

FANTOM 2.0



3412 Series Phantom 2.0 End Mill designed to excel in difficult to machine materials.

	Cast Iron (300-700) SFM (ft/min)					Hardened Steels > 48 RC (150-500) SFM (ft/min)					Steels (400-1000) SFM (ft/min)				
	Slotting	Plunge	Rough	Finish	Pocket	Slotting	Plunge	Rough	Finish	Pocket	Slotting	Plunge	Rough	Finish	Pocket
Axial Depth	< (1xD)	< (1xD)	1.5xD	1xD	< (1xD)	< (1xD)	< (1xD)	1.5xD	1xD	< (1xD)	< (1xD)	< (1xD)	1.5xD	1xD	< (1xD)
Radial Width	Full	Full	(.3-.5)xD	(.010-.015)	(.3-.5)xD	Full	Full	(.3-.5)xD	(.010-.015)	(.3-.5)xD	Full	Full	(.3-.5)xD	(.010-.015)	(.3-.5)xD
1/8"	.0010	.0012	.0010	.0012	.0010	.0007	.0008	.0005	.0010	.0005	.0010	.0012	.0010	.0012	.0010
1/4"	.0018	.0018	.0018	.0018	.0018	.0014	.0014	.0010	.0015	.0010	.0018	.0018	.0018	.0018	.0018
3/8"	.0027	.0027	.0027	.0027	.0027	.0020	.0026	.0020	.0026	.0020	.0027	.0035	.0035	.0035	.0035
1/2"	.0035	.0035	.0035	.0035	.0035	.0026	.0030	.0025	.0030	.0025	.0035	.0039	.0039	.0039	.0039
3/4"	.0043	.0043	.0043	.0043	.0043	.0033	.0033	.0030	.0033	.0030	.0043	.0043	.0043	.0043	.0043
1"	.0050	.0050	.0050	.0050	.0050	.0039	.0039	.0040	.0045	.0040	.0050	.0050	.0050	.0050	.0050

	Stainless Steels (250-800) SFM (ft/min)					Super Alloys (Nickel Based, Inconel) (75-125) SMM (ft/min)					Titanium (150-400) SMM (ft/min)				
	Slotting	Plunge	Rough	Finish	Pocket	Slotting	Plunge	Rough	Finish	Pocket	Slotting	Plunge	Rough	Finish	Pocket
Axial Depth	< (1xD)	< (1xD)	1.5xD	1xD	< (1xD)	< (1xD)	< (1xD)	1.5xD	1xD	< (1xD)	< (1xD)	< (1xD)	1.5xD	1xD	< (1xD)
Radial Width	Full	Full	(.3-.5)xD	(.010-.015)	(.3-.5)xD	Full	Full	(.3-.5)xD	(.010-.015)	(.3-.5)xD	Full	Full	(.3-.5)xD	(.010-.015)	(.3-.5)xD
1/8"	.0004	.0008	.0004	.0008	.0004	.0006	.0007	.0006	.0007	.0006	.0003	.0004	.0003	.0004	.0003
1/4"	.0010	.0014	.0010	.0014	.0010	.0008	.0010	.0008	.0010	.0008	.0008	.0010	.0008	.0010	.0008
3/8"	.0012	.0022	.0012	.0022	.0012	.0010	.0015	.0010	.0015	.0010	.0010	.0015	.0010	.0015	.0010
1/2"	.0015	.0030	.0015	.0030	.0015	.0015	.0020	.0015	.0020	.0015	.0015	.0020	.0015	.0020	.0015
3/4"	.0030	.0035	.0030	.0035	.0030	.0025	.0030	.0025	.0030	.0025	.0020	.0025	.0020	.0025	.0020
1"	.0040	.0045	.0040	.0045	.0040	.0035	.0040	.0035	.0040	.0035	.0032	.0035	.0032	.0035	.0032

Not Recommended for High Si Aluminum (>10%), Low Si Aluminum (<10%), Composites, Plastics, Brass & Copper, or Graphite.

The parameters listed for tool series that are stocked uncoated are based on running an uncoated tool. If a coating is applied to the tools, the SFM can be increased by approximately 25%. All speed and feed recommendations should be considered only as a starting point. Start with conservative speeds and feeds while analyzing the rigidity of the process. Then cautiously progress incrementally to achieve optimum performance.

Contact Engineering at 800.248.8315 or engineering@fullertontool.com

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	Cast Iron (91-213) SMM (m/min)					Hardened Steels > 48 RC (45-152) SMM (m/min)					Steels (121-304) SMM (m/min)				
	Slotting	Plunge	Rough	Finish	Pocket	Slotting	Plunge	Rough	Finish	Pocket	Slotting	Plunge	Rough	Finish	Pocket
Axial Depth	< (1xD)	< (1xD)	1.5xD	1xD	< (1xD)	< (1xD)	< (1xD)	1.5xD	1xD	< (1xD)	< (1xD)	< (1xD)	1.5xD	1xD	< (1xD)
Radial Width	Full	Full	(.3-.5)xD	(.010-.015)	(.3-.5)xD	Full	Full	(.3-.5)xD	(.010-.015)	(.3-.5)xD	Full	Full	(.3-.5)xD	(.010-.015)	(.3-.5)xD
3	.0254	.0305	.0254	.0305	.0254	.0178	.0203	.0127	.0254	.0127	.0254	.0305	.0254	.0305	.0254
6	.0457	.0457	.0457	.0457	.0457	.0356	.0356	.0254	.0381	.0254	.0457	.0457	.0457	.0457	.0457
10	.0686	.0686	.0686	.0686	.0686	.0508	.0660	.0508	.0660	.0508	.0686	.0889	.0889	.0889	.0889
12	.0889	.0889	.0889	.0889	.0889	.0660	.0762	.0635	.0762	.0635	.0889	.0991	.0991	.0991	.0991
20	.1092	.1092	.1092	.1092	.1092	.0838	.0838	.0762	.0838	.0762	.1092	.1092	.1092	.1092	.1092
25	.1270	.1270	.1270	.1270	.1270	.0991	.0991	.1016	.1143	.1016	.1270	.1270	.1270	.1270	.1270

	Stainless Steels (76-243) SMM (m/min)					Super Alloys (Nickel Based, Inconel) (22-38) SMM (m/min)					Titanium (45-121) SMM (m/min)				
	Slotting	Plunge	Rough	Finish	Pocket	Slotting	Plunge	Rough	Finish	Pocket	Slotting	Plunge	Rough	Finish	Pocket
Axial Depth	< (1xD)	< (1xD)	1.5xD	1xD	< (1xD)	< (1xD)	< (1xD)	1.5xD	1xD	< (1xD)	< (1xD)	< (1xD)	1.5xD	1xD	< (1xD)
Radial Width	Full	Full	(.3-.5)xD	(.010-.015)	(.3-.5)xD	Full	Full	(.3-.5)xD	(.010-.015)	(.3-.5)xD	Full	Full	(.3-.5)xD	(.010-.015)	(.3-.5)xD
3	.0102	.0203	.0102	.0203	.0102	.0152	.0178	.0152	.0178	.0152	.0076	.0102	.0076	.0102	.0076
6	.0254	.0356	.0254	.0356	.0254	.0203	.0254	.0203	.0254	.0203	.0203	.0254	.0203	.0254	.0203
10	.0305	.0559	.0305	.0559	.0305	.0254	.0381	.0254	.0381	.0254	.0254	.0381	.0254	.0381	.0254
12	.0381	.0762	.0381	.0762	.0381	.0381	.0508	.0381	.0508	.0381	.0381	.0508	.0381	.0508	.0381
20	.0762	.0889	.0762	.0889	.0762	.0635	.0762	.0635	.0762	.0635	.0508	.0635	.0508	.0635	.0508
25	.1016	.1143	.1016	.1143	.1016	.0889	.1016	.0889	.1016	.0889	.0813	.0889	.0813	.0889	.0813

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