



Milling

> Thread Milling

Standard

MiTM

TMSD

Solid Carbide

> Groove Milling

MILLING

Threading

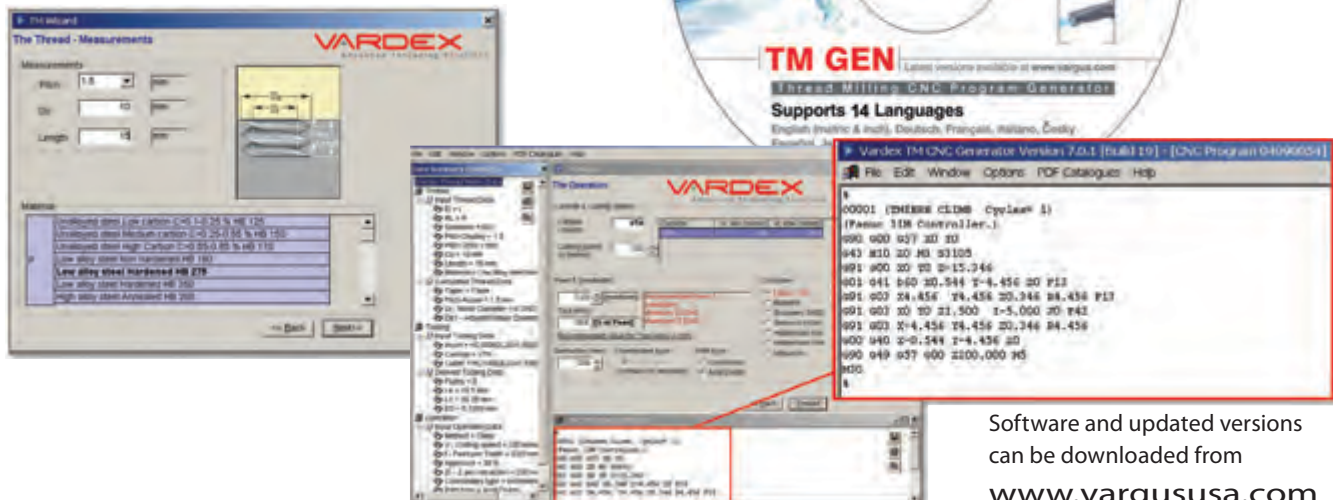
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Grooving

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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

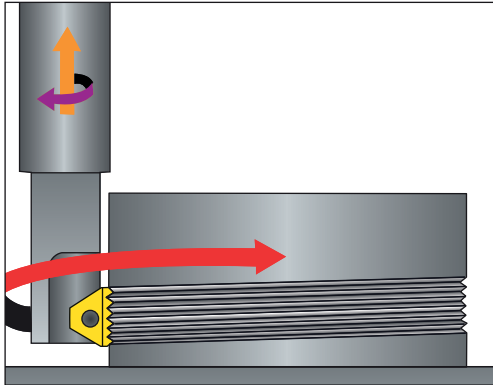
A Tool for EVERY Thread Milling Job!

Regular Threads	Standard Thread  TMC From M15x1.0 (9/16"x32UN)	Conical Thread  TMNC From 1/4"x18NPT	Coarse Pitch  TMC/124... From M10x0.75 (7/16"x20UNF)	
	Short Thread  TMSC From Pitch 0.35mm (80 TPI)	Long Thread  TMLC Up to 98.0mm (3.86")	Extra Long Thread  TMSD Up to 144mm (5.7")	Extra Long Thread  TMSD Shell Mill Up to 200mm (7.88")
	Fine  TMC From pitch 0.35mm (80 TPI)	Large - Multi Tooth  BTMC...-B Up to ISO 6.0 (4UN)	Large - Single Point  TMVC Up to ISO 6.0 (4UN)	
	Long Inserts  BTMC...-B Up to 38.9mm (1.53")	Offset Inserts  TMOC Effective length up to 50.8mm (2.0")		
Multi-Flute for Faster Machining	Small & Medium Diameter  MITM Up to 5 flutes	Medium Diameter  TM2 2 flutes	Large Diameter  Shell Mill Up to 9 flutes	Large Diameter  MiTM Shell Mill Up to 8 flutes
	Indexable Inserts  TMMC From M10x0.75 (7/16"x32UN)	Extremely Small Threads  Millipro Millipro HD From M1.0x0.25 (0-80UNF) Up to 62 HRc	Long Thread  TM Solid Deep Threading From M6x1, Max thread length 63mm (2.362")	
Small Thread Diameters	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 M6x1.0	
	Helicool+Chamfer  Helicool-C (HCC) From M6x1.0	Economical Tool  He-Lex From M3x0.5 (No.8-36UNF)	Drill, Thread and Chamfer  HTC From M6x1.0	

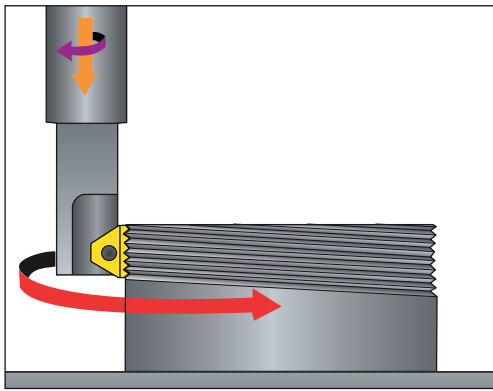
Thread Milling Methods

External

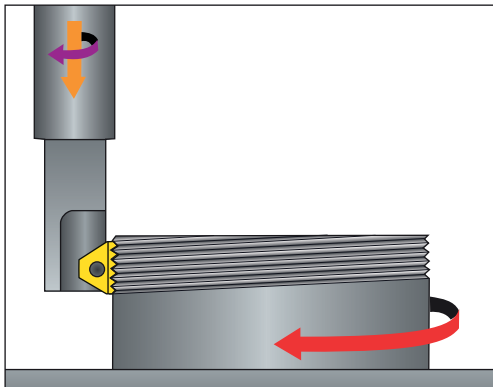
Right Hand Thread - Conventional Milling



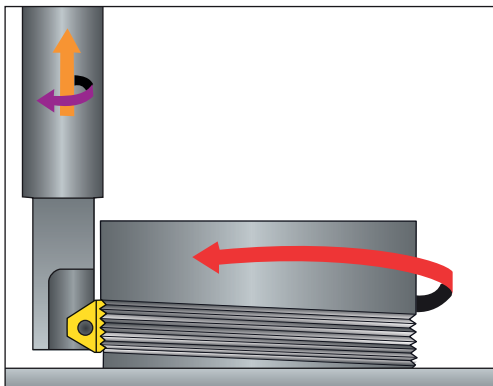
Left Hand Thread - Conventional Milling



Right Hand Thread - Climb Milling

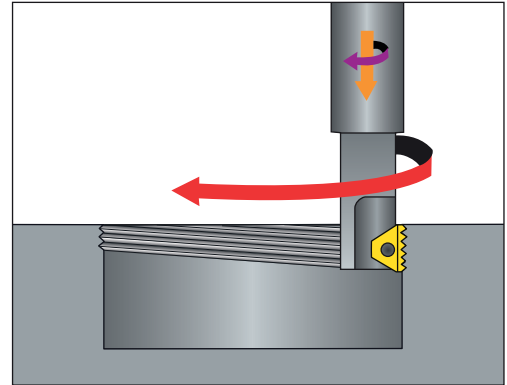


Left Hand Thread - Climb Milling

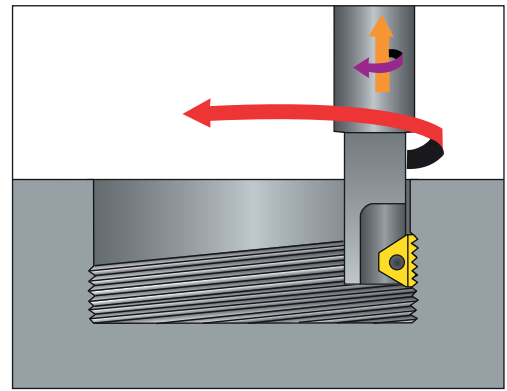


Internal

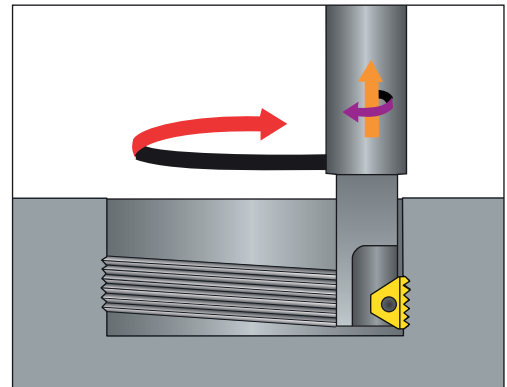
Right Hand Thread - Conventional Milling



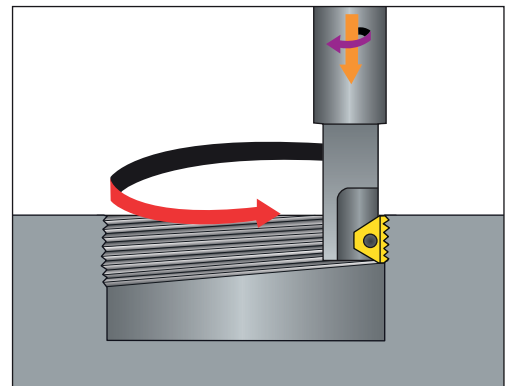
Left Hand Thread - Conventional Milling



Right Hand Thread - Climb Milling



Left Hand Thread - Climb Milling



Tooling recommendation*

(For MiTM tools see page 258)

(For TMSD tools see page 277)

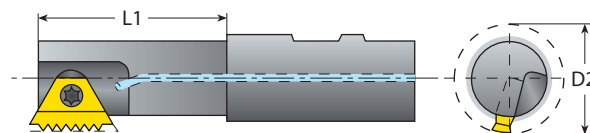
(For TM Solid Carbide tools see page 291)

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ISO - Internal

Pitch mm	Nominal Dia. mm	Holder	Insert	L1-Toolholder Overhang	D2-Tool Cutting dia.*	h min - Thread 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	
	12-14	TMMC050-6.0	6.0I1.0ISOTM...	0.47	0.35	
1.0	15-18	TMC050-2	2I1.0ISOTM2...	0.47	0.45	0.023
	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	
	12	TMMC050-6.0	6.0I1.25ISOTM...028/002	0.47	0.35	0.028
1.25	14	TMMC050-6.0	6.0I1.25ISOTM...	0.47	0.35	
	14-15	TMMC050-6.0	6.0I1.5ISOTM...	0.47	0.35	
1.5	16-20	TMC050-2	2I1.5ISOTM2...	0.47	0.45	0.034
	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
	14-20	TMC050-2	2I2.0ISOTM...028/004	0.47	0.45	
	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	
2.0	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)

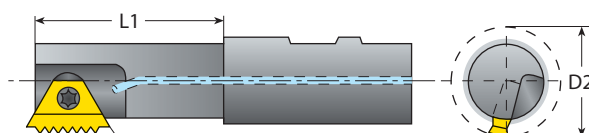
(For TM Solid Carbide tools see page 291)

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ISO - Internal (con't)

Pitch mm	Nominal Dia. mm	Holder	Insert	L1-Toolholder Overhang	D2-Tool Cutting dia.*	h min - Thread 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	
3.5	140-250	TMSH-D500-150-5	5I3.0ISOTM2...		4.92	0.080
	30-33	TMC100-5 124/204	5I3.5ISOTM...028/008	1.57	0.98	
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	
4.5	115-135	TMSH-D400-125-6B	6BI4.0ISOTM2...		3.94	0.102
	140-300	TMSH-D500-150-6B	6BI4.0ISOTM2...		4.92	
5.0	42-45	TMC100-5	5I4.5ISOTM...028/011	2.05	1.18	0.114
	48-52	TMC100-5	5I5.0ISOTM...028/075	2.05	1.18	
5.5		TMC125-6B	6BI5.0ISOTM2...	2.17	1.38	0.125
	56	TMC125-6B	6BI5.5ISOTM2...	2.17	1.38	
6.0	60	TMC150-6B	6BI5.5ISOTM2...	2.56	1.81	0.136
	64-68	TMC150-6B	6BI6.0ISOTM2...	2.56	1.81	
	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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Tooling recommendation (con't)*

(For MiTM tools see page 258)

(For TMSD tools see page 277)

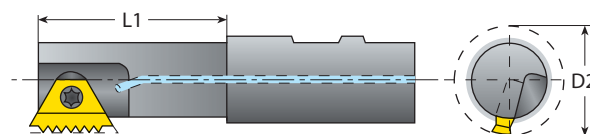
(For TM Solid Carbide tools see page 291)

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UN - Internal

Pitch tpi	Nominal Dia. Inch	Holder	Insert	L1-Toolholder Overhang	D2-Tool Cutting dia.*	h min - Thread 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	
24	1 3/16-1 1/2	TM2C100-3	3I28UNTM2...	1.69	1.02	0.024
	9/16-11/16	TMC050-2	2I24UNTM2...	0.47	0.45	
	7/16	TMMC050-6.0	6.0I20UNTM...028/012	0.47	0.35	
	1/2-9/16	TMMC050-6.0	6.0I20UNTM...	0.47	0.35	
	5/8-13/16	TMC050-2	2I20UNTM2...	0.47	0.45	
20	7/8	TMC0625-3	3I20UNTM2...	0.87	0.67	0.029
	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	



* 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)

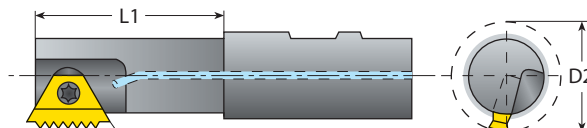
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UN - Internal (con"t)

Pitch tpi	Nominal Dia. Inch	Holder	Insert	L1-Toolholder Overhang	D2-Tool Cutting dia.*	h min - Thread 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
	9/16-11/16	TMC075-2 124/205	2I12UNTM...028/016	0.61	0.39	
12	3/4	TMNC0625-3	3I12UNTM...028/020	0.87	0.61	0.048
	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
	1 3/8-1 9/16	TMC100-5 124/204	5I6UNTM...028/025	1.57	0.98	
	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	
6	3 7/8-4	TMSH-D300-100-6B	6BI6UNTM2...		3.15	0.096
	1 3/4	TMC100-5	5I5UNTM...028/077	2.05	1.18	
	2-2 1/4	TMC125-6B	6BI4.5UNTM2...	2.17	1.38	
	2 1/2	TMC150-6B	6BI4UNTM2...	2.56	1.81	
	2 3/4-3	TM2C150-6B	6BI4UNTM2...	2.56	2.05	
	3 1/4-4	TMSH-D250-075-6B	6BI4UNTM2...		2.48	
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)

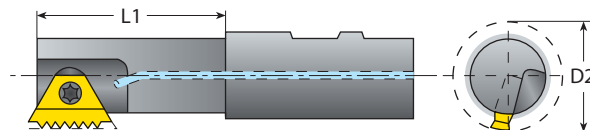
(For TM Solid Carbide tools see page 291)

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UNJ - Internal

Pitch tpi	Nominal Dia. Inch	Holder	Insert	L1-Toolholder Overhang	D2-Tool Cutting dia.*	h min - Thread 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	
14	2 1/4-2 3/8	TMSH-D200-075-3	3I16UNJTM2...		1.97	0.037
	7/8	TMC050-2	2I14UNJTM2...	0.47	0.45	
	7/8	TMNC0625-3	3I12UNJTM2...	0.87	0.61	
	15/16-1	TMC0625-3	3I12UNJTM2...	0.87	0.67	
12	1 1/16	TMC075-3	3I12UNJTM2...	1.69	0.79	0.044
	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)

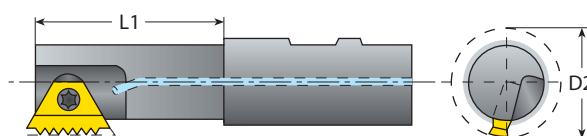
(For TM Solid Carbide tools see page 291)

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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	6.0E126WTM...	0.47	0.35	
	5/8-3/4	TMC050-2	2E126WTM2...	0.47	0.45	
	13/16-7/8	TMC0625-3	3E126WTM2...	0.87	0.67	
	15/16-1	TMC075-3	3E126WTM2...	1.69	0.79	
	1 1/16-1 1/8	TMLC100-3	3E126WTM2...	0.98	0.87	
	1 3/16-1 5/8	TM2C100-3	3E126WTM2...	1.69	1.02	
	1 3/4-2	TMSH-D150-050-2	2E126WTM2...		1.5	
20	1/2	TMMC050-6.0	6.0I20WTM...028/037	0.47	0.35	0.032
	9/16	TMMC050-6.0	6.0E120WTM2...	0.47	0.35	
	5/8-13/16	TMC050-2	2E120WTM2...	0.47	0.45	
	7/8-15/16	TMC0625-3	3E120WTM2...	0.87	0.67	
	1	TMC075-3	3E120WTM2...	1.69	0.79	
	1 1/16-1 3/16	TMLC100-3	3E120WTM2...	0.98	0.87	
	1 1/4-1 5/8	TM2C100-3	3E120WTM2...	1.69	1.02	
	1 3/4-2 1/8	TMSH-D150-050-2	2E120WTM2...		1.5	
18	2 1/4-3	TMSH-D200-075-3	3E120WTM2...		1.97	0.035
	7/16	TMMC050-6.0	6.0I18WTM...028/035	0.47	0.35	
	1/2	TMC075-2 124/205	2I16WTM...028/051	0.61	0.39	
	9/16-3/4	TMC050-2	2I16WTM...028/038	0.47	0.45	
	13/16	TMNC0625-3	3E116WTM2...	0.87	0.61	
	7/8-15/16	TMC0625-3	3E116WTM2...	0.87	0.67	
	1-1 1/16	TMC075-3	3E116WTM2...	1.69	0.79	
	1 1/8-1 1/4	TMLC100-3	3E116WTM2...	0.98	0.87	
16	1 5/16-1 3/8	TM2C100-3	3E116WTM2...	1.69	1.02	0.040
	1.4-1 5/8	TMC100-5	5E116WTM2...	2.05	1.18	
	1 3/4-1.9	TMC125-5	5E116WTM2...	2.28	1.46	
	2-2 1/4	TM2C125-5	5E116WTM2...	1.77	1.65	
	2 3/8-2 3/4	TMSH-D200-075-3	3E116WTM2...		1.97	
	2 7/8-3 3/8	TMSH-D250-075-5	5E116WTM2...		2.48	
	3 1/2-4 1/8	TMSH-D300-100-5	5E116WTM2...		3.15	
	4 1/4-5 1/8	TMSH-D400-125-5	5E116WTM2...		3.94	
	5 1/4-7	TMSH-D500-150-5	5E116WTM2...		4.92	
	5/8-11/16	TMC075-2 124/206	2I14WTM...028/039	0.61	0.47	
	3/4	TMC0625-3 124/201	3I12WTM...028/040	0.81	0.61	
	13/16	TMC0625-3	3I12WTM...028/041	0.87	0.67	
12	15/16-1 5/16	TMC075-3	3I12WTM...028/041	1.69	0.79	0.054
	1 3/8-1 7/16	TMC100-5	5I12WTM...028/050	2.05	1.18	
	1 1/2-1 3/4	TMC100-5	5E112WTM2...	2.05	1.18	
	1 7/8	TMC125-5	5E112WTM2...	2.28	1.46	
	2-2 1/4	TM2C125-5	5E112WTM2...	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)

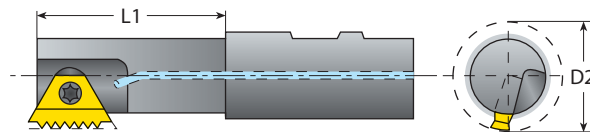
(For TM Solid Carbide tools see page 291)

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W - Internal (con't)

Pitch tpi	Nominal Dia. Inch	Holder	Insert	L1-Toolholder Overhang	D2-Tool Cutting dia.*	h min - Thread 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	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

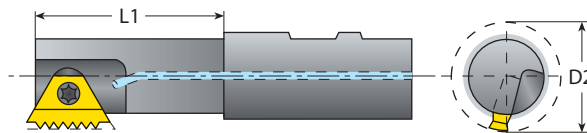
Pitch tpi	Nominal Dia. Inch	Holder	Insert	L1-Toolholder Overhang	D2-Tool Cutting dia.*	h min - Thread Profile depth
19	1/4	TMMC075-6.0	6.0EI19WTM...	0.67	0.35	0.034
	3/8	TMC075-2	2EI19WTM2...	0.79	0.45	
14	1/2-5/8	TMC075-2	2EI14WTM2...	0.79	0.45	0.046
	3/4-7/8	TMC0625-3	3EI14WTM2...	0.87	0.67	
11	1	TMC100-5 124/204	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 tpi	Nominal Dia. Inch	Holder	Insert	L1-Toolholder Overhang	D2-Tool Cutting dia.*	h min - Thread 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 tpi	Nominal Dia. Inch	Holder	Insert	L1-Toolholder Overhang	D2-Tool Cutting dia.*	h min - Thread 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	
	1	TMNC075-3	3EI11.5NPTTM...	0.91	0.75	
11.5	1 1/4	TMC100-5	5EI11.5NPTTM...	2.05	1.18	0.065
	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

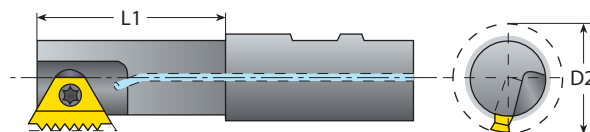
Pitch	Nominal Dia.	Holder	Insert	L1-Toolholder	D2-Tool	h min - Thread
tpi	Inch			Overhang	Cutting dia.*	Profile depth
18	1/4-3/8	TMC075-2 124/209	2I18NPTFTM...028/078	0.61	0.39	0.039
14	1/2	TMNC0625-3	3EI14NPTFTM...	0.87	0.61	0.053
	3/4	TMNC075-3	3EI14NPTFTM...	0.91	0.75	
11.5	1	TMNC075-3	3EI11.5NPTFTM...	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)

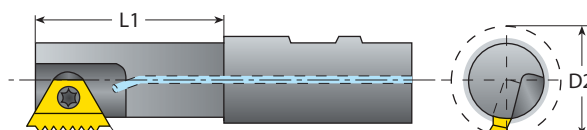
(For TM Solid Carbide tools see page 291)

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ACME - Internal

Pitch tpi	Nominal Dia. Inch	Holder	Insert	L1-Toolholder Overhang	D2-Tool Cutting dia.*	h min - Thread 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



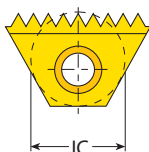
> Standard Inserts

THREAD MILLING INSERTS

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■ American UN (Internal) Coarse Pitch TM Inserts.....	Page 213
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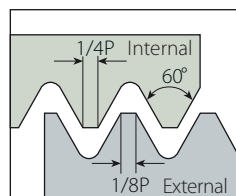
VarDEX Ordering Code System

Thread Milling Inserts

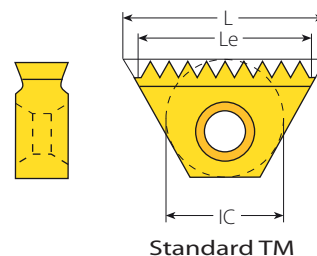
3	B	I	12	UN	TM2	F	VBX	028/...
1	2	3	4	5	6	7	8	9
1 - Insert Size 6.0 - 6.0 mm 2 - 1/4" 3 - 3/8" 3B - 3/8"B 4 - 1/2" 5 - 5/8" 6B - 3/4"B			2 - Cutting Edge Length B - TMB			3 - Type of Insert E - External I - Internal EI - External + Internal		4 - Pitch 80 - 4(tpi) 0.35 - 6.0 (mm)
			5 - Standard ISO- ISO Metric UN- American UN UNJ- UNJ W- Whitworth for BSW, BSP NPT - NPT NPTF- NPTF NPS- NPS			6 - System TM2 TM		8 - Carbide grade VBX VTX VK2
						7 - Pitch Type F = Fine Pitch		9 - Coarse Pitch Inserts 028/...

American UN

External / Internal



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



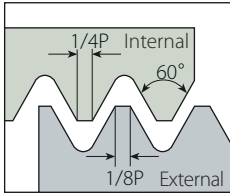
Standard TM

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	
3/8"	0.63	16	2E16UNTM2...	2I16UNTM2...	0.38	6	TMC...-3 TMSH...-3
		14	2E14UNTM2...	2I14UNTM2...	0.36	5	
		40		3I40UNTM2...	0.58	23	
		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	
3/8"B	0.87	13	3E13UNTM2...	3I13UNTM2...	0.54	6	BTMC...-3B TMSH...-3B
		12	3E12UNTM2...	3I12UNTM2...	0.58	7	
		11.5	3E11.5UNTM2...	3I11.5UNTM2...	0.52	6	
		24	3BE24UNTM2...	3BI24UNTM2...	0.83	20	
		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	

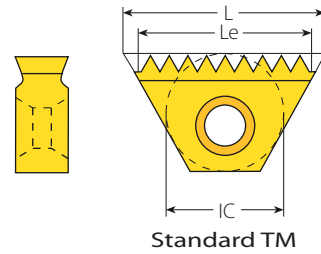
Sample order: **3E24UNTM2 VBX** All inserts have 2 cutting edges, except MiniTM (IC 6.0 mm), which has one cutting edge. For toolholder information, see page 236.

American UN (con't)

External / Internal



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



Standard TM

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	

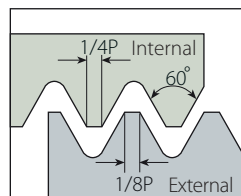
Sample order: **5E24UNTM2 VBX**

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

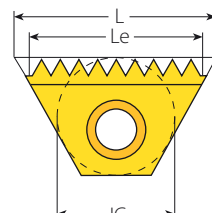
For toolholder information, see page 236.

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

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Sample tool requirement for thread 9/16"-12 UNC

Ordering codes:

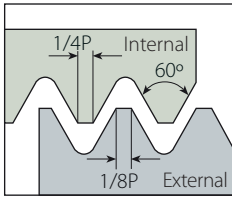
Insert: **2I12UNTM VBX 028/016**

Toolholder: **TMC075-2 124/205**

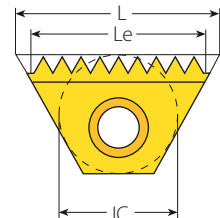
For toolholder information, see page 236.

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:

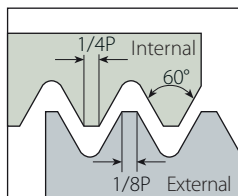
Insert: **5I6UNTM VBX 028/025**

Toolholder: **TMC 100-5 124/204**

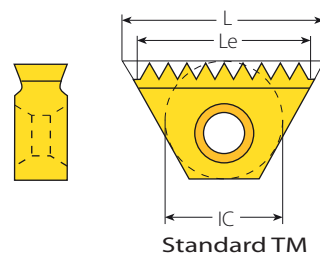
For toolholder information, see page 236.

American UN (con't)

External / Internal



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



Standard TM Inserts for TMO Toolholders

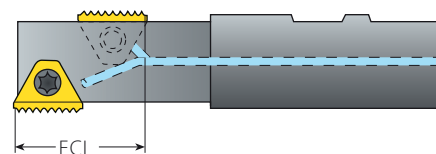
Insert Size		Pitch	Ordering Code		Toolholder	ECL
IC	L inch	tpi	External	Internal	TMO	inch
1/4"	0.43	48		2I48UNTM2...	TMOC075-2-1	0.77
		48		2I48UNTM2...	TMOC075-2-2	0.73
		48		2I48UNTM2...	TMOC075-2-9	0.75
		32		2I32UNTM2...	TMOC075-2-1	0.78
		28	2E28UNTM2...	2I28UNTM2...	TMOC075-2-3	0.68
		24	2E24UNTM2...	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

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Sample order: **2E16UNTM2 VBX**

For Le and number of teeth of the above inserts,
see the table for standard inserts on page 211-212.

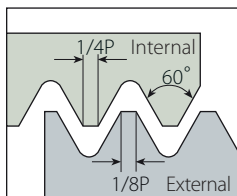
For toolholder information, see page 236.



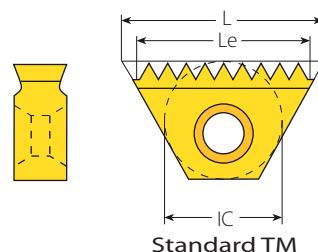
ECL - The Effective Cutting Length

American UN (con't)

External / Internal



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



Standard TM Inserts for TMO Toolholders (con't)

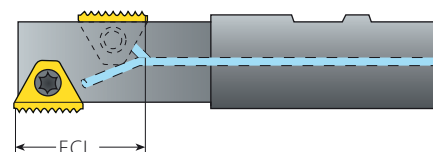
Insert Size		Pitch	Ordering Code		Toolholder	ECL
IC	L inch	tpi	External	Internal	TMO	inch
5/8"	1.06	24	5E24UNTM2..	5I24UNTM2..	TMOC100-5-1	2.00
		24	5E24UNTM2...	5I24UNTM2...	TMOC100-5-2	1.83
		20	5E20UNTM2...	5I20UNTM2...	TMOC100-5-1	2.00
		18	5E18UNTM2...	5I18UNTM2...	TMOC100-5-1	2.00
		18	5E18UNTM2...	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...	5I12UNTM2...	TMOC100-5-1	2.00
		11.5	5E11.5UNTM2...	5I11.5UNTM2...	TMOC100-5-5	1.83
		11	5E11UNTM2...	5I11UNTM2...	TMOC100-5-6	1.91
		11	5E11UNTM2...	5I11UNTM2...	TMOC100-5-1	1.82
		10	5E10UNTM2...	5I10UNTM2...	TMOC100-5-7	1.70
		10	5E10UNTM2...	5I10UNTM2...	TMOC100-5-7	1.80
		9	5E9UNTM2...	5I9UNTM2...	TMOC100-5-8	1.78
		8	5E8UNTM2...	5I8UNTM2...	TMOC100-5-9	1.75
		7	5E7UNTM2...	5I7UNTM2...	TMOC100-5-10	1.71
		7	5E7UNTM2...	5I7UNTM2...	TMOC100-5-10	1.86
		6	5E6UNTM2...	5I6UNTM2...	TMOC100-5-2	1.67
		6	5E6UNTM2...	5I6UNTM2...	TMOC100-5-2	1.83
		5	5E5UNTM2...	5I5UNTM2...	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.

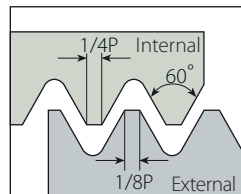
For toolholder information, see page 236.



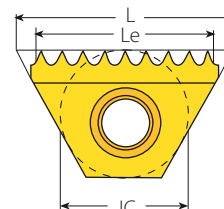
ECL - The Effective Cutting Length

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	Toolholder
IC	L inch	tpi	External	Internal	inch		
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.

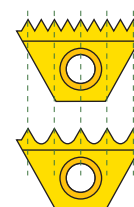
For toolholder information, see page 236.

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.

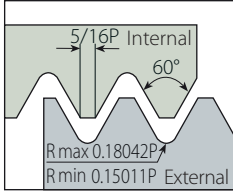
Important!

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

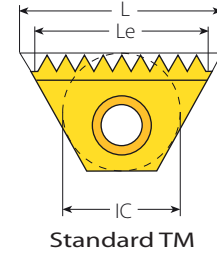


UNJ

External / Internal



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	
5/8"	1.06	12	5E12UNJTM2...	5I12UNJTM2...	1.00	16	TMC...-5 TMSH...-5
		12	5E12UNJTM2...	5I12UNJTM2...	1.00	12	
		11	5E11UNJTM2...	5I11UNJTM2...	1.00	11	

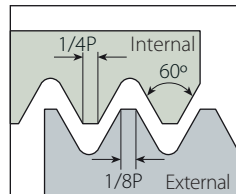
Insert ordering code: **3E16UNJTM2 VBX**

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

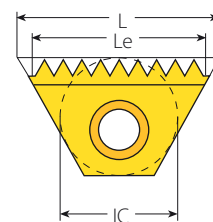
For toolholder information, see page 236.

ISO Metric

External / Internal



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



Standard TM

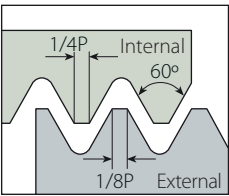
Standard TM

Insert Size		Pitch	Ordering Code		Le	Teeth	Toolholder
IC	L inch	mm	External	Internal	inch		
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	

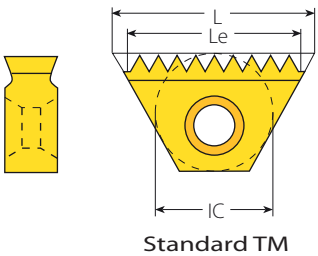
continued on next page ►

ISO Metric (con't)

External / Internal



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



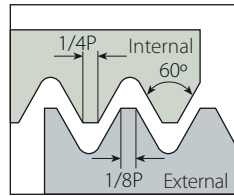
Standard TM (con't)

Insert Size		Pitch	Ordering Code		Le	Teeth	Toolholder
IC	L inch	mm	External	Internal	inch		
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	

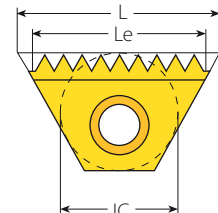
Sample order: 5I2.0ISOTM2 VBX
All inserts have 2 cutting edges, except MiniTM (IC 6.0 mm) which has one cutting edge.
For toolholder information, see page 236.

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:

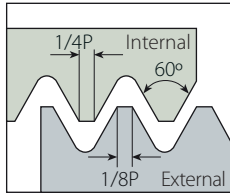
Insert: **2I2.0ISOTMVBX028/004**

Toolholder: **TMC075-2**

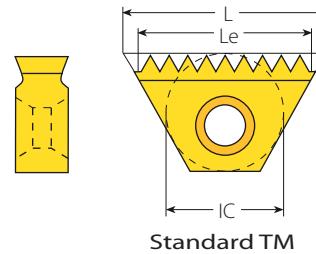
For toolholder information, see page 236.

ISO Metric (con't)

External / Internal



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



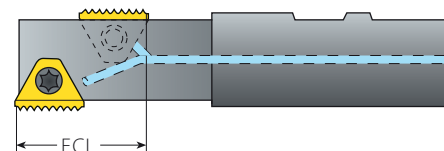
Standard TM Inserts for TMO Toolholders

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
5/8"	1.06	2.0	3E2.0ISOTM2...	3I2.0ISOTM2...	TMOC075-3-10	1.10
		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.

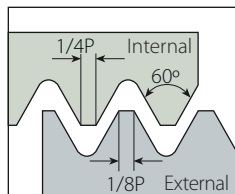
For toolholder information see page 236.



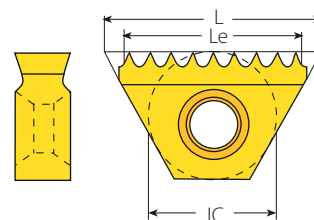
ECL - The Effective Cutting Length

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	
1/4"	0.43	0.9	6.0E0.9ISOTMF...		0.32	5	TMC...-2 TMSH...-2
		0.35	2E0.35ISOTM2F...	2I0.35ISOTM2F...	0.4	15	
		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	
3/8"	0.63	0.9	2E0.9ISOTM2F...		0.39	6	TMC...-3 TMSH...-3
		0.35	3E0.35ISOTM2F...	3I0.35ISOTM2F...	0.56	21	
		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.

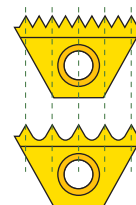
For toolholder information, see page 236.

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.

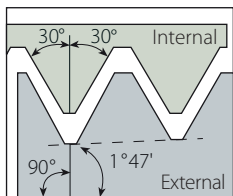
Important!

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

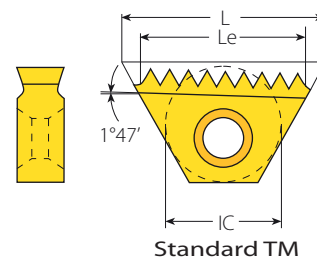


NPT

External / Internal



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



Standard TM

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	3E14NPTTM2...	0.57	8		
		11.5	3E11.5NPTTM2...	0.52	6		
3/8"B	0.87	14	3BE14NPTTM2...	0.86	12	BTMNC...-3B	BTMNC...-3BLH
		11.5	3BE11.5NPTTM2... *	0.78	9		
5/8"	1.06	11.5	5E11.5NPTTM2...	0.96	11	TM.C...-5	TM.C...-5LH
		8	5E8NPTTM2...	0.88	7	TMNC...-5	TMNC...-5LH
3/4"B	1.52	11.5	6BE11.5NPTTM2...	1.39	16	TMC...-6B	TMC...-6BLH
		8	6BE8NPTTM2...	1.25	10		

* Single sided insert - RH only

** For external thread only

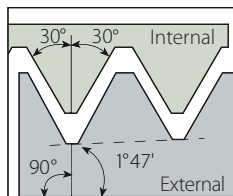
Sample order: **3E14NPTTM VBX**

NOTE: To thread with insert cutting edge marked "L", use LH toolholders.

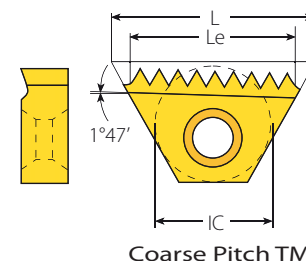
For toolholder information, see page 236.

NPT

Internal



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



Coarse Pitch TM

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

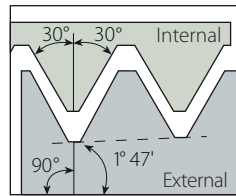
Sample order: **2I18NPTTM VBX 028/074**

NOTE: To thread with insert cutting edge marked "L", use LH toolholders.

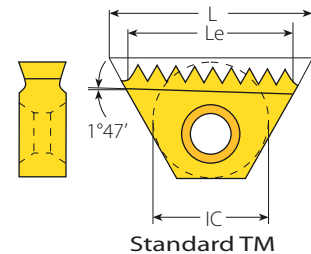
For toolholder information, see page 236.

NPTF (Dry Seal)

External / Internal



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



Standard TM

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	TMNC...-5	TMNC...-5LH
3/4"B	1.52	11.5	6BEI11.5NPTFTM2...	1.39	16	TMC...-6B	TMC...-6BLH
		8	6BEI8NPTFTM2...	1.25	10		

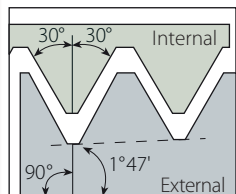
Sample order: **3EI14NPTFTM VBX**

NOTE: To thread with insert cutting edge marked "L", use LH toolholders.

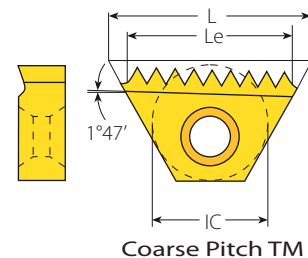
For toolholder information, see page 236.

NPTF (Dry Seal)

Internal



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



Coarse Pitch TM

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

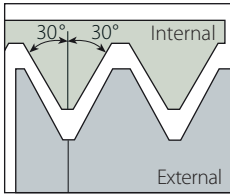
Sample tool requirement for thread 1/4" - 18NPTF

Ordering Codes Insert: **2I18NPTFTM VBX 028/078**

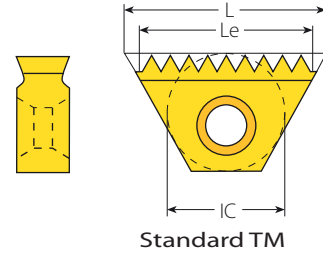
Toolholders: **TMC075-2 124/209**

NPS

External / Internal



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



Standard TM

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**

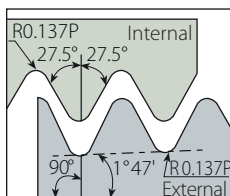
All inserts have 2 cutting edges.

For toolholder information, see page 236.

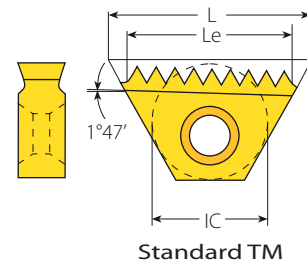
* One cutting edge.

BSPT

External / Internal



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



Standard TM

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	TMNC...-2	TMNC...-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

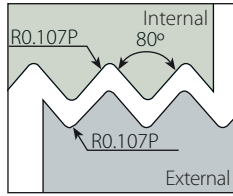
Sample Order: **5EI11BSPTTM VBX**

NOTE: To thread with insert cutting edge marked "L", use a LH toolholder.

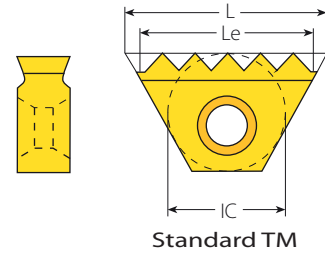
For toolholder information, see page 236.

Pg

External / Internal



Defined by: DIN 40430
Tolerance class: Standard



Standard TM

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
		18	2EI18PGTM2...	0.39	7	Pg9, Pg11, Pg13.5, Pg16	TMSH...-2
		16	2EI16PGTM2...	0.38	6	Pg21, Pg29, Pg36, Pg42, Pg48	
3/8"	0.63	20	3EI20PGTM2...	0.55	11	Pg7	TMC...-3
		18	3EI18PGTM2...	0.56	10	Pg9, Pg11, Pg13.5, Pg16	TMSH...-3
		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

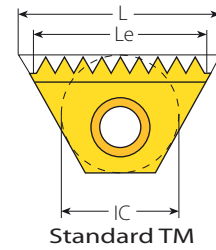
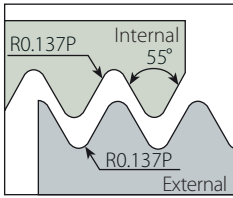
Insert Ordering Code: **5EI16PGTM2VBX**

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



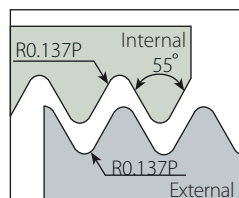
BSW Defined by: B.S.84:1956, DIN 259, ISO228/1:1982
 BSP Defined by: B.S.2779:1956
 Tolerance class: BSW-Medium class A, BSP-Medium class

Standard TM

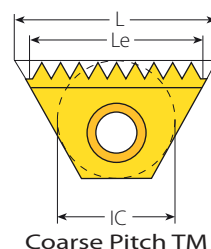
Insert Size		Pitch	Ordering Code		Le	Teeth	Toolholder
IC	L inch	tpi	External + Internal		inch		
6.0mm	0.41	28	6.0EI28WTM...		0.36	10	TMMC...-6.0
		26	6.0EI26WTM...		0.35	9	
		24	6.0EI24WTM...		0.38	9	
		20	6.0EI20WTM...		0.35	7	
		19	6.0EI19WTM...		0.37	7	
1/4"	0.43	28	2EI28WTM2...		0.39	11	TMC...-2 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	
3/8"B	0.87	11	3EI11WTM2...		0.55	6	TMC...-3B TMSH...-3B
		24	3BEI24WTM2...		0.83	20	
		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	
5/8"	1.06	11	3BEI11WTM2...		0.82	9	TMC...-5 TMSH...-5
		16	5EI16WTM2...		1.00	16	
		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	
3/4"B	1.52	7	5EI7WTM2...		0.86	6	TMC...-6B TMSH...-6B
		6	5EI6WTM2...		0.83	5	
		11	6BEI11WTM2...		1.36	15	
		6	6BEI6WTM2...		1.33	8	
		5	6BEI5WTM2...		1.20	6	
		4.5	6BEI4.5WTM2...		1.33	6	

W for BSW only (con't)

External / Internal



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

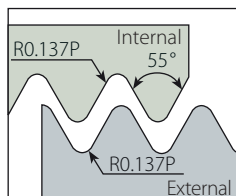
Ordering codes: Insert: **6.0I18WTM VBX 028/035** Toolholder: **TMMC 075-6.0**

For toolholder information, see page 236.

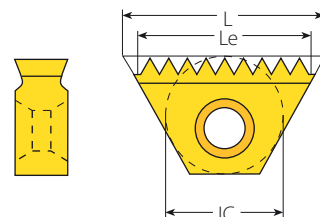
continued on next page ►

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	Toolholder	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

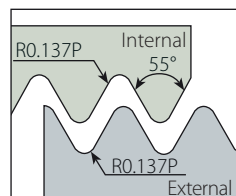
Ordering codes: Insert: **3I12WTM VBX 028/041**

Toolholder: **TMC 075-3**

For toolholder information, see page 236.

W for BSW only (con't)

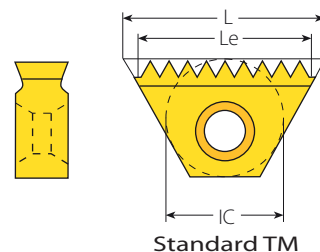
External / Internal



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



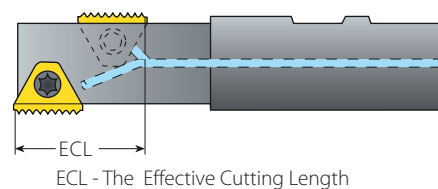
Standard TM Inserts for TMO Toolholders

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

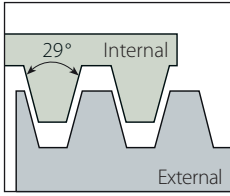
For Le and number of teeth of the above inserts, see the table for standard inserts on page 228.

For toolholder information see page 236.

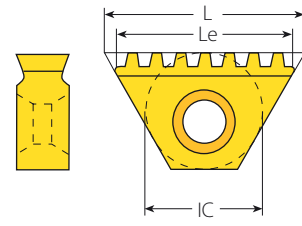


ACME

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

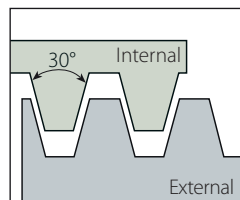
Sample tool requirement for thread ACME 1 3/4"-5

Ordering Code: Insert: 5I5ACME VBX 028/071 Toolholder: TMC100-5 124/204

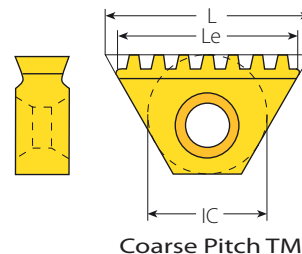
For toolholder information, see page 236.

TR

Internal



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



Coarse Pitch TM

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	212.0TRTM...028/028	1	0.39	5	TMC075-2 124/206	0.55
TR 18X2.0	1/4"	0.43	212.0TRTM...028/029	1	0.39	5	TMC075-2 124/206	0.63 - 0.71
TR 20X2.0	1/4"	0.43	212.0TRTM...028/029	1	0.39	5	TMC075-2 124/206	0.63 - 0.71
TR 24X3.0	1/2"	0.87	413.0TRTM...028/030	1	0.71	6	TMC100-4 124/202	0.83
TR 26X3.0	1/2"	0.87	413.0TRTM...028/031	1	0.71	6	TMC100-4 124/202	0.91 - 1.06
TR 28X3.0	1/2"	0.87	413.0TRTM...028/031	1	0.71	6	TMC100-4 124/202	0.91 - 1.06
TR 30X3.0	1/2"	0.87	413.0TRTM...028/031	1	0.71	6	TMC100-4 124/202	0.91 - 1.06
TR 32X3.0	1/2"	0.87	413.0TRTM...028/032	1	0.71	6	TMC100-4 124/207	1.14 - 1.30
TR 34X3.0	1/2"	0.87	413.0TRTM...028/032	1	0.71	6	TMC100-4 124/207	1.14 - 1.30
TR 36X3.0	1/2"	0.87	413.0TRTM...028/032	1	0.71	6	TMC100-4 124/207	1.14 - 1.30
TR 38X3.0	5/8"	1.06	513.0TRTM...028/033	2	0.94	8	TMC100-5 124/204	1.38 - 1.54
TR 40X3.0	5/8"	1.06	513.0TRTM...028/033	2	0.94	8	TMC100-5 124/204	1.38 - 1.54
TR 42X3.0	5/8"	1.06	513.0TRTM...028/033	2	0.94	8	TMC100-5 124/204	1.38 - 1.54
TR 44X3.0	5/8"	1.06	513.0TRTM...028/033	2	0.94	8	TMC100-5	1.61 - 1.77
TR 46X3.0	5/8"	1.06	513.0TRTM...028/033	2	0.94	8	TMC100-5	1.61 - 1.77
TR 48X3.0	5/8"	1.06	513.0TRTM...028/033	2	0.94	8	TMC100-5	1.61 - 1.77
TR 50X3.0	5/8"	1.06	513.0TRTM...028/033	2	0.94	8	TMC125-5	1.85 - 2.24
TR 52X3.0	5/8"	1.06	513.0TRTM...028/033	2	0.94	8	TMC125-5	1.85 - 2.24
TR 55X3.0	5/8"	1.06	513.0TRTM...028/033	2	0.94	8	TMC125-5	1.85 - 2.24
TR 60X3.0	5/8"	1.06	513.0TRTM...028/033	2	0.94	8	TMC125-5	1.85 - 2.24
TR 65X4.0	5/8"	1.06	514.0TRTM...028/034	2	0.94	6	TMC125-5	2.40 - 4.17
TR 70X4.0	5/8"	1.06	514.0TRTM...028/034	2	0.94	6	TMC125-5	2.40 - 4.17
TR 75X4.0	5/8"	1.06	514.0TRTM...028/034	2	0.94	6	TMC125-5	2.40 - 4.17
TR 80X4.0	5/8"	1.06	514.0TRTM...028/034	2	0.94	6	TMC125-5	2.40 - 4.17
TR 85X4.0	5/8"	1.06	514.0TRTM...028/034	2	0.94	6	TMC125-5	2.40 - 4.17
TR 90X4.0	5/8"	1.06	514.0TRTM...028/034	2	0.94	6	TMC125-5	2.40 - 4.17
TR 95X4.0	5/8"	1.06	514.0TRTM...028/034	2	0.94	6	TMC125-5	2.40 - 4.17
TR 100X4.0	5/8"	1.06	514.0TRTM...028/034	2	0.94	6	TMC125-5	2.40 - 4.17
TR 105X4.0	5/8"	1.06	514.0TRTM...028/034	2	0.94	6	TMC125-5	2.40 - 4.17
TR 110X4.0	5/8"	1.06	514.0TRTM...028/034	2	0.94	6	TMC125-5	2.40 - 4.17

Sample tool requirement for thread TR 38x3.0

Ordering Code: Insert: **513.0TRTM VBX 028/033** Toolholder: **TMC100-5 124/204**

For toolholder information, see page 236.



Thread Milling



> Standard
Toolholders

THREAD MILLING TOOLHOLDERS

■ VARDEX Ordering Code System.....	Page 236
■ Standard Toolholder TM.....	Page 237
■ Long Shank Toolholder TML.....	Page 238
■ Coarse Pitch Toolholder 124/... ..	Page 239
■ Taper Thread (NPT, NPTF, BSPT) Toolholder TMN.....	Page 239
■ Twin Flute Toolholder TM2.....	Page 240
■ Twin Flute Offset Toolholder TMO.....	Page 241
■ Standard Single Point TM Toolholder TMS.....	Page 242
■ Vertical Insert TM Toolholder TMV.....	Page 242
■ TM Shell Mill.....	Page 243
■ Spare Parts For VARDEX TM and TMSH Toolholders.....	Page 244

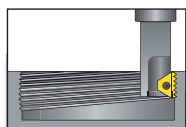
VarDEX Ordering Code System

Thread Milling Toolholders

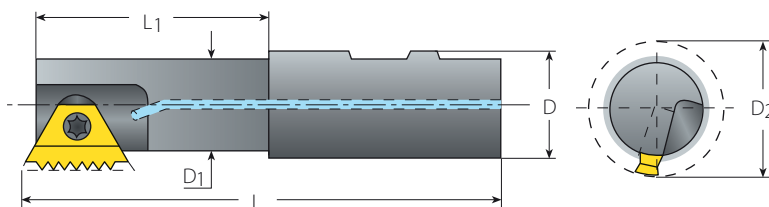
B	TM	N	C	0.75	-	3	B		CW	LH	
1	2	3	4	5		6	7	8	9	10	11
1 - Shank Type		2 - System			3 - Holder Type				4 - Cooling		
B - Anti Vibration System		TM - Thread Milling			2 - Twin Flute M - Mini L - Long Tool N - Tapered Holder V - Vertical Holder S - Single Point O - Offset W - Wide Cut. Dia.				C - Coolant Channel		
5 - Shank Dia.		6 - Insert Size		7 - Cut. Edge Length		8 - Serial No.		9 - Shank std.			
0375 - 3/8"		6.0 - 6.0mm		B - TMB		(for TMO Holders)		None - Weldon			
050 - 1/2"		2 - 1/4"				1 - 16		CW - Clarkson Weldon			
0625 - 5/8"		3 - 3/8"									
075 - 3/4"		3B - 3/8"B									
100 - 1"		4 - 1/2"									
125 - 1 1/4"		5 - 5/8"									
		6B - 3/4"B									
				10 - RH / LH Holder		11 - Serial No.					
				None - Right Hand LH - Left Hand		(for Coarse Pitch holders)		124/...			

Thread Milling Shell Mill

TMSH 1	-	D250 2	-	075 3	-	3 4	B 5
1 - System		2 - Cutting Dia.		3 - Drive Hole Dia.		4 - Insert Size	
Thread Mill Shell Mill		150, 200, 250, 300, 400, 500		1/2, 3/4, 1, 1 1/4, 1 1/2		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

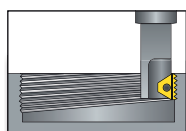


TM Standard

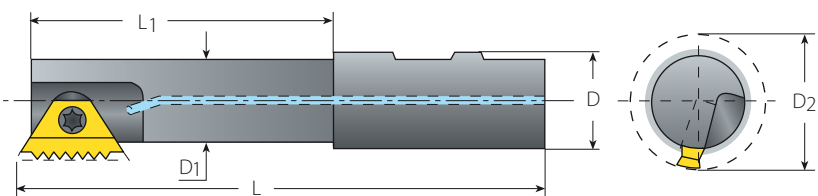
Spare Parts

Insert Size	Ordering Code	EDP No.	Dimensions inch						
IC			L	L1	D	D1	D2	Insert Screw	Torx Key
6.0mm	TMMC050-6.0	67635	2.72	0.57	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		
	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

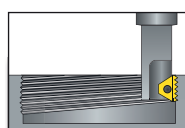


TML Long Tools

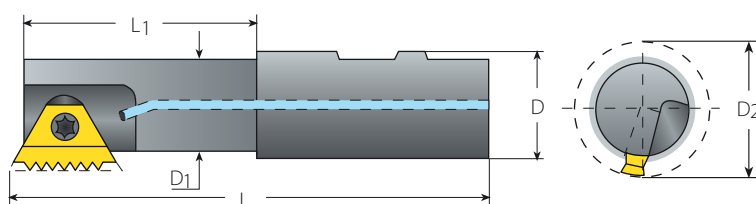
Spare Parts

Insert Size	Ordering Code	EDP No.	Dimensions inch						
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

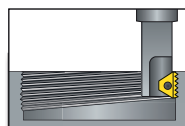


124/.. - For Coarse Pitch Threads

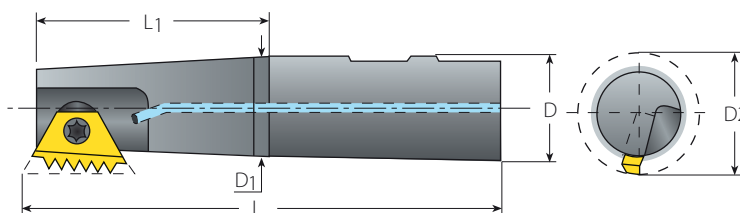
Spare Parts

Insert Size	Ordering Code	EDP No.	Dimensions inch							
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"	TMC075-3 124/201	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



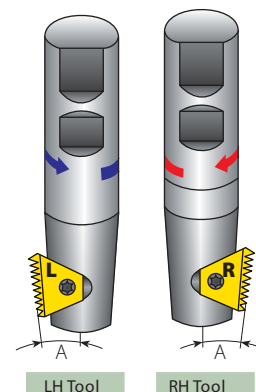
TMN - For Conical Threads (NPT, NPTF, BSPT)

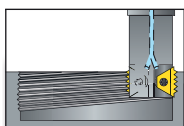
Spare Parts

Insert Size	Ordering Code	EDP No.	EDP No.	Dimensions inch							
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

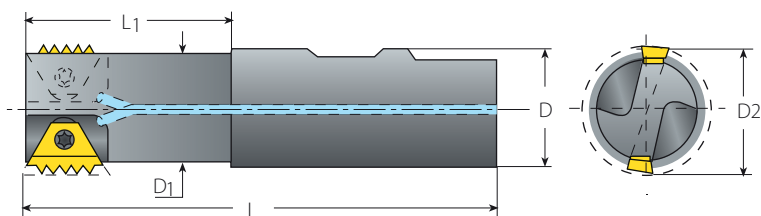
Sample Order: TMNC075-3

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





External and Internal Toolholders

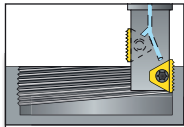


TM2 - Twin Flutes

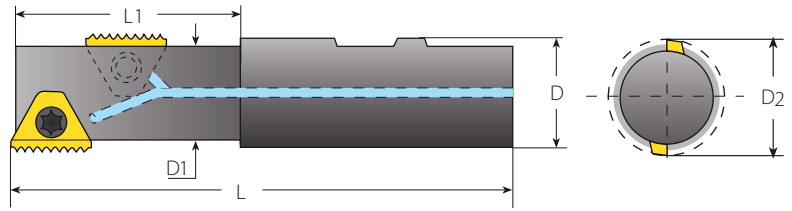
Spare Parts

Insert Size	Ordering Code	EPD No.	Dimensions inch						
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**



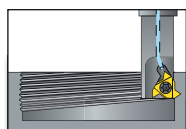
External and Internal Toolholders



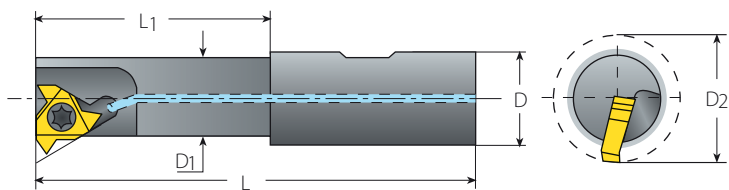
TMO - Twin Flute Offset

Spare Parts

Insert Size	Ordering Code	EDP No.	Applicable Threads			Dimensions inch						
IC			External	Internal	External & Internal	L	L1	D	D1	D2	Insert Screw	Torx Key
1/4"	TMOC075-2-1	67655	16UN	48/32/16UN								
	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	3.50	0.98	0.75	0.47	0.57	SN2TM	K2T
	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								
	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	3.75	1.69	0.75	0.65	0.79	SN3T	K3T
	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							
	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	4.38	2.05	1.00	0.94	1.18	SN5TM	K5T
	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)

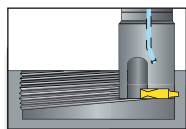
Spare Parts

Insert Size	Ordering Code	EDP No.	Dimensions inch						
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

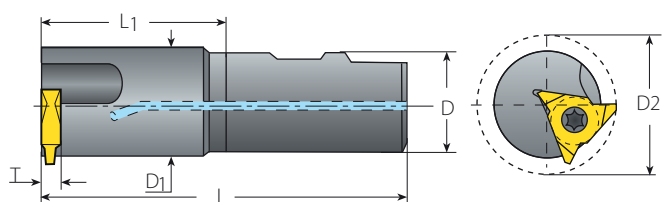
Sample Order: **TMSC0375-2**

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)

Spare Parts

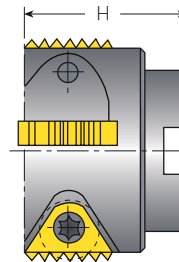
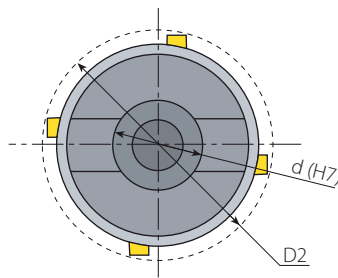
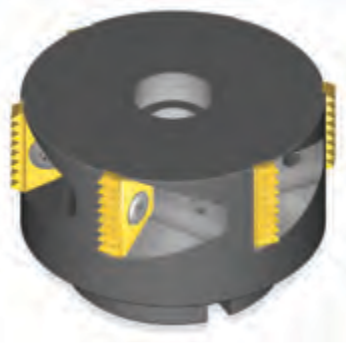
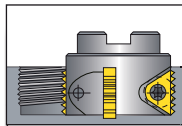
Insert Size	Ordering Code	EDP No.	Dimensions inch						
IC			L	L1	D	D1	D2	Insert Screw	Torx Key
5/8"V	TMVC125-5	67677	4.65	2.36	1.25	1.40	1.81	SN6T	K6T

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

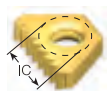
T-Head Milling
Toolholders

TM Shell Mill

Spare Parts

Insert Size	Ordering Code	EDP No.	No. of inserts	Dimensions inch					
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
1/4"	TMSH-D200-075-2	67101	8	1.97	3/4	1.58			3/8 X 24
3/8"	TMSH-D200-075-3	67102	6	1.97	3/4	1.58	SN3TM	HK3T	3/8 X 24
3/8B"	TMSH-D250-075-3B	67103	6	2.48	3/4	1.58			3/8 X 24
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™ and TMSH Toolholders



Insert IC



Holder



Holder Screw



Insert Screw

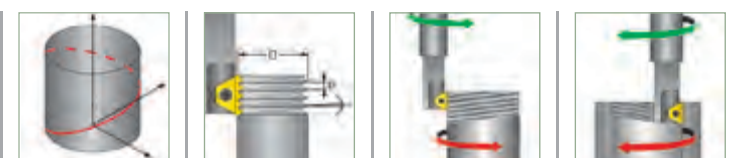


Torx Key

			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	UNC5x9.5	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

■ About Thread Milling	Page 247
■ Tangential Arc Approach & Radial Approach	Page 248
■ Preparing for the Thread Milling Operation	Page 249
■ "G" Codes for CNC Program	Page 250
■ Grades and Their Applications	Page 250
■ Recommended Cutting Speeds	Page 251
■ Minimum Bore Diameters for Thread Milling	Page 252
■ Troubleshooting	Page 254

**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

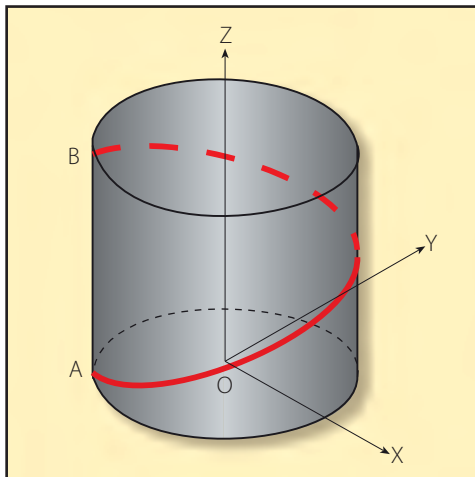


Fig. A

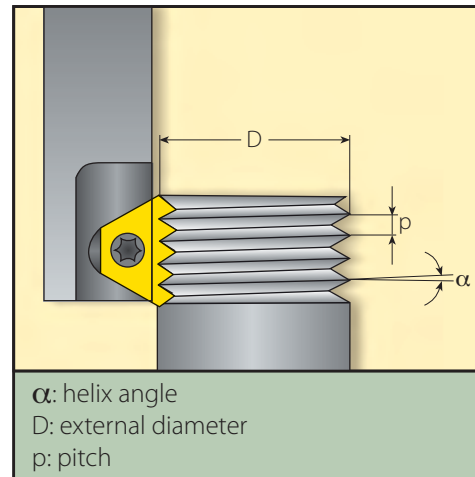


Fig. B

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.

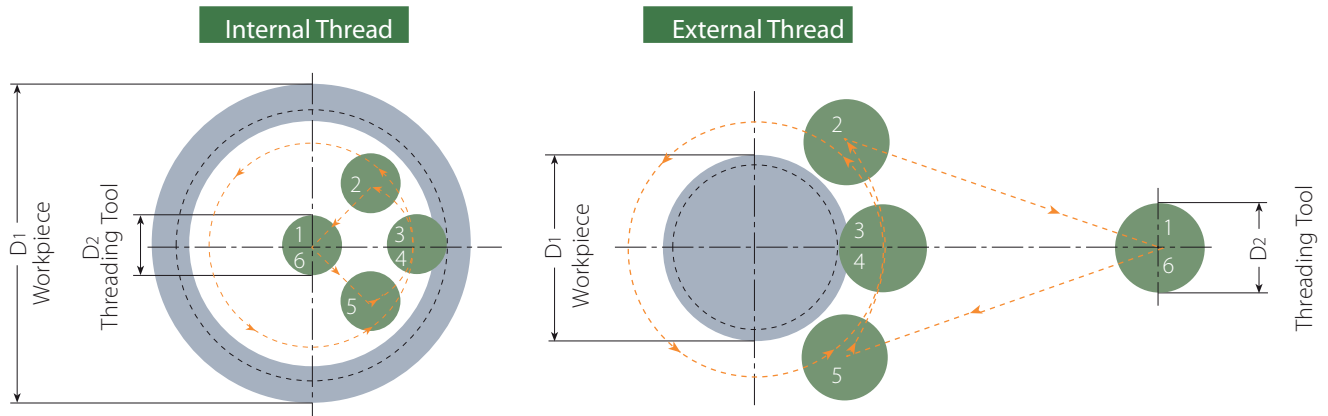
There are three acceptable ways of approaching the workpiece with the tool to initiate production of the thread:

- 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.

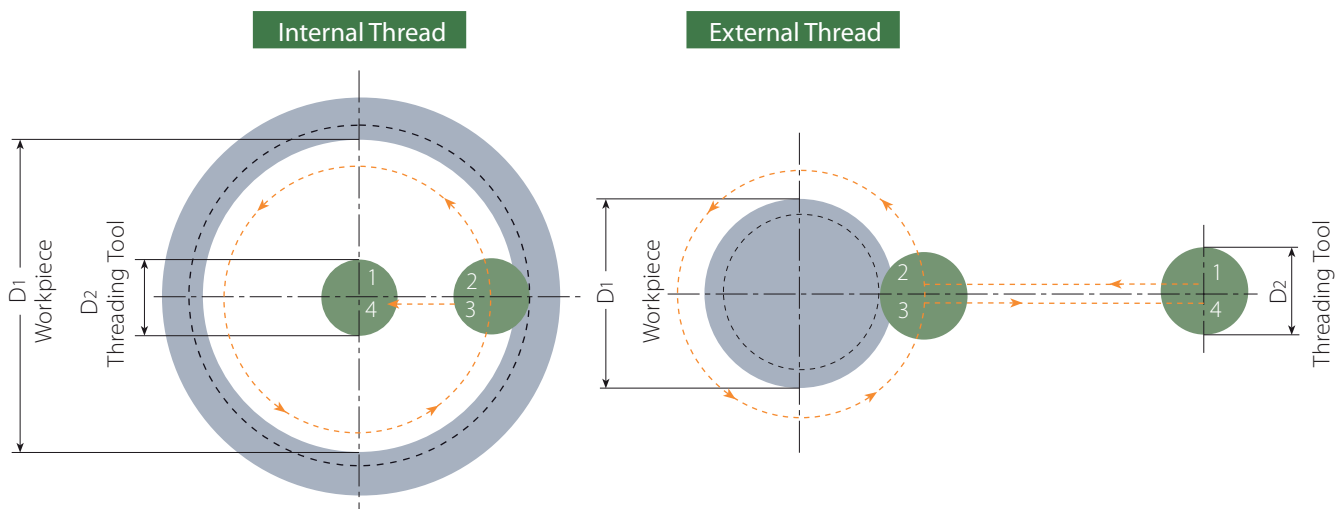


- 1-2:** Rapid approach
- 2-3:** Tool entry along tangential arc, with simultaneous feed along z-axis
- 3-4:** Helical movement during one full orbit (360°)
- 4-5:** Tool exit along tangential arc, with continuing feed along z-axis
- 5-6:** Rapid return

2 Radial Approach

This is the simplest method. There are two characteristics worth noting about the radial approach:

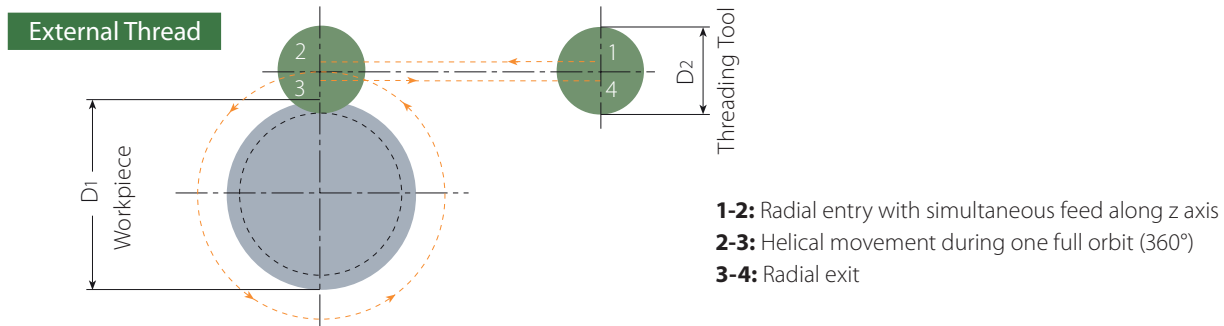
- A.** A small vertical mark may be left at the entry (and exit) point. This is of no significance to the thread itself.
 - B.** When using this method with very hard materials, there may be a tendency of the tool to vibrate as it approaches the full cutting depth.
- Note:** Radial feed during entry to the full profile depth should only be $\frac{1}{3}$ 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.



Preparing for the Thread Milling Operation

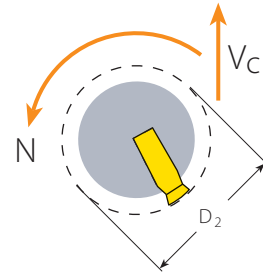
1 Calculation of Rotational Velocity and Feed at the Cutting Edge

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

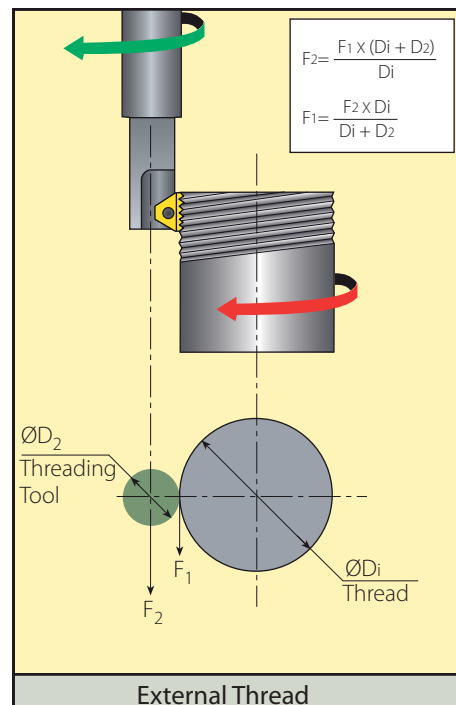
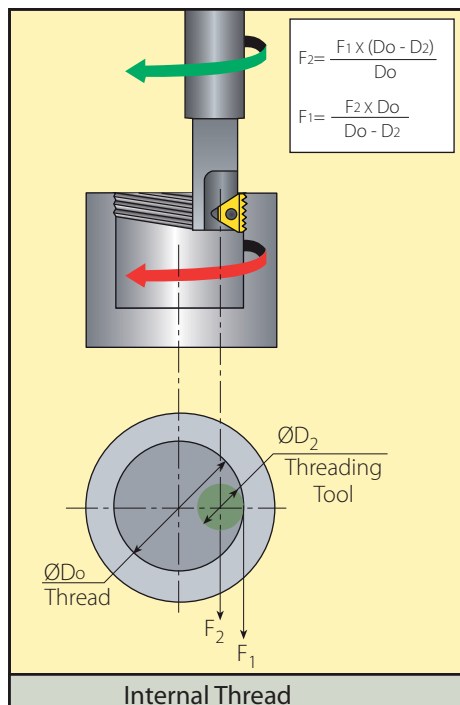
$$V = \frac{N \times \pi \times D_2}{12}$$

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

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



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	Code	Description
%	Recognition code (ISO or EIA), +End of tape	H	Tool length compensation number
G00	Fast feed linear positioning	D	Tool radius compensation number
G01	Linear interpolation	X	X coordinate
G02	Circular/Helical interpolation CW	Y	Y coordinate
G03	Circular/Helical interpolation CCW	Z	Z coordinate
G40	Cutter radius compensation cancel	R	Radius of travel
G41	Cutter radius compensation left	I	X coordinate to center of starting arc travel
G42	Cutter radius compensation right	J	Y coordinate to center of starting arc travel
G43	Tool length compensation +	M3	Spindle forward rotation
G49	Tool length compensation cancel	M5	Spindle stop
G57	Work coordinate system selection	M30	Program end & rewind
G90	Absolute command relative to work coordinate origin	O	Program number
G91	Incremental command relative to tool position	N	Block number (can be avoided)
F	Feed mm/min	(	Start of comment
S	Spindle speed RPM	)	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	Indexable Inserts
					VBX	VTX	VK2	
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 Ferritic	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 Ferritic	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	Ferritic	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

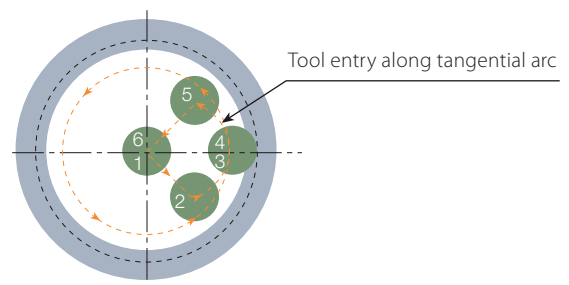
Recommendation:

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										

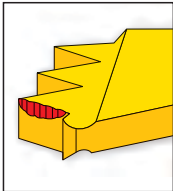
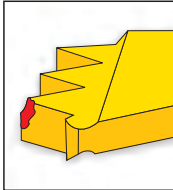
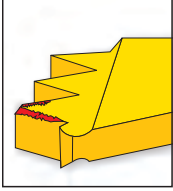
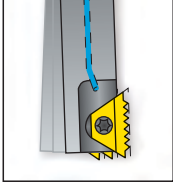
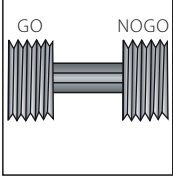
Minimum Bore Diameters for Thread Milling (con't)

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



MiTM

Super Fast Thread Milling System



- > Inserts
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- > Technical Data

MiTM - MULTI-FLUTE INDEXABLE THREAD MILLING

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

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



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



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

MiTM 25 (S) For Standard Applications



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



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



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



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

MiTM 40 (L) For Long Threads



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



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



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

MiTM 41 (B) For Large Pitches



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



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 1	25 2	I 3	1.00 4	ISO 5	TM 6	VBX 7		
1 - Product Line R - MiTM line	2 - Insert Style 24, 25, 40, 41	3 - Type of Insert I - Internal E - External EI - External+Internal NC - Plug	4 - Pitch 0.5-6.0 mm 32-4 tpi	5 - Standard ISO - ISO Metric UN - American UN W - BSW, BSP NPT - NPT NPTF - NPTF BSPT - BSPT	6 - System TM	7 - Carbide Grade VBX VTX		

MiTM Holders (Standard and Conical)

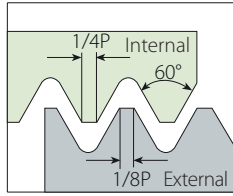
R 1	TM 2	C 3		100 4	067 5	- 6	110 7	S 8	2 9
1 - Product Line R - MiTM line BR - MiTM with anti vibration system	2 - Holder Type TM - Standard holder TMN - Conical holder	3 - Cooling C - Coolant Channel	4 - Shank Dia. [inch] 1, 1.25	5 - Cutting Dia. [inch] .54-1.42	6 - Tool Overhang [inch] 1.02-3.15	7 - Insert Style M - 24 S - 25 L - 40 B - 41	8 - No. of Flutes 1 - 5		

MiTM Shell Mill

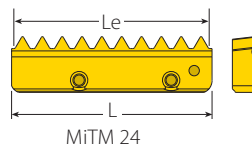
R 1	TM 2	C 3		D150 4	050 5	- 6	25S 7	5 8
1 - Product Line R - MiTM line	2 - Holder Type TM - Standard holder TMN - Conical holder	3 - Cooling C - Coolant Channel	4 - Cutting Dia. [inch] 1.54-2.48	5 - Drive Hole Dia. [inch] .5, .75, 1	6 - Insert Style 25S 40L 41B	7 - No. of Flutes 5 - 9		

American UN

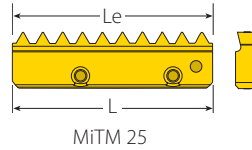
External / Internal



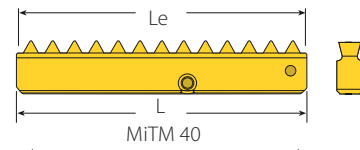
Defined by: ANSI B1.1:74
Tolerance class: 2A/2B



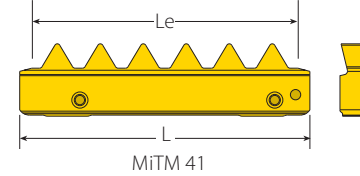
MiTM 24



MiTM 25



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
		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
	.988" (25 mm)	10				R24I10UNTM...	80814	80815	1 0.90 9
		20	R25E20UNTM...	80594	80595	R25I20UNTM...	80492	80493	2 0.95 19
		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
	1.575" (40 mm)	8	*R25E8UNTM...	80608	80609	*R25I8UNTM...	80506	80507	2 0.87 7
		20				R40I20UNTM...	80712	80713	2 1.55 31
		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
	1.614" (41 mm)	8				R40I8UNTM...	80726	80727	2 1.50 12
		8	R41E8UNTM...	80816	80817	R41I8UNTM...	80828	80829	2 1.50 12
		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

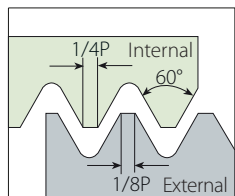
* Note: 8 UN & 9 UN inserts do not fit into toolholder RTMC100067....
For external insert 8 UN use for CNC program (D2 + 0.02")

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)...

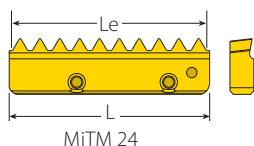


ISO Metric

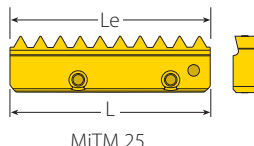
External / Internal



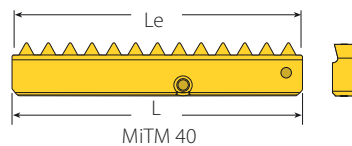
Defined by: R262 (DIN 13)
Tolerance class: 6g/6H



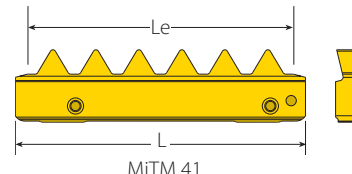
MiTM 24



MiTM 25



MiTM 40



MiTM 41

Standard MiTM

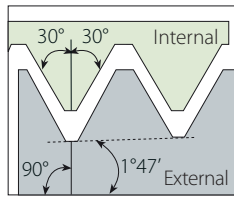
L	Pitch	Ordering Code	EDP No.		Ordering Code		EDP No.		Cutting Edge	Teeth	Toolholder
inch	tpi	External	VTX	VBX	Internal	VTX	VBX		Le	Zt	
.945" (24 mm)	0.50				R24I0.50ISOTM...	80753	80754	1	0.96	49	RTMC....M
	0.75				R24I0.75ISOTM...	80755	80751	1	0.97	33	
	1.00				R24I1.00ISOTM...	80756	80757	1	0.94	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...	80586	80587	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	
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")

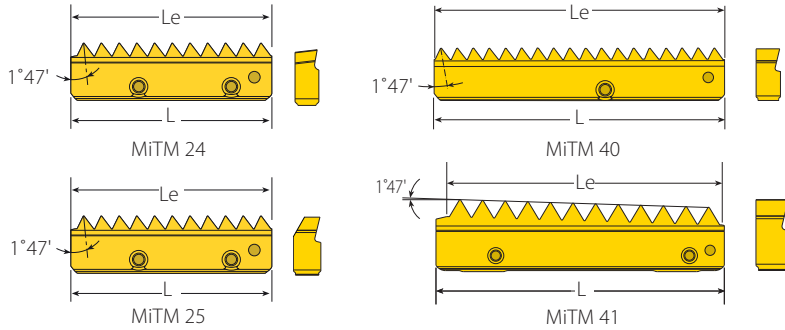
MiTM inserts 25, 40 and 41 are offered with 2 cutting edges. In case of chip flow difficulty, inserts with a single cutting edge can be ordered by request. Example: R25I2.00ISOTM(S)...

NPT

External / Internal



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



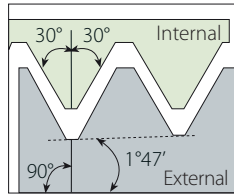
Standard MiTM



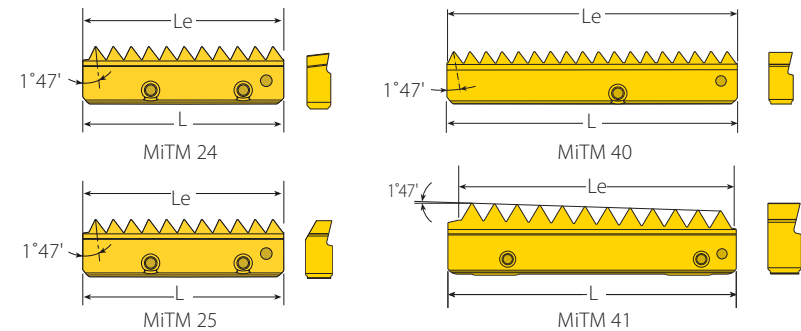
L	Pitch	Ordering Code	EDP No.		Cutting Edge	Teeth		Toolholder
inch	tpi	External + Internal	VTX	VBX		Le	Zt	
.945" (24 mm)	18	R24EI18NPTTM...	80873	80874	1	0.94	17	RTMNC.... M
	14	R25EI14NPTTM...	80516	80517	1	0.93	13	RTMNC.... S
	11.5	R25EI11.5NPTTM...	80518	80519	1	0.96	11	
.988" (25 mm)	8	R25EI8NPTTM...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



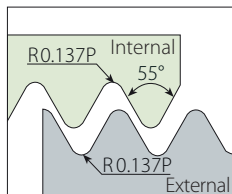
Standard MiTM



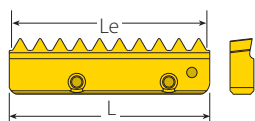
L	Pitch	Ordering Code	EDP No.		Cutting Edge	Teeth		Toolholder
inch	tpi	External + Internal	VTX	VBX		Le	Zt	
.945" (24 mm)	18	R24EI18NPTFTM...	80875	80876	1	0.94	17	RTMNC.... M
	14	R25EI14NPTFTM...	80520	80521	1	0.93	13	RTMNC.... S
	11.5	R25EI11.5NPTFTM...	80522	80523	1	0.96	11	
.988" (25 mm)	8	R25EI8NPTFTM...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

Whitworth for BSF, BSP

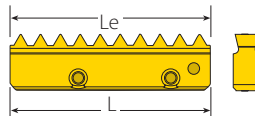
External / Internal



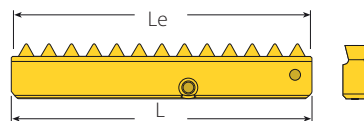
Defined by: B.S.84:1956, DIN 259,
ISO228/1:1982
Tolerance class: Medium Class A



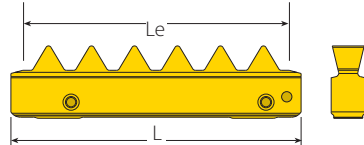
MiTM 24



MiTM 25



MiTM 40



MiTM 41

Standard MiTM

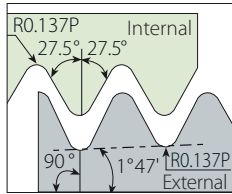
	L	Pitch	Ordering Code	EDP NO.		Ordering Code	EDP NO.		Cutting Edge	Teeth	Toolholder
	inch	tpi	External + Internal	VTX	VBX	Internal	VTX	VBX	Le	Zt	
	.945" (24 mm)	19	R24EI19WTM...	80844	80845				1	0.95	18
		14	R24EI14WTM...	80846	80847				1	0.93	13
		12	R24EI12WTM...	80848	80849				1	0.92	11
	.988" (25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

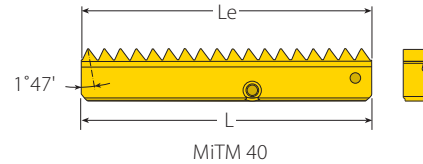
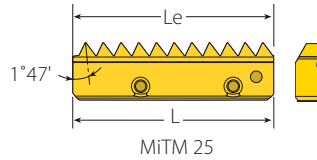
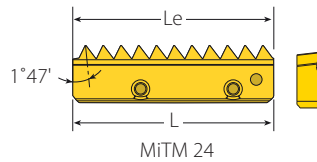


BSPT

External / Internal



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



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

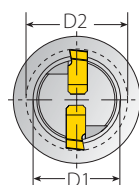
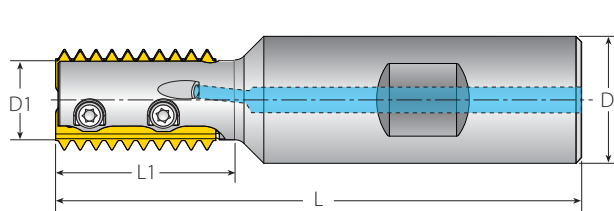
Plug Insert*



L	Ordering Code	EDP No.	Teeth	Toolholder
inch	External + Internal		Zt	
.945" (24 mm)	R24NC	80858	No Teeth	RTMC....M
.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 $D2 > 0.7 \times \text{nominal thread diameter}$

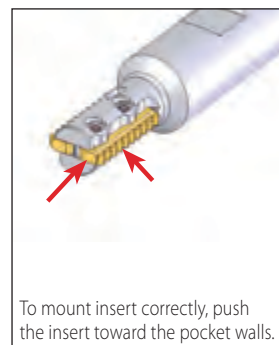
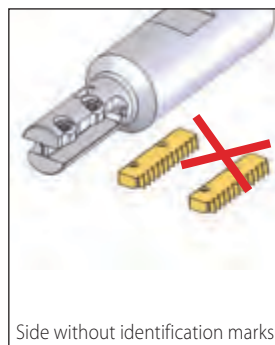
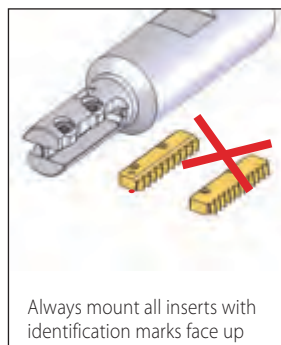
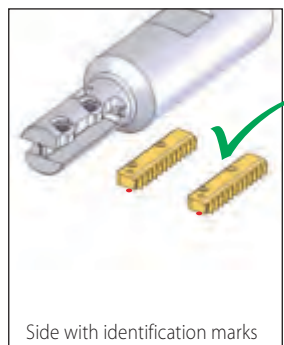
RTMC - for Standard Threads

Spare Parts (Ordering code & EDP No.)

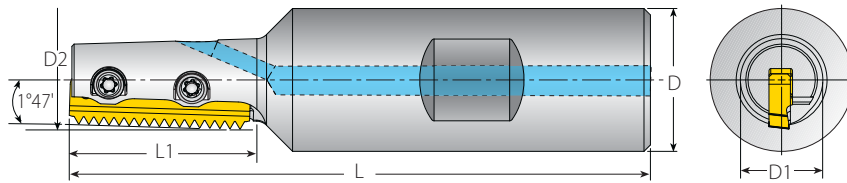
Insert Style	Ordering Code	EDP No.	Dimensions (inch)					No. of Flutes		
			L	L1	D	D1	D2	Z	Location Screw x2	Torx+ Screwdriver
.945" (24 mm)	RTMC 075053-102M1	80860	3.27	1.02	0.75	0.42	0.53	1	SLD4IP8 (M4x0.7) (80533)	KIP8 •Use the included Vardex Torx+ screwdriver only •Recommended max. torque 10.6 lbf·in (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	-	1/16-12UN; 5/8-14UNS; 5/8-16UN; 5/8-18UNF; 5/8-20UN; 5/8-24UNEF; 5/8-28UN; 5/8-32UN	1/16-14; 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; 1/16-16UN; 1/16-20UN; 1/16-24UNEF; 1/16-28UN; 1/16-32UN	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; 1/16-24UNEF; 1/16-28UN; 1/16-32UN	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; 1/16-24UNEF; 1/16-28UN; 1/16-32UN	3/4-12	-



Conical Toolholders (MiTM 24)



Coolant-Thru is recommended, especially when $D2 > 0.7 \times$ nominal thread diameter

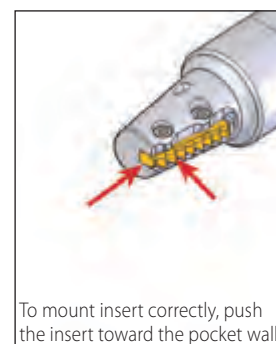
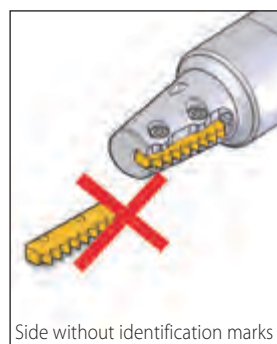
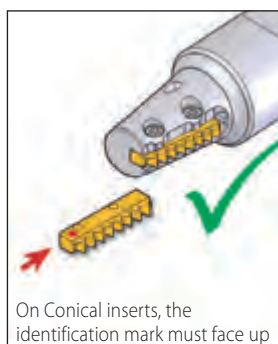
RTMC - for Standard Threads

Spare Parts (Ordering code & EDP No.)

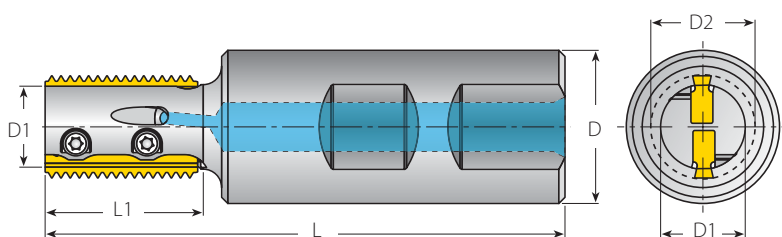
Insert Style	Ordering Code	EDP No.	Dimensions (inch)					No. of Flutes		
			L	L1	D	D1	D2	Z	Location Screw x2	Torx+ Screwdriver
.945" (24 mm)	RTMNC 075055-102M1	80863	3.23	1.02	0.75	0.45	0.55	1	SLD4IP8 (M4x0.7) (80533)	KIP8 •Use the included Vardex Torx+ screwdriver only •Recommended max. torque 10.6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

Standard Thread Application by Toolholder

Toolholder				
	D2 (inch)	NPT	NPTF	BSPT
RTMNC 075055-102M1	0.55	$\frac{3}{8}$ -18	$\frac{3}{8}$ -18	$\frac{3}{8}$ -19



Standard Toolholders (MiTM 25)



Coolant-Thru is recommended, especially when $D2 > 0.7 \times$ nominal thread diameter

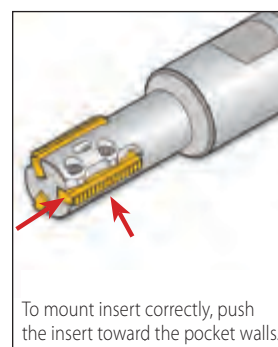
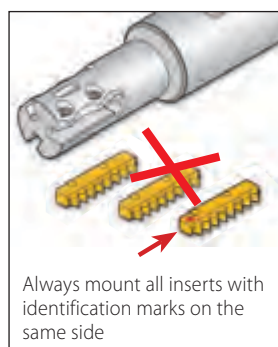
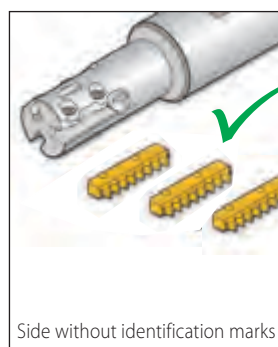
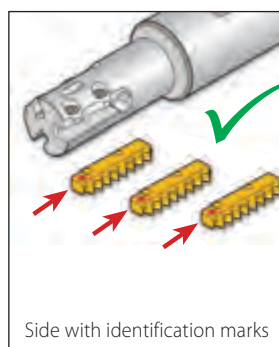
RTMC - for Standard Threads

Spare Parts (Ordering code & EDP No.)

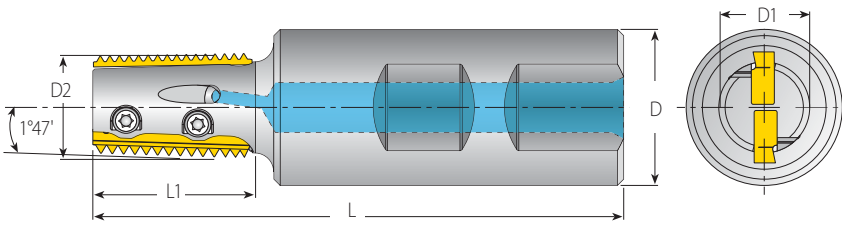
Insert Style	Ordering Code	EDP No.	Dimensions (inch)					No. of Flutes		
			L	L1	D	D1	D2	Z	Location Screw x2	Torx+ Screwdriver
.988" (25 mm)	RTMC 075067-110S2	80748	3.29	1.10	0.75	0.55	0.67	2	SLD4IP8 (M4x0.7) (80533)	KIP8 •Use the included Vardex Torx+ screwdriver only •Recommended max. torque 10.6 lbf·in (70231)
	RTMC 075067-145S2	80747	3.65	1.45		0.55	0.67	2		
	RTMC 100067-110S2	80471	3.50	1.10		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	1.00	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	BSP
RTMC 075067-110S2	0.67	M20x2.5	M19x1; M19x1.5; M20x2	-	7/8-10UNS; 13/16-12UN; 7/8-14UNF; 3/4-16UNF; 3/4-18UNS; 3/4-20UNEF	7/8-11; 7/8-12; 7/8-14; 7/8-16
RTMC 075067-145S2						
RTMC 100067-110S2						
RTMC 100067-145S2						
RTMC 100075-125S2	0.75	M22x2.5	M21x1; M21x1.5; M22x2	7/8-9; 1-8	7/8-20UNEF; 7/8-18UNS; 7/8-16UN; 7/8-14UNF; 7/8-12UN; 7/8-10UNS	7/8-16; 7/8-14; 15/16-12; 15/16-11
RTMC 100075-175S2						
RTMC 100081-150S3	0.81	M24x3	M22x1; M23x1.5; M23x2; M23.5x2.5	1-8	15/16-9UN; 1-10UNS; 15/16-12UN; 1-14UNS; 15/16-16UN; 7/8-18UNS; 7/8-20UNEF	1-11; 1-12; 1-14; 1-16
RTMC 100081-175S3						
RTMC 100087-170S3	0.87	M27x3	M24x1; M24x1.5; M25x2; M25x2.5	-	1 1/16-8UN; 1-9UN; 1-10UNS; 1-12UNF; 1-14UNS; 1-16UN; 1-18UN; 15/16-20UNEF	1-11; 1-12; 1-14; 1-16
RTMC 100087-220S3						
RTMC 100118-220S5	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
BRTMC 100118-315S4						



Conical Toolholders (MiTM 25)



Coolant-Thru is recommended, especially when $D2 > 0.7 \times$ nominal thread diameter

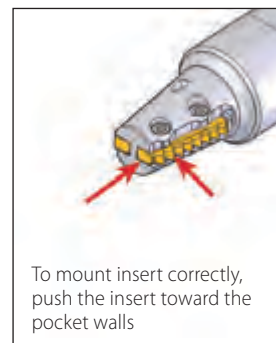
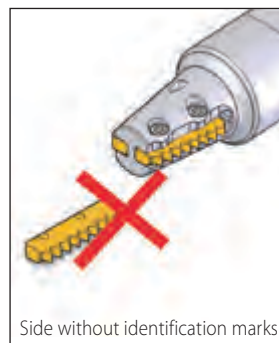
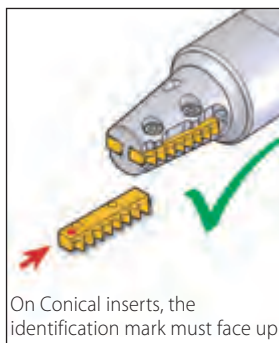
RTMNC - for Conical Threads

Spare Parts (Ordering code & EDP No.)

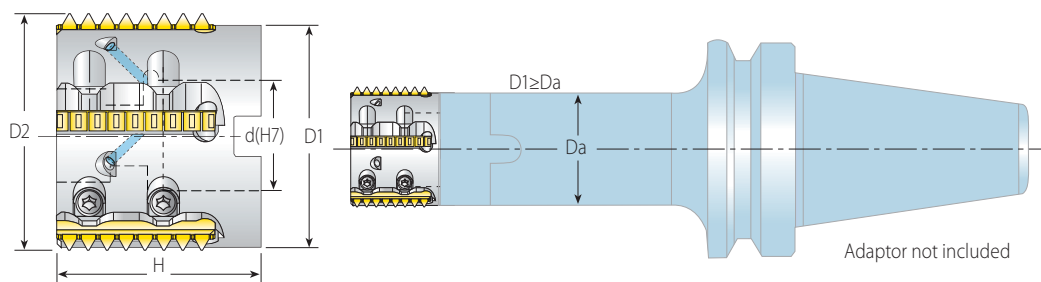
Insert Style	Ordering Code	EDP No.	Dimensions (inch)						No. of Flutes		
			L	L1	D	D1	D2	Z		Location Screw x2	Torx+ Screwdriver
.988" (25 mm)	RTMNC 075067-110S2	80749	3.29	1.10	0.75	0.55	0.67	2		SLD4IP8 (M4x0.7) (80533)	KIP8 •Use the included Vardex Torx+ screwdriver only •Recommended max. torque 10.6 lbf·in (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



Shell Mill (MiTM 25)



Coolant-Thru is recommended, especially when $D2 > 0.7 \times$ nominal thread diameter

Conical and Standard Shell Mills

Spare Parts (Ordering code & EDP No.)

Insert Style	Ordering Code	EDP No.	Dimensions (inch)					No. of Flutes			
			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)	• Use the included Vardex Torx+ screwdriver only • Recommended max. torque 10.6 lbf·in (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)

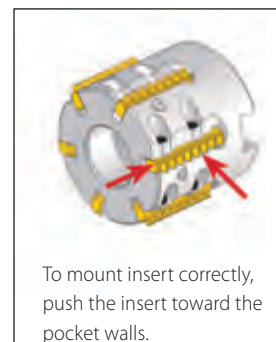
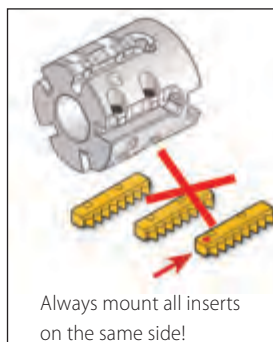
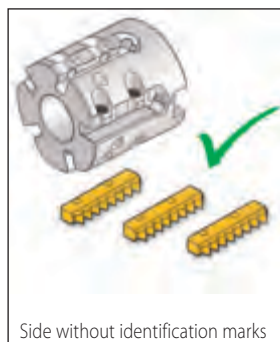
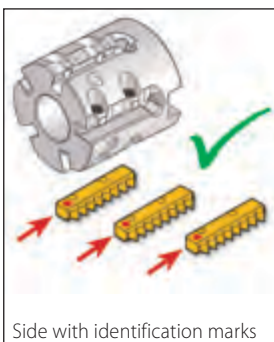
* For inserts 8NPT and 8NPTF use for CNC program (D2+0.024")

Standard Thread Applications by Toolholder

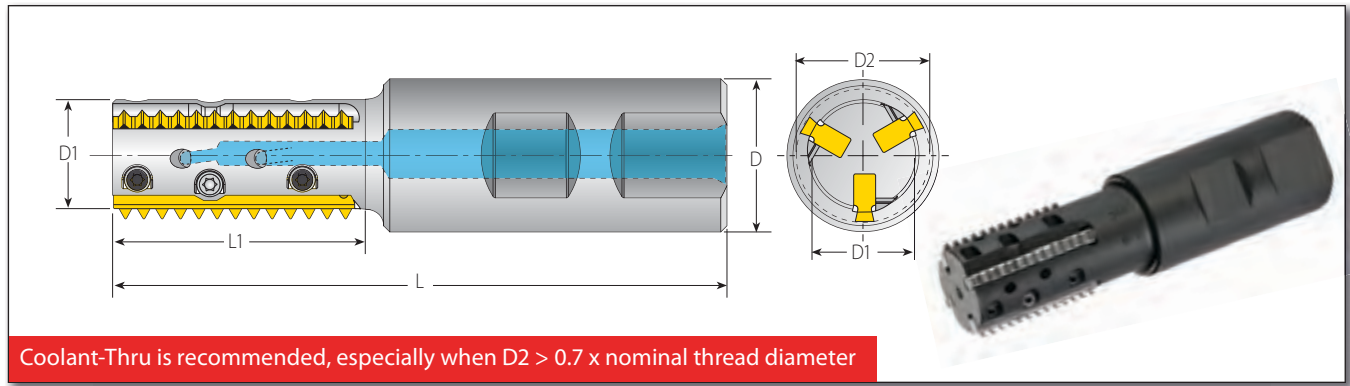
Toolholder			Min. Thread Ø			
		D2(inch)	ISO (fine)	UN/UNF/UNEF/UNS		BSP
Standard	RTMC-D150-050-25S5	1.54	M42x1 ; M42 x1.5; M45x2 ; M45x3	1 1/16-12UNF; 1 3/4-14UNS; 1 5/8-16UN 1 5/8-18UNEF; 1 5/8-20UN;		1 3/4 -16 1 3/4 -12
	RTMC-D190-075-25S7	1.93	M52x1 ; M55x1.5; M55x2 ; M55x3	2 1/8-12UN; 2 1/16-16UN; 2 1/8-20UN; 2 1/8-8UN 2 1/4-10UNS; 2 1/4-14UNS; 2 1/4-18UNS		2 1/4 -16 2 1/4 -12
	RTMC-D230-100-25S9	2.32	M64x1 ; M64x1.5; M64x2 ; M65x3	2 1/2-18UN; 2 1/2-20UN; 2 1/2-8UN 2 1/2-12UN; 2 1/2-10UN; 2 1/2-14UN; 2 1/2-16UN		2 1/2 -16 2 1/2 -12

Conical Thread Applications by Toolholder

Toolholder			Thread Ø		
		D2 (inch)	NPT	NPTF	BSPT
Conical	RTMNC-D150-050-25S5	1.54*	1 1/2 - 11.5; 2 - 11.5	1 1/2 - 11.5; 2 - 11.5	1 1/2-6 x11



Standard Toolholders (MiTM 40)

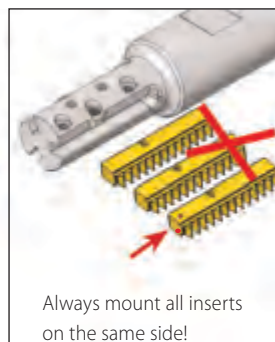
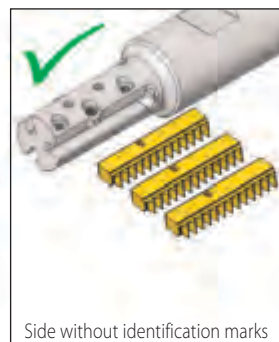


RTMC - for Standard Threads

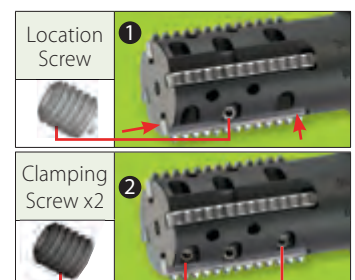
									Spare Parts (Ordering code & EDP No.)		
Insert Style	Ordering Code	EDP No.	Dimensions (inch)			No. of Flutes					
			L	L1	D	D1	D2	Z	Location Screw	Clamping Screw x2	Torx+ Screwdriver
1.575" (40 mm)	RTMC 100087-169L3	80618	4.00	1.69	1.00	0.71	0.87	3	SLD4IP8A (M4x0.7) (80533)	SCD4IP8 (M4x0.7) (80622)	KIP8 •Use the included Vardex Torx+ screwdriver only •Recommended max. torque 10.6 lbf·in (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 $\frac{1}{16}$ -8UN; 1-9UN; 1-10UNS; 1-12UNF; 1-14UNS; 1-16UN; 1-18UN; 1 $\frac{1}{16}$ -20UNEF		1-11; 1-12; 1-14; 1-16;	$\frac{3}{4}$ -14
RTMC 100087-256L3	0.87	M27x3	M24x1; M24x1.5 M25x2; M25x2.5	-	1 $\frac{1}{16}$ -8UN; 1-9UN; 1-10UNS; 1-12UNF; 1-14UNS; 1-16UN; 1-18UN; 1 $\frac{1}{16}$ -20UNEF		1-11; 1-12; 1-14; 1-16;	$\frac{3}{4}$ -14
RTMC 125118-215L4	1.18	-	M32x1; M32x1.5 M33x2; M33x2.5; M34x3	-	1 $\frac{3}{8}$ -8UN; 1 $\frac{3}{8}$ -9UN; 1 $\frac{3}{8}$ -10UN; 1 $\frac{1}{2}$ -12UN; 1 $\frac{3}{8}$ -14UNS; 1 $\frac{1}{2}$ -16UN; 1 $\frac{1}{2}$ -18UNEF; 1 $\frac{1}{2}$ -20UN		1 $\frac{3}{8}$ -11; 1 $\frac{3}{8}$ -12; 1 $\frac{3}{8}$ -14; 1 $\frac{3}{8}$ -16	1-11
BRTMC 125118-315L3	1.18	-	M32x1; M32x1.5 M33x2; M33x2.5; M34x3	-	1 $\frac{3}{8}$ -8UN; 1 $\frac{3}{8}$ -9UN; 1 $\frac{3}{8}$ -10UN; 1 $\frac{1}{2}$ -12UN; 1 $\frac{3}{8}$ -14UNS; 1 $\frac{1}{2}$ -16UN; 1 $\frac{1}{2}$ -18UNEF; 1 $\frac{1}{2}$ -20UN		1 $\frac{3}{8}$ -11; 1 $\frac{3}{8}$ -12; 1 $\frac{3}{8}$ -14; 1 $\frac{3}{8}$ -16	1-11



2 Step Clamping System!



Shell Mill (MiTM 40)

Coolant-Thru is recommended, especially when $D2 > 0.7 \times \text{nominal thread diameter}$

Conical and Standard Shell Mills									Spare Parts (Ordering code & EDP No.)			
Insert Style		Ordering Code	EDP No.	Dimensions (inch)				No. of Flutes				
				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)	•Use the included Vardex Torx+ screwdriver only •Recommended max. torque 10.6 lbf·in (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				

Standard Thread Application per Toolholder

Toolholder		Please replace with the following:					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		2 1/8 - 8UN; 2 1/8 - 12UN; 2 1/16-16UN; 2 1/8 - 20UN; 2 1/4 - 10UNS; 2 1/4 - 14UNS; 2 1/4 - 18UNS		2 1/4 - 12; 2 1/4 - 16	1 3/4 - 11
	RTMC D230-100-40L9	2.32	M64x1; M64x1.5; M64x2; M65x3		2 1/2 - 8UN; 2 1/2 - 10UNS; 2 1/2 - 12UN; 2 1/2 - 14UNS; 2 1/2 - 16UN; 2 1/2 - 18UNS; 2 1/2 - 20UN		2 1/2 - 12; 2 1/2 - 16	2 1/4 - 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; 2 1/2-8 (and up)	2-11.5; 2 1/2-8; 3-8	2-6x11

Side with identification marks

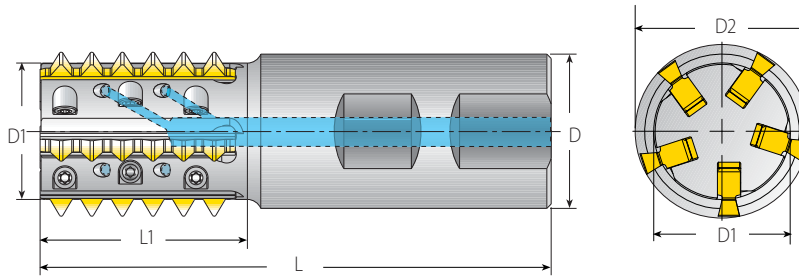
Side without identification marks

Always mount all inserts on the same side!

2 Step Clamping System!

Location Screw	1	
Clamping Screw x2	2	

Standard Toolholders (MiTM 41)



Coolant-Thru is recommended, especially when $D2 > 0.7 \times$ nominal thread diameter

RTMC - for Standard Threads

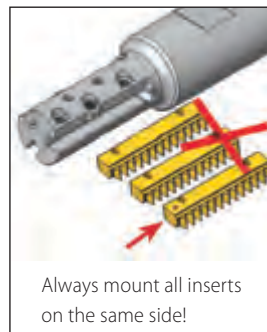
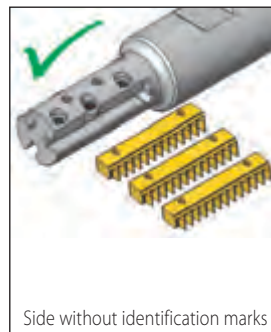
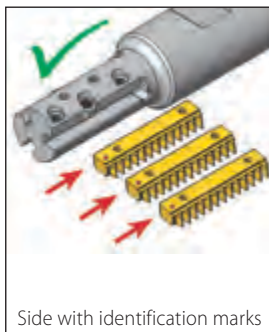
Spare Parts (Ordering code & EDP No.)

Insert Style	Ordering Code	EDP No.	Dimensions (inch)						No. of Flutes			
			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 lbf·in (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				

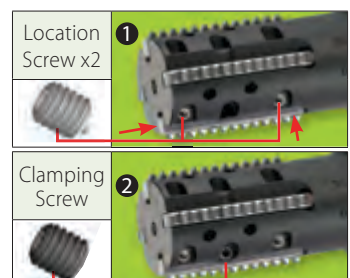
Standard Thread Application by Toolholder

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	1½-7; 1½-6	1½-8UN; 1¼-6UN	1½-8BSF; 1¼-7BSW	-	-
RTMC 125118-169B3	1.18	M36x4; M42x4.5	M34X3; M34x3.5; M45x4	1¾-6	1¾-8UN; 1¼-6UN	1¾-8BSF; 1¾-7BSF; 1½-6BSW	-	-
RTMC 125118-256B3	1.18	M36x4; M42x4.5	M34X3; M34x3.5; M45x4	1¾-6	1¾-8UN; 1¼-6UN	1¾-8BSF; 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	1¾-8UN; 1¾-6UN	1¾-8BSF; 1¾-7BSF; 1¾-6BSF	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	1¾-8UN; 1¾-6UN	1¾-8BSF; 1¾-7BSF; 1¾-6BSF	2½-8	2½-8

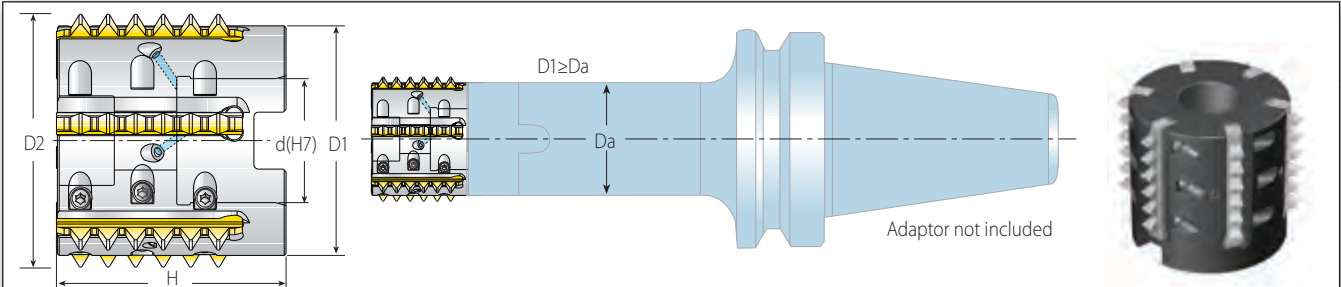
* For external applications, inserts R41E... use for CNC program (D2+0.024")



2 Step Clamping System!



Shell Mill (MiTM 41)



Adaptor not included

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

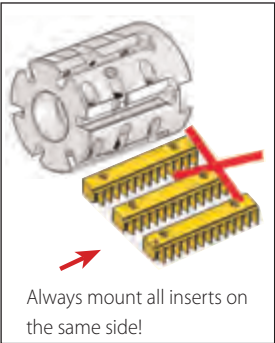
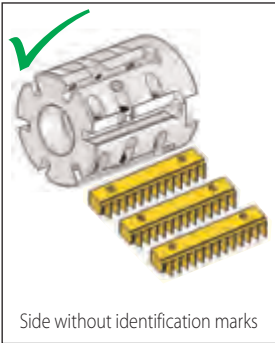
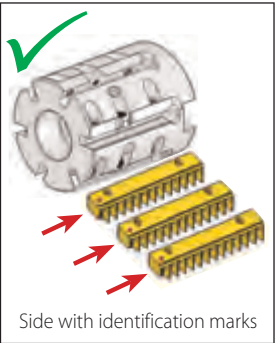
Standard Shell Mill

Standard Shell Mill								Spare Parts (Ordering code & EDP No.)			
Insert Style	Ordering Code	EPD No.	Dimensions (inch)				No. of Flutes				
			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)

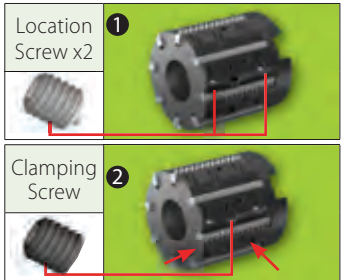
Standard Thread Application by Toolholder

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	2⅝-6UN; 2⅝-8UN	2⅝-8; 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")



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 Ferritic	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 Ferritic	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	Ferritic	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		α+β 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

MITM

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.	

