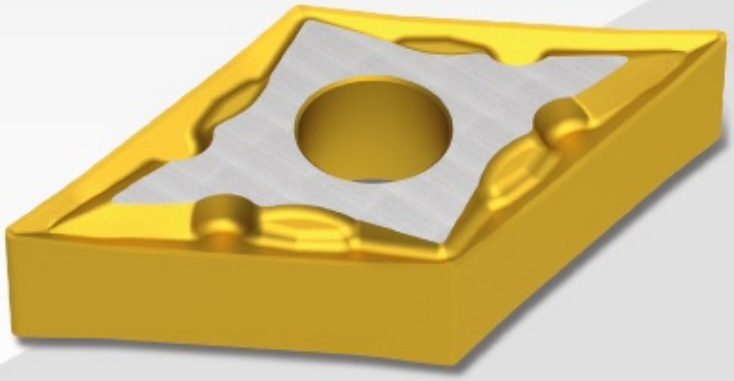
Cutting Tool Solutions

2021 EN

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

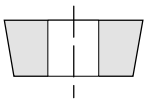
Drilling

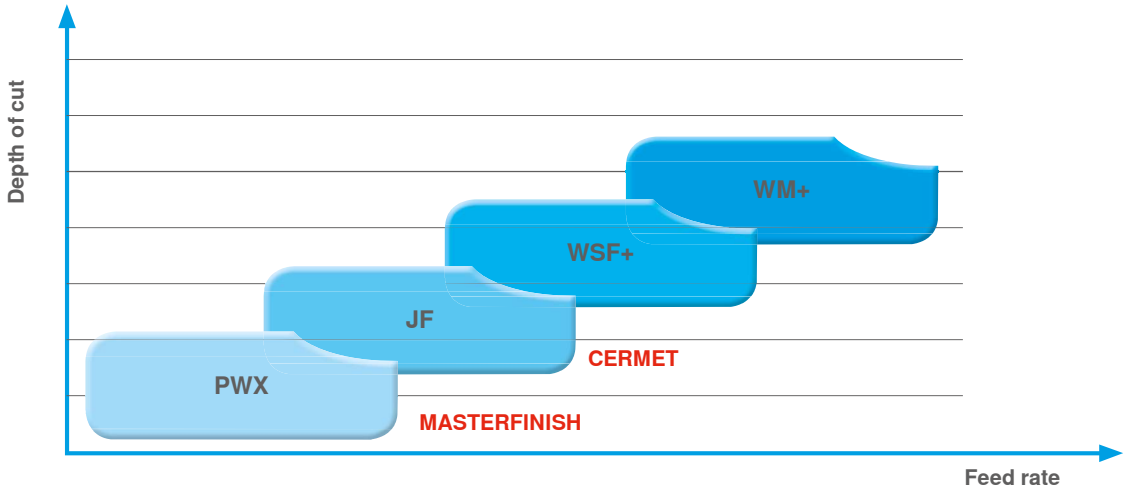
Multicut

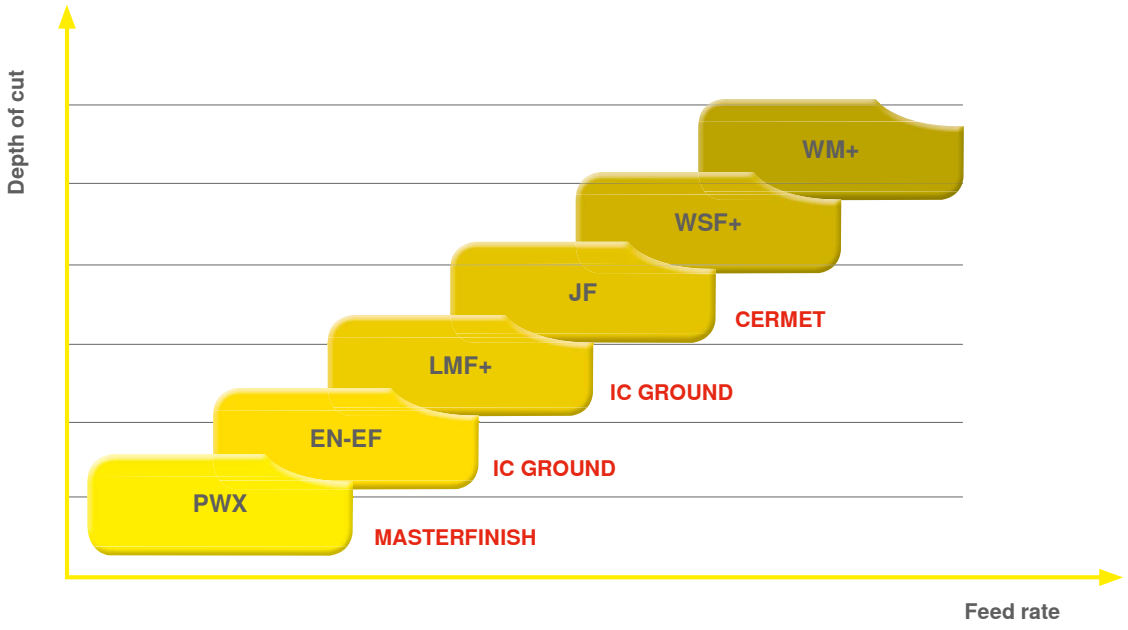
Turning

Grooving

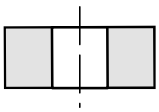
PST – Positive Size Turning

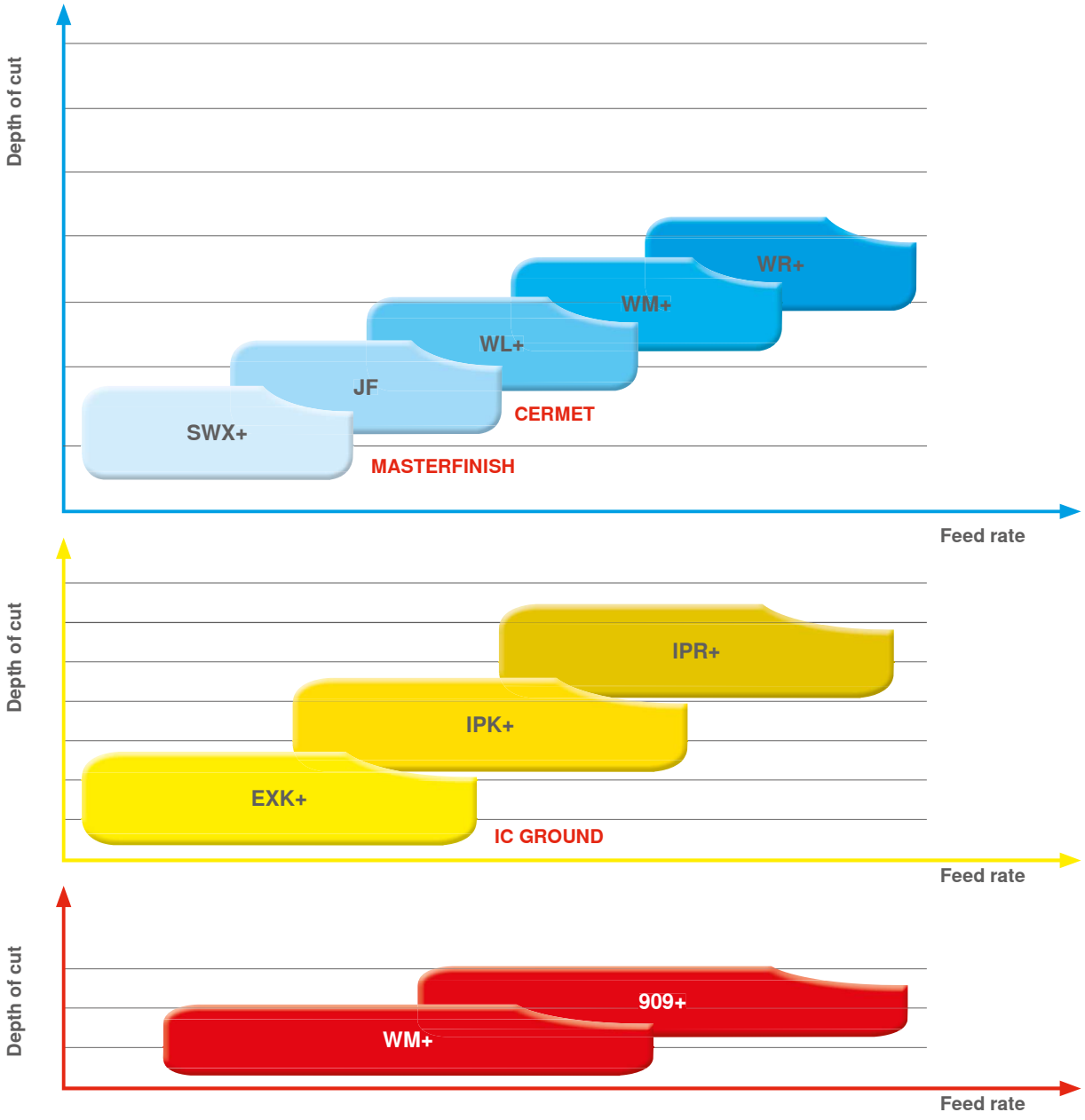



Depth of cut
WM+
WSF+
JF
CERMET
PWX
MASTERFINISH
Feed rate


Depth of cut
WM+
WSF+
JF
CERMET
LMF+
IC GROUND
EN-EF
IC GROUND
PWX
MASTERFINISH
Feed rate

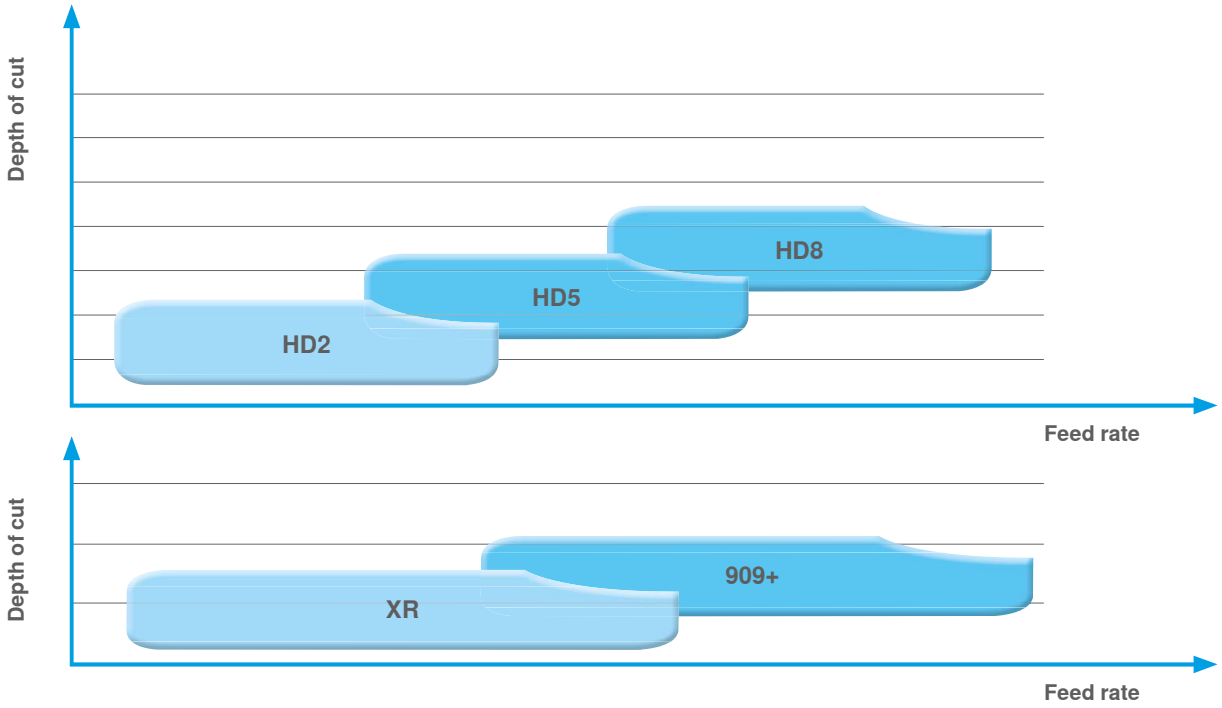
NST – Negative Size Turning




Depth of cut
WR+
WM+
WL+
JF
SWX+
CERMET
MASTERFINISH
Feed rate
Depth of cut
IPR+
IPK+
EXK+
IC GROUND
Feed rate
Depth of cut
909+
WM+
Feed rate

HDT – Heavy Duty Turning

Miscellaneous


Depth of cut
HD8
HD5
HD2
Feed rate

Depth of cut
909+
XR
Feed rate

NEW P25
CTCP125HP

Applications

NEW

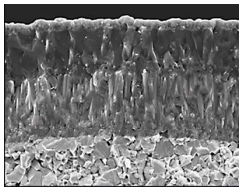
▲ New PREMIUM choice for the universal turning of steels
▲ Highly wear-resistant grade
▲ Designed for maximum cutting parameters / high productivity, long tool life, dry machining

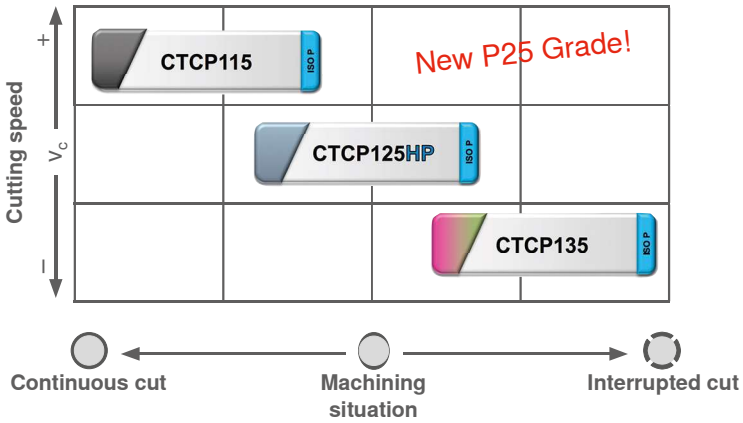
Your advantages

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

Your benefits

▲ High productivity
▲ Increased tool life

CTCP125HP	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

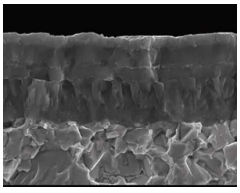
The CTCM120 is suitable for:
- ▲ High cutting parameters in wet cutting
- ▲ Better resistance to plastic deformation and higher heat resistance in operation
- ▲ Continuous to slightly interrupted cut

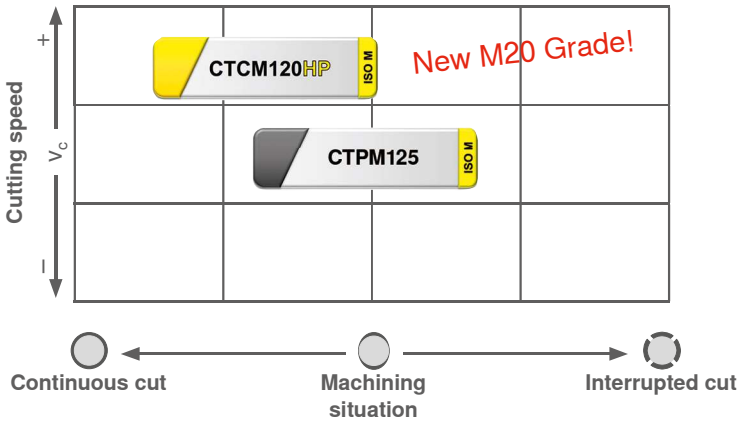
Your advantages

- ▲ 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

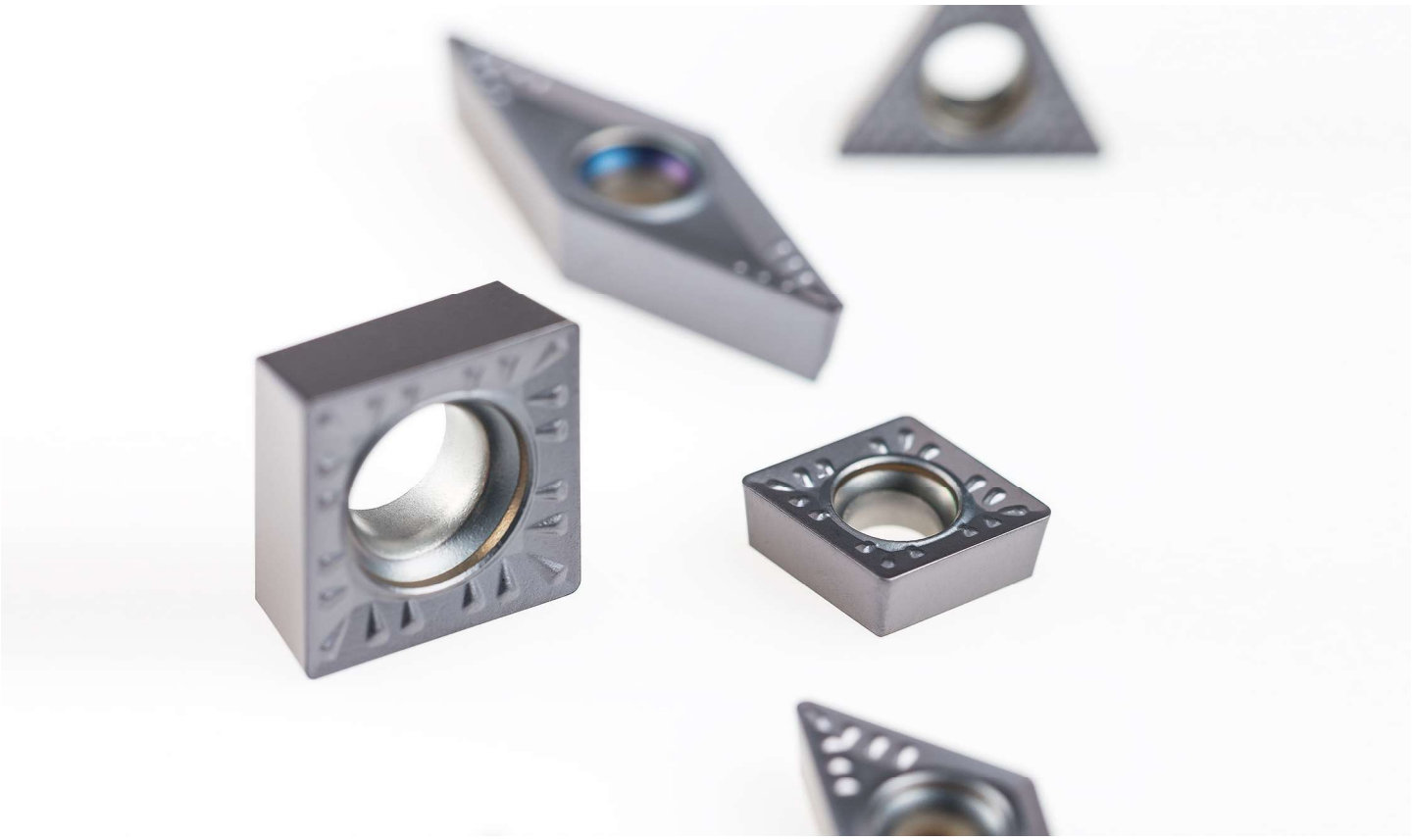
- ▲ Productivity
- ▲ Reduced warehousing costs

CTCM120HP	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+.

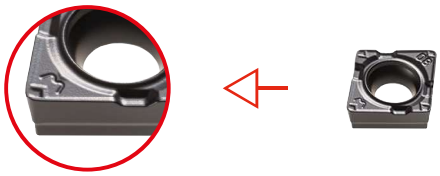
Positive Size Turning
PST



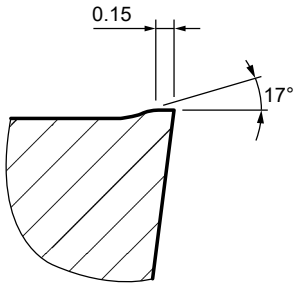
New chipbreaker

Optimised by FEM:

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



Example: CCMX 09T308-PWX



Cutting data

General cutting parameters depending on the application

Work piece material		Type of treatment / alloy	Hardness HB	CTCP125 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

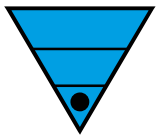
Application Chip groove	Depth of cut / feed rate a_p [mm]	f [mm]
PWX	1 to 3.5	0.3 to 0.15

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

Consistent cutting depth	Inconsistent cutting depth	Interrupted cut
●	○	X

Available range

MASTERFINISH



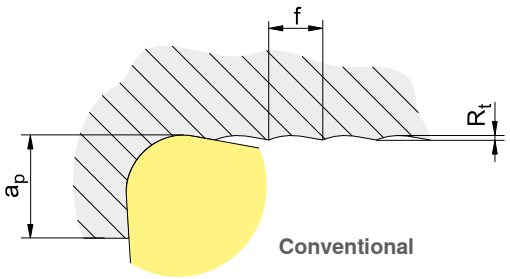
Steel extreme finishing – Masterfinish

Insert	Designation	Chipbreaker	Material number	Available
	CCMX 09T304-PWX CTCP125	…-PWX	12078108	●
	CCMX 09T308-PWX CTCP125		12078100	●
	DCMX 070204-PWX CTCP125		12078103	●
	DCMX 11T304-PWX CTCP125		12078101	●
	DCMX 11T308-PWX CTCP125		12086875	●

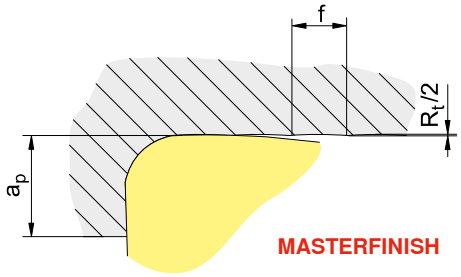
Operating principle

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



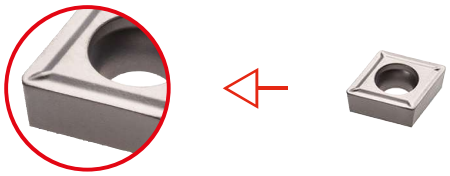
MASTERFINISH

● available from stock, ○ available upon request

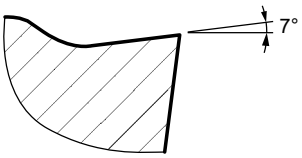
New chipbreaker

Optimised by FEM:

- Increase life time
- Reduce temperature and stress



Example: DCMT 11T304-JF



Cutting data

General cutting parameters depending on the application

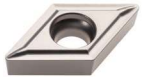
Work piece material		Type of treatment / alloy	Hardness HB	Cermet TCM10 v_c [m/min]
P	Steel	Non-alloyed steel 0 – 0.45% C	150 – 250	230 – 270
		Low-alloyed steel	250 – 300	180 – 230
		High-alloyed steel	200	160 – 200
		Corrosion-resistant steel	200	230 – 270
M	Stainless steel	Ferritic	200	170 – 240
		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

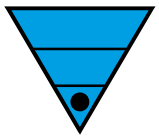
Application Chip groove	Depth of cut / feed rate a_p [mm]	f [mm]
JF	0.10 to 1.65	0.20 to 0.05

Ex: CCMT 09T304-JF
Different in each application

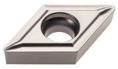
Consistent cutting depth	Inconsistent cutting depth	Interrupted cut
●	X	X

Available range





Turning steel pos finishing CERMET

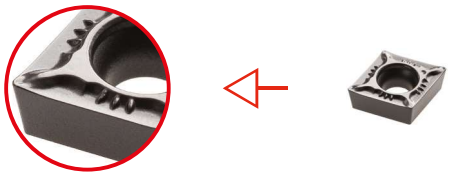
Insert	Designation	Chipbreaker	Material number	Available
	CCMT 060204-JF TCM10	… -JF	11619142	●
	CCMT 09T304-JF TCM10		11619132	●
	DCMT 070204-JF TCM10		11619127	●
	DCMT 11T304-JF TCM10		11619131	●
	TCGT 110202-JF TCM10		11622263	●
	TCMT 110204-JF TCM10		11619126	●
	WCGT 020102-JF TCM10		11619140	●

● available from stock, ○ available upon request

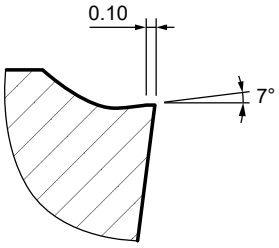
New chipbreaker

WSF+:

▲ To optimise chip control



Example: CCMT 09T308-WSF+



Cutting data

General cutting parameters depending on the application

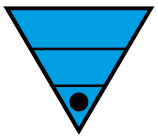
Work piece material		Type of treatment / alloy	Hardness HB	Coated carbide CTCP115 v_c [m/min]	CTCP125HP v_c [m/min]	CTCP125 v_c [m/min]	CTCP135 v_c [m/min]
P	Steel	Non-alloyed steel 0 – 0.45% C	150 – 250	220 – 400	200 – 270	170 – 240	170 – 190
		Low-alloyed steel	250 – 300	200 – 320	115 – 210	100 – 190	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]
WSF+	0.50 to 2.25	0.14 to 0.07

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

Consistent cutting depth	Inconsistent cutting depth	Interrupted cut
X	○	X

Available range



Turning steel pos finishing "P15"

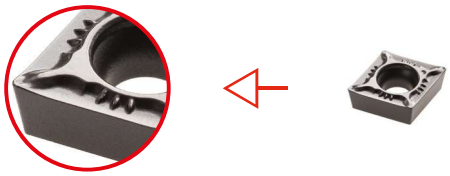
Insert	Designation	Chipbreaker	Material number	Available
	CCMT 060204-WSF+ CTCP115		12030470	●
	CCMT 09T304-WSF+ CTCP115		12030511	●
	CCMT 09T308-WSF+ CTCP115		12030567	●
	CCMT 120404-WSF+ CTCP115	…-WSF+	12030568	●
	DCMT 070204-WSF+ CTCP115		12030692	●
	DCMT 11T304-WSF+ CTCP115		12167861	●

● available from stock, ○ available upon request

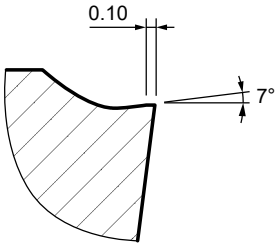
New chipbreaker

WSF+:

▲ To optimise chip control



Example: CCMT 09T308-WSF+



Cutting data

General cutting parameters depending on the application

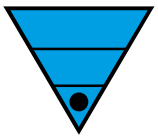
Work piece material		Type of treatment / alloy	Hardness HB	Coated carbide CTCP115 v_c [m/min]	CTCP125HP v_c [m/min]	CTCP125 v_c [m/min]	CTCP135 v_c [m/min]
P	Steel	Non-alloyed steel 0 – 0.45% C	150 – 250	220 – 400	200 – 270	170 – 240	170 – 190
		Low-alloyed steel	250 – 300	200 – 320	115 – 210	100 – 190	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]
WSF+	0.50 to 2.25	0.14 to 0.07

Ex: CCMT 09T304-WSF+ 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-WSF+ CTCP125	…-WSF+	11684867	●
	CCMT 060204-WSF+ CTCP125		11684913	●
	CCMT 09T302-WSF+ CTCP125		11684916	●
	CCMT 09T304-WSF+ CTCP125		11684923	●
	CCMT 09T308-WSF+ CTCP125		11684931	●
	DCMT 070202-WSF+ CTCP125		11684952	●
	DCMT 070204-WSF+ CTCP125		11684953	●
	DCMT 11T302-WSF+ CTCP125		11812677	●
	DCMT 11T304-WSF+ CTCP125		11686178	●
	DCMT 11T308-WSF+ CTCP125		11686185	●
	VCMT 110302-WSF+ CTCP125		11812680	●
	VCMT 110304-WSF+ CTCP125		11855132	●
	VCMT 160404-WSF+ CTCP125		11812683	●
	VCMT 160408-WSF+ CTCP125		12077363	●

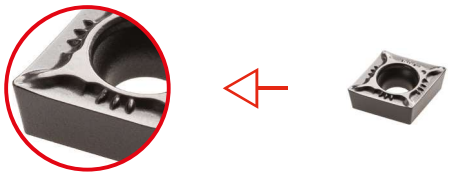
● available from stock, ○ available upon request

New chipbreaker

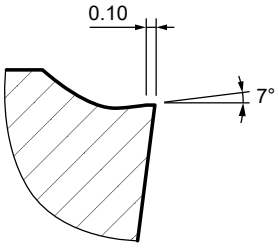
NEW

WSF+:

▲ To optimise chip control



Example: CCMT 09T308-WSF+



Cutting data

General cutting parameters depending on the application

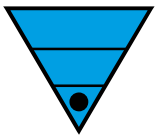
Work piece material		Type of treatment / alloy	Hardness HB	Coated carbide CTCP115 v_c [m/min]	CTCP125HP v_c [m/min]	CTCP125 v_c [m/min]	CTCP135 v_c [m/min]
P	Steel	Non-alloyed steel 0 – 0.45% C	150 – 250	220 – 400	200 – 270	170 – 240	170 – 190
		Low-alloyed steel	250 – 300	200 – 320	115 – 210	100 – 190	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]
WSF+	0.50 to 2.25	0.14 to 0.07

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

Consistent cutting depth	Inconsistent cutting depth	Interrupted cut
X	○	X

Available range



Turning steel pos finishing "P25"

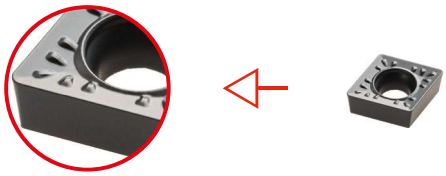
Insert	Designation	Chipbreaker	Material number	Available
	CCMT 060202-WSF+ CTCP125HP	...-WSF+	14659047	●
	CCMT 060204-WSF+ CTCP125HP		14659053	●
	CCMT 09T302-WSF+ CTCP125HP		14659058	●
	CCMT 09T304-WSF+ CTCP125HP		14659061	●
	CCMT 09T308-WSF+ CTCP125HP		14659065	●
	DCMT 070202-WSF+ CTCP125HP		14659070	●
	DCMT 070204-WSF+ CTCP125HP		14659109	●
	DCMT 11T302-WSF+ CTCP125HP		14659133	●
	DCMT 11T304-WSF+ CTCP125HP		14659135	●
	DCMT 11T308-WSF+ CTCP125HP		14659138	●

● available from stock, ○ available upon request

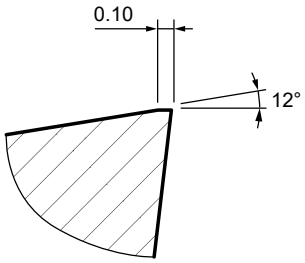
New chipbreaker

Optimised by FEM:

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



Example: CCMT 09T308-WM+



Cutting data

General cutting parameters depending on the application

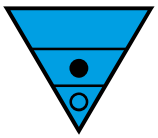
Work piece material		Type of treatment / alloy	Hardness HB	Coated carbide CTCP115 v_c [m/min]	CTCP125HP v_c [m/min]	CTCP125 v_c [m/min]	CTCP135 v_c [m/min]
P	Steel	Non-alloyed steel 0 – 0.45% C	150 – 250	220 – 400	200 – 270	170 – 240	170 – 190
		Low-alloyed steel	250 – 300	200 – 320	115 – 210	100 – 190	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]
WM+	0.50 to 3.00	0.21 to 0.12

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

Consistent cutting depth	Inconsistent cutting depth	Interrupted cut
●	○	X

Available range



Turning steel pos semi finishing "P15"

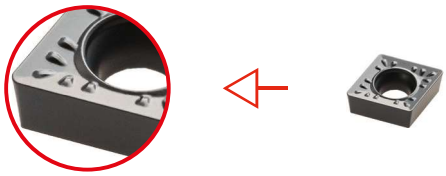
Insert	Designation	Chipbreaker	Material number	Available
	CCMT 060204-WM+ CTCP115	…-WM+	11865625	●
	CCMT 060208-WM+ CTCP115		12064721	●
	CCMT 09T304-WM+ CTCP115		11888980	●
	CCMT 09T308-WM+ CTCP115		11888982	●
	DCMT 11T304-WM+ CTCP115		11865628	●
	DCMT 11T308-WM+ CTCP115		11865630	●
	SCMT 120404-WM+ CTCP115		11865632	●
	TCMT 110204-WM+ CTCP115		12030597	●
	VBMT 160404-XM1+ CTCP115	…-XM1+	12057972	●

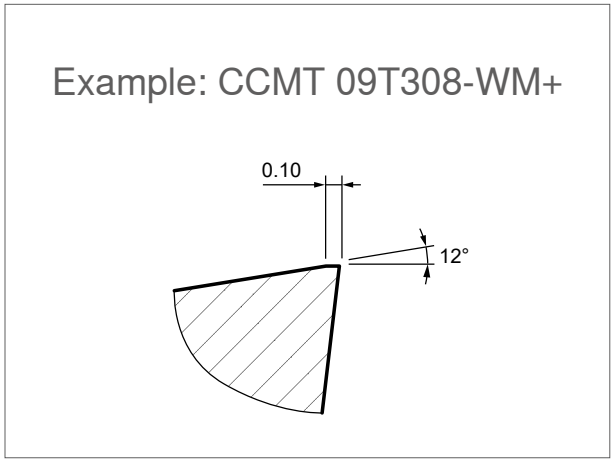
● available from stock, ○ available upon request

New chipbreaker

Optimised by FEM:

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





Cutting data

General cutting parameters depending on the application

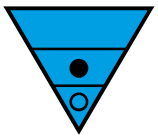
Work piece material		Type of treatment / alloy	Hardness HB	Coated carbide CTCP115 v_c [m/min]	CTCP125HP v_c [m/min]	CTCP125 v_c [m/min]	CTCP135 v_c [m/min]
P	Steel	Non-alloyed steel 0 – 0.45% C	150 – 250	220 – 400	200 – 270	170 – 240	170 – 190
		Low-alloyed steel	250 – 300	200 – 320	115 – 210	100 – 190	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]
WM+	0.50 to 3.00	0.21 to 0.12

Ex: CCMT 09T304-WM+ 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-WM+ CTCP125		11748108	●
	CCMT 060208-WM+ CTCP125		11748110	●
	CCMT 09T304-WM+ CTCP125		11748112	●
	CCMT 09T308-WM+ CTCP125		11748114	●
	CCMT 120404-WM+ CTCP125		11748116	●
	CCMT 120408-WM+ CTCP125		11748118	●
	CCMT 120412-WM+ CTCP125		11748120	●
	DCMT 070204-WM+ CTCP125		11748124	●
	DCMT 070208-WM+ CTCP125		11748127	●
	DCMT 11T304-WM+ CTCP125		11748129	●
	DCMT 11T308-WM+ CTCP125		11748131	●
	SCMT 09T304-WM+ CTCP125		11748539	●
	SCMT 09T308-WM+ CTCP125		11748556	●
	SCMT 120404-WM+ CTCP125	…-WM+	11748562	●
	SCMT 120408-WM+ CTCP125		11748566	●
	SCMT 120412-WM+ CTCP125		11748579	●
	TCMT 090204-WM+ CTCP125		11748602	●
	TCMT 110204-WM+ CTCP125		11748607	●
	TCMT 110208-WM+ CTCP125		11748609	●
	TCMT 16T304-WM+ CTCP125		11748620	●
	TCMT 16T308-WM+ CTCP125		11748622	●
	TCMT 16T312-WM+ CTCP125		11748625	●
	VCMT 110304-WM+ CTCP125		11749275	●
	VCMT 110308-WM+ CTCP125		11749283	●
	VCMT 160404-WM+ CTCP125		11687010	●
	VCMT 160408-WM+ CTCP125		11687012	●
	VBMT 160404-XM1+ CTCP125		11687006	●
	VBMT 160408-XM1+ CTCP125	…-XM1+	11687008	●
	WCMT 040204-WM+ CTCP125		11749299	●
	WCMT 040208-WM+ CTCP125		11749304	●
	WCMT 06T304-WM+ CTCP125		11749313	●
	WCMT 06T308-WM+ CTCP125	…-WM+	11749317	●
	WCMT 080404-WM+ CTCP125		11749333	●
	WCMT 080408-WM+ CTCP125		11749336	●
	WCMT 080412-WM+ CTCP125		11749340	●

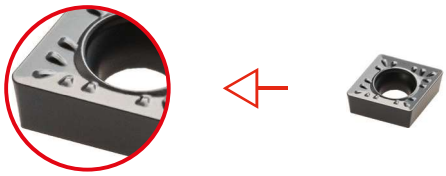
● available from stock, ○ available upon request

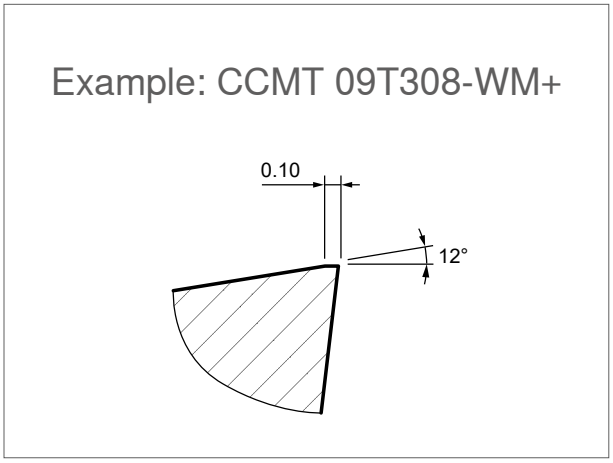
New chipbreaker

NEW

Optimised by FEM:

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





Cutting data

General cutting parameters depending on the application

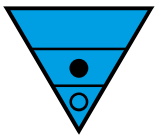
Work piece material		Type of treatment / alloy	Hardness HB	Coated carbide CTCP115 v_c [m/min]	CTCP125HP v_c [m/min]	CTCP125 v_c [m/min]	CTCP135 v_c [m/min]
P	Steel	Non-alloyed steel 0 – 0.45% C	150 – 250	220 – 400	200 – 270	170 – 240	170 – 190
		Low-alloyed steel	250 – 300	200 – 320	115 – 210	100 – 190	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]
WM+	0.50 to 3.00	0.21 to 0.12

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

Consistent cutting depth	Inconsistent cutting depth	Interrupted cut
●	●	○

Available range



Turning steel pos medium "P25"

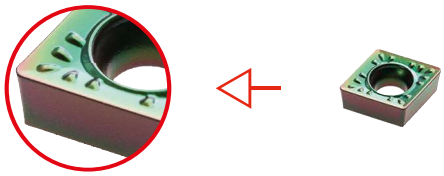
Insert	Designation	Chipbreaker	Material number	Available
	CCMT 060204-WM+ CTCP125HP		14658964	●
	CCMT 09T304-WM+ CTCP125HP		12360829	●
	CCMT 09T308-WM+ CTCP125HP		12360832	●
	CCMT 120404-WM+ CTCP125HP		14658965	●
	CCMT 120408-WM+ CTCP125HP	…-WM+	12310818	
	CCMT 120412-WM+ CTCP125HP		14658969	●
	DCMT 070204-WM+ CTCP125HP		14659032	●
	DCMT 11T304-WM+ CTCP125HP		14659038	●
	DCMT 11T308-WM+ CTCP125HP		14659043	●

● available from stock, ○ available upon request

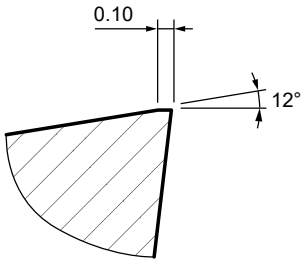
New chipbreaker

Optimised by FEM:

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



Example: CCMT 09T308-WM+



Cutting data

General cutting parameters depending on the application

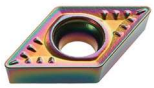
Work piece material		Type of treatment / alloy	Hardness HB	Coated carbide CTCP115 v_c [m/min]	CTCP125HP v_c [m/min]	CTCP125 v_c [m/min]	CTCP135 v_c [m/min]
P	Steel	Non-alloyed steel 0 – 0.45% C	150 – 250	220 – 400	200 – 270	170 – 240	170 – 190
		Low-alloyed steel	250 – 300	200 – 320	115 – 210	100 – 190	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	–

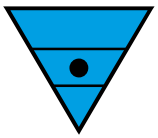
Application Chip groove	Depth of cut / feed rate a_p [mm]	f [mm]
WM+	0.50 to 3.00	0.21 to 0.12

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

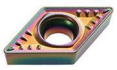
Consistent cutting depth	Inconsistent cutting depth	Interrupted cut
●	●	○

Available range





Turning steel pos medium "P35"

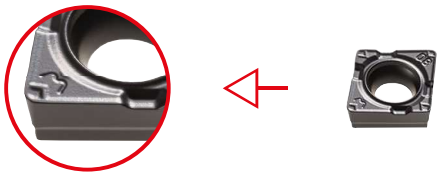
Insert	Designation	Chipbreaker	Material number	Available
	CCMT 060204-WM+ CTCP135		11854303	●
	CCMT 060208-WM+ CTCP135		11854307	●
	CCMT 09T304-WM+ CTCP135		11854315	●
	CCMT 09T308-WM+ CTCP135		11854322	●
	DCMT 070204-WM+ CTCP135		11854804	●
	DCMT 070208-WM+ CTCP135		11854807	●
	DCMT 11T304-WM+ CTCP135		11854850	●
	DCMT 11T308-WM+ CTCP135		11854863	●
	RCMT 0803MO-WM+ CTCP135		11882921	●
	RCMT 1003MO-WM+ CTCP135		11882920	●
	RCMT 1204MO-WM+ CTCP135	…-WM+	11855077	●
	SCMT 09T308-WM+ CTCP135		11855088	●
	SCMT 120408-WM+ CTCP135		11855090	●
	SCMT 120412-WM+ CTCP135		11855099	●
	TCMT 110204-WM+ CTCP135		11873284	●
	TCMT 110208-WM+ CTCP135		11873281	●
	TCMT 16T304-WM+ CTCP135		11855125	●
	TCMT 16T308-WM+ CTCP135		11855126	●
	VCMT 110304-WM+ CTCP135		11873280	●
	VCMT 110308-WM+ CTCP135		11873279	●
	VCMT 160404-WM+ CTCP135		11855136	●
	VCMT 160408-WM+ CTCP135		11855137	●

● available from stock, ○ available upon request

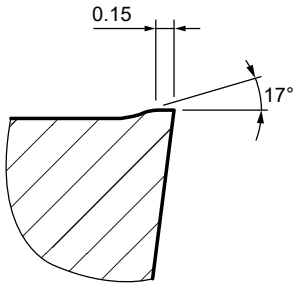
New chipbreaker

Optimised by FEM:

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



Example: CCMX 09T308-PWX



Cutting data

General cutting parameters depending on the application

Work piece material		Type of treatment / alloy	Hardness HB	CTCP125 v_c [m/min]	CTCP135M 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]
PWX	1 to 3.50	0.30 to 0.15

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

Consistent cutting depth	Inconsistent cutting depth	Interrupted cut
●	○	X

Available range

MASTERFINISH

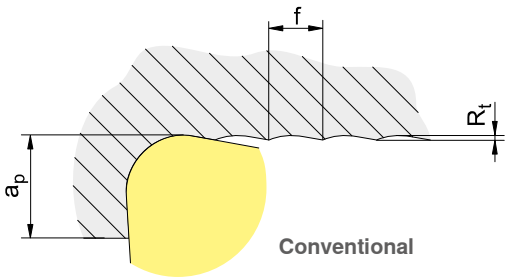
Heavy turning steel pos "P35" – Masterfinish

Insert	Designation	Chipbreaker	Material number	Available
	CCMX 09T304-PWX CTPM135M	…-PWX	12078102	●
	CCMX 09T308-PWX CTPM135M		12078097	●
	DCMX 11T304-PWX CTPM135M		12078099	●
	DCMX 11T308-PWX CTPM135M		12078094	●

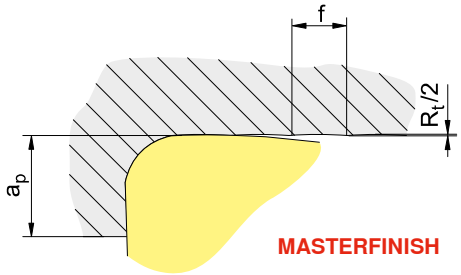
Operating principle

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

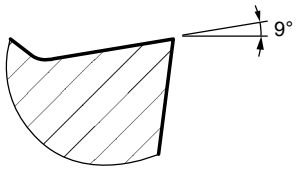


MASTERFINISH

● available from stock, ○ available upon request

Cutting data

Example: CCGT 09T301EN-EF



General cutting parameters depending on the application

Work piece material		Type of treatment / alloy	Hardness HB	Coated carbide CTP2120 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]
EN-EF	0.05 to 1.35	0.02 to 0.10

Ex: CCGT 09T0301EN-EF for 304
Different in each application

Consistent cutting depth	Inconsistent cutting depth	Interrupted cut
●	X	X

Available range

Turning stainless steel pos "Extreme finishing"

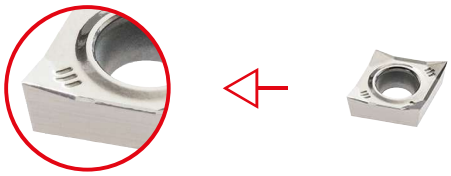
Insert	Designation	Chipbreaker	Material number	Available
	CCGT 060200EN-EF CTP2120	...EN-EF	11204029	●
	CCGT 060201EN-EF CTP2120		11203024	●
	CCGT 09T300EN-EF CTP2120		11204030	●
	CCGT 09T301EN-EF CTP2120		11203027	●
	DCGT 070200EN-EF CTP2120		11204031	●
	DCGT 070201EN-EF CTP2120		11203028	●
	DCGT 11T300EN-EF CTP2120		11204035	●
	DCGT 11T301EN-EF CTP2120		11203030	●
	VCGT 110300EN-EF CTP2120		11204036	●
	VCGT 110301EN-EF CTP2120		11203033	●
	VCGT 160400EN-EF CTP2120		11204037	●
	VCGT 160401EN-EF CTP2120		11203034	●

● available from stock, ○ available upon request

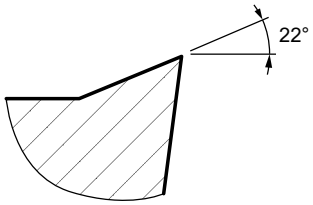
New chipbreaker

Optimised by FEM:

- Increased tool life
- Small feed rate when bar turning



Example: CCGT 120408FN-LMF+



Cutting data

General cutting parameters depending on the application

Work piece material		Type of treatment / alloy	Hardness HB	Coated carbide 1279 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]
LMF+	0.05 to 1.35	0.02 to 0.10

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

Consistent cutting depth	Inconsistent cutting depth	Interrupted cut
●	●	○

Available range

Turning stainless steel pos finishing "M15"

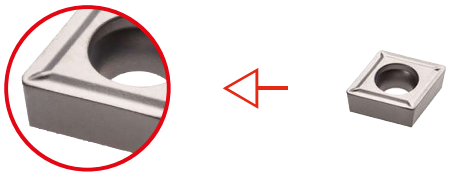
Insert	Designation	Chipbreaker	Material number	Available
	CCGT 060201FN-LMF+ 1279		11973505	●
	CCGT 060202FN-LMF+ 1279		11969606	●
	CCGT 060202FN-LMF+ 1279		11969605	●
	CCGT 09T302FN-LMF+ 1279		11969607	●
	CCGT 09T304FN-LMF+ 1279		11969604	●
	CCGT 09T308FN-LMF+ 1279		11969600	●
	CCGT 120404FN-LMF+ 1279		11969598	●
	CCGT 120408FN-LMF+ 1279		11969596	●
	DCGT 070201FN-LMF+ 1279		11969599	●
	DCGT 070202FN-LMF+ 1279		11969597	●
	DCGT 070204FN-LMF+ 1279		11969595	●
	DCGT 11T302FN-LMF+ 1279		11969591	●
	DCGT 11T304FN-LMF+ 1279		11969585	●
	DCGT 11T308FN-LMF+ 1279	…-LMF+	11969579	●
	SCGT 09T304FN-LMF+ 1279		11969578	●
	SCGT 09T308FN-LMF+ 1279		12042223	●
	SCGT 120408FN-LMF+ 1279		12049241	●
	TCGT 110204FN-LMF+ 1279		12044368	●
	VCGT 110302FN-LMF+ 1279		11969577	●
	VCGT 110304FN-LMF+ 1279		11969575	●
	VCGT 130302FN-LMF+ 1279		11969568	●
	VCGT 130304FN-LMF+ 1279		11969566	●
	VCGT 160404FN-LMF+ 1279		11969535	●
	VCGT 160408FN-LMF+ 1279		11969529	●
	VCGT 160412FN-LMF+ 1279		11969360	●

● available from stock, ○ available upon request

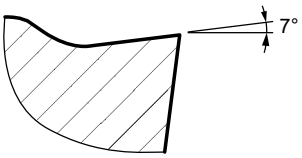
New chipbreaker

Optimised by FEM:

- Increased tool life
- Small feed rate when bar turning



Example: DCMT 11T304-JF



Cutting data

General cutting parameters depending on the application

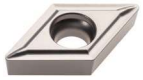
Work piece material		Type of treatment / alloy	Hardness HB	Cermet TCM10 v_c [m/min]
P	Steel	Non-alloyed steel 0 – 0.45% C	150 – 250	230 – 270
		Low-alloyed steel	250 – 300	180 – 230
		High-alloyed steel	200	160 – 200
		Corrosion-resistant steel	200	230 – 270
M	Stainless steel	Ferritic	200	170 – 240
		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

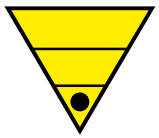
Application Chip groove	Depth of cut / feed rate a_p [mm]	f [mm]
JF	0.10 to 1.65	0.20 to 0.05

Ex: CCMT 09T304-JF
Different in each application

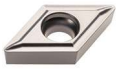
Consistent cutting depth	Inconsistent cutting depth	Interrupted cut
●	X	X

Available range





Turning stainless steel pos finishing "CERMET"

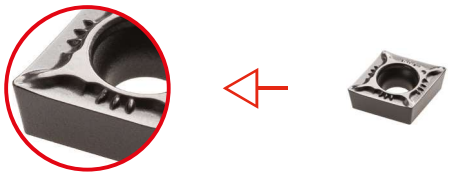
Insert	Designation	Chipbreaker	Material number	Available
	CCMT 060204-JF TCM10	… -JF	11619142	●
	CCMT 09T304-JF TCM10		11619132	●
	DCMT 070204-JF TCM10		11619127	●
	DCMT 11T304-JF TCM10		11619131	●
	TCGT 110202-JF TCM10		11622263	●
	TCMT 110204-JF TCM10		11619126	●
	WCGT 020102-JF TCM10		11619140	●

● available from stock, ○ available upon request

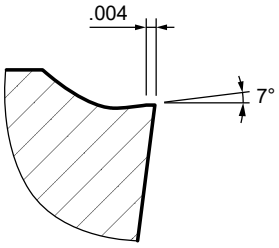
New chipbreaker

WSF+:

▲ To optimise chip control



Example: CCMT 09T308-WSF+



Cutting data

General cutting parameters depending on the application

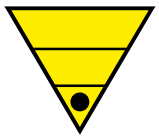
Work piece material		Type of treatment / alloy	Hardness HB	Coated carbide CTCM120HP v_c [m/min]	CTPM125 v_c [m/min]	CTPM135M v_c [m/min]
P	Steel	non-alloyed steel 0 – 0.45% C	150 – 250	150 – 250	130 – 250	150 – 190
		low-alloyed steel	250 – 300	100 – 200	60 – 180	90 – 150
		high-alloyed steel	200	120 – 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]
WSF+	0.15 to 2.25	0.20 to 0.07

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

Consistent cutting depth	Inconsistent cutting depth	Interrupted cut
●	○	X

Available range



Turning steel pos finishing "M20"

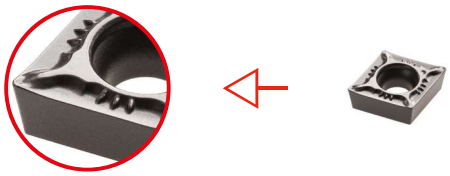
Insert	Designation	Chipbreaker	Material number	Available
	CCMT 060202-WSF+ CTCM120HP		141573467	●
	CCMT 060204-WSF+ CTCM120HP		141573469	●
	CCMT 09T302-WSF+ CTCM120HP		141573473	●
	CCMT 09T304-WSF+ CTCM120HP		141573477	●
	DCMT 070202-WSF+ CTCM120HP		141573478	●
	DCMT 070204-WSF+ CTCM120HP		141573482	●
	DCMT 11T302-WSF+ CTCM120HP	…-WSF+	141573483	●
	DCMT 11T304-WSF+ CTCM120HP		141573486	●
	VCMT 110302-WSF+ CTCM120HP		141573491	●
	VCMT 110304-WSF+ CTCM120HP		141573494	●
	VCMT 160404-WSF+ CTCM120HP		141573495	●
	VCMT 160408-WSF+ CTCM120HP		141573497	

● available from stock, ○ available upon request

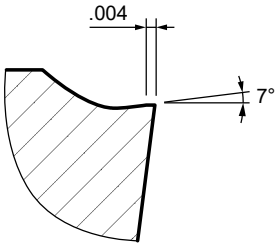
New chipbreaker

WSF+:

▲ To optimise chip control



Example: CCMT 09T308-WSF+



Cutting data

General cutting parameters depending on the application

Work piece material		Type of treatment / alloy	Hardness HB	Coated carbide CTCM120HP v_c [m/min]	CTPM125 v_c [m/min]	CTPM135M 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]
WSF+	0.15 to 2.25	0.20 to 0.07

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

Consistent cutting depth	Inconsistent cutting depth	Interrupted cut
●	○	X

Available range

Turning steel pos finishing "M25"

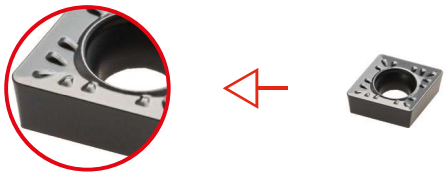
Insert	Designation	Chipbreaker	Material number	Available
	CCMT 060202-WSF+ CTPM125		11782035	●
	CCMT 060204-WSF+ CTPM125		11782037	●
	CCMT 09T302-WSF+ CTPM125		11782051	●
	CCMT 09T304-WSF+ CTPM125		11782052	●
	CCMT 09T308-WSF+ CTPM125		11782054	●
	DCMT 070202-WSF+ CTPM125		11782055	●
	DCMT 070204-WSF+ CTPM125		11782056	●
	DCMT 11T302-WSF+ CTPM125		11812678	●
	DCMT 11T304-WSF+ CTPM125	...-WSF+	11782058	●
	DCMT 11T308-WSF+ CTPM125		11782059	●
	TCMT 110202-WSF+ CTPM125		11906411	●
	VCMT 110302-WSF+ CTPM125		11812682	●
	VCMT 110304-WSF+ CTPM125		11855134	●
	VCMT 160404-WSF+ CTPM125		11812684	●

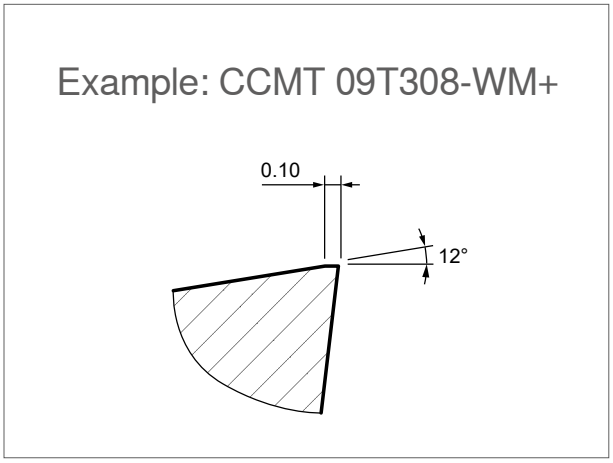
● available from stock, ○ available upon request

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 CTCM120HP v_c [m/min]	CTPM125 v_c [m/min]	CTPM135M 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]
WSF+	0.15 to 2.25	0.20 to 0.07

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

Consistent cutting depth	Inconsistent cutting depth	Interrupted cut
●	○	X

Available range

Turning stainless steel pos "M20"

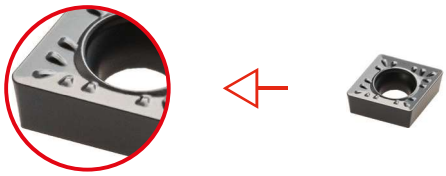
Insert	Designation	Chipbreaker	Material number	Available
	CCMT 060204-WM+ CTCM120HP		14600568	●
	CCMT 060208-WM+ CTCM120HP		14600574	●
	CCMT 09T304-WM+ CTCM120HP		14600569	●
	CCMT 09T308-WM+ CTCM120HP		14600577	●
	CCMT 120404-WM+ CTCM120HP		14600578	●
	CCMT 120408-WM+ CTCM120HP		14600581	●
	DCMT 070204-WM+ CTCM120HP		14600571	●
	DCMT 070208-WM+ CTCM120HP		14600550	●
	DCMT 11T304-WM+ CTCM120HP		14600584	●
	DCMT 11T308-WM+ CTCM120HP		14600586	●
	SCMT 09T304-WM+ CTCM120HP	…-WM+	14600587	●
	SCMT 09T308-WM+ CTCM120HP		12440389	●
	SCMT 120404-WM+ CTCM120HP		14620552	●
	SCMT 120408-WM+ CTCM120HP		14600588	●
	TCMT 090204-WM+ CTCM120HP		14479036	●
	TCMT 16T304-WM+ CTCM120HP		14600590	●
	TCMT 16T308-WM+ CTCM120HP		14479037	●
	VCMT 110304-WM+ CTCM120HP		14600591	●
	VCMT 110308-WM+ CTCM120HP		14620553	●
	VCMT 160404-WM+ CTCM120HP		14600594	●
	VCMT 160408-WM+ CTCM120HP		14600572	●

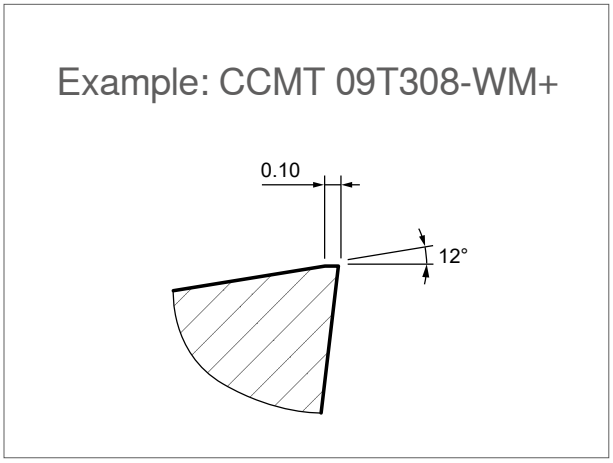
● available from stock, ○ available upon request

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 CTCM120HP v_c [m/min]	CTPM125 v_c [m/min]	CTPM135M 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]
WSF+	0.15 to 2.25	0.20 to 0.07

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

Consistent cutting depth	Inconsistent cutting depth	Interrupted cut
●	○	X

Available range

Turning stainless steel pos "M25"

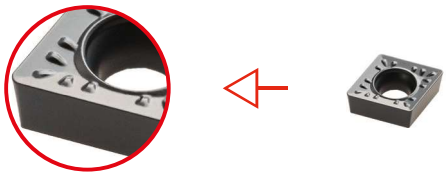
Insert	Designation	Chipbreaker	Material number	Available
	CCMT 060204-WM+ CTPM125		11748109	●
	CCMT 060208-WM+ CTPM125		11748111	●
	CCMT 09T304-WM+ CTPM125		11748113	●
	CCMT 09T308-WM+ CTPM125		11748115	●
	CCMT 120404-WM+ CTPM125		11748117	●
	CCMT 120408-WM+ CTPM125		11748119	●
	CCMT 120412-WM+ CTPM125		11748121	●
	DCMT 070204-WM+ CTPM125		11748126	●
	DCMT 070208-WM+ CTPM125		11748128	●
	DCMT 11T304-WM+ CTPM125		11748130	●
	DCMT 11T308-WM+ CTPM125		11748132	●
	SCMT 09T304-WM+ CTPM125		11748548	●
	SCMT 09T308-WM+ CTPM125		11748559	●
	SCMT 120404-WM+ CTPM125		11748564	●
	SCMT 120408-WM+ CTPM125		11748568	●
	SCMT 120412-WM+ CTPM125		11748592	●
	TCMT 090204-WM+ CTPM125	…-WM+	11748606	●
	TCMT 110204-WM+ CTPM125		11748608	●
	TCMT 110208-WM+ CTPM125		11748618	●
	TCMT 16T304-WM+ CTPM125		11748621	●
	TCMT 16T308-WM+ CTPM125		11748624	●
	TCMT 16T312-WM+ CTPM125		11748626	●
	VCMT 110304-WM+ CTPM125		11749277	●
	VCMT 110308-WM+ CTPM125		11749294	●
	VCMT 160404-WM+ CTPM125		11749295	●
	VCMT 160408-WM+ CTPM125		11749296	●
	WCMT 040204-WM+ CTPM125		11749303	●
	WCMT 040208-WM+ CTPM125		11749307	●
	WCMT 06T304-WM+ CTPM125		11749314	●
	WCMT 06T308-WM+ CTPM125		11749331	●
	WCMT 080404-WM+ CTPM125		11749335	●
	WCMT 080408-WM+ CTPM125		11749337	●
	WCMT 080412-WM+ CTPM125		11747968	●

● available from stock, ○ available upon request

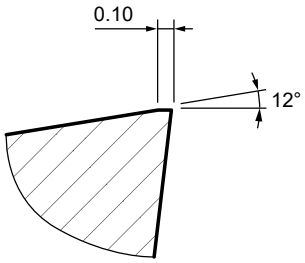
New chipbreaker

Optimised by FEM:

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



Example: CCMT 09T308-WM+



Cutting data

General cutting parameters depending on the application

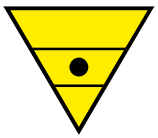
Work piece material		Type of treatment / alloy	Hardness HB	Coated carbide CTCM120HP v_c [m/min]	CTPM125 v_c [m/min]	CTPM135M v_c [m/min]
P	Steel	non-alloyed steel 0 – 0.45% C	150 – 250	150 – 250	130 – 250	150 – 190
		low-alloyed steel	250 – 300	100 – 200	60 – 180	90 – 150
		high-alloyed steel	200	120 – 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]
WSF+	0.15 to 2.25	0.20 to 0.07

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

Consistent cutting depth	Inconsistent cutting depth	Interrupted cut
●	○	X

Available range



Turning stainless steel pos "M35"

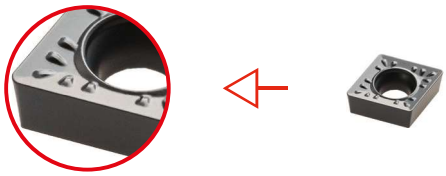
Insert	Designation	Chipbreaker	Material number	Available
	CCMT 09T304-WM+ CTPM135M		11854319	●
	CCMT 09T308-WM+ CTPM135M		11854326	●
	DCMT 11T304-WM+ CTPM135M		11854853	●
	DCMT 11T308-WM+ CTPM135M		11854898	●
	TCMT 110204-WM+ CTPM135M	…-WM+	11855120	●
	TCMT 110208-WM+ CTPM135M		11855122	●
	VCMT 110304-WM+ CTPM135M		11855131	●
	VCMT 110308-WM+ CTPM135M		11855135	●

● available from stock, ○ available upon request

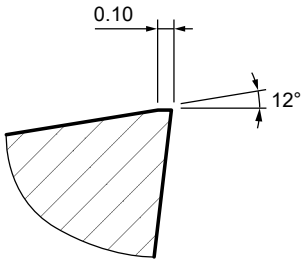
New chipbreaker

Optimised by FEM:

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



Example: CCMT 09T308-WM+



Cutting data

General cutting parameters depending on the application

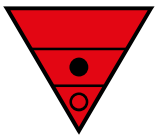
Work piece material		Type of treatment / alloy	Hardness HB	Coated carbide CTCK120 v_c [m/min]
P	Steel	Non-alloyed steel 0 – 0.45% C	150 – 250	200 – 340
		Low-alloyed steel	250 – 300	150 – 290
		High-alloyed steel	200	150 – 290
		Corrosion-resistant steel	200	160 – 290
K	Cast iron	Grey cast iron	180	150 – 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]
WM+	1.00 to 3.00	0.41 to 0.22

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

Consistent cutting depth	Inconsistent cutting depth	Interrupted cut
●	●	X

Available range



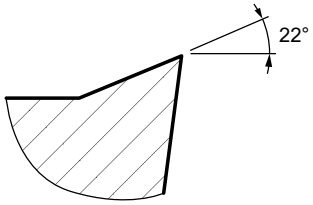
Turning cast iron pos "K20"

Insert	Designation	Chipbreaker	Material number	Available
	CCMT 060204-WM+ CTCK120		11865626	●
	CCMT 09T304-WM+ CTCK120		11821845	●
	CCMT 09T308-WM+ CTCK120		11821847	●
	CCMT 120408-WM+ CTCK120		11865627	●
	DCMT 070204-WM+ CTCK120		11905454	●
	DCMT 11T304-WM+ CTCK120		11821849	●
	DCMT 11T308-WM+ CTCK120		11821857	●
	SCMT 09T304-WM+ CTCK120	…-WM+	12001751	●
	SCMT 09T308-WM+ CTCK120		11855086	●
	SCMT 120408-WM+ CTCK120		11855089	●
	TCMT 090204-WM+ CTCK120		11905457	●
	TCMT 110204-WM+ CTCK120		11905458	●
	TCMT 110208-WM+ CTCK120		11905456	●
	TCMT 16T304-WM+ CTCK120		11821858	●
	TCMT 16T308-WM+ CTCK120		11780842	●

● available from stock, ○ available upon request

Cutting data

Example: CCGT 120408FN-LMF+



General cutting parameters depending on the application

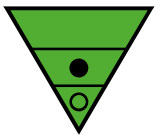
Work piece material		Type of treatment / alloy	Hardness HB	Uncoated carbide H216T v_c [m/min]
K	Cast iron	Grey cast iron	180	120 – 160
		Spheroidal cast iron	160	130 – 170
		Malleable/tempered iron	130	140 – 200
N	Non Ferrous	Aluminium wrought alloys	100	100 – 2000
		Aluminium cast alloys	130	100 – 800
		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	Depth of cut / feed rate	
Chip groove	a_p [mm]	f [mm]
LMF+	1,5 to 6,5	0,50 to 0,20

Ex: CCGT 120408FN-LMF+ 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 060201FN-LMF+ H216T		11818995	●
	CCGT 060202FN-LMF+ H216T		11812686	●
	CCGT 060204FN-LMF+ H216T		11796649	●
	CCGT 09T302FN-LMF+ H216T		11812687	●
	CCGT 09T304FN-LMF+ H216T		11559390	●
	CCGT 09T308FN-LMF+ H216T		11587908	●
	CCGT 120404FN-LMF+ H216T		11568607	●
	CCGT 120408FN-LMF+ H216T		11796647	●
	DCGT 070201FN-LMF+ H216T		11816442	●
	DCGT 070202FN-LMF+ H216T		11780860	●
	DCGT 070204FN-LMF+ H216T		11780861	●
	DCGT 070208FN-LMF+ H216T		11782068	●
	DCGT 11T302FN-LMF+ H216T		11818615	●
	DCGT 11T304FN-LMF+ H216T		11568602	●
	DCGT 11T308FN-LMF+ H216T	…-LMF+	11780859	●
	SCGT 09T304FN-LMF+ H216T		11879045	●
	SCGT 09T308FN-LMF+ H216T		12042222	●
	TCGT 110204FN-LMF+ H216T		12044373	●
	TCGT 16T304FN-LMF+ H216T		12037327	●
	TCGT 16T308FN-LMF+ H216T		12037326	●
	VCGT 110302FN-LMF+ H216T		11815996	●
	VCGT 110304FN-LMF+ H216T		11818617	●
	VCGT 130302FN-LMF+ H216T		11816588	●
	VCGT 130304FN-LMF+ H216T		11818611	●
	VCGT 160404FN-LMF+ H216T		11556414	●
	VCGT 160408FN-LMF+ H216T		11556416	●
	VCGT 160412FN-LMF+ H216T		11556417	●
	VCGT 220530FN-LMF+ H216T		12044457	●

● available from stock, ○ available upon request

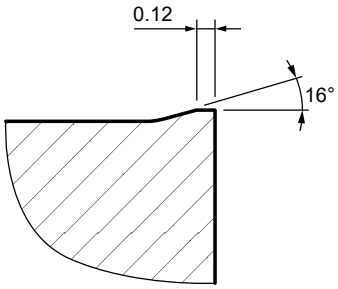
Negative Size Turning
NST

New chipbreaker

Optimised by FEM:

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

Example: CNMX 120408-SWX+



Cutting data

General cutting parameters depending on the application

Work piece material		Type of treatment / alloy	Hardness HB	Coated carbide CTCP115 v_c [m/min]	CTCP125 v_c [m/min]	CTCP135 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	–

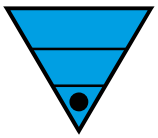
Application Chip groove	Depth of cut / feed rate a_p [mm]	f [mm]
SWX	0.50 to 3.00	0.35 to 0.15

Ex: CNMX 120408-SWX
Different in each application

Consistent cutting depth	Inconsistent cutting depth	Interrupted cut
●	●	○

Available range

MASTERFINISH



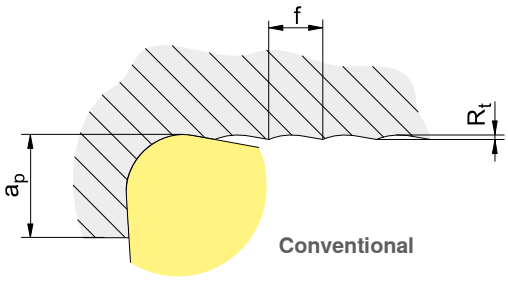
Heavy turning steel neg "P15" – Masterfinish

Insert	Designation	Chipbreaker	Material number	Available
	CNMX 120404-SWX+ CTCP115		12078117	●
	CNMX 120408-SWX+ CTCP115		12078114	●
	DNMX 150604-SWX+ CTCP115	...-SWX+	12078116	●
	DNMX 150608-SWX+ CTCP115		12078110	●
	WNMX 080404-SWX+ CTCP115		12078112	●
	WNMX 080408-SWX+ CTCP115		12078109	●

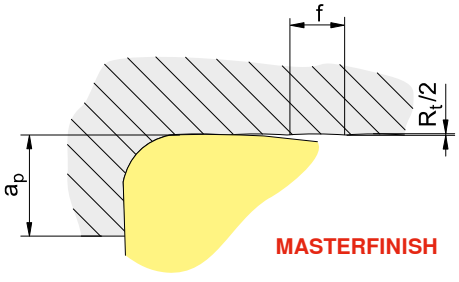
Operating principle

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

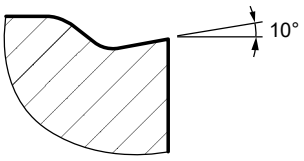


MASTERFINISH

● available from stock, ○ available upon request

Cutting data

Example: CNMG 120408EN-JF



General cutting parameters depending on the application

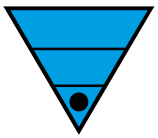
Work piece material		Type of treatment / alloy	Hardness HB	Cermet TCM10 v_c [m/min]
P	Steel	Non-alloyed steel 0 – 0.45% C	150 – 250	230 – 270
		Low-alloyed steel	250 – 300	180 – 230
		High-alloyed steel	200	160 – 200
		Corrosion-resistant steel	200	230 – 270
M	Stainless steel	Ferritic	200	170 – 240
		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	Depth of cut / feed rate	
Chip groove	a_p [mm]	f [mm]
JF	0.10 to 2.00	0.20 to 0.05

Ex: CNMG 120404EN-JF
Different in each application

Consistent cutting depth	Inconsistent cutting depth	Interrupted cut
●	X	X

Available range



Turning steel neg finishing CERMET

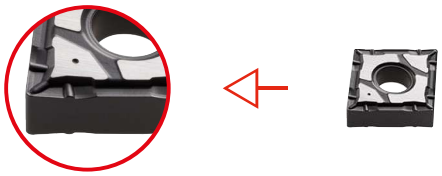
Insert	Designation	Chipbreaker	Material number	Available
	CNMG 120404EN-JF TCM10	…-JF	11882894	●
	CNMG 120408EN-JF TCM10		11882895	●
	DNMG 110404EN-JF TCM10		11882708	●
	DNMG 150604EN-JF TCM10		11882698	●

● available from stock, ○ available upon request

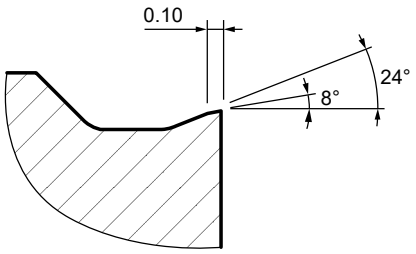
New chipbreaker

Optimised by FEM:

- ▲ Increase life time
- ▲ Reduce temperature and stress



Example: CNMG 120408EN-WL+



Cutting data

General cutting parameters depending on the application

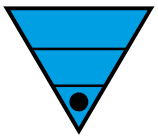
Work piece material		Type of treatment / alloy	Hardness HB	Coated carbide CTCP115 v_c [m/min]	Coated carbide CTCP125 v_c [m/min]
P	Steel	Non-alloyed steel 0 – 0.45% C	150 – 250	220 – 400	170 – 240
		Low-alloyed steel	250 – 300	200 – 320	100 – 190
		High-alloyed steel	200	180 – 320	130 – 210
		Corrosion-resistant 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]
WL+	0.50 to 2.00	0.20 to 0.10

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

Consistent cutting depth	Inconsistent cutting depth	Interrupted cut
●	○	X

Available range



Heavy turning steel neg "P15"

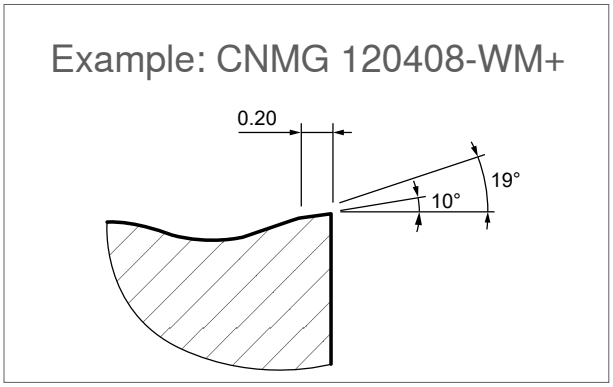
Insert	Designation	Chipbreaker	Material number	Available
	CNMG 090304EN-WL+ CTCP115		12044441	●
	CNMG 120404EN-WL+ CTCP115		12044444	●
	CNMG 120408EN-WL+ CTCP115		12044454	●
	DNMG 110404EN-WL+ CTCP115		12041499	●
	DNMG 150604EN-WL+ CTCP115		12041505	●
	DNMG 150608EN-WL+ CTCP115		12067233	●
	VNMG 160404EN-WL+ CTCP115	…-WL+	12046214	●
	WNMG 060404EN-WL+ CTCP115		12046215	●
	WNMG 080404EN-WL+ CTCP115		12046216	●

Heavy turning steel neg "P25"

Insert	Designation	Chipbreaker	Material number	Available
	CNMG 120404EN-WL+ CTCP125		12044450	●
	CNMG 120408EN-WL+ CTCP125		12044455	●
		…-WL+		
	DNMG 110404EN-WL+ CTCP125		12041502	●

● available from stock, ○ available upon request

Cutting data



General cutting parameters depending on the application

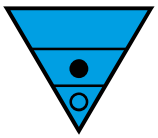
Work piece material		Type of treatment / alloy	Hardness HB	Coated carbide CTCP115 v_c [m/min]	CTCP125HP v_c [m/min]	CTCP125 v_c [m/min]	CTCP135 v_c [m/min]
P	Steel	Non-alloyed steel 0 – 0.45% C	150 – 250	220 – 400	200 – 270	170 – 240	170 – 190
		Low-alloyed steel	250 – 300	200 – 320	115 – 210	100 – 190	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]
WM+	1.00 to 4.00	0.44 to 0.22

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

Consistent cutting depth	Inconsistent cutting depth	Interrupted cut
●	●	○

Available range

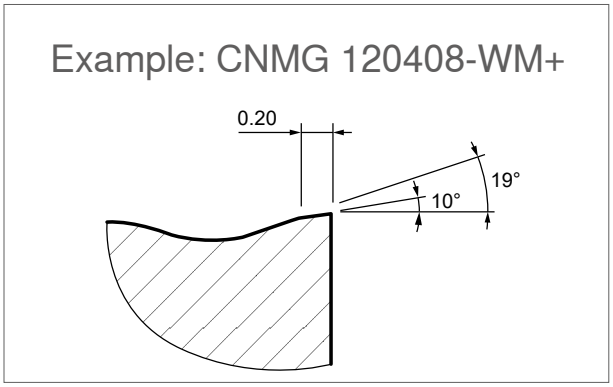


Turning steel neg semi finishing "P15"

Insert	Designation	Chipbreaker	Material number	Available
	CNMG 120404-WM+ CTCP115		11854331	●
	CNMG 120408-WM+ CTCP115		11854338	●
	CNMG 120412-WM+ CTCP115		11861944	●
	DNMG 110404-WM+ CTCP115		12067234	●
	DNMG 110408-WM+ CTCP115		12032128	●
	DNMG 150604-WM+ CTCP115		11855030	●
	DNMG 150608-WM+ CTCP115		11855070	●
	DNMG 150612-WM+ CTCP115		11861919	●
	SNMG 120408-WM+ CTCP115		11861932	●
	SNMG 120412-WM+ CTCP115		11861936	●
	TNMG 160404-WM+ CTCP115	…-WM+	11861915	●
	TNMG 160408-WM+ CTCP115		11861899	●
	TNMG 160412-WM+ CTCP115		11861913	●
	VNMG 160404-WM+ CTCP115		11861933	●
	VNMG 160408-WM+ CTCP115		11861935	●
	WNMG 060404-WM+ CTCP 115		11861939	●
	WNMG 060408-WM+ CTCP 115		11861942	●
	WNMG 080404-WM+ CTCP 115		11855139	●
	WNMG 080408-WM+ CTCP 115		11855141	●
	WNMG 080412-WM+ CTCP 115		11861917	●

● available from stock, ○ available upon request

Cutting data



General cutting parameters depending on the application

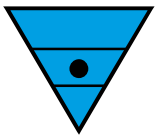
Work piece material		Type of treatment / alloy	Hardness HB	Coated carbide CTCP115 v_c [m/min]	CTCP125HP v_c [m/min]	CTCP125 v_c [m/min]	CTCP135 v_c [m/min]
P	Steel	Non-alloyed steel 0 – 0.45% C	150 – 250	220 – 400	200 – 270	170 – 240	170 – 190
		Low-alloyed steel	250 – 300	200 – 320	115 – 210	100 – 190	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]
WM+	1.00 to 4.00	0.44 to 0.22

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

Consistent cutting depth	Inconsistent cutting depth	Interrupted cut
●	●	○

Available range



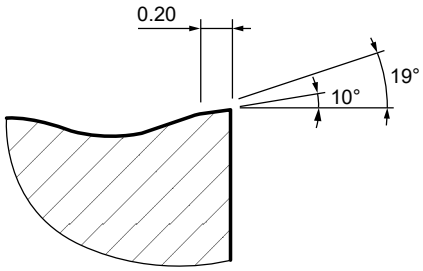
Turning steel neg medium "P25"

Insert	Designation	Chipbreaker	Material number	Available
	CNMG 120404-WM+ CTCP125		11562085	●
	CNMG 120408-WM+ CTCP125		11557291	●
	CNMG 120412-WM+ CTCP125		11577562	●
	DNMG 110404-WM+ CTCP125		11562091	●
	DNMG 110408-WM+ CTCP125		11562093	●
	DNMG 150404-WM+ CTCP125		11752699	●
	DNMG 150408-WM+ CTCP125		11752701	●
	DNMG 150604-WM+ CTCP125		11562094	●
	DNMG 150608-WM+ CTCP125		11562097	●
	DNMG 150612-WM+ CTCP125		11581880	●
	SNMG 120408-WM+ CTCP125		11560890	●
	SNMG 120412-WM+ CTCP125		11579855	●
		…-WM+		
	TNMG 160404-WM+ CTCP125		11562100	●
	TNMG 160408-WM+ CTCP125		11557290	●
	TNMG 160412-WM+ CTCP125		11581881	●
	TNMG 220404-WM+ CTCP125		11562102	●
	TNMG 220408-WM+ CTCP125		11562105	●
	VNMG 160404-WM+ CTCP125		11562107	●
	VNMG 160408-WM+ CTCP125		11560889	●
	WNMG 060404-WM+ CTCP125		11562108	●
	WNMG 060408-WM+ CTCP125		11562111	●
	WNMG 080404-WM+ CTCP125		11562112	●
	WNMG 080408-WM+ CTCP125		11560888	●
	WNMG 080412-WM+ CTCP125		11577559	●

● available from stock, ○ available upon request

Cutting data

Example: CNMG 120408-WM+



NEW

General cutting parameters depending on the application

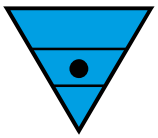
Work piece material		Type of treatment / alloy	Hardness HB	Coated carbide CTCP115 v_c [m/min]	CTCP125HP v_c [m/min]	CTCP125 v_c [m/min]	CTCP135 v_c [m/min]
P	Steel	Non-alloyed steel 0 – 0.45% C	150 – 250	220 – 400	200 – 270	170 – 240	170 – 190
		Low-alloyed steel	250 – 300	200 – 320	115 – 210	100 – 190	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]
WM+	1.00 to 4.00	0.44 to 0.22

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

Consistent cutting depth	Inconsistent cutting depth	Interrupted cut
●	●	○

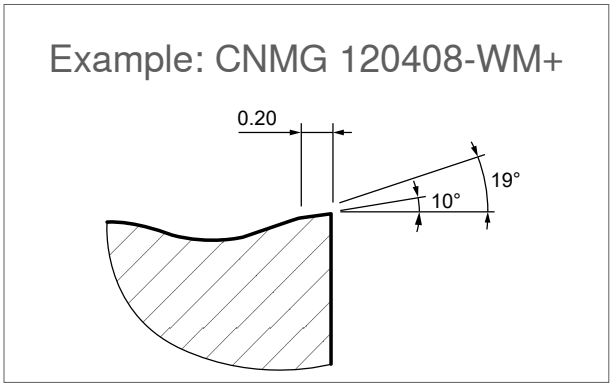
Available range



Insert	Designation	Chipbreaker	Material number	Available
	CNMG 120404-WM+ CTCP125HP		14659139	●
	CNMG 120408-WM+ CTCP125HP		12245949	●
	CNMG 120412-WM+ CTCP125HP		12245954	●
	DNMG 110408-WM+ CTCP125HP		14659140	●
	DNMG 150404-WM+ CTCP125HP		14659141	●
	DNMG 150408-WM+ CTCP125HP		14659143	●
	DNMG 150604-WM+ CTCP125HP		14659149	●
	DNMG 150608-WM+ CTCP125HP		12245956	●
	DNMG 150612-WM+ CTCP125HP	…-WM+	14659151	●
	TNMG 160408-WM+ CTCP125HP		12245955	●
	SNMG 120408-WM+ CTCP125HP		12245950	●
	WNMG 080404-WM+ CTCP125HP		14659152	●
	WNMG 080408-WM+ CTCP125HP		12245952	●
	WNMG 080412-WM+ CTCP125HP		12245953	●

● available from stock, ○ available upon request

Cutting data



General cutting parameters depending on the application

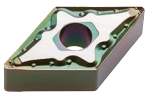
Work piece material		Type of treatment / alloy	Hardness HB	Coated carbide CTCP115 v_c [m/min]	CTCP125 v_c [m/min]	CTCP135 v_c [m/min]
P	Steel	Non-alloyed steel 0 – 0.45% C	150 – 250	220 – 400	170 – 240	170 – 190
		Low-alloyed steel	250 – 300	200 – 320	100 – 190	90 – 150
		High-alloyed steel	200	180 – 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	–

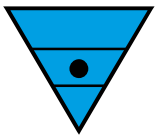
Application	Depth of cut / feed rate	
Chip groove	a_p [mm]	f [mm]
WM+	1.00 to 4.00	0.44 to 0.22

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

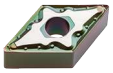
Consistent cutting depth	Inconsistent cutting depth	Interrupted cut
●	●	●

Available range





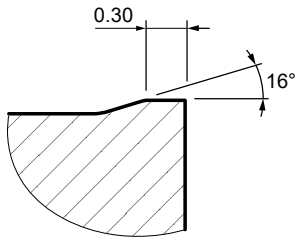
Turning steel neg medium roughing "P35"

Insert	Designation	Chipbreaker	Material number	Available
	CNMG 120408-WM+ CTCP135		11854341	●
	CNMG 120412-WM+ CTCP135		11854345	●
	DNMG 110408-WM+ CTCP135		12032130	●
	DNMG 150608-WM+ CTCP135		11855074	●
	DNMG 150612-WM+ CTCP135		11855076	●
	SNMG 120408-WM+ CTCP135		11855100	●
	SNMG 120412-WM+ CTCP135	…-WM+	11855103	●
	TNMG 160408-WM+ CTCP135		11855128	●
	WNMG 080408-WM+ CTCP135		11855143	●
	WNMG 080412-WM+ CTCP135		11855145	●

● available from stock, ○ available upon request

Cutting data

Example: CNMG 120408EN-WR+



General cutting parameters depending on the application

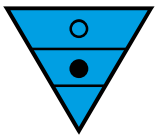
Work piece material		Type of treatment / alloy	Hardness HB	Coated carbide CTCP115 v_c [m/min]	CTCP125 v_c [m/min]	CTCP135 v_c [m/min]
P	Steel	Non-alloyed steel 0 – 0.45% C	150 – 250	220 – 400	170 – 240	170 – 190
		Low-alloyed steel	250 – 300	200 – 320	100 – 190	90 – 150
		High-alloyed steel	200	180 – 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]
WR+	1.50 to 5.00	0.50 to 0.30

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

Consistent cutting depth	Inconsistent cutting depth	Interrupted cut
●	●	○

Available range



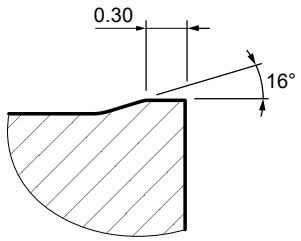
Turning steel neg roughing "P15"

Insert	Designation		Chipbreaker	Material number	Available
	CNMG 120408EN-WR+	CTCP115	…-WR+	11983084	●
	DNMG 150608EN-WR+	CTCP115		12037321	●
	DNMG 150612EN-WR+	CTCP115		12048929	●

● available from stock, ○ available upon request

Cutting data

Example: CNMG 120408EN-WR+



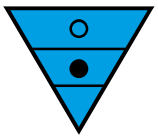
General cutting parameters depending on the application

Work piece material		Type of treatment / alloy	Hardness HB	Coated carbide CTCP115 v_c [m/min]	CTCP125 v_c [m/min]	CTCP135 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]
WR+	1.50 to 5.00	0.50 to 0.30

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

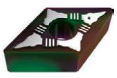
Consistent cutting depth	Inconsistent cutting depth	Interrupted cut
●	●	○



Turning steel neg roughing "P25"

Insert	Designation	Chipbreaker	Material number	Available
	CNMG 120408EN-WR+ CTCP125	…-WR+	11882916	●
	CNMG 120412EN-WR+ CTCP125		11882915	●
	DNMG 150608EN-WR+ CTCP125		12037320	●
	DNMG 150612EN-WR+ CTCP125		12049239	●
	SNMG 120408EN-WR+ CTCP125		11882913	●
	SNMG 120412EN-WR+ CTCP125		11882911	●
	TNMG 160408EN-WR+ CTCP125		11882909	●
	TNMG 160412EN-WR+ CTCP125		11882907	●
	WNMG 080408EN-WR+ CTCP125		11882906	●
	WNMG 080412EN-WR+ CTCP125		11882904	●

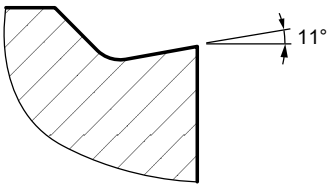
Turning steel neg roughing "P35"

Insert	Designation	Chipbreaker	Material number	Available
	DNMG 150608EN-WR+ CTCP135		12037319	●
	DNMG 150612EN-WR+ CTCP135	…-WR+	12049240	●

● available from stock, ○ available upon request

Cutting data

Example: CNGP 120408-EXK+



General cutting parameters depending on the application

Work piece material		Type of treatment / alloy	Hardness HB	Coated carbide CTP2120 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

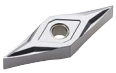
Application Chip groove	Depth of cut / feed rate a_p [mm]	f [mm]
EXK+	0.5 to 2.5	0.25 to 0.10

Ex: CNGP 120408-EXK+ 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-EXK+ CTP2120	…-EXK+	11223927	●
	CNGP 120404-EXK+ CTP2120		11219251	●
	CNGP 120408-EXK+ CTP2120		11219254	●
	CNGP 120412-EXK+ CTP2120		12068756	●
	DNGP 150404-EXK+ CTP2120		11219260	●
	DNGP 150602-EXK+ CTP2120		11241911	●
	DNGP 150604-EXK+ CTP2120		11241912	●
	DNGP 150608-EXK+ CTP2120		11226180	●
	VNGP 160402-EXK+ CTP2120		11215526	●
	VNGP 160404-EXK+ CTP2120		11226182	●
	WNGP 080404-EXK+ CTP2120		11225022	●
	WNGP 080408-EXK+ CTP2120		11220363	●

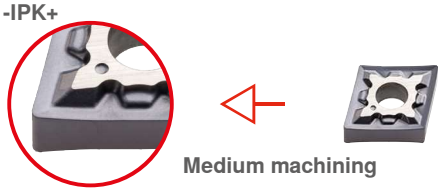
● available from stock, ○ available upon request

New chipbreaker

Optimised by FEM:

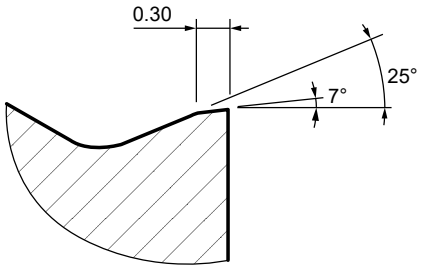
- Reduced formation of burrs
- Good surface finish
- Low cutting forces

-IPK+



Medium machining

Example: CNMG 120408 IPK+



Cutting data

General cutting parameters depending on the application

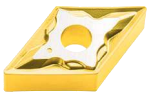
Work piece material		Type of treatment / alloy	Hardness HB	Coated carbide CTCM120HP v_c [m/min]	CTPM125 v_c [m/min]	CTPM135M v_c [m/min]
P	Steel	non-alloyed steel 0 – 0.45% C	150 – 250	150 – 250	130 – 250	150 – 190
		low-alloyed steel	250 – 300	100 – 200	60 – 180	90 – 150
		high-alloyed steel	200	120 – 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

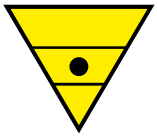
Application Chip groove	Depth of cut / feed rate a_p [mm]	f [mm]
IPK+	1.00 to 4.20	0.40 to 0.22

Ex: CNMG 120408-IPK+ 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-IPK+ CTCM120HP		14620558	●
	CNMG 090308-IPK+ CTCM120HP		12563653	●
	CNMG 120404-IPK+ CTCM120HP		12233866	●
	CNMG 120408-IPK+ CTCM120HP		12233867	●
	CNMG 120412-IPK+ CTCM120HP		14620560	
	DNMG 110404-IPK+ CTCM120HP		14600542	●
	DNMG 110408-IPK+ CTCM120HP		14600544	●
	DNMG 150404-IPK+ CTCM120HP		14600546	●
	DNMG 150408-IPK+ CTCM120HP		14681077	●
	DNMG 150604-IPK+ CTCM120HP		12233869	●
	DNMG 150608-IPK+ CTCM120HP	…-IPK+	12233868	●
	SNMG 120408-IPK+ CTCM120HP		14600552	●
	TNMG 160404-IPK+ CTCM120HP		14600556	●
	TNMG 160408-IPK+ CTCM120HP		14600566	●
	VNMG 160408-IPK+ CTCM120HP		14600567	●
	WNMG 060404-IPK+ CTCM120HP		14620561	●
	WNMG 060408-IPK+ CTCM120HP		14620547	●
	WNMG 080404-IPK+ CTCM120HP		12233872	●
	WNMG 080408-IPK+ CTCM120HP		12233870	●

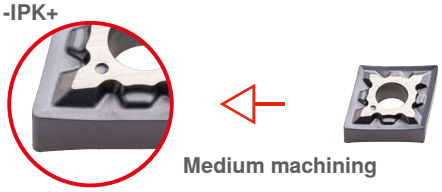
● available from stock, ○ available upon request

New chipbreaker

Optimised by FEM:

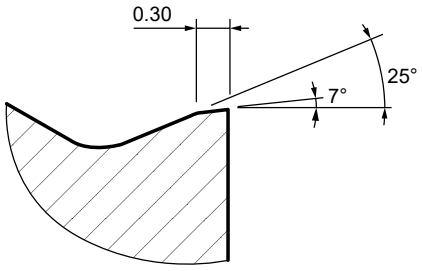
- ▲ Reduced formation of burrs
- ▲ Good surface finish
- ▲ Low cutting forces

-IPK+



Medium machining

Example: CNMG 120408 IPK+



Cutting data

General cutting parameters depending on the application

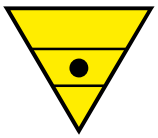
Work piece material		Type of treatment / alloy	Hardness HB	Coated carbide CTPM125 v_c [m/min]	Coated carbide CTPM135 v_c [m/min]
P	Steel	Non-alloyed steel 0 – 0.45% C	150 – 250	130 – 250	170 – 190
		Low-alloyed steel	250 – 300	60 – 180	90 – 150
		High-alloyed steel	200	80 – 200	120 – 200
		Corrosion-resistant 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]
IPK+	1.00 to 4.20	0.40 to 0.22

Ex: CNMG 120408-IPK+ 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-IPK+ CTPM125		11812968	●
	CNMG 090308-IPK+ CTPM125		11812211	●
	CNMG 120404-IPK+ CTPM125		11748122	●
	CNMG 120408-IPK+ CTPM125		11748123	●
	DNMG 110404-IPK+ CTPM125		11808002	●
	DNMG 110408-IPK+ CTPM125		11807993	●
	DNMG 150404-IPK+ CTPM125		11753922	●
	DNMG 150408-IPK+ CTPM125		11753921	●
	DNMG 150604-IPK+ CTPM125		11748133	●
	DNMG 150608-IPK+ CTPM125		11748134	●
	SNMG 120408-IPK+ CTPM125	…-IPK+	11804482	●
	TNMG 160404-IPK+ CTPM125		11748628	●
	TNMG 160408-IPK+ CTPM125		11748632	●
	VNMG 160408-IPK+ CTPM125		11754890	●
	WNMG 060404-IPK+ CTPM125		11808488	●
	WNMG 060408-IPK+ CTPM125		11808489	●
	WNMG 080404-IPK+ CTPM125		11749341	●
	WNMG 080408-IPK+ CTPM125		11749343	●
	WNMG 080412-IPK+ CTPM125		11808490	●

● available from stock, ○ available upon request

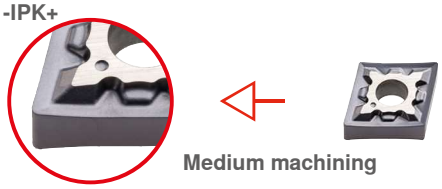
New chipbreaker

NEW

Sharp positive cutting edges:

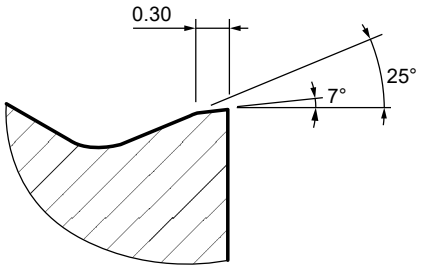
- Reduced formation of burrs
- Good surface finish
- Low cutting forces

-IPK+



Medium machining

Example: CNMG 120408 IPK+



Cutting data

General cutting parameters depending on the application

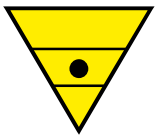
Work piece material		Type of treatment / alloy	Hardness HB	Coated carbide CTCM120HP v_c [m/min]
P	Steel	Non-alloyed steel 0 – 0.45% C	150 – 250	130 – 250
		Low-alloyed steel	250 – 300	60 – 180
		High-alloyed steel	200	80 – 200
		Corrosion-resistant steel	200	100 – 200
M	Stainless steel	Ferritic	200	120 – 250
		Austenitic	180	120 – 220
		Duplex	230 – 260	–
		Martensitic	330	–

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

Ex: CNMG 120408-IPK+ 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-IPK+ CTCM120HP	…-IPK+	12233866	●
	CNMG 120408-IPK+ CTCM120HP		12233867	●
	DNMG 150604-IPK+ CTCM120HP		12233869	●
	DNMG 150608-IPK+ CTCM120HP		12233868	●
	WNMG 080404-IPK+ CTCM120HP		12233872	●
	WNMG 080408-IPK+ CTCM120HP		12233870	●

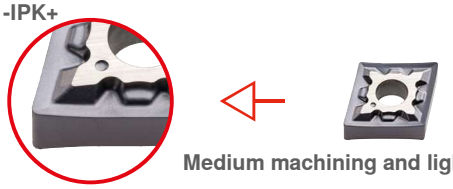
● available from stock, ○ available upon request

New chipbreaker

Sharp positive cutting edges:

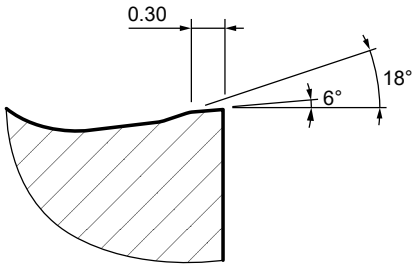
- ▲ Reduced formation of burrs
- ▲ Good surface finish
- ▲ Low cutting forces

-IPK+



Medium machining and light roughing

Example: CNMG 120408 IPR+



Cutting data

General cutting parameters depending on the application

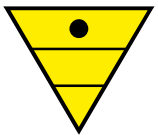
Work piece material		Type of treatment / alloy	Hardness HB	Coated carbide CTPM125 v_c [m/min]	Coated carbide CTPM135 v_c [m/min]
P	Steel	Non-alloyed steel 0 – 0.45% C	150 – 250	130 – 250	170 – 190
		Low-alloyed steel	250 – 300	60 – 180	90 – 150
		High-alloyed steel	200	80 – 200	120 – 200
		Corrosion-resistant 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]
IPR+	1.50 to 6.00	0.50 to 0.25

Ex: CNMG 120408-IPR+ for 304
Different in each application

Consistent cutting depth	Inconsistent cutting depth	Interrupted cut
●	●	○

Available range

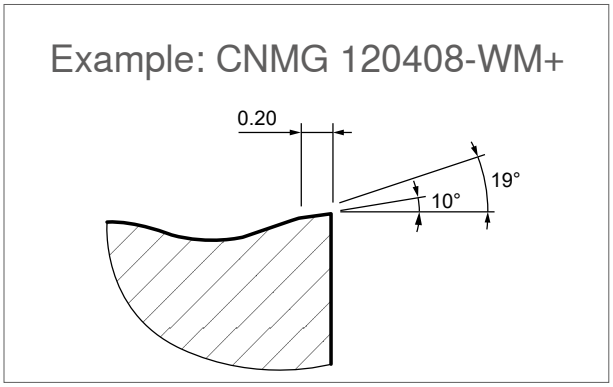


Turning stainless steel neg roughing "M25"

Insert	Designation	Chipbreaker	Material number	Available
	CNMG 120408-IPR+ CTPM125	…-IPR+	11752697	●
	CNMG 120412-IPR+ CTPM125		11752698	●
	DNMG 150608-IPR+ CTPM125		11752693	●
	DNMG 150612-IPR+ CTPM125		11752691	●
	TNMG 160408-IPR+ CTPM125		11752690	●
	TNMG 160412-IPR+ CTPM125		11752688	●
	WNMG 080408-IPR+ CTPM125		11752687	●
	WNMG 080412-IPR+ CTPM125		11752685	●

● available from stock, ○ available upon request

Cutting data



General cutting parameters depending on the application

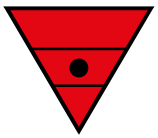
Work piece material		Type of treatment / alloy	Hardness HB	Coated carbide CTCK120 v_c [m/min]
P	Steel	Non-alloyed steel 0 – 0.45% C	150 – 250	200 – 340
		Low-alloyed steel	250 – 300	150 – 290
		High-alloyed steel	200	150 – 290
		Corrosion-resistant steel	200	160 – 290
K	Cast iron	Grey cast iron	180	150 – 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]
WM+	1.00 to 4.00	0.44 to 0.22

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

Consistent cutting depth	Inconsistent cutting depth	Interrupted cut
●	○	X

Available range



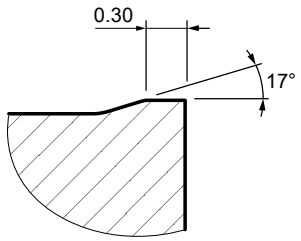
Turning cast iron neg "K20"

Insert	Designation	Chipbreaker	Material number	Available
	CNMG 120408-WM+ CTCK120		11780521	●
	CNMG 120412-WM+ CTCK120		11865623	●
	DNMG 150608-WM+ CTCK120		11780519	●
	DNMG 150612-WM+ CTCK120		11780518	●
	SNMG 120408-WM+ CTCK120		11911053	●
		…-WM+		
	TNMG 160408-WM+ CTCK120		11780838	●
	TNMG 160412-WM+ CTCK120		11865634	●
	TNMG 220408-WM+ CTCK120		11780836	●
	WNMG 080408-WM+ CTCK120		11780839	●
	WNMG 080412-WM+ CTCK120		11780841	●

● available from stock, ○ available upon request

Cutting data

Example: CNMG 120408-909+



General cutting parameters depending on the application

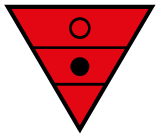
Work piece material		Type of treatment / alloy	Hardness HB	Coated carbide CTCK120 v_c [m/min]
P	Steel	Non-alloyed steel 0 – 0.45% C	150 – 250	200 – 340
		Low-alloyed steel	250 – 300	150 – 290
		High-alloyed steel	200	150 – 290
		Corrosion-resistant steel	200	160 – 290
K	Cast iron	Grey cast iron	180	150 – 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]
909+	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



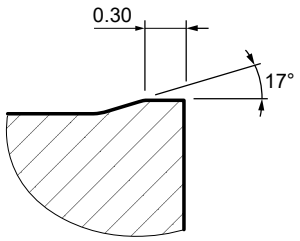
Turning cast iron neg "K20"

Insert	Designation	Chipbreaker	Material number	Available
	CNMG 120408-909+ CTCK120		11821829	●
	CNMG 120412-909+ CTCK120		11821831	●
	CNMG 160612-909+ CTCK120		11781440	●
	DNMG 150608-909+ CTCK120		11821833	●
	SNMG 120408-909+ CTCK120		11821834	●
		…-909+		
	TNMG 160408-909+ CTCK120		11875228	●
	WNMG 080408-909+ CTCK120		11875227	●
	WNMG 080412-909+ CTCK120		11875229	●
	CNMA 120408-EN CTCK120		11821837	●
	CNMA 120412-EN CTCK120		11931076	●
	CNMA 120416-EN CTCK120		11946726	●
	SNMA 120408-EN CTCK120		11821838	●
	TNMA 160408-EN CTCK120	…-EN	11821839	●
	WNMA 080408-EN CTCK120		11821840	●

● available from stock, ○ available upon request

Cutting data

Example: CNMG 120408-909+



NEW

General cutting parameters depending on the application

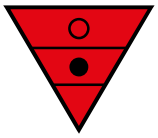
Work piece material		Type of treatment / alloy	Hardness HB	Coated carbide CTCK110HP v_c [m/min]
P	Steel	Non-alloyed steel 0 – 0.45% C	150 – 250	220 – 400
		Low-alloyed steel	250 – 300	170 – 340
		High-alloyed steel	200	170 – 340
		Corrosion-resistant steel	200	200 – 300
K	Cast iron	Grey cast iron	180	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]
909+	2.0 to 4.8	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

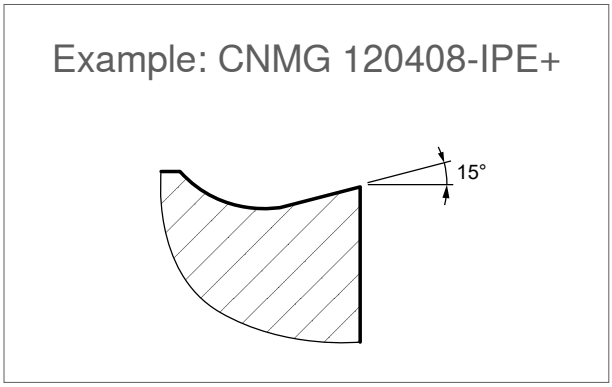
Available range



Insert	Designation	Chipbreaker	Material number	Available
	CNMG 120408-909+ CTCK110HP		12149710	●
	CNMG 120412-909+ CTCK110HP		12200956	●
	CNMG 160612-909+ CTCK110HP		12200958	●
	SNMG 120412-909+ CTCK110HP	…-909+	12200959	●
	WNMG 080408-909+ CTCK110HP		12200960	●
	WNMG 080412-909+ CTCK110HP		12200954	●
	CNMA 120408-EN CTCK110HP	–	12234327	●
	WNMA 080412-EN CTCK110HP		12234328	●

● available from stock, ○ available upon request

Cutting data



General cutting parameters depending on the application

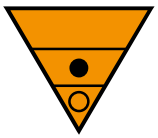
Work piece material		Type of treatment / alloy	Hardness HB	Coated carbide CTP5110 v_c [m/min]
M	Stainless steel	Ferritic	200	150 – 230
		Austenitic	180	140 – 190
		Duplex	230 – 260	60 – 100
		Martensitic	330	–
	Exotic materials	Fe base	200	80 – 120
		Nickel or cobalt base	280	60 – 100
		Nickel or cobalt base	250	35 – 90
		Nickel or cobalt base		30 – 50
		Titanium	Rm 440*	70 – 120

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

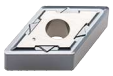
Ex: CNMG 120408-IPE+ for Super Alliage
Different in each application

Consistent cutting depth	Inconsistent cutting depth	Interrupted cut
●	○	X

Available range

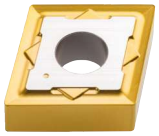


Turning titanium "S10"

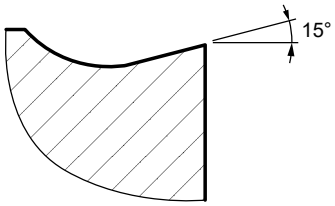
Insert	Designation	Chipbreaker	Material number	Available
	CNMG 120404-IPE+ CTP5110		11750288	●
	CNMG 120408-IPE+ CTP5110		11749057	●
	DNMG 150608-IPE+ CTP5110		11749060	●
	SNMG 120408-IPE+ CTP5110		11748599	●
	TNMG 160408-IPE+ CTP5110	…-IPE+	11748631	●
	VNMG 160408-IPE+ CTP5110		11749297	●
	WNMG 080408-IPE+ CTP5110		11749342	●

● available from stock, ○ available upon request

Cutting data



Example: CNMG 120408-IPE+



General cutting parameters depending on the application

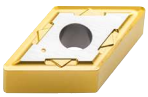
Work piece material		Type of treatment / alloy	Hardness HB	Coated carbide CTP5115 v_c [m/min]
M	Stainless steel	Ferritic	200	130 – 220
		Austenitic	180	120 – 180
		Duplex	230 – 260	50 – 90
		Martensitic	330	–
	Exotic materials	Fe base	200	80 – 120
		Nickel or cobalt base	280	60 – 120
		Nickel or cobalt base	250	35 – 90
		Nickel or cobalt base		30 – 50
		Titanium	Rm 440*	70 – 120

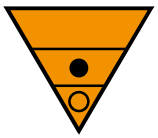
Application	Depth of cut / feed rate	
Chip groove	a_p [mm]	f [mm]
IPE+	0.80 to 3.00	0.30 to 0.10

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

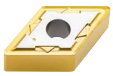
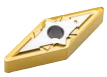
Consistent cutting depth	Inconsistent cutting depth	Interrupted cut
●	○	X

Available range





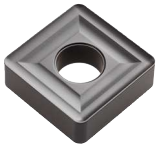
Turning titanium "S15"

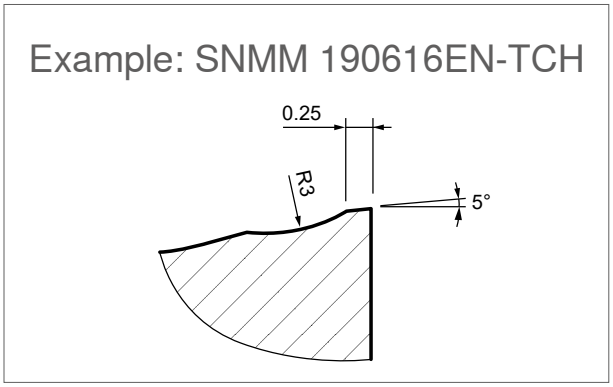
Insert	Designation	Chipbreaker	Material number	Available
	CNMG 120404-IPE+ CTP5115		11750290	●
	CNMG 120408-IPE+ CTP5115		11568115	●
	DNMG 150608-IPE+ CTP5115		11568117	●
	SNMG 120408-IPE+ CTP5115		11568120	●
	TNMG 160408-IPE+ CTP5115	…-IPE+	11568121	●
	VNMG 160408-IPE+ CTP5115		11568122	●
	WNMG 080408-IPE+ CTP5115		11568123	●

● available from stock, ○ available upon request

Heavy Duty Turning
HDT

Cutting data





General cutting parameters depending on the application

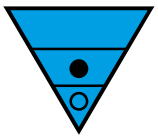
Work piece material		Type of treatment / alloy	Hardness HB	Coated carbide CTCP115 v_c [m/min]	CTCP125 v_c [m/min]	CTCP135 v_c [m/min]
P	Steel	Non-alloyed steel 0 – 0.45% C	150 – 250	220 – 400	170 – 240	170 – 190
		Low-alloyed steel	250 – 300	200 – 320	100 – 190	90 – 150
		High-alloyed steel	200	180 – 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]
TCH	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"

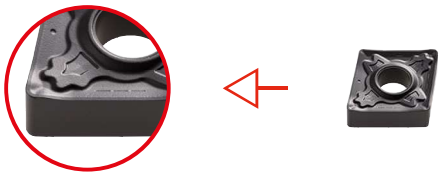
Insert	Designation	Chipbreaker	Material number	Available
	SNMM 190616EN-TCH CTCP125	...-TCH	11849212	●
	SNMM 250924EN-TCH CTCP125		11849211	●

● available from stock, ○ available upon request

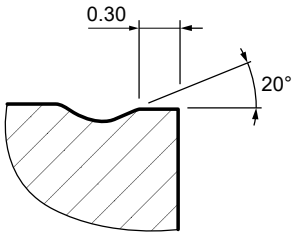
New chipbreaker

Sharp positive cutting edges:

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



Example: CNMM 120408-HD2



Cutting data

General cutting parameters depending on the application

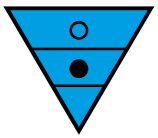
Work piece material		Type of treatment / alloy	Hardness HB	Coated carbide CTCP115 v_c [m/min]	CTCP125 v_c [m/min]	CTCP135 v_c [m/min]
P	Steel	Non-alloyed steel 0 – 0.45% C	150 – 250	220 – 400	170 – 240	170 – 190
		Low-alloyed steel	250 – 300	200 – 320	100 – 190	90 – 150
		High-alloyed steel	200	180 – 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]
HD2	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



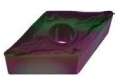
Heavy turning steel neg "P15"

Insert	Designation	Chipbreaker	Material number	Available
	CNMM 120408-HD2 CTCP115	…-HD2	12041787	●
	DNMM 150608-HD2 CTCP115		12055337	●

Heavy turning steel neg "P25"

Insert	Designation	Chipbreaker	Material number	Available
	CNMM 120408-HD2 CTCP125	…-HD2	12041513	●
	CNMM 120412-HD2 CTCP125		12077416	●
	DNMM 150608-HD2 CTCP125		12055332	●

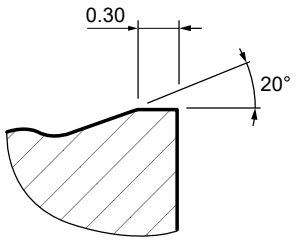
Heavy turning steel neg "P35"

Insert	Designation	Chipbreaker	Material number	Available
	CNMM 120408-HD2 CTCP135	…-HD2	12041518	●
	DNMM 150608-HD2 CTCP135		12055326	●

● available from stock, ○ available upon request

Cutting data

Example: CNMM 190616EN-HD5



General cutting parameters depending on the application

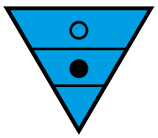
Work piece material		Type of treatment / alloy	Hardness HB	Coated carbide CTCP115 v_c [m/min]	CTCP125 v_c [m/min]	CTCP135 v_c [m/min]
P	Steel	Non-alloyed steel 0 – 0.45% C	150 – 250	220 – 400	170 – 240	170 – 190
		Low-alloyed steel	250 – 300	200 – 320	100 – 190	90 – 150
		High-alloyed steel	200	180 – 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]
HD5	2.00 to 12.00	0.80 to 0.30

Ex: CNMM 190616-HD5 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-HD5 CTCP115	…-HD5	12046218	●
	CNMM 160612-HD5 CTCP115		12044415	●
	CNMM 190612-HD5 CTCP115		12030570	●
	DNMM 150612-HD5 CTCP115		12044385	●

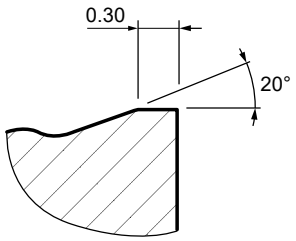
Heavy turning steel neg "P25"

Insert	Designation	Chipbreaker	Material number	Available
	CNMM 120412EN-HD5 CTCP125	…-HD5	12046217	●
	CNMM 120416EN-HD5 CTCP125		12044382	●
	CNMM 160612EN-HD5 CTCP125		12044410	●
	CNMM 190612EN-HD5 CTCP125		11840692	●
	CNMM 190616EN-HD5 CTCP125		11836430	●
	CNMM 250724EN-HD5 CTCP125		11848028	●
	CNMM 250924EN-HD5 CTCP125		11840037	●
	DNMM 150612EN-HD5 CTCP125		12044390	●
	SNMM 190612EN-HD5 CTCP125		11840041	●
	SNMM 190616EN-HD5 CTCP125		11840042	●
	SNMM 250724EN-HD5 CTCP125		11840045	●
	SNMM 250924EN-HD5 CTCP125		11840046	●

● available from stock, ○ available upon request

Cutting data

Example: CNMM 190616EN-HD5



General cutting parameters depending on the application

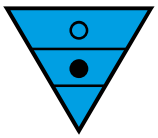
Work piece material		Type of treatment / alloy	Hardness HB	Coated carbide CTCP115 v_c [m/min]	CTCP125 v_c [m/min]	CTCP135 v_c [m/min]
P	Steel	Non-alloyed steel 0 – 0.45% C	150 – 250	220 – 400	170 – 240	170 – 190
		Low-alloyed steel	250 – 300	200 – 320	100 – 190	90 – 150
		High-alloyed steel	200	180 – 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]
HD5	2.00 to 12.00	0.80 to 0.30

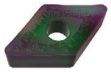
Ex: CNMM 190616-HD5 for CK60
Different in each application

Consistent cutting depth	Inconsistent cutting depth	Interrupted cut
●	●	○

Available range



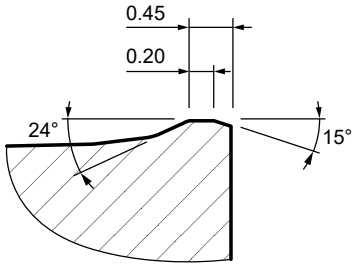
Heavy turning steel neg "P35"

Insert	Designation	Chipbreaker	Material number	Available
	CNMM 120412-HD5 CTCP135	…-HD5	12046219	●
	CNMM 120416-HD5 CTCP135		12044397	●
	CNMM 160612-HD5 CTCP135		12044423	●
	DNMM 150612-HD5 CTCP135		12044431	●

● available from stock, ○ available upon request

Cutting data

Example: CNMM 190616SN-HD8



General cutting parameters depending on the application

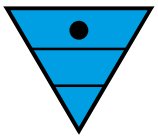
Work piece material		Type of treatment / alloy	Hardness HB	Coated carbide CTCP115 v_c [m/min]	CTCP125 v_c [m/min]	CTCP135 v_c [m/min]
P	Steel	Non-alloyed steel 0 – 0.45% C	150 – 250	220 – 400	170 – 240	170 – 190
		Low-alloyed steel	250 – 300	200 – 320	100 – 190	90 – 150
		High-alloyed steel	200	180 – 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]
HD8	2.50 to 12.00	1.20 to 0.35

Ex: CNMM 190616SN-HD8 for CK60
Different in each application

Consistent cutting depth	Inconsistent cutting depth	Interrupted cut
●	●	●

Available range



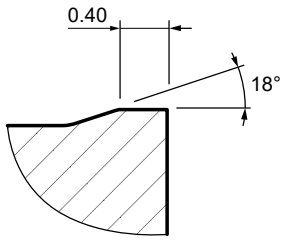
Heavy turning steel neg "P25"

Insert	Designation	Chipbreaker	Material number	Available
	CNMM 190616SN-HD8 CTCP125	…-HD8	11840034	●
	CNMM 190624SN-HD8 CTCP125		11840035	●
	CNMM 250924SN-HD8 CTCP125		11840038	●
	CNMM 250932SN-HD8 CTCP125		11840039	●
	SNMM 190616SN-HD8 CTCP125		11840043	●
	SNMM 190624SN-HD8 CTCP125		11840044	●
	SNMM 250924SN-HD8 CTCP125		11840047	●
	SNMM 250932SN-HD8 CTCP125		11840048	●

● available from stock, ○ available upon request

Cutting data

Example: CNMG 160612-909+



General cutting parameters depending on the application

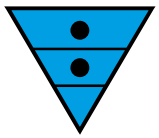
Work piece material		Type of treatment / alloy	Hardness HB	CTCP125 v_c [m/min]	CTCP135 v_c [m/min]
P	Steel	Non-alloyed steel 0 – 0.45% C	150 – 250	170 – 240	170 – 190
		Low-alloyed steel	250 – 300	100 – 190	90 – 150
		High-alloyed steel	200	130 – 210	120 – 200
		Corrosion-resistant steel	200	130 – 210	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]
909+	3.20 to 7.60	1.00 to 0.60

Ex: CNMG 190616-909+ for CK60
Different in each application

Consistent cutting depth	Inconsistent cutting depth	Interrupted cut
●	○	X

Available range



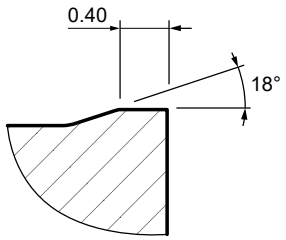
Medium and roughing turning steel

Insert	Designation	Chipbreaker	Material number	Available
	CNMG 160612-909+ CTCP125		11854347	●
	CNMG 190612-909+ CTCP125		11854749	●
	CNMG 190616-909+ CTCP125		11625891	●
	SNMG 150612-909+ CTCP125		11855109	●
	SNMG 190612-909+ CTCP125	…-909+	11855114	●
	TNMG 220412-909+ CTCP125		11860512	●
	RCMT 1606MOSN-XR CTCP125		11855078	●
	RCMT 2006MOSN-XR CTCP125	...-XR	11855080	●

● available from stock, ○ available upon request

Cutting data

Example: CNMG 160612-909+



General cutting parameters depending on the application

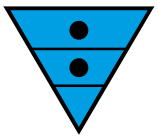
Work piece material		Type of treatment / alloy	Hardness HB	CTCP125 v_c [m/min]	CTCP135 v_c [m/min]
P	Steel	Non-alloyed steel 0 – 0.45% C	150 – 250	170 – 240	170 – 190
		Low-alloyed steel	250 – 300	100 – 190	90 – 150
		High-alloyed steel	200	130 – 210	120 – 200
		Corrosion-resistant steel	200	130 – 210	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]
909+	3.20 to 7.60	1.00 to 0.60

Ex: CNMM 190616-909+ for CK60
Different in each application

Consistent cutting depth	Inconsistent cutting depth	Interrupted cut
●	○	X

Available range



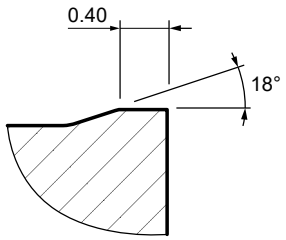
Medium and roughing turning steel

Insert	Designation	Chipbreaker	Material number	Available
	CNMG 160608-909+ CTCP135	…-909+	11854346	●
	CNMG 160612-909+ CTCP135		11854348	●
	CNMG 190612-909+ CTCP135		11854758	●
	CNMG 190616-909+ CTCP135		11861937	●
	SNMG 150612-909+ CTCP135		11855112	●
	SNMG 190612-909+ CTCP135		11855116	●
	RCMT 1606MOSN-XR CTCP135	...-XR	11855079	●
	RCMT 2006MOSN-XR CTCP135		11855082	●

● available from stock, ○ available upon request

Cutting data

Example: CNMG 160612-909+



General cutting parameters depending on the application

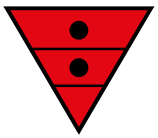
Work piece material		Type of treatment / alloy	Hardness HB	Coated carbide CTCK120 v_c [m/min]
P	Steel	Non-alloyed steel 0 – 0.45% C	150 – 250	200 – 340
		Low-alloyed steel	250 – 300	150 – 290
		High-alloyed steel	200	150 – 290
		Corrosion-resistant steel	200	160 – 290
K	Cast iron	Grey cast iron	180	150 – 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]
909+	3.20 to 5.60	0.60 to 0.38

Ex: CNMG 160612-909+ for GC25
Different in each application

Consistent cutting depth	Inconsistent cutting depth	Interrupted cut
●	○	X

Available range



Turning cast iron neg "K20"

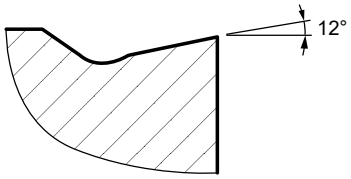
Insert	Designation	Chipbreaker	Material number	Available
	CNMG 160608-909+ CTCK120	…-909+	11781442	●
	CNMG 160612-909+ CTCK120		11781440	●
	CNMG 190612-909+ CTCK120		11821832	●

● available from stock, ○ available upon request

Miscellaneous

Cutting data

Example: KNUX 160405ER-N11

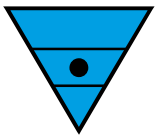


General cutting parameters depending on the application

Work piece material		Type of treatment / alloy	Hardness HB	Coated carbide CTCP115 v_c [m/min]	CTCP125 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

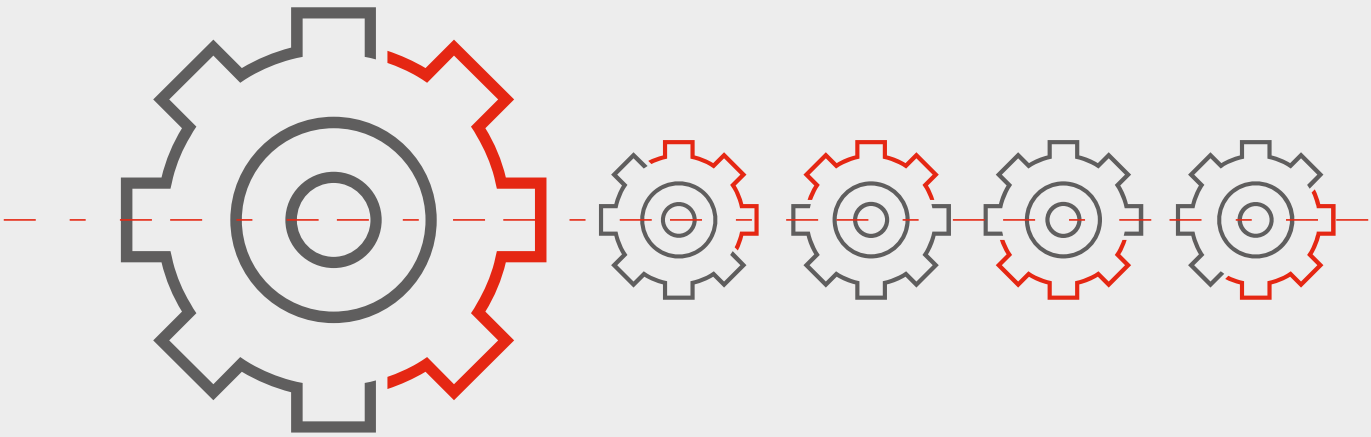


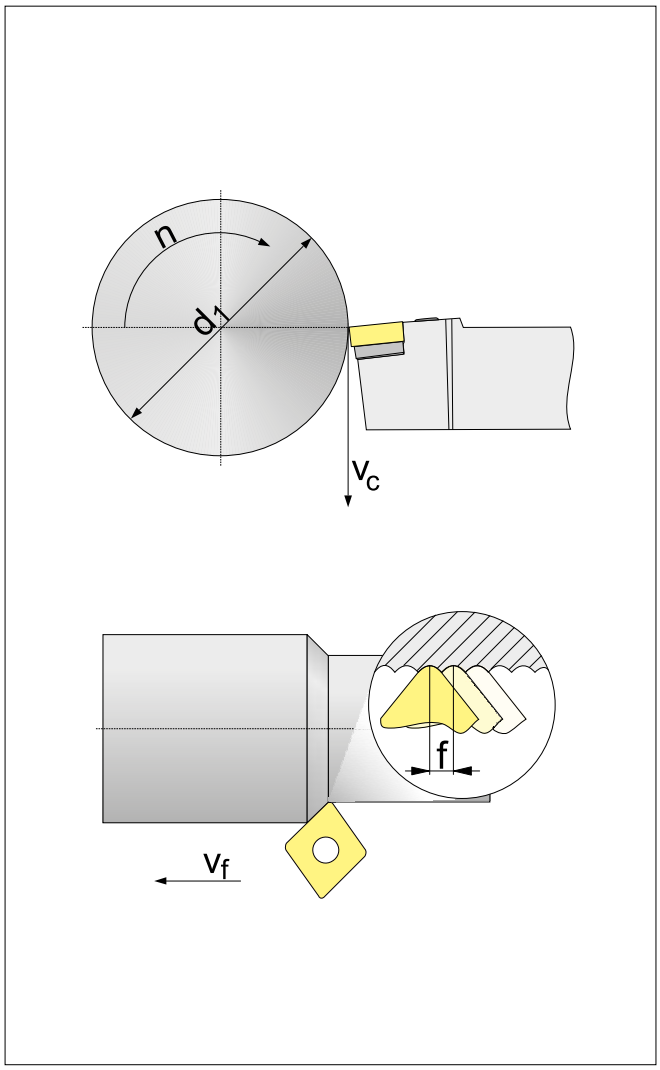
Turning steel neg medium "P25"

Insert	Designation	Chipbreaker	Material number	Available
	KNUX 160405-EL-N11 CTCP125	...-N11	11750418	●
	KNUX 160405-ER-N11 CTCP125		11750419	●
	KNUX 160410-EL-N11 CTCP125		12030582	●
	KNUX 160410-EL-N11 CTCP125		12030589	●
	KNUX 160405-ER-N11 LP2002		11246906	●
	KNUX 160405-EL-N11 LP2002		11246899	●
	KNUX 160405-ER-N11 LP4002		11247268	●
	KNUX 160405-EL-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

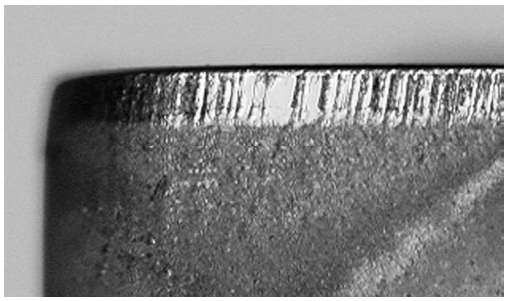
⇧ raise, increase low influence

⇩ avoid, reduce large influence

⇩ avoid, reduce low influence

≈ check, optimise

▢ use

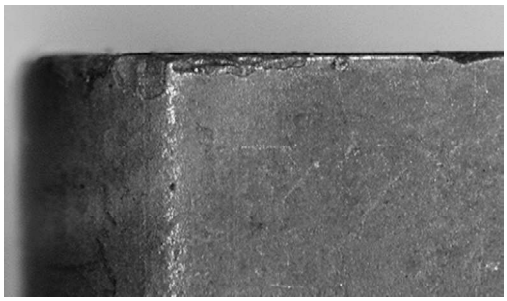


Abrasion on flank, normal wear after a certain machining time.

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

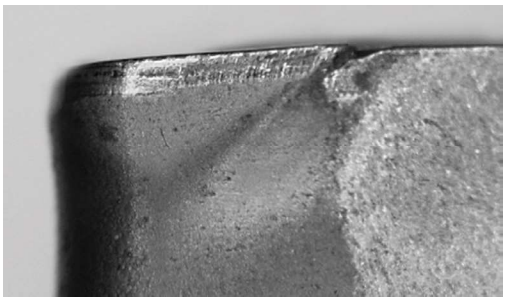
Remedies
- Use tougher grade
- Use negative cutting edge geometry with chip groove
- Increase stability (tool, work piece)

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

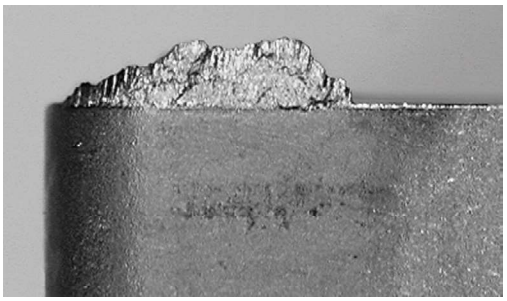


High machining temperature and simultaneous mechanical stress can lead to plastic deformation.

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

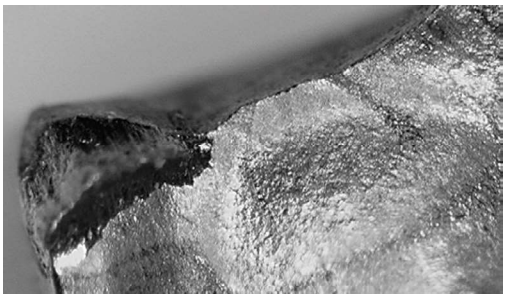


Built-up edge occurs when the chip is not evacuated properly due to insufficient cutting temperature.

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
TCM10	HC-P15	C7	T		●					
	HC-M10	–	T			●				
	HC-K10	C3	T				○			
CTCP115	HC-P15	C7	C		●					
	HC-K25	C2	C				●			
	HC-M10	–	C			○				
CTCP125	HC-P25	C6	C		●					
	HC-K30	C1	C				●			
	HC-M20	–	C			○				
CTCP125HP	HC-P25	–	C		●					
	HC-K30	–	C			○				
	HC-M20	–	C							○
CTCP135	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
CTCM120HP		HC-M20	–	C			●				
		HC-P25	–	C		○					
CTPM125		HC-M25	–	P			●				
		HC-P35	C7	P		●					
		HC-S25	–	P						○	
CTP2120		HC-M20	C3	P			●				
		HC-K20	C2	P				○	○		
CTPM135M		HC-M35	C5	P			●				
		HC-P35	–	P		○					
1279		HC-M15	–	P			●				
		HC-S15	–	P						○	
CTCK110HP		HC-K10	–	C				●			
		HC-P05	–	C		○					
CTCK120		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
H216T	HW-N15	C3	W					●		
	HW-K15	C3	W				●			
CTP5110	HC-S15	–	P						●	
	HC-M15	–	P			○				
CTP5115	HC-S15	–	P						●	
	HC-M15	–	P			○				

● Main application

○ Extended application

TCM10

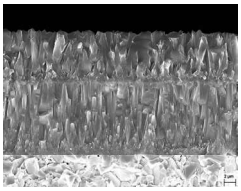
HT-P15 | HT-M10 | HT-K10

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

CTCP115

HC-P15 | HC-K25 | HC-M10

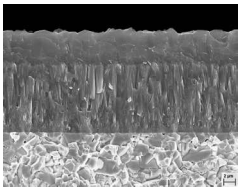


Specification:
Composition: Co 5.8%; mixed carbides 6.4%; WC balance | Grain size: 1 - 2 μm | Hardness: HV_{30} 1550 | Coating specification: CVD TiCN-Al_2O_3

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

CTCP125

HC-P25 | HC-K30 | HC-M20

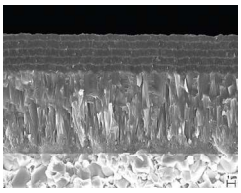


Specification:
Composition: Co 7.0%; mixed carbides 8.0%; WC balance | Grain size: 1 - 2 μm | Hardness: HV_{30} 1450 | Coating specification: CVD TiCN-Al_2O_3

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

CTCP135

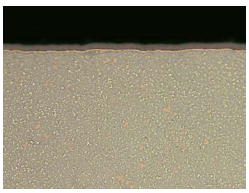
HC-P35 | HC-M25 | HC-S25



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

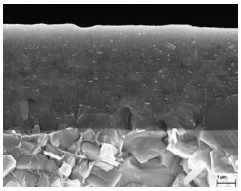
CTP2120 | **HC-M20 | HC-K20**



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

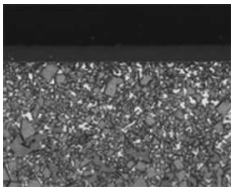
CTPM125 | **HC-M25 | HC-P35 | HC-S25**



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

CTPM135M | **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

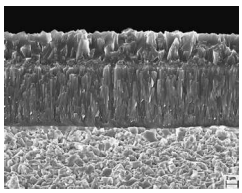
1279 | **HC-M15 | HC-S15**

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

CTCK120

HC-K20 | HC-P10

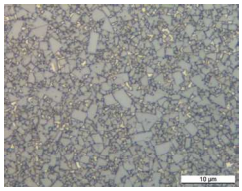


Specification:
Composition: Co 6.0%; TaC 2.0%; WC balance | Grain size: 1 μm | Hardness: HV_{30} 1630 | Coating specification: CVD TiCN-Al_2O_3

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

H216T

HW-N15 | HW-K15

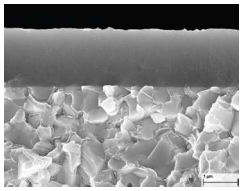


Specification:
Composition: Co 6.0%; WC balance | Grain size: 1 μm | Hardness: HV_{30} 1630

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

CTP5110

HC-S15 | HC-M15

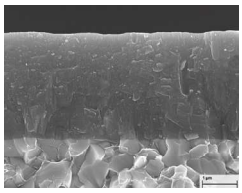


Specification:
Composition: Co 6.0%; WC balance | Grain size: 0.8 μm | Hardness: HV_{30} 1820 | Coating specification: PVD TiAlN

Recommended application:
The alternative when machining heat-resistant materials

CTP5115

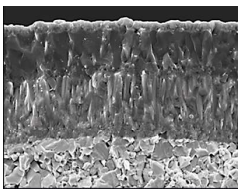
HC-S15 | HC-M15



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

CTCP125HP | **HC-P25 | HC-K30 | HC-K20**

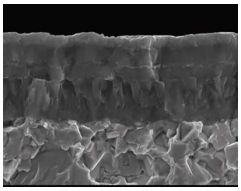


Specification:
Composition: Co 7.6%; mixed carbides 7.0%; others 0.4%; WC balance | Grain size: 1-2μm | Hardness: HV_{30} 1470 | Coating specification: CVD TiCN-Al_2O_3 top layer

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

NEW

CTCM120HP | **HC-M20 | HC-P30**

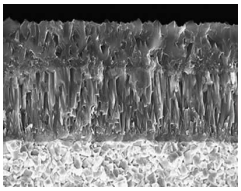


Specification:
Composition: Co 7.6%; mixed carbides 7.0%; others 0.4%; WC balance | Grain size: 1-2μm | Hardness: HV_{30} 1470 | Coating specification: CVD TiCN-Al_2O_3-Top layer.

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

NEW

CTCK110HP | **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

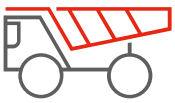
NEW

Production

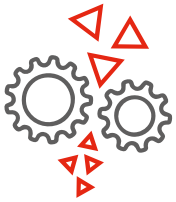
The carbide formula for success

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



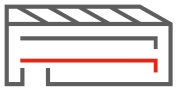
Preparation and mixing of the raw materials

Forming / pressing

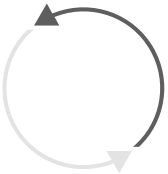
Sintering

Surface treatment

Quality assurance



Dispatch



Recycling