ALLIED MACHINE & ENGINEERING

Holemaking Solutions for Today's Manufacturing

Drilling

Boring

Reaming

Burnishing

Threading

▶ Solid Carbide & Indexable Thread Mills

Specials

AccuThread™ 856 |

ThreadMills USA™

The Foundation

Since 1941, Allied Machine & Engineering has provided dependable and practical holemaking solutions to the world. What was once a small job shop in Ohio is now a worldwide leader in cutting tool technology. With three manufacturing facilities in Ohio, one in Georgia, another in Germany, and headquarters in both the United States and Europe, Allied Machine is positioned to bring innovative solutions and technical expertise directly to the customers' hands.

The Beginning

Harold E. Stokey founded Allied Machine & Engineering to aid the war effort, manufacturing taper bearing lock nuts for the production of M1 tanks. Years later, after a sales meeting gone wrong, Stokey possessed a warehouse stocked with spade drill inserts. He set forth into the industry that would become Allied Machine's thriving identity: holemaking.

The T-A®

When Harold's son, William H. Stokey, became the president and CEO, he developed the Throw Away—or T-A—spade drill insert system. The T-A revolutionized the holemaking industry, launching Allied Machine ahead of the competition. Since then, numerous innovations and advancements have been created from the T-A's inspiration.

The Innovation

Since the development of the T-A, Allied Machine has expanded its product offering to support a vast range of customer applications, including large diameter and deep hole drilling, boring, reaming, burnishing, porting, and threading.

The Future

Allied Machine is constantly investing in the brightest and sharpest minds, shaping a future filled with success and quality for customers around the world.

Steve Stokey
Executive Vice President

William H. Stokey
President and CEO

Mike Stokey
Executive Vice President

ALLIED MACHINE & ENGINEERING

Holemaking Solutions for Today's Manufacturing

WOHLHAUPTER® ThreadMills USA™ SUPERION™ CRITERION™

DRILLING

High Penetration

GEN3SYS® XT Pro

GEN3SYS® XT

ASC 320®

General Production

(certain sizes are ideal for deep hole drilling and/or large diameter drilling)

GEN2 T-A®

Original T-A®

High Performance

Universal

Large Diameter

Revolution Drill®

Opening Drill®

Large Diameter / Deep Hole

APX Drill

Deep Hole

BT-A Drill

Guided T-A® Drill
(special)

Porting

AccuPort 432®

Structural Steel

GEN3SYS® XT

T-A®

BORING

WOHLHAUPTER®

Bringing you the finest in precision cutting tools

CRITERION™

REAMING

ALVAN®
Reaming Systems

BURNISHING

S.C.A.M.I.®
Roller Burnishing

THREADING

AccuThread™ 856
Pin Style Indexable

AccuThread™ 856
Bolt-in Style Indexable

AccuThread™ 856
Solid Carbide

ThreadMills USA
Solid Carbide

SPECIALS

Insta-Quote™
Online custom tool builder and quote generator

i-Form
Custom indexable drill / form tool system

Engineered Specials
If your special holemaking needs cannot be met with the Insta-Quote system, Allied Machine can specially engineer ANY product to make your application a success. Simply contact your local Field Sales Engineer or the Allied Machine Application Engineering department for assistance with creating your special tooling. Let Allied Machine resolve your challenges today.

Allied Machine & Engineering patent information can be found at **www.alliedmachine.com/patents**

Threading Solutions

Solid Carbide and Indexable Thread Mills | AccuThread™ 856 | ThreadMills USA

Any Thread, Any Time

Allied Machine's thread milling product line has developed into a comprehensive range of high precision tooling that offers outstanding productivity with exceptional levels of tool life and thread accuracy. The thread mill range covers both solid carbide and indexable replaceable insert tools with an extensive range of thread forms.

Our thread milling product line has been specifically designed to provide customers with a wide range of options. This is achieved by offering two thread mill ranges within our product lineup: the low cost, general production ThreadMills USA range, and the high performance, high productivity AccuThread™ range.

Online programmer available 24/7	Solid carbide and indexable insert styles	Large range of thread form options

Applicable Industries

Aerospace
Agriculture
Automotive
Firearms
General Machining
Medical
Oil & Gas
Renewable Energy
Tool, Mold & Die

Your safety and the safety of others is very important. This catalog contains important safety messages. Always read and follow all safety precautions.

This triangle is a safety hazard symbol. It alerts you to potential safety hazards that can cause tool failure and serious injury.

When you see this symbol in the catalog, look for a related safety message that may be near this triangle or referred to in the nearby text.

There are safety signal words also used in the catalog. Safety messages follow these words.

WARNING

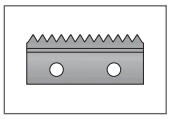
WARNING (shown above) means that failure to follow the precautions in this message could result in tool failure and serious injury.

NOTICE means that failure to follow the precautions in this message could result in damage to the tool or machine but not result in personal injury.

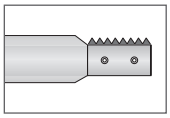
NOTE and **IMPORTANT** are also used. These are important that you read and follow but are not safety-related.

Visit www.alliedmachine.com for the most up-to-date information and procedures.

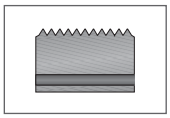
Reference Icons
The following icons will appear throughout the catalog to help you navigate between products.



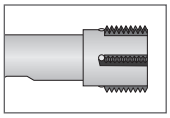
Bolt-in Style Inserts
Refers to the available bolt-in style thread mill insert options



Bolt-in Style Insert Holders
Refers to the range of holder options available for bolt-in style inserts

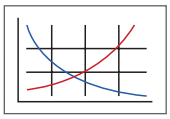


Pin Style Inserts
Refers to the available pin style thread mill insert options.



Pin Style Insert Holders
Refers to the range of holder options available for pin style inserts

Setup / Assembly Information
Detailed instructions and information regarding the corresponding part(s)



Recommended Cutting Data
Speed and feed recommendations for optimum and safe threading

Coolant Through Option
Indicates that the product is coolant through

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Solid Carbide Thread Mills

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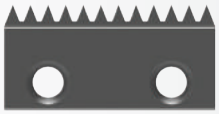
High Performance Threading Solutions

THREAD MILLING DONE *RIGHT*

Solid Carbide Thread Mills		Notes
AccuThread™ 856		• Allied Machine's proprietary AM210® coating yields a 25-50% increase in tool life over competitor products • Standard cutting lengths allow for multiple applications without the need for special thread mills • Helical flute offers increased strength and rigidity when cutting forces are applied
ThreadMills USA		• Helical flute offers increased strength and rigidity when cutting forces are applied • High quality for consistent, predictable production • Coolant through options available • TiAlN coating improves tool life versus uncoated tools

Indexable Insert Thread Mills		Notes
AccuThread™ 856 Bolt-in Style		• Thread mill holders are manufactured from stainless steel that is engineered to dampen vibration during operation • Extensive range of thread forms with two thread lengths • Can produce left or right handed threads
AccuThread™ 856 Pin Style		• Patented pin style locking system ensures unsurpassed repeatability • Thread mill holders are manufactured from stainless steel that is engineered to dampen vibration during operation • Extensive range of thread forms with two thread lengths
AccuThread™ 856 Indexable Inserts	 Bolt-in Style Pin Style	• Full profiles present on all inserts allow 100% thread form against 65-75% for tapping • Allied Machine's premium carbide allows for extended tool life while providing high quality thread forms • Allied Machine's proprietary AM210® coating yields a 25-50% increase in tool life over competitor products

Online Tools

Insta-Code™

Find your thread mill. Create your program.

iOS DEVICES | ANDROID DEVICES | PC DOWNLOAD | ONLINE WEB APP

The user-friendly software lets you choose the best thread mill product for your application and create the program code for your machine. Insta-Code is available across multiple platforms, including the mobile device app, the PC download app (that can be used offline), and the online web app available 24/7 at www.alliedmachine.com.

Eliminate the wait. Get your program now.

Insta-Code also has a
Cycle Time Calculator

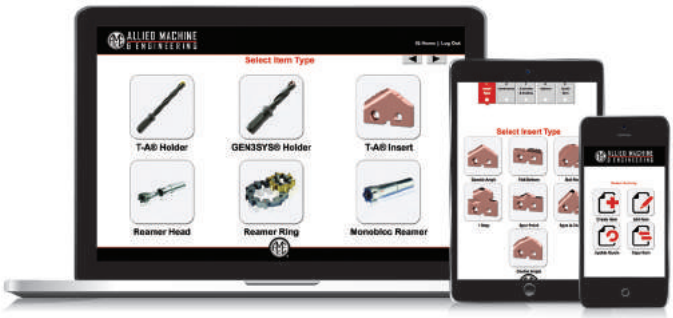
Insta-Quote™

Design, create, and quote tools in minutes.

Available online 24/7

ONLINE WEB APP

Solid Carbide Thread Mills (both AccuThread™ 856 and ThreadMills USA)



Insta-Quote is the online system that lets you design special tooling for your specific application. Receive your drawing and quote within seconds after you complete your design.

Now, you can quickly find the exact thread mill you need with Insta-Quote. Go online today and let Insta-Quote help solve your applications. After all, why should you do all the work?

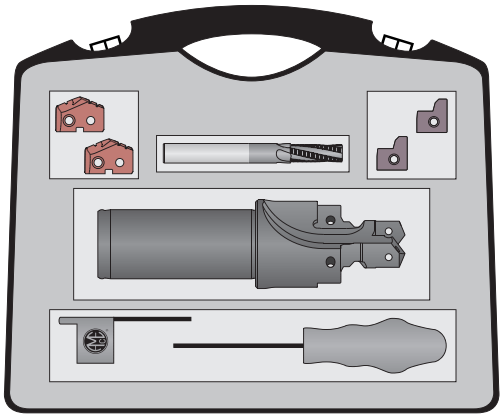
Solid Carbide Styles and Thread Forms

Thread Forms	AccuThread™ 856 - Non-Coolant	ThreadMills USA - Non-Coolant	ThreadMills USA - Coolant Through
Straight BSW			
Helical BSPP, NPS, NPSF, UN, ISO			
Taper Helical BSPT, NPT, NPTF			

The Complete Package

Producing fully finished threaded hydraulic ports has never been easier. The Port and Thread Finishing Kit includes the AccuPort 432® port contour cutter with a dedicated AccuThread 856 solid carbide thread mill in a single kit. You also receive the T-A® inserts and port form inserts needed to complete the assembly.

Port kits incorporate the AccuThread 856 solid carbide thread mills to increase the manufacturing flexibility by allowing hydraulic ports to be produced in just two operations. In addition, where a unique port profile is required, Allied Machine provides a dedicated special tooling solution using our extensive tool design and manufacturing experience to meet precise specifications.



NOTE: See Section A9 of our product catalog for the complete list of Port and Thread Finishing Kits.

One Tool, FOUR Operations

- Spot Face
- Port Contour
- Tap Drill
- Spot Drill

4 IN 1

NOTE: See Section A92 of our product catalog for full AccuPort 432 product line information.

Product Nomenclature

AccuThread™ 856 Solid Carbide Thread Mills

TM	U	K	0250	–	20	M
1	2	3	4		5	6

1. Thread Mill	2. Thread Class	3. Coating	4. Min Thread Diameter	5. Thread Pitch	6. Shank
TM = Standard **HDTM** = Heavy duty	**U** = UN **N** = NPT, NPTF **B** = BSPP, BSPT, BSW **M** = ISO **A** = AccuPort® specific	**K** = AM210® **U** = Uncoated	**0250** = 1/4 (English) **0008** = #8 (Number Drill) **0450** = M4.5 (ISO)	**20** = UN 20 TPI **075** = ISO 0.75 **NPT** = All pipe threads will show thread form	**Blank** = Imperial **M** = Metric

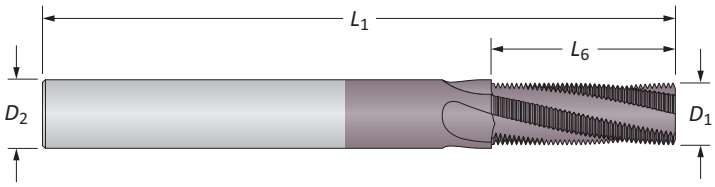
ThreadMills USA Solid Carbide Thread Mills

TM	250	20	CH	M
1	2	3	4	5

1. Thread Mill	2. Min Thread Diameter	3. Thread Pitch	4. Optional	5. Shank
TM = TiAlN **TMFT** = Uncoated **HDTM** = Heavy duty **HDTMFT** = Heavy duty uncoated	**250** = 1/4 (English) **08** = #8 (Number Drill) **45** = M4.5 (ISO)	**20** = UN 20 TPI **075** = ISO 0.75 **NPT** = All pipe threads will show thread form	**CH** = Coolant hole **DE** = Double end **NPT** = All pipe threads will show thread form	**Blank** = Imperial **M** = Metric

Reference Key

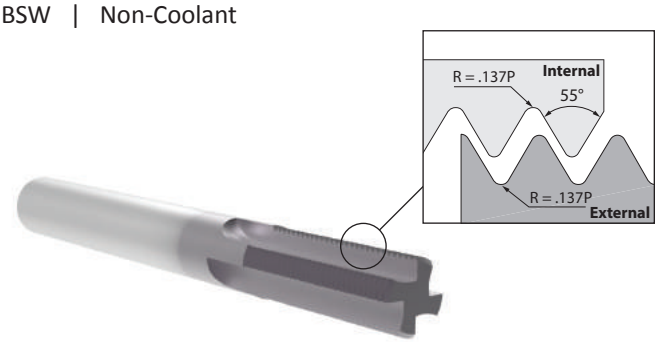
Symbol	Attribute
D_1	Maximum cutter diameter
D_2	Shank diameter
L_1	Overall length
L_6	Length of cut

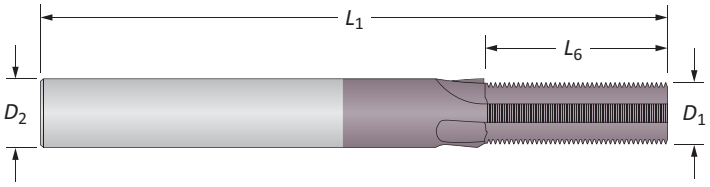


A DRILLING
B BORING
C REAMING
D BURNISHING
E THREADING
X SPECIALS

Solid Carbide Thread Mills

BSW | Non-Coolant

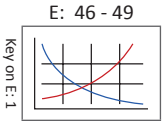




BSW | Non-Coolant

	TPI (Pitch)	Min Thread Ø	Flutes	Thread Mill D_1	D_2	L_6	L_1	Part No. ThreadMills USA	AccuThread™ 856
i	20	1/4	3	0.177	0.250	0.400	2.500	**TM20BSW**	–
	18	5/16	3	0.197	0.250	0.445	2.500	**TM18BSW**	–
	16	3/8	5	0.276	0.312	0.563	3.000	**TM16BSW**	–
	14	7/16	5	0.311	0.312	0.715	3.000	**TM14BSW**	–
	12	1/2	5	0.354	0.375	0.750	3.500	**TM12BSW**	–
	11	5/8	5	0.468	0.500	0.910	3.500	**TM11BSW**	–
	10	3/4	5	0.468	0.500	1.100	3.500	**TM10BSW**	–
	9	7/8	6	0.620	0.625	1.112	4.000	**TM9BSW**	–
	8	1	6	0.620	0.625	1.375	4.000	**TM8BSW**	–
m	20	1/4	3	4.50	6.00	10.16	58.00	**TM20BSWM**	**TMBK0250-20M**
	18	5/16	3	5.00	6.00	11.29	58.00	**TM18BSWM**	**TMBK0312-18M**
	16	3/8	5	7.00	8.00	14.29	64.00	**TM16BSWM**	**TMBK0375-16M**
	14	7/16	5	7.90	8.00	18.15	64.00	**TM14BSWM**	**TMBK0437-14M**
	12	1/2	5	9.00	10.00	19.10	73.00	**TM12BSWM**	**TMBK0500-12M**
	11	5/8	5	11.90	12.00	23.10	84.00	**TM11BSWM**	**TMBK0625-11M**
	10	3/4	5	11.90	12.00	27.94	84.00	**TM10BSWM**	**TMBK0750-10M**
	9	7/8	6	15.90	16.00	28.23	93.00	**TM9BSWM**	**TMBK0875-9M**
	8	1	6	15.90	16.00	34.94	93.00	**TM8BSWM**	**TMBK1000-8M**

E: 46 - 49



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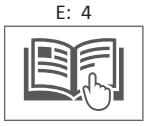
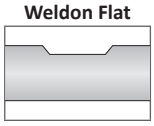


Weldon Flat

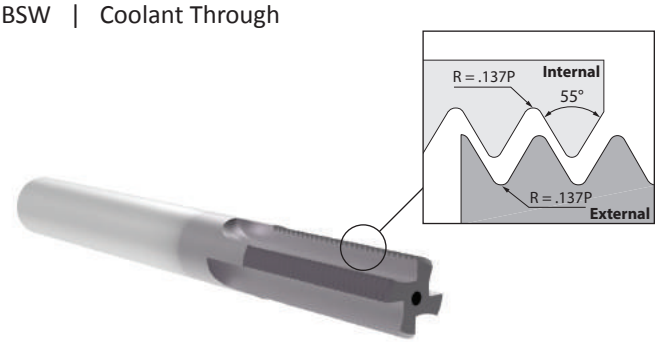


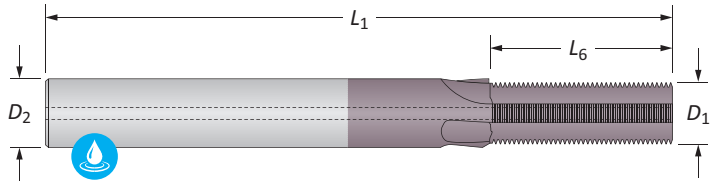
To order a thread mill with a Weldon flat, replace the leading TM designator with TW (available for inch shanks 3/8 and above, or metric shanks 6mm and above)
Example: Cylindrical shank = **TM**NK0500-NPT | Weldon shank flat = **TW**NK0500-NPT
NOTE: Weldon flats have a minimum order quantity of 2 pieces

i = Imperial (in)
m = Metric (mm)

Solid Carbide Thread Mills

BSW | Coolant Through





BSW | Coolant Through

	TPI (Pitch)	Min Thread Ø	Flutes	Thread Mill D_1	D_2	L_6	L_1	Part No. ThreadMills USA
i	20	1/4	3	0.177	0.250	0.400	2.375	**TM20BSWCH**
	18	5/16	3	0.197	0.250	0.445	2.375	**TM18BSWCH**
	16	3/8	5	0.276	0.312	0.563	3.000	**TM16BSWCH**
	14	7/16	5	0.311	0.312	0.715	3.000	**TM14BSWCH**
	12	1/2	5	0.354	0.375	0.750	3.000	**TM12BSWCH**
	11	5/8	5	0.468	0.500	0.910	3.500	**TM11BSWCH**
	10	3/4	5	0.468	0.500	1.100	3.500	**TM10BSWCH**
	9	7/8	6	0.620	0.625	1.112	4.000	**TM9BSWCH**
	8	1	6	0.620	0.625	1.375	4.000	**TM8BSWCH**
m	20	1/4	3	4.50	6.00	10.16	58.00	**TM20BSWCHM**
	18	5/16	3	5.00	6.00	11.29	58.00	**TM18BSWCHM**
	16	3/8	5	7.00	8.00	14.29	64.00	**TM16BSWCHM**
	14	7/16	5	7.90	8.00	18.15	64.00	**TM14BSWCHM**
	12	1/2	5	9.00	10.00	19.10	84.00	**TM12BSWCHM**
	11	5/8	5	11.90	12.00	23.10	84.00	**TM11BSWCHM**
	10	3/4	5	11.90	12.00	27.94	84.00	**TM10BSWCHM**
	9	7/8	6	15.90	16.00	28.23	93.00	**TM9BSWCHM**
	8	1	6	15.90	16.00	34.94	93.00	**TM8BSWCHM**

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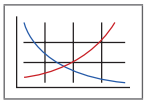
Key on E: 1



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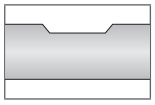
Weldon Flat



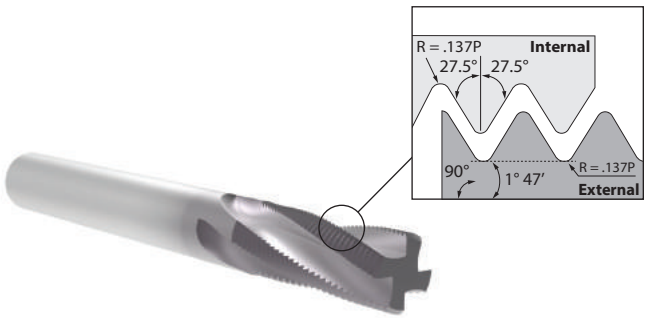
To order a thread mill with a Weldon flat, replace the leading TM designator with TW (available for inch shanks 3/8 and above, or metric shanks 6mm and above)
Example: Cylindrical shank = **TM**NK0500-NPT | Weldon shank flat = **TW**NK0500-NPT
NOTE: Weldon flats have a minimum order quantity of 2 pieces

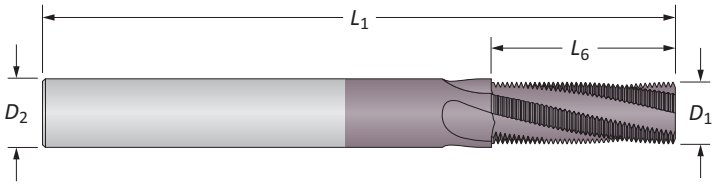
i = Imperial (in)
m = Metric (mm)

A DRILLING
B BORING
C REAMING
D BURNISHING
E THREADING
X SPECIALS

Solid Carbide Thread Mills

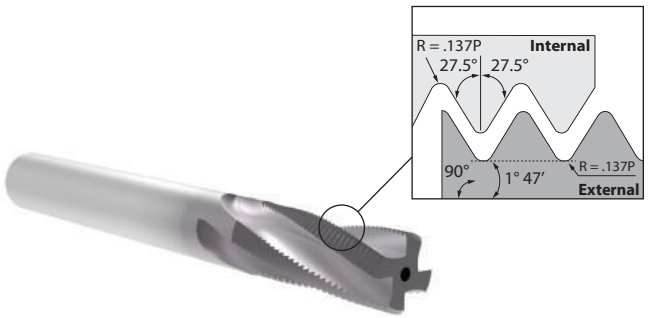
BSPT

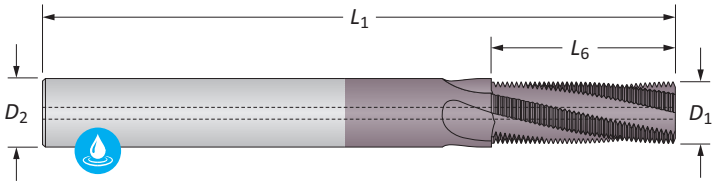




BSPT | Non-Coolant

	TPI (Pitch)	Min Thread Ø	Flutes	Thread Mill D_1	D_2	L_6	L_1	Part No. ThreadMills USA	AccuThread™ 856
i	28	1/16 and 1/8	3	0.240	0.250	0.393	2.500	**TM28BSPT**	–
	19	1/4 and 3/8	4	0.310	0.312	0.580	3.000	**TM19BSPT**	–
	14	1/2 and 3/4	4	0.470	0.500	0.787	3.500	**TM14BSPT**	–
	11	1	4	0.620	0.625	1.546	4.000	**TM11BSPT**	–
m	28	1/16 and 1/8	3	5.97	6.00	9.98	58.00	**TM28BSPTM**	**TMBK0063-BSPTM**
	19	1/4 and 3/8	4	9.91	10.00	14.73	73.00	**TM19BSPTM**	**TMBK0250-BSPTM**
	14	1/2 and 3/4	4	11.94	12.00	20.00	84.00	**TM14BSPTM**	**TMBK0500-BSPTM**
	11	1	4	15.75	16.00	32.31	93.00	**TM11BSPTM**	**TMBK1000-BSPTM**

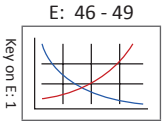




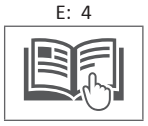
BSPT | Coolant Through

	TPI (Pitch)	Min Thread Ø	Flutes	Thread Mill D_1	D_2	L_6	L_1	Part No. ThreadMills USA
i	28	1/16 and 1/8	3	0.240	0.250	0.393	2.375	**TM28BSPTCH**
	19	1/4 and 3/8	4	0.310	0.312	0.580	3.000	**TM19BSPTCH**
	14	1/2 and 3/4	4	0.470	0.500	0.787	3.500	**TM14BSPTCH**
	11	1	4	0.620	0.625	1.546	4.000	**TM11BSPTCH**
m	28	1/16 and 1/8	3	5.97	6.00	9.98	58.00	**TM28BSPTCHM**
	19	1/4 and 3/8	4	9.91	10.00	14.73	84.00	**TM19BSPTCHM**
	14	1/2 and 3/4	4	11.94	12.00	20.00	84.00	**TM14BSPTCHM**
	11	1	4	15.75	16.00	32.31	93.00	**TM11BSPTCHM**

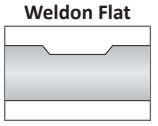
E: 46 - 49



E: 4



Weldon Flat

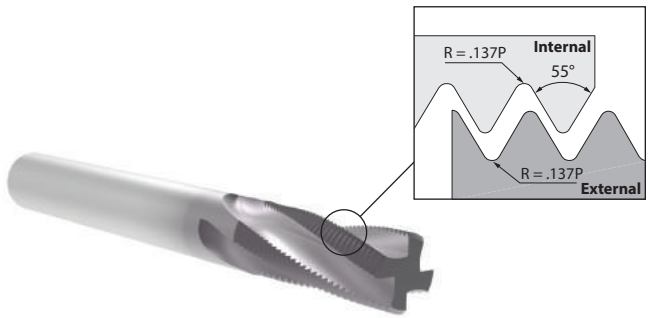


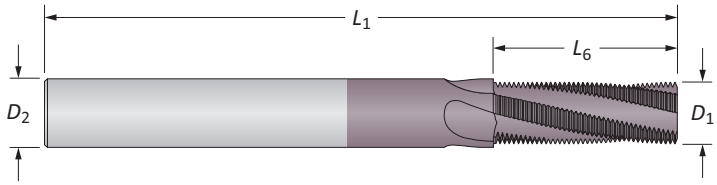
To order a thread mill with a Weldon flat, replace the leading TM designator with TW (available for inch shanks 3/8 and above, or metric shanks 6mm and above)
Example: Cylindrical shank = **TM**NK0500-NPT | Weldon shank flat = **TW**NK0500-NPT
NOTE: Weldon flats have a minimum order quantity of 2 pieces

i = Imperial (in)
m = Metric (mm)

Solid Carbide Thread Mills

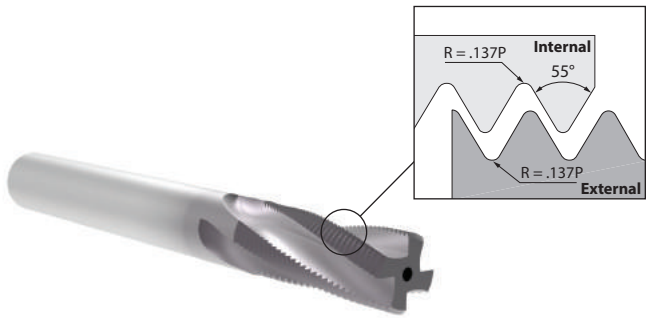
BSPP

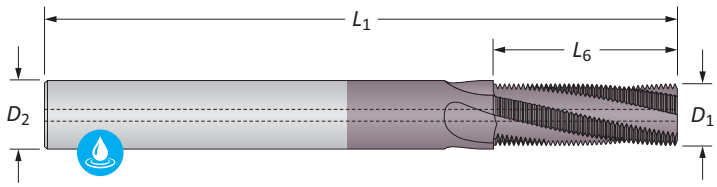




BSPP | Non-Coolant

	TPI (Pitch)	Min Thread Ø	Flutes	Thread Mill D_1	D_2	L_6	L_1	Part No. ThreadMills USA	AccuThread™ 856
i	28	1/16 and 1/8	3	0.240	0.250	0.572	2.500	**TM28BSPP**	–
	19	1/4 and 3/8	4	0.310	0.312	0.737	3.000	**TM19BSPP**	–
	14	1/2 and 3/4	4	0.470	0.500	1.143	3.500	**TM14BSPP**	–
	11	1	4	0.620	0.625	1.365	4.000	**TM11BSPP**	–
m	28	1/16 and 1/8	3	5.97	6.00	14.53	58.00	**TM28BSPPM**	**TMBK0063-BSPPM**
	19	1/4 and 3/8	4	9.91	10.00	18.72	73.00	**TM19BSPPM**	**TMBK0250-BSPPM**
	19	3/8	4	11.94	12.00	28.41	84.00	**HDTM19BSPPM**	–
	14	1/2 and 3/4	4	11.94	12.00	29.03	84.00	**TM14BSPPM**	**TMBK0500-BSPPM**
	14	3/4	5	15.75	16.00	34.47	93.00	**HDTM14BSPPM**	–
	11	1	4	15.75	16.00	34.67	93.00	**TM11BSPPM**	**TMBK1000-BSPPM**





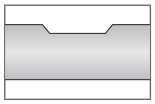
BSPP | Coolant Through

	TPI (Pitch)	Min Thread Ø	Flutes	Thread Mill D_1	D_2	L_6	L_1	Part No. ThreadMills USA
i	28	1/16 and 1/8	3	0.240	0.250	0.572	2.375	**TM28BSPPCH**
	19	1/4 and 3/8	4	0.310	0.312	0.737	3.000	**TM19BSPPCH**
	14	1/2 and 3/4	4	0.470	0.500	1.143	3.500	**TM14BSPPCH**
	11	1	4	0.620	0.625	1.365	4.000	**TM11BSPPCH**
m	28	1/16 and 1/8	3	5.97	6.00	14.53	58.00	**TM28BSPPCHM**
	19	1/4 and 3/8	4	9.91	10.00	18.72	84.00	**TM19BSPPCHM**
	14	1/2 and 3/4	4	11.94	12.00	29.03	84.00	**TM14BSPPCHM**
	11	1	4	15.75	16.00	34.67	93.00	**TM11BSPPCHM**

E: 46 - 49
Key on E: 1

E: 4

Weldon Flat



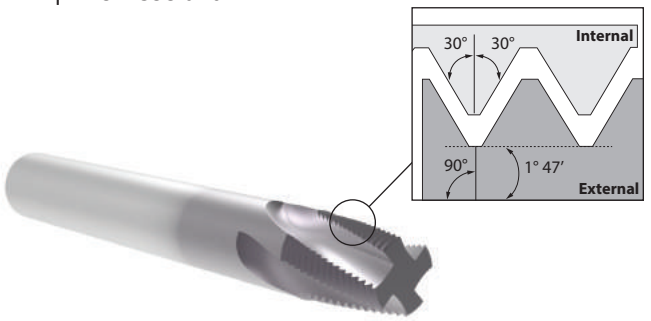
To order a thread mill with a Weldon flat, replace the leading TM designator with TW (available for inch shanks 3/8 and above, or metric shanks 6mm and above)
Example: Cylindrical shank = **TM**NK0500-NPT | Weldon shank flat = **TW**NK0500-NPT
NOTE: Weldon flats have a minimum order quantity of 2 pieces

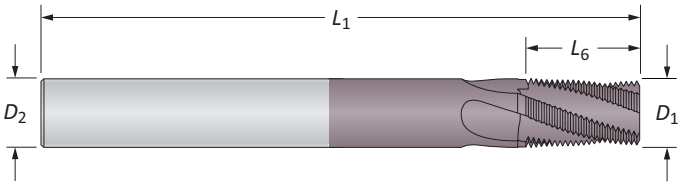
i = Imperial (in)
m = Metric (mm)

A DRILLING
B BORING
C REAMING
D BURNISHING
E THREADING
X SPECIALS

Solid Carbide Thread Mills

NPT | Non-Coolant

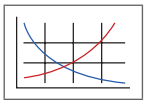




NPT | Non-Coolant

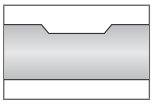
	TPI (Pitch)	Min Thread Ø	Flutes	Thread Mill D_1	D_2	L_6	L_1	Part No. ThreadMills USA	AccuThread™ 856
	27	1/16 and 1/8	3	0.245	0.250	0.437	2.500	**TM27NPT**	**TMNK0063-NPT**
	27	1/8	4	0.300	0.312	0.482	3.000	**HDTM27NPT**	**HDTMNK0125-NPT**
	18	1/4 and 3/8	4	0.305	0.312	0.625	3.000	**TM18NPT**	**TMNK0250-NPT**
	18	1/4 and 3/8	4	0.363	0.375	0.680	3.500	**HDTM18NPT**	**HDTMNK0250-NPT**
i	14	1/2 and 3/4	4	0.495	0.500	0.875	3.500	**TM14NPT**	**TMNK0500-NPT**
	14	3/4	4	0.620	0.625	1.000	4.000	**HDTM14NPT**	**HDTMNK0750-NPT**
	11.5	1	4	0.620	0.625	1.125	4.000	**TM11NPT**	**TMNK1000-NPT**
	11.5	1	5	0.745	0.750	1.219	4.000	**HDTM11NPT**	**HDTMNK1000-NPT**
	8	2-1/2	4	0.745	0.750	1.500	5.000	**TM8NPT**	**TMNK2500-NPT**
	27	1/16 and 1/8	3	5.95	6.00	11.30	58.00	**TM27NPTM**	**TMNK0063-NPTM**
	27	1/8	4	7.62	8.00	12.25	64.00	**HDTM27NPTM**	**–**
	18	1/4 and 3/8	4	7.75	8.00	15.70	64.00	**TM18NPTM**	**TMNK0250-NPTM**
	18	1/4 and 3/8	4	9.22	10.00	17.25	84.00	**HDTM18NPTM**	**–**
m	14	1/2 and 3/4	4	11.95	12.00	23.70	84.00	**TM14NPTM**	**TMNK0500-NPTM**
	14	3/4	4	15.75	16.00	25.40	93.00	**HDTM14NPTM**	**–**
	11.5	1	4	15.75	16.00	28.75	93.00	**TM11NPTM**	**TMNK1000-NPTM**
	11.5	1	5	18.92	20.00	30.95	105.00	**HDTM11NPTM**	**–**
	8	2-1/2	5	19.75	20.00	38.10	115.00	**TM8NPTM**	**TMNK2500-NPTM**

E: 46 - 49
Key on E: 1



E: 4

Weldon Flat

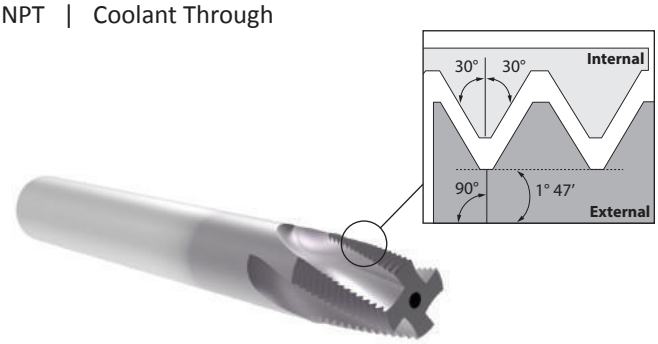


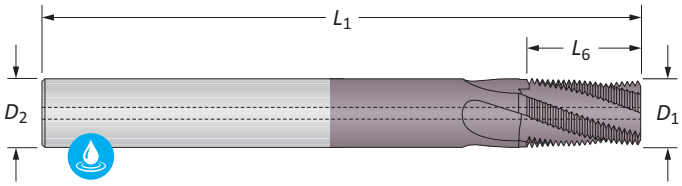
To order a thread mill with a Weldon flat, replace the leading TM designator with TW (available for inch shanks 3/8 and above, or metric shanks 6mm and above)
Example: Cylindrical shank = **TM**NK0500-NPT | Weldon shank flat = **TW**NK0500-NPT
NOTE: Weldon flats have a minimum order quantity of 2 pieces

i = Imperial (in)
m = Metric (mm)

Solid Carbide Thread Mills

NPT | Coolant Through





NPT | Coolant Through

	TPI (Pitch)	Min Thread Ø	Flutes	Thread Mill D_1	D_2	L_6	L_1	Part No. ThreadMills USA
i	27	1/16 and 1/8	3	0.245	0.250	0.437	2.375	**TM27NPTCH**
	27	1/8	4	0.300	0.312	0.482	3.000	**HDTM27NPTCH**
	18	1/4 and 3/8	4	0.305	0.312	0.625	3.000	**TM18NPTCH**
	18	1/4 and 3/8	4	0.363	0.375	0.680	3.000	**HDTM18NPTCH**
	14	1/2 and 3/4	4	0.495	0.500	0.875	3.500	**TM14NPTCH**
	14	3/4	4	0.620	0.625	1.000	4.000	**HDTM14NPTCH**
	11.5	1	4	0.620	0.625	1.125	4.000	**TM11NPTCH**
	11	1	5	0.745	0.750	1.219	4.000	**HDTM11NPTCH**
	8	2-1/2	4	0.745	0.750	1.500	5.000	**TM8NPTCH**
m	27	1/16 and 1/8	3	5.95	6.00	11.30	58.00	**TM27NPTCHM**
	27	1/8	4	7.62	8.00	12.25	64.00	**HDTM27NPTCHM**
	18	1/4 and 3/8	4	7.75	8.00	15.70	64.00	**TM18NPTCHM**
	18	1/4 and 3/8	4	9.22	10.00	17.25	84.00	**HDTM18NPTCHM**
	14	1/2 and 3/4	4	11.95	12.00	23.70	84.00	**TM14NPTCHM**
	14	3/4	4	15.75	16.00	25.40	93.00	**HDTM14NPTCHM**
	11.5	1	4	15.75	16.00	28.75	93.00	**TM11NPTCHM**
	11.5	1	5	18.92	20.00	30.95	105.00	**HDTM11NPTCHM**
	8	2-1/2	5	19.75	20.00	38.10	115.00	**TM8NPTCHM**

E: 46 - 49
Key on E: 1

E: 4

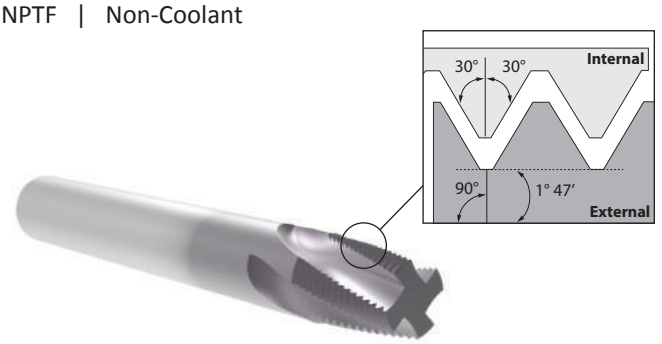
Weldon Flat

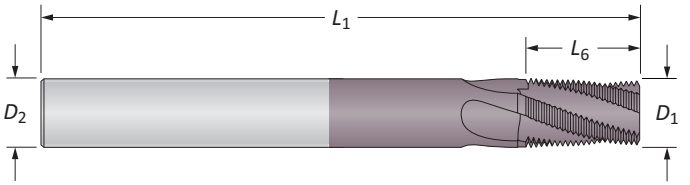
To order a thread mill with a Weldon flat, replace the leading TM designator with TW (available for inch shanks 3/8 and above, or metric shanks 6mm and above)
Example: Cylindrical shank = **TM**NK0500-NPT | Weldon shank flat = **TW**NK0500-NPT
NOTE: Weldon flats have a minimum order quantity of 2 pieces

i = Imperial (in)
m = Metric (mm)

Solid Carbide Thread Mills

NPTF | Non-Coolant





NPTF | Non-Coolant

	TPI (Pitch)	Min Thread Ø	Flutes	Thread Mill D_1	D_2	L_6	L_1	Part No. ThreadMills USA	AccuThread™ 856
i	27	1/16 and 1/8	3	0.245	0.250	0.437	2.500	**TM27NPTF**	**TMNK0063-NPTF**
	18	1/4 and 3/8	4	0.305	0.312	0.625	3.000	**TM18NPTF**	**TMNK0250-NPTF**
	14	1/2 and 3/4	4	0.495	0.500	0.875	3.500	**TM14NPTF**	**TMNK0500-NPTF**
	11.5	1	4	0.620	0.625	1.125	4.000	**TM11NPTF**	**TMNK1000-NPTF**
	8	2-1/2	4	0.745	0.750	1.500	5.000	**TM8NPTF**	**TMNK2500-NPTF**
m	27	1/16 and 1/8	3	5.95	6.00	11.30	58.00	**TM27NPTFM**	**TMNK0063-NPTFM**
	18	1/4 and 3/8	4	7.75	8.00	15.70	64.00	**TM18NPTFM**	**TMNK0250-NPTFM**
	14	1/2 and 3/4	4	11.95	12.00	23.70	84.00	**TM14NPTFM**	**TMNK0500-NPTFM**
	11.5	1	4	15.75	16.00	28.75	93.00	**TM11NPTFM**	**TMNK1000-NPTFM**
	8	2-1/2	5	19.75	20.00	38.10	115.00	**TM8NPTFM**	**TMNK2500-NPTFM**

E: 46 - 49
Key on E: 1

E: 4

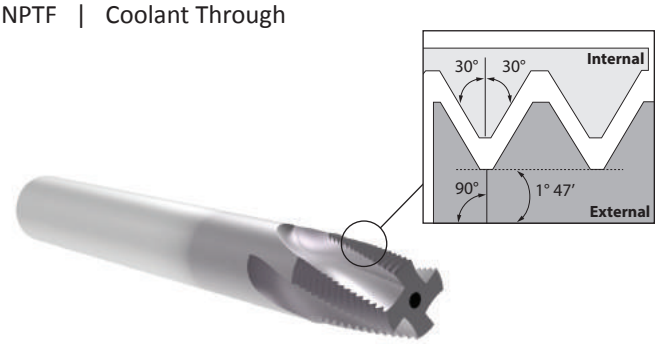
Weldon Flat

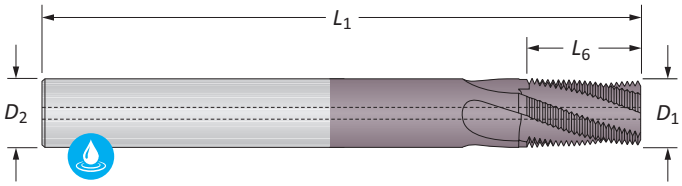
To order a thread mill with a Weldon flat, replace the leading TM designator with TW (available for inch shanks 3/8 and above, or metric shanks 6mm and above)
Example: Cylindrical shank = **TM**NK0500-NPT | Weldon shank flat = **TW**NK0500-NPT
NOTE: Weldon flats have a minimum order quantity of 2 pieces

i = Imperial (in)
m = Metric (mm)

Solid Carbide Thread Mills

NPTF | Coolant Through





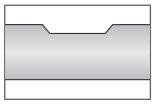
NPTF | Coolant Through

	TPI (Pitch)	Min Thread Ø	Flutes	Thread Mill D_1	D_2	L_6	L_1	Part No. ThreadMills USA
i	27	1/16 and 1/8	3	0.245	0.250	0.437	2.375	**TM27NPTFCH**
	18	1/4 and 3/8	4	0.305	0.312	0.625	3.000	**TM18NPTFCH**
	14	1/2 and 3/4	4	0.495	0.500	0.875	3.500	**TM14NPTFCH**
	11.5	1	4	0.620	0.625	1.125	4.000	**TM11NPTFCH**
	8	2-1/2	4	0.745	0.750	1.500	5.000	**TM8NPTFCH**
m	27	1/16 and 1/8	3	5.95	6.00	11.30	58.00	**TM27NPTFCHM**
	18	1/4 and 3/8	4	7.75	8.00	15.70	64.00	**TM18NPTFCHM**
	14	1/2 and 3/4	4	11.95	12.00	23.70	84.00	**TM14NPTFCHM**
	11.5	1	4	15.75	16.00	28.75	93.00	**TM11NPTFCHM**
	8	2-1/2	5	19.75	20.00	38.10	115.00	**TM8NPTFCHM**

E: 46 - 49
Key on E: 1

E: 4

Weldon Flat



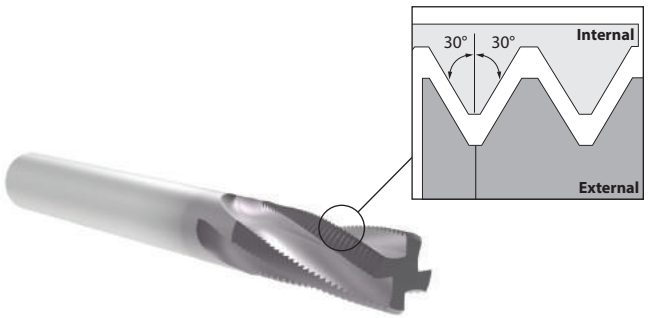
To order a thread mill with a Weldon flat, replace the leading TM designator with TW (available for inch shanks 3/8 and above, or metric shanks 6mm and above)
Example: Cylindrical shank = **TM**NK0500-NPT | Weldon shank flat = **TW**NK0500-NPT
NOTE: Weldon flats have a minimum order quantity of 2 pieces

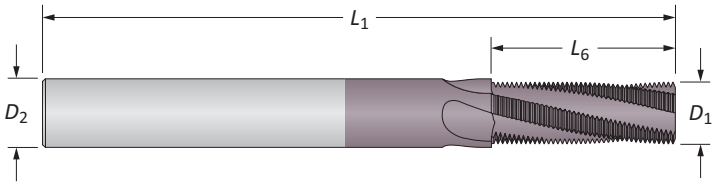
i = Imperial (in)
m = Metric (mm)

A DRILLING
B BORING
C REAMING
D BURNISHING
E THREADING
X SPECIALS

Solid Carbide Thread Mills

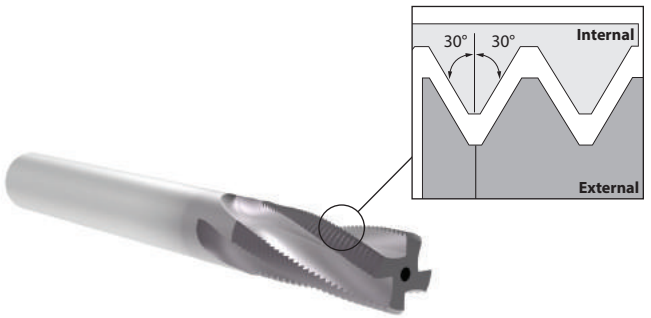
NPS

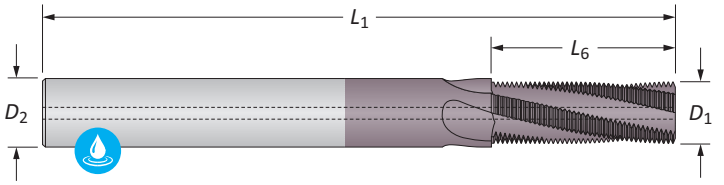




NPS | Non-Coolant

	TPI (Pitch)	Min Thread Ø	Flutes	Thread Mill D_1	D_2	L_6	L_1	Part No. ThreadMills USA
i	27	1/8	3	0.245	0.250	0.630	2.500	**TM27NPS**
	18	1/4 and 3/8	4	0.370	0.375	0.889	3.500	**TM18NPS**
	14	1/2 and 3/4	4	0.490	0.500	1.288	3.500	**TM14NPS**
	11.5	1	4	0.620	0.625	1.392	4.000	**TM11NPS**
m	27	1/8	3	5.95	6.00	16.00	58.00	**TM27NPSM**
	18	1/4 and 3/8	4	9.40	10.00	22.60	84.00	**TM18NPSM**
	14	1/2 and 3/4	4	11.94	12.00	32.70	84.00	**TM14NPSM**
	11.5	1	4	15.75	16.00	35.35	93.00	**TM11NPSM**





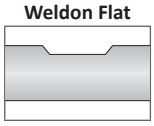
NPS | Coolant Through

	TPI (Pitch)	Min Thread Ø	Flutes	Thread Mill D_1	D_2	L_6	L_1	Part No. ThreadMills USA
i	27	1/8	3	0.245	0.250	0.630	2.375	**TM27NPSCH**
	18	1/4 and 3/8	4	0.370	0.375	0.889	3.000	**TM18NPSCH**
	14	1/2 and 3/4	4	0.490	0.500	1.288	3.500	**TM14NPSCH**
	11.5	1	4	0.620	0.625	1.392	4.000	**TM11NPSCH**
m	27	1/8	3	5.95	6.00	16.00	58.00	**TM27NPSCHM**
	18	1/4 and 3/8	4	9.40	10.00	22.60	84.00	**TM18NPSCHM**
	14	1/2 and 3/4	4	11.94	12.00	32.70	84.00	**TM14NPSCHM**
	11.5	1	4	15.75	16.00	35.35	93.00	**TM11NPSCHM**

E: 46 - 49
Key on E: 1

E: 4

Weldon Flat

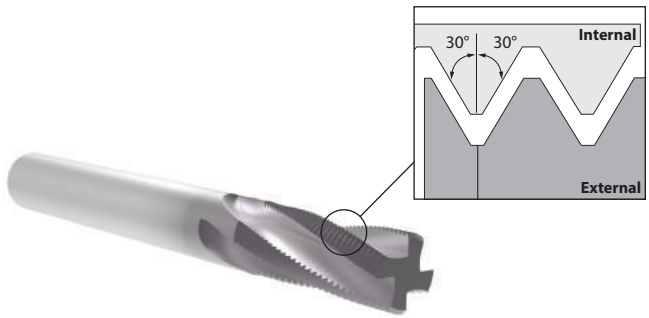


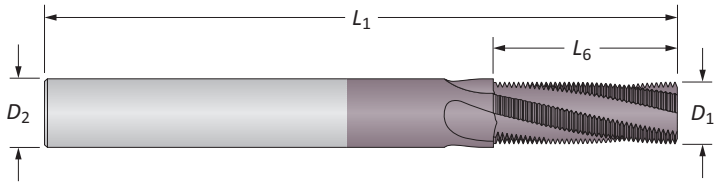
To order a thread mill with a Weldon flat, replace the leading TM designator with TW (available for inch shanks 3/8 and above, or metric shanks 6mm and above)
Example: Cylindrical shank = **TM**NK0500-NPT | Weldon shank flat = **TW**NK0500-NPT
NOTE: Weldon flats have a minimum order quantity of 2 pieces

i = Imperial (in)
m = Metric (mm)

Solid Carbide Thread Mills

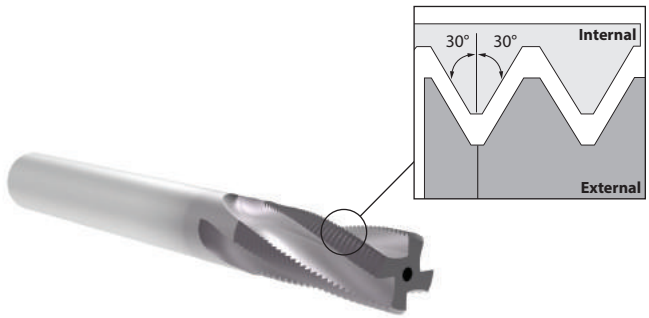
NPSF

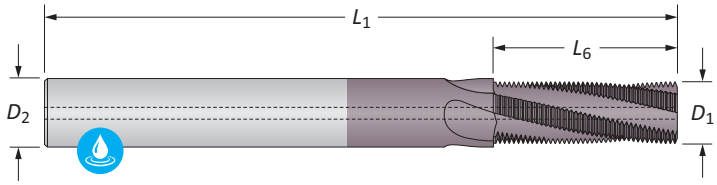




NPSF | Non-Coolant

	TPI (Pitch)	Min Thread Ø	Flutes	Thread Mill D_1	D_2	L_6	L_1	Part No. ThreadMills USA
i	27	1/8	3	0.245	0.250	0.630	2.500	**TM27NPSF**
	18	1/4 and 3/8	4	0.370	0.375	0.889	3.500	**TM18NPSF**
	14	1/2 and 3/4	4	0.490	0.500	1.288	3.500	**TM14NPSF**
	11.5	1	4	0.620	0.625	1.392	4.000	**TM11NPSF**
m	27	1/8	3	5.95	6.00	16.00	58.00	**TM27NPSFM**
	18	1/4 and 3/8	4	9.40	10.00	22.60	84.00	**TM18NPSFM**
	14	1/2 and 3/4	4	11.94	12.00	32.70	84.00	**TM14NPSFM**
	11.5	1	4	15.75	16.00	35.35	93.00	**TM11NPSFM**





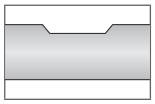
NPSF | Coolant Through

	TPI (Pitch)	Min Thread Ø	Flutes	Thread Mill D_1	D_2	L_6	L_1	Part No. ThreadMills USA
i	27	1/8	3	0.245	0.250	0.630	2.375	**TM27NPSFCH**
	18	1/4 and 3/8	4	0.370	0.375	0.889	3.000	**TM18NPSFCH**
	14	1/2 and 3/4	4	0.490	0.500	1.288	3.500	**TM14NPSFCH**
	11.5	1	4	0.620	0.625	1.392	4.000	**TM11NPSFCH**
m	27	1/8	3	5.95	6.00	16.00	58.00	**TM27NPSFCHM**
	18	1/4 and 3/8	4	9.40	10.00	22.60	84.00	**TM18NPSFCHM**
	14	1/2 and 3/4	4	11.94	12.00	32.70	84.00	**TM14NPSFCHM**
	11.5	1	4	15.75	16.00	35.35	93.00	**TM11NPSFCHM**

E: 46 - 49
Key on E: 1

E: 4

Weldon Flat

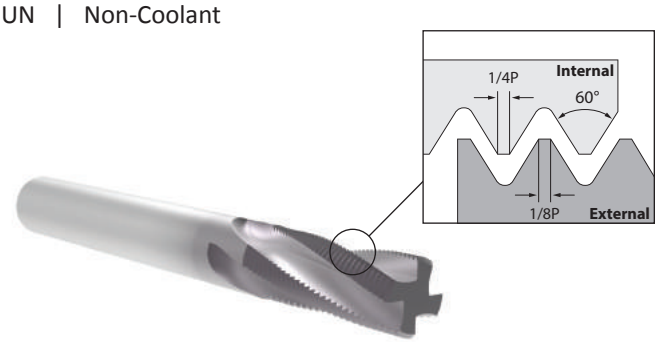


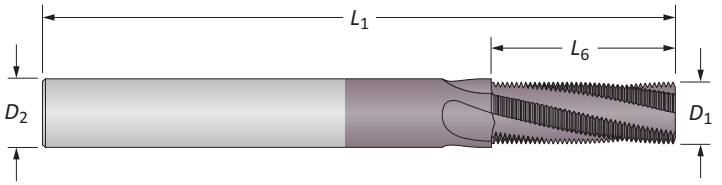
To order a thread mill with a Weldon flat, replace the leading TM designator with TW (available for inch shanks 3/8 and above, or metric shanks 6mm and above)
Example: Cylindrical shank = **TM**NK0500-NPT | Weldon shank flat = **TW**NK0500-NPT
NOTE: Weldon flats have a minimum order quantity of 2 pieces

i = Imperial (in)
m = Metric (mm)

Solid Carbide Thread Mills

UN | Non-Coolant





UN | Non-Coolant

	TPI (Pitch)	Min Thread Ø	Flutes	Thread Mill D_1	D_2	L_6	L_1	Part No. ThreadMills USA	AccuThread™ 856
	64	#2	3*	0.065	0.125	0.125	2.000	**TM08664**	–
	56	#2	3*	0.065	0.125	0.125	2.000	**TM08656**	**TMUK0002-56**
	48	#3	3*	0.075	0.125	0.167	2.000	**TM09948**	–
	44	#5	3	0.095	0.125	0.228	2.000	**TM12544**	–
	40	#4	3*	0.085	0.125	0.175	2.000	**TM12540**	**TMUK0004-40**
	36	#8	3	0.115	0.125	0.250	2.000	**TM16436**	–
	32	#6	3	0.100	0.125	0.218	2.000	**TM13832**	**TMUK0006-32**
	32	#8	3	0.115	0.125	0.250	2.000	**TM16432**	**TMUK0008-32**
	32	#10	3	0.120	0.125	0.312	2.000	**TM19032**	**TMUK0010-32**
	32	#10	3	0.150	0.187	0.312	2.500	**HDTM19032**	–
	32	1/2	6	0.370	0.375	1.000	3.500	**TM50032**	–
i	28	#10	3	0.120	0.125	0.312	2.000	**TM19028**	**TMUK0010-28**
	28	1/4	3	0.180	0.187	0.500	2.500	**TM25028**	**TMUK0250-28**
	28	1/2	6	0.370	0.375	1.000	3.500	**TM50028**	–
	24	#10	3	0.120	0.125	0.312	2.000	**TM19024**	**TMUK0010-24**
	24	#10	3	0.145	0.187	0.312	2.500	**HDTM19024**	–
	24	5/16	3	0.235	0.250	0.625	2.500	**TM31224**	**TMUK0313-24**
	24	3/8	4	0.285	0.312	0.750	3.000	**TM37524**	**TMUK0375-24**
	24	1/2	6	0.370	0.375	1.000	3.500	**TM50024**	–
	20	1/4	3	0.180	0.187	0.500	2.500	**TM25020**	**TMUK0250-20**
	20	1/4	3	0.195	0.250	0.500	2.500	**HDTM25020**	–
	20	7/16	4	0.335	0.375	0.875	3.500	**TM43720**	**TMUK0438-20**
	20	1/2	6	0.370	0.375	1.000	3.500	**TM50020**	–

*Straight fluted

E: 46 - 49
Key on E: 1

E: 4

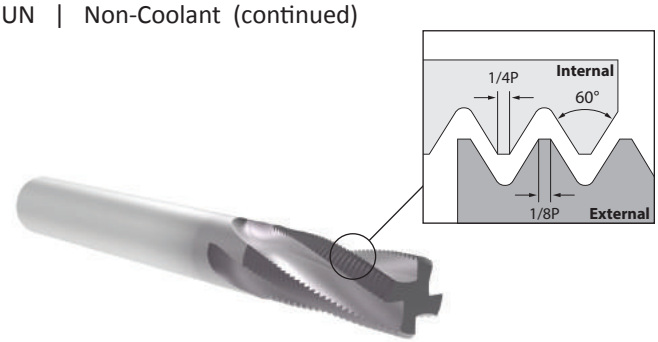
Weldon Flat

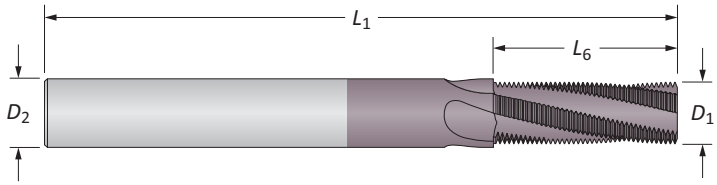
To order a thread mill with a Weldon flat, replace the leading TM designator with TW (available for inch shanks 3/8 and above, or metric shanks 6mm and above)
Example: Cylindrical shank = **TM**NK0500-NPT | Weldon shank flat = **TW**NK0500-NPT
NOTE: Weldon flats have a minimum order quantity of 2 pieces

i = Imperial (in)
m = Metric (mm)

Solid Carbide Thread Mills

UN | Non-Coolant (continued)





UN | Non-Coolant

	TPI (Pitch)	Min Thread Ø	Flutes	Thread Mill D_1	D_2	L_6	L_1	Part No. ThreadMills USA	AccuThread™ 856
	18	5/16	3	0.235	0.250	0.625	2.500	**TM31218**	**TMUK0313-18**
	18	5/16	3	0.245	0.312	0.625	3.000	**HDTM31218**	**–**
	18	9/16	4	0.370	0.375	0.875	3.500	**TM56218**	**TMUK0563-18**
	16	3/8	4	0.285	0.312	0.750	3.000	**TM37516**	**TMUK0375-16**
	16	3/8	4	0.300	0.375	0.750	3.500	**HDTM37516**	**–**
	16	3/4	4	0.490	0.500	1.250	3.500	**TM75016**	**TMUK0750-16**
	14	7/16	4	0.305	0.312	0.750	3.000	**TM43714**	**TMUK0438-14**
	14	7/8	4	0.490	0.500	1.250	3.500	**TM87514**	**TMUK0875-14**
	13	1/2	4	0.350	0.375	0.875	3.500	**TM50013**	**TMUK0500-13**
	13	1/2	4	0.400	0.500	0.875	3.500	**HDTM50013**	**–**
	12	9/16	4	0.370	0.375	0.875	3.500	**TM56212**	**TMUK0563-12**
i	12	3/4	4	0.495	0.500	1.250	3.500	**TM75012**	**TMUK0750-12**
	12	1	6	0.745	0.750	1.500	4.000	**TM10012**	**–**
	11	5/8	4	0.470	0.500	1.250	3.500	**TM62511**	**TMUK0625-11**
	11	5/8	4	0.470	0.500	1.455	3.500	**TM62511-XL**	**TMUK0625-11XL**
	10	3/4	4	0.495	0.500	1.250	3.500	**TM75010**	**TMUK0750-10**
	10	3/4	4	0.495	0.500	1.600	4.000	**TM75010-XL**	**TMUK0750-10XL**
	9	7/8	4	0.620	0.625	1.375	4.000	**TM87509**	**TMUK0875-9**
	9	7/8	4	0.620	0.625	1.778	4.000	**TM87509-XL**	**TMUK0875-9XL**
	8	1	4	0.620	0.625	1.375	4.000	**TM10008**	**TMUK1000-8**
	8	1	6	0.745	0.750	2.000	4.500	**TM10008-XL**	**TMUK1000-8XL**
	7	1-1/8	5	0.745	0.750	1.572	4.500	**TM12507**	**–**
	6	1-3/8	5	0.745	0.750	1.500	4.500	**TM13706**	**–**

E: 46 - 49
Key on E: 1

E: 4

Weldon Flat

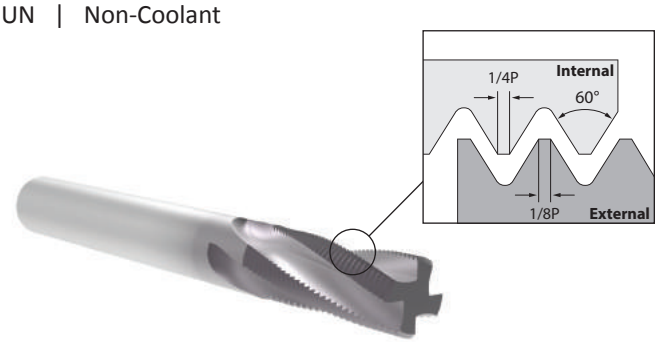
To order a thread mill with a Weldon flat, replace the leading TM designator with TW (available for inch shanks 3/8 and above, or metric shanks 6mm and above)
Example: Cylindrical shank = **TM**NK0500-NPT | Weldon shank flat = **TW**NK0500-NPT
NOTE: Weldon flats have a minimum order quantity of 2 pieces

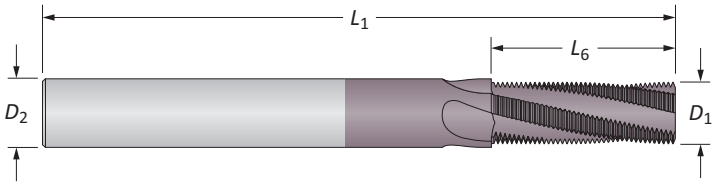
i = Imperial (in)
m = Metric (mm)

A DRILLING
B BORING
C REAMING
D BURNISHING
E THREADING
X SPECIALS

Solid Carbide Thread Mills

UN | Non-Coolant



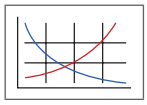


UN | Non-Coolant

	TPI (Pitch)	Min Thread Ø	Flutes	Thread Mill D_1	D_2	L_6	L_1	Part No. ThreadMills USA	AccuThread™ 856
	64	#2	3*	1.65	3.00	3.20	39.00	**TM08664M**	**TMUK0002-64M**
	56	#2	3*	1.65	3.00	3.20	39.00	**TM08656M**	**TMUK0002-56M**
	48	#3	3*	1.80	3.00	3.75	39.00	**TM09948M**	**TMUK0003-48M**
	44	#5	3	2.40	3.00	4.65	39.00	**TM12544M**	**TMUK0005-44M**
	40	#4	3*	2.20	3.00	4.45	39.00	**TM12540M**	**TMUK0004-40M**
	36	#8	3	3.00	4.00	6.35	51.00	**TM16436M**	**TMUK0008-36M**
	32	#6	3	2.50	3.00	5.55	39.00	**TM13832M**	**TMUK0006-32M**
	32	#8	3	3.20	4.00	6.35	51.00	**TM16432M**	**TMUK0008-32M**
	32	#10	3	3.80	4.00	7.95	51.00	**TM19032M**	**TMUK0010-32M**
	32	#10	3	3.80	4.00	7.95	51.00	**HDTM19032M**	**–**
	32	1/2	6	9.40	10.00	25.40	84.00	**TM50032M**	**–**
ⓜ	28	#10	3	3.80	4.00	8.20	51.00	**TM19028M**	**TMUK0010-28M**
ⓜ	28	1/4	3	4.75	6.00	12.70	58.00	**TM25028M**	**TMUK0250-28M**
ⓜ	28	7/16	4	7.90	8.00	19.95	64.00	**–**	**TMUK0438-28M**
ⓜ	28	1/2	6	9.40	10.00	25.40	84.00	**TM50028M**	**–**
	24	#10	3	3.70	4.00	8.50	51.00	**TM19024M**	**TMUK0010-24M**
	24	#10	3	3.70	4.00	8.50	51.00	**HDTM19024M**	**TMUK0313-24M**
	24	5/16	3	5.95	6.00	16.00	58.00	**TM31224M**	**TMUK0375-24M**
	24	3/8	4	7.25	8.00	19.00	64.00	**TM37524M**	**–**
	24	1/2	6	9.40	10.00	25.40	84.00	**TM50024M**	**–**
	20	1/4	3	4.75	6.00	12.70	58.00	**TM25020M**	**TMUK0250-20M**
	20	1/4	3	4.95	6.00	12.70	58.00	**HDTM25020M**	**–**
	20	7/16	4	8.75	10.00	22.85	73.00	**TM43720M**	**TMUK0438-20M**
	20	1/2	6	9.40	10.00	25.40	84.00	**TM50020M**	**–**

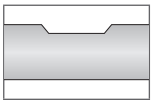
*Straight fluted

E: 46 - 49
Key on E: 1



E: 4

Weldon Flat

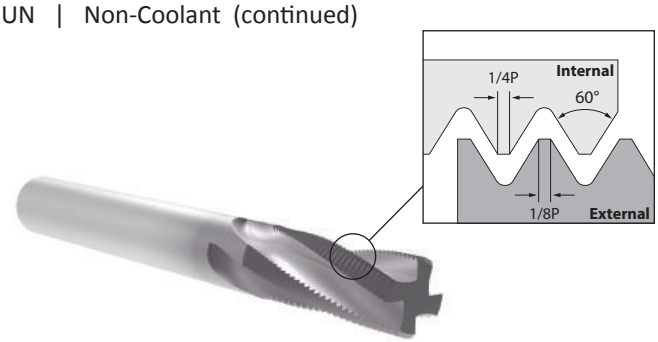


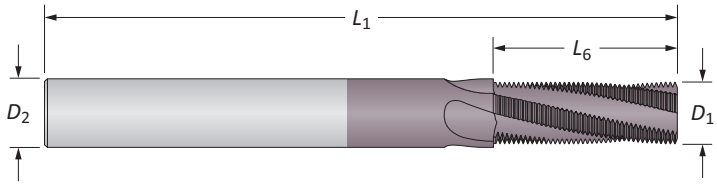
To order a thread mill with a Weldon flat, replace the leading TM designator with TW (available for inch shanks 3/8 and above, or metric shanks 6mm and above)
Example: Cylindrical shank = **TM**NK0500-NPT | Weldon shank flat = **TW**NK0500-NPT
NOTE: Weldon flats have a minimum order quantity of 2 pieces

ⓘ = Imperial (in)
ⓜ = Metric (mm)

Solid Carbide Thread Mills

UN | Non-Coolant (continued)

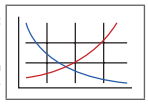




UN | Non-Coolant

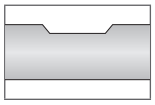
	TPI (Pitch)	Min Thread Ø	Flutes	Thread Mill D_1	D_2	L_6	L_1	Part No. ThreadMills USA	AccuThread™ 856
	18	5/16	3	5.95	6.00	17.00	58.00	**TM31218M**	**TMUK0313-18M**
	18	5/16	3	6.22	8.00	15.87	64.00	**HDTM31218M**	–
	18	9/16	4	9.90	10.00	22.65	73.00	**TM56218M**	**TMUK0563-18M**
	16	3/8	4	7.25	8.00	19.05	64.00	**TM37516M**	**TMUK0375-16M**
	16	3/8	4	7.62	10.00	19.05	84.00	**HDTM37516M**	–
	16	3/4	4	11.95	12.00	31.75	84.00	**TM75016M**	**TMUK0750-16M**
	14	7/16	4	7.75	8.00	20.00	64.00	**TM43714M**	**TMUK0438-14M**
	14	7/8	4	11.95	12.00	32.70	84.00	**TM87514M**	**TMUK0875-14M**
	13	1/2	4	9.40	10.00	23.50	73.00	**TM50013M**	**TMUK0500-13M**
	13	1/2	4	10.16	12.00	23.50	84.00	**HDTM50013M**	–
	12	9/16	4	9.90	10.00	23.35	73.00	**TM56212M**	**TMUK0563-12M**
ⓜ	12	3/4	4	11.95	12.00	31.75	84.00	**TM75012M**	**TMUK0750-12M**
	12	1	6	18.92	20.00	38.10	105.00	**TM10012M**	–
	11	5/8	4	11.95	12.00	32.40	84.00	**TM62511M**	**TMUK0625-11M**
	11	5/8	4	11.95	12.00	37.00	100.00	**TM62511M-XL**	**TMUK0625-11XLM**
	10	3/4	4	11.95	12.00	33.00	84.00	**TM75010M**	**TMUK0750-10M**
	10	3/4	4	11.95	12.00	40.70	100.00	**TM75010M-XL**	**TMUK0750-10XLM**
	9	7/8	4	15.75	16.00	36.75	93.00	**TM87509M**	**TMUK0875-9M**
	9	7/8	4	15.75	16.00	45.20	100.00	**TM87509M-XL**	**TMUK0875-9XLM**
	8	1	4	15.75	16.00	35.00	93.00	**TM10008M**	**TMUK1000-8M**
	8	1	6	19.90	20.00	50.80	115.00	**TM10008M-XL**	**TMUK1000-8XLM**
	7	1-1/8	5	19.90	20.00	36.30	105.00	**TM12507M**	**TMUK1125-7M**
	6	1-3/8	5	19.90	20.00	38.10	105.00	**TM13706M**	**TMUK1375-6M**

E: 46 - 49
Key on E: 1



E: 4

Weldon Flat



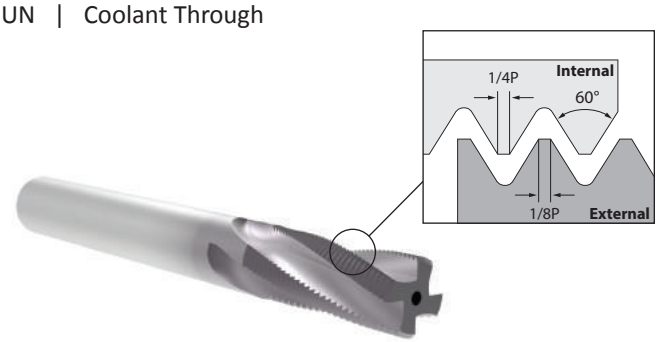
To order a thread mill with a Weldon flat, replace the leading TM designator with TW (available for inch shanks 3/8 and above, or metric shanks 6mm and above)
Example: Cylindrical shank = **TM**NK0500-NPT | Weldon shank flat = **TW**NK0500-NPT
NOTE: Weldon flats have a minimum order quantity of 2 pieces

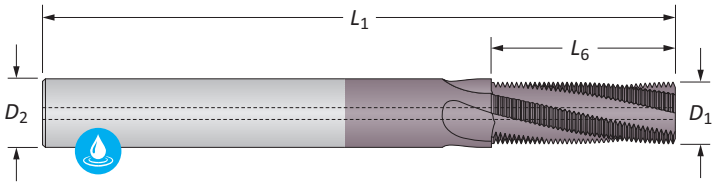
ⓘ = Imperial (in)
ⓜ = Metric (mm)

A DRILLING
B BORING
C REAMING
D BURNISHING
E THREADING
X SPECIALS

Solid Carbide Thread Mills

UN | Coolant Through





UN | Coolant Through

TPI (Pitch)	Min Thread Ø	Flutes	Thread Mill D_1	D_2	L_6	L_1	Part No. ThreadMills USA
64	#2	3*	0.065	0.125	0.125	1.500	**TM08664CH**
56	#2	3*	0.065	0.125	0.125	1.500	**TM08656CH**
48	#3	3*	0.075	0.125	0.167	1.500	**TM09948CH**
44	#5	3	0.095	0.125	0.228	1.500	**TM12544CH**
40	#4	3*	0.085	0.125	0.175	1.500	**TM12540CH**
36	#8	3	0.115	0.125	0.250	1.500	**TM16436CH**
32	#6	3	0.100	0.125	0.218	1.500	**TM13832CH**
32	#8	3	0.115	0.125	0.250	1.500	**TM16432CH**
32	#10	3	0.150	0.187	0.312	2.375	**TM19032CH**
32	#10	3	0.150	0.187	0.312	2.375	**HDTM19032CH**
32	1/2	6	0.370	0.375	1.000	3.500	**TM50032CH**
28	#10	3	0.120	0.125	0.312	1.500	**TM19028CH**
28	1/4	3	0.180	0.187	0.500	2.375	**TM25028CH**
28	1/2	6	0.370	0.375	1.000	3.500	**TM50028CH**
24	#10	3	0.145	0.187	0.312	2.375	**TM19024CH**
24	#10	3	0.145	0.187	0.312	2.375	**HDTM19024CH**
24	5/16	3	0.235	0.250	0.625	2.375	**TM31224CH**
24	3/8	4	0.285	0.312	0.750	3.000	**TM37524CH**
24	1/2	6	0.370	0.375	1.000	3.500	**TM50024CH**
20	1/4	3	0.180	0.187	0.500	2.375	**TM25020CH**
20	1/4	3	0.195	0.250	0.500	2.375	**HDTM25020CH**
20	7/16	4	0.335	0.375	0.875	3.000	**TM43720CH**
20	1/2	6	0.370	0.375	1.000	3.500	**TM50020CH**

*Straight fluted

E: 46 - 49
Key on E: 1

E: 4

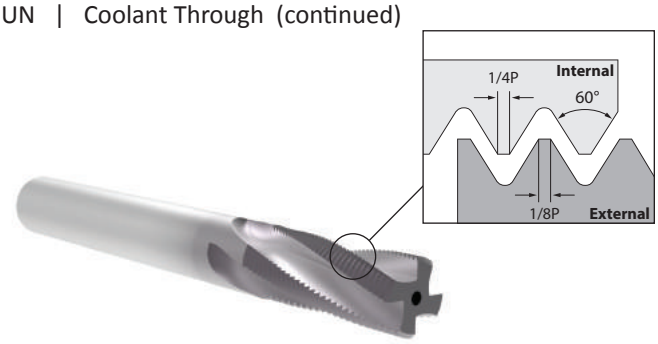
Weldon Flat

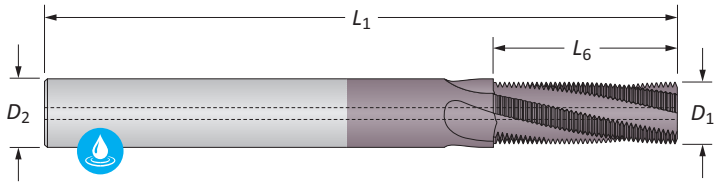
To order a thread mill with a Weldon flat, replace the leading TM designator with TW (available for inch shanks 3/8 and above, or metric shanks 6mm and above)
Example: Cylindrical shank = **TM**NK0500-NPT | Weldon shank flat = **TW**NK0500-NPT
NOTE: Weldon flats have a minimum order quantity of 2 pieces

i = Imperial (in)
m = Metric (mm)

Solid Carbide Thread Mills

UN | Coolant Through (continued)

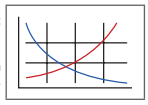




UN | Coolant Through

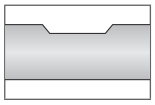
	TPI (Pitch)	Min Thread Ø	Flutes	Thread Mill D_1	D_2	L_6	L_1	Part No. ThreadMills USA
	18	5/16	3	0.235	0.250	0.625	2.375	**TM31218CH**
	18	5/16	3	0.245	0.312	0.625	3.000	**HDTM31218CH**
	18	9/16	4	0.370	0.375	0.875	3.000	**TM56218CH**
	16	3/8	4	0.285	0.312	0.750	3.000	**TM37516CH**
	16	3/8	4	0.300	0.375	0.750	3.000	**HDTM37516CH**
	16	3/4	4	0.490	0.500	1.250	3.500	**TM75016CH**
	14	7/16	4	0.305	0.312	0.750	3.000	**TM43714CH**
	14	7/8	4	0.490	0.500	1.250	3.500	**TM87514CH**
	13	1/2	4	0.350	0.375	0.875	3.000	**TM50013CH**
	13	1/2	4	0.400	0.500	0.875	3.500	**HDTM50013CH**
	12	9/16	4	0.370	0.375	0.875	3.500	**TM56212CH**
i	12	3/4	4	0.495	0.500	1.250	3.500	**TM75012CH**
	12	1	6	0.745	0.750	1.500	4.000	**TM10012CH**
	11	5/8	4	0.470	0.500	1.250	3.500	**TM62511CH**
	11	5/8	4	0.470	0.500	1.455	3.500	**TM62511CH-XL**
	10	3/4	4	0.495	0.500	1.250	3.500	**TM75010CH**
	10	3/4	4	0.495	0.500	1.600	4.000	**TM75010CH-XL**
	9	7/8	4	0.620	0.625	1.375	4.000	**TM87509CH**
	9	7/8	4	0.620	0.625	1.778	4.000	**TM87509CH-XL**
	8	1	4	0.620	0.625	1.375	4.000	**TM10008CH**
	8	1	6	0.745	0.750	2.000	4.500	**TM10008CH-XL**
	7	1-1/8	5	0.745	0.750	1.572	4.500	**TM12507CH**
	6	1-3/8	5	0.745	0.750	1.500	4.500	**TM13706CH**

E: 46 - 49
Key on E: 1



E: 4

Weldon Flat

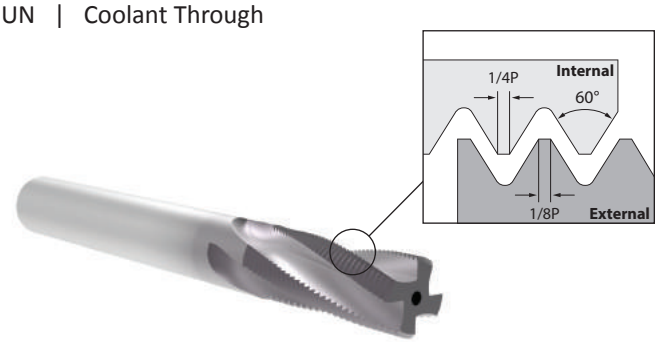


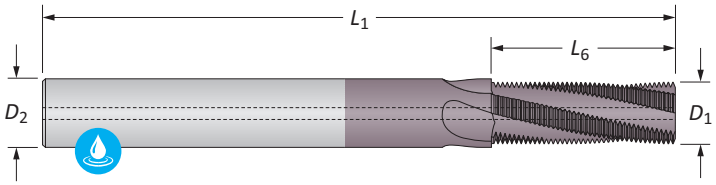
To order a thread mill with a Weldon flat, replace the leading TM designator with TW (available for inch shanks 3/8 and above, or metric shanks 6mm and above)
Example: Cylindrical shank = **TM**NK0500-NPT | Weldon shank flat = **TW**NK0500-NPT
NOTE: Weldon flats have a minimum order quantity of 2 pieces

i = Imperial (in)
m = Metric (mm)

Solid Carbide Thread Mills

UN | Coolant Through



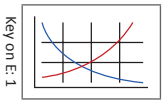


UN | Coolant Through

	TPI (Pitch)	Min Thread Ø	Flutes	Thread Mill D_1	D_2	L_6	L_1	Part No. ThreadMills USA
	64	#2	3*	1.65	3.00	3.20	39.00	**TM08664CHM**
	56	#2	3*	1.65	3.00	3.20	39.00	**TM08656CHM**
	48	#3	3*	1.80	3.00	3.75	39.00	**TM09948CHM**
	44	#5	3	2.40	3.00	4.65	39.00	**TM12544CHM**
	40	#4	3*	2.20	3.00	4.45	39.00	**TM12540CHM**
	36	#8	3	3.00	4.00	6.35	51.00	**TM16436CHM**
	32	#6	3	2.50	3.00	5.55	39.00	**TM13832CHM**
	32	#8	3	3.20	4.00	6.35	51.00	**TM16432CHM**
	32	#10	3	3.80	4.00	7.95	51.00	**TM19032CHM**
	32	#10	3	3.80	4.00	7.95	51.00	**HDTM19032CHM**
	32	1/2	6	9.40	10.00	25.40	84.00	**TM50032CHM**
m	28	#10	3	3.80	4.00	8.20	51.00	**TM19028CHM**
	28	1/4	3	4.75	6.00	12.70	58.00	**TM25028CHM**
	28	1/2	6	9.40	10.00	25.40	84.00	**TM50028CHM**
	24	#10	3	3.68	4.00	8.50	51.00	**TM19024CHM**
	24	#10	3	3.70	4.00	8.50	51.00	**HDTM19024CHM**
	24	5/16	3	5.95	6.00	16.00	58.00	**TM31224CHM**
	24	3/8	4	7.25	8.00	19.00	64.00	**TM37524CHM**
	24	1/2	6	9.40	10.00	25.40	84.00	**TM50024CHM**
	20	1/4	3	4.75	6.00	12.70	58.00	**TM25020CHM**
	20	1/4	3	4.95	6.00	12.70	58.00	**HDTM25020CHM**
	20	7/16	4	8.75	10.00	22.85	84.00	**TM43720CHM**
	20	1/2	6	9.40	10.00	25.40	84.00	**TM50020CHM**

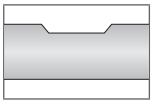
*Straight fluted

E: 46 - 49
Key on E: 1



E: 4

Weldon Flat

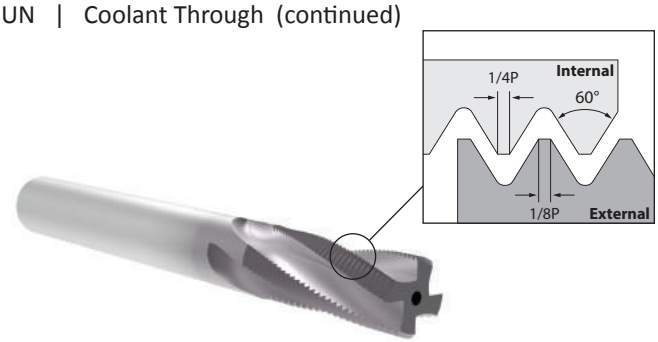


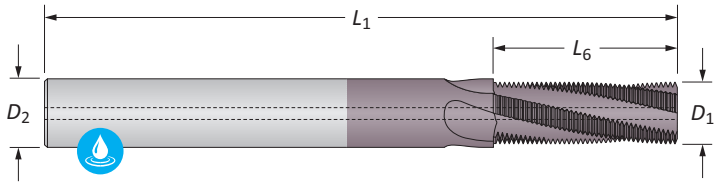
To order a thread mill with a Weldon flat, replace the leading TM designator with TW (available for inch shanks 3/8 and above, or metric shanks 6mm and above)
Example: Cylindrical shank = **TM**NK0500-NPT | Weldon shank flat = **TW**NK0500-NPT
NOTE: Weldon flats have a minimum order quantity of 2 pieces

i = Imperial (in)
m = Metric (mm)

Solid Carbide Thread Mills

UN | Coolant Through (continued)

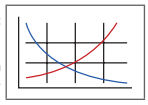




UN | Coolant Through

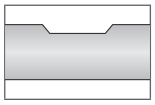
	TPI (Pitch)	Min Thread Ø	Flutes	Thread Mill D_1	D_2	L_6	L_1	Part No. ThreadMills USA
	18	5/16	3	5.95	6.00	17.00	58.00	**TM31218CHM**
	18	5/16	3	6.22	8.00	15.87	64.00	**HDTM31218CHM**
	18	9/16	4	9.90	10.00	22.65	84.00	**TM56218CHM**
	16	3/8	4	7.25	8.00	19.05	64.00	**TM37516CHM**
	16	3/8	4	7.62	10.00	19.05	84.00	**HDTM37516CHM**
	16	3/4	4	11.95	12.00	31.75	84.00	**TM75016CHM**
	14	7/16	4	7.75	8.00	20.00	64.00	**TM43714CHM**
	14	7/8	4	11.95	12.00	32.70	84.00	**TM87514CHM**
	13	1/2	4	9.40	10.00	23.50	84.00	**TM50013CHM**
	13	1/2	4	10.16	12.00	23.50	84.00	**HDTM50013CHM**
	12	9/16	4	9.90	10.00	23.35	84.00	**TM56212CHM**
m	12	3/4	4	11.95	12.00	31.75	84.00	**TM75012CHM**
	12	1	6	18.92	20.00	38.10	105.00	**TM10012CHM**
	11	5/8	4	11.95	12.00	32.40	84.00	**TM62511CHM**
	11	5/8	4	11.95	12.00	37.00	100.00	**TM62511CHM-XL**
	10	3/4	4	11.95	12.00	33.00	84.00	**TM75010CHM**
	10	3/4	4	11.95	12.00	40.70	100.00	**TM75010CHM-XL**
	9	7/8	4	15.75	16.00	36.75	93.00	**TM87509CHM**
	9	7/8	4	15.75	16.00	45.20	100.00	**TM87509CHM-XL**
	8	1	4	15.75	16.00	35.00	93.00	**TM10008CHM**
	8	1	6	19.90	20.00	50.80	115.00	**TM10008CHM-XL**
	7	1-1/8	5	19.90	20.00	36.10	105.00	**TM12507CHM**
	6	1-3/8	5	19.90	20.00	38.10	105.00	**TM13706CHM**

E: 46 - 49
Key on E: 1



E: 4

Weldon Flat



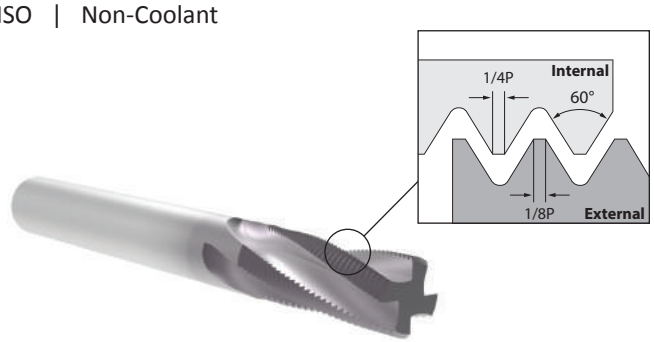
To order a thread mill with a Weldon flat, replace the leading TM designator with TW (available for inch shanks 3/8 and above, or metric shanks 6mm and above)
Example: Cylindrical shank = **TM**NK0500-NPT | Weldon shank flat = **TW**NK0500-NPT
NOTE: Weldon flats have a minimum order quantity of 2 pieces

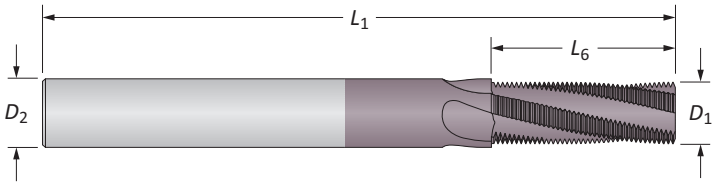
i = Imperial (in)
m = Metric (mm)

A DRILLING
B BORING
C REAMING
D BURNISHING
E THREADING
X SPECIALS

Solid Carbide Thread Mills

ISO | Non-Coolant



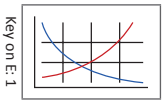


ISO | Non-Coolant

Pitch	Min Thread Ø	Flutes	Thread Mill D_1	D_2	L_6	L_1	Part No. ThreadMills USA	AccuThread™ 856
0.40	M2	3*	0.059	0.125	0.126	2.000	**TM20040**	–
0.45	M2.5	3*	0.059	0.125	0.142	2.000	**TM25045**	–
0.50	M3	3*	0.085	0.125	0.178	2.000	**TM30050**	–
0.50	M6	3	0.181	0.187	0.473	2.500	**TM60050**	–
0.50	M10	4	0.310	0.312	0.591	3.000	**TM10050**	–
0.70	M4	3	0.115	0.125	0.276	2.000	**TM40070**	–
0.75	M4.5	3	0.120	0.125	0.266	2.000	**TM45075**	**TMMK0450-075**
0.75	M8	3	0.235	0.250	0.625	2.500	**TM80075**	**TMMK0800-075**
0.75	M10	4	0.310	0.312	0.591	3.000	**TM10075**	–
0.80	M5	3	0.120	0.125	0.312	2.000	**TM50080**	**TMMK0500-080**
1.00	M6	3	0.170	0.187	0.500	2.500	**TM60100**	**TMMK0600-100**
1.00	M12	4	0.360	0.375	0.875	3.500	**TM12100**	**TMMK1200-100**
1.25	M8	3	0.235	0.250	0.625	2.500	**TM80125**	**TMMK0800-125**
1.50	M10	4	0.300	0.312	0.750	3.000	**TM10150**	**TMMK1000-150**
1.50	M14	4	0.370	0.375	0.875	3.500	**TM14150**	**TMMK1400-150**
1.50	M18	4	0.490	0.500	1.250	3.500	**TM18150**	**TMMK1800-150**
1.50	M20	5	0.620	0.625	1.418	4.000	**TM20150**	–
1.75	M12	4	0.360	0.375	0.875	3.500	**TM12175**	**TMMK1200-175**
2.00	M14	4	0.429	0.500	1.103	3.500	**TM14200**	–
2.00	M16	4	0.470	0.500	1.250	3.500	**TM16200**	**TMMK1600-200**
2.50	M20	4	0.495	0.500	1.250	3.500	**TM20250**	**TMMK2000-250**
3.00	M24	4	0.620	0.625	1.375	4.000	**TM24300**	**TMMK2400-300**
3.50	M30	4	0.620	0.625	1.516	4.000	**TM30350**	–
4.00	M36	5	0.745	0.750	1.575	4.500	**TM36400**	–

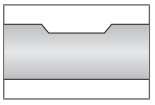
*Straight fluted

E: 46 - 49



E: 4

Weldon Flat

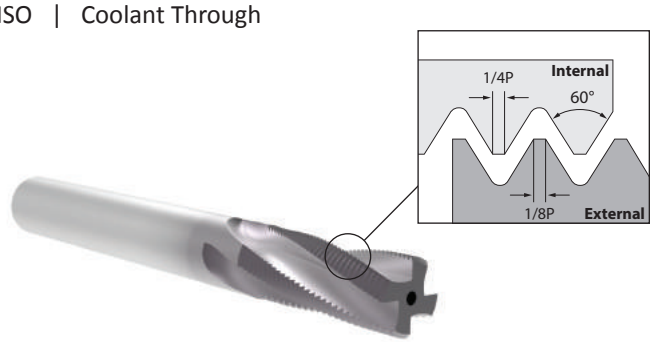


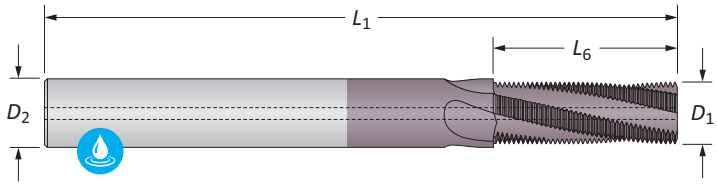
To order a thread mill with a Weldon flat, replace the leading TM designator with TW (available for inch shanks 3/8 and above, or metric shanks 6mm and above)
Example: Cylindrical shank = **TM**NK0500-NPT | Weldon shank flat = **TW**NK0500-NPT
NOTE: Weldon flats have a minimum order quantity of 2 pieces

ⓘ = Imperial (in)
ⓜ = Metric (mm)

Solid Carbide Thread Mills

ISO | Coolant Through



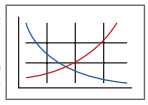


ISO | Coolant Through

	Pitch	Min Thread Ø	Flutes	Thread Mill D_1	D_2	L_6	L_1	Part No. ThreadMills USA
	0.40	M2	3*	0.059	0.125	0.126	1.500	**TM20040CH**
	0.45	M2.5	3*	0.059	0.125	0.142	1.500	**TM25045CH**
	0.50	M3	3*	0.085	0.125	0.178	1.500	**TM30050CH**
	0.50	M6	3	0.181	0.187	0.473	2.375	**TM60050CH**
	0.50	M10	4	0.310	0.312	0.591	3.000	**TM10050CH**
	0.70	M4	3	0.115	0.125	0.276	1.500	**TM40070CH**
	0.75	M4.5	3	0.120	0.125	0.266	1.500	**TM45075CH**
	0.75	M8	3	0.235	0.250	0.625	2.375	**TM80075CH**
	0.75	M10	4	0.310	0.312	0.591	3.000	**TM10075CH**
	0.80	M5	3	0.120	0.125	0.312	1.500	**TM50080CH**
	1.00	M6	3	0.170	0.187	0.500	2.375	**TM60100CH**
	1.00	M12	4	0.360	0.375	0.875	3.000	**TM12100CH**
	1.25	M8	3	0.235	0.250	0.625	2.375	**TM80125CH**
	1.50	M10	4	0.300	0.312	0.750	3.000	**TM10150CH**
	1.50	M14	4	0.370	0.375	0.875	3.000	**TM14150CH**
	1.50	M18	4	0.490	0.500	1.250	3.500	**TM18150CH**
	1.50	M20	5	0.620	0.625	1.418	4.000	**TM20150CH**
	1.75	M12	4	0.360	0.375	0.875	3.000	**TM12175CH**
	2.00	M14	4	0.429	0.500	1.103	3.500	**TM14200CH**
	2.00	M16	4	0.470	0.500	1.250	3.500	**TM16200CH**
	2.50	M20	4	0.495	0.500	1.250	3.500	**TM20250CH**
	3.00	M24	4	0.620	0.625	1.375	4.000	**TM24300CH**
	3.50	M30	4	0.620	0.625	1.516	4.000	**TM30350CH**
	4.00	M36	5	0.745	0.750	1.575	4.500	**TM36400CH**

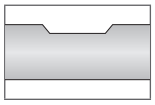
*Straight fluted

E: 46 - 49
Key on E: 1



E: 4

Weldon Flat



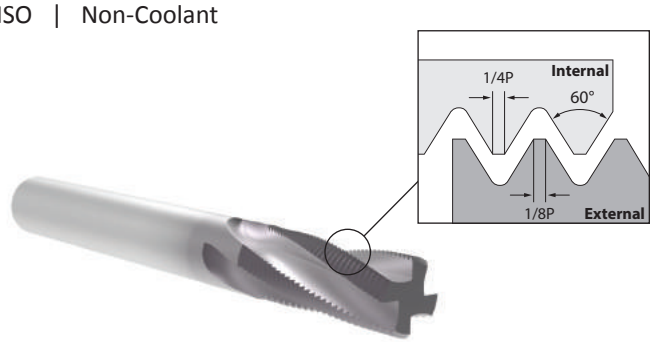
To order a thread mill with a Weldon flat, replace the leading TM designator with TW (available for inch shanks 3/8 and above, or metric shanks 6mm and above)
Example: Cylindrical shank = **TM**NK0500-NPT | Weldon shank flat = **TW**NK0500-NPT
NOTE: Weldon flats have a minimum order quantity of 2 pieces

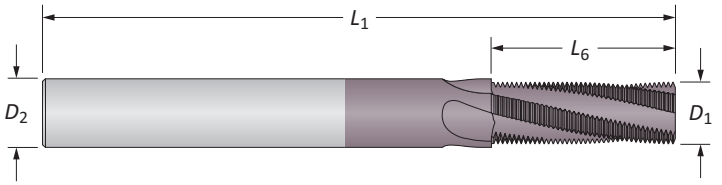
i = Imperial (in)
m = Metric (mm)

A DRILLING
B BORING
C REAMING
D BURNISHING
E THREADING
X SPECIALS

Solid Carbide Thread Mills

ISO | Non-Coolant



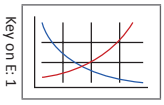


ISO | Non-Coolant

	Pitch	Min Thread Ø	Flutes	Thread Mill D_1	D_2	L_6	L_1	Part No. ThreadMills USA	AccuThread™ 856
	0.40	M2	3*	1.50	3.00	3.20	39.00	**TM20040M**	**TMMK0200-040M**
	0.45	M2.5	3*	1.50	3.00	3.60	39.00	**TM25045M**	**TMMK0250-045M**
	0.50	M3	3*	2.15	3.00	4.50	39.00	**TM30050M**	**TMMK0300-050M**
	0.50	M6	3	4.60	6.00	12.00	58.00	**TM60050M**	**TMMK0600-050M**
	0.50	M10	4	7.95	8.00	15.00	64.00	**TM10050M**	**TMMK1000-050M**
	0.70	M4	3	2.90	3.00	8.00	39.00	**TM40070M**	**TMMK0400-070M**
	0.75	M4.5	3	3.00	4.00	6.75	51.00	**TM45075M**	**TMMK0450-075M**
	0.75	M6	3	4.60	6.00	12.00	58.00	**TM60075M**	**TMMK0600-075M**
	0.75	M10	4	7.95	8.00	15.00	64.00	**TM10075M**	**TMMK1000-075M**
	0.80	M5	3	3.60	4.00	8.00	51.00	**TM50080M**	**TMMK0500-080M**
	1.00	M6	3	4.60	6.00	12.00	58.00	**TM60100M**	**TMMK0600-100M**
	1.00	M12	4	9.40	10.00	20.00	73.00	**TM12100M**	**TMMK1200-100M**
m	1.25	M8	3	5.90	6.00	16.25	58.00	**TM80125M**	**TMMK0800-125M**
	1.50	M10	4	7.40	8.00	19.50	64.00	**TM10150M**	**TMMK1000-150M**
	1.50	M14	4	10.90	12.00	27.00	84.00	**TM14150M**	**TMMK1400-150M**
	1.50	M18	4	11.90	12.00	31.50	84.00	**TM18150M**	**TMMK1800-150M**
	1.50	M20	5	15.75	16.00	36.00	93.00	**TM20150M**	–
	1.75	M12	4	9.40	10.00	22.71	73.00	**TM12175M**	**TMMK1200-175M**
	2.00	M14	4	10.90	12.00	28.00	84.00	**TM14200M**	**TMMK1400-200M**
	2.00	M16	4	11.95	12.00	30.00	84.00	**TM16200M**	**TMMK2000-200M**
	2.50	M20	4	11.90	12.00	30.00	84.00	**TM20250M**	**TMMK2000-250M**
	3.00	M24	4	15.90	16.00	36.00	93.00	**TM24300M**	**TMMK2400-300M**
	3.50	M30	4	15.75	16.00	38.50	100.00	**TM30350M**	**TMMK3000-350M**
	4.00	M36	5	19.90	20.00	40.00	105.00	**TM36400M**	**TMMK3600-400M**

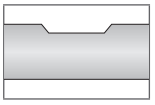
*Straight fluted

E: 46 - 49
Key on E: 1



E: 4

Weldon Flat



To order a thread mill with a Weldon flat, replace the leading TM designator with TW (available for inch shanks 3/8 and above, or metric shanks 6mm and above)
Example: Cylindrical shank = **TM**NK0500-NPT | Weldon shank flat = **TW**NK0500-NPT
NOTE: Weldon flats have a minimum order quantity of 2 pieces

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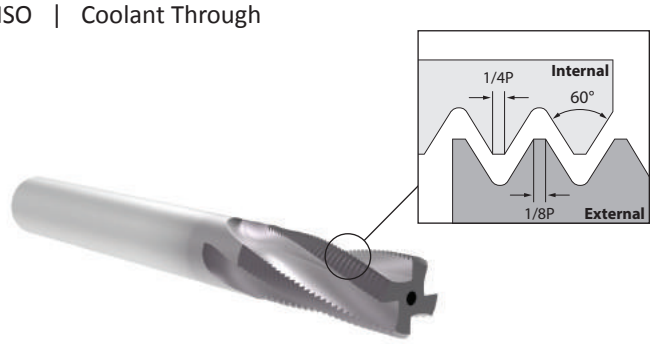
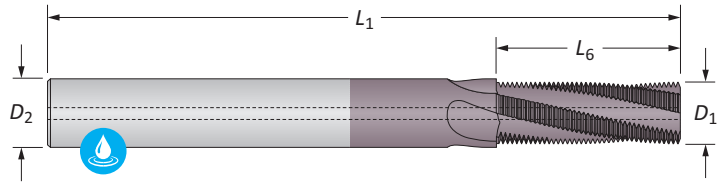
Solid Carbide Thread Mills

ISO | Coolant Through



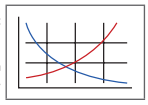


ISO | Coolant Through

	Pitch	Min Thread Ø	Flutes	Thread Mill D_1	D_2	L_6	L_1	Part No. ThreadMills USA
	0.40	M2	3*	1.50	3.00	3.20	39.00	**TM20040CHM**
	0.45	M2.5	3*	1.50	3.00	3.60	39.00	**TM25045CHM**
	0.50	M3	3*	2.15	3.00	4.50	39.00	**TM30050CHM**
	0.50	M6	3	4.60	6.00	12.00	58.00	**TM60050CHM**
	0.50	M10	4	7.95	8.00	15.00	64.00	**TM10050CHM**
	0.70	M4	3	2.90	3.00	8.00	39.00	**TM40070CHM**
	0.75	M4.5	3	3.00	4.00	6.75	51.00	**TM45075CHM**
	0.75	M6	3	4.60	6.00	12.00	58.00	**TM60075CHM**
	0.75	M10	4	7.95	8.00	15.00	64.00	**TM10075CHM**
	0.80	M5	3	3.60	4.00	8.00	51.00	**TM50080CHM**
	1.00	M6	3	4.60	6.00	12.00	58.00	**TM60100CHM**
m	1.00	M12	4	9.40	10.00	20.00	84.00	**TM12100CHM**
	1.25	M8	3	5.90	6.00	16.25	58.00	**TM80125CHM**
	1.50	M10	4	7.40	8.00	19.50	64.00	**TM10150CHM**
	1.50	M14	4	10.90	12.00	27.00	84.00	**TM14150CHM**
	1.50	M18	4	11.90	12.00	31.50	84.00	**TM18150CHM**
	1.50	M20	5	15.75	16.00	36.00	93.00	**TM20150CHM**
	1.75	M12	4	9.40	10.00	22.71	84.00	**TM12175CHM**
	2.00	M14	4	10.90	12.00	28.00	84.00	**TM14200CHM**
	2.00	M16	4	11.95	12.00	30.00	84.00	**TM16200CHM**
	2.50	M20	4	11.90	12.00	30.00	84.00	**TM20250CHM**
	3.00	M24	4	15.90	16.00	36.00	93.00	**TM24300CHM**
	3.50	M30	4	15.75	16.00	38.50	100.00	**TM30350CHM**
	4.00	M36	5	19.90	20.00	40.00	105.00	**TM36400CHM**

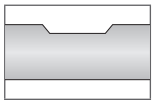
*Straight fluted

E: 46 - 49
Key on E: 1



E: 4

Weldon Flat



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NOTE: Weldon flats have a minimum order quantity of 2 pieces

i = Imperial (in)
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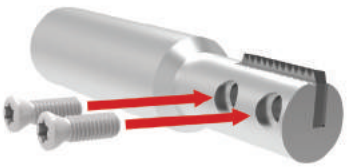
Indexable Insert Thread Mills Overview

Bolt-in Style

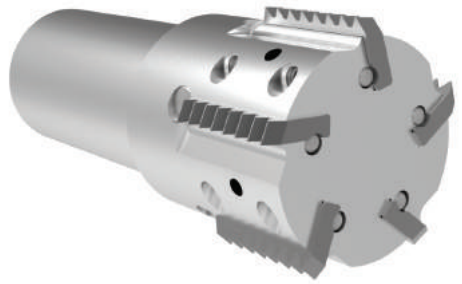
- Replaceable inserts allow for quick set-ups and tool changes to keep the production process moving smoothly
- Inserts are available with AM210® coating, which increases tool life
- Available with 1 flute only
- Multiple thread form styles are available
- Tapered thread forms: NPT, NPTF, BSPT
- Straight thread forms: BSPP, UN, UNJ, ISO

Bolt-in Style Indexable Thread Mill Assembly

Step 1:
Slide the thread mill insert into the insert holder slot.



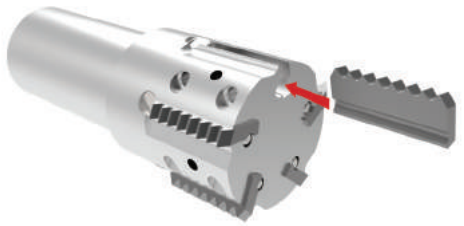
Step 2:
Tighten the screws to hold the insert in place.



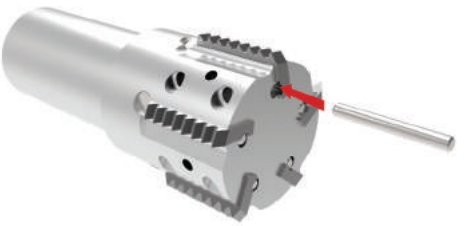
Pin Style

- Replaceable inserts allow for quick set-ups and tool changes to keep the production process moving smoothly
- Inserts are available with AM210® coating, which increases tool life
- Holders available in 2 styles: Weldon Shank and Shell Mill
- Weldon Shank holders available with 1, 2, 3, and 5 flutes
- Shell Mill holders available with 6, 7, and 8 flutes
- Thread forms available: NPT, NPTF, BSPT, BSPP, API-ROUND, ACME, UN, UNJ, ISO

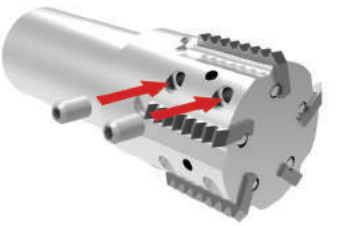
Pin Style Indexable Thread Mill Assembly



Step 1:
Slide the thread mill insert into the insert holder slot.



Step 2:
Slide the pin into the pin holder slot to hold the insert in place.

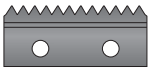


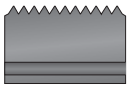
Step 3:
Tighten the screws to hold both the insert and pin in place.

Product Nomenclature

AccuThread™ 856 Indexable Inserts

TP	075	K	–	UN	32	I
1	2	3		4	5	6

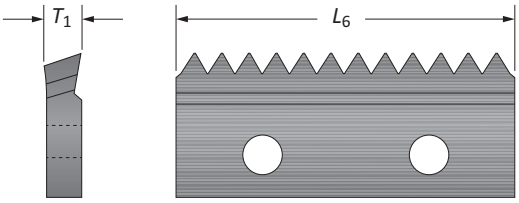

Bolt-in Style


Pin Style

1. Insert Style	2. Insert Length	3. Coating	4. Thread Class		5. Thread Pitch	6. Thread Style
TP = Bolt-in	**075** = 3/4	**K** = AM210®	**UN** = UN	**BSPT** = BSPT	**20** = UN	**I** = Internal
TN = Pin style	**100** = 1.00	**A** = TiAlN	**UNJ** = UNJ	**M** = ISO	**1.0** = ISO	**E** = External
	150 = 1.50	**U** = Uncoated	**NPT** = NPT	**FA** = Full ACME		
			NPTF = NPTF	**AP** = API Round		
			BSPP = BSPP			

Indexable Inserts

Symbol	Attribute
L_6	Length of insert
T_1	Insert thickness



AccuThread™ 856 Indexable Insert Holders

THT	–	0400	–	1F	075	M
1		2		3	4	5

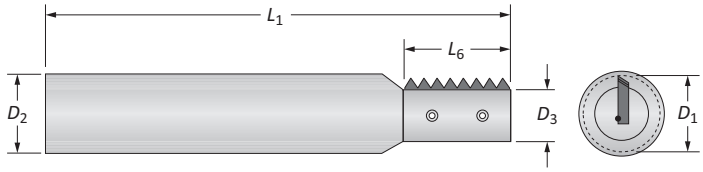
1. Holder Style	
Bolt-in Style	**Pin Style**
THT = Tapered Head	**THP** = Weldon Positive Rake
THN = Straight Head	**TNR** = Weldon Neutral Rake
	TSN = Shell Mill Positive Rake
	TSR = Shell Mill Neutral Rake

2. Length of Insert
0400 = 0.400

3. Shank Designation	
1F = 1 flute	**6F** = 6 flutes
2F = 2 flutes	**7F** = 7 flutes
3F = 3 flutes	**8F** = 8 flutes
5F = 5 flutes	

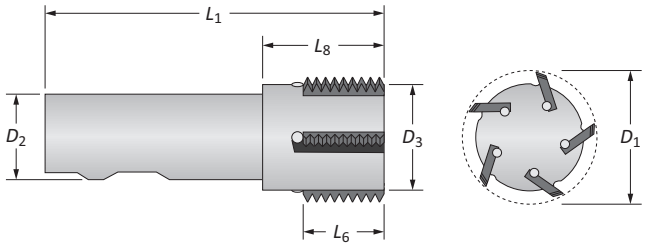
4. Length of Insert
075 = 3/4
100 = 1.00
150 = 1.50

5. Shank Designation
Blank = Inch
M = Metric



Bolt-in Style Holders

Symbol	Attribute	Symbol	Attribute
D_1	Maximum cutter diameter	L_1	Overall length
D_2	Shank diameter	L_6	Length of insert
D_3	Pilot diameter		



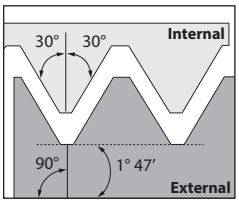
Pin Style Holders

Symbol	Attribute	Symbol	Attribute
D_1	Cutter diameter	D_5	Bore diameter (Shell Mill)
D_1*	Oversized cutter diameter	L_1	Overall length
D_2	Shank diameter	L_6	Length of insert
D_3	Pilot diameter	L_8	Flute length
D_4	Body diameter (Shell Mill)	T_2	Slot width (Shell Mill)

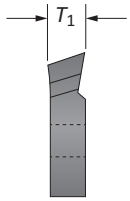
A DRILLING
B BORING
C REAMING
D BURNISHING
E THREADING
X SPECIALS

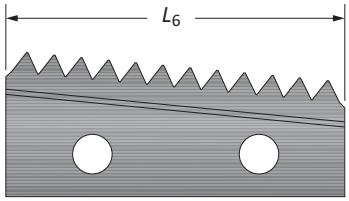
AccuThread™ 856 Thread Mill Inserts

Bolt-in Style | NPT / NPTF

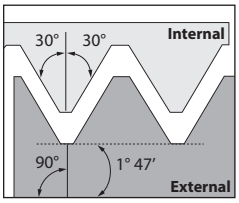


NPT
Internal / External

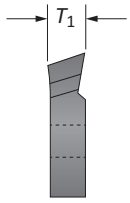


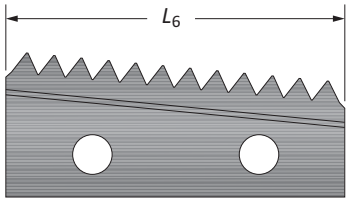


TPI (Pitch)	Insert L_6 inch	Insert L_6 mm	Insert T_1 inch	Insert T_1 mm	Part No. NPT Internal/External
18	0.750	19.05	0.080	2.03	**TP075K-NPT18**
14	1.000	25.40	0.140	3.56	**TP100K-NPT14**



NPTF
Internal / External





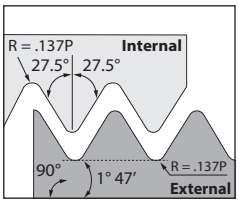
TPI (Pitch)	Insert L_6 inch	Insert L_6 mm	Insert T_1 inch	Insert T_1 mm	Part No. NPTF Internal/External
18	0.750	19.05	0.080	2.03	**TP075K-NPTF18**
14	1.000	25.40	0.140	3.56	**TP100K-NPTF14**

E: 50 - 53
Key on E: 1
E: 28
E: 35

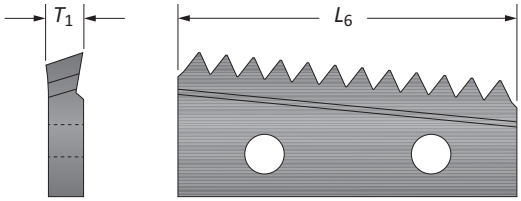
Inserts sold in quantities of 2

AccuThread™ 856 Thread Mill Inserts

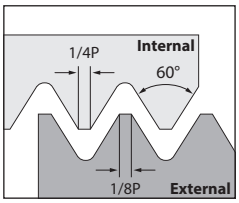
Bolt-in Style | BSPT / BSPP



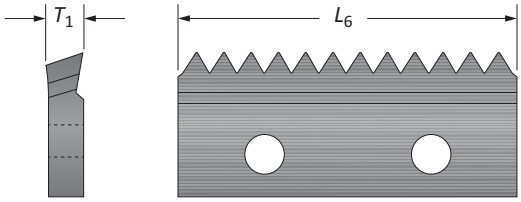
BSPT
Internal / External



TPI (Pitch)	Insert L_6 inch	Insert L_6 mm	Insert T_1 inch	Insert T_1 mm	Part No. BSPT Internal/External
19	0.750	19.05	0.080	2.03	**TP075K-BSPT19**
19	1.000	25.40	0.140	3.56	**TP100K-BSPT19**
14	1.000	25.40	0.140	3.56	**TP100K-BSPT14**



BSPP
Internal / External



TPI (Pitch)	Insert L_6 inch	Insert L_6 mm	Insert T_1 inch	Insert T_1 mm	Part No. BSPP Internal/External
19	0.750	19.05	0.080	2.03	**TP075K-BSPP19**
19	1.000	25.40	0.140	3.56	**TP100K-BSPP19**
14	1.000	25.40	0.140	3.56	**TP100K-BSPP14**

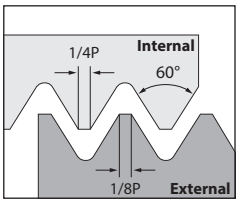
E: 50 - 53
Key on E: 1
E: 28
E: 35

Inserts sold in quantities of 2

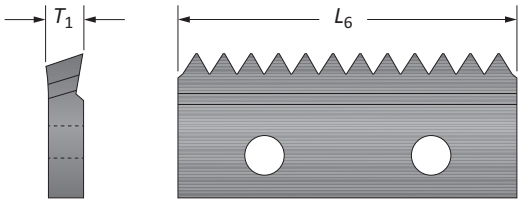
A DRILLING
B BORING
C REAMING
D BURNISHING
E THREADING
X SPECIALS

AccuThread™ 856 Thread Mill Inserts

Bolt-in Style | UN

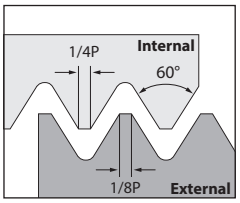


UN
Internal

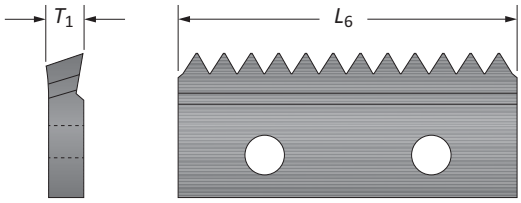


TPI (Pitch)	Insert L_6 inch	Insert L_6 mm	Insert T_1 inch	Insert T_1 mm	Part No. UN Internal
32	0.750	19.05	0.080	2.03	**TP075K-UN32I**
32	1.000	25.40	0.140	3.56	**TP100K-UN32I**
24	0.750	19.05	0.080	2.03	**TP075K-UN24I**
24	1.000	25.40	0.140	3.56	**TP100K-UN24I**
20	0.750	19.05	0.080	2.03	**TP075K-UN20I**
20	1.000	25.40	0.140	3.56	**TP100K-UN20I**
18	0.750	19.05	0.080	2.03	**TP075K-UN18I**
18	1.000	25.40	0.140	3.56	**TP100K-UN18I**
16	0.750	19.05	0.080	2.03	**TP075K-UN16I**
16	1.000	25.40	0.140	3.56	**TP100K-UN16I**
14	1.000	25.40	0.140	3.56	**TP100K-UN14I**
13	1.000	25.40	0.140	3.56	**TP100K-UN13I**
12	1.000	25.40	0.140	3.56	**TP100K-UN12I**
10*	1.000	25.40	0.140	3.56	**TP100K-UN10I**

*This item is only used with THN-0611-1F100 or THN-0611-1F100M. The reduced body allows a 3/4"-10 UN/UNJ to be produced.



UN
External



TPI (Pitch)	Insert L_6 inch	Insert L_6 mm	Insert T_1 inch	Insert T_1 mm	Part No. UN External
32	0.750	19.05	0.080	2.03	**TP075K-UN32E**
32	1.000	25.40	0.140	3.56	**TP100K-UN32E**
24	0.750	19.05	0.080	2.03	**TP075K-UN24E**
24	1.000	25.40	0.140	3.56	**TP100K-UN24E**
20	0.750	19.05	0.080	2.03	**TP075K-UN20E**
20	1.000	25.40	0.140	3.56	**TP100K-UN20E**
18	0.750	19.05	0.080	2.03	**TP075K-UN18E**
18	1.000	25.40	0.140	3.56	**TP100K-UN18E**
16	0.750	19.05	0.080	2.03	**TP075K-UN16E**
16	1.000	25.40	0.140	3.56	**TP100K-UN16E**
14	1.000	25.40	0.140	3.56	**TP100K-UN14E**
13	1.000	25.40	0.140	3.56	**TP100K-UN13E**
12	1.000	25.40	0.140	3.56	**TP100K-UN12E**
10*	1.000	25.40	0.140	3.56	**TP100K-UN10E**

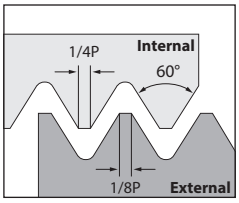
*This item is only used with THN-0611-1F100 or THN-0611-1F100M. The reduced body allows a 3/4"-10 UN/UNJ to be produced.

E: 50 - 53
Key on E: 1
E: 28
E: 35

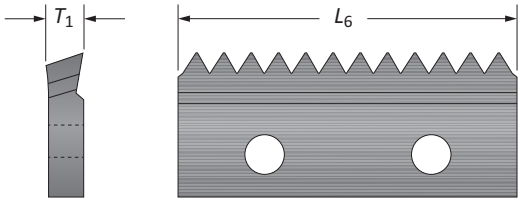
Inserts sold in quantities of 2

AccuThread™ 856 Thread Mill Inserts

Bolt-in Style | UNJ

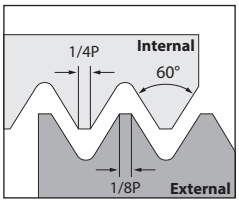


UNJ
Internal

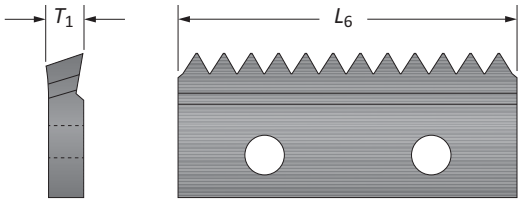


TPI (Pitch)	Insert L_6 inch	Insert L_6 mm	Insert T_1 inch	Insert T_1 mm	Part No. UNJ Internal
32	0.750	19.05	0.080	2.03	**TP075K-UNJ32I**
32	1.000	25.40	0.140	3.56	**TP100K-UNJ32I**
24	0.750	19.05	0.080	2.03	**TP075K-UNJ24I**
24	1.000	25.40	0.140	3.56	**TP100K-UNJ24I**
20	0.750	19.05	0.080	2.03	**TP075K-UNJ20I**
20	1.000	25.40	0.140	3.56	**TP100K-UNJ20I**
18	0.750	19.05	0.080	2.03	**TP075K-UNJ18I**
18	1.000	25.40	0.140	3.56	**TP100K-UNJ18I**
16	0.750	19.05	0.080	2.03	**TP075K-UNJ16I**
16	1.000	25.40	0.140	3.56	**TP100K-UNJ16I**
14	1.000	25.40	0.140	3.56	**TP100K-UNJ14I**
12	1.000	25.40	0.140	3.56	**TP100K-UNJ12I**
10*	1.000	25.40	0.140	3.56	**TP100K-UNJ10I**

*This item is only used with THN-0611-1F100 or THN-0611-1F100M. The reduced body allows a 3/4"-10 UN/UNJ to be produced.



UNJ
External



TPI (Pitch)	Insert L_6 inch	Insert L_6 mm	Insert T_1 inch	Insert T_1 mm	Part No. UNJ External
32	0.750	19.05	0.080	2.03	**TP075K-UNJ32E**
32	1.000	25.40	0.140	3.56	**TP100K-UNJ32E**
24	0.750	19.05	0.080	2.03	**TP075K-UNJ24E**
24	1.000	25.40	0.140	3.56	**TP100K-UNJ24E**
20	0.750	19.05	0.080	2.03	**TP075K-UNJ20E**
20	1.000	25.40	0.140	3.56	**TP100K-UNJ20E**
18	0.750	19.05	0.080	2.03	**TP075K-UNJ18E**
18	1.000	25.40	0.140	3.56	**TP100K-UNJ18E**
16	0.750	19.05	0.080	2.03	**TP075K-UNJ16E**
16	1.000	25.40	0.140	3.56	**TP100K-UNJ16E**
12	1.000	25.40	0.140	3.56	**TP100K-UNJ12E**

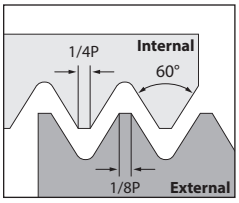
E: 50 - 53
Key on E: 1
E: 28
E: 35

Inserts sold in quantities of 2

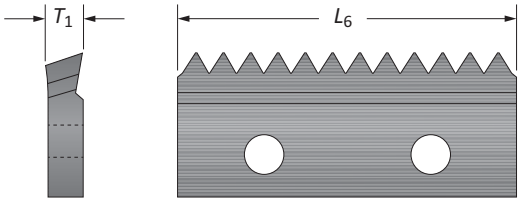
A DRILLING
B BORING
C REAMING
D BURNISHING
E THREADING
X SPECIALS

AccuThread™ 856 Thread Mill Inserts

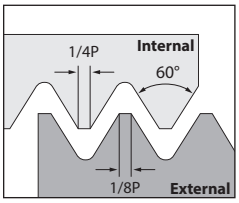
Bolt-in Style | ISO



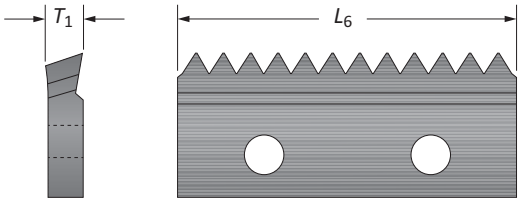
ISO
Internal



Pitch	Insert L_6 inch	Insert L_6 mm	Insert T_1 inch	Insert T_1 mm	Part No. ISO Internal
0.5	0.750	19.05	0.080	2.03	**TP075K-M0.5I**
1.0	0.750	19.05	0.080	2.03	**TP075K-M1.0I**
1.0	1.000	24.40	0.140	3.56	**TP100K-M1.0I**
1.25	0.750	19.05	0.080	2.03	**TP075K-M1.25I**
1.5	0.750	19.05	0.080	2.03	**TP075K-M1.5I**
1.5	1.000	25.40	0.140	3.56	**TP100K-M1.5I**
2.0	1.000	25.40	0.140	3.56	**TP100K-M2.0I**



ISO
External



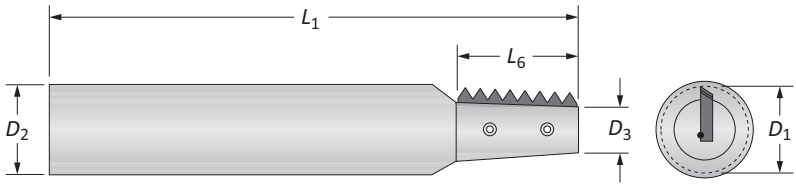
Pitch	Insert L_6 inch	Insert L_6 mm	Insert T_1 inch	Insert T_1 mm	Part No. ISO External
1.0	1.000	24.40	0.140	3.56	**TP100K-M1.0E**
1.5	1.000	25.40	0.140	3.56	**TP100K-M1.5E**
2.0	1.000	25.40	0.140	3.56	**TP100K-M2.0E**

E: 50 - 53
Key on E: 1
E: 28
E: 35

Inserts sold in quantities of 2

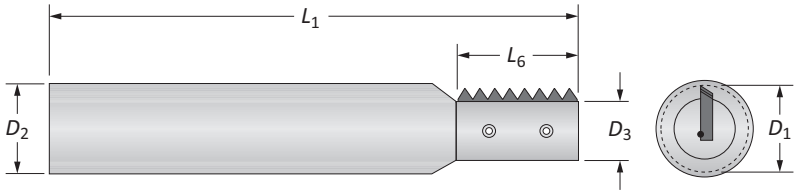
AccuThread™ 856 Thread Mill Insert Holders

Bolt-in Style



Tapered Insert Holders | NPT / NPTF / BSPT

	Holder									
	D_1	D_3	D_2	L_6	L_1	Flutes	Part No.	Inserts	Screw	Wrench
i	0.400	0.229	0.500	0.750	3.000	1	**THT-0400-1F075**	TP075K...	TMS-250	8T-8
	0.659	0.379	0.500	1.000	3.000	1	**THT-0659-1F100**	TP100K...	TMS-45	8T-9
m	10.16	5.82	13.00	19.05	76.20	1	**THT-0400-1F075M**	TP075K...	TMS-250	8T-8
	16.74	9.65	13.00	25.40	76.20	1	**THT-0659-1F100M**	TP100K...	TMS-45	8T-9



Straight Insert Holders | BSPP / UN / UNJ / ISO

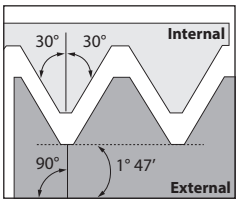
	Holder									
	D_1	D_3	D_2	L_6	L_1	Flutes	Part No.	Inserts	Screw	Wrench
i	0.394	0.250	0.500	0.750	3.000	1	**THN-0394-1F075**	TP075K...	TMS-250	8T-8
	0.611	0.383	0.750	1.000	3.500	1	**THN-0611-1F100**	TP100K...	TMS-40	8T-9
	0.625	0.454	0.750	1.000	3.500	1	**THN-0625-1F100**	TP100K...	TMS-40	8T-9
m	10.01	6.35	13.00	19.05	76.20	1	**THN-0394-1F075M**	TP075K...	TMS-250	8T-8
	15.88	11.58	25.00	25.40	88.90	1	**THN-0625-1F100M**	TP100K...	TMS-40	8T-9

E: 28
Key on E: 1
E: 30 - 34

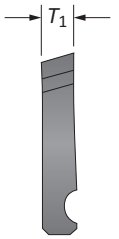
i = Imperial (in)
m = Metric (mm)

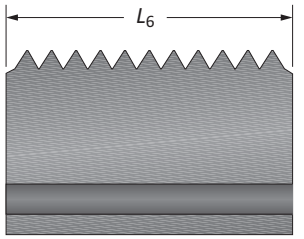
AccuThread™ 856 Thread Mill Inserts

Pin Style | NPT / NPTF / BSPT

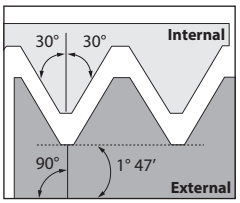


NPT
Internal / External

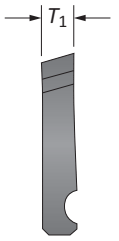


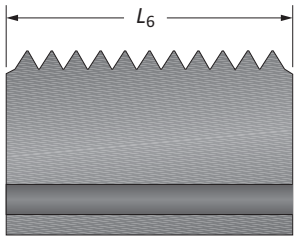


TPI (Pitch)	Insert L_6 inch	Insert L_6 mm	Insert T_1 inch	Insert T_1 mm	Part No. NPT Internal/External
11.5	1.500	38.10	0.140	3.56	**TN150K-NPT11.5**
8	1.500	38.10	0.140	3.56	**TN150K-NPT8**

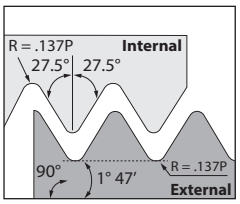


NPTF
Internal / External

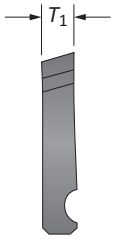


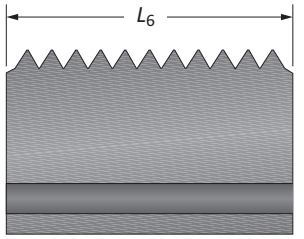


TPI (Pitch)	Insert L_6 inch	Insert L_6 mm	Insert T_1 inch	Insert T_1 mm	Part No. NPTF Internal/External
11.5	1.500	38.10	0.140	3.56	**TN150K-NPTF11.5**
8	1.500	38.10	0.140	3.56	**TN150K-NPTF8**



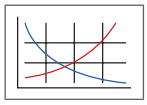
BSPT
Internal / External





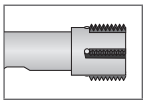
TPI (Pitch)	Insert L_6 inch	Insert L_6 mm	Insert T_1 inch	Insert T_1 mm	Part No. BSPT Internal/External
11	1.500	38.10	0.140	3.56	**TN150K-BSPT11**

E: 50 - 53
Key on E: 1



E: 28

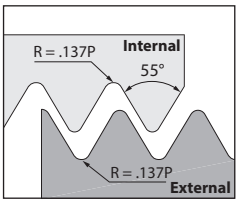
E: 42 - 43



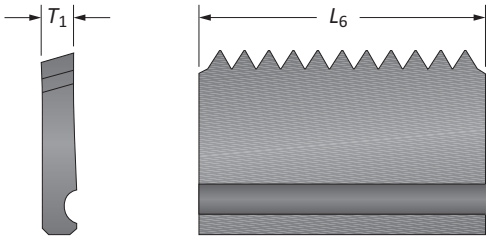
Inserts sold in quantities of 2

AccuThread™ 856 Thread Mill Inserts

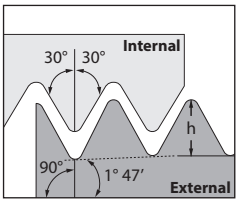
Pin Style | BSPP / API-ROUND / ACME



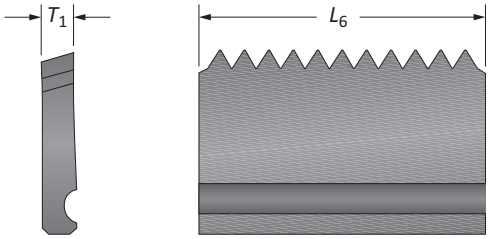
BSPP
Internal / External



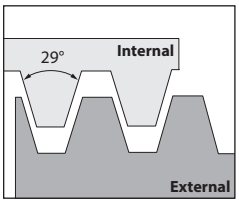
TPI (Pitch)	Insert L_6 inch	Insert L_6 mm	Insert T_1 inch	Insert T_1 mm	Part No. BSPP Internal/External
11	1.500	38.10	0.140	3.56	**TN150K-BSPP11**



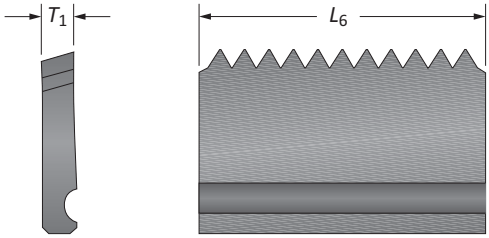
API-ROUND
Internal / External



TPI (Pitch)	Insert L_6 inch	Insert L_6 mm	Insert T_1 inch	Insert T_1 mm	Part No. API-ROUND Internal/External
10	1.500	38.10	0.140	3.56	**TN150K-AP10**
8	1.500	38.10	0.140	3.56	**TN150K-AP8**



ACME
Full Profile



TPI (Pitch)	Insert L_6 inch	Insert L_6 mm	Insert T_1 inch	Insert T_1 mm	Part No. ACME Full Profile
12	1.000	25.40	0.140	3.56	**TN100K-FA12**
12	1.500	38.10	0.140	3.56	**TN150K-FA12**
10	1.000	25.40	0.140	3.56	**TN100K-FA10**
10	1.500	38.10	0.140	3.56	**TN150K-FA10**
8	1.000	25.40	0.140	3.56	**TN100K-FA8**
8	1.500	38.10	0.140	3.56	**TN150K-FA8**
6	1.500	38.10	0.140	3.56	**TN150K-FA6**
5	1.500	38.10	0.140	3.56	**TN150K-FA5**

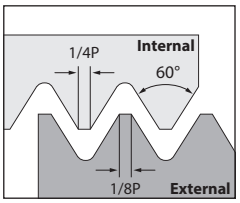
E: 50 - 53
Key on E: 1
E: 28
E: 42 - 43

Inserts sold in quantities of 2

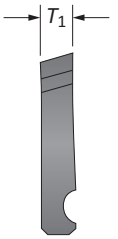
A DRILLING
B BORING
C REAMING
D BURNISHING
E THREADING
X SPECIALS

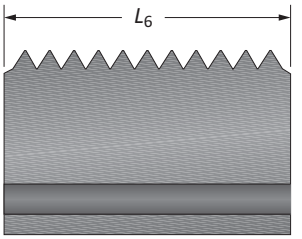
AccuThread™ 856 Thread Mill Inserts

Pin Style | UN



UN
Internal





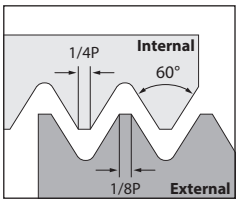
TPI (Pitch)	Insert L_6 inch	Insert L_6 mm	Insert T_1 inch	Insert T_1 mm	Part No. UN Internal
32	1.000	25.40	0.140	3.56	**TN100K-UN32I**
24	1.000	25.40	0.140	3.56	**TN100K-UN24I**
24	1.500	38.10	0.140	3.56	**TN150K-UN24I**
20	1.000	25.40	0.140	3.56	**TN100K-UN20I**
20	1.500	38.10	0.140	3.56	**TN150K-UN20I**
18	1.000	25.40	0.140	3.56	**TN100K-UN18I**
18	1.500	38.10	0.140	3.56	**TN150K-UN18I**
16	1.000	25.40	0.140	3.56	**TN100K-UN16I**
16	1.500	38.10	0.140	3.56	**TN150K-UN16I**
14	1.500	38.10	0.140	3.56	**TN150K-UN14I**
12	1.000	25.40	0.140	3.56	**TN100K-UN12I**
12	1.500	38.10	0.140	3.56	**TN150K-UN12I**
10	1.000	25.40	0.140	3.56	**TN100K-UN10I**
10	1.500	38.10	0.140	3.56	**TN150K-UN10I**
8	1.000	25.40	0.140	3.56	**TN100K-UN8I**
8	1.500	38.10	0.140	3.56	**TN150K-UN8I**
7	1.000	25.40	0.140	3.56	**TN100K-UN7I**
7	1.500	38.10	0.140	3.56	**TN150K-UN7I**
6	1.500	38.10	0.140	3.56	**TN150K-UN6I**

E: 50 - 53
Key on E: 1
E: 28
E: 42 - 43

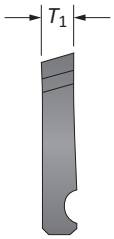
Inserts sold in quantities of 2

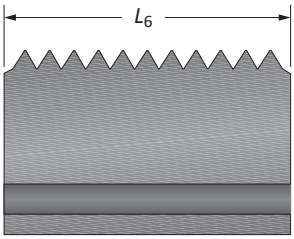
AccuThread™ 856 Thread Mill Inserts

Pin Style | UN



UN
External





TPI (Pitch)	Insert L_6 inch	Insert L_6 mm	Insert T_1 inch	Insert T_1 mm	Part No. UN External
32	1.000	25.40	0.140	3.56	**TN100K-UN32E**
24	1.000	25.40	0.140	3.56	**TN100K-UN24E**
24	1.500	38.10	0.140	3.56	**TN150K-UN24E**
20	1.000	25.40	0.140	3.56	**TN100K-UN20E**
20	1.500	38.10	0.140	3.56	**TN150K-UN20E**
18	1.000	25.40	0.140	3.56	**TN100K-UN18E**
18	1.500	38.10	0.140	3.56	**TN150K-UN18E**
16	1.000	25.40	0.140	3.56	**TN100K-UN16E**
16	1.500	38.10	0.140	3.56	**TN150K-UN16E**
12	1.000	25.40	0.140	3.56	**TN100K-UN12E**
12	1.500	38.10	0.140	3.56	**TN150K-UN12E**
10	1.000	25.40	0.140	3.56	**TN100K-UN10E**
10	1.500	38.10	0.140	3.56	**TN150K-UN10E**
8	1.000	25.40	0.140	3.56	**TN100K-UN8E**
8	1.500	38.10	0.140	3.56	**TN150K-UN8E**
6	1.500	38.10	0.140	3.56	**TN150K-UN6E**

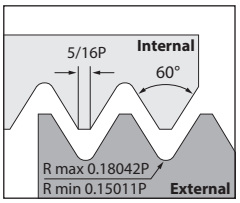
E: 50 - 53
Key on E: 1
E: 28
E: 42 - 43

Inserts sold in quantities of 2

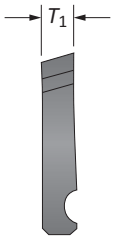
A DRILLING
B BORING
C REAMING
D BURNISHING
E THREADING
X SPECIALS

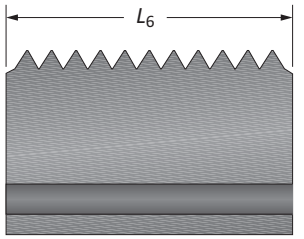
AccuThread™ 856 Thread Mill Inserts

Pin Style | UNJ

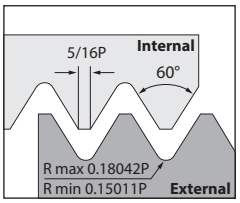


UNJ
Internal

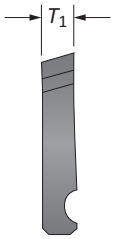


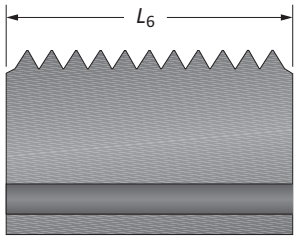


TPI (Pitch)	Insert L_6 inch	Insert L_6 mm	Insert T_1 inch	Insert T_1 mm	Part No. UNJ Internal
32	1.000	25.40	0.140	3.56	**TN100K-UNJ32I**
24	1.000	25.40	0.140	3.56	**TN100K-UNJ24I**
24	1.500	38.10	0.140	3.56	**TN150K-UNJ24I**
20	1.000	25.40	0.140	3.56	**TN100K-UNJ20I**
20	1.500	38.10	0.140	3.56	**TN150K-UNJ20I**
18	1.000	25.40	0.140	3.56	**TN100K-UNJ18I**
18	1.500	38.10	0.140	3.56	**TN150K-UNJ18I**
16	1.000	25.40	0.140	3.56	**TN100K-UNJ16I**
16	1.500	38.10	0.140	3.56	**TN150K-UNJ16I**
12	1.000	25.40	0.140	3.56	**TN100K-UNJ12I**
12	1.500	38.10	0.140	3.56	**TN150K-UNJ12I**
8	1.500	38.10	0.140	3.56	**TN150K-UNJ8I**



UNJ
External





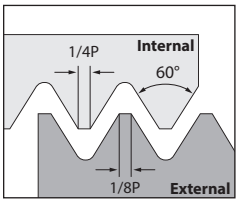
TPI (Pitch)	Insert L_6 inch	Insert L_6 mm	Insert T_1 inch	Insert T_1 mm	Part No. UNJ External
32	1.000	25.40	0.140	3.56	**TN100K-UNJ32E**
24	1.000	25.40	0.140	3.56	**TN100K-UNJ24E**
24	1.500	38.10	0.140	3.56	**TN150K-UNJ24E**
20	1.000	25.40	0.140	3.56	**TN100K-UNJ20E**
20	1.500	38.10	0.140	3.56	**TN150K-UNJ20E**
18	1.000	25.40	0.140	3.56	**TN100K-UNJ18E**
18	1.500	38.10	0.140	3.56	**TN150K-UNJ18E**
16	1.000	25.40	0.140	3.56	**TN100K-UNJ16E**
16	1.500	38.10	0.140	3.56	**TN150K-UNJ16E**
12	1.000	25.40	0.140	3.56	**TN100K-UNJ12E**
12	1.500	38.10	0.140	3.56	**TN150K-UNJ12E**
8	1.500	38.10	0.140	3.56	**TN150K-UNJ8E**

E: 50 - 53
Key on E: 1
E: 28
E: 42 - 43

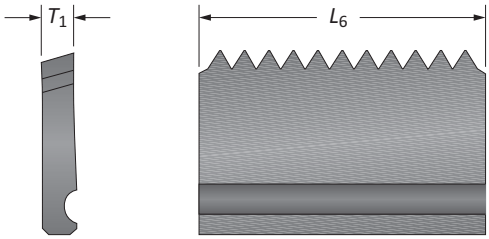
Inserts sold in quantities of 2

AccuThread™ 856 Thread Mill Inserts

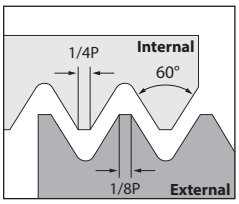
Pin Style | ISO



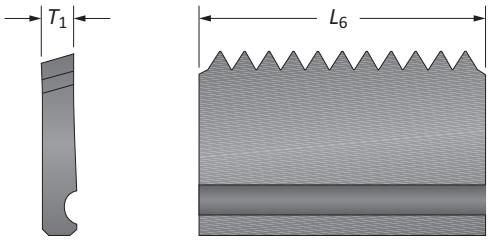
ISO
Internal



Pitch	Insert L_6 inch	Insert L_6 mm	Insert T_1 inch	Insert T_1 mm	Part No. ISO Internal
1.5	1.500	38.10	0.140	3.56	**TN150K-M1.5I**
2.0	1.500	38.10	0.140	3.56	**TN150K-M2.0I**
2.5	1.500	38.10	0.140	3.56	**TN150K-M2.5I**
3.0	1.500	38.10	0.140	3.56	**TN150K-M3.0I**
3.5	1.500	38.10	0.140	3.56	**TN150K-M3.5I**
4.0	1.500	38.10	0.140	3.56	**TN150K-M4.0I**
4.5	1.500	38.10	0.140	3.56	**TN150K-M4.5I**
5.0	1.500	38.10	0.140	3.56	**TN150K-M5.0I**
6.0	1.500	38.10	0.140	3.56	**TN150K-M6.0I**



ISO
External



Pitch	Insert L_6 inch	Insert L_6 mm	Insert T_1 inch	Insert T_1 mm	Part No. ISO External
2.0	1.500	38.10	0.140	3.56	**TN150K-M2.0E**
4.0	1.500	38.10	0.140	3.56	**TN150K-M4.0E**
4.5	1.500	38.10	0.140	3.56	**TN150K-M4.5E**
5.0	1.500	38.10	0.140	3.56	**TN150K-M5.0E**
6.0	1.500	38.10	0.140	3.56	**TN150K-M6.0E**

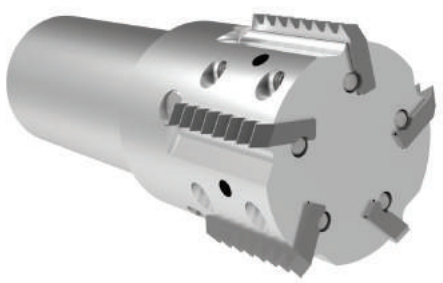
E: 50 - 53
Key on E: 1
E: 28
E: 42 - 43

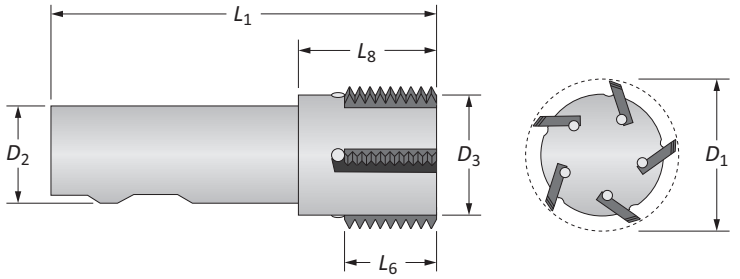
Inserts sold in quantities of 2

A DRILLING
B BORING
C REAMING
D BURNISHING
E THREADING
X SPECIALS

AccuThread™ Pin Style Holders

Weldon Shank





Positive Rake

	D_1		Holder											
	Standard	Ovesize*	D_3	L_8	L_6	L_1	D_2	Coolant	Flutes	Part No.	Inserts	Screw	Key Size	Pin
i	0.969	–	0.750	1.38	1.000	4.500	1.000	N	2	**THP-0969-2F100**	TN100K...	TMSS-3	3/32	TMP-1
	1.755	–	1.500	2.25	1.000	4.000	1.250	Y	5	**THP-1755-5F100**	TN100K...	TMSS-2	3/32	TMP-1
	0.932	1.063	0.722	1.90	1.500	4.500	1.000	N	1	**THP-0932-1F150**	TN150K...	TMSS-2	3/32	TMP-2
	0.969	1.100	0.750	2.00	1.500	4.500	1.000	N	2	**THP-0969-2F150**	TN150K...	TMSS-3	3/32	TMP-2
	1.116	1.247	0.812	2.00	1.500	4.500	1.000	Y	3	**THP-1116-3F150**	TN150K...	TMSS-3	3/32	TMP-2
	1.755	1.887	1.500	2.25	1.500	4.500	1.250	Y	5	**THP-1755-5F150**	TN150K...	TMSS-2	3/32	TMP-2
m	24.61	–	19.05	35.05	25.40	114.30	25.00	N	2	**THP-0969-2F100M**	TN100K...	TMSS-3	3/32	TMP-1
	44.58	–	38.10	57.15	25.40	101.60	32.00	Y	5	**THP-1755-5F100M**	TN100K...	TMSS-2	3/32	TMP-1
	23.67	27.00	18.34	48.44	38.10	114.30	25.00	N	1	**THP-0932-1F150M**	TN150K...	TMSS-2	3/32	TMP-2
	24.61	27.94	19.05	50.80	38.10	114.30	25.00	N	2	**THP-0969-2F150M**	TN150K...	TMSS-3	3/32	TMP-2
	28.35	31.67	20.63	50.80	38.10	114.30	25.00	Y	3	**THP-1116-3F150M**	TN150K...	TMSS-3	3/32	TMP-2
	44.58	47.93	38.10	57.15	38.10	114.30	32.00	Y	5	**THP-1755-5F150M**	TN150K...	TMSS-2	3/32	TMP-2

*See note at bottom of page

Neutral Rake

	D_1		Holder											
	Standard	Ovesize*	D_3	L_8	L_6	L_1	D_2	Coolant	Flutes	Part No.	Inserts	Screw	Key Size	Pin
i	1.116	1.247	0.812	2.00	1.500	4.500	1.000	Y	3	**TNR-1116-3F150**	TN150K...	TMSS-3	3/32	TMP-2
	1.755	1.887	1.500	2.25	1.500	4.531	1.250	Y	5	**TNR-1755-5F150**	TN150K...	TMSS-2	3/32	TMP-2
m	28.35	31.67	20.63	50.80	38.10	114.30	25.00	Y	3	**TNR-1116-3F150M**	TN150K...	TMSS-3	3/32	TMP-2
	44.58	47.93	38.10	57.15	38.10	114.30	32.00	Y	5	**TNR-1755-5F150M**	TN150K...	TMSS-2	3/32	TMP-2

*See note at bottom of page

E: 28
Key on E: 1

E: 36 - 41

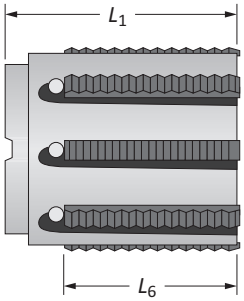
*Oversized cutter diameter occurs when assembled with the following pin style inserts:

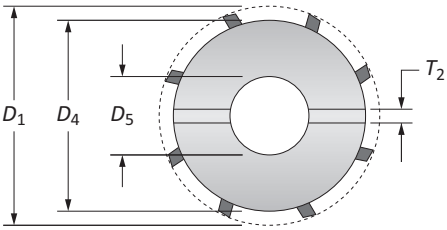
NPT 8 NPTF 11.5 NPTF 8	API 8	Metric 6.0 Metric 5.0 Metric 4.5	ACME 5 ACME 6

i = Imperial (in)
m = Metric (mm)

AccuThread™ Pin Style Holders

Shell Mill





Positive Rake

	D_1		Holder										
	Standard	Ovesize*	D_4	D_5	L_6	L_1	T_2	Flutes	Part No.	Inserts	Screw	Key Size	Pin
i	2.714	2.845	2.500	1.000	1.500	2.250	0.375	7	**TSN-2846-7F150**	TN150K...	TMSS-2	3/32	TMP-2
	3.208	3.340	3.000	1.250	1.500	2.250	0.500	8	**TSN-3341-8F150**	TN150K...	TMSS-2	3/32	TMP-2
m	68.94	72.26	63.50	27.00	38.10	57.15	12	7	**TSN-2846-7F150M**	TN150K...	TMSS-2	3/32	TMP-2
	81.48	84.84	76.20	32.00	38.10	57.15	14	8	**TSN-3341-8F150M**	TN150K...	TMSS-2	3/32	TMP-2

*See note at bottom of page

Neutral Rake

	D_1		Holder										
	Standard	Ovesize*	D_4	D_5	L_6	L_1	T_2	Flutes	Part No.	Inserts	Screw	Key Size	Pin
i	2.217	2.349	2.000	0.750	1.500	2.250	0.312	6	**TSR-2217-6F150**	TN150K...	TMSS-2	3/32	TMP-2
m	56.31	59.66	50.80	22.00	38.10	57.15	10.00	6	**TSR-2217-6F150M**	TN150K...	TMSS-2	3/32	TMP-2

*See note at bottom of page

E: 28

Key on E: 1

E: 36 - 41

*Oversized cutter diameter occurs when assembled with the following pin style inserts:

NPT 8 NPTF 11.5 NPTF 8	API 8	Metric 6.0 Metric 5.0 Metric 4.5	ACME 5 ACME 6

i = Imperial (in)
m = Metric (mm)

Thread Mill Pre-Drill Information

Linear Feed Rate (LFR)

$$LFR = RPM \bullet (IPT \bullet \text{Number of flutes})$$

RPM = Revolutions per minute

IPT = Recommended feed (inch / tooth)

Surface Feet per Minute (SFM)

$$SFM = RPM \bullet 0.262 \bullet \text{Diameter}$$

RPM = Revolutions per minute

Revolutions per Minute (RPM)

$$RPM = \frac{SFM \bullet 3.82}{\text{Diameter}}$$

SFM = Surface feet per minute

Adjusted Feed Rate (AFR) - For Internal Threading

$$AFR = \frac{\text{Major Diameter - Cutter Diameter}}{\text{Major Diameter}} [LFR]$$

LFR = Linear feed rate

NOTICE: The above formula on an internal thread program adjusts the linear feed rate to be applied to the outer diameter instead of the center of the cutting tool. If the feed rate is not adjusted, the excessive feed rate will cause the thread mill cutting edges to fail.

Example of an Internal Adjusted Feed Rate Calculation:

Cast iron 125 BHN with a 1/2-13 thread form using AccuThread 856 solid carbide (TMUK0500-13)

STEP 1:	$RPM = \frac{SFM \bullet 3.82}{\text{Diameter}}$	$RPM = \frac{675 \bullet 3.82}{0.350}$	RPM = 7367
STEP 2:	$LFR = RPM \bullet (IPT \bullet \text{Number of flutes})$	$LFR = 7367 \bullet (0.0010 \bullet 4)$	LFR = 29.47 IPM
STEP 3:	$AFR = \frac{\text{Major Diameter - Cutter Diameter}}{\text{Major Diameter}} [LFR]$	$AFR = \frac{0.500 - 0.350}{0.500} [29.47]$	AFR = 8.84 IPM

Thread Mill Calculations and Recommended Passes

Thread Mill Drill Calculation

Based on nominal tap drill diameter. Based on 0.003" or 0.075mm probable mean oversize.

To calculate the percent of full thread for a given hole diameter:

IMPERIAL:

$$\text{\% of thread} = \text{\# of threads per inch} \bullet \frac{\text{Basic major diameter of thread - Drill hole size}}{0.0130}$$

METRIC:

$$\text{\% of thread} = \frac{76.96}{\text{Pitch (mm)}} \bullet [\text{ Basic major diameter of thread - Drill hole size }]$$

Major Thread Diameter for # Drills

Drill #	Thread Diameter
# 2	0.086
# 3	0.099
# 4	0.112
# 5	0.125
# 6	0.132
# 8	0.164
# 10	0.190
# 12	0.216

Recommended Passes

NPT / NPTF / BSPT / API			
	Machinability		
Pitch Size	Easy	Average	Difficult
28	1	1	2
27	1	1	2
19	1	1	2
18	1	1	2
14	1	2	3
11.5	1	2	3
11	1	2	3
10	1	2	3
8	2	3	4

ISO			
	Machinability		
Pitch Size	Easy	Average	Difficult
0.40	1	1	2
0.45	1	1	2
0.50	1	1	2
0.70	1	1	2
0.75	1	1	2
0.80	1	1	2
1.00	1	1	2
1.25	1	2	3
1.50	1	2	3
1.75	1	2	3
2.00	1	2	3
2.50	2	3	4
3.00	2	3	4
3.50	2	3	4
4.00	2	3	4
4.50	2	3	4
5.00	2	3	4
6.00	2	3	4

UN / UNJ / BSPP / BSW / NPS / NPSF			
	Machinability		
Pitch Size	Easy	Average	Difficult
64	1	1	2
56	1	1	2
48	1	1	2
44	1	1	2
40	1	1	2
36	1	1	2
32	1	1	2
28	1	1	2
24	1	1	2
20	1	2	3
19	1	2	3
18	1	2	3
16	1	2	3
14	1	2	3
13	1	2	3
12	1	2	3
11	2	2	4
10	2	3	4
9	2	3	4
8	2	3	4
7	2	3	4
6	2	3	4

- 1 Pass
- 2 Passes
- 3 Passes
- 4 Passes

Recommended Cutting Data | Imperial (inch)

Solid Carbide | AccuThread™ 856

ISO	Material	Hardness (BHN)	Machinability*	Speed (SFM)	Recommended Feed (inch/tooth) by Cutter Diameter							
					0.060 to 0.125	0.126 to 0.188	0.189 to 0.250	0.251 to 0.312	0.313 to 0.375	0.376 to 0.500	0.501 to 0.625	0.626 to 0.750
P	**Free Machining Steel**	100 - 150	Easy	900	0.0004	0.0005	0.0007	0.0009	0.0010	0.0015	0.0020	0.0025
	1118, 1215, 12L14, etc.	150 - 200	Easy	700	0.0004	0.0005	0.0007	0.0009	0.0010	0.0015	0.0020	0.0025
		200 - 250	Easy	500	0.0004	0.0005	0.0007	0.0009	0.0010	0.0015	0.0020	0.0025
	Low Carbon Steel	85 - 125	Average	900	0.0004	0.0005	0.0007	0.0009	0.0010	0.0015	0.0020	0.0025
	1010, 1020, 1025, 1522, 1144	125 - 175	Average	700	0.0004	0.0005	0.0007	0.0009	0.0010	0.0015	0.0020	0.0025
		175 - 225	Average	600	0.0004	0.0005	0.0007	0.0009	0.0010	0.0015	0.0020	0.0025
		225 - 275	Average	500	0.0004	0.0005	0.0007	0.0009	0.0010	0.0015	0.0020	0.0025
	Medium Carbon Steel	125 - 175	Average	575	0.0004	0.0005	0.0006	0.0008	0.0010	0.0013	0.0018	0.0020
	1010, 1040, 1050, 1527, 1140	175 - 225	Average	500	0.0004	0.0005	0.0006	0.0008	0.0010	0.0013	0.0018	0.0020
		225 - 275	Average	450	0.0004	0.0005	0.0006	0.0008	0.0010	0.0013	0.0018	0.0020
		275 - 325	Average	400	0.0004	0.0005	0.0006	0.0008	0.0010	0.0013	0.0018	0.0020
	Alloy Steel	125 - 175	Average	575	0.0004	0.0005	0.0006	0.0008	0.0010	0.0013	0.0018	0.0020
	4140, 5140, 8640	175 - 225	Average	500	0.0004	0.0005	0.0006	0.0008	0.0010	0.0013	0.0018	0.0020
		225 - 275	Average	450	0.0004	0.0005	0.0006	0.0008	0.0010	0.0013	0.0018	0.0020
		275 - 325	Difficult	400	0.0004	0.0005	0.0006	0.0008	0.0010	0.0013	0.0018	0.0020
		325 - 375	Difficult	375	0.0004	0.0005	0.0006	0.0008	0.0010	0.0013	0.0018	0.0020
	High Strength Alloy	225 - 300	Average	450	0.0004	0.0005	0.0006	0.0008	0.0010	0.0013	0.0018	0.0020
	4340, 4330V, 300M	300 - 350	Difficult	400	0.0004	0.0005	0.0006	0.0008	0.0010	0.0013	0.0018	0.0020
		350 - 400	Difficult	350	0.0004	0.0005	0.0006	0.0008	0.0010	0.0013	0.0018	0.0020
	Structural Steel	100 - 150	Average	600	0.0004	0.0005	0.0007	0.0009	0.0010	0.0015	0.0020	0.0025
	A36, A285, A516	150 - 250	Average	500	0.0004	0.0005	0.0007	0.0009	0.0010	0.0015	0.0020	0.0025
		250 - 350	Difficult	450	0.0004	0.0005	0.0007	0.0009	0.0010	0.0015	0.0020	0.0025
S	**High Temp Alloy**	140 - 220	Difficult	120	0.0003	0.0004	0.0006	0.0008	0.0009	0.0010	0.0012	0.0015
	Hastelloy B, Inconel 600	220 - 310	Difficult	90	0.0003	0.0004	0.0006	0.0008	0.0009	0.0010	0.0012	0.0015
M	**Stainless Steel**	135 - 185	Difficult	525	0.0004	0.0005	0.0006	0.0008	0.0009	0.0010	0.0015	0.0020
	303, 416, 420	185 - 275	Difficult	500	0.0004	0.0005	0.0006	0.0008	0.0009	0.0010	0.0015	0.0020
	Stainless Steel PH	185 - 275	Difficult	300	0.0004	0.0005	0.0006	0.0008	0.0009	0.0010	0.0015	0.0020
	17-4	275 - 325	Difficult	150	0.0004	0.0005	0.0006	0.0008	0.0009	0.0010	0.0015	0.0020
	Tool Steel	150 - 200	Difficult	575	0.0004	0.0005	0.0007	0.0009	0.0010	0.0015	0.0020	0.0025
	H-13, H21, A-4	200 - 250	Difficult	500	0.0004	0.0005	0.0007	0.0009	0.0010	0.0015	0.0020	0.0025
K	**Cast Iron**	120 - 150	Easy	675	0.0004	0.0005	0.0007	0.0009	0.0010	0.0015	0.0020	0.0025
	Grey, Ductile, Nodular	150 - 200	Easy	625	0.0004	0.0005	0.0007	0.0009	0.0010	0.0015	0.0020	0.0025
		200 - 220	Easy	575	0.0004	0.0005	0.0007	0.0009	0.0010	0.0015	0.0020	0.0025
		220 - 260	Average	500	0.0004	0.0005	0.0007	0.0009	0.0010	0.0015	0.0020	0.0025
		260 - 320	Average	475	0.0004	0.0005	0.0007	0.0009	0.0010	0.0015	0.0020	0.0025
N	**Wrought Aluminum**	30	Easy	1100	0.0005	0.0006	0.0009	0.0010	0.0015	0.0020	0.0025	0.0030
	6061 T6	180	Easy	1000	0.0005	0.0006	0.0009	0.0010	0.0015	0.0020	0.0025	0.0030
	Cast Aluminum** up to 10% silicon	120	Easy	625	0.0005	0.0006	0.0009	0.0010	0.0015	0.0020	0.0025	0.0030
	Brass	30 - 125	Easy	1100	0.0005	0.0006	0.0009	0.0010	0.0015	0.0020	0.0025	0.0030

NOTICE: Reduce feed and speed by 30% for tapered thread forms due to additional material removal
*Refer to recommended pass chart on page E: 45 when referencing material machinability
**Uncoated thread mills are recommended for cast aluminum applications

Recommended Cutting Data | Metric (mm)

Solid Carbide | AccuThread™ 856

ISO	Material	Hardness (BHN)	Machinability*	Speed (M/min)	Recommended Feed (mm/tooth) by Cutter Diameter							
					1.50 to 3.18	3.19 to 4.76	4.77 to 6.35	6.36 to 7.94	7.95 to 9.53	9.54 to 12.70	12.71 to 15.88	15.89 to 19.05
P	**Free Machining Steel**	100 - 150	Easy	274	0.010	0.013	0.018	0.023	0.025	0.038	0.051	0.064
	1118, 1215, 12L14, etc.	150 - 200	Easy	213	0.010	0.013	0.018	0.023	0.025	0.038	0.051	0.064
		200 - 250	Easy	152	0.010	0.013	0.018	0.023	0.025	0.038	0.051	0.064
	Low Carbon Steel	85 - 125	Average	274	0.010	0.013	0.018	0.023	0.025	0.038	0.051	0.064
	1010, 1020, 1025, 1522, 1144	125 - 175	Average	213	0.010	0.013	0.018	0.023	0.025	0.038	0.051	0.064
		175 - 225	Average	183	0.010	0.013	0.018	0.023	0.025	0.038	0.051	0.064
		225 - 275	Average	152	0.010	0.013	0.018	0.023	0.025	0.038	0.051	0.064
	Medium Carbon Steel	125 - 175	Average	175	0.010	0.013	0.015	0.020	0.025	0.033	0.046	0.051
	1010, 1040, 1050, 1527, 1140	175 - 225	Average	152	0.010	0.013	0.015	0.020	0.025	0.033	0.046	0.051
		225 - 275	Average	137	0.010	0.013	0.015	0.020	0.025	0.033	0.046	0.051
		275 - 325	Average	122	0.010	0.013	0.015	0.020	0.025	0.033	0.046	0.051
	Alloy Steel	125 - 175	Average	175	0.010	0.013	0.015	0.020	0.025	0.033	0.046	0.051
	4140, 5140, 8640	175 - 225	Average	152	0.010	0.013	0.015	0.020	0.025	0.033	0.046	0.051
		225 - 275	Average	137	0.010	0.013	0.015	0.020	0.025	0.033	0.046	0.051
		275 - 325	Difficult	122	0.010	0.013	0.015	0.020	0.025	0.033	0.046	0.051
		325 - 375	Difficult	114	0.010	0.013	0.015	0.020	0.025	0.033	0.046	0.051
	High Strength Alloy	225 - 300	Average	137	0.010	0.013	0.015	0.020	0.025	0.033	0.046	0.051
	4340, 4330V, 300M	300 - 350	Difficult	122	0.010	0.013	0.015	0.020	0.025	0.033	0.046	0.051
		350 - 400	Difficult	107	0.010	0.013	0.015	0.020	0.025	0.033	0.046	0.051
	Structural Steel	100 - 150	Average	183	0.010	0.013	0.018	0.023	0.025	0.038	0.051	0.064
	A36, A285, A516	150 - 250	Average	152	0.010	0.013	0.018	0.023	0.025	0.038	0.051	0.064
		250 - 350	Difficult	137	0.010	0.013	0.018	0.023	0.025	0.038	0.051	0.064
S	**High Temp Alloy**	140 - 220	Difficult	37	0.008	0.010	0.015	0.020	0.023	0.025	0.030	0.038
	Hastelloy B, Inconel 600	220 - 310	Difficult	27	0.008	0.010	0.015	0.020	0.023	0.025	0.030	0.038
M	**Stainless Steel**	135 - 185	Difficult	160	0.010	0.013	0.015	0.020	0.023	0.025	0.038	0.051
	303, 416, 420	185 - 275	Difficult	152	0.010	0.013	0.015	0.020	0.023	0.025	0.038	0.051
	Stainless Steel PH	185 - 275	Difficult	91	0.010	0.013	0.015	0.020	0.023	0.025	0.038	0.051
	17-4	275 - 325	Difficult	46	0.010	0.013	0.015	0.020	0.023	0.025	0.038	0.051
	Tool Steel	150 - 200	Difficult	175	0.010	0.013	0.018	0.023	0.025	0.038	0.051	0.064
	H-13, H21, A-4	200 - 250	Difficult	152	0.010	0.013	0.018	0.023	0.025	0.038	0.051	0.064
K	**Cast Iron**	120 - 150	Easy	206	0.010	0.013	0.018	0.023	0.025	0.038	0.051	0.064
	Grey, Ductile, Nodular	150 - 200	Easy	191	0.010	0.013	0.018	0.023	0.025	0.038	0.051	0.064
		200 - 220	Easy	175	0.010	0.013	0.018	0.023	0.025	0.038	0.051	0.064
		220 - 260	Average	152	0.010	0.013	0.018	0.023	0.025	0.038	0.051	0.064
		260 - 320	Average	145	0.010	0.013	0.018	0.023	0.025	0.038	0.051	0.064
N	**Wrought Aluminum**	30	Easy	335	0.013	0.015	0.023	0.025	0.038	0.051	0.064	0.076
	6061 T6	180	Easy	305	0.013	0.015	0.023	0.025	0.038	0.051	0.064	0.076
	Cast Aluminum** up to 10% silicon	120	Easy	191	0.013	0.015	0.023	0.025	0.038	0.051	0.064	0.076
	Brass	30 - 125	Easy	335	0.013	0.015	0.023	0.025	0.038	0.051	0.064	0.076

NOTICE: Reduce feed and speed by 30% for tapered thread forms due to additional material removal
*Refer to recommended pass chart on page E: 45 when referencing material machinability
**Uncoated thread mills are recommended for cast aluminum applications

Recommended Cutting Data | Imperial (inch)

Solid Carbide | ThreadMills USA

ISO	Material	Hardness (BHN)	Machinability*	Speed (SFM)	Recommended Feed (inch/tooth) by Cutter Diameter							
					0.060 to 0.125	0.126 to 0.188	0.189 to 0.250	0.251 to 0.312	0.313 to 0.375	0.376 to 0.500	0.501 to 0.625	0.626 to 0.750
P	**Free Machining Steel**	100 - 150	Easy	725	0.0004	0.0005	0.0007	0.0009	0.0010	0.0015	0.0020	0.0025
	1118, 1215, 12L14, etc.	150 - 200	Easy	550	0.0004	0.0005	0.0007	0.0009	0.0010	0.0015	0.0020	0.0025
		200 - 250	Easy	450	0.0004	0.0005	0.0007	0.0009	0.0010	0.0015	0.0020	0.0025
	Low Carbon Steel	85 - 125	Average	725	0.0004	0.0005	0.0007	0.0009	0.0010	0.0015	0.0020	0.0025
	1010, 1020, 1025, 1522, 1144	125 - 175	Average	550	0.0004	0.0005	0.0007	0.0009	0.0010	0.0015	0.0020	0.0025
		175 - 225	Average	450	0.0004	0.0005	0.0007	0.0009	0.0010	0.0015	0.0020	0.0025
		225 - 275	Average	400	0.0004	0.0005	0.0007	0.0009	0.0010	0.0015	0.0020	0.0025
	Medium Carbon Steel	125 - 175	Average	450	0.0004	0.0005	0.0006	0.0008	0.0010	0.0013	0.0018	0.0020
	1010, 1040, 1050, 1527, 1140	175 - 225	Average	400	0.0004	0.0005	0.0006	0.0008	0.0010	0.0013	0.0018	0.0020
		225 - 275	Average	350	0.0004	0.0005	0.0006	0.0008	0.0010	0.0013	0.0018	0.0020
		275 - 325	Average	300	0.0004	0.0005	0.0006	0.0008	0.0010	0.0013	0.0018	0.0020
	Alloy Steel	125 - 175	Average	450	0.0004	0.0005	0.0006	0.0008	0.0010	0.0013	0.0018	0.0020
	4140, 5140, 8640	175 - 225	Average	400	0.0004	0.0005	0.0006	0.0008	0.0010	0.0013	0.0018	0.0020
		225 - 275	Average	350	0.0004	0.0005	0.0006	0.0008	0.0010	0.0013	0.0018	0.0020
		275 - 325	Difficult	300	0.0004	0.0005	0.0006	0.0008	0.0010	0.0013	0.0018	0.0020
		325 - 375	Difficult	250	0.0004	0.0005	0.0006	0.0008	0.0010	0.0013	0.0018	0.0020
	High Strength Alloy	225 - 300	Average	350	0.0004	0.0005	0.0006	0.0008	0.0010	0.0013	0.0018	0.0020
	4340, 4330V, 300M	300 - 350	Difficult	300	0.0004	0.0005	0.0006	0.0008	0.0010	0.0013	0.0018	0.0020
		350 - 400	Difficult	250	0.0004	0.0005	0.0006	0.0008	0.0010	0.0013	0.0018	0.0020
	Structural Steel	100 - 150	Average	450	0.0004	0.0005	0.0007	0.0009	0.0010	0.0015	0.0020	0.0025
	A36, A285, A516	150 - 250	Average	400	0.0004	0.0005	0.0007	0.0009	0.0010	0.0015	0.0020	0.0025
		250 - 350	Difficult	300	0.0004	0.0005	0.0007	0.0009	0.0010	0.0015	0.0020	0.0025
S	**High Temp Alloy**	140 - 220	Difficult	100	0.0003	0.0004	0.0006	0.0008	0.0009	0.0010	0.0012	0.0015
	Hastelloy B, Inconel 600	220 - 310	Difficult	75	0.0003	0.0004	0.0006	0.0008	0.0009	0.0010	0.0012	0.0015
M	**Stainless Steel**	135 - 185	Difficult	425	0.0004	0.0005	0.0006	0.0008	0.0009	0.0010	0.0015	0.0020
	303, 416, 420	185 - 275	Difficult	400	0.0004	0.0005	0.0006	0.0008	0.0009	0.0010	0.0015	0.0020
	Stainless Steel PH	185 - 275	Difficult	250	0.0004	0.0005	0.0006	0.0008	0.0009	0.0010	0.0015	0.0020
	17-4	275 - 325	Difficult	125	0.0004	0.0005	0.0006	0.0008	0.0009	0.0010	0.0015	0.0020
	Tool Steel	150 - 200	Difficult	325	0.0004	0.0005	0.0007	0.0008	0.0010	0.0015	0.0020	0.0025
	H-13, H21, A-4	200 - 250	Difficult	225	0.0004	0.0005	0.0007	0.0008	0.0010	0.0015	0.0020	0.0025
K	**Cast Iron**	120 - 150	Easy	550	0.0004	0.0005	0.0007	0.0009	0.0010	0.0015	0.0020	0.0025
	Grey, Ductile, Nodular	150 - 200	Easy	500	0.0004	0.0005	0.0007	0.0009	0.0010	0.0015	0.0020	0.0025
		200 - 220	Easy	450	0.0004	0.0005	0.0007	0.0009	0.0010	0.0015	0.0020	0.0025
		220 - 260	Average	400	0.0004	0.0005	0.0007	0.0009	0.0010	0.0015	0.0020	0.0025
		260 - 320	Average	375	0.0004	0.0005	0.0007	0.0009	0.0010	0.0015	0.0020	0.0025
N	**Wrought Aluminum**	30	Easy	1000	0.0005	0.0006	0.0009	0.0010	0.0015	0.0020	0.0025	0.0030
	6061 T6	180	Easy	900	0.0005	0.0006	0.0009	0.0010	0.0015	0.0020	0.0025	0.0030
	Cast Aluminum** up to 10% silicon	120	Easy	500	0.0005	0.0006	0.0009	0.0010	0.0015	0.0020	0.0025	0.0030
	Brass	30 - 125	Easy	1000	0.0005	0.0006	0.0009	0.0010	0.0015	0.0020	0.0025	0.0030

NOTICE: Reduce feed and speed by 30% for tapered thread forms due to additional material removal
*Refer to recommended pass chart on page E: 45 when referencing material machinability
**Uncoated thread mills are recommended for cast aluminum applications

Recommended Cutting Data | Metric (mm)

Solid Carbide | ThreadMills USA

ISO	Material	Hardness (BHN)	Machinability*	Speed (M/min)	Recommended Feed (mm/tooth) by Cutter Diameter							
					1.50 to 3.18	3.19 to 4.76	4.77 to 6.35	6.36 to 7.94	7.95 to 9.53	9.54 to 12.70	12.71 to 15.88	15.89 to 19.05
P	**Free Machining Steel**	100 - 150	Easy	221	0.010	0.013	0.018	0.023	0.025	0.038	0.051	0.064
	1118, 1215, 12L14, etc.	150 - 200	Easy	168	0.010	0.013	0.018	0.023	0.025	0.038	0.051	0.064
		200 - 250	Easy	137	0.010	0.013	0.018	0.023	0.025	0.038	0.051	0.064
	Low Carbon Steel	85 - 125	Average	221	0.010	0.013	0.018	0.023	0.025	0.038	0.051	0.064
	1010, 1020, 1025, 1522, 1144	125 - 175	Average	168	0.010	0.013	0.018	0.023	0.025	0.038	0.051	0.064
		175 - 225	Average	137	0.010	0.013	0.018	0.023	0.025	0.038	0.051	0.064
		225 - 275	Average	122	0.010	0.013	0.018	0.023	0.025	0.038	0.051	0.064
	Medium Carbon Steel	125 - 175	Average	137	0.010	0.013	0.015	0.020	0.025	0.038	0.046	0.051
	1010, 1040, 1050, 1527, 1140	175 - 225	Average	122	0.010	0.013	0.015	0.020	0.025	0.038	0.046	0.051
		225 - 275	Average	107	0.010	0.013	0.015	0.020	0.025	0.038	0.046	0.051
		275 - 325	Average	91	0.010	0.013	0.015	0.020	0.025	0.038	0.046	0.051
	Alloy Steel	125 - 175	Average	137	0.010	0.013	0.015	0.020	0.025	0.038	0.046	0.051
	4140, 5140, 8640	175 - 225	Average	122	0.010	0.013	0.015	0.020	0.025	0.038	0.046	0.051
		225 - 275	Average	107	0.010	0.013	0.015	0.020	0.025	0.038	0.046	0.051
		275 - 325	Difficult	91	0.010	0.013	0.015	0.020	0.025	0.038	0.046	0.051
		325 - 375	Difficult	76	0.010	0.013	0.015	0.020	0.025	0.038	0.046	0.051
	High Strength Alloy	225 - 300	Average	107	0.010	0.013	0.015	0.020	0.025	0.038	0.046	0.051
	4340, 4330V, 300M	300 - 350	Difficult	91	0.010	0.013	0.015	0.020	0.025	0.038	0.046	0.051
		350 - 400	Difficult	76	0.010	0.013	0.015	0.020	0.025	0.038	0.046	0.051
	Structural Steel	100 - 150	Average	137	0.010	0.013	0.018	0.023	0.025	0.038	0.051	0.064
	A36, A285, A516	150 - 250	Average	122	0.010	0.013	0.018	0.023	0.025	0.038	0.051	0.064
		250 - 350	Difficult	91	0.010	0.013	0.018	0.023	0.025	0.038	0.051	0.064
S	**High Temp Alloy**	140 - 220	Difficult	30	0.008	0.010	0.015	0.020	0.023	0.025	0.030	0.038
	Hastelloy B, Inconel 600	220 - 310	Difficult	23	0.008	0.010	0.015	0.020	0.023	0.025	0.030	0.038
M	**Stainless Steel**	135 - 185	Difficult	130	0.010	0.013	0.015	0.020	0.023	0.025	0.038	0.051
	303, 416, 420	185 - 275	Difficult	122	0.010	0.013	0.015	0.020	0.023	0.025	0.038	0.051
	Stainless Steel PH	185 - 275	Difficult	76	0.010	0.013	0.015	0.020	0.023	0.025	0.038	0.051
	17-4	275 - 325	Difficult	38	0.010	0.013	0.015	0.020	0.023	0.025	0.038	0.051
	Tool Steel	150 - 200	Difficult	99	0.010	0.013	0.018	0.023	0.025	0.038	0.051	0.064
	H-13, H21, A-4	200 - 250	Difficult	69	0.010	0.013	0.018	0.023	0.025	0.038	0.051	0.064
R	**Cast Iron**	120 - 150	Easy	168	0.010	0.013	0.018	0.023	0.025	0.038	0.051	0.064
	Grey, Ductile, Nodular	150 - 200	Easy	152	0.010	0.013	0.018	0.023	0.025	0.038	0.051	0.064
		200 - 220	Easy	137	0.010	0.013	0.018	0.023	0.025	0.038	0.051	0.064
		220 - 260	Average	122	0.010	0.013	0.018	0.023	0.025	0.038	0.051	0.064
		260 - 320	Average	114	0.010	0.013	0.018	0.023	0.025	0.038	0.051	0.064
S	**Wrought Aluminum**	30	Easy	305	0.013	0.015	0.023	0.025	0.038	0.051	0.064	0.076
	6061 T6	180	Easy	274	0.013	0.015	0.023	0.025	0.038	0.051	0.064	0.076
	Cast Aluminum** up to 10% silicon	120	Easy	152	0.013	0.015	0.023	0.025	0.038	0.051	0.064	0.076
	Brass	30 - 125	Easy	305	0.013	0.015	0.023	0.025	0.038	0.051	0.064	0.076

NOTICE: Reduce feed and speed by 30% for tapered thread forms due to additional material removal
*Refer to recommended pass chart on page E: 45 when referencing material machinability
**Uncoated thread mills are recommended for cast aluminum applications

Recommended Cutting Data | Imperial (inch)

Indexable | AccuThread™ 856 | Positive Rake

ISO	Material	Hardness (BHN)	Machinability**	Speed (SFM)	Recommended Feed (inch/tooth) by Cutter Diameter: 1 flute 0.375 - 0.500	1 flute 0.501 - 0.750	1 and 2 flutes 0.751 - 1.000	3 flutes 1.001 - 1.500	5 flutes 1.501 - 2.000	7 flutes 2.001 - 2.750	8 flutes 2.751 - 3.500
P	**Free Machining Steel** 1118, 1215, 12L14, etc.	100 - 150	Easy	900	0.0008	0.0010	0.0012	0.0015	0.0020	0.0025	0.0030
		150 - 200	Easy	700	0.0008	0.0010	0.0012	0.0015	0.0020	0.0025	0.0030
		200 - 250	Easy	500	0.0008	0.0010	0.0012	0.0015	0.0020	0.0025	0.0030
	Low Carbon Steel 1010, 1020, 1025, 1522, 1144	85 - 125	Average	900	0.0008	0.0010	0.0012	0.0015	0.0020	0.0025	0.0030
		125 - 175	Average	700	0.0008	0.0010	0.0012	0.0015	0.0020	0.0025	0.0030
		175 - 225	Average	600	0.0008	0.0010	0.0012	0.0015	0.0020	0.0025	0.0030
		225 - 275	Average	500	0.0008	0.0010	0.0012	0.0015	0.0020	0.0025	0.0030
	Medium Carbon Steel 1010, 1040, 1050, 1527, 1140	125 - 175	Average	575	0.0008	0.0009	0.0010	0.0012	0.0015	0.0020	0.0025
		175 - 225	Average	500	0.0008	0.0009	0.0010	0.0012	0.0015	0.0020	0.0025
		225 - 275	Average	450	0.0008	0.0009	0.0010	0.0012	0.0015	0.0020	0.0025
		275 - 325	Average	400	0.0008	0.0009	0.0010	0.0012	0.0015	0.0020	0.0025
	Alloy Steel 4140, 5140, 8640	125 - 175	Average	575	0.0008	0.0009	0.0010	0.0012	0.0015	0.0020	0.0025
		175 - 225	Average	500	0.0008	0.0009	0.0010	0.0012	0.0015	0.0020	0.0025
		225 - 275	Average	450	0.0008	0.0009	0.0010	0.0012	0.0015	0.0020	0.0025
		275 - 325	Difficult	400	0.0008	0.0009	0.0010	0.0012	0.0015	0.0020	0.0025
		325 - 375	Difficult	375	0.0008	0.0009	0.0010	0.0012	0.0015	0.0020	0.0025
	High Strength Alloy 4340, 4330V, 300M	225 - 300	Average	450	0.0008	0.0009	0.0010	0.0012	0.0015	0.0020	0.0025
		300 - 350	Difficult	400	0.0008	0.0009	0.0010	0.0012	0.0015	0.0020	0.0025
		350 - 400	Difficult	350	0.0008	0.0009	0.0010	0.0012	0.0015	0.0020	0.0025
	Structural Steel A36, A285, A516	100 - 150	Average	600	0.0008	0.0010	0.0012	0.0015	0.0020	0.0025	0.0030
		150 - 250	Average	500	0.0008	0.0010	0.0012	0.0015	0.0020	0.0025	0.0030
		250 - 350	Difficult	450	0.0008	0.0010	0.0012	0.0015	0.0020	0.0025	0.0030
S	**High Temp Alloy** Hastelloy B, Inconel 600	140 - 220	Difficult	120	0.0005	0.0006	0.0008	0.0010	0.0015	0.0020	0.0025
		220 - 310	Difficult	90	0.0005	0.0006	0.0008	0.0010	0.0015	0.0020	0.0025
M	**Stainless Steel** 303, 416, 420	135 - 185	Difficult	525	0.0005	0.0007	0.0009	0.0015	0.0020	0.0025	0.0030
		185 - 275	Difficult	500	0.0005	0.0007	0.0009	0.0015	0.0020	0.0025	0.0030
	Stainless Steel PH 17-4	185 - 275	Difficult	300	0.0005	0.0007	0.0009	0.0015	0.0020	0.0025	0.0030
		275 - 325	Difficult	150	0.0005	0.0007	0.0009	0.0015	0.0020	0.0025	0.0030
	Tool Steel H-13, H21, A-4	150 - 200	Difficult	575	0.0008	0.0010	0.0012	0.0015	0.0020	0.0025	0.0030
		200 - 250	Difficult	500	0.0008	0.0010	0.0012	0.0015	0.0020	0.0025	0.0030
K	**Cast Iron** Grey, Ductile, Nodular	120 - 150	Easy	675	0.0008	0.0012	0.0015	0.0020	0.0030	0.0040	0.0050
		150 - 200	Easy	625	0.0008	0.0012	0.0015	0.0020	0.0030	0.0040	0.0050
		200 - 220	Easy	575	0.0008	0.0012	0.0015	0.0020	0.0030	0.0040	0.0050
		220 - 260	Average	500	0.0008	0.0012	0.0015	0.0020	0.0030	0.0040	0.0050
		260 - 320	Average	475	0.0008	0.0012	0.0015	0.0020	0.0030	0.0040	0.0050
N	**Wrought Aluminum** 6061 T6	30	Easy	1100	0.0015	0.0020	0.0025	0.0030	0.0040	0.0050	0.0060
		180	Easy	1000	0.0015	0.0020	0.0025	0.0030	0.0040	0.0050	0.0060
	Cast Aluminum** up to 10% silicon	120	Easy	625	0.0015	0.0020	0.0025	0.0030	0.0040	0.0050	0.0060
	Brass	30 - 125	Easy	1100	0.0020	0.0025	0.0030	0.0040	0.0045	0.0055	0.0065

NOTICE: Reduce feed and speed by 30% for tapered thread forms due to additional material removal
*Refer to recommended pass chart on page E: 45 when referencing material machinability
**Uncoated thread mills are recommended for cast aluminum applications

Recommended Cutting Data | Metric (mm)

Indexable | AccuThread™ 856 | Positive Rake

ISO	Material	Hardness (BHN)	Machinability**	Speed (M/min)	Recommended Feed (mm/tooth) by Cutter Diameter: 1 flute 9.53 - 12.70	1 flute 12.71 - 19.05	1 and 2 flutes 19.06 - 25.40	3 flutes 25.41 - 38.10	5 flutes 38.11 - 50.80	7 flutes 50.81 - 69.85	8 flutes 69.86 - 88.90
P	**Free Machining Steel** 1118, 1215, 12L14, etc.	100 - 150	Easy	274	0.020	0.025	0.030	0.038	0.051	0.064	0.076
		150 - 200	Easy	213	0.020	0.025	0.030	0.038	0.051	0.064	0.076
		200 - 250	Easy	152	0.020	0.025	0.030	0.038	0.051	0.064	0.076
	Low Carbon Steel 1010, 1020, 1025, 1522, 1144	85 - 125	Average	274	0.020	0.025	0.030	0.038	0.051	0.064	0.076
		125 - 175	Average	213	0.020	0.025	0.030	0.038	0.051	0.064	0.076
		175 - 225	Average	183	0.020	0.025	0.030	0.038	0.051	0.064	0.076
		225 - 275	Average	152	0.020	0.025	0.030	0.038	0.051	0.064	0.076
	Medium Carbon Steel 1010, 1040, 1050, 1527, 1140	125 - 175	Average	175	0.020	0.023	0.025	0.030	0.038	0.051	0.064
		175 - 225	Average	152	0.020	0.023	0.025	0.030	0.038	0.051	0.064
		225 - 275	Average	137	0.020	0.023	0.025	0.030	0.038	0.051	0.064
		275 - 325	Average	122	0.020	0.023	0.025	0.030	0.038	0.051	0.064
	Alloy Steel 4140, 5140, 8640	125 - 175	Average	175	0.020	0.023	0.025	0.030	0.038	0.051	0.064
		175 - 225	Average	152	0.020	0.023	0.025	0.030	0.038	0.051	0.064
		225 - 275	Average	137	0.020	0.023	0.025	0.030	0.038	0.051	0.064
		275 - 325	Difficult	122	0.020	0.023	0.025	0.030	0.038	0.051	0.064
		325 - 375	Difficult	114	0.020	0.023	0.025	0.030	0.038	0.051	0.064
	High Strength Alloy 4340, 4330V, 300M	225 - 300	Average	137	0.020	0.023	0.025	0.030	0.038	0.051	0.064
		300 - 350	Difficult	122	0.020	0.023	0.025	0.030	0.038	0.051	0.064
		350 - 400	Difficult	107	0.020	0.023	0.025	0.030	0.038	0.051	0.064
	Structural Steel A36, A285, A516	100 - 150	Average	183	0.020	0.025	0.030	0.038	0.051	0.064	0.076
		150 - 250	Average	152	0.020	0.025	0.030	0.038	0.051	0.064	0.076
		250 - 350	Difficult	137	0.020	0.025	0.030	0.038	0.051	0.064	0.076
S	**High Temp Alloy** Hastelloy B, Inconel 600	140 - 220	Difficult	37	0.013	0.015	0.020	0.025	0.038	0.051	0.064
		220 - 310	Difficult	27	0.013	0.015	0.020	0.025	0.038	0.051	0.064
M	**Stainless Steel** 303, 416, 420	135 - 185	Difficult	160	0.013	0.018	0.023	0.038	0.051	0.064	0.076
		185 - 275	Difficult	152	0.013	0.018	0.023	0.038	0.051	0.064	0.076
	Stainless Steel PH 17-4	185 - 275	Difficult	91	0.013	0.018	0.023	0.038	0.051	0.064	0.076
		275 - 325	Difficult	46	0.013	0.018	0.023	0.038	0.051	0.064	0.076
	Tool Steel H-13, H21, A-4	150 - 200	Difficult	175	0.020	0.025	0.030	0.038	0.051	0.064	0.076
		200 - 250	Difficult	152	0.020	0.025	0.030	0.038	0.051	0.064	0.076
K	**Cast Iron** Grey, Ductile, Nodular	120 - 150	Easy	206	0.020	0.030	0.038	0.051	0.076	0.102	0.127
		150 - 200	Easy	191	0.020	0.030	0.038	0.051	0.076	0.102	0.127
		200 - 220	Easy	175	0.020	0.030	0.038	0.051	0.076	0.102	0.127
		220 - 260	Average	152	0.020	0.030	0.038	0.051	0.076	0.102	0.127
		260 - 320	Average	145	0.020	0.030	0.038	0.051	0.076	0.102	0.127
N	**Wrought Aluminum** 6061 T6	30	Easy	335	0.038	0.051	0.064	0.076	0.102	0.127	0.152
		180	Easy	305	0.038	0.051	0.064	0.076	0.102	0.127	0.152
	Cast Aluminum** up to 10% silicon	120	Easy	191	0.038	0.051	0.064	0.076	0.102	0.127	0.152
	Brass	30 - 125	Easy	335	0.051	0.064	0.076	0.102	0.114	0.140	0.165

NOTICE: Reduce feed and speed by 30% for tapered thread forms due to additional material removal

*Refer to recommended pass chart on page E: 45 when referencing material machinability

**Uncoated thread mills are recommended for cast aluminum applications

Recommended Cutting Data | Imperial (inch)

Indexable | AccuThread™ 856 | Neutral Rake

ISO	Material	Hardness (BHN)	Machinability**	Speed (SFM)	Recommended Feed (inch/tooth) by Cutter Diameter		
					3 flutes	5 flutes	6 flutes
					1.000 - 1.499	1.500 - 1.999	2.000 - 2.750
P	**Free Machining Steel**	100 - 150	Easy	765	0.0013	0.0017	0.0021
	1118, 1215, 12L14, etc.	150 - 200	Easy	595	0.0013	0.0017	0.0021
		200 - 250	Easy	425	0.0013	0.0017	0.0021
	Low Carbon Steel	85 - 125	Average	765	0.0013	0.0017	0.0021
	1010, 1020, 1025, 1522, 1144	125 - 175	Average	595	0.0013	0.0017	0.0021
		175 - 225	Average	510	0.0013	0.0017	0.0021
		225 - 275	Average	425	0.0013	0.0017	0.0021
	Medium Carbon Steel	125 - 175	Average	490	0.0010	0.0013	0.0017
	1010, 1040, 1050, 1527, 1140	175 - 225	Average	425	0.0010	0.0013	0.0017
		225 - 275	Average	380	0.0010	0.0013	0.0017
		275 - 325	Average	340	0.0010	0.0013	0.0017
	Alloy Steel	125 - 175	Average	490	0.0010	0.0013	0.0017
	4140, 5140, 8640	175 - 225	Average	425	0.0010	0.0013	0.0017
		225 - 275	Average	380	0.0010	0.0013	0.0017
		275 - 325	Difficult	340	0.0010	0.0013	0.0017
		325 - 375	Difficult	320	0.0010	0.0013	0.0017
	High Strength Alloy	225 - 300	Average	390	0.0010	0.0013	0.0017
	4340, 4330V, 300M	300 - 350	Difficult	340	0.0010	0.0013	0.0017
		350 - 400	Difficult	300	0.0010	0.0013	0.0017
	Structural Steel	100 - 150	Average	510	0.0013	0.0017	0.0021
	A36, A285, A516	150 - 250	Average	425	0.0013	0.0017	0.0021
		250 - 350	Difficult	390	0.0013	0.0017	0.0021
S	**High Temp Alloy**	140 - 220	Difficult	–	–	–	–
	Hastelloy B, Inconel 600	220 - 310	Difficult	–	–	–	–
M	**Stainless Steel**	135 - 185	Difficult	–	–	–	–
	303, 416, 420	185 - 275	Difficult	–	–	–	–
	Stainless Steel PH	185 - 275	Difficult	–	–	–	–
	17-4	275 - 325	Difficult	–	–	–	–
	Tool Steel	150 - 200	Difficult	–	–	–	–
	H-13, H21, A-4	200 - 250	Difficult	–	–	–	–
K	**Cast Iron**	120 - 150	Easy	575	0.0017	0.0026	0.0034
	Grey, Ductile, Nodular	150 - 200	Easy	525	0.0017	0.0026	0.0034
		200 - 220	Easy	490	0.0017	0.0026	0.0034
		220 - 260	Average	425	0.0017	0.0026	0.0034
		260 - 320	Average	400	0.0017	0.0026	0.0034
N	**Wrought Aluminum**	30	Easy	–	–	–	–
	6061 T6	180	Easy	–	–	–	–
	Cast Aluminum** up to 10% silicon	120	Easy	–	–	–	–
	Brass	30 - 125	Easy	–	–	–	–

NOTICE: Reduce feed and speed by 30% for tapered thread forms due to additional material removal
*Refer to recommended pass chart on page E: 45 when referencing material machinability
**Uncoated thread mills are recommended for cast aluminum applications

Recommended Cutting Data | Metric (mm)

Indexable | AccuThread™ 856 | Neutral Rake

ISO	Material	Hardness (BHN)	Machinability**	Speed (M/min)	Recommended Feed (mm/tooth) by Cutter Diameter		
					3 flutes	5 flutes	6 flutes
					25.41 - 38.09	38.10 - 50.77	50.78 - 69.85
P	**Free Machining Steel**	100 - 150	Easy	233	0.032	0.043	0.054
	1118, 1215, 12L14, etc.	150 - 200	Easy	181	0.032	0.043	0.054
		200 - 250	Easy	129	0.032	0.043	0.054
	Low Carbon Steel	85 - 125	Average	233	0.032	0.043	0.054
	1010, 1020, 1025, 1522, 1144	125 - 175	Average	181	0.032	0.043	0.054
		175 - 225	Average	156	0.032	0.043	0.054
		225 - 275	Average	129	0.032	0.043	0.054
	Medium Carbon Steel	125 - 175	Average	149	0.026	0.032	0.043
	1010, 1040, 1050, 1527, 1140	175 - 225	Average	129	0.026	0.032	0.043
		225 - 275	Average	116	0.026	0.032	0.043
		275 - 325	Average	104	0.026	0.032	0.043
	Alloy Steel	125 - 175	Average	149	0.026	0.032	0.043
	4140, 5140, 8640	175 - 225	Average	129	0.026	0.032	0.043
		225 - 275	Average	116	0.026	0.032	0.043
		275 - 325	Difficult	104	0.026	0.032	0.043
		325 - 375	Difficult	97	0.026	0.032	0.043
	High Strength Alloy	225 - 300	Average	116	0.026	0.032	0.043
	4340, 4330V, 300M	300 - 350	Difficult	104	0.026	0.032	0.043
		350 - 400	Difficult	91	0.026	0.032	0.043
	Structural Steel	100 - 150	Average	156	0.032	0.043	0.054
	A36, A285, A516	150 - 250	Average	129	0.032	0.043	0.054
		250 - 350	Difficult	116	0.032	0.043	0.054
S	**High Temp Alloy**	140 - 220	Difficult	–	–	–	–
	Hastelloy B, Inconel 600	220 - 310	Difficult	–	–	–	–
M	**Stainless Steel**	135 - 185	Difficult	–	–	–	–
	303, 416, 420	185 - 275	Difficult	–	–	–	–
	Stainless Steel PH	185 - 275	Difficult	–	–	–	–
	17-4	275 - 325	Difficult	–	–	–	–
	Tool Steel	150 - 200	Difficult	–	–	–	–
	H-13, H21, A-4	200 - 250	Difficult	–	–	–	–
K	**Cast Iron**	120 - 150	Easy	175	0.043	0.065	0.087
	Grey, Ductile, Nodular	150 - 200	Easy	162	0.043	0.065	0.087
		200 - 220	Easy	149	0.043	0.065	0.087
		220 - 260	Average	129	0.043	0.065	0.087
		260 - 320	Average	123	0.043	0.065	0.087
N	**Wrought Aluminum**	30	Easy	–	–	–	–
	6061 T6	180	Easy	–	–	–	–
	Cast Aluminum** up to 10% silicon	120	Easy	–	–	–	–
	Brass	30 - 125	Easy	–	–	–	–

NOTICE: Reduce feed and speed by 30% for tapered thread forms due to additional material removal
*Refer to recommended pass chart on page E: 45 when referencing material machinability
**Uncoated thread mills are recommended for cast aluminum applications

Thread Mill Programming Guide

What you need to know
- Thread milling can be easily accomplished with simple G code programming
- If your machine is capable of 3 axis (helical) interpolation, you can and **should** be thread milling
- Basic programming of a one pass thread mill can be achieved in 6 basic steps

AVAILABLE ONLINE 24/7
or download *INSTA-CODE*™
visit www.alliedmachine.com

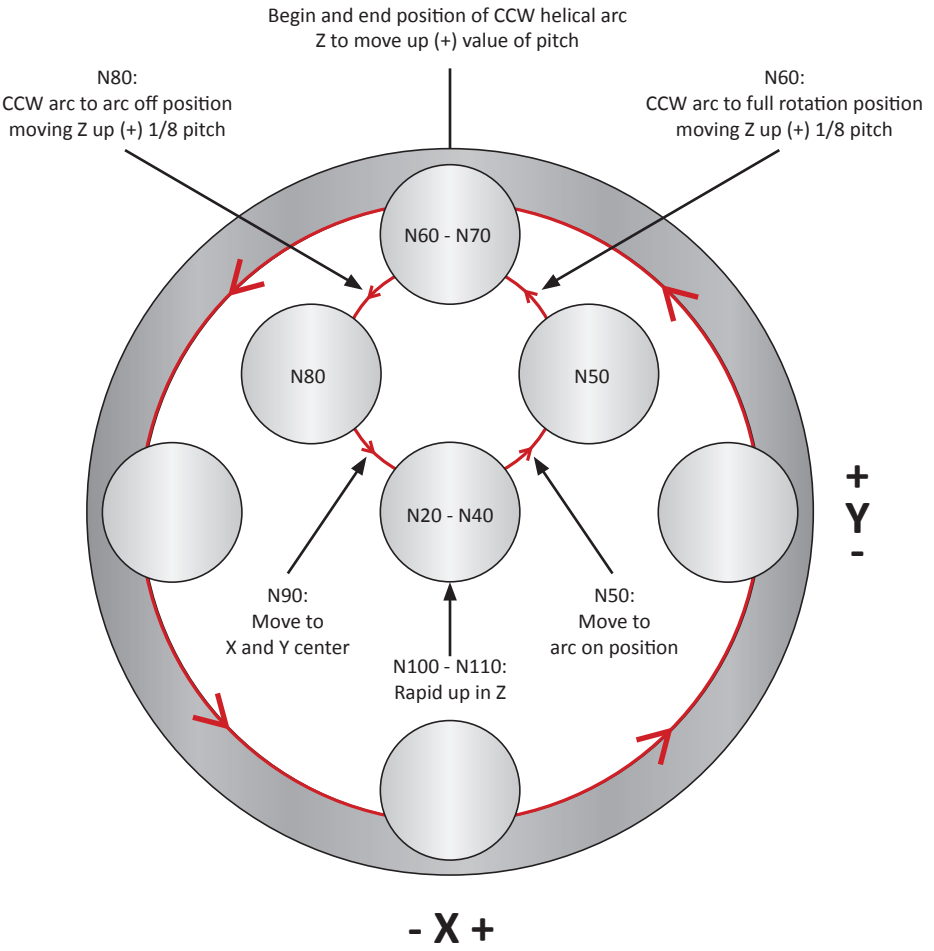
The following are examples of how to calculate and program a 7/16-20 right hand thread that will be 1/2 deep produced in one pass

Major thread diameter	**0.4375**	Major diameter of thread (7/16 = 0.4375)
Threads per inch	**20**	Number of threads per inch (20 is from 7/16-20 designation)
Length of thread	**0.5**	Desired length of cut
SFM	**475**	Recommended surface footage for material to be cut
Feed per flute	**0.0025**	Recommended feed rate per cutting edge
Number of flutes	**4**	Number of flutes on tool to be used
Tool diameter	**0.335**	Diameter of cutting tool
Using the information above, the values can be calculated:		
Pitch	**0.05**	= 1 / thread per inch
RPM	**5416**	(SFM • 3.82) / Tool diameter
Linear feed	**54.16**	RPM • Feed per flute • Number of flutes
Feed rate for thread milling	**12.69**	Linear feed • ((Major thread diameter - Tool diameter) / Major thread diameter)
Z axis move on arc on	**0.0063**	(Pitch / 8)
Z axis move for full thread	**0.5063**	(Pitch / 8) + Length of cut
Arc on/off	**0.0256**	(Major thread diameter - Tool diameter) / 4
Full rotation value	**0.05125**	(Major thread diameter - Tool diameter) / 2

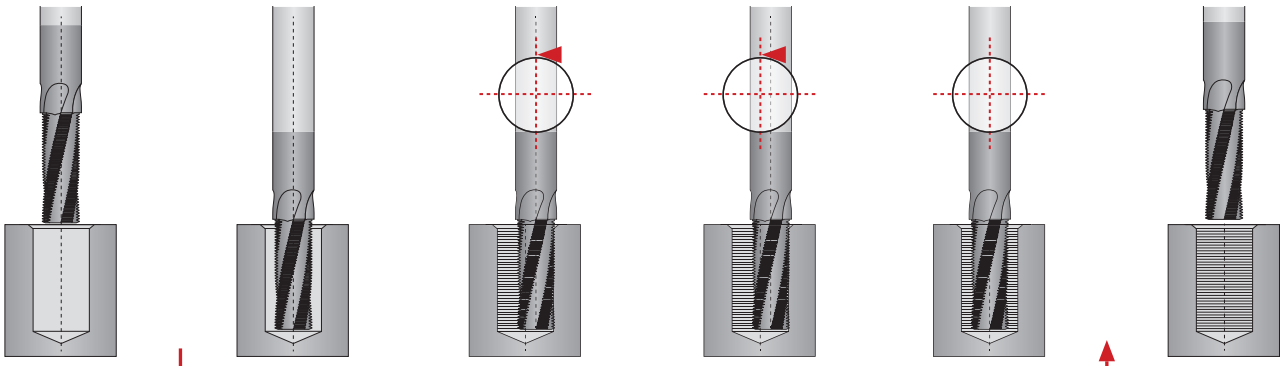
Major thread diameter	0.4375
Cutter diameter	0.335
Length of thread	0.5

Feed rate for thread milling	12.69
Z axis depth for full thread	0.5063
Z axis for arc on/off	0.0063

Arc on/off value	0.0256
Full rotation value	0.05125
Pitch value	0.05



	N10	S		5416	M03			
1			Absolute position in rapid to center of hole in X and Y, then rapid to Z0 (level with surface of hole)(assumed to be X0, Y0, Z0 for demonstration purposes). To be done by customer.					
	N20	G90	G00	X 0.0000	Y 0.0000			
	N30					Z 0.0000		
			Switch to incremental positioning and high feed to Z axis depth for full thread.					
2	N 40	G91	G01			Z -0.5063		F 50.0
			Activate left diameter compensation for tool number 1 (needs to be whatever tool number you are using) and feed to arc on/off position at 1/4 feed rate for thread milling.					
	N50	G41	G01	X 0.0256	Y 0.0256		D1	F 3.17
3			CCW arc from full rotation from the arc on position at the calculated thread milling feed rate moving Z up (+) 1/8 pitch value (Z axis move up for arc on/off). X and Y positions are the incremental distance from where tool is to where it will be after arc (arc on/off value). 1 is the incremental X value of center of rotation from where tool currently is arc on/off value *-1. J is the incremental Y value from current tool position to center of rotation.					
	N60		G03	X -0.0256	Y 0.0256	Z 0.0063	I -0.0256	J 0.0000	F 12.69
			One complete CCW arc from the full arc rotation position at the calculated thread milling feed rate moving Z up (positive pitch value). I and J values are calculated same as above. I will be 0.0 and J will be full rotation value *-1.					
4	N70		G03	X 0.0000	Y 0.0000	Z 0.0500	I 0.0000	J -0.0513	F 12.69
			CCw arc from full rotation diameter to arc off position at double the calculated thread milling feed rate moving Z up (+) 1/8 pitch value (Z axis move up for arc on/off). I and J values are calculated same as above.					
	N80		G03	X -0.0256	Y -0.0256	Z 0.0063	I 0.0000	J -0.0256	F 25.38
5			Shut off cutter comp and move from arc off position to center of hole in X (arc on/off value -1) and Y (arc on/off value *-1) at high feed rate.					
	N90	G40	G01	X 0.0256	Y -0.0256			
			Rapid Z up incremental value (length of thread - all Z values in G03 arc commands).					
	N100		G00			Z 0.4438		
6			Switch back to absolute positioning and rapid to a safe point in Z above part level (assumed to be 1 above part level for demonstration purposes).					
	N110	G90	G00				Z 1.0000	



Step 1 N10 - N30	Step 2 N40	Step 3 N50 - N60	Step 4 N70	Step 5 N80 - N90	Step 6 N100 - N110
• Preparatory commands • Positioning above hole center and at hole level in Z • In absolute position mode	• Change to incremental • Feed to bottom of hole • Z axis depth for full thread	• Activate left cutter comp • Feed to arc on position • Arc to full rotation value while moving Z up 1/8 pitch • Z axis move for arc on	• One complete CCW rotation at full arc rotation value while moving Z up 1 pitch value	• CCW arc from full rotation value to the arc on/off value while moving Z up 1/8 pitch (Z axis move for arc off)	• Rapid up in Z

Thread Mill Troubleshooting Guide

Causes		Problem: Thread mill is showing accelerated or excessive wear	Cutting edges are chipping	Thread mill is breaking in the first hole of part	Thread mill is creating excessive chatter	Out of round thread is produced	Bell mouthed thread form (small at bottom, big at top)	Part rejection because of rough flank finish	Steps in thread profile	Gauge difference from part to part	Machine not making correct paths to create thread profile	Control not accepting the program
Catalog	Incorrect tool selection			1	1							
	Incorrect speed and feed selection	2, 3	2, 3		2, 3			2, 3				
Speed and Feed	RPM too high	5										
	RPM too low				4		4	4				
	Machine tool specifications restrict RPMs			5, 19								
	Feed rate too high		7	7			7	7	7			
	Feed rate too low	6										
	Incorrect adjusted feed rate adjustment ratio			12								
	Machine tool specification restricts feed rate					7, 19						
	Ramp-in is programmed as an axial move			20					20			
Tool	Thread mill moved or slipped in its holding device	13	13	13	13			13	13			
	Tool is sticking out of the holder too far	15	15	15	15			15	15	15		
	Runout between thread mill and holder				10			10				
	Incorrect coating creating built up edge	8, 17								8, 17		
	Helix angle too low				9			9				
	Excessive thread mill wear								11	11		
	Excessive tool pressure	7, 11, 14					7, 11, 14					
Machine	Workpiece moving in its fixturing	16	16	16	16			16		16		
	Insufficient coolant pressure or flow	17	17									
	Lack of machine rigidity	16	16		16		16	16				
Programming	Incorrect number of passes			22			22					
	Incorrect program variables			18, 26							18, 26	
	Did not account for X/Y radial moves for tapered threads										24, 26	
	Incorrect cutter compensation variables			23, 26								23, 26
	Helical interpolation option not on machine or turned off										21, 26	21, 26
	Machine tool control is not formatted to standard EIA/ASCII/ISO Code											25, 26

Troubleshooting Solutions

1. Refer to catalog to ensure proper tool selection.
2. Verify the correct speed was selected from the catalog speed and feed chart.
3. Verify the correct feed rate was selected from the catalog speed and feed chart.
4. Increase the spindle speed (RPM).
5. Decrease the spindle speed (RPM).
6. Increase feed per tooth.
7. Decrease feed per tooth.
8. Investigate other coatings.
9. Increase the tool helix.
10. Gauge runout between thread mill and tool holder.
11. Perform tool change at quicker intervals.
12. Adjust the feed rate ratio properly to the correct actual penetration rate for internal threads. Refer to speed and feed pages for formula.
13. Use hydraulic clamping chuck.
14. Check the tool for excessive wear. Beginning threads will wear the fastest.
15. Make the amount of overhang in the holding device as short as possible.
16. Verify the workpiece is properly clamped. Re-tighten or increase stability if necessary.
17. Increase the coolant flow and volume.
18. Check the milling program variables, especially the positive or negative value associated with I and J values.
19. Make sure the machine has the appropriate axis and path speed capabilities.
20. Make sure the thread mill is arcing in the major diameter instead of making a radial move.
21. Make sure the machine tool has a helical interpolation option that is on.
22. Increase the number of thread mill passes.
23. Make sure the cutter compensation variables are input into the G41 program line.
24. Adjust the program for pipe tap threads to taper out on diameter in X/Y directions to create proper form.
25. Request information from the machine tool builder regarding its programming formats.
26. Scan and email a copy of your program to the Application Engineering department at **appeng@alliedmachine.com**.

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