

## END MILL DIAMETER & FEED PER TOOTH (INCHES)

MATERIAL	SPEED SFM	1/8	1/4	3/8	1/2	3/4	1
<b>Non-Ferrous Material</b>							
Aluminum/Aluminum Alloys	800-2000	.0005	.002	.003	.004	.006	.008
Brass/Soft Bronze	300-900	.001	.002	.003	.004	.004	.005
Copper/Copper Alloys	600-1000	.001	.002	.0025	.003	.004	.005
<b>Cast Iron</b>							
Ductile Iron	100-400	.0005	.001	.0015	.002	.004	.006
Gray Cast Iron	450-600	.001	.002	.003	.004	.005	.006
Malleable Cast Iron	150-500	.0005	.001	.002	.003	.005	.007
<b>High Temperature Alloys</b>							
Nickel Base	45-125	.0004	.0008	.001	.001	.001	.002
Monel/High Nickel Steel	60-150	.0005	.001	.0015	.002	.003	.004
<b>Plastics</b>							
Plastic-Glass filled	350-600	.0015	.003	.0035	.004	.060	.120
<b>Steels</b>							
Low Carbon	250-500	.0005	.0015	.002	.003	.005	.006
Medium Carbon	125-400	.0005	.001	.0015	.0025	.004	.005
High Strength Carbon	50-200	.0002	.0005	.001	.001	.002	.003
<b>Stainless Steel</b>							
Series 300-Soft	100-350	.0003	.001	.001	.001	.0025	.004
Series 400-Hard	80-200	.0002	.0005	.0006	.0007	.0015	.003
<b>Titanium Alloys</b>							
Titanium-Soft	90-130	.0005	.0005	.0015	.002	.003	.004
Titanium-Hard	50-170	.0003	.0003	.001	.0015	.002	.003

- For Lighter Radial Depths of Cut: Higher range of recommended surface speeds should be used.
- For Greater Radial Depths of Cut: Lower range of recommended surface speeds should be used.
- For Slotting Applications: Speeds (S.F.M) should be reduced approximately 20% of the lowest range value.
- When using long and extra-long end mills reduce feed per tooth 50%.

### Formulas

$$\text{SFM} = \text{RPM} \times \text{Diameter} \times .262$$

$$\text{RPM} = (\text{SFM} \times 3.82) / \text{Diameter}$$

### Safety Requirements

**Warning:** When using solid carbide rotary cutting tools, tools may shatter, wear safety glasses. Grinding also causes hazardous dust and fumes, use proper ventilation.