ULTRA HIGH PERFORMANCE HEM

Material		Speed (SFM)	Feed Per Tooth By End Mill Diameter*							
		ALL4 Coated	1/4"	5/16"	3/8"	7/16"	1/2"	5/8"	3/4"	1"
Iron, Cast (soft)	K	375-950	.0030	.0032	.0035	.0037	.0040	.0045	.0070	.0090
Iron, Cast (hard)	K	150-475	.0018	.0020	.0025	.0027	.0030	.0035	.0040	.0050
Iron, Ductile	K	200-900	.0020	.0022	.0025	.0027	.0030	.0040	.0050	.0070
Iron, Malleable	K	275-850	.0020	.0025	.0030	.0035	.0040	.0050	.0060	.0080
Carbon Steels, Low	P	350-900	.0020	.0025	.0030	.0035	.0040	.0050	.0060	.0080
Carbon Steels, Medium	P	200-675	.0025	.0026	.0027	.0028	.0030	.0040	.0050	.0060
Carbon Steels Hardened to 35 Rc	P	190-545	.0020	.0021	.0022	.0023	.0025	.0027	.0030	.0040
Carbon Steels Hardened to 50 Rc	P	90-275	.0012	.0012	.0013	.0014	.0015	.0026	.0030	.0035
Carbon Steels Hardened to 60 Rc	P	--	--	--	--	--	--	--	--	--
Steels, Mold	P	300-725	.0020	.0022	.0025	.0027	.0030	.0035	.0040	.0050
Steels, Tool	P	175-525	.0020	.0022	.0025	.0027	.0030	.0035	.0040	.0050
Stainless Steels, Soft	M	300-525	.0020	.0022	.0025	.0022	.0030	.0040	.0050	.0070
Stainless Steels, Hard	M	150-475	.0015	.0016	.0017	.0018	.0020	.0030	.0040	.0060
Monel & High Nickel Steel	S	75-250	.0015	.0022	.0025	.0027	.0030	.0035	.0040	.0050
Titanium, Soft	S	125-425	.0015	.0022	.0025	.0027	.0030	.0040	.0050	.0070
Titanium, Hard	S	50-195	.0010	.0016	.0017	.0018	.0020	.0022	.0026	.0030
Nickel Based High Temp Alloys	S	50-175	.0014	.0014	.0015	.0016	.0017	.0018	.0020	.0023

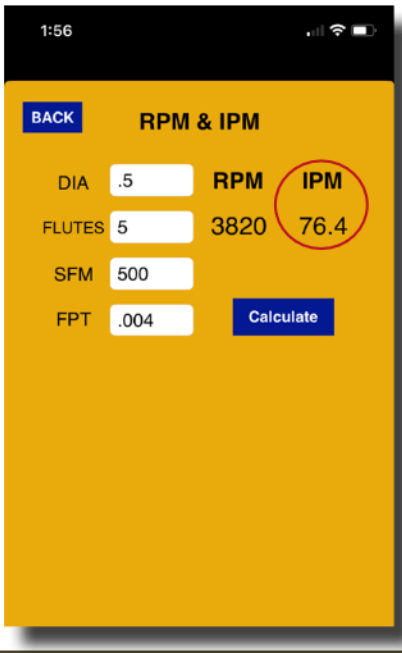
*** When using HEM techniques, the above feed per tooth must be used in a Radial Chip Thinning Factor (RCTF), formula to assure the proper progammed feed is calculated. Most machinist apps available online will have this.**

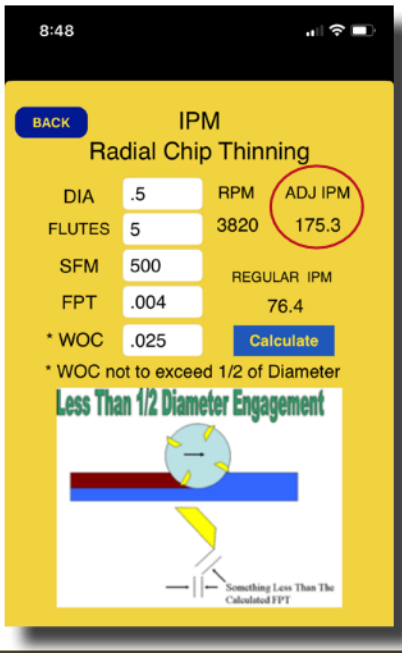
Example below demonstrates the importance of RCTF calculations:

1/2" Diameter 5 Flute Machining Low Carbon Steel using 500 SFM & .0040" feed per tooth from the chart above with Traditional & HEM techniques. The HEM application will use .025" Radial Depths of Cut

Traditional Machining

Result = 76.4 IPM



High Efficiency Machining (HEM)

Result = 175.3 IPM