SPEEDS & FEEDS

HMAF-FE-6

6 Flute - Multi-Axis Finishers

HMAF-FE-6

Material Guide		Hardness	SFM	Inches per Tooth (IPT) 1/8 Fin	3/16 Fin	1/4 Fin	3/8 Fin	1/2 Fin	5/8 Fin	3/4 Fin
Carbon Steel	10XX, 11XX, 12XX, 12LXX, ASTM A27, ASTM A36	< 75 HRB	800	.0030	.0034	.0039	.0044	.0051	.0060	.0074
		75 - 98 HRB	750	.0025	.0028	.0032	.0037	.0044	.0051	.0064
		21 - 36 HRC	700	.0021	.0023	.0026	.0030	.0035	.0042	.0051
Low Alloy Steel	13XX, 41XX, 43XX, 51XX, 86XX, 93XX	75 - 98 HRB	600	.0023	.0026	.0030	.0035	.0041	.0048	.0058
		21 - 36 HRC	550	.0019	.0023	.0026	.0030	.0035	.0041	.0049
		36 - 50 HRC	400	.0019	.0021	.0025	.0028	.0032	.0039	.0048
		> 50 HRC	350	.0018	.0019	.0021	.0025	.0028	.0034	.0042
Tool Steel	A2, H13, L6, P20, S7	75 - 98 HRB	550	.0023	.0026	.0030	.0035	.0041	.0048	.0058
		21 - 36 HRC	500	.0021	.0023	.0026	.0030	.0035	.0042	.0051
		36 - 50 HRC	450	.0019	.0021	.0025	.0026	.0032	.0039	.0046
		> 50 HRC	400	.0018	.0019	.0021	.0025	.0028	.0034	.0041
Specialty Steel	300M, Invar 36, Kovar, Maraging 200, Maraging 250, Maraging 300, Maraging 350	< 75 HRB	450	.0026	.0030	.0035	.0039	.0046	.0055	.0067
		75 - 98 HRB	500	.0023	.0025	.0028	.0034	.0039	.0046	.0055
		21 - 36 HRC	450	.0021	.0023	.0026	.0032	.0035	.0044	.0053
		36 - 50 HRC	400	.0019	.0023	.0025	.0030	.0034	.0041	.0049
		> 50 HRC	350	.0016	.0018	.0019	.0023	.0026	.0032	.0039
Austenitic Stainless Steel	Nitronic 50, Nitronic 60, 301, 303, 304, 304L, Incoloy 27-7MO, 316, 316L, 321, 347	75 - 98 HRB	500	.0023	.0026	.0030	.0034	.0041	.0048	.0058
		21 - 36 HRC	450	.0023	.0025	.0028	.0032	.0037	.0046	.0055
		36 - 50 HRC	400	.0019	.0021	.0025	.0028	.0034	.0041	.0049
Martensitic & Ferritic Stainless Steel	403, 410, 416, 420, 440, 430, 446	75 - 98 HRB	750	.0023	.0026	.0030	.0035	.0041	.0048	.0058
		21 - 36 HRC	650	.0023	.0025	.0028	.0032	.0037	.0044	.0055
PH Stainless Steel	15-5, 17-4, Carpenter 450, Carpenter 465	21 - 36 HRC	450	.0019	.0023	.0026	.0030	.0035	.0041	.0049
		36 - 50 HRC	400	.0019	.0021	.0025	.0028	.0032	.0039	.0048
Gray Cast Iron	SAE J431, ASTM A48	75 - 98 HRB	600	.0030	.0034	.0039	.0044	.0051	.0062	.0074
		21 - 36 HRC	550	.0023	.0025	.0028	.0032	.0037	.0044	.0055
Malleable Cast Iron	ASTM A47, ASTM A220, ASTM A602	75 - 98 HRB	550	.0025	.0026	.0030	.0035	.0041	.0049	.0060
		21 - 36 HRC	450	.0023	.0025	.0028	.0032	.0037	.0046	.0055
Nodular (Ductile) Cast Iron	ASTM A536, ASTM 897	75 - 98 HRB	500	.0025	.0026	.0032	.0035	.0042	.0049	.0060
		21 - 36 HRC	450	.0019	.0023	.0025	.0030	.0034	.0041	.0049
		36 - 50 HRC	400	.0016	.0018	.0019	.0023	.0026	.0032	.0039
Pure Nickel	Nickel 200, Nickel 201	< 75 HRB	600	.0028	.0032	.0035	.0041	.0048	.0056	.0069
		75 - 98 HRB	550	.0025	.0028	.0032	.0037	.0044	.0051	.0064
Nickel Alloy	Hastelloy C-22, Inconel 625, Waspaloy, René 41, Inconel 718, Incoloy 20	75 - 98 HRB	200	.0019	.0023	.0025	.0028	.0034	.0041	.0049
		21 - 36 HRC	180	.0019	.0021	.0025	.0028	.0034	.0041	.0048
		36 - 50 HRC	150	.0018	.0019	.0023	.0026	.0030	.0037	.0044
Pure Titanium	Ti Grade 1, Ti Grade 2, Ti Grade 3, Ti Grade 4, Ti Grade 7, Ti Grade 12	< 75 HRB	350	.0034	.0037	.0042	.0048	.0056	.0067	.0081
		75 - 98 HRB	400	.0030	.0034	.0039	.0044	.0051	.0062	.0074
		21 - 36 HRC	325	.0026	.0030	.0034	.0039	.0044	.0053	.0064
Titanium Alloy	Ti 3Al-2.5V, Ti 6Al-4V, Ti 10V-2Fe-3Al	21 - 36 HRC	300	.0023	.0026	.0030	.0034	.0039	.0048	.0056
		36 - 50 HRC	250	.0021	.0025	.0028	.0032	.0037	.0044	.0055
Cobalt Alloy	ASTM F562, ASTM F90, ASTM F75, ASTM F799	75 - 98 HRB	225	.0021	.0023	.0026	.0032	.0037	.0042	.0053
		21 - 36 HRC	150	.0021	.0023	.0026	.0030	.0035	.0042	.0051
		36 - 50 HRC	90	.0018	.0019	.0021	.0025	.0030	.0035	.0042

Style	Toolpath	ADOC (Stock Removal)	RDOC (Stepover Per Pass)
HMAF-FE-6 Oval	Finishing (Fin)	.005"-.010"	.025 x Dia x Benefit Multiple
HMAF-FE-6 Taper	Finishing (Fin)	.005"-.010"	.025 x Dia x Benefit Multiple

NOTES:

ADOC and RDOC are recommended starting values, and should be adjusted according to your finish requirements

If converting from a ball end mill, the benefit multiple can be used to recalculate stepover pass-to-pass