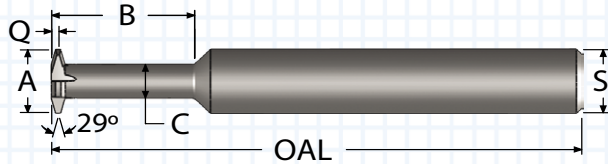


STUB ACME - INTERNAL AND EXTERNAL SOLID CARBIDE SINGLE PROFILE THREAD MILLS



- Solid carbide for maximum tool rigidity
- ALTiN+ coating for increased performance
- Single start threads only
- For 2G and 3G fit-class threads

INTERNAL ONLY

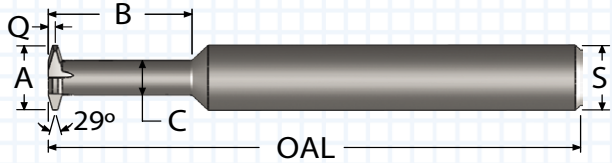
* THREAD/ PITCH	"A" CUTTER DIA.	"B" NECK LENGTH	"C" NECK DIA.	"Q" LENGTH	"S" SHANK DIA.	OAL	FLUTES	ORDER #		EDP #	
								UNCOATED	ALTiN+	UNCOATED	ALTiN+
								INTERNAL THREADS ONLY			
1/4-16	0.170	0.350	0.080	0.022	0.250	2.50	4	SPTM170SA-16	SPTM170SA-16A	120501	120525
1/4-16	0.170	0.500	0.080	0.022	0.250	2.50	4	SPTM170SA-16L	SPTM170SA-16LA	120504	120528
5/16-14	0.200	0.500	0.105	0.024	0.250	2.50	4	SPTM200SA-14	SPTM200SA-14A	120507	120531
5/16-14	0.200	0.750	0.105	0.024	0.250	2.50	4	SPTM200SA-14L	SPTM200SA-14LA	120510	120534
3/8-12, 7/16-12	0.235	0.600	0.130	0.028	0.250	2.50	4	SPTM235SA-12	SPTM235SA-12A	120513	120537
3/8-12, 7/16-12	0.235	0.900	0.130	0.028	0.250	2.50	4	SPTM235SA-12L	SPTM235SA-12LA	120516	120540
1/2-10	0.320	0.750	0.170	0.036	0.375	3.00	4	SPTM320SA-10	SPTM320SA-10A	120549	120558
1/2-10	0.320	1.200	0.170	0.036	0.375	3.00	4	SPTM320SA-10L	SPTM320SA-10LA	120552	120561
5/8-8	0.400	0.800	0.230	0.043	0.500	3.50	4	SPTM400SA-8	SPTM400SA-8A	120567	120585
5/8-8	0.400	1.300	0.230	0.043	0.500	3.50	4	SPTM400SA-8L	SPTM400SA-8LA	120570	120588
3/4-6, 7/8-6	0.490	0.800	0.260	0.058	0.500	3.50	4	SPTM490SA-6	SPTM490SA-6A	120573	120591
3/4-6, 7/8-6	0.490	1.300	0.260	0.058	0.500	3.50	4	SPTM490SA-6L	SPTM490SA-6LA	120576	120594
1-5 to 1¼-5	0.620	1.250	0.350	0.071	0.625	4.00	5	SPTM620SA-5	SPTM620SA-5A	120603	120612
1-5 to 1¼-5	0.620	1.750	0.350	0.071	0.625	4.00	5	SPTM620SA-5L	SPTM620SA-5LA	120606	120615
1¾-4 to 1¼-4	0.745	1.500	0.425	0.088	0.750	5.00	5	SPTM745SA-4	SPTM745SA-4A	120621	120633
1¾-4 to 1¼-4	0.745	2.500	0.425	0.088	0.750	5.00	5	SPTM745SA-4L	SPTM745SA-4LA	120627	120639

* Internal Stub Acme thread mills will only cut the thread size listed.
For other thread sizes, please call for availability.

EXTERNAL ONLY

THREAD/ PITCH	"A" TOOL DIA.	"B" LENGTH OF CUT	"C" NECK DIA.	"Q" LENGTH	"S" SHANK DIA.	OAL	FLUTES	ORDER #		EDP #	
								UNCOATED	ALTiN+	UNCOATED	ALTiN+
								EXTERNAL THREADS ONLY			
-16	0.240	0.750	0.145	0.024	0.250	2.50	4	SPTM240SA-16EX	SPTM240SA-16EXA	120522	120546
-14	0.240	0.750	0.145	0.026	0.250	2.50	4	SPTM240SA-14EX	SPTM240SA-14EXA	120519	120543
-12	0.370	1.375	0.260	0.031	0.375	3.00	4	SPTM370SA-12EX	SPTM370SA-12EXA	120555	120564
-10	0.495	1.750	0.345	0.038	0.500	3.50	4	SPTM495SA-10EX	SPTM495SA-10EXA	120579	120597
-8	0.495	1.750	0.325	0.046	0.500	3.50	4	SPTM495SA-8EX	SPTM495SA-8EXA	120582	120600
-6	0.620	2.000	0.390	0.062	0.625	4.00	5	SPTM620SA-6EX	SPTM620SA-6EXA	120609	120618
-5	0.745	2.250	0.475	0.074	0.750	5.00	5	SPTM745SA-5EX	SPTM745SA-5EXA	120630	120642
-4	0.745	2.250	0.425	0.091	0.750	5.00	5	SPTM745SA-4EX	SPTM745SA-4EXA	120624	120636

ACME - INTERNAL AND EXTERNAL SOLID CARBIDE SINGLE PROFILE THREAD MILLS



- Solid carbide for maximum tool rigidity
- ALTiN+ coating for increased performance
- Single start threads only
- For 2G and 3G fit-class threads

INTERNAL ONLY

* THREAD/ PITCH	"A" CUTTER DIA.	"B" NECK LENGTH	"C" NECK DIA.	"Q" LENGTH	"S" SHANK DIA.	OAL	FLUTES	ORDER #		EDP #	
								UNCOATED	ALTiN+	UNCOATED	ALTiN+
<i>INTERNAL THREADS ONLY</i>											
1/4-16	0.170	0.350	0.080	0.020	0.250	2.50	4	SPTM170FA-16	SPTM170FA-16A	120701	120725
1/4-16	0.170	0.500	0.080	0.020	0.250	2.50	4	SPTM170FA-16L	SPTM170FA-16LA	120704	120728
5/16-14	0.200	0.500	0.105	0.023	0.250	2.50	4	SPTM200FA-14	SPTM200FA-14A	120707	120731
5/16-14	0.200	0.750	0.105	0.023	0.250	2.50	4	SPTM200FA-14L	SPTM200FA-14LA	120710	120734
3/8-12, 7/16-12	0.235	0.600	0.130	0.026	0.250	2.50	4	SPTM235FA-12	SPTM235FA-12A	120713	120737
3/8-12, 7/16-12	0.235	0.900	0.130	0.026	0.250	2.50	4	SPTM235FA-12L	SPTM235FA-12LA	120716	120740
1/2-10	0.320	0.750	0.170	0.033	0.375	3.00	4	SPTM320FA-10	SPTM320FA-10A	120749	120758
1/2-10	0.320	1.200	0.170	0.033	0.375	3.00	4	SPTM320FA-10L	SPTM320FA-10LA	120752	120761
5/8-8	0.400	0.800	0.230	0.039	0.500	3.50	4	SPTM400FA-8	SPTM400FA-8A	120767	120785
5/8-8	0.400	1.300	0.230	0.039	0.500	3.50	4	SPTM400FA-8L	SPTM400FA-8LA	120770	120788
3/4-6, 7/8-6	0.490	0.800	0.260	0.054	0.500	3.50	4	SPTM490FA-6	SPTM490FA-6A	120773	120791
3/4-6, 7/8-6	0.490	1.300	0.260	0.054	0.500	3.50	4	SPTM490FA-6L	SPTM490FA-6LA	120776	120794
1-5 to 1 1/4-5	0.620	1.250	0.350	0.066	0.625	4.00	5	SPTM620FA-5	SPTM620FA-5A	120803	120812
1-5 to 1 1/4-5	0.620	1.750	0.350	0.066	0.625	4.00	5	SPTM620FA-5L	SPTM620FA-5LA	120806	120815
1 3/8-4 to 1 3/4-4	0.745	1.500	0.425	0.082	0.750	5.00	5	SPTM745FA-4	SPTM745FA-4A	120821	120833
1 3/8-4 to 1 3/4-4	0.745	2.500	0.425	0.082	0.750	5.00	5	SPTM745FA-4L	SPTM745FA-4LA	120827	120839

* Internal Acme thread mills will only cut the thread size listed.
For other thread sizes, please call for availability.

EXTERNAL ONLY

THREAD/ PITCH	"A" TOOL DIA.	"B" LENGTH OF CUT	"C" NECK DIA.	"Q" LENGTH	"S" SHANK DIA.	OAL	FLUTES	ORDER #		EDP #	
								UNCOATED	ALTiN+	UNCOATED	ALTiN+
<i>EXTERNAL THREADS ONLY</i>											
-16	0.240	0.750	0.145	0.023	0.250	2.50	4	SPTM240FA-16EX	SPTM240FA-16EXA	120722	120746
-14	0.240	0.750	0.145	0.024	0.250	2.50	4	SPTM240FA-14EX	SPTM240FA-14EXA	120719	120743
-12	0.370	1.375	0.260	0.028	0.375	3.00	4	SPTM370FA-12EX	SPTM370FA-12EXA	120755	120764
-10	0.495	1.750	0.345	0.036	0.500	3.50	4	SPTM495FA-10EX	SPTM495FA-10EXA	120779	120797
-8	0.495	1.750	0.325	0.043	0.500	3.50	4	SPTM495FA-8EX	SPTM495FA-8EXA	120782	120800
-6	0.620	2.000	0.390	0.058	0.625	4.00	5	SPTM620FA-6EX	SPTM620FA-6EXA	120809	120818
-5	0.745	2.250	0.475	0.069	0.750	5.00	5	SPTM745FA-5EX	SPTM745FA-5EXA	120830	120842
-4	0.745	2.250	0.425	0.085	0.750	5.00	5	SPTM745FA-4EX	SPTM745FA-4EXA	120824	120836

THREAD MILL FEED AND SPEED CHART

MATERIAL	HB/Rc	SPEED SFM* UNCOATED	SPEED SFM ALTiN+	FEED (INCHES PER TOOTH)					
				TOOL DIAMETER					
				.032 - .056	.059 - .090	.100 - .190	.200 - .350	.370 - .595	.600+
CAST IRON	160 HB	100-220	200-425	.0004-.001	.0004-.0008	.0004-.0014	.0004-.002	.0004-.0035	.0004-.006
CARBON STEEL	18 Rc	100-200	190-425	.0003-.001	.0003-.0008	.0003-.0014	.0003-.002	.0003-.005	.0003-.006
ALLOY STEEL	20 Rc	80-200	200-375	.0003-.001 2 Passes	.0003-.0008 3 Passes	.0003-.0014	.0003-.0024	.0003-.005	.0003-.006
TOOL STEEL	20 Rc	80-175	175-250	.0003-.0004 2 Passes	.0003-0.0005 3 Passes	.0003-.0005	.0003-.0009	.0003-.0026	.0003-.004
300 STAINLESS STEEL	150 HB	90-120	120-255	.0003-.0005 2 Passes	.0003-0.0006 3 Passes	.0003-.0007	.0003-.002	.0003-.0035	.0003-.0045
400 STAINLESS STEEL	195 HB	90-150	140-375	.0003-.0005 2 Passes	.0003-.0006 3 Passes	.0003-.0007	.0003-.002	.0003-.0026	.0003-.0045
HIGH TEMP ALLOY (Ni & Co BASE)	20 Rc	50-125	100-125	.0003-.0004 3 Passes	.0003-.00045 3 Passes	.0003-.0005 2 Passes	.0003-.0009	.0003-.0026	.0003-.004
TITANIUM	25 Rc	50-130	100-170	.0003-.0004 3 Passes	.0003-.00045 3 Passes	.0003-.001 2 Passes	.0003-.0009	.0003-.0015	.0003-.003
HEAT TREATED ALLOYS (38-45Rc)	40 Rc	50-90	90-150	.0003-.0004 3 Passes	.0003-.00045 3 Passes	.0003-.0005 2 Passes	.0003-.0008	.0003-.001	.0003-.0025
ALUMINUM	100 HB	100-800	100-1200	.0005-.0015	.0005-.002	.0005-.0025	.0005-.003	.0005-.006	.0005-.009
BRASS, ZINC	80 HB	200-350	200-750	.0005-.0015	.0005-.002	.0005-.0025	.0005-.003	.0005-.006	.0005-.009

*SFM = Surface Feet per Minute

**Parameters are a starting point based on machinability rating at hardness listed.
Check machinability rating of the material to be machined and adjust accordingly.**

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THREAD MILL FEED AND SPEED APPLICATION



It may be necessary to use more radial depth passes than shown on the chart (p.31) when cutting an unfavorable length-to-diameter ratio, coarse pitches, or hard materials. When cutting a thread with two passes, cut approximately **65% of the thread on the first pass and 35 percent on the finish pass.** For three passes, use a **50/30/20** ratio. For four passes, use a **40/27/20/13** ratio. The idea is to equalize the side cutting pressure.

Thread mills can sometimes be used to cut multiple start threads. Call engineering for assistance.

Thread mills can be cut off for shorter thread depths or necked back for deeper thread depths. Call for price and delivery.

In order to apply the Feed and Speed chart appropriately, it is necessary to understand that machining centers will apply the feed rate at the centerline of the spindle. It is correct to use a normal calculation and the following Feed & Speed Chart when cutting in a straight line; however, it is incorrect when cutting an internal thread. Therefore, the feed rate must be recalculated.

The following is an example of how to apply the feed rate correctly:

The tool is a TM290-24A cutting a 3/8-24 thread in stainless steel.

The outside diameter of the tool is 0.290.

The surface foot per minute (SFM) is 150.

The chip per tooth is 0.001. The tool has four flutes.

The revolutions per minute (RPM) equal the SFM x 3.82 divided by the outside diameter of the tool.

In this example: **$(150 \times 3.82) / 0.290$** , which equals 1975 RPM.

The RPM x feed (chip per tooth) x the number of flutes equals the Non-Adjusted Feed Rate or NAFR.

In this example: **$1975 \times 0.001 \times 4 = 7.9$ NAFR**

The major diameter of the thread is 0.375. We will call this D.

The outside diameter of the tool is 0.290. We will call this d.

We will call the Adjusted Feed Rate the AFR.

The formula for the AFR for internal interpolation is **$AFR = NAFR \times (D-d) \div D$**

In this example: **$AFR = 7.9 \times (0.375 - 0.290) \div 0.375$**

Therefore, the Adjusted Feed Rate equals 1.79. This is the feed rate that will equal 0.001 chip per tooth in the above example. This is the feed rate that must be used in the CNC program.