



www.2Linc.com

2L inc.

4 Kane Industrial Dr.
Hudson, MA 01749, USA
Phone: 978-567-8867
Fax: 978-562-8972
Email: contact@2Linc.com

Feeds and Speeds for Machining with 2L Thread Mills

Reference the following table when machining OD or ID threads held rigidly in a Collet or Shrink Fit Holder

Material	Speed -SFPM (M/Min)	Chipload - IPT (MMPT) Tool Diameter		
		.080" - .125" (2.0mm - 3.1mm)	.130" - .180" (3.3mm - 4.6mm)	.185" - .375" (4.7mm - 9.5mm)
Aluminum/Aluminum Alloys	100-1000(30-304)	0.0005 (0.013)	0.001 (0.025)	0.002(0.051)
Brass/Bronze	200-350(61-107)	0.0005 (0.013)	0.001 (0.025)	0.002(0.051)
Copper/Copper Alloys	450-550(137-168)	0.0005 (0.013)	0.001 (0.025)	0.002(0.051)
Cast Iron, Soft	300-500(91-152)	0.0003 (0.007)	0.0005 (0.012)	0.0008(0.020)
Cast Iron, Hard	100-200(30-60)	0.0003 (0.007)	0.0005 (0.012)	0.0008(0.020)
Ductile Iron	150-450(45-137)	0.0003 (0.007)	0.0005 (0.012)	0.0008(0.020)
Malleable Iron	150-550(45-168)	0.0003 (0.007)	0.0005 (0.012)	0.0008(0.020)
Magnesium/Magnesium Alloys	250-350(76-107)	0.0003 (0.007)	0.0005 (0.012)	0.0008(0.020)
Monel/High Nickel Steel	50-200(15-60)	0.0003 (0.007)	0.0005 (0.012)	0.0008(0.020)
Nickel Base Hi-Temp. Alloys	50-125(15-38)	0.0003 (0.007)	0.0005 (0.012)	0.0008(0.020)
Plastics	400-1800(122-549)	0.001 (0.025)	0.002(0.051)	0.002(0.051)
Plastics, Glass Filled (i.e. Phenolic)	400-1000(122-305)	0.001 (0.025)	0.002(0.051)	0.002(0.051)
Steel, Low Carbon	100-600(30-183)	0.0003 (0.007)	0.0005 (0.012)	0.0008(0.020)
Steel, Medium Carbon	100-450(30-137)	0.0003 (0.007)	0.0005 (0.012)	0.0008(0.020)
Steel, Hardened	50-225(15-69)	0.0002(0.005)	0.0005 (0.013)	0.0006(0.015)
Stainless Steel, Soft	90-400(27-122)	0.0003 (0.007)	0.0005 (0.012)	0.0008(0.020)
Stainless Steel, Hard	75-275(23-84)	0.0002(0.005)	0.0005 (0.013)	0.0006(0.015)
Titanium, Soft	50-200(15-60)	0.0003 (0.007)	0.0005 (0.012)	0.0008(0.020)
Titanium, Hard	50-250(15-76)	0.0002(0.005)	0.0005 (0.013)	0.0006(0.015)

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

Variations in the above table may be required depending on material being machined and cutting conditions. Consider the above recommendations as a starting point. Climb Milling is the preferred cutting direction. So for a standard right hand internal thread this means starting at the bottom of the predrilled hole and feeding upwards.

$RPM = (SFM \times 3.82) / D1$

Linear Feedrate: $IPM = (\text{No. of teeth}) \times IPT \times RPM$ or $MMPM = (\text{No. of teeth}) \times MMPT \times RPM$

Internal thread feedrates should be reduced to compensate for the major diameter being cut.

Internal Thread Feed Adjustment Factor (IFA) = ((major diameter - cutter diameter)/major diameter) x linear feedrate

Actual Cutting Feedrate for Internal Threads = IFA x Linear Feedrate

RPM= Spindle Speed.

D1 = Diameter of tool.

IPT = 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



www.2Linc.com

2L inc.

4 Kane Industrial Dr.
Hudson, MA 01749, USA
Phone: 978-567-8867
Fax: 978-562-8972
Email: contact@2Linc.com

Feeds and Speeds for Machining with 2L Thread Mills

Thread Size	Major Thread Diameter	Number of Radial Passes		
		Easy Machinability	Moderate Machinability	Difficult Machinability
4	0.112"	2	3	4
5	0.125"	2	3	4
6	0.138"	2	3	4
8	0.164"	2	2	3
10	0.190"	2	3	4
12	0.216"	2	2	3
1/4	0.250"	2	2	3
5/16	0.312"	2	2	3
3/8	0.375"	2	2	3

M2.5	2.5mm	2	3	4
M3	3.0mm	2	3	4
M4	4.0mm	2	2	3
M5	5.0mm	2	2	3
M6	6.0mm	2	2	3
M8-M14	8.0-14.0mm	2	2	3