Recommended Cutting Data | Imperial (inch)

EcoCut

ISO	Material	Hardness (BHN)	Type of Treatment / Alloy	
P	Low and Medium Carbon Steel	125	Annealed	≤ 0.15% C
		150 - 250	Annealed	0.15% - 0.45% C
		300	Tempered	≥ 0.45% C
	Alloy Steel	180	Annealed	
		250 - 300	Tempered	
		350	Tempered	
	High Strength Alloy	200	Annealed	
		350	Tempered	
S	Heat Resistant Alloys	200		Fe-base
		280		Fe-base
		250		Ni or Co-base
		–		Ni or Co-base 30 - 58 HRC
		–		Ni or Co-base 1500 - 2000 N/mm^2
	Titanium Alloy	R_m 440*		Pure Titanium
		R_m 1050*		Alpha + Beta Alloys
M	Stainless Steel	200	Annealed	Ferritic / Martensitic
		180	Quenched	Austenitic
		230 - 260	Quenched	Duplex
		330	Hardened	Martensitic / Austenitic
H	Tempered Steel	55 HRC	Hardened and Tempered	
		60 HRC	Hardened and Tempered	
	Chilled Castings	400	Cast	
	White Cast Iron	55 HRC	Hardened and Tempered	
K	Grey Cast Iron	180		Perlitic / Ferritic
		260		Perlitic / Martensitic
	Ductile Cast Iron	160		Ferritic
		–		Perlitic
	Tempered Iron	130		Ferritic
		230		Perlitic
N	Aluminum Wrought Alloys	60	Non-hardened	
		100	Hardened	
	Aluminum Cast Alloys	80	Non-hardened	< 12% Si
		90	Hardened	< 12% Si
		130	Non-hardened	< 12% Si
	Copper and Copper Alloys (Bronze, Brass)	–		Machining Alloy Stock (1% Pb)
		–		Brass, Red Bronze
		90		Bronze
		100		Lead-free Copper and Electrolytic Copper
	Non-metal Materials	100		Thermosetting Plastics
		–		Fiber Reinforced Plastics
		–		Hard Rubber

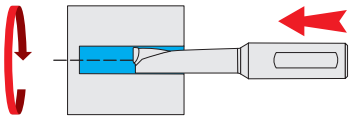
IMPORTANT: The speeds and feeds listed on these pages are a general starting point for all applications. Factory technical assistance is available through our Application Engineering department. Please call 1.330.343.4283 x7611 or email appeng@alliedmachine.com.

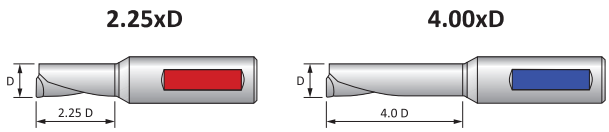
Speed (v_c SFM)						
EcoCut Mini		EcoCut Classic				
CTWN 425	CTPP 435	H210T	H216T	CTCP 425	CTPP 430	CTCP 435
–	200 - 750	–	–	490 - 985	390 - 820	460 - 920
–	200 - 525	–	–	400 - 720	260 - 590	330 - 650
–	160 - 430	–	–	330 - 650	200 - 525	260 - 590
–	200 - 525	–	–	400 - 720	260 - 590	330 - 650
–	160 - 430	–	–	330 - 590	200 - 490	260 - 525
–	160 - 330	–	–	260 - 490	200 - 430	230 - 460
–	200 - 460	–	–	360 - 625	260 - 560	330 - 590
–	130 - 330	–	–	230 - 490	160 - 430	200 - 460
80 - 130	65 - 165	115 - 165	100 - 150	–	65 - 300	65 - 165
65 - 100	65 - 130	80 - 130	65 - 115	–	65 - 300	65 - 130
65 - 100	50 - 65	80 - 130	65 - 115	–	65 - 300	50 - 65
50 - 80	30 - 65	65 - 100	50 - 80	–	65 - 300	30 - 65
50 - 80	30 - 65	50 - 80	50 - 80	–	65 - 300	30 - 65
100 - 330	165 - 400	260 - 460	100 - 330	–	130 - 330	165 - 400
80 - 200	100 - 165	130 - 330	80 - 200	–	100 - 300	100 - 165
–	130 - 650	–	–	390 - 720	160 - 525	330 - 650
–	130 - 590	–	–	330 - 650	160 - 590	330 - 590
–	130 - 330	–	–	–	160 - 430	–
–	130 - 260	–	–	–	160 - 400	–
–	–	–	–	–	–	–
–	–	–	–	–	–	–
–	–	–	–	–	–	–
–	–	–	–	–	–	–
260 - 460	330 - 590	460 - 650	390 - 525	430 - 920	400 - 650	400 - 820
200 - 400	260 - 525	330 - 525	300 - 460	430 - 920	330 - 590	400 - 820
295 - 490	330 - 590	525 - 650	430 - 560	390 - 920	400 - 650	360 - 820
200 - 360	260 - 525	360 - 490	300 - 430	390 - 920	330 - 590	360 - 820
330 - 590	330 - 650	525 - 720	460 - 650	360 - 920	300 - 525	330 - 820
260 - 460	295 - 525	460 - 590	390 - 525	360 - 920	230 - 490	330 - 820
260 - 6500	260 - 6500	400 - 9850	330 - 8200	–	260 - 6500	260 - 6500
260 - 4900	260 - 4900	400 - 8200	330 - 6550	–	260 - 4900	260 - 4900
260 - 4900	260 - 4900	400 - 6550	330 - 4900	–	260 - 4900	260 - 4900
260 - 4250	260 - 4250	400 - 5900	330 - 4900	–	260 - 4250	260 - 4250
260 - 1970	260 - 1970	400 - 3280	330 - 2625	–	260 - 1970	260 - 1970
260 - 1310	260 - 1310	400 - 2625	330 - 1970	–	260 - 1310	260 - 1310
260 - 1310	260 - 1310	400 - 2625	330 - 1970	–	260 - 1310	260 - 1310
260 - 985	260 - 985	400 - 1970	330 - 1310	–	260 - 985	260 - 985
260 - 650	260 - 650	400 - 1310	330 - 985	–	260 - 650	260 - 650
200 -525	200 -525	295 - 720	260 - 590	–	200 -525	200 -525
165 - 460	165 - 460	260 - 650	200 - 490	–	165 - 460	165 - 450
260 - 650	260 - 650	390 - 985	330 - 820	–	260 - 650	260 - 650

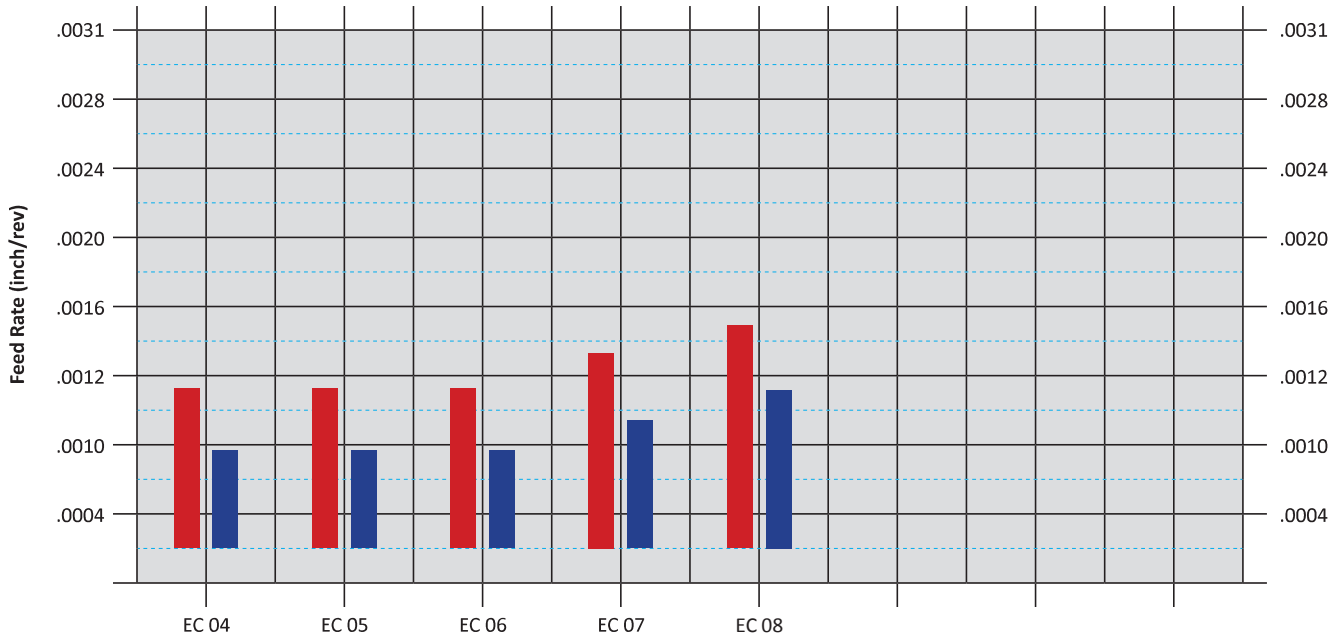
Depth of Cut / Feed Rate

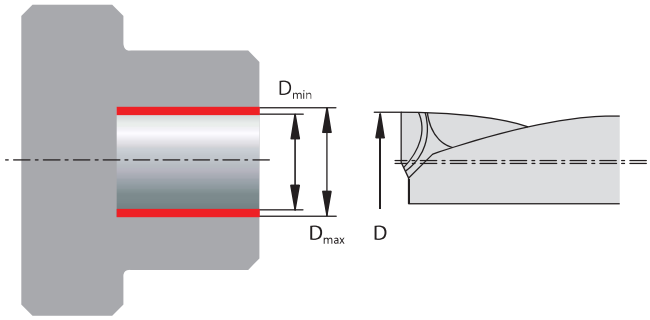
EcoCut Mini

Drilling Feed Rate (IPR)









Off-Center Drilling

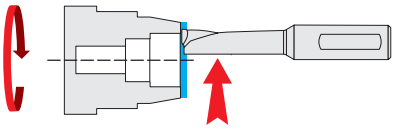
Off-center drilling is possible due to the special construction of EcoCut tools and inserts. Because of this, the desired deviations from the tool's nominal diameter can be obtained (see table below).

	Nominal Tools	Workpiece Bore Diameter	
EcoCut Mini	D (inch)	D_{min} (inch)	D_{max} (inch)
ECM 04 L/R - 2.25D	0.157	0.154	0.165
ECM 05 L/R - 2.25D	0.197	0.193	0.205
ECM 06 L/R - 2.25D	0.236	0.232	0.244
ECM 07 L/R - 2.25D	0.276	0.272	0.283
ECM 08 L/R - 2.25D	0.315	0.311	0.323

Depth of Cut / Feed Rate

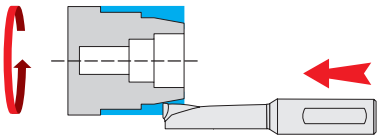
EcoCut Mini

Facing Feed Rate (IPR)



EcoCut Mini	Length Ratio	Depth of Cut (inch)				
		up to .0079	.008-.0157	0.0158-.0236	.0237-.0315	.0316-.0394
EC04	2.25	.0003 - .0028	.0003 - .0028	.0003 - .0028	–	–
	4.00	.0003 - .0020	.0003 - .0020	.0003 - .0020	–	–
EC05	2.25	.0003 - .0028	.0003 - .0028	.0003 - .0028	–	–
	4.00	.0003 - .0020	.0003 - .0020	.0003 - .0020	–	–
EC06	2.25	.0003 - .0028	.0003 - .0028	.0003 - .0028	–	–
	4.00	.0003 - .0020	.0003 - .0020	.0003 - .0020	–	–
EC07	2.25	.0003 - .0031	.0003 - .0031	.0003 - .0031	.0003 - .0031	.0003 - .0031
	4.00	.0003 - .0023	.0003 - .0023	.0003 - .0023	.0003 - .0023	.0003 - .0023
EC08	2.25	.0003 - .0031	.0003 - .0031	.0003 - .0031	.0003 - .0031	.0003 - .0031
	4.00	.0003 - .0023	.0003 - .0023	.0003 - .0023	.0003 - .0023	.0003 - .0023

Turning / Boring Feed Rate (IPR)

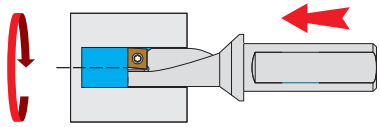


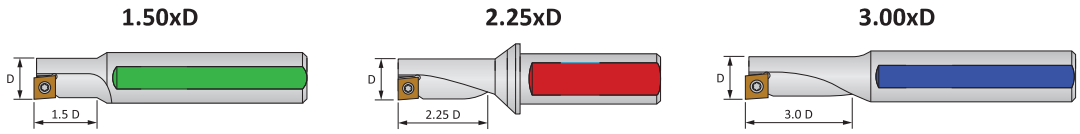
EcoCut Mini	Length Ratio	Depth of Cut (inch)			
		up to .039	.040-.079	.080-.118	.119-.157
EC04	2.25	.0002 - .0039	.0002 - .0020	—	—
	4.00	.0002 - .0031	—	—	—
EC05	2.25	.0002 - .0039	.0002 - .0024	—	—
	4.00	.0002 - .0035	.0002 - .0016	—	—
EC06	2.25	.0002 - .0039	.0002 - .0032	.0002 - .0016	—
	4.00	.0002 - .0035	.0002 - .0016	—	—
EC07	2.25	.0002 - .0039	.0002 - .0039	.0002 - .0024	—
	4.00	.0002 - .0039	.0002 - .0023	—	—
EC08	2.25	.0002 - .0039	.0002 - .0039	.0002 - .0032	.0002 - .0016
	4.00	.0002 - .0039	.0002 - .0031	.0002 - .0016	—

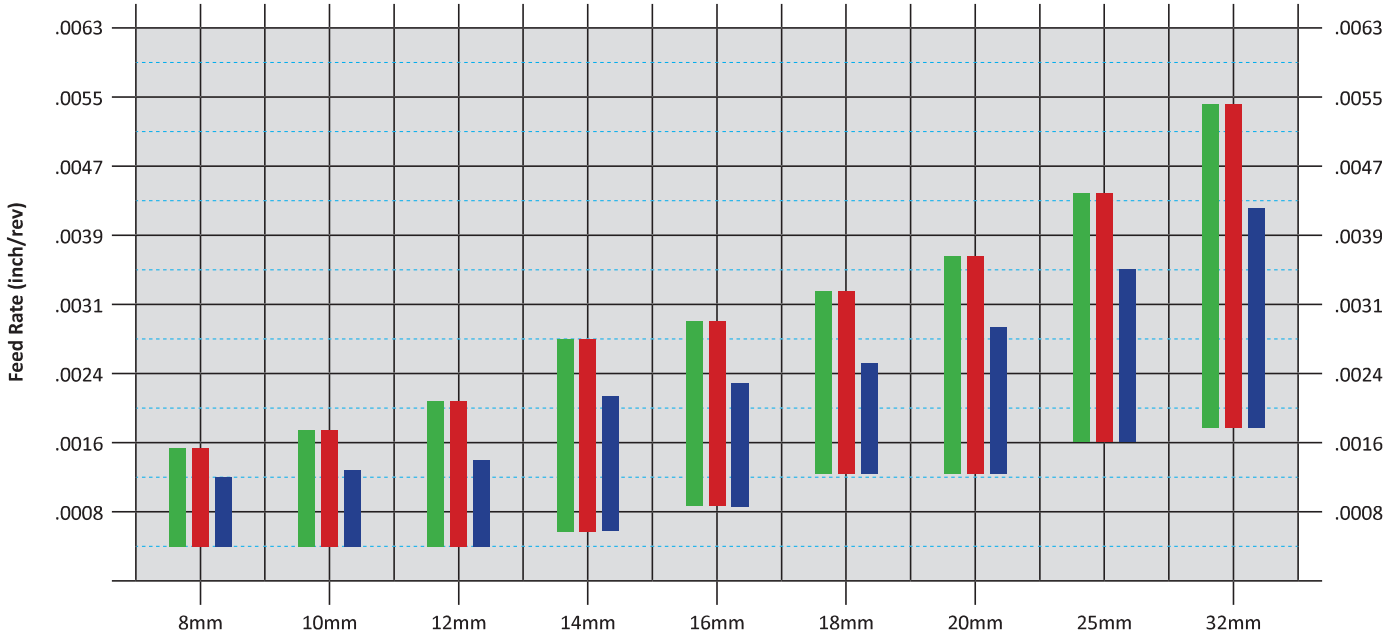
Depth of Cut / Feed Rate

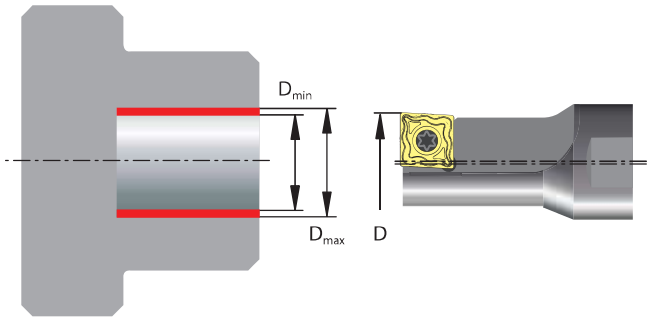
EcoCut Classic

Drilling Feed Rate (IPR)









Off-Center Drilling

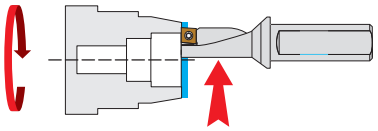
Off-center drilling is possible due to the special construction of EcoCut tools and inserts. Because of this, the desired deviations from the tool's nominal diameter can be obtained (see table below).

	Nominal Tools	Workpiece Bore Diameter	
EcoCut Classic	D (inch)	D_{min} (inch)	D_{max} (inch)
ECC 08 L/R - ... 04	0.315	0.309	0.327
ECC 10 L/R - ... 05	0.394	0.388	0.413
ECC 12 L/R - ... 06	0.472	0.467	0.492
ECC 14 L/R - ... 07	0.551	0.542	0.571
ECC 16 L/R - ... 08	0.630	0.624	0.650
ECC 18 L/R - ... 09	0.709	0.703	0.728
ECC 20 L/R - ... 10	0.787	0.780	0.807
ECC 25 L/R - ... 13	0.984	0.976	1.016
ECC 32 L/R - ... 17	1.260	1.252	1.299

Depth of Cut / Feed Rate

EcoCut Classic

Facing Feed Rate (IPR)

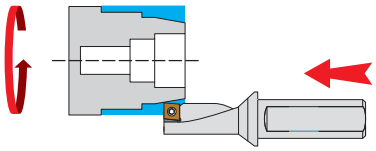


EcoCut Classic	Length Ratio	Depth of Cut (inch)						
		up to .039	.040-.079	.080-.118	.119-.157	.158-.197	.198-.236	.237-.315
8mm	1.50	.0005 - .0037	.0005 - .0037	–	–	–	–	–
	2.25	.0005 - .0037	.0005 - .0037	–	–	–	–	–
	3.00	.0005 - .0030	–	–	–	–	–	–
10mm	1.50	.0005 - .0050	.0005 - .0050	–	–	–	–	–
	2.25	.0005 - .0050	.0005 - .0050	–	–	–	–	–
	3.00	.0005 - .0037	–	–	–	–	–	–
12mm	1.50	.0005 - .0058	.0005 - .0058	–	–	–	–	–
	2.25	.0005 - .0058	.0005 - .0058	–	–	–	–	–
	3.00	.0005 - .0045	–	–	–	–	–	–
14mm	1.50	.0005 - .0065	.0005 - .0065	–	–	–	–	–
	2.25	.0005 - .0065	.0005 - .0065	.0005 - .0065	–	–	–	–
	3.00	.0005 - .0047	–	–	–	–	–	–
16mm	1.50	.0005 - .0073	.0005 - .0073	.0005 - .0073	.0005 - .0073	–	–	–
	2.25	.0005 - .0073	.0005 - .0073	.0005 - .0073	–	–	–	–
	3.00	.0005 - .0062	.0005 - .0062	–	–	–	–	–
18mm	1.50	.0005 - .0080	.0005 - .0080	.0005 - .0080	.0005 - .0080	–	–	–
	2.25	.0005 - .0080	.0005 - .0080	.0005 - .0080	.0005 - .0080	–	–	–
	3.00	.0005 - .0055	.0005 - .0055	–	–	–	–	–
20mm	1.50	.0005 - .0088	.0005 - .0088	.0005 - .0088	.0005 - .0088	–	–	–
	2.25	.0005 - .0085	.0005 - .0085	.0005 - .0085	.0005 - .0085	–	–	–
	3.00	.0005 - .0085	.0005 - .0085	–	–	–	–	–
25mm	1.50	.0005 - .0100	.0005 - .0100	.0005 - .0100	–	–	–	–
	2.25	.0005 - .0095	.0005 - .0095	.0005 - .0095	.0005 - .0095	.0005 - .0095	–	–
	3.00	.0005 - .0073	.0005 - .0073	.0005 - .0073	–	–	–	–
32mm	1.50	.0005 - .0110	.0005 - .0110	.0005 - .0110	.0005 - .0110	.0005 - .0110	.0005 - .0110	.0005 - .0110
	2.25	.0005 - .0108	.0005 - .0108	.0005 - .0108	.0005 - .0108	.0005 - .0108	.0005 - .0108	–
	3.00	.0005 - .0080	.0005 - .0080	.0005 - .0080	–	–	–	–

Depth of Cut / Feed Rate

EcoCut Classic

Turning / Boring Feed Rate (IPR)

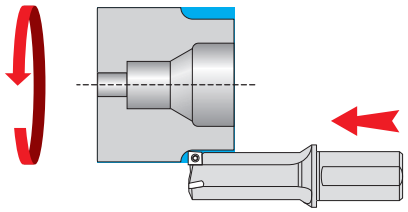


EcoCut Classic	Length Ratio	Depth of Cut (inch)						
		up to .079	.080-.157	.158-.236	.237-.315	.316-.394	.395-.472	.473-.551
8mm	1.50	.0005 - .0050	.0005 - .0030	–	–	–	–	–
	2.25	.0008 - .0052	.0008 - .0040	–	–	–	–	–
	3.00	.0008 - .0052	.0008 - .0040	–	–	–	–	–
10mm	1.50	.0005 - .0060	.0005 - .0035	–	–	–	–	–
	2.25	.0008 - .0060	.0008 - .0052	.0008 - .0035	–	–	–	–
	3.00	.0008 - .0060	.0008 - .0052	.0008 - .0035	–	–	–	–
12mm	1.50	.0005 - .0065	.0005 - .0055	.0005 - .0040	–	–	–	–
	2.25	.0008 - .0065	.0008 - .0065	.0008 - .0050	.0008 - .0040	–	–	–
	3.00	.0008 - .0065	.0008 - .0065	.0008 - .0050	.0008 - .0040	–	–	–
14mm	1.50	.0007 - .0073	.0007 - .0073	.0007 - .0050	–	–	–	–
	2.25	.0009 - .0072	.0009 - .0072	.0009 - .0058	.0009 - .0045	–	–	–
	3.00	.0009 - .0072	.0009 - .0072	.0009 - .0058	.0009 - .0045	–	–	–
16mm	1.50	.0007 - .0080	.0007 - .0080	.0007 - .0060	.0007 - .0040	–	–	–
	2.25	.0010 - .0080	.0010 - .0080	.0010 - .0070	.0010 - .0055	–	–	–
	3.00	.0010 - .0080	.0010 - .0080	.0010 - .0070	.0010 - .0055	–	–	–
18mm	1.50	.0008 - .0087	.0008 - .0087	.0008 - .0080	.0008 - .0060	–	–	–
	2.25	.0010 - .0085	.0010 - .0085	.0010 - .0080	.0010 - .0065	.0010 - .0050	–	–
	3.00	.0010 - .0085	.0010 - .0085	.0010 - .0080	.0010 - .0065	.0010 - .0050	–	–
20mm	1.50	.0008 - .0095	.0008 - .0095	.0008 - .0090	.0008 - .0075	.0008 - .0060	–	–
	2.25	.0010 - .0095	.0010 - .0095	.0010 - .0095	.0010 - .0080	.0010 - .0065	–	–
	3.00	.0010 - .0095	.0010 - .0095	.0010 - .0095	.0010 - .0080	.0010 - .0065	–	–
25mm	1.50	.0009 - .0105	.0009 - .0105	.0009 - .0105	.0009 - .0095	.0009 - .0080	.0009 - .0063	–
	2.25	.0010 - .0105	.0010 - .0105	.0010 - .0105	.0010 - .0105	.0010 - .0085	.0010 - .0070	–
	3.00	.0010 - .0105	.0010 - .0105	.0010 - .0105	.0010 - .0105	.0010 - .0085	.0010 - .0070	–
32mm	1.50	.0010 - .0120	.0010 - .0120	.0010 - .0120	.0010 - .0120	.0010 - .0103	.0010 - .0088	.0010 - .0073
	2.25	.0010 - .0120	.0010 - .0120	.0010 - .0120	.0010 - .0120	.0010 - .0110	.0010 - .0085	.0010 - .0080
	3.00	.0010 - .0120	.0010 - .0120	.0010 - .0120	.0010 - .0120	.0010 - .0110	.0010 - .0085	.0010 - .0080

Depth of Cut / Feed Rate

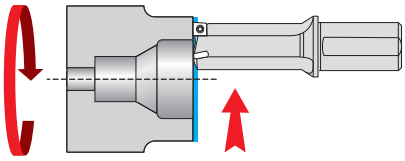
EcoCut Rebore

Turning and Boring Feed Rate (IPR)



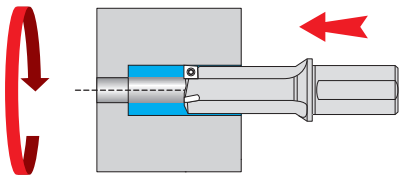
Part No.	Depth of Cut (inch)						
	Up to 0.079	0.08 - 0.157	0.158 - 0.197	0.198 - 0.315	0.316 - 0.394	0.395 - 0.472	0.473 - 0.551
ECR 40..	.0010 - .0160	.0010 - .0150	.0010 - .0120	.0010 - .0090	–	–	–
ECR 60..	.0010 - .0160	.0010 - .0160	.0010 - .0150	.0010 - .0130	.0010 - .0100	.0010 - .0075	.0010 - .0050

Facing Feed Rate (IPR)



Part No.	Depth of Cut (inch)					
	up to 0.020	0.021 - 0.040	0.041 - 0.060	0.061 - 0.080	0.081 - 0.100	0.101 - 0.120
ECR 40..	.0005 - .0120	.0005 - .0120	.0005 - .0120	.0005 - .0120	–	–
ECR 60..	.0005 - .0120	.0005 - .0120	.0005 - .0120	.0005 - .0120	.0005 - .0120	.0005 - .0120

Counterboring (Existing Hole) Feed Rate (IPR)



Part No.	Existing Hole Diameter (inch)			
	0.797 - 1.180	1.181 - 1.260	1.261 - 1.968	1.969 - 2.363
ECR 40..	.002 - .016	.002 - .035	–	–
ECR 60..	–	–	.002 - .030	.002 - .045

Tools	Initial Bore
ECR 40..	Ø min = .797"
ECR 60..	Ø min = 1.260"