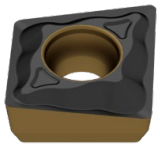
New products for machining technicians

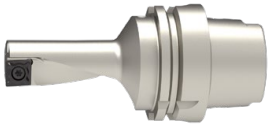
NEW ISO-P indexable inserts



Update of the reliable CVD EcoCut grades CTCP425 / CTCP435. With the update, the grades are more wear-resistant and have a wear-detection coating layer.

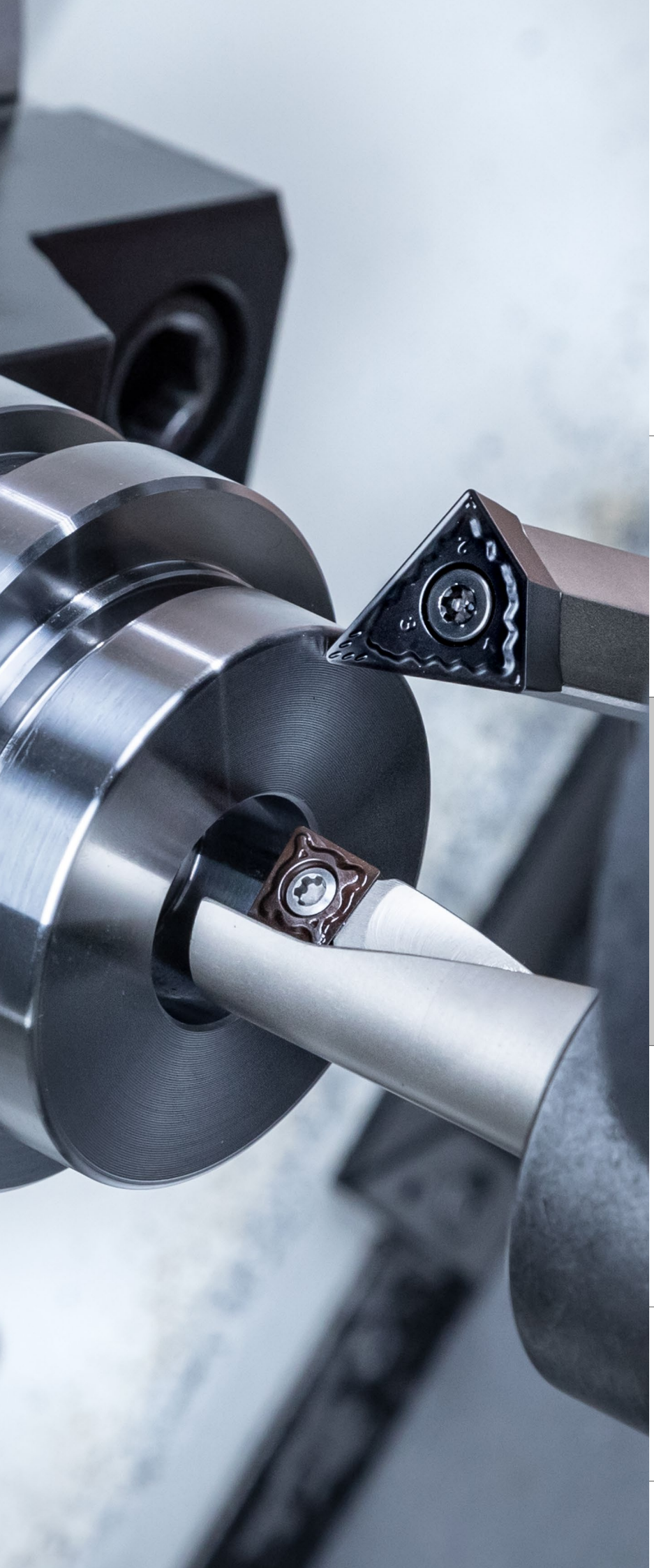
→ Page 11

NEW EcoCut Classic with direct machine interface



The new EcoCut Classic product range with direct machine interface performs the same application functions as all other EcoCut Classic tools, but the new monotools impress when it comes to stability – and therefore run quietly and very reliably. Furthermore, chip removal has been optimised thanks to the updated chip space, guaranteeing process security.

→ Page 15+16



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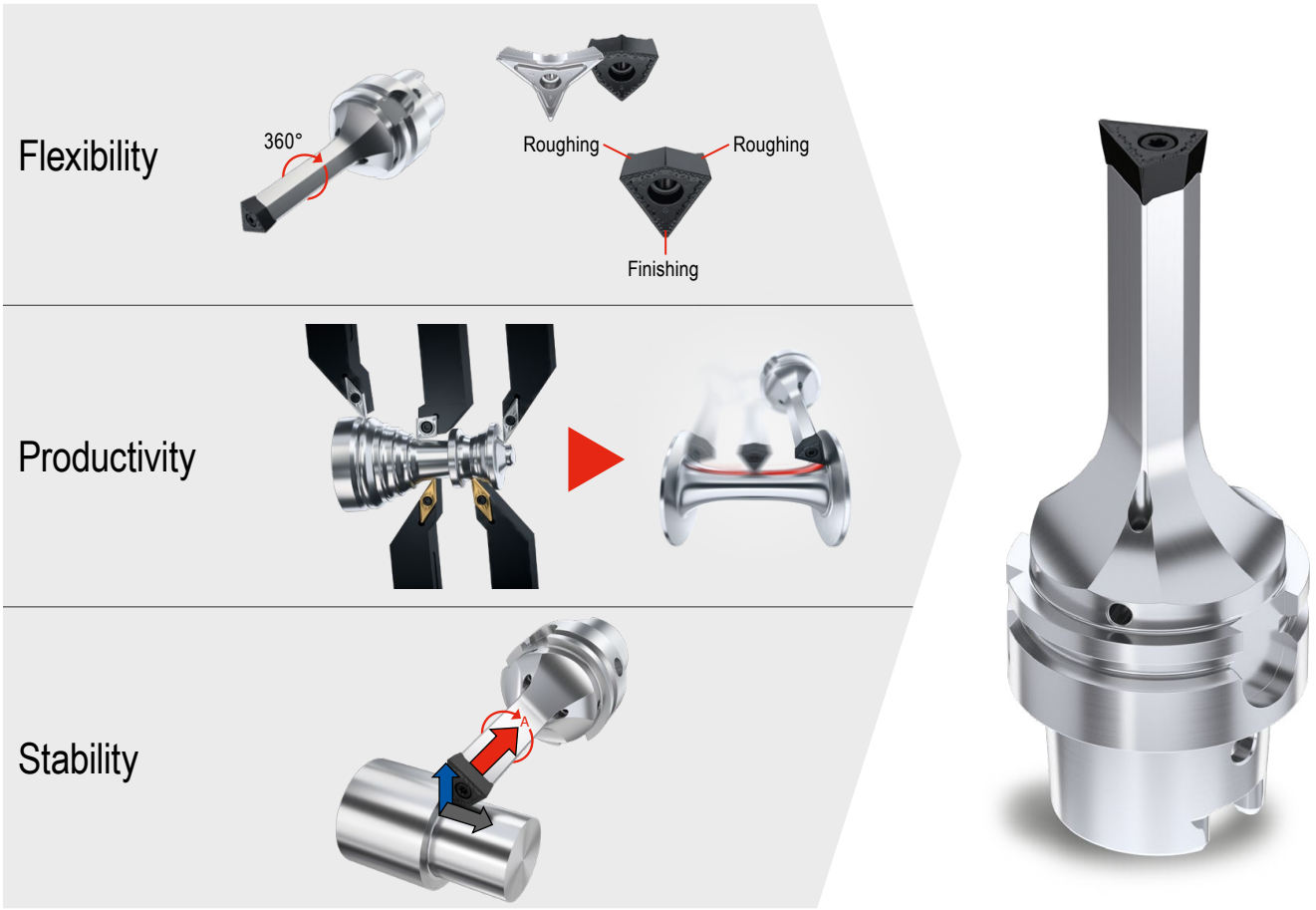
CERATIZIT \ Performance

Premium quality tools for high performance.

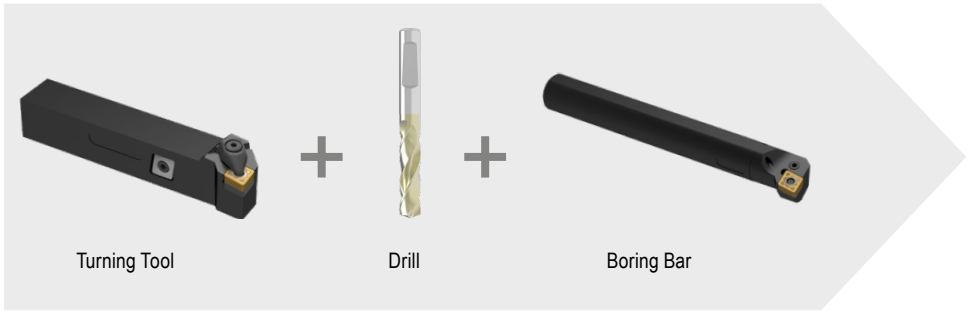
The premium quality tools from the **CERATIZIT Performance** product line have been designed for specific applications and are distinguished by their outstanding performance. If you make high demands on the performance of your production and want to achieve the very best results, we recommend the Premium tools in this product line.

Advantages of FreeTurn

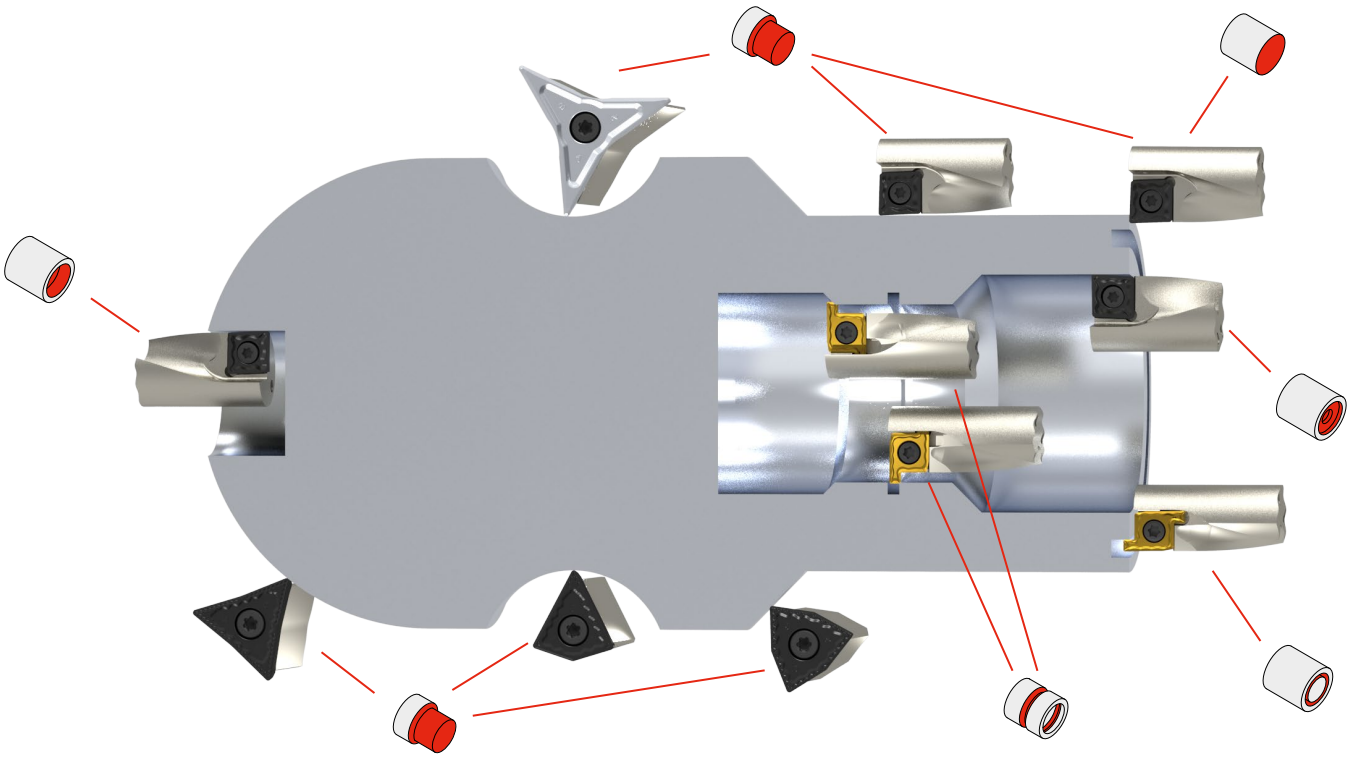


Advantages of EcoCut

- ▲ reduced machining time
- ▲ reduced need for tool positions
- ▲ generates flat bottom of hole
- ▲ less programming
- ▲ lower set-up costs / reduced setting time
- ▲ time savings due to fewer tool changes



Application examples



Symbol explanation


Turning outside profiles


Face turning


Drilling into full material


Turning internal profiles

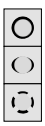

External / internal radial grooving


Axial grooving


Int. coolant supply

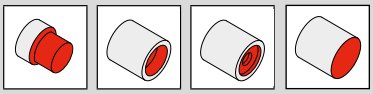
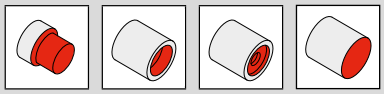
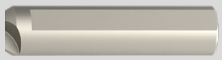
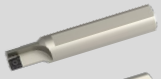
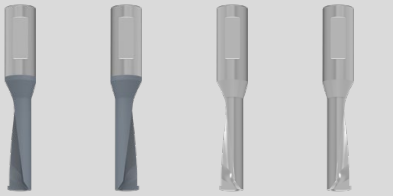
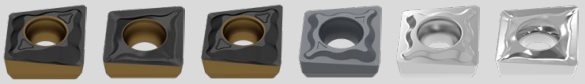
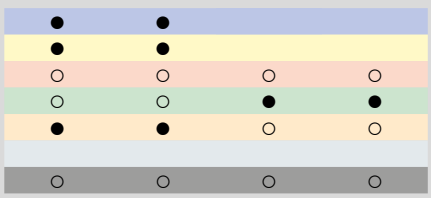
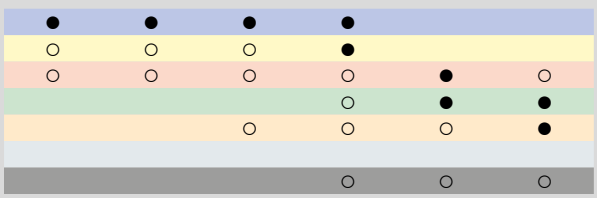
-28P — Polished chip breaker
H216T — Carbide Grade

F	Fine Machining
M	Medium Machining
R	Rough Machining



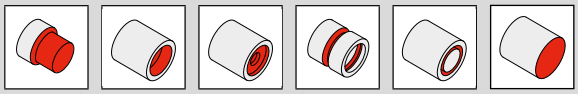
Smooth cut
Irregular cutting depth
Interrupted cut

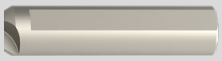
Toolfinder

Tool system	EcoCut Mini	EcoCut Classic
Application		
Machine interface	  → 9+10 Adapter for EcoCut Mini	  HSK-T 63  PSC 50 PSC 63
Lengths and diameters Versions	2,25xD Ø 2–8  → 8 4,0xD Ø 2–8  → 8	1,5xD Ø 8–32  → 12 2,25xD Ø 8–32  → 13 3,0xD Ø 8–32  → 14 2,25xD Ø 16–32  HSK-T → 15 2,25xD Ø 16–32  PSC → 16
Cutting material designation	CTPP435 | CTPP435 | CTWN425 | CTWN425	CTCP425-P | -M50Q CTCP425-P | CTCP435-P | CTPP430 | -27P H216T | -27Q H210T
Cutting conditions	DRAGONSKIN	DRAGONSKIN
		
	Solid carbide Left-hand | Solid carbide Right-hand | Solid carbide Left-hand | Solid carbide Right-hand	M XCNT | M XCNT | M XCNT | M XCNT | M XCET | M XCET
Application range		
Page No.	→ 8 | → 8 | → 8 | → 8	→ 11 | → 11 | → 11 | → 11 | → 11 | → 11
	→ v_c Page 28	→ v_c Page 28

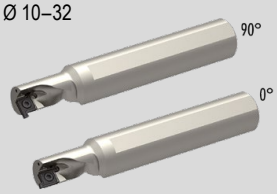
→ **Page 39**
EcoCut tools are suitable for off-centre drilling. This permits certain deviations from the nominal tool diameter to be achieved.

EcoCut ProfileMaster



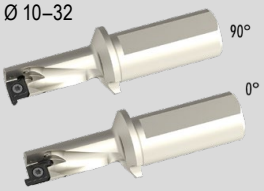


1,5xD
Ø 10–32



→ 18

2,25xD
Ø 10–32



→ 19

-M20 CTPP430	-M20 CTPP430
DRAGONSKIN	DRAGONSKIN

M	M
PM-R	PM-L
●	●
●	●
○	○
○	○
●	●
○	○

→ 17 → 17

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FreeTurn

HSK-T 63

PSC 63

HSK-T

LPR = 100
LPR = 125

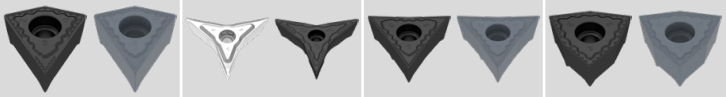
→ 23+26

PSC

LPR = 100
LPR = 125

→ 24+26

CTCP125	CTPM125	-28P H216T	-F CTCP125	CTCP125	CTPM125	CTCP125	CTPM125
DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN



M	M	F	F	F	F	F	F	M	M	M
FT15 . 808055...			FT15 . 353535...			FT15 . 555555...			FT17 . 808080...		
●	○			●		●	○		●	○	
	●						●			●	
○			○	○		○			○		
			●								
			○								
			○								

→ 20 → 20 → 21 → 21 → 22 → 22 → 25 → 25

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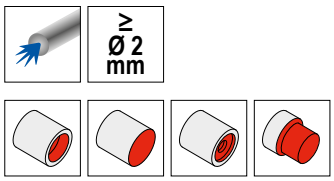
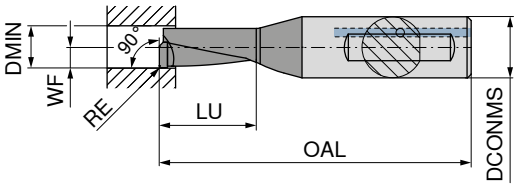
10

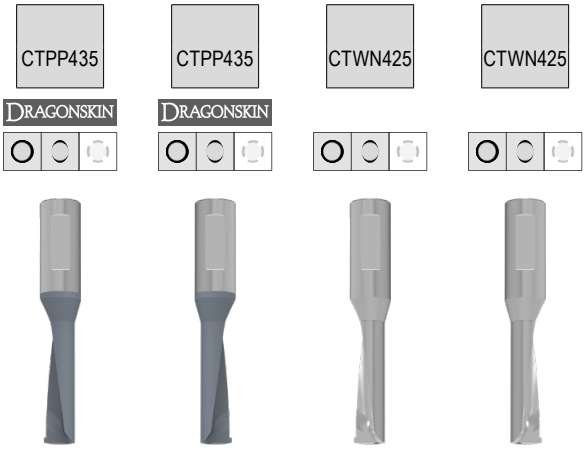
EcoCut – Mini

▲ Drilling and turning tool for small diameters





Illustrations show right-hand versions



							Solid carbide Left-hand		Solid carbide Right-hand		Solid carbide Left-hand		Solid carbide Right-hand	
							70 805 ...		70 804 ...		70 805 ...		70 804 ...	
ISO designation	DMIN mm	DCONMS mm	OAL mm	LU mm	WF mm	RE mm								
ECM 02 R/L 2,25D	2,0	4	28	4,50	1,00	0,1		320		320				
ECM 02 R/L 2,25D AL	2,0	4	28	4,50	1,00	0,1						420		420
ECM 02 R/L 4,00D	2,0	4	31	8,00	1,00	0,1		321		321				
ECM 02 R/L 4,00D AL	2,0	4	31	8,00	1,00	0,1						421		421
ECM 02,5 R/L 2,25D	2,5	4	29	5,63	1,25	0,1		325		325				
ECM 02,5 R/L 2,25D AL	2,5	4	29	5,63	1,25	0,1						425		425
ECM 02,5 R/L 4,00D	2,5	4	33	10,00	1,25	0,1		326		326				
ECM 02,5 R/L 4,00D AL	2,5	4	33	10,00	1,25	0,1						426		426
ECM 03 R/L 2,25D	3,0	4	31	6,75	1,50	0,1		330		330				
ECM 03 R/L 2,25D AL	3,0	4	31	6,75	1,50	0,1						430		430
ECM 03 R/L 4,00D	3,0	4	35	12,00	1,50	0,1		331		331				
ECM 03 R/L 4,00D AL	3,0	4	35	12,00	1,50	0,1						431		431
ECM 03,5 R/L 2,25D	3,5	4	32	7,88	1,75	0,1		335		335				
ECM 03,5 R/L 2,25D AL	3,5	4	32	7,88	1,75	0,1						435		435
ECM 03,5 R/L 4,00D	3,5	4	37	14,00	1,75	0,1		336		336				
ECM 03,5 R/L 4,00D AL	3,5	4	37	14,00	1,75	0,1						436		436
ECM 04 R/L 2,25D	4,0	6	35	9,00	2,00	0,2		300		300				
ECM 04 R/L 2,25D AL	4,0	6	35	9,00	2,00	0,2						450		450
ECM 04 R/L 4,00D	4,0	6	41	16,00	2,00	0,2		301		301				
ECM 04 R/L 4,00D AL	4,0	6	41	16,00	2,00	0,2						451		451
ECM 05 R/L 2,25D	5,0	6	37	11,25	2,50	0,2		302		302				
ECM 05 R/L 2,25D AL	5,0	6	37	11,25	2,50	0,2						452		452
ECM 05 R/L 4,00D	5,0	6	45	20,00	2,50	0,2		303		303				
ECM 05 R/L 4,00D AL	5,0	6	45	20,00	2,50	0,2						453		453
ECM 06 R/L 2,25D	6,0	8	38	13,50	3,00	0,2		306		306				
ECM 06 R/L 2,25D AL	6,0	8	38	13,50	3,00	0,2						456		456
ECM 06 R/L 4,00D	6,0	8	49	24,00	3,00	0,2		312		312				
ECM 06 R/L 4,00D AL	6,0	8	49	24,00	3,00	0,2						462		462
ECM 07 R/L 2,25D	7,0	8	42	15,75	3,50	0,2		308		308				
ECM 07 R/L 2,25D AL	7,0	8	42	15,75	3,50	0,2						458		458
ECM 07 R/L 4,00D	7,0	8	53	28,00	3,50	0,2		314		314				
ECM 07 R/L 4,00D AL	7,0	8	53	28,00	3,50	0,2						464		464
ECM 08 R/L 2,25D	8,0	8	45	18,00	4,00	0,2		310		310				
ECM 08 R/L 2,25D AL	8,0	8	45	18,00	4,00	0,2						460		460
ECM 08 R/L 4,00D	8,0	8	57	32,00	4,00	0,2		316		316				
ECM 08 R/L 4,00D AL	8,0	8	57	32,00	4,00	0,2						466		466
P							●		●					
M							●		●					
K							○		○		○		○	
N							○		○		●		●	
S							●		●		○		○	
H														
O							○		○		○		○	

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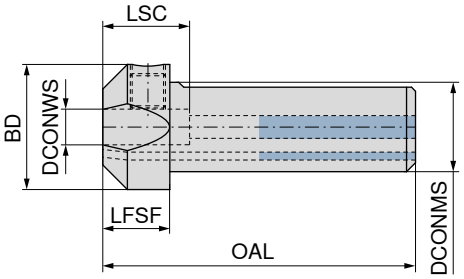
EcoCut – Adapter Mini

Scope of supply:

Toolholder with one clamping screw and one screwdriver



Designation	DCONWS mm	DCONMS mm	BD mm	OAL mm	LFSF mm	LSC mm	70 800 ...
EC-ADX16-04	4	16	22	59	14	18	**716**
EC-ADX20-04	4	20	25	64	14	18	**720**
EC-ADX16-06	6	16	22	59	14	18	**976**
EC-ADX20-06	6	20	25	64	14	18	**996**
EC-ADX16-08	8	16	22	59	14	18	**978**
EC-ADX20-08	8	20	25	64	14	18	**998**

Clamping screw

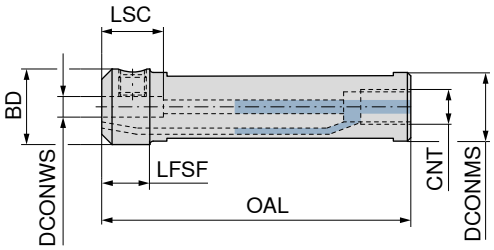
Spare parts DCONWS		70 950 ...
4	M5x10 ISO 4026	**867**
6	M8x1x8 - SW4	**123**
8	M8x1x8 - SW4	**123**

10

EcoCut – Mini adapter with coolant connection thread

Scope of supply:

Toolholder with one clamping screw and one screwdriver



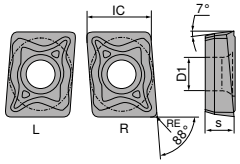
Designation	DCONWS mm	DCONMS mm	BD mm	OAL mm	LFSF mm	LSC mm	CNT	70 801 ...
ECA 16-04	4	16	20,0	75	14	18	G 1/8	**716**
ECA 20-04	4	20	19,6	90	14	18	G 1/8	**720**
ECA 22-04	4	22	21,6	110	14	18	G 1/8	**722**
ECA 16-06	6	16	22,0	75	14	18	G 1/8	**816**
ECA 20-06	6	20	22,0	90	14	18	G 1/8	**820**
ECA 22-06	6	22	21,6	110	14	18	G 1/8	**822**
ECA 16-08	8	16	22,0	75	14	18	G 1/8	**916**
ECA 20-08	8	20	22,0	90	14	18	G 1/8	**920**
ECA 22-08	8	22	21,6	110	14	18	G 1/8	**922**

Clamping screw

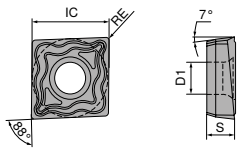
Spare parts DCONWS		70 950 ...
4	M5X8 - DIN 913	**13200**
6	M8x1x8 - SW4	**123**
8	M8x1x8 - SW4	**123**

XCNT / XCET

Designation	S	D1	IC
	mm	mm	mm
XC.T 0401..	1,80	2,10	4,5
XC.T 0502..	2,10	2,25	5,8
XC.T 0602..	2,38	2,50	6,5
XC.T 0703..	3,18	2,80	7,6
XC.T 0803..	3,18	3,40	8,5
XC.T 09T3..	3,97	3,40	9,6
XC.T 10T3..	3,97	4,40	10,6
XC.T 1304..	4,76	5,30	13,5
XC.T 1705..	5,56	5,30	17,5

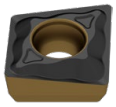
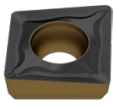
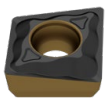
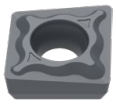
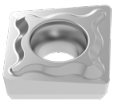


XC. T 04..



XC. T 05../06../07../08../09../10../13../17..

XCNT / XCET

	NEW	NEW	NEW			
	-EN CTCP425-P	-M50Q CTCP425-P	-EN CTCP435-P	-EN CTPP430	-27P H216T	-27Q H210T
	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN		
						
	M	M	M	M	M	M
	XCNT	XCNT	XCNT	XCNT	XCET	XCET
	70 386 ...	70 386 ...	70 386 ...	70 386 ...	70 286 ...	70 286 ...

ISO	RE mm											
040102EL	0,2	72001				82001		920				
040102ER	0,2	72201				82201		922				
040102FL	0,2									620		120
040102FR	0,2									622		122
040104EL	0,4	70001		75001		80001		900				
040104ER	0,4	70201		75201		80201		902				
040104FL	0,4									600		100
040104FR	0,4									602		102
050202EN	0,2	72301				82301		923				
050202FN	0,2									623		123
050204EN	0,4	70301		75301		80301		903				
050204FN	0,4									603		103
060202EN	0,2	72401				82401		924				
060202FN	0,2									624		124
060204EN	0,4	70401		75401		80401		904				
060204FN	0,4									604		104
070304EN	0,4	70501		75501		80501		905				
070304FN	0,4									605		105
080304EN	0,4	70601		75601		80601		906				
080304FN	0,4									606		106
09T304EN	0,4	70701		75701		80701		907				
09T304FN	0,4									607		107
10T304EN	0,4	70801		75801		80801		908				
10T304FN	0,4									608		108
10T308EN	0,8	73801		78801		83801		938				
10T308FN	0,8									628		128
130404EN	0,4	71001		76001		81001		910				
130404FN	0,4									610		110
130408EN	0,8	74001		79001		84001		940				
130408FN	0,8									611		111
170508EN	0,8	71201		76201		81201		912				
170508FN	0,8									612		112

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

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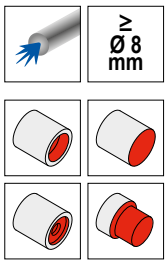
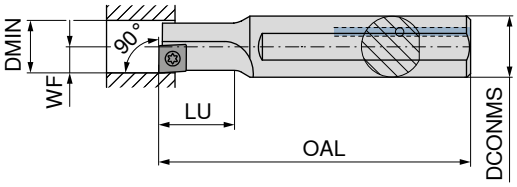
EcoCut – Classic 1.5xD

▲ Drilling and turning tool

Scope of supply:

Toolholder with 1 clamping screw + 2 spare screws and screwdriver





Illustrations show right-hand versions

Left-hand

Right-hand

ISO designation	DMIN mm	DCONMS mm	OAL mm	LU mm	WF mm	torque moment Nm	Insert	70 805 ...	70 804 ...
ECC 08 L 1,5D 04	8	12	80	12,0	4,0	0,4	XC.T 0401..EL	**008** [2]	
ECC 08 R 1,5D 04	8	12	80	12,0	4,0	0,4	XC.T 0401..ER		**008** [1]
ECC 10 R/L 1,5D 05	10	12	90	15,0	5,0	0,7	XC.T 0502..	**010**	**010**
ECC 12 R/L 1,5D 06	12	16	100	18,0	6,0	1,0	XC.T 0602..	**012**	**012**
ECC 14 R/L 1,5D 07	14	16	110	21,0	7,0	1,2	XC.T 0703..	**014**	**014**
ECC 16 R/L 1,5D 08	16	20	125	24,0	8,0	2,2	XC.T 0803..	**016**	**016**
ECC 18 R/L 1,5D 09	18	25	135	27,0	9,0	2,2	XC.T 09T3..	**018**	**018**
ECC 20 R/L 1,5D 10	20	25	150	30,0	10,0	3,2	XC.T 10T3..	**020**	**020**
ECC 25 R/L 1,5D 13	25	32	180	37,5	12,5	5,0	XC.T 1304..	**025**	**025**
ECC 32 R/L 1,5D 17	32	40	200	48,0	16,0	5,0	XC.T 1705..	**032**	**032**

1) Note! Right-hand insert on right-hand tool
2) Note! Left-hand insert on left-hand tool

Key D

Clamping screw

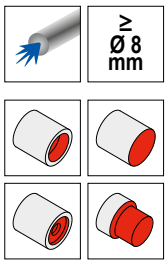
Spare parts Insert		80 950 ...		70 950 ...
XC.T 0401..EL	T06 - IP	**123**	M1,8x3,6 - IP	**862**
XC.T 0401..ER	T06 - IP	**123**	M1,8x3,6 - IP	**862**
XC.T 0502..	T06 - IP	**123**	M2x4,3 - IP	**863**
XC.T 0602..	T07 - IP	**124**	M2,2x5 - IP	**856**
XC.T 0703..	T08 - IP	**125**	M2,5x6 - IP	**857**
XC.T 0803..	T09 - IP	**126**	M3x7 - IP	**819**
XC.T 09T3..	T09 - IP	**126**	M3x7 - IP	**819**
XC.T 10T3..	T15 - IP	**128**	M3,5x8,6 - IP	**859**
XC.T 1304..	T20 - IP	**129**	M4,5x10,5 - IP	**864**
XC.T 1705..	T20 - IP	**129**	M4,5x10,5 - IP	**864**

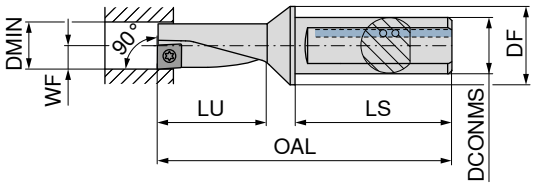
EcoCut – Classic 2.25xD

▲ Drilling and turning tool

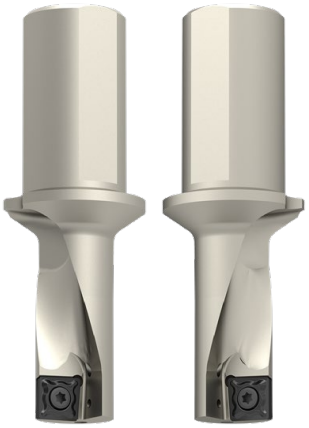
Scope of supply:

Toolholder with 1 clamping screw + 2 spare screws and screwdriver





Illustrations show right-hand versions



Left-hand | Right-hand

ISO designation	DMIN mm	DCONMS mm	DF mm	OAL mm	LU mm	LS mm	WF mm	torque moment Nm	Insert	70 805 ...	70 804 ...
ECC 08 L 2,25D 04	8	10	15	60,0	18,0	38	4,0	0,4	XC.T 0401..EL	**108** [2]	
ECC 08 R 2,25D 04	8	10	15	60,0	18,0	38	4,0	0,4	XC.T 0401..ER		**108** [1]
ECC 10 R/L 2,25D 05	10	12	18	69,5	22,5	42	5,0	0,7	XC.T 0502..	**110**	**110**
ECC 12 R/L 2,25D 06	12	16	22	78,0	27,0	45	6,0	1,0	XC.T 0602..	**112**	**112**
ECC 14 R/L 2,25D 07	14	16	23	83,5	31,5	45	7,0	1,2	XC.T 0703..	**114**	**114**
ECC 16 R/L 2,25D 08	16	20	28	94,0	36,0	50	8,0	2,2	XC.T 0803..	**116**	**116**
ECC 18 R/L 2,25D 09	18	25	36	109,5	40,5	56	9,0	2,2	XC.T 09T3..	**118**	**118**
ECC 20 R/L 2,25D 10	20	25	35	111,0	45,0	56	10,0	3,2	XC.T 10T3..	**120**	**120**
ECC 25 R/L 2,25D 13	25	32	44	129,0	56,5	60	12,5	5,0	XC.T 1304..	**125**	**125**
ECC 32 R/L 2,25D 17	32	40	54	158,0	72,0	70	16,0	5,0	XC.T 1705..	**132**	**132**

1) Note! Right-hand insert on right-hand tool
2) Note! Left-hand insert on left-hand tool

10

Key D

Clamping screw

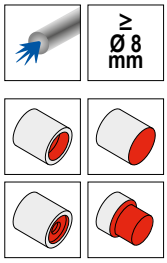
Spare parts Insert		80 950 ...		70 950 ...
XC.T 0401..EL	T06 - IP	**123**	M1,8x3,6 - IP	**862**
XC.T 0401..ER	T06 - IP	**123**	M1,8x3,6 - IP	**862**
XC.T 0502..	T06 - IP	**123**	M2x4,3 - IP	**863**
XC.T 0602..	T07 - IP	**124**	M2,2x5 - IP	**856**
XC.T 0703..	T08 - IP	**125**	M2,5x6 - IP	**857**
XC.T 0803..	T09 - IP	**126**	M3x7 - IP	**819**
XC.T 09T3..	T09 - IP	**126**	M3x7 - IP	**819**
XC.T 10T3..	T15 - IP	**128**	M3,5x8,6 - IP	**859**
XC.T 1304..	T20 - IP	**129**	M4,5x10,5 - IP	**864**
XC.T 1705..	T20 - IP	**129**	M4,5x10,5 - IP	**864**

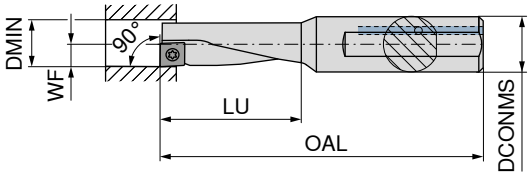
EcoCut – Classic 3xD – Heavy metal

▲ Drilling and turning tool
▲ vibration-damped

Scope of supply:

Toolholder with 1 clamping screw + 2 spare screws and screwdriver





Illustrations show right-hand versions

Left-hand

Right-hand

ISO designation	DMIN mm	DCONMS mm	OAL mm	LU mm	WF mm	torque moment Nm	Insert	70 805 ...	70 804 ...
ECC 08 L 3,00D 04 H	8	12	80	24	4,0	0,4	XC.T 0401..EL	**608** [2]	
ECC 08 R 3,00D 04 H	8	12	80	24	4,0	0,4	XC.T 0401..ER		**608** [1]
ECC 10 R/L 3,00D 05 H	10	12	85	30	5,0	0,7	XC.T 0502..	**610**	**610**
ECC 12 R/L 3,00D 06 H	12	16	95	36	6,0	1,0	XC.T 0602..	**612**	**612**
ECC 14 R/L 3,00D 07 H	14	16	100	42	7,0	1,2	XC.T 0703..	**614**	**614**
ECC 16 R/L 3,00D 08 H	16	20	110	48	8,0	2,2	XC.T 0803..	**616**	**616**
ECC 18 R/L 3,00D 09 H	18	25	125	54	9,0	2,2	XC.T 09T3..	**618**	**618**
ECC 20 R/L 3,00D 10 H	20	25	130	60	10,0	3,2	XC.T 10T3..	**620**	**620**
ECC 25 R/L 3,00D 13 H	25	32	150	75	12,5	5,0	XC.T 1304..	**625**	**625**
ECC 32 R/L 3,00D 17 H	32	40	185	96	16,0	5,0	XC.T 1705..	**632**	**632**

1) Note! Right-hand insert on right-hand tool
2) Note! Left-hand insert on left-hand tool

Key D

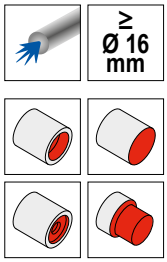
Clamping screw

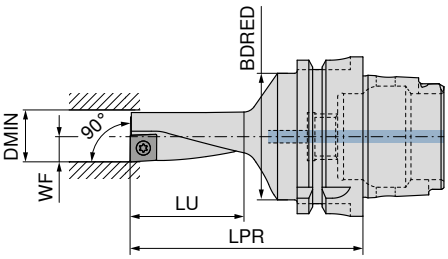
Spare parts Insert		80 950 ...		70 950 ...
XC.T 0401..EL	T06 - IP	**123**	M1,8x3,6 - IP	**862**
XC.T 0401..ER	T06 - IP	**123**	M1,8x3,6 - IP	**862**
XC.T 0502..	T06 - IP	**123**	M2x4,3 - IP	**863**
XC.T 0602..	T07 - IP	**124**	M2,2x5 - IP	**856**
XC.T 0703..	T08 - IP	**125**	M2,5x6 - IP	**857**
XC.T 0803..	T09 - IP	**126**	M3x7 - IP	**819**
XC.T 09T3..	T09 - IP	**126**	M3x7 - IP	**819**
XC.T 10T3..	T15 - IP	**128**	M3,5x8,6 - IP	**859**
XC.T 1304..	T20 - IP	**129**	M4,5x10,5 - IP	**864**
XC.T 1705..	T20 - IP	**129**	M4,5x10,5 - IP	**864**

EcoCut – HSK-T 2.25xD

Scope of supply:

Toolholder with 1 clamping screw + 2 spare screws and screwdriver





Illustrations show right-hand versions

NEW NEW

ISO designation	Adapter	LPR mm	LU mm	BDRED mm	WF mm	DMIN mm	torque moment Nm	Insert	Left-hand 74 591 ...		Right-hand 74 590 ...	
HSK-T 63 ECC 16 R/L 2,25D 08	HSK-T 63	84	36,00	50	8,0	16	2,2	XC.T 0803..		**51637**		**51637**
HSK-T 63 ECC 20 R/L 2,25D 10	HSK-T 63	92	45,00	50	10,0	20	3,2	XC.T 10T3..		**52037**		**52037**
HSK-T 63 ECC 25 R/L 2,25D 13	HSK-T 63	104	56,25	50	12,5	25	5,0	XC.T 1304..		**52537**		**52537**
HSK-T 63 ECC 32 R/L 2,25D 17	HSK-T 63	120	72,00	50	16,0	32	5,0	XC.T 1705..		**53237**		**53237**


Key D

80 950 ...


Clamping screw

70 950 ...

Spare parts Insert				
XC.T 0803..	T09 - IP	**126**	M3x7 - IP	**819**
XC.T 10T3..	T15 - IP	**128**	M3,5x8,6 - IP	**859**
XC.T 1304..	T20 - IP	**129**	M4,5x10,5 - IP	**864**
XC.T 1705..	T20 - IP	**129**	M4,5x10,5 - IP	**864**

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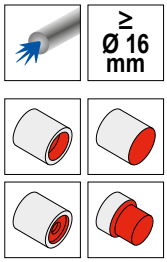
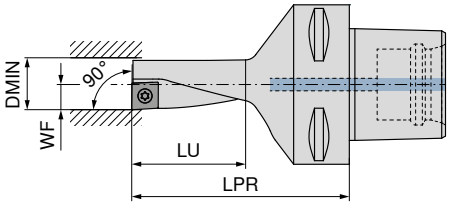
EcoCut – Classic PSC 2,25xD

Scope of supply:

Toolholder with 1 clamping screw + 2 spare screws and screwdriver





Illustrations show right-hand versions

NEW NEW

ISO designation	Adapter	LPR mm	LU mm	WF mm	DMIN mm	torque moment Nm	Insert	Left-hand 74 591 ...	Right-hand 74 590 ...
PSC 50 ECC 16 R/L 2,25D 08	PSC 50	70	36,00	8,0	16	2,2	XC.T 0803..	**51694**	**51694**
PSC 50 ECC 20 R/L 2,25D 10	PSC 50	81	45,00	10,0	20	3,2	XC.T 10T3..	**52094**	**52094**
PSC 50 ECC 25 R/L 2,25D 13	PSC 50	93	56,25	12,5	25	5,0	XC.T 1304..	**52594**	**52594**
PSC 50 ECC 32 R/L 2,25D 17	PSC 50	110	72,00	16,0	32	5,0	XC.T 1705..	**53294**	**53294**
PSC 63 ECC 16 R/L 2,25D 08	PSC 63	75	36,00	8,0	16	2,2	XC.T 0803..	**51693**	**51693**
PSC 63 ECC 20 R/L 2,25D 10	PSC 63	86	45,00	10,0	20	3,2	XC.T 10T3..	**52093**	**52093**
PSC 63 ECC 25 R/L 2,25D 13	PSC 63	97	56,25	12,5	25	5,0	XC.T 1304..	**52593**	**52593**
PSC 63 ECC 32 R/L 2,25D 17	PSC 63	114	72,00	16,0	32	5,0	XC.T 1705..	**53293**	**53293**

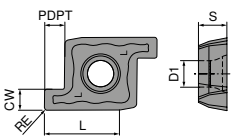
Key D

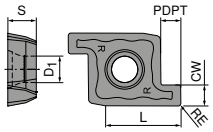
Clamping screw

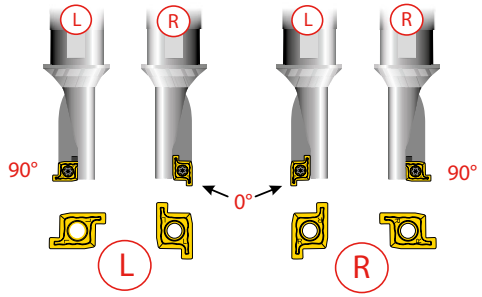
Spare parts Insert				
	80 950 ...		**70 950 ...**	
XC.T 0803..	T09 - IP	**126**	M3x7 - IP	**819**
XC.T 10T3..	T15 - IP	**128**	M3,5x8,6 - IP	**859**
XC.T 1304..	T20 - IP	**129**	M4,5x10,5 - IP	**864**
XC.T 1705..	T20 - IP	**129**	M4,5x10,5 - IP	**864**

PM-R / PM-L

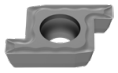
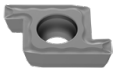
Designation	CW mm	PDPT mm	L mm	S mm	D1 mm
PM 10 G 201504	2,0	1,5	5,0	2,10	2,1
PM 12 G 201804	2,0	1,8	6,0	2,30	2,5
PM 16 G 252004	2,5	2,0	8,0	2,80	3,4
PM 20 G 302504	3,0	2,5	10,0	3,70	4,0
PM 25 G 353004	3,5	3,0	12,5	4,50	4,4
PM 32 G 404004	4,0	4,0	16,0	5,60	6,0







PM-L / PM-R

	-M20 CTPP430 DRAGONSKIN	-M20 CTPP430 DRAGONSKIN
		
	M PM-L	**M** PM-R
	70 289 ...	**70 289 ...**
ISO RE mm		
PM 10 G 201504 0,4	**510**	**511**
PM 12 G 201804 0,4	**515**	**516**
PM 16 G 252004 0,4	**520**	**521**
PM 20 G 302504 0,4	**525**	**526**
PM 25 G 353004 0,4	**530**	**531**
PM 32 G 404004 0,4	**535**	**536**
P	●	●
M	●	●
K	○	○
N	○	○
S	●	●
H		
O	○	○

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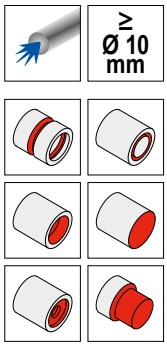
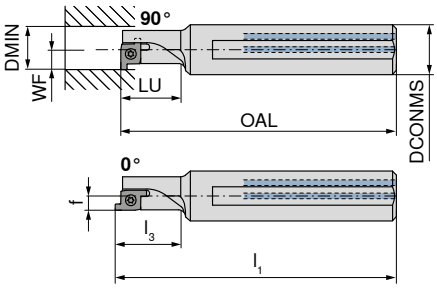
EcoCut – ProfileMaster 1.5xD

▲ Drilling, turning and grooving tool

Scope of supply:

Toolholder with one clamping screw and one screwdriver





Illustrations show right-hand versions

											Left-hand	Right-hand
											70 821 ...	**70 820 ...**
ISO designation	DMIN	DCONMS	OAL	LU	WF	l_1	l_3	f	torque moment	Insert		
	mm	mm	mm	mm	mm	mm	mm	mm	Nm			
PMC 10 R/L 1,5D	10	12	80	15	5,0				0,4	PM 10R/L	**010** [1]	**010** [1]
PMC 12 R/L 1,5D	12	16	90	18	6,0				1,0	PM 12R/L	**012** [1]	**012** [1]
PMC 16 R/L 1,5D	16	20	125	24	8,0	127,3	26,3	5,7	2,2	PM 16R/L	**016**	**016**
PMC 20 R/L 1,5D	20	25	150	30	10,0	152,8	32,8	7,2	2,2	PM 20R/L	**020**	**020**
PMC 25 R/L 1,5D	25	32	180	38	12,5	183,3	40,8	9,2	3,2	PM 25R/L	**025**	**025**
PMC 32 R/L 1,5D	32	40	200	48	16,0	204,3	52,3	11,7	5,0	PM 32R/L	**032**	**032**

1) only usable as 90° version

Key D

Clamping screw

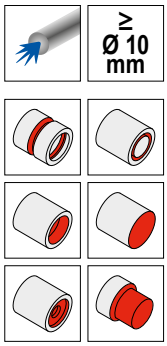
		80 950 ...		**70 950 ...**
Spare parts				
Insert				
PM 10R/L	T06 - IP	**123**	M1,8x3,6 - IP	**862**
PM 12R/L	T07 - IP	**124**	M2,2x4,2 - IP	**137**
PM 16R/L	T09 - IP	**126**	M3x5,7 - IP	**008**
PM 20R/L	T15 - IP	**128**	M3x5,7 - IP	**009**
PM 25R/L	T15 - IP	**128**	M3,5x8,6 - IP	**859**
PM 32R/L	T20 - IP	**129**	M5x10,8 - IP	**010**

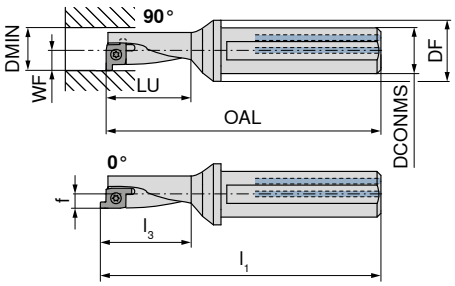
EcoCut – ProfileMaster 2.25xD

▲ Drilling, turning and grooving tool

Scope of supply:

Toolholder with one clamping screw and one screwdriver





Illustrations show right-hand versions

												Left-hand	Right-hand
												70 821 ...	**70 820 ...**
ISO designation	DMIN	DCONMS	DF	OAL	LU	WF	l_1	l_3	f	torque moment	Insert		
	mm	mm	mm	mm	mm	mm	mm	mm	mm	Nm			
PMC 10 R/L 2,25D	10	12	18	72,4	22,50	5,0				0,4	PM 10R/L	**110** 1)	**110** 1)
PMC 12 R/L 2,25D	12	16	22	78,0	27,00	6,0				1,0	PM 12R/L	**112** 1)	**112** 1)
PMC 16 R/L 2,25D	16	20	28	96,5	36,00	8,0	98,8	38,3	5,7	2,2	PM 16R/L	**116**	**116**
PMC 20 R/L 2,25D	20	25	32	111,0	45,00	10,0	113,8	47,8	7,2	2,2	PM 20R/L	**120**	**120**
PMC 25 R/L 2,25D	25	32	44	132,6	56,25	12,5	135,9	59,6	9,2	3,2	PM 25R/L	**125**	**125**
PMC 32 R/L 2,25D	32	40	54	158,0	72,00	16,0	162,3	76,3	11,7	5,0	PM 32R/L	**132**	**132**

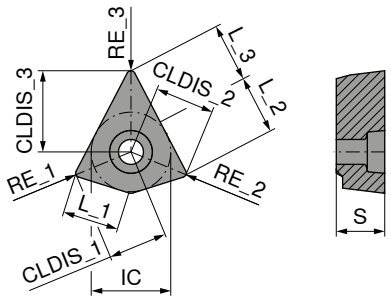
1) only usable as 90° version

Key D

Clamping screw

		80 950 ...		**70 950 ...**
Spare parts				
Insert				
PM 10R/L	T06 - IP	**123**	M1,8x3,6 - IP	**862**
PM 12R/L	T07 - IP	**124**	M2,2x4,2 - IP	**137**
PM 16R/L	T09 - IP	**126**	M3x5,7 - IP	**008**
PM 20R/L	T15 - IP	**128**	M3x5,7 - IP	**009**
PM 25R/L	T15 - IP	**128**	M3,5x8,6 - IP	**859**
PM 32R/L	T20 - IP	**129**	M5x10,8 - IP	**010**

FT15 . 808055...



Designation	IC	CLDIS_1	L_1	CLDIS_2	L_2	CLDIS_3	L_3	S
	mm	mm	mm	mm	mm	mm	mm	mm
FT15 M 808055R080804-MMF	15	11,22	10,8	11,22	11,4	15,78	11,4	9,14
FT15 M 808055R08-MMF	15	11,22	10,8	11,22	11,2	15,31	11,2	9,14
FT15 M 808055R121208-MMF	15	11,00	10,7	11,00	11,2	15,31	11,2	9,14

M M F
FT15 . 808055...
74 003 ...

M M F
FT15 . 808055...
74 003 ...

ISO	RE_1	RE_2	RE_3		
	mm	mm	mm		
FT15 M 808055R080804-MMF	0,8	0,8	0,4	00400	
FT15 M 808055R08-MMF	0,8	0,8	0,8	00200	10200
FT15 M 808055R121208-MMF	1,2	1,2	0,8	00600	
P				●	○
M					●
K				○	
N					
S					
H					
O					

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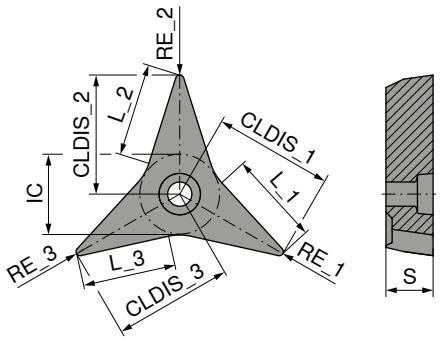
FT15 . 353535...



Designation	IC	CLDIS_1	L_1	CLDIS_2	L_2	CLDIS_3	L_3	S
	mm	mm	mm	mm	mm	mm	mm	mm
FT15 G 353535R04-28P	15	24,01	16,10	24,01	16,10	24,01	16,10	9,14
FT15 G 353535R08-28P	15	23,08	15,20	23,08	15,20	23,08	15,20	9,14
FT15 G 353535R08-F	15	23,08	14,96	23,08	14,96	23,08	14,96	9,14

ISO	RE_1	RE_2	RE_3	-F CTCP125	-28P H216T
	mm	mm	mm		
				DRAGONSKIN	DRAGONSKIN
					
				F F F	F F F
				FT15 . 353535...	FT15 . 353535...
				74 077 ...	74 001 ...
FT15 G 353535R04-28P	0,4	0,4	0,4		**20200**
FT15 G 353535R08-28P	0,8	0,8	0,8		**20400**
FT15 G 353535R08-F	0,8	0,8	0,8	**00400**	
P				●	
M					
K				○	○
N					●
S					○
H					
O					○

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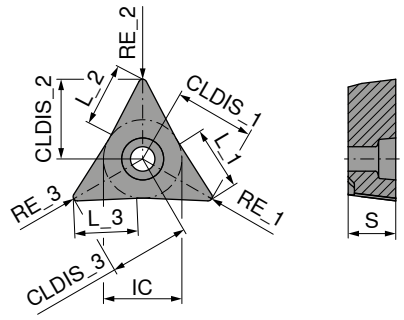
FT15 . 555555...



Designation	IC	CLDIS_1	L_1	CLDIS_2	L_2	CLDIS_3	L_3	S
	mm	mm	mm	mm	mm	mm	mm	mm
FT15 M 555555R04-FFF	15	15,78	12,6	15,78	12,6	15,78	12,6	9,14
FT15 M 555555R08-FFF	15	15,31	12,3	15,31	12,3	15,31	12,3	9,14

DRAGONSKIN

DRAGONSKIN

F F F

FT15 . 555555...

74 002 ...

F F F

FT15 . 555555...

74 002 ...

ISO	RE_1	RE_2	RE_3		
	mm	mm	mm		
FT15 M 555555R04-FFF	0,4	0,4	0,4	00200	
FT15 M 555555R08-FFF	0,8	0,8	0,8	00400	10400
P				●	○
M					●
K				○	
N					
S					
H					
O					

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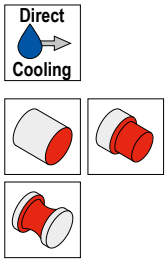
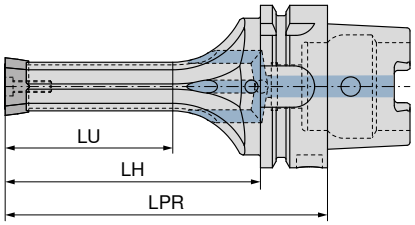
FreeTurn – HSK-T tool holder FT15

▲ Tool holder for FreeTurn indexable insert
▲ DirectCooling coolant supply

Scope of supply:

Toolholder with one clamping screw and one screwdriver





Figures show version FT15 . 808055...

ISO designation	Adapter	LPR mm	LH mm	LU mm	Insert	DirectCooling 74 700 ...
HSK-T63-100-FT15 353535	HSK-T 63	100	74	40	FT15 . 353535...	**00137**
HSK-T63-100-FT15 808055	HSK-T 63	100	74	40	FT15 . 808055...	**00537**
HSK-T63-100-FT15 555555	HSK-T 63	100	74	40	FT15 . 555555...	**00337**
HSK-T63-125-FT15 353535	HSK-T 63	125	99	65	FT15 . 353535...	**00237**
HSK-T63-125-FT15 808055	HSK-T 63	125	99	65	FT15 . 808055...	**00637**
HSK-T63-125-FT15 555555	HSK-T 63	125	99	65	FT15 . 555555...	**00437**

Spare parts		Key D 80 950 ...		Clamping screw 70 950 ...	
Adapter					
HSK-T 63		T20 - IP	**121**	M4,5x18 - IP	**25900**

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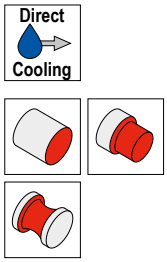
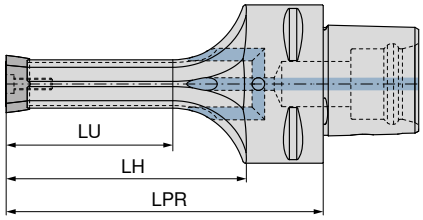
FreeTurn – PSC tool holder FT15

▲ Tool holder for FreeTurn indexable insert
▲ DirectCooling coolant supply

Scope of supply:

Toolholder with one clamping screw and one screwdriver



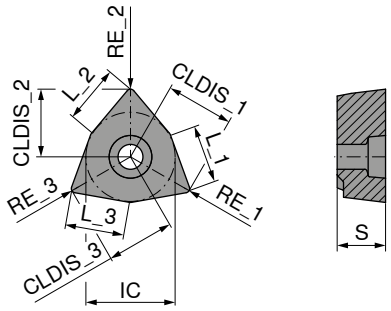


Figures show version FT15 . 808055...

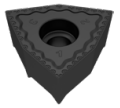
ISO designation	Adapter	LPR mm	LH mm	LU mm	Insert	DirectCooling 74 700 ...
PSC-63-100-FT15 353535	PSC 63	100	69,4	40	FT15 . 353535...	**00193**
PSC-63-100-FT15 808055	PSC 63	100	69,3	40	FT15 . 808055...	**00593**
PSC-63-100-FT15 555555	PSC 63	100	69,6	40	FT15 . 555555...	**00393**
PSC-63-125-FT15 353535	PSC 63	125	94,4	65	FT15 . 353535...	**00293**
PSC-63-125-FT15 808055	PSC 63	125	94,3	65	FT15 . 808055...	**00693**
PSC-63-125-FT15 555555	PSC 63	125	94,6	65	FT15 . 555555...	**00493**

Spare parts		 Key D 80 950 ...		 Clamping screw 70 950 ...	
Adapter					
PSC 63	T20 - IP	**121**	M4,5x18 - IP	**25900**	

FT17 . 808080...



Designation	IC	CLDIS_1	L_1	CLDIS_2	L_2	CLDIS_3	L_3	S
	mm	mm	mm	mm	mm	mm	mm	mm
FT17 M 808080R04-MMM	17	13,00	11,3	13,00	11,3	13,00	11,3	9,14
FT17 M 808080R08-MMM	17	12,78	11,3	12,78	11,3	12,78	11,3	9,14
FT17 M 808080R12-MMM	17	12,56	11,2	12,56	11,2	12,56	11,2	9,14

ISO	RE_1	RE_2	RE_3	CTCP125	CTPM125
	mm	mm	mm	DRAGONSKIN	DRAGONSKIN
					
				M M M	M M M
				FT17 . 808080...	FT17 . 808080...
				74 000 ...	**74 000 ...**
FT17 M 808080R04-MMM	0,4	0,4	0,4	**00200**	
FT17 M 808080R08-MMM	0,8	0,8	0,8	**00400**	**10400**
FT17 M 808080R12-MMM	1,2	1,2	1,2	**00600**	
P				●	○
M					●
K				○	
N					
S					
H					
O					

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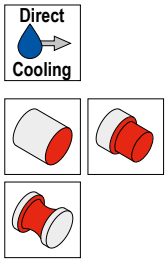
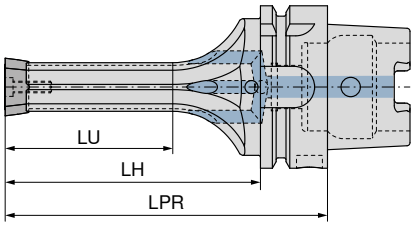
FreeTurn – HSK-T tool holder FT17

▲ Tool holder for FreeTurn indexable insert
▲ DirectCooling coolant supply

Scope of supply:

Toolholder with one clamping screw and one screwdriver





ISO designation	Adapter	LPR mm	LH mm	LU mm	Insert	DirectCooling 74 701 ...
HSK-T63-100-FT17 808080	HSK-T 63	100	74	40	FT17 . 808080...	**00737**
HSK-T63-125-FT17 808080	HSK-T 63	125	99	65	FT17 . 808080...	**00837**

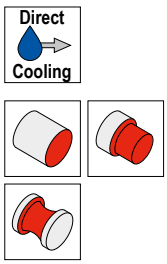
Spare parts		80 950 ...		70 950 ...	
Adapter					
HSK-T 63	T20 - IP	**121**	M4,5x18 - IP	**25900**	

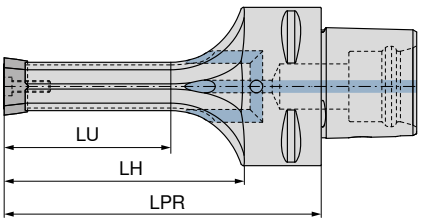
FreeTurn – PSC tool holder FT17

▲ Tool holder for FreeTurn indexable insert
▲ DirectCooling coolant supply

Scope of supply:

Toolholder with one clamping screw and one screwdriver





ISO designation	Adapter	LPR mm	LH mm	LU mm	Insert	DirectCooling 74 701 ...
PSC-63-100-FT17 808080	PSC 63	100	69,3	40	FT17 . 808080...	**00793**
PSC-63-125-FT17 808080	PSC 63	125	94,3	65	FT17 . 808080...	**00893**

Spare parts		80 950 ...		70 950 ...	
Adapter					
PSC 63	T20 - IP	**121**	M4,5x18 - IP	**25900**	

Material examples for cutting data tables

	Material sub-group	Index	Composition / Structure / Heat treatment		Tensile strength N/mm²* / HB / HRC	Material number	Material designation	Material number	Material designation
P	Unalloyed steel	P.1.1	< 0,15 % C	Annealed	420 N/mm² / 125 HB	1.0401	C15	1.1141	Ck15
		P.1.2	< 0,45 % C	Annealed	640 N/mm² / 190 HB	1.1191	C45E	1.0718	9SMnPb28
		P.1.3		Tempered	840 N/mm² / 250 HB	1.1191	C45E	1.0535	C55
		P.1.4	< 0,75 % C	Annealed	910 N/mm² / 270 HB	1.1223	C60R	1.0535	C55
		P.1.5		Tempered	1010 N/mm² / 300 HB	1.1223	C60R	1.0727	45S20
	Low-alloy steel	P.2.1		Annealed	610 N/mm² / 180 HB	1.7131	16MnCr5	1.6587	17CrNiMo6
		P.2.2		Tempered	930 N/mm² / 275 HB	1.7131	16MnCr5	1.6587	17CrNiMo6
		P.2.3		Tempered	1010 N/mm² / 300 HB	1.7225	42CrMo4	1.3505	100Cr6
		P.2.4		Tempered	1200 N/mm² / 375 HB	1.7225	42CrMo4	1.3505	100Cr6
	High-alloy steel and high-alloy tool steel	P.3.1		Annealed	680 N/mm² / 200 HB	1.4021	X20Cr13	1.4034	X46Cr13
		P.3.2		Hardened and tempered	1100 N/mm² / 300 HB	1.2343	X38CrMoV5-1	1.4034	X46Cr13
		P.3.3		Hardened and tempered	1300 N/mm² / 400 HB	1.2343	X38CrMoV5-1	1.4034	X46Cr13
	Stainless steel	P.4.1	Ferritic / martensitic	Annealed	680 N/mm² / 200 HB	1.4016	X6Cr17	1.2316	X36CrMo16
		P.4.2	Martensitic	Tempered	1010 N/mm² / 300 HB	1.4112	X90CrMoV18	1.2316	X36CrMo16
M	Stainless steel	M.1.1	Austenitic / austenitic-ferritic	Quenched	610 N/mm² / 180 HB	1.4301	X5CrNi18-10	1.4571	X6CrNiMoTi17-12-2
		M.2.1	Austenitic	Tempered	300 HB	1.4841	X15CrNiSi25-21	1.4539	X1NiCrMoCu25-20-5
		M.3.1	Austenitic / ferritic (Duplex)		780 N/mm² / 230 HB	1.4462	X2CrNiMoN22-5-3	1.4501	X2CrNiMoCuWN25-7-4
K	Grey cast iron	K.1.1	Pearlitic / ferritic		350 N/mm² / 180 HB	0.6010	GG-10	0.6025	GG-25
		K.1.2	Pearlitic (martensitic)		500 N/mm² / 260 HB	0.6030	GG-30	0.6045	GG-45
	Spherulitic graphite cast iron	K.2.1	Ferritic		540 N/mm² / 160 HB	0.7040	GGG-40	0.7060	GGG-60
		K.2.2	Pearlitic		845 N/mm² / 250 HB	0.7070	GGG-70	0.7080	GGG-80
	Malleable iron	K.3.1	Ferritic		440 N/mm² / 130 HB	0.8035	GTW-35-04	0.8045	GTW-45
		K.3.2	Pearlitic		780 N/mm² / 230 HB	0.8165	GTS-65-02	0.8170	GTS-70-02
N	Aluminium wrought alloy	N.1.1	Non-hardenable		60 HB	3.0255	Al99,5	3.3315	AlMg1
		N.1.2	Hardenable	Age-hardened	340 N/mm² / 100 HB	3.1355	AlCuMg2	3.2315	AlMgSi1
	Cast aluminium alloy	N.2.1	≤ 12 % Si, non-hardenable		250 N/mm² / 75 HB	3.2581	G-AlSi12	3.2163	G-AlSi9Cu3
		N.2.2	≤ 12 % Si, hardenable	Age-hardened	300 N/mm² / 90 HB	3.2134	G-AlSi5Cu1Mg	3.2373	G-AlSi9Mg
		N.2.3	> 12 % Si, non-hardenable		440 N/mm² / 130 HB		G-AlSi17Cu4Mg		G-AlSi18CuNiMg
	Copper and copper alloys (bronze/brass)	N.3.1	Free-machining alloys, PB > 1 %		375 N/mm² / 110 HB	2.0380	CuZn39Pb2 (Ms58)	2.0410	CuZn44Pb2
		N.3.2	CuZn, CuSnZn		300 N/mm² / 90 HB	2.0331	CuZn15	2.4070	CuZn28Sn1As
		N.3.3	CuSn, lead-free copper and electrolytic copper		340 N/mm² / 100 HB	2.0060	E-Cu57	2.0590	CuZn40Fe
	Magnesium alloys	N.4.1	Magnesium and magnesium alloys		70 HB	3.5612	MgAl6Zn	3.5312	MgAl3Zn
S	Heat-resistant alloys	S.1.1	Fe - basis	Annealed	680 N/mm² / 200 HB	1.4864	X12NiCrSi 36-16	1.4865	G-X40NiCrSi38-18
		S.1.2		Age-hardened	950 N/mm² / 280 HB	1.4980	X6NiCrTiMoVB25-15-2	1.4876	X10NiCrAlTi32-20
		S.2.1	Ni or Co basis	Annealed	840 N/mm² / 250 HB	2.4631	NiCr20TiAl (Nimonic80A)	3.4856	NiCr22Mo9Nb
		S.2.2		Age-hardened	1180 N/mm² / 350 HB	2.4668	NiCr19Nb5Mo3 (Inconel 718)	2.4955	NiFe25Cr20NbTi
		S.2.3		Cast	1080 N/mm² / 320 HB	2.4765	CoCr20W15Ni	1.3401	G-X120Mn12
	Titanium alloys	S.3.1	Pure titanium		400 N/mm²	3.7025	Ti99,8	3.7034	Ti99,7
		S.3.2	Alpha + beta alloys	Age-hardened	1050 N/mm² / 320 HB	3.7165	TiAl6V4	Ti-6246	Ti-6Al-2Sn-4Zr-6Mo
		S.3.3	Beta alloys		1400 N/mm² / 410 HB	Ti555.3	Ti-5Al-5V-5Mo-3Cr	R56410	Ti-10V-2Fe-3Al
H	Hardened steel	H.1.1		Hardened and tempered	46–55 HRC				
		H.1.2		Hardened and tempered	56–60 HRC				
		H.1.3		Hardened and tempered	61–65 HRC				
		H.1.4		Hardened and tempered	66–70 HRC				
	Chilled iron	H.2.1		Cast	400 HB				
	Hardened cast iron	H.3.1		Hardened and tempered	55 HRC				
O	Non-metal materials	O.1.1	Plastics, duroplastic		≤ 150 N/mm²				
		O.1.2	Plastics, thermoplastic		≤ 100 N/mm²				
		O.2.1	Aramid fibre-reinforced		≤ 1000 N/mm²				
		O.2.2	Glass/carbon-fibre reinforced		≤ 1000 N/mm²				
		O.3.1	Graphite						

* Tensile strength

Cutting data standard values for EcoCut

Index	EcoCut Mini CTWN425	DRAGONSKIN EcoCut Mini CTPP435	DRAGONSKIN EcoCut Classic CTCP425-P	DRAGONSKIN EcoCut Classic CTCP435-P	DRAGONSKIN EcoCut Classic CTPP430	EcoCut Classic H210T	EcoCut Classic H216T	DRAGONSKIN EcoCut ProfileMaster CTPP430
	v_c in m/min							
P.1.1		145	270	230	180			170
P.1.2		125	235	200	155			140
P.1.3		105	200	165	130			115
P.1.4		100	190	155	125			105
P.1.5		90	175	140	110			95
P.2.1		130	240	200	160			145
P.2.2		100	185	155	120			105
P.2.3		90	175	140	110			95
P.2.4		70	130	105	80			60
P.3.1		105	185	160	115			110
P.3.2		70	135	110	85			75
P.3.3		30	80	60	55			40
P.4.1		105	185	160	115			110
P.4.2		85	160	130	100			95
M.1.1		105	160	160	115			110
M.2.1		65			85			75
M.3.1		95			110			100
K.1.1	140	140	205	185	160	110	170	180
K.1.2	115	120	205	185	140	90	130	260
K.2.1	150	140	200	180	160	120	180	160
K.2.2	110	120	200	180	140	85	130	250
K.3.1	170	150	195	175	125	140	190	130
K.3.2	140	125	195	175	110	110	160	230
N.1.1	300	40			40	40	60	300
N.1.2	50	290			290	290	310	200
N.2.1	300	290			290	290	60	300
N.2.2	300	190			190	190	460	200
N.2.3	450	340			340	340	60	150
N.3.1	350	240			240	240	460	300
N.3.2	350	240			240	240	460	300
N.3.3	250	190			190	190	360	200
N.4.1	200	140			140	140	260	200
S.1.1	40	35		35	55	35	45	35
S.1.2	30	30		30	55	25	35	30
S.2.1	30	20		20	55	25	35	20
S.2.2	25	15		15	55	20	25	15
S.2.3	20	15		15	55	20	20	15
S.3.1	90	85		85	70	65	110	85
S.3.2	55	40		40	60	45	70	40
S.3.3	40	30		30	40	30	50	30
H.1.1								
H.1.2								
H.1.3								
H.1.4								
H.2.1								
H.3.1								
O.1.1	130	110			110	110	155	130
O.1.2								
O.2.1	105	95			95	95	140	105
O.2.2								
O.3.1								

The cutting data is strongly influenced by external conditions, such as the stability of the tool and workpiece clamping, material and type of machine. The specified values represent guideline cutting data that can be adjusted by approx. **±20%** according to the usage conditions.

Cutting data standard values for FreeTurn

Index	F		M		-28P
	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	
	CTCP125	CTPM125	CTCP125	CTPM125	H216T
	v_c in m/min				
P.1.1	**295**	205	**295**	205	
P.1.2	**255**	170	**255**	170	
P.1.3	**215**	140	**215**	140	
P.1.4	**200**	130	**200**	130	
P.1.5	**180**	120	**180**	120	
P.2.1	**260**	175	**260**	175	
P.2.2	**195**	130	**195**	130	
P.2.3	**180**	120	**180**	120	
P.2.4	**130**	80	**130**	80	
P.3.1	**170**	140	**170**	140	
P.3.2	**105**	95	**105**	95	
P.3.3	**45**	50	**45**	50	
P.4.1	**170**	140	**170**	140	
P.4.2	**140**	120	**140**	120	
M.1.1		**140**		**140**	
M.2.1		**100**		**100**	
M.3.1		**130**		**130**	
K.1.1	170		170		170
K.1.2	160		160		130
K.2.1	180		180		180
K.2.2	160		160		130
K.3.1	200		200		190
K.3.2	160		160		160
N.1.1					**1650**
N.1.2					**1350**
N.2.1					**1200**
N.2.2					**1100**
N.2.3					**600**
N.3.1					**525**
N.3.2					**500**
N.3.3					**375**
N.4.1					**275**
S.1.1					45
S.1.2					35
S.2.1					35
S.2.2					25
S.2.3					20
S.3.1					110
S.3.2					70
S.3.3					50
H.1.1					
H.1.2					
H.1.3					
H.1.4					
H.2.1					
H.3.1					
O.1.1					160
O.1.2					
O.2.1					140
O.2.2					
O.3.1					

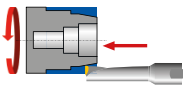
10

The cutting data is strongly influenced by external conditions, such as the stability of the tool and workpiece clamping, material and type of machine. The specified values represent guideline cutting data that can be adjusted by approx. **±20%** according to the usage conditions.

Depth of Cut and Feedrate for EcoCut Mini

Turning

2.25xD

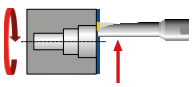


EcoCut Mini Size	Depth of Cut a_p in mm									
	0,25	0,5	0,75	1,0	1,5	2,0	2,5	3,0	3,5	4,0
	Feed rate f in mm/rev.									
ECM 02..	0,02–0,07	0,02–0,07								
ECM 02,5..	0,02–0,07	0,02–0,07	0,02–0,05							
ECM 03..	0,02–0,07	0,02–0,07	0,02–0,05	0,02–0,05						
ECM 03,5..	0,02–0,07	0,02–0,07	0,02–0,05	0,02–0,05	0,02–0,05					
ECM 04..	0,04–0,1	0,04–0,1	0,04–0,1	0,04–0,1	0,03–0,07	0,01–0,05				
ECM 05..	0,04–0,1	0,04–0,1	0,04–0,1	0,04–0,1	0,03–0,08	0,02–0,06	0,01–0,04			
ECM 06..	0,04–0,1	0,04–0,1	0,04–0,1	0,04–0,1	0,04–0,1	0,03–0,08	0,02–0,06	0,01–0,04		
ECM 07..	0,04–0,1	0,04–0,1	0,04–0,1	0,04–0,1	0,04–0,1	0,04–0,1	0,03–0,08	0,02–0,06	0,01–0,04	
ECM 08..	0,04–0,1	0,04–0,1	0,04–0,1	0,04–0,1	0,04–0,1	0,04–0,1	0,04–0,1	0,03–0,08	0,02–0,06	0,01–0,04

4xD

EcoCut Mini Size	Depth of Cut a_p in mm									
	0,25	0,5	0,75	1,0	1,5	2,0	2,5	3,0	3,5	4,0
	Feed rate f in mm/rev.									
ECM 02..	0,02–0,05	0,01–0,05								
ECM 02,5..	0,02–0,05	0,01–0,05								
ECM 03..	0,02–0,05	0,02–0,05	0,01–0,05							
ECM 03,5..	0,02–0,05	0,02–0,05	0,02–0,05	0,01–0,05						
ECM 04..	0,04–0,1	0,04–0,1	0,04–0,1	0,03–0,08	0,01–0,05					
ECM 05..	0,04–0,1	0,04–0,1	0,04–0,1	0,03–0,085	0,02–0,06	0,01–0,04				
ECM 06..	0,04–0,1	0,04–0,1	0,04–0,1	0,03–0,085	0,02–0,06	0,01–0,04				
ECM 07..	0,04–0,1	0,04–0,1	0,04–0,1	0,04–0,1	0,03–0,08	0,02–0,06	0,01–0,04			
ECM 08..	0,04–0,1	0,04–0,1	0,04–0,1	0,04–0,1	0,04–0,095	0,03–0,08	0,02–0,06	0,01–0,04		

Face turning

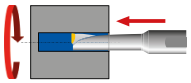


EcoCut Mini Size	2,25xD		4xD	
	$a_{p\,max.}$ in mm	f in mm/rev.	$a_{p\,max.}$ in mm	f in mm/rev.
ECM 02..	0,30	0,01–0,05	0,30	0,01–0,03
ECM 02,5..	0,30	0,01–0,05	0,30	0,01–0,03
ECM 03..	0,50	0,01–0,06	0,50	0,01–0,04
ECM 03,5..	0,50	0,01–0,06	0,50	0,01–0,04
ECM 04..	0,70	0,03–0,07	0,70	0,02–0,05
ECM 05..	0,70	0,03–0,07	0,70	0,02–0,05
ECM 06..	0,70	0,03–0,07	0,70	0,02–0,05
ECM 07..	1,00	0,04–0,08	1,00	0,03–0,06
ECM 08..	1,00	0,04–0,08	1,00	0,03–0,06

Depth of Cut and Feedrate for EcoCut Mini

Drilling

Feed rate



EcoCut Mini Size	2,25xD	4xD
	f in mm/rev.	f in mm/rev.
ECM 02..	0,0025–0,0075	0,0025–0,005
ECM 02,5..	0,0025–0,010	0,0025–0,005
ECM 03..	0,0025–0,0125	0,0025–0,010
ECM 03,5..	0,0025–0,0150	0,0025–0,010
ECM 04..	0,005–0,030	0,005–0,0125
ECM 05..	0,005–0,030	0,005–0,015
ECM 06..	0,005–0,030	0,005–0,020
ECM 07..	0,005–0,035	0,005–0,025
ECM 08..	0,005–0,040	0,005–0,030

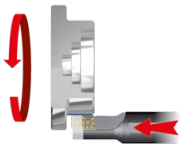
max. bore depth

EcoCut Mini Size	2,25xD	4xD
	Max. hole depth in mm	Max. hole depth in mm
ECM 02..	4,50	8,0
ECM 02,5..	5,63	10,0
ECM 03..	6,75	12,0
ECM 03,5..	7,88	14,0
ECM 04..	9,0	16,0
ECM 05..	11,25	20,0
ECM 06..	13,5	24,0
ECM 07..	15,75	28,0
ECM 08..	18,0	32,0

Depth of Cut and Feedrate for EcoCut Classic

Turning

1.5xD



EcoCut Classic Size	Depth of Cut a_p in mm											
	1	2	3	4	5	6	7	8	9	10	12	14
	Feed rate f in mm/rev.											
ECC 08	0,06–0,12	0,06–0,12	0,04–0,10	0,02–0,08								
ECC 10	0,07–0,15	0,07–0,15	0,05–0,13	0,04–0,11	0,02–0,09							
ECC 12	0,08–0,16	0,08–0,16	0,08–0,16	0,06–0,14	0,04–0,12	0,02–0,10						
ECC 14	0,09–0,18	0,09–0,18	0,09–0,18	0,09–0,18	0,07–0,16	0,05–0,14	0,02–0,11					
ECC 16	0,10–0,20	0,10–0,20	0,10–0,20	0,10–0,20	0,08–0,18	0,06–0,16	0,04–0,14	0,02–0,12				
ECC 18	0,11–0,22	0,11–0,22	0,11–0,22	0,11–0,22	0,11–0,22	0,09–0,20	0,07–0,18	0,05–0,16	0,03–0,13			
ECC 20	0,12–0,24	0,12–0,24	0,12–0,24	0,12–0,24	0,12–0,24	0,11–0,23	0,09–0,21	0,07–0,19	0,05–0,17	0,03–0,15		
ECC 25	0,13–0,26	0,13–0,26	0,13–0,26	0,13–0,26	0,13–0,26	0,13–0,26	0,13–0,26	0,11–0,24	0,09–0,22	0,07–0,20	0,03–0,16	
ECC 32	0,15–0,30	0,15–0,30	0,15–0,30	0,15–0,30	0,15–0,30	0,14–0,30	0,15–0,30	0,15–0,30	0,13–0,28	0,11–0,26	0,07–0,22	0,03–0,18

Feed f may be increased by 50–75 % when using -M50Q and -27Q.

2.25xD

EcoCut Classic Size	Depth of Cut a_p in mm										
	1,0	2,0	2,5	3,0	3,5	4,0	4,5	5,0	5,5	6,0	7,0
	Feed rate f in mm/rev.										
ECC 08	0,06–0,12	0,04–0,10	0,02–0,08								
ECC 10	0,07–0,15	0,05–0,13	0,03–0,11	0,02–0,09							
ECC 12	0,08–0,16	0,08–0,16	0,06–0,14	0,04–0,12	0,02–0,10						
ECC 14	0,09–0,18	0,09–0,18	0,07–0,16	0,05–0,14	0,04–0,13	0,02–0,11					
ECC 16	0,10–0,20	0,10–0,20	0,09–0,19	0,07–0,17	0,05–0,15	0,03–0,13					
ECC 18	0,11–0,22	0,11–0,22	0,11–0,22	0,09–0,20	0,07–0,18	0,05–0,16	0,03–0,14				
ECC 20	0,12–0,24	0,12–0,24	0,12–0,24	0,12–0,24	0,10–0,22	0,08–0,20	0,06–0,18	0,04–0,16			
ECC 25	0,13–0,26	0,13–0,26	0,13–0,26	0,13–0,26	0,13–0,26	0,12–0,25	0,10–0,23	0,08–0,21	0,06–0,19	0,04–0,17	
ECC 32	0,15–0,30	0,15–0,30	0,15–0,30	0,15–0,30	0,15–0,30	0,15–0,30	0,14–0,29	0,12–0,27	0,10–0,25	0,08–0,23	0,05–0,20

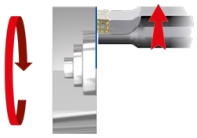
Feed f may be increased by 50–75 % when using -M50Q and -27Q.

3xD

EcoCut Classic Size	Depth of Cut a_p in mm								
	1,0	2,0	2,5	3,0	3,5	4,0	5,0	6,0	7,0
	Feed rate f in mm/rev.								
ECC 08	0,05–0,10	0,02–0,06							
ECC 10	0,06–0,11	0,03–0,07							
ECC 12	0,06–0,12	0,04–0,10	0,02–0,08						
ECC 14	0,07–0,13	0,05–0,11	0,02–0,09						
ECC 16	0,07–0,15	0,06–0,14	0,04–0,12	0,02–0,09					
ECC 18	0,08–0,16	0,08–0,16	0,06–0,14	0,04–0,12					
ECC 20	0,09–0,18	0,09–0,18	0,09–0,18	0,07–0,16	0,05–0,14	0,03–0,12			
ECC 25	0,10–0,19	0,10–0,19	0,10–0,19	0,08–0,17	0,06–0,15	0,03–0,13			
ECC 32	0,11–0,22	0,11–0,22	0,11–0,22	0,11–0,22	0,09–0,20	0,07–0,18	0,03–0,14		

Depth of Cut and Feedrate for EcoCut Classic

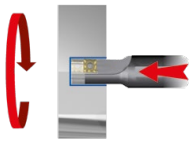
Face turning



EcoCut Classic Size	1,5xD		2,25xD		3xD	
	a_p in mm	f in mm/rev.	a_p in mm	f in mm/rev.	a_p in mm	f in mm/rev.
ECC 08	2,00	0,05–0,10	1,90	0,04–0,09	1,10	0,04–0,07
ECC 10	2,50	0,06–0,12	2,20	0,05–0,10	1,20	0,04–0,09
ECC 12	3,00	0,07–0,14	2,60	0,06–0,12	1,40	0,05–0,11
ECC 14	3,50	0,08–0,16	3,00	0,07–0,14	1,60	0,06–0,12
ECC 16	4,00	0,09–0,18	3,40	0,08–0,16	1,90	0,06–0,13
ECC 18	4,50	0,10–0,20	3,80	0,09–0,18	2,00	0,07–0,14
ECC 20	5,00	0,11–0,22	4,20	0,10–0,20	2,20	0,08–0,15
ECC 25	6,00	0,12–0,24	5,00	0,11–0,22	2,60	0,09–0,18
ECC 32	8,00	0,13–0,27	6,00	0,12–0,25	3,00	0,10–0,20

Drilling

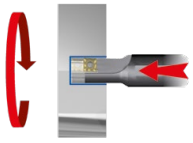
Feed rate



EcoCut Classic Size	1,5xD	2,25xD	3xD
	f in mm/rev.	f in mm/rev.	f in mm/rev.
ECC 08	0,01–0,04	0,01–0,04	0,01–0,02
ECC 10	0,01–0,05	0,01–0,05	0,01–0,03
ECC 12	0,01–0,05	0,01–0,05	0,01–0,04
ECC 14	0,01–0,07	0,01–0,07	0,01–0,05
ECC 16	0,02–0,08	0,02–0,08	0,02–0,06
ECC 18	0,03–0,09	0,03–0,09	0,03–0,07
ECC 20	0,03–0,10	0,03–0,10	0,03–0,08
ECC 25	0,03–0,12	0,03–0,12	0,04–0,09
ECC 32	0,05–0,15	0,05–0,15	0,05–0,11

10

max. bore depth

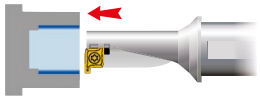


EcoCut Classic Size	1,5xD	2,25xD	3xD
	Max. hole depth in mm	Max. hole depth in mm	Max. hole depth in mm
ECC 08	12,0	18,0	24,0
ECC 10	15,0	22,5	30,0
ECC 12	18,0	27,0	36,0
ECC 14	21,0	31,5	42,0
ECC 16	24,0	36,0	48,0
ECC 18	27,0	40,5	54,0
ECC 20	30,0	45,0	60,0
ECC 25	37,5	56,5	75,0
ECC 32	48,0	72,0	96,0

Depth of Cut and Feedrate for EcoCut ProfileMaster 90°

Turning

1,5xD



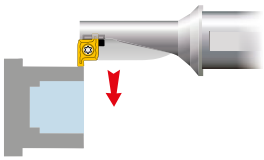
EcoCut ProfileMaster Size	Depth of Cut a_p in mm							
	1	2	3	4	5	6	7	8
	Feed rate f in mm/rev.							
EC PM 10	0,07–0,20	0,05–0,17	0,02–0,12					
EC PM 12	0,07–0,20	0,05–0,17	0,02–0,12					
EC PM 16	0,10–0,25	0,07–0,23	0,05–0,21	0,02–0,17				
EC PM 20	0,12–0,27	0,10–0,26	0,007–0,24	0,05–0,20	0,02–0,14			
EC PM 25	0,15–0,30	0,15–0,30	0,13–0,28	0,10–0,26	0,05–0,22	0,02–0,18		
EC PM 32	0,15–0,30	0,15–0,30	0,15–0,30	0,15–0,30	0,10–0,27	0,07–0,24	0,05–0,21	0,02–0,15

2,25xD

EcoCut ProfileMaster Size	Depth of Cut a_p in mm							
	1	2	3	4	5	6	7	8
	Feed rate f in mm/rev.							
EC PM 10	0,07–0,19	0,02–0,13						
EC PM 12	0,07–0,19	0,02–0,13						
EC PM 16	0,10–0,25	0,07–0,21	0,02–0,13					
EC PM 20	0,12–0,27	0,07–0,24	0,05–0,19					
EC PM 25	0,15–0,30	0,10–0,27	0,07–0,23	0,02–0,15				
EC PM 32	0,15–0,30	0,15–0,30	0,10–0,27	0,07–0,23	0,02–0,15			

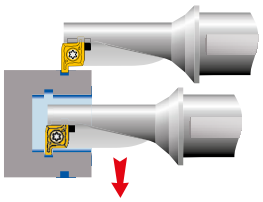
Face turning

1.5xD and 2.25xD



EcoCut ProfileMaster Size	Depth of Cut a_p in mm					
	1,0	1,5	2,0	2,5	3,0	3,5
	Feed rate f in mm/rev.					
EC PM 10	0,02–0,15	0,02–0,15				
EC PM 12	0,02–0,15	0,02–0,15				
EC PM 16	0,05–0,20	0,05–0,20	0,05–0,20			
EC PM 20	0,08–0,22	0,08–0,22	0,08–0,22	0,08–0,22		
EC PM 25	0,10–0,25	0,10–0,25	0,10–0,25	0,10–0,25	0,10–0,25	
EC PM 32	0,10–0,25	0,10–0,25	0,10–0,25	0,10–0,25	0,10–0,25	0,10–0,25

Internal + external – radial grooving

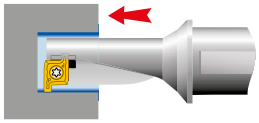


EcoCut ProfileMaster Size	1,5xD
	f in mm/rev.
EC PM 10	0,01–0,08
EC PM 12	0,02–0,10
EC PM 16	0,04–0,15
EC PM 20	0,04–0,16
EC PM 25	0,07–0,20
EC PM 32	0,08–0,22

EcoCut ProfileMaster Size	2,25xD
	f in mm/rev.
EC PM 10	0,01–0,08
EC PM 12	0,02–0,10
EC PM 16	0,04–0,15
EC PM 20	0,04–0,16
EC PM 25	0,07–0,20
EC PM 32	0,08–0,22

Drilling

Feed and max. hole depth



EcoCut ProfileMaster Size	1,5xD	
	f in mm/rev.	Max. hole depth in mm
EC PM 10	0,01–0,05	15,0
EC PM 12	0,01–0,06	18,0
EC PM 16	0,02–0,09	24,0
EC PM 20	0,03–0,10	30,0
EC PM 25	0,04–0,12	37,5
EC PM 32	0,04–0,14	48,0

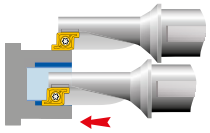
EcoCut ProfileMaster Size	2,25xD	
	f in mm/rev.	Max. hole depth in mm
EC PM 10	0,01–0,05	22,5
EC PM 12	0,01–0,06	27,0
EC PM 16	0,02–0,09	36,0
EC PM 20	0,03–0,10	45,0
EC PM 25	0,04–0,12	56,3
EC PM 32	0,04–0,14	72,0

Depth of Cut and Feedrate for EcoCut ProfileMaster 0°

EcoCut ProfileMaster Sizes 10 and 12 can not be used as 0° version.

Turning

1,5xD



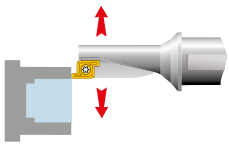
EcoCut ProfileMaster Size	Depth of cut a_p in mm					
	1,0	1,5	2,0	2,5	3,0	3,5
	Feed rate f in mm/rev.					
EC PM 16	0,04–0,20	0,04–0,20	0,04–0,20			
EC PM 20	0,06–0,22	0,06–0,22	0,06–0,22	0,06–0,22		
EC PM 25	0,08–0,25	0,08–0,25	0,08–0,25	0,08–0,25	0,08–0,25	
EC PM 32	0,10–0,28	0,10–0,28	0,10–0,28	0,10–0,28	0,10–0,28	0,10–0,28

2,25xD

EcoCut ProfileMaster Size	Depth of cut a_p in mm					
	1,0	1,5	2,0	2,5	3,0	3,5
	Feed rate f in mm/rev.					
EC PM 16	0,04–0,20	0,04–0,20	0,04–0,20			
EC PM 20	0,06–0,22	0,06–0,22	0,06–0,22	0,06–0,22		
EC PM 25	0,08–0,25	0,08–0,25	0,08–0,25	0,08–0,25	0,08–0,25	
EC PM 32	0,10–0,28	0,10–0,28	0,10–0,28	0,10–0,28	0,10–0,28	0,10–0,28

Face turning

1,5xD

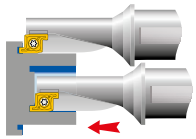


EcoCut ProfileMaster Size	Depth of cut a_p in mm						
	1,0	1,5	2,0	2,5	3,0	3,5	4,0
	Feed rate f in mm/rev.						
EC PM 16	0,05–0,20	0,05–0,20	0,05–0,20				
EC PM 20	0,05–0,20	0,05–0,20	0,05–0,20	0,05–0,20			
EC PM 25	0,10–0,25	0,10–0,25	0,10–0,25	0,10–0,25	0,10–0,25		
EC PM 32	0,10–0,25	0,10–0,25	0,10–0,25	0,10–0,25	0,10–0,25	0,10–0,25	0,10–0,25

2,25xD

EcoCut ProfileMaster Size	Depth of cut a_p in mm						
	1,0	1,5	2,0	2,5	3,0	3,5	4,0
	Feed rate f in mm/rev.						
EC PM 16	0,05–0,20	0,05–0,20	0,05–0,20				
EC PM 20	0,05–0,20	0,05–0,20	0,05–0,20	0,05–0,20			
EC PM 25	0,10–0,25	0,10–0,25	0,10–0,25	0,10–0,25	0,10–0,25		
EC PM 32	0,10–0,25	0,10–0,25	0,10–0,25	0,10–0,25	0,10–0,25	0,10–0,25	0,10–0,25

Axial grooving external + internal



EcoCut ProfileMaster Size	1,5xD
	Feed rate f in mm/rev.
EC PM 16	0,02–0,12
EC PM 20	0,04–0,14
EC PM 25	0,06–0,18
EC PM 32	0,08–0,20

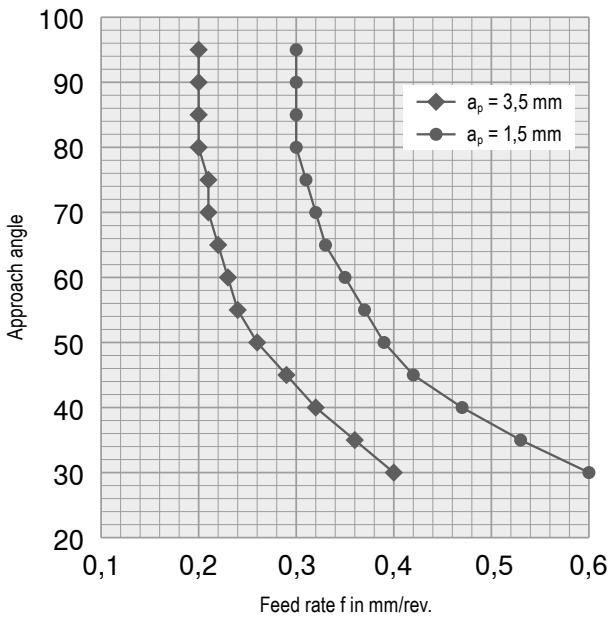
EcoCut ProfileMaster Size	2,25xD
	Feed rate f in mm/rev.
EC PM 16	0,02–0,12
EC PM 20	0,04–0,14
EC PM 25	0,06–0,18
EC PM 32	0,08–0,20

10

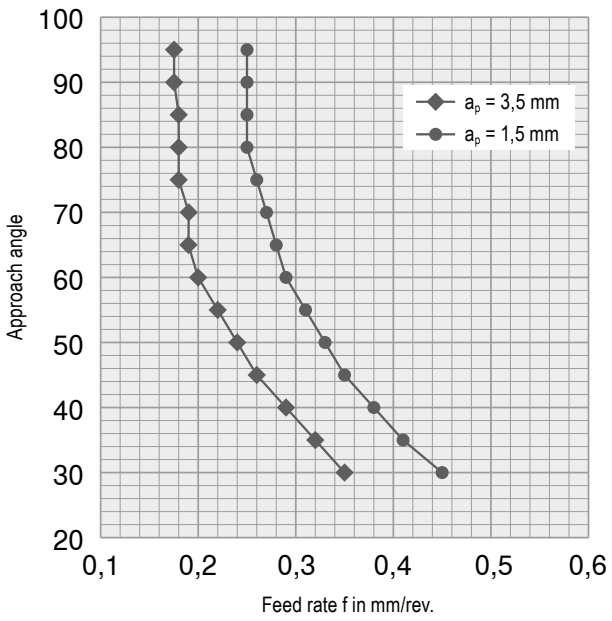
Initial curves for FreeTurn

	Material				Inserts		v_c in m/min	Cooling
Steel	1.7225	42CrMo4	1010 N/mm²	P.2.3	FT1x M 80xxxxR08 -M	CTCP125	200	Emulsion
Stainless steel	1.4301	X5CrNi18-10	610 N/mm²	M.1.1	FT1x M 80xxxxR08 -M	CTPM125	140	Emulsion
Non-ferrous metals	3.2341	G-AlSi 5 Mg	200 N/mm²	N2.2	FT1x G 35xxxxR08-28P	H210T	1100	Emulsion

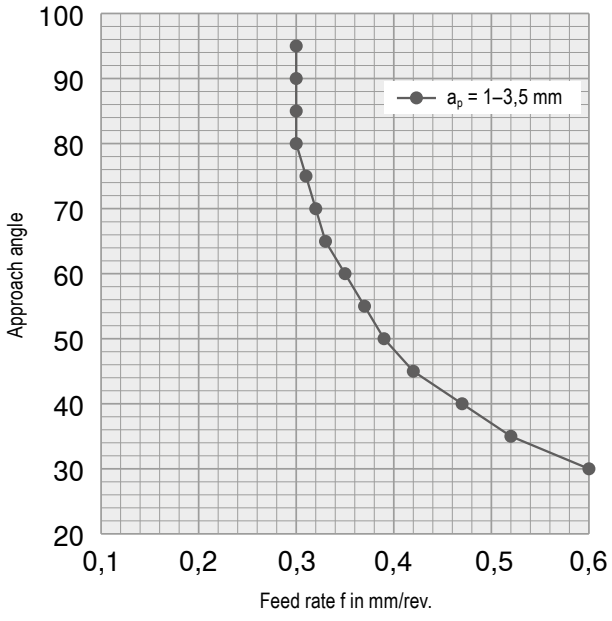
Steel



Stainless steel

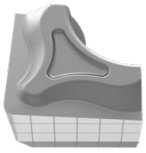
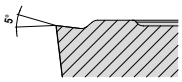
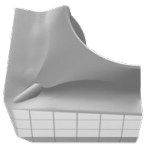
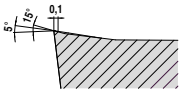
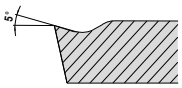
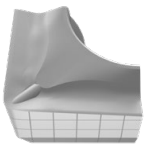
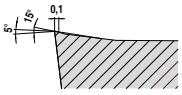


Non-ferrous metals

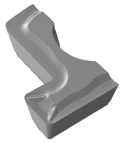
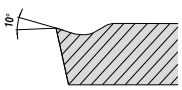


Chip Breakers Overview

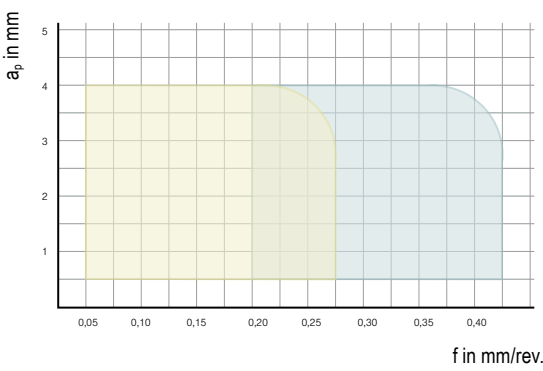
EcoCut Classic

	Model	Smooth cut ○	Irregular cutting depth ◔	Interrupted cut ◌	Sectional illustration f mm
-EN ▲ Universal geometry ▲ Excellent chip breakage ▲ Positive cutting edge ▲ Low to medium feeds		**CTCP425-P** **CTCP425-P / CTPP430** CTCP425-P CTPP430 CTCP435-P / CTPP430 CTCP435-P / CTPP430	**CTCP435-P / CTPP430** **CTPP430** CTCP435-P / CTPP430 CTPP430 CTCP435-P / CTPP430 CTCP435-P / CTPP430	**CTPP430 / CTCP435-P** **CTPP430** CTCP435-P CTPP430 CTCP435-P CTCP435-P	 0,05–0,275
-M50Q ▲ With wiper geometry ▲ Excellent surface qualities ▲ Good chip formation ▲ Medium to high feeds		**CTCP425-P** CTCP425-P CTCP425-P	**CTCP425-P** CTCP425-P		 0,2–0,425
-27P ▲ Positive cutting edge ▲ Periphery ground ▲ Polished rake face ▲ First choice for non-ferrous metals		**H216T** **H216T** H216T H216T	**H216T** **H216T** H216T H216T	**H216T** **H216T** 	 0,1–0,4
-27Q ▲ With wiper geometry ▲ Extremely positive geometry ▲ Periphery ground ▲ Low adhesion		H210T **H210T** **H210T** H210T	H210T **H210T** **H210T** H210T		 0,2–0,5

EcoCut ProfileMaster

	Model				
-M20 ▲ Positive geometry ▲ Universal application ▲ Low to medium feeds		**CTPP430** **CTPP430** CTPP430 CTPP430 **CTPP430** CTPP430	**CTPP430** **CTPP430** CTPP430 CTPP430 **CTPP430** CTPP430	**CTPP40** **CTPP430** CTPP430 CTPP430 CTPP430	 0,05–0,25

Application area of -EN and -M50Q chip breakers



EcoCut Classic 2.25xD – ECC16 – XCNT 080304

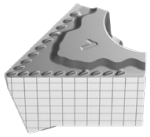
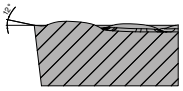
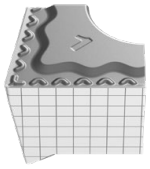
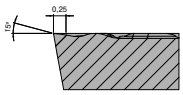
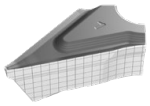
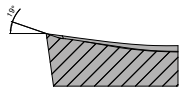
= -M50Q

= Standard

10

Chip Breakers Overview

FreeTurn

	Model	Smooth cut	Irregular cutting depth	Interrupted cut	Sectional illustration
					f mm
-F ▲ Traditional finishing geometry ▲ High surface quality ▲ First choice for finishing steel		**CTCP125** CTCP125	**CTCP125** CTCP125		 0–6
-M ▲ Average to rough machining ▲ Aggressive chip breaker		CTPM125 **CTPM125**	CTPM125 **CTPM125**		 0–6
-28P ▲ Traditional finishing geometry ▲ Sharp cutting edge ▲ First choice for aluminium		 H216T **H216T** H216T H216T	 H216T **H216T** H216T H216T	 H216T **H216T** 	 0–1,8

EcoCut Classic – Application as the most stable boring tool

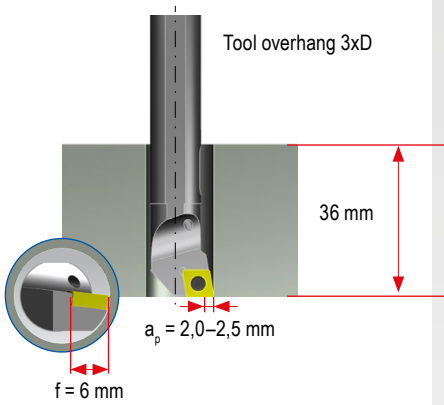
EcoCut can be used not only as a multifunctional tool. In comparison with a boring bar EcoCut used as a pure boring tool gives the user enormous benefits.

Example: machining bores, 16 mm diameter by 36 mm depth

Differences in the tool

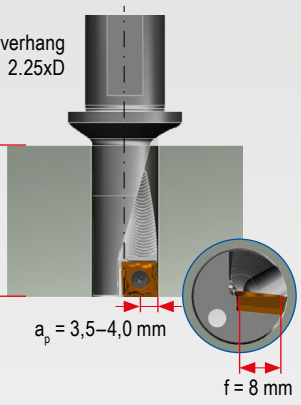
Boring Bar

A12K SCFCR 06



EcoCut Classic

ECC 16R-2.25D 08



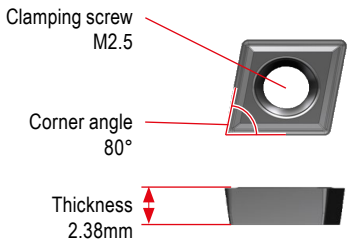
Your Advantages

Large, stable toolholder
- Absorption of high cutting forces
- Low vibration
- Chip Booster for perfect cooling and chip evacuation

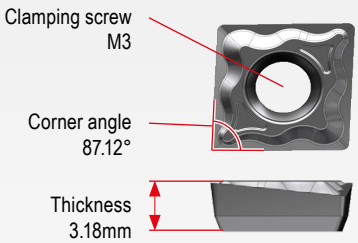
Benefits
- High surface quality
- Perfect chip control
- Max. process security

Differences in the insert

CCMT 060204



XCNT 080304

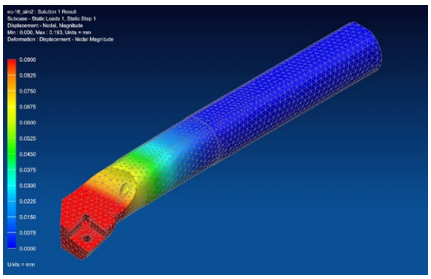


Large and stable insert
- Increased process security
- Enables large depths of cut
- Higher cutting data
- Higher tool life

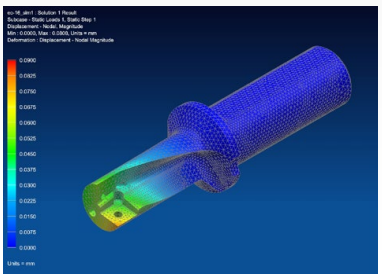
Benefits
- Reduction in machining time
- Increased productivity
- Reduced tooling costs

Stability Comparison

Calculation using FEM
A load of 1000 N on the insert seat corresponds to an approx. a_p of 2.0 mm and f 0.2 mm



Deflection 0.19mm

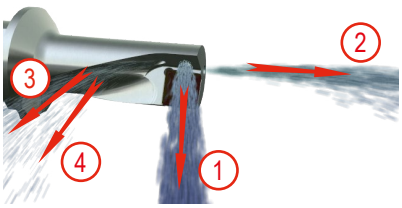


Deflection 0.08mm

Practical experience shows:

- Reduced machining time by up to **75 %**
- Increase in tool life by **400 %** possible

Innovative chip removal – Chip-Booster



EcoCut tools are equipped with a unique coolant and chip removal system.

1. Cooling of the indexable insert
2. General coolant stream
3. Chip booster for improved chip transport
4. Chip booster prevents chips from getting stuck between tool and workpiece

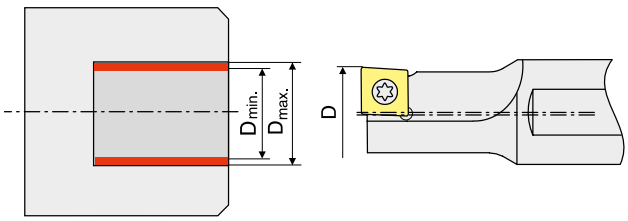
For maximum chip transport efficiency when drilling, coolant pressure must be 3–6 bar minimum (optimal 7–10 bar).

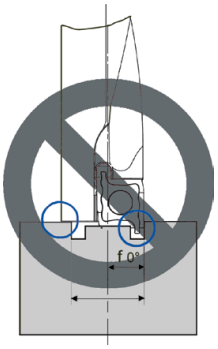
10

Application Tips

Drilling Off centre

Due to the special construction of the EcoCut tool and insert, off-centre drilling is possible.
Deviations from the tool nominal Ø, can be achieved (see adjacent table).





ProfileMaster 0°
Not suitable for drilling!

EcoCut Mini	Tool nominal-Ø	Work piece bore Ø	
	D in mm	$D_{min.}$ in mm	$D_{max.}$ in mm
ECM 02 L/R - ...D	2	1,95	2,1
ECM 02,5 L/R - ...D	2,5	2,45	2,6
ECM 03 L/R - ...D	3	2,95	3,15
ECM 03,5 L/R - ...D	3,5	3,45	3,65
ECM 04 R/L - ...D	4	3,90	4,20
ECM 05 R/L - ...D	5	4,90	5,20
ECM 06 R/L - ...D	6	5,90	6,20
ECM 07 R/L - ...D	7	6,90	7,20
ECM 08 R/L - ...D	8	7,90	8,20

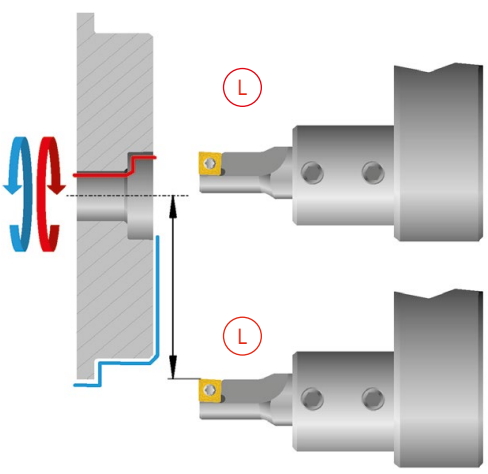
EcoCut Classic	Tool nominal-Ø	Work piece bore Ø	
	D in mm	$D_{min.}$ in mm	$D_{max.}$ in mm
ECC 08 R/L - ... 04	8	7,85	8,30
ECC 10 R/L - ... 05	10	9,85	10,50
ECC 12 R/L - ... 06	12	11,85	12,50
ECC 14 R/L - ... 07	14	13,85	14,50
ECC 16 R/L - ... 08	16	15,85	16,50
ECC 18 R/L - ... 09	18	17,85	18,50
ECC 20 R/L - ... 10	20	19,80	20,50
ECC 25 R/L - ... 13	25	24,80	25,80
ECC 32 R/L - ... 17	32	31,80	33,00

EcoCut ProfileMaster	Tool nominal-Ø	Work piece bore Ø	
	D in mm	$D_{min.}$ in mm	$D_{max.}$ in mm
PM 10R/L ...	10	9,85	12
PM 12R/L ...	12	11,85	15
PM 16R/L ...	16	15,85	19
PM 20R/L ...	20	19,80	24
PM 25R/L ...	25	24,80	29
PM 32R/L ...	32	31,80	38

Machining over centre

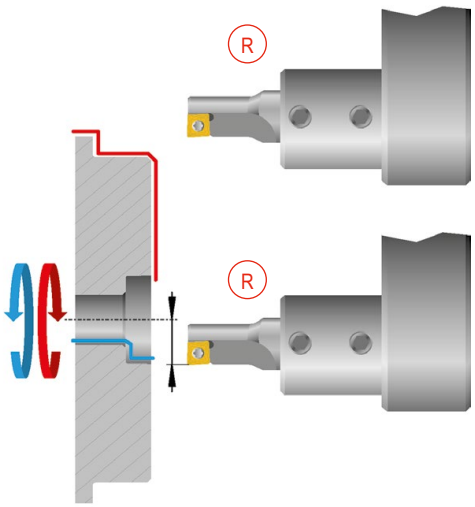
Problem

In case of insufficient movement of the machine across the centre line, the external diameter can not be machined with the same tool.



Solution

Use a right hand EcoCut tool.

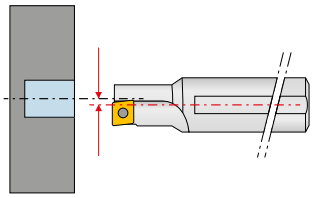


Application Tips

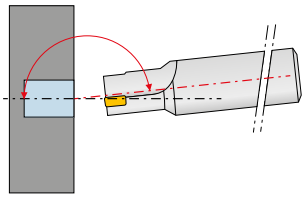
With axial displacement there is the danger of collision!

Problems

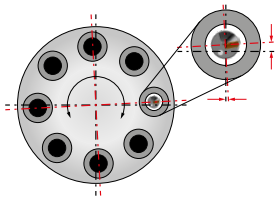
Displacement in x-direction:



Angular error:



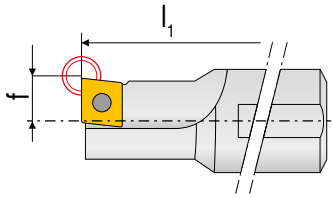
Turret position error:



Remedy

When pre-setting the tool:

▲ Definition as an internal turning tool for programming

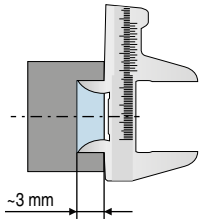


▲ Enter the tool nominal Ø as bore target Ø

At the machine:

▲ Make measuring cut, approx. 3 mm deep

▲ Measure drilled diameter produced

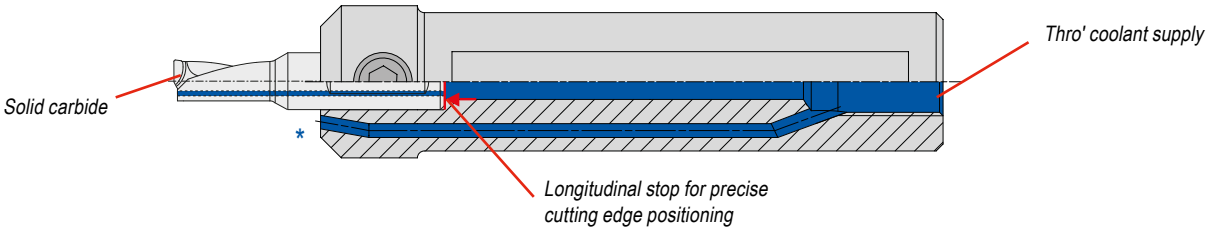


▲ If necessary correct drilling Ø

▲ Start machining

10

EcoCut Mini adapter – Design

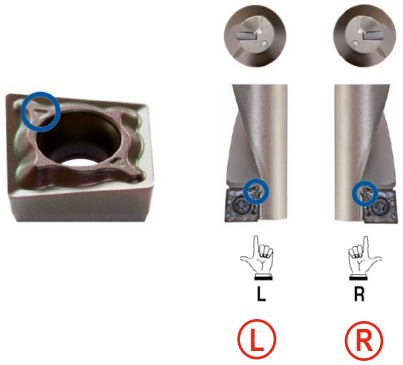


* Cross-section rotated by 90° for clarity

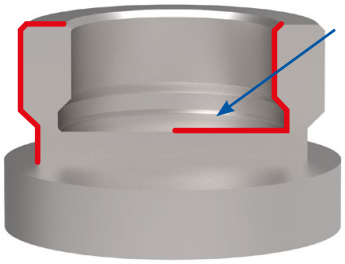
Mounting of the insert for EcoCut Classic

For tools up to Ø 8 mm right and left handed inserts are required.
From Ø 10-32 mm neutral inserts are used.

Note!
Ensure correct installation position.

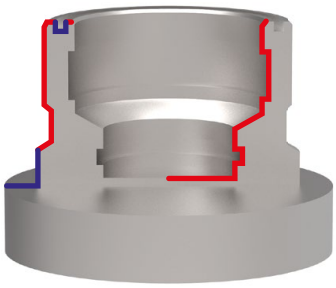


EcoCut ProfileMaster – the highlight with regard to efficiency



Right hand tool

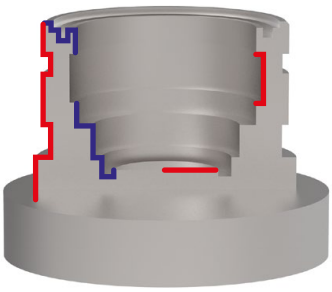
right hand insert



Right hand tool

left hand insert

right hand insert

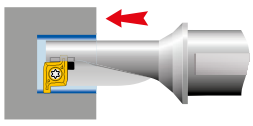


Left hand tool

Right hand tool

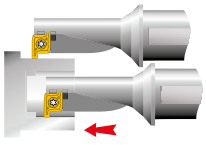
right hand insert

Version 90°



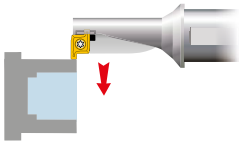
Drilling into solid material with flat bottom hole

Boring

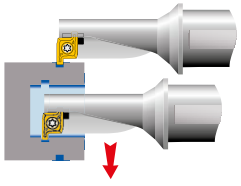


Turning External Diameters

Turning Internal Diameters



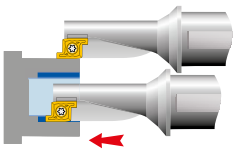
Turning Profiles



External radial grooving

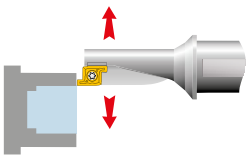
Internal radial grooving

Version 0°

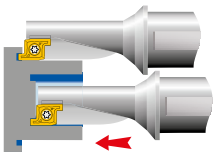


Turning External Diameters

Turning Internal Diameters



Turning Profiles



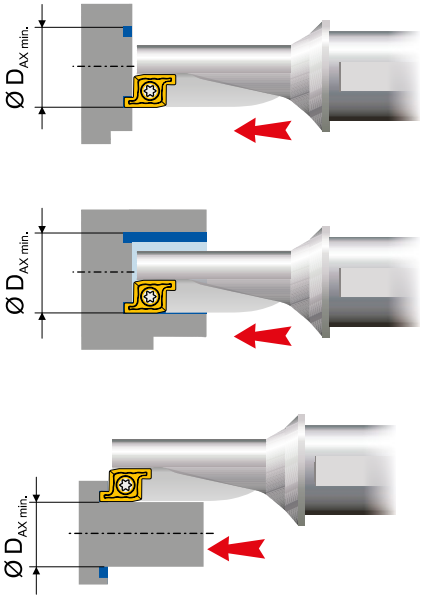
Axial grooving external

Axial grooving internal

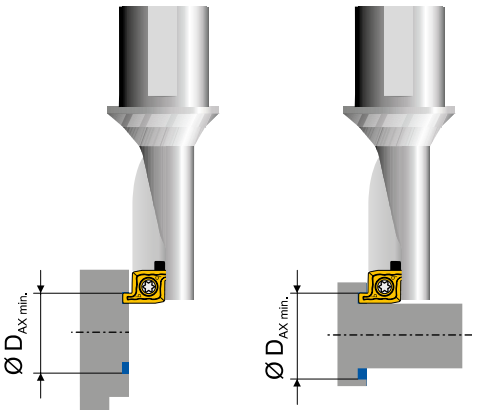
For maximum chip transport efficiency when drilling, coolant pressure must be 3–6 bar minimum (optimal 7–10 bar).

EcoCut ProfileMaster – Axial Grooving

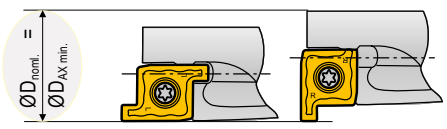
0° (from Ø 16 mm)



90°



EcoCut ProfileMaster	$ØD_{noml.}$ mm	$ØD_{AX\ min.}$ mm	$ØD_{AX\ max.}$ mm
PM 10R/L 1,5D	10	10	> 10
PM 10R/L 2,25D	10	10	> 10
PM 12R/L 1,5D	12	12	> 12
PM 12R/L 2,25D	12	12	> 12
PM 16R/L 1,5D	16	16	> 16
PM 16R/L 2,25D	16	16	> 16
PM 20R/L 1,5D	20	20	> 20
PM 20R/L 2,25D	20	20	> 20
PM 25R/L 1,5D	25	25	> 25
PM 25R/L 2,25D	25	25	> 25
PM 32R/L 1,5D	32	32	> 32
PM 32R/L 2,25D	32	32	> 32

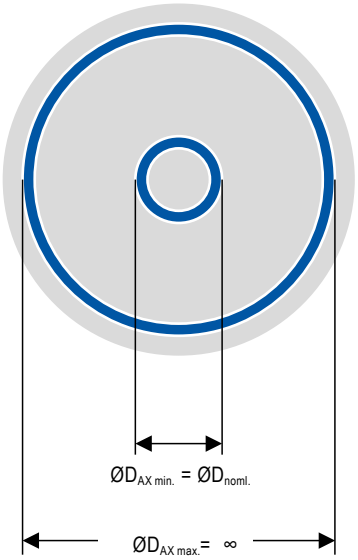


$ØD_{noml.}$ = Nominal tool diameter

$ØD_{AX\ min.}$ = smallest diameter for axial grooving

$ØD_{AX\ max.}$ = largest diameter for axial grooving

$ØD_{AX\ min.} = ØD_{noml.}$



10

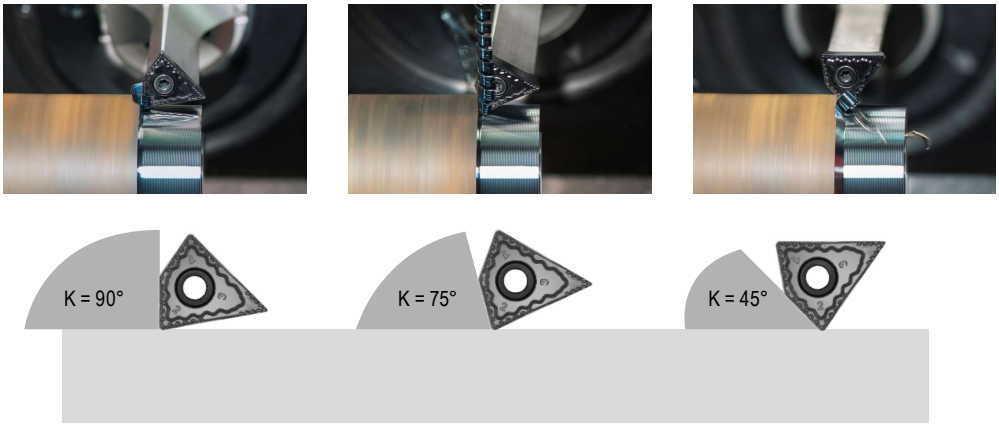
Application Tips

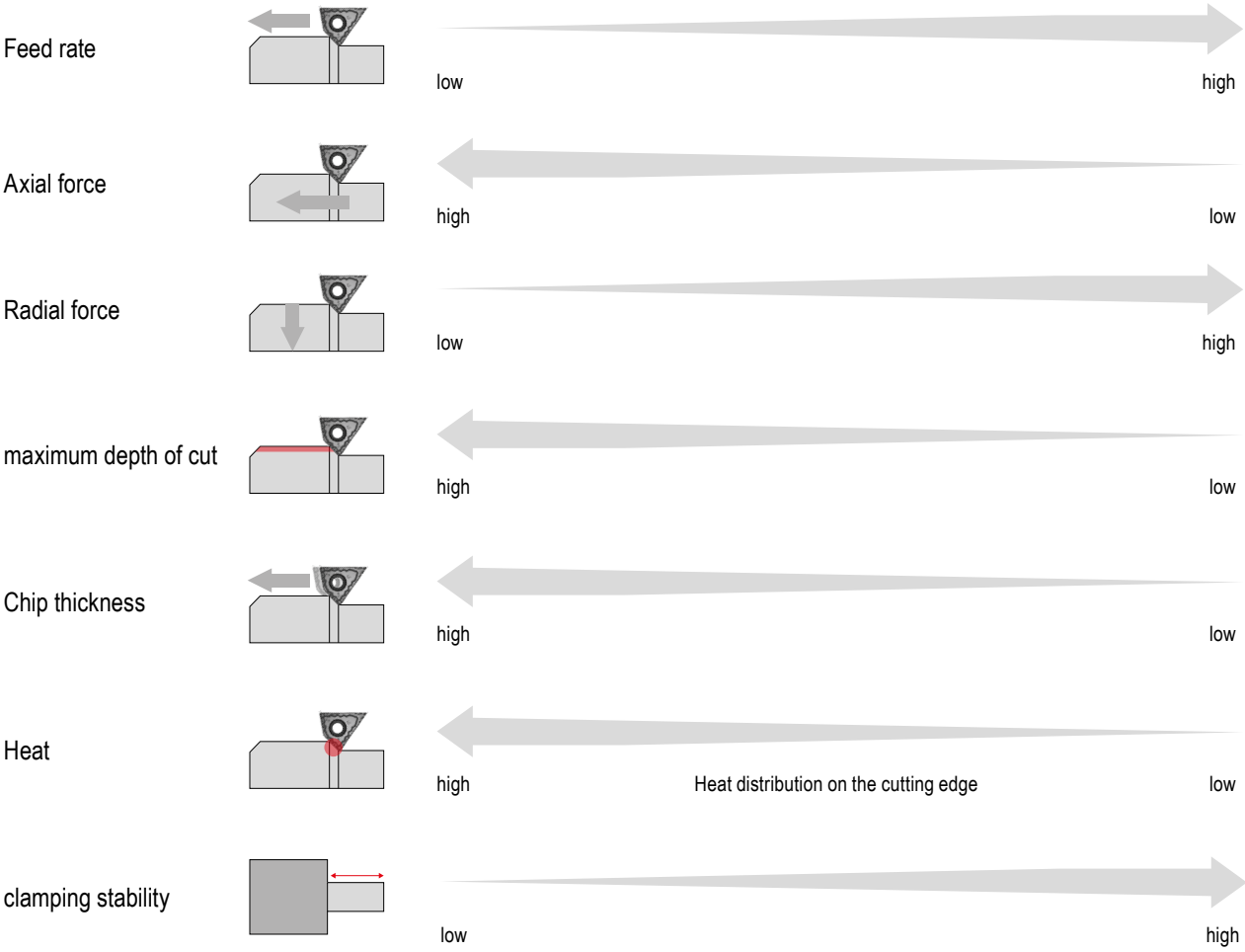
Recommendation for Optimum Results

Type of problem										
Type of wear				Work piece problems		Swarf control				
Edge breakage	Built-up edge	Wear on clearance face	Plastic deformation	Vibration	Surface quality	Chip too long (snarl chip)	Chip too short (fragmented chip)	Remedy measures		
	↑	↓	↓	↓	↑	↓			Cutting data	Cutting speed
↓		~	↓	↑	↓	↑	↓			Feed rate
↑		↑	↑	↓	↑				Insert selection	Corner radius (larger ↑ / smaller ↓)
↓		↑	↑							Tool Material (Wear resistance ↑ / toughness ↓)
~				~	~				General criteria	Tool clamping
~				~	~					Work piece clamping
~				~	↓					Overhang
~		~		~	~					Tip height
	●	●	●		●	●				Cooling lubricant

↑ raise, increase large influence
↑ raise, increase small influence
↓ avoid, reduce large influence
↓ avoid, reduce small influence
~ control, optimize
● use

Factors influencing the selection of the correct cutting angle





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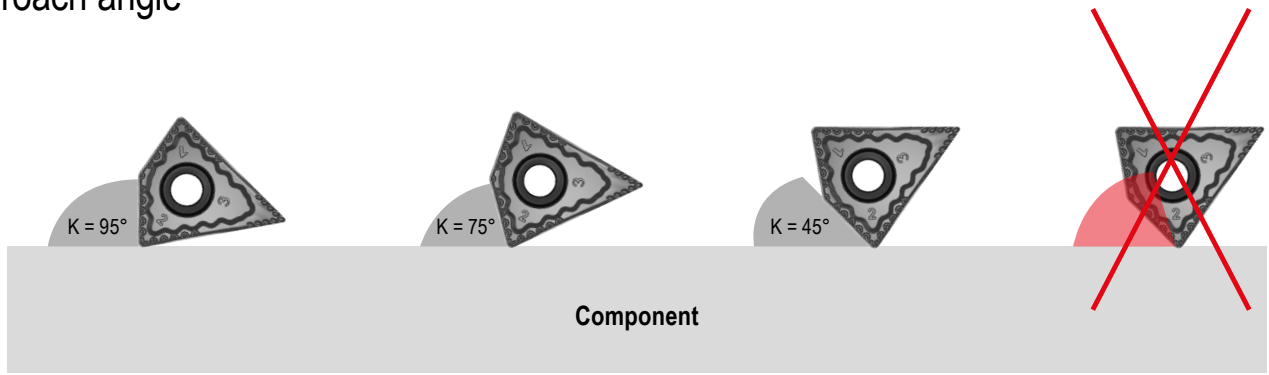
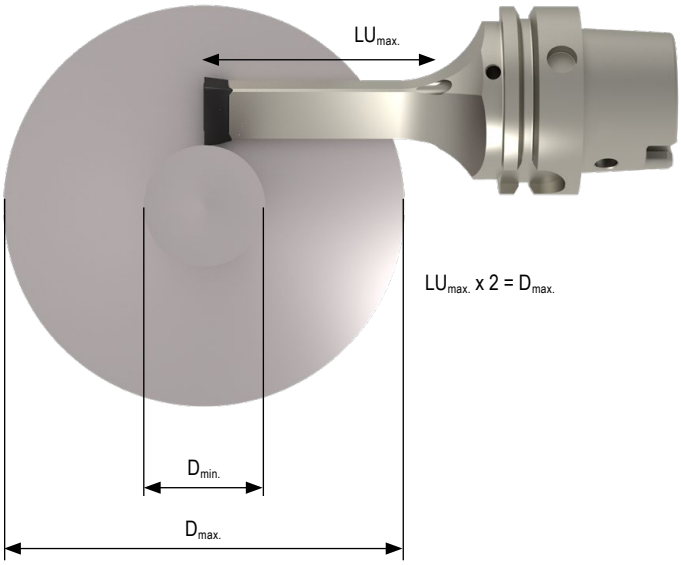
Approach angle



The approach angle always works from the edge of the component to the main cutting edge (tool).

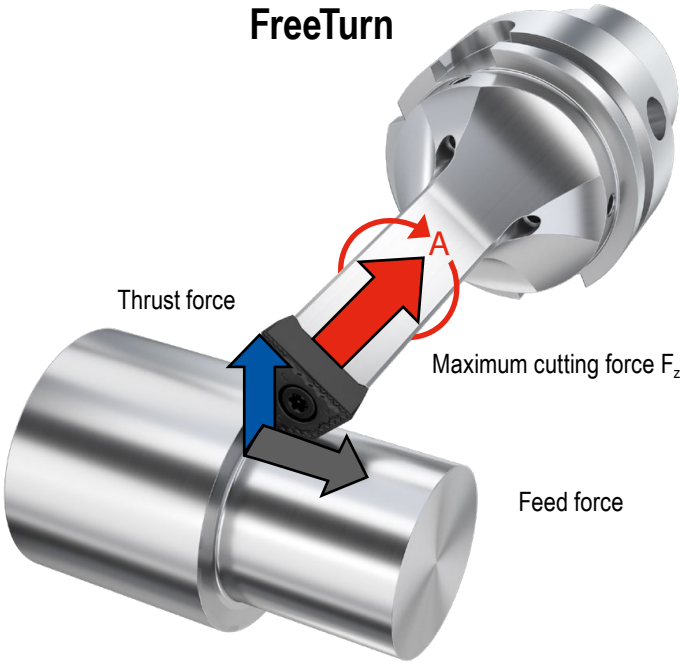
Tool / workpiece length ratio

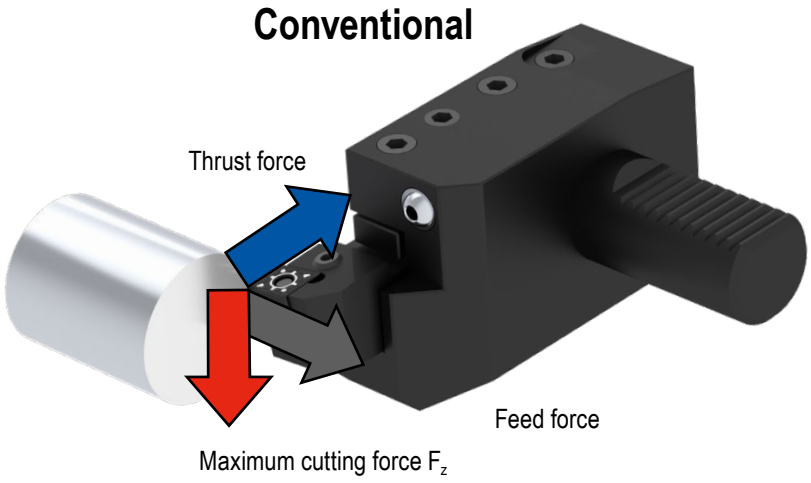


This table shows the diameter ranges you can work in with the different tool lengths.

Tool	$D_{max.}$ in mm	200	190	180	170	160	150	140	130	120	110	100	90	80
PSC-63-**100**-FT 808055	$D_{min.}$ in mm					127	115	102	88	73	56	34	0	0
PSC-63-**125**-FT 808055	$D_{min.}$ in mm	138	125	110	90	70	42	0	0	0	0	0	0	0

Force data from the process





Practical test	
Steel machining shaft Ø 60 mm 1.7227 / 42CrMoS4 R_m 850 Nm	Cutting data: v_c = 175 m/min. f = 0.3 mm/rev. a_p = 3.0 mm K = 95°

FreeTurn		Conventional
2136 N	F XYZ	2206 N
920 N	F XY (feed force)	2143 N
1928 N	Maximum cutting force F_z	526 N

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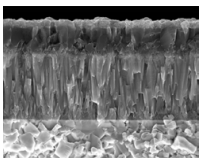
Grade description

EcoCut Classic

CTCP425-P

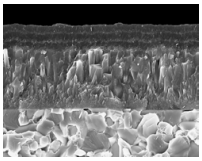


ISO **P25** | M20 | K30

Specification:
Composition: Co 7.0%; mixed carbides 8.1%; WC balance | Grain size: 1-2 µm | Hardness: HV_{30} 1470 |
Coating specification: CVD Ti(CN) + Al_2O_3 multi-layer

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

CTCP435-P

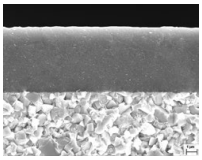


ISO **P35** | M30 | K40 | S25

Specification:
Composition: Co 9.6%; mixed carbides 7.8%; others 0.4%; WC balance | Grain size: 1-2 µm | Hardness: HV_{30} 1400 |
Coating specification: CVD Ti(C,N) + Al_2O_3 multi-layer

Recommended application:
The reliable choice when machining steel and cast iron under unstable conditions.

CTPP430

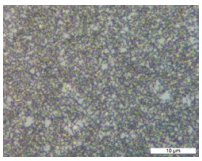


ISO | **P30** | **M25** | K30 | N25 | S25 | O25

Specification:
Composition: Co 9.0%; others 0.75%; WC balance | Grain size: 0.85 µm | Hardness: HV_{30} 1590 | Coating specification: PVD TiAlN

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

H210T

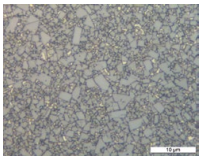


ISO | K10 | **N10** | **S10** | O10

Specification:
Composition: Co 6.0%; WC balance | Grain size: 0.8 µm | Hardness: HV_{30} 1850

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

H216T



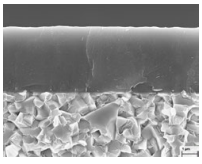
ISO | K15 | **N15** | S15 | O10

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

EcoCut Mini

CTPP435

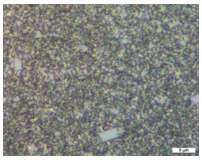


ISO **P35** | **M30** | K30 | N30 | **S30** | O30

Specification:
Composition: Co 10.3%; others 1.2%; WC balance | Grain size: 0.7 µm | Hardness: HV_{30} 1600 | Coating specification: PVD TiN / TiAlN

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

CTWN425



ISO K20 | **N25** | S25 | O25

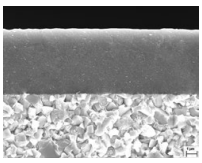
Specification:
Composition: Co 10.3%; others 1.2%; WC balance | Grain size: 0.7 µm (submicron grade) | Hardness: HV_{30} 1600

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

Grade description

EcoCut ProfileMaster

CTPP430



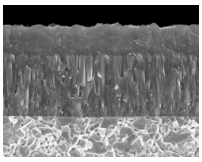
ISO | **P30** | **M25** | K30 | N25 | S25 | O25

Specification:
Composition: Co 9.0%; others 0.75%; WC balance | Grain size: 0.85 µm | Hardness: HV_{30} 1590 | Coating specification: PVD TiAlN

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

FreeTurn

CTCP125

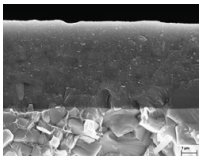


ISO | **P25** | K25

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

CTPM125

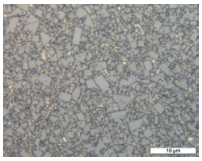


ISO | P35 | **M25**

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

H216T



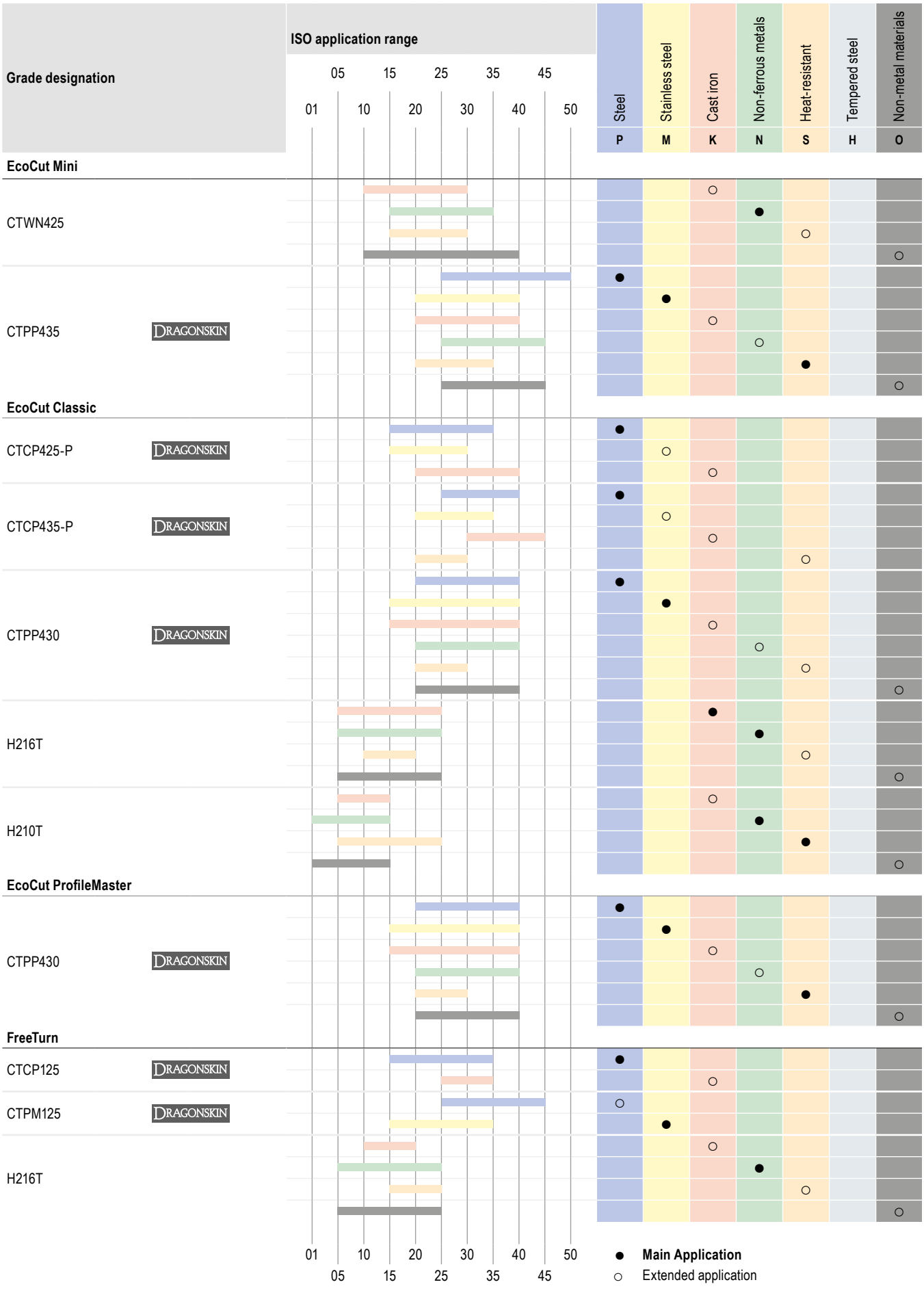
ISO | K15 | **N15** | S15 | O10

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

10

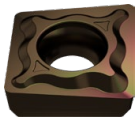
Application



Designation System

EcoCut – indexable insert designation

X	C	E	T		17	05	08	F	N	-	27P
1	2	3	4		5	6	7	8	9		10



1 Insert shape
2 Clearance angle
3 Tolerances
4 Characteristics
5 Cutting length
6 Insert thickness
7 Corner radius
8 Cutting edge
9 Direction of cut
10 Chip groove

EcoCut – holder designation

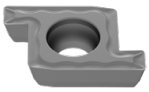
ECC	32	R	-	3.0D	17	H
1	2	3		4	5	6

1 System
2 Nominal diameter in mm
3 Direction of cut
4 maximum hole depth
5 insert size
6 Tool holder version in Densimet

10

EcoCut ProfileMaster – indexable insert designation

PM	25	R	G	35	30	04	-	M20
1	2	3	4	5	6	7		8



1 ProfileMaster
2 Nominal diameter in mm
3 Direction of cut
4 Version
5 Groove width in mm/10
6 Groove depth in mm/10
7 Corner radius
8 Chip groove

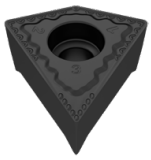
EcoCut ProfileMaster – holder designation

PMC	25	R	-	2.25D
1	2	3		4

1 ProfileMaster
2 Nominal diameter in mm
3 Direction of cut
4 maximum hole depth

Designation System

FreeTurn – indexable insert designation



FT15	M/G	808055	R	080804	Q	MMF	CTCP125
1	2	3	4	5	6	7	8	9	10	11	12

1. FreeTurn
2. Nominal diameter in mm
3. ISO tolerance (M = sintered, G = polished)
4. Cutter angle 1 in degrees
5. Cutter angle 2 in degrees
6. Cutter angle 3 in degrees
7. Corner radius 1 in mm
8. Corner radius 2 in mm
9. Corner radius 3 in mm
10. Wiper geometry
11. Chip breaker (M = medium, F = fine)
12. Carbide Grade

FreeTurn – holder designation

HSK	-	T63	-	100	-	FT15	808055
1	2	3	4	5	6	7	8

1. System
2. Size
3. Overhang length
4. FreeTurn
5. Nominal diameter in mm
6. Cutter angle 1 in degrees
7. Cutter angle 2 in degrees
8. Cutter angle 3 in degrees