



Endmills - Miniature

Material	SFM RANGE	Chipload Per Tooth					
		.020"	.040"	.060"	.080"	.100"	.120"
Aluminum/Aluminum Alloys	1480-1640	0.0015"-0.0023"	0.0018"-0.0025"	0.0020"-0.0027"	0.0023"-0.0031"	0.0027"-0.0035"	0.0031"-0.0041"
Brass/Bronze	665-720	0.0009"-0.0021"	0.0011"-0.0024"	0.0014"-0.0027"	0.0016"-0.0031"	0.0018"-0.0036"	0.0021"-0.0041"
Cast Iron (Malleable)	325-360	0.0007"-0.0018"	0.0008"-0.0020"	0.0009"-0.0023"	0.0010"-0.0025"	0.0012"-0.0030"	0.0014"-0.0034"
Cast Iron (Medium)	230-300	0.0007"-0.0018"	0.0008"-0.0020"	0.0009"-0.0023"	0.0010"-0.0025"	0.0012"-0.0030"	0.0014"-0.0034"
Cast Iron (Soft)	360-430	0.0007"-0.0018"	0.0008"-0.0020"	0.0009"-0.0023"	0.0010"-0.0025"	0.0012"-0.0030"	0.0014"-0.0034"
Copper/Copper Alloys	520-720	0.0008"-0.0014"	0.0010"-0.0016"	0.0011"-0.0018"	0.0013"-0.0021"	0.0015"-0.0024"	0.0017"-0.0028"
Nickel Alloys	180-215	0.0003"-0.0005"	0.0004"-0.0006"	0.0005"-0.0007"	0.0005"-0.0008"	0.0006"-0.0009"	0.0007"-0.0010"
Nickel Alloys (Inconel)	080-120	0.0002"-0.0004"	0.0002"-0.0004"	0.0002"-0.0005"	0.0006"-0.0005"	0.0003"-0.0006"	0.0003"-0.0007"
Nickel Alloys (Monel)	060-175	0.0003"-0.0005"	0.0004"-0.0006"	0.0005"-0.0007"	0.0005"-0.0008"	0.0006"-0.0009"	0.0007"-0.0010"
Plastic	590-700	0.0015"-0.0090"	0.0020"-0.0100"	0.0030"-0.0115"	0.0025"-0.0130"	0.0030"-0.0150"	0.0035"-0.0175"
Stainless Steel (Precipitation)	215-250	0.0002"-0.0004"	0.0002"-0.0006"	0.0002"-0.0007"	0.0003"-0.0008"	0.0003"-0.0009"	0.0003"-0.0014"
Stainless Steel (300)	230-260	0.0002"-0.0007"	0.0002"-0.0010"	0.0002"-0.0011"	0.0002"-0.0013"	0.0003"-0.0015"	0.0003"-0.0017"
Stainless Steel (400)	200-250	0.0002"-0.0005"	0.0002"-0.0008"	0.0002"-0.0009"	0.0003"-0.0010"	0.0003"-0.0009"	0.0003"-0.0014"
Steel (High Tensile 35-40 Rc)	255-330	0.0004"-0.0012"	0.0005"-0.0014"	0.0005"-0.0016"	0.0005"-0.0018"	0.0007"-0.0021"	0.0008"-0.0024"
Steel (High Tensile 40-45 Rc)	230-300	0.0003"-0.0008"	0.0004"-0.0010"	0.0005"-0.0011"	0.0004"-0.0008"	0.0003"-0.0009"	0.0005"-0.0010"
Steel (High Tensile 45+ Rc)	200-250	0.0002"-0.0004"	0.0003"-0.0005"	0.0003"-0.0007"	0.0004"-0.0008"	0.0003"-0.0009"	0.0005"-0.0010"
Steel (Low Carbon)	330-390	0.0003"-0.0005"	0.0003"-0.0006"	0.0003"-0.0007"	0.0004"-0.0008"	0.0003"-0.0009"	0.0005"-0.0010"
Steel (Medium Carbon)	490-615	0.0004"-0.0012"	0.0005"-0.0014"	0.0005"-0.0016"	0.0006"-0.0018"	0.0007"-0.0021"	0.0008"-0.0024"
Titanium (Cast/Wrought Iron)	235-300	0.0002"-0.0008"	0.0003"-0.0010"	0.0003"-0.0011"	0.0004"-0.0013"	0.0004"-0.0015"	0.0005"-0.0017"
Titanium (Hard)	230-250	0.0002"-0.0008"	0.0003"-0.0010"	0.0003"-0.0011"	0.0004"-0.0013"	0.0004"-0.0015"	0.0005"-0.0017"
Titanium (Soft)	260-330	0.0002"-0.0008"	0.0003"-0.0010"	0.0003"-0.0011"	0.0004"-0.0013"	0.0004"-0.0015"	0.0005"-0.0017"
Tool Steel	230-305	0.0003"-0.0008"	0.0004"-0.0010"	0.0005"-0.0011"	0.0004"-0.0008"	0.0003"-0.0009"	0.0005"-0.0010"

NOTE: All recommendations are considered as starting parameters only

Consider the following variables when trying to optimize performance:

1. Machine rigidity
2. Concentricity at spindle
3. Work piece rigidity
4. Use minimum tool OAL for application
5. Recommended coolant type directed to point of cut
6. Match recommended feeds and speeds
7. Resharpen or replace tool before catastrophic failure