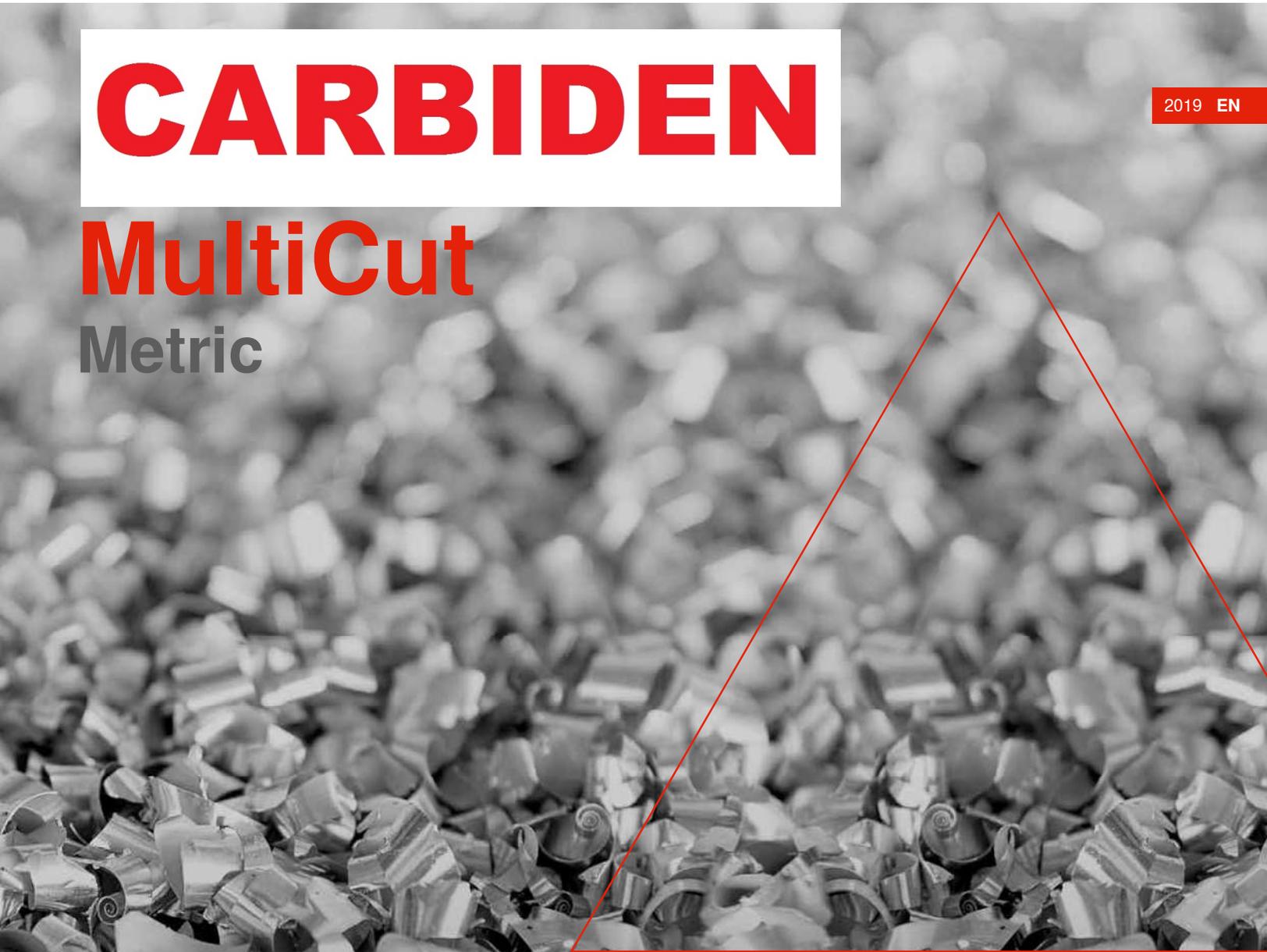


CARBIDEN

2019 EN

MultiCut

Metric





MULTICUT



General overview

The complete programme from \varnothing 8 – 32 mm with cutting depths of 1.5D and 2.25D

Application	Description	Pages
	XPNT	9
	XPET ALUMINIUM 	11
1.5 x D 	\varnothing 8.00 – 32.00 mm	14
2.25 x D 	\varnothing 8.00 – 32.00 mm	15
	Spare Parts	17



Productivity

The system:

4 machining operations – only one tool

1. Drilling into solid material with flat bottom holes
2. Boring applications
3. Turning of face profiles
4. External turning applications



Available in 2 lengths



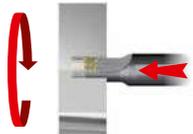
1.5 x D



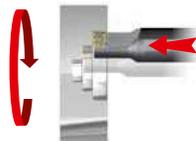
2.25 x D

Multi-purpose tool

Turning and boring $\phi \geq 8$ mm



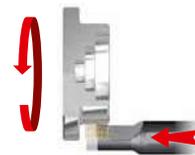
Drilling with flat bottom face



Turning of internal profiles



Facing operations



Turning of external profiles

Your benefits

- ▲ Problem solver for insufficient tool storage
- ▲ Less programming effort
- ▲ Produces a flat bottom hole
- ▲ Reduced tool and insert inventory costs
- ▲ Considerable acquisition cost savings
- ▲ Shorter set-up times. Reduced pre-setting time

Grades for Inserts

- ▲ Three coated high-performance grades: CTCP425, CTCP435, CTPP430 and a new one for aluminium: CTWN715.
- ▲ Capable to cover all the ISO material groups P, M, K, N and S.

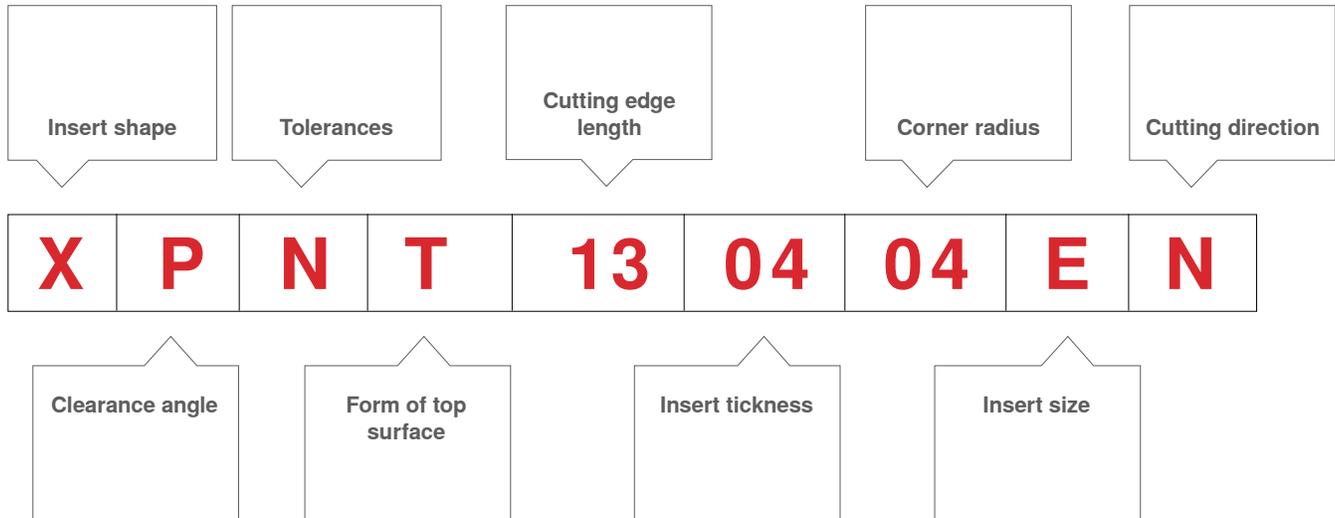
Tool performances

- ▲ Optimised stability
- ▲ Torx Plus screws for better insert clamping. Easier and more reliable handling
- ▲ "Hard & tough" surfaces for easy chip evacuating and reduced surface abrasion

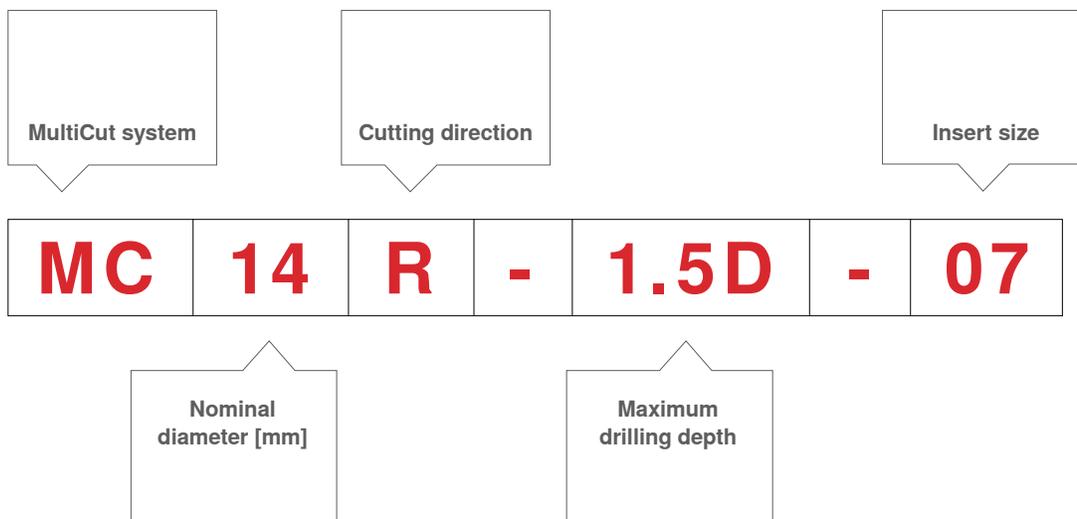


designation system

Designation system for inserts



Designation system for holders







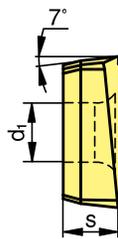
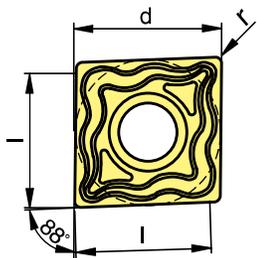
MultiCut
XPNT





XPNT inserts

Designation	d [mm]	l [mm]	s [mm]	r [mm]	d ₁ [mm]	CTCP425	CTPP430	CTCP435
XPNT 040204EL	4.50	4.00	1.80	0.40	2.10	on request	12052485	12052488
XPNT 040204ER	4.50	4.00	1.80	0.40	2.10	on request	12052490	12052492
XPNT 050204EN	5.80	5.00	2.10	0.40	2.25	on request	12052495	12052497
XPNT 060204EN	6.50	6.00	2.92	0.40	2.50	on request	12052498	12052499
XPNT 070304EN	7.60	7.00	3.87	0.40	2.80	on request	12052501	12052503
XPNT 080304EN	8.50	8.00	3.87	0.40	3.40	on request	12131066	12131067
XPNT 090404EN	9.60	9.00	4.66	0.40	3.40	on request	12053144	12053143
XPNT 100404EN	10.60	10.00	4.66	0.40	4.40	on request	12053158	12053146
XPNT 100408EN	10.60	10.00	4.66	0.80	4.40	on request	12053160	12053159
XPNT 130504EN	13.50	12.50	5.45	0.40	5.30	on request	12053165	12053162
XPNT 130508EN	13.50	12.50	5.45	0.80	5.30	on request	12053168	12053166
XPNT 170608EN	17.50	16.00	6.25	0.80	5.30	on request	12053173	12053172



P	●	●	●
M	○	●	○
K	●	○	●
N		○	
S		●	
H			

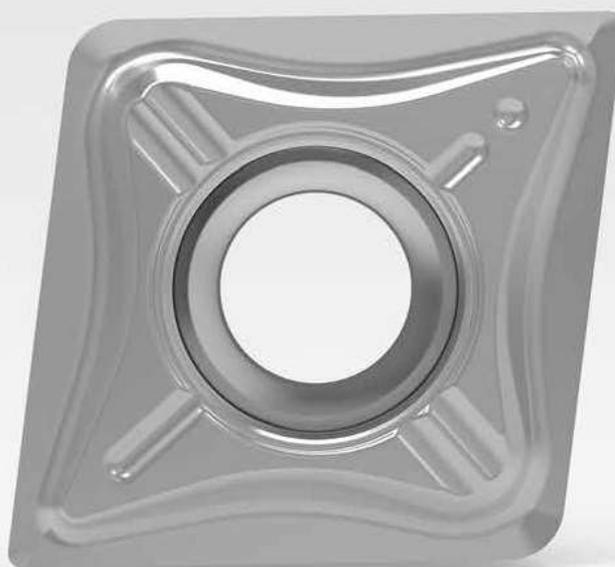
● Main application
○ Extended application



MULTICUT

10 MULTICUT INSERTS

MultiCut
XPET ALUMINIUM
Polished – grinded

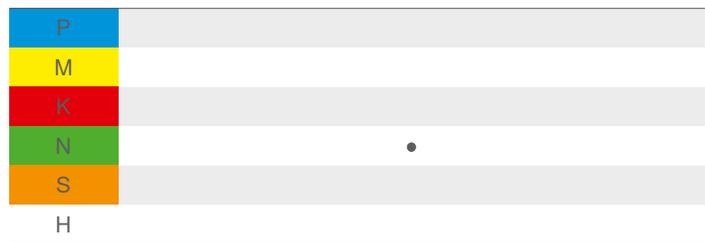
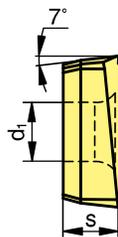
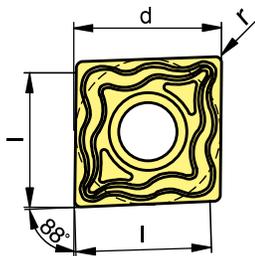




XPET inserts for aluminium



Designation	d [mm]	l [mm]	s [mm]	r [mm]	d ₁ [mm]	CTWN715
XPET 050204FN	5.80	5.00	2.10	0.40	2.25	12564629
XPET 060204FN	6.50	6.00	2.92	0.40	2.50	12558732
XPET 070304FN	7.60	7.00	3.87	0.40	2.80	12545420
XPET 080304FN	8.50	8.00	3.87	0.40	3.40	12558731
XPET 090404FN	9.60	9.00	4.66	0.40	3.40	12558729
XPET 100404FN	10.60	10.00	4.66	0.40	4.40	12564630
XPET 130504FN	13.50	12.50	5.45	0.40	5.30	12564631
XPET 170608FN	17.50	16.00	6.25	0.80	5.30	12564633



● Main application
○ Extended application



MultiCut
Tool holder



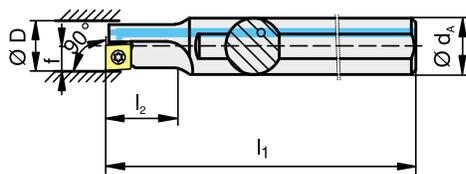




Drilling depth up to 1.5 x D

Available range for XPNT and XPET

D [mm]	Type Description	Material	d _A [mm]	l ₁ [mm]	l ₂ [mm]	f [mm]	 [XPNT/XPET]			
8.00	MC 08R-1.5D 04*	12035031	12.00	80.00	12.00	4.00	XPNT 0402	11807484	-	11843205
	MC 08L-1.5D 04*	12035027								
10.00	MC 10R-1.5D 05	12035040	12.00	90.00	15.00	5.00	XP...T 0502	11807480	-	11843205
	MC 10L-1.5D 05	12035034								
12.00	MC 12R-1.5D 06	12035057	16.00	100.00	18.00	6.00	XP...T 0602	11684214	-	11488748
	MC 12L-1.5D 06	12035052								
14.00	MC 14R-1.5D 07	12035065	16.00	110.00	21.00	7.00	XP...T 0703	11684216	-	11206195
	MC 14L-1.5D 07	12160177								
16.00	MC 16R-1.5D 08	12035070	20.00	125.00	24.00	8.00	XP...T 0803	11227305	-	11843208
	MC 16L-1.5D 08	12158340								
18.00	MC 18R-1.5D 09	12035453	25.00	135.00	27.00	9.00	XP...T 0904	11227305	-	11843208
	MC 18L-1.5D 09	12160172								
20.00	MC 20R-1.5D 10	12035456	25.00	150.00	30.00	10.00	XP...T 1004	11610311	11450858	-
	MC 20L-1.5D 10	12160171								
25.00	MC 25R-1.5D 13	12035458	32.00	180.00	37.50	12.50	XP...T 1305	11801441	11816974	-
	MC 25L-1.5D 13	12160170								
32.00	MC 32R-1.5D 17	12035460	40.00	200.00	48.00	16.00	XP...T 1706	11801441	11816974	-
	MC 32L-1.5D 17	12160168								



Drawing shows right-hand tool

* Right-hand holder → Right-hand indexable insert
 * Left-hand holder → Left-hand indexable insert

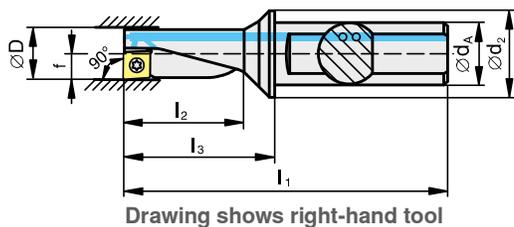


Drilling depth up to 2.25 x D

Available range for XPNT and XPET

D [mm]	Type Description	Material	d _A [mm]	d ₂ [mm]	l ₁ [mm]	l ₂ [mm]	l ₃ [mm]	f [mm]	 [XPNT/XPET]			
8.00	MC 08R-2.25D 04*	12035032	10.00	15.00	60.00	18.00	22.00	4.00	XPNT 0402	11807484	-	11843205
	MC 08L-2.25D 04*	12035029										
10.00	MC 10R-2.25D 05	12035047	12.00	18.00	69.50	22.50	27.50	5.00	XP...T 0502	11807480	-	11843205
	MC 10L-2.25D 05	12035037										
12.00	MC 12R-2.25D 06	12035064	16.00	22.00	78.00	27.00	33.00	6.00	XP...T 0602	11684214	-	11488748
	MC 12L-2.25D 06	12035054										
14.00	MC 14R-2.25D 07	12035069	16.00	23.00	83.50	31.50	38.50	7.00	XP...T 0703	11684216	-	11206195
	MC 14L-2.25D 07	12160167										
16.00	MC 16R-2.25D 08	12035076	20.00	28.00	94.00	36.00	44.00	8.00	XP...T 0803	11227305	-	11843208
	MC 16L-2.25D 08	12160165										
18.00	MC 18R-2.25D 09	12035454	25.00	36.00	109.50	40.50	53.50	9.00	XP...T 0904	11227305	-	11843208
	MC 18L-2.25D 09	12160164										
20.00	MC 20R-2.25D 10	12035457	25.00	35.00	111.00	45.00	55.00	10.00	XP...T 1004	11610311	11450858	-
	MC 20L-2.25D 10	12160163										
25.00	MC 25R-2.25D 13	12035459	32.00	44.00	129.00	56,50	69.00	12.50	XP...T 1304	11801441	11816974	-
	MC 25L-2.25D 13	12160162										
32.00	MC 32R-2.25D 17	12035461	40.00	54.00	158.00	72.00	88.00	16.00	XP...T 1706	11801441	11816974	-
	MC 32L-2.25D 17	12160157										

* Right-hand holder → Right-hand indexable insert
 * Left-hand holder → Left-hand indexable insert





MultiCut
Spare parts





Spare parts

	Material	Type description	Key size
	11206195	10002494/TORX 08IP F	T08IP
	1148748	10007404/TORX 07IP F	T07IP
	11843205	10014921/TORX 06IP F	T06IP
	11843208	10014922/TORX 09IP F	T09IP
	11450858	10006919/TORX 15IP	T15IP
	11816974	10013909/TORX 20IP	T20IP

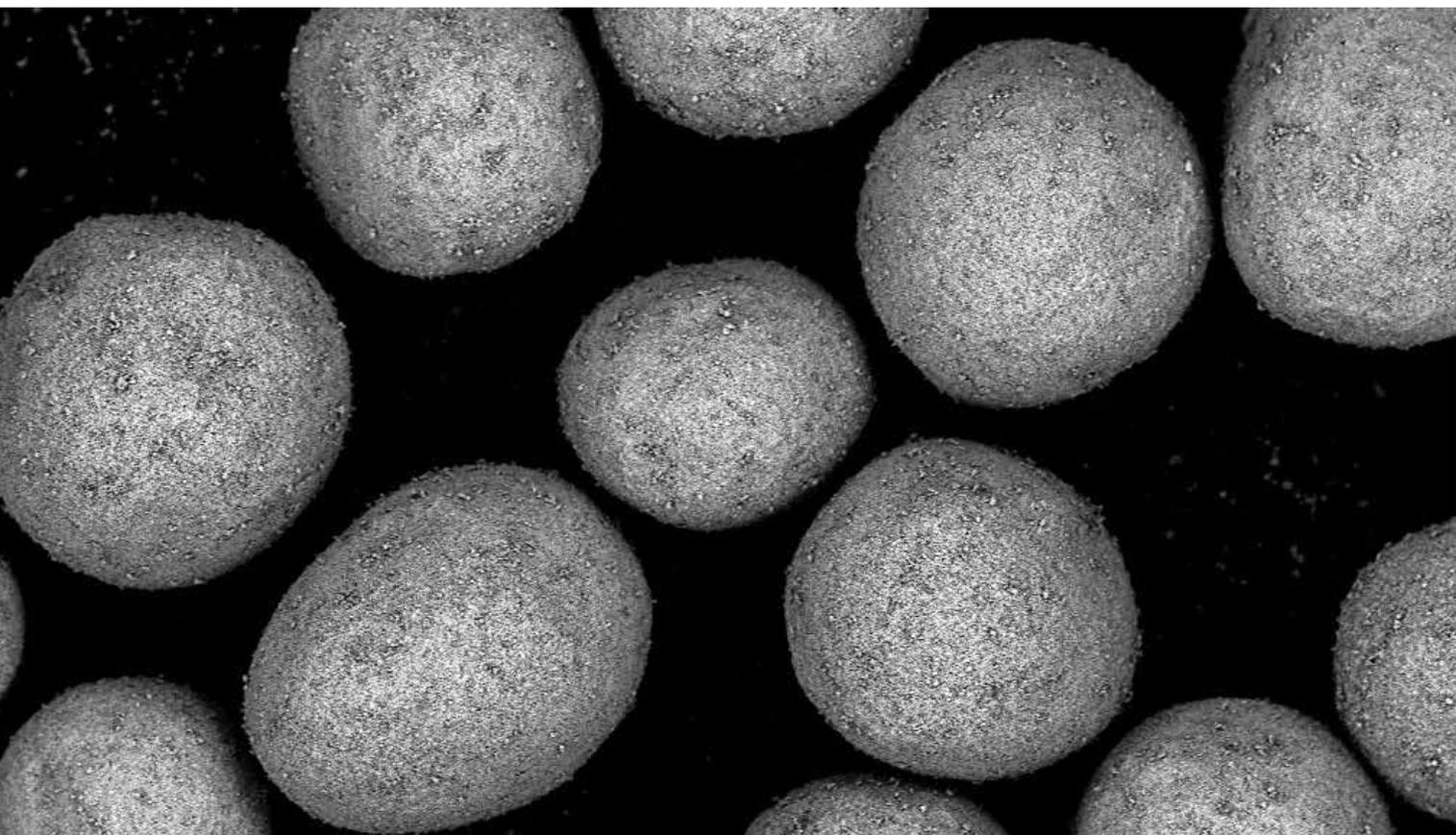
	Material	Type description	Length [mm]	Thread size	Key size
	11227305	M3.0x7.0-09IP/10003007	7.00	M3.0	T09IP
	11610311	M3.5x8.6-15IP/1000749	8.60	M3.5	T15IP
	11684214	M2.2x5.0-071IP/10009244	5.00	M2.2	T07IP
	11684216	M2.5x6.0-08IP/10009243	6.00	M2.5	T08IP
	11801441	M4.5x10.5-20IP/10013040	10.50	M4.5	T20IP
	11807480	M2.0x4.3-06IP/10013332	4.30	M2.0	T06IP
	11807484	M1.8x3.6-06IP/10013338	3.60	M1.8	T06IP



MULTICUT

18 GRADES

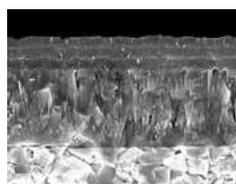
Grades





Grade description

CTCP425



HC-P25 | HC-K30 | HC-M20

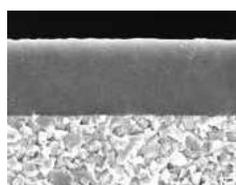
Specification:

Composition: Co 7.0%; mixed carbides 8.1%; WC balance | Grain size: 1-2 μm | Hardness: HV₃₀ 1450 | Coating specification: CVD Ti(CN) + Al₂O₃ multi-layer

Recommended application:

The wear-resistant solution for steel and cast iron under stable conditions and with high cutting speed

CTPP430



HC-P30 | HC-M25 | HC-S25 | HC-K30 | HC-N25

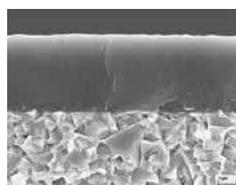
Specification:

Composition: Co 9.0%; others 0.75%; WC balance | Grain size: 0.85 μm | Hardness: HV₃₀ 1590 | Coating specification: PVD TiAlN

Recommended application:

The universal high-performance grade for steel, austenitic steel and heat-resistant alloys

CTPP435



HC-P35 | HC-M30 | HC-S30

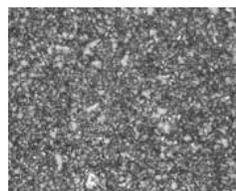
Specification:

Composition: Co 10.3%; others 1.2%; WC balance | Grain size: 0.7 μm | Hardness: HV₃₀ 1600 | Coating specification: PVD TiN / TiAlN

Recommended application:

The universal high-performance grade for steel, austenitic steel and heat-resistant alloys

CTWN715



HW-K15

Specification:

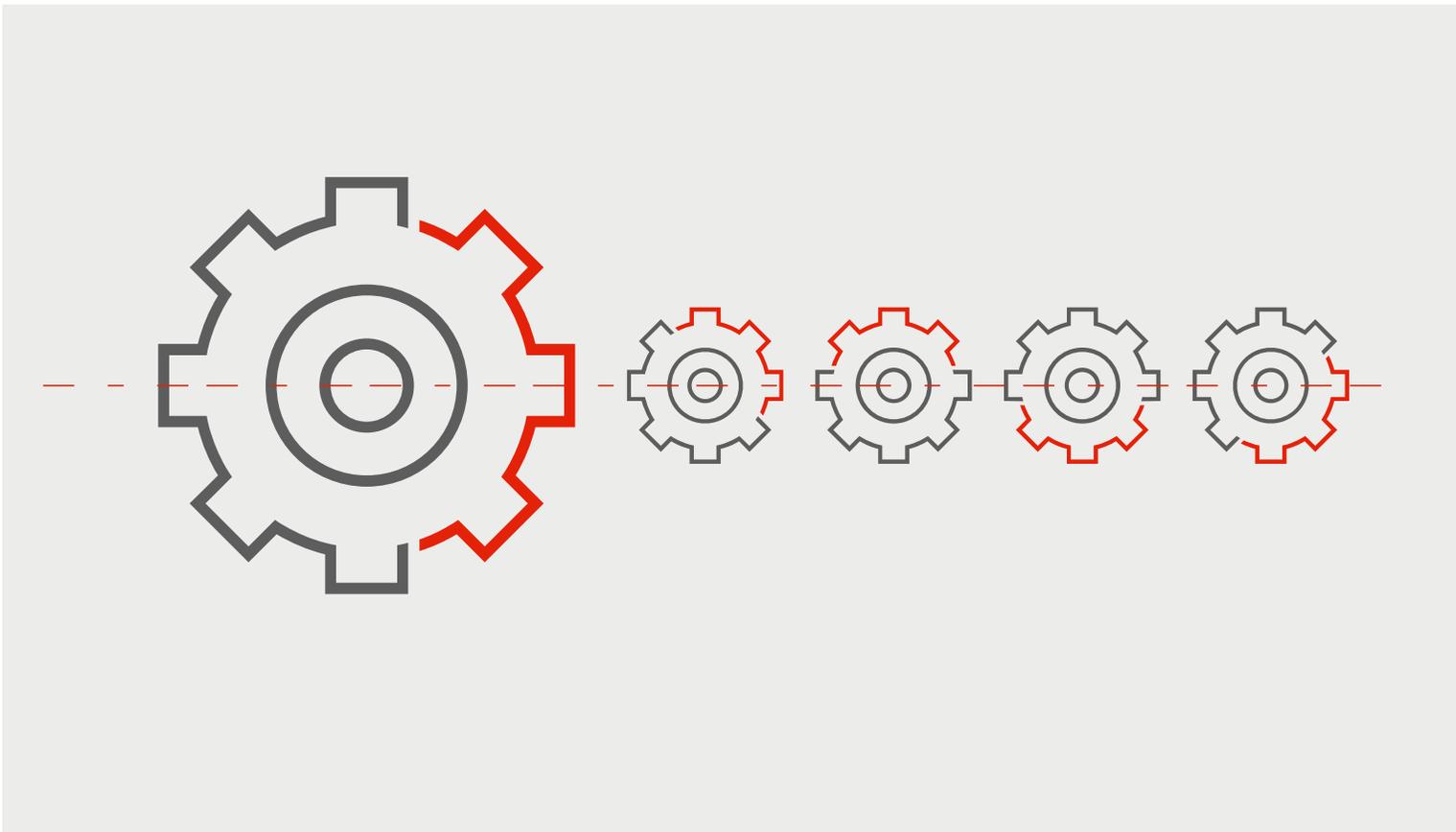
Composition: Co 6.0% | WC balance; other: 0.20% | Grain size: 0.8-1.3 μm | Hardness: HV₃₀ 1650

Recommended application:

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



Technical information





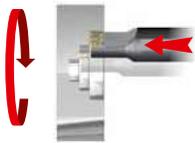
Grades / materials

Cutting data

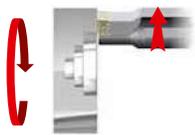
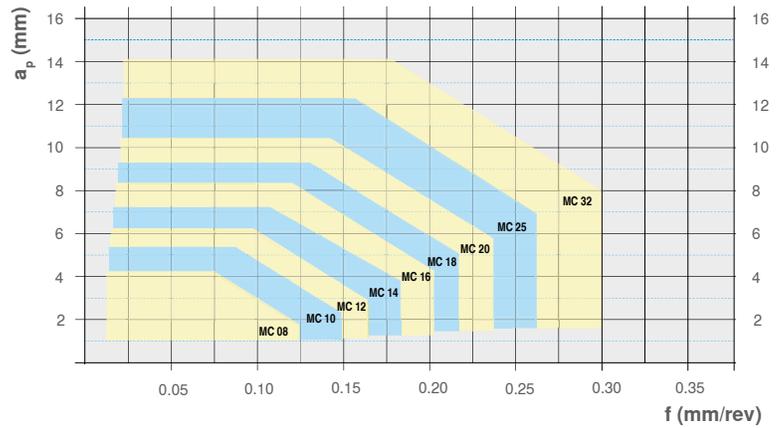
Work piece material	Type of treatment / alloy	Coated carbide			
		CTCP425 v _c [m/min]	CTPP430 v _c [m/min]	CTPP435 v _c [m/min]	CTWN715 v _c [m/min]
P Steel	Non-alloyed steel	270 – 90	230 – 50	250 – 70	–
	Low-alloyed steel	270 – 70	160 – 50	180 – 60	–
	High-alloyed steel	170 – 60	150 – 50	160 – 50	–
	Corrosion-resistant steel	200 – 90	180 – 50	180 – 70	–
Stainless steel	Stainless steel	200 – 90	160 – 50	180 – 90	–
		–	–	–	–
		–	–	–	–
		–	–	–	–
Cast iron	Grey cast iron	250 – 120	180 – 90	230 – 90	–
	Spheroidal cast iron	250 – 110	180 – 90	230 – 110	–
	Malleable cast iron	250 – 100	140 – 60	230 – 90	–
		–	–	–	–
Non-ferrous metals	Aluminium wrought alloys	–	1800 – 70	1800 – 70	100 – 2250
	Aluminium cast alloys	–	1350 – 70	1350 – 70	100 – 1250
	Copper and copper alloys (bronze, brass)	–	360 – 70	360 – 70	100 – 600
	Non-metallic materials	–	180 – 50	180 – 50	60 – 220
Heat resistant alloys	Heat-resistant alloys	–	80 – 20	50 – 10	–
	Titanium alloys	–	90 – 30	110 – 30	–
		–	–	–	–
		–	–	–	–



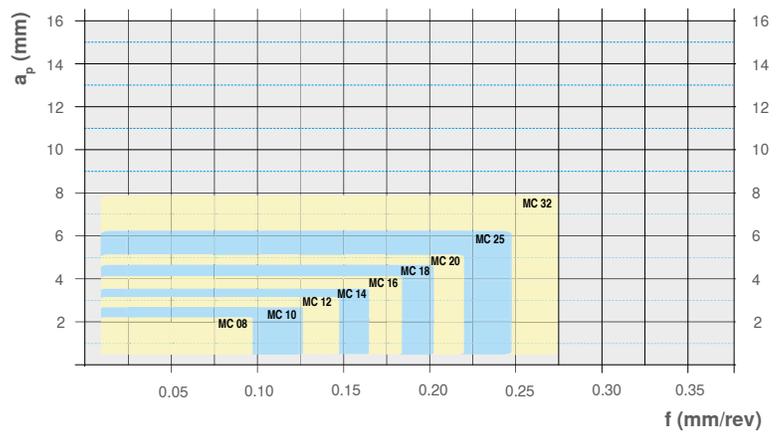
Depth of cut / feed rate – 1.5 x D



Turning of internal profiles

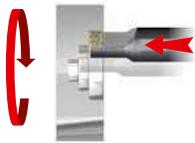


Facing operations

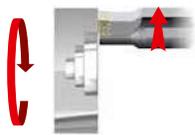
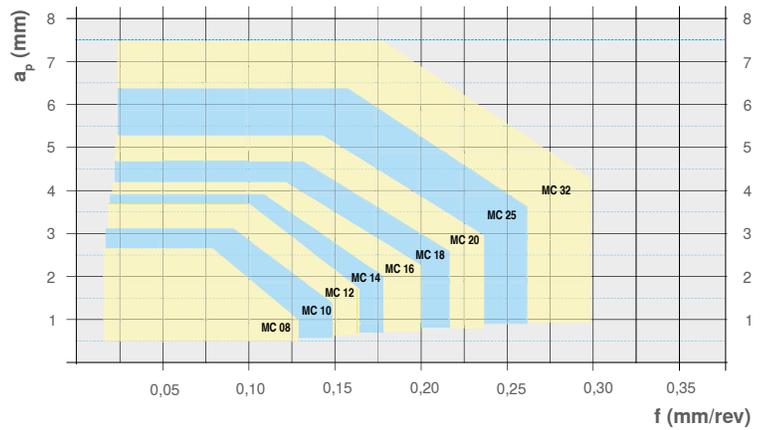




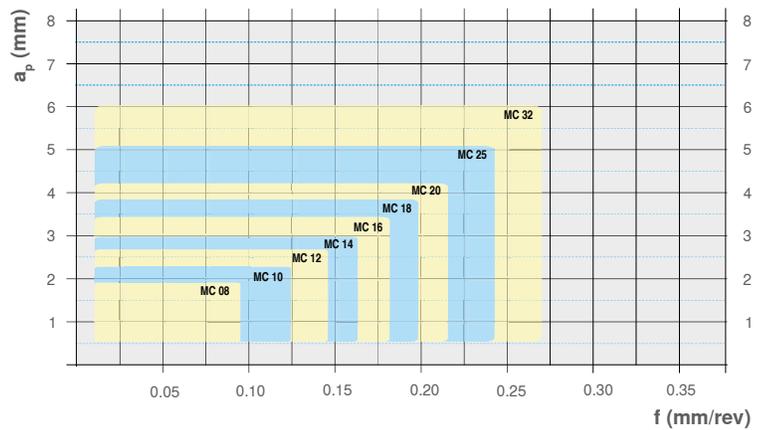
Depth of cut / feed rate – 2.25 x D



Turning of internal profiles



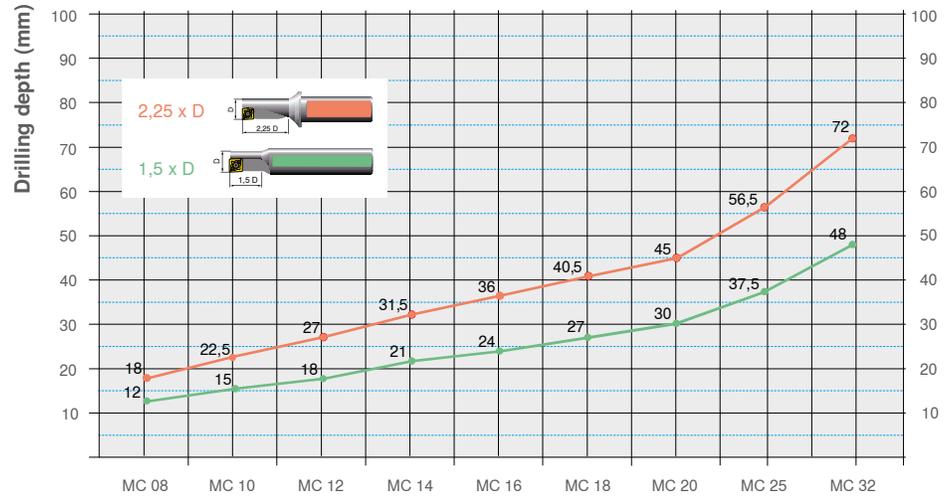
Facing operations



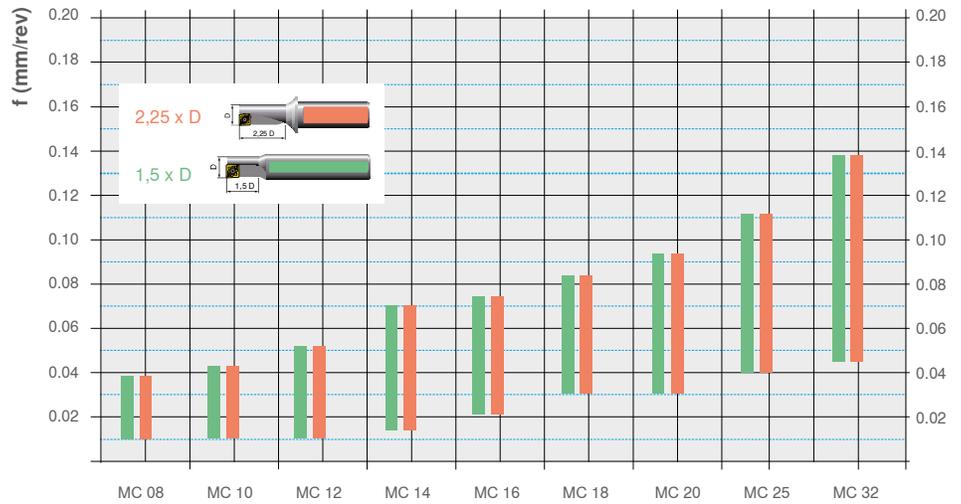


Drilling depth / feed rate

Drilling depth



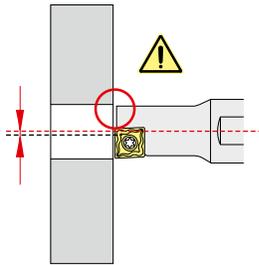
Drilling feed rate



Application reference

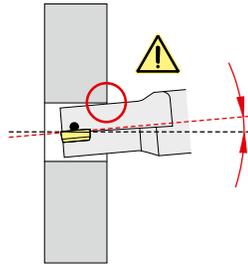
Application

Axial displacement of the machine



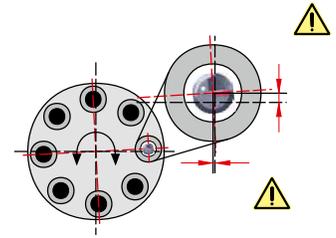
Displacement in x-direction

Correct tool positioning



Angular error

Turret and/or spindle adjustment



Turret position error

Adjust turret plate (Y-axis)



Mounting of the insert

For tools \varnothing 8 mm right-hand or left-hand inserts are required. From \varnothing 10-32 mm neutral inserts are applied.



Through hole

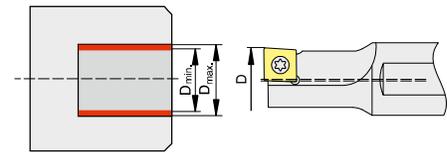
With through holes a sharp-edged disk is created as tool break-out occurs. Safety measures are necessary.



Off-centre drilling

Application

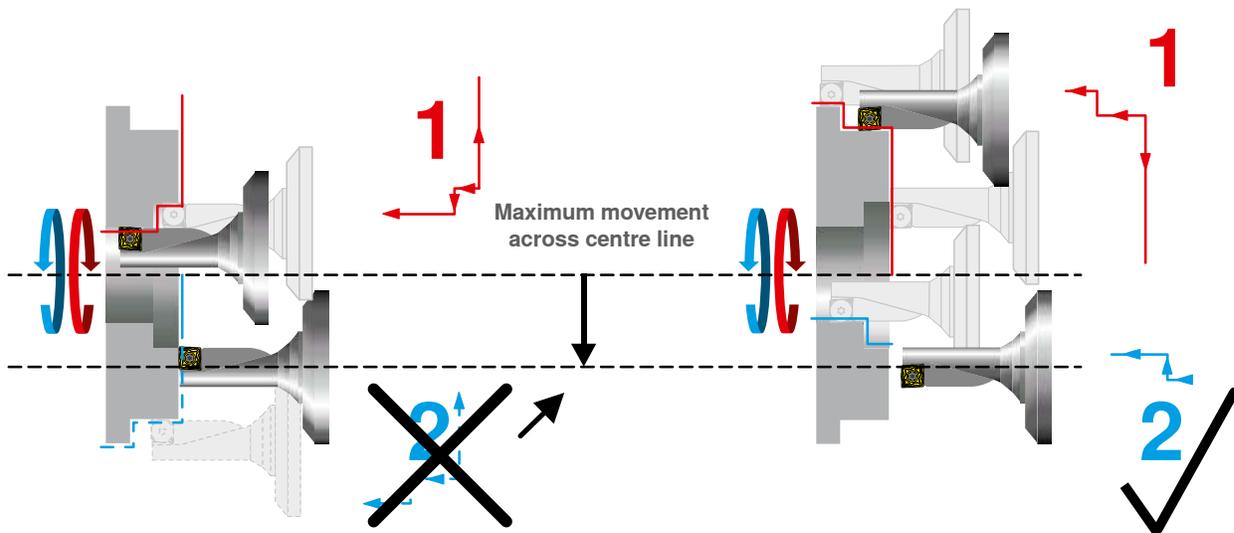
Type of tool Solid carbide	Nominal tool D [mm]	Workpiece bore diameter	
		D _{min} [mm]	D _{max} [mm]
MC 08 R/L ... 04	8.00	7.85	8.30
MC 10 R/L ... 05	10.00	9.85	10.50
MC 12 R/L ... 06	12.00	11.85	12.50
MC 14 R/L ... 07	14.00	13.85	14.50
MC 16 R/L ... 08	16.00	15.85	16.50
MC 18 R/L ... 09	18.00	17.85	18.50
MC 20 R/L ... 10	20.00	19.80	20.50
MC 25 R/L ... 13	25.00	24.80	25.80
MC 32 R/L ... 17	32.00	31.80	33.00



Thanks to the special design of the holder and the indexable inserts off-centre drilling is possible.

Machining across centre line

Application

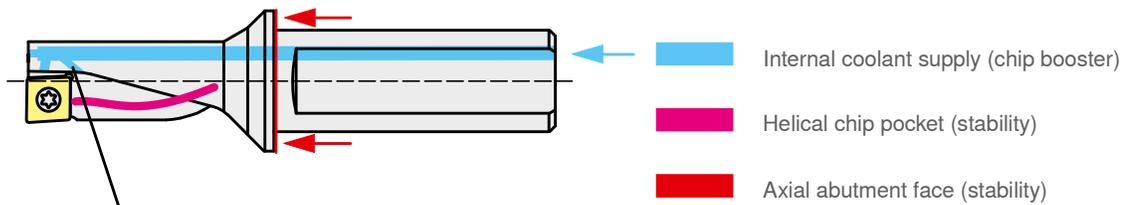


Situation:
 In case of insufficient movement of the machine across the centre line the external diameter cannot be machined with the same tool

Solution:
 Use a right-hand MultiCut tool



Chip booster / coolant pressure Application



EcoCut offers an innovative detail solution for range 2.25D, namely additional bidirectional coolant supply for better chip evacuation.

An additional backwards directed coolant stream improves chip evacuation from the flute area. A minimum coolant pressure of 1.5 – 3 bar (optimum 5 – 7 bar) is required.



Production





MULTICUT

THE CARBIDE FORMULA FOR SUCCESS 31

The carbide formula for success



Carbide production



Powder preparation and mixing



Forming / pressing



Sintering



Grinding



Dispatch



Recycling

