

Speed And Feed Chart For Threadmills

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When cutting an internal thread, the linear feed rate needs to be reduced to compensate for the ratio of the tool's cutting diameter to the major diameter being cut. If you do not compensate, the feedrate that the cutting edge sees will be much greater and tool failure will occur. The threadmilling feedrate is equal to: $(\text{major dia} - \text{cutter diameter}) / \text{major diameter} \times \text{linear feed rate}$

EXAMPLE:

If you are using a .285 dia. cutter to do a 3/8-16 thread and the values in the feed and speed chart above tell you that you should be running at a linear feedrate of 24 Inches per minute then:

Your adjusted feedrate for threadmilling an internal thread is:

$((\text{Major Dia} - \text{Cutter dia}) / \text{Major Dia}) \times \text{linear feedrate}$ or $(.375 - .285) / .375 \times 24 \text{ ipm} = 5.76 \text{ inches/minute}$

If you program the center of the cutter to cut at 5.76 inches/minute, the OD of the cutter will be cutting at a feed of 24 IPM

			CUTTER DIAMETER (in)							
Material Type	Specific Grades	Speed SFM	1/8"	3/16	1/4	5/16	3/8	1/2	5/8	3/4
			CHIPLOAD PER TOOTH (in)							
Low Carbon and Leaded Steels <25Rc	1005-1029	550	0.0003	0.0006	0.001	0.0013	0.0017	0.002	0.0027	0.0035
	12L14	"								
Medium Carbon and Alloy Steels 25-35Rc	1030-1050	450	0.0003	0.0006	0.001	0.0012	0.0015	0.0018	0.0025	0.0032
	4130, 4140, 4340	"								
Medium Carbon & Alloy Steels 36-46Rc	1040, 4130, 4140	250	0.0003	0.0004	0.0007	0.0009	0.0012	0.0015	0.002	0.0025
	4340, 52100	"								
Aluminum Alloys	6061, 6066	1200	0.0004	0.0008	0.0012	0.0017	0.0021	0.0025	0.0035	0.0042
Brass	Free Machining	1000	0.0004	0.0007	0.001	0.0015	0.0018	0.0022	0.003	0.0037
Titanium and Titanium Alloys	Commercially Pure 6Al4V	350	0.0003	0.0005	0.0007	0.0009	0.0012	0.0015	0.0021	0.0028
		250	0.0003	0.0004	0.0006	0.0008	0.0011	0.0013	0.0018	0.0022
Nickel Alloys	Inconel 718, Waspaloy Hastelloy Monel 400 series Monel 500 series	80	0.0003	0.0004	0.0005	0.0007	0.0009	0.0012	0.0016	0.0022
		100	0.0003	0.0004	0.0005	0.0007	0.0009	0.0012	0.0016	0.0022
		200	0.0003	0.0006	0.0008	0.0011	0.0013	0.0018	0.0022	0.0028
		140	0.0003	0.0004	0.0006	0.0008	0.0011	0.0015	0.002	0.0025
Stainless Steels	300 series 400 series 15-5PH, 17-4PH Nitronic 32,33,40,50,60	350	0.0003	0.0004	0.0006	0.0008	0.0011	0.0015	0.002	0.0025
		400	0.0003	0.0004	0.0006	0.0008	0.0011	0.0015	0.002	0.0025
		250	0.0003	0.0004	0.0006	0.0008	0.0011	0.0015	0.002	0.0025
		150	0.0003	0.0004	0.0005	0.0007	0.001	0.0014	0.0018	0.0022
Cast Iron	Gray Ductile Malleable	500	0.0004	0.0006	0.0009	0.0011	0.0014	0.002	0.0028	0.0035
		425	0.0005	0.0007	0.001	0.0013	0.0017	0.0025	0.0032	0.004
		400	0.0004	0.0006	0.0009	0.0011	0.0014	0.002	0.0028	0.0035
Tool Steels	H10, H12, A2 D2	325	0.0003	0.0004	0.0007	0.0009	0.0012	0.0015	0.002	0.0024
		225	0.0003	0.0004	0.0007	0.0009	0.0012	0.0015	0.002	0.0024