New products for machining technicians

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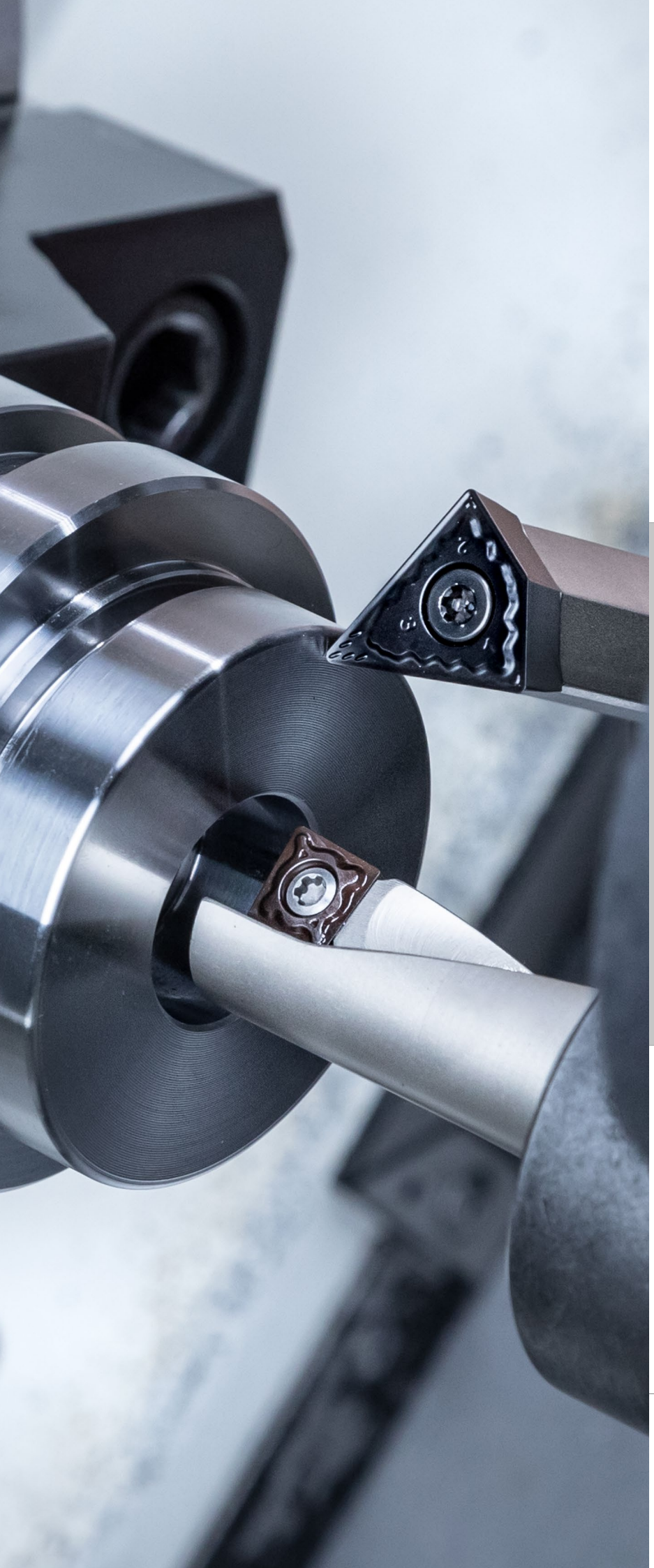
NEW FreeTurn

The innovative and extremely flexible FreeTurn tools have 3 cutting edges and are suitable for almost all external turning operations.

With High Dynamic Turning ("HDT", for short) and the dynamic FreeTurn turning tools, CERATIZIT is turning the conventional method of turning completely on its head. All familiar turning operations such as roughing, finishing, contour turning, facing and longitudinal turning can now be completed using just one tool.

Curious? More information about High Dynamic Turning and FreeTurn can be found on our website:

https://cutting.tools/us/en/freeturn



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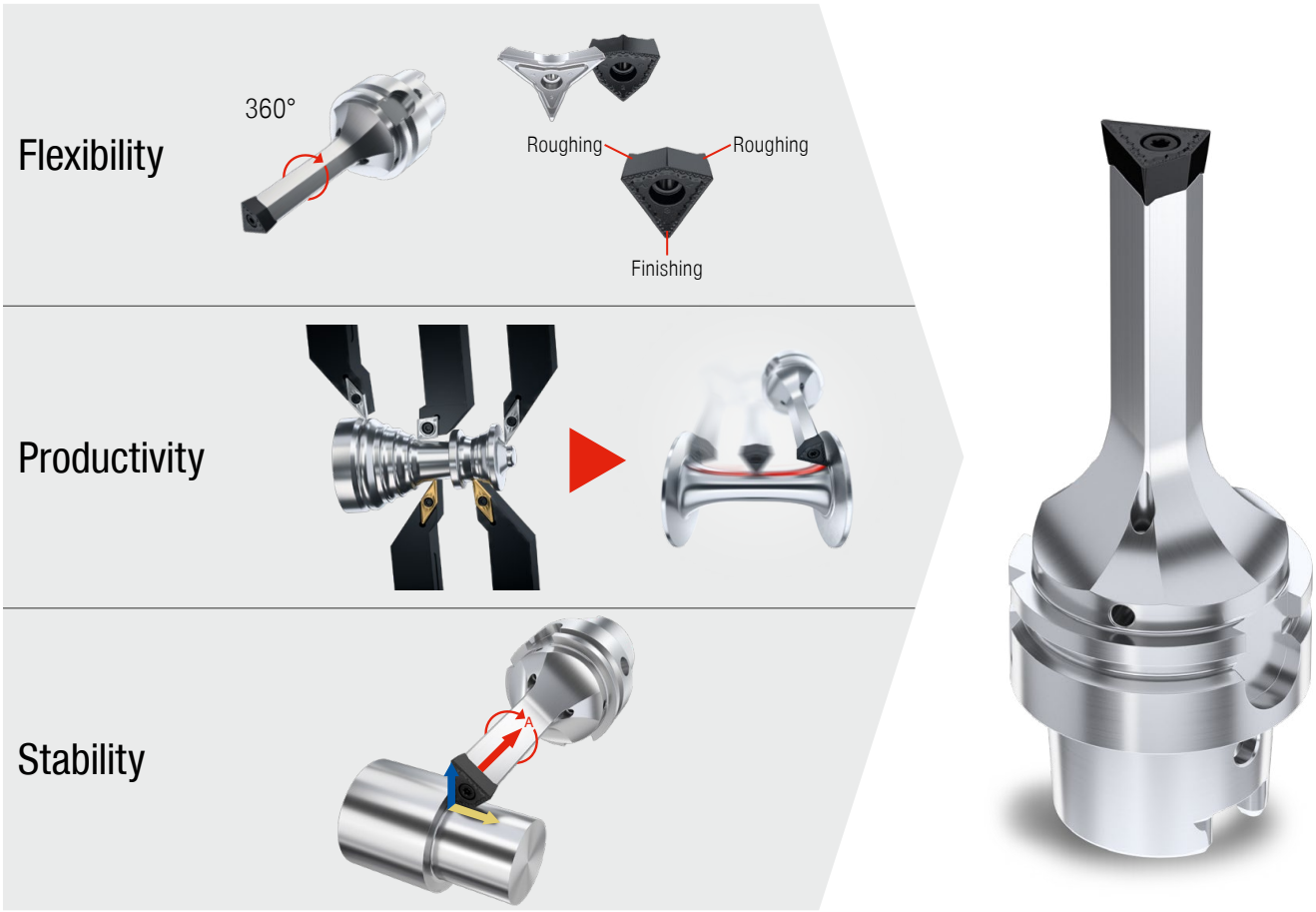
CERATIZIT \ Performance

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.

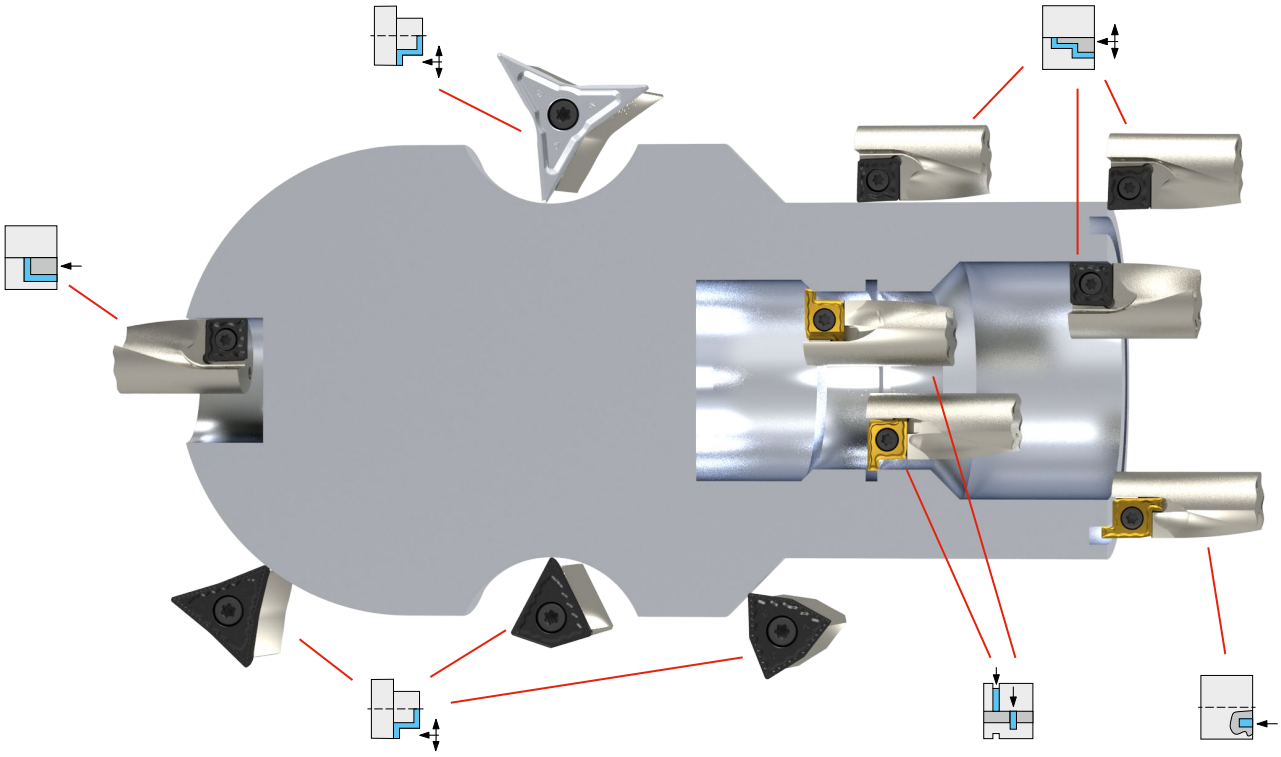
Advantages of FreeTurn



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


Drilling into solid material


Turning internal profiles

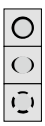

External / internal radial grooving


Axial grooving


Int. coolant supply

-28P Polished chip breaker
H216T Carbide Grade

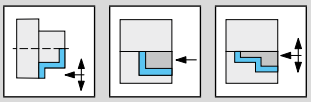
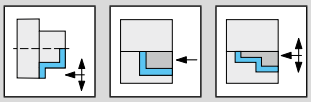
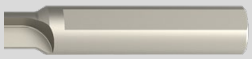
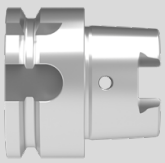
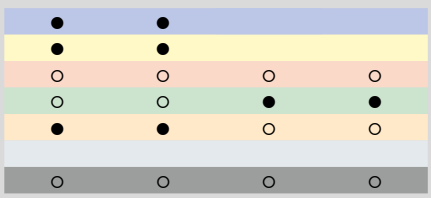
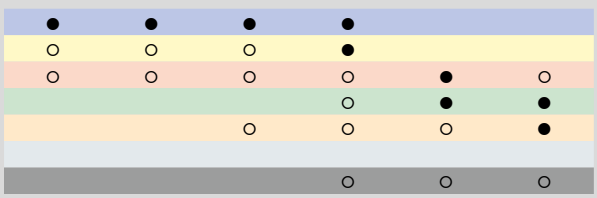
F	Fine Machining
M	Medium Machining
R	Rough Machining



Smooth cut
Irregular cutting depth
Interrupted cut

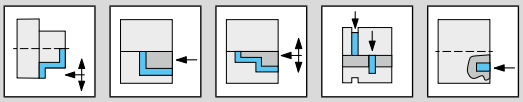
6

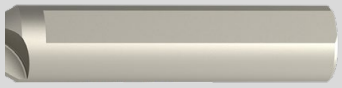
Toolfinder

	EcoCut Mini	EcoCut Classic
Tool system		
Application		
Machine interface	  → 7+8 Adapter for EcoCut Mini	  HSK-T 63 metric
Lengths and diameters Versions	**2.25xD** Ø 0.078–0.314"  → 6 **4.0xD** Ø 0.078–0.314"  → 6	**1.5xD** Ø 0.314–1.260"  → 10 **2.25xD** Ø 0.314–1.260"  → 11 **3.0xD** Ø 0.314–1.260"  → 12 **2.25xD** Ø 0.314–1.260"  metric
Grade description	CTPP435	CTPP435	CTWN425	CTWN425	CTCP425	-M50Q CTCP425	CTCP435	CTPP430	-27P H216T	-27Q H210T
Cutting conditions	DRAGONSKIN	DRAGONSKIN			DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN		
										
	Solid carbide	Solid carbide	Solid carbide	Solid carbide	M	M	M	M	M	M
	Left-hand	Right-hand	Left-hand	Right-hand	XCNT	XCNT	XCNT	XCNT	XCET	XCET
Application range		
Page No.	→ 6	→ 6	→ 6	→ 6	→ 9	→ 9	→ 9	→ 9	→ 9	→ 9
	→ v_c Page 25				→ v_c Page 25					

EcoCut tools are suitable for off-center drilling. This allows for creating a larger diameter hole from the nominal diameter of the tool → **For details, see the technical information.**

EcoCut ProfileMaster





1.5xD
Ø 0.394–1.260"

→ 14

2.25xD
Ø 0.394–1.260"

→ 15

-M20 CTPP430	-M20 CTPP430
DRAGONSKIN	DRAGONSKIN

M	M
PM-R	PM-L
●	●
●	●
○	○
○	○
●	●
○	○

→ 13 → 13

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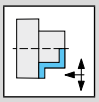
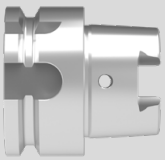
FreeTurn





HSK-T 63

PSC 63

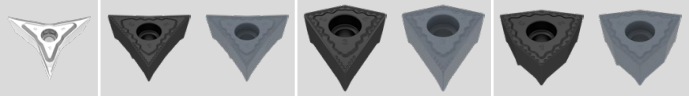
LPR = 3.937"
LPR = 4.921"

→ 19+22

LPR = 3.937"
LPR = 4.921"

→ 20+23

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



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		●		●		●
○	○		○		○	
●						
○						

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6

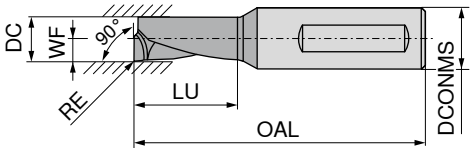
metric

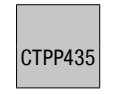
Additional metric items are available in our Online-Shop at cuttingtools.ceratizit.com and in the metric main catalog.

EcoCut – Mini

▲ Drilling and turning tool for small diameters

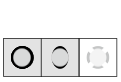
≥ Ø 0.076”

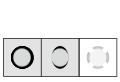




DRAGONSKIN

DRAGONSKIN





Solid carbide
Left-hand

Solid carbide
Right-hand

Solid carbide
Left-hand

Solid carbide
Right-hand

Designation	DC inch	DCONMS inch	OAL inch	LU inch	WF inch	RE inch	70 805 ...		70 804 ...		70 805 ...		70 804 ...	
ECM 02 R/L 2,25D	0.079	0.157	1.102	0.177	0.039	0.004		320		320				
ECM 02 R/L 2,25D AL	0.079	0.157	1.102	0.177	0.039	0.004						420		420
ECM 02 R/L 4,00D	0.079	0.157	1.220	0.315	0.039	0.004		321		321				
ECM 02 R/L 4,00D AL	0.079	0.157	1.220	0.315	0.039	0.004						421		421
ECM 02,5 R/L 2,25D	0.098	0.157	1.142	0.222	0.049	0.004		325		325				
ECM 02,5 R/L 2,25D AL	0.098	0.157	1.142	0.222	0.049	0.004						425		425
ECM 02,5 R/L 4,00D	0.098	0.157	1.299	0.394	0.049	0.004		326		326				
ECM 02,5 R/L 4,00D AL	0.098	0.157	1.299	0.394	0.049	0.004						426		426
ECM 03 R/L 2,25D	0.118	0.157	1.220	0.266	0.059	0.004		330		330				
ECM 03 R/L 2,25D AL	0.118	0.157	1.220	0.266	0.059	0.004						430		430
ECM 03 R/L 4,00D	0.118	0.157	1.378	0.472	0.059	0.004		331		331				
ECM 03 R/L 4,00D AL	0.118	0.157	1.378	0.472	0.059	0.004						431		431
ECM 03,5 R/L 2,25D	0.138	0.157	1.260	0.310	0.069	0.004		335		335				
ECM 03,5 R/L 2,25D AL	0.138	0.157	1.260	0.310	0.069	0.004						435		435
ECM 03,5 R/L 4,00D	0.138	0.157	1.457	0.551	0.069	0.004		336		336				
ECM 03,5 R/L 4,00D AL	0.138	0.157	1.457	0.551	0.069	0.004						436		436
ECM 04 R/L 2,25D	0.157	0.236	1.378	0.354	0.079	0.008		300		300				
ECM 04 R/L 2,25D AL	0.157	0.236	1.378	0.354	0.079	0.008						450		450
ECM 04 R/L 4,00D	0.157	0.236	1.614	0.630	0.079	0.008		301		301				
ECM 04 R/L 4,00D AL	0.157	0.236	1.614	0.630	0.079	0.008						451		451
ECM 05 R/L 2,25D	0.197	0.236	1.457	0.443	0.098	0.008		302		302				
ECM 05 R/L 2,25D AL	0.197	0.236	1.457	0.443	0.098	0.008						452		452
ECM 05 R/L 4,00D	0.197	0.236	1.772	0.787	0.098	0.008		303		303				
ECM 05 R/L 4,00D AL	0.197	0.236	1.772	0.787	0.098	0.008						453		453
ECM 06 R/L 2,25D	0.236	0.315	1.496	0.531	0.118	0.008		306		306				
ECM 06 R/L 2,25D AL	0.236	0.315	1.496	0.531	0.118	0.008						456		456
ECM 06 R/L 4,00D	0.236	0.315	1.929	0.945	0.118	0.008		312		312				
ECM 06 R/L 4,00D AL	0.236	0.315	1.929	0.945	0.118	0.008						462		462
ECM 07 R/L 2,25D	0.276	0.315	1.654	0.620	0.138	0.008		308		308				
ECM 07 R/L 2,25D AL	0.276	0.315	1.654	0.620	0.138	0.008						458		458
ECM 07 R/L 4,00D	0.276	0.315	2.087	1.102	0.138	0.008		314		314				
ECM 07 R/L 4,00D AL	0.276	0.315	2.087	1.102	0.138	0.008						464		464
ECM 08 R/L 2,25D	0.315	0.315	1.772	0.709	0.157	0.008		310		310				
ECM 08 R/L 2,25D AL	0.315	0.315	1.772	0.709	0.157	0.008						460		460
ECM 08 R/L 4,00D	0.315	0.315	2.244	1.260	0.157	0.008		316		316				
ECM 08 R/L 4,00D AL	0.315	0.315	2.244	1.260	0.157	0.008						466		466
P							●		●					
M							●		●					
K							○		○		○		○	
N							○		○		●		●	
S							●		●		○		○	
H														
O							○		○		○		○	

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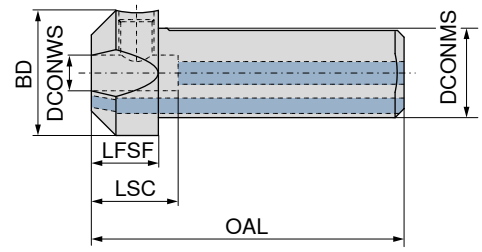
EcoCut – Adapter Mini



Designation	DCONWS inch	DCONMS inch	BD inch	OAL inch	LFSF inch	LSC inch	70 800 ...
EC-ADX12-04-E	0.157	0.750	0.984	2.500	0.551	0.708	**719**
EC-ADX12-06-E	0.236	0.750	0.984	2.500	0.551	0.708	**986**
EC-ADX12-08-E	0.314	0.750	0.984	2.500	0.551	0.708	**988**


Clamping screw

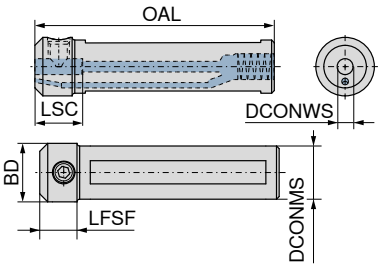
Spare parts for Article no.		70 950 ...
70 800 719	M5x10 ISO 4026	**867**
70 800 986	M8x1x8 - SW4	**123**
70 800 988	M8x1x8 - SW4	**123**

Metric Adaptors can be found in our Online-Shop or in the Metric Catalog 2021

metric

6

EcoCut – Mini adapter with coolant connection thread



Designation	DCONWS inch	DCONMS inch	BD inch	OAL inch	LFSF inch	LSC inch	70 801 ...
ECA 0750-04	0.157	0.750	0.787	3.937	0.551	0.708	**719**
ECA 1000-04	0.157	1.000	0.984	4.330	0.551	0.708	**726**
ECA 0750-06	0.236	0.750	0.866	3.937	0.551	0.708	**819**
ECA 1000-06	0.236	1.000	0.984	4.330	0.551	0.708	**826**
ECA 0750-08	0.314	0.750	0.866	3.937	0.551	0.708	**919**
ECA 1000-08	0.314	1.000	0.984	4.330	0.551	0.708	**926**

Metric Adaptors can be found in our Online-Shop or in the Metric Catalog 2021

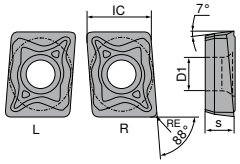
metric

Clamping screw

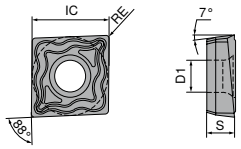
Spare parts for Article no.		70 950 ...
70 801 726	M5x10 ISO 4026	**867**
70 801 819	M8x1x8 - SW4	**123**
70 801 826	M8x1x8 - SW4	**123**
70 801 919	M8x1x8 - SW4	**123**
70 801 926	M8x1x8 - SW4	**123**

XCNT / XCET

Designation	S inch	D1 inch	IC inch
XC.T 0401..	0.070	0.082	0.177
XC.T 0502..	0.082	0.088	0.228
XC.T 0602..	0.093	0.098	0.255
XC.T 0703..	0.125	0.110	0.299
XC.T 0803..	0.125	0.133	0.334
XC.T 09T3..	0.156	0.133	0.377
XC.T 10T3..	0.156	0.173	0.417
XC.T 1304..	0.187	0.208	0.531
XC.T 1705..	0.218	0.208	0.688

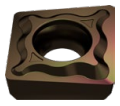
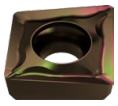
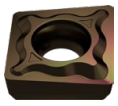
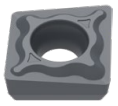
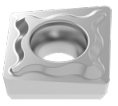


XC. T 04..



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

XCNT / XCET

	CTCP425	-M50Q CTCP425	CTCP435	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 inch					
040102EL	0.008	720		820	920		
040102ER	0.008	722		822	922		
040102FL	0.008					620	120
040102FR	0.008					622	122
040104EL	0.016	700	750	800	900		
040104ER	0.016	702	752	802	902		
040104FL	0.016					600	100
040104FR	0.016					602	102
050202EN	0.008	723		823	923		
050202FN	0.008					623	123
050204EN	0.016	703	753	803	903		
050204FN	0.016					603	103
060202EN	0.008	724		824	924		
060202FN	0.008					624	124
060204EN	0.016	704	754	804	904		
060204FN	0.016					604	104
070304EN	0.016	705	755	805	905		
070304FN	0.016					605	105
080304EN	0.016	706	756	806	906		
080304FN	0.016					606	106
09T304EN	0.016	707	757	807	907		
09T304FN	0.016					607	107
10T304EN	0.016	708	758	808	908		
10T304FN	0.016					608	108
10T308EN	0.031	738	788	838	938		
10T308FN	0.031					628	128
130404EN	0.016	710	760	810	910		
130404FN	0.016					610	110
130408EN	0.031	740	790	840	940		
130408FN	0.031					611	111
170508EN	0.031	712	762	812	912		
170508FN	0.031					612	112
P		●	●	●	●		
M		○	○	○	●		
K		○	○	○	○	●	○
N					○	●	●
S				○	○	○	●
H							
O					○	○	○

→ v_c Page 25

6

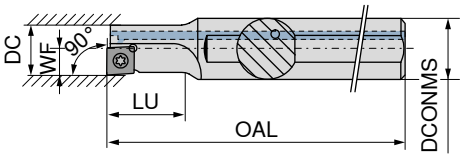
EcoCut – Classic 1.5xD

▲ Drilling and turning tool

Scope of supply:

Toolholder with one clamping screw, two spare screws and a screwdriver

≥ Ø 0.315”



Left-hand

Right-hand

Designation	DC inch	DCONMS inch	OAL inch	LU inch	WF inch	torque moment Nm	Insert	78 805 ...	78 804 ...
ECC 08 L 1,5D 04-E	0.315	0.500	3.100	0.470	0.157	0,4	XC.T 0401..EL	**00800**[2]	
ECC 08 R 1,5D 04-E	0.315	0.500	3.100	0.470	0.157	0,4	XC.T 0401..ER		**00800**[1]
ECC 10 R/L 1,5D 05-E	0.394	0.500	3.500	0.590	0.197	0,7	XC.T 0502..	**01000**	**01000**
ECC 12 R/L 1,5D 06-E	0.472	0.625	3.900	0.710	0.236	1,0	XC.T 0602..	**01200**	**01200**
ECC 14 R/L 1,5D 07-E	0.551	0.625	4.300	0.830	0.276	1,2	XC.T 0703..	**01400**	**01400**
ECC 16 R/L 1,5D 08-E	0.630	0.750	4.900	0.940	0.315	2,2	XC.T 0803..	**01600**	**01600**
ECC 18 R/L 1,5D 09-E	0.709	1.000	5.300	1.060	0.354	2,2	XC.T 09T3..	**01800**	**01800**
ECC 20 R/L 1,5D 10-E	0.787	1.000	5.900	1.180	0.394	3,2	XC.T 10T3..	**02000**	**02000**
ECC 25 R/L 1,5D 13-E	0.984	1.250	7.000	1.480	0.492	5,0	XC.T 1304..	**02500**	**02500**
ECC 32 R/L 1,5D 17-E	1.260	1.500	7.800	1.890	0.630	5,0	XC.T 1705..	**03200**	**03200**

1) Note! Right-hand insert on right-hand tool → **Page 39**
2) Note! Left-hand insert on left-hand tool → **Page 39**

Screwdriver

Clamping screw

Spare parts for Article no.	80 950 ...		70 950 ...	
78 805 00800	T06 - IP	**123**	M1,8x3,6 - IP	**862**
78 804 00800	T06 - IP	**123**	M1,8x3,6 - IP	**862**
78 804 01000 / 78 805 01000	T06 - IP	**123**	M2x4,3 - IP	**863**
78 804 01200 / 78 805 01200	T07 - IP	**124**	M2,2x5 - IP	**856**
78 804 01400 / 78 805 01400	T08 - IP	**125**	M2,5x6 - IP	**857**
78 804 01600 / 78 805 01600	T09 - IP	**126**	M3x7 - IP	**819**
78 804 01800 / 78 805 01800	T09 - IP	**126**	M3x7 - IP	**819**
78 804 02000 / 78 805 02000	T15 - IP	**128**	M3,5x8,6 - IP	**859**
78 804 02500 / 78 805 02500	T20 - IP	**129**	M4,5x10,5 - IP	**864**
78 804 03200 / 78 805 03200	T20 - IP	**129**	M4,5x10,5 - IP	**864**

Metric Adaptors can be found in our Online-Shop or in the Metric Catalog 2021

metric

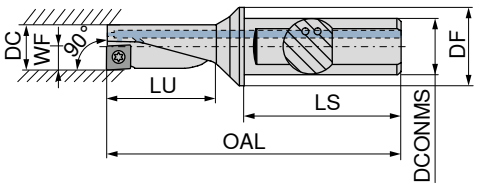
EcoCut – Classic 2.25xD

▲ Drilling and turning tool

Scope of supply:

Toolholder with one clamping screw, two spare screws and a screwdriver

≥ Ø 0.315”



Left-hand | Right-hand

Designation	DC inch	DCONMS inch	DF inch	OAL inch	LU inch	LS inch	WF inch	torque moment Nm	Insert	78 805 ...	78 804 ...
ECC 08 L 2,25D 04-E	0.315	0.375	0.472	2.300	0.710	1.430	0.157	0,4	XC.T 0401..EL	**10800**	
ECC 08 R 2,25D 04-E	0.315	0.375	0.472	2.300	0.710	1.430	0.157	0,4	XC.T 0401..ER		**10800** [1]
ECC 10 R/L 2,25D 05-E	0.394	0.500	0.630	2.700	0.890	1.615	0.197	0,7	XC.T 0502..	**11000**	**11000**
ECC 12 R/L 2,25D 06-E	0.472	0.625	0.787	3.000	1.060	1.700	0.236	1,0	XC.T 0602..	**11200**	**11200**
ECC 14 R/L 2,25D 07-E	0.551	0.625	0.787	3.200	1.240	1.700	0.276	1,2	XC.T 0703..	**11400**	**11400**
ECC 16 R/L 2,25D 08-E	0.630	0.750	0.984	3.700	1.420	1.970	0.315	2,2	XC.T 0803..	**11600**	**11600**
ECC 18 R/L 2,25D 09-E	0.709	1.000	1.260	4.300	1.590	2.190	0.354	2,2	XC.T 09T3..	**11800**	**11800**
ECC 20 R/L 2,25D 10-E	0.787	1.000	1.260	4.400	1.770	2.230	0.394	3,2	XC.T 10T3..	**12000**	**12000**
ECC 25 R/L 2,25D 13-E	0.984	1.250	1.575	5.000	2.220	2.285	0.492	5,0	XC.T 1304..	**12500**	**12500**
ECC 32 R/L 2,25D 17-E	1.260	1.500	1.969	6.200	2.830	2.740	0.630	5,0	XC.T 1705..	**13200**	**13200**

1) Note! Right-hand insert on right-hand tool → **Page 39**

Screwdriver

Clamping screw

Spare parts for Article no.	80 950 ...		70 950 ...	
78 805 10800	T06 - IP	**123**	M1,8x3,6 - IP	**862**
78 804 10800	T06 - IP	**123**	M1,8x3,6 - IP	**862**
78 804 11000 / 78 805 11000	T06 - IP	**123**	M2x4,3 - IP	**863**
78 804 11200 / 78 805 11200	T07 - IP	**124**	M2,2x5 - IP	**856**
78 804 11400 / 78 805 11400	T08 - IP	**125**	M2,5x6 - IP	**857**
78 804 11600 / 78 805 11600	T09 - IP	**126**	M3x7 - IP	**819**
78 804 11800 / 78 805 11800	T09 - IP	**126**	M3x7 - IP	**819**
78 804 12000 / 78 805 12000	T15 - IP	**128**	M3,5x8,6 - IP	**859**
78 804 12500 / 78 805 12500	T20 - IP	**129**	M4,5x10,5 - IP	**864**
78 804 13200 / 78 805 13200	T20 - IP	**129**	M4,5x10,5 - IP	**864**

6

Metric Adaptors can be found in our Online-Shop or in the Metric Catalog 2021

metric

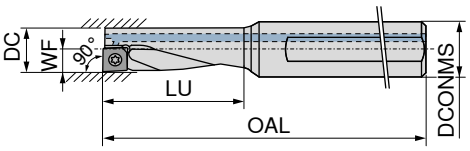
EcoCut – Classic 3xD – Heavy metal

▲ Drilling and turning tool
▲ vibration-damped

Scope of supply:

Toolholder with one clamping screw, two spare screws and a screwdriver

≥ Ø 0.315”



Left-hand

Right-hand

Designation	DC inch	DCONMS inch	OAL inch	LU inch	WF inch	torque moment Nm	Insert	78 805 ...	78 804 ...
ECC 08 L 3,00D 04 H-E	0.315	0.500	3.100	0.940	0.157	0,4	XC.T 0401..EL	60800[2]	
ECC 08 R 3,00D 04 H-E	0.315	0.500	3.100	0.940	0.157	0,4	XC.T 0401..ER		60800[1]
ECC 10 R/L 3,00D 05 H-E	0.394	0.500	3.300	1.180	0.197	0,7	XC.T 0502..	61000	61000
ECC 12 R/L 3,00D 06 H-E	0.472	0.625	3.700	1.420	0.236	1,0	XC.T 0602..	61200	61200
ECC 14 R/L 3,00D 07 H-E	0.551	0.625	3.900	1.650	0.276	1,2	XC.T 0703..	61400	61400
ECC 16 R/L 3,00D 08 H-E	0.630	0.750	4.300	1.860	0.315	2,2	XC.T 0803..	61600	61600
ECC 18 R/L 3,00D 09 H-E	0.709	1.000	5.000	2.120	0.354	2,2	XC.T 09T3..	61800	61800
ECC 20 R/L 3,00D 10 H-E	0.787	1.000	5.100	2.360	0.394	3,2	XC.T 10T3..	62000	62000
ECC 25 R/L 3,00D 13 H-E	0.984	1.250	5.900	2.950	0.492	5,0	XC.T 1304..	62500	62500
ECC 32 R/L 3,00D 17 H-E	1.260	1.500	7.200	3.780	0.630	5,0	XC.T 1705..	63200	63200

1) Note! Right-hand insert on right-hand tool → **Page 39**
2) Note! Left-hand insert on left-hand tool → **Page 39**

Screwdriver

Clamping screw

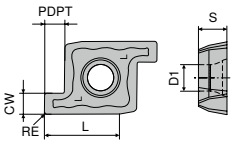
Spare parts for Article no.	80 950 ...		70 950 ...	
78 805 60800	T06 - IP	**123**	M1,8x3,6 - IP	**862**
78 804 60800	T06 - IP	**123**	M1,8x3,6 - IP	**862**
78 804 61000 / 78 805 61000	T06 - IP	**123**	M2x4,3 - IP	**863**
78 804 61200 / 78 805 61200	T07 - IP	**124**	M2,2x5 - IP	**856**
78 804 61400 / 78 805 61400	T08 - IP	**125**	M2,5x6 - IP	**857**
78 804 61600 / 78 805 61600	T09 - IP	**126**	M3x7 - IP	**819**
78 804 61800 / 78 805 61800	T09 - IP	**126**	M3x7 - IP	**819**
78 804 62000 / 78 805 62000	T15 - IP	**128**	M3,5x8,6 - IP	**859**
78 804 62500 / 78 805 62500	T20 - IP	**129**	M4,5x10,5 - IP	**864**
78 804 63200 / 78 805 63200	T20 - IP	**129**	M4,5x10,5 - IP	**864**

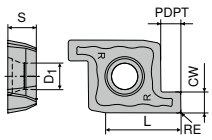
Metric Adaptors can be found in our Online-Shop or in the Metric Catalog 2021

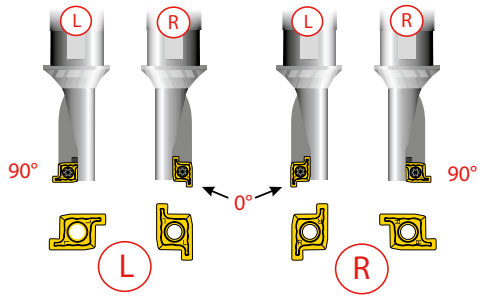
metric

PM-L / PM-R

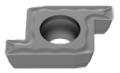
Designation	CW inch	PDPT inch	L inch	S inch	D1 inch
PM 10 G 201504	0.078	0.059	0.196	0.082	0.082
PM 12 G 201804	0.078	0.070	0.236	0.090	0.098
PM 16 G 252004	0.098	0.078	0.314	0.110	0.133
PM 20 G 302504	0.118	0.098	0.393	0.145	0.157
PM 25 G 353004	0.137	0.118	0.492	0.177	0.173
PM 32 G 404004	0.157	0.157	0.629	0.220	0.236

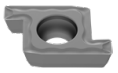






PM-L / PM-R





Designation	RE inch	M PM-L 70 289 ...	M PM-R 70 289 ...
PM 10 R/L G 201504	0.016	510	511
PM 12 R/L G 201804	0.016	515	516
PM 16 R/L G 252004	0.016	520	521
PM 20 R/L G 302504	0.016	525	526
PM 25 R/L G 353004	0.016	530	531
PM 32 R/L G 404004	0.016	535	536
P		●	●
M		●	●
K		○	○
N		○	○
S		●	●
H			
O		○	○

→ v_c Page 25

6

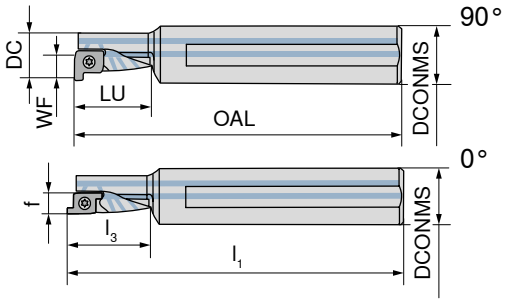
EcoCut – ProfileMaster 1.5xD

▲ Drilling, turning and grooving tool

Scope of supply:

Toolholder with one clamping screw and one screwdriver

≥ Ø 0.397”



											Left-hand	Right-hand
											78 811 ...	**78 810 ...**
Designation	DC inch	DCONMS inch	OAL inch	LU inch	WF inch	l_1 inch	l_3 inch	f inch	torque moment Nm	Insert		
PMC 10 R/L 1,5D-E	0.394	0.500	3.100	0.590	0.197				0,4	PM 10R/L	**01000** [1]	**01000** [1]
PMC 12 R/L 1,5D-E	0.472	0.625	3.500	0.709	0.236				1,0	PM 12R/L	**01200** [1]	**01200** [1]
PMC 16 R/L 1,5D-E	0.630	0.750	4.900	1.004	0.315	4.991	1.094	0.224	2,2	PM 16R/L	**01600**	**01600**
PMC 20 R/L 1,5D-E	0.787	1.000	5.900	1.181	0.394	6.010	1.291	0.283	2,2	PM 20R/L	**02000**	**02000**
PMC 25 R/L 1,5D-E	0.984	1.250	7.000	1.476	0.492	7.130	1.606	0.362	3,2	PM 25R/L	**02500**	**02500**
PMC 32 R/L 1,5D-E	1.260	1.500	7.800	1.890	0.630	7.969	2.059	0.461	5,0	PM 32R/L	**03200**	**03200**

1) only usable as 90° version

					Screwdriver		Clamping screw	
					80 950 ...		**70 950 ...**	
Spare parts for Article no.								
78 810 01000 / 78 811 01000					T06	**100**	M1,8x3,8	**57300**
78 810 01200 / 78 811 01200					T07	**101**	M2,2x4	**360**
78 810 01600 / 78 811 01600					T08	**102**	M3x5,7	**365**
78 810 02000 / 78 811 02000					T15	**105**	M3,5x7,2	**110**
78 810 02500 / 78 811 02500					T15	**105**	M3,5x8,6	**304**
78 810 03200 / 78 811 03200					T20 - IP	**129**	M5x10,8 - IP	**010**

Metric Adaptors can be found in our Online-Shop or in the Metric Catalog 2021

metric

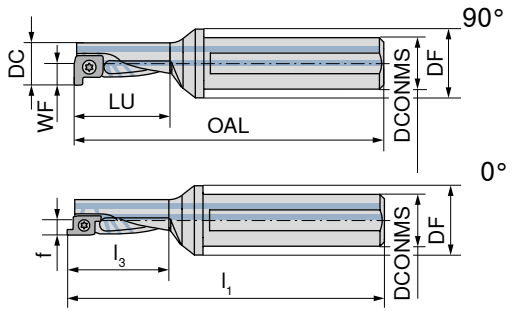
EcoCut – ProfileMaster 2.25xD

▲ Drilling, turning and grooving tool

Scope of supply:

Toolholder with one clamping screw and one screwdriver

≥ Ø 0.397”



Designation	DC inch	DCONMS inch	DF inch	OAL inch	LU inch	WF inch	l_1 inch	l_3 inch	f inch	torque moment Nm	Insert	Left-hand 78 811 ...	Right-hand 78 810 ...
PMC 10 R/L 2,25D-E	0.394	0.500	0.630	2.800	0.886	0.197				0,4	PM 10R/L	**11000**[1)]	**11000**[1)]
PMC 12 R/L 2,25D-E	0.472	0.625	0.787	3.000	1.063	0.236				1,0	PM 12R/L	**11200**[1)]	**11200**[1)]
PMC 16 R/L 2,25D-E	0.630	0.750	0.984	3.800	1.417	0.315	3.891	1.508	0.224	2,2	PM 16R/L	**11600**	**11600**
PMC 20 R/L 2,25D-E	0.787	1.000	1.260	4.400	1.772	0.394	4.510	1.882	0.283	2,2	PM 20R/L	**12000**	**12000**
PMC 25 R/L 2,25D-E	0.984	1.250	1.575	5.200	2.217	0.492	5.330	2.347	0.362	3,2	PM 25R/L	**12500**	**12500**
PMC 32 R/L 2,25D-E	1.260	1.500	1.969	6.200	2.835	0.630	6.369	3.004	0.461	5,0	PM 32R/L	**13200**	**13200**

1) only usable as 90° version

Screwdriver

Clamping screw

Spare parts for Article no.		80 950 ...		70 950 ...
78 810 11000 / 78 811 11000	T06	**100**	M1,8x3,8	**57300**
78 810 11200 / 78 811 11200	T07	**101**	M2,2x4	**360**
78 810 11600 / 78 811 11600	T08	**102**	M3x5,7	**365**
78 810 12000 / 78 811 12000	T15	**105**	M3,5x7,2	**110**
78 810 12500 / 78 811 12500	T15	**105**	M3,5x8,6	**304**
78 810 13200 / 78 811 13200	T20 - IP	**129**	M5x10,8 - IP	**010**

Metric Adaptors can be found in our Online-Shop or in the Metric Catalog 2021

metric

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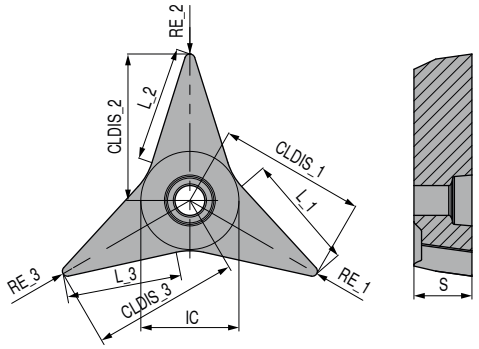
FT15 . 353535...



Designation	IC inch	CLDIS_1 inch	L_1 inch	CLDIS_2 inch	L_2 inch	CLDIS_3 inch	L_3 inch	S inch
FT15 G 353535R04-28P	0.590	0.945	0.633	0.945	0.633	0.945	0.633	0.359
FT15 G 353535R08-28P	0.590	0.908	0.598	0.908	0.598	0.908	0.598	0.359

NEW

-28P
H216T

DRAGONSKIN

F F F
FT15 . 353535...
74 001 ...

ISO	RE_1 inch	RE_2 inch	RE_3 inch	
FT15 G 353535R04-28P	0.016	0.016	0.016	**20200**
FT15 G 353535R08-28P	0.031	0.031	0.031	**20400**
P				
M				
K				○
N				●
S				
H				
O				○

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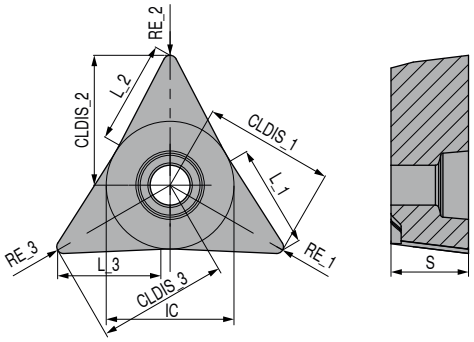
FT15 . 555555...



Designation	IC inch	CLDIS_1 inch	L_1 inch	CLDIS_2 inch	L_2 inch	CLDIS_3 inch	L_3 inch	S inch
FT15 M 555555R04-FFF	0.590	0.621	0.496	0.621	0.496	0.621	0.496	0.359
FT15 M 555555R08-FFF	0.590	0.602	0.484	0.602	0.484	0.602	0.484	0.359

NEW

DRAGONSKIN

F F F

FT15 . 555555...

74 002 ...

NEW

DRAGONSKIN

F F F

FT15 . 555555...

74 002 ...

ISO	RE_1 inch	RE_2 inch	RE_3 inch		
FT15 M 555555R04-FFF	0.016	0.016	0.016	**00200**	
FT15 M 555555R08-FFF	0.031	0.031	0.031	**00400**	**10400**
P				●	○
M					●
K				○	
N					
S					
H					
O					

→ v_c Page 26

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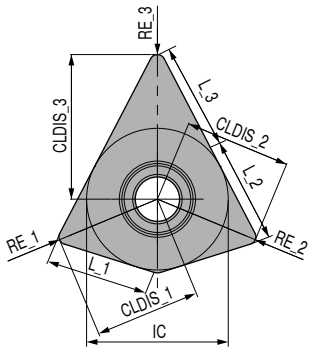
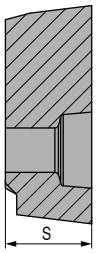
FT15 . 808055...

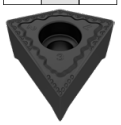




Designation	IC inch	CLDIS_1 inch	L_1 inch	CLDIS_2 inch	L_2 inch	CLDIS_3 inch	L_3 inch	S inch
FT15 M 808055R080804-MMF	0.590	0.441	0.425	0.441	0.448	0.621	0.448	0.359
FT15 M 808055R08-MMF	0.590	0.441	0.425	0.441	0.440	0.602	0.440	0.359
FT15 M 808055R121208-MMF	0.590	0.433	0.421	0.433	0.440	0.602	0.440	0.359

NEW

DRAGONSKIN



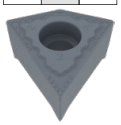
M M F

FT15 . 808055...

74 003 ...

NEW

DRAGONSKIN



M M F

FT15 . 808055...

74 003 ...

ISO	RE_1 inch	RE_2 inch	RE_3 inch		
FT15 M 808055R080804-MMF	0.031	0.031	0.016	**00400**	
FT15 M 808055R08-MMF	0.031	0.031	0.031	**00200**	**10200**
FT15 M 808055R121208-MMF	0.047	0.047	0.031	**00600**	

P	●	○
M		●
K	○	
N		
S		
H		
O		

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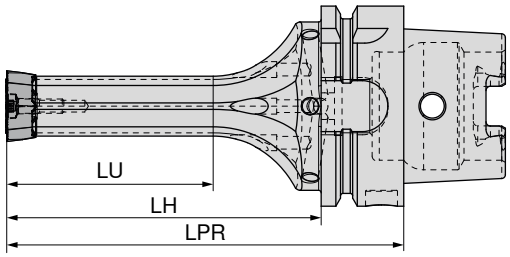
FreeTurn – HSK-T tool holder FT15

- Tool holder for FreeTurn indexable insert
- DirectCooling coolant supply

Direct Cooling



Figures show version FT15 . 808055...

NEW

DirectCooling

Designation	Adapter	LPR inch	LH inch	LU inch	Insert	74 700 ...
HSK-T63-100-FT15 353535	HSK-T 63	3.937	2.913	1.575	FT15 . 353535...	**00137**
HSK-T63-100-FT15 808055	HSK-T 63	3.937	2.913	1.575	FT15 . 808055...	**00537**
HSK-T63-100-FT15 555555	HSK-T 63	3.937	2.913	1.575	FT15 . 555555...	**00337**
HSK-T63-125-FT15 353535	HSK-T 63	4.921	3.898	2.559	FT15 . 353535...	**00237**
HSK-T63-125-FT15 808055	HSK-T 63	4.921	3.898	2.559	FT15 . 808055...	**00637**
HSK-T63-125-FT15 555555	HSK-T 63	4.921	3.898	2.559	FT15 . 555555...	**00437**

Screwdriver

Clamping screw

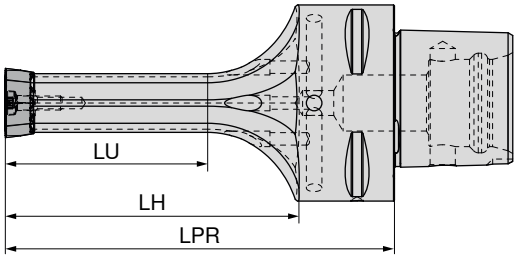
Spare parts		80 950 ...		70 950 ...
Adapter				
HSK-T 63	T20 - IP	**121**	M4,5x18 - IP	**25900**

6

FreeTurn – PSC tool holder FT15

- Tool holder for FreeTurn indexable insert
- DirectCooling coolant supply

Direct Cooling



Figures show version FT15 . 808055...

NEW

DirectCooling

74 700 ...

Designation	Adapter	LPR inch	LH inch	LU inch	Insert	
PSC-63-100-FT15 353535	PSC 63	3.937	2.732	1.575	FT15 . 353535...	**00193**
PSC-63-100-FT15 808055	PSC 63	3.937	2.728	1.575	FT15 . 808055...	**00593**
PSC-63-100-FT15 555555	PSC 63	3.937	2.740	1.575	FT15 . 555555...	**00393**
PSC-63-125-FT15 353535	PSC 63	4.921	3.717	2.559	FT15 . 353535...	**00293**
PSC-63-125-FT15 808055	PSC 63	4.921	3.713	2.559	FT15 . 808055...	**00693**
PSC-63-125-FT15 555555	PSC 63	4.921	3.724	2.559	FT15 . 555555...	**00493**

Screwdriver

80 950 ...

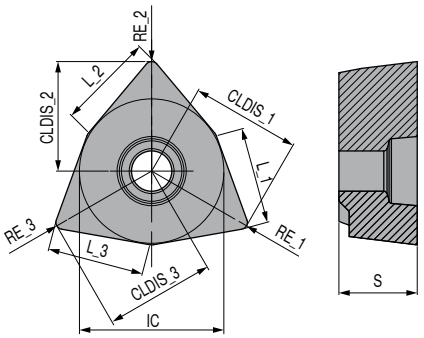
Clamping screw

70 950 ...

Spare parts

Adapter				
PSC 63	T20 - IP	**121**	M4,5x18 - IP	**25900**

FT17 . 808080...



Designation	IC inch	CLDIS_1 inch	L_1 inch	CLDIS_2 inch	L_2 inch	CLDIS_3 inch	L_3 inch	S inch
FT17 M 808080R04-MMM	0.669	0.511	0.444	0.511	0.444	0.511	0.444	0.359
FT17 M 808080R08-MMM	0.669	0.503	0.444	0.503	0.444	0.503	0.444	0.359
FT17 M 808080R12-MMM	0.669	0.494	0.440	0.494	0.440	0.494	0.440	0.359

NEW

M M M

FT17 . 808080...

74 000 ...

NEW

M M M

FT17 . 808080...

74 000 ...

ISO	RE_1 inch	RE_2 inch	RE_3 inch		
FT17 M 808080R04-MMM	0.016	0.016	0.016	**00200**	
FT17 M 808080R08-MMM	0.031	0.031	0.031	**00400**	**10400**
FT17 M 808080R12-MMM	0.047	0.047	0.047	**00600**	
P				●	○
M					●
K				○	
N					
S					
H					
O					

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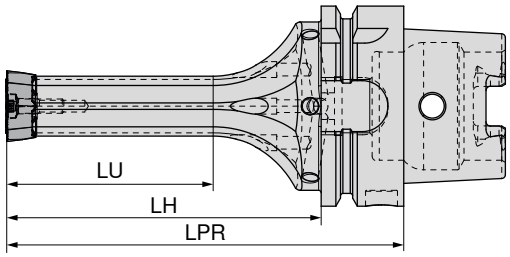
6

FreeTurn – HSK-T tool holder FT17

- Tool holder for FreeTurn indexable insert
- DirectCooling coolant supply

Direct Cooling



NEW

DirectCooling

Designation	Adapter	LPR inch	LH inch	LU inch	Insert	74 701 ...
HSK-T63-100-FT17 808080	HSK-T 63	3.937	2.913	1.575	FT17 . 808080...	**00737**
HSK-T63-125-FT17 808080	HSK-T 63	4.921	3.898	2.559	FT17 . 808080...	**00837**

Screwdriver

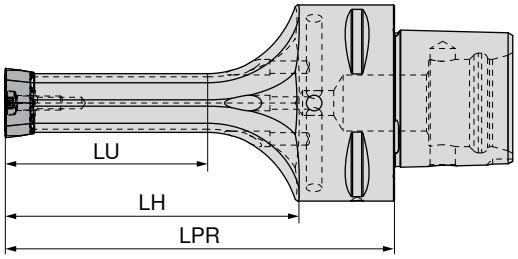
Clamping screw

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

Direct Cooling



NEW

DirectCooling

74 701 ...

Designation	Adapter	LPR inch	LH inch	LU inch	Insert	
PSC-63-100-FT17 808080	PSC 63	3.937	2.728	1.575	FT17 . 808080...	**00793**
PSC-63-125-FT17 808080	PSC 63	4.921	3.713	2.559	FT17 . 808080...	**00893**

Screwdriver

80 950 ...

Clamping screw

70 950 ...

Spare parts Adapter				
PSC 63	T20 - IP	**121**	M4,5x18 - IP	**25900**

6

Material examples for cutting data tables

	Material sub-group	Index	Composition / Structure / Heat treatment		Tensile strength lbf/in²* / HB / HRC	Material number	Material designation	Material number	Material designation
P	Unalloyed steel	P.1.1	< 0.15 % C	Annealed	60900 lbf/in² / 125 HB	1.0401	1015	1.0301	1010
		P.1.2	< 0.45 % C	Annealed	92800 lbf/in² / 190 HB	1.1191	1045	1.0737	12L14
		P.1.3		Tempered	121800 lbf/in² / 250 HB	1.1191	1045	1.0503	1043
		P.1.4	< 0.75 % C	Annealed	132000 lbf/in² / 270 HB	1.1223	1060	1.0535	1055
		P.1.5		Tempered	146500 lbf/in² / 300 HB	1.1223	1060	1.1274	1095
	Low-alloy steel	P.2.1		Annealed	88500 lbf/in² / 180 HB	1.7131	5115	1.6523	8620
		P.2.2		Tempered	134900 lbf/in² / 275 HB	1.7131	5115	1.6582	4340
		P.2.3		Tempered	146500 lbf/in² / 300 HB	1.7225	4142	1.7131	5115
		P.2.4		Tempered	174000 lbf/in² / 375 HB	1.7225	4142	17223	4140
	High-alloy steel and high-alloy tool steel	P.3.1		Annealed	98600 lbf/in² / 200 HB	1.4021	420	1.2379	D2
		P.3.2		Hardened and tempered	159500 lbf/in² / 300 HB	1.2343	H11	1.3343	M2
		P.3.3		Hardened and tempered	188500 lbf/in² / 400 HB	1.2343	H11	1.2363	A2
	Stainless steel	P.4.1	Ferritic / martensitic	Annealed	98600 lbf/in² / 200 HB	1.4016	430	1.4125	440C
		P.4.2	Martensitic	Tempered	117500 lbf/in² / 250 HB	1.4112	S44003	1.4021	420
M	Stainless steel	M.1.1	Austenitic / austenitic-ferritic	Quenched	88500 lbf/in² / 200 HB	1.4301	304	1.4401	316
		M.2.1	Austenitic	Tempered	300 HB	1.4841	314	1.4568	17-7 PH
		M.3.1	Austenitic / ferritic (Duplex)		113100 lbf/in² / 230 HB	1.4462	S32205	1.4410	S32750
K	Grey cast iron	K.1.1	Pearlitic / ferritic		88500 lbf/in² / 180 HB	0.6010	A48-20B	0.6025	A48-40 B
		K.1.2	Pearlitic (martensitic)		127600 lbf/in² / 260 HB	0.6030	A48-45B	0.6040	A48-60 B
	Spherulitic graphite cast iron	K.2.1	Ferritic		78300 lbf/in² / 160 HB	0.7040	60-40-18	0.7050	65-45-12
		K.2.2	Pearlitic		122600 lbf/in² / 250 HB	0.7070	100-70-03	0.7660	A439 Type D2
	Malleable iron	K.3.1	Ferritic		63800 lbf/in² / 130 HB	0.8035	GTW-35-04		
		K.3.2	Pearlitic		113100 lbf/in² / 230 HB	0.8170	70003		
N	Aluminium wrought alloy	N.1.1	Non-hardenable		60 HB	3.0255	A91060	3.0255	A91060
		N.1.2	Hardenable		49300 lbf/in² / 100 HB	3.1355	2024	3.1355	2024
	Cast aluminium alloy	N.2.1	≤ 12 % Si, non-hardenable		36300 lbf/in² / 75 HB	3.2581	A04130 / A413-0	3.2581	A04130 / A413-0
		N.2.2	≤ 12 % Si, hardenable		43500 lbf/in² / 90 HB	3.2134	G-AlSi5Cu1Mg		
		N.2.3	> 12 % Si, non-hardenable		63800 lbf/in² / 130 HB		G-AlSi17Cu4Mg		
	Copper and copper alloys (bronze/brass)	N.3.1	Free-machining alloys, PB > 1 %		54400 lbf/in² / 110 HB	2.0380	CuZn39Pb2 (Ms58)	2.0380	C37700
		N.3.2	CuZn, CuSnZn		43500 lbf/in² / 90 HB	2.0331	CuZn15	2.0331	C34000
		N.3.3	CuSn, lead-free copper and electrolytic copper		49300 lbf/in² / 100 HB	2.0060	E-Cu57		
	Magnesium alloys	N.4.1	Magnesium and magnesium alloys		70 HB	3.5612	MgAl6Zn		
S	Heat-resistant alloys	S.1.1	Fe - basis	Annealed	98600 lbf/in² / 200 HB	1.4864	X12NiCrSi 36-16	1.4864	330
		S.1.2			137800 lbf/in² / 280 HB	1.4980	X6NiCrTiMoVB25-15-2	1.4980	S66286
		S.2.1	Ni or Co basis	Annealed	121800 lbf/in² / 250 HB	2.4856	Inconel 625	2.4812	Hastelloy C
		S.2.2			171100 lbf/in² / 350 HB	2.4952	Nimonic 80A	2.4668	Inconel 718
		S.2.3		Cast	156600 lbf/in² / 320 HB	2.4674	Nimocast PK24	2.4670	Nimocast 713
	Titanium alloys	S.3.1	Pure titanium		5800 lbf/in²	3.7025	Ti99,8		
		S.3.2	Alpha + beta alloys		152300 lbf/in²	3.7165	TiAl6V4		
		S.3.3	Beta alloys		203100 lbf/in² / 410 HB	Ti555.3	Ti-5Al-5V-5Mo-3Cr		
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		≤ 21800 lbf/in²				
		O.1.2	Plastics, thermoplastic		≤ 14500 lbf/in²				
		O.2.1	Aramid fibre-reinforced		≤ 145000 lbf/in²				
		O.2.2	Glass/carbon-fibre reinforced		≤ 145000 lbf/in²				
		O.3.1	Graphite						

*** Tensile Strength at Rupture (Rm)**

Cutting data standard values for EcoCut

		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN			DRAGONSKIN
	EcoCut Mini CTWN425	EcoCut Mini CTPP435	EcoCut Classic CTCP425	EcoCut Classic CTCP435	EcoCut Classic CTPP430	EcoCut Classic H210T	EcoCut Classic H216T	EcoCut ProfileMaster CTPP430
Index	v_c in ft/min							
P.1.1		**480**	**750**	**690**	**600**			**550**
P.1.2		**410**	**650**	**590**	**510**			**470**
P.1.3		**350**	**560**	**500**	**440**			**380**
P.1.4		**330**	**530**	**470**	**410**			**350**
P.1.5		**300**	**480**	**420**	**370**			**310**
P.2.1		**420**	**670**	**600**	**530**			**480**
P.2.2		**320**	**520**	**460**	**400**			**340**
P.2.3		**300**	**480**	**420**	**370**			**310**
P.2.4		**220**	**370**	**310**	**270**			**200**
P.3.1		**340**	**510**	**470**	**380**			**370**
P.3.2		**220**	**370**	**320**	**280**			**250**
P.3.3		**100**	**230**	**170**	**190**			**130**
P.4.1		**340**	**510**	**470**	**380**			**370**
P.4.2		**280**	**440**	**400**	**330**			**310**
M.1.1		**340**	510	470	**380**			**370**
M.2.1		**220**			**280**			**250**
M.3.1		**310**			**350**			**340**
K.1.1	460	460	680	610	530	360	**560**	590
K.1.2	380	400	680	610	460	300	**430**	860
K.2.1	500	460	660	590	530	400	**590**	530
K.2.2	360	400	660	590	460	280	**430**	830
K.3.1	560	500	640	580	410	460	**630**	430
K.3.2	460	410	640	580	360	360	**530**	760
N.1.1	**990**	130			130	**130**	**200**	990
N.1.2	**170**	960			960	**960**	**1020**	660
N.2.1	**990**	960			960	**960**	**200**	990
N.2.2	**990**	630			630	**630**	**1520**	660
N.2.3	**1490**	1120			1120	**1120**	**200**	500
N.3.1	**1160**	790			790	**790**	**1520**	990
N.3.2	**1160**	790			790	**790**	**1520**	990
N.3.3	**830**	630			630	**630**	**1190**	660
N.4.1	**660**	460			460	**460**	**860**	660
S.1.1	120	**120**		120	180	**110**	140	**120**
S.1.2	90	**100**		100	180	**80**	110	**100**
S.2.1	90	**60**		60	180	**80**	110	**70**
S.2.2	80	**50**		50	180	**70**	80	**50**
S.2.3	70	**50**		50	180	**70**	70	**50**
S.3.1	300	**280**		280	230	**210**	360	**280**
S.3.2	180	**130**		130	200	**140**	230	**130**
S.3.3	130	**100**		100	130	**100**	170	**100**
H.1.1								
H.1.2								
H.1.3								
H.1.4								
H.2.1								
H.3.1								
O.1.1	430	360			360	360	510	430
O.1.2								
O.2.1	350	310			310	310	460	350
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.

6

Cutting data standard values for FreeTurn

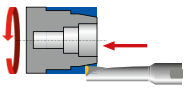
	F		M		-28P
	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	
	CTCP125	CTPM125	CTCP125	CTPM125	H216T
Index	v_c in ft/min		v_c in ft/min		v_c in ft/min
P.1.1	**980**	670	**980**	670	
P.1.2	**830**	560	**830**	560	
P.1.3	**700**	470	**700**	470	
P.1.4	**660**	440	**660**	440	
P.1.5	**590**	390	**590**	390	
P.2.1	**850**	580	**850**	580	
P.2.2	**650**	430	**650**	430	
P.2.3	**590**	390	**590**	390	
P.2.4	**430**	270	**430**	270	
P.3.1	**560**	470	**560**	470	
P.3.2	**350**	320	**350**	320	
P.3.3	**140**	170	**140**	170	
P.4.1	**560**	470	**560**	470	
P.4.2	**450**	390	**450**	390	
M.1.1		**470**		**470**	
M.2.1		**320**		**320**	
M.3.1		**420**		**420**	
K.1.1	560		560		560
K.1.2	530		530		430
K.2.1	590		590		590
K.2.2	530		530		430
K.3.1	660		660		630
K.3.2	530		530		530
N.1.1					**5450**
N.1.2					**4460**
N.2.1					**3960**
N.2.2					**3630**
N.2.3					**1980**
N.3.1					**1730**
N.3.2					**1650**
N.3.3					**1240**
N.4.1					**910**
S.1.1					
S.1.2					
S.2.1					
S.2.2					
S.2.3					
S.3.1					
S.3.2					
S.3.3					
H.1.1					
H.1.2					
H.1.3					
H.1.4					
H.2.1					
H.3.1					
O.1.1					530
O.1.2					
O.2.1					460
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.

Depth of Cut and Feedrate for EcoCut Mini

Turning

2.25xD

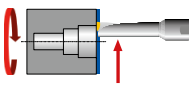


EcoCut Mini Size	Depth of Cut a_p in inch								
	0.010	0.020	0.030	0.040	0.060	0.080	0.100	0.120	0.140	0.160
	Feed rate f in inch/rev.									
ECM 02..	.0008-.0028	.0008-.0028								
ECM 02.5..	.0008-.0028	.0008-.0028	.0008-.0020							
ECM 03..	.0008-.0028	.0008-.0028	.0008-.0020	.0008-.0020						
ECM 03.5..	.0008-.0028	.0008-.0028	.0008-.0020	.0008-.0020	.0008-.0020					
ECM 04..	.0016-.0040	.0016-.0040	.0016-.0040	.0016-.0040	.0012-.0028	.0004-.0020				
ECM 05..	.0016-.0040	.0016-.0040	.0016-.0040	.0016-.0040	.0012-.0032	.0008-.0024	.0004-.0016			
ECM 06..	.0016-.0040	.0016-.0040	.0016-.0040	.0016-.0040	.0016-.0040	.0012-.0032	.0008-.0024	.0004-.0016		
ECM 07..	.0016-.0040	.0016-.0040	.0016-.0040	.0016-.0040	.0016-.0040	.0016-.0040	.0012-.0032	.0008-.0024	.0004-.0016	
ECM 08..	.0016-.0040	.0016-.0040	.0016-.0040	.0016-.0040	.0016-.0040	.0016-.0040	.0016-.0040	.0012-.0032	.0008-.0024	.0004-.0016

4xD

EcoCut Mini Size	Depth of Cut a_p in inch								
	0.010	0.020	0.030	0.040	0.060	0.080	0.100	0.120	0.140	0.160
	Feed rate f in inch/rev.									
ECM 02..	.0008-.0020	.0004-.0020								
ECM 02.5..	.0008-.0020	.0004-.0020								
ECM 03..	.0008-.0020	.0008-.0020	.0004-.0020							
ECM 03.5..	.0008-.0020	.0008-.0020	.0008-.0020	.0004-.0020						
ECM 04..	.0016-.0040	.0016-.0040	.0016-.0040	.0012-.0032	.0004-.0020					
ECM 05..	.0016-.0040	.0016-.0040	.0016-.0040	.0012-.00325	.0008-.0024	.0004-.0016				
ECM 06..	.0016-.0040	.0016-.0040	.0016-.0040	.0012-.00325	.0008-.0024	.0004-.0016				
ECM 07..	.0016-.0040	.0016-.0040	.0016-.0040	.0016-.0040	.0012-.0032	.0008-.0024	.0004-.0016			
ECM 08..	.0016-.0040	.0016-.0040	.0016-.0040	.0016-.0040	.0016-.00365	.0012-.0032	.0008-.0024	.0004-.0016		

Face turning

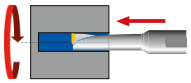


EcoCut Mini Size	2.25xD		4xD	
	$a_{p\,max.}$ in inch	f in inch/rev.	$a_{p\,max.}$ in inch	f in inch/rev.
ECM 02..	0.012	.0004-.0020	0.012	.0004-.0012
ECM 02.5..	0.012	.0004-.0020	0.012	.0004-.0012
ECM 03..	0.020	.0004-.0024	0.020	.0004-.0016
ECM 03.5..	0.020	.0004-.0024	0.020	.0004-.0016
ECM 04..	0.028	.0012-.0028	0.028	.0008-.0020
ECM 05..	0.028	.0012-.0028	0.028	.0008-.0020
ECM 06..	0.028	.0012-.0028	0.028	.0008-.0020
ECM 07..	0.039	.0016-.0032	0.039	.0012-.0024
ECM 08..	0.039	.0016-.0032	0.039	.0012-.0024

Depth of Cut and Feedrate for EcoCut Mini

Drilling

Feed rate



EcoCut Mini Size	2.25xD	4xD
	f in inch/rev.	f in inch/rev.
ECM 02..	.0001–.0003	.0001–.0002
ECM 02.5..	.0001–.0004	.0001–.0002
ECM 03..	.0001–.0005	.0001–.0004
ECM 03.5..	.0001–.0006	.0001–.0004
ECM 04..	.0002–.0012	.0002–.0005
ECM 05..	.0002–.0012	.0002–.0006
ECM 06..	.0002–.0012	.0002–.0008
ECM 07..	.0002–.0014	.0002–.0010
ECM 08..	.0002–.0016	.0002–.0012

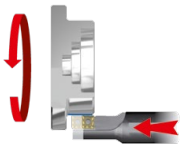
max. bore depth

EcoCut Mini Size	2.25xD	4xD
	Max. hole depth in inch	Max. hole depth in inch
ECM 02..	0.177	0.315
ECM 02.5..	0.222	0.394
ECM 03..	0.266	0.472
ECM 03.5..	0.310	0.551
ECM 04..	0.354	0.630
ECM 05..	0.443	0.787
ECM 06..	0.531	0.945
ECM 07..	0.620	1.102
ECM 08..	0.709	1.260

Depth of Cut and Feedrate for EcoCut Classic

Turning

1.5xD



EcoCut Classic Size	Depth of Cut a_p in inch											
	0.039	0.079	0.118	0.157	0.197	0.236	0.276	0.315	0.354	0.394	0.472	0.551
	Feed rate f in inch/rev.											
ECC 08	.0024-.0048	.0024-.0048	.0016-.0040	.0008-.0032								
ECC 10	.0028-.0060	.0028-.0060	.0020-.0052	.0016-.0043	.0008-.0036							
ECC 12	.0032-.0064	.0032-.0064	.0032-.0064	.0024-.0056	.0016-.0048	.0008-.0040						
ECC 14	.0036-.0072	.0036-.0072	.0036-.0072	.0036-.0072	.0028-.0064	.0020-.0056	.0008-.0043					
ECC 16	.0040-.0080	.0040-.0080	.0040-.0080	.0040-.0080	.0032-.0072	.0024-.0064	.0016-.0056	.0008-.0048				
ECC 18	.0043-.0088	.0043-.0088	.0043-.0088	.0043-.0088	.0043-.0088	.0036-.0080	.0028-.0072	.0020-.0064	.0012-.0052			
ECC 20	.0048-.0096	.0048-.0096	.0048-.0096	.0048-.0096	.0048-.0096	.0043-.0092	.0036-.0084	.0028-.0076	.0020-.0066	.0012-.0060		
ECC 25	.0052-.0102	.0052-.0102	.0052-.0102	.0052-.0102	.0052-.0102	.0052-.0102	.0052-.0102	.0043-.0096	.0036-.0088	.0028-.0080	.0012-.0064	
ECC 32	.0060-.0120	.0060-.0120	.0060-.0120	.0060-.0120	.0060-.0120	.0056-.0120	.0060-.0120	.0060-.0120	.0052-.0110	.0043-.0102	.0028-.0088	.0012-.0072

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

2.25xD

EcoCut Classic Size	Depth of Cut a_p in inch										
	0.039	0.079	0.098	0.118	0.138	0.157	0.177	0.197	0.217	0.236	0.276
	Feed rate f in inch/rev.										
ECC 08	.0024-.0048	.0016-.0040	.0008-.0032								
ECC 10	.0028-.0060	.0020-.0052	.0012-.0043	.0008-.0036							
ECC 12	.0032-.0064	.0032-.0064	.0024-.0056	.0016-.0048	.0008-.0040						
ECC 14	.0036-.0072	.0036-.0072	.0028-.0064	.0020-.0056	.0016-.0052	.0008-.0043					
ECC 16	.0040-.0080	.0040-.0080	.0036-.0076	.0028-.0066	.0020-.0060	.0012-.0052					
ECC 18	.0043-.0088	.0043-.0088	.0043-.0088	.0036-.0080	.0028-.0072	.0020-.0064	.0012-.0056				
ECC 20	.0048-.0096	.0048-.0096	.0048-.0096	.0048-.0096	.0040-.0088	.0032-.0080	.0024-.0072	.0016-.0064			
ECC 25	.0052-.0102	.0052-.0102	.0052-.0102	.0052-.0102	.0052-.0102	.0048-.0100	.0040-.0092	.0032-.0084	.0024-.0076	.0016-.0066	
ECC 32	.0060-.0120	.0060-.0120	.0060-.0120	.0060-.0120	.0060-.0120	.0060-.0120	.0056-.0114	.0048-.0106	.0040-.0100	.0032-.0092	.0020-.0080

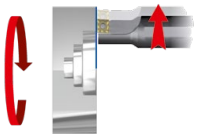
Feed f may be increased by 50–75 % when using -M50Q and -27Q.

3xD

EcoCut Classic Size	Depth of Cut a_p in inch								
	0.039	0.079	0.098	0.118	0.138	0.157	0.197	0.236	0.276
	Feed rate f in inch/rev.								
ECC 08	.0020-.0040	.0008-.0024							
ECC 10	.0024-.0043	.0012-.0028							
ECC 12	.0024-.0048	.0016-.0040	.0008-.0032						
ECC 14	.0028-.0052	.0020-.0043	.0008-.0036						
ECC 16	.0028-.0060	.0024-.0056	.0016-.0048	.0008-.0036					
ECC 18	.0032-.0064	.0032-.0064	.0024-.0056	.0016-.0048					
ECC 20	.0036-.0072	.0036-.0072	.0036-.0072	.0028-.0064	.0020-.0056	.0012-.0048			
ECC 25	.0040-.0076	.0040-.0076	.0040-.0076	.0032-.0066	.0024-.0060	.0012-.0052			
ECC 32	.0043-.0088	.0043-.0088	.0043-.0088	.0043-.0088	.0036-.0080	.0028-.0072	.0012-.0056		

Depth of Cut and Feedrate for EcoCut Classic

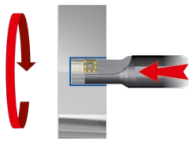
Face turning



EcoCut Classic Size	1.5xD		2.25xD		3xD	
	a_p inch	f in inch/rev.	a_p inch	f in inch/rev.	a_p inch	f in inch/rev.
ECC 08	0.079	.0020–.0040	0.075	.0016–.0036	0.043	.0016–.0028
ECC 10	0.098	.0024–.0048	0.087	.0020–.0040	0.047	.0016–.0036
ECC 12	0.118	.0028–.0056	0.102	.0024–.0048	0.055	.0020–.0044
ECC 14	0.138	.0032–.0064	0.118	.0028–.0056	0.063	.0024–.0048
ECC 16	0.157	.0036–.0072	0.134	.0032–.0064	0.075	.0024–.0052
ECC 18	0.177	.0040–.0080	0.150	.0036–.0072	0.079	.0028–.0056
ECC 20	0.197	.0044–.0088	0.165	.0040–.0080	0.087	.0032–.0060
ECC 25	0.236	.0048–.0094	0.197	.0044–.0088	0.102	.0036–.0072
ECC 32	0.315	.0052–.0106	0.236	.0048–.0100	0.118	.0040–.0080

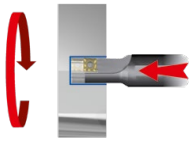
Drilling

Feed rate



EcoCut Classic Size	1.5xD	2.25xD	3xD
	f in inch/rev.	f in inch/rev.	f in inch/rev.
ECC 08	.0004–.0016	.0004–.0016	.0004–.0008
ECC 10	.0004–.0020	.0004–.0020	.0004–.0012
ECC 12	.0004–.0020	.0004–.0020	.0004–.0016
ECC 14	.0004–.0028	.0004–.0028	.0004–.0020
ECC 16	.0008–.0032	.0008–.0032	.0008–.0024
ECC 18	.0012–.0036	.0012–.0036	.0012–.0028
ECC 20	.0012–.0040	.0012–.0040	.0012–.0032
ECC 25	.0012–.0048	.0012–.0048	.0016–.0036
ECC 32	.0020–.0060	.0020–.0060	.0020–.0044

max. bore depth

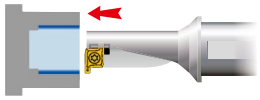


EcoCut Classic Size	1.5xD	2.25xD	3xD
	Max. hole depth in inch	Max. hole depth in inch	Max. hole depth in inch
ECC 08	0.472	0.709	0.945
ECC 10	0.591	0.886	1.181
ECC 12	0.709	1.063	1.417
ECC 14	0.827	1.240	1.654
ECC 16	0.945	1.417	1.890
ECC 18	1.063	1.594	2.126
ECC 20	1.181	1.772	2.362
ECC 25	1.476	2.224	2.953
ECC 32	1.890	2.835	3.780

Depth of Cut and Feedrate for EcoCut ProfileMaster 90°

Turning

1.5xD



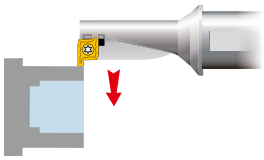
EcoCut ProfileMaster Size	Depth of Cut a_p in inch							
	0.039	0.079	0.118	0.157	0.197	0.236	0.276	0.315
	Feed rate f in inch/rev.							
EC PM 10	.0028-.0080	.0020-.0068	.0008-.0048					
EC PM 12	.0028-.0080	.0020-.0068	.0008-.0048					
EC PM 16	.0040-.0100	.0028-.0092	.0020-.0084	.0008-.0068				
EC PM 20	.0048-.0108	.0040-.0104	.0027-.0096	.0020-.0080	.0008-.0056			
EC PM 25	.0060-.0118	.0060-.0118	.0052-.0110	.0040-.0104	.0020-.0088	.0008-.0072		
EC PM 32	.0060-.0118	.0060-.0118	.0060-.0118	.0060-.0118	.0040-.0108	.0028-.0096	.0020-.0084	.0008-.0060

2.25xD

EcoCut ProfileMaster Size	Depth of Cut a_p in inch							
	0.039	0.079	0.118	0.157	0.197	0.236	0.276	0.315
	Feed rate f in inch/rev.							
EC PM 10	.0028-.0076	.0008-.0052						
EC PM 12	.0028-.0076	.0008-.0052						
EC PM 16	.0040-.0100	.0028-.0084	.0008-.0052					
EC PM 20	.0048-.0108	.0028-.0096	.0020-.0076					
EC PM 25	.0060-.0118	.0040-.0108	.0028-.0092	.0008-.0060				
EC PM 32	.0060-.0118	.0060-.0118	.0040-.0108	.0028-.0092	.0008-.0060			

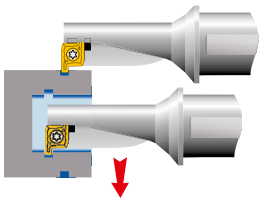
Face turning

1.5xD and 2.25xD



EcoCut ProfileMaster Size	Depth of Cut a_p in inch					
	0.039	0.059	0.079	0.098	0.118	0.138
	Feed rate f in inch/rev.					
EC PM 10	.0008-.0060	.0008-.0060				
EC PM 12	.0008-.0060	.0008-.0060				
EC PM 16	.0020-.0080	.0020-.0080	.0020-.0080			
EC PM 20	.0032-.0088	.0032-.0088	.0032-.0088	.0032-.0088		
EC PM 25	.0040-.0100	.0040-.0100	.0040-.0100	.0040-.0100	.0040-.0100	
EC PM 32	.0040-.0100	.0040-.0100	.0040-.0100	.0040-.0100	.0040-.0100	.0040-.0100

Internal + external – radial grooving

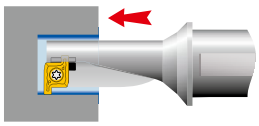


EcoCut ProfileMaster Size	1.5xD
	f in inch/rev.
EC PM 10	.0004-.0032
EC PM 12	.0008-.0040
EC PM 16	.0016-.0060
EC PM 20	.0016-.0064
EC PM 25	.0028-.0080
EC PM 32	.0032-.0088

EcoCut ProfileMaster Size	2.25xD
	f in inch/rev.
EC PM 10	.0004-.0032
EC PM 12	.0008-.0040
EC PM 16	.0016-.0060
EC PM 20	.0016-.0064
EC PM 25	.0028-.0080
EC PM 32	.0032-.0088

Drilling

Feed and max. hole depth



EcoCut ProfileMaster Size	1.5xD	
	f in inch/rev.	Max. hole depth in inch
EC PM 10	.0004-.0020	0.59
EC PM 12	.0004-.0024	0.71
EC PM 16	.0008-.0036	0.94
EC PM 20	.0012-.0040	1.18
EC PM 25	.0016-.0048	1.48
EC PM 32	.0016-.0056	1.89

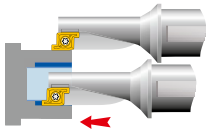
EcoCut ProfileMaster Size	2.25xD	
	f in inch/rev.	Max. hole depth in inch
EC PM 10	.0004-.0020	0.89
EC PM 12	.0004-.0024	1.06
EC PM 16	.0008-.0036	1.42
EC PM 20	.0012-.0040	1.77
EC PM 25	.0016-.0048	2.22
EC PM 32	.0016-.0056	2.83

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



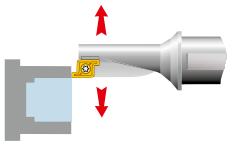
EcoCut ProfileMaster Size	Depth of cut a_p in inch					
	0.039	0.059	0.079	0.098	0.118	0.138
	Feed rate f in inch/rev.					
EC PM 16	.0016-.0080	.0016-.0080	.0016-.0080			
EC PM 20	.0024-.0088	.0024-.0088	.0024-.0088	.0024-.0088		
EC PM 25	.0032-.0100	.0032-.0100	.0032-.0100	.0032-.0100	.0032-.0100	
EC PM 32	.0040-.0112	.0040-.0112	.0040-.0112	.0040-.0112	.0040-.0112	.0040-.0112

2.25xD

EcoCut ProfileMaster Size	Depth of cut a_p in inch					
	0.039	0.059	0.079	0.098	0.118	0.138
	Feed rate f in inch/rev.					
EC PM 16	.0016-.0080	.0016-.0080	.0016-.0080			
EC PM 20	.0024-.0088	.0024-.0088	.0024-.0088	.0024-.0088		
EC PM 25	.0032-.0100	.0032-.0100	.0032-.0100	.0032-.0100	.0032-.0100	
EC PM 32	.0040-.0112	.0040-.0112	.0040-.0112	.0040-.0112	.0040-.0112	.0040-.0112

Face turning

1.5xD

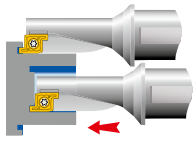


EcoCut ProfileMaster Size	Depth of cut a_p in inch						
	0.039	0.059	0.079	0.098	0.118	0.138	0.157
	Feed rate f in inch/rev.						
EC PM 16	.0020-.0080	.0020-.0080	.0020-.0080				
EC PM 20	.0020-.0080	.0020-.0080	.0020-.0080	.0020-.0080			
EC PM 25	.0040-.0100	.0040-.0100	.0040-.0100	.0040-.0100	.0040-.0100		
EC PM 32	.0040-.0100	.0040-.0100	.0040-.0100	.0040-.0100	.0040-.0100	.0040-.0100	.0040-.0100

2.25xD

EcoCut ProfileMaster Size	Depth of cut a_p in inch						
	0.039	0.059	0.079	0.098	0.118	0.138	0.157
	Feed rate f in inch/rev.						
EC PM 16	.0020-.0080	.0020-.0080	.0020-.0080				
EC PM 20	.0020-.0080	.0020-.0080	.0020-.0080	.0020-.0080			
EC PM 25	.0040-.0100	.0040-.0100	.0040-.0100	.0040-.0100	.0040-.0100		
EC PM 32	.0040-.0100	.0040-.0100	.0040-.0100	.0040-.0100	.0040-.0100	.0040-.0100	.0040-.0100

Axial grooving external + internal



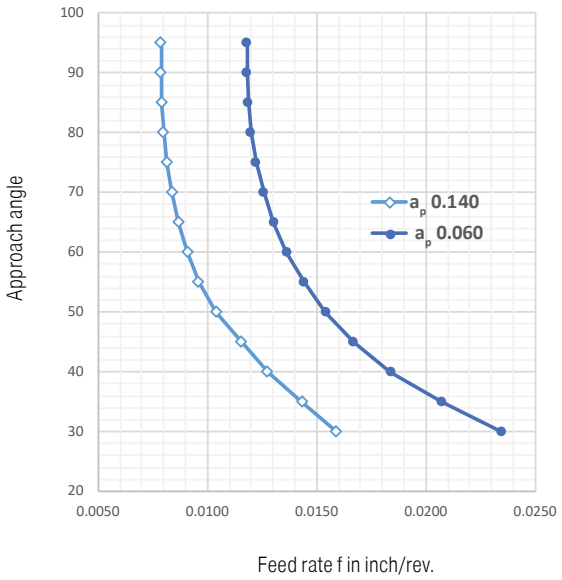
EcoCut ProfileMaster Size	1.5xD
	Feed rate f in inch/rev.
EC PM 16	.0008-.0048
EC PM 20	.0016-.0056
EC PM 25	.0024-.0072
EC PM 32	.0032-.0080

EcoCut ProfileMaster Size	2.25xD
	Feed rate f in inch/rev.
EC PM 16	.0008-.0048
EC PM 20	.0016-.0056
EC PM 25	.0024-.0072
EC PM 32	.0032-.0080

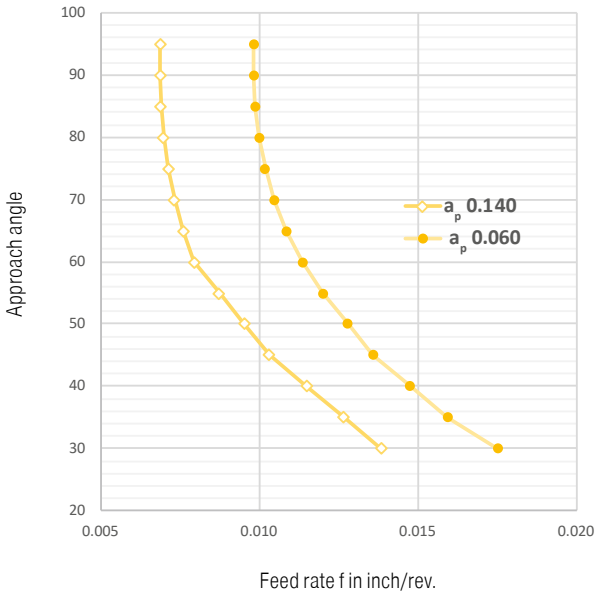
Initial curves for FreeTurn

	Material				Inserts		v_c in ft/min	Cooling
Steel	1.7225	42CrMo4	1010 N/mm²	P.2.3	FT1x M 80xxxxR08 -M	CTCP125	660	Emulsion
Stainless steel	1.4301	X5CrNi18-10	610 N/mm²	M.1.1	FT1x M 80xxxxR08 -M	CTPM125	600	Emulsion
Non-ferrous metals	3.2341	G-AlSi 5 Mg	200 N/mm²	N.2.2	FT1x G 35xxxxR08-28P	H210T	1320	Emulsion

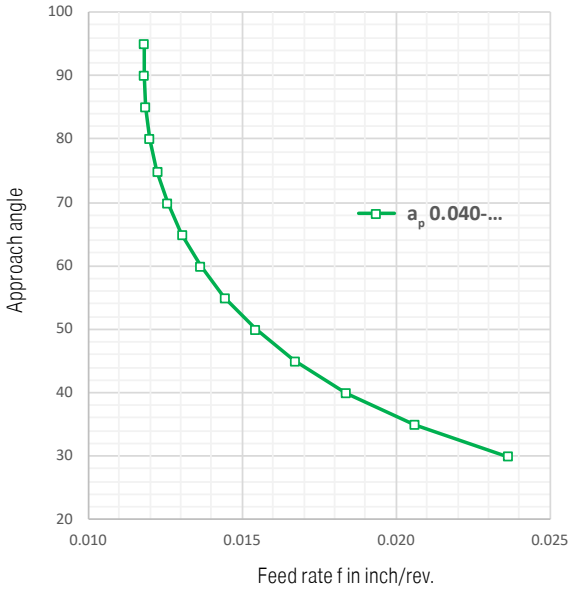
Steel



Stainless steel



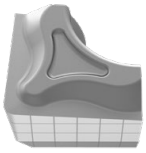
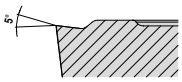
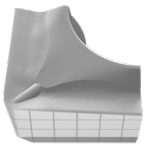
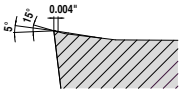
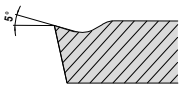
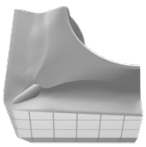
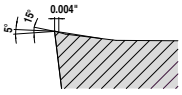
Non-ferrous metals



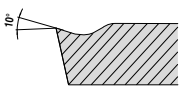
6

Chip Breakers Overview

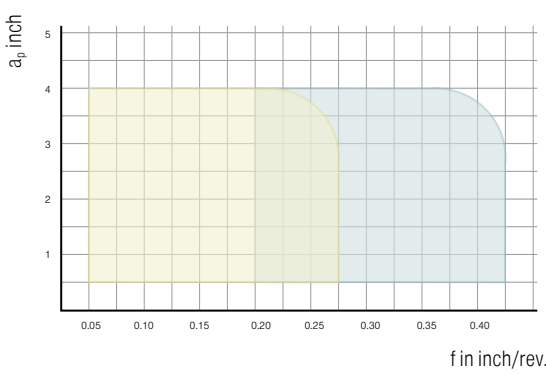
EcoCut Classic

	Model	Smooth cut ○	Irregular cutting depth ◔	Interrupted cut ◌	Sectional illustration f inch
-EN ▲ Universal geometry ▲ Excellent chip breakage ▲ Positive cutting edge ▲ Low to medium feeds		**CTCP425** **CTCP425 / CTPP430** CTCP425 CTPP430 CTCP435 / CTPP430 CTCP435 / CTPP430	**CTCP435 / CTPP430** **CTPP430** CTCP435 / CTPP430 CTPP430 CTCP435 / CTPP430 CTCP435 / CTPP430	**CTPP430 / CTCP435** **CTPP430** CTCP435 CTPP430 CTCP435 CTCP435	 0.002“ - 0.011“
-M50Q ▲ With wiper geometry ▲ Excellent surface qualities ▲ Good chip formation ▲ Medium to high feeds		**CTCP425** CTCP425 CTCP425 	**CTCP425** CTCP425 	 	 0.008“ - 0.017“
-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** 	 0.004“ - 0.016“
-27Q ▲ With wiper geometry ▲ Extremely positive geometry ▲ Periphery ground ▲ Low adhesion		 H210T **H210T** **H210T** H210T	 H210T **H210T** **H210T** H210T	 	 0.008“ - 0.020“

EcoCut ProfileMaster

	Model	Smooth cut ○	Irregular cutting depth ◔	Interrupted cut ◌	Sectional illustration f inch
-M20 ▲ Positive geometry ▲ Universal application ▲ Low to medium feeds		**CTPP430** **CTPP430** CTPP430 CTPP430 **CTPP430** CTPP430	**CTPP430** **CTPP430** CTPP430 CTPP430 **CTPP430** CTPP430	**CTPP430** **CTPP430** CTPP430 CTPP430 CTPP430	 0.002“ - 0.010“

Application area of -EN and -M50Q chip breakers



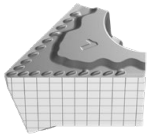
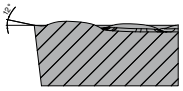
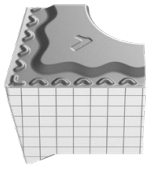
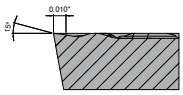
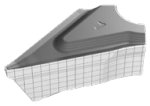
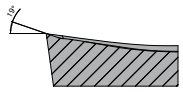
EcoCut Classic 2.25xD – ECC16 – XCNT 080304

= -M50Q

= Standard

Chip Breakers Overview

FreeTurn

	Model	Smooth cut	Irregular cutting depth	Interrupted cut	Sectional illustration
					f inch
-F ▲ Traditional finishing geometry ▲ High surface quality ▲ First choice for finishing steel		**CTCP125** CTCP125	**CTCP125** CTCP125		 0 - 0.236“
-M ▲ Average to rough machining ▲ Aggressive chip breaker		CTPM125 **CTPM125**	CTPM125 **CTPM125**		 0 - 0.236“
-28P ▲ Traditional finishing geometry ▲ Sharp cutting edge ▲ First choice for aluminium		H216T **H216T** H216T	H216T **H216T** H216T	H216T **H216T**	 0 - 0.070“

6

EcoCut Classic – Application as the most stable boring tool

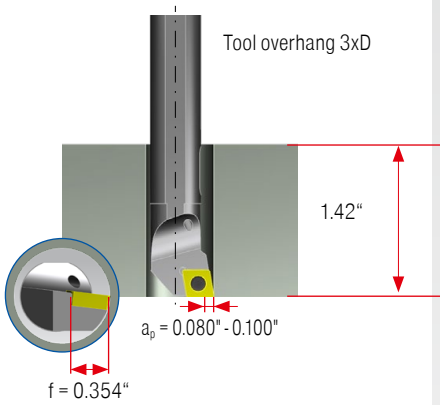
EcoCut can not only be used as a multifunction tool, but it can be used strictly as a traditional boring tool.

Example: machining bores, 0.629" diameter by 1.420" depth

Differences in the tool

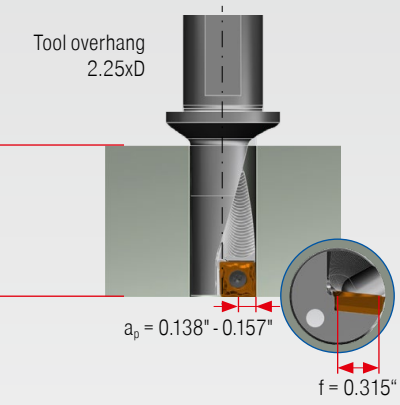
Boring Bar

A12K SCFCR 06



EcoCut Classic

ECC 16R-2.25D 08



Your Advantages

Large, stable toolholder

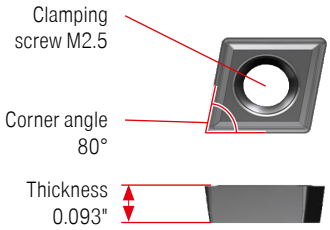
- Absorption of high cutting forces
- Low vibration
- Chip Booster for perfect cooling and chip evacuation

Benefits

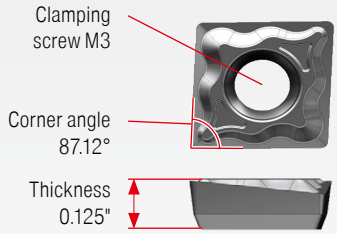
- High surface quality
- Perfect chip control
- Max. process security

Differences in the insert

CCMT 060204



XCNT 080304



Large and stable insert

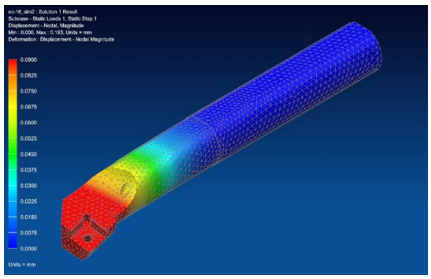
- Increased process security
- Enables large depths of cut
- Higher cutting data
- Higher tool life

Benefits

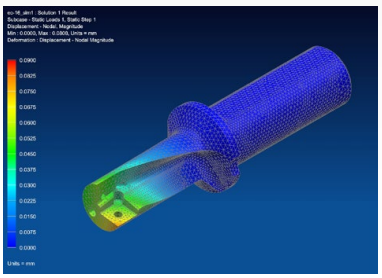
- Reduction in machining time
- Increased productivity
- Reduced tooling costs

Stability Comparison

Calculation using FEM
A load of 1000 N on the insert seat corresponds to an approx. a_p of 0.080" and f 0.008"



Deflection 0.007"

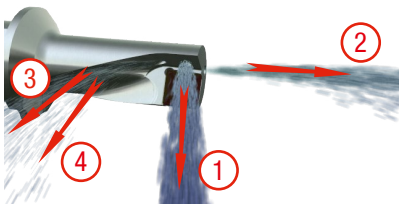


Deflection 0.003"

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.

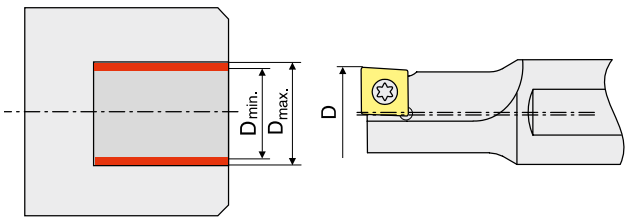
1. Cooling of the indexable insert
2. General coolant stream
3. Chip booster for improved chip transport
4. Chip booster prevents chips from getting stuck between tool and workpiece

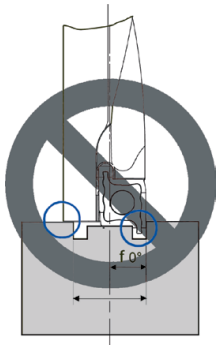
For maximum chip transport efficiency when drilling, coolant pressure must be 3–6 bar minimum (optimal 7–10 bar).

Application Tips

Drilling off-center

Due to the special construction of the EcoCut tool and insert, off-center 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 inch	$D_{min.}$ in inch	$D_{max.}$ in inch
ECM 02 L/R - ...D	0.079	0.077	0.083
ECM 02.5 L/R - ...D	0.098	0.096	0.102
ECM 03 L/R - ...D	0.118	0.116	0.124
ECM 03.5 L/R - ...D	0.138	0.136	0.144
ECM 04 R/L - ...D	0.157	0.154	0.165
ECM 05 R/L - ...D	0.197	0.193	0.205
ECM 06 R/L - ...D	0.236	0.232	0.244
ECM 07 R/L - ...D	0.276	0.272	0.283
ECM 08 R/L - ...D	0.315	0.311	0.323

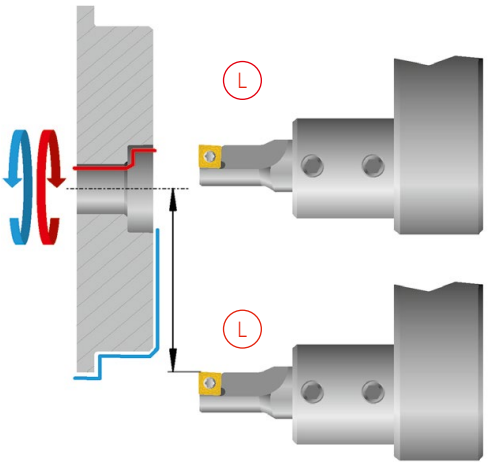
EcoCut Classic	Tool nominal-Ø	Work piece bore Ø	
	D in inch	$D_{min.}$ in inch	$D_{max.}$ in inch
ECC 08 R/L - ... 04	0.315	0.309	0.327
ECC 10 R/L - ... 05	0.394	0.388	0.413
ECC 12 R/L - ... 06	0.472	0.467	0.492
ECC 14 R/L - ... 07	0.551	0.545	0.571
ECC 16 R/L - ... 08	0.630	0.624	0.650
ECC 18 R/L - ... 09	0.709	0.703	0.728
ECC 20 R/L - ... 10	0.787	0.780	0.807
ECC 25 R/L - ... 13	0.984	0.976	1.016
ECC 32 R/L - ... 17	1.260	1.252	1.299

EcoCut ProfileMaster	Tool nominal-Ø	Work piece bore Ø	
	D in inch	$D_{min.}$ in inch	$D_{max.}$ in inch
PM 10R/L ...	0.394	0.388	0.472
PM 12R/L ...	0.472	0.467	0.591
PM 16R/L ...	0.630	0.624	0.748
PM 20R/L ...	0.787	0.780	0.945
PM 25R/L ...	0.984	0.976	1.142
PM 32R/L ...	1.260	1.252	1.496

Machining over center

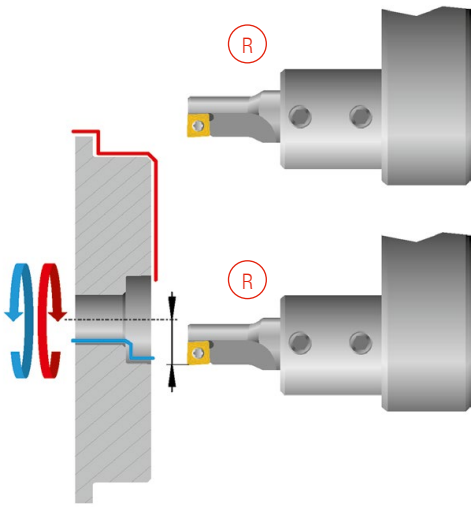
Problem

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



Solution

Use a right hand EcoCut tool.



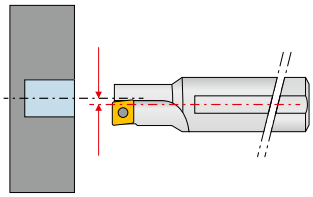
6

Application Tips

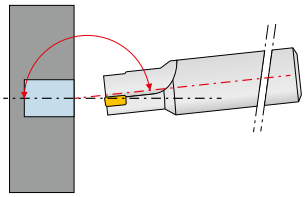
With axial displacement there is the danger of collision!

Problems

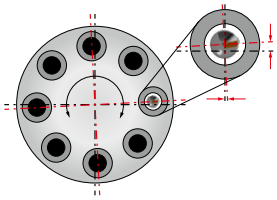
Displacement in x-direction:



Angular error:



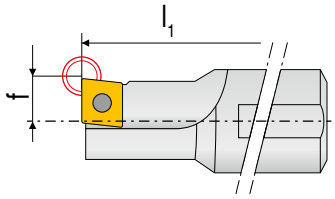
Turret position error:



Remedy

When pre-setting the tool:

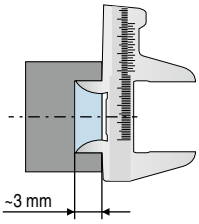
- Definition as an internal turning tool for programming



- Enter the tool nominal Ø as bore target Ø

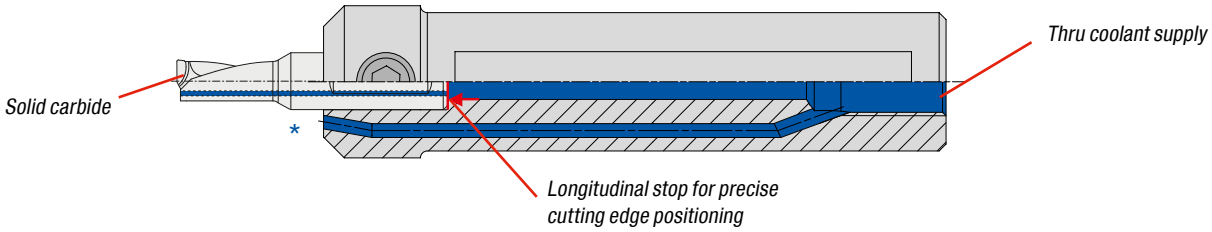
At the machine:

- Make measuring cut, approx. 0.120" deep
- Measure drilled diameter produced



- If necessary correct drilling Ø
- Start machining

EcoCut Mini adapter – Design

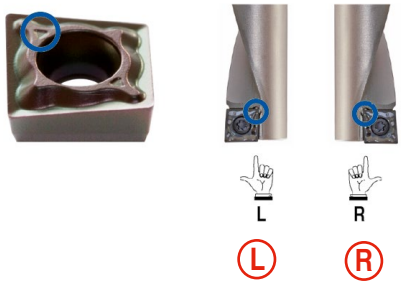


* Cross-section rotated by 90° for clarity

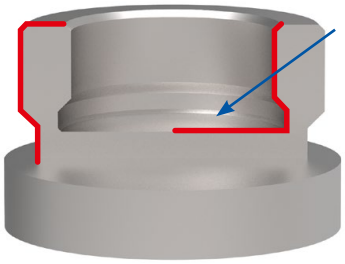
Mounting of the insert for EcoCut Classic

For tools up to Ø 0.315" right and left handed inserts are required.
From Ø 0.394"–1.260"neutral inserts are used.

Note!
Ensure correct installation position.

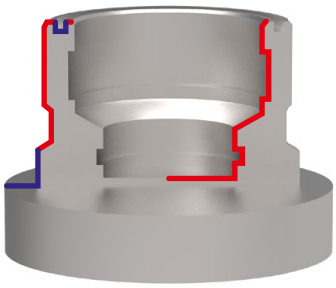


EcoCut ProfileMaster – the highlight with regard to efficiency



Right hand tool

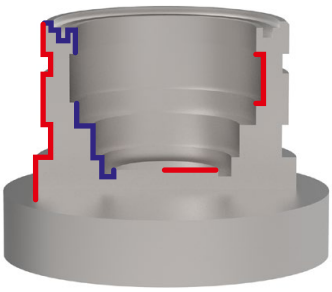
right hand insert



Right hand tool

left hand insert

right hand insert

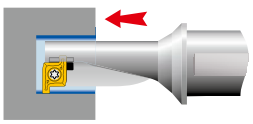


Left hand tool

Right hand tool

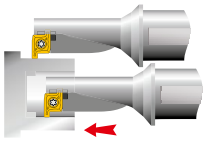
right hand insert

Version 90°



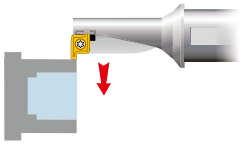
Drilling into solid material with flat bottom hole

Boring

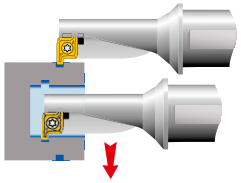


Turning External Diameters

Turning Internal Diameters



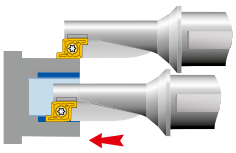
Turning Profiles



External radial grooving

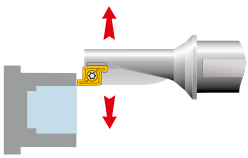
Internal radial grooving

Version 0°

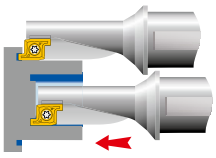


Turning External Diameters

Turning Internal Diameters



Turning Profiles



Axial grooving external

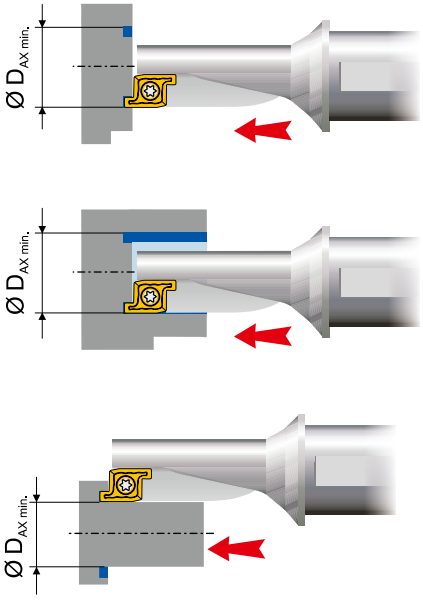
Axial grooving internal

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

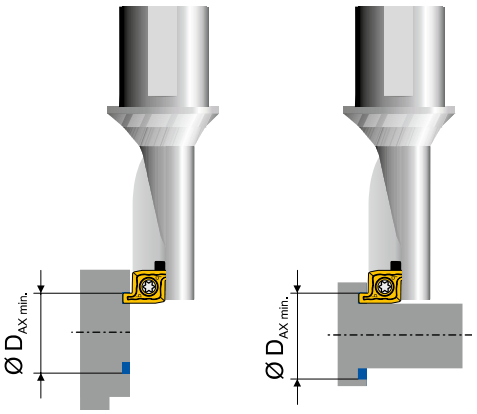
6

EcoCut ProfileMaster – Axial Grooving

0° (from Ø .629“)

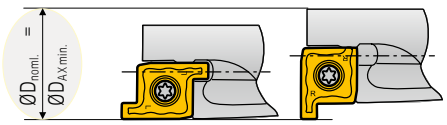


90°



EcoCut ProfileMaster	$ØD_{noml.}$ inch	$ØD_{AX\ min.}$ inch	$ØD_{AX\ max.}$ inch
PM 10R/L 1.5D	0.394	0.394	> 0.394
PM 10R/L 2.25D	0.394	0.394	> 0.394
PM 12R/L 1.5D	0.472	0.472	> 0.472
PM 12R/L 2.25D	0.472	0.472	> 0.472
PM 16R/L 1.5D	0.630	0.630	> 0.630
PM 16R/L 2.25D	0.630	0.630	> 0.630
PM 20R/L 1.5D	0.787	0.787	> 0.787
PM 20R/L 2.25D	0.787	0.787	> 0.787
PM 25R/L 1.5D	0.984	0.984	> 0.984
PM 25R/L 2.25D	0.984	0.984	> 0.984
PM 32R/L 1.5D	1.260	1.260	> 1.260
PM 32R/L 2.25D	1.260	1.260	> 1.260

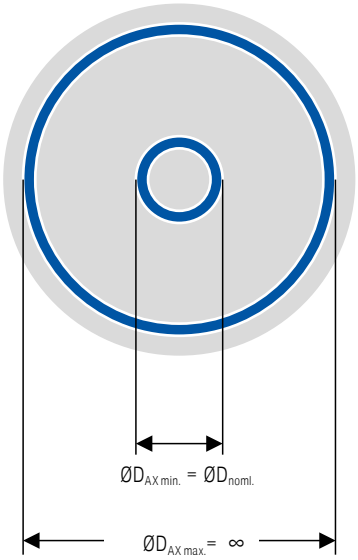
$ØD_{AX\ min.}$ = $ØD_{noml.}$



$ØD_{noml.}$ = Nominal tool diameter

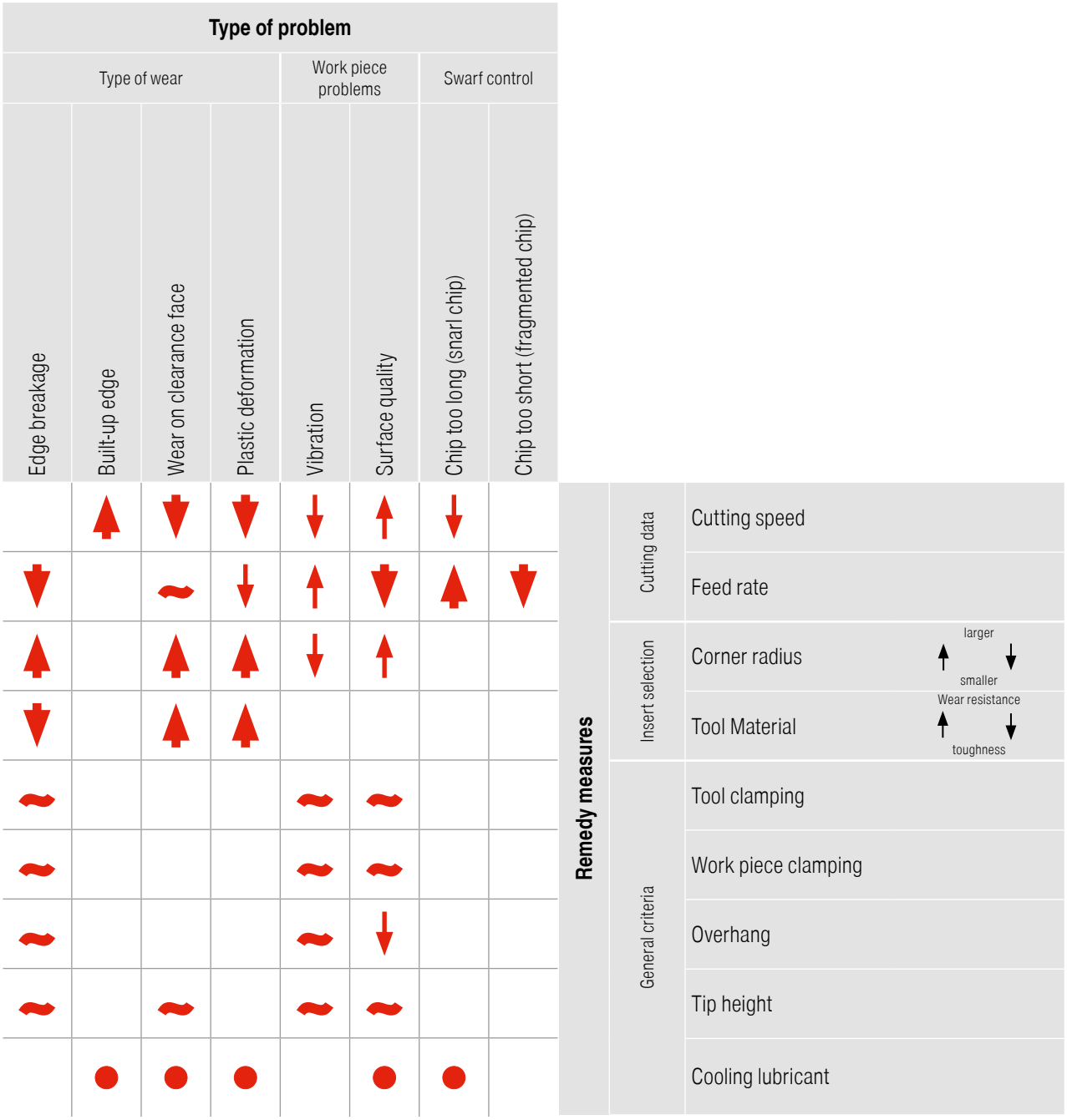
$ØD_{AX\ min.}$ = smallest diameter for axial grooving

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



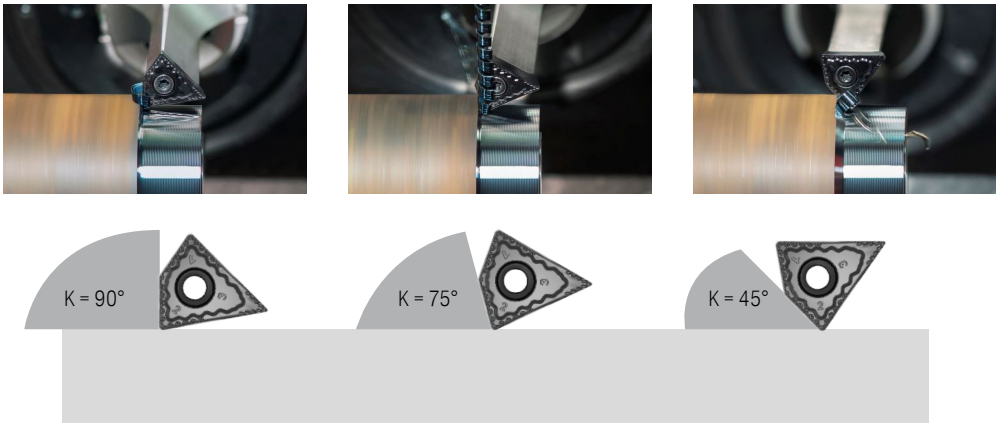
Application Tips

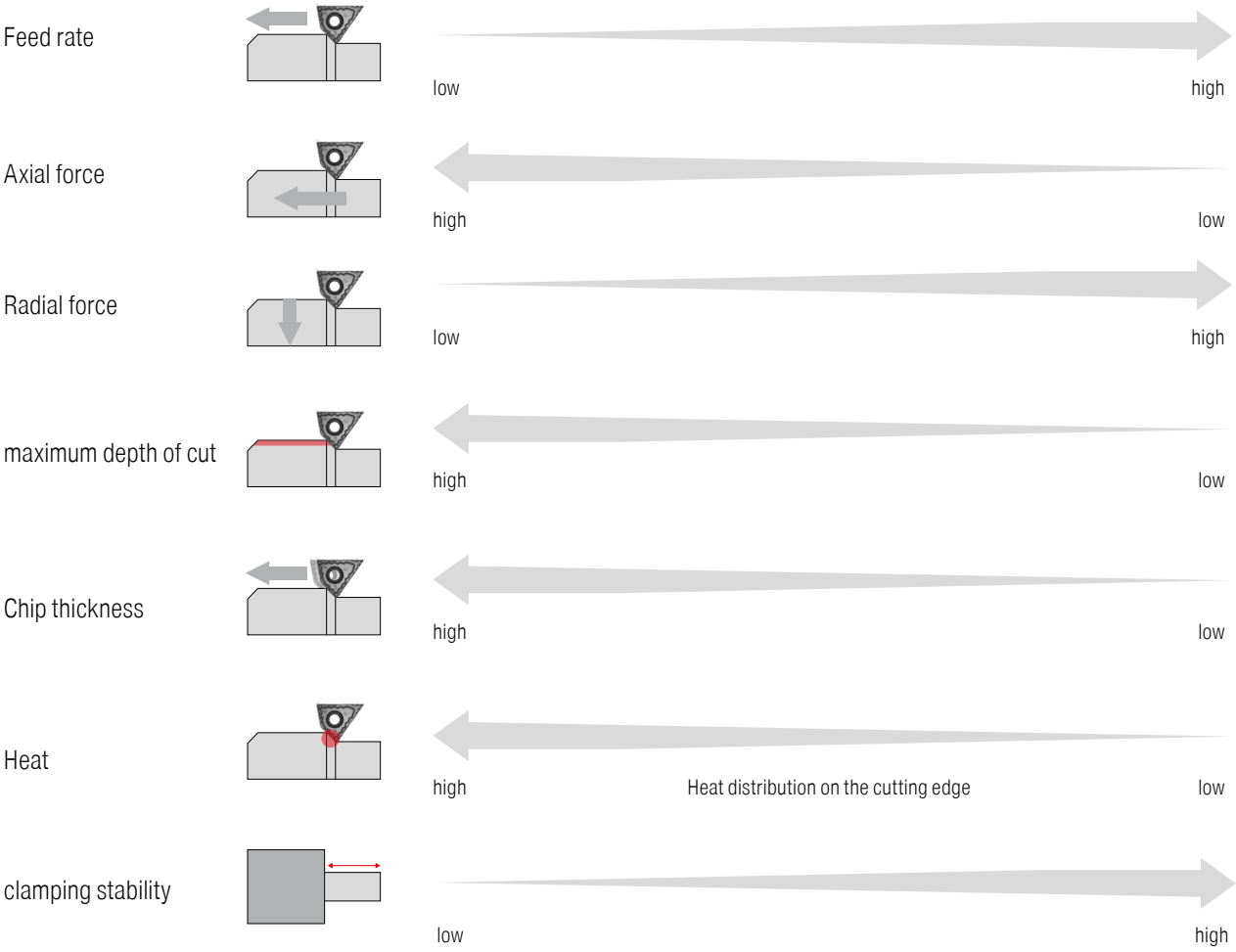
Recommendation for Optimum Results



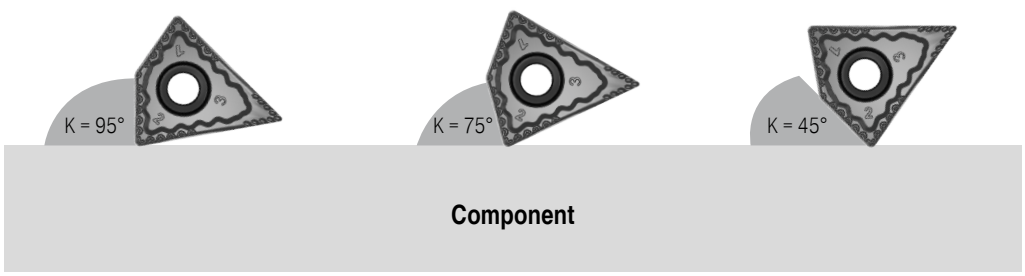
6

Factors influencing the selection of the correct cutting angle



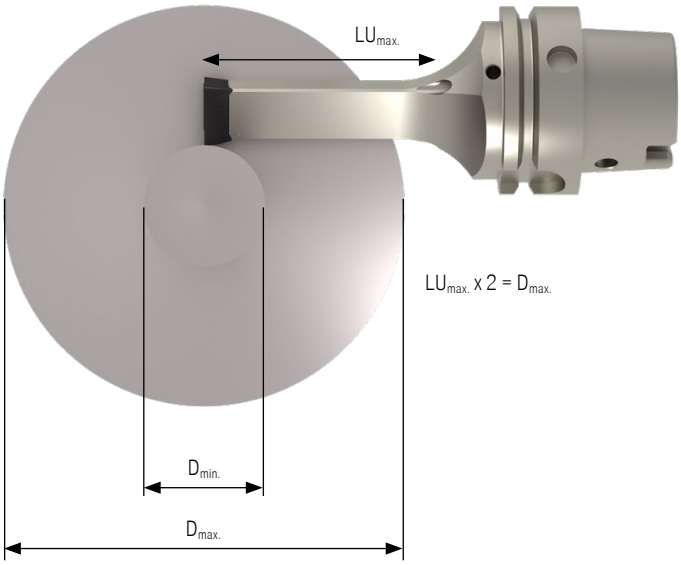


Approach angle



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

Tool / workpiece length ratio

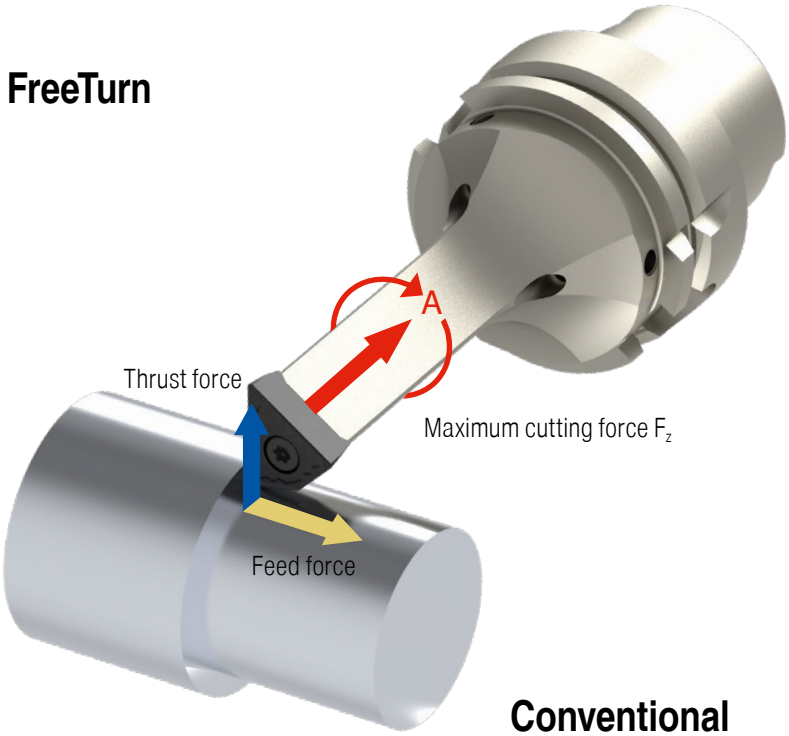


This table shows the diameter ranges you can work in with the different tool lengths.

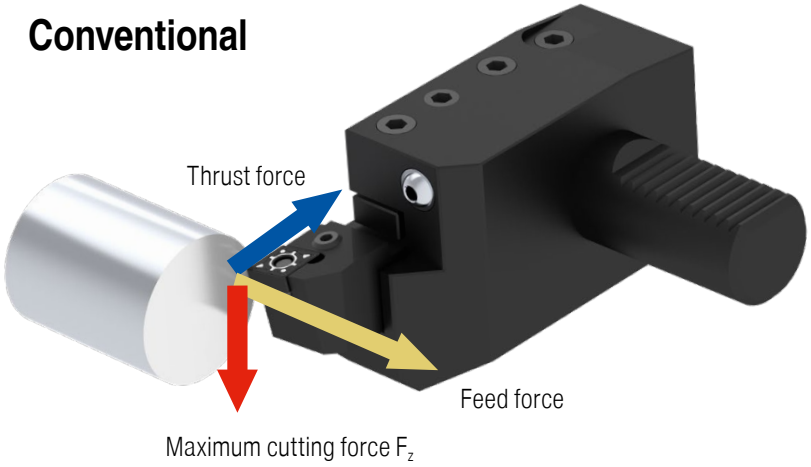
Tool	$D_{max.}$ in inch	7.87	7.48	7.09	6.69	6.30	5.91	5.51	5.12	4.72	4.33	3.94	3.54	3.15
PSC-63-**100**-FT 808055	$D_{min.}$ in inch					5.00	4.53	4.02	3.46	2.87	2.20	1.34	0.00	0.00
PSC-63-**125**-FT 808055	$D_{min.}$ in inch	5.43	4.92	4.33	3.54	2.76	1.65	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Force data from the process

FreeTurn



Conventional



Practical test	
Steel machining shaft Ø 2.36" 4140 material R_m 850 Nm	Cutting data: v_c = 575 ft./min. f = 0.012 "/rev. a_p = 0.120" 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

Grades Overview

EcoCut Classic

CTCP425
Carbide, Ti+Al_2O_3-coated
ISO | **P25** | K30 | M20
The wear-resistant choice for steel and cast iron materials under stable conditions and at high cutting speeds

CTCP435
Carbide, Ti+Al_2O_3-coated
ISO | **P35** | M30 | K40
The reliable choice for steel and cast iron materials under unstable conditions

CTPP430
Carbide. TiAlN-coated
ISO | **P30** | **M25** | K30 | N25 | S25 | O25
The universal high-performance grade for steel, austenitic steel and heat-resistant alloys

H210T
Carbide, uncoated
ISO | K10 | **N10** | **S10** | O10
The wear-resistant carbide grade for machining aluminium and other non-ferrous metals

H216T
Carbide, uncoated
ISO | **K15** | **N15** | S15 | O15
The uncoated carbide grade for machining aluminium and other non-ferrous metals. Also highly suitable for HSC machining.

FreeTurn

CTCP125
Carbide, TiCN-Al_2O_3-coated
ISO | **P25** | K25
The first choice for universal machining of steels

CTPM125
ISO | P35 | **M25**
The universal carbide grade with maximum toughness, without affecting the necessary hot hardness and wear resistance for stainless machining

H216T
Carbide, uncoated
ISO | K15 | **N15** | S15 | O15
The uncoated carbide grade for machining aluminium and other non-ferrous metals. Also highly suitable for HSC machining.

EcoCut Mini

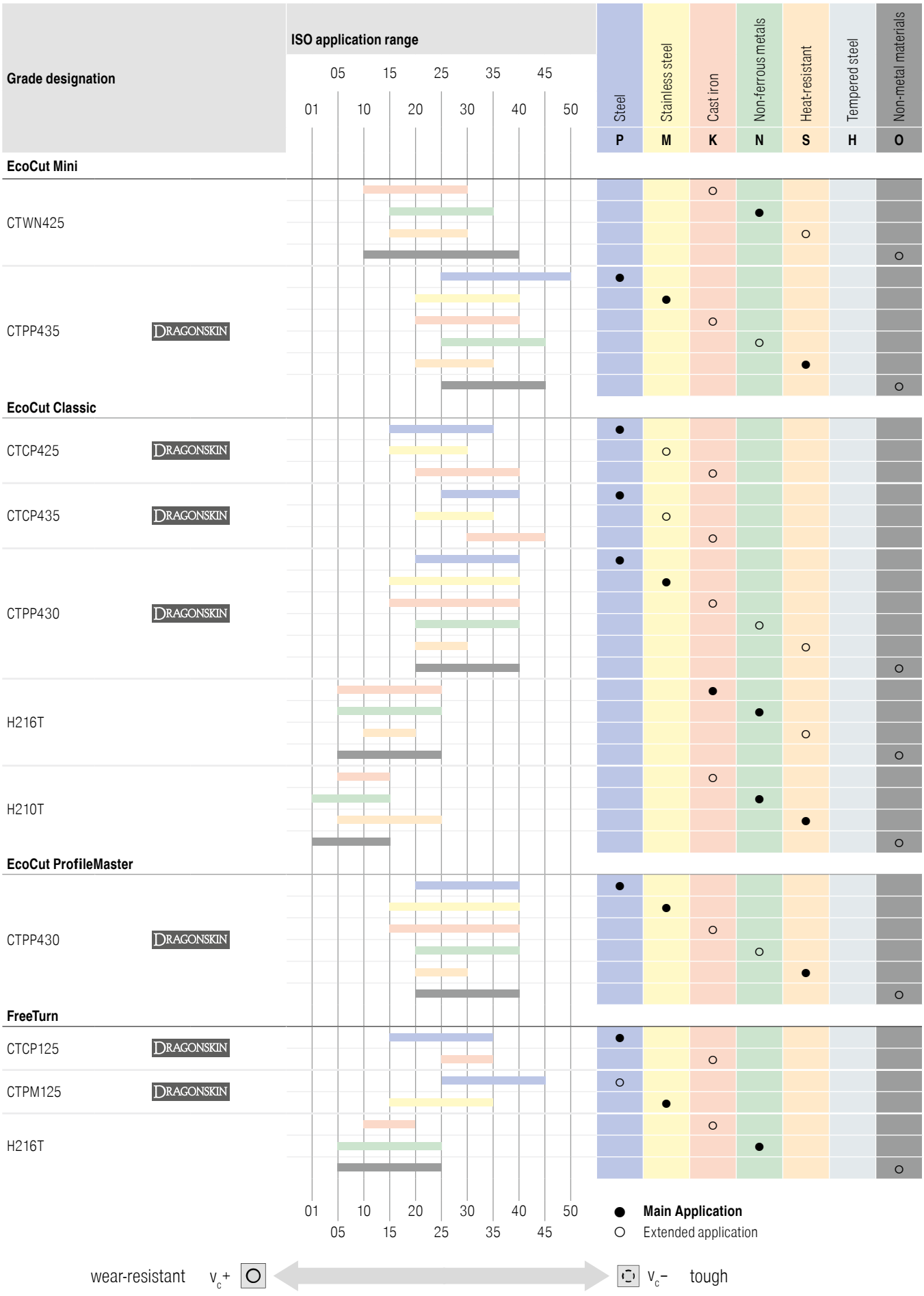
CTPP435
Carbide, TiAlN-coated
ISO | **P35** | **M30** | K30 | N30 | **S30** | O30
The universal high-performance grade for steel, austenitic steel and heat-resistant alloys

CTWN425
Carbide, uncoated
ISO | K20 | **N25** | S25 | O25
The uncoated carbide grade for machining aluminium and other non-ferrous metals

EcoCut ProfileMaster

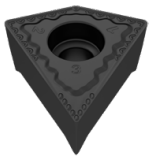
CTPP430
Carbide. TiAlN-coated
ISO | **P30** | **M25** | K30 | N25 | **S25** | O25
The universal high-performance grade for steel, austenitic steel and heat-resistant alloys

Application



Designation System

FreeTurn – indexable insert designation



FT15 M/G 808055R080804 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 Masterfinish – 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

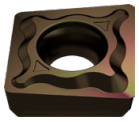
1 System
2 Size
3 Overhang length
4 FreeTurn
5 Nominal diameter in mm
6 Cutter angle 1 in degrees
7 Cutter angle 2 in degrees
8 Cutter angle 3 in degrees

6

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

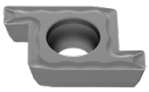
EcoCut – holder designation

ECC	32	R	-	3.0D	17	H	-	E
1	2	3		4	5	6		7

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

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	-	E
1	2	3		4		5

1 ProfileMaster
2 Nominal diameter in mm
3 Direction of cut
4 maximum hole depth
5 Inch size shank