11-Flute, Extra High Performance, Finisher Endmills, Corner Radius & Chip Control, 34 Degree Helix

- More Flutes in the cut means greater production. With an extra solid core get extra rigidity and extended tool life.
- Use with High Efficiency Machining Technology for best results. See pages 208-212.
- These Extra High Performance tools can be found on pages 94-97.

11-Flute Finishers Speeds & Feeds

Material	Grades	Cut	Axial	Radial	# of Flutes	SFM	Feed by Endmill Diameter (IPT) 3/8 (.3750)	1/2 (.5000)	5/8 (.6250)	3/4 (.7500)	1 (1.000)	1 1/4 (1.250)
P - Steels												
Low Carbon Steels <= 38 Rc	1018, 1020, 12L14, 5120, 8620	Peripheral - HEM	<2 x D	.07 x D	11	550	.0041	.0055	.0069	.0083	.0110	.0138
			2.5xD	.07 x D	11	530	.0036	.0048	.0060	.0072	.0096	.0120
			3xD	.07 x D	11	515	.0032	.0042	.0053	.0063	.0084	.0105
			3.5xD	.07 x D	11	505	.0027	.0036	.0045	.0054	.0072	.0090
		Finish	3 x D	.01 x D	11	475	.0015	.0020	.0025	.0030	.0040	.0050
Medium Carbon Steels <= 48 HRC	1045, 4140, 4340, 5140	Peripheral - HEM	<2 x D	.07 x D	11	530	.0041	.0054	.0068	.0081	.0108	.0135
			2.5xD	.07 x D	11	515	.0035	.0047	.0059	.0071	.0094	.0118
			3xD	.07 x D	11	500	.0031	.0041	.0051	.0062	.0082	.0103
			3.5xD	.07 x D	11	490	.0026	.0035	.0044	.0053	.0070	.0088
		Finish	3 x D	.01 x D	11	455	.0014	.0019	.0024	.0029	.0038	.0048
Tool and Die Steels <= 48 Rc	A2, D2, 01, S7, P20, H13	Peripheral - HEM	<2 x D	.06 x D	11	445	.0047	.0063	.0079	.0095	.0126	.0158
			2.5xD	.06 x D	11	430	.0041	.0055	.0069	.0083	.0110	.0138
			3xD	.06 x D	11	415	.0036	.0048	.0060	.0072	.0096	.0120
			3.5xD	.06 x D	11	410	.0031	.0041	.0051	.0062	.0082	.0103
		Finish	3 x D	.01 x D	11	385	.0015	.0020	.0025	.0030	.0040	.0050
M - Stainless Steels												
Austenitic Stainless Steels, FeNi Alloys	303, 304, 316, Invar, Kovar	Peripheral - HEM	<2 x D	.06 x D	11	445	.0050	.0067	.0084	.0101	.0134	.0168
			2.5xD	.06 x D	11	430	.0044	.0059	.0074	.0089	.0118	.0148
			3xD	.06 x D	11	415	.0039	.0052	.0065	.0078	.0104	.0130
			3.5xD	.06 x D	11	410	.0032	.0043	.0054	.0065	.0086	.0108
		Finish	3 x D	.01 x D	11	385	.0019	.0025	.0031	.0038	.0050	.0063
Martensitic & Ferritic Stainless Steels	410, 416, 440	Peripheral - HEM	<2 x D	.06 x D	11	450	.0051	.0068	.0085	.0102	.0136	.0170
			2.5xD	.06 x D	11	450	.0045	.0060	.0075	.0090	.0120	.0150
			3xD	.06 x D	11	425	.0041	.0054	.0068	.0081	.0108	.0135
			3.5xD	.06 x D	11	425	.0033	.0044	.0055	.0066	.0088	.0110
		Finish	3 x D	.01 x D	11	390	.0017	.0023	.0029	.0035	.0046	.0058
Precipitation Hardening Stainless Steels	17-4, 15-5, 13-8	Peripheral - HEM	<2 x D	.06 x D	11	435	.0051	.0068	.0085	.0102	.0136	.0170
			2.5xD	.06 x D	11	420	.0045	.0060	.0075	.0090	.0120	.0150
			3xD	.06 x D	11	405	.0039	.0052	.0065	.0078	.0104	.0130
			3.5xD	.06 x D	11	400	.0032	.0043	.0054	.0065	.0086	.0108
		Finish	3 x D	.01 x D	11	375	.0017	.0022	.0028	.0033	.0044	.0055
K - Cast Irons												
Gray	ASTM-A48 Class 20, 25, 30, 35 & 40	Peripheral - HEM	<2 x D	.08 x D	11	365	.0040	.0053	.0066	.0080	.0106	.0133
			2.5xD	.07 x D	11	365	.0035	.0046	.0058	.0069	.0092	.0115
			3xD	.07 x D	11	350	.0030	.0040	.0050	.0060	.0080	.0100
			3.5xD	.065 x D	11	350	.0026	.0034	.0043	.0051	.0068	.0085
		Finish	3 x D	.01 x D	11	370	.0017	.0022	.0028	.0033	.0044	.0055
Cast Iron	Malleable	Peripheral - HEM	<2 x D	.07 x D	11	375	.0047	.0063	.0079	.0095	.0126	.0158
			2.5xD	.07 x D	11	375	.0042	.0056	.0070	.0084	.0112	.0140
			3xD	.07 x D	11	360	.0036	.0048	.0060	.0072	.0096	.0120
			3.5xD	.07 x D	11	360	.0030	.0040	.0050	.0060	.0080	.0100
		Finish	3 x D	.01 x D	11	335	.0017	.0023	.0029	.0035	.0046	.0058
S - High Temp Alloys												
Titanium Alloys	6Al-4V, 6-2-4	Peripheral - HEM	<2 x D	.06 x D	11	425	.0045	.0060	.0075	.0090	.0120	.0150
			2.5xD	.06 x D	11	415	.0032	.0043	.0054	.0065	.0086	.0108
			3xD	.06 x D	11	395	.0032	.0042	.0053	.0063	.0084	.0105
			3.5xD	.06 x D	11	395	.0029	.0039	.0049	.0059	.0078	.0098
		Finish	**3 x D**	**.015 x D**	11	370	.0017	.0023	.0029	.0035	.0046	.0058
Difficult to machine titanium alloys	10-2-3	Peripheral - HEM	<2 x D	0.06	11	350	.0044	.0059	.0074	.0089	.0118	.0148
			2.5xD	0.06	11	330	.0032	.0042	.0053	.0063	.0084	.0105
			3xD	0.055	11	315	.0031	.0041	.0051	.0062	.0082	.0103
			3.5xD	0.05	11	310	.0029	.0038	.0048	.0057	.0076	.0095
		Finish	3 x D	.01 x D	11	300	.0015	.0020	.0025	.0030	.0040	.0050
Hastalloy, Waspalloy		Peripheral - HEM	<2 x D	.07 X D	11	105	.0068	.0090	.0113	.0135	.0180	.0225
			2.5xD	.065 x D	11	100	.0061	.0081	.0101	.0122	.0162	.0203
			3xD	.055 x D	11	90	.0054	.0072	.0090	.0108	.0144	.0180
			3.5xD	.055 x D	11	90	.0049	.0065	.0081	.0097	.0130	.0162
		Finish	3 x D	.01 x D	11	90	.0035	.0047	.0059	.0071	.0094	.0118
Inconel 718, Rene 88		Peripheral - HEM	<2 x D	.065 x D	11	100	.0047	.0062	.0078	.0093	.0124	.0155
			2.5xD	.06 x D	11	95	.0045	.0060	.0075	.0090	.0120	.0150
			3xD	.05 x D	11	95	.0045	.0060	.0075	.0090	.0120	.0150
			3.5xD	.05 x D	11	95	.0039	.0052	.0065	.0078	.0104	.0130
		Finish	3 x D	.01 x D	11	90	.0024	.0032	.0040	.0048	.0064	.0080

D = Tool Diameter
HEM = Hight Efficiency Machining