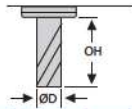


158 Recommended Cutting Data - High Feed Roughing Inch



Workpiece Material Group	Material Type	Coolant		OH	Vc-SFM	Tool Diameter and Corner Radius								
						.0787 x R.0197			.1181 x R.0315			.1575 x R.0394		
		Air	Emulsion			2.0 x R0.5		3.0 x R0.8			4.0 x R1.0			
						Ap	Ae	Fz	Ap	Ae	Fz	Ap	Ae	Fz
Steel	Alloy & Tool Steel Below 260HB	•	o	3D	395	.0039	.020	.0039	.0063	.028	.0063	.0079	.039	.0079
				4D	360	.0035		.0039	.0055		.0063	.0071		.0079
				5D	330	.0035		.0039	.0055		.0063	.0067		.0079
				6D	310	.0028		.0039	.0043		.0063	.0055		.0079
				8D	280	.0024		.0039	.0039		.0063	.0047		.0079
	10D	230	.0020	.0039	.0031	.0063	.0039	.0079						
	Pre-hardened Tool Steel Rc30-40	•	o	3D	310	.0031	.020	.0035	.0051	.028	.0055	.0063	.039	.0071
				4D	280	.0028		.0035	.0047		.0055	.0055		.0071
				5D	260	.0028		.0035	.0043		.0055	.0055		.0071
				6D	245	.0020		.0035	.0035		.0055	.0043		.0071
8D				215	.0020	.0035		.0031	.0055		.0039	.0071		
10D	180	.0016	.0035	.0024	.0055	.0031	.0071							
Stainless Steel	M	x	•	3D	230	.0031	.020	.0035	.0051	.028	.0055	.0063	.039	.0071
				4D	215	.0028		.0035	.0047		.0055	.0055		.0071
				5D	200	.0028		.0035	.0043		.0055	.0055		.0071
				6D	180	.0020		.0035	.0035		.0055	.0043		.0071
				8D	165	.0020		.0035	.0031		.0055	.0039		.0071
10D	130	.0016	.0035	.0024	.0055	.0031	.0071							
Special Alloys	High Temp Alloys	x	•	3D	100	.0012	.016	.0020	.0016	.024	.0031	.0020	.032	.0039
				4D	80	.0008		.0020	.0016		.0031	.0020		.0039
				5D	80	.0008		.0020	.0012		.0031	.0016		.0039
				6D	80	.0008		.0020	.0012		.0031	.0012		.0039
				8D	65	.0008		.0020	.0008		.0031	.0012		.0039
	10D	65	.0004	.0020	.0008	.0031	.0012	.0039						
	Titanium Alloys	x	•	3D	230	.0024	.016	.0031	.0035	.024	.0047	.0043	.032	.0059
				4D	215	.0020		.0031	.0031		.0047	.0039		.0059
				5D	200	.0020		.0031	.0028		.0047	.0035		.0059
				6D	180	.0016		.0031	.0024		.0047	.0028		.0059
8D				165	.0012	.0031		.0020	.0047		.0028	.0059		
10D	130	.0012	.0031	.0016	.0047	.0024	.0059							
Cast Iron	K	•	•	3D	395	.0039	.020	.0039	.0063	.028	.0063	.0079	.039	.0079
				4D	360	.0035		.0039	.0055		.0063	.0071		.0079
				5D	330	.0035		.0039	.0055		.0063	.0067		.0079
				6D	310	.0028		.0039	.0043		.0063	.0055		.0079
				8D	280	.0024		.0039	.0039		.0063	.0047		.0079
10D	230	.0020	.0039	.0031	.0063	.0039	.0079							
Hardened Steels	Hardened Steels Rc45-50	•	o	3D	260	.0024	.020	.0028	.0039	.028	.0043	.0047	.039	.0055
				4D	230	.0020		.0028	.0035		.0043	.0043		.0055
				5D	230	.0020		.0028	.0031		.0043	.0039		.0055
				6D	215	.0016		.0028	.0028		.0043	.0031		.0055
				8D	180	.0016		.0028	.0024		.0043	.0028		.0055
	10D	165	.0012	.0028	.0020	.0043	.0024	.0055						
	Hardened Steels Rc50-55	•	x	3D	200	.0020	.016	.0020	.0031	.024	.0031	.0039	.032	.0039
				4D	180	.0020		.0020	.0028		.0031	.0035		.0039
				5D	165	.0016		.0020	.0028		.0031	.0035		.0039
				6D	165	.0012		.0020	.0020		.0031	.0028		.0039
8D				130	.0012	.0020		.0020	.0031		.0024	.0039		
10D	115	.0012	.0020	.0016	.0031	.0020	.0039							

Coolant: • Preferred o Possible x Not Possible

Technical data provided should be considered advisory only as variations may be necessary depending on the particular application.

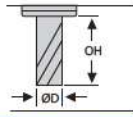
158 Recommended Cutting Data - High Feed Roughing Inch

Tool Diameter and Corner Radius																	
.2362 x R.059			.3150 x R.0787			.3937 x R.0787			.4724 X R.0787			.6299 x R.1181					
6.0 x R1.5			8.0 x R2.0			10.0 x R2.0			12 x R2.0			16 x R3.0					
Ap	Ae	Fz	Ap	Ae	Fz	Ap	Ae	Fz	Ap	Ae	Fz	Ap	Ae	Fz			
.0118	.059	.0118	.0157	.079	.0157	.0157	.118	.0157	.0157	.157	.0157	.0236	.197	.0236			
.0106		.0118			.0142			.0157			.0142			.0157	.0142	.0157	.0213
.0102		.0118			.0134			.0157			.0134			.0157	.0134	.0157	.0201
.0079		.0118			.0106			.0157			.0106			.0157	.0106	.0157	.0161
.0071		.0118			.0094			.0157			.0094			.0157	.0094	.0157	.0142
.0059		.0118			.0079			.0157			.0079			.0157	.0079	.0157	.0118
.0094	.059	.0106	.0126	.079	.0142	.0126	.118	.0142	.0126	.157	.0142	.0189	.197	.0213			
.0087		.0106			.0114			.0142			.0114			.0142	.0114	.0142	.0169
.0079		.0106			.0106			.0142			.0106			.0142	.0106	.0142	.0161
.0063		.0106			.0087			.0142			.0087			.0142	.0087	.0142	.0130
.0055		.0106			.0075			.0142			.0075			.0142	.0075	.0142	.0114
.0047		.0106			.0063			.0142			.0063			.0142	.0063	.0142	.0110
.0094	.059	.0106	.0126	.079	.0142	.0126	.118	.0142	.0126	.157	.0142	.0189	.197	.0213			
.0087		.0106			.0114			.0142			.0114			.0142	.0114	.0142	.0169
.0079		.0106			.0106			.0142			.0106			.0142	.0106	.0142	.0161
.0063		.0106			.0087			.0142			.0087			.0142	.0087	.0142	.0130
.0055		.0106			.0075			.0142			.0075			.0142	.0075	.0142	.0114
.0047		.0106			.0063			.0142			.0063			.0142	.0063	.0142	.0094
.0031	.048	.0059	.0039	.063	.0079	.0039	.098	.0079	.0039	.138	.0079	.0059	.169	.0118			
.0028		.0059			.0035			.0079			.0035			.0079	.0035	.0079	.0055
.0024		.0059			.0035			.0079			.0035			.0079	.0035	.0079	.0051
.0020		.0059			.0028			.0079			.0028			.0079	.0028	.0079	.0039
.0020		.0059			.0024			.0079			.0024			.0079	.0024	.0079	.0035
.0016		.0059			.0020			.0079			.0020			.0079	.0020	.0079	.0031
.0067	.048	.0091	.0087	.063	.0118	.0087	.098	.0118	.0087	.138	.0118	.0130	.169	.0177			
.0059		.0091			.0079			.0118			.0079			.0118	.0079	.0118	.0118
.0055		.0091			.0075			.0118			.0075			.0118	.0075	.0118	.0110
.0043		.0091			.0059			.0118			.0059			.0118	.0059	.0118	.0087
.0039		.0091			.0051			.0118			.0051			.0118	.0051	.0118	.0079
.0031		.0091			.0043			.0118			.0043			.0118	.0043	.0118	.0067
.0118	.059	.0118	.0157	.079	.0157	.0157	.118	.0157	.0157	.157	.0157	.0236	.197	.0236			
.0106		.0118			.0142			.0157			.0142			.0157	.0142	.0157	.0213
.0102		.0118			.0134			.0157			.0134			.0157	.0134	.0157	.0201
.0079		.0118			.0106			.0157			.0106			.0157	.0106	.0157	.0161
.0071		.0118			.0094			.0157			.0094			.0157	.0094	.0157	.0142
.0059		.0118			.0079			.0157			.0079			.0157	.0079	.0157	.0118
.0071	.059	.0083	.0094	.079	.0110	.0094	.118	.0110	.0094	.157	.0110	.0142	.197	.0165			
.0063		.0083			.0087			.0110			.0087			.0110	.0087	.0110	.0126
.0059		.0083			.0079			.0110			.0079			.0110	.0079	.0110	.0122
.0047		.0083			.0063			.0110			.0063			.0110	.0063	.0110	.0094
.0043		.0083			.0055			.0110			.0055			.0110	.0055	.0110	.0087
.0035		.0083			.0047			.0110			.0047			.0110	.0047	.0110	.0071
.0059	.048	.0059	.0079	.063	.0079	.0079	.098	.0079	.0079	.138	.0079	.0118	.169	.0118			
.0055		.0059			.0071			.0079			.0071			.0079	.0071	.0079	.0106
.0051		.0059			.0067			.0079			.0067			.0079	.0067	.0079	.0102
.0039		.0059			.0055			.0079			.0055			.0079	.0055	.0079	.0079
.0035		.0059			.0047			.0079			.0047			.0079	.0047	.0079	.0071
.0031		.0059			.0039			.0079			.0039			.0079	.0039	.0079	.0059

Technical data provided should be considered advisory only as variations may be necessary depending on the particular application.

For product information, call your local distributor.

158 Recommended Cutting Data - High Feed Roughing Metric



Workpiece Material Group	Material Type	Coolant		OH	Vc-M/Min	Tool Diameter and Corner Radius																								
		Air	Emulsion			2.0 x R0.5			3.0 x R0.8			4.0 x R1.0																		
						Ap	Ae	Fz	Ap	Ae	Fz	Ap	Ae	Fz																
Steel	Alloy & Tool Steel Below 260HB	•	o	3D	120	0.10	0.5	0.10	0.16	0.7	0.16	0.20	1.0	0.20																
				4D	110	0.09									0.10	0.14	0.16	0.18												
				5D	100	0.09													0.10	0.14	0.16	0.17								
				6D	95	0.07																	0.10	0.11	0.16	0.14				
				8D	85	0.06																					0.10	0.10	0.16	0.12
				10D	70	0.05																								
	3D	95	0.08	0.5	0.09	0.13	0.7	0.14	0.16	1.0	0.18																			
	4D	85	0.07									0.09	0.12	0.14	0.14															
	5D	80	0.07													0.09	0.11	0.14	0.14											
	6D	75	0.05																	0.09	0.09	0.14	0.11							
8D	65	0.05	0.09																					0.08	0.14	0.10				
10D	55	0.04																									0.09	0.06	0.14	0.08
Stainless Steel	Stainless Steel 300 & PH series	x		•	3D	70	0.08	0.5	0.09	0.13	0.7																			
					4D	65	0.07					0.09	0.12	0.14	0.14															
					5D	60	0.07									0.09	0.11	0.14	0.14											
					6D	55	0.05													0.09	0.09	0.14	0.11							
			8D		50	0.05	0.09																	0.08	0.14	0.10				
10D	40	0.04	0.09	0.06	0.14	0.08																								
Special Alloys	High Temp Alloys	x						•	3D	30	0.03	0.4	0.05	0.04	0.6												0.08	0.05	0.8	0.10
									4D	25	0.02					0.05	0.04	0.08	0.05											
									5D	25	0.02									0.05	0.03	0.08	0.04							
							6D		25	0.02	0.05													0.03	0.08	0.03				
			8D	20	0.02	0.05	0.02		0.08	0.03																				
	10D	20	0.01	0.05	0.02			0.08				0.03																		
	Titanium Alloys	x	•										3D	70	0.06	0.4	0.08	0.09	0.6								0.12	0.11	0.8	0.15
													4D	65	0.05					0.08	0.08	0.12	0.10							
											5D		60	0.05	0.08									0.07	0.12	0.09				
						6D	55		0.04	0.08	0.06		0.12	0.07																
8D				50	0.03	0.08	0.05	0.12	0.07																					
10D	40	0.03	0.08	0.04	0.12							0.06																		
Cast Iron	GG, GGG	•														•	3D	120	0.10	0.5	0.10	0.16	0.7				0.16	0.20	1.0	0.20
															4D		110	0.09	0.10					0.14	0.16	0.18				
										5D	100		0.09	0.10	0.14		0.16	0.17												
						6D	95	0.07	0.10	0.11	0.16		0.14																	
			8D	85	0.06	0.10	0.10	0.16				0.12																		
			10D	70	0.05																									
Hardened Steels	Hardened Steels Rc45-50	•	o	3D	80											0.06				0.5	0.07	0.10	0.7				0.11	0.12	1.0	0.14
				4D	70											0.05			0.07					0.09	0.11	0.11				
				5D	70									0.05	0.07	0.08	0.11	0.10												
				6D	65				0.04	0.07	0.07		0.11	0.08																
				8D	55	0.04	0.07	0.06	0.11			0.07																		
	10D	50	0.03	0.07	0.05	0.11														0.06										
	Hardened Steels Rc50-55	•	x																3D		60	0.05	0.4	0.05	0.08	0.6	0.08	0.10	0.8	0.10
															4D	55	0.05	0.05	0.07		0.08	0.09								
										5D	50		0.04	0.05	0.07	0.08	0.09													
							6D	50	0.03	0.05	0.05	0.08	0.07																	
8D				40	0.03	0.05	0.05	0.08	0.06																					
10D	35	0.03	0.05	0.04	0.08															0.05										

Coolant: • Preferred o Possible x Not Possible

Technical data provided should be considered advisory only as variations may be necessary depending on the particular application.




158 Recommended Cutting Data - High Feed Roughing Metric

Tool Diameter and Corner Radius														
6.0 x R1.5			8.0 x R2.0			10.0 x R2.0			12 x R2.0			16 x R3.0		
Ap	Ae	Fz	Ap	Ae	Fz	Ap	Ae	Fz	Ap	Ae	Fz	Ap	Ae	Fz
0.30	1.5	0.30	0.40	2.0	0.40	0.40	3.0	0.40	0.40	4.0	0.40	0.60	5.0	0.60
0.27		0.30	0.36		0.40	0.36		0.40	0.36		0.40	0.54		0.60
0.26		0.30	0.34		0.40	0.34		0.40	0.34		0.40	0.51		0.60
0.20		0.30	0.27		0.40	0.27		0.40	0.27		0.40	0.41		0.60
0.18		0.30	0.24		0.40	0.24		0.40	0.24		0.40	0.36		0.60
0.15		0.30	0.20		0.40	0.20		0.40	0.20		0.40	0.30		0.60
0.24	1.5	0.27	0.32	2.0	0.36	0.32	3.0	0.36	0.32	4.0	0.36	0.48	5.0	0.54
0.22		0.27	0.29		0.36	0.29		0.36	0.29		0.36	0.43		0.54
0.20		0.27	0.27		0.36	0.27		0.36	0.27		0.36	0.41		0.54
0.16		0.27	0.22		0.36	0.22		0.36	0.22		0.36	0.33		0.54
0.14		0.27	0.19		0.36	0.19		0.36	0.19		0.36	0.29		0.54
0.12		0.27	0.16		0.36	0.16		0.36	0.16		0.36	1.28		0.54
0.24	1.5	0.27	0.32	2.0	0.36	0.32	3.0	0.36	0.32	4.0	0.36	0.48	5.0	0.54
0.22		0.27	0.29		0.36	0.29		0.36	0.29		0.36	0.43		0.54
0.20		0.27	0.27		0.36	0.27		0.36	0.27		0.36	0.41		0.54
0.16		0.27	0.22		0.36	0.22		0.36	0.22		0.36	0.33		0.54
0.14		0.27	0.19		0.36	0.19		0.36	0.19		0.36	0.29		0.54
0.12		0.27	0.16		0.36	0.16		0.36	0.16		0.36	0.24		0.54
0.08	1.2	0.15	0.10	1.6	0.20	0.10	2.5	0.20	0.10	3.5	0.20	0.15	4.3	0.30
0.07		0.15	0.09		0.20	0.09		0.20	0.09		0.20	0.14		0.30
0.06		0.15	0.09		0.20	0.09		0.20	0.09		0.20	0.13		0.30
0.05		0.15	0.07		0.20	0.07		0.20	0.07		0.20	0.10		0.30
0.05		0.15	0.06		0.20	0.06		0.20	0.06		0.20	0.09		0.30
0.04		0.15	0.05		0.20	0.05		0.20	0.05		0.20	0.08		0.30
0.17	1.2	0.23	0.22	1.6	0.30	0.22	2.5	0.30	0.22	3.5	0.30	0.33	4.3	0.45
0.15		0.23	0.20		0.30	0.20		0.30	0.20		0.30	0.30		0.45
0.14		0.23	0.19		0.30	0.19		0.30	0.19		0.30	0.28		0.45
0.11		0.23	0.15		0.30	0.15		0.30	0.15		0.30	0.22		0.45
0.10		0.23	0.13		0.30	0.13		0.30	0.13		0.30	0.20		0.45
0.08		0.23	0.11		0.30	0.11		0.30	0.11		0.30	0.17		0.45
0.30	1.5	0.30	0.40	2.0	0.4	0.40	3.0	0.40	0.40	4.0	0.40	0.60	5.0	0.6
0.27		0.30	0.36		0.4	0.36		0.40	0.36		0.40	0.54		0.6
0.26		0.30	0.34		0.4	0.34		0.40	0.34		0.40	0.51		0.6
0.20		0.30	0.27		0.4	0.27		0.40	0.27		0.40	0.41		0.6
0.18		0.30	0.24		0.4	0.24		0.40	0.24		0.40	0.36		0.6
0.15		0.30	0.20		0.4	0.20		0.40	0.20		0.40	0.30		0.6
0.18	1.5	0.21	0.24	2.0	0.28	0.24	3.0	0.28	0.24	4.0	0.28	0.36	5.0	0.42
0.16		0.21	0.22		0.28	0.22		0.28	0.22		0.28	0.32		0.42
0.15		0.21	0.20		0.28	0.20		0.28	0.20		0.28	0.31		0.42
0.12		0.21	0.16		0.28	0.16		0.28	0.16		0.28	0.24		0.42
0.11		0.21	0.14		0.28	0.14		0.28	0.14		0.28	0.22		0.42
0.09		0.21	0.12		0.28	0.12		0.28	0.12		0.28	0.18		0.42
0.15	1.2	0.15	0.20	1.6	0.20	0.20	2.5	0.20	0.20	3.5	0.20	0.30	4.3	0.30
0.14		0.15	0.18		0.20	0.18		0.20	0.18		0.20	0.27		0.30
0.13		0.15	0.17		0.20	0.17		0.20	0.17		0.20	0.26		0.30
0.10		0.15	0.14		0.20	0.14		0.20	0.14		0.20	0.20		0.30
0.09		0.15	0.12		0.20	0.12		0.20	0.12		0.20	0.18		0.30
0.08		0.15	0.10		0.20	0.10		0.20	0.10		0.20	0.15		0.30

Technical data provided should be considered advisory only as variations may be necessary depending on the particular application.

For product information, call your local distributor.

158 Recommended Cutting Data - Inch

Workpiece Material Group	Material Type	Coolant • Preferred o Possible x Not Possible					
		Air	Emulsion	Slotting	Profiling	2D/3D HSC	
				Vc-SFM			
Steels	P	Alloy & Tool Steels Below 260HB	•	o	330	590	655
		Pre-hardened Tools Steel Rc30-40	•	•	230	395	590
Stainless Steels	M	Stainless Steels 300 & PH series	x	•	260	330	490
Special Alloys	S	High Temp Alloys	x	•	80	165	230
		Titanium Alloys	x	•	195	330	395
Cast Irons	K	GG, GGG	•	•	330	655	720
Hardened Steels	H	Hardened Steels Rc45-50	•	o	245	295	460
		Hardened Steels Rc50-55	•	o	130	230	395

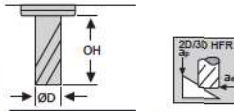
Workpiece Material Group	Material Type	Operation	Tool Diameter								
			.0787	.1181	.1575	.2362	.3150	.3937	.4724	.6299	
			2.0	3.0	4.0	6.0	8.0	10.0	12.0	16.0	
			fz-in/tooth								
Steels	P	Alloy & Tool Steels Below 260HB	Slotting	.0004	.0006	.0008	.0012	.0016	.0020	.0024	.0031
			Profiling	.0008	.0012	.0016	.0024	.0031	.0039	.0047	.0063
			HSC 2D/3D	.0024	.0035	.0047	.0071	.0094	.0118	.0142	.0189
	Pre-hardened Tool Steels Rc30-40	Slotting	.0003	.0005	.0006	.0009	.0013	.0016	.0019	.0025	
		Profiling	.0006	.0009	.0013	.0019	.0025	.0031	.0038	.0050	
		HSC 2D/3D	.0020	.0030	.0039	.0059	.0079	.0098	.0118	.0157	
Stainless Steels	M	Stainless Steel 300 & PH series	Slotting	.0003	.0004	.0005	.0008	.0010	.0013	.0016	.0021
			Profiling	.0005	.0008	.0010	.0016	.0021	.0026	.0031	.0042
			HSC 2D/3D	.0016	.0024	.0031	.0047	.0063	.0079	.0094	.0126
Special Alloys	S	High Temp Alloys	Slotting	.0002	.0002	.0003	.0005	.0007	.0008	.0010	.0013
			Profiling	.0003	.0005	.0007	.0010	.0013	.0017	.0020	.0026
			HSC 2D/3D	.0008	.0012	.0016	.0024	.0031	.0039	.0047	.0063
	Titanium Alloys	Slotting	.0002	.0004	.0005	.0007	.0009	.0012	.0014	.0019	
		Profiling	.0005	.0007	.0009	.0014	.0019	.0024	.0028	.0038	
		HSC 2D/3D	.0016	.0024	.0031	.0047	.0063	.0079	.0094	.0126	
Cast Irons	K	GG, GGG	Slotting	.0004	.0006	.0008	.0012	.0016	.0020	.0024	.0031
			Profiling	.0008	.0012	.0016	.0024	.0031	.0039	.0047	.0063
			HSC 2D/3D	.0024	.0035	.0047	.0071	.0094	.0118	.0142	.0189
Hardened Steels	H	Hardened Steels Rc45-50	Slotting	.0003	.0004	.0005	.0008	.0010	.0013	.0016	.0021
			Profiling	.0005	.0008	.0010	.0016	.0021	.0026	.0031	.0042
			HSC 2D/3D	.0016	.0024	.0031	.0047	.0063	.0079	.0094	.0126
	Hardened Steels Rc50-55	Slotting	.0002	.0003	.0004	.0006	.0008	.0010	.0012	.0016	
		Profiling	.0004	.0006	.0008	.0012	.0016	.0020	.0024	.0031	
		HSC 2D/3D	.0012	.0018	.0024	.0035	.0047	.0059	.0071	.0094	

Technical data provided should be considered advisory only as variations may be necessary depending on the particular application.

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158 Recommended Cutting Data - Inch

Depth of Cut
High Feed Roughing 2D/3D Axial & Radial



Workpiece Material Group	Material Type	OH	Tool Diameter										
			.0787	.1181	.1575	.2362	.3150	.3937	.4724	.6299			
			2.0	3.0	4.0	6.0	8.0	10.0	12.0	16.0			
			Ap-in / Ae-in										
Steels	P	Alloy & Tool Steels Below 260HB	3D-4D	.0024	.0035	.0047	.0071	.0094	.0118	.0142	.0189		
			5D-6D	.0020	.0028	.0039	.0055	.0075	.0094	.0114	.0150		
			8D-10D	.0016	.0020	.0028	.0043	.0055	.0071	.0087	.0114		
	M	Pre-hardened Tool Steels Rc30-40	3D-4D	.0024	.0035	.0047	.0071	.0094	.0118	.0142	.0189		
			5D-6D	.0020	.0028	.0039	.0055	.0075	.0094	.0114	.0150		
			8D-10D	.0016	.0020	.0028	.0043	.0055	.0071	.0087	.0114		
Stainless Steels	M	Stainless Steel 300 & PH series	3D-4D	.0024	.0035	.0047	.0071	.0094	.0118	.0142	.0189		
			5D-6D	.0020	.0028	.0039	.0055	.0075	.0094	.0114	.0150		
			8D-10D	.0016	.0020	.0028	.0043	.0055	.0071	.0087	.0114		
			S	High Temp Alloys	3D-4D	.0016	.0024	.0031	.0047	.0063	.0079	.0094	.0126
					5D-6D	.0012	.0020	.0024	.0039	.0051	.0063	.0075	.0102
					8D-10D	.0008	.0016	.0020	.0028	.0039	.0047	.0055	.0075
Special Alloys	S	Titanium Alloys	3D-4D	.0024	.0035	.0047	.0071	.0094	.0118	.0142	.0189		
			5D-6D	.0020	.0028	.0039	.0055	.0075	.0094	.0114	.0150		
			8D-10D	.0016	.0020	.0028	.0043	.0055	.0071	.0087	.0114		
Cast Irons	K	GG, GGG	3D-4D	.0024	.0035	.0047	.0071	.0094	.0118	.0142	.0189		
			5D-6D	.0020	.0028	.0039	.0055	.0075	.0094	.0114	.0150		
			8D-10D	.0016	.0020	.0028	.0043	.0055	.0071	.0087	.0114		
			H	Hardened Steels Rc45-50	3D-4D	.0020	.0031	.0039	.0059	.0079	.0098	.0118	.0157
					5D-6D	.0016	.0024	.0031	.0047	.0063	.0079	.0094	.0126
					8D-10D	.0012	.0020	.0024	.0035	.0047	.0059	.0071	.0094
Hardened Steels	H	Hardened Steels Rc50-55	3D-4D	.0016	.0024	.0031	.0047	.0063	.0079	.0094	.0126		
			5D-6D	.0012	.0020	.0024	.0039	.0051	.0063	.0075	.0102		
			8D-10D	.0008	.0016	.0020	.0028	.0039	.0047	.0055	.0075		

Notes:

For profile machining
adjust radial cut (Ae)

OH	Ae (x Ø)
3D-4D	0.10
5D-6D	0.07
8D-10D	0.05

Radial Cut (Ae)	Chip thickness Compensation factor
30%	1.10
20%	1.20
15%	1.40
10%	1.80
5%	2.30
1%	5.00

For slotting
adjust axial cut (Ap)

OH	Ap (x Ø)
3D-4D	0.10
5D-6D	0.07
8D-10D	0.05

Technical data provided should be considered advisory only as variations may be necessary depending on the particular application.

For product information, call your local distributor.

158 Recommended Cutting Data - Metric

Workpiece Material Group	Material Type	Coolant ● Preferred ○ Possible x Not Possible					
		Air	Emulsion	Slotting	Profiling	2D/3D HSC	
				Vc-M/Min			
Steels	P	Alloy & Tool Steels Below 260HB	●	○	100	180	200
		Pre-hardened Tools Steel Rc30-40	●	●	70	120	180
Stainless Steels	M	Stainless Steels 300 & PH series	x	●	80	100	150
Special Alloys	S	High Temp Alloys	x	●	25	50	70
		Titanium Alloys	x	●	60	100	120
Cast Irons	K	GG, GGG	●	●	100	200	220
Hardened Steels	H	Hardened Steels Rc45-50	●	○	75	90	140
		Hardened Steels Rc50-55	●	○	40	70	120

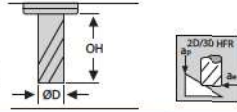
Workpiece Material Group	Material Type	Operation	Tool Diameter								
			2.0	3.0	4.0	6.0	8.0	10.0	12.0	16.0	
			fz-mm/tooth								
Steels	P	Alloy & Tool Steels Below 260HB	Slotting	0.010	0.015	0.020	0.030	0.040	0.050	0.060	0.080
			Profiling	0.020	0.030	0.040	0.060	0.080	0.100	0.120	0.160
			HSC 2D/3D	0.060	0.090	0.120	0.180	0.240	0.300	0.360	0.480
	Pre-hardened Tool Steels Rc30-40	Slotting	0.008	0.012	0.016	0.024	0.032	0.040	0.048	0.064	
		Profiling	0.016	0.024	0.032	0.048	0.064	0.080	0.096	0.128	
		HSC 2D/3D	0.050	0.075	0.100	0.150	0.200	0.250	0.300	0.400	
Stainless Steels	M	Stainless Steel 300 & PH series	Slotting	0.007	0.010	0.013	0.020	0.026	0.033	0.040	0.053
			Profiling	0.013	0.020	0.026	0.040	0.053	0.066	0.079	0.106
			HSC 2D/3D	0.040	0.060	0.080	0.120	0.160	0.200	0.240	0.320
Special Alloys	S	High Temp Alloys	Slotting	0.004	0.006	0.008	0.013	0.017	0.021	0.025	0.034
			Profiling	0.008	0.013	0.017	0.025	0.034	0.042	0.050	0.067
			HSC 2D/3D	0.020	0.030	0.040	0.060	0.080	0.100	0.120	0.160
	Titanium Alloys	Slotting	0.006	0.009	0.012	0.018	0.024	0.030	0.036	0.048	
		Profiling	0.012	0.018	0.024	0.036	0.048	0.060	0.072	0.096	
		HSC 2D/3D	0.040	0.060	0.080	0.120	0.160	0.200	0.240	0.320	
Cast Irons	K	GG, GGG	Slotting	0.010	0.015	0.020	0.030	0.040	0.050	0.060	0.080
			Profiling	0.020	0.030	0.040	0.060	0.080	0.100	0.120	0.160
			HSC 2D/3D	0.060	0.090	0.120	0.180	0.240	0.300	0.360	0.480
Hardened Steels	H	Hardened Steels Rc45-50	Slotting	0.007	0.010	0.013	0.020	0.026	0.033	0.040	0.053
			Profiling	0.013	0.020	0.026	0.040	0.053	0.066	0.079	0.106
			HSC 2D/3D	0.040	0.060	0.080	0.120	0.160	0.200	0.240	0.320
	Hardened Steels Rc50-55	Slotting	0.005	0.008	0.010	0.015	0.020	0.025	0.030	0.040	
		Profiling	0.010	0.015	0.020	0.030	0.040	0.050	0.060	0.080	
		HSC 2D/3D	0.030	0.045	0.060	0.090	0.120	0.150	0.180	0.240	

Technical data provided should be considered advisory only as variations may be necessary depending on the particular application.

158 Recommended Cutting Data - Metric

Depth of Cut

High Feed Roughing 2D/3D Axial & Radial



Workpiece Material Group	Material Type	OH	Tool Diameter								
			2.0	3.0	4.0	6.0	8.0	10.0	12.0	16.0	
			Ap-mm / Ae-mm								
Steels	P	Alloy & Tool Steels Below 260HB	3D-4D	0.06	0.09	0.12	0.18	0.24	0.30	0.36	0.48
			5D-6D	0.05	0.07	0.10	0.14	0.19	0.24	0.29	0.38
			8D-10D	0.04	0.05	0.07	0.11	0.14	0.18	0.22	0.29
	Pre-hardened Tool Steels Rc30-40	3D-4D	0.06	0.09	0.12	0.18	0.24	0.30	0.36	0.48	
		5D-6D	0.05	0.07	0.10	0.14	0.19	0.24	0.29	0.38	
		8D-10D	0.04	0.05	0.07	0.11	0.14	0.18	0.22	0.29	
Stainless Steels	M	Stainless Steel 300 & PH series	3D-4D	0.06	0.09	0.12	0.18	0.24	0.30	0.36	0.48
			5D-6D	0.05	0.07	0.10	0.14	0.19	0.24	0.29	0.38
			8D-10D	0.04	0.05	0.07	0.11	0.14	0.18	0.22	0.29
Special Alloys	S	High Temp Alloys	3D-4D	0.04	0.06	0.08	0.12	0.16	0.20	0.24	0.32
			5D-6D	0.03	0.05	0.06	0.10	0.13	0.16	0.19	0.26
			8D-10D	0.02	0.04	0.05	0.07	0.10	0.12	0.14	0.19
		Titanium Alloys	3D-4D	0.06	0.09	0.12	0.18	0.24	0.30	0.36	0.48
			5D-6D	0.05	0.07	0.10	0.14	0.19	0.24	0.29	0.38
			8D-10D	0.04	0.05	0.07	0.11	0.14	0.18	0.22	0.29
Cast Irons	K	GG, GGG	3D-4D	0.06	0.09	0.12	0.18	0.24	0.30	0.36	0.48
			5D-6D	0.05	0.07	0.10	0.14	0.19	0.24	0.29	0.38
			8D-10D	0.04	0.05	0.07	0.11	0.14	0.18	0.22	0.29
Hardened Steels	H	Hardened Steels Rc45-50	3D-4D	0.05	0.08	0.10	0.15	0.20	0.25	0.30	0.40
			5D-6D	0.04	0.06	0.08	0.12	0.16	0.20	0.24	0.32
			8D-10D	0.03	0.05	0.06	0.09	0.12	0.15	0.18	0.24
		Hardened Steels Rc50-55	3D-4D	0.04	0.06	0.08	0.12	0.16	0.20	0.24	0.32
			5D-6D	0.03	0.05	0.06	0.10	0.13	0.16	0.19	0.26
			8D-10D	0.02	0.04	0.05	0.07	0.10	0.12	0.14	0.19

Notes:

For profile machining
adjust radial cut (Ae)

OH	Ae (x Ø)
3D-4D	0.10
5D-6D	0.07
8D-10D	0.05

For slotting
adjust axial cut (Ap)

OH	Ap (x Ø)
3D-4D	0.10
5D-6D	0.07
8D-10D	0.05

Radial Cut (Ae)	Chip thickness Compensation factor
30%	1.10
20%	1.20
15%	1.40
10%	1.80
5%	2.30
1%	5.00