	●
	DNMG 110408-NM4 PMS35C		12032130	●
	DNMG 150608-NM4 PMS35C		11855074	●
	DNMG 150612-NM4 PMS35C		11855076	●
	SNMG 120408-NM4 PMS35C		11855100	●
	SNMG 120412-NM4 PMS35C	…NM4	11855103	●
	TNMG 160408-NM4 PMS35C		11855128	●
	WNMG 080408-NM4 PMS35C		11855143	●
	WNMG 080412-NM4 PMS35C		11855145	●

● available from stock, ○ available upon request

Cutting data

Example: CNMG 120408EN-NR5



General cutting parameters depending on the application

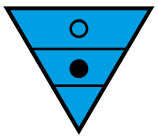
Work piece material		Type of treatment / alloy	Hardness HB	Coated carbide PMK20C PMK25C PMS35C v_c [m/min]	v_c [m/min]	v_c [m/min]
P	Steel	Non-alloyed steel 0 – 0.45% C	150 – 250	220 – 400	170 – 240	170 – 190
		Low-alloyed steel	250 – 300	200 – 320	100 – 190	90 – 150
		High-alloyed steel	200	180 – 320	130 – 210	120 – 200
		Corrosion-resistant steel	200	200 – 320	130 – 210	140 – 180
M	Stainless steel	Ferritic	200	220 – 320	140 – 210	140 – 200
		Austenitic	180	–	100 – 210	110 – 190
		Duplex	230 – 260	–	–	80 – 150
		Martensitic	330	–	70 – 100	55 – 75
K	Cast iron	Grey cast iron	180	140 – 370	130 – 210	–
		Spheroidal cast iron	160	190 – 430	120 – 240	–
		Malleable/tempered iron	130	180 – 520	150 – 250	–

Application Chip groove	Depth of cut / feed rate a_p [mm]	f [mm]
NR5	1.50 to 5.00	0.50 to 0.30

Ex: CNMG 120408-NR5 for CK60
Different in each application

Consistent cutting depth	Inconsistent cutting depth	Interrupted cut
●	●	○

Available range



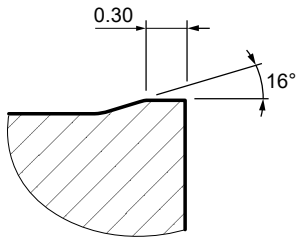
Turning steel neg roughing "P15"

Insert	Designation	Chipbreaker	Material number	Available
	CNMG 120408UN-NR5 PMK20C	…-NR5	11983084	●
	DNMG 150608UN-NR5 PMK20C		12037321	●
	DNMG 150612\UN-NR5 PMK20C		12048929	●

● available from stock, ○ available upon request

Cutting data

Example: CNMG 120408UN-NR5



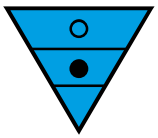
General cutting parameters depending on the application

Work piece material		Type of treatment / alloy	Hardness HB	Coated carbide PMK20C PMK25C PMS35C v_c [m/min]	v_c [m/min]	v_c [m/min]
P	Steel	Non-alloyed steel 0 – 0.45% C	150 – 250	220 – 400	170 – 240	170 – 190
		Low-alloyed steel	250 – 300	200 – 320	100 – 190	90 – 150
		High-alloyed steel	200	180 – 320	130 – 210	120 – 200
		Corrosion-resistant steel	200	200 – 320	130 – 210	140 – 180
M	Stainless steel	Ferritic	200	220 – 320	140 – 210	140 – 200
		Austenitic	180	–	100 – 210	110 – 190
		Duplex	230 – 260	–	–	80 – 150
		Martensitic	330	–	70 – 100	55 – 75
K	Cast iron	Grey cast iron	180	140 – 370	130 – 210	–
		Spheroidal cast iron	160	190 – 430	120 – 240	–
		Malleable/tempered iron	130	180 – 520	150 – 250	–

Application Chip groove	Depth of cut / feed rate a_p [mm]	f [mm]
NR5	1.50 to 5.00	0.50 to 0.30

Ex: CNMG 120408-NR5 for CK60
Different in each application

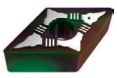
Consistent cutting depth	Inconsistent cutting depth	Interrupted cut
●	●	○



Turning steel neg roughing "P25"

Insert	Designation	Chipbreaker	Material number	Available
	CNMG 120408UN-NR5 PMK25C	…-NR5	11882916	●
	CNMG 120412UN-NR5 PMK25C		11882915	●
	DNMG 150608UN-NR5 PMK25C		12037320	●
	DNMG 150612UN-NR5 PMK25C		12049239	●
	SNMG 120408UN-NR5 PMK25C		11882913	●
	SNMG 120412UN-NR5 PMK25C		11882911	●
	TNMG 160408UN-NR5 PMK25C		11882909	●
	TNMG 160412UN-NR5 PMK25C		11882907	●
	WNMG 080408UN-NR5 PMK25C		11882906	●
	WNMG 080412UN-NR5 PMK25C		11882904	●

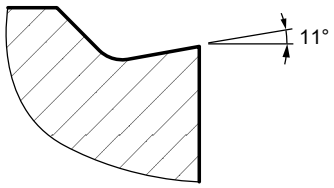
Turning steel neg roughing "P35"

Insert	Designation	Chipbreaker	Material number	Available
	DNMG 150608UN-NR5 PMK25C	…-NR5	12037319	●
	DNMG 150612UN-NR5 PMK25C		12049240	●

● available from stock, ○ available upon request

Cutting data

Example: CNGP 120408-UG2



General cutting parameters depending on the application

Work piece material		Type of treatment / alloy	Hardness HB	Coated carbide MK20P v_c [m/min]
M	Stainless steel	Ferritic	200	150 – 200
		Austenitic	180	120 – 200
		Duplex	230 – 260	90 – 160
		Martensitic	330	60 – 80
K	Cast iron	Grey cast iron	180	120 – 160
		Spheroidal cast iron	160	120 – 160
		Malleable/tempered iron	130	140 – 220
	Non-ferrous metals		100	100 – 400
			130	100 – 400
			90	100 – 600
			100	100 – 400
	Exotic materials	Fe base	200	20 – 50
		Nickel or cobalt base	280	20 – 50
		Nickel or cobalt base	250	15 – 40
		Nickel or cobalt base		20 – 35
		Titanium	Rm 440*	80 – 140

Application Chip groove	Depth of cut / feed rate a_p [mm]	f [mm]
UG2	0.5 to 2.5	0.25 to 0.10

Ex: CNGP 120408-UG2 for 304
Different in each application

Consistent cutting depth	Inconsistent cutting depth	Interrupted cut
●	○	X

Available range

Turning stainless steel neg finishing "M25"

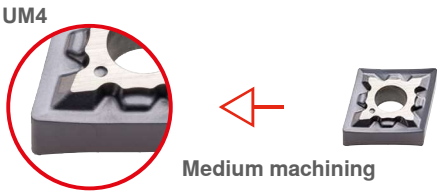
Insert	Designation	Chipbreaker	Material number	Available
	CNGP 120402-UG2 MK20P	…-UG2	11223927	●
	CNGP 120404-UG2 MK20P		11219251	●
	CNGP 120408UG2 MK20P		11219254	●
	CNGP 120412-UG2 MK20P		12068756	●
	DNGP 150404-UG2 MK20P		11219260	●
	DNGP 150602-UG2 MK20P		11241911	●
	DNGP 150604-UG2 MK20P		11241912	●
	DNGP 150608-UG2 MK20P		11226180	●
	VNGP 160402-UG2 MK20P		11215526	●
	VNGP 160404-UG2 MK20P		11226182	●
	WNGP 080404-UG2 MK20P		11225022	●
	WNGP 080408-UG2 MK20P		11220363	●

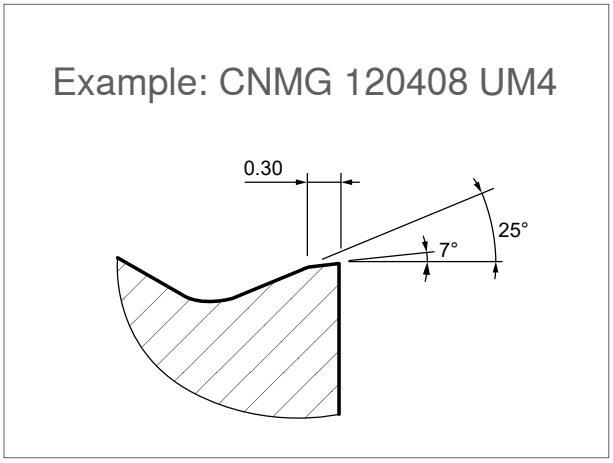
● available from stock, ○ available upon request

New chipbreaker

Optimised by FEM:

- Reduced formation of burrs
- Good surface finish
- Low cutting forces





Cutting data

General cutting parameters depending on the application

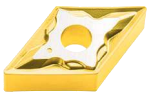
Work piece material		Type of treatment / alloy	Hardness HB	Coated carbide MP20CU v_c [m/min]	MPS25P v_c [m/min]	MP35P v_c [m/min]
P	Steel	non-alloyed steel 0 – 0.45% C	150 – 250	150 – 250	130 – 250	150 – 190
		low-alloyed steel	250 – 300	100 – 200	60 – 180	90 – 150
		high-alloyed steel	200	120 – 220	80 – 200	120 – 200
		corrosion-resistant steel	200	120 – 220	100 – 200	140 – 180
M	Stainless steel	Ferritic	200	190 – 250	120 – 250	140 – 200
		Austenitic	180	140 – 220	100 – 220	110 – 190
		Duplex	230 – 260	110 – 170	60 – 160	80 – 150
		Martensitic	330	40 – 100	40 – 100	55 – 75

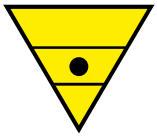
Application Chip groove	Depth of cut / feed rate a_p [mm]	f [mm]
UM4	1.00 to 4.20	0.40 to 0.22

Ex: CNMG 120408-UM4 for 304
Different in each application

Consistent cutting depth	Inconsistent cutting depth	Interrupted cut
●	○	X

Available range





Turning stainless steel neg "M20"

Insert	Designation	Chipbreaker	Material number	Available
	CNMG 090304-UM4 MP20CU		14620558	●
	CNMG 090308-UM4 MP20CU		12563653	●
	CNMG 120404-UM4 MP20CU		12233866	●
	CNMG 120408-UM4 MP20CU		12233867	●
	CNMG 120412-UM4 MP20CU		14620560	
	DNMG 110404-UM4 MP20CU		14600542	●
	DNMG 110408-UM4 MP20CU		14600544	●
	DNMG 150404-UM4 MP20CU		14600546	●
	DNMG 150408-UM4 MP20CU		14681077	●
	DNMG 150604-UM4 MP20CU		12233869	●
	DNMG 150608-UM4 MP20CU	…-UM4	12233868	●
	SNMG 120408-UM4 MP20CU		14600552	●
	TNMG 160404-UM4 MP20CU		14600556	●
	TNMG 160408-UM4 MP20CU		14600566	●
	VNMG 160408-UM4 MP20CU		14600567	●
	WNMG 060404-UM4 MP20CU		14620561	●
	WNMG 060408-UM4 MP20CU		14620547	●
	WNMG 080404-UM4 MP20CU		12233872	●
	WNMG 080408-UM4 MP20CU		12233870	●

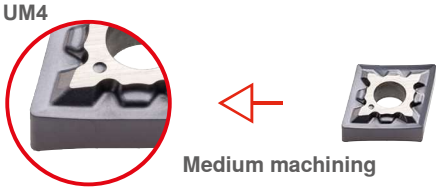
● available from stock, ○ available upon request

New chipbreaker

Optimised by FEM:

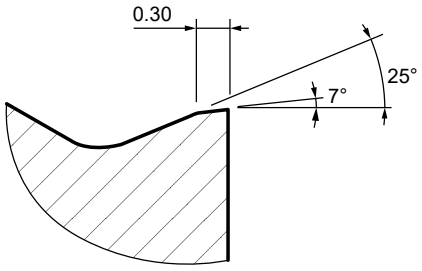
- Reduced formation of burrs
- Good surface finish
- Low cutting forces

UM4



Medium machining

Example: CNMG 120408 UM4



Cutting data

General cutting parameters depending on the application

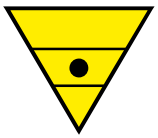
Work piece material		Type of treatment / alloy	Hardness HB	Coated carbide MPS25P v_c [m/min]	Coated carbide MP35P v_c [m/min]
P	Steel	Non-alloyed steel 0 – 0.45% C	150 – 250	130 – 250	170 – 190
		Low-alloyed steel	250 – 300	60 – 180	90 – 150
		High-alloyed steel	200	80 – 200	120 – 200
		Corrosion-resistant steel	200	100 – 200	140 – 180
M	Stainless steel	Ferritic	200	120 – 250	140 – 200
		Austenitic	180	100 – 220	110 – 190
		Duplex	230 – 260	60 – 160	80 – 150
		Martensitic	330	40 – 100	55 – 75

Application Chip groove	Depth of cut / feed rate a_p [mm]	f [mm]
UM4	1.00 to 4.20	0.40 to 0.22

Ex: CNMG 120408-UM4 for 304
Different in each application

Consistent cutting depth	Inconsistent cutting depth	Interrupted cut
●	○	X

Available range



Turning stainless steel neg medium "M25"

Insert	Designation	Chipbreaker	Material number	Available
	CNMG 090304-UM4 MPS25P		11812968	●
	CNMG 090308-IUM4 MPS25P		11812211	●
	CNMG 120404-UM4 MPS25P		11748122	●
	CNMG 120408-UM4 MPS25P		11748123	●
	DNMG 110404-UM4 MPS25P		11808002	●
	DNMG 110408-UM4 MPS25P		11807993	●
	DNMG 150404-UM4 MPS25P		11753922	●
	DNMG 150408-IUM4 MPS25P		11753921	●
	DNMG 150604-UM4 MPS25P		11748133	●
	DNMG 150608-UM4 MPS25P		11748134	●
	SNMG 120408-UM4 MPS25P	…-UM4	11804482	●
	TNMG 160404-UM4 MPS25P		11748628	●
	TNMG 160408-UM4 MPS25P		11748632	●
	VNMG 160408-UM4 MPS25P		11754890	●
	WNMG 060404-UM4 MPS25P		11808488	●
	WNMG 060408-UM4 MPS25P		11808489	●
	WNMG 080404-UM4 MPS25P		11749341	●
	WNMG 080408-UM4 MPS25P		11749343	●
	WNMG 080412-UM4 MPS25P		11808490	●

● available from stock, ○ available upon request

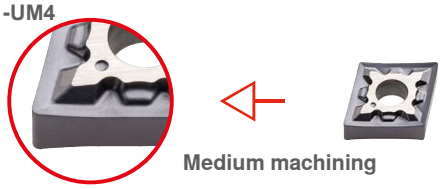
New chipbreaker

NEW

Sharp positive cutting edges:

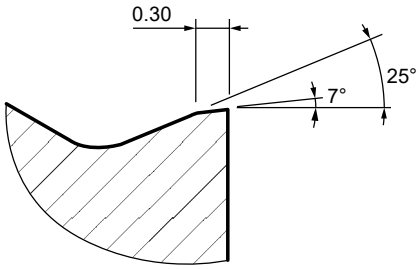
- ▲ Reduced formation of burrs
- ▲ Good surface finish
- ▲ Low cutting forces

-UM4



Medium machining

Example: CNMG 120408 UM4



Cutting data

General cutting parameters depending on the application

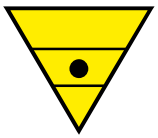
Work piece material		Type of treatment / alloy	Hardness HB	Coated carbide MP20CU v_c [m/min]
P	Steel	Non-alloyed steel 0 – 0.45% C	150 – 250	130 – 250
		Low-alloyed steel	250 – 300	60 – 180
		High-alloyed steel	200	80 – 200
		Corrosion-resistant steel	200	100 – 200
M	Stainless steel	Ferritic	200	120 – 250
		Austenitic	180	120 – 220
		Duplex	230 – 260	–
		Martensitic	330	–

Application Chip groove	Depth of cut / feed rate a_p [mm]	f [mm]
UM4	1.00 to 4.20	0.40 to 0.22

Ex: CNMG 120408-UM4 for 304
Different in each application

Consistent cutting depth	Inconsistent cutting depth	Interrupted cut
●	○	X

Available range



Insert	Designation	Chipbreaker	Material number	Available
	CNMG 120404-UM4 MP20CU	…-UM4	12233866	●
	CNMG 120408-UM4 MP20CU		12233867	●
	DNMG 150604-UM4 MP20CU		12233869	●
	DNMG 150608-UM4 MP20CU		12233868	●
	WNMG 080404-UM4 MP20CU		12233872	●
	WNMG 080408-UM4 MP20CU		12233870	●

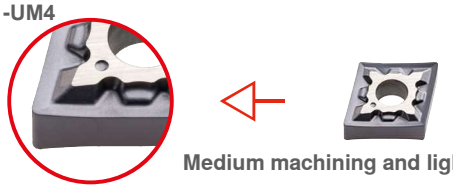
● available from stock, ○ available upon request

New chipbreaker

Sharp positive cutting edges:

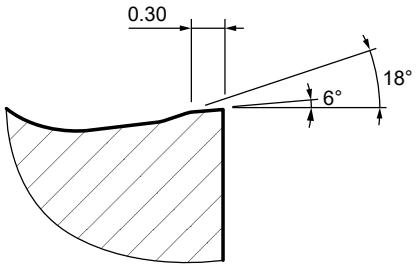
- ▲ Reduced formation of burrs
- ▲ Good surface finish
- ▲ Low cutting forces

-UM4



Medium machining and light roughing

Example: CNMG 120408 UR6



Cutting data

General cutting parameters depending on the application

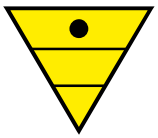
Work piece material		Type of treatment / alloy	Hardness HB	Coated carbide MPS25P v_c [m/min]	Coated carbide MP35P v_c [m/min]
P	Steel	Non-alloyed steel 0 – 0.45% C	150 – 250	130 – 250	170 – 190
		Low-alloyed steel	250 – 300	60 – 180	90 – 150
		High-alloyed steel	200	80 – 200	120 – 200
		Corrosion-resistant steel	200	100 – 200	140 – 180
M	Stainless steel	Ferritic	200	120 – 250	140 – 200
		Austenitic	180	100 – 220	110 – 190
		Duplex	230 – 260	60 – 160	80 – 150
		Martensitic	330	40 – 100	55 – 75

Application Chip groove	Depth of cut / feed rate a_p [mm]	f [mm]
UR6	1.50 to 6.00	0.50 to 0.25

Ex: CNMG 120408-UR6 for 304
Different in each application

Consistent cutting depth	Inconsistent cutting depth	Interrupted cut
●	●	○

Available range

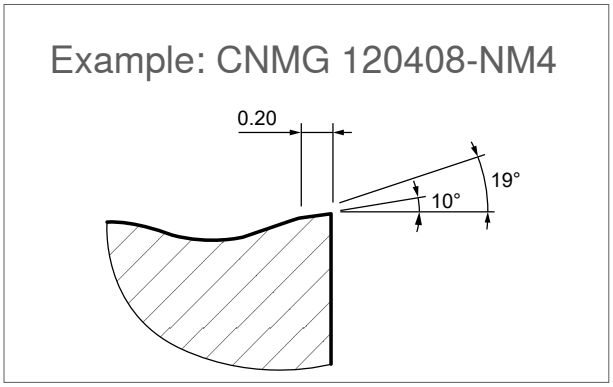


Turning stainless steel neg roughing "M25"

Insert	Designation	Chipbreaker	Material number	Available
	CNMG 120408-UR6 MPS25P	…UR6	11752697	●
	CNMG 120412-UR6 MPS25P		11752698	●
	DNMG 150608-UR6 MPS25P		11752693	●
	DNMG 150612-UR6 MPS25P		11752691	●
	TNMG 160408-UR6 MPS25P		11752690	●
	TNMG 160412-UR6 MPS25P		11752688	●
	WNMG 080408-UR6 MPS25P		11752687	●
	WNMG 080412-UR6 MPS25P		11752685	●

● available from stock, ○ available upon request

Cutting data



General cutting parameters depending on the application

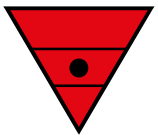
Work piece material		Type of treatment / alloy	Hardness HB	Coated carbide KP20C v_c [m/min]
P	Steel	Non-alloyed steel 0 – 0.45% C	150 – 250	200 – 340
		Low-alloyed steel	250 – 300	150 – 290
		High-alloyed steel	200	150 – 290
		Corrosion-resistant steel	200	160 – 290
K	Cast iron	Grey cast iron	180	150 – 400
		Spheroidal cast iron	160	200 – 450
		Malleable/tempered iron	130	200 – 550

Application Chip groove	Depth of cut / feed rate a_p [mm]	f [mm]
NM4	1.00 to 4.00	0.44 to 0.22

Ex: CCM. 120408-NM4 for GC25
Different in each application

Consistent cutting depth	Inconsistent cutting depth	Interrupted cut
●	○	X

Available range



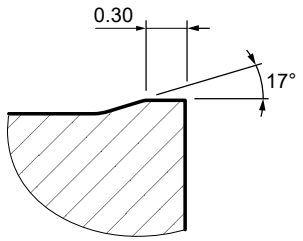
Turning cast iron neg "K20"

Insert	Designation	Chipbreaker	Material number	Available
	CNMG 120408-NM4 KP20C		11780521	●
	CNMG 120412-NM4 KP20C		11865623	●
	DNMG 150608-NM4 KP20C		11780519	●
	DNMG 150612-NM4 KP20C		11780518	●
	SNMG 120408-NM4 KP20C		11911053	●
		…-NM4		
	TNMG 160408-NM4 KP20C		11780838	●
	TNMG 160412-NM4 KP20C		11865634	●
	TNMG 220408-NM4 KP20C		11780836	●
	WNMG 080408-NM4 KP20C		11780839	●
	WNMG 080412-NM4 KP20C		11780841	●

● available from stock, ○ available upon request

Cutting data

Example: CNMG 120408-TM4



General cutting parameters depending on the application

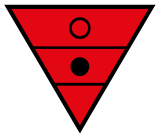
Work piece material		Type of treatment / alloy	Hardness HB	Coated carbide KP20C v_c [m/min]
P	Steel	Non-alloyed steel 0 – 0.45% C	150 – 250	200 – 340
		Low-alloyed steel	250 – 300	150 – 290
		High-alloyed steel	200	150 – 290
		Corrosion-resistant steel	200	160 – 290
K	Cast iron	Grey cast iron	180	150 – 400
		Spheroidal cast iron	160	200 – 450
		Malleable/tempered iron	130	200 – 550

Application	Depth of cut / feed rate	
Chip groove	a_p [mm]	f [mm]
TM4	2.00 to 4.80	0.48 to 0.30

Ex: CNM. 120408-909+ for GC25
Different in each application

Consistent cutting depth	Inconsistent cutting depth	Interrupted cut	Interrupted cut
●	●	X	○ Only .NMA

Available range



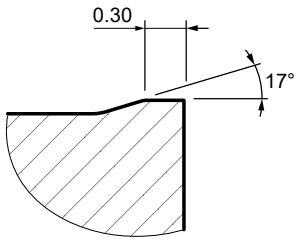
Turning cast iron neg "K20"

Insert	Designation	Chipbreaker	Material number	Available
	CNMG 120408-TM4 KP20C		11821829	●
	CNMG 120412-TM4 KP20C		11821831	●
	CNMG 160612-TM4 KP20C		11781440	●
	DNMG 150608-TM4 KP20C		11821833	●
	SNMG 120408-TM4 KP20C		11821834	●
		…-TM4		
	TNMG 160408-TM4 KP20C		11875228	●
	WNMG 080408-TM4 KP20C		11875227	●
	WNMG 080412-TM4 KP20C		11875229	●
	CNMA 120408-UN KP20C		11821837	●
	CNMA 120412-UN KP20C		11931076	●
	CNMA 120416-UN KP20C		11946726	●
	SNMA 120408-UN KP20C		11821838	●
	TNMA 160408-UN KP20C	…-UN	11821839	●
	WNMA 080408-UN KP20C		11821840	●

● available from stock, ○ available upon request

Cutting data

Example: CNMG 120408-TM4



NEW

General cutting parameters depending on the application

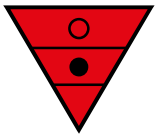
Work piece material		Type of treatment / alloy	Hardness HB	Coated carbide MP20CU v_c [m/min]
P	Steel	Non-alloyed steel 0 – 0.45% C	150 – 250	220 – 400
		Low-alloyed steel	250 – 300	170 – 340
		High-alloyed steel	200	170 – 340
		Corrosion-resistant steel	200	200 – 300
K	Cast iron	Grey cast iron	180	170 – 450
		Spheroidal cast iron	160	220 – 430
		Malleable/tempered iron	130	220 – 400

Application	Depth of cut / feed rate	
Chip groove	a_p [mm]	f [mm]
TM4	2.0 to 4.8	0.48 to 0.30

Ex: CNM. 120408-TM4 for GC25
Different in each application

Consistent cutting depth	Inconsistent cutting depth	Interrupted cut	Interrupted cut
●	●	X	Only ○ .NMA

Available range

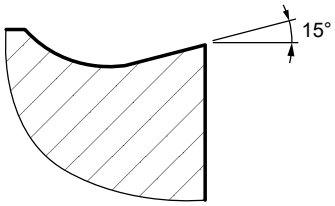


Insert	Designation	Chipbreaker	Material number	Available
	CNMG 120408-TM4 KP10C		12149710	●
	CNMG 120412-TM4 KP10C		12200956	●
	CNMG 160612-TM4 KP10C		12200958	●
	SNMG 120412-TM4 KP10C	…-TM4	12200959	●
	WNMG 080408-TM4 KP10C		12200960	●
	WNMG 080412-TM4 KP10C		12200954	●
	CNMA 120408UN KP10C	–	12234327	●
	WNMA 080412-UN KP10C		12234328	●

● available from stock, ○ available upon request

Cutting data

Example: CNMG 120408-SU3



General cutting parameters depending on the application

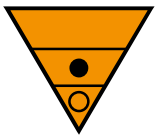
Work piece material		Type of treatment / alloy	Hardness HB	Coated carbide SM10P v_c [m/min]
M	Stainless steel	Ferritic	200	150 – 230
		Austenitic	180	140 – 190
		Duplex	230 – 260	60 – 100
		Martensitic	330	–
	Exotic materials	Fe base	200	80 – 120
		Nickel or cobalt base	280	60 – 100
		Nickel or cobalt base	250	35 – 90
		Nickel or cobalt base		30 – 50
		Titanium	Rm 440*	70 – 120

Application	Depth of cut / feed rate	
Chip groove	a_p [mm]	f [mm]
SU3	0.80 to 3.00	0.30 to 0.10

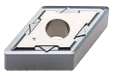
Ex: CNMG 120408-SU3 for Super Alliage
Different in each application

Consistent cutting depth	Inconsistent cutting depth	Interrupted cut
●	○	X

Available range

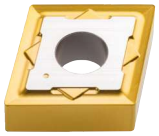


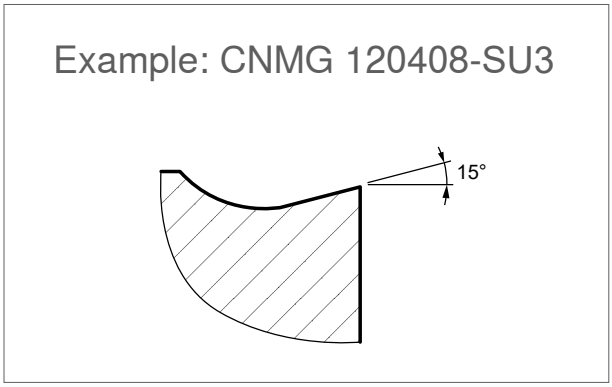
Turning titanium "S10"

Insert	Designation	Chipbreaker	Material number	Available
	CNMG 120404-ISU3 SM10P		11750288	●
	CNMG 120408-ISU3 SM10P		11749057	●
	DNMG 150608-ISU3 SM10P		11749060	●
	SNMG 120408-ISU3 SM10P		11748599	●
	TNMG 160408-ISU3 SM10P	...-SU3	11748631	●
	VNMG 160408-ISU3 SM10P		11749297	●
	WNMG 080408-ISU3 SM10P		11749342	●

● available from stock, ○ available upon request

Cutting data





General cutting parameters depending on the application

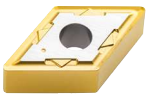
Work piece material		Type of treatment / alloy	Hardness HB	Coated carbide SM15P v_c [m/min]
M	Stainless steel	Ferritic	200	130 – 220
		Austenitic	180	120 – 180
		Duplex	230 – 260	50 – 90
		Martensitic	330	–
	Exotic materials	Fe base	200	80 – 120
		Nickel or cobalt base	280	60 – 120
		Nickel or cobalt base	250	35 – 90
		Nickel or cobalt base		30 – 50
		Titanium	Rm 440*	70 – 120

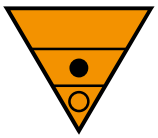
Application	Depth of cut / feed rate	
Chip groove	a_p [mm]	f [mm]
SU3	0.80 to 3.00	0.30 to 0.10

Ex: CNMG 120408-SU3 for Super Alliage
Different in each application

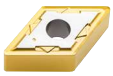
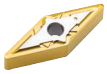
Consistent cutting depth	Inconsistent cutting depth	Interrupted cut
●	○	X

Available range





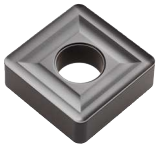
Turning titanium "S15"

Insert	Designation	Chipbreaker	Material number	Available
	CNMG 120404-SU3 SM15P		11750290	●
	CNMG 120408-SU3 SM15P		11568115	●
	DNMG 150608-SU3 SM15P		11568117	●
	SNMG 120408-SU3 SM15P		11568120	●
	TNMG 160408-SU3 SM15P	...-SU3	11568121	●
	VNMG 160408-SU3 SM15P		11568122	●
	WNMG 080408-SU3 SM15P		11568123	●

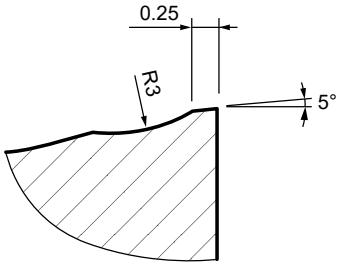
● available from stock, ○ available upon request

Heavy Duty Turning
HDT

Cutting data



Example: SNMM 190616UN-HC9



General cutting parameters depending on the application

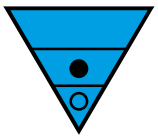
Work piece material		Type of treatment / alloy	Hardness HB	Coated carbide PMK20C v_c [m/min]	PMK25C v_c [m/min]	PMS35C v_c [m/min]
P	Steel	Non-alloyed steel 0 – 0.45% C	150 – 250	220 – 400	170 – 240	170 – 190
		Low-alloyed steel	250 – 300	200 – 320	100 – 190	90 – 150
		High-alloyed steel	200	180 – 320	130 – 210	120 – 200
		Corrosion-resistant steel	200	200 – 320	130 – 210	140 – 180
M	Stainless steel	Ferritic	200	220 – 320	140 – 210	140 – 200
		Austenitic	180	–	100 – 210	110 – 190
		Duplex	230 – 260	–	–	80 – 150
		Martensitic	330	–	70 – 100	55 – 75
K	Cast iron	Grey cast iron	180	140 – 370	130 – 210	–
		Spheroidal cast iron	160	190 – 430	120 – 240	–
		Malleable/tempered iron	130	180 – 520	150 – 250	–

Application	Depth of cut / feed rate	
Chip groove	a_p [mm]	f [mm]
HC9	2.50 to 10.00	0.60 to 0.30

Different in each application

Consistent cutting depth	Inconsistent cutting depth	Interrupted cut
●	●	○

Available range



Heavy turning steel neg "P25"

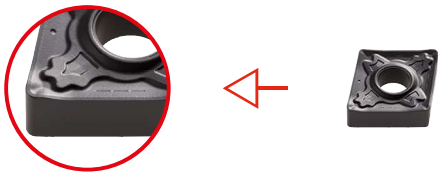
Insert	Designation	Chipbreaker	Material number	Available
	SNMM 190616UN-HC9 PMK25C	...-HC9	11849212	●
	SNMM 250924UN-HC9 PMK25C		11849211	●

● available from stock, ○ available upon request

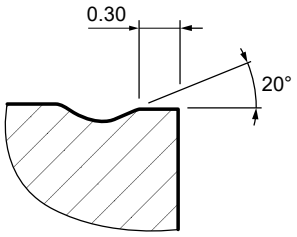
New chipbreaker

Sharp positive cutting edges:

- Single-sided roughing geometry
- Good chip control
- For steels with high strength (800 N/MM^2)



Example: CNMM 120408-HC4



Cutting data

General cutting parameters depending on the application

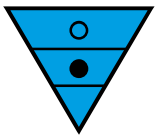
Work piece material		Type of treatment / alloy	Hardness HB	Coated carbide PMK20C v_c [m/min]	PMK25C v_c [m/min]	MP35P v_c [m/min]
P	Steel	Non-alloyed steel 0 – 0.45% C	150 – 250	220 – 400	170 – 240	170 – 190
		Low-alloyed steel	250 – 300	200 – 320	100 – 190	90 – 150
		High-alloyed steel	200	180 – 320	130 – 210	120 – 200
		Corrosion-resistant steel	200	200 – 320	130 – 210	140 – 180
M	Stainless steel	Ferritic	200	220 – 320	140 – 210	140 – 200
		Austenitic	180	–	100 – 210	110 – 190
		Duplex	230 – 260	–	–	80 – 150
		Martensitic	330	–	70 – 100	55 – 75
K	Cast iron	Grey cast iron	180	140 – 370	130 – 210	–
		Spheroidal cast iron	160	190 – 430	120 – 240	–
		Malleable/tempered iron	130	180 – 520	150 – 250	–

Application	Depth of cut / feed rate	
Chip groove	a_p [mm]	f [mm]
HC4	1.50 to 12.00	0.50 to 0.90

Ex: CNMM 120408-HD2 for CK60
Different in each application

Consistent cutting depth	Inconsistent cutting depth	Interrupted cut
●	●	○

Available range



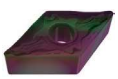
Heavy turning steel neg "P15"

Insert	Designation	Chipbreaker	Material number	Available
	CNMM 120408-HC4 PMK20C		12041787	●
	DNMM 150608-HC4 PMK20C	…-HC4	12055337	●

Heavy turning steel neg "P25"

Insert	Designation	Chipbreaker	Material number	Available
	CNMM 120408-HC4 PMK20C		12041513	●
	CNMM 120412-HC4 PMK20C		12077416	●
	DNMM 150608-HC4 PMK20C	…-HC4	12055332	●

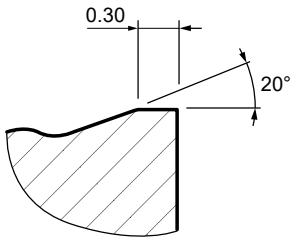
Heavy turning steel neg "P35"

Insert	Designation	Chipbreaker	Material number	Available
	CNMM 120408-HC4 PMS35C		12041518	●
	DNMM 150608-HC4 PMS35C	…-HC4	12055326	●

● available from stock, ○ available upon request

Cutting data

Example: CNMM 190616UN-HC5



General cutting parameters depending on the application

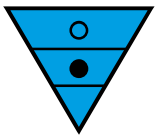
Work piece material		Type of treatment / alloy	Hardness HB	Coated carbide PMK20C PMK25C MP35P v_c [m/min]	Coated carbide PMK20C PMK25C MP35P v_c [m/min]	Coated carbide PMK20C PMK25C MP35P v_c [m/min]
P	Steel	Non-alloyed steel 0 – 0.45% C	150 – 250	220 – 400	170 – 240	170 – 190
		Low-alloyed steel	250 – 300	200 – 320	100 – 190	90 – 150
		High-alloyed steel	200	180 – 320	130 – 210	120 – 200
		Corrosion-resistant steel	200	200 – 320	130 – 210	140 – 180
M	Stainless steel	Ferritic	200	220 – 320	140 – 210	140 – 200
		Austenitic	180	–	100 – 210	110 – 190
		Duplex	230 – 260	–	–	80 – 150
		Martensitic	330	–	70 – 100	55 – 75
K	Cast iron	Grey cast iron	180	140 – 370	130 – 210	–
		Spheroidal cast iron	160	190 – 430	120 – 240	–
		Malleable/tempered iron	130	180 – 520	150 – 250	–

Application	Depth of cut / feed rate	
Chip groove	a_p [mm]	f [mm]
HC5	2.00 to 12.00	0.80 to 0.30

Ex: CNMM 190616-HC5 for CK60
Different in each application

Consistent cutting depth	Inconsistent cutting depth	Interrupted cut
●	●	○

Available range



Heavy turning steel neg "P15"

Insert	Designation	Chipbreaker	Material number	Available
	CNMM 120412-HC5 PMK20C	…-HC5	12046218	●
	CNMM 160612-HC5 PMK20C		12044415	●
	CNMM 190612-HC5 PMK20C		12030570	●
	DNMM 150612-HC5 PMK20C		12044385	●

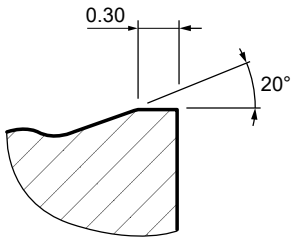
Heavy turning steel neg "P25"

Insert	Designation	Chipbreaker	Material number	Available
	CNMM 120412UN-HC5 PMK25C	…-HC5	12046217	●
	CNMM 120416UN-HC5 PMK25C		12044382	●
	CNMM 160612UN-HC5 PMK25C		12044410	●
	CNMM 190612UN-HC5 PMK25C		11840692	●
	CNMM 190616UN-HC5 PMK25C		11836430	●
	CNMM 250724UN-HC5 PMK25C		11848028	●
	CNMM 250924UN-HC5 PMK25C		11840037	●
	DNMM 150612UN-HC5 PMK25C		12044390	●
	SNMM 190612UN-HC5 PMK25C		11840041	●
	SNMM 190616UN-HC5 PMK25C		11840042	●
	SNMM 250724UN-HC5 PMK25C		11840045	●
	SNMM 250924UN-HC5 PMK25C		11840046	●

● available from stock, ○ available upon request

Cutting data

Example: CNMM 190616UN-HC5



General cutting parameters depending on the application

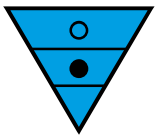
Work piece material		Type of treatment / alloy	Hardness HB	Coated carbide PMK20C v_c [m/min]	PMK25C v_c [m/min]	PMS35C v_c [m/min]
P	Steel	Non-alloyed steel 0 – 0.45% C	150 – 250	220 – 400	170 – 240	170 – 190
		Low-alloyed steel	250 – 300	200 – 320	100 – 190	90 – 150
		High-alloyed steel	200	180 – 320	130 – 210	120 – 200
		Corrosion-resistant steel	200	200 – 320	130 – 210	140 – 180
M	Stainless steel	Ferritic	200	220 – 320	140 – 210	140 – 200
		Austenitic	180	–	100 – 210	110 – 190
		Duplex	230 – 260	–	–	80 – 150
		Martensitic	330	–	70 – 100	55 – 75
K	Cast iron	Grey cast iron	180	140 – 370	130 – 210	–
		Spheroidal cast iron	160	190 – 430	120 – 240	–
		Malleable/tempered iron	130	180 – 520	150 – 250	–

Application	Depth of cut / feed rate	
Chip groove	a_p [mm]	f [mm]
HD5	2.00 to 12.00	0.80 to 0.30

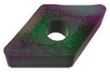
Ex: CNMM 190616-HC5 for CK60
Different in each application

Consistent cutting depth	Inconsistent cutting depth	Interrupted cut
●	●	○

Available range



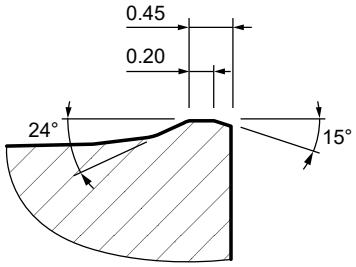
Heavy turning steel neg "P35"

Insert	Designation	Chipbreaker	Material number	Available
	CNMM 120412-HC5 PMS35C	…-HC5	12046219	●
	CNMM 120416-HC5 PMS35C		12044397	●
	CNMM 160612-HC5 PMS35C		12044423	●
	DNMM 150612-HC5 PMS35C		12044431	●

● available from stock, ○ available upon request

Cutting data

Example: CNMM 190616SN-HC8



General cutting parameters depending on the application

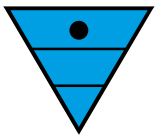
Work piece material		Type of treatment / alloy	Hardness HB	Coated carbide PMK20C v_c [m/min]	PMK25C v_c [m/min]	PMS35C v_c [m/min]
P	Steel	Non-alloyed steel 0 – 0.45% C	150 – 250	220 – 400	170 – 240	170 – 190
		Low-alloyed steel	250 – 300	200 – 320	100 – 190	90 – 150
		High-alloyed steel	200	180 – 320	130 – 210	120 – 200
		Corrosion-resistant steel	200	200 – 320	130 – 210	140 – 180
M	Stainless steel	Ferritic	200	220 – 320	140 – 210	140 – 200
		Austenitic	180	–	100 – 210	110 – 190
		Duplex	230 – 260	–	–	80 – 150
		Martensitic	330	–	70 – 100	55 – 75
K	Cast iron	Grey cast iron	180	140 – 370	130 – 210	–
		Spheroidal cast iron	160	190 – 430	120 – 240	–
		Malleable/tempered iron	130	180 – 520	150 – 250	–

Application	Depth of cut / feed rate	
Chip groove	a_p [mm]	f [mm]
HC8	2.50 to 12.00	1.20 to 0.35

Ex: CNMM 190616SN-HC8 for CK60
Different in each application

Consistent cutting depth	Inconsistent cutting depth	Interrupted cut
●	●	●

Available range



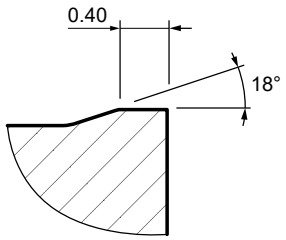
Heavy turning steel neg "P25"

Insert	Designation	Chipbreaker	Material number	Available
	CNMM 190616SN-HC8 PMK25C	…-HC8	11840034	●
	CNMM 190624SN-HC8 PMK25C		11840035	●
	CNMM 250924SN-HC8 PMK25C		11840038	●
	CNMM 250932SN-HC8 PMK25C		11840039	●
	SNMM 190616SN-HC8 PMK25C		11840043	●
	SNMM 190624SN-HC8 PMK25C		11840044	●
	SNMM 250924SN-HC8 PMK25C		11840047	●
	SNMM 250932SN-HC8 PMK25C		11840048	●

● available from stock, ○ available upon request

Cutting data

Example: CNMG 160612-TM4



General cutting parameters depending on the application

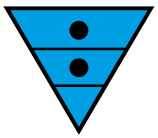
Work piece material		Type of treatment / alloy	Hardness HB	PMK25C v_c [m/min]	PMS35C v_c [m/min]
P	Steel	Non-alloyed steel 0 – 0.45% C	150 – 250	170 – 240	170 – 190
		Low-alloyed steel	250 – 300	100 – 190	90 – 150
		High-alloyed steel	200	130 – 210	120 – 200
		Corrosion-resistant steel	200	130 – 210	140 – 180
M	Stainless steel	Ferritic	200	140 – 210	140 – 200
		Austenitic	180	100 – 210	110 – 190
		Duplex	230 – 260	–	80 – 150
		Martensitic	330	70 – 100	55 – 75
K	Cast iron	Grey cast iron	180	130 – 210	–
		Spheroidal cast iron	160	120 – 240	–
		Malleable/tempered iron	130	150 – 250	–

Application	Depth of cut / feed rate	
Chip groove	a_p [mm]	f [mm]
TM4	3.20 to 7.60	1.00 to 0.60

Ex: CNMG 190616-TM4 for CK60
Different in each application

Consistent cutting depth	Inconsistent cutting depth	Interrupted cut
●	○	X

Available range



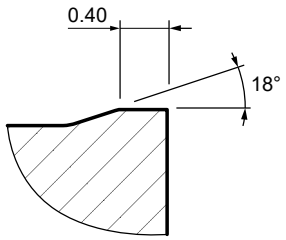
Medium and roughing turning steel

Insert	Designation	Chipbreaker	Material number	Available
	CNMG 160612-TM4 PMK25C		11854347	●
	CNMG 190612-TM4 PMK25C		11854749	●
	CNMG 190616-TM4 PMK25C		11625891	●
	SNMG 150612-TM4 PMK25C		11855109	●
	SNMG 190612-TM4 PMK25C	...-TM4	11855114	●
	TNMG 220412-TM4 PMK25C		11860512	●
	RCMT 1606MOSN-RO PMK25C		11855078	●
	RCMT 2006MOSN-RO PMK25C	...-RO	11855080	●

● available from stock, ○ available upon request

Cutting data

Example: CNMG 160612-TM4



General cutting parameters depending on the application

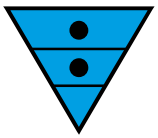
Work piece material		Type of treatment / alloy	Hardness HB	PMK25C v_c [m/min]	PMS35C v_c [m/min]
P	Steel	Non-alloyed steel 0 – 0.45% C	150 – 250	170 – 240	170 – 190
		Low-alloyed steel	250 – 300	100 – 190	90 – 150
		High-alloyed steel	200	130 – 210	120 – 200
		Corrosion-resistant steel	200	130 – 210	140 – 180
M	Stainless steel	Ferritic	200	140 – 210	140 – 200
		Austenitic	180	100 – 210	110 – 190
		Duplex	230 – 260	–	80 – 150
		Martensitic	330	70 – 100	55 – 75
K	Cast iron	Grey cast iron	180	130 – 210	–
		Spheroidal cast iron	160	120 – 240	–
		Malleable/tempered iron	130	150 – 250	–

Application	Depth of cut / feed rate	
Chip groove	a_p [mm]	f [mm]
TM4	3.20 to 7.60	1.00 to 0.60

Ex: CNMM 190616-TM4 for CK60
Different in each application

Consistent cutting depth	Inconsistent cutting depth	Interrupted cut
●	○	X

Available range



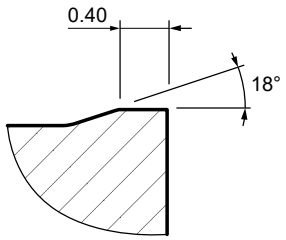
Medium and roughing turning steel

Insert	Designation	Chipbreaker	Material number	Available
	CNMG 160608-TM4 PMS35C		11854346	●
	CNMG 160612-TM4 PMS35C		11854348	●
	CNMG 190612-TM4 PMS35C		11854758	●
	CNMG 190616-TM4 PMS35C	...-TM4	11861937	●
	SNMG 150612-TM4 PMS35C		11855112	●
	SNMG 190612-TM4 PMS35C		11855116	●
	RCMT 1606MOSN-RO PMS35C		11855079	●
	RCMT 2006MOSN-RO PMS35C	...-RO	11855082	●

● available from stock, ○ available upon request

Cutting data

Example: CNMG 160612-TM4



General cutting parameters depending on the application

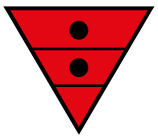
Work piece material		Type of treatment / alloy	Hardness HB	Coated carbide KP20C v_c [m/min]
P	Steel	Non-alloyed steel 0 – 0.45% C	150 – 250	200 – 340
		Low-alloyed steel	250 – 300	150 – 290
		High-alloyed steel	200	150 – 290
		Corrosion-resistant steel	200	160 – 290
K	Cast iron	Grey cast iron	180	150 – 400
		Spheroidal cast iron	160	200 – 450
		Malleable/tempered iron	130	200 – 550

Application Chip groove	Depth of cut / feed rate a_p [mm]	f [mm]
TM4	3.20 to 5.60	0.60 to 0.38

Ex: CNMG 160612-TM4 for GC25
Different in each application

Consistent cutting depth	Inconsistent cutting depth	Interrupted cut
●	○	X

Available range



Turning cast iron neg "K20"

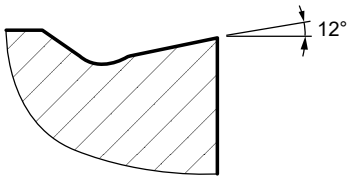
Insert	Designation	Chipbreaker	Material number	Available
	CNMG 160608-TM4 KP20C	…-TM4	11781442	●
	CNMG 160612-TM4 KP20C		11781440	●
	CNMG 190612-TM4 KP20C		11821832	●

● available from stock, ○ available upon request

Miscellaneous

Cutting data

Example: KNUX 160405UR-N11

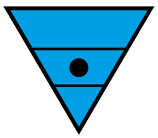


General cutting parameters depending on the application

Work piece material		Type of treatment / alloy	Hardness HB	Coated carbide PMK20C v_c [m/min]	PMK25C v_c [m/min]	LP2002 v_c [m/min]	LP4002 v_c [m/min]
P	Steel	Non-alloyed steel 0 – 0.45% C	150 – 250	220 – 400	170 – 240	170 – 200	170 – 190
		Low-alloyed steel	250 – 300	200 – 320	100 – 190	90 – 160	90 – 150
		High-alloyed steel	200	180 – 320	130 – 210	130 – 170	120 – 200
		Corrosion-resistant steel	200	200 – 320	130 – 210	130 – 180	140 – 180
M	Stainless steel	Ferritic	200	220 – 320	140 – 210	140 – 180	140 – 200
		Austenitic	180	–	100 – 210	100 – 170	110 – 190
		Duplex	230 – 260	–	–	–	80 – 150
		Martensitic	330	–	70 – 100	–	55 – 75
K	Cast iron	Grey cast iron	180	140 – 370	130 – 210	–	–
		Spheroidal cast iron	160	190 – 430	120 – 240	–	–
		Malleable/tempered iron	130	180 – 520	150 – 250	–	–

Consistent cutting depth	Incon-sistent cutting depth	Inter-rupted cut
●	○	X

Available range

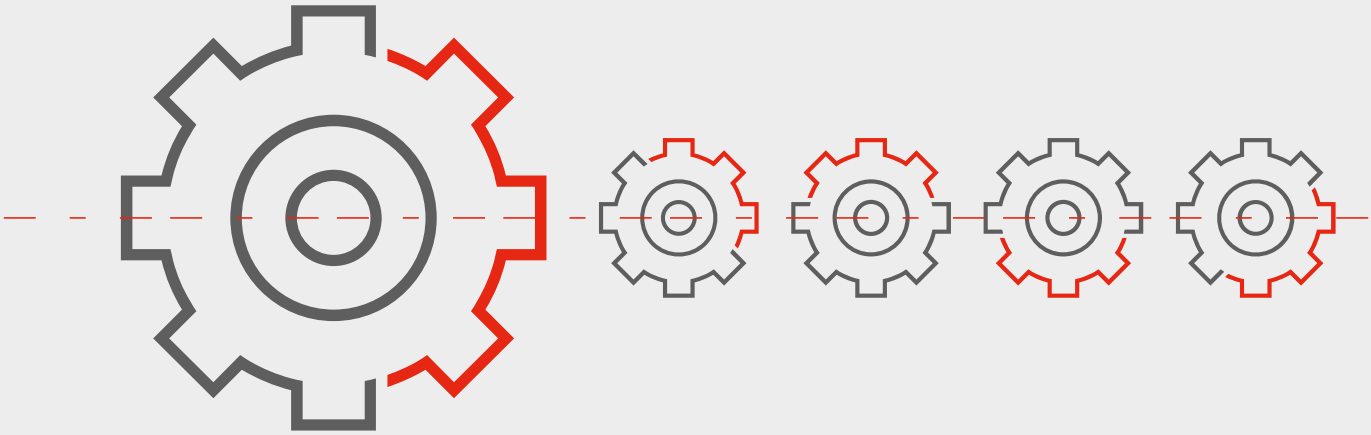


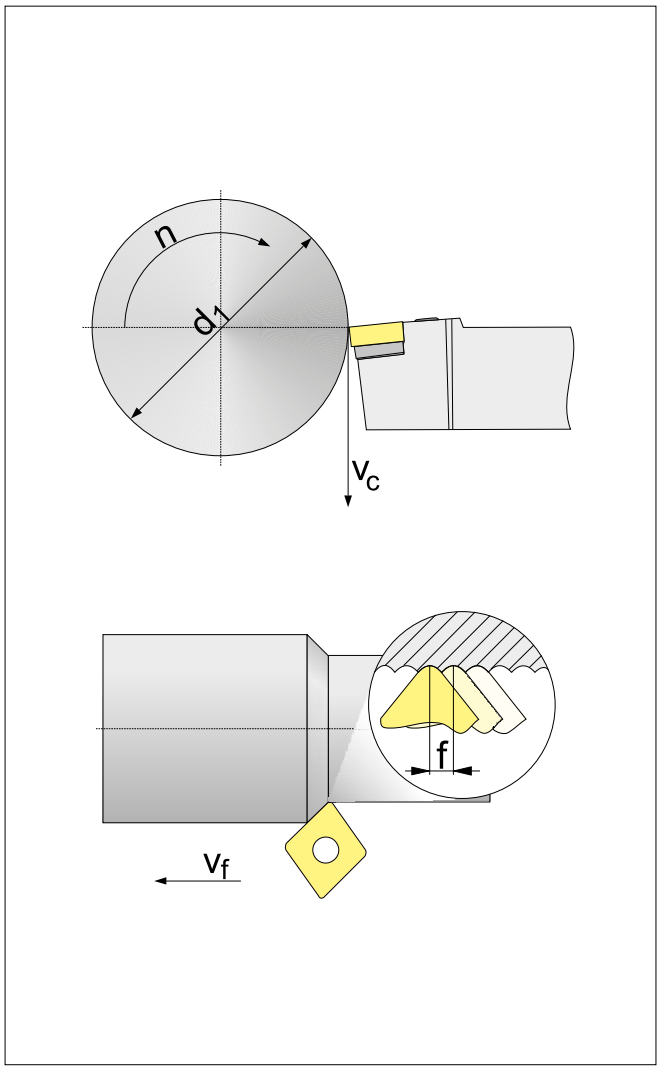
Turning steel neg medium "P25"

Insert	Designation	Chipbreaker	Material number	Available
	KNUX 160405-UL-N11 PMK25C	...-N11	11750418	●
	KNUX 160405-UR-N11 PMK25C		11750419	●
	KNUX 160410-UL-N11 PMK25C		12030582	●
	KNUX 160410-UL-N11 PMK25C		12030589	●
	KNUX 160405-UR-N11 LP2002		11246906	●
	KNUX 160405-UL-N11 LP2002		11246899	●
	KNUX 160405-UR-N11 LP4002		11247268	●
	KNUX 160405-UL-N11 LP4002		11247265	●

● available from stock, ○ available upon request

Technical information





Cutting speed (v_c)

$$v_c = \frac{d_1 \cdot \pi \cdot n}{1000} \quad [m/min]$$

Revolutions per minute (n)

$$n = \frac{v_c \cdot 1000}{d_1 \cdot \pi} \quad [rev./min]$$

Feed rate (v_f)

$$v_f = f \cdot n \quad [mm/min]$$

Type of problem													
Type of wear						Work piece problems				Chip control		Corrective measures	
Flank wear	Cratering	Edge chipping	Plastic deformation	Insert breakage	Built-up edge	Vibration	Formation of pips and burrs	Chattered surface	Surface quality	Chip too long (tangled swarf)	Chip too short (fragmented chip)		
⇩					⇧	⇩			⇧	⇩		Cutting speed	Cutting values
≈		⇩	⇩	⇩		⇧		⇩		⇧	⇩	Feed rate	
	⇩					⇩	⇩	⇩				Feed - centre area	
		⇧	≈		⇩	≈	⇩		⇩	⇩	⇧	Chip groove (-R, -M, -F)	Selection of inserts
⇧		⇧	⇧			⇩	⇩	⇩	⇧			Corner radius (larger / smaller)	
⇧	⇧	⇩	⇧	⇩								Cutting material (wear resistance / toughness)	
		≈		≈		≈		≈	≈			Clamping of tool	General criteria
		≈		≈		≈		≈	≈			Clamping of work piece	
		≈		≈		≈			⇩			Overhang	
≈		≈				≈	≈		≈			Tip height	
▢	≈		▢		▢		▢		▢	▢		Cooling lubricant	

⇧ raise, increase, large influence

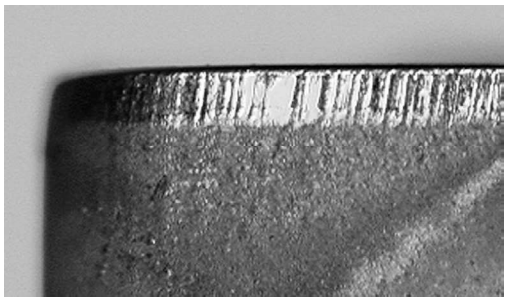
⇧ raise, increase low influence

⇩ avoid, reduce large influence

⇩ avoid, reduce low influence

≈ check, optimise

▢ use

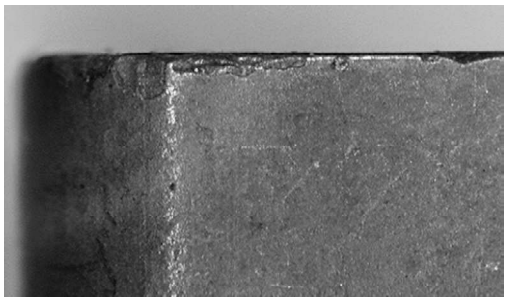


Abrasion on flank, normal wear after a certain machining time.

Flank wear

Reasons
- Cutting speed too high
- Carbide grade with insufficient wear resistance
- Incorrect feed rate

Remedies
- Reduce cutting speed
- Select more wear resistant carbide grade
- Adapt feed rate to cutting speed and cutting depth (increase feed rate)



Through excessive mechanical stress at the cutting edge fracture and chipping can occur.

Edge chipping

Reasons
- Grade with too high wear resistance
- Vibration
- Feed rate too high or excessive cutting depth
- Interrupted cut
- Swarf damage

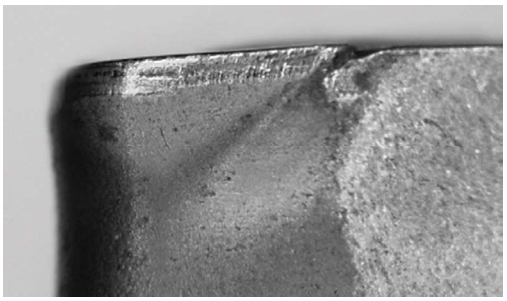
Remedies
- Use tougher grade
- Use negative cutting edge geometry with chip groove
- Increase stability (tool, work piece)

The hot chip which is being evacuated causes cratering at the rake face of the cutting edge.

Cratering

Reasons
- Cutting speed and / or feed rate too high
- Rake angle too shallow
- Grade with low wear resistance
- Insufficient coolant supply

Remedies
- Reduce cutting speed and / or feed rate
- Increase coolant quantity and / or pressure, optimise coolant supply
- Use grade with higher resistance to cratering

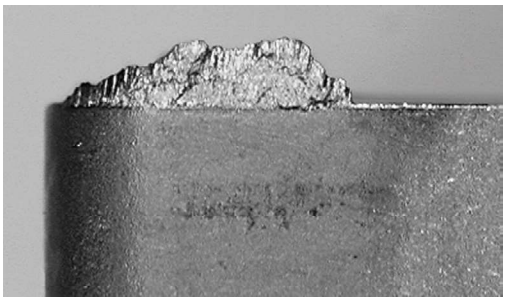


High machining temperature and simultaneous mechanical stress can lead to plastic deformation.

Plastic deformation

Reasons
- Too high machining temperature, resulting in softening of substrate
- Damaged coatings
- Chip groove too narrow

Remedies
- Reduce cutting speed
- Choose carbide grade with higher wear resistance
- Provide cooling

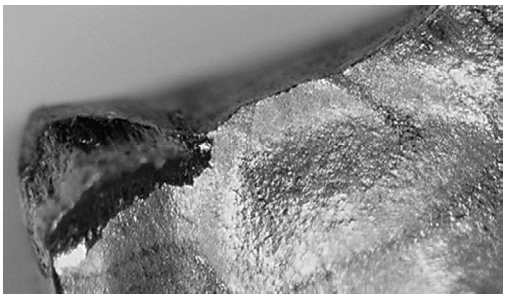


Built-up edge occurs when the chip is not evacuated properly due to insufficient cutting temperature.

Built-up edge

Reasons
- Cutting speed too low
- Rake angle too small
- Wrong cutting material
- Lack of cooling / lubrication

Remedies
- Increase cutting speed
- Increase rake angle
- Apply TiN-coating
- Use emulsion with higher concentration



Excessive stress of the insert causes breakage.

Insert breakage

Reasons
- Excessive stress of cutting material
- Lack of stability
- Corner angle too small
- Excessive notching

Remedies
- Use tougher cutting material
- Use protective edge chamfer
- Increase honing of edge
- Use more stable geometry

Grade overview

Grade designation	Standard designation ISO	Standard designation ANSI	Toughness of cutting material	Application range 01 05 10 15 20 25 30 35 40 45 50	P Steel	M Stainless steel	K Cast iron	N Non-ferrous metals	S Heat resitant	H Hard materials
PMKC15	HC-P15	C7	T		●					
	HC-M10	–	T			●				
	HC-K10	C3	T				○			
PMK20C	HC-P15	C7	C		●					
	HC-K25	C2	C				●			
	HC-M10	–	C			○				
PMK25C	HC-P25	C6	C		●					
	HC-K30	C1	C				●			
	HC-M20	–	C			○				
PMK25CU	HC-P25	–	C		●					
	HC-K30	–	C			○				
	HC-M20	–	C							○
PMS35C	HC-P35	C5	C		●					
	HC-M25	–	C			○				
	HC-S25	–	C						○	

● Main application

○ Extended application

Grade designation		Standard designation ISO	Standard designation ANSI	Toughness of cutting material	Application range 01 05 10 15 20 25 30 35 40 45 50	P Steel	M Stainless steel	K Cast iron	N Non-ferrous metals	S Heat resitant	H Hard materials
MP20CU		HC-M20	–	C			●				
		HC-P25	–	C		○					
MPS25P		HC-M25	–	P			●				
		HC-P35	C7	P		●					
		HC-S25	–	P						○	
MK20P		HC-M20	C3	P			●				
		HC-K20	C2	P				○	○		
MP35P		HC-M35	C5	P			●				
		HC-P35	–	P		○					
MS15P		HC-M15	–	P			●				
		HC-S15	–	P						○	
KP10C		HC-K10	–	C				●			
		HC-P05	–	C		○					
KP20C		HC-K20	C2	C				●			
		HC-P10	C8	C		○					

● Main application

○ Extended application

Grade designation	Standard designation ISO	Standard designation ANSI	Toughness of cutting material	Application range 01 05 10 15 20 25 30 35 40 45 50	P Steel	M Stainless steel	K Cast iron	N Non-ferrous metals	S Heat resitant	H Hard materials
NK15S	HW-N15	C3	W					●		
	HW-K15	C3	W				●			
SM10P	HC-S15	–	P						●	
	HC-M15	–	P			○				
SM15P	HC-S15	–	P						●	
	HC-M15	–	P			○				

● Main application

○ Extended application

PMKC15

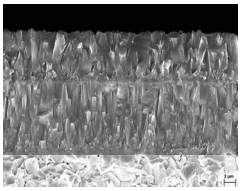
HT-P15 | HT-M10 | HT-K10

Specification:
Composition: cermet Co/Ni 12.2%; WC 15.0%; TaNbC 10.0%; TiCN balance | Hardness: HV_{30} 1620

Recommended application:
The uncoated cermet grade for the finishing of hardened steel

PMK20C

HC-P15 | HC-K25 | HC-M10

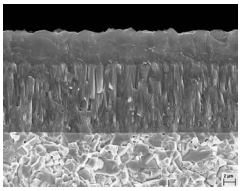


Specification:
Composition: Co 5.8%; mixed carbides 6.4%; WC balance | Grain size: 1 - 2 μm | Hardness: HV_{30} 1550 | Coating specification: CVD TiCN-Al_2O_3

Recommended application:
The wear-resistant high-performance grade for steel machining

PMK25C

HC-P25 | HC-K30 | HC-M20

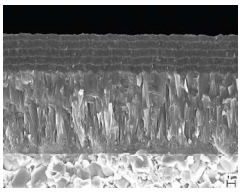


Specification:
Composition: Co 7.0%; mixed carbides 8.0%; WC balance | Grain size: 1 - 2 μm | Hardness: HV_{30} 1450 | Coating specification: CVD TiCN-Al_2O_3

Recommended application:
The first choice for the universal machining of steel

PMS35C

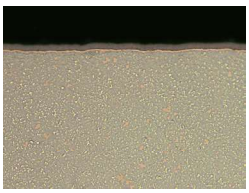
HC-P35 | HC-M25 | HC-S25



Specification:
Composition: Co 9.6%; mixed carbides 6.7%; WC balance | Grain size: 1 - 2 μm | Hardness: HV_{30} 1460 | Coating specification: CVD TiCN-Al_2O3 multi-layer

Recommended application:
The tough alternative for heavily interrupted cutting action

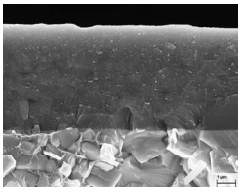
MK20P | **HC-M20 | HC-K20**



Specification:
Composition: Co 10.5%; mixed carbides 2.0%; WC balance | Grain size: 1-2mm | Hardness: HV_{30} 1400 | Coating specification: PVD TiAlTaN

Recommended application:
Particularly suitable for the wet machining of steels

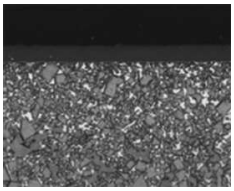
MPS25P | **HC-M25 | HC-P35 | HC-S25**



Specification:
Composition: Co 9.6%; mixed carbides 7.8%; others 0.4%; WC balance | Grain size: 1 - 2 μm | Hardness: HV_{30} 1460 | Coating specification: PVD TiAlTaN

Recommended application:
The first choice for the machining of austenitic steels

MP35P | **HC-M35 | HC-P35**



Specification:
Composition: Co 8.0%; WC balance; mixed carbides 4.2% | Grain size: 1.5 - 3.0 μm | Hardness: HV_{30} 1330

Recommended application:
Universal stainless steel turning grade, best grade in difficult conditions

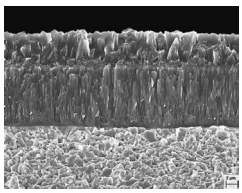
MS15P | **HC-M15 | HC-S15**

Specification:
Composition: Co 6.0%; WC balance | Grain size: 0.8 - 1,3 μm | Hardness: HV_{30} 1630 | Coating specification: PVD TiAlN

Recommended application:
The first choice for the machining of stainless steels and exotic materials

KP20C

HC-K20 | HC-P10

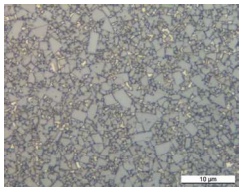


Specification:
Composition: Co 6.0%; TaC 2.0%; WC balance | Grain size: 1 μm | Hardness: HV_{30} 1630 | Coating specification: CVD TiCN-Al_2O_3

Recommended application:
The grade for cast iron machining with high toughness reserves for difficult conditions and interrupted cut

NK15S

HW-N15 | HW-K15

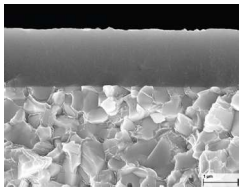


Specification:
Composition: Co 6.0%; WC balance | Grain size: 1 μm | Hardness: HV_{30} 1630

Recommended application:
The uncoated carbide grade for the machining of aluminium and other non-ferrous metals

SM10P

HC-S15 | HC-M15

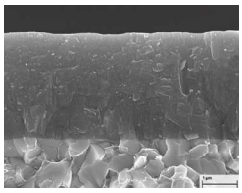


Specification:
Composition: Co 6.0%; WC balance | Grain size: 0.8 μm | Hardness: HV_{30} 1820 | Coating specification: PVD TiAlN

Recommended application:
The alternative when machining heat-resistant materials

SM15P

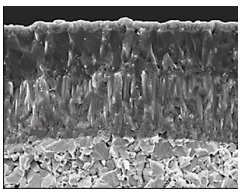
HC-S15 | HC-M15



Specification:
Composition: Co 6.0%; WC balance | Grain size: 0.8 μm | Hardness: HV_{30} 1820 | Coating specification: PVD TiAlN-TiN

Recommended application:
The first choice for the machining of heat-resistant materials

PMK25CU | **HC-P25 | HC-K30 | HC-K20**

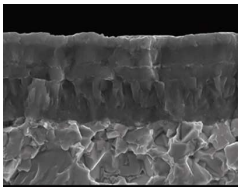


Specification:
Composition: Co 7.6%; mixed carbides 7.0%; others 0.4%; WC balance | Grain size: 1-2µm | Hardness: HV_{30} 1470 | Coating specification: CVD TiCN-Al_2O_3 top layer

Recommended application:
The first and premium choice for the universal machining of steel

NEW

MP20CU | **HC-M20 | HC-P30**

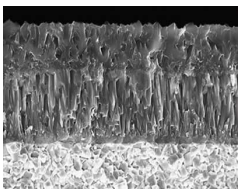


Specification:
Composition: Co 7.6%; mixed carbides 7.0%; others 0.4%; WC balance | Grain size: 1-2µm | Hardness: HV_{30} 1470 | Coating specification: CVD TiCN-Al_2O_3-Top layer.

Recommended application:
It brings advantages to dry machining, at even higher cutting speeds, and makes long tool life possible.

NEW

KP10C | **HC-K10 | HC-P05**



Specification:
Composition: Co 5.0%; mixed carbides 2.0%; WC balance | Grain size: submicron | Hardness: HV_{30} 1810 | Coating specification: CVD TiCN-Al_2O_3

Recommended application:
The wear-resistant grade for the machining of cast iron at high cutting speed with continuous cut

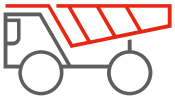
NEW

Production

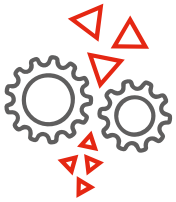
The carbide formula for success

Composite materials with valuable properties
Cemented carbides are composite materials consisting of a hard component and a comparatively soft binder metal, such as cobalt. The performance characteristics of carbide are determined by hardness, transverse rupture strength and fracture toughness. With regard to their application, important parameters for the optimisation of the characteristics here are the cobalt content and the grain size of the metal binder phase. The tungsten carbide grains have an average size of 0.5 up to several micrometres (µm). The cobalt fills the gaps between the carbide grains. On the one hand, when extremely high toughness is required, the cobalt content can amount up to 30%. On the other, the cobalt content is reduced and the grain size decreased to the submicron range (for example 0.3 µm), in order to guarantee maximum wear resistance.

Passion for cemented carbide
From the ore to the ready-to-use-tool



Mineral extraction



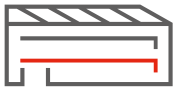
Preparation and mixing of the raw materials

Forming / pressing

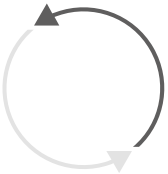
Sintering

Surface treatment

Quality assurance



Dispatch



Recycling