Milling

> **Thread Milling**
Standard
MiTM
TMSD
Solid Carbide

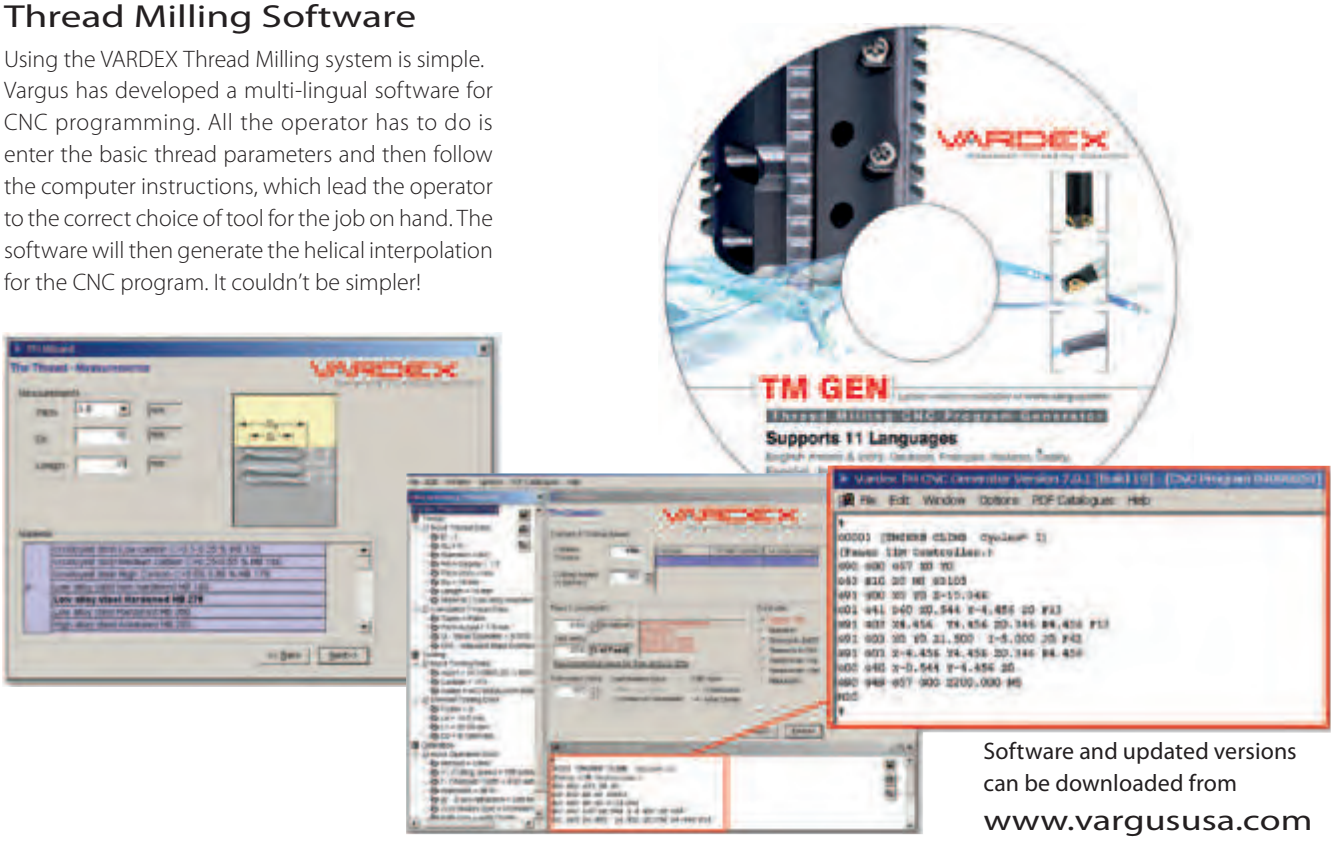
> **Groove Milling**

MILLING

VARGUS TM Gen Software for CNC Programming

Thread Milling Software

Using the VARDEX Thread Milling system is simple. Vargus has developed a multi-lingual software for CNC programming. All the operator has to do is enter the basic thread parameters and then follow the computer instructions, which lead the operator to the correct choice of tool for the job on hand. The software will then generate the helical interpolation for the CNC program. It couldn't be simpler!



Software and updated versions can be downloaded from

www.vargususa.com

A Tool for EVERY Thread Milling Job!

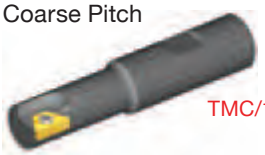
Regular Threads

Standard Thread


From M15x1.0 (9/16"x32UN)

Conical Thread


From 1/4"x18NPT

Coarse Pitch


From M10x0.75 (7/16"x20UNF)

Short & Long Threads

Short Thread


From Pitch 0.35mm (80 TPI)

Long Thread


Up to 98.0mm (3.86")

Extra Long Thread


Up to 144mm (5.7")

Extra Long Thread


Up to 200mm (7.88")

Small & Large Pitches

Fine


From pitch 0.35mm (80 TPI)

Large - Multi Tooth


Up to ISO 6.0 (4UN)

Large - Single Point


Up to ISO 6.0 (4UN)

Fewer Cycles

Long Inserts


Up to 38.9mm (1.53")

Offset Inserts


Effective length up to 50.8mm (2.0")

Multi-Flute for Faster Machining

Small & Medium Diameter


Up to 5 flutes

Medium Diameter


2 flutes

Large Diameter


Up to 9 flutes

Large Diameter


Up to 8 flutes

Small Thread Diameters

Indexable Inserts


From M10x0.75 (7/16"x32UN)

Extremely Small Threads


From M1.0x0.25 (0-80UNF) Up to 62 HRc

Long Thread


From M6x1, Max thread length 63mm (2.362")

Normal Use


From M4.5x0.75 (No.8-36UNF)

Heavy Duty


From M3x0.5 (No.10-32UNF)

Radial Coolant


From M6x1.0

Helicool+Chamfer


From M6x1.0

Economical Tool


From M3x0.5 (No.8-36UNF)

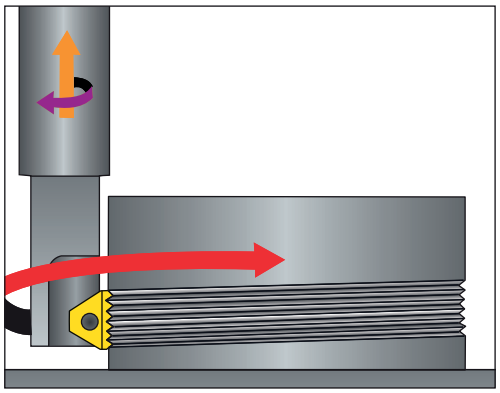
Drill, Thread and Chamfer


From M6x1.0

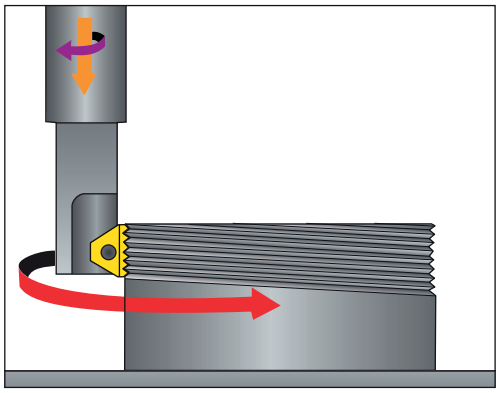
Thread Milling Methods

External

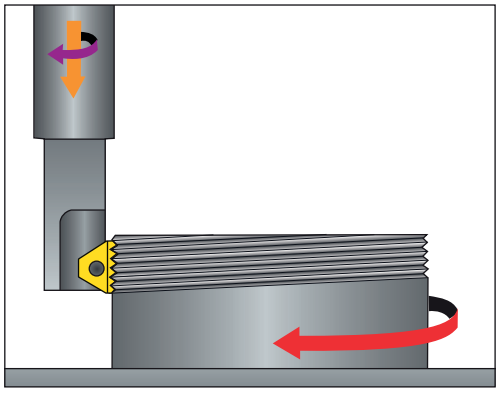
Right Hand Thread - Conventional Milling



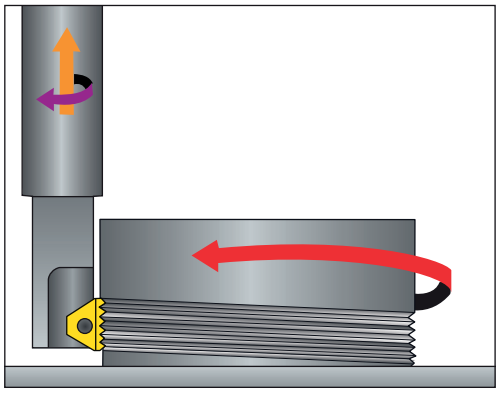
Left Hand Thread - Conventional Milling



Right Hand Thread - Climb Milling

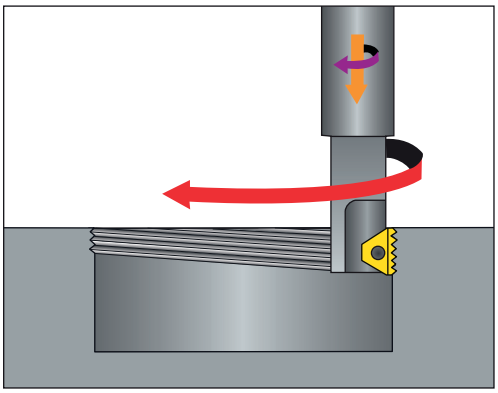


Left Hand Thread - Climb Milling

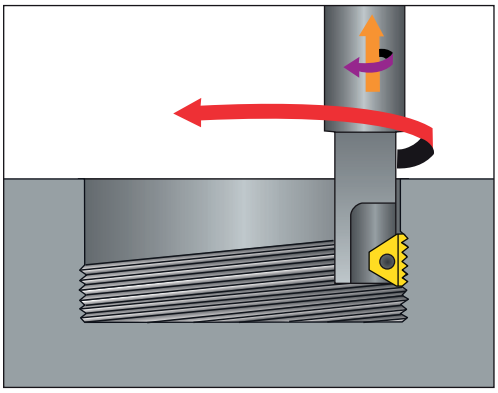


Internal

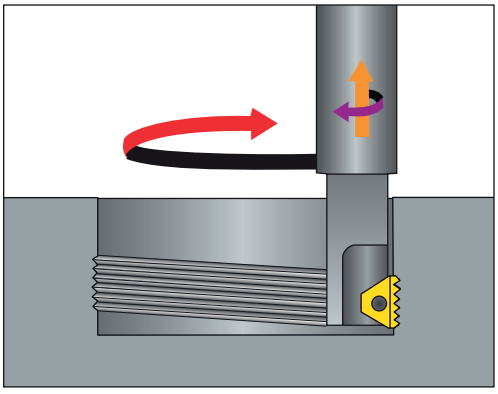
Right Hand Thread - Conventional Milling



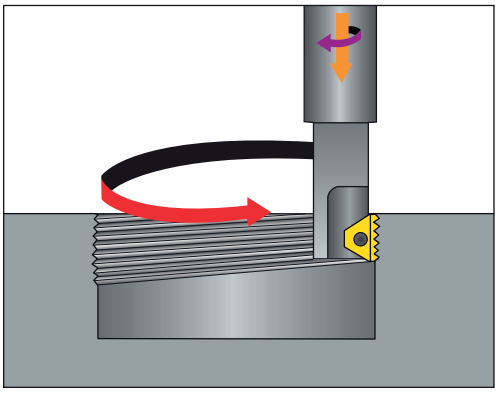
Left Hand Thread - Conventional Milling



Right Hand Thread - Climb Milling



Left Hand Thread - Climb Milling



Tooling recommendation*

(For MiTM tools see page 258)
(For TMSD tools see page 277)
(For TM Solid Carbide tools see page 291)

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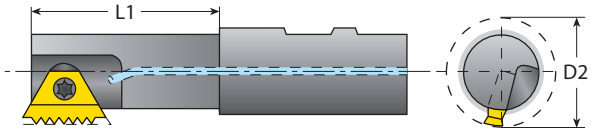
ISO - Internal

Pitch	Nominal Dia.	Holder	Insert	L1-Toolholder	D2-Tool	h min - Thread
mm	mm			Overhang	Cutting dia.*	Profile depth
0.75	10	TMMC050-6.0	6.0I0.75ISOTM...028/001	0.47	0.35	0.017
	11	TMMC050-6.0	6.0I0.75ISOTM...	0.47	0.35	
1.0	12-14	TMMC050-6.0	6.0I1.0ISOTM..	0.47	0.35	0.023
	15-18	TMC050-2	2I1.0ISOTM2...	0.47	0.45	
	20	TMC0625-3	3I1.0ISOTM2...	0.87	0.67	
	22	BTMC075-3B	3BI1.0ISOTM2...	1.14	0.75	
	24	TMC075-3	3I1.0ISOTM2...	1.69	0.79	
	25-28	TMLC100-3	3I1.0ISOTM2...	0.98	0.87	
	30	TM2C100-3	3I1.0ISOTM2...	1.69	1.02	
1.25	12	TMMC050-6.0	6.0I1.25ISOTM...028/002	0.47	0.35	0.028
	14	TMMC050-6.0	6.0I1.25ISOTM...	0.47	0.35	
1.5	14-15	TMMC050-6.0	6.0I1.5ISOTM...	0.47	0.35	0.034
	16-20	TMC050-2	2I1.5ISOTM2...	0.47	0.45	
	22	TMC0625-3	3I1.5ISOTM2...	0.87	0.67	
	24	BTMC075-3B	3BI1.5ISOTM2...	1.14	0.75	
	25-26	TMC075-3	3I1.5ISOTM2...	1.69	0.79	
	27-30	TMLC100-3	3I1.5ISOTM2...	0.98	0.87	
	32-33	TM2C100-3	3I1.5ISOTM2...	1.69	1.02	
	35-42	TMC100-5	5I1.5ISOTM2...	2.05	1.18	
	45	TMC125-5	5I1.5ISOTM2...	2.28	1.46	
	48-55	TM2C125-5	5I1.5ISOTM2...	1.77	1.65	
	56-68	TMSH-D200-075-3	3I1.5ISOTM2...		1.97	
	70-80	TMSH-D250-075-5	5I1.5ISOTM2...		2.48	
1.75	12	TMMC075-6.0 124/203	6.0I1.75ISOTM...028/003	0.59	0.35	0.04
2.0	14-20	TMC050-2	2I2.0ISOTM...028/004	0.47	0.45	0.045
	22	TMNC0625-3	3I2.0ISOTM2...	0.87	0.61	
	24	TMC0625-3	3I2.0ISOTM2...	0.87	0.67	
	25	BTMC075-3B	3BI2.0ISOTM2...	1.14	0.75	
	27	TMC075-3	3I2.0ISOTM2...	1.69	0.79	
	28-32	TMLC100-3	3I2.0ISOTM2...	0.98	0.87	
	33-36	TM2C100-3	3I2.0ISOTM2...	1.69	1.02	
	39-42	TMC100-5	5I2.0ISOTM2...	2.05	1.18	
	45-48	TMC125-5	5I2.0ISOTM2...	2.28	1.46	
	50-56	TM2C125-5	5I2.0ISOTM2...	1.77	1.65	
	58-68	TMSH-D200-075-3	3I2.0ISOTM2...		1.97	
	70-85	TMSH-D250-075-5	5I2.0ISOTM2...		2.48	
	90-105	TMSH-D300-100-5	5I2.0ISOTM2...		3.15	
	110-130	TMSH-D400-125-5	5I2.0ISOTM2...		3.94	
	135-150	TMSH-D500-150-5	5I2.0ISOTM2...		4.92	
2.5	20	TMC0625-3 124/201	3I2.5ISOTM...028/005	0.81	0.61	0.057
	22	TMC100-4 124/202	4I2.5ISOTM...028/006	1.18	0.71	



* The recommended holder is the largest for the given thread specification.
Holder with smaller or equal cutting diameters (D2) can also be used (Except inserts 028/...).

Tooling recommendation (con't)*

(For MiTM tools see page 258)
(For TMSD tools see page 277)
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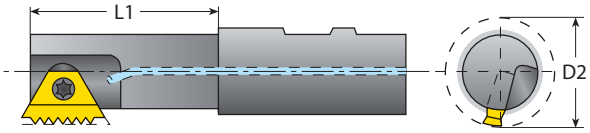
ISO - Internal (con't)

Pitch	Nominal Dia.	Holder	Insert	L1-Toolholder	D2-Tool	h min - Thread
mm	mm			Overhang	Cutting dia.*	Profile depth
3.0	24-33	TMC100-4 124/202	4I3.0ISOTM...028/007	1.18	0.71	0.068
	36-40	TMC100-5	5I3.0ISOTM...028/009	2.05	1.18	
	42-48	TMC100-5	5I3.0ISOTM2...	2.05	1.18	
	50-52	TMC125-5	5I3.0ISOTM2...	2.28	1.46	
	55-72	TM2C125-5	5I3.0ISOTM2...	1.77	1.65	
	75-90	TMSH-D250-075-5	5I3.0ISOTM2...		2.48	
	95-110	TMSH-D300-100-5	5I3.0ISOTM2...		3.15	
	115-135	TMSH-D400-125-5	5I3.0ISOTM2...		3.94	
	140-250	TMSH-D500-150-5	5I3.0ISOTM2...		4.92	
3.5	30-33	TMC100-5 124/204	5I3.5ISOTM...028/008	1.57	0.98	0.080
4.0	36-42	TMC100-5	5I4.0ISOTM...028/010	2.05	1.18	0.091
	45-52	TMC100-5	5I4.0ISOTM2...	2.05	1.18	
	55	TMC125-6B	6BI4.0ISOTM2...	2.17	1.38	
	56-58	TMC125-5	5I4.0ISOTM2...	2.28	1.46	
	60-65	TMC150-6B	6BI4.0ISOTM2...	2.56	1.81	
	68-76	TM2C150-6B	6BI4.0ISOTM2...	2.56	2.05	
	80-90	TMSH-D250-075-6B	6BI4.0ISOTM2...		2.48	
	95-110	TMSH-D300-100-6B	6BI4.0ISOTM2...		3.15	
	115-135	TMSH-D400-125-6B	6BI4.0ISOTM2...		3.94	
	140-300	TMSH-D500-150-6B	6BI4.0ISOTM2...		4.92	
4.5	42-45	TMC100-5	5I4.5ISOTM...028/011	2.05	1.18	0.102
5.0	48-52	TMC100-5	5I5.0ISOTM...028/075	2.05	1.18	0.114
		TMC125-6B	6BI5.0ISOTM2...	2.17	1.38	
5.5	56	TMC125-6B	6BI5.5ISOTM2...	2.17	1.38	0.125
	60	TMC150-6B	6BI5.5ISOTM2...	2.56	1.81	
6.0	64-68	TMC150-6B	6BI6.0ISOTM2...	2.56	1.81	0.136
	70-80	TM2C150-6B	6BI6.0ISOTM2...	2.56	2.05	
	85-100	TMSH-D250-075-6B	6BI6.0ISOTM2...		2.48	
	105-120	TMSH-D300-100-6B	6BI6.0ISOTM2...		3.15	
	125-145	TMSH-D400-125-6B	6BI6.0ISOTM2...		3.94	
	150-300	TMSH-D500-150-6B	6BI6.0ISOTM2...		4.92	



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Holder with smaller or equal cutting diameters (D2) can also be used (Except inserts 028/...).

Tooling recommendation (con't)*

(For MiTM tools see page 258)
(For TMSD tools see page 277)
(For TM Solid Carbide tools see page 291)

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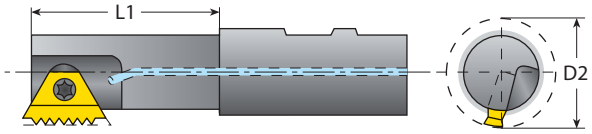
UN - Internal

Pitch	Nominal Dia.	Holder	Insert	L1-Toolholder	D2-Tool	h min - Thread
tpi	Inch			Overhang	Cutting dia.*	Profile depth
32	7/16-1/2	TMMC050-6.0	6.0I32UNTM...	0.47	0.35	0.018
	9/16-11/16	TMC050-2	2I32UNTM2...	0.47	0.45	
	3/4-13/16	TMC0625-3	3I32UNTM2...	0.87	0.67	
	7/8-15/16	TMC075-3	3I32UNTM2...	1.69	0.79	
	1	TMLC100-3	3I32UNTM2...	0.98	0.87	
28	7/16-1/2	TMMC050-6.0	6.0I28UNTM...	0.47	0.35	0.020
	9/16-3/4	TMC050-2	2I28UNTM2...	0.47	0.45	
	13/16-7/8	TMC0625-3	3I28UNTM2...	0.87	0.67	
	15/16	TMC075-3	3I28UNTM2...	1.77	0.79	
	1-1 1/8	TMLC100-3	3I28UNTM2...	0.98	0.87	
	1 3/16-1 1/2	TM2C100-3	3I28UNTM2...	1.69	1.02	
24	9/16-11/16	TMC050-2	2I24UNTM2...	0.47	0.45	0.024
20	7/16	TMMC050-6.0	6.0I20UNTM...028/012	0.47	0.35	0.029
	1/2-9/16	TMMC050-6.0	6.0I20UNTM...	0.47	0.35	
	5/8-13/16	TMC050-2	2I20UNTM2...	0.47	0.45	
	7/8	TMC0625-3	3I20UNTM2...	0.87	0.67	
	15/16-1	TMC075-3	3I20UNTM2...	1.69	0.79	
	1 1/16-1 1/8	TMLC100-3	3I20UNTM2...	0.98	0.87	
	1 3/16-1 5/16	TM2C100-3	3I20UNTM2...	1.69	1.02	
	1 3/8-1 5/8	TMC100-5	5I20UNTM2...	2.05	1.18	
	1 11/16-1 13/16	TMC125-5	5I20UNTM2...	2.28	1.46	
	1 7/8-2 1/8	TM2C125-5	5I20UNTM2...	1.77	1.65	
	2 1/4-2 5/8	TMSH-D200-075-3	3I20UNTM2...		1.97	
	2 3/4-3	TMSH-D250-075-5	5I20UNTM2...		2.48	
18	9/16	TMC050-2	2I18UNTM...028/017	0.47	0.45	0.032
	5/8	TMC050-2	2I18UNTM2...	0.47	0.45	
	1 1/16-1 3/16	TMLC100-3	3I18UNTM2...	0.98	0.87	
	1 1/4-1 3/8	TM2C100-3	3I18UNTM2...	1.69	1.02	
	1 7/16-1 5/8	TMC100-5	5I18UNTM2...	2.05	1.18	
	1 11/16	TMC125-5	5I18UNTM2...	2.28	1.46	
16	7/16-5/8	TMMC050-6.0	6.0I16UNTM...028/014	0.47	0.35	0.036
	11/16-13/16	TMC050-2	2I16UNTM2...	0.47	0.45	
	7/8-15/16	TMC0625-3	3I16UNTM2...	0.87	0.67	
	1	TMC075-3	3I16UNTM2...	1.69	0.79	
	1 1/16-1 3/16	TMLC100-3	3I16UNTM2...	0.98	0.87	
	1 1/4-1 3/8	TM2C100-3	3I16UNTM2...	1.69	1.02	
	1 7/16-1 5/8	TMC100-5	5I16UNTM2...	2.05	1.18	
	1 11/16-1 7/8	TMC125-5	5I16UNTM2...	2.28	1.46	
	1 15/16-2 3/16	TM2C125-5	5I16UNTM2...	1.77	1.65	
	2 1/4-2 5/8	TMSH-D200-075-3	3I16UNTM2...		1.97	
	2 3/4-3 3/8	TMSH-D250-075-5	5I16UN TM2...		2.48	



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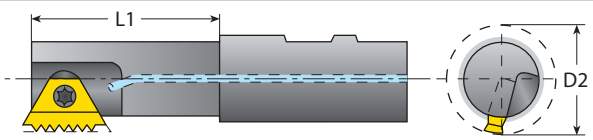
UN - Internal (con"t)

Pitch	Nominal Dia.	Holder	Insert	L1-Toolholder	D2-Tool	h min - Thread
tpi	Inch			Overhang	Cutting dia.*	Profile depth
16	3 1/2-4	TMSH-D300-100-5	5I16UNTM2...		3.15	0.036
14	7/16	TMMC075-6.0 124/203	6.0I14UNTM...028/013	0.59	0.35	0.041
	7/8	TMC050-2	2I14UNTM2...	0.47	0.45	
13	1/2	TMC075-2 124/205	2I13UNTM...028/015	0.61	0.39	0.044
12	9/16-11/16	TMC075-2 124/205	2I12UNTM...028/016	0.61	0.39	0.048
	3/4	TMNC0625-3	3I12UNTM...028/020	0.87	0.61	
	13/16	TMC0625-3	3I12UNTM...028/020	0.87	0.67	
	7/8	TMNC0625-3	3I12UNTM2...	0.87	0.61	
	15/16	TMC0625-3	3I12UNTM2...	0.87	0.67	
	1	BTMC075-3B	3BI12UNTM2...	1.14	0.75	
	1 1/16	TMC075-3	3I12UNTM2...	1.69	0.79	
	1 1/8-1 1/4	TMLC100-3	3I12UNTM2...	0.98	0.87	
	1 5/16-1 7/16	TM2C100-3	3I12UNTM2...	1.69	1.02	
	1 1/2-1 11/16	TMC100-5	5I12UNTM2...	2.05	1.18	
	1 3/4-1 15/16	TMC125-5	5I12UNTM2...	2.28	1.46	
	2-2 1/4	TM2C125-5	5I12UNTM2...	1.77	1.65	
	2 3/8-2 3/4	TMSH-D200-075-3	3I12UNTM2...		1.97	
	2 7/8-3 3/8	TMSH-D250-075-5	5I12UNTM2...		2.48	
	3 1/2-4	TMSH-D300-100-5	5I12UNTM2...		3.15	
11	5/8	TMC075-2 124/206	2I11UNTM...028/018	0.61	0.47	0.052
10	3/4	TMC0625-3 124/201	3I10UNTM...028/019	0.81	0.61	0.058
9	7/8	TMC100-4 124/202	4I9UNTM...028/021	1.18	0.71	0.064
8	1-1 3/16	TMC100-4 124/207	4I8UNTM...028/022	1.57	0.79	0.072
	1 1/4-1 3/8	TMC100-5 124/204	5I8UNTM...028/024	1.57	0.98	
	1 7/16-1 5/8	TMC100-5	5I8UNTM...028/024	2.05	1.18	
	1 11/16-1 15/16	TMC100-5	5I8UNTM2...	2.05	1.18	
	2-2 1/8	TMC125-5	5I8UNTM2...	2.28	1.46	
	2 1/4-2 7/8	TM2C125-5	5I8UNTM2...	1.77	1.65	
	3-3 5/8	TMSH-D250-075-5	5I8UNTM2...		2.48	
	3 3/4-4	TMSH-D300-100-5	5I8UNTM2...		3.15	
7	1 1/8-1 1/4	TMC100-4 124/202	4I7UNTM...028/023	1.18	0.71	0.082
6	1 3/8-1 9/16	TMC100-5 124/204	5I6UNTM...028/025	1.57	0.98	0.096
	1 5/8-1 15/16	TMC100-5	5I6UNTM...028/025	2.05	1.18	
	2-2 1/8	TMC100-5	5I6UNTM2...	2.05	1.18	
	2 1/4	TMC125-5	5I6UNTM2...	2.28	1.46	
	2 3/8-2 1/2	TMC150-6B	6BI6UNTM2...	2.56	1.81	
	2 5/8-3 1/8	TM2C150-6B	6BI6UNTM2...	2.56	2.05	
	3 1/4-3 3/4	TMSH-D250-075-6B	6BI6UNTM2...		2.48	
	3 7/8-4	TMSH-D300-100-6B	6BI6UNTM2...		3.15	
5	1 3/4	TMC100-5	5I5UNTM...028/077	2.05	1.18	0.115
4.5	2-2 1/4	TMC125-6B	6BI4.5UNTM2...	2.17	1.38	0.128
4	2 1/2	TMC150-6B	6BI4UNTM2...	2.56	1.81	0.144
	2 3/4-3	TM2C150-6B	6BI4UNTM2...	2.56	2.05	
	3 1/4-4	TMSH-D250-075-6B	6BI4UNTM2...		2.48	



* The recommended holder is the largest for the given thread specification.
Holder with smaller or equal cutting diameters (D2) can also be used (Except inserts 028/...).

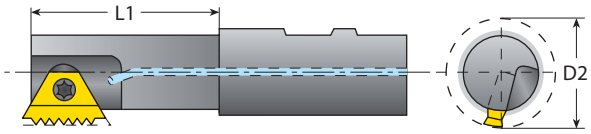
Tooling recommendation (con't)*

(For MiTM tools see page 258)
(For TMSD tools see page 277)
(For TM Solid Carbide tools see page 291)

TM Gen Software and updated versions can be downloaded from www.vargususa.com

UNJ - Internal

Pitch	Nominal Dia.	Holder	Insert	L1-Toolholder	D2-Tool	h min - Thread
tpi	Inch			Overhang	Cutting dia.*	Profile depth
24	9/16-11/16	TMC050-2	2I24UNJTM2...	0.47	0.45	0.022
20	1/2	TMMC050-6.0	6.0I20UNJTM...	0.47	0.35	0.026
	3/4-13/16	TMC050-2	2I20UNJTM2...	0.47	0.45	
	7/8	TMC0625-3	3I20UNJTM2...	0.87	0.67	
	15/16-1	TMC075-3	3I20UNJTM2...	1.69	0.79	
18	5/8	TMC050-2	2I18UNJTM2...	0.47	0.45	0.029
	1 1/16-1 3/16	TMLC100-3	3I18UNJTM2...	0.98	0.87	
	1 1/4-1 11/16	TM2C100-3	3I18UNJTM2...	1.69	1.02	
16	11/16-13/16	TMC050-2	2I16UNJTM2...	0.47	0.45	0.033
	7/8-15/16	TMC0625-3	3I16UNJTM2...	0.87	0.67	
	1	TMC075-3	3I16UNJTM2...	1.69	0.79	
	1 1/16-1 3/16	TMLC100-3	3I16UNJTM2...	0.98	0.87	
	1 1/4-1 3/8	TM2C100-3	3I16UNJTM2...	1.69	1.02	
	1 7/16-1 5/8	TMC100-5	5I16UNJTM2...	2.05	1.18	
	1 11/16-1 7/8	TMC125-5	5I16UNJTM2...	2.28	1.46	
	1 15/16-2 1/8	TM2C125-5	5I16UNJTM2...	1.77	1.65	
	2 1/4-2 3/8	TMSH-D200-075-3	3I16UNJTM2...		1.97	
14	7/8	TMC050-2	2I14UNJTM2...	0.47	0.45	0.037
12	7/8	TMNC0625-3	3I12UNJTM2...	0.87	0.61	0.044
	15/16-1	TMC0625-3	3I12UNJTM2...	0.87	0.67	
	1 1/16	TMC075-3	3I12UNJTM2...	1.69	0.79	
	1 1/8-1 1/4	TMLC100-3	3I12UNJTM2...	0.98	0.87	
	1 5/16-1 7/16	TM2C100-3	3I12UNJTM2...	1.69	1.02	
	1 1/2-1 11/16	TMC100-5	5I12UNJTM2...	2.05	1.18	
	1 3/4-1 15/16	TMC125-5	5I12UNJTM2...	2.28	1.46	
	2-2 1/4	TM2C125-5	5I12UNJTM2...	1.77	1.65	
	2 3/8-2 3/4	TMSH-D200-075-3	3I12UNJTM2...		1.97	
	2 7/8-3 3/8	TMSH-D250-075-5	5I12UNJTM2...		2.48	
	3 1/2-4 1/4	TMSH-D300-100-5	5I12UNJTM2...		3.15	
	4 3/8-5 1/4	TMSH-D400-125-5	5I12UNJTM2...		3.94	
	5 3/8-6	TMSH-D500-150-5	5I12UNJTM2...		4.92	



* The recommended holder is the largest for the given thread specification.
Holder with smaller or equal cutting diameters (D2) can also be used (Except inserts 028/...).

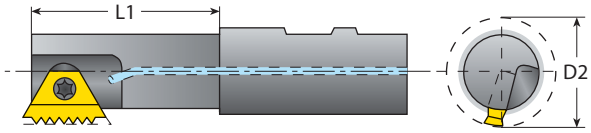
Tooling recommendation (con't)*

(For MiTM tools see page 258)
(For TMSD tools see page 277)
(For TM Solid Carbide tools see page 291)

TM Gen Software and updated versions can be downloaded from www.vargususa.com

W - Internal

Pitch	Nominal Dia.	Holder	Insert	L1-Toolholder	D2-Tool	h min - Thread
tpi	Inch			Overhang	Cutting dia.*	Profile depth
26	7/16	TMMC050-6.0	6.0I26WTM...028/036	0.47	0.35	0.025
	1/2-9/16	TMMC050-6.0	6.0EI26WTM...	0.47	0.35	
	5/8-3/4	TMC050-2	2EI26WTM2...	0.47	0.45	
	13/16-7/8	TMC0625-3	3EI26WTM2...	0.87	0.67	
	15/16-1	TMC075-3	3EI26WTM2...	1.69	0.79	
	1 1/16-1 1/8	TMLC100-3	3EI26WTM2...	0.98	0.87	
	1 3/16-1 5/8	TM2C100-3	3EI26WTM2...	1.69	1.02	
	1 3/4-2	TMSH-D150-050-2	2EI26WTM2...		1.5	
20	1/2	TMMC050-6.0	6.0I20WTM...028/037	0.47	0.35	0.032
	9/16	TMMC050-6.0	6.0EI20WTM2...	0.47	0.35	
	5/8-13/16	TMC050-2	2EI20WTM2...	0.47	0.45	
	7/8-15/16	TMC0625-3	3EI20WTM2...	0.87	0.67	
	1	TMC075-3	3EI20WTM2...	1.69	0.79	
	1 1/16-1 3/16	TMLC100-3	3EI20WTM2...	0.98	0.87	
	1 1/4-1 5/8	TM2C100-3	3EI20WTM2...	1.69	1.02	
	1 3/4-2 1/8	TMSH-D150-050-2	2EI20WTM2...		1.5	
	2 1/4-3	TMSH-D200-075-3	3EI20WTM2...		1.97	
18	7/16	TMMC050-6.0	6.0I18WTM...028/035	0.47	0.35	0.035
16	1/2	TMC075-2 124/205	2I16WTM...028/051	0.61	0.39	0.040
	9/16-3/4	TMC050-2	2I16WTM...028/038	0.47	0.45	
	13/16	TMNC0625-3	3EI16WTM2...	0.87	0.61	
	7/8-15/16	TMC0625-3	3EI16WTM2...	0.87	0.67	
	1-1 1/16	TMC075-3	3EI16WTM2...	1.69	0.79	
	1 1/8-1 1/4	TMLC100-3	3EI16WTM2...	0.98	0.87	
	1 5/16-1 3/8	TM2C100-3	3EI16WTM2...	1.69	1.02	
	1.4-1 5/8	TMC100-5	5EI16WTM2...	2.05	1.18	
	1 3/4-1.9	TMC125-5	5EI16WTM2...	2.28	1.46	
	2 -2 1/4	TM2C125-5	5EI16WTM2...	1.77	1.65	
	2 3/8-2 3/4	TMSH-D200-075-3	3EI16WTM2...		1.97	
	2 7/8-3 3/8	TMSH-D250-075-5	5EI16WTM2...		2.48	
	3 1/2-4 1/8	TMSH-D300-100-5	5EI16WTM2...		3.15	
	4 1/4-5 1/8	TMSH-D400-125-5	5EI16WTM2...		3.94	
	5 1/4-7	TMSH-D500-150-5	5EI16WTM2...		4.92	
14	5/8-11/16	TMC075-2 124/206	2I14WTM..028/039	0.61	0.47	0.046
12	3/4	TMC0625-3 124/201	3I12WTM...028/040	0.81	0.61	0.054
	13/16	TMC0625-3	3I12WTM...028/041	0.87	0.67	
	15/16-1 5/16	TMC075-3	3I12WTM...028/041	1.69	0.79	
	1 3/8-1 7/16	TMC100-5	5I12WTM...028/050	2.05	1.18	
	1 1/2-1 3/4	TMC100-5	5EI12WTM2...	2.05	1.18	
	1 7/8	TMC125-5	5EI12WTM2...	2.28	1.46	
	2-2 1/4	TM2C125-5	5EI12WTM2...	1.77	1.65	



* The recommended holder is the largest for the given thread specification.
Holder with smaller or equal cutting diameters (D2) can also be used (Except inserts 028/...).

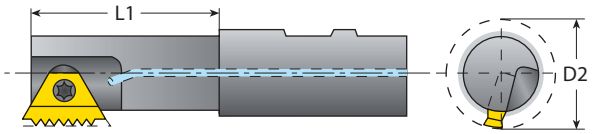
Tooling recommendation (con't)*

(For MiTM tools see page 258)
(For TMSD tools see page 277)
(For TM Solid Carbide tools see page 291)

TM Gen Software and updated versions can be downloaded from www.vargususa.com

W - Internal (con't)

Pitch	Nominal Dia.	Holder	Insert	L1-Toolholder	D2-Tool	h min - Thread
tpi	Inch			Overhang	Cutting dia.*	Profile depth
12	2 3/8 -2 3/4	TMSH-D200-075-3	3EI12WTM2...		1.97	0.054
	2 7/8-3 3/8	TMSH-D250-075-5	5EI12WTM2...		2.48	
	3 1/2-4 1/8	TMSH-D300-100-5	5EI12WTM2...		3.15	
	4 1/4-5 1/8	TMSH-D400-125-5	5EI12WTM2...		3.94	
	5 1/4-7	TMSH-D500-150-5	5EI12WTM2...		4.92	
11	7/8	TMC100-4 124/202	4I11WTM...028/043	1.18	0.71	0.058
10	1	TMC100-4 124/202	4I10WTM...028/045	1.18	0.71	0.064
9	7/8-1 1/4	TMC100-4 124/202	4I9WTM...028/042	1.18	0.71	0.071
8	1	TMC100-4 124/202	4I8WTM...028/044	1.18	0.71	0.080
	1 3/16-1.4	TMC100-5 124/204	5I8WTM...028/047	1.57	0.98	
	1 7/16-1 5/8	TMC100-5	5I8WTM...028/047	2.05	1.18	
	1 7/8-1.9	TMC100-5	5EI8WTM2...	2.05	1.18	
	2.1-2 1/8	TMC125-5	5EI8WTM2...	2.28	1.46	
	2 1/4-3	TM2C125-5	5EI8WTM2...	1.77	1.65	
	3 1/8-3 5/8	TMSH-D250-075-5	5EI8WTM2...		2.48	
	3 3/4-4 3/8	TMSH-D300-100-5	5EI8WTM2...		3.15	
	4 5/8-5 1/2	TMSH-D400-125-5	5EI8WTM2...		3.94	
	5 5/8-7	TMSH-D500-150-5	5EI8WTM2...		4.92	
7	1 1/8	TMC100-5 124/208	5I7WTM...028/046	1.57	0.87	0.091
	1 1/4	TMC100-5 124/204	5I7WTM...028/048	1.57	0.98	
	1 3/4	TMC100-5	5I7WTM...028/048	2.05	1.18	
	2	TMC100-5	5EI7WTM2...	2.05	1.18	
6	1 5/16-1 1/2	TMC100-5 124/204	5I6WTM...028/049	1.57	0.98	0.107
	1.6-1 5/8	TMC100-5	5I6WTM...028/049	2.05	1.18	
	1 7/8-1.9	TMC125-5	5I6WTM...028/049	2.28	1.46	
	2.1-2 1/8	TMC100-5	5EI6WTM2...	2.05	1.18	
	2 1/4	TMC125-6B	6BEI6WTM2...	2.17	1.38	
	2 3/8-2.6	TMC125-5	5EI6WTM2...	2.28	1.46	
	2 5/8-2 3/4	TMC150-6B	6BEI6WTM2...	2.56	1.81	
	2 7/8-3 1/4	TM2C150-6B	6BEI6WTM2...	2.56	2.05	
	3 3/8-3 7/8	TMSH-D250-075-6B	6BEI6WTM2...		2.48	
	4-4 3/4	TMSH-D300-100-6B	6BEI6WTM2...		3.15	
	4 7/8-5 3/4	TMSH-D400-125-6B	6BEI6WTM2...		3.94	
	5 7/8-7	TMSH-D500-150-6B	6BEI6WTM2...		4.92	
5	3	TMC150-6B	6BEI5WTM2...	2.56	1.81	0.128
	3 1/4	TM2C150-6B	6BEI5WTM2...	2.56	2.05	
4.5	3 1/2	TMC150-6B	6BEI4.5WTM2...	2.56	1.81	0.142
	3 3/4-4	TM2C150-6B	6BEI4.5WTM2...	2.56	2.05	



* The recommended holder is the largest for the given thread specification.
Holder with smaller or equal cutting diameters (D2) can also be used (Except inserts 028/...).

Tooling recommendation (con't)*

(For MiTM tools see page 258)
(For TMSD tools see page 277)
(For TM Solid Carbide tools see page 291)

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BSP - Internal

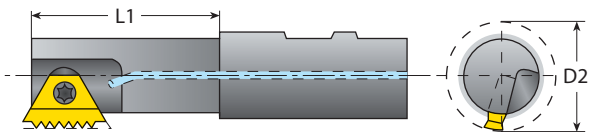
Pitch	Nominal Dia.	Holder	Insert	L1-Toolholder	D2-Tool	h min - Thread
tpi	Inch			Overhang	Cutting dia.*	Profile depth
19	1/4	TMMC075-6.0	6.0EI19WTM...	0.67	0.35	0.034
	3/8	TMC075-2	2EI19WTM2...	0.79	0.45	
14	1/2-5/8	TMC075-2	2EI14WTM2...	0.79	0.45	0.046
	3/4-7/8	TMC0625-3	3EI14WTM2...	0.87	0.67	
11	1	TMC100-5 124/204	5EI11WTM2...	1.57	0.98	0.058
	1 1/4-1 1/2	TMC100-5	5EI11WTM2...	2.05	1.18	
	1 3/4	TMC125-5	5EI11WTM2...	2.28	1.46	
	2-2 1/4	TM2C125-5	5EI11WTM2...	1.77	1.65	
	2 1/2-3	TMSH-D250-075-5	5EI11WTM2...		2.48	
	3 1/2	TMSH-D300-100-5	5EI11WTM2...		3.15	
	4	TMSH-D400-125-5	5EI11WTM2...		3.94	
	5-6	TMSH-D500-150-5	5EI11WTM2...		4.92	

BSPT - Internal

Pitch	Nominal Dia.	Holder	Insert	L1-Toolholder	D2-Tool	h min - Thread
tpi	Inch			Overhang	Cutting dia.*	Profile depth
19	3/8	TMC075-2	2EI19BSPTTM...	0.79	0.45	0.034
14	1/2-3/4	TMNC0625-3	3EI14BSPTTM...	0.87	0.61	0.046
11	1-1 1/4	TMNC075-3	3EI11BSPTTM...	0.91	0.75	0.058
	1 1/2	TMC100-5	5EI11BSPTTM...	2.05	1.18	
	2-6	TMNC125-5	5EI11BSPTTM...	2.28	1.46	

NPT - Internal

Pitch	Nominal Dia.	Holder	Insert	L1-Toolholder	D2-Tool	h min - Thread
tpi	Inch			Overhang	Cutting dia.*	Profile depth
18	1/4-3/8	TMC075-2 124/209	2I18NPTTM...028/074	0.61	0.39	0.040
14	1/2	TMNC0625-3	3EI14NPTTM...	0.87	0.61	0.052
	3/4	TMNC075-3	3EI14NPTTM...	0.91	0.75	
11.5	1	TMNC075-3	3EI11.5NPTTM...	0.91	0.75	0.065
	1 1/4	TMC100-5	5EI11.5NPTTM...	2.05	1.18	
	1 1/2-2	TMNC125-5	5EI11.5NPTTM...	2.28	1.46	
8	2 1/2	TMNC125-5	5EI8NPTTM...	2.28	1.46	0.095
	3-24	TMC150-6B	6BEI8NPTTM...	2.56	1.81	



* The recommended holder is the largest for the given thread specification.
Holder with smaller or equal cutting diameters (D2) can also be used (Except inserts 028/...).

Tooling recommendation (con't)*

(For MiTM tools see page 258)
(For TMSD tools see page 277)
(For TM Solid Carbide tools see page 291)

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NPTF - Internal

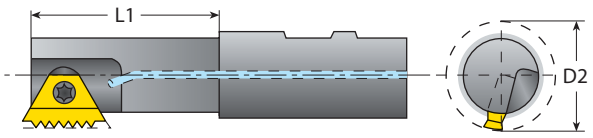
Pitch	Nominal Dia.	Holder	Insert	L1-Toolholder	D2-Tool	h min - Thread
tpi	Inch			Overhang	Cutting dia.*	Profile depth
18	1/4-3/8	TMC075-2 124/209	2I18NPTFTM...028/078	0.61	0.39	0.039
14	1/2	TMNC0625-3	3EI14NPTFTM..	0.87	0.61	0.053
	3/4	TMNC075-3	3EI14NPTFTM...	0.91	0.75	
11.5	1	TMNC075-3	3EI11.5NPTFTM...	0.91	0.75	0.064
	1 1/4	TMC100-5 124/204	5EI11.5NPTFTM...	1.57	0.98	
	1 1/2	TMC100-5	5EI11.5NPTFTM...	2.05	1.18	
	2	TMNC125-5	5EI11.5NPTFTM...	2.28	1.46	
8	2 1/2	TMNC125-5	5EI8NPTFTM...	2.28	1.46	0.094
	3	TMC150-6B	6BEI8NPTFTM...	2.56	1.81	

PG - Internal

Pitch	Nominal Dia.	Holder	Insert	L1-Toolholder	D2-Tool	h min - Thread
tpi	Inch			Overhang	Cutting dia.*	Profile depth
20	PG7	TMMC050-6.0	6.0EI20PGTM...	0.47	0.35	0.024
18	PG9	TMC050-2	2EI18PGTM2...	0.47	0.45	0.026
	PG11	TMNC0625-3	3EI18PGTM2...	0.87	0.61	
	PG13.5	TMC0625-3	3EI18PGTM2...	0.87	0.67	
	PG16	TMC075-3	3EI18PGTM2...	1.69	0.79	
16	PG21	TMC100-5 124/204	5EI16PGTM2...	1.57	0.98	0.030
	PG29	TMC100-5	5EI16PGTM2...	2.05	1.18	
	PG36	TM2C125-5	5EI16PGTM2...	1.77	1.65	
	PG42-PG48	TMSH-D200-075-3	3EI16PGTM2...		1.97	

TR -Internal

Pitch	Nominal Dia.	Holder	Insert	L1-Toolholder	D2-Tool	h min - Thread
mm	Inch			Overhang	Cutting dia.*	Profile depth
2.0	TR16	TMC075-2 124/206	2I2.0TRTM...028/028	0.61	0.47	0.049
	TR18-TR20	TMC075-2 124/206	2I2.0TRTM...028/029	0.61	0.47	
3.0	TR24	TMC100-4 124/202	4I3.0TRTM...028/030	1.18	0.71	0.069
	TR26-TR30	TMC100-4 124/202	4I3.0TRTM...028/031	1.18	0.71	
	TR32-TR36	TMC100-4 124/207	4I3.0TRTM...028/032	1.57	0.79	
	TR38-TR42	TMC100-5 124/204	5I3.0TRTM...028/033	1.57	0.98	
	TR44-TR48	TMC100-5	5I3.0TRTM...028/033	2.05	1.18	
	TR50-TR60	TMC125-5	5I3.0TRTM...028/033	2.28	1.46	
4.0	TR65-TR110	TMC125-5	5I4.0TRTM...028/034	2.28	1.46	0.089



* The recommended holder is the largest for the given thread specification.
Holder with smaller or equal cutting diameters (D2) can also be used (Except inserts 028/...).

Tooling recommendation (con't)*

(For MiTM tools see page 258)
(For TMSD tools see page 277)
(For TM Solid Carbide tools see page 291)

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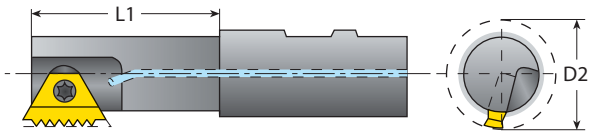
ACME - Internal

Pitch	Nominal Dia.	Holder	Insert	L1-Toolholder	D2-Tool	h min - Thread
tpi	Inch			Overhang	Cutting dia.*	Profile depth
16	1/2	TMMC050-6.0	6.0I16ACMETM...028/052	0.47	0.35	0.036
	5/8	TMC050-2	2I16ACMETM...028/053	0.47	0.45	
	3/4	TMC050-2	2I16ACMETM...028/055	0.47	0.45	
14	5/8	TMC075-2 124/205	2I14ACMETM...028/054	0.61	0.39	0.041
	3/4	TMC075-2 124/206	2I14ACMETM...028/083	0.61	0.47	
	7/8	TMNC0625-3	3I14ACMETM...028/057	0.87	0.61	
	1	TMC0625-3	3I14ACMETM...028/059	0.87	0.67	
12	3/4	TMC075-2 124/206	2I12ACMETM...028/056	0.61	0.47	0.047
	7/8	TMC075-2 124/206	2I12ACMETM...028/058	0.61	0.47	
	1	TMNC0625-3	3I12ACMETM...028/060	0.87	0.61	
	1 1/8	TMC0625-3	3I12ACMETM...028/060	0.87	0.67	
	1 1/4	TMC075-3	3I12ACMETM...028/060	1.69	0.79	
10	1	TMC100-4 124/202	4I10ACMETM...028/061	1.18	0.71	0.060
	1 1/8	TMC100-4 124/207	4I10ACMETM...028/084	1.57	0.79	
	1 1/4	TMC100-5 124/204	5I10ACMETM...028/064	1.57	0.98	
	1 3/8	TMC100-5 124/204	5I10ACMETM...028/065	1.57	0.98	
	1 1/2	TMC100-5	5I10ACMETM...028/068	2.05	1.18	
	1 3/4	TMC125-5	5I10ACMETM...028/064	2.28	1.46	
8	1	TMC100-4 124/202	4I8ACMETM...028/062	1.18	0.71	0.072
	1 1/8-1 1/4	TMC100-4 124/202	4I8ACMETM...028/063	1.18	0.71	
	1 3/8	TMC100-5 124/204	5I8ACMETM...028/066	1.57	0.98	
	1 1/2	TMC100-5 124/204	5I8ACMETM...028/069	1.57	0.98	
	1 3/4	TMC100-5	5I8ACMETM...028/069	2.05	1.18	
	2	TMC125-5	5I8ACMETM...028/069	2.28	1.46	
6	1 3/8	TMC100-5 124/208	5I6ACMETM...028/067	1.57	0.87	0.093
	1 1/2	TMC100-5 124/204	5I6ACMETM...028/070	1.57	0.98	
	1 3/4	TMC100-5	5I6ACMETM...028/070	2.05	1.18	
	2	TMC100-5	5I6ACMETM...028/072	2.05	1.18	
	2 1/4	TMC125-5	5I6ACMETM...028/072	2.28	1.46	
5	1 3/4	TMC100-5 124/204	5I5ACMETM...028/071	1.57	0.98	0.110
	2	TMC100-5	5I5ACMETM...028/071	2.05	1.18	
	2 1/4	TMC100-5	5I5ACMETM...028/073	2.05	1.18	
	2 1/2	TMC125-5	5I5ACMETM...028/073	2.28	1.46	



* The recommended holder is the largest for the given thread specification.
Holder with smaller or equal cutting diameters (D2) can also be used (Except inserts 028/...).

Thread Milling

> Standard Inserts

THREAD MILLING INSERTS

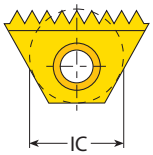
Vardex Ordering Code System

Thread Milling Inserts

3	B	I	12	UN	TM2	F	VBX	028/...
1	2	3	4	5	6	7	8	9

1- Insert Size

6.0 - 6.0 mm
2 - ¼"
3 - ⅜"
3B - ⅜"B
4 - ½"
5 - ⅝"
6B - ¾"B



2 - Cutting Edge Length

B - TMB

3 - Type of Insert

E - External
I - Internal
EI - External + Internal

4 - Pitch

80 - 4(tpi)
0.35 - 6.0 (mm)

5 - Standard

ISO- ISO Metric
UN- American UN
UNJ- UNJ
W- Whitworth for BSW, BSP
NPT - NPT
NPTF- NPTF
NPS- NPS
BSPT- British Standard Pipe Thread
PG- Pg DIN 40430
ACME- ACME
TR- Trapez DIN 103

6 - System

TM2
TM

7 - Pitch Type

F = Fine Pitch

8 - Carbide grade

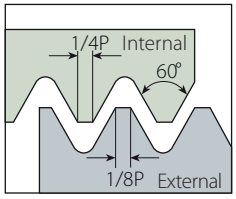
VBX
VTX
VK2

9 - Coarse Pitch Inserts

028/...

American UN

External / Internal



Defined by: ANSI B1.1.74
Tolerance class: Class 2A/2B

Standard TM

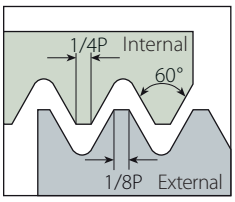
Standard TM

Insert Size		Pitch	Ordering Code		Le	Teeth	Toolholder
IC	L inch	tpi	External	Internal	inch		
6.0mm	0.41	32		6.0I32UNTM...	0.38	12	TMMC..-6.0
		28		6.0I28UNTM...	0.36	10	
		24		6.0I24UNTM...	0.38	9	
		20		6.0I20UNTM...	0.35	7	
		18		6.0I18UNTM...	0.33	6	
		16		6.0I16UNTM...	0.31	5	
1/4"	0.43	48		2I48UNTM2...	0.40	19	TMC..-2 TMSH..-2
		40		2I40UNTM2...	0.40	16	
		32		2I32UNTM2...	0.41	13	
		28	2E28UNTM2...	2I28UNTM2...	0.39	11	
		27	2E27UNTM2...	2I27UNTM2...	0.41	11	
		24	2E24UNTM2...	2I24UNTM2...	0.38	9	
		20	2E20UNTM2...	2I20UNTM2...	0.40	8	
		18	2E18UNTM2...	2I18UNTM2...	0.39	7	
		16	2E16UNTM2...	2I16UNTM2...	0.38	6	
		14	2E14UNTM2...	2I14UNTM2...	0.36	5	
3/8"	0.63	40		3I40UNTM2...	0.58	23	TMC..-3 TMSH..-3
		32		3I32UNTM2...	0.59	19	
		28	3E28UNTM2...	3I28UNTM2...	0.57	16	
		27	3E27UNTM2...	3I27UNTM2...	0.56	15	
		26	3E26UNTM2...	3I26UNTM2...	0.58	15	
		24	3E24UNTM2...	3I24UNTM2...	0.58	14	
		20	3E20UNTM2...	3I20UNTM2...	0.55	11	
		18	3E18UNTM2...	3I18UNTM2...	0.56	10	
		16	3E16UNTM2...	3I16UNTM2...	0.56	9	
		14	3E14UNTM2...	3I14UNTM2...	0.57	8	
		13	3E13UNTM2...	3I13UNTM2...	0.54	6	
		12	3E12UNTM2...	3I12UNTM2...	0.58	7	
		11.5	3E11.5UNTM2...	3I11.5UNTM2...	0.52	6	
3/8"B	0.87	24	3BE24UNTM2...	3BI24UNTM2...	0.83	20	BTMC..-3B TMSH..-3B
		20	3BE20UNTM2...	3BI20UNTM2...	0.85	17	
		18	3BE18UNTM2...	3BI18UNTM2...	0.83	15	
		16	3BE16UNTM2...	3BI16UNTM2...	0.81	13	
		14	3BE14UNTM2...	3BI14UNTM2...	0.86	12	
		13	3BE13UNTM2...	3BI13UNTM2...	0.85	11	
		12	3BE12UNTM2...	3BI12UNTM2...	0.83	10	

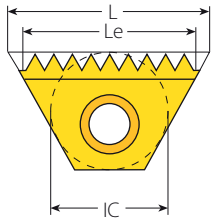
Sample order: **3E24UNTM2 VBX** All inserts have 2 cutting edges, except MiniTM (IC 6.0 mm), which has one cutting edge. For toolholder information, see page 236.

American UN (con't)

External / Internal



Defined by: ANSI B1.1.74
Tolerance class: Class 2A/2B



Standard TM

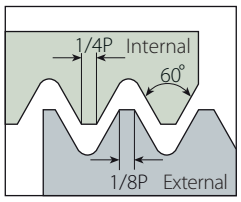
Standard TM

Insert Size		Pitch	Ordering Code		Le	Teeth	Toolholder
IC	L inch	tpi	External	Internal	inch		
5/8"	1.06	24	5E24UNTM2...	5I24UNTM2...	1.00	24	TMC..-5 TMSH..-5
		20	5E20UNTM2...	5I20UNTM2...	1.00	20	
		18	5E18UNTM2...	5I18UNTM2...	1.00	18	
		16	5E16UNTM2...	5I16UNTM2...	1.00	16	
		14	5E14UNTM2...	5I14UNTM2...	1.00	14	
		13	5E13UNTM2...	5I13UNTM2...	1.00	13	
		12	5E12UNTM2...	5I12UNTM2...	1.00	12	
		11.5	5E11.5UNTM2...	5I11.5UNTM2...	0.96	11	
		11	5E11UNTM2...	5I11UNTM2...	1.00	11	
		10	5E10UNTM2...		0.90	9	
		10		5I10UNTM2...	1.00	10	
		9	5E9UNTM2...	5I9UNTM2...	0.89	8	
		8	5E8UNTM2...	5I8UNTM2...	0.88	7	
		7	5E7UNTM2...		0.86	6	
		7		5I7UNTM2...	1.00	7	
		6	5E6UNTM2...		0.83	5	
		6		5I6UNTM2...	1.00	6	
3/4"B	1.52	6	6BE6UNTM2...	6BI6UNTM2...	1.53	8	TMC..-6B TMSH..-6B
		5	6BE5UNTM2...	6BI5UNTM2...	1.20	6	
		4.5	6BE4.5UNTM2...	6BI4.5UNTM2...	1.33	6	
		4	6BE4UNTM2...	6BI4UNTM2...	1.25	5	

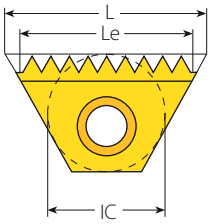
Sample order: **5E24UNTM2 VBX**
All inserts have 2 cutting edges, except MiniTM (IC 6.0 mm), which has one cutting edge.
For toolholder information, see page 236.

American UN (con't)

Internal



Defined by: ANSI B1.1.74
Tolerance class: Class 2A/2B



Coarse Pitch TM

Coarse Pitch TM

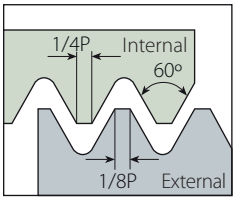
Thread	Insert Size		Ordering Code	Cutting Edge	Le	Teeth	Toolholder	Bore Dia. Range
	IC	L inch	Internal		inch			inch
7/16"-20UNF	6.0mm	0.41	6.0I20UNTM...028/012	1	0.35	7	TMMC050-6.0	0.38 - 0.45
7/16"-20UNF	6.0mm	0.41	6.0I20UNTM...028/012	1	0.35	7	TMMC075-6.0	0.38 - 0.45
7/16"-16UN	6.0mm	0.41	6.0I16UNTM...028/014	1	0.31	5	TMMC050-6.0	0.37 - 0.56
7/16"-16UN	6.0mm	0.41	6.0I16UNTM...028/014	1	0.31	5	TMMC075-6.0	0.37 - 0.56
7/16"-14UNC	6.0mm	0.41	6.0I14UNTM...028/013	1	0.36	5	TMMC075-6.0 124/203	0.36 - 0.39
1/2"-13UNC	1/4"	0.43	2I13UNTM...028/015	1	0.38	5	TMC075-2 124/205	0.41 - 0.77
1/2"-16UN	6.0mm	0.41	6.0I16UNTM...028/014	1	0.31	5	TMMC050-6.0	0.37 - 0.56
1/2"-16UN	6.0mm	0.41	6.0I16UNTM...028/014	1	0.31	5	TMMC075-6.0	0.37 - 0.56
9/16"-12UNC	1/4"	0.43	2I12UNTM...028/016	1	0.33	4	TMC075-2 124/205	0.47 - 0.61
9/16"-18UNF	1/4"	0.43	2I18UNTM...028/017	2	0.39	7	TMC050-2	0.50 - 0.57
9/16"-18UNF	1/4"	0.43	2I18UNTM...028/017	2	0.39	7	TMC075-2	0.50 - 0.57
9/16"-16UN	6.0mm	0.41	6.0I16UNTM...028/014	1	0.31	5	TMMC050-6.0	0.37 - 0.56
9/16"-16UN	6.0mm	0.41	6.0I16UNTM...028/014	1	0.31	5	TMMC075-6.0	0.37 - 0.56
5/8"-11UNC	1/4"	0.43	2I11UNTM...028/018	1	0.36	4	TMC075-2 124/206	0.52 - 0.73
5/8"-12UN	1/4"	0.43	2I12UNTM...028/016	1	0.33	4	TMC075-2 124/205	0.47 - 0.61
5/8"-16UN	6.0mm	0.41	6.0I16UNTM...028/014	1	0.31	5	TMMC050-6.0	0.37 - 0.56
5/8"-16UN	6.0mm	0.41	6.0I16UNTM...028/014	1	0.31	5	TMMC075-6.0	0.37 - 0.56
11/16"-12UN	1/4"	0.43	2I12UNTM...028/016	1	0.33	4	TMC075-2 124/205	0.47 - 0.61
3/4"-10UNC	3/8"	0.63	3I10UNTM...028/019	1	0.50	5	TMC0625-3 124/201	0.64 - 1.24
3/4"-12UN	3/8"	0.63	3I12UNTM...028/020	2	0.58	7	TMNC0625-3	0.66 - 0.72
13/16"-12UN	3/8"	0.63	3I12UNTM...028/020	2	0.58	7	TMC0625-3	0.72 - 0.77
7/8"-9UNC	1/2"	0.87	4I9UNTM...028/021	1	0.67	6	TMC100-4 124/202	0.75 - 1.28

continued on next page ►

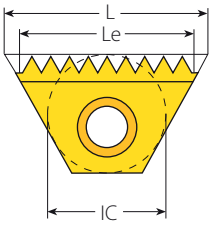
Sample tool requirement for thread 9/16"-12 UNC
Ordering codes:
Insert: **2I12UNTM VBX 028/016**
Toolholder: **TMC075-2 124/205**
For toolholder information, see page 236.

American UN (con't)

Internal



Defined by: ANSI B1.1.74
Tolerance class: Class 2A/2B



Coarse Pitch TM

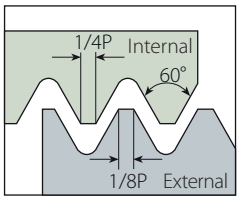
Coarse Pitch TM (con't)

Thread	Insert Size		Ordering Code	Cutting Edge	Le	Teeth	Toolholder	Bore Dia. Range
	IC	L inch	Internal		inch			inch
1" - 8UNC	1/2"	0.87	4I8UNTM...028/022	1	0.75	6	TMC100 - 4 124/207	0.86 - 1.11
1 1/16"-8UN	1/2"	0.87	4I8UNTM...028/022	1	0.75	6	TMC100-4 124/207	0.86 - 1.11
1 1/8"-7UNC	1/2"	0.87	4I7UNTM...028/023	1	0.71	5	TMC100-4 124/202	0.97 - 1.41
1 1/8"-8UN	1/2"	0.87	4I8UNTM...028/022	1	0.75	6	TMC100-4 124/207	0.86 - 1.11
1 3/16"-8UN	1/2"	0.87	4I8UNTM...028/022	1	0.75	6	TMC100-4 124/207	0.86 - 1.11
1 1/4"-7UNC	1/2"	0.87	4I7UNTM...028/023	1	0.71	5	TMC100-4 124/202	0.97 - 1.41
1 1/4"-8UN	5/8"	1.06	5I8UNTM...028/024	2	0.88	7	TMC100-5 124/204	1.11 - 1.30
1 5/16"-8UN	5/8"	1.06	5I8UNTM...028/024	2	0.88	7	TMC100-5 124/204	1.11 - 1.30
1 3/8"-6UNC	5/8"	1.06	5I6UNTM...028/025	2	1.00	6	TMC100-5 124/204	1.19 - 1.44
1 3/8"-8UN	5/8"	1.06	5I8UNTM...028/024	2	0.88	7	TMC100-5 124/204	1.11 - 1.30
1 7/16"-6UN	5/8"	1.06	5I6UNTM...028/025	2	1.00	6	TMC100-5 124/204	1.19 - 1.44
1 7/16"-8UN	5/8"	1.06	5I8UNTM...028/024	2	0.88	7	TMC100-5	1.30 - 1.54
1 1/2"-6UNC	5/8"	1.06	5I6UNTM...028/025	2	1.00	6	TMC100-5 124/204	1.19 - 1.44
1 1/2"-8UN	5/8"	1.06	5I8UNTM...028/024	2	0.88	7	TMC100-5	1.30 - 1.54
1 9/16" -6UN	5/8"	1.06	5I6UNTM...028/025	2	1.00	6	TMC100-5 124/204	1.19 - 1.44
1 9/16"-8UN	5/8"	1.06	5I8UNTM...028/024	2	0.88	7	TMC100-5	1.30 - 1.54
1 5/8"-6UN	5/8"	1.06	5I6UNTM...028/025	2	1.00	6	TMC100-5	1.44 - 1.77
1 5/8"-8UN	5/8"	1.06	5I8UNTM...028/024	2	0.88	7	TMC100-5	1.30 - 1.54
1 11/16"-6UN	5/8"	1.06	5I6UNTM...028/025	2	1.00	6	TMC100-5	1.44 - 1.77
1 3/4"-5UNC	5/8"	1.06	5I5UNTM...028/077	2	0.80	4	TMC100-5	1.53 - ∞
1 3/4"-6UN	5/8"	1.06	5I6UNTM...028/025	2	1.00	6	TMC100-5	1.44 - 1.77
1 13/16"-6UN	5/8"	1.06	5I6UNTM...028/025	2	1.00	6	TMC100-5	1.44 - 1.77
1 7/8"-6UN	5/8"	1.06	5I6UNTM...028/025	2	1.00	6	TMC100-5	1.44 - 1.77
1 15/16"-6UN	5/8"	1.06	5I6UNTM...028/025	2	1.00	6	TMC100-5	1.44 - 1.77

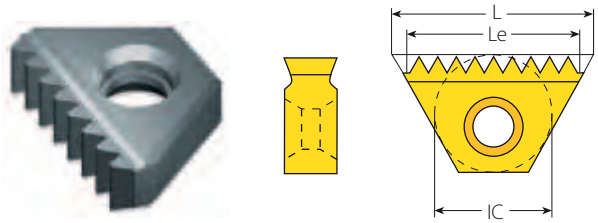
Sample tool requirement for thread 1 9/16"-6 UN
Ordering codes:
Insert: **5I6UNTM VBX 028/025**
Toolholder: **TMC 100-5 124/204**
For toolholder information, see page 236.

American UN (con't)

External / Internal



Defined by: ANSI B1.1.74
Tolerance class: Class 2A/2B



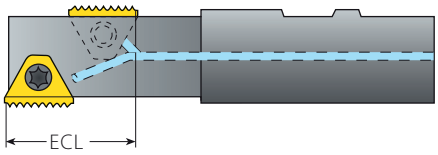
Standard TM

Standard TM Inserts for TMO Toolholders

Insert Size		Pitch	Ordering Code		Toolholder	ECL
IC	L inch	tpi	External	Internal	TMO	inch
1/4"	0.43	48		2I48UNTM2...	TMOC075-2-1	0.77
		48		2I48UNTM2...	TMOC075-2-2	0.73
		48		2I48UNTM2...	TMOC075-2-9	0.75
		32		2I32UNTM2...	TMOC075-2-1	0.78
		28	2E28UNTM2...	2I28UNTM2...	TMOC075-2-3	0.68
		24	2E24UNTM2...	2I24UNTM2...	TMOC075-2-2	0.71
		20	2E20UNTM2...	2I20UNTM2...	TMOC075-2-4	0.75
		18	2E18UNTM2...	2I18UNTM2...	TMOC075-2-2	0.72
		16	2E16UNTM2...	2I16UNTM2...	TMOC075-2-1	0.75
		14	2E14UNTM2...	2I14UNTM2...	TMOC075-2-3	0.64
3/8"	0.63	32		3I32UNTM2...	TMOC075-3-3	1.09
		32		3I32UNTM2...	TMOC075-3-11	1.13
		28	3E28UNTM2...	3I28UNTM2...	TMOC075-3-3	1.07
		27	3E27UNTM2...	3I27UNTM2...	TMOC075-3-4	1.07
		24	3E24UNTM2...	3I24UNTM2...	TMOC075-3-6	1.08
		20	3E20UNTM2...	3I20UNTM2...	TMOC075-3-6	1.05
		18	3E18UNTM2...	3I18UNTM2...	TMOC075-3-6	1.06
		16	3E16UNTM2...	3I16UNTM2...	TMOC075-3-6	1.06
		14	3E14UNTM2...	3I14UNTM2...	TMOC075-3-6	1.07
		13	3E13UNTM2...	3I13UNTM2...	TMOC075-3-2	1.00
		12	3E12UNTM2...	3I12UNTM2...	TMOC075-3-6	1.08
		11.5	3E11.5UNTM2...	3I11.5UNTM2...	TMOC075-3-5	0.96

continued on next page ►

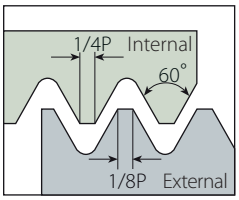
Sample order: **2E16UNTM2 VBX**
For Le and number of teeth of the above inserts,
see the table for standard inserts on page 211-212.
For toolholder intormation, see page 236.



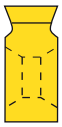
ECL - The Effective Cutting Length

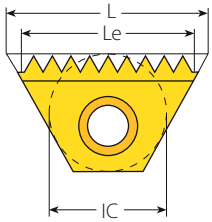
American UN (con't)

External / Internal



Defined by: ANSI B1.1.74
Tolerance class: Class 2A/2B



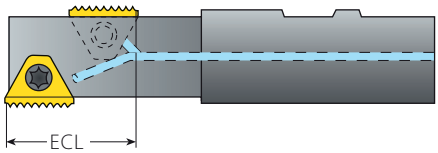


Standard TM

Standard TM Inserts for TMO Toolholders (con't)

Insert Size		Pitch	Ordering Code		Toolholder	ECL
IC	L inch	tpi	External	Internal	TMO	inch
		24	5E24UNTM2..	5I24UNTM2..	TMOC100-5-1	2.00
		24	5E24UNTM2...	5I24UNTM2...	TMOC100-5-2	1.83
		20	5E20UNTM2...	5I20UNTM2...	TMOC100-5-1	2.00
		18	5E18UNTM2...	5I18UNTM2...	TMOC100-5-1	2.00
		18	5E18UNTM2...	5I18UNTM2...	TMOC100-5-2	1.83
		16	5E16UNTM2...	5I16UNTM2...	TMOC100-5-3	1.88
		14	5E14UNTM2...	5I14UNTM2...	TMOC100-5-1	2.00
		14	5E14UNTM2...	5I14UNTM2...	TMOC100-5-4	1.86
		13	5E13UNTM2...	5I13UNTM2...	TMOC100-5-1	2.00
		12	5E12UNTM2...	5I12UNTM2...	TMOC100-5-2	1.83
		12	5E12UNTM2...		TMOC100-5-1	2.00
5/8"	1.06	11.5	5E11.5UNTM2...	5I11.5UNTM2...	TMOC100-5-5	1.83
		11	5E11UNTM2...	5I11UNTM2...	TMOC100-5-6	1.91
		11		5I11UNTM2...	TMOC100-5-1	1.82
		10	5E10UNTM2...		TMOC100-5-7	1.70
		10		5I10UNTM2...	TMOC100-5-7	1.80
		9	5E9UNTM2...	5I9UNTM2...	TMOC100-5-8	1.78
		8	5E8UNTM2...	5I8UNTM2...	TMOC100-5-9	1.75
		7	5E7UNTM2...		TMOC100-5-10	1.71
		7		5I7UNTM2...	TMOC100-5-10	1.86
		6	5E6UNTM2...		TMOC100-5-2	1.67
		6		5I6UNTM2...	TMOC100-5-2	1.83
		5		5I5UNTM...028/077	TMOC100-5-7	1.60

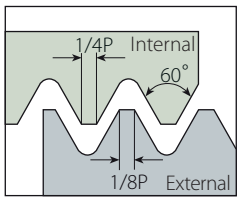
Sample order: **5E16UNTM2 VBX**
For Le and number of teeth of the above inserts,
see table for standard inserts on page 211-212.
For toolholder information, see page 236.



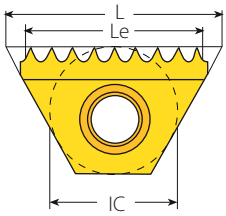
ECL - The Effective Cutting Length

American UN (con't)

External / Internal



Defined by: ANSI B1.1.74
Tolerance class: Class 2A/2B



Fine Pitch TM

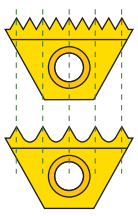
Fine Pitch TM

Insert Size		Pitch	Ordering Code		Le	Teeth	
IC	L inch	tpi	External	Internal	inch		Toolholder
6.0mm	0.41	80	6.0E80UNTMF...	6.0I80UNTMF...	0.39	16	TMMC..-6.0
		72	6.0E72UNTMF...	6.0I72UNTMF...	0.38	14	
		64	6.0E64UNTMF...	6.0I64UNTMF...	0.36	12	
		56	6.0E56UNTMF...	6.0I56UNTMF...	0.38	11	
		48	6.0E48UNTMF...		0.35	9	
		44	6.0E44UNTMF...		0.34	8	
		40	6.0E40UNTMF...		0.33	7	
		36	6.0E36UNTMF...		0.36	7	
		32	6.0E32UNTMF...		0.34	6	
1/4"	0.43	80	2E80UNTM2F...	2I80UNTM2F...	0.39	16	TMC..-2 TMSH..-2
		72	2E72UNTM2F...	2I72UNTM2F...	0.40	15	
		64	2E64UNTM2F...	2I64UNTM2F...	0.39	13	
		56	2E56UNTM2F...	2I56UNTM2F...	0.38	11	
		48	2E48UNTM2F...		0.40	10	
		44	2E44UNTM2F...		0.39	9	
		40	2E40UNTM2F...		0.38	8	
		36	2E36UNTM2F...		0.36	7	
		32	2E32UNTM2F...		0.34	6	
3/8"	0.63	80	3E80UNTM2F...	3I80UNTM2F...	0.56	23	TMC..-3 TMSH..-3
		72	3E72UNTM2F...	3I72UNTM2F...	0.57	21	
		64	3E64UNTM2F...	3I64UNTM2F...	0.58	19	
		56	3E56UNTM2F...	3I56UNTM2F...	0.55	16	
		48	3E48UNTM2F...		0.56	14	
		44	3E44UNTM2F...		0.57	13	
		40	3E40UNTM2F...		0.58	12	
		36	3E36UNTM2F...		0.58	11	
		32	3E32UNTM2F...		0.53	9	

NOTE: Two orbits are required to complete the thread. Fine Pitch TM Inserts produce partial profile thread.
Sample order: **6.0E80UNTMF VBX**
All inserts have 2 cutting edges, except MiniTM (IC 6.0 mm), which has one cutting edge.
For toolholder information, see page 236.

Fine Pitch Threads

Fine pitch threads are threads with small pitches. It is difficult to produce multitooth inserts for small pitches because of the small radius between the teeth. Vargus developed inserts where every second tooth was dropped to enlarge the radius between the teeth.

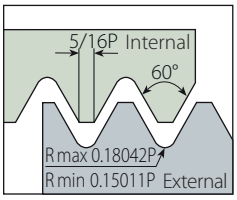


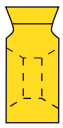
Important!

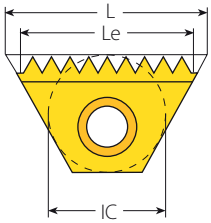
- All the fine pitch inserts are partial profile type (as a result of the enlarged radius).

UNJ

External / Internal







Standard TM

Defined by: MIL-S-8879C
Tolerance class: 3A/3B

Standard TM

Insert Size		Pitch	Ordering Code		Le	Teeth	Toolholder
IC	L inch	tpi	External	Internal	inch		
6.0mm	0.41	24		6.0I24UNJTM...	0.38	9	TMMC..-6.0
		20		6.0I20UNJTM...	0.35	7	
		18		6.0I18UNJTM...	0.33	6	
		16		6.0I16UNJTM...	0.38	6	
1/4"	0.43	24	2E24UNJTM2...	2I24UNJTM2...	0.38	9	TMC..-2 TMSH..-2
		20	2E20UNJTM2...	2I20UNJTM2...	0.40	8	
		18		2I18UNJTM2...	0.39	7	
		16	2E16UNJTM2...	2I16UNJTM2...	0.38	6	
		14	2E14UNJTM2...	2I14UNJTM2...	0.36	5	
3/8"	0.63	24	3E24UNJTM2...	3I24UNJTM2...	0.58	14	TMC..-3 TMSH..-3
		20	3E20UNJTM2...	3I20UNJTM2...	0.55	11	
		18	3E18UNJTM2...	3I18UNJTM2...	0.56	10	
		16	3E16UNJTM2...	3I16UNJTM2...	0.56	9	
		14	3E14UNJTM2...	3I14UNJTM2...	0.57	8	
		13	3E13UNJTM2...		0.54	7	
		12	3E12UNJTM2...	3I12UNJTM2...	0.58	7	
5/8"	1.06	16	5E16UNJTM2...	5I16UNJTM2...	1.00	16	TMC..-5 TMSH..-5
		12	5E12UNJTM2...	5I12UNJTM2...	1.00	12	
		11	5E11UNJTM2...	5I11UNJTM2...	1.00	11	

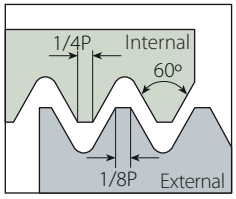
Insert ordering code: **3E16UNJTM2 VBX**

All inserts have 2 cutting edges, except MiniTM (IC 6.0 mm), which has one cutting edge.

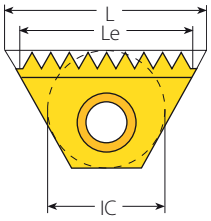
For toolholder information, see page 236.

ISO Metric

External / Internal



Defined by: R262 (DIN 13)
Tolerance class: 6g/6H



Standard TM

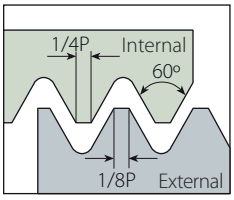
Standard TM

Insert Size		Pitch	Ordering Code		Le	Teeth	
IC	L inch	mm	External	Internal	inch		Toolholder
6.0mm	0.41	0.5		6.0I0.5ISOTM...	0.39	20	TMMC..-6.0
		0.75		6.0I0.75ISOTM...	0.38	13	
		1.0		6.0I1.0ISOTM...	0.35	9	
		1.25		6.0I1.25ISOTM...	0.34	7	
		1.5		6.0I1.5ISOTM...	0.35	6	
1/4"	0.43	0.5		2I0.5ISOTM2...	0.39	20	TMC..-2 TMSH..-2
		0.75	2E0.75ISOTM2...	2I0.75ISOTM2...	0.41	14	
		1.0	2E1.0ISOTM2...	2I1.0ISOTM2...	0.39	10	
		1.25	2E1.25ISOTM2...		0.39	8	
		1.25		2I1.25ISOTM2...	0.34	7	
		1.5	2E1.5ISOTM2...		0.35	6	
		1.5		2I1.5ISOTM2...	0.41	7	
3/8"	0.63	0.5		3I0.5ISOTM2...	0.59	30	TMC..-3 TMSH..-3
		0.75	3E0.75ISOTM2...	3I0.75ISOTM2...	0.59	20	
		0.8		3I0.8ISOTM2...	0.57	18	
		1.0	3E1.0ISOTM2...		0.55	14	
		1.0		3I1.0ISOTM2...	0.59	15	
		1.25	3E1.25ISOTM2...	3I1.25ISOTM2...	0.59	12	
		1.5	3E1.5ISOTM2...	3I1.5ISOTM2...	0.59	10	
		1.75	3E1.75ISOTM2...	3I1.75ISOTM2...	0.55	8	
		2.0	3E2.0ISOTM2...	3I2.0ISOTM2...	0.55	7	
3/8"B	0.87	1.0	3BE1.0ISOTM2...	3BI1.0ISOTM2...	0.87	22	BTMC..-3B TMSH..-3B
		1.25	3BE1.25ISOTM2...	3BI1.25ISOTM2...	0.84	17	
		1.5	3BE1.5ISOTM2...	3BI1.5ISOTM2...	0.83	14	
		1.75	3BE1.75ISOTM2...	3BI1.75ISOTM2...	0.83	12	
		2.0	3BE2.0ISOTM2...	3BI2.0ISOTM2...	0.87	11	
5/8"	1.06	1.0	5E1.0ISOTM2...	5I1.0ISOTM2...	1.02	26	TMC..-5 TMSH..-5
		1.25	5E1.25ISOTM2...	5I1.25ISOTM2...	0.98	20	
		1.5	5E1.5ISOTM2...	5I1.5ISOTM2...	1.00	17	
		1.75	5E1.75ISOTM2...	5I1.75ISOTM2...	0.96	14	
		2.0	5E2.0ISOTM2...	5I2.0ISOTM2...	0.94	12	
		2.5	5E2.5ISOTM2...	5I2.5ISOTM2...	0.98	10	
		3.0	5E3.0ISOTM2...	5I3.0ISOTM2...	0.94	8	
		3.5	5E3.5ISOTM2...	5I3.5ISOTM2...	0.96	7	
		4.0	5E4.0ISOTM2...	5I4.0ISOTM2...	0.94	6	
		4.5	5E4.5ISOTM2...	5I4.5ISOTM2...	0.89	5	

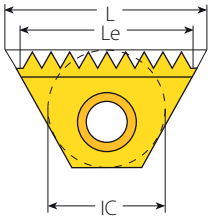
continued on next page ►

ISO Metric (con't)

External / Internal



Defined by: R262 (DIN 13)
Tolerance class: 6g/6H



Standard TM

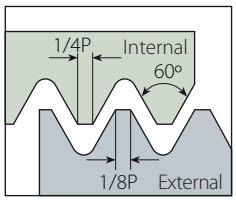
Standard TM (con't)

Insert Size		Pitch	Ordering Code		Le	Teeth	
IC	L inch	mm	External	Internal	inch		Toolholder
3/4"B	1.52	1.5	6BE1.5ISOTM2...	6BI1.5ISOTM2...	1.42	24	TMC..-6B TMSH..-6B
		2.0	6BE2.0ISOTM2...	6BI2.0ISOTM2...	1.42	18	
		2.5	6BE2.5ISOTM2...	6BI2.5ISOTM2...	1.38	14	
		3.0	6BE3.0ISOTM2...	6BI3.0ISOTM2...	1.42	12	
		4.0	6BE4.0ISOTM2...	6BI4.0ISOTM2...	1.26	8	
		4.5	6BE4.5ISOTM2...	6BI4.5ISOTM2...	1.24	7	
		5.0	6BE5.0ISOTM2...	6BI5.0ISOTM2...	1.18	6	
		5.5	6BE5.5ISOTM2...	6BI5.5ISOTM2...	1.30	6	
		6.0	6BE6.0ISOTM2...	6BI6.0ISOTM2...	1.18	5	

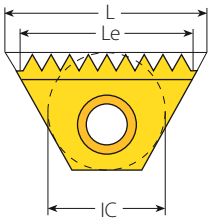
Sample order: **5I2.0ISOTM2 VBX**
All inserts have 2 cutting edges, except **MiniTM (IC 6.0 mm)** which has one cutting edge.
For toolholder information, see page 236.

ISO Metric (con't)

Internal



Defined by: R262 (DIN 13)
Tolerance class: 6g/6H



Coarse Pitch TM

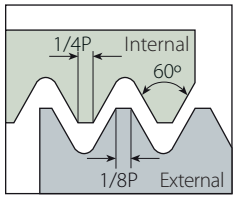
Coarse Pitch TM

Thread	Insert Size		Ordering Code	Cutting Edge	Le	Teeth	Toolholder	Bore Dia. Range
	IC	L inch	Internal		inch			inch
M10 X 0.75	6.0 mm	0.41	6.0I0.75ISOTM...028/001	1	0.38	13	TMMC050-6.0	0.36 - 0.39
M10 X 0.75	6.0 mm	0.41	6.0I0.75ISOTM...028/001	1	0.38	13	TMMC075-6.0	0.36 - 0.39
M12 X 1.25	6.0 mm	0.41	6.0I1.25ISOTM...028/002	1	0.34	7	TMMC050-6.0	0.42 - 0.45
M12 X 1.25	6.0 mm	0.41	6.0I1.25ISOTM...028/002	1	0.34	7	TMMC075-6.0	0.42 - 0.45
M12 X 1.75	6.0 mm	0.41	6.0I1.75ISOTM...028/003	1	0.34	5	TMMC075-6.0 124/203	0.40 - 0.75
M14 X 2.0	1/4"	0.43	2I2.0ISOTM...028/004	2	0.39	5	TMC050-2	0.46 - 0.77
M14 x 2.0	1/4"	0.43	2I2.0ISOTM...028/004	2	0.39	5	TMC075-2	0.46 - 0.77
M16 X 2.0	1/4"	0.43	2I2.0ISOTM...028/004	2	0.39	5	TMC050-2	0.46 - 0.77
M16 X 2.0	1/4"	0.43	2I2.0ISOTM...028/004	2	0.39	5	TMC075-2	0.46 - 0.77
M20 X 2.5	3/8"	0.63	3I2.5ISOTM...028/005	1	0.49	5	TMC075-3 124/201	0.68 - 0.76
M22 X 2.5	1/2''	0.87	4I2.5ISOTM...028/006	1	0.69	7	TMC100-4 124/202	0.76 - 1.24
M24 X 3.0	1/2''	0.87	4I3.0ISOTM...028/007	1	0.71	6	TMC100-4 124/202	0.81 - 1.29
M27 X 3.0	1/2''	0.87	4I3.0ISOTM...028/007	1	0.71	6	TMC100-4 124/202	0.81 - 1.29
M30 X 3.5	5/8"	1.06	5I3.5ISOTM...028/008	2	0.96	7	TMC100-5 124/204	1.03 - 1.41
M33 X 3.5	5/8"	1.06	5I3.5ISOTM...028/008	2	0.96	7	TMC100-5 124/204	1.03 - 1.41
M36 X 3.0	5/8"	1.06	5I3.0ISOTM...028/009	2	0.94	8	TMC100-5	1.29 - 1.54
M36 X 4.0	5/8"	1.06	5I4.0ISOTM...028/010	2	0.94	6	TMC100-5	1.24 - 1.52
M39 X 3.0	5/8"	1.06	5I3.0ISOTM...028/009	2	0.94	8	TMC100-5	1.29 - 1.54
M39 X 4.0	5/8"	1.06	5I4.0ISOTM...028/010	2	0.94	6	TMC100-5	1.24 - 1.52
M42 X 4.5	5/8"	1.06	5I4.5ISOTM...028/011	2	0.89	5	TMC100-5	1.46 - 1.89
M45 X 4.5	5/8"	1.06	5I4.5ISOTM...028/011	2	0.89	5	TMC100-5	1.46 - 1.89
M48 X 5.0	5/8"	1.06	5I5.0ISOTM...028/075	2	0.79	4	TMC100-5	1.53 - ∞
M52 X 5.0	5/8"	1.06	5I5.0ISOTM...028/075	2	0.79	4	TMC100-5	1.53 - ∞

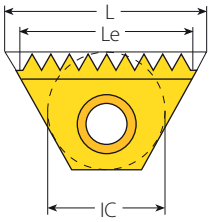
Sample tool requirement for thread **M14x2.0**.
Ordering code:
Insert: **2I2.0ISOTMVBX028/004**
Toolholder: **TMC075-2**
For toolholder information, see page 236.

ISO Metric (con't)

External / Internal



Defined by: R262 (DIN 13)
Tolerance class: 6g/6H

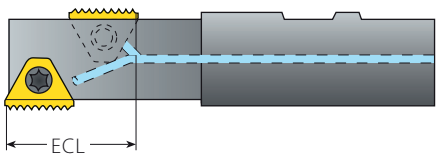


Standard TM

Standard TM Inserts for TMO Toolholders

Insert Size		Pitch	Ordering Code		Toolholder	ECL
IC	L inch	mm	External	Internal	TMO	inch
1/4″	0.43	0.5		2I0.5ISOTM2...	TMOC075-2-8	0.75
		0.75	2E0.75ISOTM2...	2I0.75ISOTM2...	TMOC075-2-9	0.77
		1.0	2E1.0ISOTM2...	2I1.0ISOTM2...	TMOC075-2-8	0.75
		1.25	2E1.25ISOTM2...		TMOC075-2-10	0.74
		1.25		2I1.25ISOTM2...	TMOC075-2-10	0.64
		1.5	2E1.5ISOTM2...		TMOC075-2-8	0.71
		1.5		2I1.5ISOTM2..	TMOC075-2-8	0.77
3/8″	0.63	0.5		3I0.5ISOTM2....	TMOC075-3-1	1.12
		0.5		3I0.5ISOTM2....	TMOC075-3-10	1.14
		0.75	3E0.75ISOTM2...	3I0.75ISOTM2...	TMOC075-3-11	1.12
		1.0	3E1.0ISOTM2...		TMOC075-3-10	1.10
		1.0		3I1.0ISOTM2...	TMOC075-3-10	1.14
		1.25	3E1.25ISOTM2...	3I1.25ISOTM2...	TMOC075-3-7	1.13
		1.5	3E1.5ISOTM2...	3I1.5ISOTM2...	TMOC075-3-1	1.12
		1.75	3E1.75ISOTM2...	3I1.75ISOTM2...	TMOC075-3-12	1.03
		2.0	3E2.0ISOTM2...	3I2.0ISOTM2...	TMOC075-3-10	1.10
5/8″	1.06	1.0	5E1.0ISOTM2...	5I1.0ISOTM2...	TMOC100-5-12	1.81
		1.0	5E1.0ISOTM2...	5I1.0ISOTM2...	TMOC100-5-16	1.85
		1.25	5E1.25ISOTM2...	5I1.25ISOTM2...	TMOC100-5-13	1.92
		1.5	5E1.5ISOTM2...	5I1.5ISOTM2...	TMOC100-5-14	1.89
		1.5	5E1.5ISOTM2...	5I1.5ISOTM2...	TMOC100-5-16	1.83
		1.75	5E1.75ISOTM2...	5I1.75ISOTM2...	TMOC100-5-15	1.86
		2.0	5E2.0ISOTM2...	5I2.0ISOTM2...	TMOC100-5-12	1.73
		2.5	5E2.5ISOTM2...	5I2.5ISOTM2...	TMOC100-5-12	1.77
		2.5	5E2.5ISOTM2...	5I2.5ISOTM2...	TMOC100-5-14	1.87
		3.0	5E3.0ISOTM2...	5I3.0ISOTM2...	TMOC100-5-16	1.77
		3.5	5E3.5ISOTM2...	5I3.5ISOTM2...	TMOC100-5-16	1.79
		4.0	5E4.0ISOTM2...	5I4.0ISOTM2...	TMOC100-5-12	1.73
		4.5	5E4.5ISOTM2...	5I4.5ISOTM2...	TMOC100-5-14	1.77
		5.0		5I5.0ISOTM...028/075	TMOC100-5-12	1.57

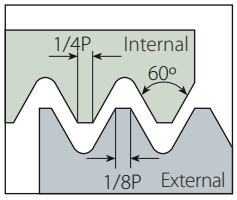
Sample order: **2E0.75ISOTM2 VBX**
For Le and number of teeth of the above inserts,
see the table for standard inserts on pages 219-220.
For toolholder information see page 236.



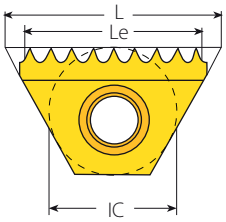
ECL - The Effective Cutting Length

ISO Metric (con't)

External / Internal



Defined by: R262 (DIN 13)
Tolerance class: 6g/6H



Fine Pitch TM

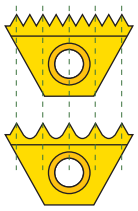
Fine Pitch TM

Insert Size		Pitch	Ordering Code		Le	Teeth	Toolholder
IC	L inch	mm	External	Internal	inch		
6.0mm	0.41	0.35	6.0E0.35ISOTMF...	6.0I0.35ISOTMF...	0.37	14	TMMC..-6.0
		0.4	6.0E0.4ISOTMF...	6.0I0.4ISOTMF...	0.36	12	
		0.45	6.0E0.45ISOTMF...	6.0I0.45ISOTMF...	0.37	11	
		0.5	6.0E0.5ISOTMF...		0.37	10	
		0.6	6.0E0.6ISOTMF...		0.35	8	
		0.7	6.0E0.7ISOTMF...		0.36	7	
		0.75	6.0E0.75ISOTMF...		0.32	6	
		0.8	6.0E0.8ISOTMF...		0.35	6	
		0.9	6.0E0.9ISOTMF...		0.32	5	
1/4"	0.43	0.35	2E0.35ISOTM2F...	2I0.35ISOTM2F...	0.4	15	TMC..-2 TMSH..-2
		0.4	2E0.4ISOTM2F...	2I0.4ISOTM2F...	0.39	13	
		0.45	2E0.45ISOTM2F...	2I0.45ISOTM2F...	0.37	11	
		0.5	2E0.5ISOTM2F...		0.37	10	
		0.6	2E0.6ISOTM2F...		0.40	9	
		0.7	2E0.7ISOTM2F...		0.36	7	
		0.8	2E0.8ISOTM2F...		0.35	6	
		0.9	2E0.9ISOTM2F...		0.39	6	
3/8"	0.63	0.35	3E0.35ISOTM2F...	3I0.35ISOTM2F...	0.56	21	TMC..-3 TMSH..-3
		0.4	3E0.4ISOTM2F...	3I0.4ISOTM2F...	0.58	19	
		0.45	3E0.45ISOTM2F...	3I0.45ISOTM2F...	0.58	17	
		0.5	3E0.5ISOTM2F...		0.53	14	
		0.6	3E0.6ISOTM2F...		0.54	12	
		0.7	3E0.7ISOTM2F...		0.58	11	
		0.8	3E0.8ISOTM2F...		0.54	9	
		0.9	3E0.9ISOTM2F...		0.53	8	

NOTE: Two orbits are required to complete the thread. Fine Pitch TM Inserts produce partial profile thread.
Sample order: **6.0E0.35ISOTMF VBX**
All inserts have 2 cutting edges, except MiniTM (IC 6.0 mm), which has one cutting edge.
For toolholder information, see page 236.

Fine Pitch Threads

Fine pitch threads are threads with small pitches. It is difficult to produce multitooth inserts for small pitches because of the small radius between the teeth. Vargus developed inserts where every second tooth was dropped to enlarge the radius between the teeth.

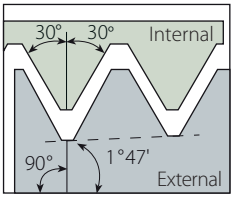


Important!

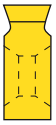
- All the fine pitch inserts are partial profile type (as a result of the enlarged radius).

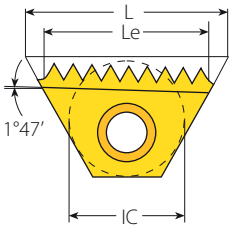
NPT

External / Internal



Defined by: USAS B2.1:1968
Tolerance class: Standard NPT





Standard TM

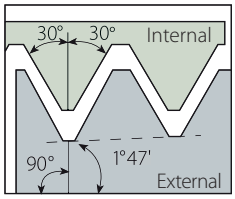
Standard TM

Insert Size		Pitch	Ordering Code	Le	Teeth	Toolholder	
IC	L inch	tpi	External + Internal	inch		RH	LH
3/8"	0.63	18	3E18NPTTM2... **	0.56	10	TMNC..-3	TMNC..-3LH
		14	3EI14NPTTM2...	0.57	8		
		11.5	3EI11.5NPTTM2...	0.52	6		
3/8"B	0.87	14	3BEI14NPTTM2...	0.86	12	BTMNC..-3B	BTMNC..-3BLH
		11.5	3BEI11.5NPTTM2... *	0.78	9		
5/8"	1.06	11.5	5EI11.5NPTTM2...	0.96	11	TM.C..-5	TM.C..-5LH
		8	5EI8NPTTM2...	0.88	7		
3/4"B	1.52	11.5	6BEI11.5NPTTM2...	1.39	16	TMC..-6B	TMC..-6BLH
		8	6BEI8NPTTM2...	1.25	10		

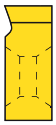
* Single sided insert - RH only
** For external thread only
Sample order: **3EI14NPTTM VBX**
NOTE: To thread with insert cutting edge marked "L", use LH toolholders.
For toolholder information, see page 236.

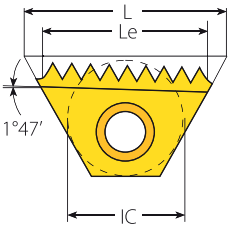
NPT

Internal



Defined by: USAS B2.1:1968
Tolerance class: Standard NPT





Coarse Pitch TM

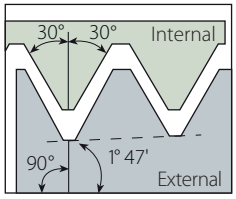
Coarse Pitch TM

Thread	Insert Size		Ordering Code	Cutting Edge	Le	Teeth	Toolholder
Inch	IC	L inch	Internal		inch		
1/4"-18	1/4"	0.43	2I18NPTTM...028/074	1	0.39	7	TMC075-2 124/209
3/8"-18	1/4"	0.43	2I18NPTTM...028/074	1	0.39	7	TMC075-2 124/209

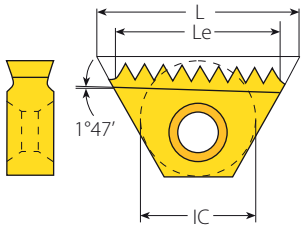
Sample order: **2I18NPTTM VBX 028/074**
NOTE: To thread with insert cutting edge marked "L", use LH toolholders.
For toolholder information, see page 236.

NPTF (Dry Seal)

External / Internal



Defined by: ANSI 1.20.3-1976
Tolerance class: Standard NPTF



Standard TM

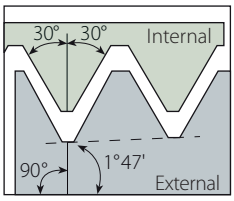
Standard TM

Insert Size		Pitch	Ordering Code	Le	Teeth	Toolholder	
IC	L inch	tpi	External + Internal	inch		RH	LH
3/8"	0.63	14	3EI14NPTFTM2...	0.57	8	TMNC..-3	TMNC..-3LH
		11.5	3EI11.5NPTFTM2...	0.52	6		
3/8"B	0.87	14	3BEI14NPTFTM2...	0.86	12	BTMNC..-3B	BTMNC..-3BLH
		11.5	3BEI11.5NPTFTM2...	0.78	9		
5/8"	1.06	11.5	5EI11.5NPTFTM2...	0.96	11	TM.C..-5	TM.C..-5LH
		8	5EI8NPTFTM2...	0.88	7		
3/4"B	1.52	11.5	6BEI11.5NPTFTM2...	1.39	16	TMC..-6B	TMC..-6BLH
		8	6BEI8NPTFTM2...	1.25	10		

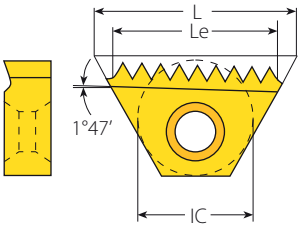
Sample order: **3EI14NPTFTM VBX**
NOTE: To thread with insert cutting edge marked "L", use LH toolholders.
For toolholder information, see page 236.

NPTF (Dry Seal)

Internal



Defined by: ANSI 1.20.3-1976
Tolerance class: Standard NPTF



Coarse Pitch TM

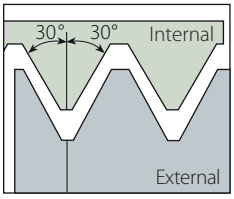
Coarse Pitch TM

Thread	Insert Size		Ordering Code	Cutting Edge	Le	Teeth	Toolholder
Inch	IC	L inch	Internal		inch		
1/4"-18	1/4"	0.43	2I18NPTFTM...028/078	1	0.39	7	TMC075-2 124/209
3/8"-18	1/4"	0.43	2I18NPTFTM...028/078	1	0.39	7	TMC075-2 124/209

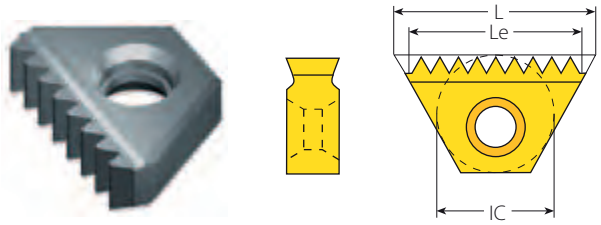
Sample tool requirement for thread 1/4" - 18NPTF
Ordering Codes Insert: **2I18NPTFTM VBX 028/078**
Toolholders: **TMC075-2 124/209**

NPS

External / Internal



Defined by: USA NBS H28 (1957)
Tolerance class: Standard NPS



Standard TM

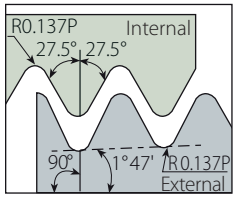
Standard TM

Insert Size		Pitch	Ordering Code	Le	Teeth	Nominal Thread Size	Toolholder
IC	L inch	tpi	External + Internal	inch			
3/8″	0.63	14	3EI14NPSTM2...	0.57	8	1/2″	TMNC0625-3
		14	3EI14NPSTM2...	0.57	8	3/4″	TMNC075-3
		11.5	3EI11.5NPSTM2...	0.52	6	1″, 1 1/4″	TMNC075-3
3/8″B	0.87	11.5	3BEI11.5NPSTM2...*	0.78	9	1″, 1 1/4″	BTMNC075-3B
5/8″	1.06	11.5	5EI11.5NPSTM2...	0.96	11	1 1/2″, 2″	TMC100-5
		8	5EI8NPSTM2...	0.88	7	2 1/2″ & larger	TMC125-5

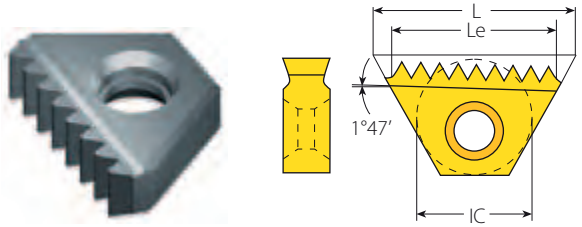
Sample Order: **5EI11.5NPSTM2VBX**
All inserts have 2 cutting edges.
For toolholder information, see page 236.
* One cutting edge.

BSPT

External / Internal



Defined by: B.S. 21:1985
Tolerance class: Standard BSPT



Standard TM

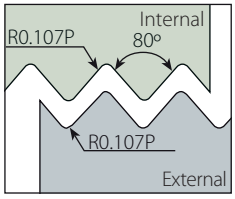
Standard TM

Insert Size		Pitch	Ordering Code	Le	Teeth	Toolholder	
IC	L inch	tpi	External + Internal	inch		RH	LH
1/4″	0.43	19	2EI19BSPTTM2...	0.37	7	TMC..-2	TMC..-2LH
3/8″	0.63	14	3EI14BSPTTM2...	0.57	8	TMNC..-3	TMNC..-3LH
		11	3EI11BSPTTM2...	0.55	6		
5/8″	1.06	11	5EI11BSPTTM2...	0.91	10	TMC..-5	TMC..-5LH

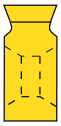
Sample Order: **5EI11BSPTTM VBX**
NOTE: To thread with insert cutting edge marked "L", use a LH toolholder.
For toolholder information, see page 236.

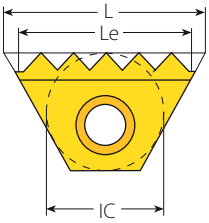
Pg

External / Internal



Defined by: DIN 40430
Tolerance class: Standard





Standard TM

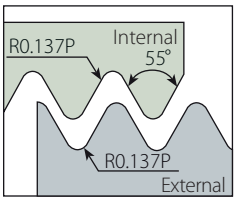
Standard TM

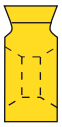
Insert Size		Pitch	Ordering Code	Le	Teeth	Nominal Thread Size	Toolholder
IC	L inch	tpi	External + Internal	inch			
6.0mm	0.41	20	6.0EI20PGTM...	0.35	7	Pg7	TMMC..-6.0
1/4"	0.43	20	2EI20PGTM2...	0.40	8	Pg7	TMC..-2 TMSH..-2
		18	2EI18PGTM2...	0.39	7	Pg9, Pg11, Pg13.5, Pg16	
		16	2EI16PGTM2...	0.38	6	Pg21, Pg29, Pg36, Pg42, Pg48	
3/8"	0.63	20	3EI20PGTM2...	0.55	11	Pg7	TMC..-3 TMSH..-3
		18	3EI18PGTM2...	0.56	10	Pg9, Pg11, Pg13.5, Pg16	
		16	3EI16PGTM2...	0.56	9	Pg21, Pg29, Pg36, Pg42, Pg48	
5/8"	1.06	16	5EI16PGTM2...	1.00	16	Pg21, Pg29, Pg36, Pg42, Pg48	TMC..-5, TMSH..-5

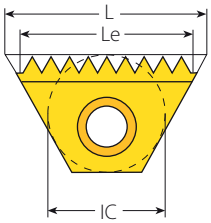
Insert Ordering Code: **5EI16PGTM2VBX**
All inserts have 2 cutting edges, except MiniTM (IC 6.0 mm) which has one edge.
For toolholder information, see page 236.

W for BSW, BSP

External / Internal







Standard TM

BSW Defined by: B.S.84:1956, DIN 259, ISO228/1:1982
BSP Defined by: B.S.2779:1956
Tolerance class: BSW-Medium class A, BSP-Medium class

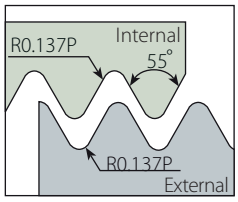
Standard TM

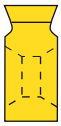
Insert Size		Pitch	Ordering Code	Le	Teeth	
IC	L inch	tpi	External + Internal	inch		Toolholder
6.0mm	0.41	28	6.0EI28WTM...	0.36	10	TMMC..-6.0
		26	6.0EI26WTM...	0.35	9	
		24	6.0EI24WTM...	0.38	9	
		20	6.0EI20WTM...	0.35	7	
		19	6.0EI19WTM...	0.37	7	
1/4"	0.43	28	2EI28WTM2...	0.39	11	TMC..-2 TMSH..-2
		26	2EI26WTM2...	0.38	10	
		24	2EI24WTM2...	0.38	9	
		20	2EI20WTM2...	0.40	8	
		19	2EI19WTM2...	0.37	7	
		14	2EI14WTM2...	0.36	5	
3/8"	0.63	26	3EI26WTM2...	0.58	15	TMC..-3 TMSH..-3
		24	3EI24WTM2...	0.58	14	
		20	3EI20WTM2...	0.55	11	
		19	3EI19WTM2...	0.58	11	
		18	3EI18WTM2...	0.56	10	
		16	3EI16WTM2...	0.56	9	
		14	3EI14WTM2...	0.57	8	
		12	3EI12WTM2...	0.58	7	
		11	3EI11WTM2...	0.55	6	
3/8"B	0.87	24	3BEI24WTM2...	0.83	20	TMC..-3B TMSH..-3B
		20	3BEI20WTM2...	0.85	17	
		19	3BEI19WTM2...	0.84	16	
		18	3BEI18WTM2...	0.83	15	
		16	3BEI16WTM2...	0.81	13	
		14	3BEI14WTM2...	0.86	12	
		12	3BEI12WTM2...	0.83	10	
		11	3BEI11WTM2...	0.82	9	
5/8"	1.06	16	5EI16WTM2...	1.00	16	TMC..-5 TMSH..-5
		14	5EI14WTM2...	1.00	14	
		12	5EI12WTM2...	0.92	11	
		11	5EI11WTM2...	0.91	10	
		10	5EI10WTM2...	1.00	10	
		9	5EI9WTM2...	0.89	8	
		8	5EI8WTM2...	0.88	7	
		7	5EI7WTM2...	0.86	6	
		6	5EI6WTM2...	0.83	5	
3/4"B	1.52	11	6BEI11WTM2...	1.36	15	TMC..-6B TMSH..-6B
		6	6BEI6WTM2...	1.33	8	
		5	6BEI5WTM2...	1.20	6	
		4.5	6BEI4.5WTM2...	1.33	6	

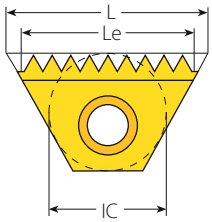
Insert ordering code: **3EI14WTM2 VBX**
All inserts have 2 cutting edges, except MiniTM (IC 6.0 mm) which has one cutting edge.
For toolholder information, see page 236.

W for BSW only (con't)

External / Internal







Coarse Pitch TM

Defined by: B.S.84:1956, DIN259, ISO228/1:1982
Tolerance class: Medium class A

Coarse Pitch TM

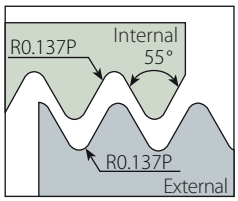
Thread	Insert Size		Ordering Code	Cutting Edge	Le	Teeth	Toolholder	Bore Dia. Range
Inch	IC	L inch	Internal		inch			inch
7/16"-18	6.0mm	0.41	6.0I18WTM...028/035	1	0.33	6	TMMC050-6.0	0.37 - 0.56
7/16"-18	6.0mm	0.41	6.0I18WTM...028/035	1	0.33	6	TMMC075-6.0	0.37 - 0.56
7/16"-26	6.0mm	0.41	6.0I26WTM... 028/036	1	0.35	9	TMMC050-6.0	0.39 - 0.41
7/16"-26	6.0mm	0.41	6.0I26WTM... 028/036	1	0.35	9	TMMC075-6.0	0.39 - 0.41
1/2"-16	1/4"	0.43	2I16WTM... 028/051	1	0.38	6	TMC075-2 124/205	0.42 - 0.48
1/2"-20	6.0mm	0.41	6.0I20WTM...028/037	1	0.35	7	TMMC050-6.0	0.43 - 0.45
1/2"-20	6.0mm	0.41	6.0I20WTM...028/037	1	0.35	7	TMMC075-6.0	0.43 - 0.45
9/16"-16	1/4"	0.43	2I16WTM...028/038	2	0.38	6	TMC050-2	0.48 - 0.73
9/16"-16	1/4"	0.43	2I16WTM...028/038	2	0.38	6	TMC075-2	0.48 - 0.73
5/8"-14	1/4"	0.43	2I14WTM...028/039	1	0.36	5	TMC075-2 124/206	0.53 - 0.75
11/16"-14	1/4"	0.43	2I14WTM...028/039	1	0.36	5	TMC075-2 124/206	0.53 - 0.75
11/16"-16	1/4"	0.43	2I16WTM...028/038	2	0.38	6	TMC050-2	0.48 - 0.73
11/16"-16	1/4"	0.43	2I16WTM...028/038	2	0.38	6	TMC075-2	0.48 - 0.73
3/4"-12	3/8"	0.63	3I12WTM...028/040	1	0.58	7	TMC0625-3 124/201	0.64 - 0.70
3/4"-16	1/4"	0.43	2I16WTM...028/038	2	0.38	6	TMC050-2	0.48 - 0.73
3/4"-16	1/4"	0.43	2I16WTM...028/038	2	0.38	6	TMC075-2	0.48 - 0.73
13/16"-12	3/8"	0.63	3I12WTM...028/041	2	0.58	7	TMC0625-3	0.70 - 0.830
7/8"-9	1/2"	0.87	4I9WTM...028/042	1	0.67	6	TMC100-4 124/202	0.73 - 1.28
7/8"-11	1/2"	0.87	4I11WTM...028/043	1	0.73	8	TMC100-4 124/202	0.76 - 0.87
15/16"-12	3/8"	0.63	3I12WTM...028/041	2	0.58	7	TMC075-3	0.83 - 1.20
1"-8	1/2"	0.87	4I8WTM...028/044	1	0.63	5	TMC100-4 124/202	0.84 - 1.02
1"-10	1/2"	0.87	4I10WTM...028/045	1	0.70	7	TMC100-4 124/202	0.87 - 1.24
1"-12	3/8"	0.63	3I12WTM...028/041	2	0.58	7	TMC075-3	0.83 - 1.20
1 1/16"-12	3/8"	0.63	3I12WTM...028/041	2	0.58	7	TMC075-3	0.83 - 1.20
1 1/8"-7	5/8"	1.06	5I7WTM...028/046	1	0.86	6	TMC100-5 124/208	0.94 - 1.07
1 1/8"-9	1/2"	0.87	4I9WTM...028/042	1	0.67	6	TMC100-4 124/202	0.73 - 1.28
1 1/8"-12	3/8"	0.63	3I12WTM...028/041	2	0.58	7	TMC075-3	0.83 - 1.20
1 3/16"-8	5/8"	1.06	5I8WTM...028/047	2	0.88	7	TMC100-5 124/204	1.02 - 1.28
1 3/16"-12	3/8"	0.63	3I12WTM...028/041	2	0.58	7	TMC075-3	0.83 - 1.20
1 1/4"-7	5/8"	1.06	5I7WTM...028/048	2	0.86	6	TMC100-5 124/204	0.85 - 1.41
1 1/4"-9	1/2"	0.87	4I9WTM...028/042	1	0.67	6	TMC100-4 124/202	0.73 - 1.28
1 1/4"-12	3/8"	0.63	3I12WTM...028/041	2	0.58	7	TMC075-3	0.83 - 1.20
1 5/16"-6	5/8"	1.06	5I6WTM...028/049	2	0.83	5	TMC100-5 124/204	1.10 - 1.28
1 5/16"-8	5/8"	1.06	5I8WTM...028/047	2	0.88	7	TMC100-5 124/204	1.02 - 1.28

Sample tool requirement for thread 7/16"-18 BSW
Ordering codes: Insert: **6.0I18WTM VBX 028/035** Toolholder: **TMMC 075-6.0**
For toolholder information, see page 236.

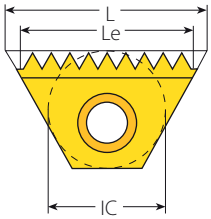
continued on next page ►

W for BSW only (con't)

Internal



Defined by: B.S.84:1956, DIN259, ISO228/1:1982
Tolerance class: Medium class A



Coarse Pitch TM Inserts

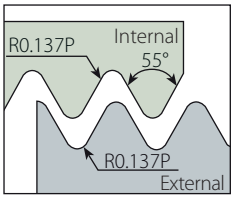
Coarse Pitch TM

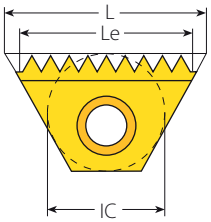
Thread	Insert Size		Ordering Code	Cutting Edge	Le	Teeth	Tooolholder	Bore Dia. Range
	IC	L inch	Internal		inch			inch
1 5/16"-12	3/8"	0.63	3I12WTM...028/041	2	0.58	7	TMC075-3	0.83 - 1.20
1 3/8"-8	5/8"	1.06	5I8WTM...028/047	2	0.88	7	TMC100-5 124/204	1.02 - 1.28
1 3/8"-6	5/8"	1.06	5I6WTM...028/049	2	0.83	5	TMC100-5 124/204	1.10 - 1.28
1 3/8"-12	5/8"	1.06	5I12WTM...028/050	2	0.92	11	TMC100-5	1.27 - 1.36
1.4-6	5/8 "	1.06	5I6WTM...028/049	2	0.83	5	TMC100-5 124/204	1.10 - 1.28
1.4-8	5/8"	1.06	5I8WTM...028/047	2	0.88	7	TMC100-5124/204	1.02 - 1.28
1.4-12	5/8"	1.06	5I12WTM...028/050	2	0.92	11	TMC100-5	1.27 - 1.36
1 7/16"-6	5/8"	1.06	5I6WTM...028/049	2	0.83	5	TMC100-5 124/204	1.10 - 1.28
1 7/16"-8	5/8"	1.06	5I8WTM...028/047	2	0.88	7	TMC100-5	1.28 - 1.54
1 7/16"-12	5/8"	1.06	5I12WTM...028/050	2	0.92	11	TMC100-5	1.27 - 1.36
1 1/2"-6	5/8"	1.06	5I6WTM...028/049	2	0.83	5	TMC100-5 124/204	1.10 - 1.29
1 1/2" -8	5/8"	1.06	5I8WTM...028/047	2	0.88	7	TMC100-5	1.28 - 1.54
1.6-6	5/8"	1.06	5I6WTM...028/049	2	0.83	5	TMC100-5	1.28 - 1.52
1.6-8	5/8"	1.06	5I8WTM...028/047	2	0.88	7	TMC100-5	1.28 - 1.54
1 5/8"-8	5/8"	1.06	5I8WTM...028/047	2	0.88	7	TMC100-5	1.28 - 1.54
1 5/8"-6	5/8"	1.06	5I6WTM...028/049	2	0.83	5	TMC100-5	1.28 - 1.52
1 3/4"-7	5/8"	1.06	5I7WTM...028/048	2	0.86	6	TMC100-5	1.57 - 1.65
1 7/8"-6	5/8"	1.06	5I6 WTM...028/049	2	0.83	5	TMC125-5	1.66 - 1.77
1.9-6	5/8"	1.06	5I6 WTM...028/049	2	0.83	5	TMC125-5	1.66 - 1.77

Sample tool requirement for thread 1 5/16"-12 BSW
Ordering codes: Insert: **3I12WTM VBX 028/041**
Toolholder: **TMC 075-3**
For toolholder information, see page 236.

W for BSW only (con't)

External / Internal





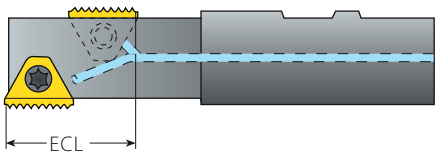
Standard TM

BSW Defined by: B.S.84:1956, DIN 259, ISO228/1:1982
BSP Defined by: B.S.2779:1956
Tolerance class: BSW-Medium class A

Standard TM Inserts for TMO Toolholders

Insert Size		Pitch	Ordering Code		ECL
IC	L inch	tpi	External + Internal	TMO	inch
1/4"	0.43	28	2EI28WTM2...	TMOC075-2-3	0.68
		26	2EI26WTM2...	TMOC075-2-5	0.73
		24	2EI24WTM2...	TMOC075-2-2	0.71
		20	2EI20WTM2...	TMOC075-2-6	0.75
		19	2EI19WTM2...	TMOC075-2-7	0.68
		14	2EI14WTM2...	TMOC075-2-3	0.64
3/8"	0.63	26	3EI26WTM2...	TMOC075-3-2	1.08
		26	3EI26WTM2...	TMOC075-3-6	1.04
		24	3EI24WTM2...	TMOC075-3-7	1.12
		20	3EI20WTM2...	TMOC075-3-6	1.05
		19	3EI19WTM2...	TMOC075-3-8	1.11
		18	3EI18WTM2...	TMOC075-3-6	1.06
		16	3EI16WTM2...	TMOC075-3-6	1.06
		14	3EI14WTM2...	TMOC075-3-6	1.07
		12	3EI12WTM2...	TMOC075-3-6	1.08
		11	3EI11WTM2...	TMOC075-3-9	1.09
5/8"	1.06	16	5EI16WTM2...	TMOC100-5-3	1.88
		14	5EI14WTM2...	TMOC100-5-1	2.00
		14	5EI14WTM2...	TMOC100-5-4	1.86
		12	5EI12WTM2...	TMOC100-5-2	1.75
		11	5EI11WTM2...	TMOC100-5-6	1.82
		10	5EI10WTM2...	TMOC100-5-7	1.80
		9	5EI9WTM2...	TMOC100-5-8	1.78
		8	5EI8WTM2...	TMOC100-5-9	1.75
		7	5EI7WTM2...	TMOC100-5-4	1.71
		6	5EI6WTM2...	TMOC100-5-11	1.67

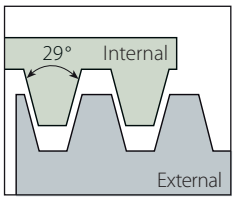
Sample order: **3EI19WTM2 VBX**
For Le and number of teeth of the above inserts, see the table for standard inserts on page 228.
For toolholder information see page 236.



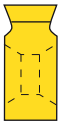
ECL - The Effective Cutting Length

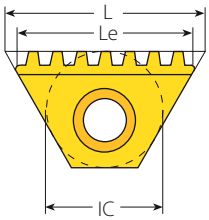
ACME

Internal



Defined by: ANSI B1/5:1988
Tolerance class: 3G





Coarse Pitch TM

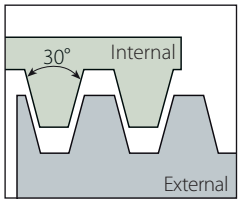
Coarse Pitch TM

Thread	Insert Size		Ordering Code	Cutting Edge	Le	Teeth	Toolholder	Bore Dia. Range
Inch	IC	L inch	Internal		inch			inch
1/2"-16	6.0mm	0.41	6.0I16ACMETM...028/052	1	0.31	5	TMMC050-6.0	0.44
1/2"-16	6.0mm	0.41	6.0I16ACMETM...028/052	1	0.31	5	TMMC075-6.0	0.44
5/8"-16	1/4"	0.43	2I16ACMETM...028/053	2	0.38	6	TMC050-2	0.56
5/8"-16	1/4"	0.43	2I16ACMETM...028/053	2	0.38	6	TMC075-2	0.56
5/8"-14	1/4"	0.43	2I14ACMETM...028/054	1	0.36	5	TMC075-2 124/205	0.55
3/4"-16	1/4"	0.43	2I16ACMETM...028/055	2	0.38	6	TMC050-2	0.69
3/4"-16	1/4"	0.43	2I16ACMETM...028/055	2	0.38	6	TMC075-2	0.69
3/4"-14	1/4"	0.43	2I14ACMETM...028/083	1	0.36	5	TMC075-2 124/206	0.68
3/4"-12	1/4"	0.43	2I12ACMETM...028/056	1	0.33	4	TMC075-2 124/206	0.67
7/8"-14	3/8"	0.63	3I14ACMETM...028/057	2	0.57	8	TMNC0625-3	0.80
7/8"-12	1/4"	0.43	2I12ACMETM...028/058	1	0.33	4	TMC075-2 124/206	0.79
1"-14	3/8"	0.63	3I14ACMETM...028/059	2	0.57	8	TMC0625-3	0.93
1"-12	3/8"	0.63	3I12ACMETM...028/060	2	0.58	7	TMNC0625-3	0.91
1"-10	1/2"	0.87	4I10ACMETM...028/061	1	0.70	7	TMC100-4 124/202	0.90
1"-8	1/2"	0.87	4I8ACMETM...028/062	1	0.75	6	TMC100-4 124/202	0.87
1 1/8"-12	3/8"	0.63	3I12ACMETM...028/060	2	0.58	7	TMC0625-3	1.04
1 1/8"-10	1/2"	0.87	4I10ACMETM...028/084	1	0.70	7	TMC100-4 124/207	1.02
1 1/8"-8	1/2"	0.87	4I8ACMETM...028/063	1	0.75	6	TMC100-4 124/202	1.00 - 1.12
1 1/4"-12	3/8"	0.63	3I12ACMETM...028/060	2	0.58	7	TMC075-3	1.17
1 1/4"-10	5/8"	1.06	5I10ACMETM....028/064	2	0.90	9	TMC100-5 124/204	1.15
1 1/4"-8	1/2"	0.87	4I8ACMETM...028/063	1	0.75	6	TMC100-4 124/202	1.00 - 1.12
1 3/8"-10	5/8"	1.06	5I10ACMETM...028/065	2	0.90	9	TMC100-5 124/204	1.27
1 3/8"-8	5/8"	1.06	5I8ACMETM...028/066	2	0.88	7	TMC100-5 124/204	1.25
1 3/8"-6	5/8"	1.06	5I6ACMETM...028/067	1	0.83	5	TMC100-5 124/208	1.20
1 1/2"-10	5/8"	1.06	5I10ACMETM...028/068	2	0.90	9	TMC100-5	1.40
1 1/2"-8	5/8"	1.06	5I8ACMETM...028/069	2	0.88	7	TMC100-5 124/204	1.37
1 1/2"-6	5/8"	1.06	5I6ACMETM...028/070	2	0.83	5	TMC100-5 124/204	1.33
1 3/4"-10	5/8"	1.06	5I10ACMETM...028/064	2	0.90	9	TMC125-5	1.65
1 3/4"-8	5/8"	1.06	5I8ACMETM...028/069	2	0.88	7	TMC100-5	1.62
1 3/4"-6	5/8"	1.06	5I6ACMETM...028/070	2	0.83	5	TMC100-5	1.58
1 3/4"-5	5/8"	1.06	5I5ACMETM...028/071	2	0.80	4	TMC100-5 124/204	1.55
2"-8	5/8"	1.06	5I8ACMETM...028/069	2	0.88	7	TMC125-5	1.87
2"-6	5/8"	1.06	5I6ACMETM...028/072	2	0.83	5	TMC100-5	1.83
2"-5	5/8"	1.06	5I5ACMETM...028/071	2	0.80	4	TMC100-5	1.80
2 1/4"-6	5/8"	1.06	5I6ACMETM...028/072	2	0.83	5	TMC125-5	2.08
2 1/4"-5	5/8"	1.06	5I5ACMETM...028/073	2	0.80	4	TMC100-5	2.05
2 1/2"-5	5/8"	1.06	5I5ACMETM...028/073	2	0.80	4	TMC125-5	2.30

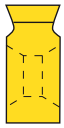
Sample tool requirement for thread ACME 1 3/4"-5
Ordering Code: Insert: 5I5ACME VBX 028/071 Toolholder: TMC100-5 124/204
For toolholder information, see page 236.

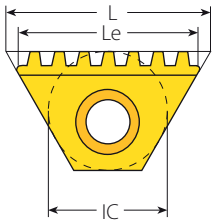
TR

Internal



Defined by: Trapez DIN 103
Tolerance class: 7e/7H





Coarse Pitch TM

Coarse Pitch TM

Thread	Insert Size		Ordering Code	Cutting Edge	Le	Teeth	Toolholder	Bore Dia. Range
mm	IC	L inch	Internal		inch			inch
TR 16X2.0	1/4"	0.43	2I2.0TRTM...028/028	1	0.39	5	TMC075-2 124/206	0.55
TR 18X2.0	1/4"	0.43	2I2.0TRTM...028/029	1	0.39	5	TMC075-2 124/206	0.63 - 0.71
TR 20X2.0	1/4"	0.43	2I2.0TRTM...028/029	1	0.39	5	TMC075-2 124/206	0.63 - 0.71
TR 24X3.0	1/2"	0.87	4I3.0TRTM...028/030	1	0.71	6	TMC100-4 124/202	0.83
TR 26X3.0	1/2"	0.87	4I3.0TRTM...028/031	1	0.71	6	TMC100-4 124/202	0.91 - 1.06
TR 28X3.0	1/2"	0.87	4I3.0TRTM...028/031	1	0.71	6	TMC100-4 124/202	0.91 - 1.06
TR 30X3.0	1/2"	0.87	4I3.0TRTM...028/031	1	0.71	6	TMC100-4 124/202	0.91 - 1.06
TR 32X3.0	1/2"	0.87	4I3.0TRTM...028/032	1	0.71	6	TMC100-4 124/207	1.14 - 1.30
TR 34X3.0	1/2"	0.87	4I3.0TRTM...028/032	1	0.71	6	TMC100-4 124/207	1.14 - 1.30
TR 36X3.0	1/2"	0.87	4I3.0TRTM...028/032	1	0.71	6	TMC100-4 124/207	1.14 - 1.30
TR 38X3.0	5/8"	1.06	5I3.0TRTM...028/033	2	0.94	8	TMC100-5 124/204	1.38 - 1.54
TR 40X3.0	5/8"	1.06	5I3.0TRTM...028/033	2	0.94	8	TMC100-5 124/204	1.38 - 1.54
TR 42X3.0	5/8"	1.06	5I3.0TRTM...028/033	2	0.94	8	TMC100-5 124/204	1.38 - 1.54
TR 44X3.0	5/8"	1.06	5I3.0TRTM...028/033	2	0.94	8	TMC100-5	1.61 - 1.77
TR 46X3.0	5/8"	1.06	5I3.0TRTM...028/033	2	0.94	8	TMC100-5	1.61 - 1.77
TR 48X3.0	5/8"	1.06	5I3.0TRTM...028/033	2	0.94	8	TMC100-5	1.61 - 1.77
TR 50X3.0	5/8"	1.06	5I3.0TRTM...028/033	2	0.94	8	TMC125-5	1.85 - 2.24
TR 52X3.0	5/8"	1.06	5I3.0TRTM...028/033	2	0.94	8	TMC125-5	1.85 - 2.24
TR 55X3.0	5/8"	1.06	5I3.0TRTM...028/033	2	0.94	8	TMC125-5	1.85 - 2.24
TR 60X3.0	5/8"	1.06	5I3.0TRTM...028/033	2	0.94	8	TMC125-5	1.85 - 2.24
TR 65X4.0	5/8"	1.06	5I4.0TRTM...028/034	2	0.94	6	TMC125-5	2.40 - 4.17
TR 70X4.0	5/8"	1.06	5I4.0TRTM...028/034	2	0.94	6	TMC125-5	2.40 - 4.17
TR 75X4.0	5/8"	1.06	5I4.0TRTM...028/034	2	0.94	6	TMC125-5	2.40 - 4.17
TR 80X4.0	5/8"	1.06	5I4.0TRTM...028/034	2	0.94	6	TMC125-5	2.40 - 4.17
TR 85X4.0	5/8"	1.06	5I4.0TRTM...028/034	2	0.94	6	TMC125-5	2.40- 4.17
TR 90X4.0	5/8"	1.06	5I4.0TRTM...028/034	2	0.94	6	TMC125-5	2.40 - 4.17
TR 95X4.0	5/8"	1.06	5I4.0TRTM...028/034	2	0.94	6	TMC125-5	2.40 - 4.17
TR 100X4.0	5/8"	1.06	5I4.0TRTM...028/034	2	0.94	6	TMC125-5	2.40 - 4.17
TR 105X4.0	5/8"	1.06	5I4.0TRTM...028/034	2	0.94	6	TMC125-5	2.40 - 4.17
TR 110X4.0	5/8"	1.06	5I4.0TRTM...028/034	2	0.94	6	TMC125-5	2.40 - 4.17

Sample tool requirement for thread TR 38x3.0
Ordering Code: Insert: **5I3.0TRTM VBX 028/033** Toolholder: **TMC100-5 124/204**
For toolholder information, see page 236.

Thread Milling

> Standard Toolholders

Vardex Ordering Code System

Thread Milling Toolholders

B	TM	N	C	0.75	-	3	B		CW	LH	
1	2	3	4	5		6	7	8	9	10	11

1 - Shank Type
B - Anti Vibration System

2 - System
TM - Thread Milling

3 - Holder Type
2 - Twin Flute
M - Mini
L - Long Tool
N - Tapered Holder
V - Vertical Holder
S - Single Point
O - Offset
W - Wide Cut. Dia.

4 - Cooling
C - Coolant Channel

5 - Shank Dia.
0375 - 3/8"
050 - 1/2"
0625 - 5/8"
075 - 3/4"
100 - 1"
125 - 1 1/4"

6 - Insert Size
6.0 - 6.0mm
2 - 1/4"
3 - 3/8"
3B - 3/8"B
4 - 1/2"
5 - 5/8"
6B - 3/4"B

7 - Cut. Edge Length
B - TMB

8 - Serial No.
(for TMO Holders)
1 - 16

9 - Shank std.
None - Weldon
CW - Clarkson Weldon

10 - RH / LH Holder
None - Right Hand
LH - Left Hand

11 - Serial No.
(for Coarse Pitch holders)
124/...

Thread Milling Shell Mill

TMSH	-	D250	-	075	-	3	B
1		2		3		4	5

1 - System
Thread Mill Shell Mill

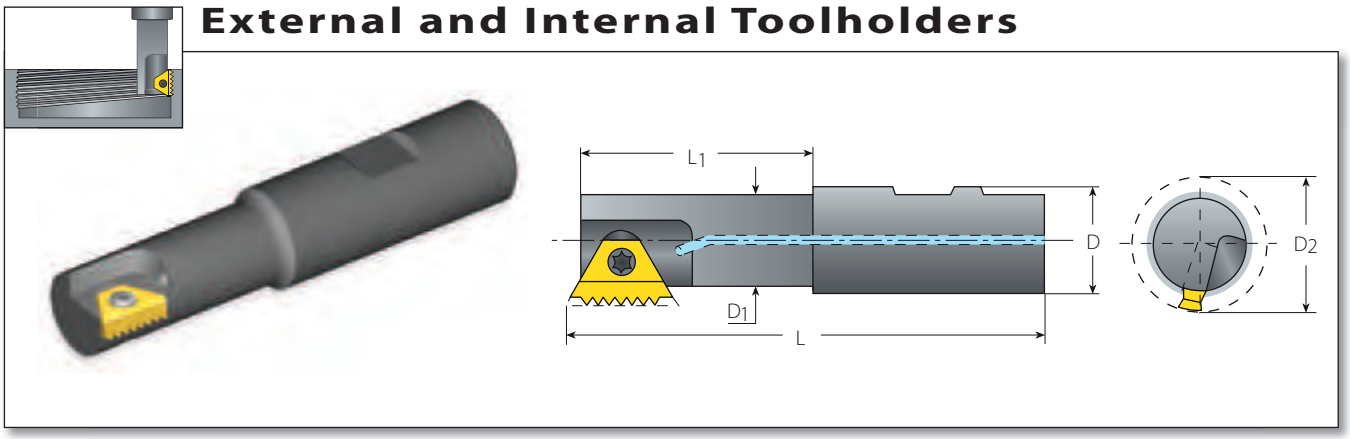
2 - Cutting Dia.
150, 200, 250, 300, 400, 500

3 - Drive Hole Dia.
1/2, 3/4, 1, 1 1/4, 1 1/2

4 - Insert Size
2 - 1/4"
3 - 3/8"
3B - 3/8"B
5 - 5/8"
6B - 3/4"B

5 - Cut. Edge Length
B - TMB

External and Internal Toolholders

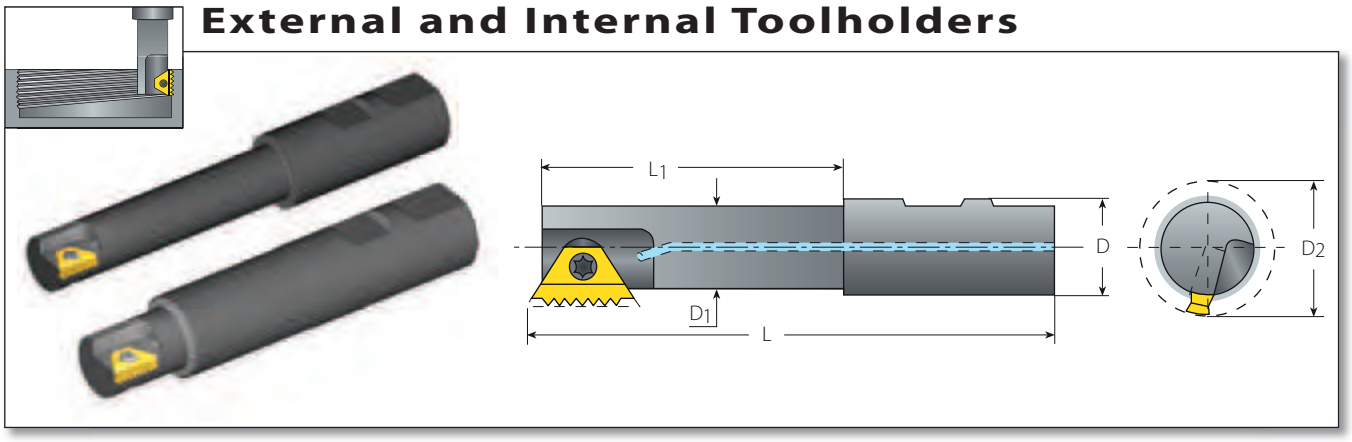


TM Standard

Insert Size	Ordering Code	EDP No.	Dimensions inch					Spare Parts	
IC			L	L1	D	D1	D2	Insert Screw	Torx Key
6.0mm	TMMC050-6.0	67635	2.72	0.47	0.50	0.27	0.35	SN7T	K7T
	TMMC075-6.0	67636	3.50	0.67	0.75	0.27	0.35		
1/4"	TMC050-2	67612	2.75	0.47	0.50	0.35	0.45	SN2TM	K2T
	TMC075-2	67614	3.50	0.79	0.75	0.35	0.45		
3/8"	TMC0625-3	67613	3.56	0.87	0.625	0.54	0.67	SN3TM	K3T
	TMC075-3	67615	3.75	1.69	0.75	0.65	0.79		
3/8"B	BTMC0625-3B	67600	3.15	1.14	0.625	0.53	0.67	SN3TM	K3T
	BTMC075-3B	67601	3.27	1.14	0.75	0.61	0.75	SN3T	K3T
	BTMC100-3B	67602	3.68	1.18	1.00	0.61	0.75		
	BTMWC100-3B	67609	3.62	1.18	1.00	0.73	0.87		
5/8"	TMC100-5	67616	4.38	2.05	1.00	0.94	1.18	SN5TM	K5T
	TMC100-5LH	67617	4.38	2.05	1.00	0.94	1.18		
	TMC125-5	67618	4.75	2.28	1.25	1.22	1.46		
3/4"B	TMC125-6B	67619	4.45	2.16	1.25	1.06	1.38	SM7T	K30T
	TMC150-6B	67708	5.25	2.56	1.50	1.50	1.81		

Sample Order: **TMC050-2**

External and Internal Toolholders

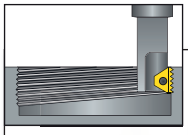


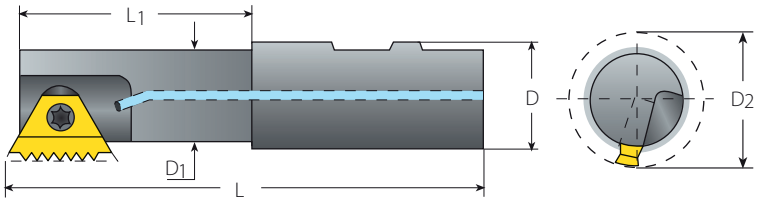
TML Long Tools

Insert Size	Ordering Code	EDP No.	Dimensions inch					Spare Parts	
IC			L	L1	D	D1	D2	Insert Screw	Torx Key
1/4″	TMLC100-2	67719	4.95	0.67	1.00	0.35	0.45	SN2TM	K2T
3/8″	TMLC100-3	67624	5.00	0.98	1.00	0.73	0.87	SN3T	K3T
	BTMLC100-3	67737	4.95	2.50	1.00	0.73	0.87		
3/8″B	BTMLC075-3B	67603	3.86	1.73	0.75	0.61	0.75	SN3T	K3T
	BTMLC100-3B	67604	4.95	2.50	1.00	0.73	0.87		
5/8″	TMLC100-5	67625	5.88	3.62	1.00	0.94	1.18	SN5TM	K5T
	TMLC125-5	67628	6.33	3.86	1.25	1.22	1.46		
3/4″B	TMLC150-6B	67720	6.55	3.74	1.50	1.50	1.81	SM7T	K30T

Sample Order: **TMLC100-3**

External and Internal Toolholders



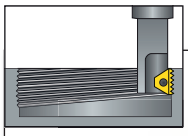


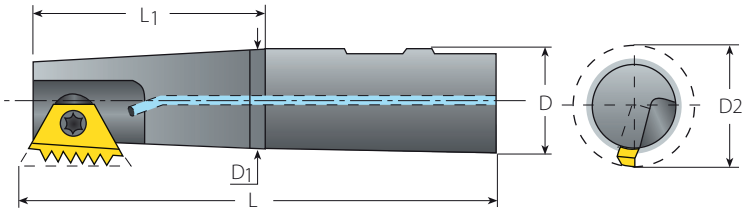
124/.. - For Coarse Pitch Threads

Insert Size	Ordering Code	EDP No.	Dimensions inch					Spare Parts	
IC			L	L1	D	D1	D2	Insert Screw	Torx Key
6.0mm	TMMC075-6 124/203	67700	3.50	0.59	0.75	0.26	0.35	SN7T	K7T
1/4"	TMC075-2 124/205	67702	3.12	0.61	0.75	0.29	0.39	SN2TM	K2T
	TMC075-2 124/206	67703	3.12	0.61	0.75	0.35	0.47		
	TMC075-2 124/209	67706	3.12	0.61	0.75	0.29	0.39		
3/8"	TMC0625-3 124/201	67698	3.75	0.81	0.75	0.48	0.61	SN3TM	K3T
1/2"	TMC100-4 124/202	67699	3.58	1.18	1.00	0.53	0.71	SN4TM	K4T
	TMC100-4 124/207	67704	3.97	1.57	1.00	0.63	0.79	SA4TM	
5/8"	TMC100-5 124/204	67701	3.98	1.57	1.00	0.75	0.98	SA5TM	K5T
	TMC100-5 124/208	67705	3.98	1.57	1.00	0.65	0.87	SN5TM	

Sample Order: **TMMC 075-6 124/203**

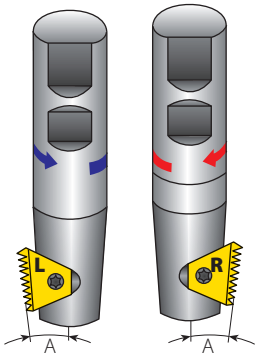
External and Internal Toolholders





TMN - For Conical Threads (NPT, NPTF, BSPT)

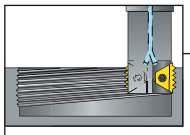
Insert Size	Ordering Code	EDP No.		EDP No.		Dimensions inch				Spare Parts	
IC	RH		LH		L	L1	D	D1	D2	Insert Screw	Torx Key
3/8"	TMNC0625-3	67638	TMNC0625-3 LH	67639	3.56	0.87	0.625	0.49	0.61	SN3TM	K3T
	TMNC075-3	67640	TMNC075-3 LH	67641	3.38	0.91	0.75	0.59	0.75		
3/8"B	BTMNC0625-3B	67605	BTMNC0625-3B LH	67606	3.15	1.14	0.625	0.53	0.67	SN3TM	K3T
	BTMNC075-3B	67607	BTMNC075-3B LH	67730	3.27	1.14	0.75	0.61	0.75		
5/8"	TMNC125-5	67644	TMNC125-5 LH	67645	4.75	2.28	1.25	1.22	1.46	SN5TM	K5T

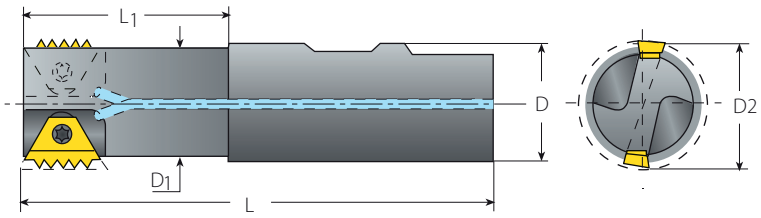


Sample Order: **TMNC075-3**

NOTE: To use the cutting edge marked "L", LH Cutter is required.
Add LH to the ordering code.

External and Internal Toolholders



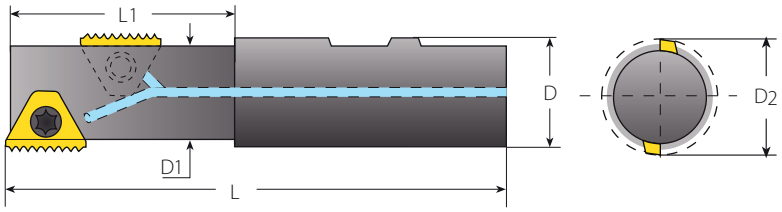


TM2 - Twin Flutes

Insert Size	Ordering Code	EPD No.	Dimensions inch					Spare Parts	
IC			L	L1	D	D1	D2	Insert Screw	Torx Key
1/4"	TM2C075-2	67685	3.42	0.79	0.75	0.57	0.67	SN2TM	K2T
3/8"	TM2C100-3	67686	4.02	1.69	1.00	0.89	1.02	SN3T	K3T
3/8"B	BTM2C100-3B	67718	4.13	1.81	1.00	0.89	1.02		
5/8"	TM2C125-5	67687	4.65	1.77	1.25	1.42	1.65	SN5TM	K5T
3/4"B	TM2C150-6B	67688	5.33	2.56	1.50	1.73	2.05	SM7T	K30T

Sample Order: **TM2C125-5**

External and Internal Toolholders

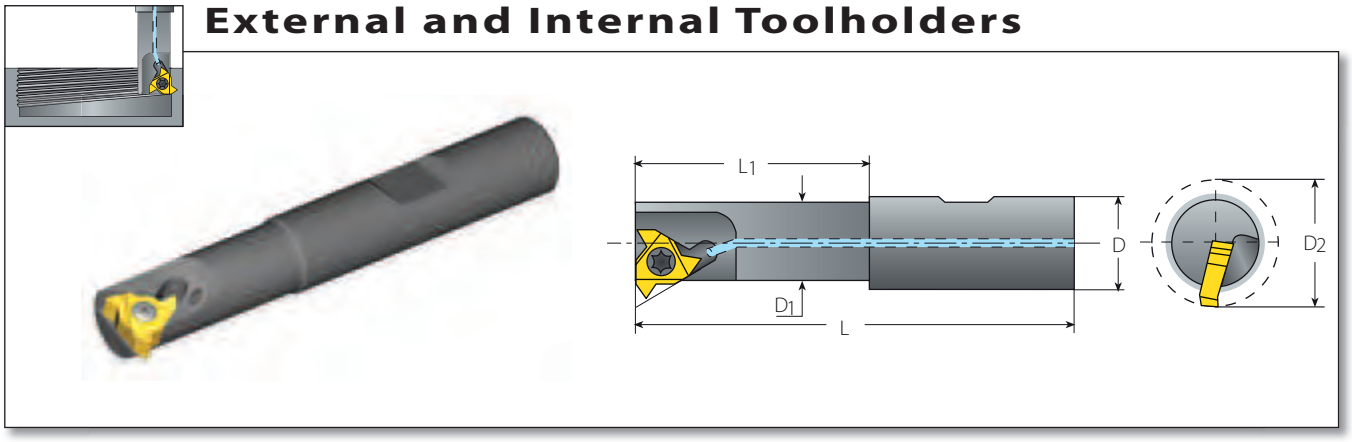


TMO - Twin Flute Offset

Spare Parts

Insert Size	Ordering Code	EDP No.	Applicable Threads			Dimensions inch					Spare Parts	
IC			External	Internal	External & Internal	L	L1	D	D1	D2	Insert Screw	Torx Key
1/4″	TMOC075-2-1	67655	16UN	48/32/16UN		3.50	0.98	0.75	0.47	0.57	SN2TM	K2T
	TMOC075-2-2	67657	24/18UN	48/24/18UN	24W							
	TMOC075-2-3	67658	28/14UN	28/14UN	28/14W							
	TMOC075-2-4	67659	20UN	20UN								
	TMOC075-2-5	67693			26W							
	TMOC075-2-6	67727			20W							
	TMOC075-2-7	67660			19W							
	TMOC075-2-8	67713	1.0/1.5ISO	0.5/1.0/1.5ISO								
	TMOC075-2-9	67762	0.75ISO	48UN, 0.75ISO								
	TMOC075-2-10	67656	1.25ISO	1.25ISO								
3/8″	TMOC075-3-1	67661	1.5ISO	0.5/1.5ISO		3.75	1.69	0.75	0.65	0.79	SN3T	K3T
	TMOC075-3-2	67763	13UN	13UN	26W							
	TMOC075-3-3	67663	28UN	32/28UN								
	TMOC075-3-4	67674	27UN	27UN								
	TMOC075-3-5	67664		11.5UN	11.5NPS							
	TMOC075-3-6	67665	24/20/18/16/14/12UN	24/20/18/16/14/12UN	26/20/18/16/14/12W, 14NPS							
	TMOC075-3-7	67764	1.25ISO	1.25ISO	24W							
	TMOC075-3-8	67765			19W							
	TMOC075-3-9	67716			11W							
	TMOC075-3-10	67662	1.0/2.0ISO	0.5/1.0/2.0ISO								
	TMOC075-3-11	67766	0.75ISO	32UN, 0.75ISO								
	TMOC075-3-12	67767	1.75ISO	1.75ISO								
5/8″	TMOC100-5-1	67666	24/20/18/14/13/12UN	24/20/18/14/13/11UN	14W	4.38	2.05	1.00	0.94	1.18	SN5TM	K5T
	TMOC100-5-2	67667	24/18/12UN	24/18/12/6UN	12W							
	TMOC100-5-3	67668	16UN	16UN	16W, 8NPS							
	TMOC100-5-4	67669	14/7UN	14UN	14/7W							
	TMOC100-5-5	67726		11.5UN	11.5NPS							
	TMOC100-5-6	67707	11UN	11UN	11W							
	TMOC100-5-7	67670	10UN	10/5UN	10W							
	TMOC100-5-8	67714	9UN	9UN	9W							
	TMOC100-5-9	67671	8UN	8UN	8W							
	TMOC100-5-10	67678		7UN								
	TMOC100-5-11	67768	6UN		6W							
	TMOC100-5-12	67712	1.0/2.0/2.5/4.0ISO	1.0/2.0/2.5/4.0/5.0ISO								
	TMOC100-5-13	67769	1.25ISO	1.25ISO								
	TMOC100-5-14	67770	1.5/2.5/4.5ISO	1.5/2.5/4.5/ISO								
	TMOC100-5-15	67771	1.75ISO	1.75ISO								
	TMOC100-5-16	67760	1.0/1.5/3.0/3.5ISO	1.0/1.5/3.0/3.5ISO								

External and Internal Toolholders



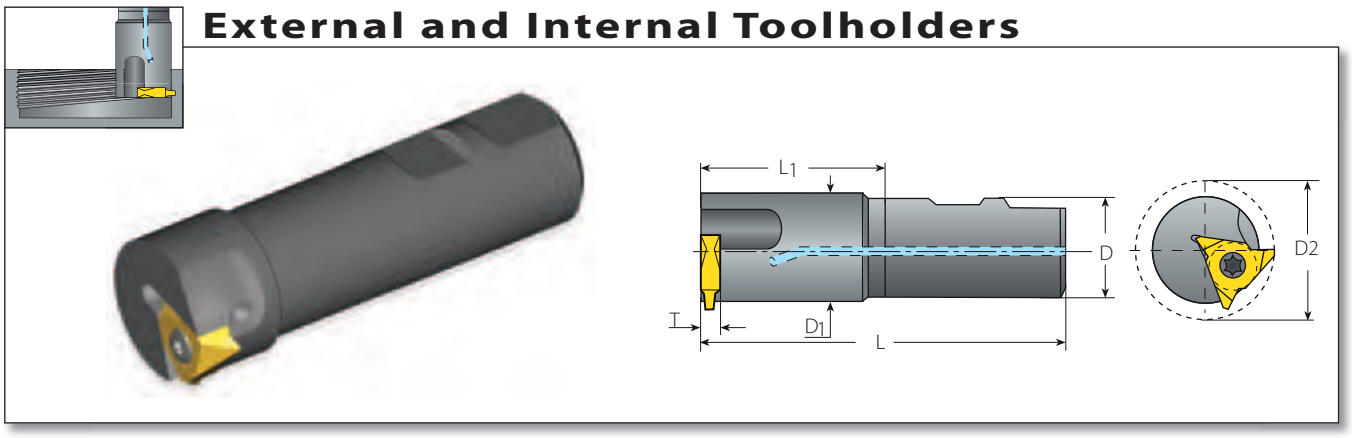
TMS - Single Point (Standard Inserts)

Insert Size	Ordering Code	EDP No.	Dimensions inch					Spare Parts	
IC			L	L1	D	D1	D2	Insert Screw	Torx Key
1/4"	TMSC0375-2	67673	2.50	0.98	0.375	0.37	0.49	SN2T8	K2T

Sample Order: **TMSC0375-2**

NOTE: Use Standard laydown thread turning inserts. See Thread Turning Inserts section - Page 17.
Use external LH inserts for external thread and internal RH inserts for internal thread.

External and Internal Toolholders



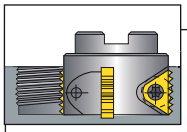
TMV - Single Point (Vertical Insert)

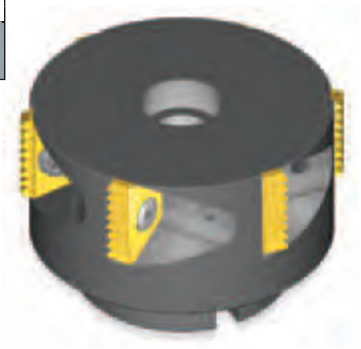
Insert Size	Ordering Code	EDP No.	Dimensions inch					Spare Parts	
IC			L	L1	D	D1	D2	Insert Screw	Torx Key
5/8"V	TMVC125-5	67677	4.65	2.36	1.25	1.40	1.81	SN6T	K6T

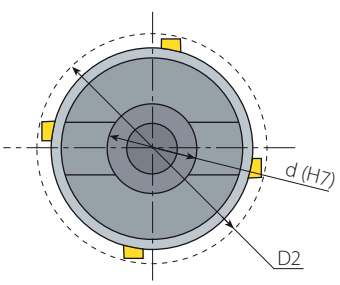
Sample Order: **TMVC125-5**

NOTE: Requires IC 5/8" vertical thread turning inserts (width T=6). Use external LH inserts for external threads and internal RH inserts for internal threads.
See Thread Turning Inserts section - Page 17.

External and Internal Toolholders







Cutter Drive
ANSI B94.19 - 1977

TM Shell Mill

Insert Size	Ordering Code	EDP No.	No. of inserts	Dimensions inch			Spare Parts		
IC				D2	d(H7)	H	Insert Screw	Torx Key	Holder Screw
1/4″	TMSH-D150-050-2	67100	6	1.50	1/2	1.58	SN2T	HK2T	1/4 X 28 3/8 X 24
1/4″	TMSH-D200-075-2	67101	8	1.97	3/4	1.58			
3/8″	TMSH-D200-075-3	67102	6	1.97	3/4	1.58	SN3TM	HK3T	3/8 X 24 3/8 X 24
3/8B″	TMSH-D250-075-3B	67103	6	2.48	3/4	1.58			
5/8″	TMSH-D250-075-5	67104	4	2.48	3/4	1.77	SN5TM	HK5T	3/8 X 24
3/4B″	TMSH-D250-075-6B	67112	4	2.48	3/4	1.97	SM7T	HK7T	3/8 X 24
5/8″	TMSH-D300-100-5	67105	6	3.15	1	2.00	SN5TM	HK5T	1/2 X 20
3/4B″	TMSH-D300-100-6B	67106	5	3.15	1	2.00	SM7T	HK7T	1/2 X 20
5/8″	TMSH-D400-125-5	67107	7	3.94	1 1/4	2.16	SN5TM	HK5T	5/8 X 18
3/4B″	TMSH-D400-125-6B	67772	6	3.94	1 1/4	2.16	SM7T	HK7T	5/8 X 18
5/8″	TMSH-D500-150-5	67109	9	4.92	1 1/2	2.50	SN5TM	HK5T	3/4 X 16
3/4B″	TMSH-D500-150-6B	67110	8	4.92	1 1/2	2.50	SM7T	HK7T	3/4 X 16

Spare Parts
For VARDEX TM and TMSH Toolholders

Insert IC


Holder


Holder Screw


Insert Screw


Torx Key

			Designation	Thread	
6.0mm	TMMC..-6.0		SN7T	M2.2x0.45x5.0	K7T
1/4"	TM.C..-2		SN2TM	M2.6x0.45x5.9	K2T
3/8"	TM.C..-3, TMC..-3 124/...		SN3T, SN3TM	UNC5x9.5, 8.0	K3T
3/8"B	BTM.C..-3B		SN3T	UNC5x.9.5	K3T
1/2"	TMC..-4 124/...		SN4TM, SA4TM	UNC8x10.7, 11.6	K4T
5/8"	TM.C..-5, TMC..-5 124/...		SN5TM, SA5TM	M5x0.8x15.0	K5T
3/4"B	TM.C..-6B		SM7T	M7x1.0x15.0	K30T
1/4"	TMSH-D150-050-2	1/4 - 28 X 1.25, 3/8 X 24	SN2T	M2.6x0.45x6.5	HK2T
1/4"	TMSH-D200-075-2	3/8 - 24 X 1.25	SN2T	M2.6x0.45x6.5	HK2T
3/8"	TMSH-D200-075-3	3/8 - 24 X 1.25, 3/8 X 24	SN3TM	UNC5x8.0	HK3T
3/8"B	TMSH-D250-075-3B	3/8 - 24 X 1.25	SN3TM	UNC5x8.0	HK3T
5/8"	TMSH-D250-075-5	3/8 - 24 X 1.25	SN5TM	M5x0.8x15.0	HK5T
3/4"B	TMSH-D250-075-6B	3/8 - 24 X 1.25	SM7T	M7x1.0x15.0	HK7T
5/8"	TMSH-D300-100-5	1/2 - 20 X 1.5	SN5TM	M5x0.8x15.0	HK5T
3/4"B	TMSH-D300-100-6B	1/2 - 20 X 1.5	SM7T	M7x1.0x15.0	HK7T
5/8"	TMSH-D400-125-5	5/8 - 18 X 1.5	SN5TM	M5x0.8x15.0	HK5T
3/4"B	TMSH-D400-125-6B	5/8 - 18 X 1.5	SM7T	M7x1.0x15.0	HK7T
5/8"	TMSH-D500-150-5	3/4 - 16 X 1.75	SN5TM	M5x0.8x15.0	HK5T
3/4"B	TMSH-D500-150-6B	3/4 - 16 X 1.75	SM7T	M7x1.0x15.0	HK7T

Thread Milling




> Technical Data

THREAD MILLING TECHNICAL DATA

For more Technical Data see our TM Handbook

About Thread Milling

In order to perform a thread milling operation, a milling machine with three-axis control capable of helical interpolation is required. Helical interpolation is a CNC function producing tool movement along a helical path. This helical motion combines circular movement in one plane with a simultaneous linear motion in a plane perpendicular to the first. For example, the path from point A to point B (Fig. A) on the envelope of the cylinder combines a circular movement in the xy plane with a linear displacement in the z direction.
On most CNC systems this function can be executed in two different ways:

G02: Helical interpolation in a clockwise direction
G03: Helical interpolation in a counter-clockwise direction

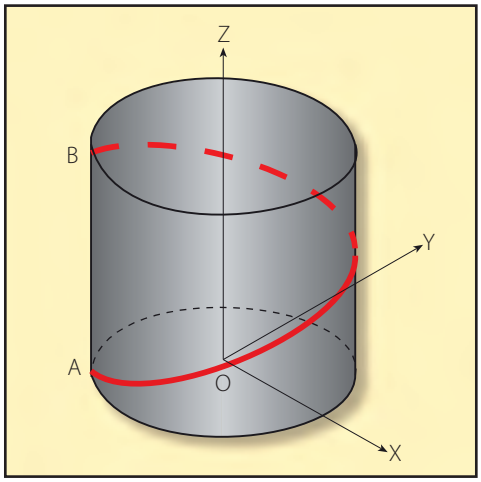


Fig. A

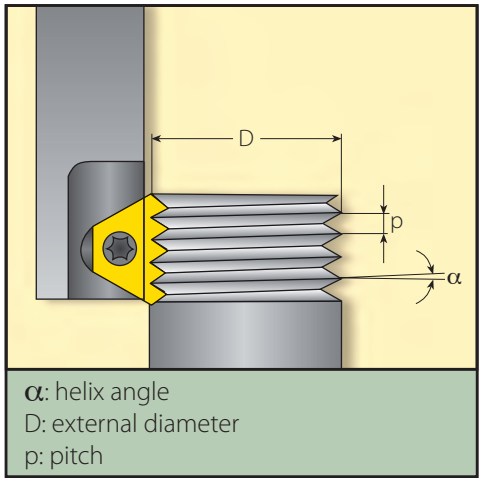


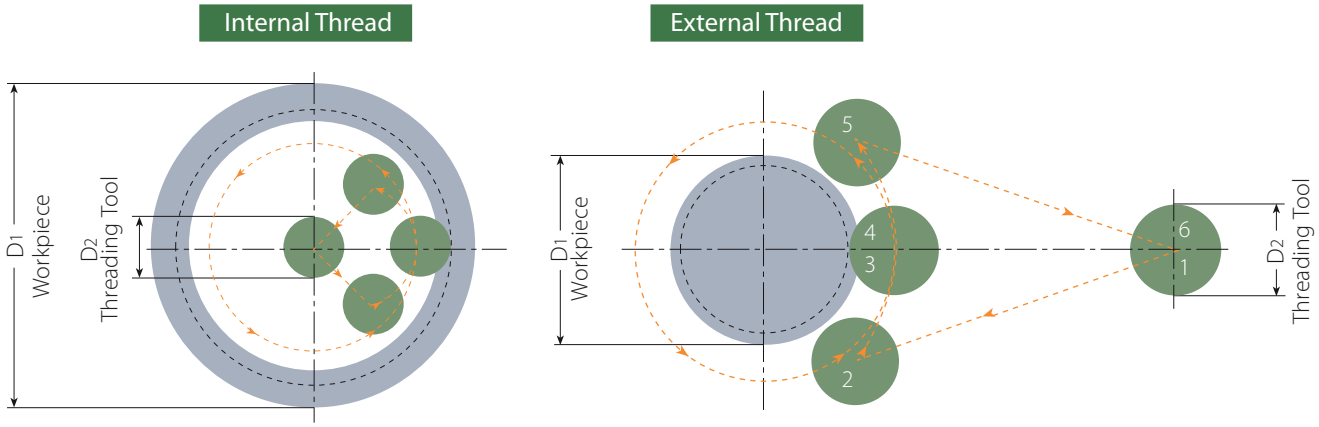
Fig. B

The thread milling operation (Fig. B) consists of circular rotation of the tool around its own axis together with an orbiting motion along the bore or workpiece circumference.
During one such orbit, the tool will shift vertically one pitch length. These movements combined with the insert geometry create the required thread form.
There are three acceptable ways of approaching the workpiece with the tool to initiate production of the thread:

1. **Tangential Arc Approach**
2. **Radial Approach**
3. **Tangential Line Approach**

1 Tangential Arc Approach

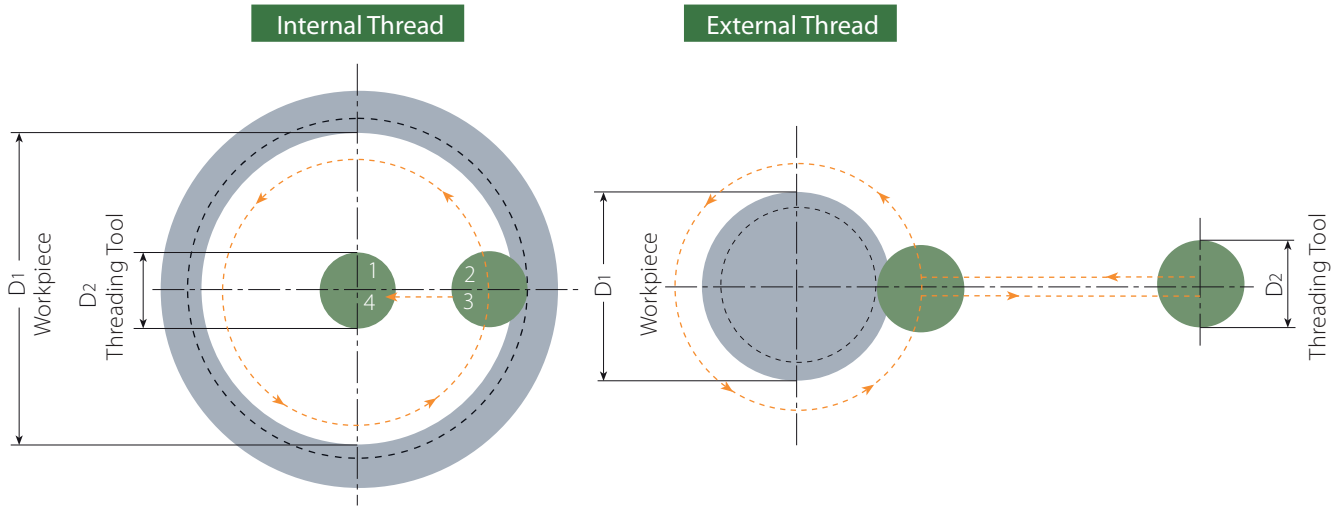
With this method, the tool enters and exits the workpiece smoothly. No marks are left on the workpiece and there is no vibration, even with harder materials.
Although it requires slightly more complex programming than the radial approach (see below), this is the method recommended for machining the highest quality threads.



1-2: Rapid approach
2-3: Tool entry along tangential arc, with simultaneous feed along z-axis
3-4: Helical movement during one full orbit (360°)
4-5: Tool exit along tangential arc, with continuing feed along z-axis
5-6: Rapid return

2 Radial Approach

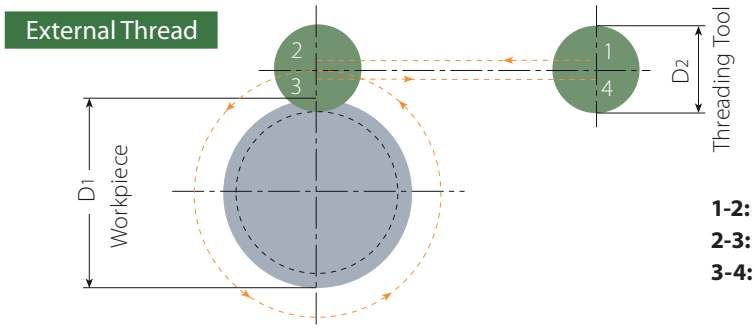
This is the simplest method. There are two characteristics worth noting about the radial approach:
A. A small vertical mark may be left at the entry (and exit) point. This is of no significance to the thread itself.
B. When using this method with very hard materials, there may be a tendency of the tool to vibrate as it approaches the full cutting depth.
Note: Radial feed during entry to the full profile depth should only be ⅓ of the subsequent circular feed !



1-2: Radial entry
2-3: Helical movement during one full orbit (360°)
3-4: Radial exit

3 Tangential Line Approach

This method is very simple, and has all of the advantages of the tangential arc method. However, it is applicable only with external threads.



1-2: Radial entry with simultaneous feed along z axis
2-3: Helical movement during one full orbit (360°)
3-4: Radial exit

Preparing for the Thread Milling Operation

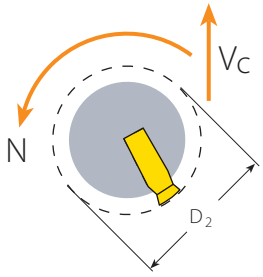
1 Calculation of Rotational Velocity and Feed at the Cutting Edge

$$N = \frac{12 \times V}{\pi \times D_2}$$

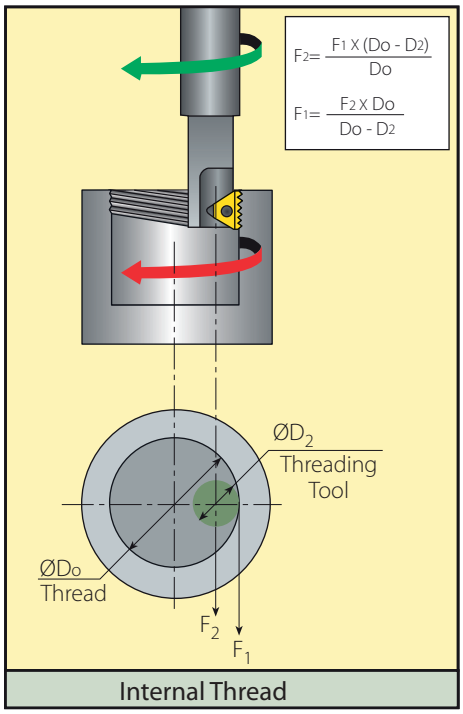
$$V = \frac{N \times \pi \times D_2}{12}$$

$$F_1 = N \times z \times f$$

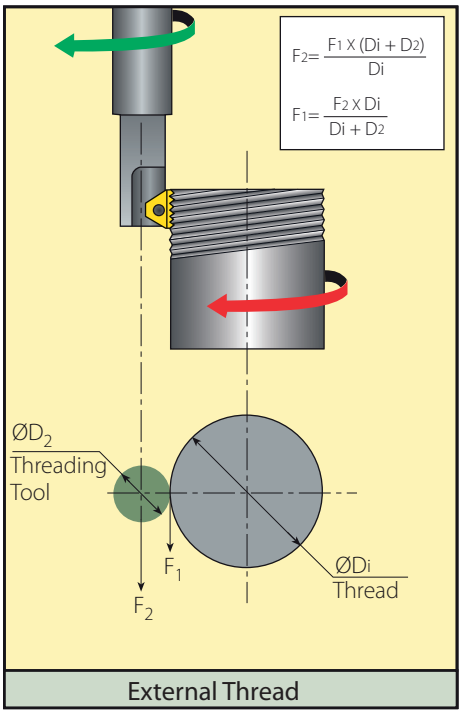
N - Rotational Velocity [R.P.M.]
V - Cutting Speed [ft/min]
D_2 - Toolholder Cutting Dia. [inch]
F_1 - Tool Feed Rate at the Cutting Edge [inch/min]
z - No. of Cutting Edges
f - Feed per Tooth per Rotation [inch/rev]



2 Calculation of Feed Rates at the Tool Center Line



Internal Thread



External Thread

On most CNC machines, the feed rate required for programming is that of the center-line of the tool. When dealing with linear tool movement, the feed rate at the cutting edge and the center line are identical, but with circular tool movement, such is not the case. The equations define the relationship between feed rates at the cutting edge and at the tool center line.

List of "G" Codes (ISO) for CNC Program

Code	Description
%	Recognition code (ISO or EIA), +End of tape
G00	Fast feed linear positioning
G01	Linear interpolation
G02	Circular/Helical interpolation CW
G03	Circular/Helical interpolation CCW
G40	Cutter radius compensation cancel
G41	Cutter radius compensation left
G42	Cutter radius compensation right
G43	Tool length compensation +
G49	Tool length compensation cancel
G57	Work coordinate system selection
G90	Absolute command relative to work coordinate origin
G91	Incremental command relative to tool position
F	Feed mm/min
S	Spindle speed RPM

Code	Description
H	Tool length compensation number
D	Tool radius compensation number
X	X coordinate
Y	Y coordinate
Z	Z coordinate
R	Radius of travel
I	X coordinate to center of starting arc travel
J	Y coordinate to center of starting arc travel
M3	Spindle forward rotation
M5	Spindle stop
M30	Program end & rewind
O	Program number
N	Block number (can be avoided)
(	Start of comment
)	End of comment

Grades and Their Applications

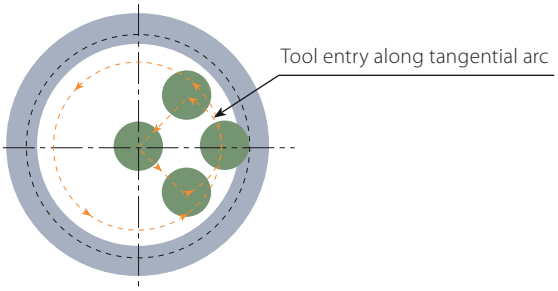
Grade	Application	Sample
VBX	First choice for steel and cast iron A tough sub-micron substrate with TiCN coating Provides good fracture toughness and excellent wear resistance	
VTX	First choice for stainless steel A tough sub-micron substrate with TiAlN coating Provides good fracture toughness and excellent wear resistance	
VK2	Uncoated grade for machining cast iron & nonferrous metals	

Recommended Grades, Cutting Speeds Vc [ft/min] and Feed f [inch/tooth]

Material Group	Vardex No.	Material		Hardness Brinell HB	Vc [ft/min]			Feed f[inch/tooth]
					Coated		Uncoated	
					VBX	VTX	VK2	Indexable Inserts
P Steel	1	Unalloyed steel	Low carbon (C=0.1-0.25%)	125	328 - 688	295 - 590		0.002 - 0.012
	2		Medium carbon (C=0.25-0.55%)	150	328 - 590	295 - 557		0.002 - 0.010
	3		High Carbon (C=0.55-0.85%)	170	328 - 557	295 - 524		0.002 - 0.008
	4	Low alloy steel (alloying elements≤5%)	Non hardened	180	295 - 524	295 - 508		0.002 - 0.010
	5		Hardened	275	262 - 590	262 - 524		0.002 - 0.008
	6		Hardened	350	229 - 459	229 - 492		0.002 - 0.006
	7	High alloy steel (alloying elements>5%)	Annealed	200	197 - 426	229 - 377		0.002 - 0.008
	8		Hardened	325	229 - 361	197 - 328		0.002 - 0.004
	9	Cast steel	Low alloy (alloying elements <5%)	200	328 - 557	328 - 557	328 - 492	0.002 - 0.006
	10		High alloy (alloying elements >5%)	225	229 - 393	229 - 426	197 - 426	0.002 - 0.004
M Stainless Steel	11	Stainless steel Feritic	Non hardened	200	328 - 557	393 - 590		0.002 - 0.006
	12		Hardened	330	328 - 557	393 - 590		0.002 - 0.004
	13	Stainless steel Austenitic	Austenitic	180	229 - 459	328 - 459		0.002 - 0.006
	14		Super Austenitic	200	229 - 459	328 - 459		0.002 - 0.004
	15	Stainless steel Cast Feritic	Non hardened	200	229 - 459	328 - 459		0.002 - 0.006
	16		Hardened	330	229 - 459	328 - 459		0.002 - 0.004
	17	Stainless steel Cast austenitic	Austenitic	200	229 - 393	328 - 393		0.002 - 0.006
	18		Hardened	330	229 - 393	328 - 393		0.002 - 0.004
K Cast Iron	28	Malleable Cast iron	Ferritic (short chips)	130	197 - 426	328 - 393		0.001 - 0.031
	29		Pearlitic (long chips)	230	197 - 393	262 - 328		0.001 - 0.002
	30	Grey cast iron	Low tensile strength	180	197 - 426	262 - 328		0.002 - 0.006
	31		High tensile strength	260	197 - 328	262 - 328		0.002 - 0.004
	32	Nodular SG iron	Feritic	160	197 - 410	262 - 328		0.002 - 0.006
	33		Pearlitic	260	164 - 295	197 - 295		0.002 - 0.004
N(K) Non-Ferrous Metals	34	Aluminium alloys Wrought	Non aging	60	328 - 820		656 - 983	0.004 - 0.016
	35		Aged	100	328 - 590		197 - 361	0.004 - 0.012
	36	Aluminium alloys	Cast	75	492 - 1,311		197 - 393	0.004 - 0.012
	37		Cast & aged	90	492 - 918		197 - 328	0.002 - 0.010
	38	Aluminium alloys	Cast Si 13-22%	130	262 - 492		66 - 164	0.004 - 0.012
	39	Copper and copper alloys	Brass	90	393 - 688	328 - 656	164 - 229	0.004 - 0.012
	40		Bronze and non leaded copper	100	393 - 688	328 - 656	164 - 229	0.002 - 0.010
S(M) Heat Resistant Material	19	High temperature alloys	Annealed (Iron based)	200	66 - 148	66 - 131	66 - 98	0.002 - 0.004
	20		Aged (Iron based)	280	66 - 98	66 - 98	49 - 82	0.001 - 0.002
	21		Annealed (Nickel or Cobalt based)	250	66 - 164	49 - 66	49 - 66	0.001 - 0.002
	22		Aged (Nickel or Cobalt based)	350	33 - 49	33 - 49	33 - 49	0.001 - 0.002
	23	Titanium alloys	Pure 99.5 Ti	400Rm	229 - 459	229 - 393	131 - 197	0.001 - 0.002
	24		α+β alloys	1050Rm	66 - 164	66 - 164	66 - 131	0.001 - 0.002
H(K) Hardned Material	25	Extra hard steel	Hardened & tempered	45-50HRc	66 - 148	66 - 148		0.001
	26			51-55HRc	66 - 148	66 - 148		0.001

Recommendation:
At tool entry, set the Feed f [inch/tooth] to 70% lower than the threading Feed.

Example:
Threading Feed: 0.01[inch/tooth]
Tool entry Feed: 0.003[inc/tooth]



Minimum Bore Diameters for Thread Milling

Pitch mm		0.5	0.6	0.7	0.75 0.80	0.9	1.0	1.25	1.5	1.75	2.0		2.5	3.0	3.5	4.0	4.5	5.0	5.5		6.0	
Pitch tpi		48	44	36	32	28	26 24	20 19	18 16	14	13 12	11.5 11	10	9 8	7	6		5		4.5		4
Toolholder Ordering Code	D2	Minimum Bore Diameter Di mm																				
TMMC 050-6.0	0.35	0.37	0.38	0.39	0.39	0.41	0.42	0.45	0.47													
TMMC 075-6.0	0.35	0.37	0.38	0.39	0.39	0.41	0.42	0.45	0.47													
TMMC 075-6.0 124/203	0.35	0.37	0.38	0.39	0.39	0.41	0.42	0.45	0.47													
TMC 050-2	0.45	0.47	0.48	0.49	0.49	0.51	0.52	0.55	0.57	0.59												
TMC 075-2	0.45	0.47	0.48	0.49	0.49	0.51	0.52	0.55	0.57	0.59												
TMLC 100-2	0.45	0.47	0.48	0.49	0.49	0.51	0.52	0.55	0.57	0.59												
TMSC 0375-2	0.49	0.51	0.50	0.54	0.53	0.55	0.56	0.59	0.61	0.63												
TMOC 075-2	0.57	0.59	0.60	0.6	0.61	0.63	0.65	0.67	0.70	0.73												
TMNC 0625-3	0.61	0.63	0.64	0.65	0.65	0.67	0.68	0.70	0.73	0.75	0.77	0.79										
TMC 075-3 124/201	0.61	0.63	0.64	0.65	0.65	0.67	0.68	0.70	0.73	0.75	0.77	0.79										
TMC 0625-3	0.67	0.69	0.70	0.71	0.72	0.74	0.75	0.77	0.79	0.81	0.83	0.85										
BTMC 0625-3B	0.67	0.69	0.70	0.71	0.72	0.74	0.75	0.77	0.79	0.81	0.83	0.85										
TM2C 075-2	0.67	0.69	0.70	0.71	0.72	0.74	0.75	0.77	0.79	0.81												
BTMC 075-3B	0.75	0.78	0.79	0.80	0.80	0.82	0.83	0.85	0.87	0.89	0.91	0.93										
TMNC 075-3	0.75	0.78	0.79	0.80	0.80	0.82	0.83	0.85	0.87	0.89	0.91	0.93										
TMC 075-3	0.79	0.81	0.83	0.83	0.84	0.86	0.87	0.89	0.91	0.93	0.94	0.96										
TMOC 075-3	0.79	0.81	0.83	0.83	0.84	0.86	0.87	0.89	0.91	0.93	0.94	0.96										
BTMWC 100-3B	0.87	0.89	0.91	0.91	0.92	0.94	0.94	0.97	0.98	1.00	1.02	1.04										
BTMLC 100-3B	0.87	0.89	0.91	0.91	0.92	0.94	0.94	0.97	0.98	1.00	1.02	1.04										
TMLC 100-3	0.87	0.89	0.91	0.91	0.92	0.94	0.94	0.97	0.98	1.00	1.02	1.04										
TMC 100-5 124/204	0.98	1.01	1.02	1.03	1.04	1.06	1.06	1.09	1.11	1.13	1.15	1.17	1.23	1.33	1.44	1.56	1.68					
TM2C 100-3	1.02	1.05	1.06	1.07	1.08	1.09	1.10	1.13	1.15	1.17	1.19	1.21										
BTM2C 100-3B	1.02	1.05	1.06	1.07	1.08	1.09	1.10	1.13	1.15	1.17	1.19	1.21										
TMC 100-5	1.18	1.21	1.22	1.23	1.24	1.25	1.26	1.29	1.32	1.34	1.36	1.40	1.44	1.54	1.65	1.77	1.89					
TMLC 100-5	1.18	1.21	1.22	1.23	1.24	1.25	1.26	1.29	1.32	1.34	1.36	1.40	1.44	1.54	1.65	1.77	1.89					
TMOC 100-5	1.18	1.21	1.22	1.23	1.24	1.25	1.26	1.29	1.32	1.34	1.36	1.40	1.44	1.54	1.65	1.77	1.89					
TMC 125-6B	1.38								1.52	1.54	1.56	1.60	1.65	1.73	1.85	1.97	2.10	1.67	1.97	1.76	2.26	2.23
TMC 125-5	1.46	1.50	1.50	1.51	1.52	1.54	1.56	1.59	1.61	1.63	1.65	1.69	1.73	1.83	1.93	2.05	2.19					
TMLC 125-5	1.46	1.50	1.50	1.51	1.52	1.54	1.56	1.59	1.61	1.63	1.65	1.69	1.73	1.83	1.93	2.05	2.19					
TMNC 125-5	1.46	1.50	1.50	1.51	1.52	1.54	1.56	1.57	1.61	1.63	1.65	1.69	1.73	1.83	1.93	2.05	2.19					
TMSH D150-050-2	1.50	1.52	1.52	1.53	1.54	1.56	1.57	1.61	1.65	1.69												
TM2C 125-5	1.65	1.70	1.71	1.72	1.72	1.75	1.77	1.81	1.83	1.85	1.87	1.90	1.93	2.05	2.15	2.26	2.40					
TMVC 125-5	1.81																				2.46	
TMC 150-6B	1.81								1.95	1.97	1.99	2.03	2.09	2.17	2.17	2.19	2.17	2.07	2.13	2.15	2.26	2.23
TMLC 150-6B	1.81								1.95	1.97	1.99	2.03	2.09	2.17	2.17	2.19	2.17	2.07	2.13	2.15	2.26	2.23
TMSH D200-075-2	1.97	1.99	2.00	2.00	2.01	2.03	2.05	2.09	2.13	2.15												
TMSH D200-075-3	1.97	1.99	2.00	2.00	2.01	2.03	2.05	2.09	2.13	2.15	2.17	2.19										

Minimum Bore Diameters for Thread Milling (con't)

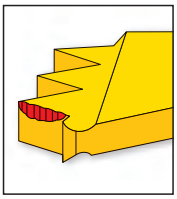
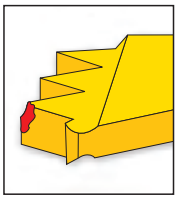
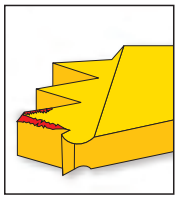
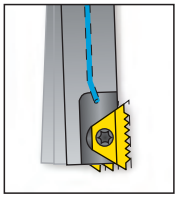
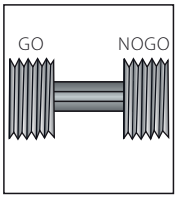
Pitch mm		0.5	0.6	0.7	0.75 0.80	0.9	1.0	1.25	1.5	1.75	2.0		2.5	3.0	3.5	4.0	4.5	5.0	5.5		6.0	
Pitch tpi		48	44	36	32	28	26 24	20 19	18 16	14	13 12	11.5 11	10	9 8	7	6		5		4.5		4
Toolholder Ordering Code	D2	Minimum Bore Diameter Di mm																				
TM2C 150-6B	2.05								2.20	2.21	2.22	2.24	2.32	2.42		2.48	2.52	2.60	2.64	2.66	2.72	2.76
TMSH D250-075-3B	2.48	2.5	2.51	2.52	2.52	2.54	2.56	2.6	2.64	2.66	2.68	2.72										
TMSH D250-075-5	2.48	2.5	2.51	2.52	2.52	2.54	2.56	2.6	2.64	2.66	2.68	2.72	2.76	2.83	2.87	2.91	2.95					
TMSH D250-075-6B	2.48								2.64	2.66	2.68	2.72	2.76	2.83	2.87	2.91	2.95	3.03	3.07	3.09	3.15	3.19
TMSH D300-100-5	3.15	3.17	3.18	3.19	3.19	3.21	3.23	3.27	3.31	3.33	3.35	3.39	3.43	3.50	3.54	3.58	3.62					
TMSH D300-100-6B	3.15								3.31	3.33	3.35	3.39	3.43	3.50	3.54	3.58	3.62	3.70	3.74	3.76	3.82	3.86
TMSH D400-125-5	3.94	3.96	3.96	3.97	3.98	4.00	4.02	4.06	4.09	4.11	4.13	4.17	4.21	4.29	4.33	4.37	4.41					
TMSH D400-125-6B	3.94								4.09	4.11	4.13	4.17	4.21	4.29	4.33	4.37	4.41	4.49	4.53	4.55	4.61	4.65
TMSH D500-150-5	4.92	4.94	4.95	4.96	4.96	4.98	5.00	5.04	5.08	5.10	5.12	5.16	5.20	5.28	5.31	5.35	5.39					
TMSH D500-50-6B	4.92								5.08	5.10	5.12	5.16	5.20	5.28	5.31	5.35	5.39	5.47	5.51	5.54	5.59	5.63

Coarse Pitch Tooling:

This table is not applicable to the Coarse Pitch system, which can thread mill bores smaller than those listed above.

See the Coarse Pitch section of the various thread standards.

Troubleshooting

	Problem	Possible Cause	Solution
	Increased insert flank wear	Cutting speed too high ----------➤ Chip is too thin ----------➤ Insufficient coolant ----------➤	Reduce cutting speed/use coated insert Increase feed rate Increase coolant flow rate
	Chipping of cutting edge	Chip is too thick ----------➤ Vibration ----------➤	Reduce feed rate Use the tangential arc method Increase RPM Check stability
	Material build up on the cutting edge	Incorrect cutting speed ----------➤ Unsuitable carbide grade ----------➤	Change cutting speed Use a coated carbide grade
	Chatter / Vibration	Feed rate is too high ----------➤ Profile is too deep ----------➤ Thread length is too long ----------➤	Reduce the feed Execute two passes, each with increased cutting depth Execute two passes, each cutting only half the thread length Execute two passes, each cutting only half the thread length
	Insufficient thread accuracy	Tool deflection ----------➤	Reduce feed rate Execute a “zero” cut

TM Solid

Solid Carbide Thread Milling Tools

> Tools

> Technical Data

TM Solid Carbide

HC		19	141	L03	-	I	24	UNC	TM		VTH
1	2	3	4	5		6	7	8	9	10	11

1- Line	2 - No. of Teeth	3 - Shank Dia.	4 - Cutting Dia.	5 - Tool Cutting Length	6 - Type of Tool
HC - Helicool **HCR** - Helicool R **HCC** - Helicool C **H** - He-Lex **S** - Straight Flutes **D** - Deep Threading or MilliPro	**1T** - 1 Tooth **3T** - 3 Teeth (MilliPro) **2L** - 2 Teeth LH (MilliPro HD)	1/8" - 12 3/16" - 19 1/4" - 25 5/16" - 31 3/8" - 37 1/2" - 50 5/8" - 63 3/4" - 75	0.028 - 0.746	Up to 3Do	**E** - External **I** - Internal **EI** - External + Internal

7 - Pitch

Full Profile - Pitch Range

mm	tpi
0.25-6.0	80 - 4.5

Partial Profile - Pitch Range

	mm	tpi
TA	0.5-0.8	32-56
TB	0.5-1.0	24-56
TC	1.0-1.50	16-24
TD	1.0-1.75	14-24
TF	0.5-1.25	20-48

8 - Standard	9 - System	10 - No. of Flutes	11 - Carbide Grade
ISO - ISO Metric **UN** - American UN **UNC** - UN Coarse **UNF** - UN Fine **UNEF** - UN Extra Fine **UNJ** - UNJ **MJ** - MJ **BSW** - Whit. Coarse **BSP** - BSP **BSF** - Whit. Fine **BSPT** - BSPT **NPT** - NPT **NPTF** - NPTF **PG** - PG	**TM** **TML** - Extra Long	**3** - 3 Flutes **5** - 5 Flutes Straight Flute, when two options are available	VTS VTH

HTC - Thriller

HTC	M6	1.0	2D	VTN
1	2	3	4	5

1 - Line	2 - Thread Diameter	3 - Pitch	4 - Thread Length	5 - Carbide Grade
HTC - Thriller	M6 - M12	1 - 1.75mm	2D 2.5D	VTN VTS

A Tool for EVERY Thread Milling Job!

Miniature Threads
MilliPro

MilliPro &
MilliPro EL
From M1.6x0.35 (1-72UNF)

MilliPro HD
Up to 62 HRc

MilliPro Dental
From M1.0x0.25 (0-80UNF)

Long Thread
Deep Threading

Full Profile

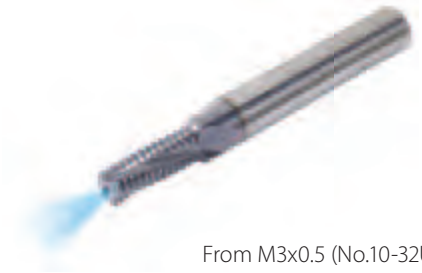
Partial Profile

Up to 3XDo

Normal Use
Straight Flutes

From M4.5x0.75 (No.8-36UNF)

Heavy Duty
Helicool



From M3x0.5 (No.10-32UNF)

Radial Coolant
Helicool-R (HCR)

From No.10-32UNF

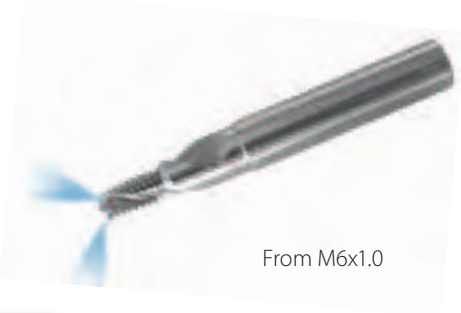
Helicool and Chamfer
Helicool-C (HCC)

From No.10-32UNF

Economical Tool
He-Lex

From M3x0.5 (No.10-32UNF)

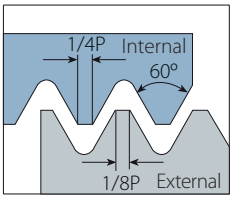
Drill, Thread and Chamfer
HTC



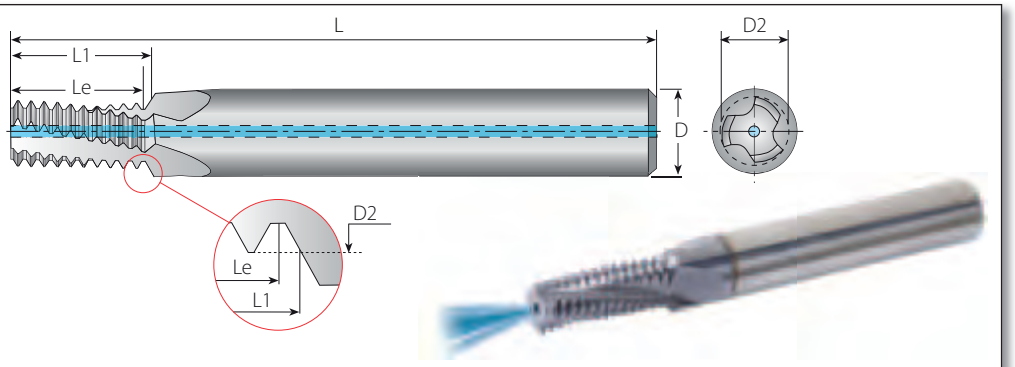
From M6x1.0

TM Solid Carbide

Internal



Defined by: ANSI B1.1:74
Tolerance class: 2B



Helical Flutes with Thru-Hole Coolant

1.5 x Do (L1 ≤ 1.5 x Thread Diameter)

Thread			Pitch	Ordering Code	EDP No.	Dimensions inch					No. of Flutes	Teeth	Bore Dia.*
UNC	UNF	UNEF	tpi	Internal	VTH	D	D2	L	Le	L1	Z	Zt	inch
No.10-24	5/16", 3/8"x24	9/16"-11/16"x24	24	HC19141L03-I24UNC TM...	80360	3/16	.141	1.772	.292	.312	3	7	.150
No.12-24	5/16", 3/8"x24	9/16"-11/16"x24	24	HC25163L03-I24UNC TM...	80361	1/4	.163	2.244	.333	.354	3	8	.177
1/4"x20	7/16", 1/2"x20	3/4"-1"x20	20	HC25192L03-I20UNC TM...	80362	1/4	.192	2.244	.350	.375	3	7	.201
5/16"x18	9/16", 5/8"x18	11/16"-1 11/16" x18	18	HC31242L04-I18UNC TM...	80363	5/16	.242	2.402	.444	.472	3	8	.260
3/8"x16	3/4"x16		16	HC31301L05-I16UNC TM...	80364	5/16	.301	2.402	.563	.594	3	9	.315
7/16"x14	7/8"x14		14	HC37354L06-I14UNC TM...	80365	3/8	.354	2.874	.643	.678	3	9	.370
1/2"x13			13	HC50407L08-I13UNC TM...	80366	1/2	.407	3.150	.769	.808	4	10	.429
9/16"x12	1"-1 1/2"x12		12	HC50465L08-I12UNC TM...	80367	1/2	.465	3.150	.833	.875	4	10	.484

Helical Flutes with Thru-Hole Coolant

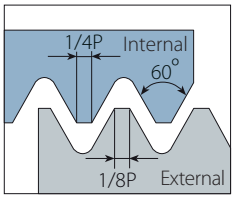
2 x Do (L1 ≤ 2 x Thread Diameter)

Thread			Pitch	Ordering Code	EDP No.	Dimensions inch					No. of Flutes	Teeth	Bore Dia.*
UNC	UNF	UNEF	tpi	Internal	VTH	D	D2	L	Le	L1	Z	Zt	inch
	No.10-32	No.12-3/8"x32	32	HC19150L03-I32UNF TM...	80291	3/16	.150	1.772	.375	.391	3	12	.157
		No.12-3/8"x32	32	HC25173L04-I32UNEF TM...	80292	1/4	.173	2.244	.438	.453	3	14	.185
	No.12; 1/4"x28	7/16"; 1/2"x28	28	HC25169L04-I28UNF TM...	80293	1/4	.169	2.244	.429	.446	3	12	.181
	1/4"x28	7/16"; 1/2"x28	28	HC25203L05-I28UNF TM...	80294	1/4	.203	2.244	.500	.518	3	14	.216
		7/16"; 1/2"x28	28	HC37371L08-I28UNEF TM...	80295	3/8	.371	2.874	.857	.875	3	24	.401
No.10-24	5/16"; 3/8"x24	9/16"-11/16"x24	24	HC19141L04-I24UNC TM...	80296	3/16	.141	1.772	.375	.396	3	9	.150
No.12-24	5/16"; 3/8"x24	9/16"-11/16"x24	24	HC25163L04-I24UNC TM...	80297	1/4	.163	2.244	.417	.437	3	10	.177
	5/16"; 3/8"x24	9/16"-11/16"x24	24	HC31263L06-I24UNF TM...	80298	5/16	.263	2.402	.625	.646	3	15	.272
	3/8"x24	9/16"-11/16"x24	24	HC37323L07-I24UNF TM...	80299	3/8	.323	2.874	.750	.771	3	18	.335
		9/16"-11/16"x24	24	HC50496L11-I24UNEF TM...	80300	1/2	.496	3.150	1.125	1.145	4	27	.520
1/4"x20	7/16"; 1/2"x20	3/4"-1"x20	20	HC25192L05-I20UNC TM...	80301	1/4	.192	2.244	.500	.525	3	10	.201
	7/16"; 1/2"x20	3/4"-1"x20	20	HC37362L08-I20UNF TM...	80302	3/8	.362	2.874	.850	.875	3	17	.390
	1/2"x20	3/4"-1"x20	20	HC50437L10-I20UNF TM...	80303	1/2	.437	3.150	1.000	1.025	4	20	.453
		3/4"-1"x20	20	HC75685L15-I20UNEF TM...	80304	3/4	.685	4.016	1.500	1.525	4	30	.701
5/16"x18	9/16"; 5/8"x18	11/16"-1 11/16"x18	18	HC31242L06-I18UNC TM...	80305	5/16	.242	2.402	.611	.639	3	11	.260
	9/16"; 5/8"x18	11/16"-1 11/16"x18	18	HC50492L11-I18UNF TM...	80306	1/2	.492	3.150	1.111	1.139	4	20	.512
	5/8"x18	11/16"-1 11/16"x18	18	HC63555L12-I18UNF TM...	80307	5/8	.555	3.622	1.222	1.250	4	22	.575
3/8"x16	3/4"x16		16	HC31301L07-I16UNC TM...	80308	5/16	.301	2.402	.750	.781	3	12	.315
	3/4"x16		16	HC75669L15-I16UNF TM...	80309	3/4	.669	4.016	1.500	1.528	4	24	.689
7/16"x14	7/8"x14		14	HC37354L08-I14UNC TM...	80310	3/8	.354	2.874	.857	.893	3	12	.370
	7/8"x14		14	HC75746L17-I14UNF TM...	80311	3/4	.746	4.016	1.714	1.750	4	24	.807
1/2"x13			13	HC50407L10-I13UNC TM...	80312	1/2	.407	3.150	1.000	1.039	4	13	.430
9/16"x12	1"-1 1/2"x12		12	HC50465L11-I12UNC TM...	80313	1/2	.465	3.150	1.084	1.125	4	13	.484
	1"-1 1/2"x12		12	HC75746L20-I12UNF TM...	80314	3/4	.746	4.016	2.000	2.042	4	24	.925
5/8"x11			11	HC63516L13-I11UNC TM...	80315	5/8	.516	3.622	1.273	1.318	4	14	.539
3/4"x10			10	HC63622L15-I10UNC TM...	80316	5/8	.622	3.622	1.500	1.550	4	15	.657
7/8"x9			9	HC75746L18-I9UNC TM...	80317	3/4	.746	4.016	1.778	1.833	4	16	.768
1"x8			8	HC75746L20-I8UNC TM...	80318	3/4	.746	4.016	2.000	2.063	4	16	.866

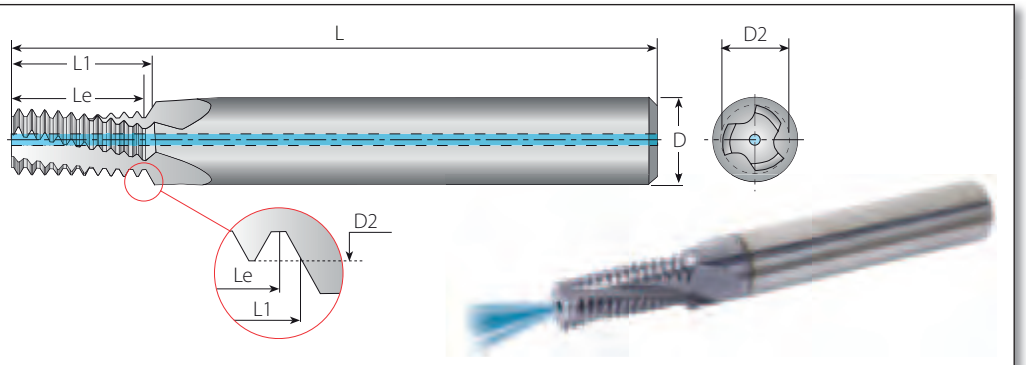
*Bore Diameter applies to smallest thread Dia.

Maximum thread length = L1 - $\frac{\text{Pitch}}{4}$

Internal



Defined by: R262 (DIN 13)
Tolerance class: 6H



Helical Flutes with Thru-Hole Coolant

1.5 x Do (L1 ≤ 1.5 x Thread Diameter)

Thread		Pitch	Ordering Code	EDP No.	Dimensions inch					No. of Flutes	Teeth	Bore Dia.*
M Coarse	M Fine	mm	Internal	VTH	D	D2	L	Le	L1	Z	Zt	inch
M3x0.5	M3.5-M16x0.5	0.5	HC19094L01-I0.50ISO TM...	80337	3/16	.094	1.772	.177	.187	3	9	.098
M4x0.7		0.7	HC19124L02-I0.70ISO TM...	80355	3/16	.124	1.772	.248	.262	3	9	.129
M5x0.8		0.8	HC19159L02-I0.80ISO TM...	80356	3/16	.159	2.244	.283	.299	3	9	.165
M6X1.0	M8-M40x1.0	1.0	HC25189L03-I1.00ISO TM...	80343	1/4	.189	2.244	.354	.374	3	9	.197
M8x1.25		1.25	HC31256L05-I1.25ISO TM...	80357	5/16	.256	2.402	.492	.524	3	10	.268
M10x1.5	M12-M48x1.5	1.5	HC37323L06-I1.50ISO TM...	80346	3/8	.323	2.874	.591	.620	3	10	.335
M12x1.75		1.75	HC37370L07-I1.75ISO TM...	80358	3/8	.370	2.874	.689	.724	4	10	.405
M14x2.0	M17-M80x2.0	2.0	HC50457L08-I2.00ISO TM...	80351	1/2	.457	2.874	.787	.827	4	10	.472
M16x2.0	M17-M80x2.0	2.0	HC63535L09-I2.00ISO TM...	80353	5/8	.535	3.622	.945	.984	4	12	.551

Helical Flutes with Thru-Hole Coolant

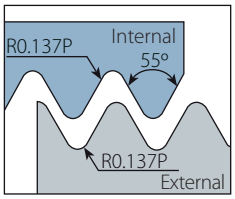
2 x Do (L1 ≤ 2 x Thread Diameter)

Thread		Pitch	Ordering Code	EPD No.	Dimensions inch					No. of Flutes	Teeth	Bore Dia.*
M Coarse	M Fine	mm	Internal	VTH	D	D2	L	Le	L1	Z	Zt	inch
M3x0.5	M3.5-M16x0.5	0.5	HC19094L02-I0.50ISO TM...	80336	3/16	.094	1.772	.236	.246	3	12	.098
	M4x0.5	0.5	HC19126L03-I0.50ISO TM...	80338	3/16	.126	1.772	.315	.325	3	16	.138
	M5x0.5	0.5	HC25165L04-I0.50ISO TM...	80339	1/4	.165	2.244	.394	.404	3	20	.177
M4x0.7		0.7	HC19124L03-I0.70ISO TM...	80284	3/16	.124	1.772	.331	.344	3	12	.129
	M6x0.75	0.75	HC25197L04-I0.75ISO TM...	80340	1/4	.197	2.244	.472	.487	3	16	.209
M5x0.8		0.8	HC19159L04-I0.80ISO TM...	80341	3/16	.159	2.244	.409	.425	3	13	.165
M6x1.0	M8-M40x1.0	1.0	HC25189L04-I1.00ISO TM...	80342	1/4	.189	2.244	.472	.492	3	12	.197
	M8x1.0	1.0	HC31264L06-I1.00ISO TM...	80344	5/16	.264	2.402	.630	.650	3	16	.276
	M10x1.0	1.0	HC37343L08-I1.00ISO TM...	80285	3/8	.343	2.874	.787	.807	3	20	.354
	M12x1.0	1.0	HC50421L09-I1.00ISO TM...	80286	1/2	.421	2.874	.945	.965	4	24	.433
M8x1.25		1.25	HC31256L06-I1.25ISO TM...	80287	5/16	.256	2.402	.640	.664	3	13	.268
	M10x1.25	1.25	HC37335L08-I1.25ISO TM...	80345	3/8	.335	2.874	.787	.812	3	16	.346
M10x1.5	M12-M48x1.5	1.5	HC37323L07-I1.50ISO TM...	80288	3/8	.323	2.874	.768	.797	3	13	.335
	M12x1.5	1.5	HC37370L09-I1.50ISO TM...	80347	3/8	.370	2.874	.945	.974	4	16	.413
	M14x1.5	1.5	HC50469L11-I1.50ISO TM...	80348	1/2	.469	3.150	1.122	1.152	4	19	.492
	M16x1.5	1.5	HC63547L12-I1.50ISO TM...	80349	5/8	.547	3.150	1.240	1.270	4	21	.571
M12x1.75		1.75	HC37370L09-I1.75ISO TM...	80350	3/8	.370	2.874	.965	.999	4	14	.405
M14x2.0	M17-M80x2.0	2.0	HC50457L11-I2.00ISO TM...	80289	1/2	.457	3.150	1.102	1.142	4	14	.472
M16x2.0	M17-M80x2.0	2.0	HC63535L12-I2.00ISO TM...	80352	5/8	.535	3.622	1.260	1.299	4	16	.551
M18x2.5		2.5	HC63583L14-I2.50ISO TM...	80354	5/8	.583	3.622	1.378	1.427	4	14	.598
M20x2.5		2.5	HC75673L16-I2.50ISO TM...	80290	3/4	.673	4.016	1.575	1.624	4	16	.687
M24x3.0		3.0	HC75746L19-I3.00ISO TM...	80359	3/4	.746	4.016	1.890	1.949	4	16	.827

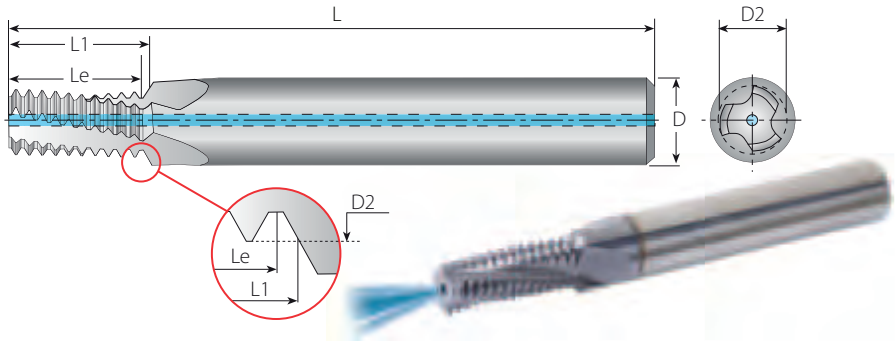
*Bore Diameter applies to smallest thread Dia.

Maximum thread length = L1 - $\frac{\text{Pitch}}{4}$

External / Internal



Defined by: B.S.84:1956,
DIN 259, ISO228/1:1982
Tolerance class: Medium class A



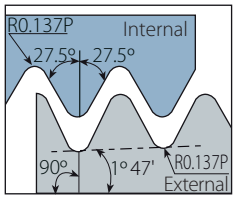
Helical Flutes with Thru-Hole Coolant

2 x Do (L1 ≤ 2 x Thread Diameter)

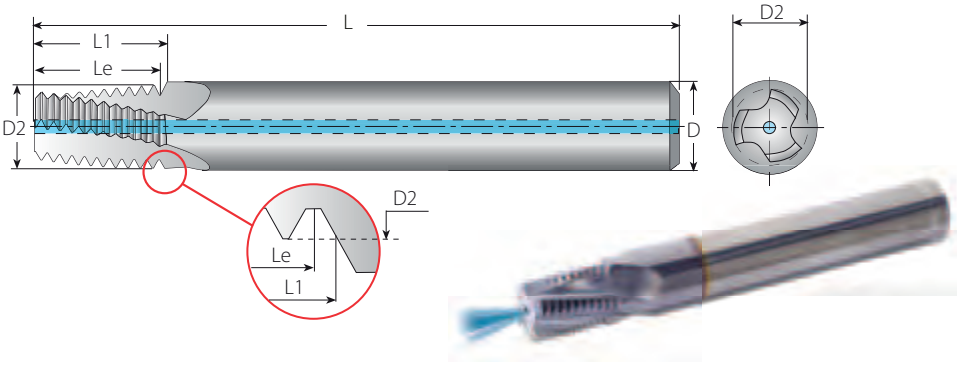
Thread		Pitch	Ordering Code	EDP No.	Dimensions inch					No. of Flutes	Teeth	Bore Dia.*
BSW	BSF	tpi	External / Internal	VTH	D	D2	L	Le	L1	Z	Zt	inch
	1/4"x26	26	HC25197L05-EI26BSF TM...	80368	1/4	.197	2.244	.500	.519	3	13	.209
	5/16"x22	22	HC31250L06-EI22BSF TM...	80369	5/16	.250	2.402	.636	.659	3	14	.264
1/4"x20	3/8"x20	20	HC25175L05-EI20BSW TM...	80370	1/4	.175	2.244	.500	.525	3	10	.197
	3/8"x20	20	HC31301L07-EI20BSF TM...	80371	5/16	.301	2.402	.750	.775	3	15	.323
5/16"x18	7/16"x18	18	HC25230L06-EI18BSW TM...	80372	1/4	.230	2.244	.611	.639	3	11	.256
	7/16"x18	18	HC37362L09-EI18BSF TM...	80373	3/8	.362	2.874	.889	.917	3	16	.382
3/8"x16	1/2", 9/16"x16	16	HC31283L07-EI16BSW TM...	80374	5/16	.283	2.402	.750	.781	3	12	.311
	1/2", 9/16"x16	16	HC50413L10-EI16BSF TM...	80375	1/2	.413	2.874	1.000	1.031	4	16	.437
	9/16"x16	16	HC50478L11-EI16BSF TM...	80376	1/2	.478	3.150	1.125	1.156	4	18	.496
7/16"x14	5/8", 11/16"x14	14	HC37335L08-EI14BSW TM...	80377	3/8	.335	2.874	.857	.893	3	12	.362
	5/8", 11/16"x14	14	HC63528L12-EI14BSF TM...	80378	5/8	.528	3.150	1.214	1.250	4	17	.551
	11/16"x14	14	HC63591L13-EI14BSF TM...	80379	5/8	.591	3.622	1.357	1.393	4	19	.614
1/2"x12	3/4"x12	12	HC37362L10-EI12BSW TM...	80380	3/8	.362	2.874	1.000	1.042	3	12	.413
9/16"x12	3/4"x12	12	HC50444L11-EI12BSW TM...	80381	1/2	.444	3.150	1.083	1.125	4	13	.476
	3/4"x12	12	HC63622L15-EI12BSF TM...	80382	5/8	.622	3.622	1.500	1.542	4	18	.661
5/8"x11	7/8"x11	11	HC50496L13-EI11BSW TM...	80383	1/2	.496	3.150	1.273	1.318	4	14	.528
11/16"x11		11	HC63559L14-EI11BSW TM...	80384	5/8	.559	3.622	1.364	1.409	4	15	.591

BSPT

External / Internal



Defined by: B.S.21:1985
Tolerance class: Standard BSPT



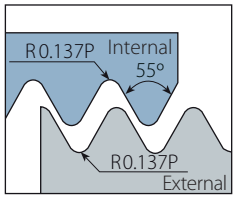
Helical Flutes with Thru-Hole Coolant

Thread	Pitch	Ordering Code	EDP No.	Dimensions inch					No. of Flutes	Teeth	Bore Dia.*
Standard	tpi	External / Internal	VTH	D	D2	L	Le	L1	Z	Zt	inch
1/16"x28	28	HC25232L03-EI28BSPT TM...	80394	1/4	.232	2.402	.393	.401	3	11	.264
1/8"x28	28	HC31301L03-EI28BSPT TM...	80320	5/16	.301	2.402	.393	.401	3	11	.342
1/4"x19	19	HC50400L05-EI19BSPT TM...	80395	1/2	.400	2.874	.579	.605	3	11	.464
3/8"x19	19	HC50439L05-EI19BSPT TM...	80396	1/2	.439	2.874	.579	.605	4	11	.598
1/2, 3/4"x14	14	HC63561L08-EI14BSPT TM...	80397	5/8	.561	3.150	.857	.893	4	12	.748
1", 1 1/2", 2", 2 1/2"x11	11	HC75746L10-EI11BSPT TM...	80398	3/4	.746	4.016	1.091	1.136	4	12	1.209

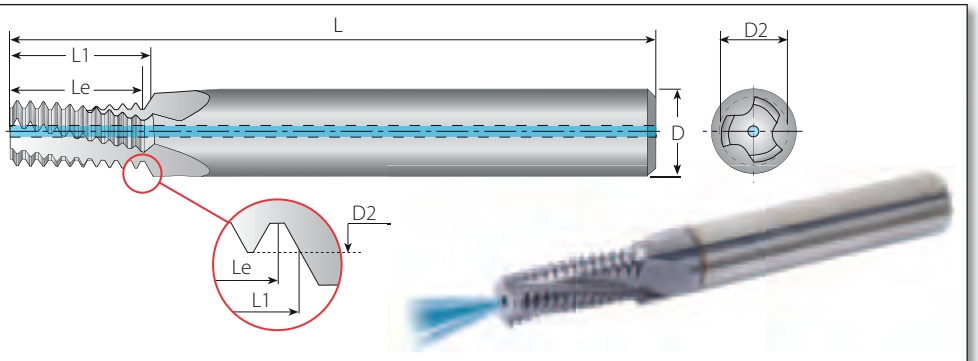
*Bore Diameter applies to smallest thread Dia.

Maximum thread length = L1 - $\frac{\text{Pitch}}{4}$

External / Internal



Defined by: B.S.2779:1956
Tolerance class: Medium class



Helical Flutes with Thru-Hole Coolant

1.5 x Do (L1 ≤ 1.5 x Thread Diameter)

Thread	Pitch	Ordering Code	EDP No.	Dimensions inch					No. of Flutes	Teeth	Bore Dia.*
Standard	tpi	External / Internal	VTH	D	D2	L	Le	L1	Z	Zt	inch
1/16", 1/8"x28	28	HC31252L04-EI28BSP TM...	80386	5/16	.252	2.402	.464	.480	3	13	.264
1/8"x28	28	HC37323L05-EI28BSP TM...	80388	3/8	.323	2.874	.571	.591	3	16	.324
1/4", 3/8"x19	19	HC50433L08-EI19BSP TM...	80389	1/2	.433	2.874	.789	.815	4	15	.465
3/8"x19	19	HC63571L10-EI19BSP TM...	80391	5/8	.571	3.622	1.000	1.028	4	19	.602
1"-4"x11	11	HC75746L16-EI11BSP TM...	80393	3/4	.746	4.016	1.636	1.681	4	18	1.208

Helical Flutes with Thru-Hole Coolant

2 x Do (L1 ≤ 2 x Thread Diameter)

Thread	Pitch	Ordering Code	EDP No.	Dimensions inch					No. of Flutes	Teeth	Bore Dia.*
Standard	tpi	External / Internal	VTH	D	D2	L	Le	L1	Z	Zt	inch
1/16", 1/8"x28	28	HC31252L06-EI28BSP TM...	80385	5/16	.252	2.402	.607	.625	3	17	.264
1/8"x28	28	HC37323L07-EI28BSP TM...	80387	3/8	.323	2.874	.750	.768	3	21	.324
1/4", 3/8"x19	19	HC50433L10-EI19BSP TM...	80319	1/2	.433	3.150	1.053	1.079	4	20	.465
3/8"x19	19	HC63571L13-EI19BSP TM...	80390	5/8	.571	3.622	1.316	1.342	4	25	.602
1/2"-7/8"x14	14	HC75705L16-EI14BSP TM...	80392	3/4	.705	4.016	1.643	1.678	4	23	.752

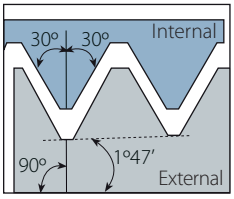
*Bore Diameter applies to smallest thread Dia.

Maximum thread length = L1 - $\frac{\text{Pitch}}{4}$

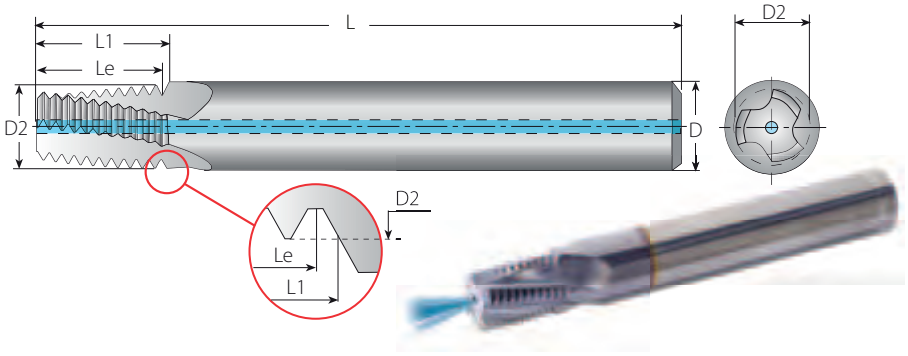
NPT

Helicool

External / Internal



Defined by: USAS B2.1:1968
Tolerance class: Standard NPT



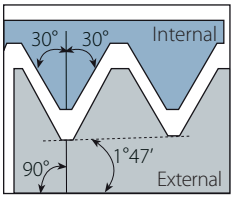
Helical Flutes with Thru-Hole Coolant

Thread	Pitch	Ordering Code	EDP No.	Dimensions inch					No. of Flutes	Teeth	Bore Dia.*
Standard	tpi	External / Internal	VTH	D	D2	L	Le	L1	Z	Zt	inch
1/16″x27	27	HC25232L03-EI27NPT TM...	80321	1/4	.232	2.244	.370	.389	3	10	.244
1/8″x27	27	HC31301L03-EI27NPT TM...	80322	5/16	.301	2.402	.370	.389	3	10	.330
1/4″x18	18	HC37370L05-EI18NPT TM...	80323	3/8	.370	2.874	.556	.583	3	10	.437
3/8″x18	18	HC50439L05-EI18NPT TM...	80324	1/2	.439	2.874	.556	.583	4	10	.562
1/2″, 3/4″x14	14	HC63561L07-EI14NPT TM...	80325	5/8	.561	3.150	.714	.750	4	10	.704, .905
1″, 1 1/4″, 1 1/2″, 2″x11.5	11.5	HC75746L09-EI11.5NPT TM...	80326	3/4	.746	4.016	.870	.913	4	10	1.411, 1.484, 1.732, 2.204
2 1/2″, 3″x8	8	HC75746L13-EI8NPT TM...	80327	3/4	.746	4.016	1.250	1.313	4	10	2.625, 3.232

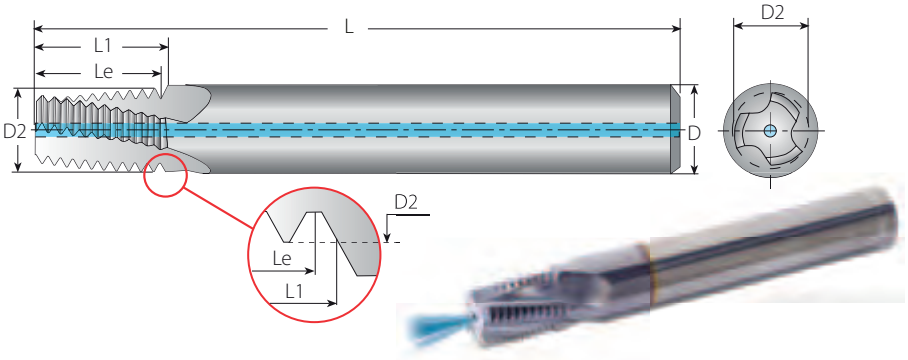
NPTF

Helicool

External / Internal



Defined by: ANSI 1.20.3-1976
Tolerance class: Standard NPTF



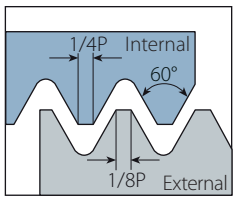
Helical Flutes with Thru-Hole Coolant

hread	Pitch	Ordering Code	EDP No.	Dimensions inch					No. of Flutes	Teeth	Bore Dia.*
Standard	tpi	External / Internal	VTH	D	D2	L	Le	L1	Z	Zt	inch
1/16″x27	27	HC25232L03-EI27NPTF TM...	80328	1/4	.232	2.244	.370	.389	3	10	.240
1/8″x27	27	HC31301L03-EI27NPTF TM...	80329	5/16	.301	2.402	.370	.389	3	10	.330
1/4″x18	18	HC37370L05-EI18NPTF TM...	80330	3/8	.370	2.874	.556	.583	3	10	.437
3/8″x18	18	HC50439L05-EI18NPTF TM...	80331	1/2	.439	2.874	.556	.583	4	10	.562
1/2″, 3/4″x14	14	HC63561L07-EI14NPTF TM...	80332	5/8	.561	3.150	.714	.750	4	10	.704, .905
1″, 1 1/4″, 1 1/2″, 2″x11.5	11.5	HC75746L09-EI11.5NPTF TM...	80333	3/4	.746	4.016	.870	.913	4	10	1.411, 1.484, 1.720, 2.188
2 1/2″x8; 3″x8	8	HC75746L13-EI8NPTF TM...	80334	3/4	.746	4.016	1.250	1.313	4	10	2.610, 3.232

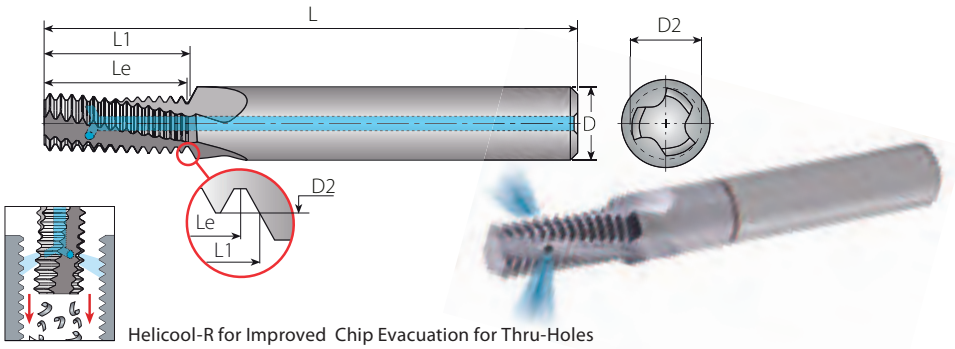
*Bore Diameter applies to smallest thread Dia.

Maximum thread length = L1 - $\frac{\text{Pitch}}{4}$

Internal



Defined by: ANSI B1.1.74
Tolerance class: 2B



Helicool-R for Improved Chip Evacuation for Thru-Holes

HeliCool-R (HCR)

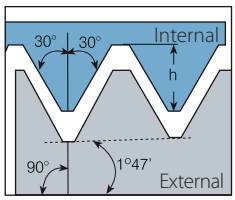
Helical Flutes with Radial Cooling

2 x Do (L1 ≤ 2 x Thread Diameter)

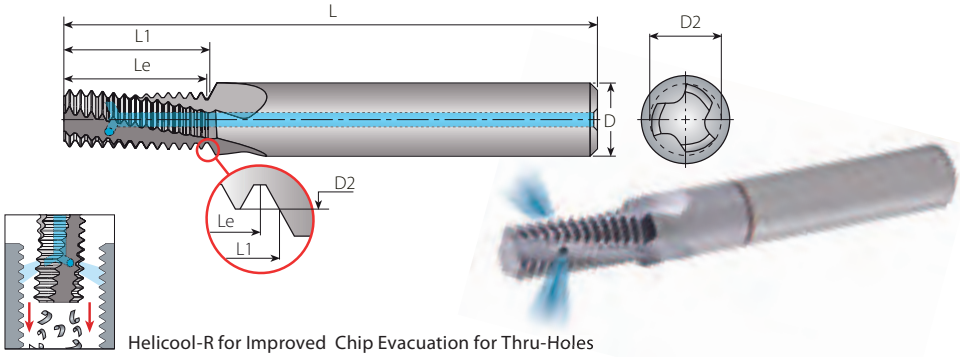
Thread			Pitch	Ordering Code	EDP No.	Dimensions inch					No. of Flutes	Teeth	Bore Dia.*
UNC	UNF	UNEF	tpi	Internal	VTH	D	D2	L	Le	L1	Z	Zt	inch
	No.10-32	No.12-3/8"x32	32	HCR19150L03-I32UNF TM...	80458	3/16	.150	1.772	.375	.391	3	12	.157
	1/4"x28	7/16", 1/2"x28	28	HCR25203L05-I28UNF TM...	80459	1/4	.203	2.244	.500	.518	3	14	.216
No.10-24	5/16", 3/8"x24	9/16"-11/16"x24	24	HCR19141L04-I24UNC TM...	80460	3/16	.141	1.772	.375	.396	3	9	.150
No.12-24	5/16", 3/8"x24	9/16"-11/16"x24	24	HCR19163L04-I24UNC TM...	80461	3/16	.163	1.772	.417	.437	3	10	.177
	5/16", 3/8"x24	9/16"-11/16"x24	24	HCR31263L06-I24UNF TM...	80462	5/16	.263	2.402	.625	.646	3	15	.272
	3/8"x24	9/16"-11/16"x24	24	HCR37323L07-I24UNF TM...	80463	3/8	.323	2.874	.750	.771	3	18	.335
1/4"x20	7/16", 1/2"x20	3/4"-1"x20	20	HCR25192L05-I20UNC TM...	80464	1/4	.192	2.244	.500	.525	3	10	.201
	1/2"x20	3/4"-1"x20	20	HCR50437L10-I20UNF TM...	80465	1/2	.437	3.150	1.000	1.025	4	20	.453
5/16"x18	9/16", 5/8"x18	11/16"-1 11/16"x18	18	HCR31242L16-I18UNC TM...	80466	5/16	.242	2.402	.611	.639	3	11	.260
3/8"x16	3/4"x16		16	HCR31301L07-I16UNC TM...	80467	5/16	.301	2.402	.750	.781	3	12	.315
7/16"x14	7/8"x14		14	HCR37354L08-I14UNC TM...	80468	3/8	.354	2.874	.857	.893	3	12	.370
1/2"x13			13	HCR50407L10-I13UNC TM...	80469	1/2	.407	3.150	1.000	1.039	4	13	.430
9/16"x12	1"-1 1/2"x12		12	HCR50465L11-I12UNC TM...	80470	1/2	.465	3.150	1.084	1.125	4	13	.484

NPT

External / Internal



Defined by: USAS B2.1:1968
Tolerance class: Standard NPT



Helicool-R for Improved Chip Evacuation for Thru-Holes

HeliCool-R (HCR)

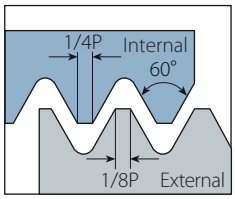
Helical Flutes with Radial Cooling

Thread	Pitch	Ordering Code	EDP No.	Dimensions inch					No. of Flutes	Teeth	Bore Dia.*
Standard	tpi	External / Internal	VTH	D	D2	L	Le	L1	Z	Zt	inch
1/16"x27	27	HCR25232L03-EI27NPT TM...	80573	1/4	.232	2.244	.370	.389	3	10	.244
1/8"x27	27	HCR31301L03-EI27NPT TM...	80574	5/16	.301	2.402	.370	.389	3	10	.330
1/4"x18	18	HCR37370L05-EI18NPT TM...	80575	3/8	.370	2.874	.556	.583	3	10	.437
3/8"x18	18	HCR50439L05-EI18NPT TM...	80576	1/2	.439	2.874	.556	.583	4	10	.562
1/2", 3/4"x14	14	HCR63561L07-EI14NPT TM...	80577	5/8	.561	3.150	.714	.750	4	10	.704, .905
1", 1 1/4", 1 1/2" , 2"x11.5	11.5	HCR75746L09-EI11.5NPT TM...	80578	3/4	.746	4.016	.870	.913	4	10	1.411, 1.484, 1.732, 2.204
2 1/2", 3"x8	8	HCR75746L13-EI8NPT TM...	80579	3/4	.746	4.016	1.250	1.313	4	10	2.625, 3.232

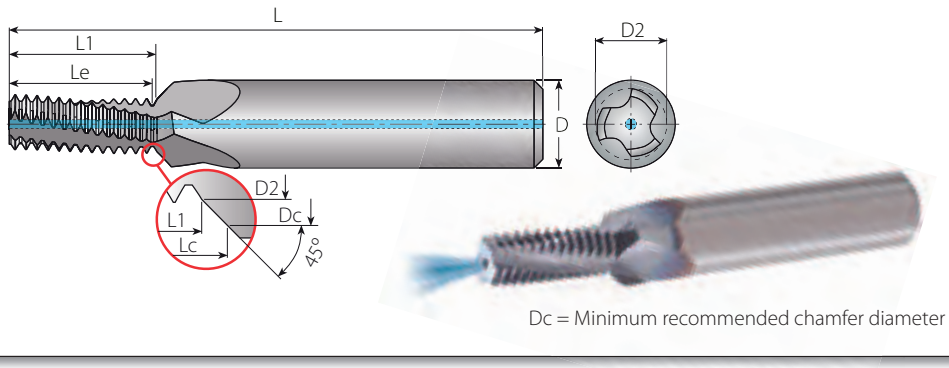
*Bore Diameter applies to smallest thread Dia.

Maximum thread length = L1 - $\frac{\text{Pitch}}{4}$

Internal



Defined by: ANSI B1.1.74
Tolerance class: 2B



Dc = Minimum recommended chamfer diameter

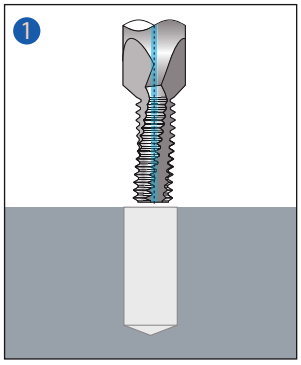
HeliCool-R (HCR)

Helical Flutes with Axial Coolant - Thru & Chamfer

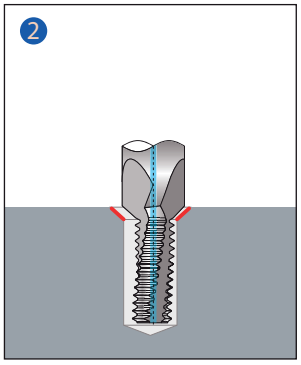
2 x Do (L1 ≤ 2 x Thread Diameter)

Thread			Pitch	Ordering Code	EDP No.	Dimensions inch							No. of Flutes Teeth		Bore Dia.*
UNC	UNF	UNEF	tpi	Internal	VTH	D	D2	Dc	L	Le	L1	Le	Z	Zt	inch
	No.10-32	No.12-3/8"x32	32	HCC25150L03-I32UNF TM...	80449	1/4	.150	.202	2.244	.375	.391	.417	3	12	.157
	1/4"x28	7/16", 1/2"x28	28	HCC31203L05-I28UNF TM...	80450	5/16	.203	.262	2.402	.500	.518	.549	3	14	.216
No.10-24	5/16", 3/8"x24	9/16"-11/16"x24	24	HCC25141L04-I24UNC TM...	80451	1/4	.141	.202	2.244	.375	.396	.425	3	9	.150
No.12-24	5/16", 3/8"x24	9/16"-11/16"x24	24	HCC25163L04-I24UNC TM...	80452	1/4	.163	.228	2.244	.417	.437	.468	3	10	.177
	5/16", 3/8"x24	9/16"-11/16"x24	24	HCC37263L06-I24UNF TM...	80453	3/8	.263	.324	2.874	.625	.646	.678	3	15	.272
	3/8"x24	9/16"-11/16"x24	24	HCC50323L07-I24UNF TM...	80454	1/2	.323	.387	3.150	.750	.771	.804	3	18	.335
1/4"x20	7/16", 1/2"x20	3/4"-1"x20	20	HCC31192L05-I20UNC TM...	80455	5/16	.192	.262	2.402	.500	.525	.558	3	10	.201
	1/2"x20	3/4"-1"x20	20	HCC63437L10-I20UNF TM...	80456	5/8	.437	.512	3.622	1.000	1.025	1.065	3	20	.453
5/16"x18	9/16", 5/8"x18	11/16"-1 11/16"x18	18	HCC37242L16-I18UNC TM...	80457	3/8	.242	.324	2.874	.611	.639	.676	3	11	.260
3/8"x16	3/4"x16		16	HCC50301L07-I16UNC TM...	80528	1/2	.301	.387	3.150	.750	.781	.814	3	12	.315
7/16"x14	7/8"x14		14	HCC50354L08-I14UNC TM...	80529	1/2	.354	.449	3.150	.857	.893	.937	3	12	.370
1/2"x13			13	HCC63407L10-I13UNC TM...	80530	5/8	.407	.512	3.622	1.000	1.039	1.087	4	13	.430
9/16"x12	1"-1 1/2"x12		12	HCC63465L11-I12UNC TM...	80531	5/8	.465	.574	3.622	1.084	1.125	1.178	4	13	.484

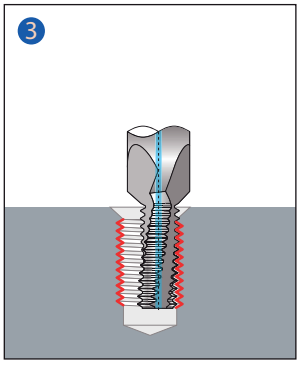
Helicool-C Operating Cycle



Positioning



Chamfering

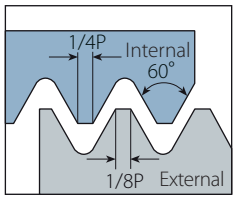


Thread Milling

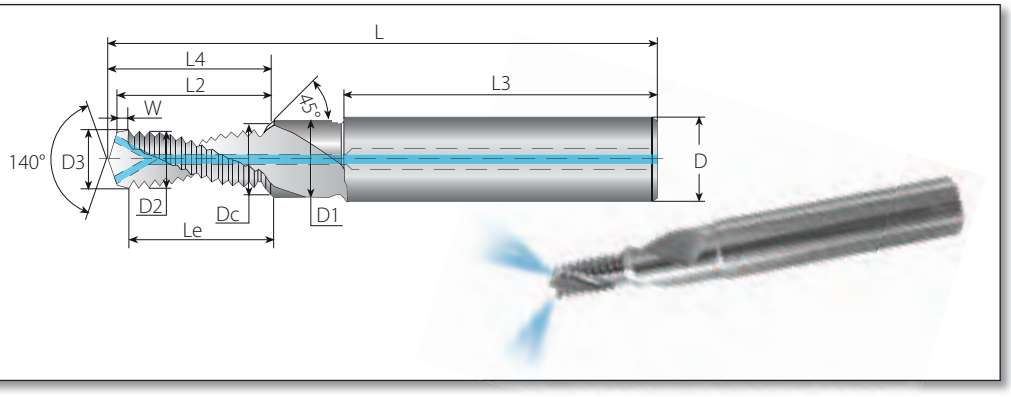
*Bore Diameter applies to smallest thread Dia.

Maximum thread length = L1 - $\frac{\text{Pitch}}{4}$

Internal



Defined by: R262 (DIN 13)
Tolerance class: 6H

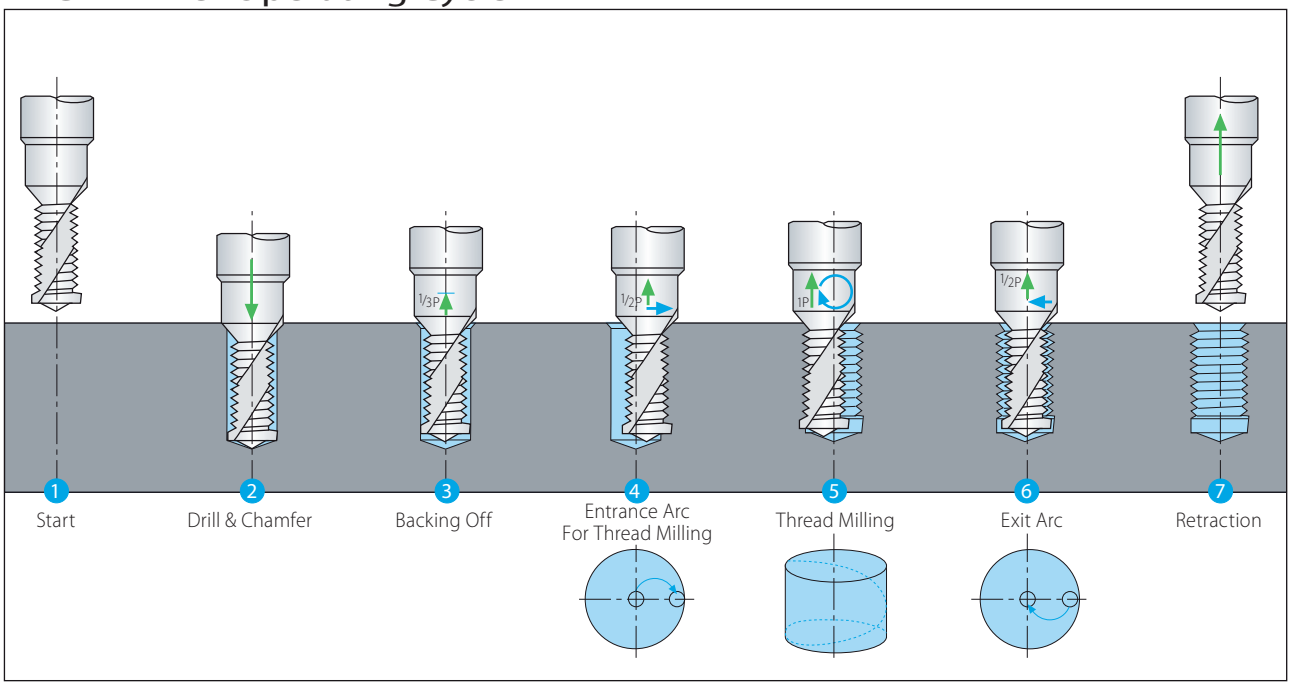


HTC (Thriller)

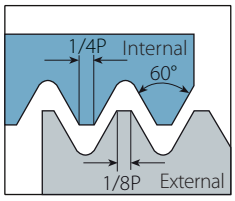
Drill, Chamfer & Thread with Coolant-Thru

Thread	Ordering Code	EDP No.		Pitch	Dimensions											No. of Flutes	Teeth
ISO 2xDo Coarse	Internal	VTS	VTN	mm	L	L4	L2	L3	W	Le	D3	D[mm]	D1	Dc	D2	Z	Zt
M6x1.0	HTC M6x1.0x2D...	80687	80680	1.00	2.441	.571	.539	1.417	.039	.500	.197	8	.260	.248	.191	2	11
M8x1.25	HTC M8x1.25x2D...	80688	80681	1.25	2.913	.717	.673	1.575	.051	.622	.268	10	.354	.327	.254	2	11
M10x1.5	HTC M10x1.5x2D...	80689	80682	1.50	3.110	.921	.870	1.772	.059	.811	.335	12	.433	.406	.318	2	12
M12x1.75	HTC M12x1.75x2D...	80690	80683	1.75	3.504	1.067	1.004	1.772	.059	.945	.406	14	.531	.484	.383	2	12
ISO 2.5xDo Coarse																	
M6x1.0	HTC M6x1.0x2.5D...	80691	80684	1.00	2.441	.650	.618	1.417	.039	.579	.197	8	.260	.248	.191	2	13
M8x1.25	HTC M8x1.25x2.5D...	80692	80685	1.25	2.913	.913	.870	1.575	.051	.819	.268	10	.354	.327	.254	2	15
M10x1.5	HTC M10x1.5x2.5D...	80693	80686	1.50	3.110	1.098	1.047	1.772	.059	.988	.335	12	.433	.406	.318	2	15

HTC - Thriller Operating Cycle



External / Internal



Defined by: ANSI B1.1.74
Tolerance class: 2A/2B

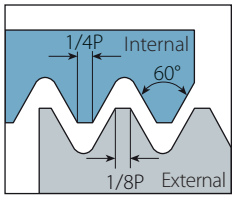
He-Lex Flutes - Internal

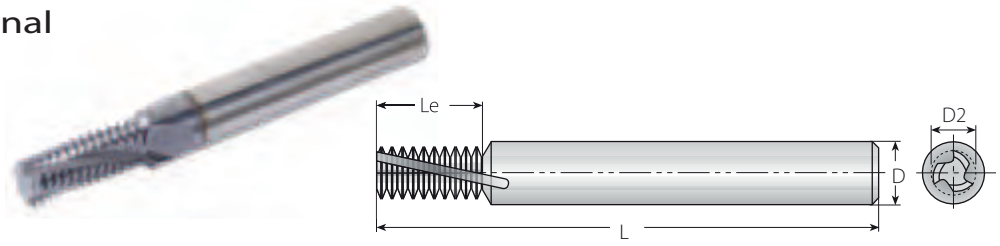
2 x Do (L1 ≤ 2 x Thread Diameter)

Thread		Pitch	Ordering Code	EDP No.	Dimensions inch				No. of Flutes	Teeth	Bore Dia.*
UNC	UNF	tpi	Internal	VTH	D	D2	L	Le	Z	Zt	inch
	No.10-32	32	HX1/8".121"-I32UNF TM...	80534	1/8	.121	2.0	.312	3	10	.157
	No.10-28	28	HX1/8".121"-I28UNF TM...	80535	1/8	.121	2.0	.321	3	9	.155
	No.12-28	28	HX3/16".150"-I28UNF TM...	80536	3/16	.150	2.5	.464	3	13	.181
	1/4"x28	28	HX3/16".181"-I28UNF TM...	80537	3/16	.181	2.5	.500	3	14	.217
No.10-24		24	HX1/8".120"-I24UNC TM...	80538	1/8	.120	2.0	.333	3	8	.150
No.12-24		24	HX3/16".138"-I24UNC TM...	80539	3/16	.138	2.5	.458	3	11	.177
	5/16"x24	24	HX1/4".232"-I24UNF TM...	80540	1/4	.232	2.5	.625	3	15	.268
	3/8"x24	24	HX5/16".291"-I24UNF TM...	80541	5/16	.291	3.0	.750	4	18	.335
1/4"x20		20	HX3/16".181"-I20UNC TM...	80542	3/16	.181	2.5	.500	3	10	.205
	1/2"x20	20	HX3/8".371"-I20UNF TM...	80543	3/8	.371	3.5	1.000	4	20	.453
	7/16"x20	20	HX3/8".335"-I20UNF TM...	80544	3/8	.335	3.5	.900	4	18	.386
5/16"x18		18	HX1/4".232"-I18UNC TM...	80545	1/4	.232	2.5	.667	3	12	.256
	9/16"x18	18	HX3/8".371"-I18UNF TM...	80546	3/8	.371	3.5	.889	4	16	.504
	5/8"x18	18	HX1/2".496"-I18UNF TM...	80547	1/2	.496	3.5	1.278	4	23	.571
3/8"x16		16	HX5/16".285"-I16UNC TM...	80548	5/16	.285	3.0	.750	4	12	.315
	3/4"x16	16	HX1/2".496"-I16UNF TM...	80549	1/2	.496	3.5	1.250	4	20	.689
7/16"x14		14	HX5/16".305"-I14UNC TM...	80550	5/16	.305	3.0	.786	4	11	.366
1/2"x13		13	HX3/8".350"-I13UNC TM...	80551	3/8	.350	3.5	.923	4	12	.425
9/16"x12		12	HX3/8".371"-I12UNC TM...	80552	3/8	.371	3.5	.917	4	11	.484
5/8"x11		11	HX1/2".469"-I11UNC TM...	80553	1/2	.469	3.5	1.273	4	14	.531
3/4"x10		10	HX1/2".496"-I10UNC TM...	80554	1/2	.496	3.5	1.300	4	13	.650
7/8"x9		9	HX5/8".621"-I9UNC TM...	80555	5/8	.621	4.0	1.444	4	13	.768
1"x8		8	HX5/8".621"-I8UNC TM...	80556	5/8	.621	4.0	1.375	4	11	.878

*Bore Diameter applies to smallest thread Dia.

External / Internal





Defined by: R262 (DIN 13)
Tolerance class: 6g/6H

He-Lex Flutes - External

2 x Do (L1 ≤ 2 x Thread Diameter)

Thread		Pitch	Ordering Code	EDP No.	Dimensions inch				No. of Flutes	Teeth
M Coarse		mm	External	VTH	D[mm]	D2	L	Le	Z	Zt
M3x0.5		0.5	H04039L06-E0.5ISO TM...	80891	4	.154	1.772	.236	3	12
M4.5x0.75		0.75	H04039L09-E0.75ISO TM...	80892	4	.154	1.772	.354	3	12
M6x1.0		1.0	H04039L12-E1.0ISO TM...	80893	4	.154	1.772	.472	3	12
M8x1.25		1.25	H06059L16-E1.25ISO TM...	80894	6	.232	2.244	.640	3	13
M10x1.5		1.5	H08079L21-E1.5ISO TM...	80895	8	.311	2.480	.827	3	14
M14x2.0		2.0	H10099L28-E2.0ISO TM...	80896	10	.390	2.874	1.102	4	14

He-Lex Flutes - Internal

2 x Do (L1 ≤ 2 x Thread Diameter)

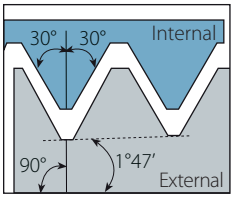
Thread		Pitch	Ordering Code	EDP No.	Dimensions inch				No. of Flutes	Teeth	Bore Dia.*
M Coarse	M Fine	mm	Internal	VTH	D[mm]	D2	L	Le	Z	Zt	inch
M3x0.5	M3.5-M16x0.5	0.5	H04022L06-I0.5ISO TM...	80897	4	.087	1.772	.236	3	12	.098
	M4x0.5	0.5	H04030L08-I0.5ISO TM...	80898	4	.118	1.772	.315	3	16	.138
	M5x0.5	0.5	H04039L10-I0.5ISO TM...	80899	4	.154	1.772	.394	3	20	.177
M4x0.7		0.7	H04028L08-I0.7ISO TM...	80900	4	.110	1.772	.331	3	12	.130
	M6x0.75	0.75	H04039L12-I0.75ISO TM...	80901	4	.154	1.772	.472	3	16	.209
M5x0.8		0.8	H04035L10-I0.8ISO TM...	80902	4	.138	1.772	.409	3	13	.165
M6x1.0	M8-M40x1.0	1.0	H04039L12-I1.0ISO TM...	80903	4	.154	1.772	.472	3	12	.197
	M8x1.0	1.0	H06059L16-I1.0ISO TM...	80904	6	.232	2.244	.630	3	16	.276
	M10x1.0	1.0	H08079L20-I1.0ISO TM...	80905	8	.311	2.480	.787	3	20	.354
	M12x1.0	1.0	H10099L24-I1.0ISO TM...	80801	10	.390	2.874	.945	4	24	.433
M8x1.25		1.25	H06058L16-I1.25ISO TM...	80907	6	.228	2.244	.640	3	13	.268
	M10x1.25	1.25	H08077L20-I1.25ISO TM...	80908	8	.303	2.480	.787	3	16	.346
M10x1.5	M12-M48x1.5	1.5	H08077L21-I1.5ISO TM...	80909	8	.303	2.480	.827	3	14	.335
	M12x1.5	1.5	H10094L24-I1.5ISO TM...	80910	10	.370	2.874	.945	4	16	.413
	M14x1.5	1.5	H12112L28-I1.5ISO TM...	80911	12	.441	3.268	1.122	4	19	.492
	M16x1.5	1.5	H12119L33-I1.5ISO TM...	80912	12	.469	3.268	1.299	4	22	.571
M12x1.75		1.75	H10087L24-I1.75ISO TM...	80913	10	.343	2.874	.965	4	14	.402
M14x2.0	M17-M80x2.0	2.0	H10099L28-I2.0ISO TM...	80914	10	.390	2.874	1.102	4	14	.472
M16x2.0	M17-M80x2.0	2.0	H12119L32-I2.0ISO TM...	80915	12	.469	3.268	1.260	4	16	.551
M18-M22x2.5		2.5	H16139L40-I2.5ISO TM...	80916	16	.547	3.622	1.575	5	16	.610
M24x3.0		3.0	H16159L42-I3.0ISO TM...	80917	16	.626	3.622	1.654	4	14	.827

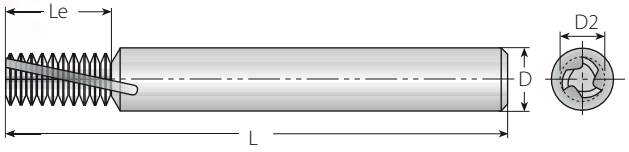
*Bore Diameter applies to smallest thread Dia.

NPT

He-Lex

External / Internal





Defined by: USAS B2.1:1968
Tolerance class: Standard NPT

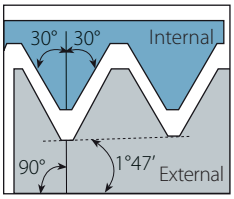
He-Lex Flutes

Thread	Pitch	Ordering Code	EDP No.	Dimensions inch				No. of Flutes	Teeth	Bore Dia.*
Standard	tpi	External / Internal	VTH	D	D2	L	Le	Z	Zt	inch
1/16"x27, 1/8"x27	27	HX1/4".209"-EI27NPT TM...	80562	1/4	.209	2.5	.407	3	11	.248, .335
1/4"x18, 3/8"x18	18	HX5/16".305"-EI18NPT TM...	80563	5/16	.305	3.0	.611	4	11	.437, .571
1/2"x14, 3/4"x14	14	HX1/2".496"-EI14NPT TM...	80564	1/2	.496	3.5	.929	4	13	.697, .906
1"-2"x11.5	11.5	HX5/8".621"-EI11.5NPT TM...	80565	5/8	.621	4.0	1.130	4	13	1.142-2.205
2 1/2"-6"x8	8	HX3/4".746"-EI8NPT TM...	80566	3/4	.746	5.0	1.500	4	12	from 2.618

NPTF

He-Lex

External / Internal



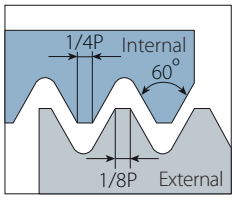
Defined by: ANSI 1.20.3-1976
Tolerance class: Standard NPTF

He-Lex Flutes

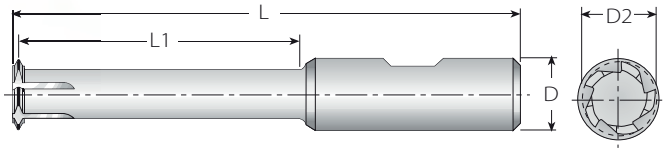
Thread	Pitch	Ordering Code	EDP No.	Dimensions inch				No. of Flutes	Teeth	Bore Dia.*
Standard	tpi	External / Internal	VTH	D	D2**	L	Le	Z	Zt	inch
1/16"x27, 1/8"x27	27	HX1/4".209"-EI27NPTF TM...	80557	1/4	.209	2.5	.407	3	11	.248, .331
1/4"x18, 3/8"x18	18	HX5/16".305"-EI18NPTF TM...	80558	5/16	.305	3.0	.611	4	11	.437, .579
1/2"x14, 3/4"x14	14	HX1/2".496"-EI14NPTF TM...	80559	1/2	.496	3.5	.929	4	13	.705, .921
1"-2"x11.5	11.5	HX5/8".621"-EI11.5NPTF TM...	80560	5/8	.621	4.0	1.130	4	13	1.158-2.213
2 1/2"-6"x8	8	HX3/4".746"-EI8NPTF TM...	80561	3/4	.746	5.0	1.500	4	12	from 2.638

*Bore Diameter applies to smallest thread Dia.

Internal



Defined by: ANSI B1.1.74
Tolerance class: 2B

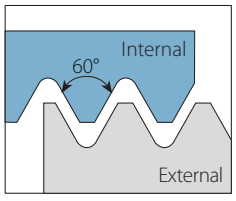


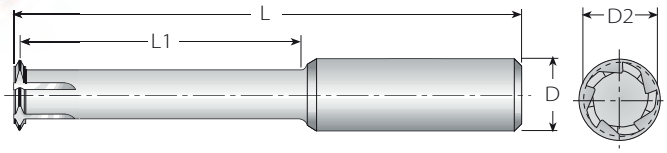
Deep Threading - Long Tools for Deep Holes

3 x Do (L1 ≤ 3 x Thread Diameter)

Thread		Pitch	Ordering Code	EDP No.	Dimensions inch				No. of Flutes	Teeth	Bore Dia.
UNC	UNF	tpi	Internal	VTH	D	D2	L	L1	Z	Zt	inch
1/4"x20		20	D1T5/16".157"-I20UNC TM...	80220	5/16	.157	2.480	.787	3	1	.205
	1/4"x28	28	D1T5/16".181"-I28UNF TM...	80271	5/16	.181	2.480	.787	3	1	.217
5/16"x18		18	D1T3/8".205"-I18UNC TM...	80221	3/8	.205	2.874	.984	3	1	.256
	5/16"x24	24	D1T3/8".224"-I24UNF TM...	80272	3/8	.224	2.874	.984	3	1	.268
3/8"x16		16	D1T3/8".264"-I16UNC TM...	80222	3/8	.264	2.874	1.181	3	1	.315
	3/8"x24	24	D1T3/8".291"-I24UNF TM...	80273	3/8	.291	2.874	1.181	3	1	.335
7/16"x14		14	D1T1/2".299"-I14UNC TM...	80274	1/2	.299	3.268	1.378	4	1	.366
	7/16"x20	20	D1T1/2".335"-I20UNF TM...	80275	1/2	.335	3.268	1.378	4	1	.386
1/2"x13		13	D1T1/2".350"-I13UNC TM...	80223	1/2	.350	3.268	1.575	4	1	.425
	1/2"x20	20	D1T1/2".398"-I20UNF TM...	80276	1/2	.398	3.268	1.575	4	1	.453
9/16"x12		12	D1T5/8".406"-I12UNC TM...	80224	5/8	.406	3.780	1.772	4	1	.484
	9/16"x18	18	D1T5/8".445"-I18UNF TM...	80277	5/8	.445	3.780	1.772	4	1	.504
5/8"x11		11	D1T5/8".433"-I11UNC TM...	80225	5/8	.433	3.976	1.969	4	1	.531
	5/8"x18	18	D1T5/8".504"-I18UNF TM...	80278	5/8	.504	3.976	1.969	4	1	.571
3/4"x10		10	D1T5/8".531"-I10UNC TM...	80226	5/8	.531	4.370	2.362	5	1	.650
	3/4"x16	16	D1T5/8".610"-I16UNF TM...	80227	5/8	.610	4.370	2.362	5	1	.689

Internal

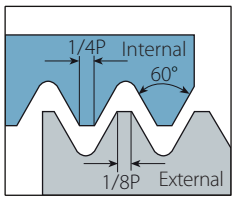




Deep Threading - Long Tools for Deep Holes

Min. Thread			Pitch		Ordering Code	EDP No.	Dimensions inch					
M coarse	M fine	UN, UNS, UNF, UNEF	mm	tpi	Internal	VTH	D	D2	L	L1	Z	Zt
M5x0.8	M5x0.5, M5X0.75	No.10-56UNS, No.10-48UNS, No.10-40UNS, No.10-36UNS, No.10-32UNF	0.5-0.8	32-56	D1T19154L063-ITA60 TM...	80414	3/16	0.154	1.750	0.63	4	1
M6x1.0	M6x0.5, M6X0.75	No.12-56UNS, No.12-48UNS, ¼-40UNS, ¼-36UNS, ¼-32UNEF, ¼-28UNF, ¼-27UNS, ¼-24UNS	0.5-1.0	24-56	D1T25191L079-ITB60 TM...	80415	1/4	0.191	2.000	0.79	5	1
M8x1.25	M7x0.5, M7x0.75, M7.5x1.0	5/16-48UNS, 5/16-40UNS, 5/16-36UNS, 5/16-32UNEF, 5/16-28UN, 5/16-27UNS, 5/16-24UNS, 5/16-20UN	0.5-1.25	20-48	D1T25232L100-ITF60 TM...	80416	1/4	0.232	2.500	1.00	5	1
-	M10.5x0.5, M11x0.75, M11x1.0	7/16-32UN, 7/16-28UNEF, 7/16-27UNS, 7/16-24UNS	0.5-1.0	24-56	D1T37370L138-ITB60 TM...	80417	3/8	0.39	3.000	1.38	6	1
M10x1.5	M10x1.0, M10X1.25	3/8-24UNF, 3/8-20UN, 7/16-18UNS, 7/16-16UN	1.0-1.50	16-24	D1T31307L126-ITC60 TM...	80423	5/16	0.311	2.500	1.26	6	1
M12x1.75	M12x1.0, M12X1.25, M12x1.5	½-24UNS, ½-20UNS, ½-18UNS, ½-16UNS, ½-14UNS	1.0-1.75	14-24	D1T37370L150-ITD60 TM...	80424	3/8	0.39	3.000	1.50	6	1
-	M13.5x1.0, M14x1.25, M14x1.5	9/16-24UNEF	1.0-1.75	14-24	D1T50469L177-ITD60 TM...	80425	1/2	0.469	3.250	1.77	6	1

Internal



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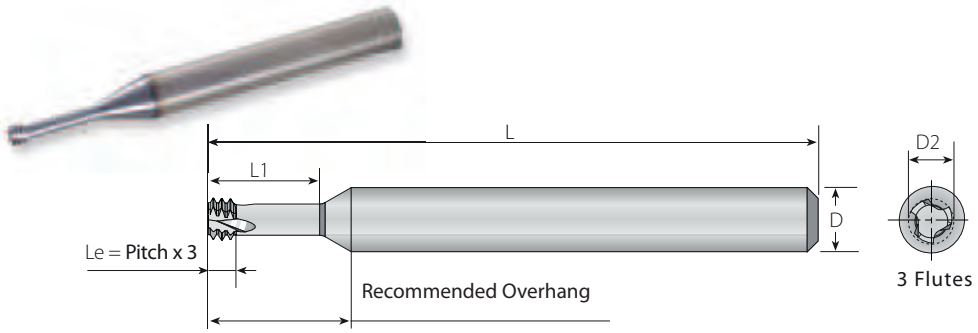


MilliPro

Miniature Thread Mills

2 x Do (L1 ≤ 2 x Thread Diameter)

Thread		Pitch	Ordering Code	EDP No.	Dimensions inch				No. of Flutes	Teeth	Bore Dia.*
UNC	UNF	tpi	Internal	VTH	D	D2	L	L1	Z	Zt	inch
	No.1-72	72	D3T25057L154-I72UN TM...	80215	1/4	.057	2.244	.154	3	3	.059
No.1-64	No.2-64	64	D3T25055L165-I64UN TM...	80214	1/4	.055	2.244	.165	3	3	.059
No.2-56	No.3-56	56	D3T25065L197-I56UN TM...	80216	1/4	.065	2.244	.197	3	3	.071
No.3-48	No.4-48	48	D3T25075L236-I48UN TM...	80217	1/4	.075	2.244	.236	3	3	.079
No.4, No.5-40	No.6-40	40	D3T25083L236-I40UN TM...	80218	1/4	.083	2.244	.236	3	3	.090
No.5-40	No.6-40	40	D3T25096L283-I40UN TM...	80219	1/4	.096	2.244	.283	3	3	.102
	No.8-36	36	D3T25130L343-I36UN TM...	80240	1/4	.130	2.244	.343	3	3	.138
No.6, No.8-32	No.10-32	32	D3T25100L292-I32UN TM...	80241	1/4	.100	2.244	.292	3	3	.110
No.8-32	No.10-32	32	D3T25126L394-I32UN TM...	80242	1/4	.126	2.244	.394	3	3	.134
	1/4"x28	28	D3T25207L520-I28UN TM...	80243	1/4	.207	2.244	.520	3	3	.216
No.10-24	5/16"x24	24	D3T25141L402-I24UN TM...	80244	1/4	.141	2.244	.402	3	3	.150
	5/16"x24	24	D3T31263L650-I24UN TM...	80245	5/16	.263	2.480	.650	3	3	.272
1/4"x20	7/16"x20	20	D3T25192L528-I20UN TM...	80246	1/4	.192	2.244	.528	3	3	.201
	7/16"x20	20	D3T37375L906-I20UN TM...	80247	3/8	.375	2.874	.906	3	3	.390
3/8"x16		16	D3T31264L752-I16UN TM...	80279	5/16	.264	2.480	.752	3	3	.315
7/16"x14		14	D3T37354L917-I14UN TM...	80248	3/8	.354	2.874	.917	3	3	.370

MilliPro

Miniature Thread Mills

3 x Do (L1 ≤ 3 x Thread Diameter)

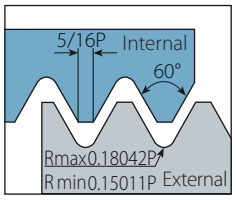
Thread		Pitch	Ordering Code	EDP No.	Dimensions inch				No. of Flutes	Teeth	Bore Dia.*
UNC	UNF	tpi	Internal	VTH	D	D2	L	L1	Z	Zt	inch
	No.1-72	72	D3T25057L226-I72UN TM...	80443	1/4	.057	2.244	.226	3	3	.059
No.4,No.5-40	No.6-40	40	D3T25083L354-I40UN TM...	80263	1/4	.083	2.244	.354	3	3	.091
No.5-40	No.6-40	40	D3T25096L394-I40UN TM...	80249	1/4	.096	2.244	.394	3	3	.102
No.6,No.8-32	No.10-32	32	D3T25100L433-I32UN TM...	80264	1/4	.100	2.244	.433	3	3	.110
No.8-32	No.10-32	32	D3T25126L512-I32UN TM...	80250	1/4	.126	2.244	.512	3	3	.134
	1/4"x28	28	D3T25207L772-I28UN TM...	80251	1/4	.207	2.244	.772	3	3	.216
	5/16"x24	24	D3T31263L965-I24UN TM...	80252	5/16	.263	2.480	.965	3	3	.272
1/4"x20	7/16"x20	20	D3T25192L780-I20UN TM...	80253	1/4	.192	2.244	.780	3	3	.201

*Bore Diameter applies to smallest thread Dia.

UNJ

MilliPro

Internal



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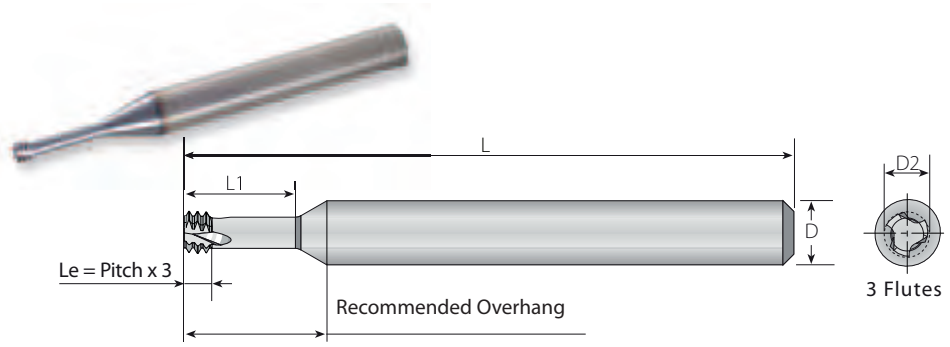


MilliPro - Miniature Thread Mills

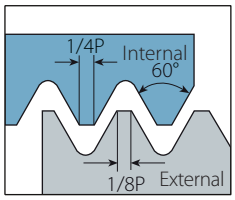
3 x Do (L1 ≤ 3 x Thread Diameter)

Thread		Pitch	Ordering Code	EDP No.	Dimensions inch				No. of Flutes	Teeth	Bore Dia.*
UNJC	UNJF	tpi	Internal	VTH	D	D2	L	L1	Z	Zt	inch
0.138"(#6)	0.190"(#10)	32	D3T25106L043-I32UNJ TM...	80436	1/4	.106	2.244	.433	3	3	.110
	0.250"(1/4")	28	D3T25213L076-I28UNJ TM...	80437	1/4	.213	2.244	.768	3	3	.220
0.190"(#10)		24	D3T25146L058-I24UNJ TM...	80438	1/4	.146	2.244	.587	3	3	.157
	0.3125"(5/16")	24	D3T31264L094-I24UNJ TM...	80439	5/16	.264	2.480	.949	3	3	.276
0.250"(1/4")		20	D3T25197L076-I20UNJ TM...	80445	1/4	.197	2.244	.768	3	3	.209
	0.4375"(7/16")	20	D3T37371L131-I20UNJ TM...	80446	3/8	.371	2.874	1.319	3	3	.394
0.3125"(5/16")	0.5625"(9/16")	18	D3T31252L094-I18UNJ TM...	80961	5/16	.252	2.480	.949	3	3	.266
0.375"(3/8")	0.750"(3/4")	16	D3T31303L114-I16UNJ TM...	80879	5/16	.303	2.480	1.142	3	3	.319
0.4375"(7/16")	0.875"(7/8")	14	D3T37362L131-I14UNJ TM...	80880	3/8	.362	2.874	1.319	3	3	.374
0.500"(1/2")		13	D3T37371L151-I13UNJ TM...	80881	3/8	.371	2.874	1.516	3	3	.433

MJ

MilliPro

Internal



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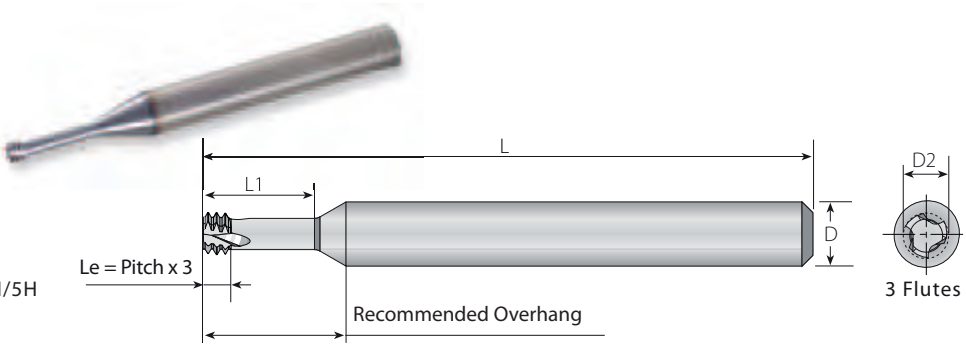


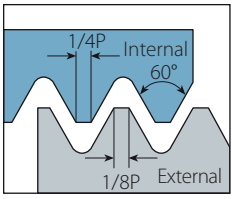
MilliPro - Miniature Thread Mills

3 x Do (L1 ≤ 3 x Thread Diameter)

Thread	Pitch	Ordering Code	EDP No.	Dimensions inch				No. of Flutes	Teeth	Bore Dia.
Standard	mm	Internal	VTH	D	D2	L	L1	Z	Zt	inch
MJ3x0.5	0.5	D3T25094L036-I0.5MJ TM...	80882	1/4	.094	2.244	0.362	3	3	.102
MJ3.5x0.6	0.6	D3T25112L043-I0.6MJ TM...	80883	1/4	.112	2.244	0.433	3	3	.118
MJ4x0.7	0.7	D3T25124L048-I0.7MJ TM...	80884	1/4	.124	2.244	0.484	3	3	.134
MJ5x0.8	0.8	D3T25159L060-I0.8MJ TM...	80885	1/4	.159	2.244	0.606	3	3	.169
MJ6x1.0	1.0	D3T25189L072-I1.0MJ TM...	80886	1/4	.189	2.244	0.728	3	3	.201
MJ8x1.25	1.25	D3T31256L096-I1.25MJ TM...	80887	5/16	.256	2.480	0.969	3	3	.272
MJ10x1.5	1.50	D3T37323L121-I1.50MJ TM...	80888	3/8	.323	2.874	1.213	3	3	.343
MJ12x1.75	1.75	D3T37371L145-I1.75MJ TM...	80889	3/8	.371	2.874	1.457	3	3	.409
MJ14x2	2.0	D3T50469L167-I2.0MJ TM...	80890	1/2	.469	3.268	1.673	3	3	.482

*Bore Diameter applies to smallest thread Dia.

Internal



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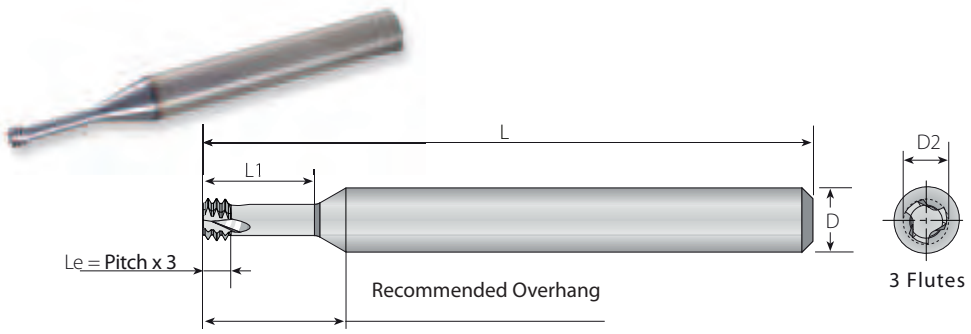
Tolerance class: 6H



MilliPro

Miniature Thread Mills

2 x Do (L1 ≤ 2 x Thread Diameter)

Thread		Pitch	Ordering Code	EDP No.	Dimensions inch				No. of Flutes	Teeth	Bore Dia.*
M Coarse	M Fine	mm	Internal		D	D2	L	L1	Z	Zt	inch
M1.6x0.35		0.35	D3T12047L134-I0.35ISO TM...	80660	1/8	.047	1.181	.134	3	3	.049
M2x0.4		0.4	D3T25061L165-I0.4ISO TM...	80661	1/4	.061	2.244	.165	3	3	.063
M2.2x0.45		0.45	D3T25065L181-I0.45ISO TM...	80662	1/4	.065	2.244	.181	3	3	.069
M2.5x0.45		0.45	D3T25077L205-I0.45ISO TM...	80663	1/4	.077	2.244	.205	3	3	.081
M3x0.5	M3.5-M16x0.5	0.5	D3T25094L244-I0.5ISO TM...	80664	1/4	.094	2.244	.244	3	3	.098
M3.5x0.6		0.6	D3T25108L287-I0.6ISO TM...	80665	1/4	.108	2.244	.287	3	3	.114
M4x0.7		0.7	D3T25124L327-I0.7ISO TM...	80666	1/4	.124	2.244	.327	3	3	.130
M5x0.8		0.8	D3T25159L409-I0.8ISO TM...	80667	1/4	.159	2.244	.409	3	3	.165
M6x1.0	M8-M40x1.0	1.0	D3T25189L492-I1.0ISO TM...	80668	1/4	.189	2.244	.492	3	3	.197
M8x1.25		1.25	D3T31256L654-I1.25ISO TM...	80669	5/16	.256	2.480	.654	3	3	.268
M10x1.5	M12-M48x1.50	1.50	D3T37323L819-I1.50ISO TM...	80670	3/8	.323	2.874	.819	3	3	.335
M12x1.75		1.75	D3T37371L984-I1.75ISO TM...	80671	3/8	.371	2.874	.984	3	3	.406

MilliPro

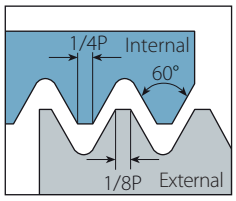
Miniature Thread Mills

3 x Do (L1 ≤ 3 x Thread Diameter)

Thread		Pitch	Ordering Code	EDP No.	Dimensions inch				No. of Flutes	Teeth	Bore Dia.*
M Coarse	M Fine	mm	Internal		D	D2	L	L1	Z	Zt	inch
M1.6X0.35		0.35	D3T12047L197-I0.35ISO TM...	80672	1/8	.047	1.181	.197	3	3	.049
M2X0.4		0.4	D3T25061L244-I0.4ISO TM...	80673	1/4	.061	2.244	.244	3	3	.063
M2.5x0.45		0.45	D3T25077L276-I0.45ISO TM...	80674	1/4	.077	2.244	.276	3	3	.081
M3x0.5	M3.5-M16x0.5	0.5	D3T25094L362-I0.5ISO TM...	80675	1/4	.094	2.244	.362	3	3	.098
M4x0.7		0.7	D3T25124L484-I0.7ISO TM...	80676	1/4	.124	2.244	.484	3	3	.130
M5x0.8		0.8	D3T25159L606-I0.8ISO TM...	80677	1/4	.159	2.244	.606	3	3	.165
M6x1.0	M8-M40x1.0	1.00	D3T25189L728-I1.0ISO TM...	80678	1/4	.189	2.244	.728	3	3	.197
M8x1.25		1.25	D3T31256L969-I1.25ISO TM...	80679	5/16	.256	2.480	.969	3	3	.268

*Bore Diameter applies to smallest thread Dia.

Internal



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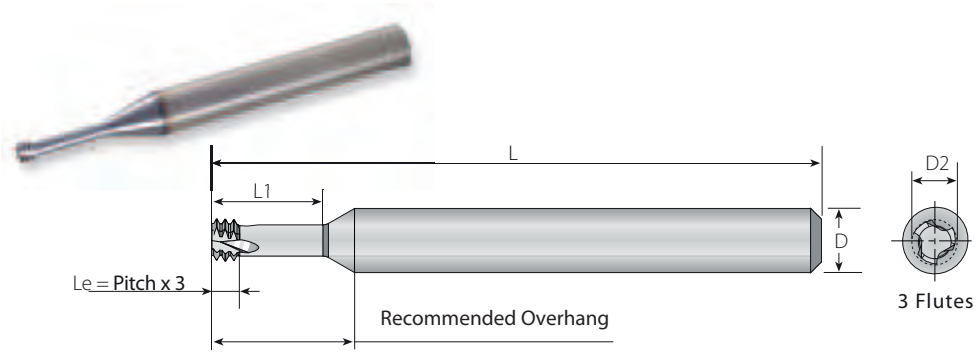


MilliPro (D-mm shank)

Miniature Thread Mills

2 x Do (L1 ≤ 2 x Thread Diameter)

Thread		Pitch	Ordering Code	EDP No.	Dimensions inch				No. of Flutes	Teeth	Bore Dia.*
M Coarse	M Fine	mm	Internal		D (mm)	D2	L	L1	Z	Zt	inch
M1.6x0.35		0.35	D3T03012L034-I0.35ISO TM...	80420	3	0.05	1.18	0.13	3	3	0.05
M2x0.4		0.4	D3T06015L042-I0.4ISO TM...	80254	6	0.06	2.24	0.17	3	3	0.06
M2.2x0.45		0.45	D3T06016L046-I0.45ISO TM...	80255	6	0.06	2.24	0.18	3	3	0.07
M2.5x0.45		0.45	D3T06019L052-I0.45ISO TM...	80256	6	0.08	2.24	0.20	3	3	0.08
M3x0.5	M3.5-M16x0.5	0.5	D3T06024L062-I0.5ISO TM...	80257	6	0.09	2.24	0.24	3	3	0.10
M3.5x0.6		0.6	D3T06027L073-I0.6ISO TM...	80258	6	0.11	2.24	0.29	3	3	0.11
M4x0.7		0.7	D3T06031L083-I0.7ISO TM...	80259	6	0.12	2.24	0.33	3	3	0.13
M5x0.8		0.8	D3T06040L104-I0.8ISO TM...	80260	6	0.16	2.24	0.41	3	3	0.17
M6x1.0	M8-M40x1.0	1.0	D3T06048L125-I1.0ISO TM...	80261	6	0.19	2.24	0.49	3	3	0.20
M8x1.25		1.25	D3T08065L166-I1.25ISO TM...	80262	8	0.26	2.48	0.65	3	3	0.27
M10x1.5	M12-M48x1.50	1.50	D3T10082L208-I1.50ISO TM...	80418	10	0.32	2.87	0.82	3	3	0.33
M12x1.75		1.75	D3T10099L250-I1.75ISO TM...	80419	10	0.39	2.87	0.98	3	3	0.41
M16x2.0		2.0	D3T12119L330-I2.0ISO TM...	80963	12	0.47	3.27	1.30	3	3	0.55
M20x2.5		2.50	D3T16159L413-I2.5ISO TM...	80962	16	0.63	3.62	1.63	3	3	0.69

MilliPro (D-mm shank)

Miniature Thread Mills

3 x Do (L1 ≤ 3 x Thread Diameter)

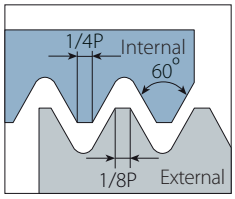
Thread		Pitch	Ordering Code	EDP No.	Dimensions inch				No. of Flutes	Teeth	Bore Dia.*
M Coarse	M Fine	mm	Internal		D (mm)	D2	L	L1	Z	Zt	inch
M1.6X0.35		0.35	D3T03012L050-I0.35ISO TM...	80421	3	1.20	1.18	0.2	3	3	0.05
M2x0.4		0.4	D3T03015L062-I0.4IS0 TM...	80966	3	1.55	1.18	0.24	3	3	0.06
M2X0.4		0.4	D3T06015L062-I0.4ISO TM...	80422	6	1.55	2.24	0.24	3	3	0.06
M2.5x0.45		0.45	D3T03019L077-I0.45ISO TM...	80964	3	1.95	1.18	0.30	3	3	0.08
M2.5x0.45		0.45	D3T06019L077-I0.45ISO TM...	80265	6	1.95	2.24	0.30	3	3	0.08
M3X0.5	M3.5-M16x0.5	0.5	D3T03024L092-I0.5ISO TM...	80965	3	2.40	1.18	0.36	3	3	0.10
M3x0.5	M3.5-M16x0.5	0.5	D3T06024L092-I0.5ISO TM...	80266	6	2.40	2.24	0.36	3	3	0.10
M4x0.7		0.7	D3T06031L123-I0.7ISO TM...	80267	6	3.15	2.24	0.48	3	3	0.13
M5x0.8		0.8	D3T06040L154-I0.8ISO TM...	80268	6	4.05	2.24	0.61	3	3	0.17
M6x1.0	M8-M40x1.0	1.00	D3T06048L185-I1.0ISO TM...	80269	6	4.80	2.24	0.73	3	3	0.20
M8x1.25		1.25	D3T08065L246-I1.25ISO TM...	80270	8	6.50	2.48	0.97	3	3	0.27

*Bore Diameter applies to smallest thread Dia.

ISO Metric

MilliPro Dental

Internal



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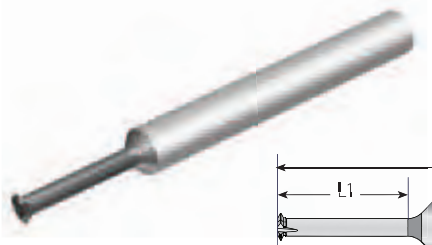
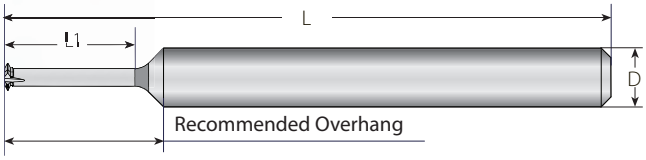
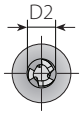
Tolerance class: 6H







3 Flutes

MilliPro Dental

Miniature Thread Mills for Dental Implants

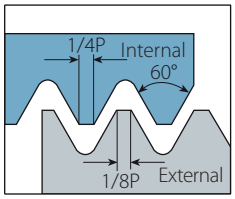
3xDo (L1≤3 x Thread Diameter)

Thread		Pitch	Ordering Code	EDP No.	Dimensions inch				No. of Flutes	Teeth	Bore Dia.
M Coarse	M Fine	mm	Internal	VTH	D[mm]	D2	L	L1	Z	Zt	inch
M1.0x0.25	M1.4x0.25	0.25	D1T03007L031-I0.25ISO TM...	80210	3	.028	1.220	.122	3	1	.030
M1.2x0.25	M1.4x0.25	0.25	D1T03009L038-I0.25ISO TM...	80211	3	.035	1.220	.150	3	1	.037
M1.4x0.3	-	0.30	D1T03011L044-I0.30ISO TM...	80212	3	.041	1.220	.173	3	1	.045
M1.6x0.35	-	0.35	D1T03012L050-I0.35ISO TM...	80213	3	.047	1.220	.197	3	1	.051
M1.8x0.35	M2.0x0.35	0.35	D1T03014L056-I0.35ISO TM...	80280	3	.055	1.220	.220	3	1	.059
M2.0x0.4	-	0.40	D1T03015L062-I0.40ISO TM...	80281	3	.059	1.220	.244	3	1	.065
M2.5x0.45	-	0.45	D1T03019L077-I0.45ISO TM...	80282	3	.077	1.220	.303	3	1	.083

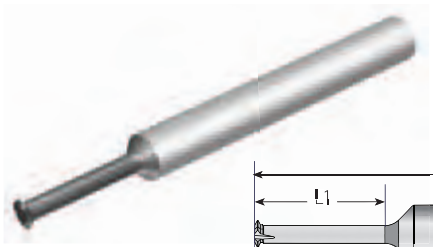
American UN

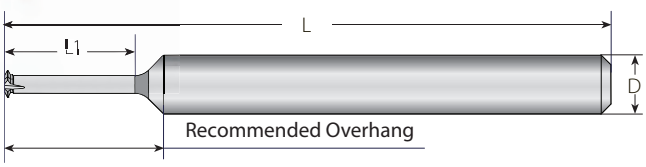
MilliPro Dental

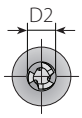
Internal



Defined by: ANSI B1.1:74
Tolerance class: 2B







3 Flutes

MilliPro Dental

Miniature Thread Mills for Dental Implants

3xDo (L1≤3 x Thread Diameter)

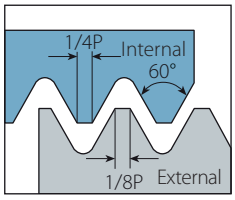
Thread	Pitch	Ordering Code	EDP No.	Dimensions inch				No. of Flutes	Teeth	Bore Dia.
UNF	tpi	Internal	VTH	D[mm]	D2	L	L1	Z	Zt	inch
0-80	80	D1T03011L046-I80UN TM...	80283	3	.045	1.220	.181	3	1	.051
1-72	72	D1T03014L065-I72UN TM...	80413	3	.057	1.220	.256	3	1	.063

The MilliPro Dental line was specially designed for machining Titanium and Stainless Steel in high RPM.
MilliPro Dental D1T tools are also suitable for general use applications

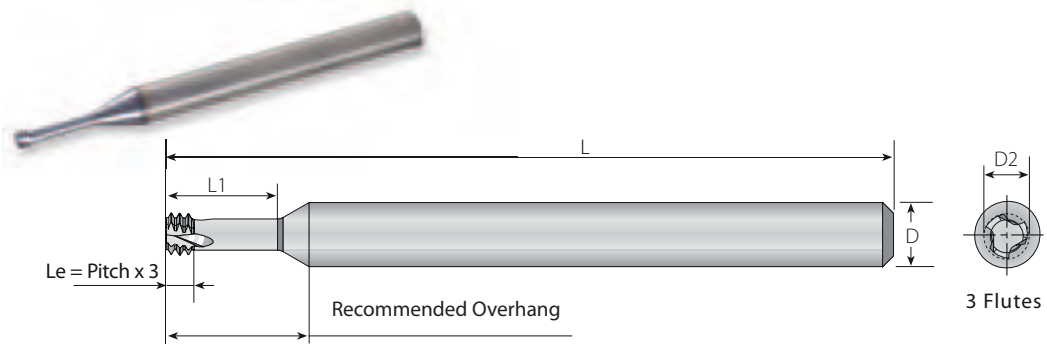
ISO Metric

MilliPro EL

Internal



Defined by: R262 (DIN 13)
Tolerance class: 6H



MilliPro EL

Miniature Thread Mills, Extra Long Tools

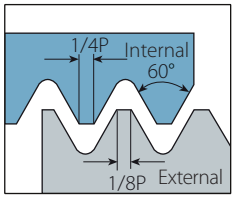
2 x Do (L1 ≤ 2 x Thread Diameter)

Thread		Pitch	Ordering Code	EDP No.	Dimensions inch				No. of Flutes	Teeth	Bore Dia.*
M Coarse	M Fine	mm	Internal	VTH	D	D2	L	L1	Z	Zt	Inch
M2x0.4		0.4	D3T25061L165-I0.4ISO TML...	80426	1/4	.061	3.937	.165	3	3	.063
M2.5x0.45		0.45	D3T25077L205-I0.45ISO TML...	80428	1/4	.077	3.937	.205	3	3	.081
M3x0.5	M3.5-M16x0.5	0.5	D3T25094L244-I0.5ISO TML...	80429	1/4	.094	3.937	.244	3	3	.098

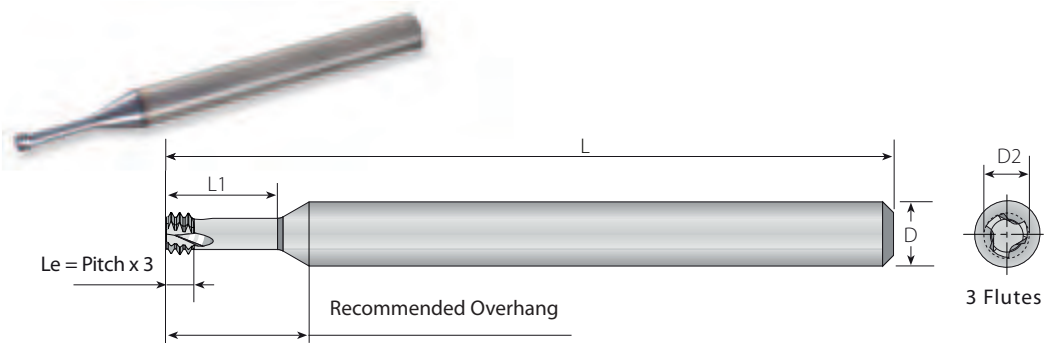
American UN

MilliPro EL

Internal



Defined by: ANSI B1.1:74
Tolerance class: 2B



MilliPro EL

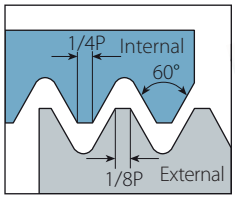
Miniature Thread Mills, Extra Long Tools

2 x Do (L1 ≤ 2 x Thread Diameter)

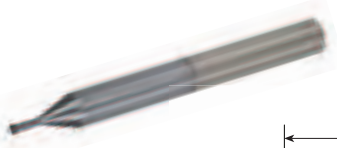
Thread		Pitch	Ordering Code	EDP No.	Dimensions inch				No. of Flutes	Teeth	Bore Dia.*
UNC	UNF	tpi	Internal	VTH	D	D2	L	L1	Z	Zt	inch
No.2-56	No.3-56	56	D3T25065L197-I56UN TML...	80430	1/4	.065	3.937	.197	3	3	.071
No.4, No.5-40	No.6-40	40	D3T25083L236-I40UN TML...	80431	1/4	.083	3.937	.236	3	3	.091
No.6, No.8-32	No.10-32	32	D3T25100L291-I32UN TML...	80432	1/4	.100	3.937	.291	3	3	.110
No.8-32	No.10-32	32	D3T25126L394-I32UN TML...	80433	1/4	.126	3.937	.394	3	3	.134

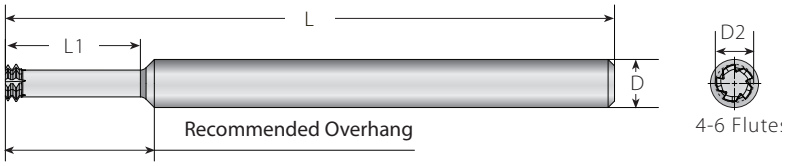
*Bore Diameter applies to smallest thread Dia.

Internal



Defined by: ANSI B1.1:74
Tolerance class: 2B





Left Hand Tool

MilliPro HD

Miniature Thread Mills for Hard Materials Up to 62HRc

2 x Do (L1 ≤ 2 x Thread Diameter)

Thread		Pitch	Ordering Code	EDP No.	Dimensions inch				No. of Flutes	Teeth	Bore Dia.*
UNC	UNF	tpi	Internal	VTH	D	D2	L	L1	Z	Zt	inch
No.2-56	No.3-56	56	S2L25065L197-I56UN TM...	80936	1/4"	.065	3.00	.210	4	2	.071
No.3-48	No.4-48	48	S2L25075L236-I48UN TM...	80937	1/4"	.075	3.00	.260	4	2	.083
No.4-40, No.5-40	No.6-40	40	S2L25083L236-I40UN TM...	80938	1/4"	.083	3.00	.260	4	2	.093
No.5-40	No.6-40	40	S2L25096L283-I40UN TM...	80939	1/4"	.096	3.00	.310	4	2	.104
	No.8-36	36	S2L25130L343-I36UN TM...	80940	1/4"	.130	3.00	.370	4	2	.140
No.6-32, No.8-32	No.10-32	32	S2L25100L292-I32UN TM...	80941	1/4"	.100	3.00	.320	4	2	.112
No.8-32	No.10-32	32	S2L25126L394-I32UN TM...	80942	1/4"	.126	3.00	.420	4	2	.138
	No.10-32	32	S2L25146L394-I32UN TM...	80943	1/4"	.146	3.00	.430	4	2	.164
	1/4"x28	28	S2L25207L520-I28UN TM...	80944	1/4"	.207	3.00	.560	5	2	.219
No.10-24	5/16"x24	24	S2L25141L402-I24UN TM...	80945	1/4"	.141	3.00	.440	4	2	.154
	5/16"x24	24	S2L31263L650-I24UN TM...	80946	5/16"	.263	3.15	.690	5	2	.276
1/4"-20	7/16"x20	20	S2L25192L528-I20UN TM...	80947	1/4"	.192	3.00	.580	5	2	.205
	7/16"x20	20	S2L37372L906-I20UN TM...	80948	3/8"	.372	4.00	.960	6	2	.390
3/8"x16		16	S2L31301L776-I16UN TM...	80949	5/16"	.301	3.15	.840	5	2	.315
7/16"x14		14	S2L37354L917-I14UN TM...	80950	3/8"	.354	4.00	.990	6	2	.374
1/2"x13		13	S2L37390L101-I13UN TM...	80951	3/8"	.390	4.00	1.080	6	2	.429

MilliPro HD

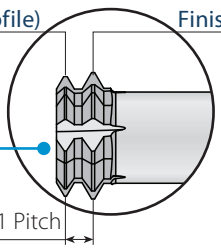
Miniature Thread Mills for Hard Materials Up to 62HRc

3 x Do (L1 ≤ 3 x Thread Diameter)

Thread		Pitch	Ordering Code	EDP No.	Dimensions inch				No. of Flutes	Teeth	Bore Dia.*
UNC	UNF	tpi	Internal	VTH	D	D2	L	L1	Z	Zt	inch
No.4-40, No.5-40	No.6-40	40	S2L25083L354-I40UN TM...	80952	1/4"	.083	3.00	.380	4	2	.093
No.5-40	No.6-40	40	S2L25096L394-I40UN TM...	80953	1/4"	.096	3.00	.410	4	2	.104
No.6-32, No.8-32	No.10-32	32	S2L25100L433-I32UN TM...	80954	1/4"	.100	3.00	.460	4	2	.111
No.8-32	No.10-32	32	S2L25126L512-I32UN TM...	80955	1/4"	.126	3.00	.540	4	2	.136
	1/4"x28	28	S2L25207L772-I28UN TM...	80956	1/4"	.207	3.00	.810	5	2	.219
	5/16"x24	24	S2L31263L965-I24UN TM...	80957	5/16"	.263	3.15	1.010	5	2	.272
1/4"x20	7/16"x20	20	S2L25192L780-I20UN TM...	80958	1/4"	.192	3.00	.830	5	2	.204
7/16"x14		14	S2L37354L131-I14UN TM...	80959	3/8"	.354	4.00	1.390	6	2	.375

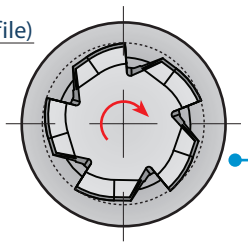
Roughing (Partial Profile)

Finish (Full Profile)



Two cutting teeth: Partial Profile for leading tooth followed by Full Profile for finishing.

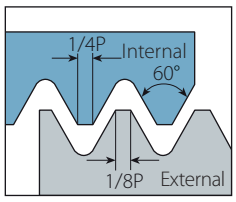
The work direction should be from the top to the bottom (Climb Milling).



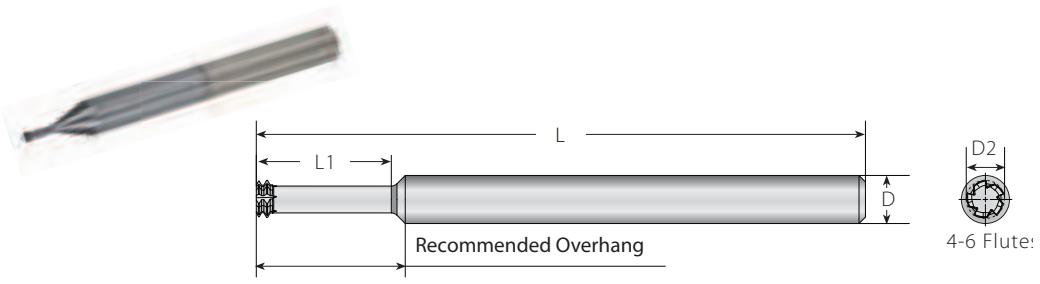
MilliPro HD Tools are left handed. For CNC use M04 code.

*Bore Diameter applies to smallest thread Dia.

Internal



Defined by: R262 (DIN 13)
Tolerance class: 6H



Left Hand Tool

MilliPro HD

Miniature Thread Mills for Hard Materials Up to 62HRc

2 x Do (L1 ≤ 2 x Thread Diameter)

Thread		Pitch	Ordering Code	EDP No.	Dimensions inch				No. of Flutes	Teeth	Bore Dia.*
M Coarse	M Fine	mm	Internal	VTH	D	D2	L	L1	Z	Zt	Inch
M2x0.4		0.4	S2L25061L165-I0.4ISO TM...	80918	1/4	.061	2.99	.18	4	2	.063
M2.2x0.45		0.45	S2L25065L181-I0.45ISO TM...	80919	1/4	.065	2.99	.20	4	2	.071
M2.5x0.45		0.45	S2L25077L204-I0.45ISO TM...	80920	1/4	.077	2.99	.22	4	2	.081
M3x0.5	M3.5-M16x0.5	0.5	S2L25094L244-I0.5ISO TM...	80921	1/4	.094	2.99	.27	4	2	.101
M3.5x0.6		0.6	S2L25108L287-I0.6ISO TM...	80922	1/4	.108	2.99	.31	4	2	.116
M4x0.7		0.7	S2L25124L326-I0.7ISO TM...	80923	1/4	.124	2.99	.36	4	2	.132
M5x0.8		0.8	S2L25159L409-I0.8ISO TM...	80924	1/4	.159	2.99	.44	4	2	.169
M6x1.0	M8-M40x1.0	1.0	S2L25189L492-I1.0ISO TM...	80925	1/4	.189	2.99	.53	5	2	.201
M8x1.25		1.25	S2L31256L653-I1.25ISO TM...	80926	5/16	.256	3.15	.70	5	2	.268
M10x1.5	M12-M48x1.50	1.50	S2L31308L818-I1.50ISO TM...	80927	5/16	.308	3.15	.88	6	2	.339
M12x1.75		1.75	S2L37371L984-I1.75ISO TM...	80928	3/8	.371	3.98	1.05	6	2	.409

MilliPro HD

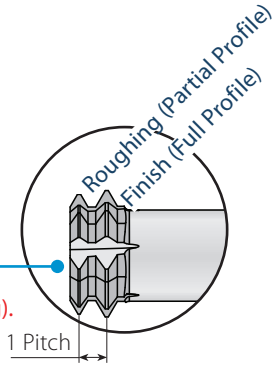
Miniature Thread Mills for Hard Materials Up to 62HRc

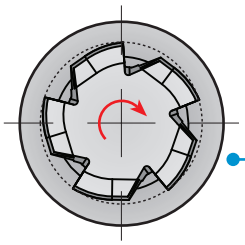
3 x Do (L1 ≤ 3 x Thread Diameter)

Thread		Pitch	Ordering Code	EDP No.	Dimensions inch				No. of Flutes	Teeth	Bore Dia.*
M Coarse	M Fine	mm	Internal	VTH	D	D2	L	L1	Z	Zt	inch
M2x0.4		0.4	S2L25061L244-I0.4ISO TM...	80929	1/4	.061	2.99	.26	4	2	.063
M2.5x0.45		0.45	S2L25077L303-I0.45ISO TM...	80930	1/4	.077	2.99	.32	4	2	.081
M3x0.5	M3.5-M16x0.5	0.5	S2L25094L362-I0.5ISO TM...	80931	1/4	.094	2.99	.38	4	2	.101
M4x0.7		0.7	S2L25124L484-I0.7ISO TM...	80932	1/4	.124	2.99	.51	4	2	.132
M5x0.8		0.8	S2L25159L606-I0.8ISO TM...	80933	1/4	.159	2.99	.64	4	2	.169
M6x1.0	M8-M40x1.0	1.0	S2L25189L728-I1.0ISO TM...	80934	1/4	.189	2.99	.77	5	2	.201
M8x1.25		1.25	S2L31256L968-I1.25ISO TM...	80935	5/16	.256	3.15	1.02	5	2	.268

Two cutting teeth: Partial Profile for leading tooth followed by Full Profile for finishing.

The work direction should be from the top to the bottom (Climb Milling).

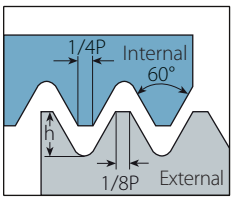


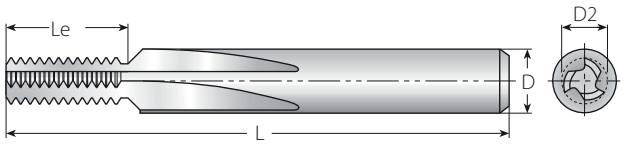


MilliPro HD Tools are left handed. For CNC use M04 code.

*Bore Diameter applies to smallest thread Dia.

External / Internal





Defined by: ANSI B1.1:74
Tolerance class: 2A/2B

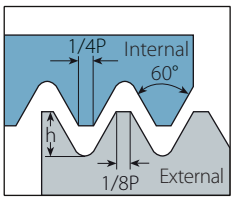
Straight Flutes - External

Thread	Pitch	Ordering Code	EDP No.	Dimensions inch				No. of Flutes	Teeth	
Min. Dia.	tpi	External	VTS	D	D2	L	Le	Z	Zt	h inch
No.6	32	S1/4".240"-E32UN TM...	80026	1/4	.240	2.244	.562	3	18	.019
No.12	28	S5/16".310"-E28UN TM3...	80027	5/16	.310	2.480	.786	3	22	.022
No.12	28	S5/16".310"-E28UN TM5...	80408	5/16	.310	2.480	.786	5	22	.022
1/4"	20	S3/8".370"-E20UN TM...	80028	3/8	.370	2.835	.900	5	18	.031
5/16"	18	S3/8".370"-E18UN TM...	80029	3/8	.370	2.835	.944	5	17	.034
3/8"	16	S1/2".470"-E16UN TM...	80030	1/2	.470	3.268	1.125	5	18	.038
9/16"	12	S1/2".470"-E12UN TM...	80031	1/2	.470	3.268	1.167	5	14	.051
1"	8	S5/8".620"-E8UN TM...	80032	5/8	.620	3.622	1.500	5	12	.077
1 3/8"	6	S5/8".620"-E6UN TM...	80033	5/8	.620	3.622	1.500	5	9	.102

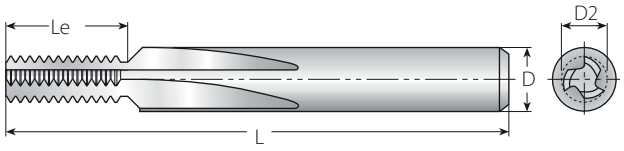
Straight Flutes - Internal

Thread	Pitch	Ordering Code	EDP No.	Dimensions inch				No. of Flutes	Teeth	
Min. Dia.	tpi	Internal	VTS	D	D2	L	Le	Z	Zt	h inch
No.8	36	S1/8".120"-I36UN TM...	80034	1/8	.120	1.654	.250	3	9	.016
No.8	32	S1/8".120"-I32UN TM...	80035	1/8	.120	1.654	.250	3	8	.018
5/16"	32	S1/4".240"-I32UN TM...	80036	1/4	.240	2.244	.562	3	18	.018
No.12	28	S3/16".145"-I28UN TM...	80037	3/16	.145	1.654	.321	3	9	.021
7/16"	28	S5/16".310"-I28UN TM3...	80038	5/16	.310	2.480	.786	3	22	.021
7/16"	28	S5/16".310"-I28UN TM5...	80441	5/16	.310	2.480	.786	5	22	.021
No.12	24	S3/16".160"-I24UN TM...	80039	3/16	.160	2.244	.333	3	8	.024
1/4"	20	S3/16".160"-I20UN TM...	80040	3/16	.160	2.244	.400	3	8	.029
9/16"	20	S3/8".370"-I20UN TM...	80041	3/8	.370	2.835	.900	5	18	.029
5/16"	18	S1/4".200"-I18UN TM...	80440	1/4	.200	2.244	.500	3	9	.033
9/16"	18	S3/8".370"-I18UN TM...	80043	3/8	.370	2.835	.944	5	17	.033
3/8"	16	S1/4".240"-I16UN TM...	80044	1/4	.240	2.244	.562	3	9	.037
13/16"	16	S1/2".470"-I16UN TM...	80045	1/2	.470	3.268	1.125	5	18	.037
7/16"	14	S5/16".310"-I14UN TM3...	80046	5/16	.310	2.480	.714	3	10	.042
7/16"	14	S5/16".310"-I14UN TM5...	80238	5/16	.310	2.480	.714	5	10	.042
1/2"	13	S5/16".310"-I13UN TM3...	80047	5/16	.310	2.480	.769	3	10	.045
1/2"	13	S5/16".310"-I13UN TM5...	80237	5/16	.310	2.480	.769	5	10	.045
9/16"	12	S3/8".370"-I12UN TM...	80048	3/8	.370	2.835	.917	5	11	.049
1"	12	S1/2".470"-I12UN TM...	80049	1/2	.470	3.268	1.167	5	14	.049
5/8"	11	S3/8".370"-I11UN TM...	80050	3/8	.370	2.835	.909	5	10	.053
3/4"	10	S1/2".470"-I10UN TM...	80051	1/2	.470	3.268	1.100	5	11	.059
7/8"	9	S5/8".620"-I9UN TM...	80442	5/8	.620	3.622	1.333	5	12	.065
1"	8	S5/8".620"-I8UN TM...	80053	5/8	.620	3.622	1.500	5	12	.073
1 1/8"	7	S5/8".620"-I7UN TM...	80054	5/8	.620	3.622	1.429	5	10	.084
1 3/8"	6	S3/4".745"-I6UN TM...	80055	3/4	.745	4.095	1.500	5	9	.098
1 3/4"	5	S3/4".745"-I5UN TM...	80057	3/4	.745	4.095	1.600	5	8	.117
2"	4.5	S3/4".745"-I4.5UN TM...	80058	3/4	.745	4.095	1.555	5	7	.130

External / Internal



Defined by: R262 (DIN 13)
Tolerance class: 6g/6H



Straight Flutes - External

Thread	Pitch	Ordering Code	EDP No.	Dimensions inch				No. of Flutes	Teeth	
Min. Dia.	mm	External	VTS	D	D2	L	Le	Z	Zt	h inch
M3	0.50	S1/4".240"-E0.5ISO TM...	80000	1/4	.240	2.244	.591	3	30	.012
M4.5	0.75	S5/16".310"-E0.75ISO TM3...	80001	5/16	.310	2.480	.610	3	26	.019
M4.5	0.75	S5/16".310"-E0.75ISO TM5...	80444	5/16	.310	2.480	.610	5	26	.019
M6	1.00	S3/8".370"-E1.0ISO TM...	80002	3/8	.370	2.835	.945	5	24	.025
M10	1.50	S1/2".470"-E1.5ISO TM...	80003	1/2	.470	3.268	1.181	5	20	.037
M14	2.00	S1/2".470"-E2.0ISO TM...	80004	1/2	.470	3.268	1.181	5	15	.050
M24	3.00	S5/8".620"-E3.0ISO TM...	80005	5/8	.620	3.622	1.417	5	12	075
M36	4.00	S5/8".620"-E4.0ISO TM...	80006	5/8	.620	3.622	1.575	5	10	.100
M64	6.00	S3/4".745"-E6.0ISO TM...	80007	3/4	.745	4.095	1.417	5	6	.149

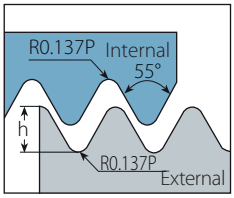
Straight Flutes - Internal

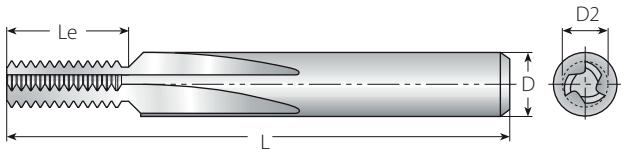
Thread	Pitch	Ordering Code	EDP No.	Dimensions inch				No. of Flutes	Teeth	
Min. Dia.	mm	Internal	VTS	D	D2	L	Le	Z	Zt	h inch
M4.5	0.75	S1/8".120"-I0.75ISO TM...	80008	1/8	.120	1.496	.270	3	9	.017
M8	0.75	S1/4".240"-I0.75ISO TM...	80009	1/4	.240	2.244	.591	3	20	.017
M5	0.80	S3/16".145"-I0.8ISO TM...	80010	3/16	.145	1.654	.315	3	10	.018
M6	1.00	S3/16".160"-I1.0ISO TM...	80011	3/16	.160	1.654	.354	3	9	.023
M12	1.00	S5/16".310"-I1.0ISO TM3...	80012	5/16	.310	2.480	.787	3	20	.023
M12	1.00	S5/16".310"-I1.0ISO TM5...	80239	5/16	.310	2.480	.787	5	20	.023
M8	1.25	S1/4".200"-I1.25ISO TM...	80013	1/4	.200	2.244	.492	3	10	.029
M10	1.50	S1/4".240"-I1.5ISO TM...	80014	1/4	.240	2.244	.591	3	10	.035
M14	1.50	S3/8".370"-I1.5ISO TM...	80015	3/8	.370	2.835	.945	5	16	.035
M18	1.50	S1/2".470"-I1.5ISO TM...	80016	1/2	.470	3.268	1.181	5	20	.035
M12	1.75	S5/16".310"-I1.75ISO TM3...	80017	5/16	.310	2.480	.758	3	11	.040
M12	1.75	S5/16".310"-I1.75ISO TM5...	80236	5/16	.310	2.480	.758	5	11	.040
M16	2.00	S3/8".370"-I2.0ISO TM...	80018	3/8	.370	2.835	.944	5	12	.046
M18	2.00	S1/2".470"-I2.0ISO TM...	80019	1/2	.470	3.268	1.181	5	15	.046
M20	2.50	S1/2".470"-I2.5ISO TM...	80020	1/2	.470	3.268	1.181	5	12	.058
M24	3.00	S5/8".620"-I3.0ISO TM...	80021	5/8	.620	3.622	1.417	5	12	.069
M30	3.50	S5/8".620"-I3.5ISO TM...	80022	5/8	.620	3.622	1.516	5	11	.081
M36	4.00	S5/8".620"-I4.0ISO TM...	80023	5/8	.620	3.622	1.575	5	10	.092
M48	5.00	S3/4".745"-I5.0ISO TM...	80024	3/4	.745	4.095	1.575	5	8	.116
M64	6.00	S3/4".745"-I6.0ISO TM...	80025	3/4	.745	4.095	1.417	5	6	.139

BSW

Straight

External / Internal





Defined by: B.S.84:1956, DIN 259, ISO228/1:1982
Tolerance class: Medium class A

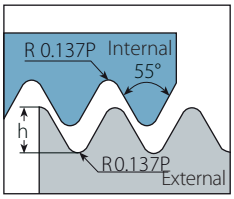
Straight Flutes

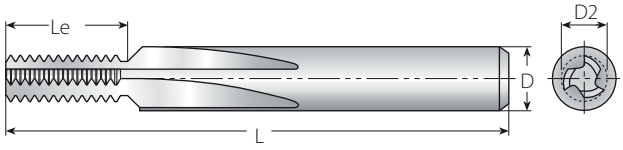
Thread	Pitch	Ordering Code	EDP No.	Dimensions inch				No. of Flutes	Teeth	
Min. Dia.	tpi	External / Internal	VTS	D	D2	L	Le	Z	Zt	h inch
1/4"	20	S3/16".160"-EI20BSW TM...	80059	3/16	.160	1.654	.400	3	8	.032
5/16"	18	S1/4".200"-EI18BSW TM...	80060	1/4	.200	2.244	.444	3	8	.035
3/8"	16	S1/4".240"-EI16BSW TM...	80061	1/4	.240	2.244	.562	3	9	.040
7/16"	14	S5/16".310"-EI14BSW TM3...	80062	5/16	.310	2.480	.714	3	10	.046
7/16"	14	S5/16".310"-EI14BSW TM5...	80232	5/16	.310	2.480	.714	5	10	.046
1/2"	12	S5/16".310"-EI12BSW TM3...	80063	5/16	.310	2.480	.750	3	9	.053
1/2"	12	S5/16".310"-EI12BSW TM5...	80447	5/16	.310	2.480	.750	5	9	.053
5/8"	11	S3/8".370"-EI11BSW TM...	80064	3/8	.370	2.835	.909	5	10	.058
3/4"	10	S1/2".470"-EI10BSW TM...	80065	1/2	.470	3.268	1.100	5	11	.064
7/8"	9	S1/2".470"-EI9BSW TM...	80066	1/2	.470	3.268	1.111	5	10	.071
1"	8	S5/8".620"-EI8BSW TM...	80067	5/8	.620	3.622	1.500	5	12	.080
1 1/8"	7	S5/8".620"-EI7BSW TM...	80068	5/8	.620	3.622	1.429	5	10	.091
1 3/8"	6	S5/8".620"-EI6BSW TM...	80069	5/8	.620	3.622	1.500	5	9	.107
1 5/8"	5	S3/4".745"-EI5BSW TM...	80070	3/4	.745	4.095	1.600	5	8	.128
1 7/8"	4.5	S3/4".745"-EI4.5BSW TM...	80071	3/4	.745	4.095	1.555	5	7	.142

BSP

Straight

External / Internal





Defined by: B.S.2779:1956
Tolerance class: Medium class

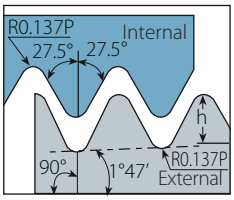
Straight Flutes

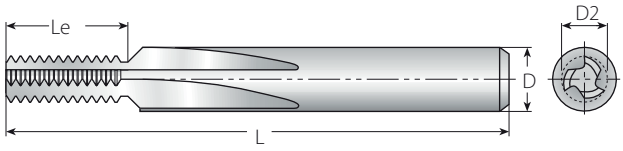
Thread	Pitch	Ordering Code	EDP No.	Dimensions inch				No. of Flutes	Teeth	
Min. Dia.	tpi	External / Internal	VTS	D	D2	L	Le	Z	Zt	h inch
1/16"	28	S1/4".240"-EI28BSP TM...	80076	1/4	.240	2.244	.571	3	16	.023
1/4"	19	S5/16".310"-EI19BSP TM3...	80073	5/16	.310	2.480	.737	3	14	.034
1/4"	19	S5/16".310"-EI19BSP TM5...	80234	5/16	.310	2.480	.737	5	14	.034
1/2"	14	S1/2".470"-EI14BSP TM...	80074	1/2	.470	3.268	1.143	5	16	.046
1"	11	S5/8".620"-EI11BSP TM...	80075	5/8	.620	3.622	1.364	5	15	.058

BSPT

Straight

External / Internal





Defined by: B.S.21:1985
Tolerance class: Standard BSPT

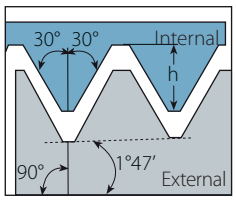
Straight Flutes

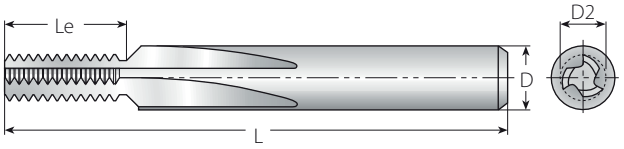
Thread	Pitch	Ordering Code	EDP No.	Dimensions inch				No. of Flutes	Teeth	
Min. Dia.	tpi	External / Internal	VTS	D	D2	L	Le	Z	Zt	h inch
1/16"	28	S1/4".240"-EI28BSPT TM...	80072	1/4	.240	2.244	.393	3	11	.023
1/4"	19	S5/16".310"-EI19BSPT TM3...	80077	5/16	.310	2.480	.579	3	11	.034
1/4"	19	S5/16".310"-EI19BSPT TM5...	80235	5/16	.310	2.480	.579	5	11	.034
1/2"	14	S1/2".470"-EI14BSPT TM...	80078	1/2	.470	3.268	.786	5	11	.046
1"	11	S5/8".620"-EI11BSPT TM...	80079	5/8	.620	3.622	1.545	5	17	.058

NPT

Straight

External / Internal





Defined by: USAS B2.1:1968
Tolerance class: Standard NPT

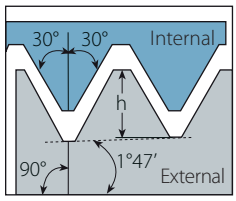
Straight Flutes

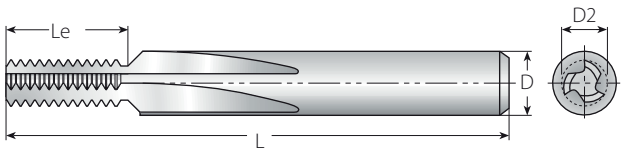
Thread	Pitch	Ordering Code	EDP No.	Dimensions inch				No. of Flutes	Teeth	
Min. Dia.	tpi	External / Internal	VTS	D	D2	L	Le	Z	Zt	h inch
1/16"	27	S1/4".240"-EI27NPT TM...	80080	1/4	.240	2.244	.370	3	10	.030
1/4"	18	S5/16".310"-EI18NPT TM3...	80081	5/16	.310	2.480	.555	3	10	.044
1/4"	18	S5/16".310"-EI18NPT TM5...	80190	5/16	.310	2.480	.555	5	10	.044
1/2"	14	S1/2".470"-EI14NPT TM...	80082	1/2	.470	3.268	.786	5	11	.057
1"	11.5	S5/8".620"-EI11.5NPT TM...	80083	5/8	.620	3.622	1.043	5	12	.070
2 1/2"	8	S5/8".620"-EI8NPT TM...	80084	5/8	.620	3.622	1.500	5	12	.100

NPTF

Straight

External / Internal





Defined by: ANSI 1.20.3-1976
Tolerance class: Standard NPTF

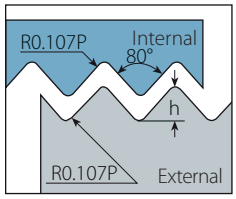
Straight Flutes

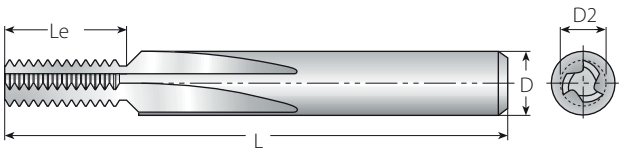
Thread	Pitch	Ordering Code	EDP No.	Dimensions inch				No. of Flutes	Teeth	
Min. Dia.	tpi	External / Internal	VTS	D	D2	L	Le	Z	Zt	h inch
1/16"	27	S1/4".240"-EI27NPTF TM...	80085	1/4	.240	2.244	.370	3	10	.030
1/4"	18	S5/16".310"-EI18NPTF TM3...	80086	5/16	.310	2.480	.555	3	10	.044
1/4"	18	S5/16".310"-EI18NPTF TM5...	80233	5/16	.310	2.480	.555	5	10	.044
1/2"	14	S1/2".470"-EI14NPTF TM...	80087	1/2	.470	3.268	.786	5	11	.057
1"	11.5	S5/8".620"-EI11.5NPTF TM...	80088	5/8	.620	3.622	1.043	5	12	.070
2 1/2"	8	S5/8".620"-EI8NPTF TM...	80089	5/8	.620	3.622	1.500	5	12	.100

Pg

Straight

External / Internal





Defined by: DIN 40430
Tolerance class: Standard

Straight Flutes

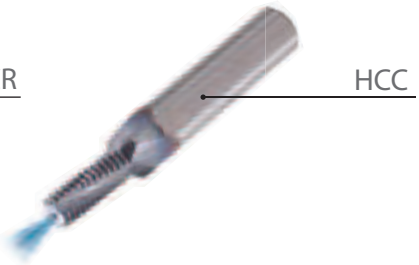
Thread	Pitch	Ordering Code	EDP No.	Dimensions inch				No. of Flutes	Teeth	
	tpi	External / Internal	VTS	D	D2	L	Le	Z	Zt	h inch
Pg7	20	S5/16".310"-EI20PG TM3...	80090	5/16	.310	2.480	.750	3	15	0.024
Pg7	20	S5/16".310"-EI20PG TM5...	80448	5/16	.310	2.480	.750	5	15	0.024
Pg9, 11, 13.5, 16	18	S3/8".370"-EI18PG TM...	80091	3/8	.370	2.835	.944	5	17	0.026
Pg21, 29, 36, 42, 48	16	S1/2".470"-EI16PG TM...	80092	1/2	.470	3.268	1.125	5	18	0.030

Grades and Their Applications

VTH

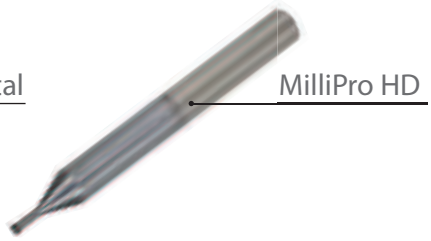

Helicool


HCR


HCC


MilliPro


MilliPro Dental


MilliPro HD


MilliPro EL


Deep Threading


He-Lex

- A general-purpose, heavy duty thread milling grade
- TiCN coated for high resistance to wear

VTS


Straight

- A general-purpose grade, specially designed for TM Solid Straight Flute cutters
- TiAlN coated for high resistance to wear

VTS


HTC (Thriller)

- TiAlN coated grade
- First choice for Cast iron and general use

VTN


HTC (Thriller)

- Uncoated grade
- First choice for Aluminium and general use

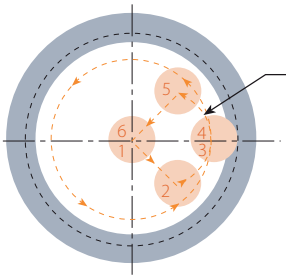
TM Gen Software and updated versions can be downloaded from www.vargususa.com

Cutting Speeds Vc [ft/min] and Feed f [inch/tooth] (Not Including HTC & MilliPro HD)

Material Group	Vardex No.	Material		Hardness Brinell HB	Vc [ft/min]			Feed [inch/tooth]				
					Helicool, HCR, HCC, He-Lex, Sraight, Deep Threading		MilliPro	He-Lex	Straight	Deep Threading	Helicool HCC HCR	MilliPro
					VTH	VTS	VTH					
P Steel	1	Unalloyed steel	Low carbon (C=0.1-0.25%)	125	262-820	164-590	197-394	.0012-.0059	.0004-.0039	.0039-.0138	.001-.0118	.0008-.0063
	2		Medium carbon (C=0.25-0.55%)	150	262-754	164-459	197-394	.0012-.0039	.0004-.0031	.0031-.0118	.0008-.0102	.0008-.0063
	3		High Carbon (C=0.55-0.85%)	170	262-656	164-394	197-295	.0012-.0031	.0004-.0024	.0031-.0118	.0008-.0091	.0008-.0063
	4	Low alloy steel (alloying elements ≤5%)	Non hardened	180	197-590	197-558	197-295	.0012-.0039	.0012-.0028	.0031-.0118	.0008-.0087	.0006-.0063
	5		Hardened	275	197-558	197-525	164-262	.0012-.0028	.0012-.0028	.0031-.0118	.0004-.0059	.0006-.0028
	6		Hardened	350	197-525	197-492	164-262	.0004-.0012	.0002-.0004	.002-.0059	.0004-.0039	.0006-.0012
	7	High alloy steel (alloying elements>5%)	Annealed	200	131-328	131-295	164-262	.0012-.002	.0004-.0012	.0039-.0094	.0004-.0051	.0006-.0035
	8		Hardened	325	98-262	98-230	164-262	.0004-.0012	.0002-.0004	.002-.0059	.0004-.0047	.0006-.0012
	9	Cast steel	Low alloy (alloying elements <5%)	200	262-820	230-656	230-295	.0012-.0039	.0004-.0012	.0031-.0118	.0004-.0059	.0006-.0063
	10		High alloy (alloying elements >5%)	225	197-558	197-492	197-262	.0004-.0012	.0002-.0004	.002-.0059	.0004-.0039	.0006-.0012
M Stainless Steel	11	Stainless steel Feritic	Non hardened	200	197-492	164-459	197-295	.0016-.0039	.0004-.002	.0043-.0138	.0004-.0051	.0006-.0063
	12		Hardened	330	197-394	164-361	164-262	.0004-.002	.0002-.0004	.002-.0094	.0004-.0047	.0006-.0012
	13	Stainless steel Austenitic	Austenitic	180	197-459	197-426	197-295	.0016-.0039	.0003-.0008	.0043-.0138	.0004-.0047	.0006-.0063
	14		Super Austenitic	200	197-426	164-394	164-262	.0016-.0039	.0003-.0008	.0043-.0138	.0004-.0039	.0006-.0063
	15	Stainless steel Cast Feritic	Non hardened	200	197-525	164-492	197-295	.0016-.0039	.0004-.0012	.0043-.0138	.0004-.0059	.0006-.0063
	16		Hardened	330	197-361	164-328	164-262	.0012-.002	.0002-.0004	.0039-.0094	.0004-.0039	.0006-.0012
	17	Stainless steel Cast austenitic	Austenitic	200	197-492	164-459	197-295	.0016-.0039	.0004-.0012	.0043-.0138	.0004-.0047	.0006-.0063
	18		Hardened	330	197-328	164-295	164-262	.0012-.002	.0002-.0004	.0039-.0094	.0004-.0039	.0006-.0012
K Cast Iron	28	Malleable Cast iron	Ferritic (short chips)	130	197-230	197-492	164-262	.0004-.0012	.0003-.0008	.002-.0059	.0004-.0059	.0006-.0012
	29		Pearlitic (long chips)	230	197-492	262-328	197-295	.0012-.002	.0002-.0004	.0039-.0094	.0004-.0047	.0008-.0047
	30	Grey cast iron	Low tensile strength	180	230-525	164-459	230-328	.0008-.0039	.0003-.0008	.0035-.0098	.0004-.0051	.0008-.0063
	31		High tensile strength	260	131-394	131-361	197-295	.0012-.002	.0002-.0004	.0039-.0094	.0004-.0047	.0008-.0047
	32	Nodular SG iron	Feritic	160	131-361	131-328	230-328	.002-.0039	.0003-.0008	.0035-.0098	.0004-.0051	.0008-.0063
	33		Pearlitic	260	131-328	131-295	197-295	.0012-.002	.0002-.0004	.0039-.0094	.0004-.0047	.0008-.0047
N(K) Non-Ferrous Metals	34	Aluminium alloys Wrought	Non aging	60	66-984	49-820	197-820	.0039-.0098	.002-.0059	.0047-.0157	.0016-.0157	.001-.0059
	35		Aged	100	49-820	33-722	197-492	.0039-.0079	.0012-.0039	.0039-.0126	.0012-.0142	.001-.0063
	36	Aluminium alloys	Cast	75	33-656	262-492	197-820	.0039-.0079	.002-.0059	.0039-.0126	.0012-.0142	.001-.0063
	37		Cast & aged	90	39-722	295-525	197-492	.0039-.0059	.0012-.0039	.0039-.0118	.0039-.0118	.0006-.0063
	38	Aluminium alloys	Cast Si 13-22%	130	66-984	49-820	820	.0039-.0079	.002-.0059	.0039-.0126	.0012-.0142	.0012-.0059
	39	Copper and copper alloys	Brass	90	66-984	49-820	197-820	.0039-.0098	.002-.0059	.0047-.0157	.0016-.0169	
	40		Bronze and non leaded copper	100	49-820	33-722	197-492	.0039-.0079	.0012-.0039	.0039-.0126	.0012-.0142	.0012-.0059
S(M) Heat Resistant Material	19	High temperature alloys	Annealed (Iron based)	200	98-197	98-164	197	.0016-.0039	.0003-.0008	.0043-.0138	.0003-.0035	.0006-.0063
	20		Aged (Iron based)	280	66-164	66-131	164	.0004-.0012	.0002-.0004	.002-.0059	.0002-.0028	.0006-.0012
	21		Annealed (Nickel or Cobalt based)	250	49-115	49-98	115	.0004-.0012	.0002-.0004	.002-.0059	.0002-.0024	.0006-.0012
	22		Aged (Nickel or Cobalt based)	350	49-98	49-82	98	.0004-.0012	.0002-.0004	.002-.0059	.0002-.0024	.0006-.0012
	23	Titanium alloys	Pure 99.5 Ti	400Rm	131-262	98-230	98-164	.0012-.002	.0003-.0008	.0039-.0094	.0002-.0028	.0006-.0028
	24		α+β alloys	1050Rm	66-164	66-148	82-115	.0012-.002	.0003-.0008	.0039-.0094	.0002-.0028	.0006-.0028
H(K) Hardened Material	25	Extra hard steel	Hardened & tempered	45-50HRc	49-148	49-115	148	.0002-.0004	.0001-.0002	.001-.0024	.0002-.0016	.0004-.0016
	26			51-55HRc	49-131	49-98	98	.0002-.0004	.0001-.0002	.001-.0024	.0002-.0016	-

* **Recommendation:**
At tool entry, set the Feed f [inch/tooth] to 70% lower than the threading Feed.

Example:
Threading Feed: 0.012[inch/tooth]
Tool entry Feed: 0.0035[inch/tooth]



MilliPro HD
Cutting Speeds Vc [ft/min] and Feed f [inch/tooth]

Material Group	Vardex No.	Material		Hardness Brinell HB	Vc [ft/min]	Feed f [inch/tooth] by Cutting Dia.=D2				
					VTH	.06-.10	.10-.20	.20-.30	.30-.35	.35-.45
P Steel	6	Low alloy steel (alloying elements≤5%)	Hardened	350	82-525	.0016	.0020	.0024	.0028	.0031
	8	High alloy steel (alloying elements>5%)	Hardened	325	82-590					
M Stainless Steel	12	Stainless steel Feritic	Hardened	330	82-394	.0016	.0020	.0024	.0028	.0031
	16	Stainless steel Cast Feritic	Hardened	330	82-361					
	18	Stainless steel Cast Austenitic	Hardened	330	82-328					
K Cast Iron	28	Malleable cast iron	Ferritic (short chips)	130	82-525	.0020	.0024	.0028	.0031	.0039
	29		Pearlitic (long chips)	230	82-492	.0016	.0020	.0024	.0028	.0031
	30	Grey cast iron	Low tensile strength	180	82-426	.0020	.0024	.0028	.0031	.0039
	31		High tensile strength	260	82-328	.0016	.0020	.0024	.0028	.0031
	32	Nodular SG iron	Feritic	160	82-410	.0016	.0020	.0024	.0028	.0035
	33		Pearlitic	260	82-295	.0012	.0016	.0020	.0024	.0028
S(M) Heat Resistant Material	21	High temperature alloys	Annealed (Nickel or Cobalt based)	250	49-115	.0012	.0016	.0020	.0024	.0028
	22		Aged (Nickel or Cobalt based)	350	49-98					
	23	Titanium alloys	Pure 99.5 Ti	400Rm	82-230					
	24		α+β alloys	1050Rm	82-164					
H(K) Hardened Material	25	Extra hard steel	Hardened & tempered	45-50HRc	82-230	.0016	.0020	.0024	.0028	.0031
	26			51-55HRc	82-197	.0012	.0016	.0020	.0024	.0028
	27			56-62HRc	82-164	.0008	.0012	.0016	.0020	.0024

HTC Recommended Grades, Cutting Speed and Feed

Material Group	Material		Hardness Brinell HB	Strength (N-mm²)	Vc[ft/min]		fb[inch/rev]		fz[inch/tooth]	
					VTN	VTS	≤.24 inch	≤.47 inch	≤.24 inch	≤47 inch
K Cast Iron	Cast Iron	Grey cast iron	≤150	≤500	165-260	260-390	.004-.006	.006-.009	.001-.002	.002-.004
		Grey cast iron, heat treated	150-300	500-1000	165-260	260-390	.004-.006	.006-.009	0.02-0.05	.002-.004
		Spher. graph. Cast Iron	≤200	≤700	165-260	260-390	.004-.006	.006-.009	0.02-0.05	.002-.004
	Copper	Short Chips, Brass, Bronze, Red Brass	≤200	≤700	330-980	—	.004-.012	.002-.004	.001-.002	.002-.004
N(K) Non-Ferrous Metals	Aluminium/ Magnesium	Aluminium, Magnesium non-alloy	≤100	≤350	330-1310	330-1310	.004-.010	.010-.012	.001-.002	.002-.004
		Aluminium, Wrought Alloy, Breaking Strain (A5) < 14%	≤180	≤600	330-1310	330-1310	.004-.010	.010-.012	.001-.002	.002-.004
		Aluminium, Wrought Alloy, Breaking Strain (A5) ≥ 14%	≤180	≤600	330-1310	330-1310	.001-.002	.002-.005	.001-.002	.002-.004
		Aluminium, Cast Alloy, Si<10%	≤180	≤600	330-980	330-1310	.004-.010	.010-.012	.001-.002	.002-.004
		Aluminium, Cast Alloy, Si≥10%	≤180	≤600	—	330-980	.004-.010	.010-.012	.001-.002	.002-.004
Plastic		Thermoplastics	—	—	195-390	195-390	.004-.010	.010-.012	.001-.002	.002-.004
		Thermosetting Plastic	—	—	195-330	195-330	.004-.010	.010-.012	.001-.002	.002-.004
		Fibre Reinforce Plastic	—	—	130-195	195-260	.004-.006	.006-.009	.001-.002	.002-.004

Vc - Cutting Speed [ft/min]
fb (Drilling) - Feed per Revolution [inch/rev]
fz (Threading) - Feed per Tooth [inch/tooth]

MiTM

Super Fast Thread Milling System

> Inserts
> Toolholders
> Technical Data

Inserts

Toolholders

Technical Data

TM Gen Software and updated versions can be downloaded from www.vargususa.com

MiTM

Comprehensive Family of Thread Milling Tools

The VARDEX Multi-flute Indexable Thread Mill (MiTM), reduces cycle time on machining of threads with long inserts in a variety of holder styles.

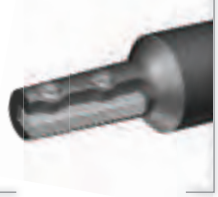
MiTM 24 (M)

For Small Bores

Standard

No. of Flutes (Z) 1-2
Cutting Dia. (D2) .54-.63
Tool Overhang (L1) 1.02-1.42

Conical



No. of Flutes (Z) 1
Cutting Dia. (D2) .547
Tool Overhang (L1) 1.02

MiTM 25 (S)

For Standard Applications

Standard

No. of Flutes (Z) 2-5
Cutting Dia. (D2) .67-1.18
Tool Overhang (L1) 1.10-3.15

Conical

No. of Flutes (Z) 2-4
Cutting Dia. (D2) .67-1.10
Tool Overhang (L1) 1.10-1.70

Shell Mill

No. of Flutes (Z) 5-9
Cutting Dia. (D2) 1.54-2.32
Tool Overhang (L1) max. 7.87

Shell Mill Conical

No. of Flutes (Z) 5
Cutting Dia. (D2) 1.54
Tool Overhang (L1) max. 7.87

MiTM 40 (L)

For Long Threads

Standard

No. of Flutes (Z) 3-4
Cutting Dia. (D2) .87-1.18
Tool Overhang (L1) 1.69-3.15

Shell Mill

No. of Flutes (Z) 6-8
Cutting Dia. (D2) 1.93-2.32
Tool Overhang (L1) max. 7.87

Shell Mill Conical

No. of Flutes (Z) 6
Cutting Dia. (D2) 1.93
Tool Overhang (L1) max. 7.87

MiTM 41 (B)

For Large Pitches

Standard

No. of Flutes (Z) 2-5
Cutting Dia. (D2) .96-1.42
Tool Overhang (L1) 1.69-2.56

Shell Mill

No. of Flutes (Z) 5-6
Cutting Dia. (D2) 2.09-2.48
Tool Overhang (L1) max. 7.87

MiTM Ordering Code System

MiTM Inserts

R	25	I	1.00	ISO	TM	VBX
1	2	3	4	5	6	7

1- Product Line	2 - Insert Style	3 - Type of Insert	4 - Pitch	5 - Standard	6 - System	7 - Carbide Grade
R- MiTM line	24, 25, 40, 41	I - Internal E - External EI-External+Internal NC- Plug	0.5-6.0 mm 32-4 tpi	ISO- ISO Metric UN-American UN W- BSW, BSP NPT-NPT NPTF-NPTF BSPT-BSPT	TM	VBX VTX

MiTM Holders (Standard and Conical)

R	TM	C		100	067	-	110	S	2
1	2	3		4	5		6	7	8

1- Product Line	2 - Holder Type	3 - Cooling	4 - Shank Dia. [inch]	5 - Cutting Dia. [inch]
R - MiTM line BR - MiTM with anti vibration system	TM - Standard holder TMN - Conical holder	C- Coolant Channel	1, 1.25	.54-1.42

6 - Tool Overhang [inch]	7 - Insert Style	8 - No. of Flutes
1.02-3.15	M - 24 S - 25 L - 40 B - 41	1 - 5

MiTM Shell Mill

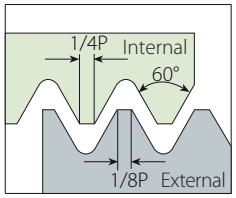
R	TM	C		D150	050	-	25S	5
1	2	3		4	5		6	7

1- Product Line	2 - Holder Type	3 - Cooling	4 - Cutting Dia. [inch]	5 - Drive Hole Dia. [inch]
R - MiTM line	TM - Standard holder TMN - Conical holder	C- Coolant Channel	1.54-2.48	.5, .75, 1

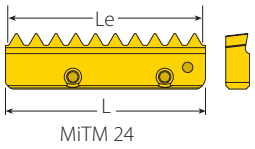
6 - Insert Style	7 - No. of Flutes
25S 40L 41B	5 - 9

American UN

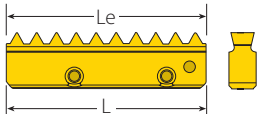
External / Internal



Defined by: ANSI B1.1:74
Tolerance class: 2A/2B



MiTM 24



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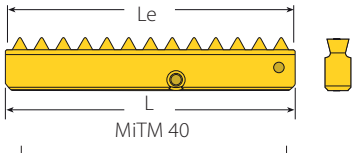
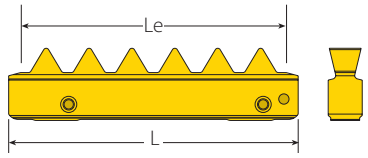


MiTM 40



MiTM 41

Standard MiTM

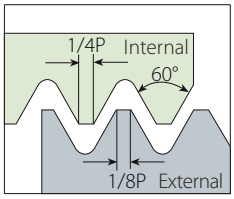
	L	Pitch	Ordering Code	EDP NO.		Ordering Code	EDP NO.		Cutting Edge	Teeth		Toolholder
	inch	tpi	External	VTX	VBX	Internal	VTX	VBX		Le	Zt	
	.945" (24 mm)	32				R24I32UNTM...	80796	80797	1	0.97	31	RTMC....M
		28				R24I28UNTM...	80798	80799	1	0.96	27	
		24				R24I24UNTM...	80802	80803	1	0.96	23	
		20				R24I20UNTM...	80804	80805	1	0.95	19	
		18				R24I18UNTM...	80806	80807	1	0.94	17	
		16				R24I16UNTM...	80808	80809	1	0.94	15	
		14				R24I14UNTM...	80810	80811	1	0.93	13	
		12				R24I12UNTM...	80812	80813	1	0.92	11	
		10				R24I10UNTM...	80814	80815	1	0.90	9	
	988" (25 mm)	20	R25E20UNTM...	80594	80595	R25I20UNTM...	80492	80493	2	0.95	19	(B)RTMC....S
		18	R25E18UNTM...	80596	80597	R25I18UNTM...	80494	80495	2	0.94	17	
		16	R25E16UNTM...	80598	80599	R25I16UNTM...	80496	80497	2	0.94	15	
		14	R25E14UNTM...	80600	80601	R25I14UNTM...	80498	80499	2	0.93	13	
		12	R25E12UNTM...	80602	80603	R25I12UNTM...	80500	80501	2	0.92	11	
		10	R25E10UNTM...	80604	80605	R25I10UNTM...	80502	80503	2	0.90	9	
		9	*R25E9UNTM...	80606	80607	*R25I9UNTM...	80504	80505	2	0.89	8	* See note below
		8	*R25E8UNTM...	80608	80609	*R25I8UNTM...	80506	80507	2	0.87	7	
	1.575" (40 mm)	20				R40I20UNTM...	80712	80713	2	1.55	31	(B)RTMC....L
		18				R40I18UNTM...	80714	80715	2	1.56	28	
		16				R40I16UNTM...	80716	80717	2	1.56	25	
		14				R40I14UNTM...	80718	80719	2	1.57	22	
		12				R40I12UNTM...	80720	80721	2	1.50	18	
		10				R40I10UNTM...	80722	80723	2	1.50	15	
		9				R40I9UNTM...	80724	80725	2	1.56	14	
		8				R40I8UNTM...	80726	80727	2	1.50	12	
	1.614" (41 mm)	8	R41E8UNTM...	80816	80817	R41I8UNTM...	80828	80829	2	1.50	12	RTMC....B
		7	R41E7UNTM...	80818	80819	R41I7UNTM...	80830	80831	2	1.57	11	
		6	R41E6UNTM...	80820	80821	R41I6UNTM...	80832	80833	2	1.50	9	
		5	R41E5UNTM...	80822	80823	R41I5UNTM...	80834	80835	2	1.40	7	
		4.5	R41E4.5UNTM...	80824	80825	R41I4.5UNTM...	80836	80837	2	1.56	7	
		4	R41E4UNTM...	80826	80827	R41I4UNTM...	80838	80839	2	1.50	6	

* Note: 8 UN & 9 UN inserts do not fit into toolholder RTMC100067....
For external insert 8 UN use for CNC program (D2 + 0.02")

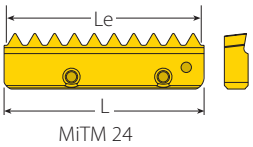
MiTM inserts 25, 40 and 41 are offered with 2 cutting edges. In case of chip flow difficulty, inserts with a single cutting edge can be ordered by request. Example: R25I20UNTM(S)...

ISO Metric

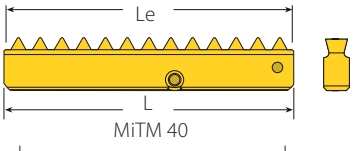
External / Internal



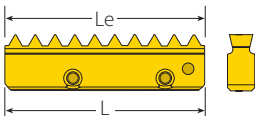
Defined by: R262 (DIN 13)
Tolerance class: 6g/6H



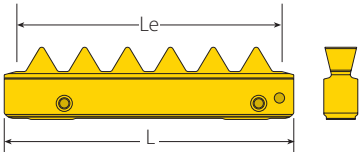
MiTM 24



MiTM 40



MiTM 25



MiTM 41

Standard MiTM

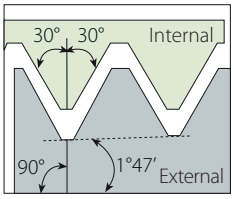
	L	Pitch	Ordering Code	EDP No.		Ordering Code	EDP No.		Cutting Edge	Teeth		Toolholder
	inch	tpi	External	VTX	VBX	Internal	VTX	VBX		Le	Zt	
	.945" (24 mm)	0.50				R24I0.50ISOTM...	80753	80754	1	0.96	49	RTMC.....M
		0.75				R24I0.75ISOTM...	80755	80751	1	0.97	33	
		1.00				R24I1.00ISOTM...	80756	80757	1	0.94	24	
		1.25				R24I1.25ISOTM...	80758	80759	1	0.98	20	
		1.50				R24I1.50ISOTM...	80760	80761	1	0.94	16	
		1.75				R24I1.75ISOTM...	80762	80763	1	0.96	14	
		2.00				R24I2.00ISOTM...	80764	80765	1	0.94	12	
		2.50				R24I2.50ISOTM...	80766	80767	1	0.98	10	
	.988" (25 mm)	1.00	R25E1.00ISOTM...	80584	80585	R25I1.00ISOTM...	80482	80483	2	0.94	24	(B)RTMC.....S
		1.50	R25E1.50ISOTM...	80587	80586	R25I1.50ISOTM...	80484	80485	2	0.94	16	
		2.00	R25E2.00ISOTM...	80588	80589	R25I2.00ISOTM...	80486	80487	2	0.94	12	
		2.50	R25E2.50ISOTM...	80590	80591	R25I2.50ISOTM...	80488	80489	2	0.98	10	
		3.00	*R25E3.00ISOTM...	80592	80593	*R25I3.00ISOTM...	80490	80491	2	0.94	8	* See note below
	1.575" (40 mm)	1.00				R40I1.00ISOTM...	80702	80703	2	1.54	39	(B)RTMC.....L
		1.50				R40I1.50ISOTM...	80704	80705	2	1.54	26	
		2.00				R40I2.00ISOTM...	80706	80707	2	1.50	19	
		2.50				R40I2.50ISOTM...	80708	80709	2	1.48	15	
		3.00				R40I3.00ISOTM...	80710	80711	2	1.54	13	
	1.614" (41 mm)	3.00	R41E3.00ISOTM...	80768	80769	R41I3.00ISOTM...	80782	80783	2	1.54	13	RTMC.....B
		3.50	R41E3.50ISOTM...	80770	80771	R41I3.50ISOTM...	80784	80785	2	1.52	11	
		4.00	R41E4.00ISOTM...	80772	80773	R41I4.00ISOTM...	80786	80787	2	1.57	10	
		4.50	R41E4.50ISOTM...	80774	80775	R41I4.50ISOTM...	80788	80789	2	1.59	9	
		5.00	R41E5.00ISOTM...	80776	80777	R41I5.00ISOTM...	80790	80791	2	1.57	8	
		5.50	R41E5.50ISOTM...	80778	80779	R41I5.50ISOTM...	80792	80793	2	1.52	7	
		6.00	R41E6.00ISOTM...	80780	80781	R41I6.00ISOTM...	80794	80795	2	1.42	6	

* Note: 3.00 ISO inserts do not fit into toolholder RTMC100067....
For external insert 3.0 ISO use for CNC program (D2 + 0.02")

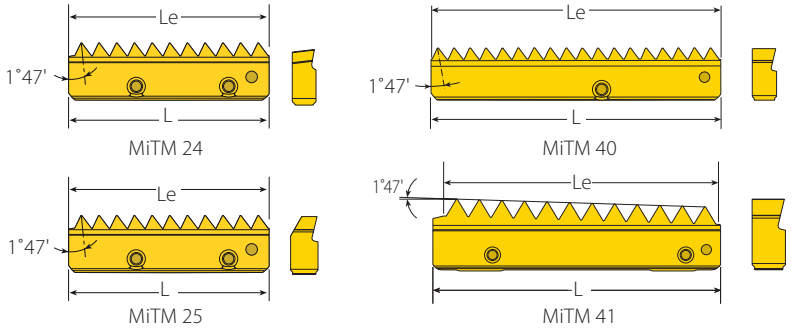
MiTM inserts 25, 40 and 41 are offered with 2 cutting edges. In case of chip flow difficulty, inserts with a single cutting edge can be ordered by request. Example: R25I2.00ISOTM(S)...

NPT

External / Internal



Defined by: USAS B2.1:1968
Tolerance class: Standard NPT

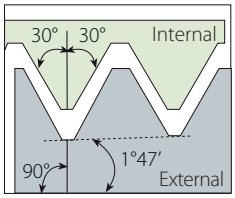


Standard MiTM

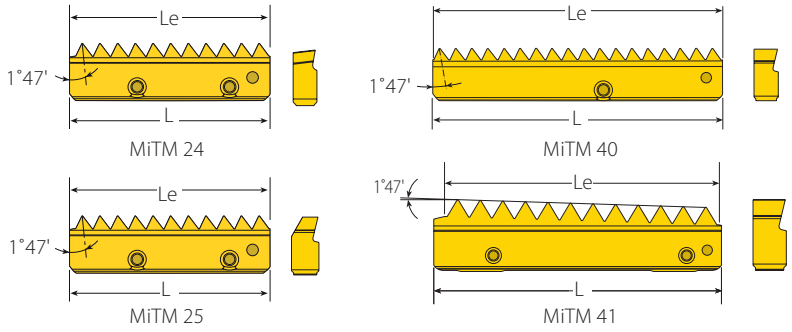
L	Pitch	Ordering Code	EDP No.		Cutting Edge		Teeth	Toolholder
inch	tpi	External + Internal	VTX	VBX		Le	Zt	
.945" (24 mm)	18	R24EI18NPTTM...	80873	80874	1	0.94	17	RTMNC....M
.988" (25 mm)	14	R25EI14NPTTM...	80516	80517	1	0.93	13	RTMNC....S
	11.5	R25EI11.5NPTTM...	80518	80519	1	0.96	11	
	8	R25EI8NPTTM...	80580	80581	1	0.87	7	RTMNC-D150-050-25S5
1.575" (40 mm)	11.5	R40EI11.5NPTTM...	80743	80744	1	1.48	17	RTMNC-D190-075-40L7
	8	R40EI8NPTTM...	80728	80729	1	1.50	12	
1.614" (41 mm)	8	R41EI8NPTTM...	80840	80841	1	1.50	12	RTMC....B

NPTF

External / Internal



Defined by: ANSI B1.20.3-1976
Tolerance class: Standard NPTF

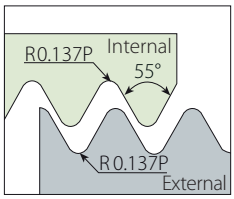


Standard MiTM

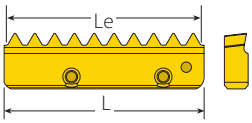
L	Pitch	Ordering Code	EDP No.		Cutting Edge		Teeth	Toolholder
inch	tpi	External + Internal	VTX	VBX		Le	Zt	
.945" (24 mm)	18	R24EI18NPTFTM...	80875	80876	1	0.94	17	RTMNC....M
.988" (25 mm)	14	R25EI14NPTFTM...	80520	80521	1	0.93	13	RTMNC....S
	11.5	R25EI11.5NPTFTM...	80522	80523	1	0.96	11	
	8	R25EI8NPTFTM...	80582	80583	1	0.87	7	RTMNC-D150-050-25S5
1.575" (40 mm)	11.5	R40EI11.5NPTFTM...	80745	80746	1	1.48	17	RTMNC-D190-075-40L7
	8	R40EI8NPTFTM...	80730	80731	1	1.50	12	
1.614" (41 mm)	8	R41EI8NPTFTM...	80842	80843	1	1.50	12	RTMC....B

Whitworth for BSF, BSP

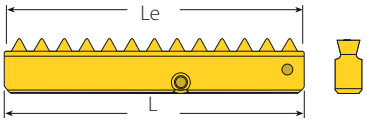
External / Internal



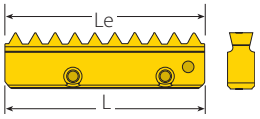
Defined by: B.S.84:1956, DIN 259,
ISO228/1:1982
Tolerance class: Medium Class A



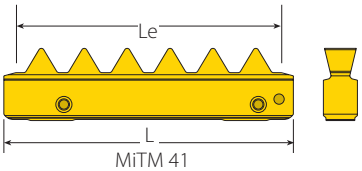
MiTM 24



MiTM 40



MiTM 25



MiTM 41

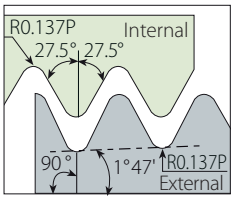
Standard MiTM

L	Pitch	Ordering Code	EDP NO.		Ordering Code	EDP NO.		Cutting Edge		Teeth	Toolholder
inch	tpi	External + Internal	VTX	VBX	Internal	VTX	VBX		Le	Zt	
.945" (24 mm)	19	R24EI19WTM...	80844	80845				1	0.95	18	RTMC....M
	14	R24EI14WTM...	80846	80847				1	0.93	13	
	12	R24EI12WTM...	80848	80849				1	0.92	11	
.988" (25 mm)	16	R25EI16WTM...	80508	80509				2	0.94	15	(B)RTMC....S
	14	R25EI14WTM...	80510	80511				2	0.93	13	
	12	R25EI12WTM...	80512	80513				2	0.92	11	
	11	R25EI11WTM...	80514	80515				2	0.91	10	
1.575" (40 mm)	16	R40EI16WTM...	80610	80611				2	1.56	25	(B)RTMC....L
	14	R40EI14WTM...	80612	80613				2	1.57	22	
	12	R40EI12WTM...	80614	80615				2	1.50	18	
	11	R40EI11WTM...	80616	80617				2	1.55	17	
1.614" (41 mm)	8				R41I8WTM...	80850	80851	2	1.50	12	RTMC....B
	7				R41I7WTM...	80852	80853	2	1.57	11	
	6				R41I6WTM...	80854	80855	2	1.50	9	

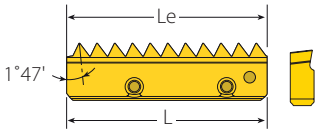
MiTM inserts 25, 40 and 41 are offered with 2 cutting edges. In case of chip flow difficulty, inserts with a single cutting edge can be ordered by request. Example: R25EI16WTM(S)...

BSPT

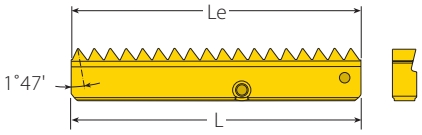
External / Internal



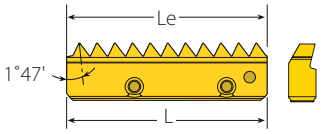
Defined by: B.S. 21:1985
Tolerance class: Standard BSPT



MiTM 24



MiTM 40



MiTM 25

Standard MiTM

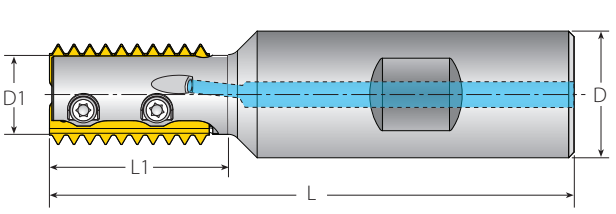
L	Pitch	Ordering Code	EDP No.		Cutting Edge	Teeth		Toolholder
inch	tpi	External + Internal	VTX	VBX		Le	Zt	
.945" (24 mm)	19	R24EI19BSPTTM...	80871	80872	1	0.95	18	RTMNC 075055-102M1
.988" (25 mm)	14	R25EI14BSPTTM...	80524	80525	1	0.93	13	RTMNC....S
	11	R25EI11BSPTTM...	80526	80527	1	0.91	10	
1.575" (40 mm)	11	R40EI11BSPTTM...	80732	80733	1	1.55	17	RTMNC-D190-075-40L7

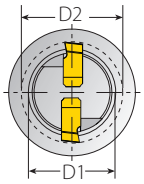
Plug Insert*

L	Ordering Code	EDP No.	Teeth	Toolholder	
inch	External + Internal		Zt		
.945" (24 mm)	R24NC	80858	No Teeth	RTMC....M	All Types
.988" (25 mm)	R25NC	80532		(B)RTMC....S	
1.575" (40 mm)	R40NC	80626		(B)RTMC....L	
1.614" (41 mm)	R41NC	80859		RTMC....B	

* Fill unused toolholder pockets with Plug inserts (R..NC). This assures balance and prevents instability and chips from packing into empty pockets.

Standard Toolholders (MiTM 24)





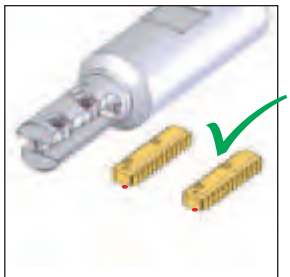
Coolant-Thru is recommended, especially when D2 > 0.7 x nominal thread diameter

RTMC - for Standard Threads

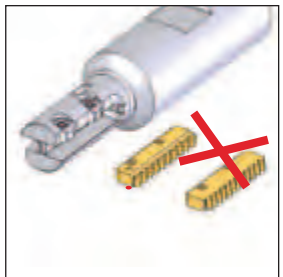
Insert Style	Ordering Code	EDP No.	Dimensions (inch)					No. of Flutes	Spare Parts (Ordering code & EDP No.)	
			L	L1	D	D1	D2	Z	Location Screw x2	Torx+ Screwdriver
.945" (24 mm)	RTMC 075053-102M1	80860	3.27	1.02	0.75	0.42	0.53	1	SLD4IP8 (M4x0.7) (80533)	KIP8 •Use the included Vardex Torx+ screwdriver only •Recommended max. torque 10.6 lbfxin (70231)
	RTMC 075059-118M1	80861	3.39	1.18	0.75	0.47	0.59	1		
	RTMC 075063-110M2	80752	3.31	1.10	0.75	0.49	0.63	2		
	RTMC 075063-142M1	80862	3.62	1.42	0.75	0.49	0.63	1		

Standard Thread Application by Toolholder

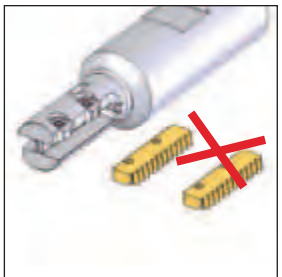
Toolholder	Min. Thread Ø						
	D2 (inch)	ISO (coarse)	ISO (fine)	UNC	UN/UNF/UNEF/UNS	BSF	BSP(G)
RTMC 075053-102M1	0.53	M16x2	M14.5x0.5; M15X0.75; M15x1; M15x1.25; M16x1.5; M16x1.75	-	11/16-12UN; 5/8-14UNS; 5/8-16UN; 5/8-18UNF; 5/8-20UN; 5/8-24UNEF; 5/8-28UN; 5/8-32UN	11/16-14; 3/4-12	3/8-19
RTMC 075059-118M1	0.59	M18x2.5	M16x0.5; M17X0.75; M17x1; M17x1.25; M17x1.5; M18x1.75; M18x2	3/4-10	3/4-12UN; 3/4-14UNS; 11/16-16UN; 11/16-20UN; 11/16-24UNEF; 11/16-28UN; 11/16-32UN	3/4-12	-
RTMC 075063-110M2	0.63	M20x2.5	M17x0.5; M17x0.75; M18x1; M18x1.25; M18x1.5; M18x1.75; M19x2	3/4-10	3/4-12UN; 3/4-14UNS; 3/4-16UN; 3/4-18UNS; 3/4-20UNEF; 11/16-24UNEF; 11/16-28UN; 11/16-32UN	3/4-12	-
RTMC 075063-142M1	0.63	M20x2.5	M17x0.5; M17x0.75; M18x1; M18x1.25; M18x1.5; M18x1.75; M19x2	3/4-10	3/4-12UN; 3/4-14UNS; 3/4-16UN; 3/4-18UNS; 3/4-20UNEF; 11/16-24UNEF; 11/16-28UN; 11/16-32UN	3/4-12	-



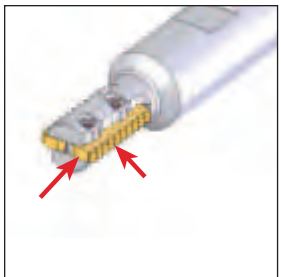
Side with identification marks



Always mount all inserts with identification marks face up

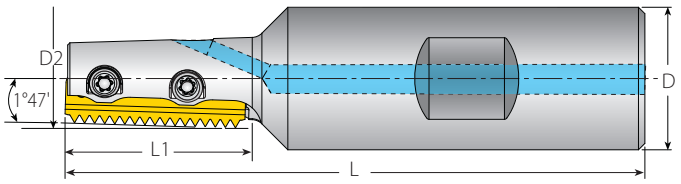


Side without identification marks



To mount insert correctly, push the insert toward the pocket walls.

Conical Toolholders (MiTM 24)



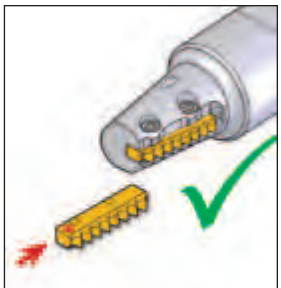
Coolant-Thru is recommended, especially when D2 > 0.7 x nominal thread diameter

RTMC - for Standard Threads

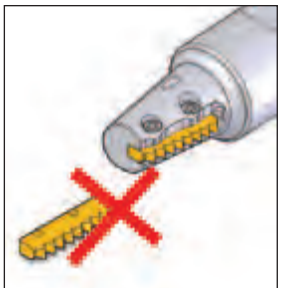
Insert Style	Ordering Code	EDP No.	Dimensions (inch)					No. of Flutes	Spare Parts (Ordering code & EDP No.)	
			L	L1	D	D1	D2	Z	Location Screw x2	Torx+ Screwdriver
.945" (24 mm)	RTMNC 075055-102M1	80863	3.23	1.02	0.75	0.45	0.55	1	SLD4IP8 (M4x0.7) (80533)	KIP8 •Use the included Vardex Torx+ screwdriver only •Recommended max. torque 10.6 lbfxin (70231)

Standard Thread Application by Toolholder

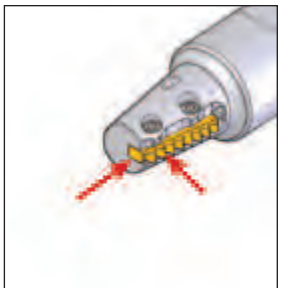
Toolholder				
	D2 (inch)	NPT	NPTF	BSPT
RTMNC 075055-102M1	0.55	⅜-18	⅜-18	⅜-19



On Conical inserts, the identification mark must face up

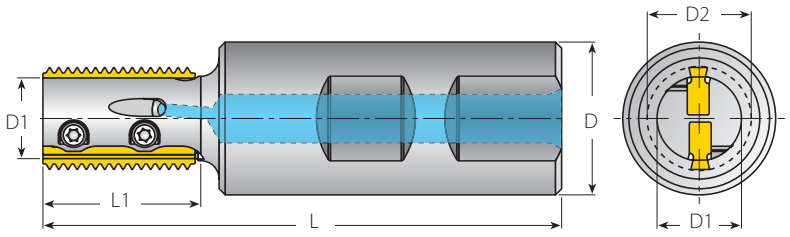


Side without identification marks



To mount insert correctly, push the insert toward the pocket walls

Standard Toolholders (MiTM 25)



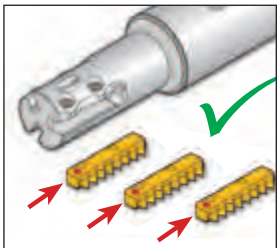
Coolant-Thru is recommended, especially when D2 > 0.7 x nominal thread diameter

RTMC - for Standard Threads

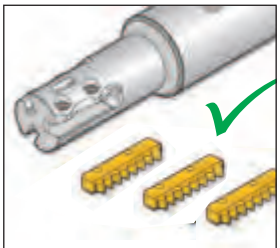
Insert Style	Ordering Code	EDP No.	Dimensions (inch)					No. of Flutes	Spare Parts (Ordering code & EDP No.)	
			L	L1	D	D1	D2	Z	Location Screw x2	Torx+ Screwdriver
.988" (25 mm)	RTMC 075067-110S2	80748	3.29	1.10	0.75	0.55	0.67	2	SLD4IP8 (M4x0.7) (80533)	KIP8 •Use the included Vardex Torx+ screwdriver only •Recommended max. torque 10.6 lbfxin (70231)
	RTMC 075067-145S2	80747	3.65	1.45		0.55	0.67	2		
	RTMC 100067-110S2	80471	3.50	1.10	1.00	0.55	0.67	2		
	RTMC 100067-145S2	80472	3.86	1.45		0.55	0.67	2		
	RTMC 100075-125S2	80633	3.65	1.25		0.60	0.75	2		
	RTMC 100075-175S2	80634	4.15	1.75		0.60	0.75	2		
	RTMC 100081-150S3	80474	3.90	1.50		0.65	0.81	3		
	RTMC 100081-175S3	80475	4.15	1.75		0.65	0.81	3		
	RTMC 100087-170S3	80476	4.09	1.70		0.71	0.87	3		
	RTMC 100087-220S3	80478	4.60	2.20		0.71	0.87	3		
	RTMC 100118-220S5	80479	4.53	2.20		1.10	1.18	5		
	BRTMC 100118-315S4	80481	5.51	3.15		1.10	1.18	4		

Standard Thread Application by Toolholder

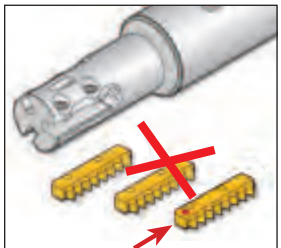
Toolholder	Min.Thread Ø						
	D2 (inch)	ISO (coarse)	ISO (fine)	UNC	UN/UNF/UNEF/UNS	BSF	BSP(G)
RTMC 075067-110S2 RTMC 075067-145S2 RTMC 100067-110S2 RTMC 100067-145S2	0.67	M20x2.5	M19x1; M19x1.5; M20x2	-	⅞-10UNS; 1 3/16-12UN; ⅞-14UNF; ¾-16UNF; ¾-18UNS; ¾-20UNEF	⅞-11; ⅞-12; ⅞-14; ⅞-16	½-14
RTMC 100075-125S2 RTMC 100075-175S2	0.75	M22x2.5 M24x3	M21x1; M21x1.5; M22x2	⅞-9; 1-8	⅞-20UNEF; ⅞-18UNS; ⅞-16UN; ⅞-14UNF; ⅞-12UN; ⅞-10UNS	⅞-16; ⅞-14; 1 5/16-12; 1 5/16-11	⅝-14
RTMC 100081-150S3 RTMC 100081-175S3	0.81	M24x3	M22x1; M23x1.5; M23x2; M23.5x2.5	1-8	1 5/16-9UN; 1-10UNS; 1 5/16-12UN; 1-14UNS; 1 5/16-16UN; ⅞-18UNS; ⅞-20UNEF	1-11; 1-12; 1-14; 1-16	⅝-14
RTMC 100087-170S3 RTMC 100087-220S3	0.87	M27x3	M24x1; M24x1.5; M25x2; M25x2.5	-	1 11/16-8UN; 1-9UN; 1-10UNS; 1-12UNF; 1-14UNS; 1-16UN; 1-18UN; 1 5/16-20UNEF	1-11; 1-12; 1-14; 1-16	¾-14
RTMC 100118-220S5 BRTMC 100118-315S4	1.18	-	M32x1; M32x1.5; M33x2; M33x2.5; M34x3	-	1⅜-8UN; 1⅜-9UN; 1⅜-10UN; 1 5/16-12UN; 1⅜-14UNS; 1 5/16-16UN; 1 5/16-18UNEF; 1 5/16-20UN	1⅜-11; 1⅜-12; 1⅜-14; 1⅜-16	1-11



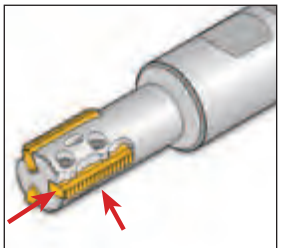
Side with identification marks



Side without identification marks

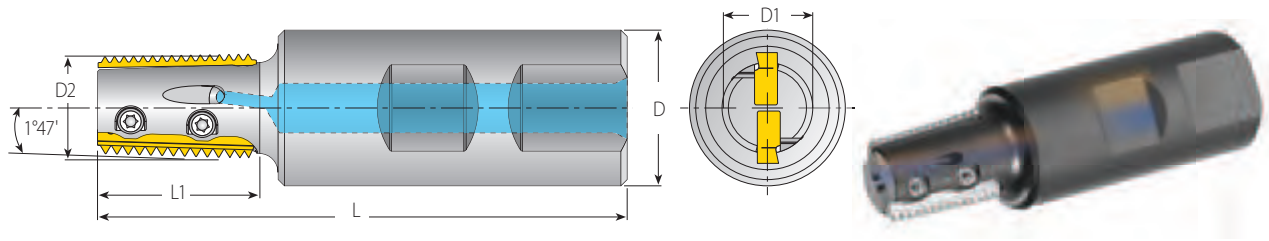


Always mount all inserts with identification marks on the same side



To mount insert correctly, push the insert toward the pocket walls.

Conical Toolholders (MiTM 25)



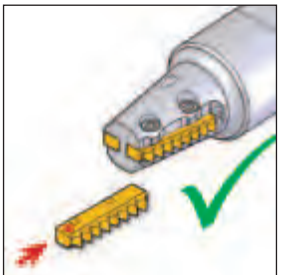
Coolant-Thru is recommended, especially when D2 > 0.7 x nominal thread diameter

RTMNC - for Conical Threads

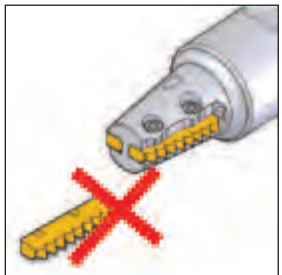
Insert Style	Ordering Code	EDP No.	Dimensions (inch)					No. of Flutes	Spare Parts (Ordering code & EDP No.)	
			L	L1	D	D1	D2	Z	Location Screw x2	Torx+ Screwdriver
.988" (25 mm)	RTMNC 075067-110S2	80749	3.29	1.10	0.75	0.55	0.67	2	SLD4IP8 (M4x0.7) (80533)	KIP8 •Use the included Vardex Torx+ screwdriver only •Recommended max. torque 10.6 lbfxin (70231)
	RTMNC 100067-110S2	80473	3.50	1.10	1.00	0.55	0.67	2		
	RTMNC 100087-170S3	80477	4.09	1.70	1.00	0.71	0.87	3		
	RTMNC 100110-170S4	80480	4.06	1.70	1.00	1.10	1.10	4		

Conical Thread Application by Toolholder

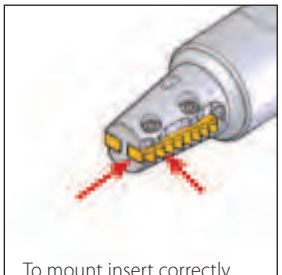
Toolholder		Thread Ø		
	D2 (inch)	NPT	NPTF	BSPT
RTMNC 075067-110S2	0.67	½-14; ¾-14; 1-11.5; 1¼-11.5; 1½-11.5; 2-11.5	½ -14; ¾-14; 1-11.5; 1¼-11.5; 1½-11.5; 2-11.5	½ -14; ¾-14
RTMNC 100067-110S2				
RTMNC 100087-170S3	0.87	¾-14; 1-11.5; 1¼-11.5; 1½-11.5; 2-11.5	¾-14; 1-11.5; 1¼-11.5; 1½-11.5; 2-11.5	¾-14; 1-11; 1¼-11; 1½-11; 2-11; 2½-11; 3-11; 4-11; 5-11; 6-11
RTMNC 100110-170S4	1.10	1-11.5; 1¼-11.5; 1½-11.5; 2-11.5	1-11.5; 1¼-11.5; 1½-11.5; 2-11.5	1-11; 1¼-11; 1½-11; 2-11; 2½-11; 3-11; 4-11; 5-11; 6-11



On Conical inserts, the identification mark must face up



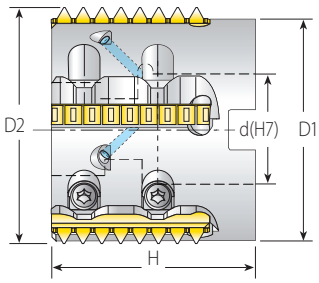
Side without identification marks

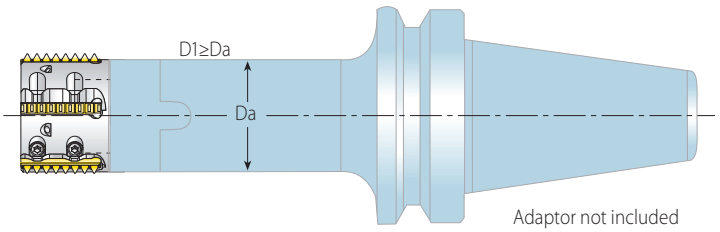


To mount insert correctly, push the insert toward the pocket walls

MITM

Shell Mill (MiTM 25)





Adaptor not included

Coolant-Thru is recommended, especially when D2 > 0.7 x nominal thread diameter

Conical and Standard Shell Mills

	Insert Style	Ordering Code	EDP No.	Dimensions (inch)				No. of Flutes	Spare Parts (Ordering code & EDP No.)		
				D1	D2	d(H7)	H	Z	Location Screw x2	Torx+ Screwdriver	Holder Screw
Standard	.988" (25 mm)	RTMC-D150-050-25S5	80569	1.38	1.54	0.50	1.26	5	SLD4IP8 (M4x0.7) (80533)	KIP8 •Use the included Vardex Torx+ screwdriver only •Recommended max. torque 10.6 lbfxin (70231)	1/4"-28x1.00 (70263)
		RTMC-D190-075-25S7	80570	1.77	1.93	0.75	1.58	7			3/8"-24x1.125 (70223)
		RTMC-D230-100-25S9	80571	2.17	2.32	1.00	1.58	9			1/2"-20x1.25 (70262)
Conical		RTMNC-D150-050-25S5	80572	1.38	1.54*	.50	1.26	5			1/4"-28x1.00 (70263)

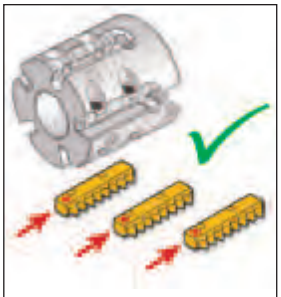
* For inserts 8NPT and 8NPTF use for CNC program (D2+0.024")

Standard Thread Applications by Toolholder

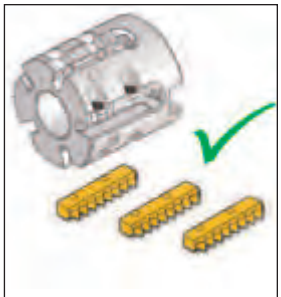
Toolholder			Min. Thread Ø			
		D2(inch)	ISO (fine)	UN/UNF/UNEF/UNS	BSW	BSP(G)
Standard	RTMC-D150-050-25S5	1.54	M42x1 ; M42 x1.5; M45x2 ; M45x3	1 11/16-12UNF; 1¾-14UNS; 1⅝-16UN 1⅝-18UNEF; 1⅝-20UN;	1¾ -16 1¾ -12	1½ - 11
	RTMC-D190-075-25S7	1.93	M52x1 ; M55x1.5; M55x2 ; M55x3	2⅛-12UN; 2 1/16-16UN; 2⅛-20UN; 2⅛-8UN 2¼-10UNS; 2¼-14UNS; 2¼-18UNS	2¼ -16 2¼ -12	1¾ - 11
	RTMC-D230-100-25S9	2.32	M64x1 ; M64x1.5; M64x2 ; M65x3	2½-18UN; 2½-20UN; 2½-8UN 2½-12UN; 2½-10UN; 2½-14UN; 2½-16UN	2½ -16 2½ -12	2¼ - 11

Conical Thread Applications by Toolholder

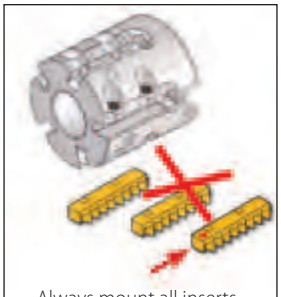
Toolholder		Thread Ø			
		D2 (inch)	NPT	NPTF	BSPT
Conical	RTMNC-D150-050-25S5	1.54*	1½ - 11.5; 2 - 11.5	1½ - 11.5; 2 - 11.5	1½-6 x11



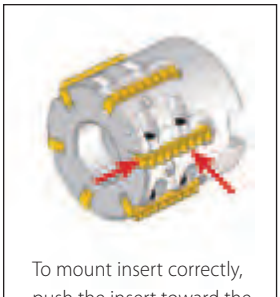
Side with identification marks



Side without identification marks



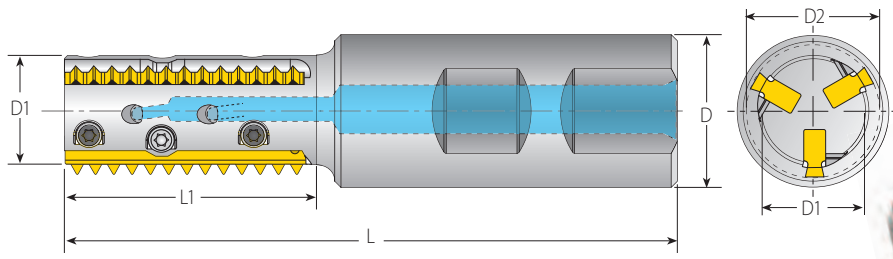
Always mount all inserts on the same side!



To mount insert correctly, push the insert toward the pocket walls.

MITM

Standard Toolholders (MiTM 40)



Coolant-Thru is recommended, especially when D2 > 0.7 x nominal thread diameter

RTMC - for Standard Threads

Insert Style	Ordering Code	EDP No.	Dimensions (inch)					No. of Flutes	Spare Parts (Ordering code & EDP No.)		
			L	L1	D	D1	D2	Z	Location Screw	Clamping Screw x2	Torx+ Screwdriver
1.575" (40 mm)	RTMC 100087-169L3	80618	4.00	1.69	1.00	0.71	0.87	3	SLD4IP8A (M4x0.7) (80533)	SCD4IP8 (M4x0.7) (80622)	KIP8 •Use the included Vardex Torx+ screwdriver only •Recommended max. torque 10.6 lbfxin (70231)
	RTMC 100087-256L3	80619	4.87	2.56	1.00	0.71	0.87	3			
	RTMC 125118-215L4	80620	4.55	2.15	1.25	1.02	1.18	4			
	BRTMC 125118-315L3	80621	5.35	3.15	1.25	1.02	1.18	3			

Standard Thread Application by Toolholder

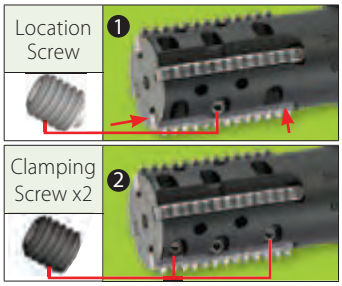
Toolholder		Min. Thread Ø					
	D2 (inch)	ISO (coarse)	ISO (fine)	UNC	UN/UNF/UNEF/UNS	BSF	BSP(G)
RTMC 100087-169L3	0.87	M27x3	M24x1; M24x1.5 M25x2; M25x2.5	-	1 11/16-8UN; 1-9UN; 1-10UNS; 1-12UNF; 1-14UNS; 1-16UN; 1-18UN; 15/16-20UNEF	1-11; 1-12; 1-14; 1-16;	3/4-14
RTMC 100087-256L3	0.87	M27x3	M24x1; M24x1.5 M25x2; M25x2.5	-	1 11/16-8UN; 1-9UN; 1-10UNS; 1-12UNF 1-14UNS; 1-16UN; 1-18UN; 15/16-20UNEF	1-11; 1-12; 1-14; 1-16;	3/4-14
RTMC 125118-215L4	1.18	-	M32x1; M32x1.5 M33x2; M33x2.5; M34x3	-	1 3/8-8UN; 1 3/8-9UN; 1 3/8-10UN; 1 5/16-12UN; 1 3/8-14UNS; 1 5/16-16UN; 1 5/16-18UNEF; 1 5/16-20UN	1 3/8-11; 1 3/8-12; 1 3/8-14; 1 3/8-16	1-11
BRTMC 125118-315L3	1.18	-	M32x1; M32x1.5 M33x2; M33x2.5; M34x3	-	1 3/8-8UN; 1 3/8-9UN; 1 3/8-10UN; 1 5/16-12UN; 1 3/8-14UNS; 1 5/16-16UN; 1 5/16-18UNEF; 1 5/16-20UN	1 3/8-11; 1 3/8-12; 1 3/8-14; 1 3/8-16	1-11

Side with identification marks

Side without identification marks

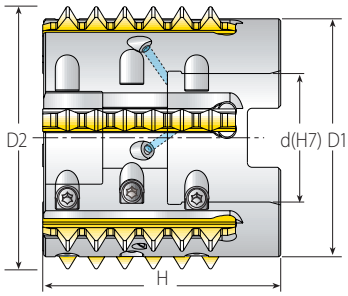
Always mount all inserts on the same side!

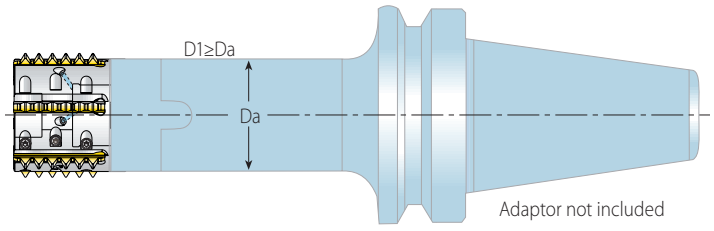
2 Step Clamping System!



MiTM

Shell Mill (MiTM 40)





Coolant-Thru is recommended, especially when D2 > 0.7 x nominal thread diameter

Conical and Standard Shell Mills

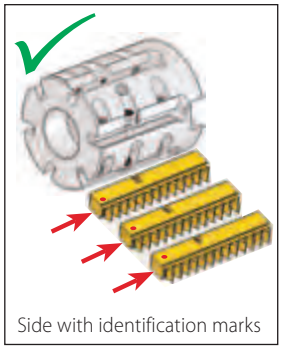
	Insert Style	Ordering Code	EDP No.	Dimensions (inch)				No. of Flutes	Spare Parts (Ordering code & EDP No.)			
				D1	D2	d(H7)	H	Z	Location Screw	Clamping Screw x2	Torx+ Screwdriver	Holder Screw
Standard	1.575" (40 mm)	RTMC D190-075-40L7	80623	1.77	1.93	0.75	1.97	7	SLD4IP8A (M4x0.7) (80533)	SCD4IP8 (M4x0.7) (80622)	KIP8 •Use the included Vardex Torx+ screwdriver only •Recommended max. torque 10.6 lbfxin (70231)	3/8"-24x1.25 (70223)
		RTMC D230-100-40L9	80624	2.17	2.32	1.00	2.00	9				1/2"-20x1.5 (70224)
Conical		RTMNC D190-075-40L7	80625	1.77	1.93	0.75	1.97	7				3/8"-24x1.25 (70223)

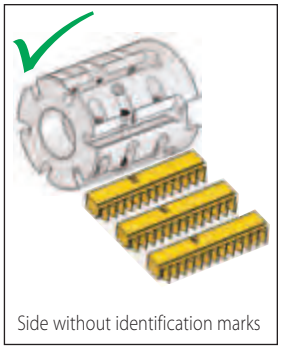
Standard Thread Application per Toolholder

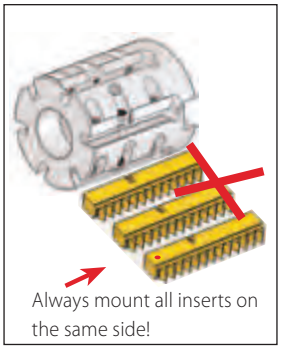
Toolholder			Min. Thread Ø			
		D2 (inch)	ISO (fine)	UN/UNF/UNEF/UNS	BSW	BSP(G)
Standard	RTMC D190-075-40L7	1.93	M52x1; M55x1.5; M55x2; M55x3	1⅞-12UN; 1 13/16-16UN; 1 13/16-20UN; 1 15/16-8UN; 1⅞-10UNS; 1⅞-14UNS	2¼ -12; 2¼ -16	1¾ -11
	RTMC D230-100-40L9	2.32	M64x1; M64x1.5; M64x2; M65x3	2¼-8UN; 2¼-10UN; 2¼-12UN; 2¼-14UN; 2¼-16UN; 2¼-18UN; 2¼-20UN	2½ -12; 2½ -16	2¼ -11

Conical Thread Application by Toolholder

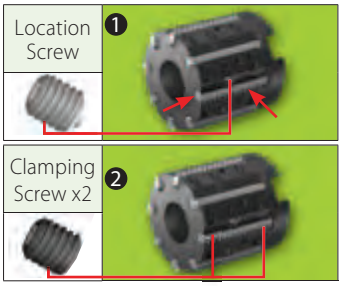
Toolholder			Min. Thread Ø		
		D2 (inch)	NPT	NPTF	BSPT
Conical	RTMNC D190-075-40L7	1.93	2-11.5; 2½-8 (and up)	2-11.5; 2½-8; 3-8	2-6x11


Side with identification marks


Side without identification marks

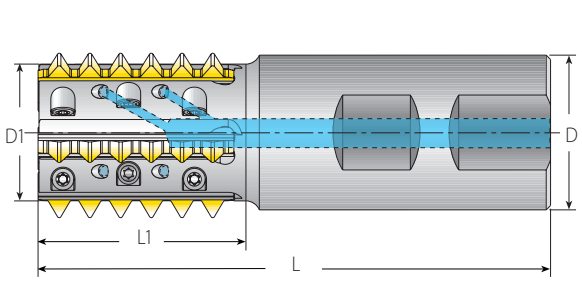

Always mount all inserts on the same side!

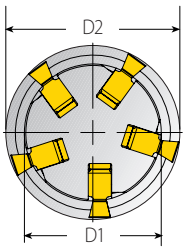
2 Step Clamping System!



MiTM

Standard Toolholders (MiTM 41)





Coolant-Thru is recommended, especially when D2 > 0.7 x nominal thread diameter

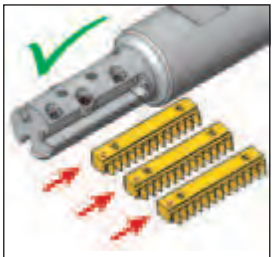
RTMC - for Standard Threads

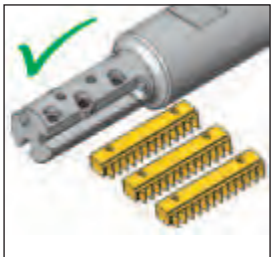
Insert Style	Ordering Code	EDP No.	Dimensions (inch)					No. of Flutes	Spare Parts (Ordering code & EDP No.)		
			L	L1	D	D1	D2*	Z	Location Screw x2	Clamping Screw	Torx+ Screwdriver
1.614" (41 mm)	RTMC 100096-169B2	80864	4.13	1.69	1.00	0.76	0.97	2	SLD4IP8A (M4x0.7) (80533)	SCD4IP8 (M4x0.7) (80622)	KIP8 •Use the included Vardex Torx+ screwdriver only •Recommended max. torque 10.6 lbfxin (70231)
	RTMC 125118-169B3	80865	4.13	1.69	1.25	0.95	1.18	3			
	RTMC 125118-256B3	80866	5.00	2.56	1.25	0.95	1.18	3			
	RTMC 125141-169B5	80867	4.13	1.69	1.25	1.11	1.42	5			
	RTMC 125141-256B4	80868	4.98	2.56	1.25	1.11	1.42	4			

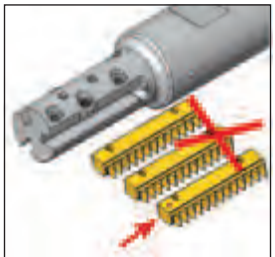
Standard Thread Application by Toolholder

Toolholder		Min. Thread Ø						
	D2* (inch)	ISO (coarse)	ISO (fine)	UNC	UN/UNF/UNEF/UNS	BSW/BSF	NPT	NPTF
RTMC 100096-169B2	0.97	M30x3.5; M36x4	M28X3; M45x4	1⅛-7; 1⅜-6	1⅛-8UN; 1⁷⁄₁₆-6UN	1⅜-8BSF; 1¼-7BSW	-	-
RTMC 125118-169B3	1.18	M36x4; M42x4.5	M34X3; M34x3.5; M45x4	1⅜-6	1⅜-8UN; 1⁷⁄₁₆-6UN	1⅜-8BSF; 1¾-7BSF; 1½-6BSW	-	-
RTMC 125118-256B3	1.18	M36x4; M42x4.5	M34X3; M34x3.5; M45x4	1⅜-6	1⅜-8UN; 1⁷⁄₁₆-6UN	1⅜-8BSF; 1¾-7BSF; 1½-6BSW	-	-
RTMC 125141-169B5	1.42	M42x4.5; M48x5; M56x5.5; M64x6	M40x3; M40x3.5; M42x4; M70x6	1¾-5; 2-4.5; 2½-4	1⅝-8UN; 1⅜-6UN	1⅝-8BSF; 1¾-7BSF; 1⅞-6BSF	2½-8	2½-8
RTMC 125141-256B4	1.42	M42x4.5; M48x5; M56x5.5; M64x6	M40x3; M40x3.5; M42x4; M70x6	1¾-5; 2-4.5; 2½-4	1⅝-8UN; 1⅜-6UN	1⅝-8BSF; 1¾-7BSF; 1⅞-6BSF	2½-8	2½-8

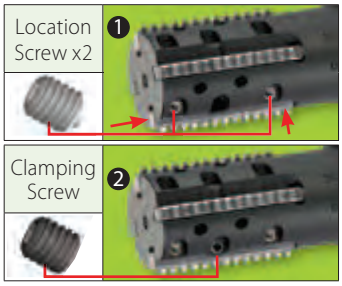
* For external applications, inserts R41E... use for CNC program (D2+0.024")


Side with identification marks


Side without identification marks

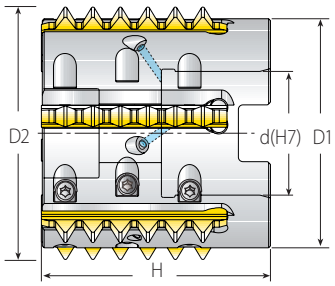

Always mount all inserts on the same side!

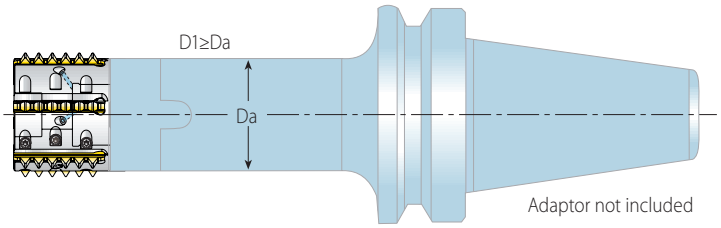
2 Step Clamping System!



MiTM

Shell Mill (MiTM 41)





Coolant-Thru is recommended, especially when D2 > 0.7 x nominal thread diameter

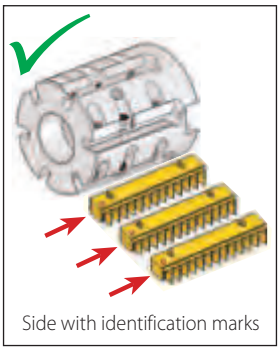
Standard Shell Mill

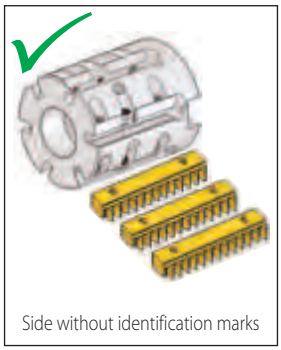
Insert Style	Ordering Code	EPD No.	Dimensions (inch)				No. of Flutes	Spare Parts (Ordering code & EDP No.)			
			D1	D2*	d(H7)	H	Z	Location Screw x2	Clamping Screw	Torx+ Screwdriver	Holder Screw
1.614" (41 mm)	RTMC D209-075-41B5	80869	1.77	2.09*	0.75	2.00	5	SLD4IP8A (M4x0.7) (80533)	SCD4IP8 (M4x0.7) (80622)	KIP8 •Use the included Vardex Torx+ screwdriver only •Recommended max. torque 10.6 lbfxin (70231)	3/8"-24x1.5 (70264)
	RTMC D248-100-41B6	80870	2.17	2.48*	1.00	2.00	6				1/2"-20x1.5 (70224)

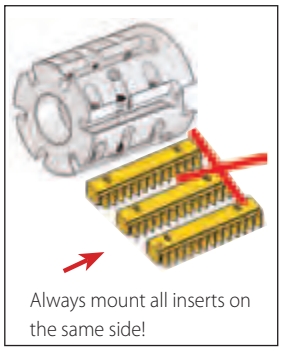
Standard Thread Application by Toolholder

Toolholder		Min. Thread Ø						
	D2* (inch)	ISO (coarse)	ISO (fine)	UNC	UN/UNF/UNEF/UNS	BSF	NPT	NPTF
RTMC D209-075-41B5	2.09*	M64X6	M58x4; M70x6	2½-4	2⅜-6UN; 2⅜-8UN	2⅜-8; 2½-6	2½-8	2½-8
RTMC D248-100-41B6	2.48*	-	M68x4; M70x6	3-4	2¾-6UN; 2¾-8UN	2¾-8; 2¾-6	2½-8	2½-8

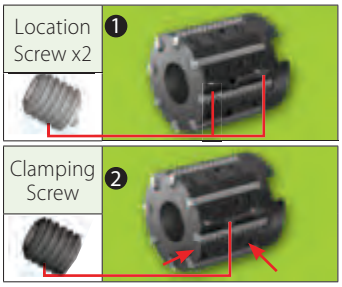
* For external applications, inserts R41E... use for CNC program (D2+0.024")


Side with identification marks


Side without identification marks


Always mount all inserts on the same side!

2 Step Clamping System!



Recommended Grades, Cutting Speeds Vc [ft/min] and Feed f [inch/tooth]

Material Group	Vardex No.	Material		Hardness Brinell HB	Vc [ft/min]		Feed f[inch/tooth]
					VBX	VTX	f
P Steel	1	Unalloyed steel	Low carbon (C=0.1-0.25%)	125	328-689	295-590	.0040-.0138
	2		Medium carbon (C=0.25-0.55%)	150	328-590	295-558	.0040-.0157
	3		High Carbon (C=0.55-0.85%)	170	328-558	295-524	.0040-.0138
	4	Low alloy steel (alloying elements≤5%)	Non hardened	180	295-197	295-508	.0040-.0157
	5		Hardened	275	262-492	262-525	.0040-.0138
	6		Hardened	350	230-459	230-492	.0040-.0118
	7	High alloy steel (alloying elements>5%)	Annealed	200	197-426	230-377	.0040-.0138
	8		Hardened	325	230-361	197-328	.0040-.0080
	9	Cast steel	Low alloy (alloying elements <5%)	200	328-558	328-558	.0040-.0118
	10		High alloy (alloying elements >5%)	225	230-394	230-426	.0040-.0080
M Stainless Steel	11	Stainless steel Feritic	Non hardened	200	328-558	394-590	.0040-.0118
	12		Hardened	330	328-558	394-590	.0040-.0080
	13	Stainless steel Austenitic	Austenitic	180	230-460	328-459	.0040-.0118
	14		Super Austenitic	200	230-460	328-459	.0040-.0080
	15	Stainless steel Cast Feritic	Non hardened	200	230-460	328-459	.0040-.0118
	16		Hardened	330	230-460	328-459	.0040-.0080
	17	Stainless steel Cast austenitic	Austenitic	200	230-394	328-394	.0040-.0118
	18		Hardened	330	230-394	328-394	.0040-.0080
K Cast Iron	28	Malleable Cast iron	Ferritic (short chips)	130	197-426	328-394	.0020-.0063
	29		Pearlitic (long chips)	230	197-394	262-328	.0016-.0040
	30	Grey cast iron	Low tensile strength	180	197-426	262-328	.0040-.0118
	31		High tensile strength	260	197-328	262-328	.0040-.0080
	32	Nodular SG iron	Feritic	160	197-410	262-328	.0040-.0118
	33		Pearlitic	260	164-295	197-295	.0040-.0080
N(K) Non-Ferrous Metals	34	Aluminium alloys Wrought	Non aging	60	328-820		.0060-.0216
	35		Aged	100	328-590		.0060-.0197
	36	Aluminium alloys	Cast	75	492-1312		.0060-.0197
	37		Cast & aged	90	492-918		.0040-.0157
	38	Aluminium alloys	Cast Si 13-22%	130	262-492		.0060-.0197
	39	Copper and copper alloys	Brass	90	394-689	328-565	.0060-.0197
	40		Bronze and non leaded copper	100	394-689	328-565	.0040-.0157
S(M) Heat Resistant Material	19	High temperature alloys	Annealed (Iron based)	200	66-148	66-131	.0040-.0080
	20		Aged (Iron based)	280	66-98	66-98	.0016-.0040
	21		Annealed (Nickel or Cobalt based)	250	49-66	49-66	.0016-.0040
	22		Aged (Nickel or Cobalt based)	350	33-49	33-49	.0016-.0040
	23	Titanium alloys	Pure 99.5 Ti	400Rm	230-459	230-394	.0016-.0040
	24		$\alpha+\beta$ alloys	1050Rm	66-164	66-164	.0016-.0040
H(K) Hardened Material	25	Extra hard steel	Hardened & tempered	45-50HRc	49-148	49-148	.0024-.0047
	26			51-55HRc	49-131	49-131	.0016-.0031

Grades

Grade	Application	Sample
VBX	TiCN coated carbide grade. Excellent grade for **steels and general use**.	
VTX	TiAlN coated carbide grade. Ideal for **Stainless Steels.**	

MITM

TMSD

Thread Mill for Deep Holes

> Inserts
> Toolholders
> Technical Data

TMSD - THREAD MILL FOR DEEP HOLES

TM Gen Software and updated versions can be downloaded from www.vargususa.com

A multi-flute, high-productivity, and economical solution for milling threads in deep holes

Smooth Cut
- Reduced load on the cutting edges due to single point insert design

Wide Range of Pitches
- Partial profile

Cost Effective
- Up to 3 cutting edges per insert
- Very high feed per tooth

Fast Machining
- Multi-flute, up to 8 cutting edges (inserts)

Long Overhang
- Up to 5.12" (7.87" in Shell Mill)

Tool Cutting Diameter
- As small as 0.51"

Cooling Thru
- For improved chip evacuation and cooling the cutting corner

TMSD

Thread Mill for Deep Holes

A multi-flute, high-productivity, and economical solution for milling threads in deep holes

Mini L

For Small Bores and Short L2

Weldon Shank

Tool Overhang (L1) 1.14-1.65
Cutting Dia. (D2) .51-.70
No. of Flutes (Z) 1-3

Carbide Cylindrical Shank

Tool Overhang (L1) .79-2.55
Cutting Dia. (D2) .51-.70
No. of Flutes (Z) 1-3

U Style

For Large Pitches

Weldon Shank

Tool Overhang (L1) 1.57-4.72
Cutting Dia. (D2) .58-1.66
No. of Flutes (Z) 1-4

Carbide Cylindrical Shank

Tool Overhang (L1) .98-3.15
Cutting Dia. (D2) .58-.81
No. of Flutes (Z) 1-2

Steel Cylindrical Shank

Tool Overhang (L1) 1.57-5.12
Cutting Dia. (D2) .91-1.44
No. of Flutes (Z) 2-4

Shell Mill

Tool Overhang (L1) Max. 7.87
Cutting Dia. (D2) 1.69-4.35
No. of Flutes (Z) 4-8

A Style

For Shorter L2

Steel Cylindrical Shank

Tool Overhang (L1) 1.97-5.12
Cutting Dia. (D2) 1.02-1.39
No. of Flutes (Z) 3

Vardex Ordering Code System

TMSD Inserts

2	U	I	DB	60	TM	VBX
1	2	3	4	5	6	7

1- Insert Size

5L - IC5.0L mm
2 - IC1/4"
3 - IC3/8"
4 - IC1/2"

2 - Insert Style

U -

A -

L -

3 - Type of Insert

I - Internal

4 - Pitch

Full Profile - Pitch Range

mm	tpi
2.0-5.0	-

Partial Profile - Pitch Range

	mm	tpi
DA	0.5-1.5	48-16
DB	1.5-2.0	16-12
DC	2.5-4.0	10-6
DD	2.0-2.5	9-12
DE	2.5-3.5	10-7
DH	4.0-6.0	6-4
DK	6.0-8.0	4-3
DL	-	11-7
DM	2.5	10
DN	1.0-2.0	24-11
DP	1.5-3.0	16-8
DR	-	26-14
DT	2.0-4.0	12-6

5 - Standard

60° - Partial Profile 60°
55° - Partial Profile 55°
TR - Trapez DIN 103

6 - System

TM

7 - Carbide Grade

VBX, VTX

TMSD Toolholders

C	TM	2	S	C	056	C	068	-	235	-	2	U
1	2	3	4	5	6	7	8		9		10	11

1- Shank Style

None - Steel
C - Carbide Shank

2- System

TM

3 - No. of Flutes

1- 4

4 - Insert Type

S - Single Point

5 - Cooling

C - Coolant

6 - Shank Dia.

.375-1.50

7 - Shank Type

W - Weldon
C - Cylindrical

8 - Cutting Dia.

.51-1.65

9 - Max. Tool Overhang

.79-5.12

10 - Insert Size

5L - IC5.0L mm
2 - IC1/4"
3 - IC3/8"
4 - IC1/2"

11 - Insert Style

U
A
L

TMSD Shell Mill

TM	4	S	C		D169	-	050	-	3	U
1	2	3	4		5		6		7	8

1- System

TM

2 - No. of Flutes

4-8

3 - Insert Type

S - Single Point

4 - Cooling

C - Coolant

5 - Cutting Dia.

1.69-4.35

6 - Drive Hole Dia.

.50, .75, 1.0, 1.5

7 - Insert Size

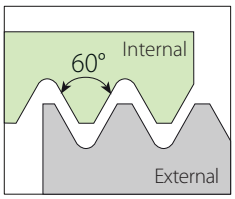
3 - IC3/8"
4 - IC1/2"

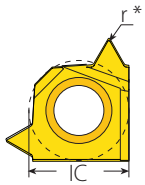
8 - Insert Style

U

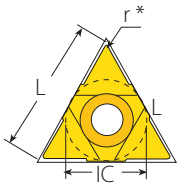
TMSD - Partial Profile 60°

Internal

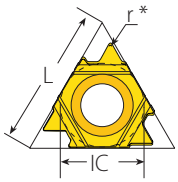




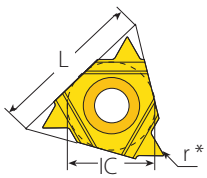
Mini L Style



U Style



2UIDB60 TM…
2UIDD60 TM…



A Style

Mini-L

Insert Size		Pitch		Ordering Code	EDP No.		Dimensions (inch)	
IC	L inch	mm	tpi	Internal	VTX	VBX	r *	Toolholder
5.0L	-	0.5-1.5	48-16	5LIDA60 TM…	50264	50263	.002	TM.SC…5L CTM. SC…5L
		1.0-2.0	24-11	5LIDN60 TM…	50267	50266	.002	

U Style

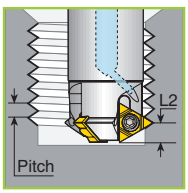
2UIDB60 TM…
2UIDD60 TM…

Insert Size		Pitch		Ordering Code	EDP No.		Dimensions (inch)	
IC	L inch	mm	tpi	Internal	VTX	VBX	r *	Toolholder
1/4"U	.43	0.5-1.5	48-16	2UIDA60 TM…	50305	50299	.002	TM.SC…2U CTM. SC…2U
		1.5-2.0	16-12	2UIDB60 TM…	50018	50008	.002	
		2.0-2.5	9-12	2UIDD60 TM…	50355	50352	.004	CTM2SC 056C068-235-2U
		2.5	10	2UIDM60 TM…	50296	50291	.004	
		2.5-4.0	10-6	2UIDC60 TM…	50033	50026	.006	TM.SC…2U CTM. SC…2U
3/8"U	.63	1.5-2.0	16-12	3UIDB60 TM…	50040	50034	.002	TM.SC…3U
		2.5-3.5	10-7	3UIDE60 TM…	50044	50041	.006	
		4.0-6.0	6-4	3UIDH60 TM…	50048	50045	.001	
1/2"U	.87	6.0-8.0	4-3	4UIDK60 TM…	50052	50049	.012	TM.SC D…4U

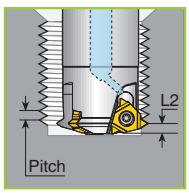
A Style

Insert Size		Pitch		Ordering Code	EDP No.		Dimensions (inch)	
IC	L inch	mm	tpi	Internal	VTX	VBX	r *	Toolholder
1/4"A	.43	1.5-3.0	16-8	2AIDP60 TM…	50219	50200	.002	TM.SC…2A
3/8"A	.63	2.0-4.0	12-6	3AIDT60 TM…	50227	50226	.003	TM.SC…3A

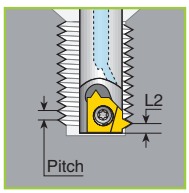
* The indicated radius (r) refers to the insert nose radius only



U Style
For Large Pitches



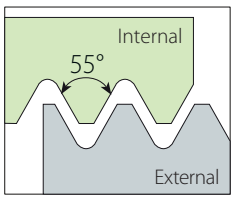
A Style
For Shorter L2

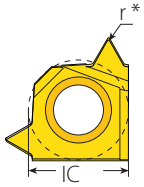


Mini-L Style
For Small Bores and Short L2

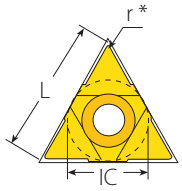
TMSD - Partial Profile 55°

Internal





Mini L Style



U Style

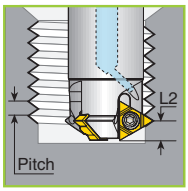
Mini-L

Insert Size	Pitch	Ordering Code	EDP No.		Dimensions (inch)	
IC	tpi	Internal	VTX	VBX	r*	Toolholder
5.0L	26-14	5LIDR55 TM…	50269	50268	.004	TM.SC…5L CTM. SC…5L

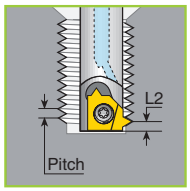
U Style

Insert Size		Pitch	Ordering Code	EDP No.		Dimensions (inch)	
IC	L inch	tpi	Internal	VTX	VBX	r*	Toolholder
1/4"U	.43	48-16	2UIDA55 TM…	50317	50309	.004	TM.SC...2U CTM. SC…2U
		16-12	2UIDB55 TM…	50055	50053	.003	
		11-7	2UIDL55 TM…	50061	50056	.010	
3/8"U	.63	16-12	3UIDB55 TM…	50067	50062	.003	TM.SC...3U
		11-7	3UIDL55 TM…	50091	50068	.009	
		6-4	3UIDH55 TM…	50148	50233	.011	
1/2"U	.87	4-3	4UIDK55 TM…	50190	50189	.020	TM.SC...4U

* The indicated radius (r) refers to the insert nose radius only



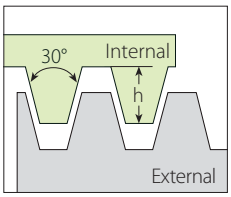
U Style
For Large Pitches



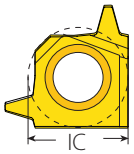
Mini-L Style
For Small Bores and Short L2

TMSD - Trapez

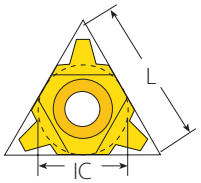
Internal



Defined by: DIN 103
Tolerance class: 7e/7H



Mini L Style



U Style

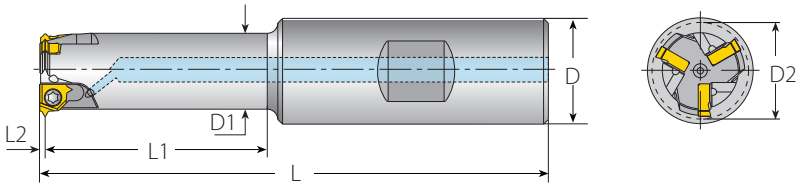
Mini-L

Insert Size		Pitch	Ordering Code	EDP No.		Application	
IC		mm	Internal	VTX	VBX	Internal	Toolholder
5.0L		2.0	5LI2.0TR-1 TM…	50359	50207	TR16x2, TR20x2	See pages 282-283
			5LI2.0TR-2 TM…	50367	50361	TR18x2	

U Style

Insert Size		Pitch	Ordering Code	EDP No.		Application	
IC	L inch	mm	Internal	VTX	VBX	Internal	Toolholder
1/4"U	.43	3.0	2UI3TR-1 TM…	50383	50372	(TR22-TR30)x3	See pages 284-285
			2UI3TR-2 TM…	50389	50386	(TR32-TR60)x3	
		4.0	2UI4TR-1 TM…	50396	50394	(TR20-TR28)x4	
			2UI4TR-2 TM…	50415	50399	(TR65-TR110)x4	
		5.0	2UI5TR-1 TM…	50428	50417	TR22x5; TR28x5	
			2UI5TR-2 TM…	50438	50431	TR24x5; TR26x5	

TMSD Standard Toolholder - Weldon Shank (Mini L-Style)



Coolant-Thru is recommended, especially when D2>0.7 x nominal thread diameter

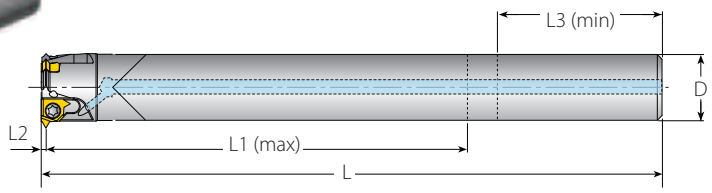
Weldon Shank for Mini-L Style Inserts

Insert Size	Ordering Code	EPD No.	Dimensions (inch)						No. of Flutes	Spare Parts (Ordering code & EDP No.)	
IC (mm)			L	L1	L2	D	D1	D2	Z	Insert Screw	Torx Key
5.0L	TM1SC 062W051-114-5L	67111	3.20	1.14	0.04	0.625	0.38	0.51	1	SN5LTR (72007)	K7T (70026)
	TM2SC 062W054-130-5L	67114	3.40	1.30		0.625	0.41	0.53	2		
	TM3SC 075W069-165-5L	67115	3.80	1.65		0.750	0.56	0.70	3		

Thread Applications for Mini-L Style Toolholders (Weldon Shank)

Toolholder	Min. Thread Ø						
	D2	ISO Coarse	ISO Fine	UN/UNF/UNEF/UNS	BSP (G)	Partial 55°	Trapez
TM1SC 062W051-114-5L	0.51	M16x2	M14x0.5; M14x0.75; M14.5x1.0; M15x1.5; M17x2.0	9/16-32UN; 9/16-28UN; 9/16-27UNS; 9/16-24UNEF; 5/8-20UN; 5/8-18UNF; 5/8-16UN; 5/8-14UNS; 5/8-12UN	3/8-19	5/8-14	TR16X2; TR18X2
TM2SC 062W054-130-5L	0.53	M16x2	M15x0.5; M15x0.75; M15x1.0; M16x1.5; M17x2.0	5/8-32UN; 5/8-28UN; 5/8-27UNS; 5/8-24UNEF; 5/8-20UN; 5/8-18UNF; 5/8-16UN; 5/8-14UNS; 11/16-12UN	3/8-19	11/16-14	TR16X2; TR18X2
TM3SC 075W069-165-5L	0.70	-	M19x0.5; M19x0.75; M19x1.0; M20x1.5; M20x2.0	3/4-32UN; 3/4-28UN; 7/8-27UNS; 3/4-24UNS; 13/16-20UNEF; 7/8-18UNS; 13/16-16UN; 7/8-14UNF; 13/16-12UN	1/2-14	-	TR20X2

TMSD Standard Toolholder - Carbide Cylindrical Shank (Mini L-Style)



Coolant-Thru is recommended, especially when D2>0.7 x nominal thread diameter

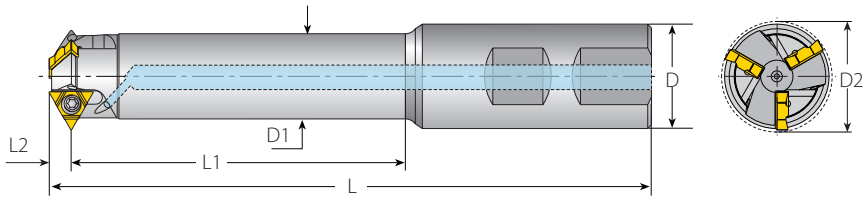
Carbide Cylindrical Shank for Mini-L Style Inserts

Insert Size	Ordering Code	EDP No.	Dimensions (inch)						No. of Flutes	Spare Parts (Ordering code & EDP No.)	
											
IC (mm)			L	L1 (max)	L2	L3 (min)	D	D2	Z	Insert Screw	Torx Key
5.0L	CTM1SC 037C051-169-5L	67118	4.30	1.69	0.04	0.79	0.375	0.51	1	SN5LTR (72007)	K7T (70026)
	CTM2SC 037C53-197-5L	67119	4.60	1.97		0.87	0.375	0.53	2		
	CTM3SC 056C069-255-5L	67120	5.20	2.56		1.18	0.5625	0.70	3		

Thread Applications for Mini-L Style Toolholders (Carbide Cylindrical Shank)

Toolholder		Min. Thread Ø					
	D2	ISO Coarse	ISO Fine	UN/UNF/UNEF/UNS	BSP (G)	Partial 55°	Trapez
CTM1SC 037C051-169-5L	0.51	M16x2	M14x0.5; M14x0.75; M14.5x1.0; M15x1.5; M17x2.0	9/16-32UN; 9/16-28UN; 9/16-27UNS; 9/16-24UNEF; 5/8-20UN; 5/8-18UNF; 5/8-16UN; 5/8-14UNS; 5/8-12UN	3/8-19	5/8-14	TR16X2; TR18X2
CTM2SC 037C53-197-5L	0.53	M16x2	M15x0.5; M15x0.75; M15x1.0; M16x1.5; M17x2.0	5/8-32UN; 5/8-28UN; 5/8-27UNS; 5/8-24UNEF; 5/8-20UN; 5/8-18UNF; 5/8-16UN; 5/8-14UNS; 11/16-12UN	3/8-19	11/16-14	TR16X2; TR18X2
CTM3SC 056C069-255-5L	0.70	-	M19x0.5; M19x0.75; M19x1.0; M20x1.5; M20x2.0	3/4-32UN; 3/4-28UN; 7/8-27UNS; 3/4-24UNS; 13/16-20UNEF; 7/8-18UNS; 13/16-16UN; 7/8-14UNF; 13/16-12UN	1/2-14	-	TR20X2

TMSD Standard Toolholder - Weldon Shank (U-Style)



Coolant-Thru is recommended, especially when D2>0.7 x nominal thread diameter

Weldon Shank for U-Style Inserts

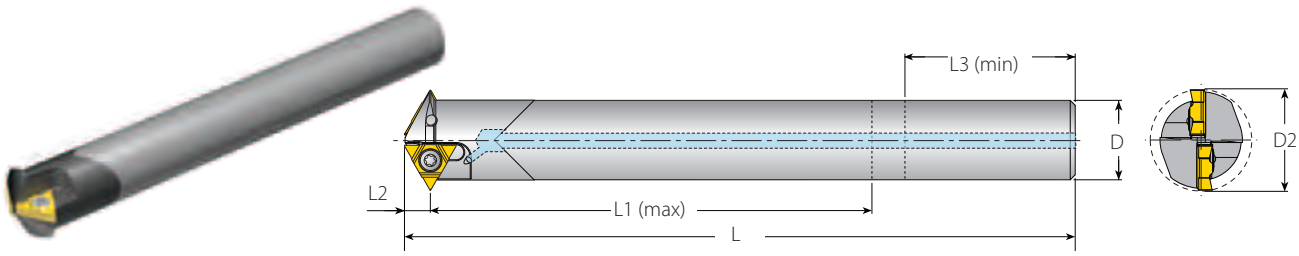
Insert Size	Ordering Code	EDP No.	Dimensions (inch)						No. of Flutes	Spare Parts (Ordering code & EDP No.)	
IC			L	L1	L2	D	D1	D2	Z	Insert Screw	Torx Key
1/4"U	TM1SC 062W059-157-2U	67116	3.76	1.57	0.21	0.625	0.43	0.58*	1	SN2T (70036)	HK2T (70227)
	TM2SC 100W082-236-2U	67117	4.92	2.36		1.00	0.63	0.81*	2		
	TM2SC 100W90-275-2U	67722	5.38	2.76		1.00	0.70	0.91	2		
	TM3SC 100W102-315-2U	67724	5.79	3.15		1.00	0.80	1.02	3		
	TM4SC 125W122-374-2U	67725	6.37	3.74		1.25	1.01	1.22	4		
3/8"U	TM3SC 125W143-374-3U	67742	6.45	3.74	0.32	1.25	1.14	1.44	3	SA3T (70028)	HK3T (70228)
	TM4SC 150W165-472-3U	67743	7.82	4.72		1.50	1.35	1.65	4	SN3T (70038)	

Thread Application for U-Style Toolholders (Weldon Shank)

Toolholder	Min. Thread Ø							
	D2	ISO Coarse	ISO Fine	UNC	UN/UNF/UNEF/UNS	BSP (G)	Partial 55°	Trapez
TM1SC 062W059-157-2U	0.58*	M18x2.5, M24x3.0	M16x0.5, M16x0.75, M16x1.0, M17x1.25, M17x1.5, M17x2.0	¾-10	⅝-32UN, ⅝-28UN, ⅝-27UNS, 11/16-24UN, 11/16-20UN, 11/16-16UN, ¾-14UNS, ¾-12UN	⅜-19, ½-14, 1-11	11/16-14; ¾-12; ⅞-11; ¾-10; ⅞-9; 1-8; 1⅛-7	TR22x3, TR24x3
TM2SC 100W082-236-2U	0.81*	M24x3.0, M30x3.5	M22x0.5, M22x0.75, M22x1.0, M23x1.25, M23x1.5, M23x2.0	1-8, 1⅛-7, 1⅜-6	⅞-32UN, ⅞-28UN, ⅞-27UNS, ⅞-24UNS, ⅞-20UNEF, 1-18UNS, 15/16-16UN, 1-14UNS, 15/16-12UN, 1-10UNS	¾-14, 1-11	1-26, 1-20, 1-16, 1-12, 1-10, 1⅛-9, 1-8, 1 ⅛-7	(TR26-TR60x3)
TM2SC 100W90-275-2U	0.91	M27x3.0, M30x3.5, M36x4.0	M24x0.5, M24x0.75, M25x1.0, M25x1.25, M26x1.5, M26x2.0, M27x2.5	1⅛-7	1-32UN, 1-28UN, 1-27UNS, 1-24UNS, 1-20UNEF, 1-18UNS, 1-16UN, 1-14UNS, 1-12UNF, 1⅛-10UNS, 1⅛-8UN	¾-14, 1-11	1-26, 1-20, 1-16, 1 1/16-12, 1⅛-9, 1⅛-7	-
TM3SC 100W102-315-2U	1.02	M30x3.5, M36x4.0	M27x0.5, M27x0.75, M28x1.0, M28x1.25, M28x1.5, M29x2.0, M30x2.5, M30x3.0	1¼-7, 1⅜-6	1⅛-28UN, 1⅛-24UNS, 1⅛-20UN, 1⅛-18UNEF, 1⅛-16UN, 1⅛-14UNS, 1⅛-12UNF, 1¼-10UNS, 1 3/16-8UN	⅞-14, 1-11	1⅛-26, 1⅛-20, 1⅜-16, 1⅜-12, 1 3/16-8, 1¼-7	-
TM4SC 125W122-374-2U	1.22	M36X4.0	M32x0.5, M32x0.75, M33x1.0, M33x1.25, M33x1.5, M34x2.0, M34x2.5, M35x3.0, M36x3.5	1½-6	15/16-28UN, 1⅜-24UNS, 15/16-20UN, 15/16-18UNEF, 15/16-16UN, 1⅜-14UNS, 1⅜-12UNF, 1⅜-10UNS, 1⅜-8UN	1⅛-11	1⅜-26, 1⅜-20, 1⅜-16, 1⅜-12, 1 7/16-8	-
TM3SC 125W143-374-3U	1.44	M42x4.5, M48x5.0, M56x5.5, M64x6.0	M39x1.5, M39x2.0, M40x2.5, M41x3.0, M42x3.5, M42x4.0	1¾-5, 2-4.5, 2½-4	1 9/16-16UN, 1⅝-14UNS, 1 9/16-12UN, 1⅝-10UNS, 1⅝-8UN, 1⅝-6UN	1¼-11	1⅝-16, 1⅝-12, 1⅝-8, 2¼-6, 1¾-5	-
TM4SC 150W165-472-3U	1.66	M48x5.0, M56x5.5, M64x6.0	M45x1.5, M45x2.0, M46x2.5, M48x3.0, M48x3.5, M48x4.0	2-4.5, 2 1/2-4	1¾-16UN, 1¾-14UNS, 1 13/16-12UN, 1 13/16-8UN 1 15/16-6UN	1½-11	1⅞-16, 1⅞-12, 1⅞-8, 1⅞-6, 2-4.5	-

* For TR inserts use for the CNC program (D2+0.010")

TMSD Standard Toolholder - Carbide Cylindrical Shank (U-Style)



Coolant-Thru is recommended, especially when D2>0.7 x nominal thread diameter

Carbide Cylindrical Shank for U-Style Inserts

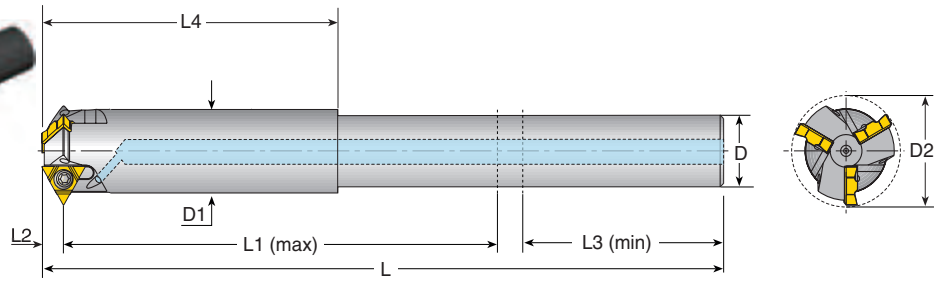
Insert Size	Ordering Code	EDP No.	Dimensions (inch)						No. of Flutes	Spare Parts (Ordering code & EDP No.)	
IC			L	L1 (max)	L2	L3 (min)	D	D2	Z	Insert Screw	Torx Key
1/4"U	CTM1SC 031C059-157-2U	67121	4.30	1.57	0.21	0.65	0.3125	0.58*	1	SN2T (70036)	HK2T (70227)
	CTM1SC 043C061-235-2U	67123	4.72	2.36	0.21	0.98	0.4375	0.58*	1		
	CTM2SC 056C068-235-2U**	67125	5.35	2.56	0.13	1.15	0.5625	0.68**	2		
	CTM2SC 056C082-256-2U	67122	5.38	2.56	0.21	1.15	0.5625	0.81*	2		
	CTM2SC 062C082-315-2U	67124	5.30	3.15	0.21	1.28	0.6250	0.81*	2		

Thread Applications for U-Style Toolholder (Carbide Cylindrical Shank)

Toolholder	Min. Thread Ø							
	D2	ISO Coarse	ISO Fine	UNC	UN/UNF/UNEF/UNS	BSP (G)	Partial 55°	Trapez
CTM1SC 031C059-157-2U	0.58*	M18x2.5, M24x3.0, M30x3.5, M36x4.0	M16x0.5, M16x0.75, M16x1.0, M17x1.25, M17x1.5, M17x2.0	¾-10, ⅞-9, 1-8, 1⅛-7, 1⅜-6	⅝-32UN, ⅝-28UN, ⅝-27UNS, 11/16-24UNEF, 11/16-20UN, 11/16-16UN, ¾-14UNS, 11/16-12UN	½-14, 1-11	11/16-26, 11/16-20, 11/16-16, 11/16-14, ¾-12, ⅞-11, ¾-10, ⅞-9, 1-8, 1⅛-7	TR22x3, TR24x3, TR20x4, TR22x5, TR24x5, TR26x5, TR28x5
CTM1SC 043C061-235-2U	0.60*	M18x2.5, M24x3.0	M16x0.5, M16x0.75, M16x1.0, M17x1.25, M17x1.5, M17x2.0	¾-10, ⅞-9, 1-8	⅝-32UN, ⅝-28UN, ⅝-27UNS, 11/16-24UNEF, 11/16-20UN, 11/16-16UN, ¾-14UNS, 11/16-12UN	½-14, 1-11	11/16-26, 11/16-20, 11/16-16, 11/16-14, ¾-12, ⅞-11, ¾-10, ⅞-9	TR22x3, TR24x3
CTM2SC 056C068-235-2U	0.68**	M20x2.5, M22x2.5	M21x2.0	⅞-9	⅞-10UNS, 13/16-12UN	-	-	-
CTM2SC 056C082-256-2U	0.81*	M24x3.0, M30x3.5, M36x4.0	M22x0.5, M22x0.75, M22x1.0, M23x1.25, M23x1.5, M23x2.0	1-8, 1⅛-7, 1⅜-6	⅞-32UN, ⅞-28UN, ⅞-27UNS, ⅞-24UNS, ⅞-20UNEF, 1-18UNS, 15/16-16UN, 1-14UNS, 15/16-12UN, 1-10UNS	¾-14, 1-11	1-26, 1-20, 1-16, 1-12, 1-10, 1⅛-9, 1-8, 1⅛-7	(TR26-TR60)x3, TR28x4, (TR65-TR110)x4, TR28x5
CTM2SC 062C082-315-2U	0.81*	M24x3.0, M30x3.5	M22x0.5, M22x0.75, M22x1.0, M23x1.25, M23x1.5, M23x2.0	1-8, 1⅛-7, 1⅜-6	⅞-32UN, ⅞-28UN, ⅞-27UNS, ⅞-24UNS, ⅞-20UNEF, 1-18UNS, 15/16-16UN, 1-14UNS, 15/16-12UN, 1-10UNS	¾-14, 1-11	1-26, 1-20, 1-16, 1-12, 1-10, 1⅛-9, 1-8, 1⅛-7	(TR26-TR60)x3

* For TR inserts use for CNC program (D2+0.010")
* * To be used only with inserts 2UIDD60TM... or 2UIDM60TM...
For insert 2UIDD60 TM... use for CNC program (D2+0.028")

TMSD Standard Toolholder - Steel Cylindrical Shank (U-Style)



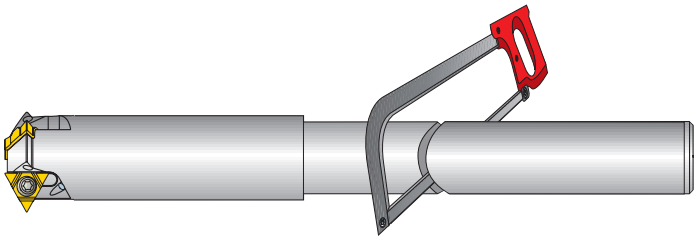
Coolant-Thru is recommended, especially when D2>0.7 x nominal thread diameter

Steel Cylindrical Shank for U-Style Inserts

Insert Size	Ordering Code	EDP No.	Dimensions (inch)								No. of Flutes	Spare Parts (Ordering code & EDP No.)	
			L	L1 (max)	L2	L3 (min)	L4	D	D1	D2	Z	 Insert Screw	 Torx Key
1/4"U	TM2SC 062C090-300-2U	67744	5.60	3.00	0.21	1.35	2.16	0.625	0.70	0.91	2	SN2T (70036)	HK2T (70227)
	TM3SC 075C102-415-2U	67745	7.20	4.15	0.21	1.57	-	0.75	0.75	1.02	3		
	TM4SC 100C122-452-2U	67746	7.70	4.52	0.21	1.80	-	1.00	1.00	1.22	4		
3/8"U	TM3SC 100C143-512-3U	67747	8.35	5.12	0.31	1.80	3.08	1.00	1.14	1.44	3	SA3T (70028)	HK3T (70228)

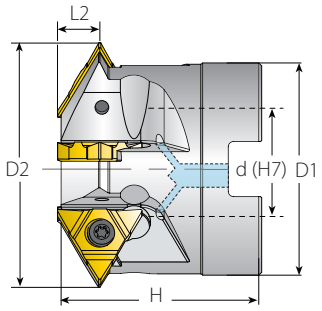
Thread Application for U-Style Toolholders (Steel Cylindrical Shank)

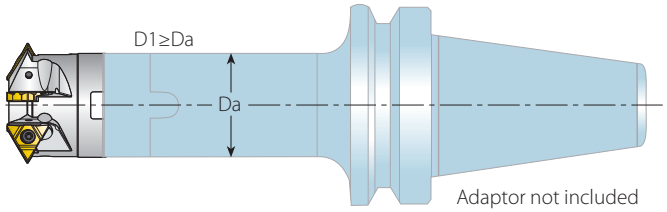
Toolholder		Min. Thread Ø					
	D2	ISO Coarse	ISO Fine	UNC	UN/UNF/UNEF/UNS	BSP (G)	Partial 55°
TM2SC 062C090-300-2U	0.91	M27x3.0, M30x3.5, M36x4.0	M24x0.5, M25x0.75, M25x1.0, M25x1.25, M26x1.5, M26x2.0, M27x2.5	1⅛-7	1-32UN, 1-28UN, 1-27UN, 1-24UNS, 1-20UNEF, 1-18UNS, 1-16UN, 1-14UNS, 1 1/16-12UN, 1⅛-10UNS, 1⅛-8UN	¾-14, 1-11	1-26, 1-20, 1⅛-16, 1⅛-12, 1⅛-9, 1⅛-7
TM3SC 075C102-415-2U	1.02	M30x3.5, M36x4.0	M27x0.5, M27x0.75, M28x1.0, M28x1.25, M28x1.5, M29x2.0, M30x2.5, M30x3.0	1¼-7, 1⅜-6	1⅛-28UN, 1⅛-24UNS, 1⅛-20UN, 1⅛18UNEF, 1⅛-16UN, 1⅛-14UNS, 1⅛-12UNF, 1⅜-10UNS, 1 7/16-8UN	⅞-14, 1-11	1⅛-26, 1⅛-20, 1 3/16-16, 1 3/16-12, 1 3/16-8, 1¼-7
TM4SC 100C122-452-2U	1.22	M36x4.0	M32x0.5, M32x0.75, M33x1.0, M33x1.25, M33x1.5, M34x2.0, M34x2.5, M35x3.0, M36x3.5	1½-6	1 5/16-28UN, 1½-24UNS, 1½-20UN, 1½18UNEF, 1⅜-16UN, 1⅜-14UNS, 1⅜-12UNF, 1⅜-10UNS, 1 7/16-8UN	1⅛-11	1 5/16-26, 1 5/16-20, 1⅜-16, 1⅜-12, 1 7/16-8
TM3SC 100C143-512-3U	1.44	M42.5x4.5, M48x5.0, M56x5.5, M64x6.0	M39x1.5, M40x2.5, M41x3.0, M42x3.5, M42x4.0	1¾-5, 2-4.5, 2½-4	1 9/16-16UN, 1⅝-14UNS, 1 9/16-12UN, 1⅝-10UNS, 1⅝-8UN, 1⅝-6UN	1¼-11	1⅝-16, 1⅝-12, 1⅝-8, 2¼-6, 1¾-5



Length of cylindrical shank toolholders can be modified to reduce chatter (vibration).
Note: Length of shank inside the clamping device should be minimum L3.

TMSD - Shell Mill (U-Style)





Coolant-Thru is recommended, especially when D2>0.7 x nominal thread diameter

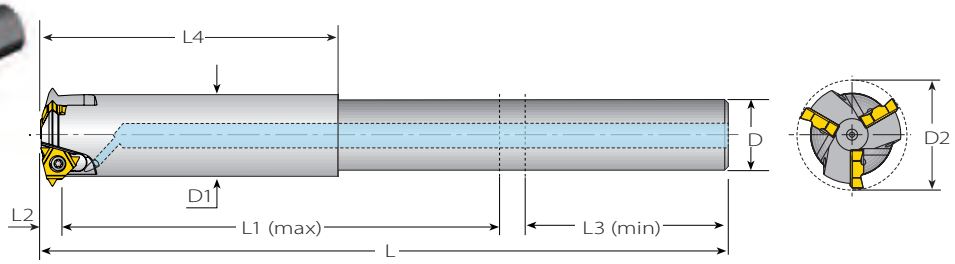
Shell Mill for U-style Inserts

Insert Size	Ordering Code	EDP No.	Dimensions (inch)					No. of Flutes	Spare Parts (Ordering code & EDP No.)		
IC			D1	D2	d(H7)	H	L2	Z	Insert Screw	Torx Key	Holder Screw
3/8"U	TM4SC D169-050-3U	67750	1.38	1.69	0.50	1.58	0.31	4	SN3T (70038)	HK3T (70228)	1/4-28x1.25 (70222)
	TM5SC D208-075-3U	67751	1.77	2.09	0.75	1.58	0.31	5			3/8-24x1.25 (70223)
1/2"U	TM6SC D346-100-4U	67752	2.99	3.47	1.00	2.00	0.39	6	SA4T (70032)	HK4T (70241)	1/2-20x1.50 (70224)
	TM7SC D435-150-4U	67761	3.83	3.86	1.50	2.17	0.39	8			3/4-16x1.75 (70226)

Thread Application U-Style Shell Mill

Toolholder	Min. Thread Ø						
	D2	ISO Coarse	ISO Fine	UNC	UN/UNF/UNEF/UNS	BSP (G)	Partial 55°
TM4SC D169-050-3U	1.69	M56x5.5, M64x6.0,	M45x1.5, M48x2.0, M48x3.0, M48x4.0	2-4.5, 2½ - 4	1 13/16-16UN, 1⅞-14UNS, 1 13/16 12UN, 1⅞-10UNS, 1⅞-8UN, 1 15/16-6UN	1½ - 11	1⅞-16, 1⅞-12, 1⅞-8, 2⅛-6, 2-4.5, 2¼-4
TM5SC D208-075-3U	2.09	M64x6.0	M55x1.5, M56x2.0, M58x3.0,M58x4.0	2½ - 4	2¼-16UN, 2¼-14UNS, 2¼-12UN, 2¼-10UNS, 2¼-8UN, 2⅜-6UN	2 - 11	2¼-16, 2¼-12, 2⅜-8, 2⅜-6, 3-5, 3½-4.5
TM6SC D346-100-4U	3.47	-	M95x6.0, M125x8	3¾ - 4	-	3½ - 11	4¼-4, 4-3
TM7SC D435-150-4U	4.35	-	M120x6.0, M125x8	-	4¾-4UN	-	-

TMSD Standard Toolholder - Steel Cylindrical Shank (A-Style)



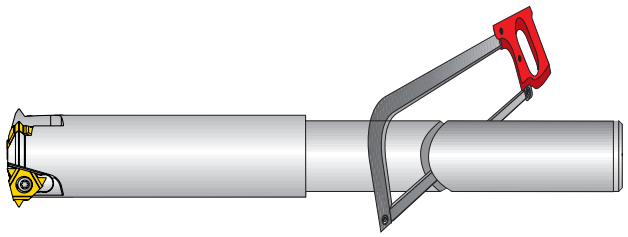
Coolant-Thru is recommended, especially when D2>0.7 x nominal thread diameter

Steel Cylindrical Shank for A-Style Inserts

Insert Size	Ordering Code	EDP No.	Dimensions (inch)								No. of Flutes	Spare Parts (Ordering code & EDP No.)	
IC			L	L1 (max)	L2	L3 (min)	L4	D	D1	D2	Z	Insert Screw	Torx Key
1/4"A	TM3SC 075C102-415-2A	67748	7.20	4.15	0.12	1.57	-	0.75	0.75	1.02	3	SN2T (70036)	HK2T (70227)
3/8"A	TM3SC 100C138-512-3A	67749	8.35	5.12	0.16	1.80	3.08	1.00	1.11	1.39	3	SA3T (70028)	HK3T (70228)

Thread Application for A-Style Toolholders (Steel Cylindrical Shank)

Toolholder	Min. Thread Ø					
	D2	ISO Coarse	ISO Fine	UNC	UN/UNF/UNEF/UNS	BSP (G)
TM3SC 075C102-415-2A	1.02	-	M28x1.5, M29x2.0, M30x2.5, M30x3.0	-	1⅛-16UN, 1⅛-14UNS, 1³⁄₁₆-12UN, 1¼-10UNS, 1³⁄₁₆-8UN	-
TM3SC 100C138-512-3A	1.39	-	M38x2.0, M39x2.5, M39x3.0, M40x4.0	-	1⁹⁄₁₆-12UN, 1⅝-10UNS, 1⅝-8UN, 1⅝-6UN	-



Length of cylindrical shank toolholders can be modified to reduce chatter (vibration).
Note: Length of shank inside the clamping device should be minimum L3.

Recommended Grades, Cutting Speeds Vc [ft/min] and Feed f [inch/tooth]

Material Group	Vardex No.	Material		Hardness Brinell HB	Vc [ft/min]		Feed* f [inch/tooth] by Cutting Dia. (D2)		
					VBX	VTX	0.51-0.91	0.94-1.65	Shell Mill
P Steel	1	Unalloyed steel	Low carbon (C=0.1-0.25%)	125	328 - 689	295 - 590	0.0079 - 0.0126	0.0118 - 0.0197	0.0118 - 0.0295
	2		Medium carbon (C=0.25-0.55%)	150	328 - 590	295 - 558	0.0079 - 0.0126	0.0118 - 0.0197	0.0118 - 0.0295
	3		High Carbon (C=0.55-0.85%)	170	328 - 558	295 - 525	0.0059 - 0.0091	0.0098 - 0.0138	0.0098 - 0.0205
	4	Low alloy steel (alloying elements≤5%)	Non hardened	180	197 - 295	295 - 508	0.0067 - 0.011	0.011 - 0.0177	0.011 - 0.0264
	5		Hardened	275	262 - 492	262 - 525	0.0059 - 0.011	0.0098 - 0.0177	0.0098 - 0.0264
	6		Hardened	350	230 - 459	230 - 492	0.0059 - 0.0098	0.0098 - 0.0157	0.0098 - 0.0236
	7	High alloy steel (alloying elements>5%)	Annealed	200	197 - 426	230 - 377	0.0059 - 0.0087	0.0079 - 0.0118	0.0079 - 0.0177
	8		Hardened	325	230 - 361	197 - 328	0.0051 - 0.0083	0.0071 - 0.0118	0.0071 - 0.0177
	9	Cast steel	Low alloy (alloying elements<5%)	200	328 - 558	328 - 558	0.0059 - 0.0087	0.0079 - 0.0118	0.0079 - 0.0177
	10		High alloy (alloying elements >5%)	225	230 - 394	230 - 426	0.0047 - 0.0087	0.0067 - 0.0118	0.0067 - 0.0177
M Stainless Steel	11	Stainless steel Feritic	Non hardened	200	328 - 558	394 - 590	0.0059 - 0.0087	0.0087 - 0.0134	0.0087 - 0.0197
	12		Hardened	330	328 - 558	394 - 590	0.0063 - 0.0091	0.0083 - 0.0126	0.0083 - 0.0189
	13	Stainless steel Austenitic	Austenitic	180	230 - 459	328 - 459	0.0059 - 0.0098	0.0098 - 0.0157	0.0098 - 0.0236
	14		Super Austenitic	200	230 - 459	328 - 459	0.0047 - 0.0079	0.0067 - 0.0102	0.0067 - 0.0154
	15	Stainless steel Cast Feritic	Non hardened	200	230 - 459	328 - 459	0.0063 - 0.0094	0.0098 - 0.0146	0.0098 - 0.0217
	16		Hardened	330	230 - 459	328 - 459	0.0047 - 0.0079	0.0067 - 0.0102	0.0067 - 0.0154
	17	Stainless steel Cast austenitic	Austenitic	200	230 - 394	328 - 394	0.0059 - 0.0087	0.0079 - 0.0118	0.0079 - 0.0177
	18		Hardened	330	230 - 394	328 - 394	0.0047 - 0.0079	0.0067 - 0.0102	0.0067 - 0.0154
K Cast Iron	28	Malleable Cast iron	Ferritic (short chips)	130	197 - 426	328 - 394	0.0063 - 0.0094	0.0098 - 0.0146	0.0098 - 0.0217
	29		Pearlitic (long chips)	230	197 - 394	262 - 328	0.0059 - 0.0087	0.0079 - 0.0118	0.0079 - 0.0177
	30	Grey cast iron	Low tensile strength	180	197 - 426	262 - 328	0.0059 - 0.0087	0.0087 - 0.0134	0.0087 - 0.0197
	31		High tensile strength	260	197 - 328	262 - 328	0.0059 - 0.0087	0.0079 - 0.0118	0.0079 - 0.0177
	32	Nodular SG iron	Feritic	160	197 - 410	262 - 328	0.0039 - 0.0079	0.0059 - 0.0098	0.0059 - 0.0146
	33		Pearlitic	260	164 - 295	197 - 295	0.0059 - 0.0087	0.0079 - 0.0118	0.0079 - 0.0177
N(K) Non-Ferrous Metals	34	Aluminium alloys Wrought	Non aging	60	328 - 820		0.0118 - 0.0197	0.0236 - 0.0394	0.0236 - 0.0591
	35		Aged	100	328 - 590		0.011 - 0.0197	0.0197 - 0.0354	0.0197 - 0.0472
	36	Aluminium alloys	Cast	75	492 - 1,312		0.011 - 0.0197	0.0197 - 0.0354	0.0197 - 0.0472
	37		Cast & aged	90	492 - 918		0.0098 - 0.0157	0.0157 - 0.0236	0.0157 - 0.0354
	38	Aluminium alloys	Cast Si 13-22%	130	262 - 492		0.011 - 0.0197	0.0197 - 0.0354	0.0197 - 0.0472
	39	Copper and Copper alloys	Brass	90	394 - 689	328 - 656	0.0118 - 0.0197	0.0236 - 0.0394	0.0236 - 0.0591
	40		Bronze and non leaded copper	100	394 - 689	328 - 656	0.011 - 0.0197	0.0197 - 0.0354	0.0197 - 0.0472
S(M) Heat Resistant Material	19	High temperature alloys	Annealed (Iron based)	200	66 - 148	66 - 131	0.0035 - 0.0059	0.0047 - 0.0087	0.0047 - 0.013
	20		Aged (Iron based)	280	66 - 98	66 - 98	0.0028 - 0.0051	0.0039 - 0.0079	0.0039 - 0.0118
	21		Annealed (Nickel or Cobalt based)	250	49 - 66	49 - 66	0.0031 - 0.0059	0.0031 - 0.0079	0.0031 - 0.0118
	22		Aged (Nickel or Cobalt based)	350	33 - 49	33 - 49	0.0031 - 0.0059	0.0031 - 0.0079	0.0031 - 0.0118
	23	Titanium alloys	Pure 99.5 Ti	400Rm	230 - 459	230 - 394	0.0028 - 0.0051	0.0039 - 0.0079	0.0039 - 0.0118
	24		α+β alloys	1050Rm	66 - 164	66 - 164	0.0028 - 0.0051	0.0039 - 0.0079	0.0039 - 0.0118
H(K) Hardened Material	25	Extra hard steel	Hardened & tempered	45-50HRc	49 - 148	49 - 148	0.002 - 0.0047	0.002 - 0.0071	0.002 - 0.0106
	26			51-55HRc	49 - 131	49 - 131	0.002 - 0.0047	0.002 - 0.0071	0.002 - 0.0106

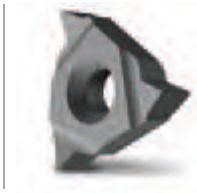
* When using a Shell Mill holder, Feed can be increased by 50%

Grades

Grade	Application
VBX	TiCN coated carbide grade. Excellent grade for **steels and general use**.
VTX	TiAlN coated carbide grade. Ideal for **Stainless Steels.**

U Style

A Style



Mini-L Style

TMSD