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**Feeds and Speeds for Machining with 2L End Mills**

**Reference the following table when milling, slotting, or profile cutting with 2L End Mills held rigidly in a Collet, End Mill Holder, or Shrink Fit Holder**

Material	Speed -SFPM (M/Min)	Chipload - IPT (MMPT)		
		Dia.=1/8"(3mm)	Dia.=1/4"(6mm)	Dia.=1/2"(12mm)
Aluminum/Aluminum Alloys	600-1200(182-366)	0.0005 (0.013)	0.002 (0.051)	0.004(0.1016)
Brass/Bronze	200-350(61-107)	0.001(0.025)	0.002 (0.051)	0.003 (0.076)
Copper/Copper Alloys	450-850(137-259)	0.001(0.025)	0.002 (0.051)	0.002 (0.051)
Cast Iron, Soft	300-750(91-229)	0.001(0.025)	0.002 (0.051)	0.003 (0.076)
Cast Iron, Hard	125-350(38-107)	0.0004(0.010)	0.0008 (0.020)	0.002 (0.051)
Ductile Iron	150-450(45-137)	0.0005 (0.013)	0.001(0.025)	0.002 (0.051)
Malleable Iron	300-550(91-168)	0.0005 (0.013)	0.001(0.025)	0.003 (0.076)
Magnesium/Magnesium Alloys	1100-1600(335-488)	0.001(0.025)	0.002 (0.051)	0.004(0.1016)
Monel/High Nickel Steel	225-350(69-107)	0.0005 (0.013)	0.001(0.025)	0.002 (0.051)
Nickel Base Hi-Temp. Alloys	50-125(15-38)	0.0004(0.010)	0.0008 (0.020)	0.001(0.025)
Plastics	900-1800(274-549)	0.0015 (0.038)	0.003 (0.076)	0.006(0.1524)
Plastics, Glass Filled (i.e. Phenolic)	400-1000(122-305)	0.0015 (0.038)	0.003 (0.076)	0.004(0.1016)
Steel, Low Carbon	300-600(91-183)	0.0005 (0.013)	0.001 (0.025)	0.003 (0.076)
Steel, Medium Carbon	150-450(45-137)	0.0006(0.015)	0.0015 (0.038)	0.002 (0.051)
Steel, Hardened	50-225(15-69)	0.0002(0.005)	0.0005 (0.013)	0.001(0.025)
Stainless Steel, Soft	250-500(76-152)	0.0005 (0.013)	0.001(0.025)	0.002 (0.051)
Stainless Steel, Hard	75-275(23-84)	0.0002(0.005)	0.0005 (0.013)	0.001(0.025)
Titanium, Soft	175-400(53-122)	0.0005 (0.013)	0.001(0.025)	0.002 (0.051)
Titanium, Hard	75-250(23-76)	0.0003(0.0076)	0.0005 (0.013)	0.001(0.025)
Wood, Soft	200-1200(61-366)	0.002 (0.051)	0.003 (0.076)	0.006(0.1524)
Wood, Hard	200-1200(61-366)	0.002 (0.051)	0.003 (0.076)	0.006(0.1524)

Please note as with all machining it is important to take appropriate safety precautions.

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

$$\text{IPM} = (\text{No. of teeth}) \times \text{IPR} \times \text{RPM}$$

FOR SLOTTING APPLICATIONS: Reduce Speed to approximately 80% of the lower values for the particular material being machined.

AXIAL DEPTH OF CUT: These recommendations are for axial depths of cuts not to exceed 1 times the cutter diameter. On tougher materials, depths per pass as low as 0.001" are not uncommon.

RPM= Spindle Speed.

D = Diameter of tool.

IPR = Inches per rev.

IPM = Inches per minute.

IPT = Inches per tooth.

MMPT = MM per tooth

SFM and SFPM = Surface feet per minute.

M/Min. = Meters per minute

Variations in the above table may be required depending on material being machined and cutting conditions. Consider the above recommendations as a starting point.