

VARDEX

Advanced Threading Solutions



Turning and Milling Tools

Threading

Grooving

Boring

Main Catalog

INCH

NEW IN THIS CATALOG

NEW SOLID CARBIDE TOOLS

HELICOOL FAMILY

- **Helicool**
Helical Flutes with Thru-Hole Coolant



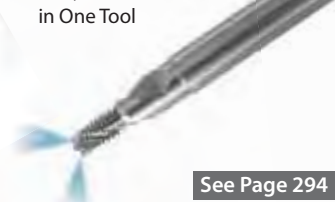
- **Helicool-R (HCR)**
Radial Coolant



- **Helicool-C (HCC)**
Thread & Chamfer in One Tool



- **Thriller (HTC)**
Drill, Thread & Chamfer in One Tool



See Page 294

MILLIPRO FAMILY

- **Miniature Thread Mills**



See Page 306

DEEP THREADING

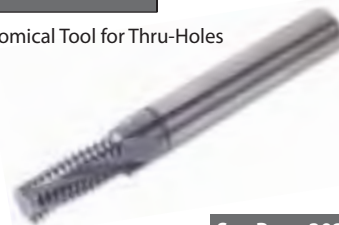
- **Long Reaching up to 3xDo**



See Page 305

HE-LEX

- **Economical Tool for Thru-Holes**



See Page 302

MULTI+ INSERTS

- **Improved Design for Multi-Tooth Inserts**

See Pages 17-95

Multi+



M+



T+



Z+

MINI-3 IC4.0

- **Indexable Threading Insert for Small Bores**



See Pages 17-95

V6 INSERTS

- **A Revolutionary 6 Cutting Corners System**

See Pages 17-95

V6



TMSD

- **Thread Mills for Deep Holes**



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MiTM FAMILY

- **Multi-Flute Indexable Thread Milling for Fast Machining**

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VARDEX CATALOG

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Visit our website at www.vargususa.com



NUMBER ONE IN THREADING

VARGUS is a world leading developer, manufacturer and supplier of high-quality, precision cutting and deburring tools. The company's VARDEX product line is the number one source for threading solutions worldwide and includes the largest range of thread turning and thread milling solutions as well as an extensive range of solutions for micro-machining.

Established in 1960, VARGUS is a member of the NEUMO Ehrenberg Group, a diversified multi-national organization headquartered in Knittlingen, Germany. With a network of international distributors, warehouses and certified ISO 9001 manufacturing facilities, VARGUS serves customers in more than 100 countries around the globe, providing fast delivery and dedicated customer service.

Vargus is a customer-focused organization, committed to providing innovative products of the highest quality, excellent value, top service and technical expertise.

These key values have helped Vargus remain the market leader in threading solutions and will continue to guide our approach to business in the future.



VARDEX SPECIAL TOOLS

VARDEX engineers and toolmakers have the know-how and experience to design special cutting tools tailored to customer requirements. Whether it's a special, complex shape or a non-standard size, our Special Tools service can quickly produce the tool you need using the latest techniques and technology.

For specific details, contact your nearest VARDEX sales representative.

- VARDEX expertise
- Fast quotation
- Competitive delivery

Tailor Made



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Threading

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Boring

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TT Gen: Takes the guesswork out of threading!

TT Gen

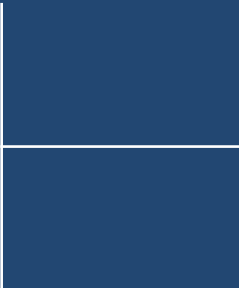
Thread Turning Tool Selection Software

VARGUS' TT Gen software guides you to the right thread turning tool and the best cutting conditions for your applications in seconds.

The latest version can be downloaded at
www.vargususa.com



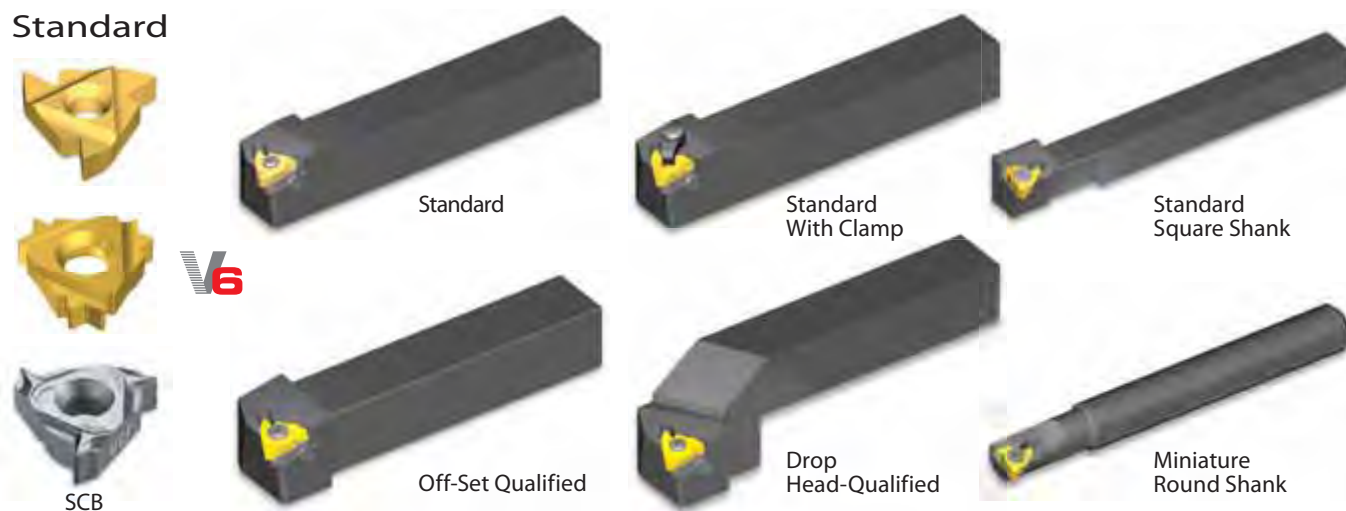
Turning



- 
- > Threading
 - > Grooving
 - > Boring

Thread Turning System - External

Standard



U Style



V Style



M+ Style

Multiplus



Z+ Style

Multiplus



T+ Style

Multiplus



Thread Turning System - Internal

Standard



U Style



M+ Style



T+ Style



Z+ Style



Mini-3



Mini-L



Micro



Tooling recommendation for a given Internal thread specification

TT Gen Software
and updated versions
can be downloaded from
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American UN

Pitch tpi	Thread	Insert Size	Insert	Holder	Anvil
56	10 - 1/4	Micro 4.0	Special	SMC...-4.0	-
48	10 - 5/16	Micro 4.0	Special	SMC...-4.0	-
40	10 - 3/8	Micro 4.0	4.0SIR40UN	SMC...-4.0	-
36	12 - 3/8	Micro 4.0	4.0SIR36UN	SMC...-4.0	-
	12 - 1/4	Micro 4.0	4.0SIR32UN	SMC...-4.0	-
	5/16 - 3/8	Micro 6.0	6.0SIR32UN	SMC...-6.0	-
	7/16 - 1/2	IC 6.0	6.0IR32UN	NVR...-6.0	-
32	9/16 - 11/16	IC 1/4"	2IR32UN	NVR0375-2	-
	3/4 - 15/16	IC 3/8"	3IR32UN	NVR050-3	-
	7/8 - 15/16	IC 3/8"	3IR32UN	NVR0625-3	-
	1	IC 3/8"	3IR32UN	AVR075-3	YI3 - 1N
	12 - 1/4	Micro 4.0	4.0SIR28UN	SMC...-4.0	-
	5/16 - 3/8	Micro 6.0	6.0SIR28UN	SMC...-6.0	-
	7/16 - 1/2	IC 6.0	6.0IR28UN	NVR...-6.0	-
28	5/8 - 11/16	IC 1/4"	2IR28UN	NVR0375-2	-
	3/4 - 13/16	IC 3/8"	3IR28UN	NVR050-3	-
	7/8 - 15/16	IC 3/8"	3IR28UN	NVR0625-3	-
	1 - 1 1/8	IC 3/8"	3IR28UN	AVR075-3	YI3 - 1N
	1 3/16	IC 3/8"	3IR28UN	AVR100-3	YI3 - 1N
	1/4	Micro 4.0	4.0SIR27UN	SMC...-4.0	-
	5/16 - 3/8	Micro 6.0	6.0SIR27UN	SMC...-6.0	-
	7/16 - 1/2	IC 6.0	Special	NVR...-6.0	-
27	9/16 - 5/8	IC 1/4"	2IR27UN	NVR0375-2	-
	3/4	IC 3/8"	3IR27UN	NVR050-3	-
	7/8	IC 3/8"	3IR27UN	NVR0625-3	-
	1	IC 3/8"	3IR27UN	AVR075-3	YI3 - 1N
	12 - 1/4	Micro 4.0	4.0SIR24UN	SMC...-4.0	-
	5/16 - 3/8	Micro 6.0	6.0SIR24UN	SMC...-6.0	-
	7/16	IC 5.0 L	5LIR24UN	NVR0375-5L	-
	1/2	IC 6.0	6.0IR24UN	NVR...-6.0	-
24	9/16 - 11/16	IC 1/4"	2IR24UN	NVR0375-2	-
	3/4	IC 3/8"	3IR24UN	NVR050-3	-
	7/8	IC 3/8"	3IR24UN	NVR0625-3	-
	1 - 1 1/8	IC 3/8"	3IR24UN	AVR075-3	YI3 - 1N
	1 1/4 - 1 1/2	IC 3/8"	3IR24UN	AVR100-3	YI3 - 1N
	1 5/8 - 24	IC 3/8"	3IR24UN	AVR125-3	YI3 - 1N
	5/16 - 3/8	Micro 6.0	6.0SIR20UN	SMC...-6.0	-
	7/16	IC 5.0 L	5LIR20UN	NVR0375-5L	-
	1/2 - 9/16	IC 6.0	6.0IR20UN	NVR...-6.0	-
	5/8 - 11/16	IC 1/4"	2IR20UN	NVR0375-2	-
	3/4 - 13/16	IC 3/8"	3IR20UN	NVR050-3	-
	7/8 - 15/16	IC 3/8"	3IR20UN	NVR0625-3	-
20	1 - 1 3/16	IC 3/8"	3IR20UN	AVR075-3	YI3 - 1N
	1 1/4 - 1 1/2	IC 3/8"	3IR20UN	AVR100-3	YI3 - 1N
	1 9/16 - 1 13/16	IC 3/8"	3IR20UN	AVR125-3	YI3 - 1N
	1 7/8 - 2 1/8	IC 3/8"	3IR20UN	AVR150-3	YI3 - 1N

Tooling recommendation for a given **Internal** thread specification

TT Gen Software
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American UN (con't)

Pitch tpi	Thread	Insert Size	Insert	Holder	Anvil
18	5/16 - 3/8	Micro 6.0	6.0SIR18UN	SMC...-6.0	-
	7/16	IC 5.0 L	5LIR18UN	NVR0375-5L	-
	1/2 - 9/16	IC 6.0	6.0IR18UN	NVR...-6.0	-
	5/8	IC 1/4"	2IR18UN	NVR0375-2	-
	3/4	IC 3/8"	3IR18UN	NVR050-3	-
	7/8 - 1	IC 3/8"	3IR18UN	NVR0625-3	-
	1 1/16 - 1 3/16	IC 3/8"	3IR18UN	AVR075-3	YI3 - 1N
	1 1/4 - 1 1/2	IC 3/8"	3IR18UN	AVR100-3	YI3 - 1N
	1 9/16 - 1 3/4	IC 3/8"	3IR18UN	AVR125-3	YI3 - 1N
	1 7/8 - 2	IC 3/8"	3IR18UN	AVR150-3	YI3 - 1N
16	3/8	Micro 6.0	6.0SIR16UN	SMC...-6.0	-
	7/16	IC 5.0 L	5LIR16UN	NVR0375-5L	-
	1/2 - 9/16	IC 6.0	6.0IR16UN	NVR...-6.0	-
	5/8 - 11/16	IC 1/4"	2IR16UN	NVR0375-2	-
	3/4 - 13/16	IC 3/8"	3IR16UN	NVR050-3	-
	7/8 - 1	IC 3/8"	3IR16UN	NVR0625-3	-
	1 1/16 - 1 1/8	IC 3/8"	3IR16UN	AVR075-3	YI3
	1 3/16	IC 3/8"	3IR16UN	AVR075-3	YI3 - 1N
	1 1/4 - 1 1/2	IC 3/8"	3IR16UN	AVR100-3	YI3 - 1N
	1 9/16 - 1 13/16	IC 3/8"	3IR16UN	AVR125-3	YI3 - 1N
14	1 7/8 - 2 1/8	IC 3/8"	3IR16UN	AVR150-3	YI3 - 1N
	7/16	IC 5.0 L	5LIR14UN	NVR0375-5L	-
	1/2 - 9/16	IC 6.0	6.0IR14UN	NVR...-6.0	-
	5/8	IC 1/4"	2IR14UN	NVR0375-2	-
	3/4	IC 3/8"	3IR14UN	NVR050-3	-
	7/8 - 1	IC 3/8"	3IR14UN	NVR0625-3	-
	1 1/8	IC 3/8"	3IR14UN	AVR075-3	YI3
	1 1/4	IC 3/8"	3IR14UN	AVR100-3	YI3
	1 3/8 - 1 1/2	IC 3/8"	3IR14UN	AVR100-3	YI3 - 1N
	1 5/8 - 1 3/4	IC 3/8"	3IR14UN	AVR125-3	YI3 - 1N
13	1 7/8 - 2	IC 3/8"	3IR14UN	AVR150-3	YI3 - 1N
	1/2 - 13	IC 6.0	6.0I13UN...158/001	BNVR050S-6.0	-
12	9/16 - 11/16	IC 1/4"	2I12UN...158/002	NVRC040-2 157/001	-
	3/4 - 7/8	IC 3/8"	3IR12UN	NVR050-3	-
	15/16 - 1	IC 3/8"	3IR12UN	NVR0625-3	-
	1 1/16 - 1 3/16	IC 3/8"	3IR12UN	AVR075-3	YI3
	1 1/4 - 1 1/2	IC 3/8"	3IR12UN	AVR100-3	YI3
	1 9/16 - 1 13/16	IC 3/8"	3IR12UN	AVR125-3	YI3
	1 7/8 - 2 1/8	IC 3/8"	3IR12UN	AVR150-3	YI3 - 1N
11	5/8 - 11	IC 1/4U"	2UIR11UN...158/003	NVRC044-2U 157/002	-
	7/8	IC 3/8"	3IR10UN	NVR050-3	-
10	1 - 10	IC 3/8"	3IR10UN	NVR0625-3	-
	1 1/8 - 10	IC 3/8"	3IR10UN	AVR075-3	YI3
	1 1/4 - 1 1/2	IC 3/8"	3IR10UN	AVR100-3	YI3
	1 5/8 - 1 3/4	IC 3/8"	3IR10UN	AVR125-3	YI3
	1 7/8 - 2	IC 3/8"	3IR10UN	AVR150-3	YI3

Tooling recommendation for a given Internal thread specification

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American UN (con't)

Pitch tpi	Thread	Insert Size	Ordering Code		
			Insert	Holder	Anvil
9	7/8 - 9	IC 3/8"	3IR9UN	NVR050-3	-
8	1	IC 3/8"	3IR8UN	NVR0625-3	-
	1 1/16 - 1 3/16	IC 3/8"	3IR8UN	AVR075-3	YI3 - 1P
	1 1/4	IC 3/8"	3IR8UN	AVR075-3	YI3
	1 5/16 - 1 1/2	IC 3/8"	3IR8UN	AVR100-3	YI3
	1 9/16 - 1 13/16	IC 3/8"	3IR8UN	AVR125-3	YI3
	1 7/8 - 2 1/8	IC 3/8"	3IR8UN	AVR150-3	YI3
7	1 1/8 - 1 1/4	IC 1/2"	4IR7UN	NVR075-4	-
6	1 3/8 - 1 7/16	IC 1/2"	4IR6UN	NVR075-4	-
	1 1/2 - 1 5/8	IC 1/2"	4IR6UN	AVR100-4	YI4 - 1P
	1 11/16	IC 1/2"	4IR6UN	AVR100-4	YI4
	1 3/4 - 2	IC 1/2"	4IR6UN	AVR125-4	YI4
	2 1/8 - 6	IC 1/2"	4IR6UN	AVR150-4	YI4
5	1 3/4 - 5	IC 1/2"	4IR5UN	AVR100-4	YI4 - 1P
4.5	2 - 4 1/2	IC 5/8"	5IR4.5UN	AVR125-5	YI5 - 1P

Tooling recommendation for a given Internal thread specification

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ISO Metric

Pitch mm	Thread	Insert Size	Ordering Code		
			Insert	Holder	Anvil
0.70	4	Micro 3.0	3.0SIR0.7ISO	SMC...-3	-
	6	Micro 4.0	4.0SIR0.75ISO	SMC...-4	-
0.75	8	Micro 6.0	6.0SIR0.75ISO	SMC...-6	-
	10	IC 5.0 L	5LIR0.75ISO	NVR0375-5L	-
0.80	5	Micro 3.0	3.0SIR0.8ISO	SMC...-3	-
	M6	Micro 4.0	4.0SIR1.0ISO	SMC...-4	-
	8	Micro 6.0	6.0SIR1.0ISO	SMC...-6	-
1.00	10	IC 5.0 L	5LIR1.0ISO	NVR0375-5L	-
	12-14	IC 6.0	6.0IR1.0ISO	NVR...-6.0	-
	15-17	IC 1/4"	2IR1.0ISO	NVR0375-2	-
	18	IC 1/4"	2IR1.0ISO	NVR050-2	-
	20-24	IC 3/8"	3IR1.0ISO	NVR050-3	-
	M8	Micro 6.0	6.0SIR1.25ISO	SMC...-6.0	-
1.25	10	IC 5.0 L	5LIR1.25ISO	NVR0375-5L	-
	12-14	IC 6.0	6.0IR1.25ISO	NVR...-6.0	-
	M10	IC 5.0 L	5LIR1.5ISO	NVR0375-5L	-
1.50	12-14	IC 6.0	6.0IR1.5ISO	NVR...-6.0	-
	15-18	IC 1/4"	2IR1.5ISO	NVR0375-2	-
	20-25	IC 3/8"	3IR1.5ISO	NVR050-3	-
	26-28	IC 3/8"	3IR1.5ISO	AVR075-3	YI3
	30-36	IC 3/8"	3IR1.5ISO	AVR075-3	YI3-1N
	38-45	IC 3/8"	3IR1.5ISO	AVR125-3	YI3-1N
	48-68	IC 3/8"	3IR1.5ISO	AVR150-3	YI3-1N
1.75	M12	IC 6.0	6.0IR1.75ISO	NVR...-6.0	-
	M14	IC 6.0	6.0IR2.0ISO	NVR1...-6.0	-
	M16-18	IC 1/4"	2IR2.0ISO	NVR0375-2	-
2.00	20-22	IC 3/8"	3IR2.0ISO	NVR050-3	-
	24	IC 3/8"	3IR2.0ISO	NVR0625-3	-
	27-30	IC 3/8"	3IR2.0ISO	AVR075-3	YI3
	33-36	IC 3/8"	3IR2.0ISO	AVR100-3	YI3
	39-45	IC 3/8"	3IR2.0ISO	AVR125-3	YI3-1N
	48-68	IC 3/8"	3IR2.0ISO	AVR150-3	YI3-1N
	M18	IC 1/4"	2IR2.5ISO	NVR0375-2	-
2.50	M20-M22	IC 3/8"	3IR2.5ISO	NVR050-3	-
	M24-M27	IC 3/8"	3IR3.0ISO	NVR0625-3	-
3.00	36-45	IC 3/8"	3IR3.0ISO	AVR100-3	YI3
	48-68	IC 3/8"	3IR3.0ISO	AVR150-3	YI3
3.50	M30-M33	IC 3/8"	3IR3.5ISO	NVR0625-3	-
	M36	IC 1/2"	4IR4.0ISO	NVR075-4	-
4.00	M39	IC 1/2"	4IR4.0ISO	AVR100-4	YI4
	56-68	IC 1/2"	4IR4.0ISO	AVR150-4	YI4
	M42	IC 1/2"	4IR4.5ISO	AVR100-4	YI4-1P
4.50	M45	IC 1/2"	4IR4.5ISO	AVR125-4	YI4
	M48	IC 1/2"	4IR5.0ISO	AVR125-4	YI4-1P
5.00	M52	IC 1/2"	4IR5.0ISO	AVR125-4	YI4
	M56-60	IC 5/8"	5IR5.5ISO	AVR150-5	YI5
6.00	M64-68	IC 5/8"	5IR6.0ISO	AVR150-5	YI5

Tooling recommendation for a given Internal thread specification

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Whitworth

Pitch tpi	Thread	Insert Size	Ordering Code		
			Insert	Holder	Anvil
26	1/4	Micro 4.0	4.0SIR26W	SMC..-4.0	-
	5/16 - 1/2	Micro 6.0	6.0SIR26W	SMC..-6.0	-
	9/16 - 5/8	IC 1/4"	2IR26W	NVR0375-2	-
	11/16	IC 1/4"	2IR26W	NVR050-2	-
	3/4 - 13/16	IC 3/8"	3IR26W	NVR050-3	-
	7/8 - 15/16	IC 3/8"	3IR26W	NVR0625-3	-
	1 - 1 3/16	IC 3/8"	3IR26W	AVR075-3	YI3 - 1N
	1 1/4 - 1 7/16	IC 3/8"	3IR26W	AVR100-3	YI3 - 1N
	1 1/2 - 1 3/4	IC 3/8"	3IR26W	AVR125-3	YI3 - 1N
22	1 7/8 - 2	IC 3/8"	3IR26W	AVR150-3	YI3 - 1N
	5/16	Micro 6.0	6.0SIR22W	SMC..-6.0	-
	3/8 - 9/16	Micro 6.0	6.0SIR20W	SMC..-6.0	-
	5/8 - 11/16	IC 1/4"	2IR20W	NVR0375-2	-
	3/4 - 13/16	IC 3/8"	3IR20W	NVR050-3	-
	7/8 - 1	IC 3/8"	3IR20W	NVR0625-3	-
	1 1/16 - 1 3/16	IC 3/8"	3IR20W	AVR075-3	YI3 - 1N
	1 1/4 - 1 7/16	IC 3/8"	3IR20W	AVR100-3	YI3 - 1N
	1 1/2 - 1 3/4	IC 3/8"	3IR20W	AVR125-3	YI3 - 1N
20	1 7/8 - 3	IC 3/8"	3IR20W	AVR150-3	YI3 - 1N
	11/16	IC 1/4"	2IR16W	NVR0375-2	-
	3/4 - 11/16	IC 3/8"	3IR16W	NVR050-3	-
	7/8 - 1	IC 3/8"	3IR16W	NVR0625-3	-
	1 1/16 - 1 1/8	IC 3/8"	3IR16W	AVR075-3	YI3
	1 3/16	IC 3/8"	3IR16W	AVR075-3	YI3 - 1N
	1 1/4 - 1 7/16	IC 3/8"	3IR16W	AVR100-3	YI3 - 1N
	1 1/2 - 1 3/4	IC 3/8"	3IR16W	AVR125-3	YI3 - 1N
	1 7/8 - 4 5/8	IC 3/8"	3IR16W	AVR150-3	YI3 - 1N
16	4 3/4 - 7	IC 3/8"	3IR16W	AVR150-3	YI3 - 1.5N
	7/16	IC 5.0 L	5LIR14W	NVR0375-5L	-
	5/8 - 11/16	IC 1/4"	2IR14W	NVR0375-2	-
	13/16	IC 3/8"	3IR12W	NVR050-3	-
	15/16 - 1	IC 3/8"	3IR12W	NVR0625-3	-
	1 1/16 - 1 3/16	IC 3/8"	3IR12W	AVR075-3	YI3
	1 1/4 - 1 1/2	IC 3/8"	3IR12W	AVR100-3	YI3
	1.6 - 1 3/4	IC 3/8"	3IR12W	AVR125-3	YI3 - 1N
	1 7/8 - 6	IC 3/8"	3IR12W	AVR150-3	YI3 - 1N
12	6 1/4 - 7	IC 3/8"	3IR12W	AVR150-3	YI3 - 1.5N
	7/8	IC 3/8"	3IR11W	NVR050-3	-
	1	IC 3/8"	3IR10W	NVR0625-3	-

Tooling recommendation for a given **Internal** thread specification

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Whitworth (con't)

Pitch tpi	Thread	Insert Size	Insert	Ordering Code	Anvil
				Holder	
9	7/8	IC 3/8"	3IR9W	NVR050-3	-
	1 1/8 - 1 1/4	IC 3/8"	3IR9W	AVR075-3	YI3
8	1	IC 3/8"	3IR8W	NVR0625-3	-
	1 3/16	IC 3/8"	3IR8W	AVR075-3	YI3 - 1P
	1 5/16 - 1 1/2	IC 3/8"	3IR8W	AVR100-3	YI3
	1.6 - 1 7/8	IC 3/8"	3IR8W	AVR125-3	YI3
	1.9 - 2 1/4	IC 3/8"	3IR8W	AVR150-3	YI3
	2.4 - 7	IC 3/8"	3IR8W	AVR150-3	YI3 - 1N
7	1 1/4	IC 1/2"	4IR7W	NVR075-4	-
	1 3/4 - 2	IC 1/2"	4IR7W	AVR125-4	YI4
	1 5/16 - 1 7/16	IC 1/2"	4IR6W	NVR075-4	-
6	1 1/2 - 1 5/8	IC 1/2"	4IR6W	AVR100-4	YI4 - 1P
	1 7/8 - 1.9	IC 1/2"	4IR6W	AVR125-4	YI4
	2.1 - 3.1	IC 1/2"	4IR6W	AVR150-4	YI4
	3 1/4 - 7	IC 1/2"	4IR6W	AVR150-4	YI4 - 1N
5	1 3/4	IC 1/2"	4IR5W	AVR100-4	YI4 - 1P
	3 - 3 1/4	IC 1/2"	4IR5W	AVR150-4	YI4
4.5	2	IC 5/8"	5IR4.5W	AVR125-5	YI5 - 1P
	3 1/2 - 4	IC 5/8"	5IR4.5W	AVR250-5	YI5
4	2 1/4	IC 5/8"	5IR4W	AVR150-5	YI5 - 1P
	2 1/2	IC 5/8"	5IR4W	AVR150-5	YI5
	4 1/4 - 4 3/4	IC 5/8"	5IR4W	AVR250-5	YI5
	4 7/8 - 7	IC 5/8"	5IR4W	AVR250-5	YI5 - 1N
3.5	2 3/4	IC 5/8" U	5UEI3.5W	AVR150-5U	YI5U - 1P
	3	IC 5/8" U	5UEI3.5W	AVR200-5U	YI5U
3.25	3 1/4	IC 5/8" U	5UEI3.25W	AVR200-5U	YI5U
	3 1/2	IC 5/8" U	5UEI3.25W	AVR250-5U	YI5U
3	3 3/4 - 4	IC 5/8" U	5UEI3W	AVR250-5U	YI5U
2.75	5	IC 5/8" U	5UEI2.75W	AVR250-5U	YI5U
2.5	6	IC 5/8" V	5VIR2.5W	NVR250-5V	-

Tooling recommendation for a given Internal thread specification

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



NPT

Pitch tpi	Thread	Insert Size	Ordering Code		
			Insert	Holder	Anvil
27	1/16	Micro 6.0	6.0SIR27NPT	SMC...-6.0	-
18	1/4	Micro 6.0	6.0SIR18NPT	SMC...-6.0	-
	3/8	Micro 6.0	6.0SIR18NPT	SMC...-6.0	-
14	1/2	IC 3/8"	3IR14NPT	NVR050-3	-
	3/4	IC 3/8"	3IR14NPT	NVR050-3	-
11.5	1	IC 3/8"	3IR11.5NPT	AVR075-3	YI3
	1 1/4	IC 3/8"	3IR11.5NPT	AVR125-3	YI3
	1 1/2	IC 3/8"	3IR11.5NPT	AVR125-3	YI3 - 1N
	2	IC 3/8"	3IR11.5NPT	AVR150-3	YI3 - 1N
8	2 1/2	IC 3/8"	3IR8NPT	AVR150-3	YI3 - 1N
	3	IC 3/8"	3IR8NPT	AVR150-3	YI3 - 1N
	3 1/2	IC 3/8"	3IR8NPT	AVR150-3	YI3 - 1N
	4	IC 3/8"	3IR8NPT	AVR150-3	YI3 - 1N
	5	IC 3/8"	3IR8NPT	AVR150-3	YI3 - 1N
	6	IC 3/8"	3IR8NPT	AVR150-3	YI3 - 1N
	8	IC 3/8"	3IR8NPT	AVR150-3	YI3 - 1N
	10	IC 3/8"	3IR8NPT	AVR150-3	YI3 - 1N
	12	IC 3/8"	3IR8NPT	AVR150-3	YI3 - 1N

NPTF

Pitch tpi	Thread	Insert Size	Ordering Code		
			Insert	Holder	Anvil
27	1/8	IC 5.0 L	5LIR27NPTF	NVR...-5L	-
18	1/4	IC 6.0	6.0IR18NPTF	NVR1...-6.0	-
	3/8	IC 1/4"	2IR18NPTF	NVR0375-2	-
14	1/2	IC 3/8"	3IR14NPTF	NVR050-3	-
	3/4	IC 3/8"	3IR14NPTF	NVR0625-3	-
11.5	1	IC 3/8"	3IR11.5NPTF	AVR075-3	YI3
	1 1/4	IC 3/8"	3IR11.5NPTF	AVR125-3	YI3
	1 1/2	IC 3/8"	3IR11.5NPTF	AVR125-3	YI3 - 1N
	2	IC 3/8"	3IR11.5NPTF	AVR150-3	YI3 - 1N
8	2 1/2	IC 3/8"	3IR8NPTF	AVR150-3	YI3 - 1N
	3	IC 3/8"	3IR8NPTF	AVR150-3	YI3 - 1N

PG

Pitch tpi	Thread	Insert Size	Ordering Code		
			Insert	Holder	Anvil
20	Pg 7	IC 6.0	6.0IR20PG	NVR...6.0	-
	Pg 9	IC 1/4"	2IR18PG	NVR0375-2	-
18	Pg 11 & Pg 13.5	IC 3/8"	3IR18PG	NVR050-3	-
	Pg 16	IC 3/8"	3IR18PG	NVR0625-3	-
16	Pg 21	IC 3/8"	3IR16PG	AVR075-3	YI3
	Pg 29	IC 3/8"	3IR16PG	AVR100-3	YI3 - 1N
	Pg 36 & Pg 42 & Pg 48	IC 3/8"	3IR16PG	AVR150-3	YI3 - 1N

Tooling recommendation for a given **Internal** thread specification

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



BSP (55°)

Pitch tpi	Thread	Insert Size	Ordering Code		
			Insert	Holder	Anvil
28	G1/16	Micro 6.0	6.0SIR28W	SMC...-6.0	-
	G1/8	IC 5.0 L	5LIR28W	NVR0375-5L	-
19	G1/4	IC 6.0	6.0IR19W	NVR ...-6.0	-
	G3/8	IC 1/4"	2IR19W	NVR0375-2	-
14	G1/2 & G5/8	IC 3/8"	3IR14W	NVR050-3	-
	G3/4 & G7/8	IC 3/8"	3IR14W	AVR075-3	YI3
11	G1 & G1 1/8 & 1 1/4	IC 3/8"	3IR11W	AVR100-3	YI3
	G1 1/2	IC 3/8"	3IR11W	AVR150-3	YI3 - 1N
	G1 3/4	IC 3/8"	3IR11W	AVR150-3	YI3 - 1N
	G2	IC 3/8"	3IR11W	AVR150-3	YI3 - 1N
	G2 1/4	IC 3/8"	3IR11W	AVR150-3	YI3 - 1N
	G2 1/2	IC 3/8"	3IR11W	AVR150-3	YI3 - 1N
	G2 3/4	IC 3/8"	3IR11W	AVR150-3	YI3 - 1N
	G3	IC 3/8"	3IR11W	AVR150-3	YI3 - 1N
	G3 1/2	IC 3/8"	3IR11W	AVR150-3	YI3 - 1N
	G4	IC 3/8"	3IR11W	AVR150-3	YI3 - 1N
	G4 1/2	IC 3/8"	3IR11W	AVR150-3	YI3 - 1N
	G5	IC 3/8"	3IR11W	AVR150-3	YI3 - 1N
	G5 1/2	IC 3/8"	3IR11W	AVR150-3	YI3 - 1N
	G6	IC 3/8"	3IR11W	AVR150-3	YI3 - 1N

BSPT

Pitch tpi	Thread	Insert Size	Ordering Code		
			Insert	Holder	Anvil
28	1/8	IC 5.0 L	5LIR28BSPT	NVR...-5L	-
19	1/4	IC 6.0	6.0IR19BSPT	NVR...-6.0	-
	3/8	IC 1/4"	2IR19BSPT	NVR0375-2	-
14	1/2	IC 3/8"	3IR14BSPT	NVR050-3	-
	3/4	IC 3/8"	3IR14BSPT	AVR075-3	YI3
11	1	IC 3/8"	3IR11BSPT	AVR100-3	YI3
	1 1/4	IC 3/8"	3IR11BSPT	AVR125-3	YI3
	1 1/2	IC 3/8"	3IR11BSPT	AVR150-3	YI3 - 1N
	2	IC 3/8"	3IR11BSPT	AVR150-3	YI3 - 1N
	2 1/2	IC 3/8"	3IR11BSPT	AVR150-3	YI3 - 1N
	3	IC 3/8"	3IR11BSPT	AVR150-3	YI3 - 1N
	4	IC 3/8"	3IR11BSPT	AVR150-3	YI3 - 1N
	5	IC 3/8"	3IR11BSPT	AVR150-3	YI3 - 1N
	6	IC 3/8"	3IR11BSPT	AVR150-3	YI3 - 1N



Thread Turning



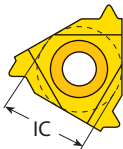
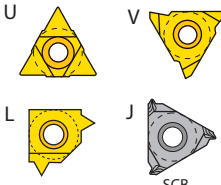
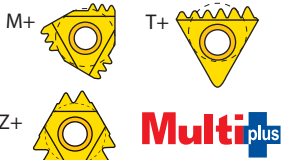
> Inserts

THREAD TURNING INSERTS

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Vardex Ordering Code System

Threading Inserts (Not Including Micro Systems)

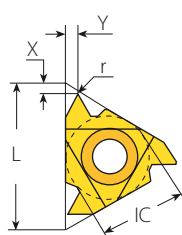
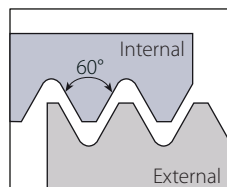
3		E	R	12	UN					VTX																							
1	2	3	4	5	6	7	8	9	10	11	12																						
1 - Insert Size 5L - IC5.0L mm 4.0K - IC4.0 mm 6.0 - IC6.0 mm 2 - IC1/4" 3 - IC 3/8" 4 - IC 1/2" 5 - IC5/8" 			2 - Insert Style 			3 - Type of Insert E - External I - Internal EI - External +Internal			4 - RH/LH Insert R - Right Hand Insert L - Left Hand Insert None - Right + Left Insert																								
5 - Pitch Full Profile - Pitch Range <table><tr><td>mm</td><td>tpi</td></tr><tr><td>0.35-12.0</td><td>72-2</td></tr></table> Partial Profile - Pitch Range <table><tr><td>mm</td><td>tpi</td></tr><tr><td>A 0.5 - 1.5</td><td>48 -16</td></tr><tr><td>AG 0.5 - 3.0</td><td>48 - 8</td></tr><tr><td>G 1.75 - 3.0</td><td>14 - 8</td></tr><tr><td>N 3.5 - 5.0</td><td>7 - 5</td></tr><tr><td>U 5.5 - 8.0</td><td>4½ - 3½</td></tr><tr><td>Q 5.5 - 6.0</td><td>4½ - 4</td></tr><tr><td>U 6.5 - 9.0</td><td>4 - 2¾</td></tr><tr><td>V 6.0 - 10.0</td><td>4 - 2½</td></tr></table>			mm	tpi	0.35-12.0	72-2	mm	tpi	A 0.5 - 1.5	48 -16	AG 0.5 - 3.0	48 - 8	G 1.75 - 3.0	14 - 8	N 3.5 - 5.0	7 - 5	U 5.5 - 8.0	4½ - 3½	Q 5.5 - 6.0	4½ - 4	U 6.5 - 9.0	4 - 2¾	V 6.0 - 10.0	4 - 2½	6 - Standard 60° - Partial Profile 60° 55° - Partial Profile 55° ISO - ISO Metric UN - American UN W - Whitworth for BSW, BSP BSPT - British Standard Pipe Thread NPT - NPT NPTF - NPTF NPS - NPS RD - Round DIN 405 RD20400 - Round DIN 20400 TR - Tarpez DIN 103 ACME - ACME STACME - Stub ACME UNJ - UNJ MJ - ISO 5855 ABOUT - American Butterss BBUT - British Buttress SAGE - Metric Buttress DIN 513 API - API BUT - API Buttress Casing APIRD - API Round Casing & Tubing VAM - VAM EL - Extreme Line Casing H90 - H90 PG - Pg DIN 40430								
mm	tpi																																
0.35-12.0	72-2																																
mm	tpi																																
A 0.5 - 1.5	48 -16																																
AG 0.5 - 3.0	48 - 8																																
G 1.75 - 3.0	14 - 8																																
N 3.5 - 5.0	7 - 5																																
U 5.5 - 8.0	4½ - 3½																																
Q 5.5 - 6.0	4½ - 4																																
U 6.5 - 9.0	4 - 2¾																																
V 6.0 - 10.0	4 - 2½																																
10 - Multi tooth Style 			11 - Carbide Grade VKX, VTX, VCB, VM7, VK2, VK2P, VKP, VHX, VBX			12 - Coarse Pitch Inserts 158/...																											
						7 - No. of Cutting Corners 6C - V6 Cutting Corners None - All Others																											
						8 - API Form <table><tr><td>382</td><td>2</td></tr><tr><td>383</td><td>3</td></tr><tr><td>403</td><td>15</td></tr><tr><td>502</td><td>75</td></tr><tr><td>503</td><td>125</td></tr></table>						382	2	383	3	403	15	502	75	503	125												
382	2																																
383	3																																
403	15																																
502	75																																
503	125																																
						9 - No. of Teeth (for multitooth Style) 2, 3, 5, 6, 8																											

Micro Threading Inserts - Double Ended

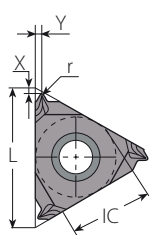
3	S	I	R	32	UN	VMX																				
1	2	3	4	5	6	7																				
1 - Insert Dia. 3.0 - 3.0 mm 4.0 - 4.0 mm 6.0 - 6.0 mm 8.0 - 8.0 mm 10.0 - 10.0 mm		2 - Insert Style S - Micro Insert		3 - Type of Insert I - Internal		4 - RH/LH Insert R - Right Hand Insert L - Left Hand Insert																				
6 - Standard 60° - Partial Profile 60° 55° - Partial Profile 55° ISO - ISO Metric MJ - ISO 5855 NPT - NPT NPTF - NPTF UN - American UN W - Whitworth for BSW, BSP		7 - Carbide Grades VMX		5 - Pitch Full Profile - Pitch Range <table><tr><td colspan="2">mm</td><td colspan="2">tpi</td></tr><tr><td colspan="2">0.30-1.5</td><td colspan="2">40-16</td></tr></table> Partial Profile - Pitch Range <table><tr><td colspan="2">mm</td><td colspan="2">tpi</td></tr><tr><td>A</td><td>0.5 - 1.5</td><td>A</td><td>48 - 16</td></tr><tr><td>F</td><td>0.5 - 3.0</td><td>F</td><td>48 - 24</td></tr></table>			mm		tpi		0.30-1.5		40-16		mm		tpi		A	0.5 - 1.5	A	48 - 16	F	0.5 - 3.0	F	48 - 24
mm		tpi																								
0.30-1.5		40-16																								
mm		tpi																								
A	0.5 - 1.5	A	48 - 16																							
F	0.5 - 3.0	F	48 - 24																							

Partial Profile 60°

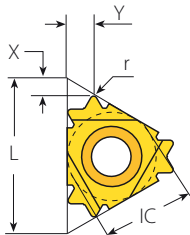
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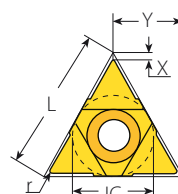
Standard



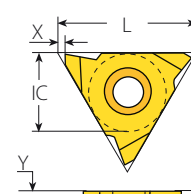
SCB
Sintered
Chipbreaker



V6



U Style



V Style / Slim Throat

Standard



SCB



V6

Insert Size		Pitch		Ordering Code		Dimensions inch			Anvil		Toolholder
IC	L inch	mm	tpi	RH	LH	r	X	Y	RH	LH	
1/4"	0.43	0.5-1.5	48-16	2ERA60...	2ELA60...	0.002	0.03	0.04	-	-	NL...-2 (LH)
		0.5-1.5	48-16	3ERA60...	3ELA60...	0.002	0.03	0.04			
3/8"	0.63	1.75-3.0	14-8	3ERG60...	3ELG60...	0.011	0.05	0.07	YE3	YI3	AL...-3 (LH)
		0.5-3.0	48-8	3ERAG60...	3ELAG60...	0.003	0.05	0.07			
		0.5-1.5	48-16	3JERA60...		0.002	0.02	0.03	YE3	-	AL...-3
3/8" SCB	0.63	1.75-3.0	14-8	3JERG60...		0.011	0.04	0.06			
		0.5-3.0	48-8	3JERAG60...		0.003	0.04	0.06			
3/8" V6	0.63	0.5-2.0	48-13	3ERS60-6C...		0.002	0.07	0.12	YE3-6C	-	AL...-3
1/2"	0.87	3.5-5.0	7-5	4ERN60...	4ELN60...	0.021	0.07	0.10	YE4	YI4	AL...-4 (LH)
5/8"	1.06	5.5-6.0	4.5-4	5ERQ60...	5ELQ60...	0.025	0.08	0.12	YE5	YI5	AL...-5 (LH)

U Style



Insert Size		Pitch		Ordering Code		Dimensions inch			Anvil		Toolholder
IC	L inch	mm	tpi	RH+LH		r	X	Y	RH	LH	
1/2"U	0.87	5.5-8.0	4.5-3.25	4UEIU60...		0.012	0.02	0.43	YE4U	YI4U	AL...-4U (LH)
5/8"U	1.06	6.5-9.0	4-2.75	5UEIU60...		0.015	0.04	0.54	YE5U	YI5U	AL...-5U (LH)

Slim Throat



Insert Size		Pitch		Ordering Code		Dimensions inch				Toolholder
IC	L inch	mm	tpi	RH	LH	r	X	Y	T	
1/4"V	0.43	0.5-1.5	48-16	2VERA60...	2VELA60...	0.002	0.03	0.09	0.13	NL...-2V (LH)
		0.5-1.5	48-16	3VERA60...	3VELA60...	0.002	0.04	0.11	0.14	
3/8"V	0.63	1.75-3.0	14-8	3VERG60...	3VELG60...	0.011	0.04	0.07	0.14	NL...-3V (LH)
		0.5-3.0	48-8	3VERAG60...	3VELAG60...	0.003	0.04	0.07	0.14	
1/2"V	0.87	3.5-5.0	7-5	4VERN60...	4VELN60...	0.021	0.04	0.09	0.19	NL...-4V (LH)

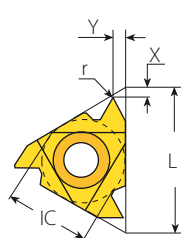
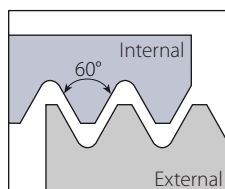
V Style



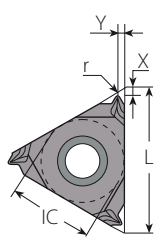
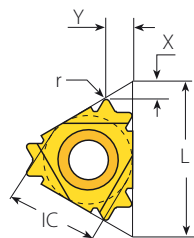
Insert Size		Pitch		Ordering Code		Dimensions inch				Toolholder
IC	L inch	mm	tpi	RH	LH	r	X	Y	T	
5/8"V	1.06	6.0-10.0	4-2.5	5VERV60...	5VELV60...	0.030	0.02	0.20	0.39	NL...-5V-10 (LH)

Partial Profile 60° (con't)

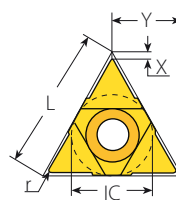
Internal



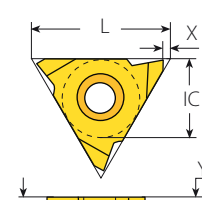
Standard

SCB
Sintered
Chipbreaker

V6



U Style



V Style

Standard



SCB



V6

Insert Size		Pitch		Ordering Code		Dimensions inch			Anvil		
IC	L inch	mm	tpi	RH	LH	r	X	Y	RH	LH	Toolholder
1/4"	0.43	0.5-1.5	48-16	2IRA60...	2ILA60...	0.002	0.03	0.04	-	-	NVR...-2 (LH)
1/4" SCB	0.43	0.5-1.5	48-16	2JIRA60...		0.002	0.03	0.03	-	-	NVR...-2
3/8"	0.63	0.5-1.5	48-16	3IRA60...	3ILA60...	0.002	0.03	0.04	YI3	YE3	AVR...-3 (LH)
		1.75-3.0	14-8	3IRG60...	3ILG60...	0.006	0.05	0.07			
		0.5-3.0	48-8	3IRAG60...	3ILAG60...	0.002	0.05	0.07			
3/8" SCB	0.63	0.5-1.5	48-16	3JIRA60...		0.002	0.02	0.03	YI3	-	AVR...-3
		1.75-3.0	14-8	3JIRG60...		0.006	0.04	0.06			
		0.5-3.0	48-8	3JIRAG60...		0.002	0.04	0.06			
3/8" V6	0.63	0.5-2.0	48-14	3IRS60-6C...		0.001	0.06	0.10	YI3-6C	-	AVR...-3 NVRC...-3V6
1/2"	0.87	3.5-5.0	7-5	4IRN60...	4ILN60...	0.012	0.07	0.10	YI4	YE4	AVR...-4 (LH)
5/8"	1.06	5.5-6.0	4.5-4	5IRQ60...	5ILQ60...	0.012	0.07	0.11	YI5	YE5	AVR...-5 (LH)

U Style



Insert Size		Pitch		Ordering Code		Dimensions inch			Anvil		
IC	L inch	mm	tpi	RH+LH		r	X	Y	RH	LH	Toolholder
1/2"U	0.87	5.5-8.0	4.5-3.25	4UEIU60...		0.012	0.02	0.43	YI4U	YE4U	AVR...-4U (LH)
5/8"U	1.06	6.5-9.0	4-2.75	5UEIU60...		0.015	0.04	0.54	YI5U	YE5U	AVR...-5U (LH)

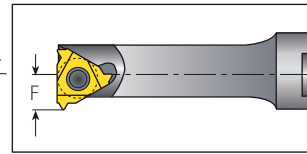
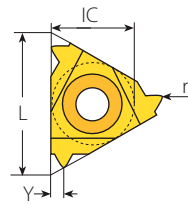
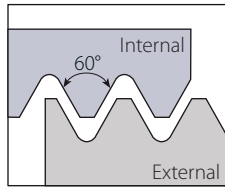
V Style



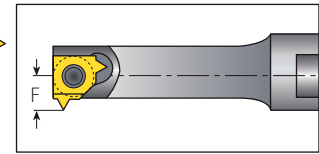
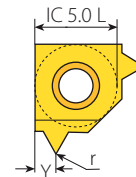
Insert Size		Pitch		Ordering Code		Dimensions inch					
IC	L inch	mm	tpi	RH	LH	r	X	Y	T	Toolholder	
5/8"V	1.06	6.0-10.0	4-2.5	5VIRV60...	5VILV60...	0.014	0.04	0.17	0.31	NVR...-5V (LH)	

Partial Profile 60° (con't)

Internal



Mini-3



Mini-L

Mini-3



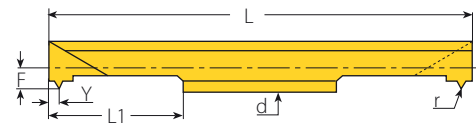
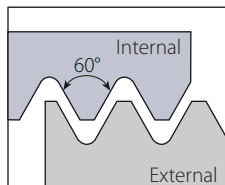
Insert Size		Pitch		Ordering Code		Dimensions inch			Min. Bore dia.	Toolholder
IC	L inch	mm	tpi	RH		r	Y	F	inch	
4.0	6	0.5-1.25	48-20	4.0KIRA60...		0.002	0.02	0.15	0.25	.NVR.020-4.0K
6.0	10	0.5-1.5	48-16	6.0IRA60...		0.002	0.04	0.21	0.39	.NVR...-6.0

Mini-L



Insert Size		Pitch		Ordering Code	Dimensions inch			Min Bore dia.	
IC	mm	tpi		RH	r	Y	F	inch	Toolholder
5.0L	0.5-1.5	48-16		5LIRA60...	0.002	0.04	0.18	0.31	.NVR...-5L

Internal



RH-Double Ended

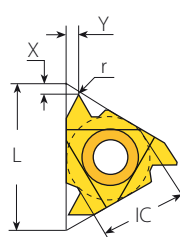
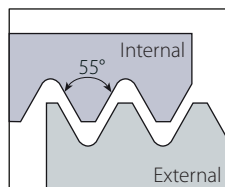
Micro - Double Ended

Insert dia.		Pitch	Ordering Code	Dimensions inch					Min. Bore dia.	
d mm	mm	tpi	RH/LH	r	L1	L	F	Y	inch.	Toolholder
3.0	0.5-1.0	48-24	3.0SIRF60...	0.002	0.63	1.97	0.06	0.04	0.13	SMC...-3.0
4.0	0.5-1.0	48-24	4.0SIRF60...	0.002	0.63	1.97	0.08	0.04	0.17	SMC...-4.0
6.0	0.5-1.5	48-16	6.0SIRA60...	0.002	0.63	1.97	0.10	0.04	0.24	SMC...-6.0

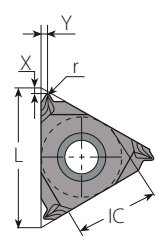
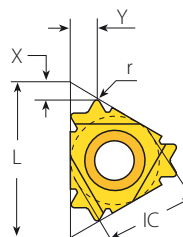
Left Handed Tool Supplied by Request. (Example: 6.0SILA60...)

Partial Profile 55°

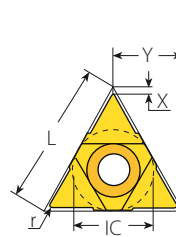
External



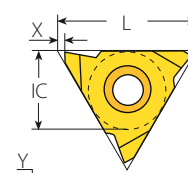
Standard

SCB
Sintered
Chipbreaker

V6



U Style



V Style / Slim Throat

Standard



SCB



V6

Insert Size		Pitch		Ordering Code		Dimensions inch			Anvil		
IC	L inch	mm	tpi	RH	LH	r	X	Y	RH	LH	Toolholder
1/4"	0.43	0.5-1.5	48-16	2ERA55...	2ELA55...	0.002	0.03	0.04	-	-	NL...-2 (LH)
3/8"	0.63	0.5-1.5	48-16	3ERA55...	3ELA55...	0.002	0.03	0.04	YE3	YI3	AL...-3 (LH)
		1.75-3.0	14-8	3ERG55...	3ELG55...	0.008	0.05	0.07			
		0.5-3.0	48-8	3ERAG55...	3ELAG55...	0.003	0.05	0.07			
3/8" SCB	0.63	0.5-1.5	48-16	3JERA55...		0.002	0.02	0.03	YE3	-	AL...-3
		1.75-3.0	14-8	3JERG55...		0.008	0.04	0.06			
		0.5-3.0	48-8	3JERAG55...		0.003	0.04	0.06			
3/8"V6	0.63	-	48-14	3ERS55-6C...		0.002	0.07	0.11	YE3-6C	-	AL...-3
1/2"	0.87	3.5-5.0	7-5	4ERN55...	4ELN55...	0.017	0.07	0.10	YE4	YI4	AL...-4 (LH)
5/8"	1.06	5.5-6.0	4.5-4	5ERQ55...	5ELQ55...	0.024	0.08	0.11	YE5	YI5	AL...-5 (LH)

U Style



Insert Size		Pitch		Ordering Code		Dimensions inch			Anvil		
IC	L inch	mm	tpi	RH+LH		r	X	Y	RH	LH	Toolholder
1/2"U	0.87	5.5-8.0	4.5-3.25	4UEIU55...		0.024	0.04	0.43	YE4U	YI4U	AL...-4U (LH)
5/8"U	1.06	6.5-9.0	4-2.75	5UEIU55...		0.031	0.05	0.54	YE5U	YI5U	AL...-5U (LH)

Slim Throat



Insert Size		Pitch		Ordering Code		Dimensions inch				Toolholder
IC	L inch	mm	tpi	RH	LH	r	X	Y	T	
1/4"V	0.43	0.5-1.5	48-16	2VERA55...	2VELA55...	0.002	0.03	0.11	0.13	NL...-2V (LH)
3/8"V	0.63	0.5-1.5	48-16	3VERA55...	3VELA55...	0.002	0.04	0.11	0.14	NL...-3V (LH)
		1.75-3.0	14-8	3VERG55...	3VELG55...	0.008	0.04	0.07	0.14	
		0.5-3.0	48-8	3VERAG55...	3VELAG55...	0.003	0.04	0.07	0.14	
1/2"V	0.87	3.5-5.0	7-5	4VERN55...	4VELN55...	0.017	0.04	0.09	0.19	NL...-4V (LH)

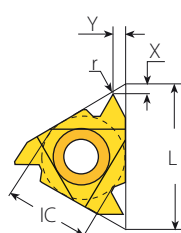
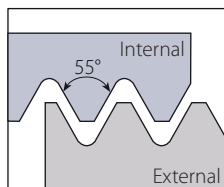
V Style



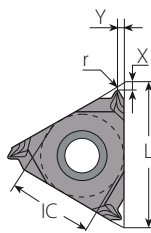
Insert Size		Pitch		Ordering Code		Dimensions inch				Toolholder
IC	L inch	mm	tpi	RH	LH	r	X	Y	T	
5/8"V	1.06	6.0-9.0	4-2.75	5VERV55...	5VELV55...	0.028	0.04	0.17	0.31	NL...-5V-8 (LH)

Partial Profile 55° (con't)

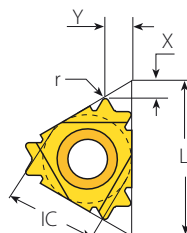
Internal



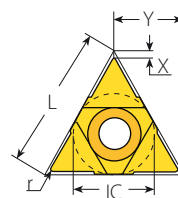
Standard



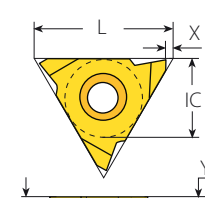
SCB
Sintered
Chipbreaker



V6



U Style



V Style

Standard



Insert Size		Pitch		Ordering Code		Dimensions inch			Anvil		Toolholder
IC	L inch	mm	tpi	RH	LH	r	X	Y	RH	LH	
1/4"	0.43	0.5-1.5	48-16	2IRA55...	2ILA55...	0.002	0.03	0.04	-	-	NVR...-2 (LH)
1/4" SCB	0.43	0.5-1.5	48-16	2JIRA55...		0.002	0.02	0.03	-	-	NVR...-2
3/8"	0.63	0.5-1.5	48-16	3IRA55...	3ILA55...	0.002	0.03	0.04	YI3	YE3	AVR...-3 (LH)
		1.75-3.0	14-8	3IRG55...	3ILG55...	0.008	0.05	0.07			
		0.5-3.0	48-8	3IRAG55...	3ILAG55...	0.003	0.05	0.07			
3/8" SCB	0.63	0.5-1.5	48-16	3JIRA55...		0.002	0.02	0.03	YI3	-	AVR...-3
		1.75-3.0	14-8	3JIRG55...		0.008	0.04	0.06			
		0.5-3.0	48-8	3JIRAG55...		0.003	0.04	0.06			
3/8" V6	0.63	-	48-16	3IRS55-6C...		0.002	0.06	0.10	YI3-6C	-	AVR...-3 NVR...-3V6
1/2"	0.87	3.5-5.0	7-5	4IRN55...	4ILN55...	0.017	0.07	0.10	YI4	YE4	AVR...-4 (LH)
5/8"	1.06	5.5-6.0	4.5-4	5IRQ55...	5ILQ55...	0.024	0.08	0.11	YI5	YE5	AVR...-5 (LH)

U Style



Insert Size		Pitch		Ordering Code		Dimensions inch			Anvil		Toolholder
IC	L inch	mm	tpi	RH+LH		r	X	Y	RH	LH	
1/2"U	0.87	5.5-8.0	4.5-3.25	4UEIU55...		0.024	0.04	0.43	YI4U	YE4U	AVR...-4U (LH)
5/8"U	1.06	6.5-9.0	4-2.75	5UEIU55...		0.031	0.05	0.54	YI5U	YE5U	AVR...-5U (LH)

V Style

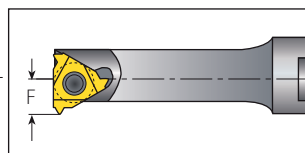
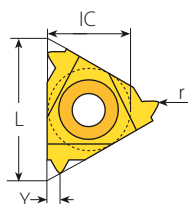
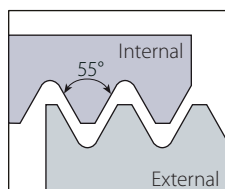


Insert Size		Pitch		Ordering Code		Dimensions inch				Toolholder
IC	L inch	mm	tpi	RH	LH	r	X	Y	T	
5/8"V	1.06	6.0-9.0	4-2.75	5VIRV55...	5VILV55...	0.028	0.04	0.17	0.31	NVR...-5V (LH)

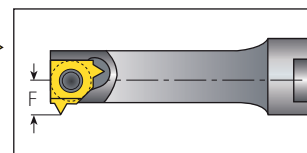
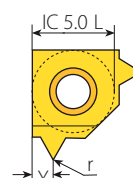
Partial Profile 55° (con't)



Internal



Mini-3



Mini-L

Mini-3



Insert Size		Pitch		Ordering Code		Dimensions inch				Min. Bore dia.	Toolholder
IC	L inch	mm	tpi	RH		r	Y	F		inch	
4.0	0.24	0.5-1.25	48-20	4.0KIRA55...		0.002	0.02	0.15		0.25	.NVR. 020-4.0K
6.0	0.39	0.5-1.50	48-16	6.0IRA55...		0.002	0.04	0.21		0.39	.NVR...-6.0

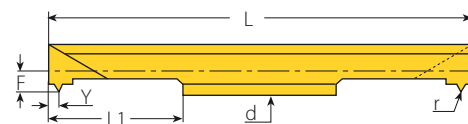
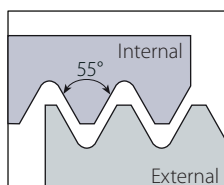
Mini-L



Insert Size		Pitch		Ordering Code		Dimensions inch				Min. Bore dia.	Toolholder
IC	mm	tpi		RH		r	Y	F		inch	
5.0L	0.5-1.5	48-16		5LIRA55...		0.002	0.04	0.18		0.31	.NVR...-5L

Partial Profile 55°

Internal



RH-Double Ended

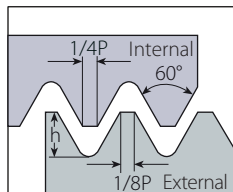
Micro - Double Ended

Insert dia.	Pitch		Ordering Code	Dimensions inch				Min. Bore dia.		
d mm	mm	tpi	RH/LH	r	L1	L	F	Y	inch	Toolholder
3.0	0.5-1.0	48-24	3.0SIRF55...	0.002	0.63	1.97	0.06	0.04	0.13	SMC..-3.0
4.0	0.5-1.0	48-24	4.0SIRF55...	0.002	0.63	1.97	0.08	0.04	0.17	SMC..-4.0
6.0	0.5-1.5	48-16	6.0SIRA55...	0.002	0.63	1.97	0.10	0.04	0.24	SMC..-6.0

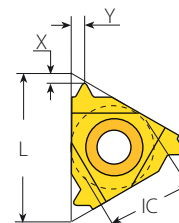
Left Handed Tool Supplied by Request. (Example: 6.0SILA55...)

American UN - UNC, UNF, UNEF, UNS

External



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



Standard

Standard

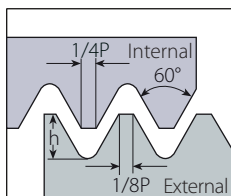
Insert Size		Pitch	Ordering Code		Dimensions inch			Anvil		Toolholder
IC	L inch	tpi	RH	LH	h min	X	Y	RH	LH	
1/4"	0.43	72	2ER72UN...	2EL72UN...	0.009	0.03	0.02	-	-	NL...-2 (LH)
		64	2ER64UN...	2EL64UN...	0.009	0.03	0.02			
		56	2ER56UN...	2EL56UN...	0.011	0.03	0.02			
		48	2ER48UN...	2EL48UN...	0.013	0.02	0.02			
		44	2ER44UN...	2EL44UN...	0.014	0.02	0.02			
		40	2ER40UN...	2EL40UN...	0.015	0.02	0.02			
		36	2ER36UN...	2EL36UN...	0.017	0.02	0.02			
		32	2ER32UN...	2EL32UN...	0.019	0.02	0.02			
		28	2ER28UN...	2EL28UN...	0.022	0.02	0.03			
		27	2ER27UN...	2EL27UN...	0.023	0.03	0.03			
		24	2ER24UN...	2EL24UN...	0.026	0.03	0.03			
		20	2ER20UN...	2EL20UN...	0.031	0.03	0.04			
		18	2ER18UN...	2EL18UN...	0.034	0.03	0.04			
		16	2ER16UN...	2EL16UN...	0.038	0.04	0.04			
		14	2ER14UN...	2EL14UN...	0.044	0.04	0.04			
3/8"	0.63	80	3ER80UN...	3EL80UN...	0.007	0.03	0.01	YE3	YI3	AL...-3 (LH)
		72	3ER72UN...	3EL72UN...	0.009	0.03	0.02			
		64	3ER64UN...	3EL64UN...	0.009	0.03	0.02			
		56	3ER56UN...	3EL56UN...	0.011	0.03	0.02			
		48	3ER48UN...	3EL48UN...	0.013	0.02	0.02			
		44	3ER44UN...	3EL44UN...	0.014	0.02	0.02			
		40	3ER40UN...	3EL40UN...	0.015	0.02	0.02			
		36	3ER36UN...	3EL36UN...	0.017	0.02	0.02			
		32	3ER32UN...	3EL32UN...	0.019	0.02	0.02			
		28	3ER28UN...	3EL28UN...	0.022	0.02	0.03			
		27	3ER27UN...	3EL27UN...	0.023	0.03	0.03			
		24	3ER24UN...	3EL24UN...	0.026	0.03	0.03			
		20	3ER20UN...	3EL20UN...	0.031	0.03	0.04			
		18	3ER18UN...	3EL18UN...	0.034	0.03	0.04			
		16	3ER16UN...	3EL16UN...	0.038	0.04	0.04			
		14	3ER14UN...	3EL14UN...	0.044	0.04	0.05			
		13	3ER13UN...	3EL13UN...	0.047	0.04	0.05			
		12	3ER12UN...	3EL12UN...	0.051	0.04	0.06			
		11.5	3ER11.5UN...	3EL11.5UN...	0.053	0.04	0.06			
		11	3ER11UN...	3EL11UN...	0.056	0.04	0.06			
		10	3ER10UN...	3EL10UN...	0.061	0.04	0.06			
		9	3ER9UN...	3EL9UN...	0.068	0.05	0.07			
		8	3ER8UN...	3EL8UN...	0.077	0.05	0.06			



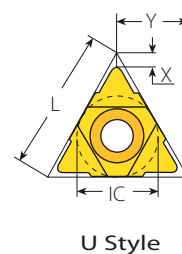
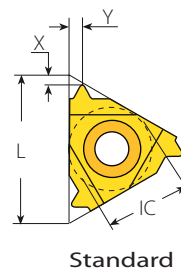
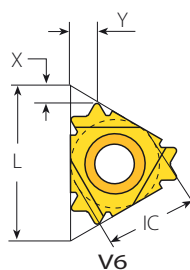
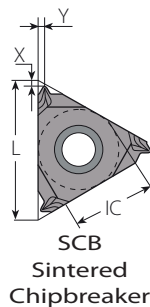
continued on next page ▶

American UN - UNC, UNF, UNEF, UNS (con't)

External



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



Standard (con't)



Insert Size		Pitch	Ordering Code		Dimensions inch			Anvil		Toolholder
IC	L inch	tpi	RH	LH	h min	X	Y	RH	LH	
3/8" SCB	0.63	36	3JER36UN...		0.017	0.05	0.02	YE3	-	AL...-3
		32	3JER32UN...		0.019	0.05	0.02			
		28	3JER28UN...		0.022	0.03	0.03			
		24	3JER24UN...		0.026	0.03	0.03			
		20	3JER20UN...		0.031	0.03	0.03			
		18	3JER18UN...		0.034	0.03	0.03			
		16	3JER16UN...		0.038	0.03	0.03			
		14	3JER14UN...		0.044	0.05	0.06			
		13	3JER13UN...		0.047	0.05	0.06			
		12	3JER12UN...		0.051	0.05	0.06			
		10	3JER10UN...		0.061	0.05	0.06			
		9	3JER9UN...		0.068	0.05	0.06			
3/8" V6	0.63	32	3ER32UN-6C...		0.019	0.08	0.07	YE3-6C	-	AL...-3
		28	3ER28UN-6C...		0.022	0.08	0.08			
		24	3ER24UN-6C...		0.026	0.07	0.08			
		20	3ER20UN-6C...		0.031	0.07	0.08			
		18	3ER18UN-6C...		0.034	0.07	0.09			
		16	3ER16UN-6C...		0.038	0.07	0.09			
		14	3ER14UN-6C...		0.044	0.07	0.11			
		12	3ER12UN-6C...		0.051	0.07	0.09			
1/2"	0.87	7	4ER7UN...	4EL7UN...	0.087	0.06	0.09	YE4	YI4	AL...-4 (LH)
		6	4ER6UN...	4EL6UN...	0.102	0.06	0.09			
		5	4ER5UN...	4EL5UN...	0.123	0.07	0.10			
5/8"	1.06	4.5	5ER4.5UN...	5EL4.5UN...	0.136	0.07	0.11	YE5	YI5	AL...-5 (LH)
		4	5ER4UN...	5EL4UN...	0.153	0.08	0.12			

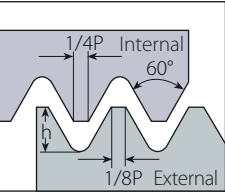
U Style



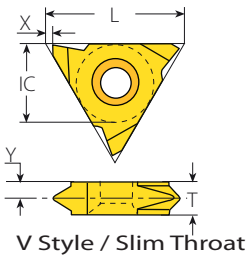
Insert Size		Pitch	Ordering Code	Dimensions inch			Anvil		Toolholder
IC	L inch	tpi	RH+LH	h min	X	Y	RH	LH	
1/2"U	0.87	4.5	4UE4.5UN...	0.136	0.08	0.43	YE4U	YI4U	AL...-4U (LH)
		4	4UE4UN...	0.153	0.08	0.43			
5/8"U	1.06	3	5UE3UN...	0.204	0.10	0.54	YE5U	YI5U	AL...-5U (LH)

American UN - UNC, UNF, UNEF, UNS (con't)

External



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



Slim Throat



Insert Size		Pitch	Ordering Code		Dimensions inch				Toolholder
IC	L inch	tpi	RH	LH	h min	X	Y	T	
1/4"V	0.43	20	2VER20UN...	2VEL20UN...	0.031	0.03	0.09	0.13	NL..-2V (LH)
		18	2VER18UN...	2VEL18UN...	0.034	0.03	0.09	0.13	
		16	2VER16UN...	2VEL16UN...	0.038	0.03	0.09	0.13	
		14	2VER14UN...	2VEL14UN...	0.044	0.03	0.08	0.13	
		12	2VER12UN...	2VEL12UN...	0.051	0.03	0.07	0.13	
3/8"V	0.63	32	3VER32UN...	3VEL32UN...	0.019	0.04	0.12	0.14	NL..-3V (LH)
		28	3VER28UN...	3VEL28UN...	0.022	0.04	0.12	0.14	
		24	3VER24UN...	3VEL24UN...	0.026	0.04	0.11	0.14	
		20	3VER20UN...	3VEL20UN...	0.031	0.04	0.11	0.14	
		18	3VER18UN...	3VEL18UN...	0.034	0.04	0.10	0.14	
		16	3VER16UN...	3VEL16UN...	0.038	0.04	0.10	0.14	
		14	3VER14UN...	3VEL14UN...	0.044	0.04	0.09	0.14	
		12	3VER12UN...	3VEL12UN...	0.051	0.04	0.09	0.14	
		10	3VER10UN...	3VEL10UN...	0.061	0.04	0.08	0.14	
1/2"V	0.87	7	4VER7UN...	4VEL7UN...	0.087	0.04	0.10	0.19	NL..-4V (LH)

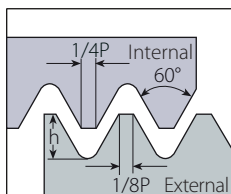
V Style



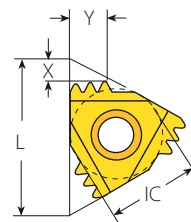
Insert Size		Pitch	Ordering Code		Dimensions inch				Toolholder
IC	L inch	tpi	RH	LH	h min	X	Y	T	
5/8"V	1.06	4	5VER4UN...	5VEL4UN...	0.153	0.04	0.13	0.24	NL..-5V-6 (LH)
		3	5VER3UN...	5VEL3UN...	0.204	0.04	0.17	0.31	NL..-5V-8 (LH)

American UN - UNC, UNF, UNEF, UNS (con't)

External



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



M+ Style

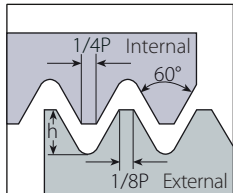
M+ Style



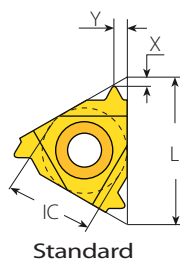
Insert Size		Pitch	Teeth	Ordering Code	Dimensions inch			Anvil	
IC	L inch	tpi		RH	h min	X	Y	RH	Toolholder
3/8"	0.63	20	3	3ER20UN3M+...	0.031	0.09	0.13	YE3M	AL..-3
		18	2	3ER18UN2M+...	0.034	0.06	0.09		
		18	3	3ER18UN3M+...	0.034	0.09	0.14		
		16	2	3ER16UN2M+...	0.038	0.07	0.10		
		14	2	3ER14UN2M+...	0.044	0.07	0.11		
		12	2	3ER12UN2M+...	0.051	0.09	0.13		
1/2"	0.87	16	3	4ER16UN3M+...	0.038	0.10	0.16	YE4M	AL..-4
		14	2	4ER14UN2M+...	0.044	0.07	0.11		
		12	2	4ER12UN2M+...	0.051	0.09	0.13		
		12	3	4ER12UN3M+...	0.051	0.13	0.21		
		11	2	4ER11UN2M+...	0.056	0.09	0.14		
		10	2	4ER10UN2M+...	0.061	0.10	0.15		
5/8"	1.06	8	2	5ER8UN2M+...	0.077	0.12	0.19	YE5M	AL..-5M

American UN - UNC, UNF, UNEF, UNS (con't)

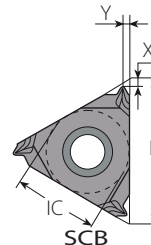
Internal



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



Standard



SCB
Sintered
Chipbreaker

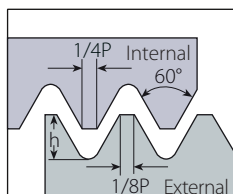
Standard (con't)

Insert Size		Pitch	Ordering Code		Dimensions inch			Anvil		Toolholder
IC	L inch	tpi	RH	LH	h min	X	Y	RH	LH	
1/4"	0.43	72	2IR72UN...	2IL72UN...	0.008	0.03	0.01	-	-	NVR..-2 (LH)
		64	2IR64UN...	2IL64UN...	0.009	0.03	0.02			
		56	2IR56UN...	2IL56UN...	0.010	0.03	0.02			
		48	2IR48UN...	2IL48UN...	0.012	0.02	0.02			
		44	2IR44UN...	2IL44UN...	0.013	0.02	0.02			
		40	2IR40UN...	2IL40UN...	0.015	0.02	0.02			
		36	2IR36UN...	2IL36UN...	0.016	0.02	0.02			
		32	2IR32UN...	2IL32UN...	0.018	0.02	0.02			
		28	2IR28UN...	2IL28UN...	0.020	0.02	0.03			
		27	2IR27UN...	2IL27UN...	0.021	0.03	0.03			
		24	2IR24UN...	2IL24UN...	0.024	0.03	0.03			
		20	2IR20UN...	2IL20UN...	0.029	0.03	0.04			
		18	2IR18UN...	2IL18UN...	0.032	0.03	0.04			
		16	2IR16UN...	2IL16UN...	0.036	0.04	0.04			
		14	2IR14UN...	2IL14UN...	0.041	0.04	0.04			
		12	2IR12UN...	2IL12UN...	0.048	0.03	0.04			
11	2IR11UN...	2IL11UN...	0.052	0.03	0.04					
1/4" SCB	0.43	36	2JIR36UN...		0.016	0.04	0.02	-	-	NVR..-2
		32	2JIR32UN...		0.018	0.05	0.02			
		28	2JIR28UN...		0.020	0.02	0.03			
		24	2JIR24UN...		0.024	0.03	0.03			
		20	2JIR20UN...		0.029	0.02	0.03			
		18	2JIR18UN...		0.032	0.02	0.03			
		16	2JIR16UN...		0.038	0.03	0.03			
3/8"	0.63	72	3IR72UN...	3IL72UN...	0.008	0.03	0.01	Y13	YE3	AVR..-3 (LH)
		64	3IR64UN...	3IL64UN...	0.009	0.03	0.02			
		56	3IR56UN...	3IL56UN...	0.010	0.03	0.02			
		48	3IR48UN...	3IL48UN...	0.012	0.02	0.02			
		44	3IR44UN...	3IL44UN...	0.013	0.02	0.02			
		40	3IR40UN...	3IL40UN...	0.015	0.02	0.02			
		36	3IR36UN...	3IL36UN...	0.016	0.02	0.02			
		32	3IR32UN...	3IL32UN...	0.020	0.02	0.02			
		28	3IR28UN...	3IL28UN...	0.020	0.02	0.03			
		27	3IR27UN...	3IL27UN...	0.021	0.03	0.03			

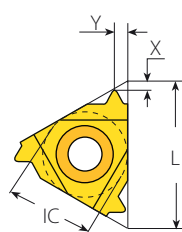
continued on next page▶

American UN - UNC, UNF, UNEF, UNS (con't)

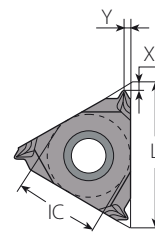
Internal



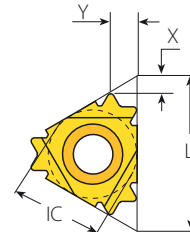
Defined by: ANSI B1.1:74
Tolerance class: 2A/2B



Standard



SCB
Sintered
Chipbreaker



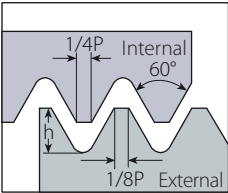
V6

Standard (con't)

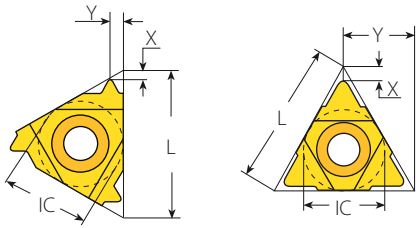
Insert Size		Pitch	Ordering Code		Dimensions inch			Anvil		
IC	L inch	tpi	RH	LH	h min	X	Y	RH	LH	Toolholder
3/8"	0.63	24	3IR24UN...	3IL24UN...	0.024	0.03	0.03	YI3	YE3	AVR..-3 (LH)
		20	3IR20UN...	3IL20UN...	0.029	0.03	0.04			
		18	3IR18UN...	3IL18UN...	0.032	0.03	0.04			
		16	3IR16UN...	3IL16UN...	0.036	0.04	0.04			
		14	3IR14UN...	3IL14UN...	0.041	0.04	0.05			
		13	3IR13UN...	3IL13UN...	0.044	0.04	0.05			
		12	3IR12UN...	3IL12UN...	0.048	0.04	0.06			
		11.5	3IR11.5UN...	3IL11.5UN...	0.050	0.04	0.06			
		11	3IR11UN...	3IL11UN...	0.052	0.04	0.06			
		10	3IR10UN...	3IL10UN...	0.058	0.04	0.06			
		9	3IR9UN...	3IL9UN...	0.064	0.05	0.07			
		8	3IR8UN...	3IL8UN...	0.072	0.04	0.06			
3/8" SCB	0.63	28	3JIR28UN...		0.020	0.02	0.03	YI3	-	AVR..-3
		24	3JIR24UN...		0.024	0.03	0.03			
		20	3JIR20UN...		0.029	0.02	0.03			
		18	3JIR18UN...		0.032	0.02	0.03			
		16	3JIR16UN...		0.036	0.03	0.03			
		14	3JIR14UN...		0.041	0.04	0.06			
		13	3JIR13UN...		0.044	0.04	0.06			
		12	3JIR12UN...		0.048	0.04	0.06			
		10	3JIR10UN...		0.058	0.04	0.06			
		9	3JIR9UN...		0.064	0.04	0.06			
		8	3JIR8UN...		0.072	0.04	0.06			
3/8" V6	0.63	32	3IR32UN-6C...		0.020	0.08	0.07	YI3-6C	-	AVR..-3 NVRC..-3V6
		28	3IR28UN-6C...		0.020	0.07	0.07			
		24	3IR24UN-6C...		0.024	0.07	0.07			
		20	3IR20UN-6C...		0.029	0.07	0.08			
		18	3IR18UN-6C...		0.032	0.07	0.08			
		16	3IR16UN-6C...		0.036	0.06	0.09			
		14	3IR14UN-6C...		0.041	0.07	0.10			
		13	3IR13UN-6C...		0.044	0.07	0.11			
		12	3IR12UN-6C...		0.048	0.06	0.10			
1/2"	0.87	7	4IR7UN...	4IL7UN...	0.082	0.06	0.09	YI4	YE4	AVR..-4 (LH)
		6	4IR6UN...	4IL6UN...	0.096	0.06	0.09			
		5	4IR5UN...	4IL5UN...	0.115	0.06	0.09			
5/8"	1.06	4.5	5IR4.5UN...	5IL4.5UN...	0.128	0.07	0.09	YI5	YE5	AVR..-5 (LH)
		4	5IR4UN...	5IL4UN...	0.144	0.07	0.11			

American UNC

Internal



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



Standard U+ Style

Coarse Pitch

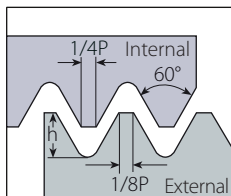


Thread	Insert Size		Ordering Code	Dimensions inch				Min. Bore dia.	
	IC	L inch		h min	X	Y	Toolholder	inch	
1/2 x 13UN	6.0	0.39	*6.0IR13UN...158/001	0.044	0.03	0.04	BNVR0375S-6.0	0.42	
9/16 x 12UN	1/4"	0.43	*2IR12UN...158/002	0.048	0.04	0.04	NVRC040-2	157/001	0.47
5/8 x 11UN	1/4"U		2UIR11UN...158/003	0.052	0.05	0.22	NVRC044-2U	157/002	0.53
3/4 x 10UN	3/8"	0.63	3IR10UN...	0.058	0.04	0.06	NVRC050-3	157/016	0.64
7/8 x 9UN			3IR9UN...	0.064	0.05	0.07	NVRC050-3	157/016	0.76
1 x 8UN			3IR8UN...	0.072	0.04	0.06	NVRC0625-3	0.87	
1 1/8 x 7UN	1/2"	0.87	4IR7UN...	0.082	0.06	0.09	NVRC075-4	0.97	
1 1/4 x 7UN			4IR7UN...	0.082	0.06	0.09	NVRC075-4	1.09	
1 3/8 x 6UN			4IR6UN...	0.096	0.06	0.09	NVRC075-4	1.19	

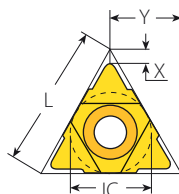
Left Handed Tool Supplied by Request.
* For LH order: 6.0IL13UN...158/016, 2IL12UN...158/017.

American UN - UNC, UNF, UNEF, UNS (con't)

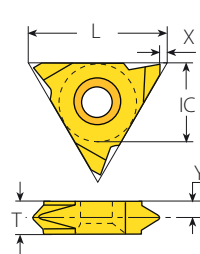
Internal



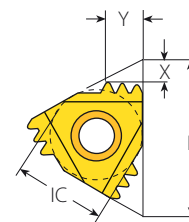
Defined by: ANSI B1.1:74
Tolerance class: 2A/2B



U Style



V Style



M+ Style

U Style



Insert Size		Pitch	Ordering Code		Dimensions inch			Anvil		Toolholder
IC	L inch	tpi	RH+LH		h min	X	Y	RH	LH	
1/2"U	0.87	4.5	4UI4.5UN...		0.128	0.09	0.43	YI4U	YE4U	AVR..-4U (LH)
		4	4UI4UN...		0.144	0.09	0.43			
5/8"U	1.06	3	5UI3UN...		0.193	0.11	0.54	YI5U	YE5U	AVR..-5U (LH)

V Style



Insert Size		Pitch	Ordering Code		Dimensions inch				Toolholder
IC	L inch	tpi	RH	LH	h min	X	Y	T	
5/8"V	1.06	4	5VIR4UN...	5VIL4UN...	0.144	0.04	0.13	0.24	NVR..-5V (LH)
		3	5VIR3UN...	5VIL3UN...	0.193	0.04	0.17	0.31	

M+ Style

Multiplus

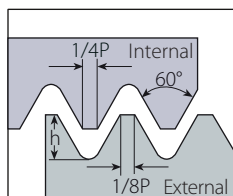


Insert Size		Pitch	Teeth	Ordering Code		Dimensions inch			Anvil	Toolholder
IC	L inch	tpi		RH		h min	X	Y	RH	
3/8"	0.63	12	2	3IR12UN2M+...		0.048	0.09	0.13	YI3M	AVR..-3
		14	2	3IR14UN2M+...		0.041	0.07	0.11		
		16	2	3IR16UN2M+...		0.036	0.07	0.10		
1/2"	0.87	16	3	4IR16UN3M+...		0.036	0.10	0.16	YI4M	AVR..-4
		14	2	4IR14UN2M+...		0.041	0.07	0.11		
		12	2	4IR12UN2M+...		0.048	0.09	0.13		
		12	3	4IR12UN3M+...		0.048	0.13	0.21		
5/8"	1.06	8	2	5IR8UN2M+...		0.072	0.12	0.19	YI5M	AVR..-5M

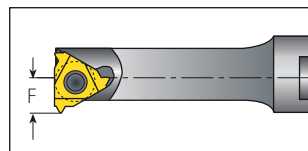
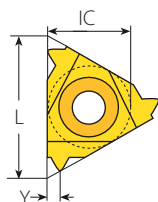
American UN - UNC, UNF, UNEF, UNS (con't)



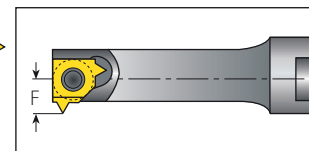
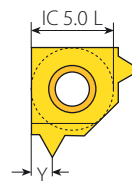
Internal



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



Mini-3



Mini-L

Mini-3



Insert Size		Pitch	Ordering Code	Dimensions inch			Min. Bore dia.	Toolholder
IC	L inch	tpi	RH	h min	Y	F	inch	
4.0	0.24	32	4.0KIR32UN...	0.018	0.02	0.14	0.24	.NVR.020-4.0K
		28	4.0KIR28UN...	0.020	0.02	0.14	0.24	
		24	4.0KIR24UN...	0.024	0.02	0.14	0.25	
		20	4.0KIR20UN...	0.029	0.02	0.15	0.25	
		18	4.0KIR18UN...	0.032	0.03	0.15	0.25	
6.0	0.39	40	6.0IR40UN...	0.015	0.02	0.18	0.37	.NVR...-6.0
		32	6.0IR32UN...	0.018	0.02	0.18	0.37	
		28	6.0IR28UN...	0.020	0.03	0.19	0.38	
		24	6.0IR24UN...	0.024	0.03	0.19	0.38	
		20	6.0IR20UN...	0.029	0.04	0.19	0.39	
		18	6.0IR18UN...	0.032	0.04	0.20	0.39	
		16	6.0IR16UN...	0.036	0.04	0.20	0.39	
		14	6.0IR14UN...	0.041	0.04	0.20	0.39	

Mini-L

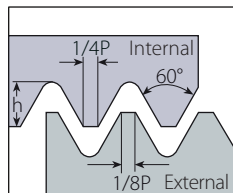


Insert Size		Pitch	Ordering Code	Dimensions inch			Min. Bore dia.	Toolholder
IC mm		tpi	RH	h min	Y	F	inch	
5.0L		32	5LIR32UN...	0.018	0.02	0.15	0.30	.NVR...-5L
		28	5LIR28UN...	0.020	0.03	0.16	0.30	
		24	5LIR24UN...	0.024	0.03	0.16	0.30	
		20	5LIR20UN...	0.029	0.04	0.17	0.31	
		18	5LIR18UN...	0.032	0.04	0.17	0.31	
		16	5LIR16UN...	0.036	0.04	0.17	0.31	
		14	5LIR14UN...	0.041	0.04	0.18	0.31	

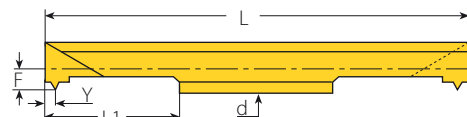
American UN - UNC, UNF, UNEF, UNS (con't)



Internal



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



RH-Double Ended

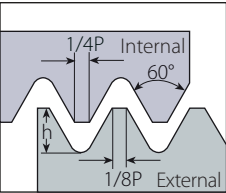
Micro - Double Ended

Thread	Insert dia. d mm	Pitch mm	Ordering Code RH/LH	Dimensions inch					Min. Bore dia. inch	Toolholder
10-40UNS	3.0	40	3.0SIR40UN...	0.63	1.97	0.05	0.02	0.015	0.13	SMC...-3.0
8-36UNF		36	3.0SIR36UN...	0.63	1.97	0.06	0.02	0.016	0.13	
8-32UNF		32	3.0SIR32UN...	0.63	1.97	0.06	0.02	0.018	0.13	
10-40UNS	4.0	40	4.0SIR40UN...	0.63	1.97	0.06	0.02	0.015	0.16	SMC...-4.0
10-36UNS		36	4.0SIR36UN...	0.63	1.97	0.07	0.02	0.016	0.16	
12-32UNEF		32	4.0SIR32UN...	0.63	1.97	0.07	0.02	0.018	0.16	
12-28UNF		28	4.0SIR28UN...	0.63	1.97	0.07	0.03	0.020	0.17	
1/4"-27UNS		27	4.0SIR27UN...	0.63	1.97	0.07	0.03	0.021	0.17	
12-24UNC	6.0	24	4.0SIR24UN...	0.63	1.97	0.08	0.03	0.024	0.17	SMC...-6.0
1/4"-20UNC		20	4.0SIR20UN...	0.63	1.97	0.08	0.03	0.029	0.17	
1/4"-32UNEF		32	6.0SIR32UN...	0.63	1.97	0.08	0.02	0.018	0.22	
5/16"-28UN		28	6.0SIR28UN...	0.63	1.97	0.08	0.03	0.020	0.22	
5/16"-27UNS		27	6.0SIR27UN...	0.63	1.97	0.08	0.03	0.021	0.22	
5/16"-24UNF		24	6.0SIR24UN...	0.63	1.97	0.09	0.03	0.024	0.22	
5/16"-20UN		20	6.0SIR20UN...	0.63	1.97	0.09	0.04	0.029	0.23	
5/16"-18UNC		18	6.0SIR18UN...	0.63	1.97	0.09	0.04	0.032	0.23	
3/8"-16UNC		16	6.0SIR16UN...	0.63	1.97	0.10	0.04	0.036	0.24	

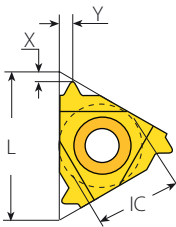
Left Handed Tool Supplied by Request. (Example: 6.0SIR16UN...)

ISO Metric

External



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



Standard

Standard

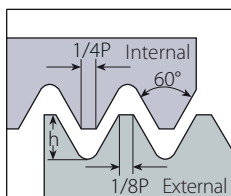
Insert Size		Pitch	Ordering Code		Dimensions inch			Anvil		Toolholder
IC	L inch	mm	RH	LH	h min	X	Y	RH	LH	
1/4"	0.43	0.25	2ER0.25ISO...	2EL0.25ISO...	0.006	0.02	0.01	-	-	NL..-2 (LH)
		0.3	2ER0.3ISO...	2EL0.3ISO...	0.007	0.03	0.01			
		0.35	2ER0.35ISO...	2EL0.35ISO...	0.008	0.03	0.02			
		0.4	2ER0.4ISO...	2EL0.4ISO...	0.010	0.03	0.02			
		0.45	2ER0.45ISO...	2EL0.45ISO...	0.011	0.03	0.02			
		0.5	2ER0.5ISO...	2EL0.5ISO...	0.012	0.02	0.02			
		0.6	2ER0.6ISO...	2EL0.6ISO...	0.015	0.02	0.02			
		0.7	2ER0.7ISO...	2EL0.7ISO...	0.017	0.02	0.02			
		0.75	2ER0.75ISO...	2EL0.75ISO...	0.018	0.02	0.02			
		0.8	2ER0.8ISO...	2EL0.8ISO...	0.019	0.02	0.02			
		1.0	2ER1.0ISO...	2EL1.0ISO...	0.024	0.03	0.03			
		1.25	2ER1.25ISO...	2EL1.25ISO...	0.030	0.03	0.04			
		1.5	2ER1.5ISO...	2EL1.5ISO...	0.036	0.03	0.04			
		1.75	2ER1.75ISO...	2EL1.75ISO...	0.042	0.03	0.04			
3/8"	0.63	0.25	3ER0.25ISO...	3EL0.25ISO...	0.006	0.02	0.01	YE3	YI3	AL..-3 (LH)
		0.35	3ER0.35ISO...	3EL0.35ISO...	0.008	0.03	0.02			
		0.4	3ER0.4ISO...	3EL0.4ISO...	0.010	0.03	0.02			
		0.45	3ER0.45ISO...	3EL0.45ISO...	0.011	0.03	0.02			
		0.5	3ER0.5ISO...	3EL0.5ISO...	0.012	0.02	0.02			
		0.6	3ER0.6ISO...	3EL0.6ISO...	0.015	0.02	0.02			
		0.7	3ER0.7ISO...	3EL0.7ISO...	0.017	0.02	0.02			
		0.75	3ER0.75ISO...	3EL0.75ISO...	0.018	0.02	0.02			
		0.8	3ER0.8ISO...	3EL0.8ISO...	0.019	0.02	0.02			
		1.0	3ER1.0ISO...	3EL1.0ISO...	0.024	0.03	0.03			
		1.25	3ER1.25ISO...	3EL1.25ISO...	0.030	0.03	0.04			
		1.5	3ER1.5ISO...	3EL1.5ISO...	0.036	0.03	0.04			
		1.75	3ER1.75ISO...	3EL1.75ISO...	0.042	0.04	0.05			
		2.0	3ER2.0ISO...	3EL2.0ISO...	0.048	0.04	0.05			
		2.5	3ER2.5ISO...	3EL2.5ISO...	0.060	0.04	0.06			
		3.0	3ER3.0ISO...	3EL3.0ISO...	0.072	0.05	0.06			
		3.5	3ER3.5ISO...	3EL3.5ISO...	0.085	0.06	0.07			



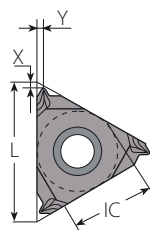
continued on next page ▶

ISO Metric (con't)

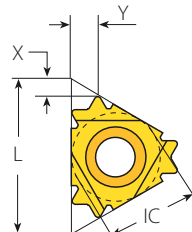
External



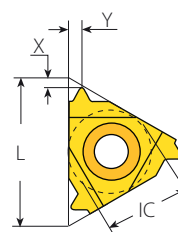
Defined by: R262 (DIN 13)
Tolerance class: 6g/6H



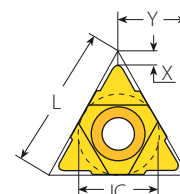
SCB
Sintered
Chipbreaker



V6



Standard



U Style

Standard



SCB



V6



Insert Size		Pitch	Ordering Code		Dimensions inch			Anvil		
IC	L inch	mm	RH	LH	h min	X	Y	RH	LH	Toolholder
3/8” SCB	0.63	0.5	3JER0.5ISO...		0.012	0.05	0.02	YE3	-	AL...-3
		0.75	3JER0.75ISO...		0.018	0.05	0.02			
		0.8	3JER0.8ISO...		0.019	0.05	0.02			
		1.0	3JER1.0ISO...		0.024	0.03	0.03			
		1.25	3JER1.25ISO...		0.030	0.03	0.03			
		1.5	3JER1.5ISO...		0.036	0.03	0.03			
		1.75	3JER1.75ISO...		0.042	0.05	0.06			
		2.0	3JER2.0ISO...		0.048	0.05	0.06			
		2.5	3JER2.5ISO...		0.060	0.05	0.06			
		3.0	3JER3.0ISO...		0.072	0.05	0.06			
		3.5	3JER3.5ISO...		0.085	0.05	0.06			
3/8” V6	0.63	0.5	3ER0.5ISO-6C...		0.012	0.09	0.07	YE3-6C	-	AL...-3
		0.75	3ER0.75ISO-6C...		0.018	0.08	0.07			
		0.8	3ER0.8ISO-6C...		0.019	0.08	0.07			
		1.0	3ER1.0ISO-6C...		0.024	0.07	0.08			
		1.25	3ER1.25ISO-6C...		0.030	0.07	0.08			
		1.5	3ER1.5ISO-6C...		0.036	0.07	0.09			
		1.75	3ER1.75ISO-6C...		0.042	0.07	0.10			
		2.0	3ER2.0ISO-6C...		0.048	0.07	0.11			
1/2”	0.87	3.5	4ER3.5ISO...	4EL3.5ISO...	0.085	0.06	0.09	YE4	YI4	AL...-4 (LH)
		4.0	4ER4.0ISO...	4EL4.0ISO...	0.096	0.06	0.09			
		4.5	4ER4.5ISO...	4EL4.5ISO...	0.109	0.07	0.09			
		5.0	4ER5.0ISO...	4EL5.0ISO...	0.121	0.07	0.10			
		6.0	4ER6.0ISO...	4EL6.0ISO...	0.145	0.08	0.11			
5/8”	1.06	5.5	5ER5.5ISO...	5EL5.5ISO...	0.133	0.07	0.11	YE5	YI5	AL...-5 (LH)
		6.0	5ER6.0ISO...	5EL6.0ISO...	0.145	0.08	0.11			

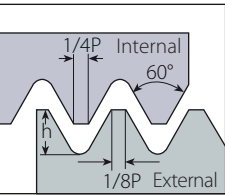
U Style



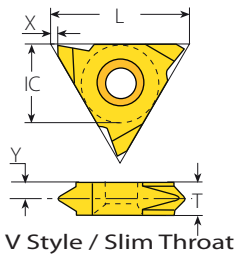
Insert Size		Pitch	Ordering Code		Dimensions inch			Anvil		Toolholder
IC	L inch	mm	RH+LH		h min	X	Y	RH	LH	
1/2"U	0.87	5.0	4UE5.0ISO...		0.121	0.09	0.43	YE4U	YI4U	AL...-4U (LH)
		5.5	4UE5.5ISO...		0.133	0.09	0.43			
		6.0	4UE6.0ISO...		0.145	0.10	0.43			
5/8"U	1.06	8.0	5UE8.0ISO...		0.193	0.09	0.54	YE5U	YI5U	AL...-5U (LH)

ISO Metric (con't)

External



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



Slim Throat

Insert Size		Pitch	Ordering Code		Dimensions inch				Toolholder
IC	L inch	mm	RH	LH	h min	X	Y	T	
1/4"V	0.43	0.75	2VER0.75ISO...	2VEL0.75ISO...	0.018	0.03	0.10	0.13	NL...-2V (LH)
		1.0	2VER1.0ISO...	2VEL1.0ISO...	0.024	0.03	0.10	0.13	
		1.5	2VER1.5ISO...	2VEL1.5ISO...	0.036	0.03	0.09	0.13	
		1.75	2VER1.75ISO...	2VEL1.75ISO...	0.042	0.03	0.08	0.13	
		2.0	2VER2.0ISO...	2VEL2.0ISO...	0.048	0.03	0.07	0.13	
3/8"V	0.63	0.35	3VER0.35ISO...	3VEL0.35ISO...	0.008	0.04	0.13	0.14	NL...-3V (LH)
		0.4	3VER0.4ISO...	3VEL0.4ISO...	0.010	0.04	0.13	0.14	
		0.5	3VER0.5ISO...	3VEL0.5ISO...	0.012	0.04	0.12	0.14	
		0.75	3VER0.75ISO...	3VEL0.75ISO...	0.018	0.04	0.12	0.14	
		0.8	3VER0.8ISO...	3VEL0.8ISO...	0.019	0.04	0.12	0.14	
		1.0	3VER1.0ISO...	3VEL1.0ISO...	0.024	0.04	0.11	0.14	
		1.25	3VER1.25ISO...	3VEL1.25ISO...	0.030	0.04	0.11	0.14	
		1.5	3VER1.5ISO...	3VEL1.5ISO...	0.036	0.04	0.10	0.14	
		1.75	3VER1.75ISO...	3VEL1.75ISO...	0.042	0.04	0.10	0.14	
		2.0	3VER2.0ISO...	3VEL2.0ISO...	0.048	0.04	0.09	0.14	
		2.5	3VER2.5ISO...	3VEL2.5ISO...	0.060	0.04	0.08	0.14	
		3.0	3VER3.0ISO...	3VEL3.0ISO...	0.072	0.04	0.08	0.14	



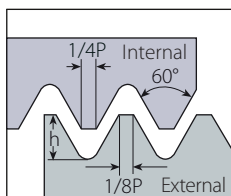
V Style

Insert Size		Pitch	Ordering Code		Dimensions inch				Toolholder
IC	L inch	mm	RH	LH	h min	X	Y	T	
5/8"V	1.06	5.5	5VER5.5ISO...	5VEL5.5ISO...	0.133	0.04	0.13	0.24	NL...-5V-6 (LH)
		6.0	5VER6.0ISO...	5VEL6.0ISO...	0.145	0.04	0.13	0.24	
		8.0	5VER8.0ISO...	5VEL8.0ISO...	0.193	0.04	0.17	0.31	NL...-5V-8 (LH)
		10.0	5VER10.0ISO...	5VEL10.0ISO...	0.241	0.04	0.20	0.39	NL...-5V-10 (LH)

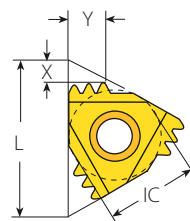


ISO Metric (con't)

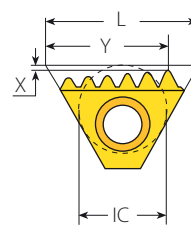
External



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



M+ Style



T+ Style

M+ Style

Multiplus



Insert Size		Pitch	Teeth	Ordering Code	Dimensions inch			Anvil	Toolholder
IC	L inch	mm		RH	h min	X	Y	RH	
3/8"	0.63	1.0	3	3ER1.0ISO3M+...	0.024	0.07	0.10	YE3M	AL..-3
		1.5	2	3ER1.5ISO2M+...	0.036	0.06	0.09		
		2.0	2	3ER2.0ISO2M+...	0.048	0.08	0.12		
1/2"	0.87	1.5	3	4ER1.5ISO3M+...	0.036	0.10	0.15	YE4M	AL..-4
		2.0	2	4ER2.0ISO2M+...	0.048	0.08	0.12		
		2.0	3	4ER2.0ISO3M+...	0.048	0.13	0.20		
		2.5	2	4ER2.5ISO2M+...	0.060	0.10	0.15		
5/8"	1.06	3.0	2	5ER3.0ISO2M+...	0.072	0.12	0.19	YE5M	AL..-5M

T+ Style

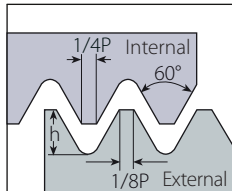
Multiplus



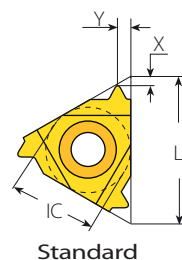
Insert Size		Pitch	Teeth	Ordering Code	Dimensions inch			Anvil	Toolholder
IC	L inch	mm		RH	h min	X	Y	RH	
1/2"T	0.87	1.5	8	4ER1.5ISO8T+...	0.036	0.01	0.49	Y4T	AL..-4T
		2.0	8	4ER2.0ISO8T+...	0.048	0.01	0.69		

ISO Metric (con't)

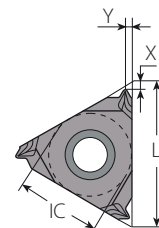
Internal



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



Standard



SCB
Sintered
Chipbreaker

Standard



1/4"

0.43



SCB

1/4"

SCB

0.43



3/8"

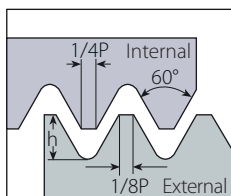
0.63

Insert Size		Pitch	Ordering Code		Dimensions inch			Anvil		Toolholder
IC	L inch	mm	RH	LH	h min	X	Y	RH	LH	
1/4"	0.43	0.35	2IR0.35ISO...	2IL0.35ISO...	0.008	0.03	0.01	-	-	NVR...-2 (LH)
		0.4	2IR0.4ISO...	2IL0.4ISO...	0.009	0.03	0.02			
		0.45	2IR0.45ISO...	2IL0.45ISO...	0.010	0.03	0.02			
		0.5	2IR0.5ISO...	2IL0.5ISO...	0.011	0.02	0.02			
		0.6	2IR0.6ISO...	2IL0.6ISO...	0.014	0.02	0.02			
		0.7	2IR0.7ISO...	2IL0.7ISO...	0.016	0.02	0.02			
		0.75	2IR0.75ISO...	2IL0.75ISO...	0.017	0.02	0.02			
		0.8	2IR0.8ISO...	2IL0.8ISO...	0.018	0.02	0.02			
		1.0	2IR1.0ISO...	2IL1.0ISO...	0.023	0.02	0.03			
		1.25	2IR1.25ISO...	2IL1.25ISO...	0.028	0.03	0.04			
		1.5	2IR1.5ISO...	2IL1.5ISO...	0.034	0.03	0.04			
		1.75	2IR1.75ISO...	2IL1.75ISO...	0.040	0.04	0.04			
		2.0	2IR2.0ISO...	2IL2.0ISO...	0.045	0.04	0.04			
		2.5	2IR2.5ISO...	2IL2.5ISO...	0.057	0.03	0.04			
1/4"	SCB	0.5	2JIR0.5ISO...		0.011	0.05	0.02	-	-	NVR...-2
		0.75	2JIR0.75ISO...		0.017	0.05	0.02			
		0.8	2JIR0.8ISO...		0.018	0.05	0.02			
		1.0	2JIR1.0ISO...		0.023	0.03	0.03			
		1.25	2JIR1.25ISO...		0.028	0.03	0.03			
3/8"	0.63	1.5	2JIR1.5ISO...		0.034	0.03	0.03	YI3	YE3	AVR...-3 (LH)
		0.35	3IR0.35ISO...	3IL0.35ISO...	0.008	0.03	0.01			
		0.4	3IR0.4ISO...	3IL0.4ISO...	0.009	0.03	0.02			
		0.45	3IR0.45ISO...	3IL0.45ISO...	0.010	0.03	0.02			
		0.5	3IR0.5ISO...	3IL0.5ISO...	0.011	0.02	0.02			
		0.6	3IR0.6ISO...	3IL0.6ISO...	0.014	0.02	0.02			
		0.7	3IR0.7ISO...	3IL0.7ISO...	0.016	0.02	0.02			
		0.75	3IR0.75ISO...	3IL0.75ISO...	0.017	0.02	0.02			
		0.8	3IR0.8ISO...	3IL0.8ISO...	0.018	0.02	0.02			
		1.0	3IR1.0ISO...	3IL1.0ISO...	0.023	0.02	0.03			
		1.25	3IR1.25ISO...	3IL1.25ISO...	0.028	0.03	0.04			
		1.5	3IR1.5ISO...	3IL1.5ISO...	0.034	0.03	0.04			
		1.75	3IR1.75ISO...	3IL1.75ISO...	0.040	0.04	0.05			
		2.0	3IR2.0ISO...	3IL2.0ISO...	0.045	0.04	0.05			
		2.5	3IR2.5ISO...	3IL2.5ISO...	0.057	0.04	0.06			
		3.0	3IR3.0ISO...	3IL3.0ISO...	0.068	0.04	0.06			
		3.5	3IR3.5ISO...	3IL3.5ISO...	0.080	0.05	0.06			

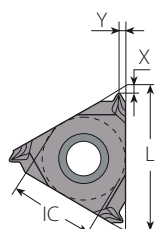
continued on next page ▶

ISO Metric (con't)

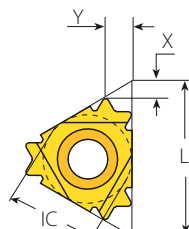
Internal



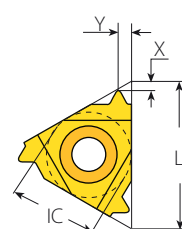
Defined by: R262 (DIN 13)
Tolerance class: 6g/6H



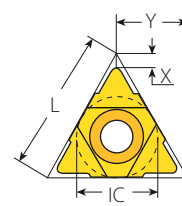
SCB
Sintered
Chipbreaker



V6



Standard



U Style

Standard (con't)



SCB



V6



Insert Size		Pitch	Ordering Code		Dimensions inch			Anvil		Toolholder
IC	L inch	mm	RH	LH	h min	X	Y	RH	LH	
	3/8"	0.63	1.0	3JIR1.0ISO...	0.023	0.03	0.03	YI3	-	AVR..-3
			1.25	3JIR1.25ISO...	0.028	0.03	0.03			
			1.5	3JIR1.5ISO...	0.034	0.03	0.03			
			1.75	3JIR1.75ISO...	0.040	0.04	0.06			
			2.0	3JIR2.0ISO...	0.045	0.04	0.06			
			2.5	3JIR2.5ISO...	0.057	0.04	0.06			
			3.0	3JIR3.0ISO...	0.068	0.04	0.06			
	3/8"	0.63	3.5	3JIR3.5ISO...	0.080	0.05	0.06	YI3-6C	-	AVR..-3 NVRC..-3V6
			0.5	3IR0.5ISO-6C...	0.011	0.08	0.07			
			0.75	3IR0.75ISO-6C...	0.017	0.08	0.07			
			0.8	3IR0.8ISO-6C...	0.018	0.07	0.07			
			1.0	3IR1.0ISO-6C...	0.023	0.07	0.06			
			1.25	3IR1.25ISO-6C...	0.028	0.07	0.08			
			1.5	3IR1.5ISO-6C...	0.034	0.06	0.08			
	1/2"	0.87	1.75	3IR1.75ISO-6C...	0.040	0.06	0.09	YI4	YE4	AVR..-4 (LH)
			2.0	3IR2.0ISO-6C...	0.045	0.07	0.10			
			3.5	4IR3.5ISO...	0.080	0.06	0.09			
			4.0	4IR4.0ISO...	0.091	0.06	0.09			
			4.5	4IR4.5ISO...	0.102	0.06	0.09			
	5/8"	1.06	5.0	4IR5.0ISO...	0.114	0.06	0.09	YI5	YE5	AVR..-5 (LH)
			6.0	4IR6.0ISO...	0.136	0.07	0.10			
			4.5	5IR4.5ISO...	0.102	0.06	0.09			
			5.0	5IR5.0ISO...	0.114	0.06	0.09			
	5/8"	1.06	5.5	5IR5.5ISO...	0.125	0.06	0.09	YI5	YE5	AVR..-5 (LH)
			6.0	5IR6.0ISO...	0.136	0.07	0.10			

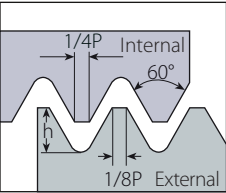
U Style



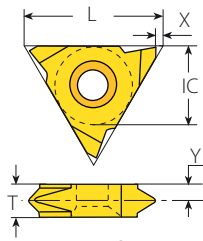
Insert Size		Pitch	Ordering Code	Dimensions inch			Anvil		Toolholder
IC	L inch	mm	RH+LH	h min.	X	Y	RH	LH	
1/2"U	0.87	5.5	4UI5.5ISO...	0.125	0.09	0.43	YI4U	YE4U	AVR..-4U (LH)
		6.0	4UI6.0ISO...	0.136	0.08	0.43			
5/8"U	1.06	8.0	5UI8.0ISO...	0.182	0.09	0.54	YI5U	YE5U	AVR..-5U (LH)

ISO Metric (con't)

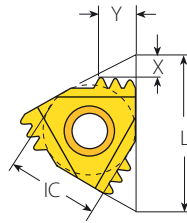
Internal



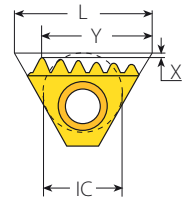
Defined by: R262 (DIN 13)
Tolerance class: 6g/6H



V Style



M+ Style



T+ Style

V Style



Insert Size		Pitch	Ordering Code		Dimensions inch				Toolholder
IC	L inch	mm	RH	LH	h min	X	Y	T	
5/8"V	1.06	6.0	5VIR6.0ISO...	5VIL6.0ISO...	0.136	0.04	0.13	0.24	NVR...-5V (LH)
		8.0	5VIR8.0ISO...	5VIL8.0ISO...	0.182	0.04	0.17	0.31	
		10.0	5VIR10.0ISO...	5VIL10.0ISO...	0.227	0.04	0.20	0.39	

M+ Style



Insert Size		Pitch	Teeth	Ordering Code	Dimensions inch			Anvil	Toolholder
IC	L inch	mm		RH	h min	X	Y	RH	
3/8"	0.63	1.0	3	3IR1.0ISO3M+...	0.023	0.07	0.10	YI3M	AVR...-3
		1.5	2	3IR1.5ISO2M+...	0.034	0.06	0.09		
		2.0	2	3IR2.0ISO2M+...	0.045	0.08	0.12		
1/2"	0.87	1.5	3	4IR1.5ISO3M+...	0.034	0.10	0.15	YI4M	AVR...-4
		2.0	2	4IR2.0ISO2M+...	0.045	0.08	0.12		
		2.0	3	4IR2.0ISO3M+...	0.045	0.13	0.20		
5/8"	1.06	3.0	2	5IR3.0ISO2M+...	0.068	0.12	0.19	YI5M	AVR...-5M

T+ Style

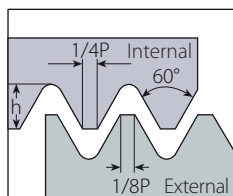


Insert Size		Pitch	Teeth	Ordering Code	Dimensions inch			Anvil	Toolholder
IC	L inch	mm		RH	h min	X	Y	RH	
1/2"	0.87	1.5	8	4IR1.5ISO8T+...	0.034	0.01	0.49	Y4T	AVR...-4T
		2.0	8	4IR2.0ISO8T+...	0.045	0.01	0.69		

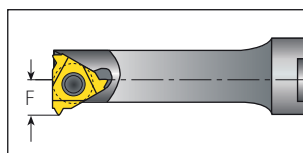
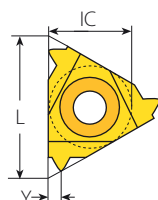
ISO Metric (con't)



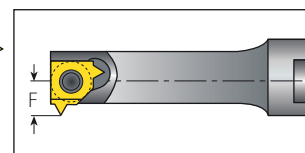
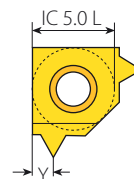
Internal



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



Mini-3



Mini-L

Mini-3



Insert Size		Pitch	Ordering Code	Dimensions inch			Min. Bore dia.	Toolholder
IC	L inch	mm	RH	h min	Y	F	inch	
4.0	0.24	0.25	4.0KIR0.25ISO...	0.006	0.01	0.13	0.23	.NVR 020-4.0K
		0.5	4.0KIR0.5ISO...	0.011	0.02	0.14	0.24	
		0.75	4.0KIR0.75ISO...	0.017	0.02	0.14	0.25	
		1.0	4.0KIR1.0ISO...	0.023	0.03	0.14	0.25	
		1.25	4.0KIR1.25ISO...	0.028	0.02	0.15	0.25	
6.0	0.39	0.5	6.0IR0.5ISO...	0.011	0.02	0.17	0.37	.NVR...-6.0
		0.75	6.0IR0.75ISO...	0.017	0.02	0.18	0.37	
		1.0	6.0IR1.0ISO...	0.023	0.03	0.19	0.38	
		1.25	6.0IR1.25ISO...	0.028	0.04	0.19	0.39	
		1.5	6.0IR1.5ISO...	0.034	0.04	0.20	0.39	
		1.75	6.0IR1.75ISO...	0.040	0.04	0.20	0.39	
		2.0	6.0IR2.0ISO...	0.045	0.04	0.21	0.39	

Mini-L

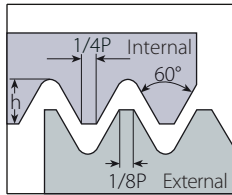


Insert Size		Pitch	Ordering Code	Dimensions inch			Min. Bore dia.	Toolholder
IC mm		mm	RH	h min	Y	F	inch	
5.0L		0.35	5LIR0.35ISO...	0.008	0.01	0.15	0.29	.NVR...-5L
		0.5	5LIR0.5ISO...	0.011	0.02	0.15	0.29	
		0.75	5LIR0.75ISO...	0.017	0.02	0.15	0.30	
		1.0	5LIR1.0ISO...	0.023	0.03	0.16	0.30	
		1.25	5LIR1.25ISO...	0.028	0.04	0.17	0.31	
		1.5	5LIR1.5ISO...	0.034	0.04	0.17	0.31	
		1.75	5LIR1.75ISO...	0.040	0.04	0.18	0.31	
		2.0	5LIR2.0ISO...	0.045	0.04	0.18	0.31	

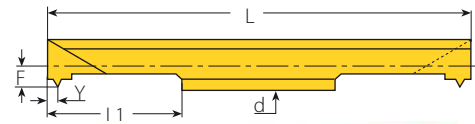
ISO Metric (con't)



Internal



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

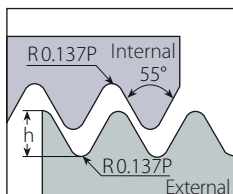


RH-Double Ended

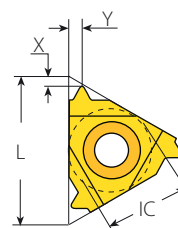
Micro - Double Ended

Insert dia.		Pitch	Ordering Code	Dimensions inch					Min. Bore dia.	Toolholder
Thread	d mm	mm	RH/LH	L1	L	F	Y	h min	inch	
M4 x 0.3	3.0	0.3	3.0SIR0.3ISO...	0.63	1.97	0.05	0.01	0.007	0.13	SMC...-3.0
M4 x 0.4		0.4	3.0SIR0.4ISO...	0.63	1.97	0.05	0.01	0.009	0.13	
M4 x 0.5		0.5	3.0SIR0.5ISO...	0.63	1.97	0.05	0.02	0.011	0.13	
M4 x 0.6		0.6	3.0SIR0.6ISO...	0.63	1.97	0.05	0.02	0.014	0.13	
M4.5 x 0.7		0.7	3.0SIR0.7ISO...	0.63	1.97	0.06	0.02	0.016	0.13	
M4.5 x 0.75		0.75	3.0SIR0.75ISO...	0.63	1.97	0.06	0.02	0.017	0.13	
M5 x 0.8	4.0	0.8	3.0SIR0.8ISO...	0.63	1.97	0.06	0.02	0.018	0.13	SMC...-4.0
M5 x 0.4		0.4	4.0SIR0.4ISO...	0.63	1.97	0.06	0.01	0.009	0.16	
M5 x 0.5		0.5	4.0SIR0.5ISO...	0.63	1.97	0.06	0.02	0.011	0.16	
M5 x 0.6		0.6	4.0SIR0.6ISO...	0.63	1.97	0.07	0.02	0.014	0.16	
M5 x 0.7		0.7	4.0SIR0.7ISO...	0.63	1.97	0.07	0.02	0.016	0.16	
M5.5 x 0.75		0.75	4.0SIR0.75ISO...	0.63	1.97	0.07	0.02	0.017	0.17	
M5.5 x 0.8	6.0	0.8	4.0SIR0.8ISO...	0.63	1.97	0.07	0.02	0.018	0.17	SMC...-6.0
M6 x 1		1.0	4.0SIR1.0ISO...	0.63	1.97	0.08	0.04	0.023	0.17	
M6 x 0.5		0.5	6.0SIR0.5ISO...	0.63	1.97	0.07	0.02	0.011	0.21	
M6.5 x 0.75		0.75	6.0SIR0.75ISO...	0.63	1.97	0.08	0.02	0.017	0.22	
M7 x 1		1.0	6.0SIR1.0ISO...	0.63	1.97	0.09	0.03	0.023	0.22	
M8 x 1.25		1.25	6.0SIR1.25ISO...	0.63	1.97	0.09	0.04	0.028	0.23	
M10.5 x 1.5		1.5	6.0SIR1.5ISO...	0.63	1.97	0.10	0.04	0.034	0.24	

Left Handed Tool Supplied by Request. (Example: 3.0SIL0.3ISO...)

Whitworth - BSW, BSP, BSF, BSB**External**

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

**Standard****Standard**

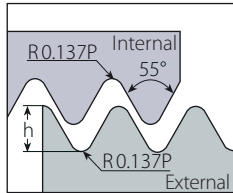
Insert Size		Pitch	Ordering Code		Dimensions inch			Anvil		Toolholder
IC	L inch	tpi	RH	LH	h min	X	Y	RH	LH	
1/4"	0.43	72	2ER72W...	2EL72W...	0.009	0.03	0.02	-	-	NL ...-2 (LH)
		60	2ER60W...	2EL60W...	0.011	0.03	0.02			
		56	2ER56W...	2EL56W...	0.011	0.03	0.02			
		48	2ER48W...	2EL48W...	0.013	0.02	0.02			
		40	2ER40W...	2EL40W...	0.016	0.02	0.02			
		36	2ER36W...	2EL36W...	0.018	0.02	0.02			
		32	2ER32W...	2EL32W...	0.020	0.02	0.02			
		28	2ER28W...	2EL28W...	0.023	0.02	0.03			
		26	2ER26W...	2EL26W...	0.025	0.03	0.03			
		24	2ER24W...	2EL24W...	0.027	0.03	0.03			
		22	2ER22W...	2EL22W...	0.029	0.03	0.04			
		20	2ER20W...	2EL20W...	0.032	0.03	0.04			
		19	2ER19W...	2EL19W...	0.034	0.03	0.04			
		18	2ER18W...	2EL18W...	0.035	0.03	0.04			
		16	2ER16W...	2EL16W...	0.040	0.04	0.04			
		14	2ER14W...	2EL14W...	0.046	0.04	0.05			
3/8"	0.63	72	3ER72W...	3EL72W...	0.009	0.03	0.02	YE3	YI3	AL...-3 (LH)
		60	3ER60W...	3EL60W...	0.011	0.03	0.02			
		56	3ER56W...	3EL56W...	0.011	0.03	0.02			
		48	3ER48W...	3EL48W...	0.013	0.02	0.02			
		40	3ER40W...	3EL40W...	0.016	0.02	0.02			
		36	3ER36W...	3EL36W...	0.018	0.02	0.02			
		32	3ER32W...	3EL32W...	0.020	0.02	0.02			
		30	3ER30W...	3EL30W...	0.022	0.02	0.03			
		28	3ER28W...	3EL28W...	0.023	0.02	0.03			
		26	3ER26W...	3EL26W...	0.025	0.03	0.03			
		24	3ER24W...	3EL24W...	0.027	0.03	0.03			
		22	3ER22W...	3EL22W...	0.029	0.03	0.04			
		20	3ER20W...	3EL20W...	0.032	0.03	0.04			
		19	3ER19W...	3EL19W...	0.034	0.03	0.04			
		18	3ER18W...	3EL18W...	0.035	0.03	0.04			
		16	3ER16W...	3EL16W...	0.040	0.04	0.04			
		14	3ER14W...	3EL14W...	0.046	0.04	0.05			
		12	3ER12W...	3EL12W...	0.054	0.04	0.06			
		11	3ER11W...	3EL11W...	0.058	0.04	0.06			
		10	3ER10W...	3EL10W...	0.064	0.04	0.06			
		9	3ER9W...	3EL9W...	0.071	0.05	0.07			
		8	3ER8W...	3EL8W...	0.080	0.05	0.06			



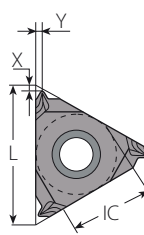
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Whitworth - BSW, BSP, BSF, BSB (con't)

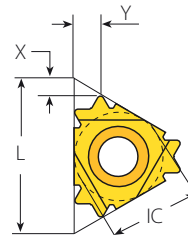
External



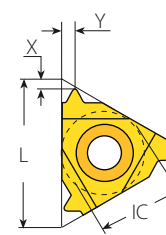
Defined by: B.S.84:1956, DIN 259, ISO228/1:1982
Tolerance class: Medium class A



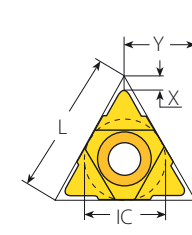
SCB
Sintered
Chipbreaker



V6



Standard



U Style

Standard (con't)

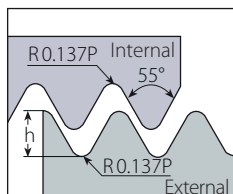
Insert Size		Pitch	Ordering Code		Dimensions inch			Anvil		Toolholder
IC	L inch	tpi	RH	LH	h min	X	Y	RH	LH	
 SCB	3/8"	0.63	36	3JER36W...	0.018	0.05	0.02	YE3	-	AL..-3
			32	3JER32W...	0.020	0.05	0.02			
			28	3JER28W...	0.023	0.03	0.03			
			24	3JER24W...	0.027	0.03	0.03			
			20	3JER20W...	0.032	0.03	0.03			
			19	3JER19W...	0.034	0.03	0.03			
			18	3JER18W...	0.035	0.03	0.03			
			16	3JER16W...	0.040	0.03	0.03			
			14	3JER14W...	0.046	0.05	0.06			
			12	3JER12W...	0.054	0.05	0.06			
			11	3JER11W...	0.058	0.05	0.06			
			10	3JER10W...	0.064	0.05	0.06			
 V6	3/8"	0.63	8	3JER8W...	0.080	0.05	0.06	YE3-6C	-	AL..-3
			19	3ER19W-6C...	0.034	0.07	0.09			
			16	3ER16W-6C...	0.040	0.06	0.09			
			14	3ER14W-6C...	0.046	0.07	0.11			
 Standard	1/2"	0.87	12	3ER12W-6C...	0.054	0.07	0.12	YE4	YI4	AL..-4 (LH)
			7	4ER7W...	0.095	0.06	0.09			
			6	4ER6W...	0.107	0.06	0.09			
 U Style	5/8"	1.06	5	4ER5W...	0.128	0.07	0.09	YE5	YI5	AL..-5 (LH)
			4.5	5ER4.5W...	0.142	0.07	0.10			
			4	5ER4W...	0.160	0.08	0.11			

U Style

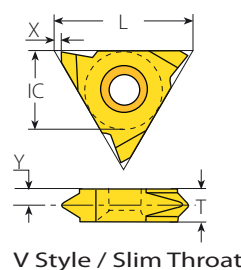
Insert Size		Pitch	Ordering Code		Dimensions inch			Anvil		Toolholder
IC	L inch	tpi	RH+LH		h min	X	Y	RH	LH	
 U Style	1/2"U	0.87	4.5	4UEI4.5W...	0.142	0.09	0.43	YE4U	YI4U	AL..-4U (LH)
			4	4UEI4W...	0.160	0.07	0.43			
			3.5	4UEI3.5W...	0.183	0.08	0.43			
			3.25	4UEI3.25W...	0.197	0.08	0.43			
	5/8"U	1.06	3.5	5UEI3.5W...	0.183	0.08	0.54	YE5U	YI5U	AL..-5U (LH)
			3.25	5UEI3.25W...	0.197	0.08	0.54			
			3	5UEI3W...	0.213	0.09	0.54			
			2.75	5UEI2.75W...	0.233	0.09	0.54			

Whitworth - BSW, BSP, BSF, BSB (con't)

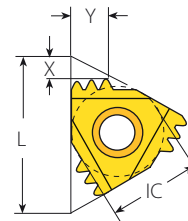
External



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



V Style / Slim Throat



M+ Style

Slim Throat



Insert Size		Pitch	Ordering Code		Dimensions inch				Toolholder
IC	L inch	tpi	RH	LH	h min	X	Y	T	
1/4"V	0.43	19	2VER19W...	2VEL19W...	0.034	0.03	0.09	0.13	NL..-2V (LH)
		14	2VER14W...	2VEL14W...	0.046	0.03	0.08	0.13	
		11	2VER11W...	2VEL11W...	0.058	0.03	0.07	0.13	
3/8"V	0.63	19	3VER19W...	3VEL19W...	0.034	0.04	0.11	0.14	NL..-3V (LH)
		18	3VER18W...	3VEL18W...	0.035	0.04	0.10	0.14	
		16	3VER16W...	3VEL16W...	0.040	0.04	0.10	0.14	
		14	3VER14W...	3VEL14W...	0.046	0.04	0.09	0.14	
		12	3VER12W...	3VEL12W...	0.054	0.04	0.09	0.14	
		11	3VER11W...	3VEL11W...	0.058	0.04	0.08	0.14	

V Style



Insert Size		Pitch	Ordering Code		Dimensions inch				Toolholder
IC	L inch	tpi	RH	LH	h min	X	Y	T	
5/8"V	1.06	4	5VER4W...	5VEL4W...	0.160	0.04	0.13	0.24	NL..-5V-6 (LH)
		3	5VER3W...	5VEL3W...	0.213	0.04	0.17	0.31	NL..-5V-8 (LH)
		2.5	5VER2.5W...	5VEL2.5W...	0.256	0.04	0.20	0.39	NL..-5V-10 (LH)

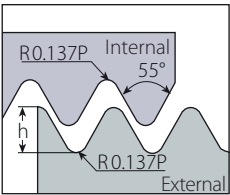
M+ Style



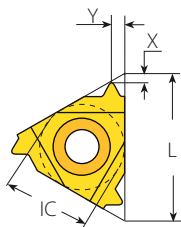
Insert Size		Pitch	Teeth	Ordering Code		Dimensions inch			Anvil	Toolholder
IC	L inch	tpi		RH	h min	X	Y		RH	
3/8"	0.63	28	2	3ER28W2M+...	0.023	0.05	0.06		YE3M	AL..-3
		19	2	3ER19W2M+...	0.034	0.06	0.09			
		19	3	3ER19W3M+...	0.034	0.09	0.13			
		14	2	3ER14W2M+...	0.046	0.08	0.12			
1/2"	0.87	14	3	4ER14W3M+...	0.046	0.11	0.18		YE4M	AL..-4
		11	2	4ER11W2M+...	0.058	0.09	0.14			

Whitworth - BSW, BSP, BSF, BSB (con't)

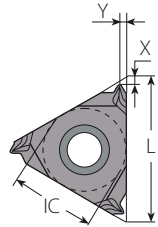
Internal



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



Standard



SCB
Sintered
Chipbreaker

Standard



SCB

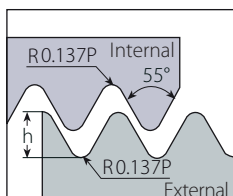


Insert Size		Pitch	Ordering Code		Dimensions inch			Anvil		Toolholder
IC	L inch	tpi	RH	LH	h min	X	Y	RH	LH	
1/4"	0.43	72	2IR72W...	2IL72W...	0.009	0.03	0.02	-	-	NVR..-2 (LH)
		60	2IR60W...	2IL60W...	0.011	0.03	0.02			
		56	2IR56W...	2IL56W...	0.011	0.03	0.02			
		48	2IR48W...	2IL48W...	0.013	0.02	0.02			
		40	2IR40W...	2IL40W...	0.016	0.02	0.02			
		36	2IR36W...	2IL36W...	0.018	0.02	0.02			
		32	2IR32W...	2IL32W...	0.020	0.02	0.02			
		28	2IR28W...	2IL28W...	0.023	0.02	0.03			
		26	2IR26W...	2IL26W...	0.025	0.03	0.03			
		24	2IR24W...	2IL24W...	0.027	0.03	0.03			
		22	2IR22W...	2IL22W...	0.029	0.03	0.04			
		20	2IR20W...	2IL20W...	0.032	0.03	0.04			
		19	2IR19W...	2IL19W...	0.034	0.03	0.04			
		18	2IR18W...	2IL18W...	0.035	0.03	0.04			
		16	2IR16W...	2IL16W...	0.040	0.04	0.04			
		14	2IR14W...	2IL14W...	0.046	0.04	0.04			
		12	2IR12W...	2IL12W...	0.052	0.04	0.05			
1/4" SCB	0.43	36	2JIR36W...		0.018	0.05	0.02	-	-	NVR..-2
		32	2JIR32W...		0.020	0.05	0.02			
		28	2JIR28W...		0.023	0.03	0.03			
		24	2JIR24W...		0.027	0.03	0.03			
		20	2JIR20W...		0.032	0.03	0.03			
		19	2JIR19W...		0.034	0.02	0.03			
		18	2JIR18W...		0.035	0.03	0.03			
		16	2JIR16W...		0.040	0.03	0.03			
3/8"	0.63	72	3IR72W...	3IL72W...	0.009	0.03	0.02	YI3	YE3	AVR..-3 (LH)
		60	3IR60W...	3IL60W...	0.011	0.03	0.02			
		56	3IR56W...	3IL56W...	0.011	0.03	0.02			
		48	3IR48W...	3IL48W...	0.013	0.02	0.02			
		40	3IR40W...	3IL40W...	0.016	0.02	0.02			
		36	3IR36W...	3IL36W...	0.018	0.02	0.02			
		32	3IR32W...	3IL32W...	0.020	0.02	0.02			
		30	3IR30W...	3IL30W...	0.022	0.02	0.03			

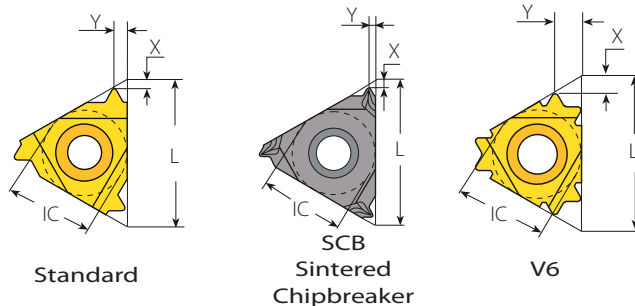
continued on next page▶

Whitworth - BSW, BSP, BSF, BSB (con't)

Internal



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



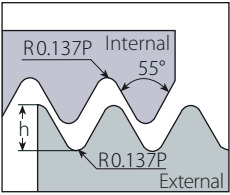
Standard (con't)



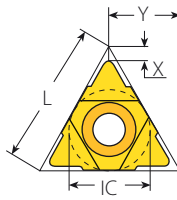
Insert Size		Pitch	Ordering Code		Dimensions inch			Anvil		Toolholder
IC	L inch	tpi	RH	LH	h min	X	Y	RH	LH	
3/8"	0.63	28	3IR28W...	3IL28W...	0.023	0.02	0.03	YI3	YE3	AVR...-3 (LH)
		26	3IR26W...	3IL26W...	0.025	0.03	0.03			
		24	3IR24W...	3IL24W...	0.027	0.03	0.03			
		22	3IR22W...	3IL22W...	0.029	0.03	0.04			
		20	3IR20W...	3IL20W...	0.032	0.03	0.04			
		19	3IR19W...	3IL19W...	0.034	0.03	0.04			
		18	3IR18W...	3IL18W...	0.035	0.03	0.04			
		16	3IR16W...	3IL16W...	0.040	0.04	0.04			
		14	3IR14W...	3IL14W...	0.046	0.04	0.05			
		12	3IR12W...	3IL12W...	0.054	0.04	0.06			
		11	3IR11W...	3IL11W...	0.058	0.04	0.06			
		10	3IR10W...	3IL10W...	0.064	0.04	0.06			
		9	3IR9W...	3IL9W...	0.071	0.05	0.07			
		8	3IR8W...	3IL8W...	0.080	0.05	0.06			
3/8" SCB	0.63	28	3JIR28W...		0.023	0.03	0.03	YI3	-	AVR...-3
		24	3JIR24W...		0.027	0.03	0.03			
		20	3JIR20W...		0.032	0.03	0.03			
		19	3JIR19W...		0.034	0.02	0.02			
		18	3JIR18W...		0.035	0.03	0.03			
		16	3JIR16W...		0.040	0.03	0.03			
		14	3JIR14W...		0.046	0.05	0.06			
		12	3JIR12W...		0.054	0.05	0.06			
		11	3JIR11W...		0.058	0.05	0.06			
		10	3JIR10W...		0.064	0.05	0.06			
3/8" V6	0.63	19	3IR19W-6C...		0.034	0.07	0.09	YI3-6C	-	AVR...-3 NVRC...-3V6
		16	3IR16W-6C...		0.040	0.06	0.10			
		14	3IR14W-6C...		0.046	0.07	0.11			
		12	3IR12W-6C...		0.054	0.07	0.10			
1/2"	0.87	7	4IR7W...	4IL7W...	0.095	0.06	0.09	YI4	YE4	AVR...-4 (LH)
		6	4IR6W...	4IL6W...	0.107	0.06	0.09			
		5	4IR5W...	4IL5W...	0.128	0.07	0.09			
5/8"	1.06	4.5	5IR4.5W...	5IL4.5W...	0.142	0.07	0.10	YI5	YE5	AVR...-5 (LH)
		4	5IR4W...	5IL4W...	0.160	0.08	0.11			

Whitworth - BSW, BSP, BSF, BSB (con't)

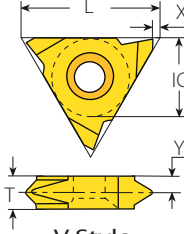
Internal



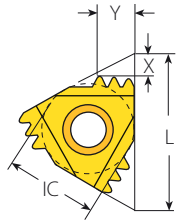
Defined by: B.S.84:1956, DIN 259, ISO228/1:1982
Tolerance class: Medium class A



U Style



V Style



M+ Style

U Style



Insert Size		Pitch	Ordering Code		Dimensions inch			Anvil		Toolholder
IC	L inch	tpi	RH+LH		h min	X	Y	RH	LH	
1/2"U	0.87	4.5	4UEI4.5W...		0.142	0.09	0.43	YI4U	YE4U	AVR..-4U (LH)
		4	4UEI4W...		0.160	0.07	0.43			
		3.5	4UEI3.5W...		0.183	0.08	0.43			
		3.25	4UEI3.25W...		0.197	0.08	0.43			
5/8"U	1.06	3.5	5UEI3.5W...		0.183	0.08	0.54	YI5U	YE5U	AVR..-5U (LH)
		3.25	5UEI3.25W...		0.197	0.08	0.54			
		3	5UEI3W...		0.213	0.09	0.54			
		2.75	5UEI2.75W...		0.233	0.09	0.54			

V Style



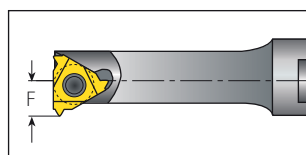
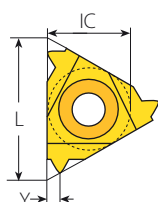
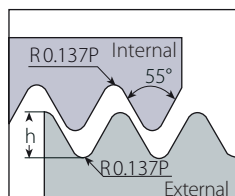
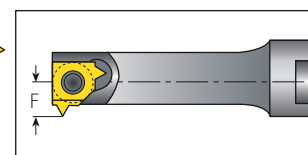
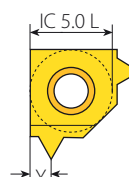
Insert Size		Pitch	Ordering Code		Dimensions inch				Toolholder
IC	L inch	tpi	RH	LH	h min	X	Y	T	
5/8"V	1.06	4	5VIR4W...	5VIL4W...	0.160	0.04	0.13	0.24	NVR..-5V (LH)
		3	5VIR3W...	5VIL3W...	0.213	0.04	0.17	0.31	
		2.5	5VIR2.5W...	5VIL2.5W...	0.256	0.04	0.20	0.39	

M+ Style



Insert Size		Pitch	Teeth	Ordering Code		Dimensions inch			Anvil	Toolholder
IC	L inch	tpi		RH		h min	X	Y	RH	
3/8"	0.63	14	2	3IR14W2M+...		0.046	0.08	0.12	YI3M	AVR..-3
1/2"	0.87	11	2	4IR11W2M+...		0.058	0.09	0.14	YI4M	AVR..-4

Multiplus

Whitworth - BSW, BSP, BSF, BSB (con't)**Internal****Mini-3****Mini-L**

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

Mini-3

Insert Size		Pitch	Ordering Code	Dimensions inch			Min. Bore dia.	Toolholder
IC	L inch	tpi	RH	h min	Y	F	inch	
4.0	0.24	26	4.0KIR26W...	0.025	0.02	0.14	0.25	.NVR.020-4.0K
		22	4.0KIR22W...	0.029	0.02	0.15	0.25	
		20	4.0KIR20W...	0.032	0.03	0.15	0.25	
		19	4.0KIR19W...	0.034	0.03	0.15	0.25	
		18	4.0KIR18W...	0.035	0.03	0.15	0.25	
6.0	0.39	28	6.0IR28W...	0.023	0.03	0.19	0.38	.NVR...-6.0
		19	6.0IR19W...	0.034	0.04	0.20	0.39	
		14	6.0IR14W...	0.046	0.04	0.21	0.39	

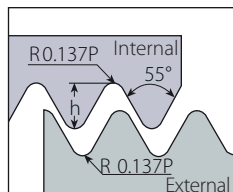
Mini-L

Insert Size		Pitch	Ordering Code	Dimensions inch			Min. Bore dia.	Toolholder
IC mm		tpi	RH	h min	Y	F	inch	
5.0 L		28	5LIR28W...	0.023	0.03	0.16	0.30	.NVR... -5L
		19	5LIR19W...	0.034	0.04	0.17	0.31	
		14	5LIR14W...	0.046	0.04	0.18	0.31	

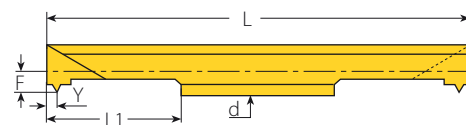
Whitworth - BSW, BSP, BSF, BSB (con't)



Internal



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



RH-Double Ended

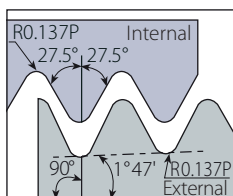
Micro - Double Ended

Insert dia.		Pitch	Ordering Code	Dimensions inch					Min. Bore dia.	Toolholder
Thread	d mm	tpi	RH/LH	L1	L	F	Y	h min	inch	
1/16"-28BSP	4.0	28	4.0SIR28W...	0.63	1.97	0.07	0.03	0.023	0.17	SMC..-4.0
1/4"-26BSF		26	4.0SIR26W...	0.63	1.97	0.08	0.03	0.025	0.17	
1/4"-24BSW		24	4.0SIR24W...	0.63	1.97	0.08	0.03	0.027	0.17	
1/16"-28BSP	6.0	28	6.0SIR28W...	0.63	1.97	0.10	0.03	0.023	0.24	SMC..-6.0
5/16"-28BSW		26	6.0SIR26W...	0.63	1.97	0.10	0.03	0.025	0.24	
5/16"-24BSW		24	6.0SIR24W...	0.63	1.97	0.10	0.03	0.027	0.24	
5/16"-22BSW		22	6.0SIR22W...	0.63	1.97	0.10	0.04	0.029	0.24	
3/8"-20BSF		20	6.0SIR20W...	0.63	1.97	0.10	0.04	0.032	0.24	
1/4"-19BSP		19	6.0SIR19W...	0.63	1.97	0.10	0.04	0.034	0.24	

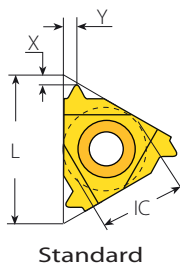
Left Handed Tool Supplied by Request. (Example: 6.0SIL19W...)

BSPT

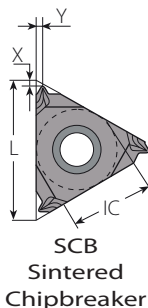
External



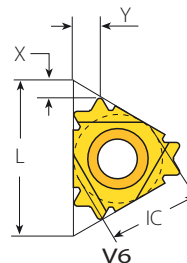
Defined by: B.S. 21:1985
Tolerance class: Standard BSPT



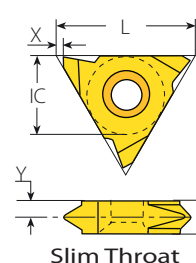
Standard



SCB
Sintered
Chipbreaker



V6



Slim Throat

Standard



SCB



V6

Insert Size		Pitch	Ordering Code		Dimensions inch			Anvil		Toolholder
IC	L inch	tpi	RH	LH	h min	X	Y	RH	LH	
1/4"	0.43	28	2ER28BSPT...	2EL28BSPT...	0.023	0.02	0.02	-	-	NL...-2 (LH)
		19	2ER19BSPT...	2EL19BSPT...	0.034	0.03	0.04			
		14	2ER14BSPT...	2EL14BSPT...	0.046	0.04	0.04			
3/8"	0.63	28	3ER28BSPT...	3EL28BSPT...	0.023	0.02	0.02	YE3	YI3	AL...-3 (LH)
		19	3ER19BSPT...	3EL19BSPT...	0.034	0.03	0.04			
		14	3ER14BSPT...	3EL14BSPT...	0.046	0.04	0.05			
		11	3ER11BSPT...	3EL11BSPT...	0.058	0.04	0.06			
3/8" SCB	0.63	28	3JER28BSPT...		0.023	0.03	0.03	YE3	-	AL...-3
		19	3JER19BSPT...		0.034	0.03	0.03			
		14	3JER14BSPT...		0.046	0.05	0.06			
		11	3JER11BSPT...		0.058	0.05	0.06			
3/8" V6	0.63	19	3ER19BSPT-6C...		0.034	0.07	0.09	YE3-6C	-	AL...-3
		14	3ER14BSPT-6C...		0.046	0.07	0.11			

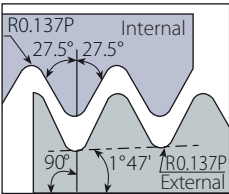
Slim Throat



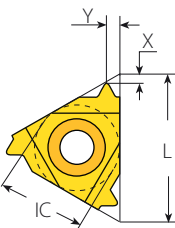
Insert Size		Pitch	Ordering Code		Dimensions inch				
IC	L inch	tpi	RH	LH	h min	X	Y	T	Toolholder
3/8"V	0.63	28	3VER28BSPT...	3VEL28BSPT...	0.023	0.04	0.12	0.14	NL...-3V (LH)
		19	3VER19BSPT...	3VEL19BSPT...	0.034	0.04	0.11	0.14	
		14	3VER14BSPT...	3VEL14BSPT...	0.046	0.04	0.09	0.14	
		11	3VER11BSPT...	3VEL11BSPT...	0.058	0.04	0.08	0.14	

BSPT (con't)

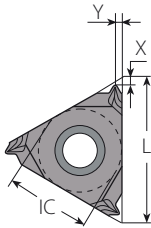
Internal



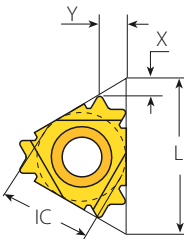
Defined by: B.S. 21:1985
Tolerance class: Standard BSPT



Standard



SCB
Sintered
Chipbreaker

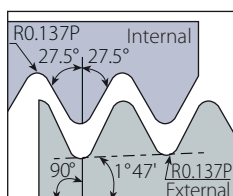


V6

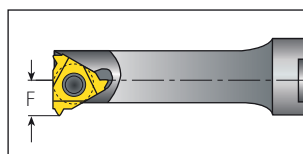
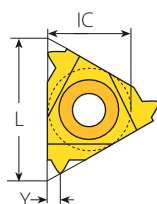
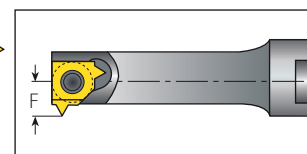
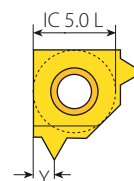
Standard



Insert Size		Pitch	Ordering Code		Dimensions inch			Anvil		Toolholder
IC	L inch	tpi	RH	LH	h min	X	Y	RH	LH	
1/4"	0.43	28	2IR28BSPT...	2IL28BSPT...	0.023	0.02	0.02	-	-	NVR..-2 (LH)
		19	2IR19BSPT...	2IL19BSPT...	0.034	0.03	0.04			
		14	2IR14BSPT...	2IL14BSPT...	0.046	0.04	0.04			
1/4" SCB	0.43	28	2JIR28BSPT...		0.023	0.03	0.03	-	-	NVR..-2
		19	2JIR19BSPT...		0.034	0.03	0.03			
3/8"	0.63	28	3IR28BSPT...	3IL28BSPT...	0.023	0.02	0.02	YI3	YE3	AVR..-3 (LH)
		19	3IR19BSPT...	3IL19BSPT...	0.034	0.03	0.04			
		14	3IR14BSPT...	3IL14BSPT...	0.046	0.04	0.05			
		11	3IR11BSPT...	3IL11BSPT...	0.058	0.04	0.06			
3/8" SCB	0.63	28	3JIR28BSPT...		0.023	0.03	0.03	YI3	-	AVR..-3
		19	3JIR19BSPT...		0.034	0.03	0.03			
		14	3JIR14BSPT...		0.046	0.05	0.06			
		11	3JIR11BSPT...		0.058	0.05	0.06			
3/8" V6	0.63	19	3IR19BSPT-6C...		0.034	0.07	0.09	YI3-6C	-	AVR..-3 NVRC...-3V6
		14	3IR14BSPT-6C...		0.046	0.07	0.11			

BSPT (con't)**Internal**

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

**Mini-3****Mini-L****Mini-3**

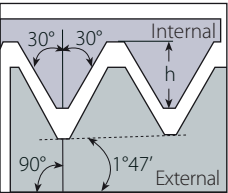
Insert Size		Pitch	Ordering Code	Dimensions inch			Min. Bore dia.	Toolholder
IC	L inch	tpi	RH	h min	Y	F	inch	
4.0	0.24	28	4.0KIR28BSPT...	0.023	0.02	0.14	0.25	.NVR.020-4.0K
		28	6.0IR28BSPT...	0.023	0.02	0.19	0.38	
6.0	0.39	19	6.0IR19BSPT...	0.034	0.04	0.20	0.39	.NVR...-6.0
		14	6.0IR14BSPT...	0.046	0.05	0.21	0.39	

Mini-L

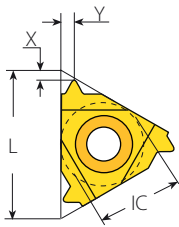
Insert Size		Pitch	Ordering Code	Dimensions inch			Min. Bore dia.	Toolholder
IC mm		tpi	RH	h min	Y	F	inch	
5.0L		28	5LIR28BSPT...	0.023	0.02	0.16	0.31	.NVR...-5L
		19	5LIR19BSPT...	0.034	0.04	0.17	0.31	
		14	5LIR14BSPT...	0.046	0.05	0.18	0.31	

NPT

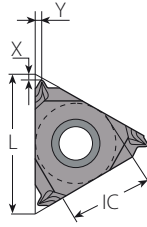
External



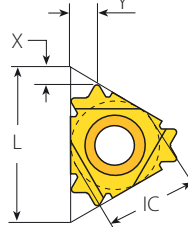
Defined by: USAS B2.1:1968
Tolerance class: Standard NPT



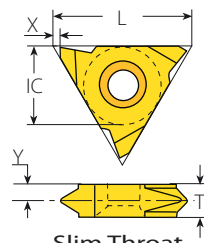
Standard



SCB
Sintered
Chipbreaker



V6



Slim Throat

Standard



SCB



V6

Insert Size		Pitch	Ordering Code		Dimensions inch			Anvil		Toolholder
IC	L inch	tpi	RH	LH	h min	X	Y	RH	LH	
1/4"	0.43	27	2ER27NPT...	2EL27NPT...	0.026	0.03	0.03	-	-	NL...-2 (LH)
		18	2ER18NPT...	2EL18NPT...	0.040	0.03	0.04			
		14	2ER14NPT...	2EL14NPT...	0.052	0.03	0.04			
3/8"	0.63	27	3ER27NPT...	3EL27NPT...	0.026	0.03	0.03	YE3	YI3	AL...-3 (LH)
		18	3ER18NPT...	3EL18NPT...	0.040	0.03	0.04			
		14	3ER14NPT...	3EL14NPT...	0.052	0.04	0.05			
		11.5	3ER11.5NPT...	3EL11.5NPT...	0.065	0.04	0.06			
3/8" SCB	0.63	8	3ER8NPT...	3EL8NPT...	0.095	0.05	0.07	YE3	-	AL...-3
		27	3JER27NPT...		0.026	0.02	0.03			
		18	3JER18NPT...		0.040	0.02	0.03			
		14	3JER14NPT...		0.052	0.04	0.06			
3/8" V6	0.63	11.5	3JER11.5NPT...		0.065	0.04	0.06	YE3-6C	-	AL...-3
		8	3JER8NPT...		0.095	0.04	0.06			
		14	3ER14NPT-6C...		0.052	0.07	0.12			

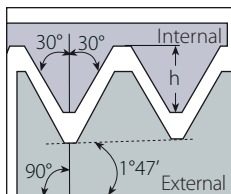
Slim Throat



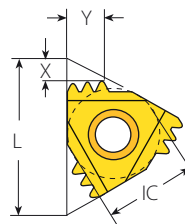
Insert Size		Pitch	Ordering Code		Dimensions inch				Toolholder
IC	L inch	tpi	RH	LH	h min	X	Y	T	
1/4"V	0.43	27	2VER27NPT...	2VEL27NPT...	0.026	0.03	0.08	0.13	NL...-2V (LH)
		18	2VER18NPT...	2VEL18NPT...	0.040	0.03	0.07	0.13	
		14	2VER14NPT...	2VEL14NPT...	0.052	0.03	0.07	0.13	
		11.5	2VER11.5NPT...	2VEL11.5NPT...	0.065	0.03	0.08	0.13	
3/8"V	0.63	27	3VER27NPT...	3VEL27NPT...	0.026	0.04	0.11	0.14	NL...-3V (LH)
		18	3VER18NPT...	3VEL18NPT...	0.040	0.04	0.10	0.14	
		11.5	3VER11.5NPT...	3VEL11.5 NPT...	0.065	0.04	0.08	0.14	

NPT (con't)

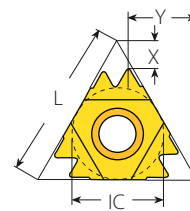
External



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



M+ Style



Z+ Style

M+ Style



Insert Size		Pitch	Teeth	Ordering Code	Dimensions inch			Anvil	Toolholder
IC	L inch	tpi		RH	h min	X	Y	RH	
3/8"	0.63	14	2	3ER14NPT2M+...	0.052	0.08	0.12	YE3M	AL..-3
1/2"	0.87	11.5	2	4ER11.5NPT2M+...	0.065	0.09	0.13	YE4M	AL..-4
5/8"	1.06	11.5	3	5ER11.5NPT3M+...	0.065	0.14	0.22	YE5M	AL..-5M
		8	2	5ER8NPT2M+...	0.095	0.12	0.19		

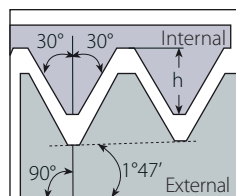
Z+ Style



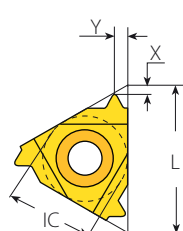
Insert Size		Pitch	Teeth	Ordering Code	Dimensions inch			Anvil	Toolholder
IC	L inch	tpi		RH	h min	X	Y	RH	
1/2"	0.87	11.5	2	4ER11.5NPT2Z+...	0.065	0.11	0.39	YE4Z	AL..-4Z
		8	2	4ER8NPT2Z+...	0.095	0.13	0.38		

NPT (con't)

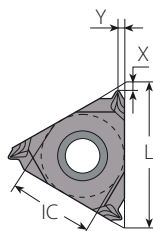
Internal



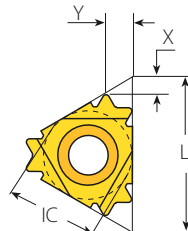
Defined by: USAS B2.1:1968
Tolerance class: Standard NPT



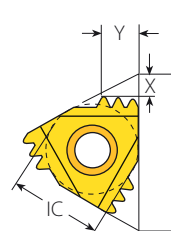
Standard



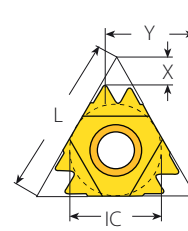
SCB
Sintered
Chipbreaker



V6



M+ Style



Z+ Style

Standard



SCB



V6

Insert Size		Pitch	Ordering Code		Dimensions inch			Anvil		Toolholder
IC	L inch	tpi	RH	LH	h min	X	Y	RH	LH	
1/4"	0.43	27	2IR27NPT...	2IL27NPT...	0.026	0.03	0.03	-	-	NVR...-2 (LH)
		18	2IR18NPT...	2IL18NPT...	0.040	0.03	0.04			
		14	2IR14NPT...	2IL14NPT...	0.052	0.03	0.04			
1/4" SCB	0.43	27	2JIR27NPT...		0.026	0.02	0.03	-	-	NVR...-2
		18	2JIR18NPT...		0.040	0.02	0.03			
3/8"	0.63	27	3IR27NPT...	3IL27NPT...	0.026	0.03	0.03	YI3	YE3	AVR...-3 (LH)
		18	3IR18NPT...	3IL18NPT...	0.040	0.03	0.04			
		14	3IR14NPT...	3IL14NPT...	0.052	0.04	0.05			
		11.5	3IR11.5NPT...	3IL11.5NPT...	0.065	0.04	0.06			
		8	3IR8NPT...	3IL8NPT...	0.095	0.05	0.07			
3/8" SCB	0.63	27	3JIR27NPT...		0.026	0.02	0.03	YI3	-	AVR...-3
		18	3JIR18NPT...		0.040	0.02	0.03			
		14	3JIR14NPT...		0.052	0.04	0.06			
		11.5	3JIR11.5NPT...		0.065	0.04	0.06			
		8	3JIR8NPT...		0.095	0.04	0.06			
3/8" V6	0.63	14	3IR14NPT-6C...		0.052	0.07	0.11	YI3-6C	-	AVR...-3 NVRC...-3V6

M+ Style

Multiplus



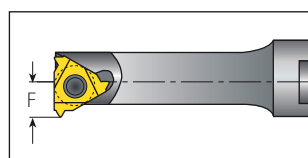
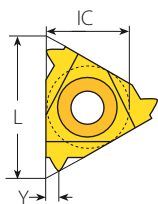
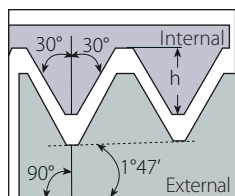
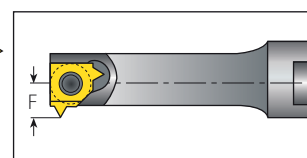
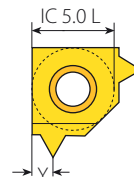
Insert Size		Pitch	Teeth	Ordering Code	Dimensions inch			Anvil	
IC	L inch	tpi		RH	h min	X	Y	RH	Toolholder
3/8"	0.63	14	2	3IR14NPT2M+...	0.052	0.08	0.12	YI3M	AVR...-3
1/2"	0.87	11.5	2	4IR11.5NPT2M+...	0.065	0.09	0.13	YI4M	AVR...-4
5/8"	1.06	11.5	3	5IR11.5NPT3M+...	0.065	0.14	0.22	YI5M	AVR...-5M
		8	2	5IR8NPT2M+...	0.095	0.12	0.19		

Z+ Style

Multiplus



Insert Size		Pitch	Teeth	Ordering Code	Dimensions inch			Anvil	
IC	L inch	tpi		RH	h min	X	Y	RH	Toolholder
1/2"	0.87	11.5	2	4IR11.5NPT2Z+...	0.065	0.11	0.39	YI4Z	AVR...-4Z
		8	2	4IR8NPT2Z+...	0.095	0.13	0.38		

NPT (con't)**Internal****Mini-3****Mini-L**

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

Mini-3

Insert Size		Pitch	Ordering Code	Dimensions inch			Min. Bore dia.	Toolholder
IC	L inch	tpi	RH	h min	Y	F	inch	
4.0	0.24	27	4.0KIR27NPT...	0.026	0.02	0.15	0.25	.NVR.020-4.0K
		27	6.0IR27NPT...	0.026	0.03	0.21		
6.0	0.39	18	6.0IR18NPT...	0.040	0.04	0.21	0.39	.NVR...-6.0
		14	6.0IR14NPT...	0.052	0.04	0.21		

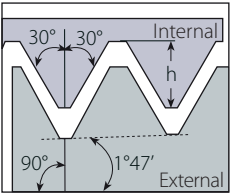
Mini-L

Insert Size		Pitch	Ordering Code	Dimensions inch			Min. Bore dia.	Toolholder
IC mm		tpi	RH	h min	Y	F	inch	
5.0L		27	5LIR27NPT...	0.026	0.03	0.18		
		18	5LIR18NPT...	0.040	0.04	0.18	0.31	.NVR...-5L
		14	5LIR14NPT...	0.052	0.04	0.18		

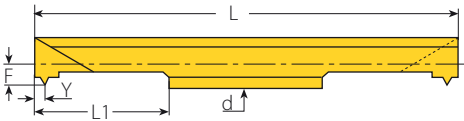
NPT



Internal



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



RH-Double Ended

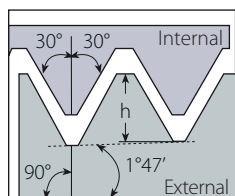
Micro - Double Ended

Insert dia.		Pitch	Ordering Code	Dimensions inch					Min. Bore dia.	Toolholder
Thread	d mm	mm	RH/LH	L1	L	F	Y	h min	inch	
1/16"-27NPT	6.0	27	6.0SIR27NPT...	0.63	1.97	0.10	0.04	0.026	0.23	SMC..-6.0
1/4"-18NPT		18	6.0SIR18NPT...	0.63	1.97	0.10	0.03	0.040	0.24	

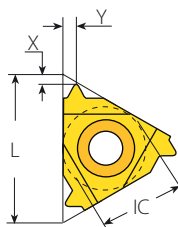
Left Handed Tool Supplied by Request. (Example: 6.0SIL18NPT...)

NPTF

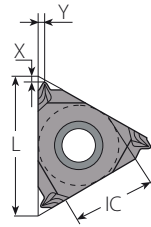
External



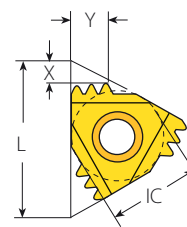
Defined by: ANSI B1.20.3-1976
Tolerance class: Class 2



Standard



SCB
Sintered
Chipbreaker



M+ Style

Standard



SCB

Insert Size		Pitch	Ordering Code		Dimensions inch			Anvil		Toolholder
IC	L inch	tpi	RH	LH	h min	X	Y	RH	LH	
1/4"	0.43	27	2ER27NPTF...	2EL27NPTF...	0.025	0.03	0.03	-	-	NL..-2 (LH)
		18	2ER18NPTF...	2EL18NPTF...	0.039	0.03	0.04			
		14	2ER14NPTF...	2EL14NPTF...	0.053	0.03	0.04			
3/8"	0.63	27	3ER27NPTF...	3EL27NPTF...	0.025	0.03	0.03	YE3	YI3	AL..-3 (LH)
		18	3ER18NPTF...	3EL18NPTF...	0.039	0.03	0.04			
		14	3ER14NPTF...	3EL14NPTF...	0.053	0.04	0.05			
		11.5	3ER11.5NPTF...	3EL11.5NPTF...	0.064	0.04	0.06			
		8	3ER8NPTF...	3EL8NPTF...	0.094	0.05	0.07			
3/8" SCB	0.63	27	3JER27NPTF...		0.025	0.03	0.03	YE3	-	AL..-3
		18	3JER18NPTF...		0.039	0.02	0.03			
		14	3JER14NPTF...		0.053	0.04	0.06			
		11.5	3JER11.5NPTF...		0.064	0.04	0.06			
		8	3JER8NPTF...		0.094	0.04	0.06			

M+ Style

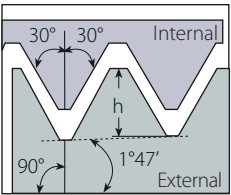


Insert Size		Pitch	Teeth	Ordering Code	Dimensions inch			Anvil		Toolholder
IC	L inch	tpi		RH	h min	X	Y	RH		
3/8"	0.63	14	2	3ER14NPTF2M+...	0.053	0.08	0.12	YE3M		AL...-3

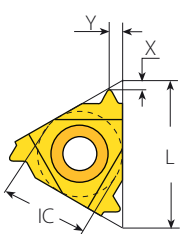
Multiplus

NPTF (con't)

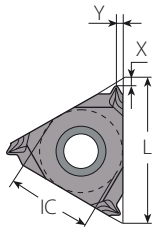
Internal



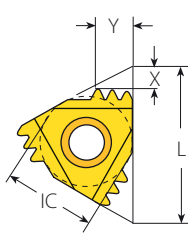
Defined by: ANSI B1.20.3-1976
Tolerance class: Class 2



Standard



SCB
Sintered
Chipbreaker



M+ Style

Standard



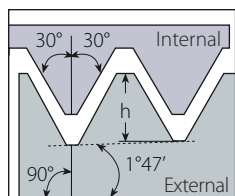
SCB

Insert Size		Pitch	Ordering Code		Dimensions inch			Anvil		Toolholder
IC	L inch	tpi	RH	LH	h min	X	Y	RH	LH	
1/4"	0.43	27	2IR27NPTF...	2IL27NPTF...	0.025	0.03	0.03	-	-	NVR...-2 (LH)
		18	2IR18NPTF...	2IL18NPTF...	0.039	0.03	0.04			
		14	2IR14NPTF...	2IL14NPTF...	0.053	0.03	0.04			
1/4" SCB	0.43	27	2JIR27NPTF...		0.025	0.03	0.03	-	-	NVR...-2
		18	2JIR18NPTF...		0.039	0.02	0.03			
3/8"	0.63	27	3IR27NPTF...	3IL27NPTF...	0.025	0.03	0.03	YI3	YE3	AVR...-3 (LH)
		18	3IR18NPTF...	3IL18NPTF...	0.039	0.03	0.04			
		14	3IR14NPTF...	3IL14NPTF...	0.053	0.04	0.05			
		11.5	3IR11.5NPTF...	3IL11.5NPTF...	0.064	0.04	0.06			
		8	3IR8NPTF...	3IL8NPTF...	0.094	0.05	0.07			
3/8" SCB	0.63	27	3JIR27NPTF...		0.025	0.03	0.03	YI3	-	AVR...-3
		18	3JIR18NPTF...		0.039	0.02	0.03			
		14	3JIR14NPTF...		0.053	0.04	0.06			
		11.5	3JIR11.5NPTF...		0.064	0.04	0.06			
		8	3JIR8NPTF...		0.094	0.04	0.06			

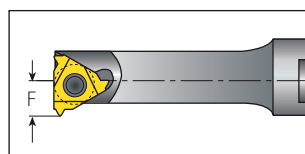
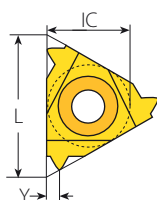
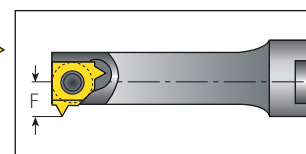
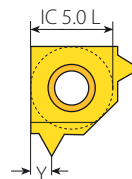
M+ Style



Insert Size		Pitch	Teeth	Ordering Code	Dimensions inch			Anvil		Toolholder
IC	L inch	tpi		RH	h min	X	Y	RH		
3/8"	0.63	14	2	3IR14NPTF2M+...	0.053	0.08	0.12	YI3M		AVR...-3

NPTF (con't)**Internal**

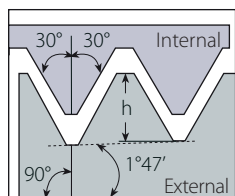
Defined by: ANSI B1.20.3-1976
Tolerance class: Class 2

**Mini-3****Mini-L****Mini-3**

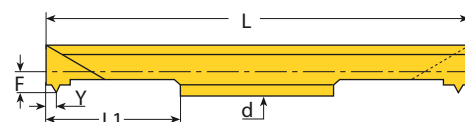
Insert Size		Pitch	Ordering Code	Dimensions inch			Min. Bore dia.	Toolholder
IC	L inch	tpi	RH	h min	Y	F	inch	
4.0	0.24	27	4.0KIR27NPTF...	0.025	0.02	0.14	0.25	.NVR.020-4.0K
		27	6.0IR27NPTF...	0.025	0.03	0.21		
6.0	0.39	18	6.0IR18NPTF...	0.039	0.04	0.21	0.39	.NVR...-6.0
		14	6.0IR14NPTF...	0.053	0.04	0.21		

Mini-L

Insert Size		Pitch	Ordering Code	Dimensions inch			Min. Bore dia.	Toolholder
IC mm		tpi	RH	h min	Y	F	inch	
5.0L		27	5LIR27NPTF...	0.025	0.03	0.18		
		18	5LIR18NPTF...	0.039	0.04	0.18	0.31	.NVR...-5L
		14	5LIR14NPTF...	0.053	0.04	0.18		

NPTF**Internal**

Defined by: ANSI B1.20.3-1976
Tolerance class: Class 2

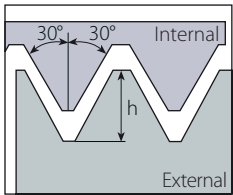
**RH-Double Ended****Micro - Double Ended**

Insert dia.		Pitch	Ordering Code	Dimensions inch					Min. Bore dia.	Toolholder
Thread	d mm	tpi	RH/LH	L1	L	F	Y	h min	inch	
1/16"-27NPTF	6.0	27	6.0SIR27NPTF...	0.63	1.97	0.10	0.03	0.025	0.24	SMC...-6.0
1/4"-18NPTF		18	6.0SIR18NPTF...	0.63	1.97	0.10	0.04	0.039		

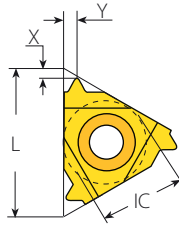
Left Handed Tool Supplied by Request. (Example: 6.0SIL18NPTF...)

NPS

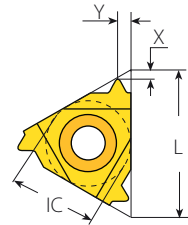
External / Internal



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



External - Standard



Internal - Standard

External

Standard



Insert Size		Pitch	Ordering Code		Dimensions inch			Anvil		Toolholder
IC	L inch	tpi	RH	LH	h min	X	Y	RH	LH	
3/8"	0.63	24	3ER24NPS...	3EL24NPS...	0.031	0.03	0.03	YE3	YI3	AL...-3 (LH)
		16	3ER16NPS...	3EL16NPS...	0.048	0.03	0.04			
		14	3ER14NPS...	3EL14NPS...	0.052	0.04	0.05			
		12	3ER12NPS...	3EL12NPS...	0.064	0.04	0.06			
		11.5	3ER11.5NPS...	3EL11.5NPS...	0.067	0.04	0.06			
		9	3ER9NPS...	3EL9NPS...	0.087	0.05	0.06			
1/2"	0.87	8	4ER8NPS...	4EL8NPS...	0.097	0.05	0.07	YE4	YI4	AL...-4 (LH)
		7	4ER7NPS...	4EL7NPS...	0.111	0.06	0.09			
		6	4ER6NPS...	4EL6NPS...	0.130	0.06	0.09			
5/8"	1.06	5	5ER5NPS...	5EL5NPS...	0.157	0.07	0.11	YE5	YI5	AL...-5 (LH)

Internal

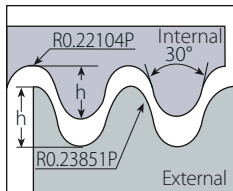
Standard



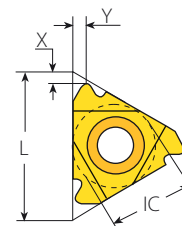
Insert Size		Pitch	Ordering Code		Dimensions inch			Anvil		Toolholder
IC	L inch	tpi	RH	LH	h min	X	Y	RH	LH	
3/8"	0.63	24	3IR24NPS...	3IL24NPS...	0.031	0.03	0.03	YI3	YE3	AVR...-3 (LH)
		14	3IR14NPS...	3IL14NPS...	0.052	0.04	0.05			
		12	3IR12NPS...	3IL12NPS...	0.064	0.04	0.06			
		11.5	3IR11.5NPS...	3IL11.5NPS...	0.067	0.04	0.06			
		9	3IR9NPS...	3IL9NPS...	0.087	0.05	0.06			
1/2"	0.87	8	4IR8NPS...	4IL8NPS...	0.097	0.05	0.07	YI4	YE4	AVR...-4 (LH)
		7	4IR7NPS...	4IL7NPS...	0.111	0.06	0.09			
		6	4IR6NPS...	4IL6NPS...	0.130	0.06	0.09			
5/8"	1.06	5	5IR5NPS...	5IL5NPS...	0.157	0.07	0.11	YI5	YE5	AVR...-5 (LH)

Round (DIN 405)

External



Defined by: DIN 405
Tolerance class: 7h/7H



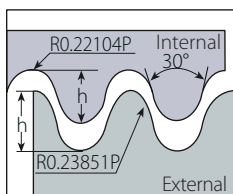
Standard

Standard

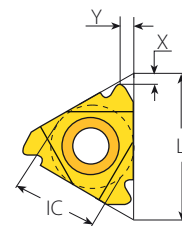


Insert Size		Pitch	Ordering Code		Dimensions inch			Anvil		Toolholder
IC	L inch	tpi	RH	LH	h min	X	Y	RH	LH	
3/8"	0.63	10	3ER10RD...	3EL10RD...	0.050	0.04	0.05	YE3	YI3	AL...-3 (LH)
		8	3ER8RD...	3EL8RD...	0.063	0.06	0.05			
		6	3ER6RD...	3EL6RD...	0.083	0.06	0.07			
1/2"	0.87	6	4ER6RD...	4EL6RD...	0.083	0.06	0.07	YE4	YI4	AL...-4 (LH)
		4	4ER4RD...	4EL4RD...	0.125	0.09	0.09			
5/8"	1.06	4	5ER4RD...	5EL4RD...	0.125	0.09	0.09	YE5	YI5	AL...-5 (LH)

Internal



Defined by: DIN 405
Tolerance class: 7h/7H



Standard

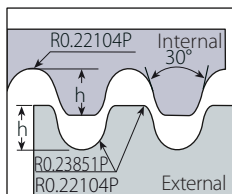
Standard



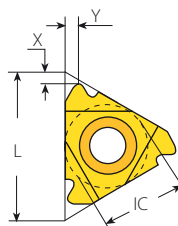
Insert Size		Pitch	Ordering Code		Dimensions inch			Anvil		Toolholder
IC	L inch	tpi	RH	LH	h min	X	Y	RH	LH	
3/8"	0.63	10	3IR10RD...	3IL10RD...	0.050	0.04	0.05	YI3	YE3	AVR...-3 (LH)
		8	3IR8RD...	3IL8RD...	0.063	0.06	0.06			
		6	3IR6RD...	3IL6RD...	0.083	0.06	0.06			
1/2"	0.87	6	4IR6RD...	4IL6RD...	0.083	0.06	0.07	YI4	YE4	AVR...-4 (LH)
		4	4IR4RD...	4IL4RD...	0.125	0.09	0.09			
5/8"	1.06	4	5IR4RD...	5IL4RD...	0.125	0.09	0.09	YI5	YE5	AVR...-5 (LH)

Round (DIN 20400)

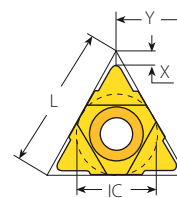
External



Defined by: DIN 20400
Tolerance class: Standard



Standard



U Style

Standard



Insert Size		Pitch	Ordering Code		Dimensions inch			Anvil		Toolholder
IC	L inch	mm	RH	LH	h min	X	Y	RH	LH	
1/2"	0.87	3.0	4ER3.0RD20400...	4EL3.0RD20400...	0.065	0.05	0.07	YE4	YI4	AL...-4 (LH)
		4.0	4ER4.0RD20400...	4EL4.0RD20400...	0.087	0.06	0.09			
		5.0	4ER5.0RD20400...	4EL5.0RD20400...	0.108	0.06	0.07			
		6.0	4ER6.0RD20400...	4EL6.0RD20400...	0.13	0.07	0.08			

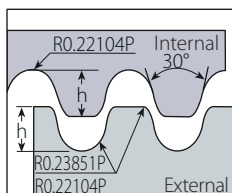
U Style



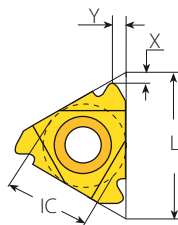
Insert Size		Pitch	Ordering Code		Dimensions inch			Anvil		Toolholder
IC	L inch	mm	RH+LH		h min	X	Y	RH	LH	
5/8"U	1.06	8.0	5UEI8.0RD20400...		0.173	0.11	0.53	YE5U	YI5U	AL...-5U (LH)

Round (DIN 20400)

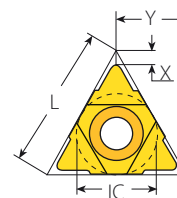
Internal



Defined by: DIN 20400
Tolerance class: Standard



Standard



U Style

Standard



Insert Size		Pitch	Ordering Code		Dimensions inch			Anvil		Toolholder
IC	L inch	mm	RH	LH	h min	X	Y	RH	LH	
1/2"	0.87	3.0	4IR3.0RD20400...	4IL3.0RD20400...	0.065	0.05	0.07	YI4	YE4	AVR...-4 (LH)
		4.0	4IR4.0RD20400...	4IL4.0RD20400...	0.087	0.06	0.09			
		5.0	4IR5.0RD20400...	4IL5.0RD20400...	0.108	0.06	0.07			
		6.0	4IR6.0RD20400...	4IL6.0RD20400...	0.130	0.07	0.08			

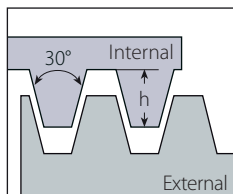
U Style



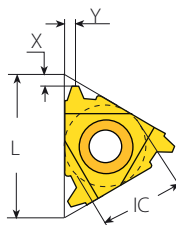
Insert Size		Pitch	Ordering Code		Dimensions inch			Anvil		Toolholder
IC	L inch	mm	RH+LH		h min	X	Y	RH	LH	
5/8"U	1.06	8.0	5UEI8.0RD20400...		0.173	0.11	0.53	YI5U	YE5U	AVR...-5U (LH)

Trapez

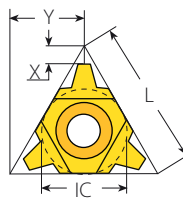
External



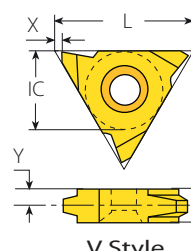
Defined by: DIN 103
Tolerance class: 7e/7H



Standard



U Style



V Style

Standard



Insert Size		Pitch	Ordering Code		Dimensions inch			Anvil		Toolholder
IC	L inch	mm	RH	LH	h min	X	Y	RH	LH	
1/4"	0.43	1.5	2ER1.5TR...	2EL1.5TR...	0.035	0.03	0.04	-	-	NL..-2 (LH)
3/8"	0.63	1.5	3ER1.5TR...	3EL1.5TR...	0.035	0.04	0.04	YE3	YI3	AL..-3 (LH)
		2.0	3ER2.0TR...	3EL2.0TR...	0.049	0.04	0.05			
		2.5	3ER2.5TR...	3EL2.5TR...	0.061	0.05	0.06			
		3.0	3ER3.0TR...	3EL3.0TR...	0.069	0.05	0.06			
1/2"	0.87	4.0	4ER4.0TR...	4EL4.0TR...	0.089	0.07	0.07	YE4	YI4	AL..-4 (LH)
		5.0	4ER5.0TR...	4EL5.0TR...	0.108	0.08	0.10			
		6.0	4ER6.0TR...	4EL6.0TR...	0.138	0.09	0.11			
5/8"	1.06	6.0	5ER6.0TR...	5EL6.0TR...	0.138	0.09	0.11	YE5	YI5	AL..-5 (LH)

U Style



Insert Size		Pitch	Ordering Code		Dimensions inch			Anvil		Toolholder
IC	L inch	mm	RH+LH		h min	X	Y	RH	LH	
1/2"U	0.87	6.0	4UE6.0TR...		0.138	0.08	0.43	YE4U	YI4U	AL..-4U (LH)
		7.0	4UE7.0TR...		0.157	0.09	0.43			
		8.0	4UE8.0TR...		0.177	0.10	0.43			
5/8"U	1.06	8.0	5UE8.0TR...		0.177	0.10	0.54	YE5U	YI5U	AL..-5U (LH)
		9.0	5UE9.0TR...		0.197	0.12	0.54			

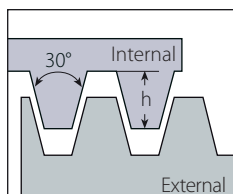
V Style



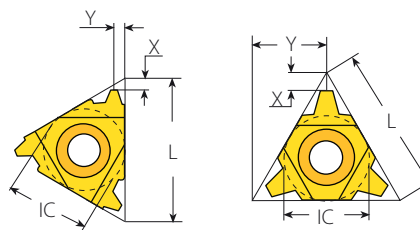
Insert Size		Pitch	Ordering Code		Dimensions inch				Toolholder
IC	L inch	mm	RH	LH	h min	X	Y	T	
5/8"V	1.06	6.0	5VER6.0TR...	5VEL6.0TR...	0.138	0.04	0.13	0.24	NL..-5V-6 (LH)
		7.0	5VER7.0TR...	5VEL7.0TR...	0.157	0.04	0.13	0.24	
		8.0	5VER8.0TR...	5VEL8.0TR...	0.177	0.04	0.13	0.24	
		9.0	5VER9.0TR...	5VEL9.0TR...	0.197	0.04	0.17	0.31	NL..-5V-8 (LH)
		10.0	5VER10.0TR...	5VEL10.0TR...	0.217	0.04	0.17	0.31	
		12.0	5VER12.0TR...	5VEL12.0TR...	0.256	0.04	0.20	0.39	NL..-5V-10 (LH)

Trapez (con't)

Internal



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



Standard

U Style

Standard



Insert Size		Pitch	Ordering Code		Dimensions inch			Anvil		Toolholder
IC	L inch	mm	RH	LH	h min	X	Y	RH	LH	
1/4"	0.43	1.5	2IR1.5TR...	2IL1.5TR...	0.035	0.03	0.04	-	-	NVR 8-2 (LH)
3/8"	0.63	1.5	3IR1.5TR...	3IL1.5TR...	0.035	0.04	0.04	YI3	YE3	AVR..-3 (LH)
		2.0	3IR2.0TR...	3IL2.0TR...	0.049	0.04	0.05			
		2.5	3IR2.5TR...	3IL2.5TR...	0.060	0.05	0.06			
		3.0	3IR3.0TR...	3IL3.0TR...	0.069	0.05	0.06			
1/2"	0.87	4.0	4IR4.0TR...	4IL4.0TR...	0.089	0.07	0.07	YI4	YE4	AVR..-4 (LH)
		5.0	4IR5.0TR...	4IL5.0TR...	0.108	0.08	0.10			
		6.0	4IR6.0TR...	4IL6.0TR...	0.138	0.09	0.11			
5/8"	1.06	6.0	5IR6.0TR...	5IL6.0TR...	0.138	0.09	0.11	YI5	YE5	AVR..-5 (LH)

Coarse Pitch



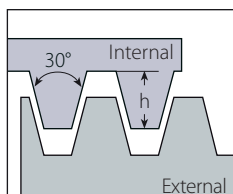
Thread	Insert Size		Ordering Code	Dimensions inch			Toolholder		Min. Bore dia.
	IC	L inch	RH	h min	X	Y			inch
TR18x4	3/8"U	0.63	3UIR4.0TR...158/013	0.089	0.08	0.31	NVRC044-3U	157/020	0.55
TR20x4	3/8"	0.63	3IR4.0TR...158/012	0.089	0.06	0.07	NVRC050-3	157/006	0.63
TR22x5	3/8"U	0.63	3UIR5.0TR...158/011	0.108	0.06	0.31	NVRC055-3U	157/018	0.67
TR24x5			3UIR5.0TR...158/011	0.108	0.06	0.31	NVRC059-3U	157/019	0.75
TR26x5			3UIR5.0TR...158/011	0.108	0.06	0.31	NVRC059-3U	157/019	0.83
TR28x5			3UIR5.0TR...	0.108	0.06	0.31	NVRC059-3U	157/019	0.83
TR28x5	1/2"	0.87	4IR5.0TR...	0.108	0.09	0.11	NVRC075-4	157/008	0.91
TR30x6	1/2"U	0.87	4UIR6.0TR...158/007	0.138	0.08	0.43	NVRC075-4U	157/011	0.94
TR36x6	5/8"	1.06	5IR6.0TR...	0.138	0.09	0.11	NVRC100-5	157/012	1.18
TR38x7	1/2"U	0.87	4UIR7.0TR...158/008	0.157	0.09	0.43	NVRC100-4U	157/013	1.22
TR40x7			4UIR7.0TR...158/008	0.157	0.09	0.43	NVRC100-4U	157/013	1.30
TR42x7			4UIR7.0TR...158/008	0.157	0.09	0.43	NVRC125-4U	157/014	1.38
TR44x7			4UIR7.0TR...158/008	0.157	0.09	0.43	NVRC125-4U	157/014	1.46
TR46x8	5/8"U	1.06	5UIR8.0TR...158/010	0.177	0.10	0.53	NVRC125-5U	157/015	1.50
TR48x8			5UIR8.0TR...158/010	0.177	0.10	0.53	NVRC125-5U	157/015	1.57
TR50x8			5UIR8.0TR...158/010	0.177	0.10	0.53	NVRC125-5U	157/015	1.65
TR52x8			5UIR8.0TR...158/010	0.177	0.10	0.53	NVRC125-5U	157/015	1.73

Left Handed Tool Supplied by Request.

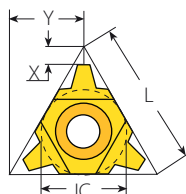
U Type Inserts Can be Used for LH Applications with LH toolholders.

Trapez (con't)

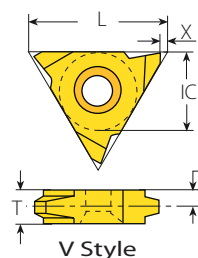
Internal



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



U Style



V Style

U Style



Insert Size		Pitch	Ordering Code	Dimensions inch			Anvil		Toolholder
IC	L inch	mm	RH+LH	h min	X	Y	RH	LH	
1/2"U	0.87	6.0	4UI6.0TR...	0.138	0.08	0.43	YI4U	YE4U	AVR...-4U (LH)
		7.0	4UI7.0TR...	0.157	0.09	0.43			
		8.0	4UI8.0TR...	0.177	0.10	0.43			
5/8"U	1.06	8.0	5UI8.0TR...	0.177	0.10	0.54	YI5U	YE5U	AVR...-5U (LH)
		9.0	5UI9.0TR...	0.197	0.12	0.54			

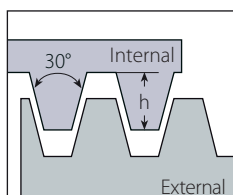
V Style



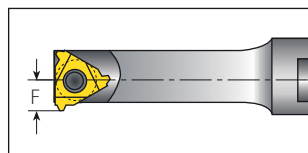
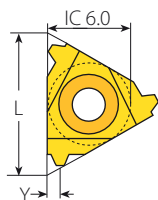
Insert Size		Pitch	Ordering Code		Dimensions inch				Toolholder
IC	L inch	mm	RH	LH	h min	X	Y	T	
5/8"V	1.06	6.0	5VIR6.0TR...	5VIL6.0TR...	0.138	0.04	0.13	0.24	NVR...-5V (LH)
		7.0	5VIR7.0TR...	5VIL7.0TR...	0.157	0.04	0.13	0.24	
		8.0	5VIR8.0TR...	5VIL8.0TR...	0.177	0.04	0.13	0.24	
		9.0	5VIR9.0TR...	5VIL9.0TR...	0.197	0.04	0.17	0.31	
		10.0	5VIR10.0TR...	5VIL10.0TR...	0.217	0.04	0.17	0.31	
		12.0	5VIR12.0TR...	5VIL12.0TR...	0.256	0.04	0.20	0.39	



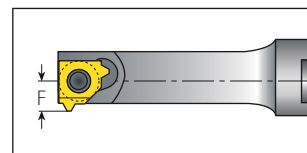
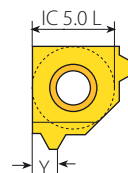
Internal



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



Mini-3



Mini-L

Mini-3



Insert Size		Pitch	Ordering Code	Dimensions inch			Min. Bore dia.	Toolholder
IC	L inch	mm	RH	h min	Y	F	inch	
6.0	0.39	1.5	6.0IR1.5TR...	0.033	0.03	0.21	0.39	.NVR...-6.0
		2.0	6.0IR2.0TR...	0.049	0.05	0.21	0.39	

Mini-L

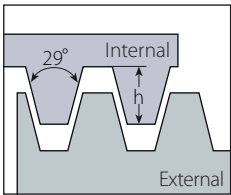


Insert Size		Pitch	Ordering Code	Dimensions inch			Min. Bore dia.	Toolholder
IC mm	mm	mm	RH	h min	Y	F	inch	
5.0L		1.5	5LIR1.5TR...	0.033	0.03	0.18	0.31	.NVR...-5L
		2.0	5LIR2.0TR...	0.049	0.05	0.18	0.31	

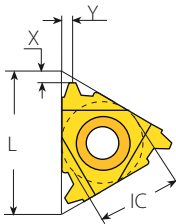
Left Handed Tool Supplied by Request. (Example: 6.0IL2.0TR...)

American ACME

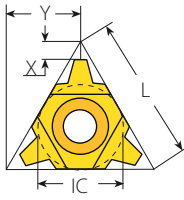
External



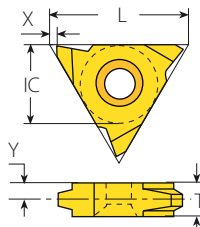
Defined by: ANSI B1.5:1988
Tolerance class: 3G



Standard



U Style



V Style

Standard



Insert Size		Pitch	Ordering Code		Dimensions inch			Anvil		Toolholder
IC	L inch	tpi	RH	LH	h min	X	Y	RH	LH	
1/4"	0.43	16	2ER16ACME...	2EL16ACME...	0.036	0.04	0.04	-	-	NL...-2 (LH)
		16	3ER16ACME...	3EL16ACME...	0.036	0.04	0.04	YE3	YI3	AL...-3 (LH)
		14	3ER14ACME...	3EL14ACME...	0.041	0.04	0.05			
3/8"	0.63	12	3ER12ACME...	3EL12ACME...	0.047	0.04	0.05			
		10	3ER10ACME...	3EL10ACME...	0.060	0.05	0.06			
		8	3ER8ACME...	3EL8ACME...	0.072	0.06	0.06			
		7	3ER7ACME...	3EL7ACME...	0.082	0.07	0.09			
		6	3ER6ACME...	3EL6ACME...	0.093	0.07	0.07	YE3AC6	YI3AC6	
		7	4ER7ACME...	4EL7ACME...	0.082	0.07	0.09	YE4	YI4	AL...-4 (LH)
1/2"	0.87	6	4ER6ACME...	4EL6ACME...	0.093	0.07	0.08			
		5	4ER5ACME...	4EL5ACME...	0.110	0.08	0.09			
5/8"	1.06	4	5ER4ACME...	5EL4ACME...	0.135	0.09	0.11	YE5	YI5	AL...-5 (LH)

U Style



Insert Size		Pitch	Ordering Code		Dimensions inch			Anvil		Toolholder
IC	L inch	tpi	RH+LH		h min	X	Y	RH	LH	
1/2"U	0.87	3	4UE3ACME...		0.177	0.12	0.43	YE4U	YI4U	AL...-4U (LH)
		4	4UE4ACME...		0.135	0.09	0.43			
5/8"U	1.06	3	5UE3ACME...		0.177	0.12	0.54	YE5U	YI5U	AL...-5U (LH)

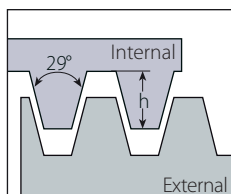
V Style



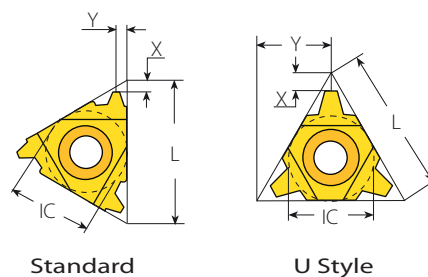
Insert Size		Pitch	Ordering Code		Dimensions inch				Toolholder
IC	L inch	tpi	RH	LH	h min	X	Y	T	
5/8"V	1.06	4	5VER4ACME...	5VEL4ACME...	0.135	0.04	0.13	0.24	NL...-5V-6 (LH)
		3.5	5VER3.5ACME...	5VEL3.5ACME...	0.152	0.04	0.13	0.24	
		3	5VER3ACME...	5VEL3ACME...	0.177	0.04	0.13	0.24	
		2	5VER2ACME...	5VEL2ACME...	0.26	0.04	0.20	0.39	NL...-5V-10 (LH)

American ACME (con't)

Internal



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



Standard

U Style

Standard



Insert Size		Pitch	Ordering Code		Dimensions inch			Anvil		Toolholder
IC	L inch	tpi	RH	LH	h min	X	Y	RH	LH	
1/4"	0.43	16	2IR16ACME...	2IL16ACME...	0.036	0.04	0.04	-	-	NVR..-2 (LH)
		16	3IR16ACME...	3IL16ACME...	0.036	0.04	0.04			
		14	3IR14ACME...	3IL14ACME...	0.041	0.04	0.05			
		12	3IR12ACME...	3IL12ACME...	0.047	0.05	0.05	YI3	YE3	AVR..-3 (LH)
		10	3IR10ACME...	3IL10ACME...	0.060	0.05	0.05			
		8	3IR8ACME...	3IL8ACME...	0.072	0.06	0.06			
1/2"	0.63	6	3IR6ACME...	3IL6ACME...	0.093	0.07	0.07	YI3AC6	YE3AC6	
		6	4IR6ACME...	4IL6ACME...	0.093	0.07	0.08	YI4	YE4	AVR..-4 (LH)
		5	4IR5ACME...	4IL5ACME...	0.110	0.08	0.09			
5/8"	1.06	4	5IR4ACME...	5IL4ACME...	0.135	0.09	0.10	YI5	YE5	AVR..-5 (LH)

Coarse Pitch



Thread	Insert Size		Ordering Code	Dimensions inch			Anvil	Min. Bore dia.	
tpi	IC	L inch	RH	h min	X	Y	RH	Toolholder	inch
1/2"x10	6.0U	10	6.0UIR10ACME...158/005	0.060	0.04	0.20	-	NVRC 032-6.0U 157/003	0.40
5/8"x8	1/4"U	11	2UIR8ACME...158/006	0.072	0.04	0.22	-	NVRC 039-2U 157/004	0.50
3/4"x6	3/8"	16	3IR6ACME...	0.093	0.07	0.07	-	NVRC 044-3 157/005	0.58
7/8"x6			3IR6ACME...	0.093	0.07	0.07	-	NVRC 050-3 157/006	0.73
1"x5	1/2"	22	4IR5ACME...	0.110	0.08	0.09	-	NVRC 067-4 157/007	0.80
1 1/8"x5			4IR5ACME...	0.110	0.08	0.09	-	NVRC 075-4 157/008	0.94
1 1/4"x5			4IR5ACME...	0.110	0.08	0.09	-	NVRC 075-4 157/009	1.07
1 1/2"x4	5/8"	27	5IR4ACME...	0.135	0.09	0.10	-	NVRC 110-5 157/010	1.27
1 3/4"x4			5IR4ACME...	0.135	0.09	0.10	YI5-1P	AVRC 125-5	1.53

Left Handed Tool Supplied by Request.

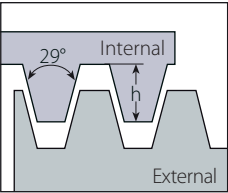
U Style



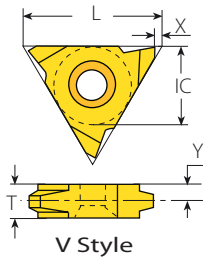
Insert Size		Pitch	Ordering Code	Dimensions inch			Anvil		Toolholder
IC	L inch	tpi	RH+LH	h min	X	Y	RH	LH	
1/2"U	0.87	4	4UI4ACME...	0.135	0.09	0.43	YI4U	YE4U	AVR..-4U (LH)
		3	4UI3ACME...	0.177	0.11	0.43			
5/8"U	1.06	3	5UI3ACME...	0.177	0.11	0.54	YI5U	YE5U	AVR..-5U(LH)

American ACME (con't)

Internal



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



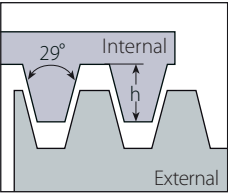
V Style



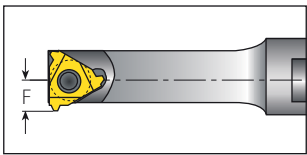
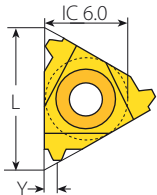
Insert Size		Pitch	Ordering Code		Dimensions inch				Toolholder
IC	L inch	tpi	RH	LH	h min	X	Y	T	
5/8"V	1.06	4	5VIR4ACME...	5VIL4ACME...	0.135	0.04	0.13	0.24	NVR...-5V (LH)
		3.5	5VIR3.5ACME...	5VIL3.5ACME...	0.152	0.04	0.13	0.24	
		3	5VIR3ACME...	5VIL3ACME...	0.177	0.04	0.13	0.24	
		2	5VIR2ACME...	5VIL2ACME...	0.260	0.04	0.20	0.39	



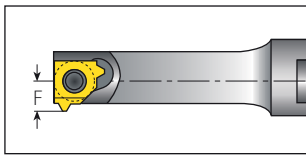
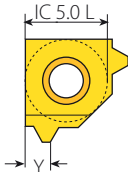
Internal



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



Mini-3



Mini-L

Mini-3



Insert Size		Pitch	Ordering Code		Dimensions inch			Min. Bore dia.	Toolholder
IC	L inch	tpi	RH	LH	h min	Y	F	inch	
6.0	0.39	12	6.0IR12ACME...		0.047	0.04	0.20	0.39	.NVR...-6.0

Mini-L

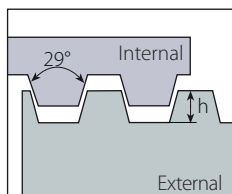


Insert Size		Pitch	Ordering Code		Dimensions inch			Min. Bore dia.	Toolholder
IC mm		tpi	RH	LH	h min	Y	F	inch	
5.0L		12	5LIR12ACME...		0.047	0.04	0.17	0.31	.NVR...-5L

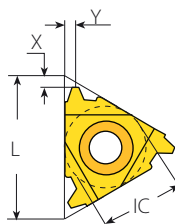
Left Handed Tool Supplied by Request. (Example: 6.0L12ACME...)

Stub ACME

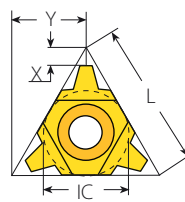
External



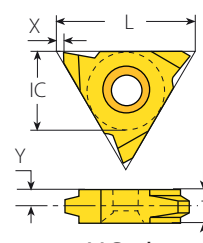
Defined by: ANSI B1.8:1988
Tolerance class: 2G



Standard



U Style



V Style

Standard



Insert Size		Pitch	Ordering Code		Dimensions inch			Anvil		Toolholder
IC	L inch	tpi	RH	LH	h min	X	Y	RH	LH	
1/4"	0.43	16	2ER16STACME...	2EL16STACME...	0.024	0.04	0.04	-	-	NL..-2 (LH)
		16	3ER16STACME...	3EL16STACME...	0.024	0.04	0.04			
3/8"	0.63	14	3ER14STACME...	3EL14STACME...	0.026	0.04	0.04			
		12	3ER12STACME...	3EL12STACME...	0.030	0.05	0.05	YE3	YI3	AL..-3 (LH)
		10	3ER10STACME...	3EL10STACME...	0.040	0.05	0.05			
		8	3ER8STACME...	3EL8STACME...	0.048	0.06	0.06			
		6	3ER6STACME...	3EL6STACME...	0.060	0.07	0.07			
		6	4ER6STACME...	4EL6STACME...	0.060	0.07	0.07			
1/2"	0.87	5	4ER5STACME...	4EL5STACME...	0.070	0.08	0.09	YE4	YI4	AL..-4 (LH)
		4	4ER4STACME...	4EL4STACME...	0.085	0.09	0.09			
5/8"	1.06	4	5ER4STACME...	5EL4STACME...	0.085	0.09	0.09	YE5	YI5	AL..-5 (LH)
		3	5ER3STACME...	5EL3STACME...	0.110	0.11	0.11			

U Style



Insert Size		Pitch	Ordering Code		Dimensions inch			Anvil		Toolholder
IC	L inch	tpi	RH+LH		h min	X	Y	RH	LH	
1/2"U	0.87	4	4UE4STACME...		0.085	2.6	11.0	YE4U	YI4U	AL..-4U (LH)
		3	4UE3STACME...		0.110	3.4	11.0			

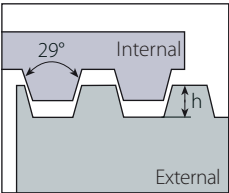
V Style



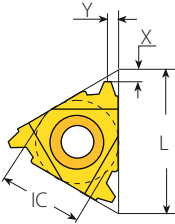
Insert Size		Pitch	Ordering Code		Dimensions inch					Toolholder
IC	L inch	tpi	RH	LH	h min	X	Y	T		
5/8"V	1.06	4	5VER4STACME...	5VEL4STACME...	0.085	0.04	0.13	0.24		NL..-5V-6 (LH)
		3	5VER3STACME...	5VEL3STACME...	0.110	0.04	0.13	0.24		
		2	5VER2STACME...	5VEL2STACME...	0.160	0.04	0.17	0.31		NL..-5V-8 (LH)

Stub ACME (con't)

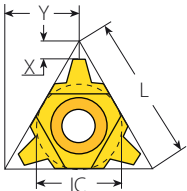
Internal



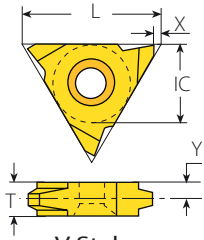
Defined by: ANSI B1.8:1988
Tolerance class: 2G



Standard



U Style



V Style

Standard



Insert Size		Pitch	Ordering Code		Dimensions inch			Anvil		Toolholder
IC	L inch	tpi	RH	LH	h min	X	Y	RH	LH	
1/4"	0.43	16	2IR16STACME...	2IL16STACME...	0.024	0.04	0.04	-	-	NVR..-2 (LH)
		16	3IR16STACME...	3IL16STACME...	0.024	0.04	0.04			
		14	3IR14STACME...	3IL14STACME...	0.026	0.04	0.04			
		12	3IR12STACME...	3IL12STACME...	0.030	0.04	0.05	YI3	YE3	AVR..-3 (LH)
		10	3IR10STACME...	3IL10STACME...	0.040	0.05	0.05			
		8	3IR8STACME...	3IL8STACME...	0.048	0.06	0.06			
3/8"	0.63	6	3IR6STACME...	3IL6STACME...	0.060	0.07	0.07			
		6	4IR6STACME...	4IL6STACME...	0.060	0.07	0.07	YI4	YE4	AVR..-4 (LH)
		5	4IR5STACME...	4IL5STACME...	0.070	0.08	0.09			
		4	4IR4STACME...	4IL4STACME...	0.085	0.09	0.09			
		4	5IR4STACME...	5IL4STACME...	0.085	0.09	0.09	YI5	YE5	AVR..-5 (LH)
		3	5IR3STACME...	5IL3STACME...	0.110	0.11	0.11			

U Style



Insert Size		Pitch	Ordering Code		Dimensions inch			Anvil		Toolholder
IC	L inch	tpi	RH+LH		h min	X	Y	RH	LH	
1/2"U	0.87	4	4UI4STACME...		0.085	0.10	0.43	YI4U	YE4U	AVR..-4U (LH)
		3	4UI3STACME...		0.110	0.13	0.43			

V Style

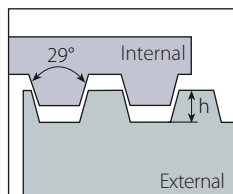


Insert Size		Pitch	Ordering Code		Dimensions inch				Toolholder
IC	L inch	tpi	RH	LH	h min	X	Y	T	
5/8"V	1.06	4	5VIR4STACME...	5VIL4STACME...	0.085	0.04	0.13	0.24	NVR..-5V (LH)
		3	5VIR3STACME...	5VIL3STACME...	0.110	0.04	0.13	0.24	
		2	5VIR2STACME...	5VIL2STACME...	0.160	0.04	0.17	0.31	

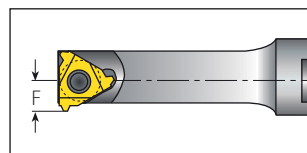
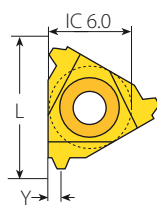
Stub ACME (con't)



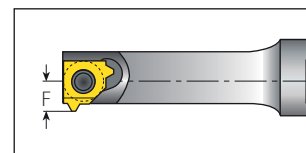
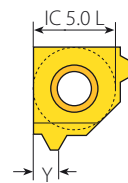
Internal



Defined by: ANSI B1.8:1988
Tolerance class: 2G



Mini-3



Mini-L

Mini-3



Insert Size		Pitch	Ordering Code	Dimensions inch			Min. Bore dia.	Toolholder
IC	L inch	tpi	RH	h min	Y	F	inch	
6.0	0.39	12	6.0IR12STACME...	0.03	0.05	0.20	0.39	.NVR...-6.0

Mini-L

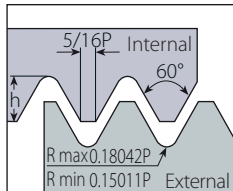


Insert Size		Pitch	Ordering Code	Dimensions inch			Min. Bore dia.	Toolholder
IC mm		tpi	RH	h min	Y	F	inch	
5.0L		12	5LIR12STACME...	0.03	0.05	0.17	0.31	.NVR...-5L

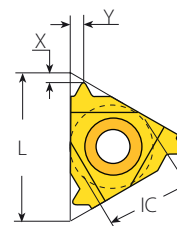
Left Handed Tool Supplied by Request. (Example: 6.0L12STACME...)

UNJ - UNJC, UNJF, UNJEF, UNJS

External



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



Standard

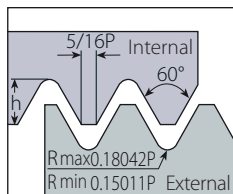
Standard

Insert Size		Pitch	Ordering Code		Dimensions inch			Anvil		Toolholder
IC	L inch	tpi	RH	LH	h min	X	Y	RH	LH	
1/4"	0.43	48	2ER48UNJ...	2EL48UNJ...	0.012	0.02	0.02	-	-	NL...-2 (LH)
		44	2ER44UNJ...	2EL44UNJ...	0.013	0.02	0.02			
		40	2ER40UNJ...	2EL40UNJ...	0.015	0.02	0.02			
		36	2ER36UNJ...	2EL36UNJ...	0.016	0.02	0.02			
		32	2ER32UNJ...	2EL32UNJ...	0.018	0.02	0.03			
		28	2ER28UNJ...	2EL28UNJ...	0.020	0.03	0.03			
		24	2ER24UNJ...	2EL24UNJ...	0.024	0.03	0.03			
		20	2ER20UNJ...	2EL20UNJ...	0.029	0.03	0.04			
		18	2ER18UNJ...	2EL18UNJ...	0.032	0.03	0.04			
		16	2ER16UNJ...	2EL16UNJ...	0.036	0.04	0.04			
		14	2ER14UNJ...	2EL14UNJ...	0.041	0.04	0.05			
3/8"	0.63	48	3ER48UNJ...	3EL48UNJ...	0.012	0.02	0.02	YE3	YI3	AL...-3 (LH)
		44	3ER44UNJ...	3EL44UNJ...	0.013	0.02	0.02			
		40	3ER40UNJ...	3EL40UNJ...	0.015	0.02	0.02			
		36	3ER36UNJ...	3EL36UNJ...	0.016	0.02	0.02			
		32	3ER32UNJ...	3EL32UNJ...	0.018	0.02	0.03			
		28	3ER28UNJ...	3EL28UNJ...	0.020	0.03	0.03			
		24	3ER24UNJ...	3EL24UNJ...	0.024	0.03	0.03			
		20	3ER20UNJ...	3EL20UNJ...	0.029	0.03	0.04			
		18	3ER18UNJ...	3EL18UNJ...	0.032	0.03	0.04			
		16	3ER16UNJ...	3EL16UNJ...	0.036	0.04	0.04			
		14	3ER14UNJ...	3EL14UNJ...	0.041	0.04	0.05			
		13	3ER13UNJ...	3EL13UNJ...	0.044	0.04	0.05			
		12	3ER12UNJ...	3EL12UNJ...	0.048	0.04	0.05			
		11	3ER11UNJ...	3EL11UNJ...	0.052	0.05	0.06			
		10	3ER10UNJ...	3EL10UNJ...	0.058	0.05	0.06			
		9	3ER9UNJ...	3EL9UNJ...	0.064	0.05	0.07			
		8	3ER8UNJ...	3EL8UNJ...	0.072	0.05	0.06			

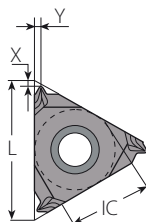
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UNJ - UNJC, UNJF, UNJEF, UNJS (con't)

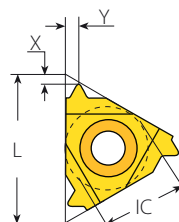
External



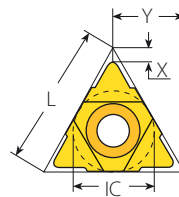
Defined by: MIL-S-8879C
Tolerance class: 3A/3B



SCB
Sintered
Chipbreaker



Standard



U Style

Standard (con't)



SCB



Insert Size		Pitch	Ordering Code		Dimensions inch			Anvil		Toolholder
IC	L inch	tpi	RH	LH	h min	X	Y	RH	LH	
3/8"	0.63	36	3JER36UNJ...		0.016	0.05	0.02	YE3	-	AL...-3
		32	3JER32UNJ...		0.018	0.05	0.02			
		28	3JER28UNJ...		0.020	0.03	0.03			
		24	3JER24UNJ...		0.024	0.03	0.03			
		20	3JER20UNJ...		0.029	0.03	0.03			
		18	3JER18UNJ...		0.032	0.03	0.03			
		16	3JER16UNJ...		0.036	0.03	0.03			
		14	3JER14UNJ...		0.041	0.05	0.06			
		12	3JER12UNJ...		0.048	0.05	0.06			
		10	3JER10UNJ...		0.058	0.05	0.06			
1/2"	0.87	7	4ER7UNJ...	4EL7UNJ...	0.082	0.07	0.09	YE4	Y14	AL...-4 (LH)
		6	4ER6UNJ...	4EL6UNJ...	0.096	0.07	0.09			
		5	4ER5UNJ...	4EL5UNJ...	0.115	0.07	0.10			
5/8"	1.06	4.5	5ER4.5UNJ...	5EL4.5UNJ...	0.128	0.08	0.11	YE5	Y15	AL...-5 (LH)
		4	5ER4UNJ...	5EL4UNJ...	0.144	0.09	0.12			

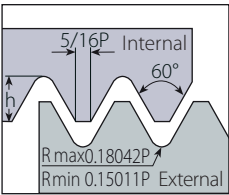
U Style



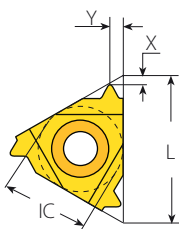
Insert Size		Pitch	Ordering Code	Dimensions inch			Anvil		Toolholder
IC	L inch	tpi	RH+LH	h min	X	Y	RH	LH	
1/2"U	0.87	4.5	4UE4.5UNJ...	0.128	0.08	0.43	YE4U	Y14U	AL...-4U (LH)
		4	4UE4UNJ...	0.144	0.09	0.43			

UNJ - UNJC, UNJF, UNJEF, UNJS (con't)

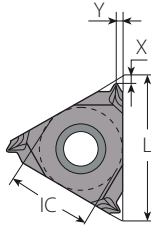
Internal



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



Standard



SCB
Sintered
Chipbreaker

Standard



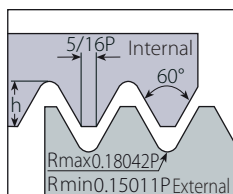
SCB

Insert Size		Pitch	Ordering Code		Dimensions inch			Anvil		Toolholder
IC	L inch	tpi	RH	LH	h min	X	Y	RH	LH	
1/4"	0.43	48	2IR48UNJ...	2IL48UNJ...	0.011	0.02	0.02	-	-	NVR..-2 (LH)
		44	2IR44UNJ...	2IL44UNJ...	0.012	0.02	0.02			
		40	2IR40UNJ...	2IL40UNJ...	0.013	0.02	0.02			
		36	2IR36UNJ...	2IL36UNJ...	0.015	0.02	0.02			
		32	2IR32UNJ...	2IL32UNJ...	0.017	0.02	0.03			
		28	2IR28UNJ...	2IL28UNJ...	0.019	0.03	0.03			
		24	2IR24UNJ...	2IL24UNJ...	0.022	0.03	0.03			
		20	2IR20UNJ...	2IL20UNJ...	0.026	0.03	0.04			
		18	2IR18UNJ...	2IL18UNJ...	0.029	0.03	0.04			
		16	2IR16UNJ...	2IL16UNJ...	0.033	0.04	0.04			
1/4" SCB	0.43	14	2IR14UNJ...	2IL14UNJ...	0.037	0.04	0.05	-	-	NVR..-2
		36	2JIR36UNJ...		0.015	0.04	0.02			
		32	2JIR32UNJ...		0.017	0.05	0.02			
		28	2JIR28UNJ...		0.019	0.02	0.03			
		24	2JIR24UNJ...		0.022	0.02	0.03			
		20	2JIR20UNJ...		0.026	0.02	0.03			
		18	2JIR18UNJ...		0.029	0.02	0.03			
		16	2JIR16UNJ...		0.033	0.02	0.03			
		14	2JIR14UNJ...		0.037	0.02	0.03			

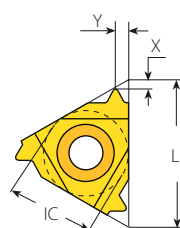
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UNJ - UNJC, UNJF, UNJEF, UNJS (con't)

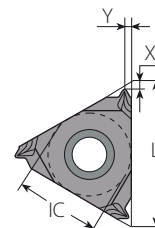
Internal



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



Standard



SCB
Sintered
Chipbreaker

Standard (con't)



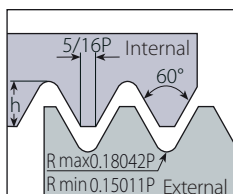
SCB



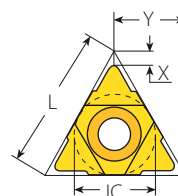
Insert Size		Pitch	Ordering Code		Dimensions inch			Anvil		Toolholder
IC	L inch	tpi	RH	LH	h min	X	Y	RH	LH	
3/8"	0.63	48	3IR48UNJ...	3IL48UNJ...	0.011	0.02	0.02	YI3	YE3	AVR...-3 (LH)
		44	3IR44UNJ...	3IL44UNJ...	0.012	0.02	0.02			
		40	3IR40UNJ...	3IL40UNJ...	0.013	0.02	0.02			
		36	3IR36UNJ...	3IL36UNJ...	0.015	0.02	0.02			
		32	3IR32UNJ...	3IL32UNJ...	0.017	0.02	0.03			
		28	3IR28UNJ...	3IL28UNJ...	0.019	0.03	0.03			
		24	3IR24UNJ...	3IL24UNJ...	0.022	0.03	0.03			
		20	3IR20UNJ...	3IL20UNJ...	0.026	0.03	0.04			
		18	3IR18UNJ...	3IL18UNJ...	0.029	0.03	0.04			
		16	3IR16UNJ...	3IL16UNJ...	0.033	0.04	0.04			
		14	3IR14UNJ...	3IL14UNJ...	0.037	0.04	0.05			
		13	3IR13UNJ...	3IL13UNJ...	0.040	0.04	0.05			
		12	3IR12UNJ...	3IL12UNJ...	0.044	0.04	0.05			
		11	3IR11UNJ...	3IL11UNJ...	0.048	0.05	0.06			
		10	3IR10UNJ...	3IL10UNJ...	0.052	0.05	0.06			
		9	3IR9UNJ...	3IL9UNJ...	0.058	0.05	0.07			
		8	3IR8UNJ...	3IL8UNJ...	0.065	0.05	0.06			
3/8" SCB	0.63	28	3JIR28UNJ...		0.019	0.02	0.03	YI3	-	AVR...-3
		24	3JIR24UNJ...		0.022	0.02	0.03			
		20	3JIR20UNJ...		0.026	0.02	0.03			
		18	3JIR18UNJ...		0.029	0.02	0.03			
		16	3JIR16UNJ...		0.033	0.02	0.03			
		14	3JIR14UNJ...		0.037	0.04	0.06			
		12	3JIR12UNJ...		0.044	0.04	0.06			
		10	3JIR10UNJ...		0.052	0.04	0.06			
		8	3JIR8UNJ...		0.065	0.04	0.06			
1/2"	0.87	7	4IR7UNJ...	4IL7UNJ...	0.075	0.07	0.09	YI4	YE4	AVR...-4 (LH)
		6	4IR6UNJ...	4IL6UNJ...	0.087	0.07	0.09			
		5	4IR5UNJ...	4IL5UNJ...	0.105	0.07	0.10			
5/8"	1.06	4.5	5IR4.5UNJ...	5IL4.5UNJ...	0.116	0.08	0.11	YI5	YE5	AVR...-5 (LH)
		4	5IR4UNJ...	5IL4UNJ...	0.131	0.09	0.09			

UNJ - UNJC, UNJF, UNJEF, UNJS (con't)

Internal



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



U Style

U Style

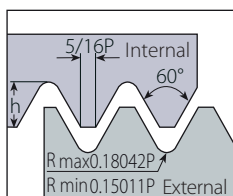


Insert Size		Pitch	Ordering Code	Dimensions inch			Anvil		Toolholder
IC	L inch	tpi	RH+LH	h min	X	Y	RH	LH	
1/2"U	0.87	4.5	4UI4.5UNJ...	0.116	0.08	0.43	YI4U	YE4U	AVR...-4U (LH)
		4	4UI4UNJ...	0.131	0.09	0.43			

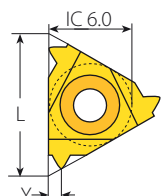
UNJ - UNJC, UNJF, UNJEF, UNJS (con't)



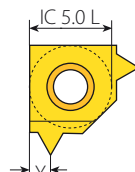
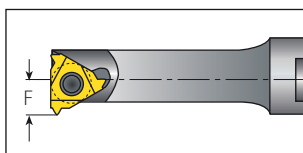
Internal



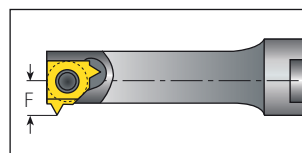
Defined by: MIL-S-8879C
Tolerance class: 3A/3B



Mini-3



Mini-L



Mini-3



Insert Size		Pitch	Ordering Code	Dimensions inch			Min. Bore dia.	Toolholder
IC	L inch	tpi	RH	h min	Y	F	inch	
6.0	0.39	20	6.0IR20UNJ...	0.026	0.04	0.19	0.39	.NVR...-6.0

Mini-L

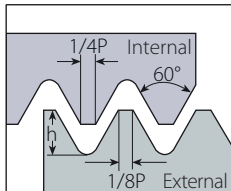


Insert Size		Pitch	Ordering Code	Dimensions inch			Min. Bore dia.	Toolholder
IC mm		tpi	RH	h min	Y	F	inch	
5.0L		32	5LIR32UNJ...	0.017	0.02	0.15	0.30	.NVR... -5L
		28	5LIR28UNJ...	0.019	0.02	0.16	0.30	
		20	5LIR20UNJ...	0.026	0.04	0.17	0.31	
		18	5LIR18UNJ...	0.029	0.04	0.17	0.31	
		16	5LIR16UNJ...	0.033	0.04	0.17	0.31	
		14	5LIR14UNJ...	0.037	0.04	0.18	0.31	

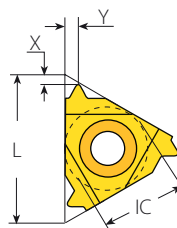
Left Handed Tool Supplied by Request. (Example: 6.0L20UNJ...)

MJ

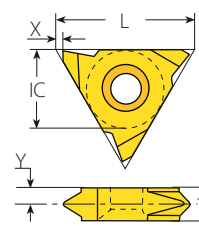
External



Defined by: ISO 5855
Tolerance class: 4h/6h-4H/5H



External - Standard



Slim Throat

Standard



Insert Size		Pitch	Ordering Code		Dimensions inch			Anvil		Toolholder
IC	L inch	mm	RH	LH	h min	X	Y	RH	LH	
1/4"	0.43	1.0	2ER1.0MJ...	2EL1.0MJ...	0.023	0.03	0.03	-	-	NL..-2 (LH)
		1.25	2ER1.25MJ...	2EL1.25MJ...	0.028	0.03	0.04			
		1.5	2ER1.5MJ...	2EL1.5MJ...	0.034	0.03	0.04			
3/8"	0.63	0.7	3ER0.7MJ...	3EL0.7MJ...	0.016	0.02	0.02	YE3	YI3	AL..-3 (LH)
		1.0	3ER1.0MJ...	3EL1.0MJ...	0.023	0.03	0.03			
		1.25	3ER1.25MJ...	3EL1.25MJ...	0.028	0.03	0.04			
		1.5	3ER1.5MJ...	3EL1.5MJ...	0.034	0.03	0.04			
		2.0	3ER2.0MJ...	3EL2.0MJ...	0.045	0.04	0.05			
		2.5	3ER2.5MJ...	3EL2.5MJ...	0.059	0.04	0.06			
		3.0	3ER3.0MJ...	3EL3.0MJ...	0.068	0.05	0.06			

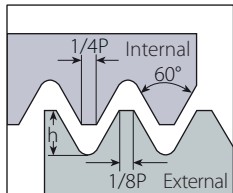
Slim Throat



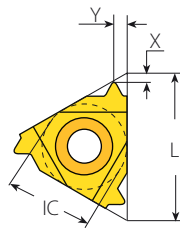
Insert Size		Pitch	Ordering Code		Dimensions inch				
IC	L inch	mm	RH	LH	h min	X	Y	T	Toolholder
1/4"V	0.43	0.7	2VER0.7MJ	2VEL0.7MJ	0.016	0.03	0.10	0.13	NL...-2V (LH)
		0.8	2VER0.8MJ	2VEL0.8MJ	0.017	0.03	0.10	0.13	
		0.9	2VER0.9MJ	2VEL0.9MJ	0.021	0.03	0.10	0.13	
		1.0	2VER1.0MJ	2VEL1.0MJ	0.023	0.03	0.10	0.13	
		1.25	2VER1.25MJ	2VEL1.25MJ	0.028	0.03	0.09	0.13	
		1.5	2VER1.5MJ	2VEL1.5MJ	0.034	0.03	0.09	0.13	

MJ

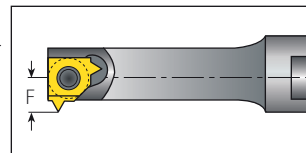
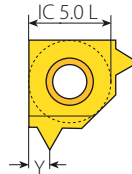
Internal



Defined by: ISO 5855
Tolerance class: 4h/6h-4H/5H



Internal - Standard



Mini-L

Standard



Insert Size		Pitch	Ordering Code		Dimensions inch			Anvil		Toolholder
IC	L inch	mm	RH	LH	h min	X	Y	RH	LH	
1/4"	0.43	1.0	2IR1.0MJ...	2IL1.0MJ...	0.019	0.02	0.03	-	-	NVR...-2 (LH)
		1.25	2IR1.25MJ...	2IL1.25MJ...	0.024	0.03	0.04			
		1.5	2IR1.5MJ...	2IL1.5MJ...	0.029	0.03	0.04			
		2.0	2IR2.0MJ...	2IL2.0MJ...	0.038	0.03	0.04			
3/8"	0.63	0.75	3IR0.75MJ...	3IL0.75MJ...	0.015	0.02	0.02	Y13	YE3	AVR...-3 (LH)
		1.0	3IR1.0MJ...	3IL1.0MJ...	0.019	0.02	0.03			
		1.25	3IR1.25MJ...	3IL1.25MJ...	0.024	0.03	0.04			
		1.5	3IR1.5MJ...	3IL1.5MJ...	0.029	0.03	0.04			
		2.0	3IR2.0MJ...	3IL2.0MJ...	0.038	0.03	0.05			
		2.5	3IR2.5MJ...	3IL2.5MJ...	0.048	0.04	0.06			
		3.0	3IR3.0MJ...	3IL3.0MJ...	0.057	0.05	0.06			

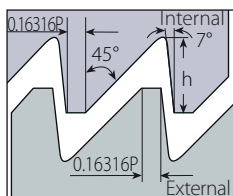
Mini - L



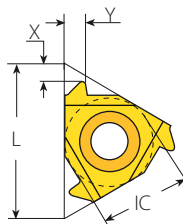
Insert Size		Pitch	Ordering Code		Dimensions inch			Min. Bore dia.	Toolholder
IC mm		mm	RH		h min	Y	F	inch	
5.0L		1.0	5LIR1.0MJ...		0.019	0.03	0.16	0.30	.NVR...-5L
		1.25	5LIR1.25MJ...		0.024	0.04	0.17	0.31	
		1.5	5LIR1.50MJ...		0.029	0.04	0.17	0.31	

American Buttress

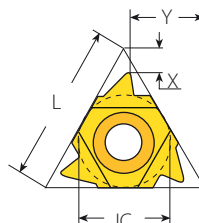
External



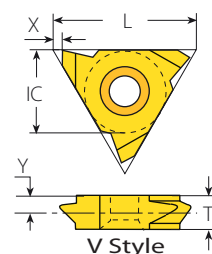
Defined by: ANSI B1.9.1973
Tolerance class: Class 2



Standard



U Style



V Style

Standard



Insert Size		Pitch	Ordering Code		Dimensions inch			Anvil		Toolholder
IC	L inch	tpi	RH	LH	h min	X	Y	RH	LH	
1/4"	0.43	20	2ER20ABUT...	2EL20ABUT...	0.033	0.04	0.06	-	-	NL..-2 (LH)
		16	2ER16ABUT...	2EL16ABUT...	0.041	0.05	0.07			
3/8"	0.63	20	3ER20ABUT...	3EL20ABUT...	0.033	0.04	0.06	YE3	YI3	AL..-3 (LH)
		16	3ER16ABUT...	3EL16ABUT...	0.041	0.05	0.07			
		12	3ER12ABUT...	3EL12ABUT...	0.055	0.06	0.08			
		10	3ER10ABUT...	3EL10ABUT...	0.066	0.06	0.09			
1/2"	0.87	8	4ER8ABUT...	4EL8ABUT...	0.083	0.08	0.13	YE4	YI4	AL..-4 (LH)
		6	4ER6ABUT...	4EL6ABUT...	0.110	0.09	0.14			

U Style



Insert Size		Pitch	Ordering Code		Dimensions inch			Anvil		Toolholder
IC	L inch	tpi	RH	LH	h min	X	Y	RH	LH	
1/2"U	0.87	4	4UER4ABUT...	4UEL4ABUT...	0.166	0.09	0.39	YE4U-BUT4	YI4U-BUT4	AL..-4U (LH)
5/8"U	1.06	3	5UER3ABUT...	5UEL3ABUT...	0.221	0.12	0.48	YE5U-BUT3	YI5U-BUT3	AL..-5U (LH)

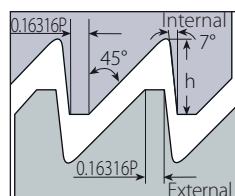
V Style



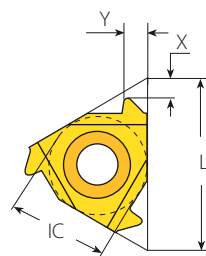
Insert Size		Pitch	Ordering Code		Dimensions inch			Anvil		Toolholder
IC	L inch	tpi	RH	LH	h min	X	Y	T		
5/8"V	1.06	4	5VER4ABUT...	5VEL4ABUT...	0.166	0.02	0.07	0.24		NL..-5V-6 (LH)
		3	5VER3ABUT...	5VEL3ABUT...	0.221	0.02	0.09	0.31		NL..-5V-8 (LH)
		2.5	5VER2.5ABUT...	5VEL2.5ABUT...	0.265	0.02	0.11	0.39		NL..-5V-10ABUT (LH)

American Buttress (con't)

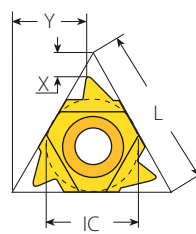
Internal



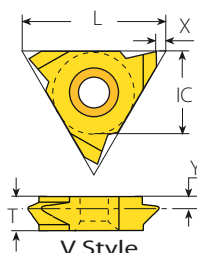
Defined by: ANSI B1.9.1973
Tolerance class: Class 2



Standard



U Style



V Style

Standard



Insert Size		Pitch	Ordering Code		Dimensions inch			Anvil		Toolholder
IC	L inch	tpi	RH	LH	h min	X	Y	RH	LH	
1/4"	0.43	20	2IR20ABUT...	2IL20ABUT...	0.033	0.04	0.06	-	-	NVR..-2 (LH)
		16	2IR16ABUT...	2IL16ABUT...	0.041	0.05	0.07			
3/8"	0.63	20	3IR20ABUT...	3IL20ABUT...	0.033	0.04	0.06	YI3	YE3	AVR..-3 (LH)
		16	3IR16ABUT...	3IL16ABUT...	0.041	0.05	0.07			
		12	3IR12ABUT...	3IL12ABUT...	0.055	0.06	0.08			
		10	3IR10ABUT...	3IL10ABUT...	0.066	0.06	0.09			
1/2"	0.87	8	4IR8ABUT...	4IL8ABUT...	0.083	0.08	0.13	YI4	YE4	AVR..-4 (LH)
		6	4IR6ABUT...	4IL6ABUT...	0.110	0.09	0.14			

U Style



Insert Size		Pitch	Ordering Code		Dimensions inch			Anvil		Toolholder
IC	L inch	tpi	RH	LH	h min	X	Y	RH	LH	
1/2"U	0.87	4	4UIR4ABUT...	4UIL4ABUT...	0.166	0.09	0.39	YI4U-4B	YE4U-4B	AVR..-4U (LH)
5/8"U	1.06	3	5UIR3ABUT...	5UIL3ABUT...	0.221	0.12	0.48	YI5U-3B	YE5U-3B	AVR..-5U (LH)

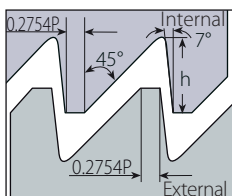
V Style



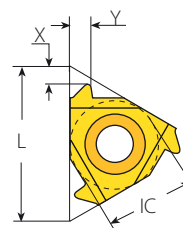
Insert Size		Pitch	Ordering Code		Dimensions inch				Toolholder
IC	L inch	tpi	RH	LH	h min	X	Y	T	
5/8"V	1.06	4	5VIR4ABUT...	5VIL4ABUT...	0.166	0.02	0.07	0.24	NVR..-5V (LH)
		3	5VIR3ABUT...	5VIL3ABUT...	0.221	0.02	0.09	0.31	
		2.5	5VIR2.5ABUT...	5VIL2.5ABUT...	0.265	0.02	0.11	0.39	

British Buttress

External



Defined by: B.S. 1657: 1950
Tolerance class: Medium Class



Standard

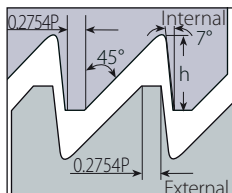
Standard



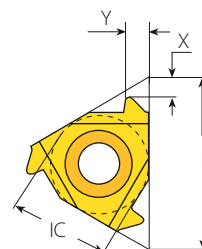
Insert Size		Pitch	Ordering Code		Dimensions inch			Anvil		Toolholder
IC	L inch	tpi	RH	LH	h min	X	Y	RH	LH	
3/8"	0.63	16	3ER16BBUT...	3EL16BBUT...	0.031	0.04	0.06	YE3	YI3	AL...-3 (LH)
		12	3ER12BBUT...	3EL12BBUT...	0.042	0.06	0.08			
		10	3ER10BBUT...	3EL10BBUT...	0.050	0.06	0.09			
		8	3ER8BBUT...	3EL8BBUT...	0.063	0.06	0.10			
1/2"	0.87	8	4ER8BBUT...	4EL8BBUT...	0.063	0.06	0.10	YE4	YI4	AL...-4 (LH)

British Buttress

Internal



Defined by: B.S. 1657: 1950
Tolerance class: Medium Class



Standard

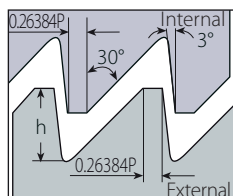
Standard



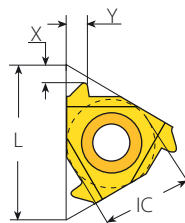
Insert Size		Pitch	Ordering Code		Dimensions inch			Anvil		Toolholder
IC	L inch	tpi	RH	LH	h min	X	Y	RH	LH	
3/8"	0.63	16	3IR16BBUT...	3IL16BBUT...	0.031	0.04	0.06	YI3	YE3	AVR...-3 (LH)
		12	3IR12BBUT...	3IL12BBUT...	0.042	0.06	0.08			
		10	3IR10BBUT...	3IL10BBUT...	0.050	0.06	0.09			
		8	3IR8BBUT...	3IL8BBUT...	0.063	0.06	0.10			
1/2"	0.87	8	4IR8BBUT...	4IL8BBUT...	0.063	0.06	0.10	YI4	YE4	AVR...-4 (LH)

Metric Buttress (Sägewinde)

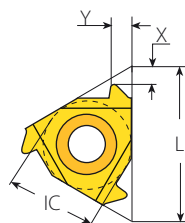
External / Internal



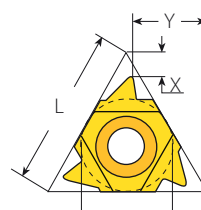
Defined by: DIN 513
Tolerance class: Medium Class



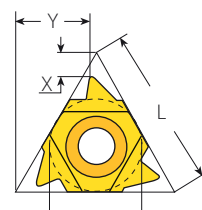
External
Standard



Internal
Standard



External
U Style



Internal
U Style

Standard - External



Insert Size		Pitch	Ordering Code		Dimensions inch			Anvil		Toolholder
IC	L inch	mm	RH	LH	h min	X	Y	RH	LH	
3/8"	0.63	2.0	3ER2.0SAGE...	3EL2.0SAGE...	0.069	0.06	0.08	YE3	YI3	AL..-3 (LH)
		2.0	4ER2.0SAGE...	4EL2.0SAGE...	0.069	0.06	0.08			
1/2"	0.87	3.0	4ER3.0SAGE...	4EL3.0SAGE...	0.102	0.07	0.10	YE4	YI4	AL..-4 (LH)
		4.0	4ER4.0SAGE...	4EL4.0SAGE...	0.140	0.07	0.12			
5/8"	1.06	4.0	5ER4.0SAGE...	5EL4.0SAGE...	0.140	0.07	0.13	YE5 082/038	YI5 082/039	AL..-5 (LH)

U Style - External



Insert Size		Pitch	Ordering Code		Dimensions inch			Anvil		Toolholder
IC	L inch	mm	RH	LH	h min	X	Y	RH	LH	
1/2"U	0.87	5	4UER5.0SAGE...	4UEL5.0SAGE...	0.174	0.05	0.41	YE4U-SAGE5	YI4U-SAGE5	AL..-4U (LH)
		6	4UER6.0SAGE...	4UEL6.0SAGE...	0.208	0.05	0.40	YE4U-SAGE6	YI4U-SAGE6	

Standard - Internal



Insert Size		Pitch	Ordering Code		Dimensions inch			Anvil		Toolholder
IC	L inch	mm	RH	LH	h min	X	Y	RH	LH	
3/8"	0.63	2.0	3IR2.0SAGE...	3IL2.0SAGE...	0.059	0.06	0.09	YI3	YE3	AVR..-3 (LH)
		3.0	4IR3.0SAGE...	4IL3.0SAGE...	0.089	0.07	0.11			
1/2"	0.87	4.0	4IR4.0SAGE...	4IL4.0SAGE...	0.122	0.08	0.13	YI4	YE4	AVR..-4 (LH)
		4.0	5IR4.0SAGE...	5IL4.0SAGE...	0.122	0.08	0.13			
5/8"	1.06	4.0	5IR4.0SAGE...	5IL4.0SAGE...	0.122	0.08	0.13	YI5 082/039	YE5 082/038	AVR..-5 (LH)

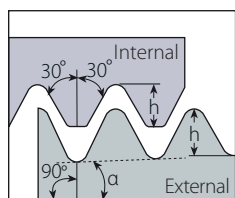
U Style - Internal



Insert Size		Pitch	Ordering Code		Dimensions inch			Anvil		Toolholder
IC	L inch	mm	RH	LH	h min	X	Y	RH	LH	
1/2"U	0.87	5	4UIR5.0SAGE...	4UIL5.0SAGE...	0.148	0.07	0.41	YI4U-5S	YE4U-5S	AVR..-4U (LH)
		6	4UIR6.0SAGE...	4UIL6.0SAGE...	0.179	0.07	0.40	YI4U-6S	YE4U-6S	

API

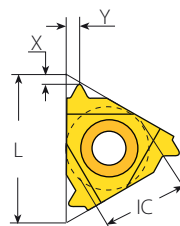
External / Internal



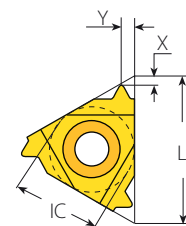
$$\alpha = \arctg (IPF/24)$$

Defined by: API SPEC. 7:1990

Tolerance class: Standard API



External - Standard



Internal - Standard

Standard - External



Insert Size		Pitch	Thread	Taper	Ordering Code	Size	Dimensions inch			Anvil	
IC	L inch	tpi		IPF	RH		h min	X	Y	RH	Toolholder
1/2"	0.87	4	V-0.038R	2	4ER4API382...	NC23-NC50	0.122	0.08	0.11	YE4	AL..-4 (LH)
		4	V-0.038R	3	4ER4API383...	NC56-NC77	0.121	0.08	0.11		
		4	V-0.050	2	4ER4API502...	6 5/8" REG	0.148	0.08	0.11		
		4	V-0.050	3	4ER4API503...	5 1/2", 7 5/8", 8 5/8" REG	0.147	0.08	0.11		
		5	V-0.040	3	4ER5API403...	2 3/8"-4 1/2" REG	0.118	0.07	0.10		
		6	V-0.055	1.5	4ER6API551...	NC10-NC16	0.056	0.10	0.08		
5/8"	1.06	4	V-0.038R	2	5ER4API382...	NC23-NC50	0.122	0.08	0.11	YE5OIL	AL..-5 OIL (LH)
		4	V-0.038R	3	5ER4API383...	NC56-NC77	0.121	0.08	0.11		
		4	V-0.050	2	5ER4API502...	6 5/8" REG	0.148	0.08	0.12		
		4	V-0.050	3	5ER4API503...	5 1/2", 7 5/8", 8 5/8" REG	0.147	0.08	0.12		
		5	V-0.040	3	5ER5API403...	2 3/8"-4 1/2" REG	0.118	0.07	0.11		

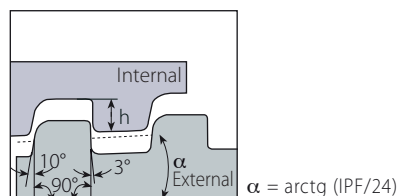
Standard - Internal



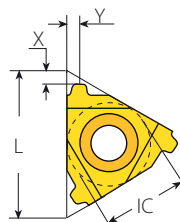
Insert Size		Pitch	Thread	Taper	Ordering Code	Size	Dimensions inch			Anvil	
IC	L inch	tpi		IPF	RH		h min	X	Y	RH	Toolholder
1/2"	0.87	4	V-0.038R	2	4IR4API382...	NC23-NC50	0.122	0.08	0.11	YI4	AVR..-4 (LH)
		4	V-0.038R	3	4IR4API383...	NC56-NC77	0.121	0.08	0.11		
		4	V-0.050	2	4IR4API502...	6 5/8" REG	0.148	0.08	0.12		
		4	V-0.050	3	4IR4API503...	5 1/2", 7 5/8", 8 5/8" REG	0.147	0.08	0.11		
		5	V-0.040	3	4IR5API403...	2 3/8"-4 1/2" REG	0.118	0.07	0.10		
		6	V-0.055	1.5	4IR6API551...	NC10-NC16	0.056	0.10	0.08		
5/8"	1.06	4	V-0.038R	2	5IR4API382...	NC23-NC50	0.122	0.08	0.11	YI5OIL	AVR..-5 OIL (LH)
		4	V-0.038R	3	5IR4API383...	NC56-NC77	0.121	0.08	0.11		
		4	V-0.050	2	5IR4API502...	6 5/8" REG	0.148	0.08	0.12		
		4	V-0.050	3	5IR4API503...	5 1/2", 7 5/8", 8 5/8" REG	0.147	0.08	0.12		
		5	V-0.040	3	5IR5API403...	2 3/8"-4 1/2" REG	0.118	0.07	0.11		

API Buttress Casing

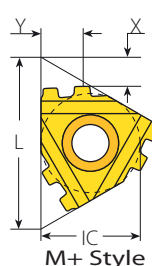
External



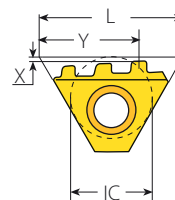
Defined by: STD.5B:1979
Tolerance class: Standard API



Standard



M+ Style



T+ Style

Standard



Insert Size		Pitch	Taper	Ordering Code		Size	Dimensions inch			Anvil	Toolholder
IC	L inch	tpi	IPF	RH			h min	X	Y	RH	
1/2"	0.87	5	0.75	4ER5BUT75...		4 1/2"-13 3/8"	0.061	0.12	0.07	YE4	AL...-4
		5	1	4ER5BUT1...		16"-20"	0.061	0.12	0.07		

M+ Style



Insert Size		Pitch	Taper	Teeth	Ordering Code		Size	Dimensions inch			Anvil	Toolholder
IC	L inch	tpi	IPF		RH			h min	X	Y	RH	
5/8"	1.06	5	0.75	2	5ER5BUT752M+...		4 1/2"-13 3/8"	0.061	0.19	0.27	YE5M	AL...-5M

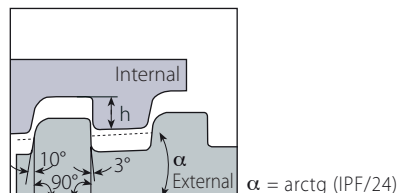
T+ Style



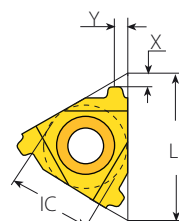
Insert Size		Pitch	Taper	Teeth	Ordering Code		Size	Dimensions inch			Anvil	Toolholder
IC	L inch	tpi	IPF		RH			h min	X	Y	RH	
1/2" T	0.87	5	0.75	3	4ER5BUT753T+...		4 1/2"-13 3/8"	0.061	0.10	0.63	Y4T	AL...-4T

API Buttress Casing

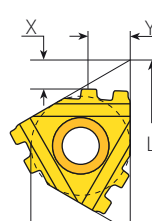
Internal



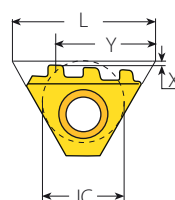
Defined by: STD.5B:1979
Tolerance class: Standard API



Standard



M+ Style



T+ Style

Standard



Insert Size		Pitch	Taper	Ordering Code		Size	Dimensions inch			Anvil	Toolholder
IC	L inch	tpi	IPF	RH			h min	X	Y	RH	
1/2"	0.87	5	0.75	4IR5BUT75...		4 1/2"-13 3/8"	0.061	0.11	0.07	YI4	AVR...-4
		5	1	4IR5BUT1...		16"-20"	0.061	0.11	0.07		

M+ Style



Insert Size		Pitch	Taper	Teeth	Ordering Code		Size	Dimensions inch			Anvil	Toolholder
IC	L inch	tpi	IPF		RH			h min	X	Y	RH	
5/8"	1.06	5	0.75	2	5IR5BUT752M+...		4 1/2"-13 3/8"	0.061	0.19	0.26	YI5M	AVR...-5M

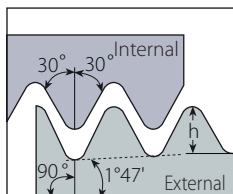
T+ Style



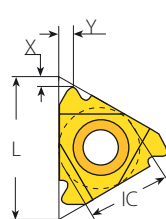
Insert Size		Pitch	Taper	Teeth	Ordering Code		Size	Dimensions inch			Anvil	Toolholder
IC	L inch	tpi	IPF		RH			h min	X	Y	RH	
1/2" T	0.87	5	0.75	3	4IR5BUT753T+...		4 1/2"-13 3/8"	0.061	0.10	16.1	Y4T	AVR...-4T

API Round Casing & Tubing

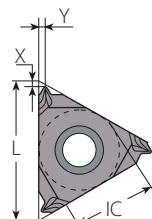
External



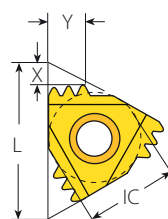
Defined by: API STD. 5B:1979
Tolerance class: Standard API RD



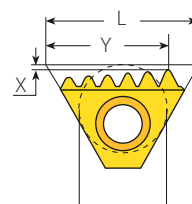
Standard



SCB
Sintered
Chipbreaker



M+ Style



T+ Style

Standard



SCB

Insert Size		Pitch	Ordering Code	Dimensions inch			Anvil	Toolholder
IC	L inch	tpi	RH	h min	X	Y	RH	
3/8"	0.63	10	3ER10APIRD...	0.056	0.05	0.06	YE3	AL...-3
		8	3ER8APIRD...	0.071	0.05	0.06		
3/8" SCB	0.63	10	3JER10APIRD...	0.056	0.05	0.06	YE3	AL...-3
		8	3JER8APIRD...	0.071	0.05	0.06		

Multiplus

M+ Style



Insert Size		Pitch	Teeth	Ordering Code	Dimensions inch			Anvil	Toolholder
IC	L inch	tpi		RH	h min	X	Y	RH	
5/8"	1.06	10	3	5ER10APIRD3M+...	0.056	0.15	0.25	YE5M	AL...-5M
		8	2	5ER8APIRD2M+...	0.071	0.11	0.18		

Multiplus

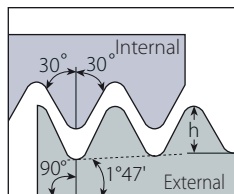
T+ Style



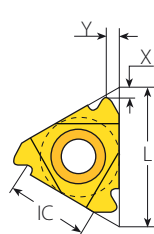
Insert Size		Pitch	Teeth	Ordering Code	Dimensions inch			Anvil	Toolholder
IC	L inch	tpi		RH	h min	X	Y	RH	
1/2"T	0.87	10	6	4ER10APIRD6T+...	0.056	0.01	0.64	Y4T	AL...-4T
		8	3	4ER8APIRD3T+...	0.071	0.01	0.56		
		8	5	4ER8APIRD5T+...	0.071	0.01	0.66		

API Round Casing & Tubing (con't)

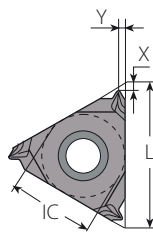
Internal



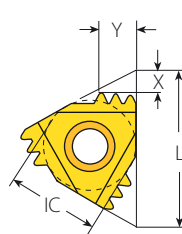
Defined by: API STD. 5B:1979
Tolerance class: Standard API RD



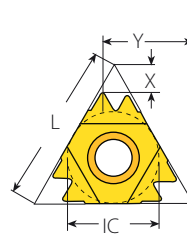
Standard



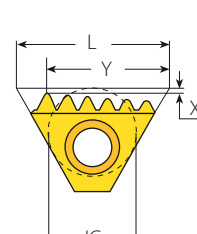
SCB
Sintered
Chipbreaker



M+ Style



Z+ Style



T+ Style

Standard



SCB

Insert Size		Pitch	Ordering Code		Dimensions inch			Anvil	Toolholder
IC	L inch	tpi	RH		h min	X	Y	RH	
3/8"	0.63	10	3IR10APIRD...		0.056	0.05	0.06	YI3	AVR..-3
		8	3IR8APIRD...		0.071	0.05	0.06		
3/8" SCB	0.63	10	3JIR10APIRD...		0.056	0.05	0.06	YI3	AVR..-3
		8	3JIR8APIRD...		0.071	0.05	0.06		

M+ Style

Multiplus



Insert Size		Pitch	Teeth	Ordering Code		Dimensions inch			Anvil	Toolholder
IC	L inch	tpi		RH		h min	X	Y	RH	
1/2"	0.87	10	2	4IR10APIRD2M+...		0.056	0.09	0.15	YI4M	AVR..-4
		8	2	4IR8APIRD2M+...		0.071	0.11	0.18		
5/8"	1.06	10	3	5IR10APIRD3M+...		0.056	0.15	0.25	YI5M	AVR..-5M
		8	2	5IR8APIRD2M+...		0.071	0.11	0.18		

Z+ Style

Multiplus



Insert Size		Pitch	Teeth	Ordering Code		Dimensions inch			Anvil	Toolholder
IC	L inch	tpi		RH		h min	X	Y	RH	
1/2"	0.87	8	2	4IR8APIRD2Z+...		0.071	0.15	0.38	YI4Z	AVR..-4Z

T+ Style

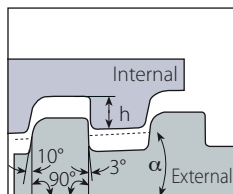
Multiplus



Insert Size		Pitch	Teeth	Ordering Code		Dimensions inch			Anvil	Toolholder
IC	L inch	tpi		RH		h min	X	Y	RH	
1/2"	0.87	10	6	4IR10APIRD6T+...		0.056	0.01	0.66	Y4T	AVR..-4T
		8	3	4IR8APIRD3T+...		0.071	0.01	0.56		
		8	5	4IR8APIRD5T+...		0.071	0.01	0.66		

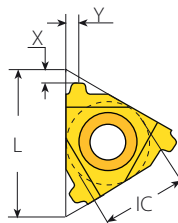
VAM

External / Internal

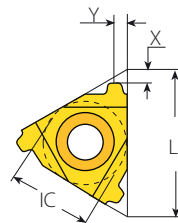


$$\alpha = \arctg (IPF/24)$$

Defined by: VAM
Tolerance class: Standard VAM



External - Standard



Internal - Standard

Standard - External



Insert Size		Pitch	Taper	Ordering Code	Size	Dimensions inch			Anvil	
IC	L inch	tpi	IPF	RH		h min	X	Y	RH	Toolholder
3/8"	0.63	8	0.75	3ER8VAM...	2 3/8", 2 7/8"	0.038	0.07	0.07	YE3	AL...-3
1/2"	0.87	6	0.75	4ER6VAM...	3 1/2"	0.038	0.09	0.09	YE4	AL...-4
		5	0.75	4ER5VAM...	5"-9 5/8"	0.061	0.09	0.11		

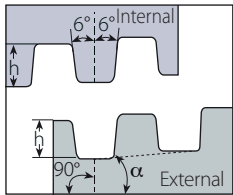
Standard - Internal



Insert Size		Pitch	Taper	Ordering Code	Size	Dimensions inch			Anvil	
IC	L inch	tpi	IPF	RH		h min	X	Y	RH	Toolholder
3/8"	0.63	8	0.75	3IR8VAM...	2 3/8", 2 7/8"	0.038	0.07	0.07	YI3	AVR...-3
1/2"	0.87	6	0.75	4IR6VAM...	3 1/2"	0.038	0.10	0.10	YI4	AVR...-4
		5	0.75	4IR5VAM...	5"-9 5/8"	0.061	0.09	0.10		

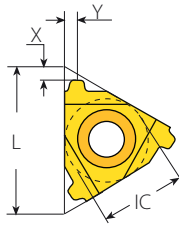
EL-Extreme Line

External / Internal

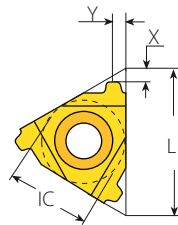


$\alpha = \arctg (IPF/24)$

Defined by: API STD,5B:1979
Tolerance class: Standard



External - Standard



Internal - Standard

Standard - External



Insert Size		Pitch	Taper	Ordering Code	Connection No. or Size	Dimensions inch			Anvil	
IC	L inch	tpi	IPF	RH		h min	X	Y	RH	Toolholder
1/2"	0.87	6	1.5	4ER6EL15...	5"-7 5/8"	0.048	0.07	0.07	YE4	AL...-4 (LH)
		5	1.25	4ER5EL125...	8 5/8"-10 3/4"	0.067	0.09	0.09		

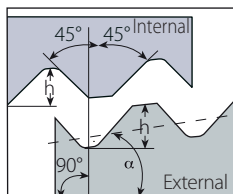
Standard - Internal



Insert Size		Pitch	Taper	Ordering Code	Connection No. or Size	Dimensions inch			Anvil	
IC	L inch	tpi	IPF	RH		h min	X	Y	RH	Toolholder
1/2"	0.87	6	1.5	4IR6EL15...	5"-7 5/8"	0.055	0.07	0.07	YI4	AVR...-4 (LH)
		5	1.25	4IR5EL125...	8 5/8"-10 3/4"	0.075	0.09	0.09		

Hughes H-90

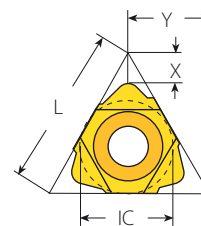
External / Internal



$$\alpha = \arctg (IPF/24)$$

Defined by: API STD,5B:1979

Tolerance class: Standard



U Style

U Style - External



Insert Size		Pitch	Taper	Ordering Code	Size	Dimensions inch			Anvil	
IC	L inch	tpi	IPF	RH		h min	X	Y	RH	Toolholder
1/2" U	0.87	3.5	2	4UER3.5H902...	3 1/2"-6 5/8"	0.098	0.17	0.43	YE4U-H90	AL...-4U (LH)
		3.5	3	4UER3.5H903...	7"-8 5/8"	0.098	0.17	0.43		
5/8" U	1.06	3	1.25*	5UER3H90SL...	2 3/8"-3 1/2"	0.088	0.22	0.54	YE5U-H90	AL...-5U (LH)

* H-90 Slimline

U Style - Internal

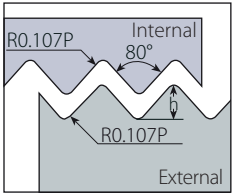


Insert Size		Pitch	Taper	Ordering Code	Size	Dimensions inch			Anvil	
IC	L inch	tpi	IPF	RH		h min	X	Y	RH	Toolholder
1/2" U	0.87	3.5	2	4UIR3.5H902...	3 1/2"-6 5/8"	0.098	0.17	0.43	YI4U-H90	AVR...-4U (LH)
		3.5	3	4UIR3.5H903...	7"-8 5/8"	0.098	0.17	0.43		
5/8" U	1.06	3	1.25*	5UIR3H90SL...	2 3/8"-3 1/2"	0.088	0.22	0.54	YI5U-H90	AVR...-5U (LH)

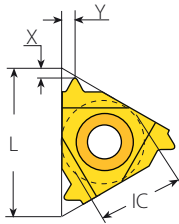
* H-90 Slimline

Pg

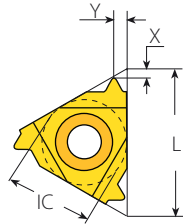
External / Internal



Defined by: DIN 40430
Tolerance class: Standard



Standard External



Standard Internal

Standard - External

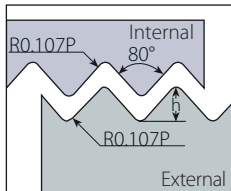


Insert Size		Pitch	Thread	Ordering Code		Dimensions inch			Anvil		Toolholder
IC	L inch	tpi		RH	LH	h min	X	Y	RH	LH	
1/4"	0.43	20	Pg7	2ER20PG...	2EL20PG...	0.024	0.03	0.04	-	-	NL..-2 (LH)
		18	Pg9/11/13.5/16	2ER18PG...	2EL18PG...	0.026	0.03	0.04			
		16	Pg21/29/36/42/48	2ER16PG...	2EL16PG...	0.030	0.04	0.04			
3/8"	0.63	20	Pg7	3ER20PG...	3EL20PG...	0.024	0.03	0.04	YE3	YI3	AL..-3 (LH)
		18	Pg9/11/13.5/16	3ER18PG...	3EL18PG...	0.026	0.03	0.04			
		16	Pg21/29/36/42/48	3ER16PG...	3EL16PG...	0.030	0.04	0.04			

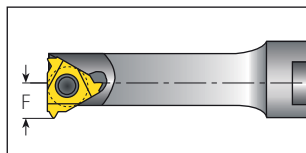
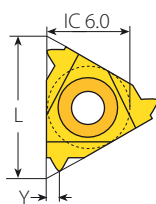
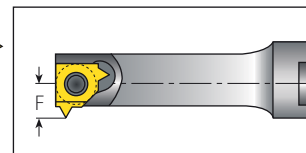
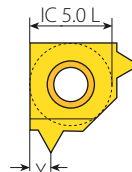
Standard - Internal



Insert Size		Pitch	Thread	Ordering Code		Dimensions inch			Anvil		Toolholder
IC	L inch	tpi		RH	LH	h min	X	Y	RH	LH	
1/4"	0.43	20	Pg7	2IR20PG...	2IL20PG...	0.025	0.03	0.04	-	-	NVR..-2 (LH)
		18	Pg9/11/13.5/16	2IR18PG...	2IL18PG...	0.026	0.03	0.04			
		16	Pg21/29/36/42/48	2IR16PG...	2IL16PG...	0.030	0.04	0.04			
3/8"	0.63	20	Pg7	3IR20PG...	3IL20PG...	0.025	0.03	0.04	YI3	YE3	AVR..-3 (LH)
		18	Pg11/13.5/16	3IR18PG...	3IL18PG...	0.026	0.03	0.04			
		16	Pg21/29/36/42/48	3IR16PG...	3IL16PG...	0.030	0.03	0.04			

Pg**Internal**

Defined by: DIN 40430
Tolerance class: Standard

**Mini-3****Mini-L****Mini-3**

Insert Size		Pitch	Thread	Ordering Code	Dimensions inch			Min. Bore dia.	Toolholder
IC	L inch	tpi		RH	h min	Y	F	inch	
6.0	0.39	20	Pg7	6.0IR20PG...	0.024	0.03	0.21	0.39	.NVR1..-6.0
		18	Pg9/11/13.5/16	6.0IR18PG...	0.026	0.04	0.21		

Mini-L

Insert Size		Pitch	Thread	Ordering Code	Dimensions inch			Min. Bore dia.	Toolholder
IC		tpi		RH	h min	Y	F	inch	
5.0L		20	Pg7	5LIR20PG...	0.024	0.03	0.18	0.31	.NVR10..-5L
		18	Pg9/11/13.5/16	5LIR18PG...	0.026	0.04	0.18		



Thread Turning



> Toolholders

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External Toolholders

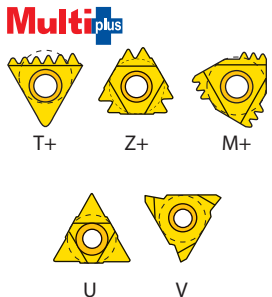
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Internal Toolholders

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Vardex Ordering Code System

External Toolholders

A	L	125	-	4	U	C			
1	2	3		4	5	6	7	8	9
1 - Anvil			2 - Holder Style			3 - Shank Square		4 - Insert Size	
A - Anvil required N - No Anvil required O - Miniature holder			L - External V - Miniature Square Shank VR - Miniature Round Shank			031, 3/8, 050, 0625, 075, 100, 125, 150, 200		2 - IC1/4" 3 - IC3/8" 4 - IC1/2" 5 - IC5/8"	
5 - Insert Style			6 - Clamping			7 - Insert Width [mm]			
			C - with Clamping			(for IC5/8"V) 6, 8, 10			
8 - Tool Type			9 - RH/LH Holder						
CQ - Drop Head FQ - Off-Set Oil - For API Inserts			None - Right Hand LH - Left Hand						

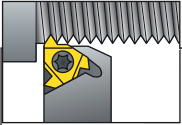
Internal Toolholders

C	A	VR	C	075		-	3					
1	2	3	4	5	6		7	8	9	10	11	12
1- Shank Type			2 - Anvil		3 - Tool Type		5 - Shank front Dia			6 - Holder Length		
B - Anti Vibration System C - Carbide Shank S - Mini Holders			A - Anvil required N - No Anvil required O - Miniature holder		VR - Internal Round shank		0375, 050, 0625, 075, 100, 125, 150, 200, 250 6.2 (Mini Adjust) 8.0 (Mini Adjust)			(Mini Holders) U - Ultra Short S - Short M - Medium L - Long T - Adjustable		
					4 - Cooling							
					C - With Coolant Channel							
7- Insert Size			8- Insert style		9 - Clamping		12 - Serial No.					
4.0K - IC4.0 mm 5L - IC5.0L mm 6.0 - IC6.0 mm 2 - IC1/4" 3 - IC3/8" 4 - IC1/2" 5 - IC5/8"			U V T M Z L V6		C - with Clamp		157/... (Coarse Pitch Holder)					
					10 -Oil Field							
					OIL - For API Inserts							
					11 - RH/LH Holder							
					None - Right Hand LH - Left Hand							

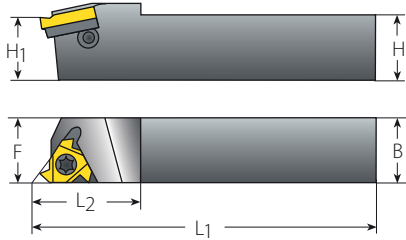
Micro & Adjustable Toolholders (Sleeves)

S	M	C	0625	-	3
1	2	3	4		5

1 - Holder Shape	2 - Holder Type	3 - Cooling	4 - Holder Dia.	5 - Holder Bore Size [mm]
S - Sleeve (Double Ended)	V - Adjustable Holders for Mini M - Micro (Double Ended)	C - Coolant Channel	050, 0625, 075	Micro Size 3, 4, 6, 8, 10 Adjustable Holders (for Mini) 6.2 8



External Toolholders



The AL..-3 holders are supplied with standard anvil (see spare parts table below). For V6, please use the V6 anvil YE3-6C. For more info see page 127.

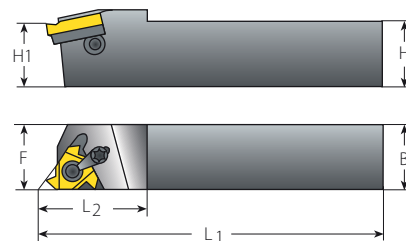
Standard

Spare Parts

Insert Size	Ordering Code	EDP No.	Dimensions inch								
IC	RH		H=H1=B	F	L1	L2	Insert Screw	Anvil Screw	Torx Key	Anvil RH	Anvil LH
1/4"	NL031-2	66214	0.31	0.43	5.37	0.69	SN2T	-	K2T	-	-
	NL050-3	66220	0.50	0.63	3.27	0.87	SA3T	-	K3T	-	-
3/8"	AL3/8-3	66091	0.37	0.63	2.45	0.76	SA3T	SY3T	K3T	YE3	YI3
	AL050-3	66000	0.50	0.63	3.27	0.87					
	AL0625-3	66005	0.63	0.63	5.00	1.02					
	AL075-3	66007	0.75	0.75	5.00	1.02					
	AL100-3	66016	1.00	1.00	6.00	1.20					
	AL125-3	66036	1.25	1.25	7.00	1.18					
1/2"	AL100-4	66024	1.00	1.00	6.00	1.42	SA4T	SY4T	K4T	YE4	YI4
	AL125-4	66042	1.25	1.25	7.00	1.42					
	AL150-4	66066	1.50	1.50	8.00	1.42					
5/8"	AL100-5	66034	1.00	1.25	6.00	1.57	SA5T	SY5T	K5T	YE5	YI5
	AL125-5	66051	1.25	1.25	7.00	1.57					
	AL150-5	66073	1.50	1.50	8.00	1.57					
	AL200-5	66085	2.00	2.00	10.00	1.57					

The above toolholders have a 1.5° helix angle. For other helix angles, see page 127. Toolholders with prefix "N" cannot be used with an anvil.

External Toolholders



The AL...-3 holders are supplied with standard anvil (see spare parts table below).
For V6, please use the V6 anvil YE3-6C. For more info see page 127.

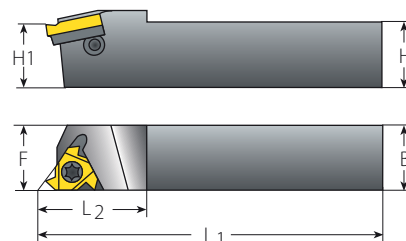
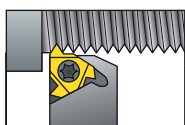
Standard with Clamp

(Dual System, Screw or Clamp)

Spare Parts

Insert Size	Ordering Code	EDP No.	Dimensions inch				     					
IC	RH		H=H1=B	F	L1	L2	Insert Screw	Anvil Screw	Clamp	Torx Key	Anvil RH	Anvil LH
3/8"	AL075-3C	66008	0.75	0.75	5.00	1.20						
	AL100-3C	66017	1.00	1.00	6.00	1.20						
	AL125-3C	66031	1.25	1.25	7.00	1.20						
1/2"	AL100-4C	66330	1.00	1.00	6.00	1.42	SA4T	SY4T	C4	K4T	YE4	YI4
	AL125-4C	66222	1.25	1.25	7.00	1.42						
	AL150-4C	66223	1.50	1.50	8.00	1.42						
5/8"	AL100-5C	66327	1.00	1.25	6.00	1.57	SA5T	SY5T	C5	K5T	YE5	YI5
	AL125-5C	66224	1.25	1.25	7.00	1.57						
	AL150-5C	66225	1.50	1.50	8.00	1.57						
	AL200-5C	66230	2.00	2.00	10.00	1.57						

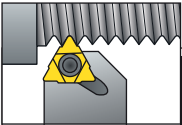
External Toolholders



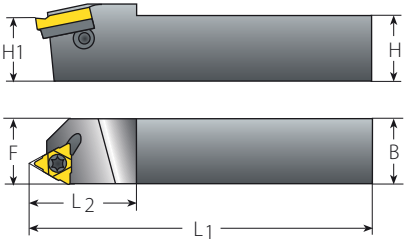
Standard for API

Spare Parts

Insert Size	Ordering Code	EDP No.	Thread Form	Connection no. or size	Dimensions inch			    				
IC	RH				H=H1=B=F	L1	L2	Insert Screw	Anvil Screw	Torx Key	Anvil RH	Anvil LH
5/8"	AL125-5OIL	66058	V0.038R	V0.050 NC23-NC77 all sizes	1.25	7.00	1.60	SA5T	SY5T	K5T	YE5OIL	YI5OIL
	AL150-5OIL	66075	V0.038R	V0.050 NC23-NC77 all sizes	1.50	8.00	1.60					

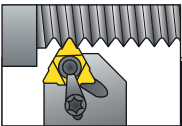


External Toolholders

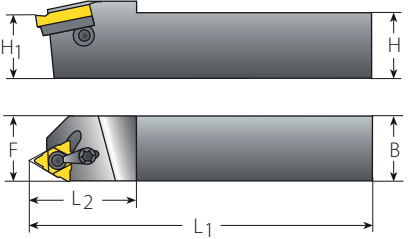


U Style

Insert Size Ordering Code EDP No. Dimensions inch							Spare Parts				
IC	RH		H=H1=B	F	L1	L2	Insert Screw	Anvil Screw	Torx Key	Anvil RH	Anvil LH
1/2"U	AL125-4U	66048	1.25	1.25	7.00	1.52	SA4T	SY4T	K4T	YE4U	YI4U
	AL150-4U	66247	1.50	1.50	8.00	1.52					
5/8"U	AL125-5U	66059	1.25	1.25	7.00	1.57	SA5T	SY5T	K5T	YE5U	YI5U
	AL150-5U	66076	1.50	1.50	8.00	1.57					
	AL200-5U	66249	2.00	2.00	10.00	1.57					



External Toolholders

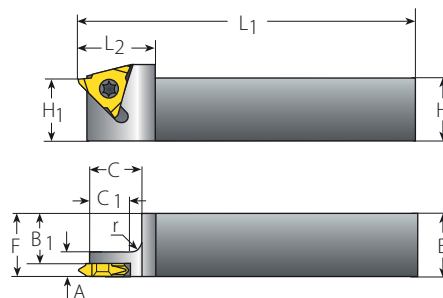
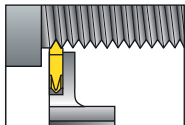


U Style with Clamp

(Dual System, Screw or Clamp)

Insert Size Ordering Code EDP No. Dimensions inch							Spare Parts					
IC	RH		H=H1=B	F	L1	L2	Insert Screw	Anvil Screw	Clamp	Torx Key	Anvil RH	Anvil LH
1/2"U	AL125-4UC	66250	1.25	1.25	7.00	1.52	SA4T	SY4T	C4	K4T	YE4U	YI4U
	AL150-4UC	66251	1.50	1.50	8.00	1.52						
5/8"U	AL125-5UC	66252	1.25	1.25	7.00	1.57	SA5T	SY5T	C5	K5T	YE5U	YI5U
	AL150-5UC	66253	1.50	1.50	8.00	1.57						
	AL200-5UC	66256	2.00	2.00	10.00	1.57						

External Toolholders



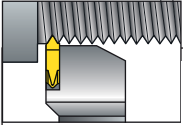
Slim Throat

Spare Parts

Insert Size		Ordering Code		EDP No.		Dimensions inch						Spare Parts	
IC	RH		H=B=F	H1	A	B1	C	C1	L1	L2	r	Insert Screw	Torx Key
1/4"V	NL0325-2V	66257	0.27	0.32	0.25	0.25	0.50	0.45	2.50	0.60	0.04	SN2T	K2T
	NL0375-2V	67226	0.37	0.37	0.27	0.25	0.50	0.45	2.75	0.60	0.04		
	NL050-2V	67232	0.50	0.50	0.27	0.37	0.57	0.45	3.15	0.60	0.12		
	NL0625-2V	67229	0.62	0.62	0.27	0.50	0.57	0.45	4.00	0.60	0.12		
3/8"V	NL0625-3V	67201	0.62	0.62	0.27	0.47	0.57	0.45	4.00	1.00	0.12	SN3TV	K3T
	NL075-3V	67203	0.75	0.75	0.27	0.60	0.65	0.45	5.00	1.20	0.12		
	NL100-3V	67205	1.00	1.00	0.27	0.85	0.65	0.45	6.00	1.20	0.20		
	NL125-3V	66258	1.25	1.25	0.27	1.20	0.65	0.45	7.00	1.20	0.20		
	NL150-3V	66259	1.50	1.50	0.28	1.25	0.65	0.45	8.00	1.20	0.20		
1/2"V	NL100-4V	66221	1.00	1.00	0.47	0.81	0.65	0.45	6.00	1.20	0.20	SN4T	K4T
	NL125-4V	66263	1.25	1.25	0.47	1.07	0.65	0.45	7.00	1.20	0.20		
	NL150-4V	66266	1.50	1.50	0.47	1.31	0.65	0.45	8.00	1.20	0.20		

All Slim Throat toolholders have a 1.5° helix angle.

External Toolholders



V Style

Spare Parts

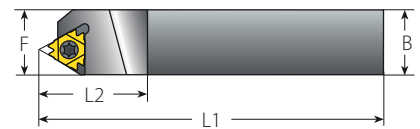
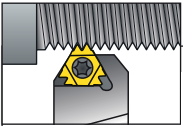
Insert Size	Ordering Code	EDP No.	Dimensions inch						
IC	RH		H=H1=B	B1	F	L1	L2	Insert Screw	Torx key
5/8"V	NL125-5V-6	67213	1.25	1.00	1.25	7.00	1.57	SN6T	K6T
	NL125-5V-8	67214	1.25	1.00	1.33	7.00	1.57		
	NL125-5V-10	67212	1.25	1.00	1.40	7.00	1.57		
	NL125-5V-10ABUT*	66382	1.25	1.00	1.40	7.00	1.57		
	NL150-5V-6	66383	1.50	1.24	1.50	8.00	1.57		
	NL150-5V-8	66384	1.50	1.24	1.63	8.00	1.57		
	NL150-5V-10	67215	1.50	1.24	1.65	8.00	1.57		
	NL150-5V-10ABUT*	66385	1.50	1.24	1.65	8.00	1.57		

All V Style toolholders have a 1° helix angle.

The above toolholders are for RH inserts. For LH inserts, add LH to the toolholder's ordering code. (Example NL125-5V-6 **LH**)

* To be used only with inserts 5VER2.5ABUT...

External Toolholders



Z+ Style

Spare Parts

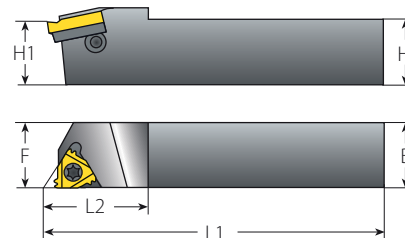
Multiplus

Insert Size	Ordering Code	EDP No.	Dimensions inch								
IC	RH		H=H1=B	F	L1	L2	Insert Screw	Anvil Screw	Torx Key	Anvil RH	Anvil LH
1/2"Z	AL125-4Z	66386	1.25	1.25	7.00	1.52	SA4T	SY4T	K4T	YE4Z	YI4Z
	AL150-4Z	66387	1.50	1.50	8.00	1.52					
5/8"Z	AL125-5Z	66388	1.25	1.25	7.00	1.57	SA5T	SY5T	K5T	YE5Z	YI5Z
	AL150-5Z	66389	1.50	1.50	8.00	1.57					
	AL200-5Z	66390	2.00	2.00	10.00	1.57					

All Z Style toolholders have a 1.5° helix angle.



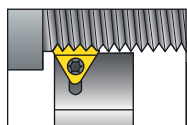
External Toolholders



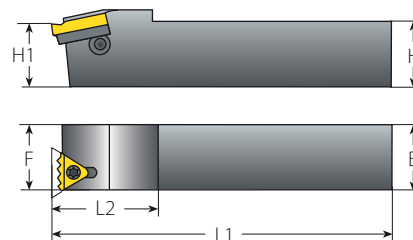
M+ Style

Spare Parts							Multiplus	
Insert Size	Ordering Code	EDP No.	Dimensions inch					
IC	RH		H=H1=B	F	L1	L2	Insert Screw	Anvil Screw
5/8"M	AL125-5M	66391	1.25	1.25	7.00	1.57	SA5T	SY5T
	AL150-5M	66392	1.50	1.50	8.00	1.57		
	AL200-5M	66393	2.00	2.00	10.00	1.57		
							Torx Key	Anvil RH
							YI5M	

All M Style toolholders have a 1.5° helix angle.



External Toolholders

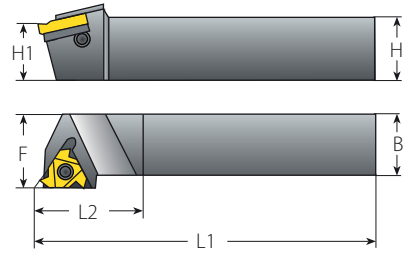
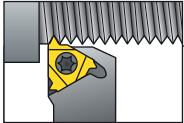


T+ Style

Spare Parts							Multiplus	
Insert Size	Ordering Code	EDP No.	Dimensions inch					
IC	RH		H=H1=B	F	L1	L2	Insert Screw	Anvil Screw
1/2"T	AL100-4T	66334	1.00	1.08	6.00	1.20	SA4T	SY4K2
	AL125-4T	66394	1.25	1.33	7.00	1.20		
	AL150-4T	66395	1.50	1.58	8.00	1.20		
							Insert Torx Key	Anvil Torx Key
							Y4T	

All T Style toolholders have a 0° helix angle.

External Toolholders



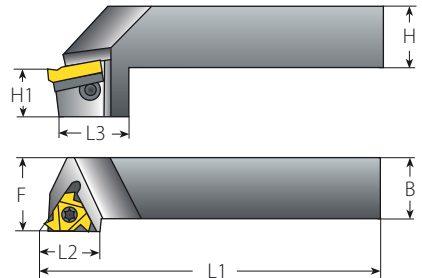
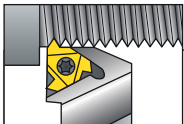
The AL...-3 holders are supplied with standard anvil (see spare parts table below).
For V6, please use the V6 anvil YE3-6C. For more info see page 127.

Off-Set Qualified (FQ)

Spare Parts

Insert Size	Ordering Code	EDP No.	Dimensions inch								
IC	RH		H=H1=B	F	L1	L2	Insert Screw	Anvil Screw	Torx Key	Anvil RH	Anvil LH
3/8"	AL075-3FQ	66011	0.75	0.75	6.00	1.00	SA3T	SY3T	K3T	YE3	YI3
	AL100-3FQ	66020	1.00	1.25	6.00	1.00					
	AL125-3FQ	66039	1.25	1.50	6.00	1.20					
1/2"	AL100-4FQ	66027	1.00	1.25	6.00	1.20	SA4T	SY4T	K4T	YE4	YI4
	AL125-4FQ	66045	1.25	1.50	6.00	1.20					
5/8"	AL125-5FQ	66053	1.25	1.50	6.00	1.20	SA5T	SY5T	K5T	YE5	YI5

External Toolholders

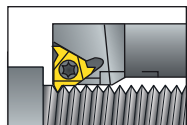


The AL...-3 holders are supplied with standard anvil (see spare parts table below).
For V6, please use the V6 anvil YE3-6C. For more info see page 127.

Drop Head-Qualified (CQ)

Spare Parts

Insert Size	Ordering Code	EDP No.	Dimensions inch										
IC	RH		H=B	F	L1	L2	L3	H1	Insert Screw	Anvil Screw	Torx Key	Anvil RH	Anvil LH
3/8"	AL075-3CQ	66009	0.75	1.00	5.00	0.88	1.50	0.69	SA3T	SY3T	K3T	YE3	YI3
	AL100-3CQ	66018	1.00	1.25	6.00	0.88	1.50	0.87					
	AL125-3CQ	66037	1.25	1.50	7.00	0.88	1.50	0.87					
1/2"	AL100-4CQ	66025	1.00	1.25	6.00	1.13	1.50	0.87	SA4T	SY4T	K4T	YE4	YI4
	AL125-4CQ	66043	1.25	1.50	7.00	1.13	1.50	0.87					
5/8"	AL125-5CQ	66052	1.25	1.50	7.00	1.25	1.69	1.00	SA5T	SY5T	K5T	YE5	YI5



External + Internal Toolholders

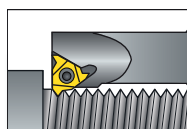


Miniature Square Shank*

Spare Parts

Insert Size	Ordering Code	EDP No.	Dimensions inch				Min. Bore dia.		
IC	RH/LH		A	L	L1	F	inch		
1/4"	OV 8-2	66282	0.31	3.94	1.00	0.47	1.15	SN2T	K2T
	OV 10-2	66280	0.39	3.94	1.00	0.55	1.42		

Miniature toolholders have a 0.5° helix angle.



External + Internal Toolholders



Miniature Round Shank*

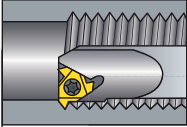
Spare Parts

Insert Size	Ordering Code	EDP No.	Dimensions inch						Min. Bore dia.		
IC	RH/LH		A	L	L1	D	D1	F	inch		
1/4"	OVR 12-2	66272	0.45	3.94	0.98	0.47	0.39	0.29	0.51	SN2T	K2T
	OVR 15-2	66274	0.56	3.94	1.26	0.59	0.51	0.35	0.63		
	OVR 16D-2	66217	0.6	3.94	1.26	0.63	0.51	0.35	0.63		

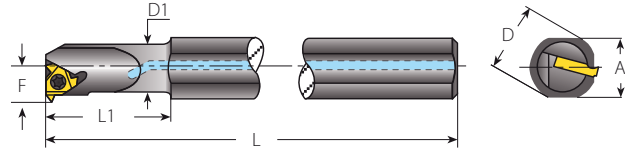
Miniature toolholders have a 0.5° helix angle.

* Miniature square and round toolholders are designed for use on automatic lathes for the optical and other precision industries. They can be used for both external and internal threading, as follows:

Thread	ER	EL	IR	IL
Insert	ER	EL	IR	IL
Holder	LH	RH	RH	LH



Internal Toolholders



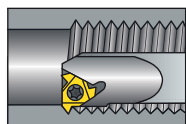
The AVR.-3 holders are supplied with standard anvil (see spare parts table below).
For V6, please use the V6 anvil YI3-6C. For more info see page 127.

Standard

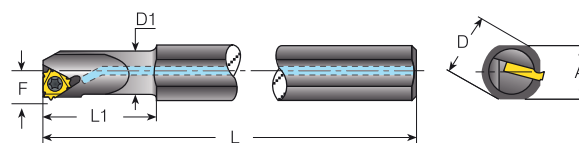
Spare Parts

Insert Size	Ordering Code	EDP No.	Dimensions inch							Min. Bore dia.					
IC	RH		A	L	L1	D	D1	F	inch		Insert Screw	Anvil Screw	Torx Key	Anvil RH	Anvil LH
1/4"	NVRC0375D-2	66234	0.67	7.00	1.00	0.75	0.37	0.28	0.50						
	NVRC050-2	66236	0.67	7.00	1.25	0.75	0.50	0.37	0.65		SN2T	-	K2T	-	-
3/8"	NVRC050-3	66238	0.67	7.00	1.25	0.75	0.62	0.40	0.67		SN3T	-	K3T	-	-
	NVRC0625-3	66240	0.67	7.00	1.50	0.75	0.62	0.46	0.80						
	NVRC0625D-3	66242	0.58	6.00	1.25	0.62	0.62	0.46	0.80						
	AVRC075-3	66098	0.67	7.00	1.50	0.75	0.75	0.51	0.90						
	AVRC100-3	66100	1.12	10.00	2.50	1.25	1.00	0.65	1.20						
	AVRC100D-3	66104	0.89	8.00	1.75	1.00	1.00	0.65	1.20		SA3T	SY3T	K3T	YI3	YE3
	AVRC125-3	66108	1.12	10.00	2.50	1.25	1.25	0.77	1.45						
	AVRC150-3	66114	1.34	12.00	2.50	1.50	1.50	0.90	1.65						
1/2"	NVRC075-4	66244	0.67	7.00	2.00	0.75	0.75	0.59	1.00		SN4T	-	K4T	-	-
	AVRC100-4	66102	1.12	10.00	2.50	1.25	1.00	0.71	1.25						
	AVRC100D-4	66106	0.89	8.00	1.75	1.00	1.00	0.71	1.25		SA4T	SY4T	K4T	YI4	YE4
	AVRC125-4	66110	1.12	10.00	2.50	1.25	1.25	0.85	1.50						
	AVRC150-4	66116	1.34	12.00	2.50	1.50	1.50	0.98	1.75						
5/8"	AVRC125-5	66112	1.12	10.00	2.50	1.25	1.25	0.88	1.55		SN5T	SY5T	K5T	YI5	YE5
	AVRC150-5	66118	1.34	12.00	2.50	1.50	1.50	1.00	1.80						
	AVRC200-5	66120	1.80	14.00	3.00	2.00	2.00	1.25	2.30		SA5T	SY5T	K5T	YI5	YE5
	AVRC250-5	66123	2.26	16.00	3.00	2.50	2.50	1.50	2.80						

The above toolholders have a 1.5° helix angle. For other helix angles, see page 127.
Toolholders with prefix "N" cannot be used with an anvil.



Internal Toolholders for V6 (without anvil)*



Specially designed for V6 inserts

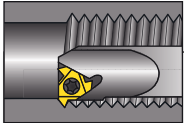
V6 Style

Spare Parts 

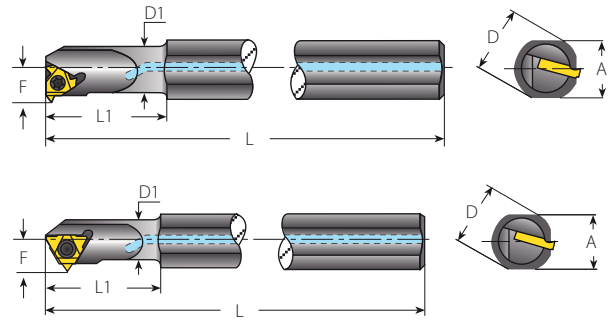
Insert Size	Ordering Code	EDP No.	Dimensions inch							Min. Bore dia.		
IC	RH		A	L	L1	D	D1	F	inch		Insert Screw	Torx Key
3/8" V6	NVRC050-3V6	66231	0.67	7.0	1.25	0.75	0.50	0.40	0.67		SN3TM	K3T
	NVRC0625-3V6	66232	0.67	7.0	1.50	0.75	0.62	0.46	0.80		SN3T	
	NVRC0625D-3V6	66233	0.58	6.0	1.25	0.62	0.62	0.46	0.80		SN3T	

The above toolholders have 1.5° helix angle.

* V6 inserts cannot be used on standard internal toolholders without anvil. For this purpose you must use one of these special V6 toolholders.



Internal Toolholders



Standard for Coarse Pitch

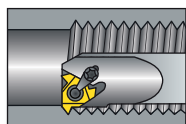
Spare Parts

Insert Size	Ordering Code	EDP No.	Dimensions inch					F to insert		Holder Helix		
IC	RH		A	L	L1	D	D1	inch	Deg.		Insert Screw	Torx Key
1/4"	NVRC040-2	157/001	66297	0.67	7.00	0.98	0.75	0.40	0.26	3.0	SN2T	K2T
	NVRC044-3	157/005	66301	0.67	7.00	1.00	0.75	0.44	0.33	4.5	SN3TM	K3T
3/8"	NVRC050-3	157/006	66302	0.67	7.00	1.26	0.75	0.51	0.36	4.0	SN3T	K3T
	NVRC050-3	157/016	66322	0.67	7.00	1.26	0.75	0.54	0.35	2.5		
	NVRC067-4	157/007	66303	0.67	7.00	1.57	0.75	0.66	0.45	4.0	SN4TM	K4T
1/2"	NVRC075-4	157/008	66304	0.67	7.00	1.97	0.75	0.77	0.49	3.5	SN4T	K4T
	NVRC075-4	157/009	66305	0.67	7.00	1.97	0.75	0.77	0.49	3.0		
5/8"	NVRC100-5	157/012	66362	1.12	10.00	2.36	1.25	0.98	0.66	3.3	SN5TM	K5T
	NVRC110-5	157/010	66306	1.12	10.00	1.97	1.25	1.10	0.70	3.5		

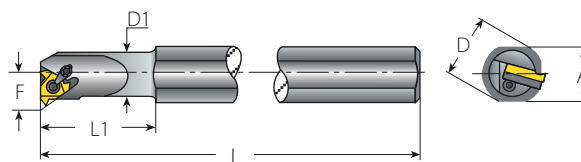
U Style for Coarse Pitch

Spare Parts

Insert Size	Ordering Code	EDP No.	Dimensions inch					F to insert		Holder Helix		
IC	RH		A	L	L1	D	D1	inch	Deg.		Insert Screw	Torx Key
6.0U	NVRC032-6.0U	157/003	66299	0.67	7.00	0.94	0.75	0.31	0.23	4.0	SN6MT	K6MT
1/4"U	NVRC039-2U	157/004	66300	0.67	7.00	1.26	0.75	0.39	0.29	4.0	SM2T8	K2T
	NVRC044-2U	157/002	66298	0.67	7.00	1.26	0.75	0.44	0.29	3.0		
	NVRC044-3U	157/020	66420	0.67	7.00	1.26	0.75	0.43	0.32	4.5	SN3TM	K3T
3/8"U	NVRC55-3U	157/018	66396	0.67	7.00	1.50	0.75	0.53	0.39	4.5		
	NVRC59-3U	157/019	66363	0.67	7.00	1.50	0.75	0.61	0.43	4.0	SN4T	K4T
	NVRC075-4U	157/011	66329	0.67	7.00	1.57	0.75	0.76	0.54	4.0		
1/2"U	NVRC100-4U	157/013	66360	1.12	10.00	2.36	1.25	0.98	0.69	3.5	SA4T	K4T
	NVRC125-4U	157/014	66136	1.12	10.00	2.36	1.25	1.17	0.74	3.3	SA4T	K4T
5/8"U	NVRC125-5U	157/015	66361	1.12	10.00	2.36	1.25	1.24	0.83	3.2	SA5T	K5T



Internal Toolholders



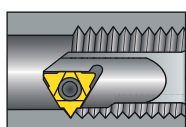
The AVR...-3C holders are supplied with standard anvil (see spare parts table below). For V6, please use the V6 anvil YE3-6C. For more info see page 127.

Standard with Clamp

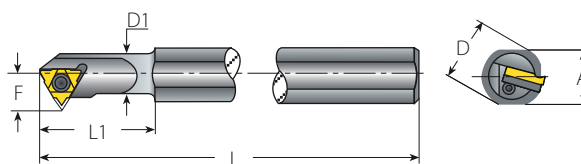
(Dual System, Screw or Clamp)

Spare Parts

Insert Size	Ordering Code	EDP No.	Dimensions inch							Min. Bore dia.						
IC	RH		A	L	L1	D	D1	F	inch		Insert Screw	Anvil Screw	Clamp	Torx Key	Anvil RH	Anvil LH
3/8"	AVR075-3C	66130	0.67	7.00	2.00	0.75	0.75	0.51	0.94							
	AVR100-3C	66397	1.12	10.00	2.50	1.25	1.00	0.65	1.20							
	AVR100D-3C	66132	0.90	8.00	1.75	1.00	1.00	0.65	1.20		SA3T	SY3T	C3	K3CT	YI3	YE3
	AVR125-3C	66398	1.12	10.00	2.50	1.25	1.25	0.77	1.45							
	AVR150-3C	66399	1.34	12.00	2.50	1.50	1.50	0.90	1.65							
1/2"	AVR100-4C	66400	1.12	10.00	2.50	1.25	1.00	0.71	1.25							
	AVR100D-4C	66401	0.90	8.00	1.75	1.00	1.00	0.71	1.25		SA4T	SY4T	C4	K4T	YI4	YE4
	AVR125-4C	66402	1.12	10.00	2.50	1.25	1.25	0.85	1.50							
	AVR150-4C	66403	1.34	12.00	2.50	1.50	1.50	0.98	1.75							
5/8"	AVR125-5C	66404	1.12	10.00	2.50	1.25	1.25	0.88	1.55		SN5T	SY5T	C5	K5T	YI5	YE5
	AVR150-5C	66405	1.34	12.00	2.50	1.50	1.50	1.00	1.80							
	AVR200-5C	66406	1.80	14.00	3.00	2.00	2.00	1.25	2.30		SA5T	SY5T	C5	K5T	YI5	YE5
	AVR250-5C	66407	2.26	16.00	3.00	2.50	2.50	1.50	2.80							



Internal Toolholders

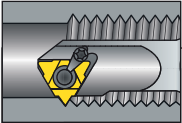


U Style

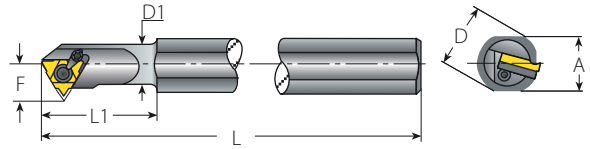
Spare Parts

Insert Size	Ordering Code	EDP No.	Dimensions inch							Min. Bore dia.					
IC	RH		A	L	L1	D	D1	F	inch		Insert Screw	Anvil Screw	Torx Key	Anvil RH	Anvil LH
1/2"U	AVR125-4U	66421	1.12	10.00	2.50	1.25	1.25	1.01	1.65		SA4T	SY4T	K4T	YI4U	YE4U
	AVR150-4U	66156	1.34	12.00	2.50	1.50	1.50	1.12	1.90						
5/8"U	NVR125-5U	66264	1.12	10.00	2.50	1.25	1.25	0.98	1.65		SN5T	-	K5T	-	-
	AVR150-5U	66162	1.34	12.00	2.50	1.50	1.50	1.13	1.90						
	AVR200-5U	66179	1.80	14.00	3.00	2.00	2.00	1.37	2.40		SA5T	SY5T	K5T	YI5U	YE5U
	AVR250-5U	66187	2.26	16.00	3.00	2.50	2.50	1.31	2.90						

The above toolholders have a 1.5° helix angle. For other helix angles, see page 127. Toolholders with prefix "N" cannot be used with an anvil. Holders with coolant channel available as standard. (Example AVRC100-3C).
The above toolholders are for RH inserts. For LH inserts, add LH to the toolholder's ordering code. (Example AVR075-3C LH)



Internal Toolholders



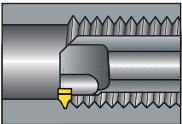
U style with Clamp

(Dual System, Screw or Clamp)

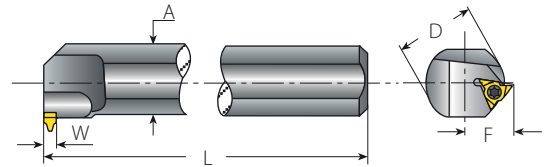
Spare Parts

Insert Size	Ordering Code	EDP No.	Dimensions inch							Min. Bore dia.						
IC	RH		A	L	L1	D	D1	F	inch		Insert Screw	Anvil Screw	Clamp	Torx Key	Anvil RH	Anvil LH
1/2"U	AVR125-4UC	66408	1.12	10.00	2.50	1.25	1.25	1.01	1.65		SA4T	SY4T	C4	K4T	YI4U	YE4U
	AVR150-4UC	66409	1.34	12.00	2.50	1.50	1.50	1.12	1.90							
5/8"U	AVR150-5UC	66410	1.34	12.00	2.50	1.50	1.50	1.13	1.90							
	AVR200-5UC	66411	1.80	14.00	3.00	2.00	2.00	1.37	2.40		SA5T	SY5T	C5	K5T	YI5U	YE5U
	AVR250-5UC	66412	2.26	16.00	3.00	2.50	2.50	1.61	2.90							

The above toolholders have a 1.5° helix angle. For other helix angles, see page 127.



Internal Toolholders



V Style

Spare Parts

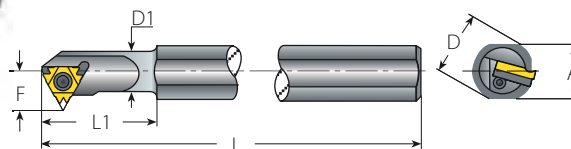
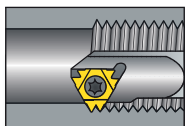
Insert Size	Ordering Code	EDP No.	Dimensions inch						
IC	RH		A	L	D	F	W	Insert Screw	Torx Key
5/8"V	NVR150-5V	67220	1.34	12.00	1.50	1.08	0.256		
	NVR200-5V	67222	1.80	14.00	2.00	1.33	0.256	SN6T	K6T
	NVR250-5V	67223	2.26	16.00	2.50	1.58	0.256		

The above toolholders have a 1.0° helix angle.

Minimum Bore Dia

	Pitch mm	6.0 ISO	8.0 ISO	10.0 ISO
	Pitch tpi	4 UN	3 UN	2.5 W
NVR150-5V		1.98	2.17	2.76
NVR200-5V		2.37	2.37	2.76
NVR250-5V		2.76	2.76	2.76

Internal Toolholders

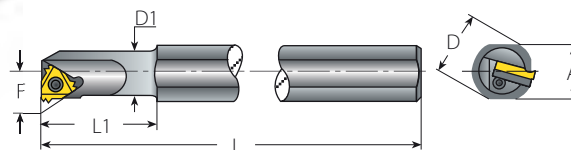
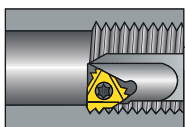


Z+ Style

Z+ Style											Spare Parts					Multiplus
Insert Size	Ordering Code	EDP No.	Dimensions inch							Min. Bore dia.						
IC	RH		A	L	L1	D	D1	F	inch	Insert Screw	Anvil Screw	Torx Key	Anvil RH	Anvil LH		
1/2"Z	AVR125-4Z	66413	1.12	10.00	2.50	1.25	1.25	1.01	1.65	SA4T	SY4T	K4T	YI4Z	YE4Z		
	AVR150-4Z	66414	1.34	12.00	2.50	1.50	1.50	1.12	1.90							
5/8"Z	NVR125-5Z	66415	1.12	10.00	2.50	1.25	1.25	0.98	1.65	SN5T	-	K5T	-	-		
	AVR150-5Z	66416	1.34	12.00	2.50	1.50	1.50	1.13	1.90							
	AVR200-5Z	66417	1.80	14.00	3.00	2.00	2.00	1.37	2.40	SA5T	SY5T	K5T	YI5Z	YE5Z		
	AVR250-5Z	66418	2.26	16.00	3.00	2.50	2.50	1.61	2.90							

All Z style toolholders have a 1.5° helix angle.

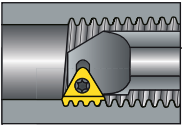
Internal Toolholders



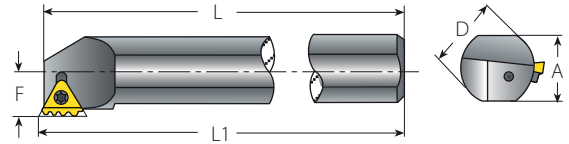
M+ Style

M+ Style										Spare Parts					Multiplus
Insert Size	Ordering Code	EDP No.	Dimensions inch						Min. Bore dia.						
IC	RH		A	L	L1	D	D1	F	inch	Insert Screw	Anvil Screw	Torx Key	Anvil RH	Anvil LH	
5/8"M	AVR125-5M	66127	1.12	10.00	2.50	1.25	1.25	0.88	1.55	SN5T	SY5T	K5T	YI5M	YE5M	
	AVR150-5M	66161	1.34	12.00	2.50	1.50	1.50	1.00	1.80	SA5T	SY5T	K5T	YI5M	YE5M	
	AVR200-5M	66419	1.80	14.00	3.00	2.00	2.00	1.25	2.30						
	AVR250-5M	66422	2.26	16.00	3.00	2.50	2.50	1.50	2.80						

All M style toolholders have a 1.5° helix angle.



Internal Toolholders



T+ Style

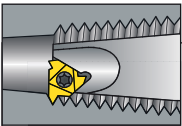
Spare Parts



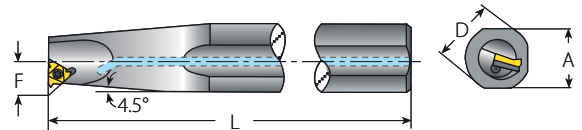
Insert Size	Ordering Code	EDP No.	Dimensions inch						Min. Bore dia.					
IC	RH		A	L	L1	D	F	inch	Insert Screw	Anvil Screw	Torx Key	Anvil Torx Key	Anvil RH/LH	
1/2" T	AVR150-4T	66423	1.34	12.00	12.08	1.50	0.88	2.40	SA4T	SY4K2	K4T	K2	Y4T	
	AVR200-4T	66424	1.80	14.00	14.08	2.00	1.13	2.75						
	AVR250-4T	66425	2.26	16.00	16.08	2.50	1.38	3.25						

All toolholders have a 0° helix angle.

Holders with coolant channel available as standard. (Example: AVRC150-4T)



Internal Toolholders



API

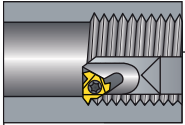
Spare Parts

Insert Size	Ordering Code	EDP No.	Thread Form	Connection no. or size	Dimensions inch								
IC	RH				A	L	D	F	Insert Screw	Anvil Screw	Torx Key	Anvil RH	Anvil LH
5/8"	AVR200-5OIL	66426	V0.038R	NC23-NC38	1.80	12.0	2.00	0.90	SA5T	SY5T	K5T	Y15OIL	YE5OIL
	AVRC200-5OIL	66122	V0.038R	NC23-NC38									
	AVR300-5OIL	66188	V0.050R	NC40-NC77	2.68	16.0	3.00	1.50					
	AVRC300-5OIL	66125	V0.050R	NC40-NC77									

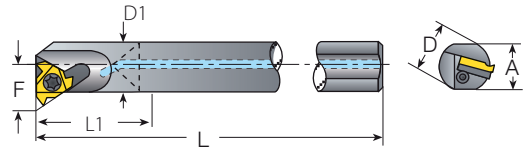
The above toolholders have a 1.5° helix angle.

Toolholders ordered with an internal coolant channel have an internal BSP 1/2" thread for connection to the flexible coolant pipe.

The above toolholders are for RH inserts. For LH inserts, add LH to the toolholder's ordering code. (Example AVR200-5OIL LH)



Internal Toolholders



The CAVRC...-3 holders are supplied with standard anvil (see spare parts table below). For V6, please use the V6 anvil YI3-6C. For more info see page 127.

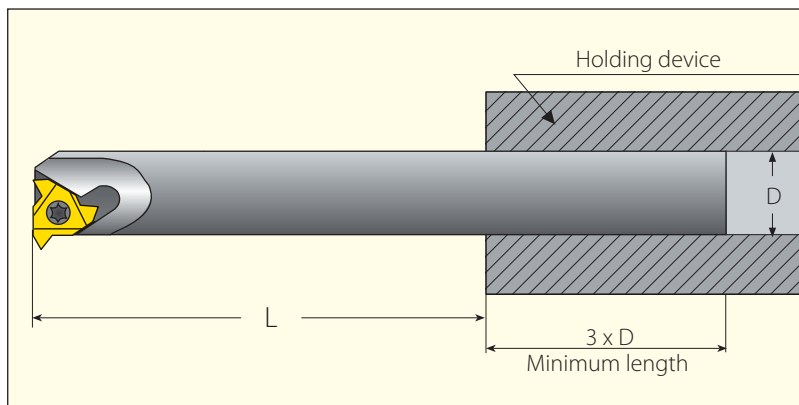
Standard with Carbide Shank

Insert Size	Ordering Code	EDP No.	Dimensions inch							Min. Bore dia.					
IC	RH		A	L	L1	D	D1	F	inch	Insert Screw	Anvil Screw	Torx Key	Anvil RH	Anvil LH	
4.0 mm	CNVRC0205-4.0K	66347	0.20	4.00	1.02	0.25	0.20	0.17	0.24	SN4MT	-	K6MT	-	-	
1/4"	CNVRC0375-2	66196	0.35	6.00	-	0.37	0.37	0.28	0.50	SN2T	-	K2T	-	-	
	CNVRC050-2	66197	0.48	7.00	-	0.50	0.50	0.35	0.60						
3/8"	CNVRC050-3	66199	0.48	7.00	-	0.50	0.50	0.40	0.67						
	CNVRC0625-3	66200	0.60	8.00	-	0.62	0.62	0.45	0.80	SN3T	-	K3T	-	-	
	CAVRC075-3	66194	0.73	10.00	-	0.75	0.75	0.51	0.90	SA3T	SY3T	K3T	YI3	YE3	
1/2"	CNVRC075-4	66202	0.73	10.00	-	0.75	0.75	0.59	1.00	SN4T	-	K4T	-	-	

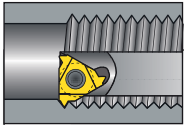
The above toolholders have 1.5° helix angle. For other helix angles see page 127.

Toolholders with prefix "CN" cannot be used with an anvil. The above Toolholders have coolant channel as standard.

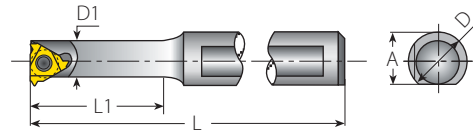
Carbide Shank toolholders should be used when extra accuracy is required or when the bar length to bar diameter ratio exceeds 3:1.



The overhang to bar diameter ratio should be as small as possible to eliminate the chance of chatter (vibration). The minimum length inside a holding device should be 3 times the diameter of the bar shank.



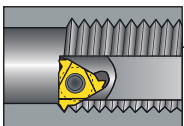
Internal Toolholders



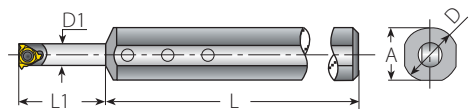
Mini-3

Spare Parts

Insert Size	Ordering Code	EDP No.	Dimensions inch					Anti-Vibration System		
IC mm	RH		A	L	L1	D	D1		Insert Screw	Torx Key
4.0	SNVR 0205-4.0K	42267	0.46	4.00	0.47	0.50	0.20	No	SN4MT	K6MT
6.0	SNVR 375U-6.0	67338	0.36	3.23	0.63	0.37	0.31	No	SN6MT	K6MT
	BNVR 375S-6.0	67308	0.36	3.50	0.87	0.37	0.31	Carbide Implanted		
	BNVR 375M-6.0	67304	0.36	3.86	1.22	0.37	0.31	Carbide Implanted		
	BNVR 375L-6.0	67301	0.36	4.33	1.69	0.37	0.31	Carbide Implanted		
6.0	SNVR 050U-6.0	67341	0.49	3.23	0.63	0.50	0.31	No		
	BNVR 050S-6.0	67317	0.49	3.50	0.87	0.50	0.31	Carbide Implanted		
	BNVR 050M-6.0	67313	0.49	3.86	1.22	0.50	0.31	Carbide Implanted		
	BNVR 050L-6.0	67310	0.49	4.33	1.69	0.50	0.31	Carbide Implanted		



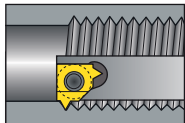
Internal Toolholders



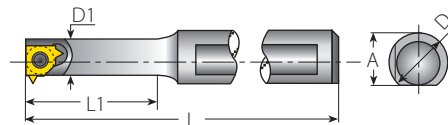
Mini-3 Adjustable

Spare Parts

Insert Size	Ordering Code	EDP No.	Ordering Code	EDP No.	Dimensions inch								
IC mm	Sleeve		Holder		A	L	L1	D	D1	Insert Screw	Torx Key for Insert Screw	Holder Screw x3	Key for Holder Screw
6.0	SV0625-8.0	67344	BNVR8.0T-6.0	67326	.584	4	0.315-2.2	.625	.315	SN6MT	K6MT	S4.0	K2.0

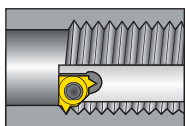


Internal Toolholders

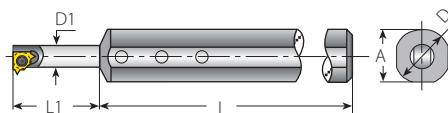


Mini-L

									Spare Parts	
Insert Size	Ordering Code	EDP No.	Dimensions inch					Anti-Vibration System		
IC	RH		A	L	L1	D	D1		Insert Screw	Torx Key
5.0L	SNVR 0375U-5L	67336	0.36	3.19	0.63	0.37	0.24	No	SN5LT	K5LT
	BNVR 0375S-5L	67306	0.36	3.43	0.87	0.37	0.24	Carbide Implanted		
	BNVR 0375M-5L	67302	0.36	3.82	1.22	0.37	0.24	Carbide Implanted		
	BNVR 0375L-5L	67300	0.36	4.29	1.69	0.37	0.24	Carbide Implanted		
5.0L	SNVR 050U-5L	67340	0.49	3.19	0.63	0.50	0.24	No		
	BNVR 050S-5L	67315	0.49	3.43	0.87	0.50	0.24	Carbide Implanted		
	BNVR 050M-5L	67311	0.49	3.82	1.22	0.50	0.24	Carbide Implanted		
	BNVR 050L-5L	67309	0.49	4.29	1.69	0.50	0.24	Carbide Implanted		



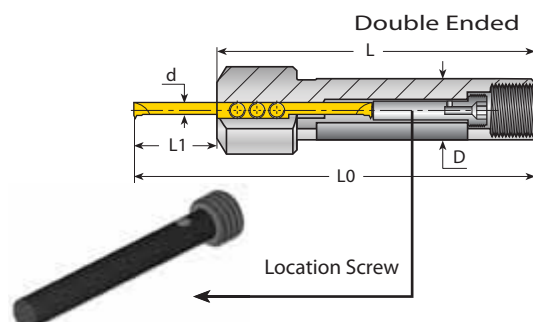
Internal Toolholders



Mini-L-Adjustable

								Spare Parts			
Insert Size	Ordering Code	EDP No.	Ordering Code	EDP No.	Dimensions inch						
IC mm	Sleeve		Holder		A	L	L1 D D1	Insert Screw	Torx Key for Insert Screw	Holder Screw x3	Key for Holder Screw
5.0L	SV0625-6.2	67343	BNVR6.2T-5L	67324	.584	4	0.315-1.73 .625 .244	SN5LT	K5LT	S4.0	K2.0

Internal Toolholders



Thread Turning
Toolholders

Spare Parts



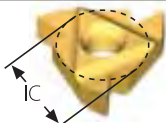
Micro - Double Ended

Micro Insert Dia.	Shank Dia.	Ordering Code	EDP No.	Dimensions inch			Location Screw*			Clamping Screw x 3	
				L	L1	L0	Screw	M	Key	Screw	Key
3	0.50	SMC050-3.0	41075	3.15	0.35- Short	3.50	4GISM8X28	1.10	K4.0	M4X0.7X4.0	K2.0
					0.63- Medium	3.78	4GISM8X21	0.83			
	0.63	SMC0625-3.0	40210	3.74	0.35- Short	4.09	4GISM8X49	1.93			
	0.75	SMC075-3.0	41080		0.63- Medium	4.37	4GISM8X42	1.65			
4	0.50	SMC050-4.0	41092	3.15	0.35- Short	3.50	4GISM8X28	1.10			
					0.63- Medium	3.78	4GISM8X21	0.83			
					0.83- Long	3.98	4GISM8X16	0.63			
	0.63	SMC0625-4.0	40212	3.74	0.35- Short	4.09	4GISM8X49	1.93			
					0.63- Medium	4.37	4GISM8X42	1.65			
					0.83- Long	4.57	4GISM8X37	1.46			
6	0.50	SMC050-6.0	41517	3.15	0.35- Short	3.5	4GISM8X28	1.10			
					0.63- Medium	3.78	4GISM8X21	0.83			
					0.83- Long	3.98	4GISM8X16	0.63			
	0.63	SMC0625-6.0	40214	3.74	0.35- Short	4.09	4GISM8X49	1.93			
					0.63- Medium	4.37	4GISM8X42	1.65			
					0.83- Long	4.57	4GISM8X37	1.46			

* Every toolholder package contains the full range of location screws needed.

Spare Parts

External and Internal Toolholders (not including Micro)

    								
Toolholder	IC	Designation	Thread	Designation	Thread	Key	EX RH / IN LH	IN RH / EX LH
Standard	1/4"	SN2T	M2.6x0.45x6.5	-	-	K2T	-	-
	3/8", 3/8"V6*	SA3T	UNC5x12.0	SY3T	UNC5x7.3	K3T	YE3/YE3-6C	YI3/YI3-6C
	1/2"***	SA4T	UNC8x15.2	SY4T	UNC8x9.3	K4T	YE4	YI4
	5/8"	SA5T	M5x0.8x22.0	SY5T	M5x0.8x9.5	K5T	YE5	YI5
Standard with clamp	3/8"	SA3T/C3	UNC5x12.0/M5x0.8x22.0	SY3T	UNC5x7.3	K3CT	YE3	YI3
	1/2"	SA4T/C4	UNC8x15.2/M6x1.0x29.5	SY4T	UNC8x9.3	K4T	YE4	YI4
	5/8"	SA5T/C5	M5x0.8x22.0/M8x1.25x28.0	SY5T	M5x0.8x9.5	K5T	YE5	YI5
U Style	1/2"U	SA4T	UNC8x15.2	SY4T	UNC8x9.3	K4T	YE4U	YI4U
	5/8"U	SA5T	M5x0.8x22.0	SY5T	M5x0.8x9.5	K5T	YE5U	YI5U
U Style with clamp	1/2"	SA4T/C4	UNC8x15.2/M6x1.0x29.5	SY4T	UNC8x9.3	K4T	YE4U	YI4U
	5/8"	SA5T/C5	M5x0.8x22.0/M8x1.25x28.0	SY5T	M5x0.8x9.5	K5T	YE5U	YI5U
V Style	1/4"V	SN2T	M2.6x0.45x6.5	-	-	K2T	-	-
	3/8"V	SN3TV	UNC5x7.5	-	-	K3T	-	-
	1/2"V	SN4T	UNC8x15.2	-	-	K4T	-	-
	5/8"V	SN6T	M6x1.0x29.5	-	-	K6T	-	-
Z+ Style	1/2"Z	SA4T	UNC8x15.2	SY4T	UNC8x9.3	K4T	YE4Z	YI4Z
	5/8"Z	SA5T	M5x0.8x22.0	SY5T	M5x0.8x9.5	K5T	YE5Z	YI5Z
M+ Style	3/8"M	SA3T	UNC5x12.0	SY3T	UNC5x7.3	K3T	YE3M	YI3M
	1/2"M	SA4T	UNC8x15.2	SY4T	UNC8x9.3	K4T	YE4M	YI4M
	5/8"M	SA5T	M5x0.8x22.0	SY5T	M5x0.8x9.5	K5T	YE5M	YI5M
T+ Style	1/2"T	SA4T	UNC8x15.2	SY4K2	UNC8x7.3	K4T/K2	Y4T	Y4T
API	5/8"	SA5T/C5	M5x0.8x22.0/M8x1.25x28.0	SY5T	M5x0.8x9.5	K5T	YE5OIL	YI5OIL
Mini-L	5.0L	SN5LT	M2x0.4x4.1	-	-	K5LT	-	-
Mini-3	4.0mm	SN4MT	M2x0.4x4.0	-	-	K6MT	-	-
	6.0mm	SN6MT	M1.8x0.35x4.5	-	-	K6MT	-	-
Mini Adjustable Holder	-	S4.0	M4x0.7x4.0	-	-	K2.0	-	-

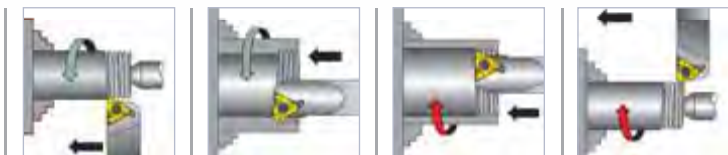
* NVR0625-3 requires insert screw SN3T (UNC5x9.5) ** NVR075-4 requires insert screw SN4T (UNC8x12.0)

SN5T (M5x0.8x18) for holders A/NVR125-5...

For Micro Toolholders see page 118. ▣



Thread Turning



> Technical Data

THREAD TURNING TECHNICAL DATA

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Thread Terminology

External Thread

A thread on the external surface of a cylinder screw or cone

Depth of Thread

The distance between crest and root measured normal to the axis.

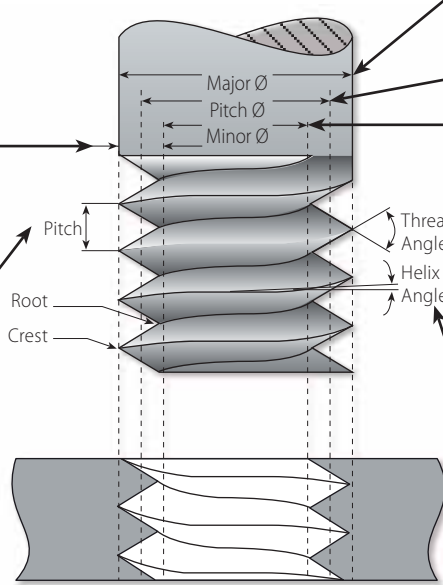
Pitch

The distance between corresponding points on adjacent thread forms measured parallel to the axis. This distance can be defined in millimeters or by the tpi (threads per inch), which is the reciprocal of the pitch.

Nominal Diameter

The diameter from which the diameter limits are derived by the application of deviation allowances and tolerances.

External Thread



Internal Thread

A thread on the internal surface of a cylinder or cone.

Major Diameter

The largest diameter of a screw thread.

Pitch Diameter

On a straight thread, the diameter of an imaginary cylinder, the surface of which cuts the thread forms where the width of the thread and groove are equal.

Minor Diameter

The smallest diameter of a screw thread.

Helix Angle

For a straight thread, where the lead of the thread and the pitch diameter circle circumference form a right angled triangle, the helix angle is the angle opposite the lead.

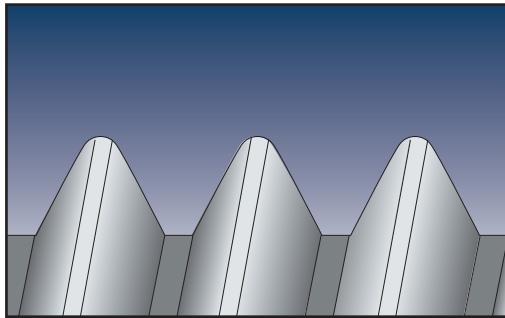
Straight Thread

A thread formed on a cylinder

Taper Thread

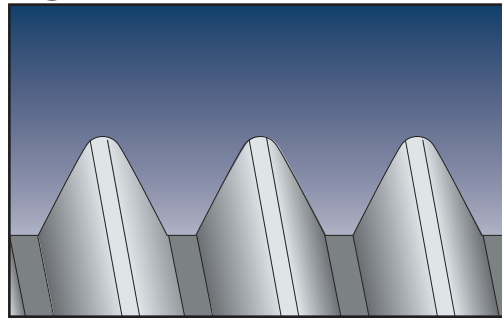
A thread formed on a cone

Left-hand thread



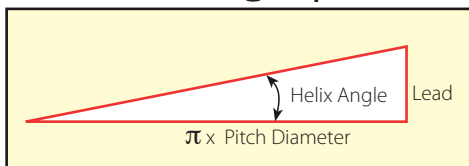
A thread which, when viewed axially, winds in a counterclockwise and receding direction. All left-hand threads are designated LH.

Right-hand thread



A thread which, when viewed axially, winds in a clockwise and receding direction. Threads are always right-hand unless otherwise specified.

The Helix Angle β



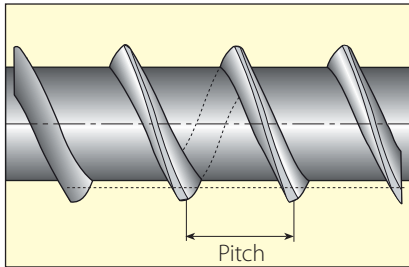
Lead

The distance a threaded part moves axially, with respect to a fixed mating part, in one complete revolution. The lead is equal to the pitch multiplied by the number of thread starts.

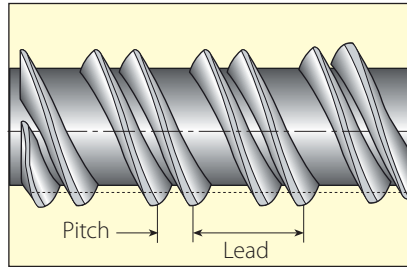
Machining a Multi-Start Thread

A thread in which the lead is an integral multiple, greater than one, of the pitch.
A multi-start thread permits a more rapid advance without a coarser (larger) thread form.

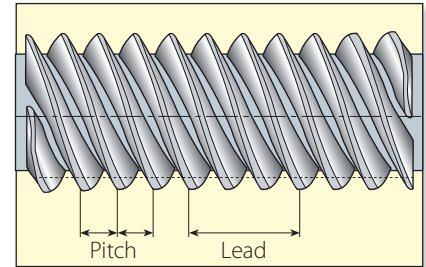
First Start Machined



Second Start Machined



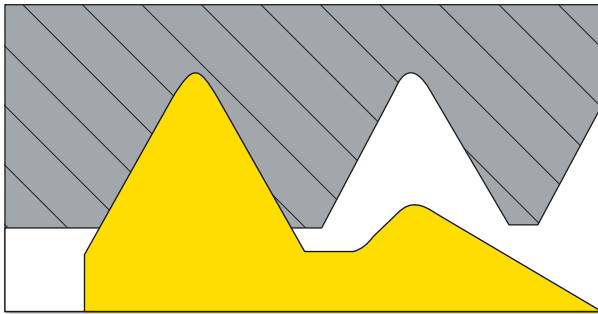
Third Start Machined
(Final, 3 Starts Thread)



Lead = 3 x Pitch

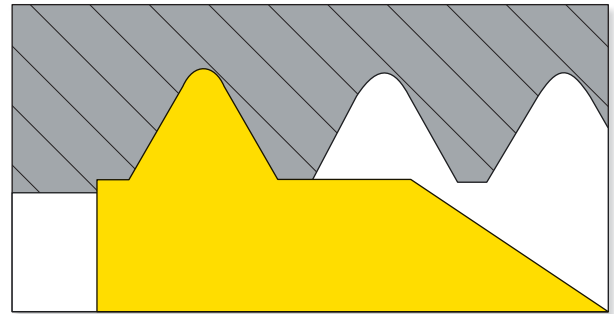
Insert Profile Styles

Partial Profile



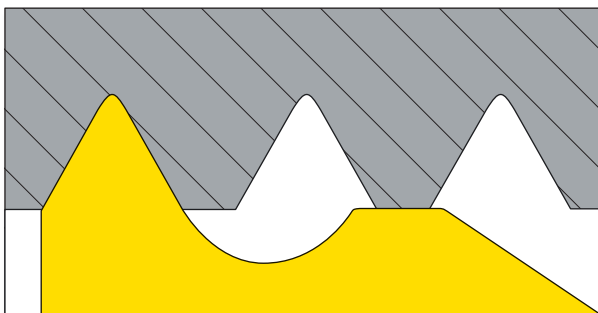
The V partial profile insert cuts without topping the outer diameter of the thread. The same insert can be used for a range of different thread pitches which have a common thread angle.

Full Profile



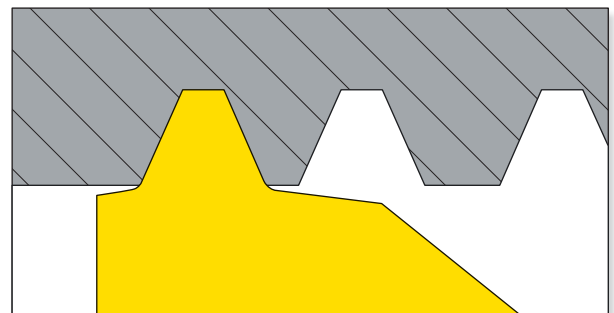
The full profile insert will form a complete thread profile including the crest. For every thread pitch and standard, a separate insert is required.

Full Profile for Fine Pitches



The full profile for Fine Pitches will form a complete thread.
The topping of the outer diameter is generated by the second tooth.

Semi Full

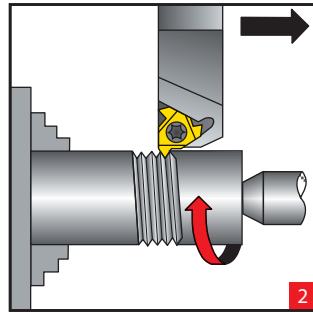
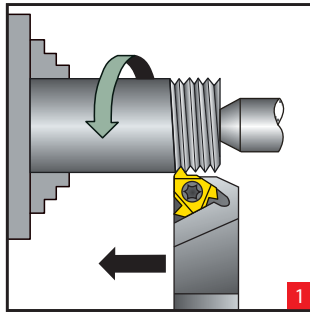


The Semi profile insert will form a complete thread including crest radius but without topping the outer diameter.
Mainly used for trapezoidal profiles.

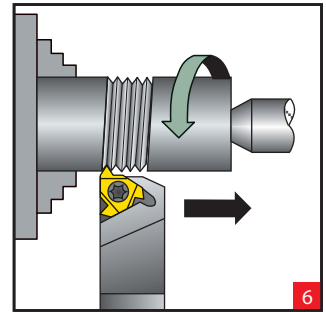
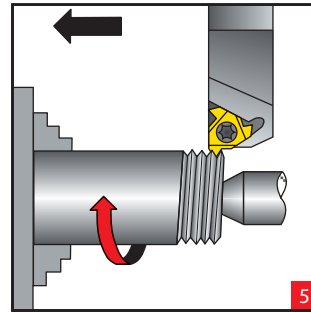
Thread Turning Methods

Thread	Inserts & Toolholder	Rotation	Feed Direction	Helix Method	Drawing No.
Right Hand External	EX RH	Counterclockwise	Towards chuck	Regular	1
	EX LH	Clockwise	From chuck	Reversed	2
Right Hand Internal	IN RH	Counterclockwise	Towards chuck	Regular	3
	IN LH	Clockwise	From chuck	Reversed	4
Left Hand External	EX LH	Clockwise	Towards chuck	Regular	5
	EX RH	Counterclockwise	From chuck	Reversed	6
Left Hand Internal	IN LH	Clockwise	Towards chuck	Regular	7
	IN RH	Counterclockwise	From chuck	Reversed	8

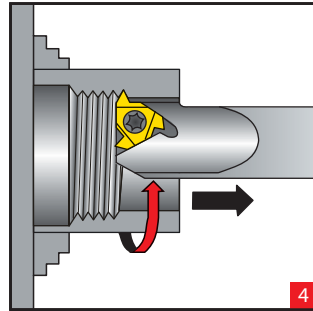
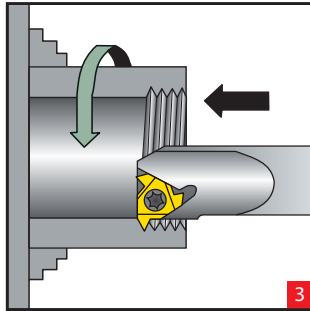
External RH Thread



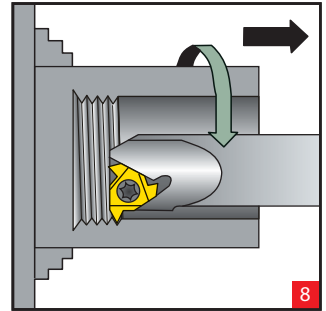
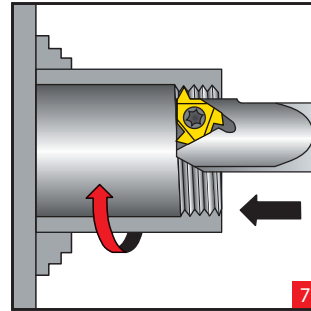
External LH Thread



Internal RH Thread

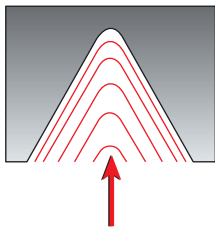


Internal LH Thread



Thread Infeed Methods

Radial Infeed



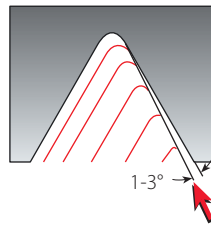
Radial infeed is the simplest and quickest method.

The feed is perpendicular to the turning axis, and both flanks of the insert perform the cutting operation.

Radial infeed is recommended in 3 cases:

- When the pitch is smaller than 16 tpi
- For material with short chips
- For work with hardened material

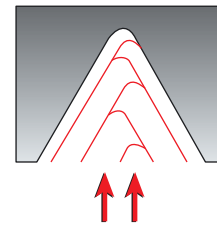
Flank Infeed (modified)



Flank infeed is recommended in the following cases:

- When the thread pitch is greater than 16 tpi., using the radial method, the effective cutting edge length is too large, resulting in chatter.
- For TRAPEZ and ACME. The radial method result in three cutting edges, making chip flow very difficult.

Alternate Flank Infeed

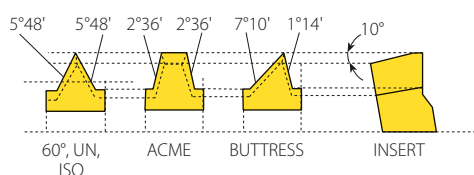


Use of the alternate flank method is recommended especially in large pitches and for materials with long chips.

This method divides the load equally on both flanks, resulting in equal wear along the cutting edges. Alternate flank infeed requires more complicated programming, and is not available on all lathes.

Calculating the Helix Angle and Choosing The Right Anvil

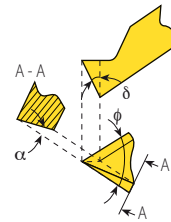
Flank Clearance Angle α (For External Inserts)



Vardex toolholders are designed to tilt the insert when seated in the toolholder (10° for external, 15° for internal tooling).

This results in the differing flank clearance angles, based on the

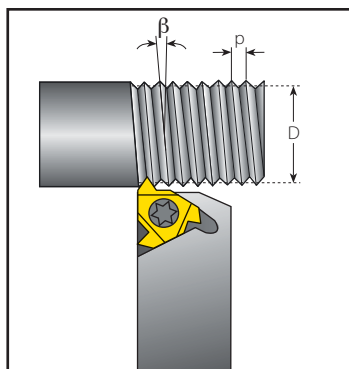
geometry of the insert. To ensure that the side of the insert cutting edge will not rub on the workpiece, it is most important that the insert helix angle be correct - especially in profiles with small enclosed flank angles. This correction is provided by Vardex anvils.



$$\alpha = \arctan (\tan \phi / 2 \times \tan \delta)$$

Where: α - Flank clearance angle
 δ - Tilt angle
 ϕ - Enclosed flank angle

Calculating the Helix Angle β



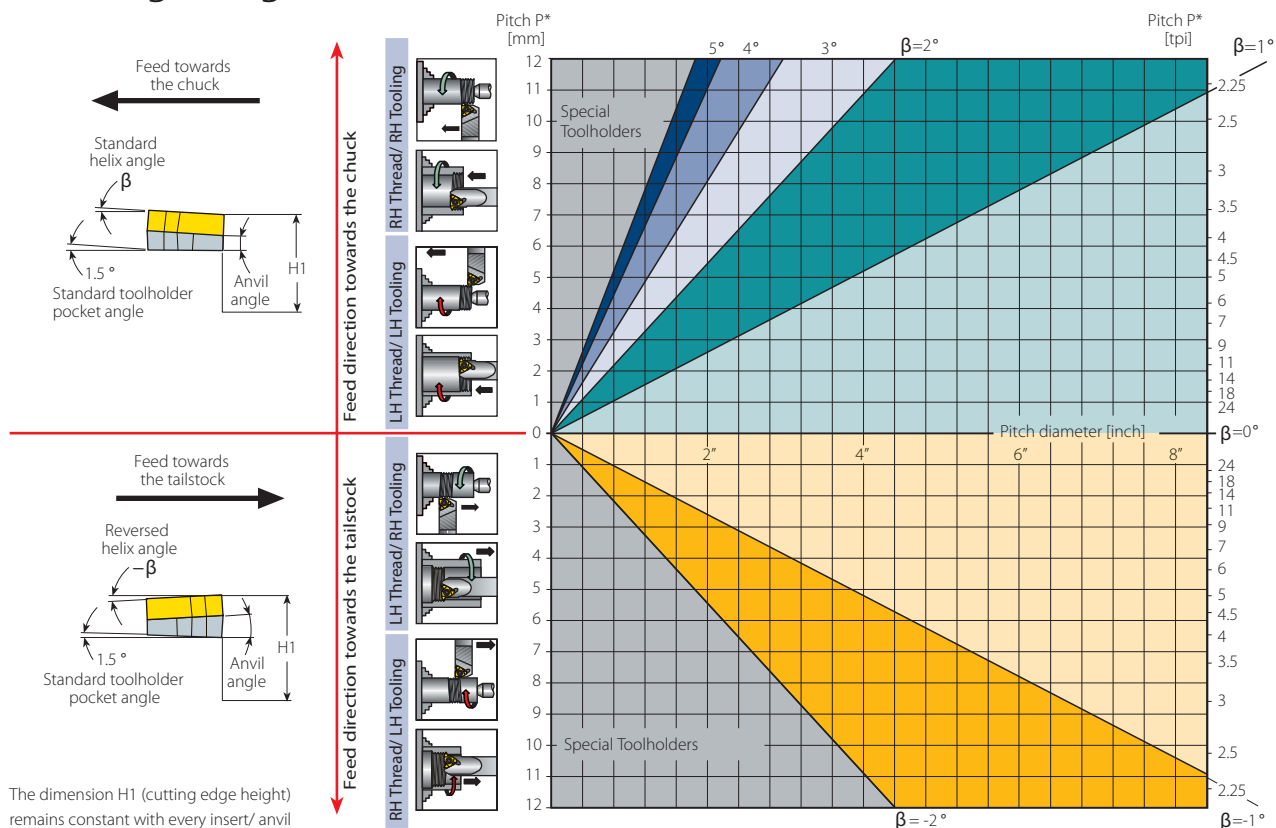
The helix angle is calculated by the following formula:

$$\beta = \arctan \frac{P \times N}{\pi \times D}$$

β - Helix angle [°]
 P - Pitch [inch]
 N - No. of starts
 D - Pitch diameter [inch]
 Lead = P x N

The helix angle can also be found from the diagram below.

Helix Angle Diagram



The dimension H1 (cutting edge height) remains constant with every insert/ anvil combination.

Anvils

Resultant Helix Angle		4.5°		3.5°	2.5°	1.5°	0.5°	0°	-0.5°	-1.5°
Insert Size		Holder		Ordering Code						
IC	L inch									
3/8"	0.63	ER / IL	YE3-3P	YE3-2P	YE3-1P	YE3	YE3-1N	YE3-1.5N	YE3-2N	YE3-3N
		EL / IR	YI3-3P	YI3-2P	YI3-1P	YI3	YI3-1N	YI3-1.5N	YI3-2N	YI3-3N
3/8" V6	0.63	ER	YE3-6C-3P	YE3-6C-2P	YE3-6C-1P	YE3-6C	YE3-6C-1N	YE3-6C-1.5N	YE3-6C-2N	YE3-6C-3N
		IR	YI3-6C-3P	YI3-6C-2P	YI3-6C-1P	YI3-6C	YI3-6C-1N	YI3-6C-1.5N	YI3-6C-2N	YI3-6C-3N
1/2"	0.87	ER / IL	YE4-3P	YE4-2P	YE4-1P	YE4	YE4-1N	YE4-1.5N	YE4-2N	YE4-3N
		EL / IR	YI4-3P	YI4-2P	YI4-1P	YI4	YI4-1N	YI4-1.5N	YI4-2N	YI4-3N
1/2"U	0.87	ER / IL	YE4U-3P	YE4U-2P	YE4U-1P	YE4U	YE4U-1N	YE4U-1.5N	YE4U-2N	YE4U-3N
		EL / IR	YI4U-3P	YI4U-2P	YI4U-1P	YI4U	YI4U-1N	YI4U-1.5N	YI4U-2N	YI4U-3N
5/8"	1.06	ER / IL	YE5-3P	YE5-2P	YE5-1P	YE5	YE5-1N	YE5-1.5N	YE5-2N	YE5-3N
		EL / IR	YI5-3P	YI5-2P	YI5-1P	YI5	YI5-1N	YI5-1.5N	YI5-2N	YI5-3N
5/8"U	1.06	ER / IL	YE5U-3P	YE5U-2P	YE5U-1P	YE5U	YE5U-1N	YE5U-1.5N	YE5U-2N	YE5U-3N
		EL / IR	YI5U-3P	YI5U-2P	YI5U-1P	YI5U	YI5U-1N	YI5U-1.5N	YI5U-2N	YI5U-3N
3/8"M	0.63	ER / IL			YE3M-1P	YE3M	YE3M-1N	YE3M-1.5N	YE3M-2N	
		EL / IR			YI3M-1P	YI3M	YI3M-1N	YI3M-1.5N		
1/2"M	0.87	ER / IL			YE4M-1P	YE4M	YE4M-1N	YE4M-1.5N	YE4M-2N	
		EL / IR			YI4M-1P	YI4M	YI4M-1N	YI4M-1.5N		
5/8"M	1.06	ER / IL				YE5M	YE5M-1N	YE5M-1.5N		
		EL / IR				YI5M	YI5M-1N	YI5M-1.5N		
1/2"Z	0.87	ER / IL			YE4Z-1P	YE4Z	YE4Z-1N			
		EL / IR			YI4Z-1P	YI4Z	YI4Z-1N			
5/8"Z	1.06	ER / IL				YE5Z				
		EL / IR				YI5Z				
1/2"T	0.87	ER / IL EL / IR						Y4T		

Standard Anvil		V6 Anvil		U Style Anvil		M Style Anvil		Z Style Anvil		T Style Anvil	
											
ER/IL	EL/IR	ER	IR	ER/IL	EL/IR	ER/IL	EL/IR	ER/IL	EL/IR	ER/IL	EL/IR
V6 is indicated on the backside								Same anvil turned over			

Anvil Kits

Anvil Size		Ordering Code		Included Anvils:
IC	L inch			
3/8"	0.63	ABY3	YE3-2P, 1P, 1N, 2N, 3N	
			YI3-2P, 1P, 1N, 2N, 3N	
3/8" V6	0.63	ABY3-6C	YE3-6C-2P, 1P, 1N, 2N, 3N	
			YI3-6C-2P, 1P, 1N, 2N, 3N	
1/2"	0.87	ABY4	YE4-2P, 1P, 1N, 2N, 3N	
			YI4-2P, 1P, 1N, 2N, 3N	
1/2"U	0.87	ABY4U	YE4U-2P, 1P, 1N, 2N, 3N	
			YI4U-2P, 1P, 1N, 2N, 3N	
5/8"	1.06	ABYE5	YE5-2P, 1P, 1N, 2N, 3N	
		ABYI5	YI5-2P, 1P, 1N, 2N, 3N	
5/8"U	1.06	ABYE5U	YE5U-2P, 1P, 1N, 2N, 3N	
		ABYI5U	YI5U-2P, 1P, 1N, 2N, 3N	

To ensure that you always have on hand an assortment of anvils for any job, we recommend that anvil kits be readily available.

Important!

Use a V6 anvil when using a V6 insert.



For External RH
use YE3-6C anvil.

For Internal RH
use YI3-6C anvil.



Grades and Their Applications

General Use		
VKX	VTX	VCB
 Superior general purpose grade, excellent in steels and stainless steels, recommended for rigid cutting conditions, ground or sintered chipbreaker styles. TiN coated.	 General purpose grade with tough submicron substrate. Provides good fracture toughness in non-rigid cutting conditions. TiAlN coated.	 Vardex sintered chipbreaker with ground profile for machining materials with long chips. TiAlN coated.
Stainless Steel		Non Ferrous, High Temperature Alloys and Titanium
VM7	VK2	VK2P
 Specialty grade for threading stainless steel. Multi-layer PVD coated.	 Uncoated grade for non-ferrous, aluminium, high temperature and titanium alloys.	 Highly-polished version of the VK2 uncoated grade for high quality surface finish in aluminium.

MINI PRO

Micro	Mini "5L" & Mini IC 6.0	Mini IC 4.0
VMX	VHX	VTX
 General purpose carbide grade for Micro double-ended inserts. TiN coated.	 HSS grade for Mini "L" and Mini 6.0 inserts; for low cutting speeds, TiN coated.	 Carbide grade for Mini 4.0. For machining stainless steel and general use. TiAlN coated.
	VKP	VBX
	 General purpose carbide grade for Mini "L" and Mini 6.0 inserts, TiN coated.	 Carbide grade for Mini 4.0. For machining steel and general use. TiCN coated.

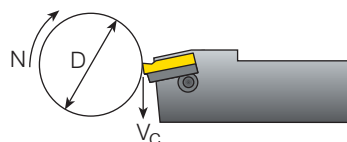
Recommended Grades and Cutting Speeds Vc [ft/min] not Including MiniPro Line

Material Group	Vardex No.	Material		Hardness Brinell HB	Vc [ft/min]				
					Coated				Uncoated
					VKX	VCB	VM7	VTX	
P Steel	1	Unalloyed steel	Low carbon (C=0.1-0.25%)	125	377-623	377-623		377-623	
	2		Medium carbon (C=0.25-0.55%)	150	328-574	328-541		328-574	
	3		High carbon (C=0.55-0.85%)	170	295-541	295-508		295-541	
	4	Low alloy steel (alloying elements≤5%)	Non hardened	180	328-590	328-590		328-590	
	5		Hardened	275	246-459	246-459		246-459	
	6		Hardened	350	229-443	229-443		229-443	
	7	High alloy steel (alloying elements>5%)	Annealed	200	262-393	262-393		262-393	
	8		Hardened	325	164-328	164-328		164-328	
	9	Cast steel	Low alloy (alloying elements <5%)	200	229-426	229-426		229-426	
	10		High alloy (alloying elements >5%)	225	197-393	197-393		197-393	
M Stainless Steel	11	Stainless steel Ferritic	Non hardened	200	229-426	229-426	229-492	229-426	
	12		Hardened	330	197-377	164-311	197-410	197-377	
	13	Stainless steel Austenitic	Austenitic	180	295-459	262-393	295-524	295-459	
	14		Super Austenitic	200	131-361	98-328	131-393	131-361	
	15	Stainless steel Cast ferritic	Non hardened	200	295-393	295-393	295-492	295-393	
	16		Hardened	330	213-361	213-361	213-393	213-361	
	17	Stainless steel Cast austenitic	Austenitic	200	279-361	279-361	279-393	279-361	
	18		Hardened	330	197-328	197-328	197-361	197-328	
K Cast Iron	28	Malleable Cast iron	Ferritic (short chips)	130	197-229	229-393		197-229	
	29		Pearlitic (long chips)	230	197-475	229-393		197-475	
	30	Grey Cast iron	Low tensile strength	180	229-426	229-426		229-426	
	31		High tensile strength	260	197-377	197-328		197-377	
	32	Nodular SG iron	Ferritic	160	410-524	410-524		410-524	
	33		Pearlitic	260	295-393	295-393		295-393	
N(K) Non-Ferrous Metals	34	Aluminium alloys Wrought	Non aging	60	328-1196	328-819		328-1196	328-819
	35		Aged	100	262-721	262-590		262-721	262-524
	36	Aluminium alloys	Cast	75	656-1312	656-1312		656-1312	262-393
	37		Cast & aged	90	656-918	656-918		656-918	229-328
	38	Aluminium alloys	Cast Si 13-22%	130	197-590	197-492		197-590	164-393
	39	Copper and copper alloys	Brass	90	262-738	262-688		262-738	229-557
	40		Bronze and non leaded copper	100	262-836	262-688		262-836	229-557
S(M) Heat Resistant Material	19	High temperature alloys	Annealed (Iron based)	200	148-197	148-197		148-197	98-164
	20		Aged (Iron based)	280	98-164	98-164		98-164	82-131
	21		Annealed (Nickel or Cobalt based)	250	66-98	66-98		66-98	66-98
	22		Aged (Nickel or Cobalt based)	350	49-82	49-82		49-82	49-82
	23	Titanium alloys	Pure 99.5 Ti	400Rm	459-557	459-557		459-557	197-328
	24		α+β alloys	1050Rm	164-229	164-229		164-229	131-197
H(K) Hardened Material	25	Extra hard steel	Hardened & tempered	45-50HRC	148-197	148-197		148-197	
	26			51-55HRC	131-164	131-164		131-164	

Calculation of N [RPM]

$$N = \frac{12 \times V_c}{\pi \times D}$$

$$V_c = \frac{N \times \pi \times D}{12}$$



N - Revolution Per Minute [RPM]
V_c - Cutting Speed [ft/min]
D - Workpiece Diameter [inch]

Recommended Grades and Cutting Speeds

Vc [ft/min] Mini, Micro

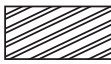
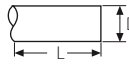
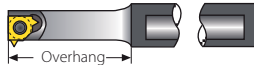
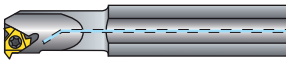
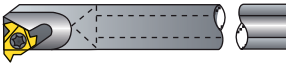


Material Group	Vardex No.	Material		Hardness Brinell HB	Vc [ft/min]			
					Coated			
					VMX (Micro)	VKP (Mini)	VTX (Mini)	VHX (Mini)
P Steel	1	Unalloyed steel	Low carbon (C=0.1-0.25%)	125	164-393	459-656	492-656	66-164
	2		Medium carbon (C=0.25-0.55%)	150	131-328	393-590	426-590	49-131
	3		High Carbon (C=0.55-0.85%)	170	98-262	361-590	393-590	49-98
	4	Low alloy steel (alloying elements ≤ 5%)	Non hardened	180	164-229	328-508	361-508	66-148
	5		Hardened	275	131-197	295-475	328-475	33-82
	6		Hardened	350	98-164	262-443	295-443	33-82
	7	High alloy steel (alloying elements > 5%)	Annealed	200	98-164	213-377	229-377	
	8		Hardened	325	82-131	164-328	197-328	
	9	Cast steel	Low alloy (alloying elements < 5%)	200	98-164	98-164	98-164	82-131
	10		High alloy (alloying elements > 5%)	225	82-131	82-131	98-131	82-131
M Stainless Steel	11	Stainless steel Ferritic	Non hardened	200	197-328	262-393	295-393	
	12		Hardened	330	131-197	180-311	197-311	
	13	Stainless steel Austenitic	Austenitic	180	164-295	197-328	229-328	
	14		Super Austenitic	200	131-197	164-295	197-295	
	15	Stainless steel Cast Ferritic	Non hardened	200	131-197	197-262	229-262	
	16		Hardened	330	98-164	148-213	164-213	
	17	Stainless steel Cast austenitic	Austenitic	200	131-197	164-229	197-229	
	18		Hardened	330	98-164	131-197	131-197	
K Cast Iron	28	Malleable Cast iron	Ferritic (short chips)	130	164-229	197-262	229-262	
	29		Pearlitic (long chips)	230	164-229	197-262	229-262	
	30	Grey cast iron	Low tensile strength	180	164-229	197-262	229-262	
	31		High tensile strength	260	131-197	131-229	131-229	
	32	Nodular SG iron	Ferritic	160	164-229	197-262	229-262	
	33		Pearlitic	260	197-262	229-295	262-295	
N(K) Non-Ferrous Metals	34	Aluminium alloys Wrought	Non aging	60	328-983	262-787	295-787	98-197
	35		Aged	100	328-492	328-557	361-557	82-164
	36	Aluminium alloys	Cast	75	328-492	328-492	361-492	82-164
	37		Cast & aged	90	197-328	197-328	229-328	66-131
	38	Aluminium alloys	Cast Si 13-22%	130	328-492	328-492	361-492	49-98
	39	Copper and copper alloys	Brass	90	197-328	262-656	295-656	49-115
	40		Bronze and non leaded copper	100	197-328	262-656	295-656	49-115
S(M) Heat Resistant Material	19	High temperature alloys	Annealed (Iron based)	200	82-148	82-148	98-148	
	20		Aged (Iron based)	280	66-98	66-98	66-98	
	21		Annealed (Nickel or Cobalt based)	250	49-66	49-66	49-66	
	22		Aged (Nickel or Cobalt based)	350	33-49	33-49	49-66	
	23	Titanium alloys	Pure 99.5 Ti	400Rm	197-328	197-328	229-328	
	24		α+β alloys	1050Rm	131-164	131-164	131-164	
H(K) Hardened Material	25	Extra hard steel	Hardened & tempered	45-50HRc	66-131	66-131	66-131	
	26			51-55HRc	66-131	66-131	66-131	

Number of Passes

Pitch	mm	0.50	0.75	1.00	1.25	1.50	1.75	2.00	2.50	3.00	3.50	4.00	4.50	5.00	5.50	6.00	8.00
	tpi	48	32	24	20	16	14	12	10	8	7	6	5.5	5	4.5	4	3
No. of passes		4-6	4-7	4-8	5-9	6-10	7-12	7-12	8-14	9-16	10-18	11-18	11-19	12-20	12-20	12-20	15-24
No. of passes (SCB)		3-4	3-4	3-5	4-6	5-6	6-8	6-8	8-10	9-12	10-14						
No. of passes (Micro & Mini)		6-9	6-11	6-12	8-14	9-15	11-18	11-18									

Cutting Conditions Depends On:

Workpiece	Material Type	
	Material Dimension: Diameter and Length	
	Chipflow Character	
	Material Hardness	
Thread Application	External or Internal	
	Profile Shape	
	Surface Finish	
Machine	Machine Stability	
	Max. RPM	
	Clamping System Stability	
Coolant	Coolant Type	
Holders	Holder Cross Section Area	
	Holder Overhang	
	Through Coolant Option	
	Shank Type: Carbide, Alloy, Carbide Implant	
Insert	Grade	
	Profile Shape: Pitch and Depth	
	Nose Radius	
	Chipbreaker Style	

Radial infeed per pass

UN External

Number of passes	Pitch/tpi	Cutting Speed																	Higher
		32	28	24	20	18	16	14	13	12	11	10	9	8	7	6	5	4.5	4
1		0.007	0.007	0.007	0.008	0.009	0.009	0.009	0.009	0.010	0.011	0.011	0.011	0.012	0.014	0.014	0.017	0.017	0.018
2		0.006	0.006	0.006	0.007	0.008	0.008	0.008	0.009	0.010	0.009	0.010	0.010	0.011	0.013	0.013	0.015	0.016	0.017
3		0.004	0.004	0.006	0.005	0.006	0.006	0.006	0.007	0.007	0.007	0.007	0.008	0.008	0.010	0.010	0.012	0.014	0.014
4		0.002	0.004	0.004	0.004	0.005	0.005	0.005	0.006	0.006	0.006	0.006	0.007	0.007	0.008	0.009	0.011	0.011	0.013
5			0.002	0.002	0.004	0.004	0.004	0.004	0.005	0.006	0.006	0.006	0.006	0.006	0.007	0.008	0.009	0.009	0.012
6					0.002	0.002	0.004	0.004	0.005	0.005	0.005	0.005	0.006	0.006	0.007	0.007	0.009	0.009	0.010
7							0.002	0.004	0.004	0.005	0.005	0.005	0.005	0.006	0.006	0.007	0.008	0.008	0.009
8								0.002	0.002	0.002	0.004	0.005	0.005	0.005	0.006	0.006	0.007	0.008	0.009
9											0.002	0.004	0.005	0.005	0.006	0.006	0.007	0.007	0.009
10												0.002	0.004	0.005	0.005	0.005	0.007	0.007	0.008
11																0.005	0.007	0.006	0.007
12																0.004	0.006	0.006	0.007
13																0.002	0.005	0.006	0.006
14																	0.002	0.006	0.006
15																		0.005	0.005
16																		0.002	0.002

UN Internal

Number of passes	Pitch/tpi	Cutting Speed																	Higher
		32	28	24	20	18	16	14	13	12	11	10	9	8	7	6	5	4.5	4
1		0.007	0.006	0.007	0.007	0.009	0.009	0.009	0.009	0.010	0.010	0.011	0.011	0.012	0.013	0.014	0.017	0.017	0.018
2		0.005	0.005	0.006	0.006	0.007	0.007	0.008	0.008	0.009	0.009	0.010	0.010	0.011	0.013	0.013	0.015	0.015	0.017
3		0.004	0.004	0.005	0.005	0.005	0.006	0.006	0.006	0.007	0.007	0.007	0.007	0.008	0.009	0.010	0.012	0.013	0.015
4		0.002	0.003	0.004	0.004	0.005	0.005	0.005	0.005	0.006	0.006	0.006	0.006	0.007	0.008	0.008	0.010	0.010	0.012
5			0.002	0.002	0.004	0.004	0.004	0.004	0.005	0.005	0.006	0.005	0.006	0.006	0.007	0.007	0.009	0.009	0.011
6					0.002	0.002	0.004	0.004	0.004	0.004	0.005	0.005	0.005	0.005	0.006	0.006	0.008	0.008	0.009
7							0.002	0.004	0.004	0.004	0.005	0.004	0.005	0.005	0.006	0.006	0.007	0.007	0.009
8								0.002	0.002	0.002	0.004	0.004	0.004	0.004	0.005	0.006	0.007	0.007	0.008
9											0.004	0.004	0.004	0.004	0.005	0.005	0.006	0.007	0.008
10											0.002	0.002	0.004	0.004	0.005	0.005	0.006	0.006	0.007
11													0.002	0.004	0.004	0.005	0.006	0.006	0.007
12														0.002	0.002	0.004	0.006	0.006	0.006
13																0.004	0.005	0.006	0.006
14																0.002	0.002	0.005	0.006
15																		0.005	0.005
16																		0.002	0.002

Radial infeed per pass

ISO External

Number of passes	Cutting Speed															
	Pitch/mm	0.5	0.75	1	1.25	1.5	1.75	2	2.5	3	3.5	4	4.5	5	5.5	6
1		0.004	0.006	0.007	0.007	0.009	0.009	0.009	0.010	0.011	0.013	0.013	0.015	0.016	0.017	0.018
2		0.003	0.006	0.006	0.007	0.008	0.008	0.009	0.009	0.010	0.012	0.012	0.013	0.015	0.016	0.017
3		0.003	0.004	0.005	0.006	0.007	0.006	0.007	0.007	0.008	0.009	0.009	0.011	0.013	0.013	0.014
4		0.002	0.002	0.004	0.004	0.006	0.005	0.006	0.007	0.007	0.008	0.009	0.009	0.011	0.011	0.012
5				0.002	0.004	0.005	0.004	0.006	0.006	0.006	0.007	0.007	0.009	0.009	0.009	0.011
6					0.002	0.002	0.004	0.005	0.005	0.006	0.007	0.007	0.008	0.009	0.009	0.009
7							0.004	0.004	0.005	0.005	0.006	0.006	0.007	0.008	0.008	0.009
8							0.002	0.002	0.004	0.005	0.006	0.006	0.007	0.007	0.007	0.008
9										0.004	0.005	0.006	0.006	0.006	0.007	0.007
10										0.002	0.004	0.005	0.005	0.006	0.007	0.007
11											0.004	0.004	0.005	0.006	0.006	0.007
12											0.002	0.002	0.005	0.005	0.006	0.006
13													0.004	0.005	0.005	0.006
14													0.002	0.002	0.002	0.006
15															0.005	0.005
16															0.002	0.002

ISO Internal

Number of passes	Pitch/mm	Lower	Cutting Speed														Higher
			0.5	0.75	1	1.25	1.5	1.75	2	2.5	3	3.5	4	4.5	5	5.5	6
1		0.004	0.006	0.007	0.007	0.009	0.009	0.009	0.010	0.011	0.011	0.013	0.013	0.014	0.017	0.017	0.018
2		0.003	0.005	0.006	0.006	0.008	0.008	0.009	0.010	0.010	0.010	0.012	0.012	0.013	0.015	0.015	0.017
3		0.003	0.004	0.004	0.005	0.006	0.006	0.007	0.007	0.008	0.009	0.009	0.009	0.011	0.012	0.013	0.014
4		0.002	0.002	0.004	0.004	0.005	0.005	0.006	0.006	0.006	0.007	0.008	0.009	0.010	0.010	0.010	0.011
5				0.002	0.004	0.004	0.004	0.004	0.005	0.006	0.007	0.007	0.008	0.009	0.009	0.009	0.000
6					0.002	0.002	0.003	0.004	0.005	0.005	0.006	0.006	0.007	0.008	0.008	0.008	0.009
7							0.003	0.004	0.004	0.005	0.006	0.006	0.006	0.007	0.007	0.007	0.008
8							0.002	0.002	0.004	0.004	0.005	0.005	0.006	0.006	0.007	0.007	0.007
9										0.004	0.004	0.005	0.005	0.006	0.006	0.006	0.007
10										0.002	0.004	0.004	0.005	0.005	0.006	0.006	0.006
11											0.003	0.004	0.004	0.005	0.006	0.006	0.006
12											0.002	0.002	0.004	0.005	0.006	0.006	0.006
13													0.004	0.004	0.005	0.005	0.006
14													0.002	0.002	0.002	0.005	0.005
15																0.005	0.005

Radial infeed per pass

UNJ External & Internal

Number of passes	Lower		Cutting Speed								Higher
	Pitch/tpi	32	28	24	20	18	16	14	12	10	8
1		0.006	0.006	0.007	0.007	0.008	0.009	0.009	0.010	0.010	0.011
2		0.006	0.005	0.006	0.006	0.007	0.007	0.008	0.009	0.009	0.011
3		0.004	0.004	0.006	0.005	0.006	0.006	0.006	0.007	0.007	0.008
4		0.002	0.004	0.004	0.004	0.005	0.005	0.005	0.006	0.006	0.006
5			0.002	0.002	0.004	0.004	0.004	0.004	0.005	0.005	0.006
6					0.002	0.002	0.004	0.004	0.004	0.005	0.005
7							0.002	0.004	0.004	0.005	0.005
8								0.002	0.002	0.004	0.005
9										0.004	0.005
10										0.002	0.004
11											0.004
12											0.002

NPT External & Internal

Number of passes	Cutting Speed					
	Pitch/tpi	27	18	14	11.5	8
1		0.008	0.008	0.009	0.009	0.010
2		0.006	0.006	0.007	0.007	0.009
3		0.006	0.006	0.006	0.007	0.008
4		0.005	0.005	0.006	0.006	0.007
5		0.005	0.005	0.005	0.006	0.007
6		0.004	0.004	0.005	0.005	0.007
7		0.004	0.004	0.004	0.005	0.007
8		0.002	0.002	0.004	0.005	0.007
9				0.004	0.004	0.006
10				0.002	0.004	0.006
11					0.004	0.006
12					0.002	0.005
13						0.005
14						0.004
15						0.002

Radial infeed per pass

NPTF External & Internal

Number of passes	Pitch/tpi	Cutting Speed				Higher
		Lower				
		27	18	14	11.5	8
1		0.006	0.008	0.009	0.009	0.009
2		0.006	0.007	0.009	0.009	0.009
3		0.004	0.006	0.006	0.007	0.009
4		0.004	0.005	0.006	0.006	0.007
5		0.003	0.004	0.005	0.005	0.007
6		0.002	0.004	0.004	0.004	0.006
7			0.004	0.004	0.004	0.006
8			0.002	0.004	0.004	0.006
9				0.004	0.004	0.005
10				0.002	0.004	0.005
11					0.004	0.005
12						0.005
13						0.004
14						0.004
15						0.004

ACME External & Internal

CUTTING SPEED									
Number of passes	Lower			Cutting Speed				Higher	
	Pitch/tpi	16	14	12	10	8	6	5	4
1		0.009	0.009	0.010	0.010	0.011	0.013	0.014	0.015
2		0.008	0.007	0.009	0.009	0.010	0.011	0.013	0.014
3		0.007	0.007	0.007	0.008	0.008	0.009	0.010	0.012
4		0.006	0.006	0.006	0.007	0.007	0.008	0.009	0.011
5		0.005	0.005	0.005	0.006	0.006	0.007	0.009	0.010
6		0.002	0.004	0.005	0.005	0.005	0.007	0.008	0.009
7			0.002	0.004	0.004	0.005	0.006	0.007	0.008
8				0.002	0.004	0.005	0.006	0.007	0.008
9					0.002	0.005	0.008	0.007	0.008
10						0.004	0.006	0.006	0.007
11						0.004	0.006	0.006	0.007
12						0.002	0.005	0.006	0.006
13							0.002	0.005	0.006
14								0.002	0.006
15									0.006

Radial infeed per pass

STUB ACME External & Internal

Number of passes	Cutting Speed								Higher
	Pitch/tpi	16	14	12	10	8	6	5	4
1		0.007	0.009	0.009	0.009	0.010	0.012	0.013	0.014
2		0.005	0.006	0.006	0.007	0.007	0.009	0.010	0.011
3		0.004	0.005	0.005	0.006	0.007	0.007	0.008	0.009
4		0.002	0.004	0.004	0.006	0.006	0.007	0.007	0.008
5			0.002	0.004	0.005	0.006	0.006	0.007	0.008
6				0.002	0.004	0.005	0.006	0.006	0.007
7					0.002	0.004	0.006	0.006	0.006
8						0.002	0.005	0.006	0.006
9							0.002	0.005	0.005
10								0.002	0.005
11									0.004
12									0.002

W External & Internal

Number of passes	Cutting Speed																	Higher
	Pitch/tpi	28	26	20	19	18	16	14	12	11	10	9	8	7	6	5	4.5	4
1		0.007	0.007	0.008	0.008	0.008	0.008	0.009	0.010	0.010	0.011	0.011	0.012	0.013	0.014	0.017	0.017	0.018
2		0.006	0.006	0.007	0.007	0.007	0.007	0.008	0.010	0.009	0.010	0.010	0.011	0.013	0.013	0.016	0.016	0.017
3		0.004	0.005	0.006	0.006	0.006	0.006	0.007	0.008	0.008	0.008	0.008	0.009	0.010	0.011	0.014	0.014	0.014
4		0.004	0.004	0.005	0.005	0.005	0.005	0.006	0.006	0.007	0.007	0.007	0.007	0.009	0.009	0.011	0.012	0.013
5		0.002	0.002	0.004	0.005	0.005	0.004	0.005	0.006	0.006	0.006	0.006	0.007	0.008	0.008	0.010	0.010	0.012
6				0.002	0.002	0.002	0.004	0.005	0.006	0.006	0.006	0.006	0.006	0.007	0.008	0.009	0.009	0.011
7							0.004	0.043	0.005	0.005	0.005	0.006	0.006	0.007	0.007	0.009	0.009	0.011
8							0.002	0.002	0.002	0.005	0.005	0.005	0.006	0.006	0.007	0.008	0.009	0.010
9										0.002	0.005	0.005	0.005	0.006	0.006	0.007	0.008	0.009
10											0.002	0.005	0.005	0.006	0.006	0.007	0.007	0.009
11												0.002	0.005	0.005	0.006	0.007	0.007	0.008
12													0.002	0.002	0.005	0.006	0.006	0.007
13															0.005	0.005	0.006	0.007
14																0.002	0.002	0.006
15																		0.005

Radial infeed per pass

BSPT External & Internal

Number of passes	Pitch/tpi	Cutting Speed			
		Lower			Higher
		28	19	14	11
1		0.007	0.009	0.009	0.010
2		0.006	0.007	0.008	0.009
3		0.004	0.006	0.007	0.008
4		0.004	0.005	0.006	0.007
5		0.002	0.005	0.005	0.006
6			0.002	0.005	0.006
7				0.004	0.005
8				0.002	0.005
9					0.002

TRAPEZ External & Internal

Number of passes	Lower		Cutting Speed						Higher
	Pitch/tpi	16	1.5	2	3	4	5	6	7
1		0.009	0.009	0.009	0.010	0.014	0.014	0.015	0.016
2		0.008	0.007	0.008	0.009	0.013	0.013	0.014	0.014
3		0.007	0.007	0.006	0.007	0.010	0.010	0.012	0.013
4		0.006	0.006	0.005	0.006	0.009	0.009	0.011	0.012
5		0.005	0.005	0.004	0.005	0.009	0.009	0.010	0.011
6		0.002	0.004	0.002	0.005	0.008	0.008	0.010	0.011
7			0.002		0.004	0.007	0.007	0.009	0.011
8					0.002	0.007	0.007	0.008	0.010
9						0.007	0.007	0.008	0.009
10						0.006	0.006	0.007	0.009
11						0.005	0.006	0.007	0.009
12						0.005	0.005	0.006	0.008
13						0.002	0.005	0.006	0.008
14							0.002	0.006	0.007
15								0.006	0.007
16								0.002	0.002

Number of Passes and Depth of Cut per Pass for Multi+ Inserts



Standard	Insert Type	Insert Size		Pitch	Teeth	Ordering Code	Passes	Depth of cut per pass			
		IC	L inch					RH		1	2
ISO External	M+	3/8"	0.63	1.0	mm	3	3ER1.0ISO3M+...	2	0.013	0.012	
				1.5	mm	2	3ER1.5ISO2M+...	3	0.013	0.012	0.011
				2.0	mm	2	3ER2.0ISO2M+...	3	0.018	0.016	0.015
		1/2"	0.87	1.5	mm	3	4ER1.5ISO3M+...	2	0.019	0.018	
				2.0	mm	2	4ER2.0ISO2M+...	3	0.018	0.016	0.015
				2.0	mm	3	4ER2.0ISO3M+...	2	0.025	0.023	
		2.5	mm	2	4ER2.5ISO2M+...	4	0.018	0.017	0.015	0.014	
	5/8"	1.06	3.0	mm	2	5ER3.0ISO2M+...	4	0.021	0.019	0.018	0.015
	T+	1/2" T	0.87	1.5	mm	8	4ER1.5ISO8T+...	1	0.037		
				2.0	mm	8	4ER2.0ISO8T+...	1	0.048		
ISO Internal	M+	3/8"	0.63	1.0	mm	3	3IR1.0ISO3M+...	2	0.012	0.011	
				1.5	mm	2	3IR1.5ISO2M+...	3	0.012	0.011	0.011
				2.0	mm	2	3IR2.0ISO2M+...	3	0.017	0.015	0.014
		1/2"	0.87	1.5	mm	3	4IR1.5ISO3M+...	2	0.018	0.016	
				2.0	mm	2	4IR2.0ISO2M+...	3	0.017	0.015	0.014
				2.0	mm	3	4IR2.0ISO3M+...	2	0.023	0.022	
	5/8"	1.06	3.0	mm	2	5IR3.0ISO2M+...	4	0.019	0.018	0.017	0.015
	T+	1/2"	0.87	1.5	mm	8	4IR1.5ISO8T+...	1	0.034		
				2.0	mm	8	4IR2.0ISO8T+...	1	0.045		
	UN External	M+	3/8"	0.63	20	tpi	3	3ER20UN3M+...	2	0.016	0.015
18					tpi	2	3ER18UN2M+...	3	0.013	0.011	0.011
18					tpi	3	3ER18UN3M+...	2	0.018	0.017	
16					tpi	2	3ER16UN2M+...	3	0.014	0.013	0.012
14					tpi	2	3ER14UN2M+...	3	0.017	0.015	0.015
12					tpi	2	3ER12UN2M+...	3	0.019	0.017	0.016
1/2"			0.87	16	tpi	3	4ER16UN3M+...	2	0.020	0.019	
				14	tpi	2	4ER14UN2M+...	3	0.017	0.015	0.015
				12	tpi	2	4ER12UN2M+...	3	0.019	0.017	0.016
				12	tpi	3	4ER12UN3M+...	2	0.026	0.025	
11	tpi	2	4ER11UN2M+...	4	0.017	0.015	0.014	0.013			
10	tpi	2	4ER10UN2M+...	4	0.018	0.017	0.016	0.014			
5/8"	1.06	8	tpi	2	5ER8UN2M+...	4	0.022	0.02	0.019	0.016	
UN Internal	M+	3/8"	0.63	12	tpi	2	3IR12UN2M+...	3	0.018	0.015	0.015
				14	tpi	2	3IR14UN2M+...	3	0.016	0.014	0.013
				16	tpi	2	3IR16UN2M+...	3	0.013	0.012	0.011
		1/2"	0.87	16	tpi	3	4IR16UN3M+...	2	0.019	0.017	
				14	tpi	2	4IR14UN2M+...	3	0.016	0.014	0.013
				12	tpi	2	4IR12UN2M+...	3	0.018	0.015	0.015
		12	tpi	3	4IR12UN3M+...	2	0.025	0.023			
		5/8"	1.06	8	tpi	2	5IR8UN2M+...	4	0.020	0.019	0.017
BSW External	M+	3/8"	0.63	28	tpi	2	3ER28W2M+...	3	0.009	0.008	0.008
				19	tpi	2	3ER19W2M+...	3	0.013	0.011	0.011
				19	tpi	3	3ER19W3M+...	2	0.018	0.016	
				14	tpi	2	3ER14W2M+...	3	0.017	0.015	0.014
		1/2"	0.87	14	tpi	3	4ER14W3M+...	2	0.024	0.022	
				11	tpi	2	4ER11W2M+...	4	0.017	0.015	0.014

Number of Passes and Depth of Cut per Pass for Multi+ Inserts



Standard	Insert Type	Insert Size		Pitch	Teeth	Ordering Code	Passes	Depth of cut per pass			
		IC	L inch					1	2	3	4
BSW Internal	M+	3/8"	0.63	14	tpi	2	3IR14W2M+...	3	0.017	0.015	0.014
		1/2"	0.87	11	tpi	2	4IR11W2M+...	4	0.017	0.015	0.014 0.012
NPT External	M+	3/8"	0.63	14	tpi	2	3ER14NPT2M+...	3	0.020	0.018	0.017
		1/2"	0.87	11.5	tpi	2	4ER11.5NPT2M+...	4	0.018	0.017	0.017 0.016
		5/8"	1.06	11.5	tpi	3	5ER11.5NPT3M+...	4	0.019	0.017	0.017 0.015
	Z+	1/2"	0.87	8	tpi	2	5ER8NPT2M+...	4	0.028	0.025	0.024 0.021
				11.5	tpi	2	4ER11.5NPT2Z+...	4	0.018	0.017	0.017 0.016
				8	tpi	2	4ER8NPT2Z+...	4	0.028	0.025	0.024 0.021
NPT Internal	M+	3/8"	0.63	14	tpi	2	3IR14NPT2M+...	3	0.020	0.018	0.017
		1/2"	0.87	11.5	tpi	2	4IR11.5NPT2M+...	4	0.018	0.017	0.017 0.016
		5/8"	1.06	11.5	tpi	2	5IR11.5NPT3M+...	4	0.019	0.017	0.017 0.015
	Z+	1/2"	0.87	8	tpi	2	5IR8NPT2M+...	4	0.028	0.025	0.024 0.021
				11.5	tpi	3	4IR11.5NPT2Z+...	4	0.018	0.017	0.017 0.016
				8	tpi	2	4IR8NPT2Z+...	4	0.028	0.025	0.024 0.021
NPTF External	M+	3/8"	0.63	14	tpi	2	3ER14NPTF2M+...	3	0.020	0.017	0.017
NPTF Internal	M+	3/8"	0.63	14	tpi	2	3IR14NPTF2M+...	3	0.020	0.017	0.017
API BUT External	M+	5/8"	1.06	5	tpi	2	5ER5BUT752M+...	4	0.018	0.016	0.015 0.013
	T+	1/2"	0.87	5	tpi	3	4ER5BUT753T+...	3	0.022	0.02	0.020
API BUT Internal	M+	5/8"	1.06	5	tpi	2	5IR5BUT752M+...	4	0.018	0.016	0.015 0.013
	T+	1/2"	0.87	5	tpi	3	4IR5BUT753T+...	3	0.022	0.020	0.020
API RD External	M+	5/8"	1.06	10	tpi	3	5ER10APIRD3M+...	2	0.029	0.027	
				8	tpi	2	5ER8APIRD2M+...	3	0.026	0.024	0.023
	T+	1/2"	0.87	10	tpi	6	4ER10APIRD6T+...	2	0.028	0.028	
				8	tpi	3	4ER8APIRD3T+...	2	0.037	0.035	
				8	tpi	5	4ER8APIRD5T+...	2	0.037	0.035	
				10	tpi	2	4IR10APIRD2M+...	3	0.020	0.018	0.018
API RD Internal	M+	1/2"	0.87	8	tpi	2	4IR8APIRD2M+...	3	0.026	0.024	0.023
				10	tpi	3	5IR10APIRD3M+...	3	0.019	0.019	0.019
		5/8"	1.06	8	tpi	2	5IR8APIRD2M+...	3	0.026	0.024	0.023
				10	tpi	2	5IR10APIRD3M+...	3	0.019	0.019	0.019
	Z+	1/2"	0.87	8	tpi	2	4IR8APIRD2Z+...	3	0.026	0.024	0.023
				10	tpi	6	4IR10APIRD6T+...	2	0.028	0.028	
				8	tpi	3	4IR8APIRD3T+...	2	0.037	0.035	
				8	tpi	5	4IR8APIRD5T+...	2	0.037	0.035	



M+ Style insert

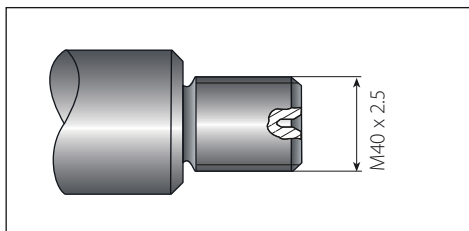


T+ Style insert



Z+ Style insert

Step by Step Thread Turning - Example 1

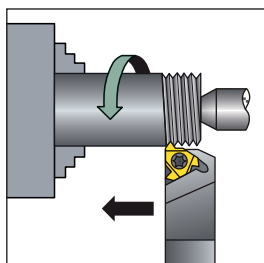


Application:

Thread: External Right Hand
1 1/2 x 10UN

Material: 4140 (25 HRC)

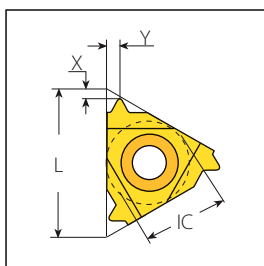
U Choose the Thread Turning Method



Feed direction towards the chuck was chosen.

Therefore, an external right hand insert and an external right hand holder will be used.

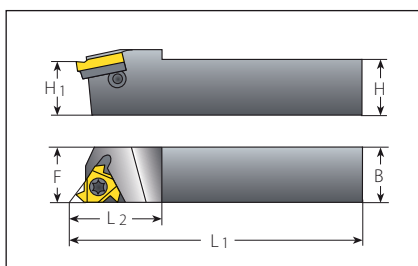
V Choose the Insert Size



Chosen insert: 3ER10UN...

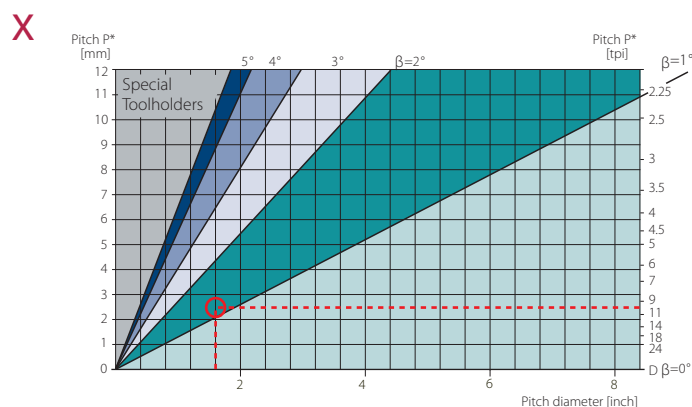
Insert Size		Pitch	Ordering Code	Anvil	Toolholder
IC	L inch	tpi	RH	RH	
3/8"	0.63	10	3ER10UN...	YE3	AL..-3(LH)

W Choose the Toolholder



Chosen toolholder: AL 100-3

Insert Size		Ordering Code	Dimensions inch		
IC	RH	H=H1=B	F	L1	L2
3/8"	AL 100-3	1.00	1.00	6.05	1.20



From the table, using a pitch of 10 tpi and a workpiece diameter of 1 1/2", we find the helix angle to be 1.5°.

Y Choose the Correct Anvil

Anvil chosen: YE3

Resultant Helix Angle

3.5

2.5

1.5

0.5

Insert Size	Ordering Code	Holder	Ordering Code		
IC	L inch				
3/8"	0.63	ER/IL	YE3-2P	YE3-1P	YE3 YE3-1N

U Choose the carbide grade and cutting speed

Carbide Grade chosen: VTX

Cutting Speed: 420 ft/min

Material:	Hardness Brinell HB	VTX	VCB
P Low alloy steel (alloying elements ≤ 5%)	Non hardened	279-476	328-590
	Hardened	246-459	246-459
	Hardened	230-443	230-443

V Determine the Number of Passes

Numbers of passes: 10

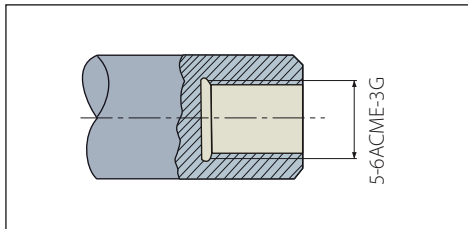
UN External

Pitch	mm	1.50	1.75	2.00	2.50	3.00	3.50	4.00
	tpi	16	14	12	10	8	7	6
No. of passes		6-10	7-12	7-12	8-14	9-16	10-18	11-18

Summary

Thread Type	1½x10UN External Right Hand
U Feed Direction:	Towards the chuck
V Insert and Grade:	3ER10UN VTX
W Toolholder:	AL 100 - 3
X Helix Angle:	1.5°
y Anvil:	YE3
U Cutting Speed:	420 ft/min
V Number of Passes:	10

Step by Step Thread Turning - Example 2



Application:

Thread: Internal Right Hand

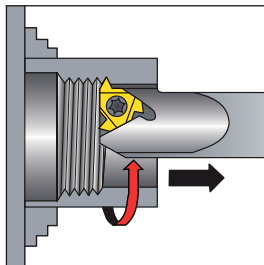
ACME

Pitch: 6 tpi

Bore dia: 5"

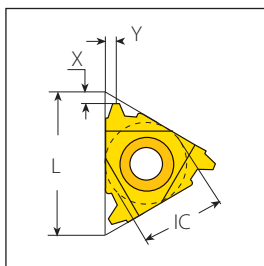
Material: Stainless Steel Austemetic

U Choose the Thread Turning Method



To facilitate the removal of chips from the machined area, we chose a feed direction away from the chuck. Therefore, an internal left hand insert and an internal left hand toolholder are to be used.

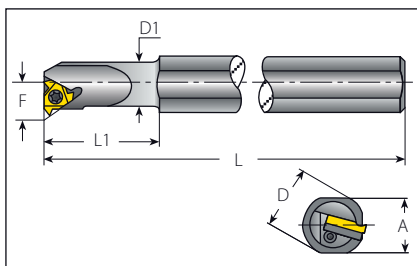
V Choose the Insert size



Chosen insert: 4IL6ACME

Insert Size		Pitch	Ordering Code	Anvil	Toolholder
IC	L inch	tpi	LH	LH	
1/2"	0.87	6	4IL6ACME...	YE4	AVR..-4(LH)

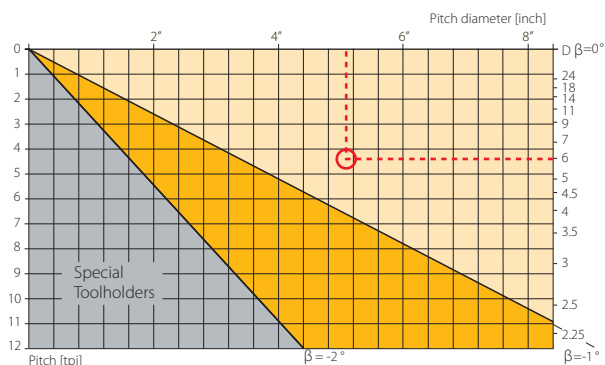
W Choose the Toolholder



Chosen toolholder: AVR 150-4LH

Insert Size	Ordering Code	Dimensions inch						Min Bore
IC	LH	A	L	L1	D	D1	F	inch
1/2"	AVR 150-4 LH	1.34	12.00	2.50	1.50	1.50	0.98	1.75

X Determine the Helix Angle



In this case, a right hand thread is being turned with a left hand toolholder. The reverse helix method is used. From the lower part of the table, using a pitch of 6 tpi and a bore diameter of 5", we obtain a helix angle of **-0.65°**.

y Choose the Correct Anvil

Anvil chosen: YE4-2N

Resultant Helix Angle			1.5	0.5	0	-0.5	-1.5
Insert Size		Ordering Code					
IC	L inch						
1/2"	0.87	ER/IL	YE4	YE4-1N	YE4-1.5N	YE4-2N	YE4-3N

U Choose the carbide grade and cutting speed

Carbide grade chosen: VTX

Cutting speed: 420 ft/min

	Material:		Hardness Brinell HB	VTX	VCB
M	Stainless steel Austenitic	Austenitic	180	295-459	266-394
		Super austenitic	200	131-361	98-328

V Determine The Number Of Passes

Numbers of passes: 18

ACME External & Internal

Pitch	mm	3.00	3.50	4.00	4.50	5.00	5.50	6.00
	tpi	8	7	6	5.5	5	4.5	4
No. of passes		9-16	10-18	11-18	11-19	12-20	12-20	12-20

Summary

Thread Type	5"x6 ACME Internal Right Hand
U Feed Direction:	Away from the chuck
V Insert and Grade:	4IL6ACME VTX
W Toolholder:	AVR 150-4LH
X Helix Angle:	-0.65°
y Anvil:	YE4-2N
U Cutting Speed:	420 ft/min
V Number of Passes:	18

Material Comparison Table

Material Group	VardeX No.	USA AISI/SAE	Germany W.-Nr.	Germany DIN	Great Britain BS	France AFNOR	Italy UNI
P Steel	1	1015	1.0037	St37-2	Fe360B	E24-2	Fe360 B FU
	1	1020	1.0044	St44-2	Fe430B FN	E28-2	Fe430B FN
	2	ASTM A570Gr.50	1.0050	St50-2	Fe490-2 FN	A50-2	Fe490
	2	—	1.0070	St70-2	Fe690-2 FN	A70-2	Fe690
	1	1015	1.0401	C15	080M15	CC12	C15C16
	1	1020	1.0402	C22	050A20	CC20	C20C21
	2	1035	1.0501	C35	060A35	CC35	C35
	2	1045	1.0503	C45	080M46	CC45	C45
	2	1055	1.0535	C55	070M55	—	C55
	2	1060	1.0601	C60	080A62	CC55	C60
	1	1213	1.0715	95Mn28	230M07	S250	CF95Mn28
	1	12L13	1.0718	95MnPb28	—	S250Pb	CF95MnPb28
	1	—	1.0722	105Pb20	—	10PbF2	CF10SPb20
	2	1140	1.0726	35S20	212M36	35MF4	—
	2	1215	1.0736	95Mn36	240M07	S300	CF95Mn36
	2	12L14	1.0737	95MnPb36	—	S300Pb	CF95MnPb36
	2	9255	1.0904	55Si7	250A53	55S7	55Si8
	2	9262	1.0961	60SiCr7	—	60SC7	60SiCr8
	1	1015	1.1141	Ck15	080M15	XC1 2	C16
	2	1039	1.1157	40Mn4	150M36	35M5	—
	2	1025	1.1158	Ck25	—	—	—
	2	1335	1.1167	36Mn5	—	40M5	—
	2	1330	1.1170	28Mn6	150M28	20M5	C28Mn
	2	1035	1.1183	Cf35	060A35	XC38TS	C36
	2	1045	1.1191	Ck45	080M46	XC42	C45
	2	1055	1.1203	Ck55	070M55	XC55	C50
	3	1050	1.1213	Cf53	060A52	XC48TS	C53
	3	1060	1.1221	Ck60	080A62	XC60	C60
	8	1095	1.1274	Ck101	060A96	—	—
	9	—	1.3401	X120Mn12	Z120M12	Z120M12	XG120Mn12
	8	52100	1.3505	100Cr6	534A99	100C6	100Cr6
	8	ASTM A20Gr.A	1.5415	15Mo3	1501-240	15D3	16Mo3KW
	8	4520	1.5423	16Mo5	1503-245-420	—	16Mo5
	4	ASTMA350LF5	1.5622	14Ni6	—	16N6	14Ni6
	8	ASTM A353	1.5662	X8Ni9	1501-509; 510	—	X10Ni9
	8	2515	1.5680	12Ni19	—	Z18N5	—
	5	3135	1.5710	36NiCr6	640A35	35NC6	—
	5	3415	1.5732	14NiCr10	—	14NC11	16NiCr11
	5	3415; 3310	1.5752	14NiCr14	655M13; 655M12	12NC15	—
	5	9840	1.6511	36CrNiMo4	816M40	40NCD3	38NiCrMo4(KB)
	5	8620	1.6523	21NiCrMo2	805M20	20NCD2	20NiCrMo2
	5	8740	1.6546	40NiCrMo22	311-Type7	—	40NiCrMo2(KB)
	5	4340	1.6582	34CrNiMo6	817M40	35NCD6	35NiCrMo6(KB)
	5	—	1.6587	17CrNiMo6	820A16	18NCD6	—
	5	—	1.6657	14NiCrMo134	832M13	—	15NiCrMo13
	2	5015	1.7015	15Cr3	523M15	12C3	—
	5	5132	1.7033	34Cr4	530A32	32C4	34Cr4(KB)
	5	5140	1.7035	41Cr4	530M40	42C4	41Cr4
	5	5140	1.7045	42Cr4	—	—	—
	5	5115	1.7131	16MnCr5	(527M20)	16MC5	16MnCr5
	5	5155	1.7176	55Cr3	527A60	55C3	—
	5	4130	1.7218	25CrMo4	1717CDS110	25CD4	25CrMo4(KB)
	5	4137; 4135	1.7220	34CrMo4	708A37	35CD4	35CrMo4
	5	4140; 4142	1.7223	41CrMo4	708M40	42CD4TS	41CrMo4
	5	4140	1.7225	42CrMo4	708M40	42CD4	42CrMo4
	5	—	1.7262	15CrMo5	—	12CD4	—
	5	ASTM A182; F11; F12	1.7335	13CrMo4 4	1501-620Gr.27	15CD3.5; 15CD4.5	14CrMo4 5
	5	—	1.7361	32CrMo12	722M24	30CD12	32CrMo12
	5	ASTM A182; F22	1.7380	10CrMo9 10	1501-622; Gr.31; 45	12CD9; 10	12CrMo9, 10
	5	—	1.7715	14MoV6 3	1503-660-440	—	—
	5	6150	1.8159	50CrV4	735A50	50CV4	50CrV4
	8	—	1.8509	41CrAlMo7	905M39	40CAD6, 12	41CrAlMo7
	8	—	1.8523	39CrMoV13 9	897M39	—	36CrMoV12
	5	W.110	1.1545	C105W1	—	Y1105	C98KU; C100KU
	5	W.112	1.1663	C125W	—	Y2120	C120KU
	8	L3	1.2067	100Cr6	BL3	Y100C6	—
	10	D3	1.2080	X210Cr12	BD3	Z200Cr12	X210Cr13KU
	10	—	—	—	—	—	X250Cr12KU
	10	—	1.2311	40CrMnMo7	—	—	35CrMo8KU
	10	—	1.2312	40CrMnMoS8-6	—	—	—
	10	H11	1.2343	X38CrMoV5-1	BH11	Z38CDV5	X37CrMoV51 1KU
	10	H13	1.2344	X40CrMoV5-1	BH13	Z40CDV5	X35CrMoV05KU
	10	—	—	—	—	—	X40CrMoV511KU
	10	A2	1.2363	X100CrMoV5-1	BA2	Z1 00CDV5	X100CrMoV51KU
	10	—	1.2367	X38CrMoV5-3	—	Z38CDV5-3	—
	10	D2	1.2379	X155CrVMo 12-1	BD2	Z160CDV12	X155CrVMo12 1 KU
	10	—	1.2419	105WC6	—	105WC13	10WC6; 107WC5KU
	10	—	1.2436	X210CrW12	—	—	X215CrW121KU
	10	S1	1.2542	45WCrV17	BS1	—	45WCrV8KU
	10	H21	1.2581	X30WCrV9 3	BH21	Z30WCv9	X30WCrV9 3KU
	10	—	1.2601	X165CrMoV12	—	—	X165CrMoV12KU
	10	L6	1.2713	55NiCrMoV6	—	55NCDV7	—
	10	—	1.2738	40CrMnNiMo8-6-4	—	—	—
	10	W210	1.2833	100V1	BW2	Y1105V; 100V2	—
	10	—	1.3243	S 6-5-2-5	—	Z85WDCV-06-05-04-02	HS 6-5-2-5
	10	T4	1.3255	S 18-1-2-5	BT4	Z80WKCV-18-05-04-01	X78WCo1805KU
	10	M2	1.3343	S 6-5-2	BM2	Z85WDCV-06-05-04-02	X82WCo0605KU
	10	M7	1.3348	S 2-9-2	—	Z100WCvV-09-04-02-02	HS 2-9-2
	10	T1	1.3355	S 18-0-1	BT1	Z80WCv-18-04-01	X75W18KU

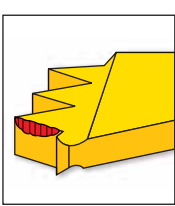
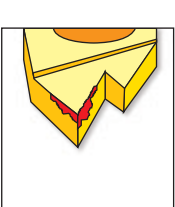
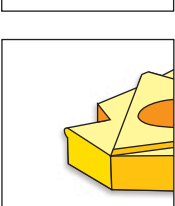
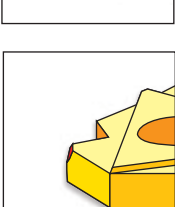
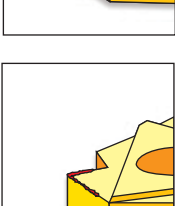
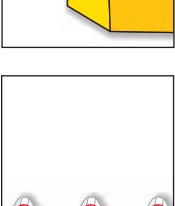
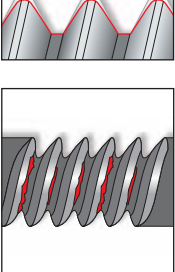
Sweden SS	Japan JIS	Russia GOST	Spain UNE	Varde No.	P
1311	STKM 12A;C	–	Fe360B	1	
1412	SM400A;B;C	St4ps;sp	Fe430B FN	1	
1550	SS490	St5ps;sp	A490-2	2	
–	–	–	A690-2	2	
1350	–	–	F.111	1	
1450	–	20	1 C 22 ; F.112	1	
1550	–	30	F. 113	2	
1650	–	45	F.114	2	
1655	–	55	F.115	2	
–	–	60(G)	–	2	
1912	SUM22	–	F.2111-11SMn28	1	
1914	SUM22L	–	F.2112-11SMnPb28	1	
–	–	–	F.2122-10SPb20	1	
1957	–	–	F.210.G	2	
–	–	–	F.2113-12SMn35	2	
1926	–	–	F.2114-12SMnPb35	2	
2085	–	55S2	F.1440-56Si7	2	
–	–	–	F.1442-60SiCr8	2	
1370	S15C	15	F.1110-C15k ; F.1511-C16k	1	
–	–	40G	–	2	
–	S25C	25	F.1120-C25k	2	
2120	SMn438(H)	35G2 ; 35GL	F.1203-36Mn6 ; F.8212-36Mn5	2	
–	SCM1	30G	28Mn6	2	
1572	S35C	35	–	2	
1672	S45C	45	F.1140-C45k ; F.1142-C48k	2	
–	S55C	55	F.1150-C55k	2	
1674	S50C	50	–	3	
1678	S58C	60 ; 60G ; 60GA	–	3	
1870	SUP4	–	–	8	
–	SCMnH/1	110G13L	F.8251-AM-X120Mn12	9	
2258	SUJ2	SchCh15	F.1310-100Cr6	8	
2912	–	–	F.2601-16Mo3	8	
–	–	–	F.2602-16Mo5	8	
–	–	–	F.2641-15Ni6	4	
–	–	–	F.2645-X8Ni09	8	
–	–	–	–	8	
–	SNC236	–	–	5	
–	SNC415(H)	–	F.1540-15NiCr11	5	
–	SNC81 5(H)	–	–	5	
–	–	40ChN2MA ; 40ChGNM	F.1280-35NiCrMo4	5	
2506	SNCM220(H)	20ChGNM	F.1552-20NiCrMo2 ; F.1534-20NiMo31	5	
–	SNCM240	38ChGNM	F.1204-40NiCrMo2 ; F.1205-40NiCrMo2DF	5	
2541	–	38Ch2N2MA	F.1272-40NiCrMo7 ; 34CrNiMo6	5	
–	–	–	F.1560-14NiCrMo13	5	
–	–	–	F.1560-14NiCrMo13 ; F.1569-14NiCrMo131	5	
–	SCr415(H)	15Ch	–	2	
–	SCr430(H)	35Ch	F.8221-35Cr4	5	
–	SCr440(H)	40Ch	F.1211-41Cr4DF ; F.1202-42Cr4	5	
2245	SCr440	40Ch	F.1202-42Cr4	5	
2511	–	18ChG	F.1516-16MnCr5 ; F.1517-16MnCr5	5	
–	SUP9(A)	50ChGA	F.1431-55Cr3	5	
2225	SCM420	20ChM ; 30ChM	F.8372-AM26CrMo4;F.8330-AM25CrMo4;F.1256-30CrMo4-1	5	
2234	SCM432; SCCRM3	AS38ChGM;35ChM;35ChML	F.8331-AM34CrMo4;F.823134CrMo4;F.1250-35CrMo4;F.1254-35CrMo4DF	5	
2244	SCM440	40ChFA	F.8332-AM42CrMo4;F.8232-42CrMo4;F.1252-40CrMo4	5	
2244	SCM440(H)	–	F.8332-AM42CrMo4;F.8232-42CrMo4;F.1252-40CrMo4	5	
2216	SCM415(H)	–	F.1551-12CrMo4	5	
–	–	12ChM ; 15ChM	F.2631-14CrMo45	5	
2240	–	–	F.124.A	5	
2218	–	12Ch8	TU.H	5	
–	–	–	F.2621-13MoCrV6	5	
2230	SUP10	50ChGFA ; 50ChFA	F.1430-51CrV4	5	
2940	–	38ChMJua	F.1740-41CrAlMo7	8	
–	–	–	–	8	
1880	–	U10A-1;2	F.516	5	
–	SK2	U13	F.5123 ; C120	5	
–	–	Ch	F.5230 ; 100Cr6	8	
–	SKD1	Ch12	F.5212 ; X210 Cr12	10	
–	–	–	–	10	
–	–	–	–	10	
–	–	–	–	10	
–	SKD6	4ChMFS	F.5317 ; X37 CrMoV5	10	
2242	SKD61	4ChMF1S	F.5318 ; X40CrMoC5	10	
–	–	–	–	10	
2260	SKD12	–	F.5227 ; X100CrMoV5	10	
–	–	–	–	10	
2310	SKD11	–	F.520A	10	
2140	SKS31;SKS2,SKS3	ChWG	F.5233 ; 105WCr5	10	
2312	SKD2	–	F.5213 ; X210CrW12	10	
2710	–	5ChW2SF	F.5241 ; 45WCrSi8	10	
–	SKD5	3Ch2W8F	F.5323 ; X30WCrV9	10	
2310	–	–	F.5211 ; X160CrMoV12	10	
–	SKT4	5ChNM	F.520S	10	
–	–	–	–	10	
–	SKS43	–	–	10	
2723	SKH55	2723	R6M5K5	10	
–	SKH3	–	F.5530 ; 18-1-1-5	10	
2722	SKH9	(R6AM5) ; R6M5	F.5603 ; 6-5-2	10	
2782	–	–	F.5607 ; 18-0-1	10	
–	SKH2	R18	F.5520 ; 18-0-1	10	

Material Comparison Table (con't)

Material Group	VarDEX No.	USA AISI/SAE	Germany W.-Nr.	Germany DIN	Great Britain BS	France AFNOR	Italy UNI
M Stainless Steel	12	403	1.4000	X6Cr13	403S17	Z6C13	X6Cr13
	12	—	1.4001	X7Cr14	—	—	—
	12	410	1.4006	X10Cr13	410S21	Z10C14	X12Cr13
	12	430	1.4016	X6Cr17	430S15	Z8C17	X8Cr17
	12	—	1.4027	G-X20Cr14	420C29	Z20C13M	—
	12	—	1.4034	X46Cr13	420S45	Z40CM;Z38C13M	X40Cr14
	12	431	1.4057	X20CrNi172	431S29	Z15CNi6.02	X16CrNi16
	12	430	1.4104	X12CrMoS17	—	Z10CF17	X10CrS17
	12	434	1.4113	X6CrMo171	434S17	Z8CD17.01	X8CrMo17
	12	—	1.4313	X5CrNi134	425C11	Z4CND13.4M	—
	12	—	1.4408	G-X6CrNiMo18 10	316C16	—	—
	12	HW3	1.4718	X45CrSi93	401S45	Z45CS 9	X45CrSi8
	12	405	1.4724	X10CrAl13	403S17	Z10C13	X101CrAl12
	11	—	1.4742	X10CrAl18	430S15	Z12CA518	X8Cr17
	12	HNv6	1.4747	X80CrNiSi20	443S65	Z80CSN20.02	X80CrSiNi20
	11	446	1.4762	X10CrAl24	—	Z10CA524	X16Cr26
	13	304	1.4301	X5CrNi18 10	304S15	Z6CN18.09	X5CrNi1810
	13	303	1.4305	X10CrNiS18 9	303S21	Z10CNF 18.09	X10CrNiS 18.09
	13	304L	1.4306	X2CrNi19 11	304S12;304C12	Z2CN18.10;Z3CN 19.10	X10CrNi18.11
	13	CF8	1.4308	G-X6CrNi18 9	304C15	Z6CN18.10M	—
	13	301	1.4310	X12CrNi177	301S21	Z12CN 17.07	X1 2CrNi1 707
	13	304LN	1.4311	X2CrNi18 10	304S62	Z2CN18.10	—
	13	316	1.4401	X5CrNiMo17122	316S16	Z6CND17.11	X5CrNiMo17 12
	13	316LN	1.4429	X2CrNiMoNi17133	—	Z2CND17.13	—
	13	316L	1.4435	X2CrNiMo18143	316S12	Z2CND17.13	X2CrNiMo17 13
	13	317L	1.4438	X2CrNiMo17133	317S12	Z2CND19.15	X2CrNiMo18 16
	13	329	1.4460	X8CrNiMo275	—	—	—
	12	321	1.4541	X6CrNiTi18 10	2337	Z6CNT18.10	X6CrNiTi18 11
	12	347	1.4550	X6CrNiNb18 10	347S17	Z6CNNb18.10	X6CrNiNb18 11
	12	316Ti	1.4571	X6CrNiMoTi17122	320S17	Z6NDT1 7.12	X6CrNiMoTi17 12
	12	—	1.4581	G-X5CrNiMoNb18 10	318C17	Z4CNDNb18 12M	XG8CrNiMo18 11
	12	318	1.4583	X10CrNiMoNb18 12	—	Z6CNDNb17 13B	X6CrNiMoNb17 13
	13	309	1.4828	X15CrNiSi20 12	309S24	Z15CNS20.12	—
	13	310S	1.4845	X12CrNi25 21	310S24	Z12CN25 20	X6CrNi25 20
	13	330	1.4864	X12NiCr36 16	—	Z12NCS35.16	—
	13	—	1.4865	G-X40NiCrSi38 18	330C11	—	XG50NiCr39 19
	13	EV8	1.4871	X53CrMnNiN2 19	349S54;321S12	Z52CMN21.09	X53CrMnNiN219
	13	321	1.4878	X12CrNiTi18 9	321S320	Z6CNT18.12B	X6CrNiTi1811
K Cast Iron	30	No 20 B	0.6010	GG10	—	Ft 10 D	—
	30	No 25 B	0.6015	GG15	Grade 150	Ft 15 D	—
	30	No 30 B	0.6020	GG20	Grade 220	Ft 20 D	—
	29	No 35 B; No 40 B	0.6025	GG25	Grade 260	Ft 25 D	—
	29	No 45 B	0.6030	GG30	Grade 300	R 30 D	—
	29	No 50 B	0.6035	GG35	Grade 350	Ft 35 D	—
	29	No 55 B	0.6040	GG40	Grade 400	Ft 40 D	—
	29	ASTM	—	DIN4694	3468; 1974	—	—
	29	A436-72	—	GGL	—	A32-301	—
	29	Type 2	—	NiCr20 2	L-NiCr 20 2	L-NC 20 2	—
	30	60-40-18	0.7040	GGG 40	SNG 420/12	FCS 400-12	GS 370-17
	30	—	0.7043	GGG 40.3	SNG 370/17	FGS 370-17	—
	30	—	0.7033	GGG 35.3	—	—	—
	31	80-55-06	0.7050	GGG 50	SNG 500/7	FGS 500-7	GS 500
	31	—	0.7060	GGG 60	SNG 600/3	FGS 600-3	—
	31	100-70-03	0.7070	GGG70	SNG 700/2	FGS 700-2	GS 700-2
	31	—	—	DIN 1694	—	L-NM 13 7	—
	31	Type 2	—	GGG NiMn 13 7	L-NiMn 13 7	L-NC 20 2	—
	31	—	—	GGG NiCr 20 2	L-NC 20 2	—	—
	28	32510	0.8135	GTS-35	B 340/12	MN 35-10	—
N(K) Non-Ferrous Metals	29	40010	0.8145	GTS-45	P 440/7	—	—
	29	50005	0.8155	GTS-55	P 510/4	MP50-5	—
	29	70003	0.8165	GTS-65	P 570/3	MP 60-3	—
	29	80002	0.8170	GTS-70	P690/2	MP 70-2	—
	36	—	—	G-AlSi12	LM20	—	—
	36	—	—	GD-AlSi12	—	—	—
S(M) Heat Resistant Material	36	—	—	GD-AlSi8Cu3	LM24	—	—
	36	—	—	G-AlSi10Mg	LM9	—	—
	36	—	—	G-AlSi12	LM6	—	—
	19	330	1.4864	X12NiCrSi	—	Z12NCS35.16	—
	19	—	1.4865	G-X40NiCrSi	330C11	—	XG50NiCr
	19	5390 A	2.4603	—	—	NC22FeD	—
	19	—	2.4630	NiCr20Ti	HR5, 203-4	NC20T	—
	19	5666	2.4856	NiCr22Mo9N	—	NC22FeDNB	—
	19	5537 C	LW2.496	CoCr20W15	—	KC20WN	—
	19	4676	2.4375	NiCu30Al	3072-76	—	—
	19	—	2.4631	NiCr20TiAk	HR40,601	NC20TA	—
	19	AMS 5399	2.4973	NiCr19Co11	—	NC19KDT	—
	21	5391	LW2.467	S-NiCr13Al6	3146-3	NC12AD	—
	21	5660	LW2.466	NiCr19Fe19	HR8	NC19FeNb	—
	21	5383	LW2.466	NiCr19Fe19	—	NC20K14	—
	21	—	—	CoCr22W14	—	KC22WN	—
	21	—	LW2.467	NiCo15Cr10	—	—	—
	23	—	—	TiAl14Mo4Sn4Si0.5	—	—	—
	23	—	—	TiAl5Sn2.5	TA14/17	T-A5E	—
	23	—	—	TiAl6V4	TA10-13/TA2	T-A6V	—
	23	—	—	TiAl6V4ELI	TA11	—	—

Sweden SS	Japan JIS	Russia GOST	Spain UNE	Vardex No.	
2301	SUS403	08Ch13	F.3110-X6Cr13 ; F.8401-AM-X12Cr13	12	M
–	–	08Ch13	F.3110-X6Cr13 ; F.8401-AM-X12Cr13	12	
2302	SUS410	12Ch13 ; 15Ch13L	F.3401-X10Cr13	12	
2320	SUS430	12Ch17	F.3113-X6Cr17	12	
–	SCS2	20Ch13L	–	12	
2304	SUS420J2	40Ch13	F.3405-X45Cr13	12	
2321	SUS431	20Ch17N2	F.3427-X19CrNi172	12	
2383	SUS430F	–	F.3117-X10CrSi17 ; F.3413-X14CrMoSi17	12	
2325	SUS434	–	F.3116-X6CrMo171	12	
–	SCS5	–	–	12	
–	SCS14	07Ch18N10G2S2M2L	F.8414-AM-X7CrNiMo2010	12	
–	SUH1	40Ch9S2	F.3220-X45CrSi09-03	12	
–	SUS405	10Ch13SJ	F.3152-X10CrAl13	12	
–	SUH21	15Ch18SJ	F.3153-X10CrAl18	11	
–	SUH4	–	F.3222-X80CrSiNi20-02	12	
2322	SUH446	–	F.3154-X10CrAl24	11	
2332	SUS304	08Ch18N10	F.3551-X5CrNi1811; F.3541-X5CrNi1810 ; F.3504-X6CrNi1910	13	
2346	SUS303	–	F.3508-X10CrNiSi18-09	13	
2352	SCS19; SUS304L	03Ch18N11	F.3503-X2CrNi1810	13	
2333	SCS13	07Ch18N9L	–	13	
2331	SUS301	–	F.3517-X12CrNi177	13	
2371	SUS304LN	–	F.3541-X2CrNi1810	13	
2347	SUS316	–	F.3534-X5CrNiMo17122	13	
2375	SUS316LN	–	F.3543-X2CrNiMoN17133	13	
2353	SCS16	03Ch17N14M3	F.3533-X2CrNiMo17132	13	
2367	SUS317L	–	F.3539-X2CrNiMo18164	13	
2324	SUS329L;	–	F.3309-X8CrNiMo27-05; F.3552-X8CrNiMo266	13	
58B	SUS321	06Ch18N10T; 08Ch18N10T09; Ch18N10T; 12Ch18N10T	F.3523-X6CrNiTi1810	12	
2338	SUS347	08Ch18N12B	F.3524-X6CrNiNb1810	12	
2350	–	10Ch17N13M2T	F.3535-X6CrNiMoTi17122	12	
–	SCS22	–	–	12	
–	–	–	–	12	
–	SUH309	20Ch20N14S2	F.3312-X15CrNiSi20-12	13	
2361	SUH310	20Ch23N18	–	13	
–	SUH330	–	F.3313-X12CrNiSi36-16	13	
–	SCH15	–	–	13	
–	SUH35,SUH36,SU321	55Ch20G9AN4	F.3217-X53CrMnNiN21-09	13	
–	–	–	–	13	
01 10	–	C410	FG10	30	K
01 15	–	C415	FG15	30	
01 20	–	C420	FG20	30	
01 25	–	C425	FG25	29	
01 30	–	C430	FG30	29	
01 35	–	C435	FG35	29	
01 40	–	C440	–	29	
MB	–	–	–	29	
ISO-215	–	–	–	29	
523	–	–	–	29	
07 17-02	–	VC42-12	–	30	
07 17-12	–	VC42-12	–	30	
07 17-15	–	–	–	30	
07 27-02	–	VC50-2	–	31	
07 32-03	–	VC60-2	–	31	
07 37-01	–	VC70-2	–	31	
07 72	–	–	–	31	
07 76	–	–	–	31	
–	–	–	–	31	
08 15	–	–	–	28	
08 52	–	–	–	29	
08 54	–	–	–	29	N
08 58	–	–	–	29	
08 62	–	–	–	29	
4260	–	–	–	36	
4247	–	–	–	36	
4250	–	–	–	36	S
4253	–	–	–	36	
4261	–	–	–	36	
–	SUH 330	–	F.3313-X12CrNiSi36-16	19	
–	SCH 15	–	–	19	
–	–	–	–	19	
–	–	–	–	19	
–	–	–	–	19	
–	–	–	–	19	
–	–	–	–	19	
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–	–	–	–	21	
–	–	–	–	21	
–	–	–	–	23	
–	–	–	–	23	
–	–	–	–	23	

Troubleshooting

	Problem	Possible Cause	Solution
	Increased flank wear	Cutting speed too high -----> Depth of cut too low/ too many passes -----> Unsuitable carbide grade -----> Insufficient cooling ----->	Reduce cutting speed/ use coated insert Increase the depth of cut per pass Use a coated carbide grade Increase coolant flow rate
	Uneven cutting edge wear	Incorrect helix angle -----> Wrong infeed method ----->	Choose the correct anvil Use the alternating flank infeed method
	Extreme plastic deformation	Depth of cut too large -----> Insufficient cooling -----> Cutting speed too high -----> Unsuitable carbide grade -----> Nose radius too small ----->	Decrease depth of cut/ increase number of passes Increase coolant flow rate Reduce cutting speed Use a tougher carbide Use an insert with a larger radius, if possible
	Cutting edge breakage	Depth of cut too large -----> Extreme plastic deformation -----> Insufficient cooling -----> Unsuitable carbide grade -----> Instability ----->	Decrease depth of cut/ increase number of passes Use a tougher carbide Increase flow rate and/ or correct flow direction Use a tougher carbide Check stability of the system
	Built-up edge	Incorrect cutting speed -----> Unsuitable carbide grade ----->	Change the cutting speed Use a coated carbide
	Thread profile is too shallow	The tool is not at the workpiece axis height ---> Insert is not machining the thread crest -----> Worn insert ----->	Change tool height Measure the workpiece diameter Change the cutting edge sooner
	Poor surface quality	Cutting speed too low -----> Wrong anvil -----> Flank infeed method is not appropriat ----->	Increase cutting speed Choose correct anvil Use the alternate flank or radial infeed method



Grooving



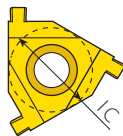
> Inserts

GROOVING INSERTS

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Vardex Ordering Code System

Grooving Insert

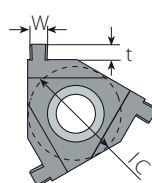
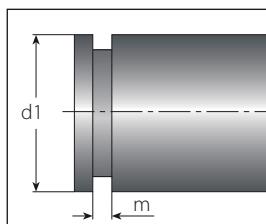
5 1	L 2	I 3	R 4	1.1 5	- 6	D472 7	- 6	1.3 8	VKP 9
1 - Insert Size 5.0L - IC5.0L 2 - IC1/4" 3 - IC3/8" 4 - IC1/2" 5 - IC5/8" 		2 - Insert Style L 		3 - Type of Insert E - External I - Internal		4 - RH / LH Insert R - Right Hand Insert L - Left Hand Insert			
5 - Groove Std. Width 0.03 - 0.08 (inch)		6 - Profile Style C - Full Profile		7 - Groove Standard DIN 471 Partial DIN 471 DIN 472 Partial DIN 472 DIN 7993 Partial DIN 7993 DIN 76 ST, DIN 76 SH DIN 3770		8 - Groove Depth 0.013 - 0.079 (inch)		9 - Carbide Grade VTX VKP (for Mini) VHX (for Mini)	

Grooving Micro Insert - Double Ended

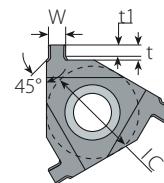
4.0	S	I	R	090	S	-	D472	-	1.1	VMX
1	2	3	4	5	6		7		8	9
1 - Insert Dia.		2 - Insert Style		3 - Type of Insert		4 - RH / LH Insert		5 -Groove std. Width		
3.0 - 3.0 mm 4.0 - 4.0 mm 6.0 - 6.0 mm 8.0 - 8.0 mm 10.0 - 10.0 mm		S - Micro Insert		I - Internal		R - Right Hand Insert L - Left Hand Insert		0.027 - 0.078 (inch) 0.90 - 2.15 (mm)		
6 - Insert Length		7 - Groove Standard				8 - Groove Depth		9 - Carbide Grade		
A - Axialy S - Short M - Medium L - Long		DIN 471 DIN 472 CIRCLIP DIN 7993 DIN 76SH, DIN 76ST DIN 3770S, DIN 3770D SNAP RING CIRCLIP - Face Grooving				0.02 - 0.06 (inch)		VMX		

DIN 471 Retaining Ring Grooves for Shafts

External



Standard
(Partial Profile)



Standard
(Full Profile)

Standard (Partial Profile)



Insert Size	Ordering Code	Groove Std.	Dimensions inch			Anvil	Holder
IC	RH	m (H13)	W	t			
3/8"	3ER1.10-D471-1.30...	0.043	0.047	0.051		YE3M-1.5N	AL...-3
	3ER1.30-D471-1.50...	0.051	0.055	0.059			
	3ER1.60-D471-1.85...	0.063	0.067	0.071			
	3ER1.85-D471-2.00...	0.073	0.076	0.079			

Range of profiles also available on IC 1/4", 1/2" and 5/8", inserts on request.

Standard (Full Profile)

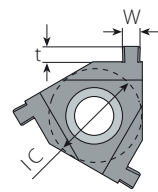
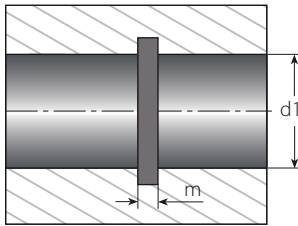


Insert Size	Ordering Code	Groove Std.		Dimensions inch			Anvil	Holder
IC	RH	m(H13)	d1	W	t1	t		
3/8"	3ER1.10C-D471-0.35...	0.043	0.59	0.047	0.013	0.014	YE3M-1.5N	AL...-3
	3ER1.10C-D471-0.40...	0.043	0.63-0.67	0.047	0.014	0.016		
	3ER1.30C-D471-0.50...	0.051	0.71-0.87	0.055	0.017	0.020		
	3ER1.30C-D471-0.55...	0.051	0.94-1.02	0.055	0.018	0.022		
	3ER1.60C-D471-0.70...	0.063	1.1-1.18	0.067	0.024	0.028		
	3ER1.60C-D471-0.85...	0.063	1.26-1.34	0.067	0.030	0.033		
	3ER1.60C-D471-1.00...	0.063	1.38	0.067	0.033	0.039		
	3ER1.85C-D471-1.00...	0.073	1.42-1.50	0.076	0.033	0.039		
	3ER1.85C-D471-1.25...	0.073	1.57-1.89	0.076	0.043	0.049		
	3ER2.15C-D471-1.50...	0.085	1.97-2.48	0.088	0.053	0.059		

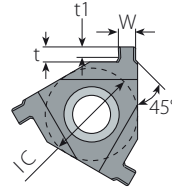
Range of profiles also available on IC 1/4", 1/2" and 5/8", inserts on request.

DIN 472 Retaining Ring Grooves for Bores

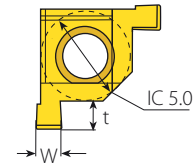
Internal



Standard
(Partial Profile)



Standard
(Full Profile)



Mini-L
(Partial Profile)

Standard (Partial Profile)



Insert Size	Ordering Code	Groove Std.	Dimensions inch		Anvil	Holder
IC		m (H13)	W	t		
3/8"	3IR1.10-D472-1.30...	0.043	0.047	0.051	Y13M-1.5N	AVR...-3
	3IR1.30-D472-1.50...	0.051	0.055	0.059		
	3IR1.60-D472-1.80...	0.063	0.067	0.071		
	3IR1.85-D472-2.00...	0.073	0.076	0.079		

Range of profiles also available on IC 1/4", 1/2" and 5/8", inserts on request.
For minimum bore diameters, refer to page 167.

Standard (Full Profile)



Insert Size	Ordering Code	Groove Std.	Dimensions inch				Anvil	Holder
IC		m (H13)	d1	W	t1	t		
3/8"	3IR1.10C-D472-0.50...	0.043	0.71 - 0.87	0.047	0.014	0.020	Y13M-1.5N	AVR...-3
	3IR1.30C-D472-0.60...	0.051	0.94 - 1.02	0.055	0.017	0.024		
	3IR1.30C-D472-0.70...	0.051	1.10 - 1.18	0.055	0.024	0.028		
	3IR1.30C-D472-0.85...	0.051	1.22 - 1.34	0.055	0.030	0.033		
	3IR1.60C-D472-0.85...	0.063	1.34	0.067	0.030	0.033		
	3IR1.60C-D472-1.00...	0.063	1.38 - 1.50	0.067	0.033	0.039		
	3IR1.85C-D472-1.25...	0.073	1.57 - 1.89	0.076	0.043	0.049		
	3IR2.15C-D472-1.50...	0.085	1.97 - 2.48	0.088	0.053	0.059		

Range of profiles also available on IC 1/4", 1/2" and 5/8", inserts on request.
For minimum bore diameters, refer to page 167.

Mini-L (Partial Profile)



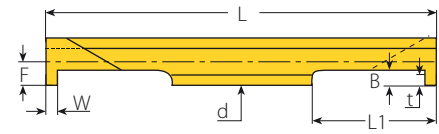
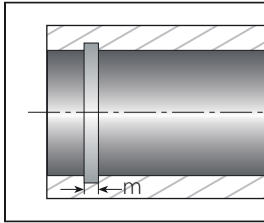
Insert Size	Ordering Code	Groove Std.	Dimensions inch		Min. Bore dia. (inch)	Holder
IC		m (H13)	W	t		
5.0L	5LIR0.9-D472-0.7...	0.035	0.039	0.028	0.315	.NVR...-5L
	5LIR1.1-D472-1.0...	0.043	0.047	0.039		
	5LIR1.3-D472-1.5...	0.051	0.055	0.051		



DIN 472 Retaining Ring Grooves for Bores



Internal



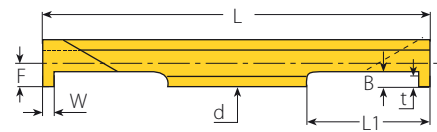
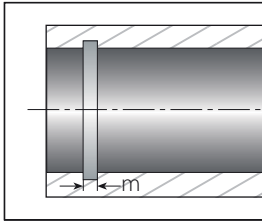
RH-Double Ended

Micro - Double Ended

Insert dia.	Ordering Code	Groove Std.	Dimensions inch						Min. Bore dia.	Holder
d (mm)	RH	m (H13)	W	L1	L	B	t	F	inch	
3.0	3.0SIR0.90S-D472-0.5...	0.035	0.039	0.36	1.42	0.031	0.02	0.055	0.126	SMC...-3.0
	3.0SIR0.90M-D472-0.5...	0.035	0.039	0.64	1.97					
	3.0SIR1.10S-D472-0.5...	0.043	0.047	0.36	1.42					
	3.0SIR1.10M-D472-0.5...	0.043	0.047	0.64	1.97					
4.0	4.0SIR0.90S-D472-1.1...	0.035	0.039	0.36	1.42	0.055	0.043	0.075	0.161	SMC...-4.0
	4.0SIR0.90M-D472-1.1...	0.035	0.039	0.64	1.97					
	4.0SIR0.90L-D472-1.1...	0.035	0.039	0.84	2.36					
	4.0SIR1.10S-D472-1.1...	0.043	0.047	0.36	1.42					
	4.0SIR1.10M-D472-1.1...	0.043	0.047	0.64	1.97					
	4.0SIR1.10L-D472-1.1...	0.043	0.047	0.84	2.36					
	4.0SIR1.30S-D472-1.1...	0.051	0.055	0.36	1.42					
	4.0SIR1.30M-D472-1.1...	0.051	0.055	0.64	1.97					
	4.0SIR1.30L-D472-1.1...	0.051	0.055	0.84	2.36					
	4.0SIR1.60S-D472-1.1...	0.063	0.067	0.36	1.42					
	4.0SIR1.60M-D472-1.1...	0.063	0.067	0.64	1.97					
	4.0SIR1.60L-D472-1.1...	0.063	0.067	0.84	2.36					
6.0	6.0SIR0.90S-D472-1.5...	0.035	0.039	0.36	1.42	0.071	0.059	0.114	0.24	SMC...-6.0
	6.0SIR0.90M-D472-1.5...	0.035	0.039	0.64	1.97					
	6.0SIR0.90L-D472-1.5...	0.035	0.039	0.84	2.36					
	6.0SIR1.10S-D472-1.5...	0.043	0.047	0.36	1.42					
	6.0SIR1.10M-D472-1.5...	0.043	0.047	0.64	1.97					
	6.0SIR1.10L-D472-1.5...	0.043	0.047	0.84	2.36					
	6.0SIR1.30S-D472-1.5...	0.051	0.055	0.36	1.42					
	6.0SIR1.30M-D472-1.5...	0.051	0.055	0.64	1.97					
	6.0SIR1.30L-D472-1.5...	0.051	0.055	0.84	2.36					
	6.0SIR1.60S-D472-1.5...	0.063	0.067	0.36	1.42					
	6.0SIR1.60M-D472-1.5...	0.063	0.067	0.64	1.97					
	6.0SIR1.60L-D472-1.5...	0.063	0.067	0.84	2.36					
	6.0SIR1.85S-D472-1.5...	0.073	0.076	0.36	1.42					
	6.0SIR1.85M-D472-1.5...	0.073	0.076	0.64	1.97					
	6.0SIR1.85L-D472-1.5...	0.073	0.076	0.84	2.36					
	6.0SIR2.15S-D472-1.5...	0.085	0.088	0.36	1.42					
	6.0SIR2.15M-D472-1.5...	0.085	0.088	0.64	1.97					
	6.0SIR2.15L-D472-1.5...	0.085	0.088	0.84	2.36					

continued on next page ►

Internal



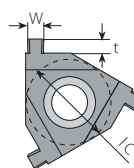
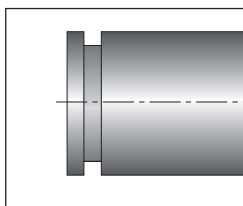
RH-Double Ended

Micro - Double Ended (con't)

Insert dia. d (mm)	Ordering Code	Groove Std. m (H13)	W	L1	Dimensions inch				Min. Bore dia. inch	Holder
	RH				L	B	t	F		
8.0	8.0SIR1.10M-D472-2.0...	0.043	0.047	0.79	2.76	0.098	0.079	0.154	0.331	SMC...-8.0
	8.0SIR1.30M-D472-2.0...	0.051	0.055	0.79	2.76	0.098	0.079			
	8.0SIR1.60M-D472-2.5...	0.063	0.067	0.79	2.76	0.118	0.098			
	8.0SIR1.85M-D472-2.5...	0.073	0.076	0.79	2.76	0.118	0.098			
	8.0SIR2.15M-D472-3.0...	0.085	0.088	0.79	2.76	0.138	0.118			
	8.0SIR2.65M-D472-3.5...	0.104	0.108	0.79	2.76	0.157	0.138			
	8.0SIR3.15M-D472-3.5...	0.124	0.129	0.79	2.76	0.157	0.138			
10.0	10.0SIR1.30M-D472-3.5...	0.051	0.055	0.98	3.15	0.157	0.138	0.193	0.409	SMC...-10.0
	10.0SIR1.60M-D472-3.5...	0.063	0.067	0.98	3.15					
	10.0SIR1.85M-D472-3.5...	0.073	0.076	0.98	3.15					
	10.0SIR2.15M-D472-3.5...	0.085	0.088	0.98	3.15					
	10.0SIR2.65M-D472-3.5...	0.104	0.108	0.98	3.15					
	10.0SIR3.15M-D472-3.5...	0.124	0.129	0.98	3.15					
	10.0SIR4.15M-D472-3.5...	0.163	0.169	0.98	3.15					
	10.0SIR5.15M-D472-3.5...	0.203	0.208	0.98	3.15					

CIRCLIP Inch Standard

External



Standard
(Partial Profile)

Standard (Partial Profile)

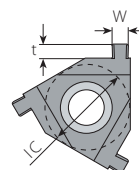
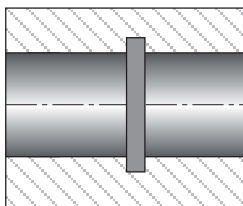


Insert Size	Ordering Code	Dimensions Inch		Anvil	Holder
IC		W	t		
3/8"	3ER.031-CIRC-.05	0.031	0.05	YE3M-1.5N	AL...-3
	3ER.041-CIRC-.07	0.041	0.07		
	3ER.047-CIRC-.07	0.047	0.08		
	3ER.058-CIRC-.08	0.058	0.08		
	3ER.062-CIRC-.08	0.062	0.08		
	3ER.072-CIRC-.08	0.072	0.08		
	3ER.078-CIRC-.08	0.078	0.08		

Range of profiles also available on IC 1/4", 1/2" and 5/8", inserts on request.

CIRCLIP Inch Standard

Internal



Standard
(Partial Profile)

Standard (Partial Profile)



Insert Size	Ordering Code	Dimensions Inch		Anvil	Holder
IC		W	t		
3/8"	3IR.031-CIRC-.05	0.031	0.05	YI3M-1.5N	AVR...-3*
	3IR.041-CIRC-.07	0.041	0.07		
	3IR.047-CIRC-.07	0.047	0.07		
	3IR.058-CIRC-.08	0.058	0.08		
	3IR.062-CIRC-.08	0.062	0.08		
	3IR.072-CIRC-.08	0.072	0.08		
	3IR.078-CIRC-.08	0.078	0.08		

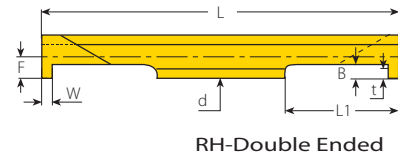
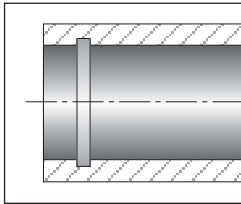
Range of profiles also available on IC 1/4", 1/2" and 5/8", inserts on request.

* For minimum bore diameters, refer to page 161.

CIRCLIP Inch Standard



Internal



Micro (Partial Profile)

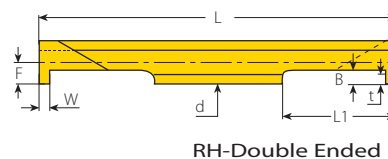
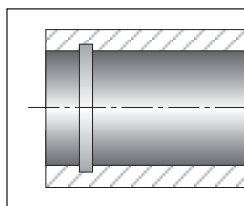
Insert dia.		Dimensions Inch						Min.	
d mm	RH-Double Ended	W	L1	L	B	t	F	Holder	Bore dia.
3.0	3.0SIR.027S-CIRC-.02...	0.027	0.354	1.42	0.035	0.023	0.055	SMC0...-3.0	0.126
	3.0SIR.027M-CIRC-.02...	0.027	0.63	1.97					
	3.0SIR.031S-CIRC-.02...	0.031	0.354	1.42					
	3.0SIR.031M-CIRC-.02...	0.031	0.63	1.97					
	3.0SIR.041S-CIRC-.02...	0.041	0.354	1.42	0.055	0.043			
	3.0SIR.041M-CIRC-.02...	0.041	0.63	1.97					
	3.0SIR.046S-CIRC-.04...	0.046	0.354	1.42					
	3.0SIR.046M-CIRC-.04...	0.046	0.63	1.97					
4.0	4.0SIR.027S-CIRC-.04...	0.027	0.354	1.42	0.055	0.043	0.074	SMC0...-4.0	0.165
	4.0SIR.027M-CIRC-.04...	0.027	0.63	1.97					
	4.0SIR.027L-CIRC-.04...	0.027	0.827	2.36					
	4.0SIR.031S-CIRC-.04...	0.031	0.354	1.42					
	4.0SIR.031M-CIRC-.04...	0.031	0.63	1.97					
	4.0SIR.031L-CIRC-.04...	0.031	0.827	2.36					
	4.0SIR.041S-CIRC-.04...	0.041	0.354	1.42					
	4.0SIR.041M-CIRC-.04...	0.041	0.63	1.97					
	4.0SIR.041L-CIRC-.04...	0.041	0.827	2.36					
	4.0SIR.047S-CIRC-.04...	0.046	0.354	1.42					
	4.0SIR.047M-CIRC-.04...	0.046	0.63	1.97					
	4.0SIR.047L-CIRC-.04...	0.046	0.827	2.36					
	4.0SIR.058S-CIRC-.04...	0.058	0.354	1.42	0.071	0.059			
	4.0SIR.058M-CIRC-.04...	0.058	0.63	1.97					
	4.0SIR.058L-CIRC-.04...	0.058	0.827	2.36					
	4.0SIR.062S-CIRC-.06...	0.062	0.354	1.42					
	4.0SIR.062M-CIRC-.06...	0.062	0.63	1.97					
	4.0SIR.062L-CIRC-.06...	0.062	0.827	2.36					
	4.0SIR.078S-CIRC-.06...	0.078	0.354	1.42					
	4.0SIR.078M-CIRC-.06...	0.078	0.63	1.97					
	4.0SIR.078L-CIRC-.06...	0.078	0.827	2.36					

continued on next page ►

CIRCLIP Inch Standard



Internal



RH-Double Ended

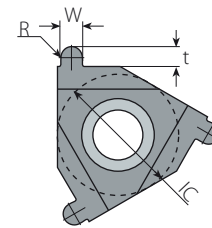
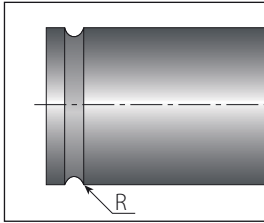
Micro (Partial Profile) con't

Insert dia.	Dimensions Inch							Min. Bore dia.	
d mm	RH-Double Ended	W	L1	L	B	t	F	Holder	
6.0	6.0SIR.046S-CIRC-.06...	0.046	0.354	1.42	0.071	0.059	0.114	SMC0...-6.0	0.244
	6.0SIR.046M-CIRC-.06...	0.046	0.63	1.97					
	6.0SIR.046L-CIRC-.06...	0.046	0.827	2.36					
	6.0SIR.058S-CIRC-.06...	0.058	0.354	1.42					
	6.0SIR.058M-CIRC-.06...	0.058	0.63	1.97					
	6.0SIR.058L-CIRC-.06...	0.058	0.827	2.36					
	6.0SIR.062S-CIRC-.06...	0.062	0.354	1.42					
	6.0SIR.062M-CIRC-.06...	0.062	0.63	1.97					
	6.0SIR.062L-CIRC-.06...	0.062	0.827	2.36					
	6.0SIR.072S-CIRC-.06...	0.072	0.354	1.42					
	6.0SIR.072M-CIRC-.06...	0.072	0.63	1.97					
	6.0SIR.072L-CIRC-.06...	0.072	0.827	2.36					
	6.0SIR.078S-CIRC-.06...	0.078	0.354	1.42	0.079	0.069	0.114	SMC0...-6.0	0.244
	6.0SIR.078M-CIRC-.06...	0.078	0.63	1.97					
	6.0SIR.078L-CIRC-.06...	0.078	0.827	2.36					
	6.0SIR.088S-CIRC-.06...	0.088	0.354	1.42					
	6.0SIR.088M-CIRC-.06...	0.088	0.63	1.97					
	6.0SIR.088L-CIRC-.06...	0.088	0.827	2.36					
	6.0SIR.094S-CIRC-.07...	0.094	0.354	1.42					
	6.0SIR.094M-CIRC-.07...	0.094	0.63	1.97					
	6.0SIR.094L-CIRC-.07...	0.094	0.827	2.36					
	6.0SIR.097S-CIRC-.07...	0.097	0.354	1.42					
	6.0SIR.097M-CIRC-.07...	0.097	0.63	1.97					
	6.0SIR.097L-CIRC-.07...	0.097	0.827	2.36					
	6.0SIR.105S-CIRC-.07...	0.105	0.354	1.42					
	6.0SIR.105M-CIRC-.07...	0.105	0.63	1.97					
	6.0SIR.105L-CIRC-.07..	0.105	0.827	2.36					

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DIN 7993 Snap Ring Grooves

External



**Standard
(Partial Profile)**

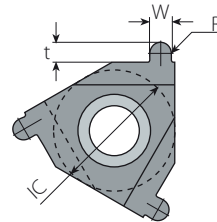
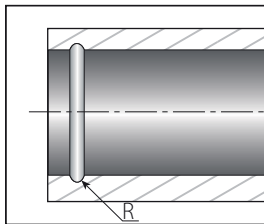
Standard (Partial Profile for Shafts)



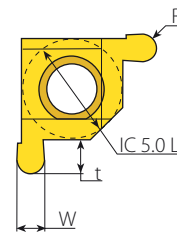
Insert Size	Ordering Code	Dimensions inch			Anvil	Holder
IC	RH	R	W	t		
3/8"	3ER0.40-D7993-0.60...	0.015	0.031	0.024	YE3M-1.5N	AL...-3
	3ER0.60-D7993-0.80...	0.023	0.047	0.031		
	3ER0.90-D7993-1.10...	0.035	0.071	0.043		
	3ER1.00-D7993-1.20...	0.039	0.079	0.047		

Range of profiles also available on IC 1/4", 1/2" and 5/8", inserts on request.

Internal



**Standard
(Partial Profile)**



**Mini-L
(Partial Profile)**

Standard (Partial Profile for Bores)



Insert Size	Ordering Code	Dimensions inch			Anvil	Holder
IC	RH	R	W	t		
3/8"	3IR0.60-D7993-0.80...	0.023	0.047	0.031	YI3M-1.5N	AVR...-3
	3IR0.90-D7993-1.10...	0.035	0.071	0.043		
	3IR1.00-D7993-1.20...	0.039	0.079	0.047		

Range of profiles also available on IC 1/4", 1/2" and 5/8" inserts on request.
For minimum bore diameters, refer to page 167.

Mini-L (Partial Profile for Bores)

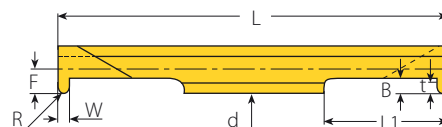
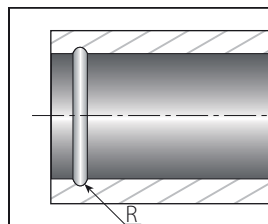


Insert Size	Ordering Code	Dimensions inch			Min. Bore dia.	Holder
IC	RH	R	W	t	inch	
5.0L	5LIR0.4-D7993-0.8...	0.016	0.031	0.031	0.315	.NVR...-5L
	5LIR0.6-D7993-1.0...	0.024	0.047	0.039		

DIN 7993 Snap Ring Grooves



Internal



RH-Double Ended

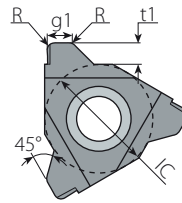
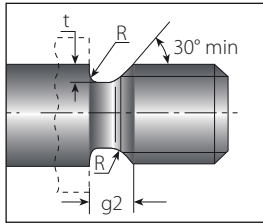
Micro (Partial Profile) - Double Ended

Insert Dia.	Ordering Code	Groove Std.		Dimensions inch				Min. Bore dia.		Holder				
d (mm)	RH	R	W	L1	L	B	t	F	inch					
3.0	3.0SIR0.4S-D7993-0.6...	0.016	0.031	0.36	1.42	0.031	0.024	0.055	0.126	SMC...-3.0				
	3.0SIR0.4M-D7993-0.6...	0.016	0.031	0.64	1.97									
4.0	4.0SIR0.4S-D7993-0.6...	0.016	0.031	0.36	1.42	0.035	0.024	0.075	0.161	SMC...-4.0				
	4.0SIR0.4M-D7993-0.6...	0.016	0.031	0.64	1.97									
	4.0SIR0.4L-D7993-0.8...	0.016	0.031	0.84	2.36	0.043	0.031							
	4.0SIR0.6S-D7993-0.8...	0.024	0.047	0.36	1.42									
	4.0SIR0.6M-D7993-0.8...	0.024	0.047	0.64	1.97									
	4.0SIR0.6L-D7993-0.8...	0.024	0.047	0.84	2.36	0.055	0.043							
	4.0SIR0.9S-D7993-1.1...	0.035	0.071	0.36	1.42									
	4.0SIR0.9M-D7993-1.1...	0.035	0.071	0.64	1.97									
	4.0SIR0.9L-D7993-1.1...	0.035	0.071	0.84	2.36	0.055	0.043							
	6.0SIR0.9S-D7993-1.1...	0.035	0.071	0.36	1.42									
6.0SIR0.9M-D7993-1.1...	0.035	0.071	0.64	1.97										
6.0SIR0.9L-D7993-1.1...	0.035	0.071	0.84	2.36										
6.0	6.0SIR1.0S-D7993-1.2...	0.039	0.079	0.36	1.42	0.059	0.047	0.114	0.24	SMC...-6.0				
	6.0SIR1.0M-D7993-1.2...	0.039	0.079	0.64	1.97									
	6.0SIR1.0L-D7993-1.2...	0.039	0.079	0.84	2.36	0.063	0.051							
	6.0SIR1.1S-D7993-1.3...	0.043	0.087	0.36	1.42									
	6.0SIR1.1M-D7993-1.3...	0.043	0.087	0.64	1.97									
	6.0SIR1.1L-D7993-1.3...	0.043	0.087	0.84	2.36									
	8.0	8.0SIR0.9M-D7993-2.0...	0.035	0.071	0.79	2.76	0.098				0.079	0.154	0.331	SMC...-8.0
		8.0SIR1.1M-D7993-2.0...	0.043	0.087	0.79	2.76								
8.0SIR1.4M-D7993-2.0...		0.055	0.110	0.79	2.76	0.134	0.114	0.193	0.409	SMC...-10.0				
10.0	10.0SIR1.4M-D7993-2.9...	0.055	0.110	0.99	3.15									
	10.0SIR1.8M-D7993-2.9...	0.071	0.142	0.99	3.15									

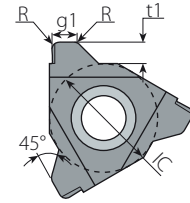
DIN 76 Thread Undercuts

(For ISO Metric Threads in Accordance with DIN 13)

External



Normal - Type A



Short - Type B

Standard (Normal - Type A)



Insert Size	Ordering Code	Pitch	Dimensions inch					Anvil	Holder
IC	RH	(mm)	R	g1	g2	t	t1		
3/8"	3ER0.50-D76ST-0.40...	0.50	0.008	0.043	0.059	0.016	0.098	YE3M-1.5N	AL...-3
	3ER0.60-D76ST-0.50...	0.60	0.015	0.051	0.071	0.020	0.094		
	3ER0.70-D76ST-0.55...	0.70	0.015	0.061	0.083	0.022	0.087		
	3ER0.80-D76ST-0.65...	0.80	0.015	0.069	0.094	0.026	0.083		
5/8"	3ER1.00-D76ST-0.80...	1.00	0.023	0.087	0.118	0.031	0.075	YE5M-1.5N	AL...-5
	5ER1.25-D76ST-1.00...	1.25	0.023	0.110	0.150	0.039	0.142		
	5ER1.50-D76ST-1.15...	1.50	0.031	0.132	0.177	0.045	0.130		
	5ER1.75-D76ST-1.30...	1.75	0.039	0.157	0.209	0.051	0.118		
	5ER2.00-D76ST-1.50...	2.00	0.039	0.177	0.236	0.059	0.106		

Standard (Short - Type B)



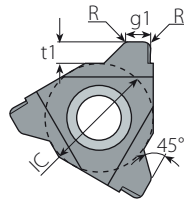
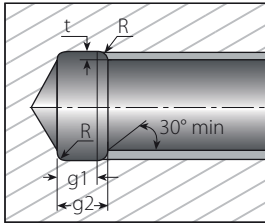
Insert Size	Ordering Code	Pitch	Dimensions inch					Anvil	Holder
IC	RH	(mm)	R	g1	g2	t	t1		
3/8"	3ER1.00-D76SH-0.80...	1.00	0.023	0.047	0.079	0.031	0.098	YE3M-1.5N	AL...-3
	3ER1.25-D76SH-1.00...	1.25	0.023	0.059	0.098	0.039	0.091		
	3ER1.50-D76SH-1.15...	1.50	0.031	0.073	0.118	0.045	0.083		
	3ER1.75-D76SH-1.30...	1.75	0.039	0.087	0.138	0.051	0.075		
5/8"	5ER2.00-D76SH-1.50...	2.00	0.039	0.098	0.157	0.059	0.150	YE5M-1.5N	AL...-5
	5ER2.50-D76SH-1.80...	2.50	0.047	0.126	0.197	0.071	0.138		
	5ER3.00-D76SH-2.20...	3.00	0.063	0.150	0.236	0.087	0.122		

Range of profiles also available on IC 1/4" and 1/2" inserts on request.

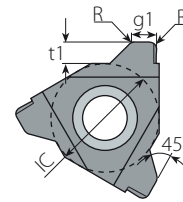
DIN 76 Thread Undercuts

(For ISO Metric Threads in Accordance with DIN 13)

Internal



Normal - Type C



Short - Type D

Standard (Normal - Type C)



Insert Size	Ordering Code	Pitch	Dimensions inch					Anvil	Holder
IC	RH	(mm)	R	g1	g2	t	t1		
3/8"	3IR0.50-D76ST-0.40...	0.50	0.008	0.043	0.059	0.016	0.098	Y13M-1.5N	AL..-3
	3IR0.60-D76ST-0.50...	0.60	0.015	0.051	0.071	0.020	0.094		
	3IR0.70-D76ST-0.55...	0.70	0.015	0.061	0.083	0.022	0.087		
	3IR0.80-D76ST-0.65...	0.80	0.015	0.069	0.094	0.026	0.083		
	3IR1.00-D76ST-0.80...	1.00	0.023	0.087	0.118	0.031	0.075		

Range of profiles also available on IC 1/4", 1/2" and 5/8" inserts on request.
For minimum bore diameters, refer to page 167.

Standard (Short - Type D)



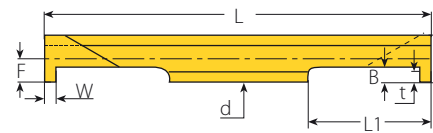
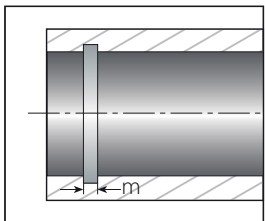
Insert Size	Ordering Code	Pitch	Dimensions inch					Anvil	Holder
IC	RH	(mm)	R	g1	g2	t	t1		
3/8"	3IR1.00-D76SH-0.80...	1.00	0.023	0.047	0.079	0.031	0.098	Y13M-1.5N	AL..-3
	3IR1.25-D76SH-1.00...	1.25	0.023	0.059	0.098	0.039	0.091		
	3IR1.50-D76SH-1.15...	1.50	0.031	0.073	0.118	0.045	0.083		
	3IR1.75-D76SH-1.30...	1.75	0.039	0.087	0.138	0.051	0.075		

Range of profiles also available on IC 1/4", 1/2" and 5/8" inserts on request.
For minimum bore diameters, refer to page 167.

DIN 3770 - Grooves



Internal



RH-Double Ended

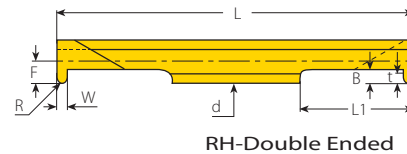
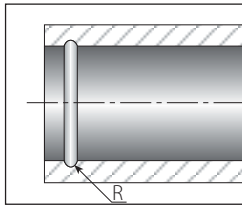
Micro - Double Ended

Insert dia.	Ordering Code	Groove Std.		Dimensions inch					Min. Bore dia.	Holder
d (mm)	RH	m (H13)	W	L1	L	B	t	F	inch	
6.0	6.0SIR1.6S-D3770S-1.5...	0.063	0.078	0.36	1.42	0.071	0.059	0.114	0.24	SMC...-6.0
	6.0SIR1.6M-D3770S-1.5...	0.063	0.078	0.64	1.97					
	6.0SIR1.6L-D3770S-1.5...	0.063	0.078	0.84	2.36					
	6.0SIR2.0S-D3770D-1.8...	0.079	0.094	0.36	1.42	0.079	0.071	0.114		
	6.0SIR2.0M-D3770D-1.8...	0.079	0.094	0.64	1.97					
	6.0SIR2.0L-D3770D-1.8...	0.079	0.094	0.84	2.36					

Snap Ring Grooves Inch Standard



Internal



RH-Double Ended

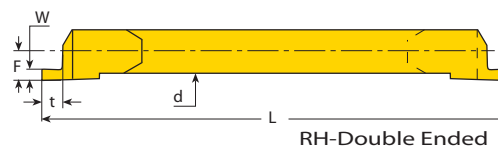
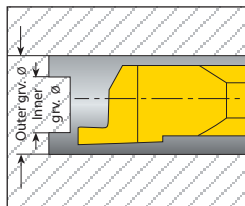
Micro (Partial Profile)

Insert Dia.	Groove Std.	Dimensions mm							Min. Bore dia.
d mm	RH-Double Ended	R	W	L1	L	B	t	F	Holder
3.0	3.0SIR.015S-SNAP-.02...	0.015	0.03	0.354	1.42	0.035	0.024	0.055	SMC0...-3.0
	3.0SIR.015M-SNAP-.02...	0.015	0.03	0.63	1.97				
	4.0SIR.015S-SNAP-.02...	0.015	0.03	0.354	1.42				
	4.0SIR.015M-SNAP-.02...	0.015	0.03	0.63	1.97	0.035	0.024		
4.0	4.0SIR.015L-SNAP-.02...	0.015	0.03	0.827	2.36				
	4.0SIR.023S-SNAP-.03...	0.023	0.047	0.354	1.42				
	4.0SIR.023M-SNAP-.03...	0.023	0.047	0.63	1.97	0.047	0.035	0.075	SMC0...-4.0
	4.0SIR.023L-SNAP-.03...	0.023	0.047	0.827	2.36				
	4.0SIR.031S-SNAP-.05...	0.031	0.062	0.354	1.42				
	4.0SIR.031M-SNAP-.05...	0.031	0.062	0.63	1.97	0.059	0.047		
	4.0SIR.031L-SNAP-.05...	0.031	0.062	0.827	2.36				
	6.0SIR.031S-SNAP-.05...	0.031	0.062	0.354	1.42				
6.0	6.0SIR.031M-SNAP-.05...	0.031	0.062	0.63	1.97				
	6.0SIR.031L-SNAP-.05...	0.031	0.062	0.827	2.36				
	6.0SIR.036S-SNAP-.05...	0.036	0.072	0.354	1.42				
	6.0SIR.036M-SNAP-.05...	0.036	0.072	0.63	1.97				
	6.0SIR.036L-SNAP-.05...	0.036	0.072	0.827	2.36	0.063	0.051		
	6.0SIR.039S-SNAP-.05...	0.039	0.078	0.354	1.42				
	6.0SIR.039M-SNAP-.05...	0.039	0.078	0.63	1.97			0.114	SMC0...-6.0
	6.0SIR.039L-SNAP-.05...	0.039	0.078	0.827	2.36				
	6.0SIR.047S-SNAP-.05...	0.047	0.094	0.354	1.42				
	6.0SIR.047M-SNAP-.05...	0.047	0.094	0.63	1.97				
	6.0SIR.047L-SNAP-.05...	0.047	0.094	0.827	2.36				
	6.0SIR.062S-SNAP-.07...	0.062	0.125	0.354	1.42				
	6.0SIR.062M-SNAP-.07...	0.062	0.125	0.63	1.97	0.079	0.067		
	6.0SIR.062L-SNAP-.07...	0.062	0.125	0.827	2.36				

Circlip - Face Grooves



Internal



Micro (Partial Profile)

Insert Dia.		Dimensions mm					Inner Groove	Outer Groove
d mm	RH-Double Ended	W	t	L	F	Sleeve	Ø	Ø
4.0	4.0SIR.031A-CIRC-.055...	0.031	0.043	1.969	0.076	SMC...-4.0	0.138	0.198
	4.0SIR.041A-CIRC-.063...	0.041	0.051				0.130	0.212
	4.0SIR.047A-CIRC-.071...	0.047	0.059				0.122	0.216
	4.0SIR.058A-CIRC-.082...	0.058	0.075				0.110	0.226
	4.0SIR.062A-CIRC-.086...	0.062	0.083				0.106	0.230
6.0	6.0SIR.031A-CIRC-.055...	0.031	0.043	1.969	0.126	SMC...-6.0	0.216	0.276
	6.0SIR.041A-CIRC-.063...	0.041	0.051				0.209	0.291
	6.0SIR.047A-CIRC-.071...	0.047	0.059				0.200	0.294
	6.0SIR.058A-CIRC-.082...	0.058	0.075				0.189	0.305
	6.0SIR.062A-CIRC-.086...	0.062	0.083				0.185	0.309
	6.0SIR.072A-CIRC-.094...	0.072	0.087				0.177	0.321
	6.0SIR.078A-CIRC-.088...	0.078	0.087				0.169	0.325
	6.0SIR.088A-CIRC-.110...	0.088	0.088				0.161	0.337



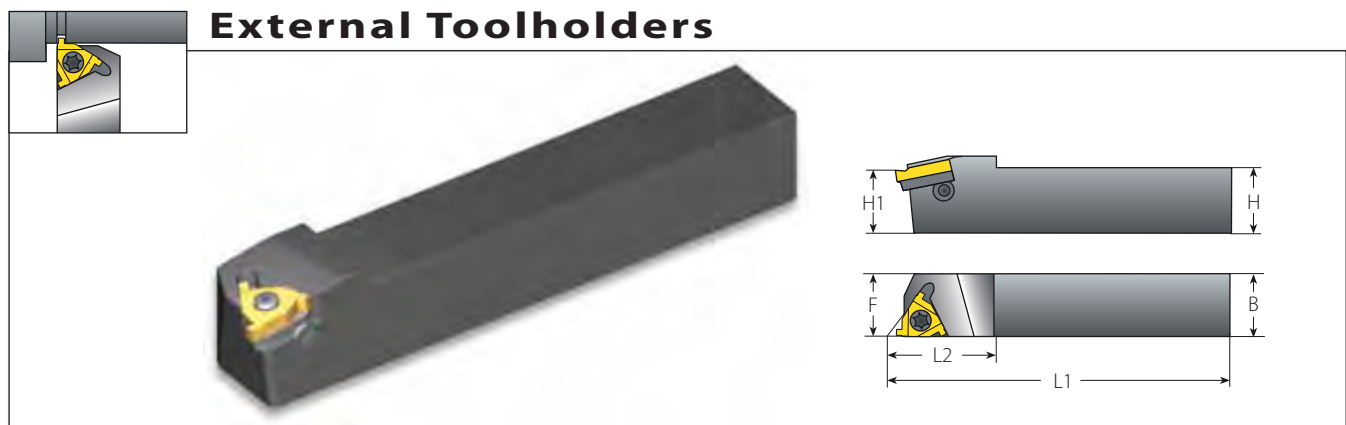
Grooving



> Toolholders

GROOVING TOOLHOLDERS

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■ Internal Standard.....	Page 167
■ Internal Mini-L.....	Page 168
■ Internal Mini-L - Adjustable	Page 168
■ Micro	Page 169

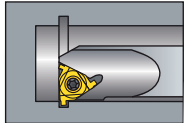


Standard

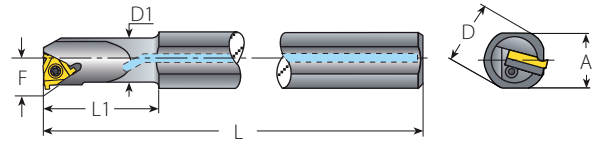
Spare Parts

Insert Size Ordering Code EDP No. Dimensions inch							   			
IC	RH		H=H1=B	F	L1	L2	Insert Screw	Anvil Screw	Torx Key	Anvil RH
1/4"	NL031-2	66214	0.31	0.43	5.37	0.69	SN2T	-	K2T	-
	AL3/8-3	66091	0.37	0.63	2.45	0.76	SA3T	SY3T	K3T	YE3M-1.5N
3/8"	AL050-3	66000	0.50	0.63	3.27	0.87				
	AL0625-3	66005	0.63	0.63	5.00	1.02				
	AL075-3	66007	0.75	0.75	5.00	1.02				
	AL100-3	66016	1.00	1.00	6.00	1.20				
	AL125-3	66036	1.25	1.25	7.00	1.18				
1/2"	AL100-4	66024	1.00	1.00	6.00	1.42	SA4T	SY4T	K4T	YE4M-1.5N
	AL125-4	66042	1.25	1.25	7.00	1.42				
	AL150-4	66066	1.50	1.50	8.00	1.42				
5/8"	AL100-5	66034	1.00	1.25	6.00	1.57	SA5T	SY5T	K5T	YE5M-1.5N
	AL125-5	66051	1.25	1.25	7.00	1.57				
	AL150-5	66073	1.50	1.50	8.00	1.57				
	AL200-5	66085	2.00	2.00	10.00	1.57				

* The toolholders are supplied with standard anvils. For Grooving, please use the anvils indicated in the table above.



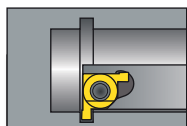
Internal Toolholders



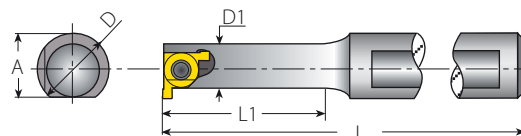
Standard

Insert Size	Ordering Code	EDP No.	Dimensions inch							Min. Bore dia.					*
IC	RH		A	L	L1	D	D1	F	inch	Insert Screw	Anvil Screw	Torx Key	Anvil RH		
1/4"	NVRC0375-2	66234	0.67	7.00	1.00	0.75	0.37	0.28	0.50	SN2T	-	K2T	-		
	NVRC050-2	66236	0.67	7.00	1.25	0.75	0.50	0.37	0.65						
3/8"	NVRC050-3	66238	0.67	7.00	1.25	0.75	0.50	0.40	0.67	SN3T	-	K3T	-		
	NVRC0625-3	66240	0.67	7.00	1.50	0.75	0.62	0.46	0.80						
	NVRC0625D-3	66242	0.58	6.00	1.25	0.62	0.62	0.46	0.80						
	AVRC075-3	66098	0.67	7.00	1.50	0.75	0.75	0.51	0.90						
	AVRC100-3	66100	1.12	10.00	2.50	1.25	1.00	0.65	1.20	SA3T	SY3T	K3T	YI3M-1.5N		
	AVRC100D-3	66104	0.90	8.00	1.75	1.00	1.00	0.65	1.20						
	AVRC125-3	66108	1.12	10.00	2.50	1.25	1.25	0.77	1.45						
	AVRC150-3	66114	1.34	12.00	2.50	1.50	1.50	0.90	1.65						
1/2"	NVRC075-4	66244	0.67	7.00	2.00	0.75	0.75	0.59	1.00	SN4T	-	K4T	-		
	AVRC100-4	66102	1.12	10.00	2.50	1.25	1.00	0.71	1.25						
	AVRC100D-4	66106	0.88	8.00	1.75	1.00	1.00	0.71	1.25	SA4T	SY4T	K4T	YI4M-1.5N		
	AVRC125-4	66110	1.12	10.00	2.50	1.25	1.25	0.85	1.50						
	AVRC150-4	66116	1.34	12.00	2.50	1.50	1.50	0.98	1.75						
5/8"	AVRC125-5	66112	1.12	10.00	2.50	1.25	1.25	0.88	1.55	SN5T	SY5T	K5T	YI5M-1.5N		
	AVRC150-5	66118	1.34	12.00	2.50	1.50	1.50	1.00	1.80	SA5T	SY5T	K5T	YI5M-1.5N		
	AVRC200-5	66120	1.80	14.00	3.00	2.00	2.00	1.25	2.30						
	AVRC250-5	66123	2.26	16.00	3.00	2.50	2.50	1.50	2.80						

* The toolholders are supplied with standard anvils. For Grooving, please use the anvils indicated in the table above.

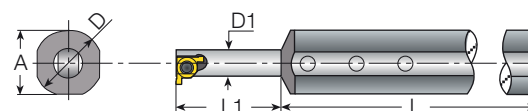
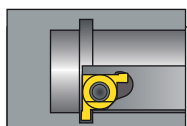


Internal Toolholders



Mini-L

Spare Parts								
Insert Size	Ordering Code	EDP No.	Dimensions inch					Anti-Vibration System
IC	RH		A	L	L1	D	D1	
5.0L	SNVR 0375U-5L	67336	0.36	3.19	0.63	0.37	0.24	No
	BNVR 0375S-5L	67306	0.36	3.43	0.87	0.37	0.24	Carbide Implanted
	BNVR 0375M-5L	67302	0.36	3.82	1.22	0.37	0.24	Carbide Implanted
	BNVR 0375L-5L	67300	0.36	4.29	1.69	0.37	0.24	Carbide Implanted
5.0L	SNVR 050U-5L	67340	0.49	3.19	0.63	0.50	0.24	No
	BNVR 050S-5L	67315	0.49	3.43	0.87	0.50	0.24	Carbide Implanted
	BNVR 050M-5L	67311	0.49	3.82	1.22	0.50	0.24	Carbide Implanted
	BNVR 050L-5L	67309	0.49	4.29	1.69	0.50	0.24	Carbide Implanted
 								
Insert Screw Torx Key								
SN5LT K5LT								



Mini-L - Adjustable

Spare Parts								
Insert Size	Ordering Code	EDP No.	EDP No.	Dimensions inch				
IC	Sleeve	Holder RH		A	L	L1	D	D1
5.0L	SV0625-6.2	67343	BNVR6.2T-5L	67324	.584	4	0.315-1.73	.625 .244
   								
Insert Screw Torx Key for Insert Screw Holder Screw x 3 Key for Holder Screw								
SN5LT K5LT S4.0 K2.0								

Internal Toolholders



Micro - Double Ended

Spare Parts

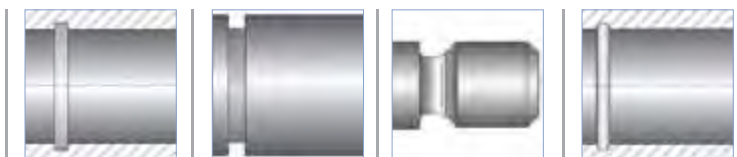


Micro Insert Dia.	Shank Dia.	Ordering Code	EDP No.	Dimensions inch			Location Screw*			Clamping Screw x 3	
d [mm]	D			L	L1	L0	Screw	M	Key	Screw	Key
3	0.50	SMC050-3.0	41075	3.15	0.35- Short	3.50	4GISM8X28	1.10	K4.0	M4X0.7X4.0	K2.0
					0.63- Medium	3.78	4GISM8X21	0.83			
	0.63	SMC0625-3.0	40210	3.74	0.35- Short	4.09	4GISM8X49	1.93			
	0.75	SMC075-3.0	41080		0.63- Medium	4.37	4GISM8X42	1.65			
4	0.50	SMC050-4.0	41092	3.15	0.35- Short	3.50	4GISM8X28	1.10			
					0.63- Medium	3.78	4GISM8X21	0.83			
					0.83- Long	3.98	4GISM8X16	0.63			
	0.63	SMC0625-4.0	40212	3.74	0.35- Short	4.09	4GISM8X49	1.93			
					0.63- Medium	4.37	4GISM8X42	1.65			
	0.75	SMC075-4.0	41081		0.83- Long	4.57	4GISM8X37	1.46			
6	0.50	SMC050-6.0	41517	3.15	0.35- Short	3.5	4GISM8X28	1.10			
					0.63- Medium	3.78	4GISM8X21	0.83			
					0.83- Long	3.98	4GISM8X16	0.63			
	0.63	SMC0625-6.0	40214	3.74	0.35- Short	4.09	4GISM8X49	1.93			
					0.63- Medium	4.37	4GISM8X42	1.65			
	0.75	SMC075-6.0	41082		0.83- Long	4.57	4GISM8X37	1.46			

* Every toolholder package contains the full range of location screws needed.



Grooving



> Technical Data

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

Material Group	Vardex No.	Material		Hardness Brinell HB	Vc [ft/min]				Feed f [inch/rev]	
					Coated				Laydown & Mini	Micro
					VTX (Laydown)	VMX (Micro)	VKP (Mini)	VHX (Mini)		
P Steel	1	Unalloyed steel	Low carbon (C=0.1-0.25%)	125	459 - 656	164 - 393	459 - 656	66 - 164	0.0118	0.0012
	2		Medium carbon (C=0.25-0.55%)	150	393 - 590	131 - 328	393 - 590	49 - 131	0.0059	0.0008
	3		High Carbon (C=0.55-0.85%)	170	361 - 590	98 - 262	361 - 590	49 - 98	0.002	0.0004
	4	Low alloy steel (alloying elements ≤ 5%)	Non hardened	180	328 - 508	164 - 229	328 - 508	66 - 148	0.0098	0.0008
	5		Hardened	275	295 - 475	131 - 197	295 - 475	33 - 82	0.0039	0.0004
	6		Hardened	350	262 - 443	98 - 164	262 - 443	33 - 82	0.002	0.0004
	7	High alloy steel (alloying elements >5%)	Annealed	200	229 - 377	98 - 164	213 - 377		0.0079	0.0008
	8		Hardened	325	164 - 328	82 - 131	164 - 328		0.002	0.0004
	9	Cast steel	Low alloy (alloying elements <5%)	200	98 - 164	98 - 164	98 - 164	82 - 164	0.0079	0.0008
	10		High alloy (alloying elements >5%)	225	66 - 131	82 - 131	82 - 131	66 - 131	0.002	0.0008
M Stainless Steel	11	Stainless steel Ferritic	Non hardened	200	229 - 393	197 - 328	262 - 393		0.0079	0.0004
	12		Hardened	330	197 - 311	131 - 197	180 - 311		0.002	0.0004
	13	Stainless steel Austenitic	Austenitic	180	229 - 328	164 - 295	197 - 328		0.0079	0.0004
	14		Super Austenitic	200	131 - 295	131 - 197	164 - 295		0.002	0.0004
	15	Stainless steel Cast ferritic	Non hardened	200	262 - 361	131 - 197	197 - 262		0.0079	0.0008
	16	Cast austenitic	Hardened	330	213 - 361	98 - 164	148 - 213		0.002	0.0004
	17		Austenitic	200	279 - 328	131 - 197	164 - 229		0.0079	0.0008
	18		Hardened	330	197 - 328	98 - 164	131 - 197		0.002	0.0004
K Cast Iron	28	Malleable Cast iron	Ferritic (short chips)	130	229 - 393	164 - 229	197 - 262		0.0079	0.0008
	29		Pearlitic (long chips)	230	229 - 393	164 - 229	197 - 262		0.0059	0.0004
	30	Grey cast iron	Low tensile strength	180	229 - 393	164 - 229	197 - 262		0.0079	0.0008
	31		High tensile strength	260	197 - 328	131 - 197	131 - 229		0.0039	0.0059
	32	Nodular SG iron	Ferritic	160	164 - 262	164 - 229	197 - 262		0.0079	0.0008
	33		Pearlitic	260	197 - 295	197 - 262	229 - 295		0.0039	0.0004
N_(K) Non-Ferrous Metals	34	Aluminium alloys Wrought	Non aging	60	328 - 787	328 - 983	262 - 787	98 - 197	0.0157	0.0012
	35		Aged	100	262 - 557	328 - 492	328 - 557	82 - 164	0.0039	0.0012
	36	Aluminium alloys	Cast	75	328 - 492	328 - 492	328 - 492	82 - 164	0.0098	0.0012
	37		Cast & aged	90	262 - 393	197 - 328	197 - 328	66 - 131	0.0059	0.0012
	38	Aluminium alloys	Cast Si 13-22%	130	328 - 492	328 - 492	328 - 492	49 - 98	0.0059	0.0008
	39	Copper and copper alloys	Brass	90	262 - 656	197 - 328	262 - 656	49 - 115	0.0079	0.0012
	40		Bronze and non leaded copper	100	262 - 656	197 - 328	262 - 656	49 - 115	0.0059	0.0012
	19	High temperature alloys	Annealed (Iron based)	200	148 - 197	82 - 148	82 - 148		0.0079	0.0004
S_(M) Heat Resistant Material	20		Aged (Iron based)	280	115 - 164	66 - 98	66 - 98		0.002	0.0004
	21		Annealed (Nickel or Cobalt based)	250	66 - 98	49 - 66	49 - 66		0.002	0.0004
	22		Aged (Nickel or Cobalt based)	350	49 - 82	33 - 49	33 - 49		0.002	0.0004
	23	Titanium alloys	Pure 99.5 Ti	400Rm	459 - 557	197 - 328	197 - 328		0.0039	0.0008
	24		α+β alloys	1050Rm	164 - 229	131 - 164	131 - 164		0.002	0.0008
H_(K) Hardned Material	25	Extra hard steel	Hardened & tempered	45-50HRc	148 - 197	66 - 131	66 - 131		0.0008	0.0004
	26			51-55HRc	131 - 164	66 - 115	66 - 115		0.0008	0.0004

Grades and Their Application

Grade	Application Type	Sample	Grade	Application Type	Sample
VTX	General use carbide grade. A tough sub-micron substrate with TiAlN coating. Provides good fracture toughness and excellent wear resistance.		VKP	General use carbide grade for Mini inserts. TiN coated	
VMX	General use carbide grade for Micro inserts. TiN coated		VHX	General use HSS grade for Mini inserts. For Machining at low cutting speed. TiN coated	



Boring



> Inserts

BORING INSERTS

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■ TD0W Inserts	Page 176
■ WC0W Inserts	Page 177
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■ Chamfer - Micro	Page 179
■ Long Nose - Micro	Page 180
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Vardex Ordering Code System

PowerBore Inserts

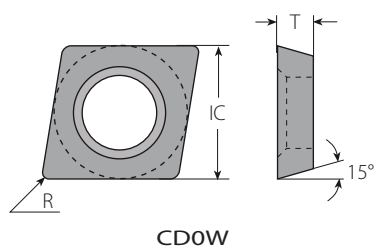
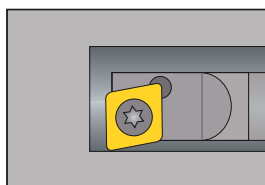
T 1	D 2	0 3	W 4	41 5	14 6	VTX 7
1- Insert Shape C - Diamond 80 deg. T - Triangle W - Trigon 80 deg.	2 - Clearance Angle C - 7 deg. D - 15 deg.		3 - Tolerance Class 0 - Special Tolerance Class		4 - Insert Type W - Hole + Countersink	
5 - Insert Dimension 40-IC 0.156" - Thickness-0.040" 41-IC 0.160" - Thickness-0.047" 42-IC 0.156" - Thickness-0.062" 50-IC 0.187" - Thickness-0.094"		6 - Corner Radius 11- R 0.02 12- R 0.007 13- R 0.008 14- R 0.015		7 - Carbide Grade VTX		

Micro Boring Inserts - Double Ended

6.0	S	I	R	0.2	M	-	Bore	-	1	VMX
1	2	3	4	5	6		7		8	9
1 - Insert Dia. (mm)		2 - Tool Group		3 - Type of Insert		4 - RH or LH		5 - Corner Radius (mm)		
3.0 4.0 6.0 8.0 10.0		S - Solid Carbide		I - Internal		R - Right Hand Insert L - Left Hand Insert		0.2		
6 - Tool Length		7 - Tool Application				8 - Front Relief		9 - Carbide Grade		
U - Ultra Short S - Short M - Medium L - Long		Bore - Boring Copy - Boring Copy Chamfer - Boring Chamfer Back - Back Edge 3527, 3537, 3547 - Long Nose BD - Bore Drill				1 - With Relief 0 - Without Relief		VMX		

Boring

Internal



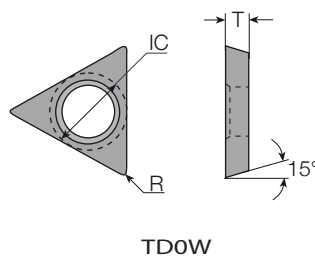
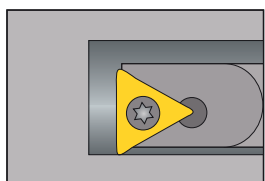
CD0W Inserts for Series A Toolholders

Power Bore



Insert Size	Ordering Code	Dimensions [inch]		Insert Screw 
		R	T	
.156"	CD0W4011...	0.002	0.040	VS01
	CD0W4012...	0.007	0.040	
	CD0W4014...	0.015	0.040	

Internal



TD0W Inserts for Series B Toolholders

Power Bore

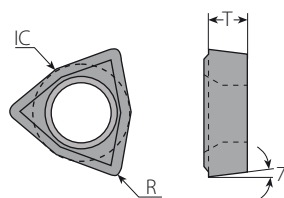
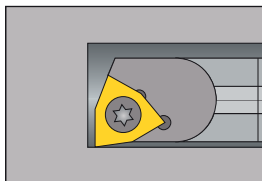


Insert Size	Ordering Code	Dimensions [inch]		Insert Screw 
		R	T	
.160"	TD0W4111...	0.002	0.047	VS01, VS40
	TD0W4112...	0.007	0.047	
	TD0W4114...	0.015	0.047	

Boring



Internal



WC0W 4213, 4214

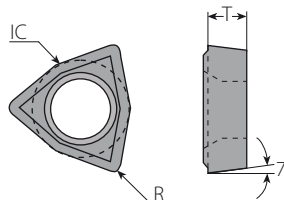
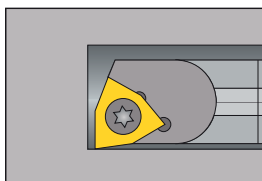
WC0W Inserts for Series E Toolholders

Power Bore



Insert Size	Ordering Code	Dimensions [inch]		Insert Screw 
IC		R	T	
.156"	WC0W4213...	0.008	0.062	VS40
	WC0W4214...	0.015	0.062	

Internal



TD0W

WC0W Inserts for Series F Toolholders

Power Bore

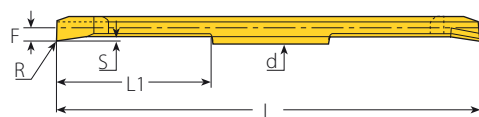
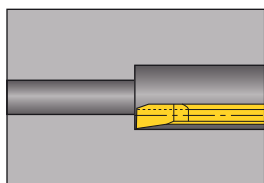


Insert Size	Ordering Code	Dimensions [inch]		Insert Screw 
IC		R	T	
.187"	WC0W5013...	0.008	0.094	VS41
	WC0W5014...	0.015	0.094	

Micro Boring - Boring



Internal



RH-Double Ended

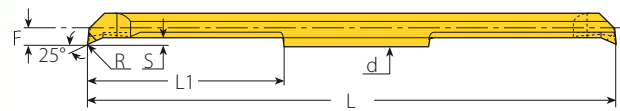
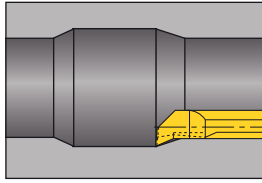
Micro - Double Ended

Insert dia.	Ordering Code	Dimensions inch					Min. Bore dia.	Holder
d (mm)	RH	R	L1	L	S	F	inch	
3.0	3.0SIR0.1U-Bore-1...	0.004	0.23	1.417	0.016	0.009	0.079	SMC..-3.0
	3.0SIR0.1S-Bore-1...	0.004	0.36	1.417	0.016	0.009		
	3.0SIR0.2S-Bore-1...	0.008	0.36	1.417	0.026	0.056	0.126	
	3.0SIR0.2M-Bore-1...	0.008	0.64	1.969	0.026	0.056		
4.0	4.0SIR0.2S-Bore-1...	0.008	0.36	1.417	0.026	0.076	0.165	SMC..-4.0
	4.0SIR0.2M-Bore-1...	0.008	0.64	1.969	0.026	0.076		
	4.0SIR0.2L-Bore-1...	0.008	0.84	2.362	0.026	0.076		
6.0	6.0SIR0.2S-Bore-1...	0.008	0.36	1.417	0.030	0.115	0.244	SMC..-6.0
	6.0SIR0.2M-Bore-1...	0.008	0.64	1.969	0.030	0.115		
	6.0SIR0.2L-Bore-1...	0.008	0.84	2.362	0.030	0.115		
8.0	8.0SIR0.2S-Bore-1...	0.008	0.48	2.126	0.032	0.154	0.323	SMC..-8.0
	8.0SIR0.2M-Bore-1...	0.008	0.79	2.756	0.032	0.154		
	8.0SIR0.2L-Bore-1...	0.008	1.09	3.386	0.032	0.154		
10.0	10.0SIR0.2S-Bore-1...	0.008	0.58	2.362	0.039	0.194	0.402	SMC..-10.0
	10.0SIR0.2M-Bore-1...	0.008	0.99	3.150	0.039	0.194		
	10.0SIR0.2L-Bore-1...	0.008	1.37	3.937	0.039	0.194		

Micro Boring Copy



Internal



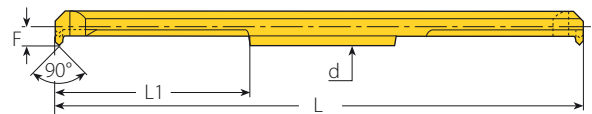
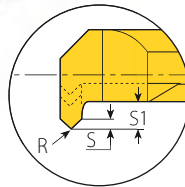
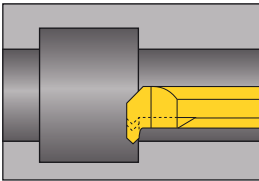
RH-Double Ended

Micro - Double Ended

Insert dia.	Ordering Code	Dimensions inch					Min. Bore dia.	Holder
d (mm)	RH	R	L1	L	S	F	inch	
4.0	4.0SIR0.2S-Copy-1...	0.008	0.36	1.417	0.039	0.076	0.165	SMC...-4.0
	4.0SIR0.2M-Copy-1...	0.008	0.64	1.969	0.039	0.076		
	4.0SIR0.2L-Copy-1...	0.008	0.84	2.362	0.039	0.076		
6.0	6.0SIR0.2S-Copy-1...	0.008	0.36	1.417	0.051	0.115	0.276	SMC...-6.0
	6.0SIR0.2M-Copy-1...	0.008	0.64	1.969	0.051	0.115		
	6.0SIR0.2L-Copy-1...	0.008	0.84	2.362	0.051	0.115		

Micro Boring Chamfer

Internal



RH-Double Ended

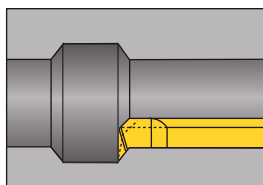
Micro - Double Ended

Insert dia.	Ordering Code	Dimensions inch					Min. Bore dia.	Holder
d (mm)	RH	R	L1	L	F	S1	S	inch
4.0	4.0SIR0.2S-Chamfer-0...	0.008	0.36	1.417	0.076	0.031	0.016	0.165
	4.0SIR0.2M-Chamfer-0...	0.008	0.64	1.969	0.076	0.031	0.016	
	4.0SIR0.2L-Chamfer-0...	0.008	0.84	2.362	0.076	0.031	0.016	
6.0	6.0SIR0.2S-Chamfer-0...	0.008	0.36	1.417	0.115	0.039	0.028	0.244
	6.0SIR0.2M-Chamfer-0...	0.008	0.64	1.969	0.115	0.039	0.028	
	6.0SIR0.2L-Chamfer-0...	0.008	0.84	2.362	0.115	0.039	0.028	

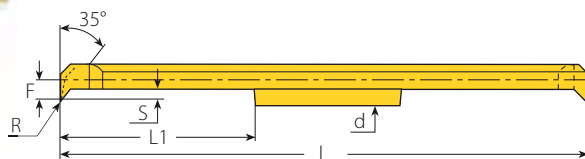
Micro Boring - Long Nose



Internal



RH-Double Ended



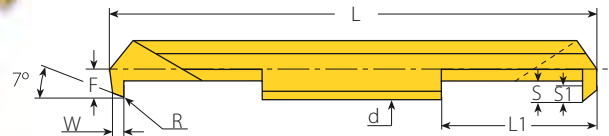
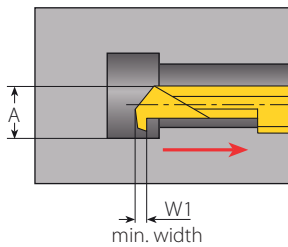
Micro - Double Ended

Insert dia.	Ordering Code	Dimensions inch					Min. Bore dia.	Holder
d(mm)	RH	R	L1	L	F	S	inch	
6.0	6.0SIR0.2S-3527-1...	0.008	0.36	1.417	0.106	0.115	0.272	SMC...-6.0
	6.0SIR0.2M-3527-1...	0.008	0.64	1.969	0.106	0.115		
	6.0SIR0.2L-3527-1...	0.008	0.84	2.362	0.106	0.115		
8.0	8.0SIR0.2S-3537-1...	0.008	0.48	2.126	0.146	0.154	0.35	SMC...-8.0
	8.0SIR0.2M-3537-1...	0.008	0.79	2.756	0.146	0.154		
	8.0SIR0.2L-3537-1...	0.008	1.09	3.386	0.146	0.154		
10.0	10.0SIR0.2S-3547-1...	0.008	0.58	2.362	0.185	0.194	0.425	SMC...-10.0
	10.0SIR0.2M-3547-1...	0.008	0.99	3.150	0.185	0.194		
	10.0SIR0.2L-3547-1...	0.008	1.37	3.937	0.185	0.194		

Micro Boring - Back Edge



Internal



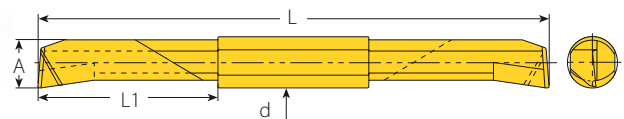
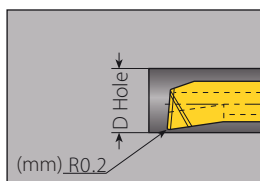
RH-Double Ended

Micro - Double Ended

Insert dia.	Ordering Code	Dimensions inch										Min. Bore dia.	Holder
d(mm)	RH	R	L1	L	A	W	W1	S	S1	F	inch		
3.0	3.0SIR0.2S-Back-1...	0.002	0.36	1.417	0.135	0.059	0.071	0.031	0.024	0.056	0.126		SMC...-3.0
	3.0SIR0.2M-Back-1...	0.002	0.64	1.969									
4.0	4.0SIR0.2S-Back-1...	0.002	0.36	1.417	0.175	0.079	0.092	0.051	0.039	0.076	0.165		SMC...-4.0
	4.0SIR0.2M-Back-1...	0.002	0.64	1.969									
	4.0SIR0.2L-Back-1...	0.002	0.84	2.362									
6.0	6.0SIR0.2S-Back-1...	0.002	0.36	1.417	0.254	0.079	0.097	0.075	0.063	0.115	0.244		SMC...-6.0
	6.0SIR0.2M-Back-1...	0.002	0.64	1.969									
	6.0SIR0.2L-Back-1...	0.002	0.84	2.362									

Micro Boring - Boredrill

Internal



RH-Double Ended

Micro - Double Ended

Insert dia.	Ordering Code	Dimensions inch				Min. Bore dia.	Holder
d(mm)	RH	L1	L	A	inch		
4.0	4.0SIR0.2M-BD-1...	0.64	1.969	0.139	0.147		SMC...-4.0
6.0	6.0SIR0.2M-BD-1...	0.64	1.969	0.205	0.228		SMC...-6.0
	6.0SIR0.2L-BD-1...	0.84	2.362				
8.0	8.0SIR0.2S-BD-1...	0.48	2.126	0.272	0.307		SMC...-8.0
	8.0SIR0.2M-BD-1...	0.79	2.756				
	8.0SIR0.2L-BD-1...	1.09	3.386				



Boring



> Toolholders

■ VARDEX Ordering Code System.....	Page 184
■ Series A - Boring Bars for CD0W Inserts.....	Page 185
■ Series B - Boring Bars for TD0W Inserts.....	Page 186
■ Series E -Boring Bars for WC0W Inserts (4213, 4214)	Page 187
■ Series F - Boring Bars for WC0W Inserts (5013, 5014).....	Page 188
■ Toolholders - Micro Double Ended.....	Page 189

VarDEX Ordering Code System

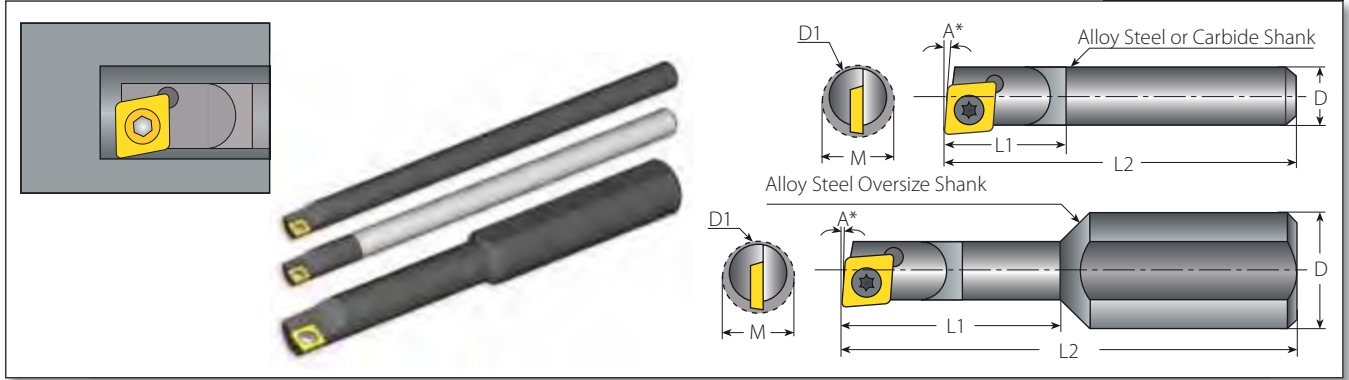
PowerBore Toolholders

C	06	-	23	C	40	5
1	2		3	4	5	6
1 - Shank Style	2 - Shank Dia.	3 - Bar Dia. [Di]	4 - Insert Shape	5 - Holder Length [L2]		
C - Carbide S - Steel	05 - 5/32" - 0.156 06 - 3/16" - 0.187 08 - 1/4" - 0.250 10 - 5/16" - 0.312 12 - 3/8" - 0.375 16 - 1/2" - 0.500	21 - 0.165 23 - 0.180 24 - 0.187 26 - 0.203 32 - 0.250 40 - 0.312	C - Diamond 80 Deg.  T - Triangle  W- Trigon 80 Deg. 	23 - 2.25 25 - 2.50 27 - 2.75 30 - 3.00 35 - 3.50 40 - 4.00 45 - 4.50 50 - 5.00 60 - 6.00		
				6 - Front Relief Angle		
				0, 5, 7		

Micro

S	M	C	0625	-	3
1	2	3	4		5
1 - Holder Shape	2 - Holder Type	3 - Cooling	4 - Holder Dia.	5 - Bore Size	
S - Sleeve (Double Ended)	M - Micro (Double Ended)	C - Coolant Channel	050 - 1/2" 0625 - 5/8" 075 - 3/4"	Micro Size 3, 4, 6, 8, 10	

Series A - Boring Bars for CD0W Inserts



Alloy Steel Shanks - Standard Size



Shank	Ordering Code	EDP No.	Dimensions inch						Insert Type	Screw	Torx Key
			A	D	D1	M	L2	L1			
			angle	shank dia.	bar dia.	min.bore	overall length	bar length			
3/16"	S06-21C257	41546	7°	0.187	0.165	0.180	2.500	.500	CD0W	VS01	VT51
	S06-23C255	41547	5°	0.187	0.180	0.208	2.500				
	S06-24C255	41548	5°	0.187	0.187	0.230	2.500				
	S06-24C250	41543	0°	0.187	0.187	0.244	2.500				
1/4"	S08-32C305	41550	5°	0.250	0.250	0.290	3.000	D1=D	CD0W	VS01	VT51
	S08-32C300	41551	0°	0.250	0.250	0.300	3.000				



Solid Carbide Shank with Alloy Steel Head - Standard Size

Shank	Ordering Code	EDP No.	Dimensions inch						Insert Type	Screw	Torx Key
			A	D	D1	M	L2	L1			
			angle	shank dia.	bar dia.	min.bore	overall length	bar length			
5/32"	C05-21C607	41552	7°	.156	.165	.180	6.000	.500	CD0W	VS01	VT51
3/16"	C06-23C405	41553	5°	.187	.180	.208	4.000				
	C06-24C405	41554	5°	.187	.187	.230	4.000				
	C06-24C400	41555	0°	.187	.187	.244	4.000				
1/4"	C08-32C405	41556	5°	.250	.250	.290	4.000	D1=D	CD0W	VS01	VT51
	C08-32C400	41557	0°	.250	.250	.300	4.000				

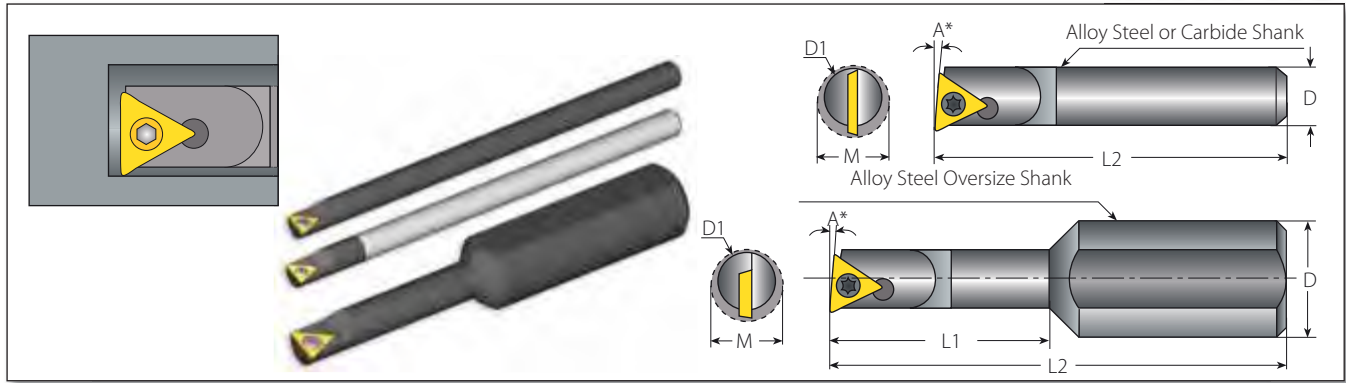


Alloy Steel Shanks- Oversize

Shank	Ordering Code	EDP No.	Dimensions inch								
			A	D	D1	M	L2	L1			
			angle	shank dia.	bar dia.	min.bore	overall length	bar length	Insert Type	Screw	Torx Key
3/8"	S12-23C235	41558	5°	.375	.180	.208	2.250	1.000	CD0W	VS01	VT51
	S12-26C235	41559	5°	.375	.203	.230	2.250				
	S12-26C230	41560	0°	.375	.203	.244	2.250				
	S12-32C255	41561	5°	.375	.250	.290	2.500	1.250			
	S12-32C250	41562	0°	.375	.250	.300	2.500				

* 5° angle for facing and thru-hole boring
 * 0° angle for thru-hole boring and boring to a shoulder

Series B - Boring Bars for TD0W Inserts



Power Bore

Spare Parts

Alloy Steel Shanks - Standard Size

Shank	Ordering Code	EDP No.	Dimensions inch						
			A	D=D1	M	L2			
			angle	bar dia.	min.bore	overall length	Insert Type	Screw	Torx Key
3/16"	S06-24T355	41563	5°	.187	.270	3.500	TD0W	VS01	VT51
	S06-24T350	41564	0°	.187	.270	3.500			
1/4"	S08-32T405	41565	5°	.250	.300	4.000		VS40	
	S08-32T400	41566	0°	.250	.300	4.000			
5/16"	S10-40T405	41567	5°	.312	.360	4.000			
	S10-40T400	41568	0°	.312	.360	4.000			

Power Bore

Spare Parts

Solid Carbide Shank with Alloy Steel Head - Standard Size

Shank	Ordering Code	EDP No.	Dimensions inch						
			A	D=D1	M	L2			
			angle	bar dia.	min.bore	overall length	Insert Type	Screw	Torx Key
3/16"	C06-24T405	41569	5°	.187	.270	4.000	TD0W	VS01	VT51
	C06-24T400	41570	0°	.187	.270	4.000			
1/4"	C08-32T405	41571	5°	.250	.300	4.000		VS40	
	C08-32T400	41572	0°	.250	.300	4.000			
5/16"	C10-40T405	41573	5°	.312	.360	4.000			
	C10-40T400	41574	0°	.312	.360	4.000			

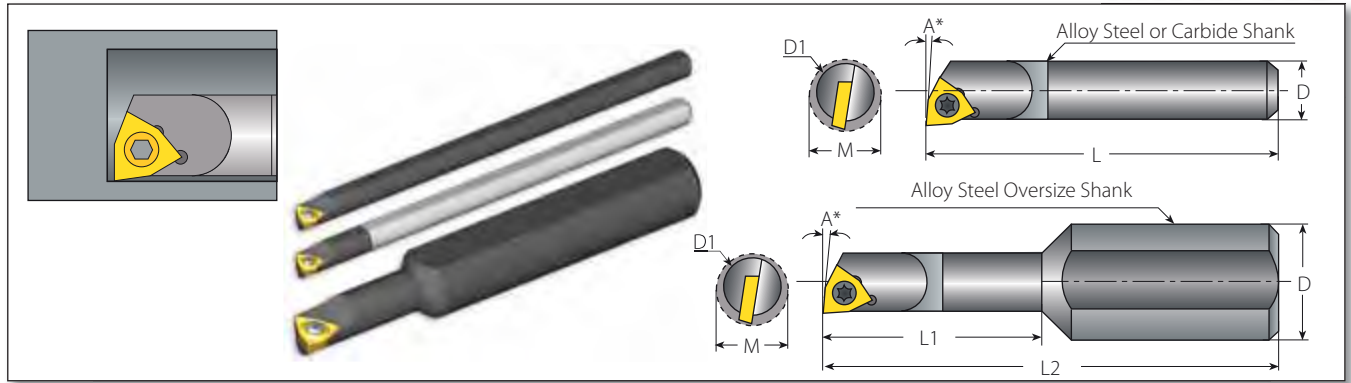
Power Bore

Spare Parts

Alloy Steel Shanks - Oversize

Shank	Ordering Code	EDP No.	Dimensions inch								
			A	D	D1	M	L2	L1			
angle shank dia. bar dia. min.bore overall length bar length									Insert Type	Screw	Torx Key
3/8"	S12-26T255	41575	5°	.375	.203	.270	2.500	1.000	TD0W	VS01	VT51
	S12-26T250	41576	0°	.375	.203	.270	2.500				
	S12-32T275	41577	5°	.375	.250	.300	2.750	1.250			
	S12-32T270	41578	0°	.375	.250	.300	2.750				
	S12-40T305	41579	5°	.375	.312	.360	3.000	1.500			
	S12-40T300	41580	0°	.375	.312	.360	3.000				

Series E - Boring Bars for WC0W Inserts (4213, 4214)



Power Bore

Spare Parts

Alloy Steel Shanks - Standard Size

Shank	Ordering Code	EDP No.	Dimensions inch				Insert Type	Screw	Torx Key
			A	D=D1	M	L			
			angle	bar dia.	min.bore	bar length			
3/16"	S06-24W255	41581	5°	.187	.230	2.500	WC0W4213 WC0W4214	VS40	VT51
	S06-24W250	41582	0°	.187	.244	2.500			
1/4"	S08-32W405	41583	5°	.250	.300	4.000			
	S08-32W400	41584	0°	.250	.300	4.000			

Power Bore

Spare Parts

Solid Carbide Shank with Alloy Steel Head - Standard Size

Shank	Ordering Code	EDP No.	Dimensions inch				Insert Type	Screw	Torx Key
			A	D=D1	M	L			
			angle	bar dia.	min.bore	bar length			
3/16"	C06-24W405	41585	5°	.187	.230	4.000	WC0W4213 WC0W4214	VS40	VT51
	C06-24W400	41586	0°	.187	.244	4.000			
1/4"	C08-32W405	41587	5°	.250	.290	4.000			
	C08-32W400	41588	0°	.250	.300	4.000			

Power Bore

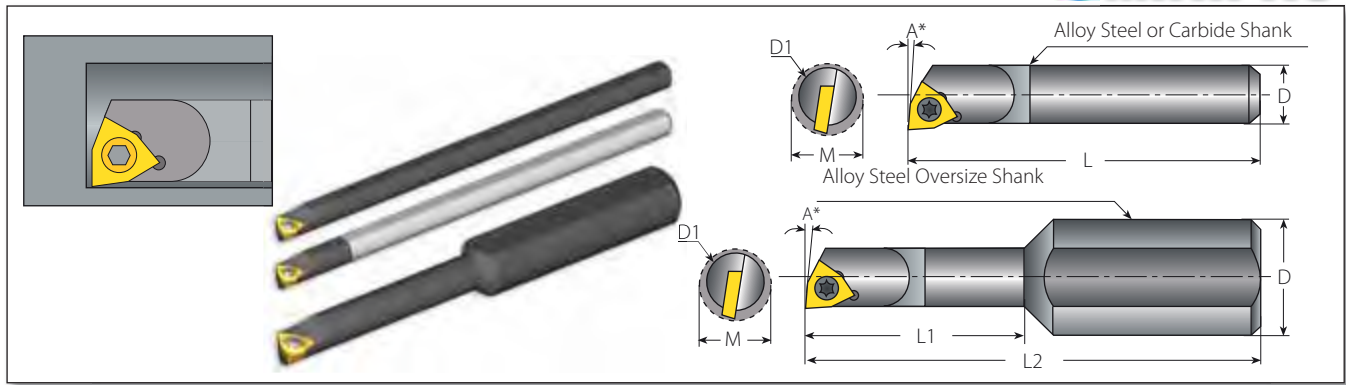
Spare Parts

Alloy Steel Shanks - Oversize

Shank	Ordering Code	EDP No.	Dimensions inch						Insert Type	Screw	Torx Key
			A	D	D1	M	L2	L1			
			angle	shank dia.	bar dia.	min.bore	overall length	bar length			
3/8"	S12-26W235	41589	5°	.375	.203	.230	2.250	.500	WC0W4213 WC0W4214	VS40	VT51
	S12-26W230	41590	0°	.375	.203	.244	2.250				
	S12-32W255	41591	5°	.375	.250	.290	2.500				
	S12-32W250	41592	0°	.375	.250	.300	2.500				

* 5° angle for facing and thru-hole boring
* 0° angle for thru-hole boring and boring to a shoulder

Series F - Boring Bars for WCOW Inserts (5013, 5014)



Power Bore

Alloy Steel Shanks - Standard Size

Spare Parts

Shank	Ordering Code	EDP No.	Dimensions inch				Insert Type	Screw	Torx Key
			A	D=D1	M	L			
			angle	bar dia.	min.bore	bar length			
5/16"	S10-40W405	41593	5°	.312	.360	4.000	WCOW5013	VS41	VT51
	S10-40W400	41594	0°	.312	.360	4.000	WCOW5014		

Power Bore

Solid Carbide Shank with Alloy Steel Head - Standard Size

Spare Parts

Shank	Ordering Code	EDP No.	Dimensions inch				Insert Type	Screw	Torx Key
			A	D=D1	M	L			
			angle	bar dia.	min.bore	bar length			
5/16"	C10-40W405	41597	5°	.312	.360	4.000	WCOW5013	VS41	VT51
	C10-40W400	41598	0°	.312	.360	4.000	WCOW5014		

Power Bore

Alloy Steel Shanks - Oversize

Spare Parts

Shank	Ordering Code	EDP No.	Dimensions inch						Insert Type	Screw	Torx Key
			A	D	D1	M	L2	L1			
			angle	shank dia	bar dia.	min.bore	overall length	bar length			
3/8"	S12-40W305	41599	5°	.375	.312	.360	3.000	1.500	WCOW5013	VS41	VT51
	S12-40W300	41600	0°	.375	.312	.360	3.000	1.500	WCOW5014		

Internal Toolholders



Micro - Double Ended

Spare Parts

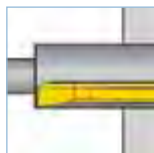
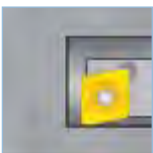


Micro Insert Dia.	Shank Dia.	Ordering Code	EDP No.	Dimensions inch			Location Screw*			Clamping Screw x 3	
d [mm]	D			L	L1	L0	Screw	M	Key	Screw	Key
3	0.50	SMC050-3.0	41075	3.15	0.35- Short	3.50	4GISM8X28	1.10	K4.0	M4X0.7X4.0	K2.0
					0.63- Medium	3.78	4GISM8X21	0.83			
	0.63	SMC0625-3.0	40210	3.74	0.35- Short	4.09	4GISM8X49	1.93			
	0.75	SMC075-3.0	41080		0.63- Medium	4.37	4GISM8X42	1.65			
4	0.50	SMC050-4.0	41092	3.15	0.35- Short	3.50	4GISM8X28	1.10			
					0.63- Medium	3.78	4GISM8X21	0.83			
					0.83- Long	3.98	4GISM8X16	0.63			
	0.63	SMC0625-4.0	40212	3.74	0.35- Short	4.09	4GISM8X49	1.93			
					0.63- Medium	4.37	4GISM8X42	1.65			
					0.83- Long	4.57	4GISM8X37	1.46			
6	0.50	SMC050-6.0	41517	3.15	0.35- Short	3.50	4GISM8X28	1.10			
					0.63- Medium	3.78	4GISM8X21	0.83			
					0.83- Long	3.98	4GISM8X16	0.63			
	0.63	SMC0625-6.0	40214	3.74	0.35- Short	4.09	4GISM8X49	1.93			
					0.63- Medium	4.37	4GISM8X42	1.65			
					0.83- Long	4.57	4GISM8X37	1.46			
8	0.63	SMC0625-8.0	40248	3.74	0.47 - Short	4.21	4GISM8X33	1.30		M6X1.0X5.0	K3.0
					0.79 - Medium	4.53	4GISM8X25	0.98			
	0.79	SMC075-8.0	40184		1.10 - Long	4.84	4GISM8X17	0.67			
10	0.63	SMC0625-10.0	41093	3.74	0.59 - Short	4.33	4GISM8X30	1.18			
					0.98 - Medium	4.72	4GISM8X20	0.79			
	0.79	SMC075-10.0	41083		1.38 - Long	5.12	4GISM8X10	0.39			

* Every toolholder package contains the full range of location screws needed.



Boring



> Technical Data



■ Spare Parts PowerBore	Page 192
■ Recommended Cutting Data - PowerBore and Micro.....	Page 193
■ Grades and Their Applications.....	Page 193

Spare Parts PowerBore

					
Insert	Boring Bar	Insert	Torx Screw	Screw Description	Torx key
	A	CD0W	VS01	1-72 Oval X 0.109LG.	VT51
	B	TD0W Min. Bore 0.28 > Bore 0.28	VS01 VS40	1-72 Oval X 0.109LG. M2 X 0.4 X 0.152LG.	
	E	WC0W4213, WC0W4214	VS40	M2 X 0.4 X 0.152LG.	
	F	WC0W5013, WC0W5014	VS41	M2 X 0.4 X 0.193LG.	

Recommended Grades, Cutting Speeds Vc [ft/min], Feed f [inch/rev] and Max Depth [inch]



Material Group	Vardex No.	Material		Hardness Brinell HB	Vc [ft/min]		Feed f [inch/ rev]		Max Depth [inch]			
					Coated		Power Bore	Micro	PowerBore			Micro
					VTX (PowerBore)	VMX (Micro)			CD0W	TD0W	WD0W	
P Steel	1	Unalloyed steel	Low carbon (C=0.1-0.25%)	125	377 - 623	164 - 393	0.0098	0.002	0.020	0.018	0.024	0.016
	2		Medium carbon (C=0.25-0.55%)	150	328 - 574	131 - 328	0.0079	0.0016	0.020	0.018	0.024	0.016
	3		High Carbon (C=0.55-0.85%)	170	295 - 541	98 - 262	0.0059	0.0012	0.020	0.018	0.024	0.016
	4	Low alloy steel (alloying elements ≤5%)	Non hardened	180	279 - 475	164 - 229	0.0079	0.0016	0.016	0.014	0.020	0.012
	5		Hardened	275	246 - 459	131 - 197	0.0059	0.0016	0.016	0.014	0.020	0.012
	6		Hardened	350	229 - 443	98 - 164	0.0039	0.0012	0.016	0.014	0.020	0.012
	7	High alloy steel (alloying elements>5%)	Annealed	200	229 - 361	98 - 164	0.0039	0.0016	0.008	0.007	0.016	0.006
	8		Hardened	325	164 - 328	82 - 131	0.002	0.0012	0.008	0.007	0.016	0.006
	9	Cast steel	Low alloy (alloying elements <5%)	200	246 - 459	98 - 164	0.0098	0.0016	0.008	0.007	0.016	0.006
	10		High alloy (alloying elements >5%)	225	197 - 393	82 - 131	0.0039	0.0016	0.008	0.007	0.016	0.006
M Stainless Steel	11	Stainless steel	Non hardened	200	229 - 426	197 - 328	0.0079	0.0016	0.010	0.009	0.020	0.008
	12	Feritic	Hardened	330	197 - 377	131 - 197	0.0031	0.0012	0.008	0.007	0.016	0.006
	13	Stainless steel	Austenitic	180	295 - 459	164 - 295	0.0079	0.0016	0.010	0.009	0.020	0.008
	14	Austenitic	Super Austenitic	200	131 - 361	131 - 197	0.0031	0.0016	0.008	0.007	0.016	0.006
	15	Stainless steel	Non hardened	200	295 - 393	131 - 197	0.0079	0.0016	0.010	0.009	0.020	0.008
	16	Cast feritic	Hardened	330	213 - 361	98 - 164	0.0031	0.0012	0.008	0.007	0.016	0.006
	17	Stainless steel	Austenitic	200	279 - 361	131 - 197	0.0079	0.0016	0.010	0.009	0.020	0.008
	18	Cast austenitic	Hardened	330	197 - 328	98 - 164	0.0031	0.0012	0.008	0.007	0.016	0.006
K Cast Iron	28	Malleable	Ferritic (short chips)	130	229 - 524	164 - 229	0.0059	0.0008	0.012	0.012	0.016	0.010
	29	Cast iron	Pearlitic (long chips)	230	197 - 475	164 - 229	0.0039	0.0004	0.012	0.012	0.016	0.010
	30	Grey	Low tensile strength	180	229 - 426	164 - 229	0.0059	0.0008	0.020	0.018	0.024	0.016
	31	Cast iron	High tensile strength	260	197 - 377	131 - 197	0.0039	0.0004	0.020	0.018	0.024	0.016
	32	Nodular SG iron	Feritic	160	410 - 524	164 - 229	0.0059	0.0008	0.020	0.018	0.024	0.016
33	Pearlitic		260	295 - 393	197 - 262	0.0039	0.0004	0.020	0.018	0.024	0.016	
N(K) Non-Ferrous Metals	34	Wrought	Non aging	60	328 - 1,196	328 - 983	0.0118	0.0012	0.030	0.025	0.039	0.020
	35	Aluminium alloys	Aged	100	262 - 721	328 - 492	0.0079	0.0012	0.030	0.025	0.039	0.020
	36	Aluminium alloys	Cast	75	656 - 1,311	328 - 492	0.0118	0.0012	0.030	0.025	0.039	0.020
	37		Cast & aged	90	656 - 918	197 - 328	0.0079	0.0012	0.030	0.025	0.039	0.020
	38	Aluminium alloys	Cast Si 13-22%	130	197 - 590	328 - 492	0.0118	0.0008	0.030	0.025	0.039	0.020
	39	Copper and copper alloys	Brass	90	262 - 738	197 - 328	0.0118	0.0012	0.030	0.025	0.039	0.020
40	Bronze and non leaded copper		100	262 - 836	197 - 328	0.0079	0.0012	0.030	0.025	0.039	0.020	
S(M) Heat Resistant Material	19	High temperature alloys	Annealed (Iron based)	200	148 - 197	82 - 148	0.0079	0.0016	0.010	0.009	0.020	0.008
	20		Aged (Iron based)	280	98 - 164	66 - 98	0.0031	0.0012	0.008	0.007	0.016	0.006
	21		Annealed (Nickel or Cobalt based)	250	66 - 98	49 - 66	0.0031	0.0004	0.008	0.007	0.016	0.006
	22		Aged (Nickel or Cobalt based)	350	49 - 82	33 - 49	0.002	0.0004	0.008	0.007	0.016	0.006
	23	Titanium alloys	Pure 99.5 Ti	400Rm	459 - 557	197 - 328	0.002	0.0008	0.008	0.007	0.016	0.006
24	α+β alloys		1050Rm	164 - 229	131 - 164	0.002	0.0008	0.008	0.007	0.016	0.006	
H(K) Hardened Material	25	Extra hard steel	Hardened & tempered	45-50HRc	148 - 213	66 - 148	0.0008	0.0004	0.004	0.002	0.008	0.002
	26			51-55HRc	148 - 197	66 - 131	0.0004	0.0004	0.002	0.002	0.004	0.002

Grades and Their Applications

VTX

General use carbide grade.
TiAlN coated.

VMX

General use carbide grade
for Micro inserts. TiN coated

Milling

> **Thread Milling**

Standard

MiTM

TMSD

Solid Carbide

> **Groove Milling**

MILLING

Threading

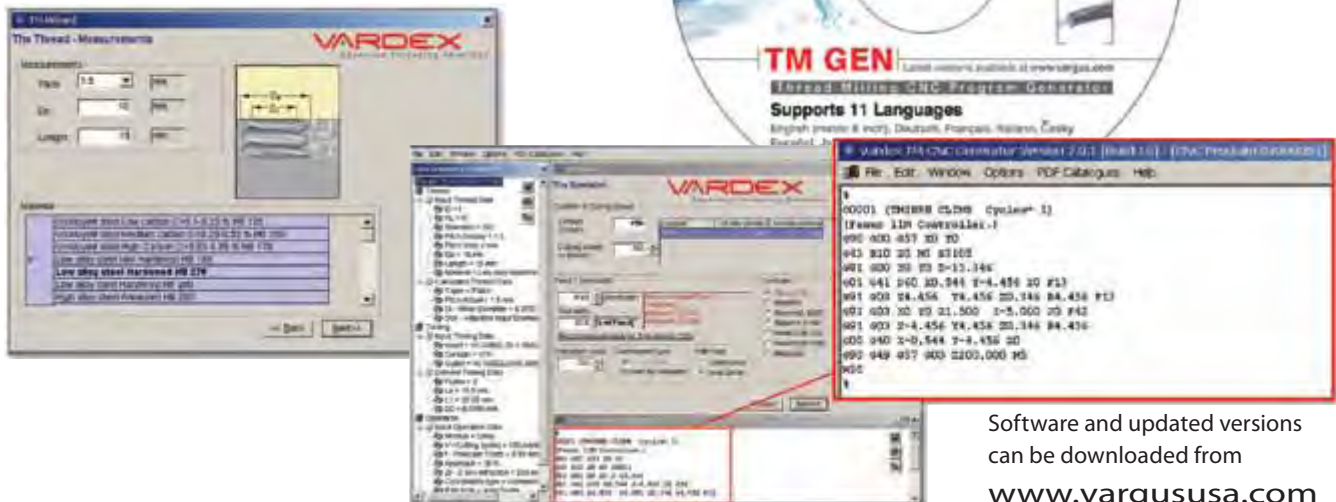
■ A Tool for Every Thread Milling Job.....	Page 197
■ Thread Milling Method.....	Page 198
■ Tooling Recommendation for Given Thread Specification.....	Page 199
■ Thread Milling Inserts.....	Page 209
■ Thread Milling Holders.....	Page 235
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Grooving

■ Grooving Milling Inserts.....	Page 325
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■ Grooving Milling Technical Data.....	Page 330

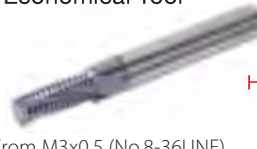
VARGUS TM Gen Software for CNC Programming Thread Milling Software

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

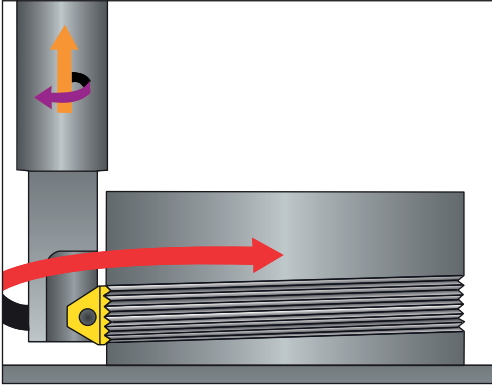
A Tool for EVERY Thread Milling Job!

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	

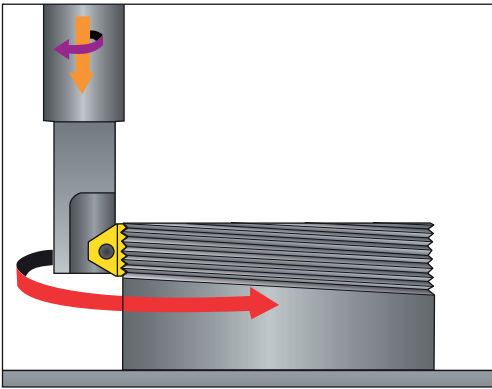
Thread Milling Methods

External

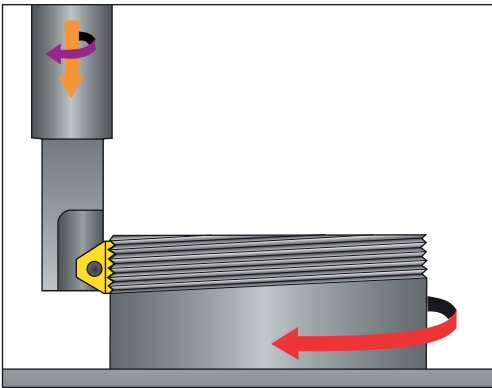
Right Hand Thread - Conventional Milling



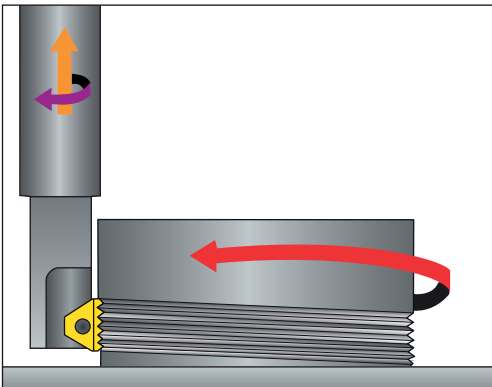
Left Hand Thread - Conventional Milling



Right Hand Thread - Climb Milling

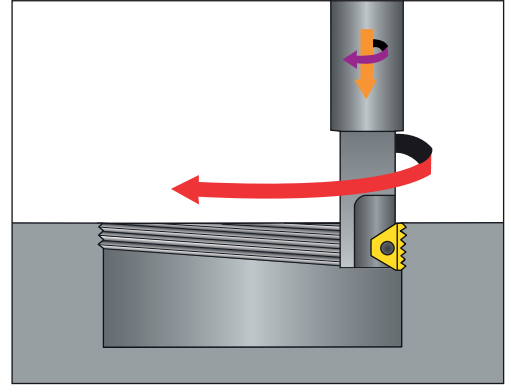


Left Hand Thread - Climb Milling

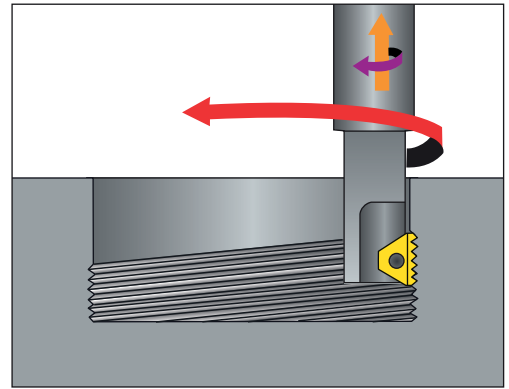


Internal

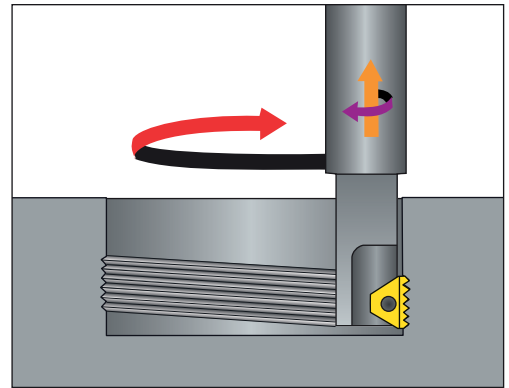
Right Hand Thread - Conventional Milling



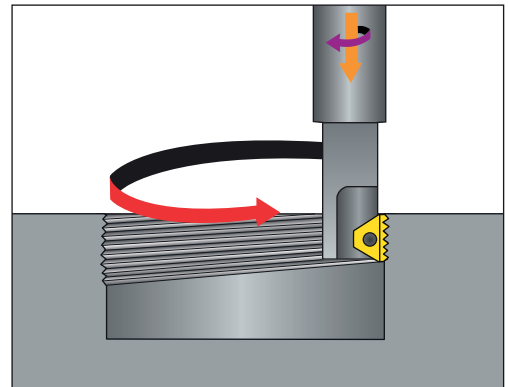
Left Hand Thread - Conventional Milling



Right Hand Thread - Climb Milling



Left Hand Thread - Climb Milling



Tooling recommendation*

(For MiTM tools see page 258)

(For TMSD tools see page 277)

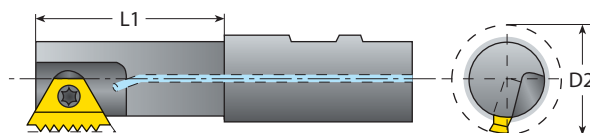
(For TM Solid Carbide tools see page 291)

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



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	
1.0	12-14	TMMC050-6.0	6.0I1.0ISOTM...	0.47	0.35	0.023
	15-18	TMC050-2	2I1.0ISOTM2...	0.47	0.45	
	20	TMC0625-3	3I1.0ISOTM2...	0.87	0.67	
	22	BTMC075-3B	3BI1.0ISOTM2...	1.14	0.75	
	24	TMC075-3	3I1.0ISOTM2...	1.69	0.79	
	25-28	TMLC100-3	3I1.0ISOTM2...	0.98	0.87	
	30	TM2C100-3	3I1.0ISOTM2...	1.69	1.02	
1.25	12	TMMC050-6.0	6.0I1.25ISOTM...028/002	0.47	0.35	0.028
	14	TMMC050-6.0	6.0I1.25ISOTM...	0.47	0.35	
1.5	14-15	TMMC050-6.0	6.0I1.5ISOTM...	0.47	0.35	0.034
	16-20	TMC050-2	2I1.5ISOTM2...	0.47	0.45	
	22	TMC0625-3	3I1.5ISOTM2...	0.87	0.67	
	24	BTMC075-3B	3BI1.5ISOTM2...	1.14	0.75	
	25-26	TMC075-3	3I1.5ISOTM2...	1.69	0.79	
	27-30	TMLC100-3	3I1.5ISOTM2...	0.98	0.87	
	32-33	TM2C100-3	3I1.5ISOTM2...	1.69	1.02	
	35-42	TMC100-5	5I1.5ISOTM2...	2.05	1.18	
	45	TMC125-5	5I1.5ISOTM2...	2.28	1.46	
	48-55	TM2C125-5	5I1.5ISOTM2...	1.77	1.65	
	56-68	TMSH-D200-075-3	3I1.5ISOTM2...		1.97	
	70-80	TMSH-D250-075-5	5I1.5ISOTM2...		2.48	
1.75	12	TMMC075-6.0 124/203	6.0I1.75ISOTM...028/003	0.59	0.35	0.04
	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	
2.0	90-105	TMSH-D300-100-5	5I2.0ISOTM2...		3.15	0.045
	110-130	TMSH-D400-125-5	5I2.0ISOTM2...		3.94	
	135-150	TMSH-D500-150-5	5I2.0ISOTM2...		4.92	
	20	TMC0625-3 124/201	3I2.5ISOTM...028/005	0.81	0.61	
	22	TMC100-4 124/202	4I2.5ISOTM...028/006	1.18	0.71	
2.5						0.057



* The recommended holder is the largest for the given thread specification.

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

Tooling recommendation (con't)*

(For MiTM tools see page 258)

(For TMSD tools see page 277)

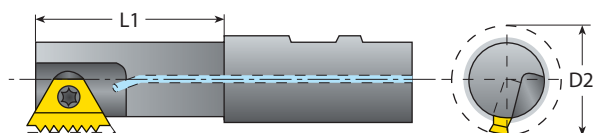
(For TM Solid Carbide tools see page 291)

TM Gen Software
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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	
	115-135	TMSH-D400-125-6B	6BI4.0ISOTM2...		3.94	
	140-300	TMSH-D500-150-6B	6BI4.0ISOTM2...		4.92	
4.5	42-45	TMC100-5	5I4.5ISOTM...028/011	2.05	1.18	0.102
5.0	48-52	TMC100-5	5I5.0ISOTM...028/075	2.05	1.18	0.114
		TMC125-6B	6BI5.0ISOTM2...	2.17	1.38	
5.5	56	TMC125-6B	6BI5.5ISOTM2...	2.17	1.38	0.125
	60	TMC150-6B	6BI5.5ISOTM2...	2.56	1.81	
	64-68	TMC150-6B	6BI6.0ISOTM2...	2.56	1.81	
6.0	70-80	TM2C150-6B	6BI6.0ISOTM2...	2.56	2.05	0.136
	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	



* 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)

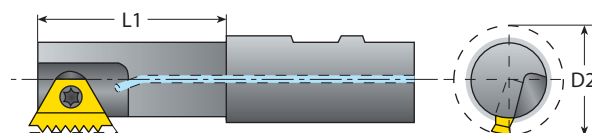
(For TM Solid Carbide tools see page 291)

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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	
20	7/16	TMMC050-6.0	6.0I20UNTM...028/012	0.47	0.35	0.029
	1/2-9/16	TMMC050-6.0	6.0I20UNTM...	0.47	0.35	
	5/8-13/16	TMC050-2	2I20UNTM2...	0.47	0.45	
	7/8	TMC0625-3	3I20UNTM2...	0.87	0.67	
	15/16-1	TMC075-3	3I20UNTM2...	1.69	0.79	
	1 1/16-1 1/8	TMLC100-3	3I20UNTM2...	0.98	0.87	
	1 3/16-1 5/16	TM2C100-3	3I20UNTM2...	1.69	1.02	
	1 3/8-1 5/8	TMC100-5	5I20UNTM2...	2.05	1.18	
	1 11/16-1 13/16	TMC125-5	5I20UNTM2...	2.28	1.46	
	1 7/8-2 1/8	TM2C125-5	5I20UNTM2...	1.77	1.65	
	2 1/4-2 5/8	TMSH-D200-075-3	3I20UNTM2...		1.97	
	2 3/4-3	TMSH-D250-075-5	5I20UNTM2...		2.48	
18	9/16	TMC050-2	2I18UNTM...028/017	0.47	0.45	0.032
	5/8	TMC050-2	2I18UNTM2...	0.47	0.45	
	1 1/16-1 3/16	TMLC100-3	3I18UNTM2...	0.98	0.87	
	1 1/4-1 3/8	TM2C100-3	3I18UNTM2...	1.69	1.02	
	1 7/16-1 5/8	TMC100-5	5I18UNTM2...	2.05	1.18	
	1 11/16	TMC125-5	5I18UNTM2...	2.28	1.46	
16	7/16-5/8	TMMC050-6.0	6.0I16UNTM...028/014	0.47	0.35	0.036
	11/16-13/16	TMC050-2	2I16UNTM2...	0.47	0.45	
	7/8-15/16	TMC0625-3	3I16UNTM2...	0.87	0.67	
	1	TMC075-3	3I16UNTM2...	1.69	0.79	
	1 1/16-1 3/16	TMLC100-3	3I16UNTM2...	0.98	0.87	
	1 1/4-1 3/8	TM2C100-3	3I16UNTM2...	1.69	1.02	
	1 7/16-1 5/8	TMC100-5	5I16UNTM2...	2.05	1.18	
	1 11/16-1 7/8	TMC125-5	5I16UNTM2...	2.28	1.46	
	1 15/16-2 3/16	TM2C125-5	5I16UNTM2...	1.77	1.65	
	2 1/4-2 5/8	TMSH-D200-075-3	3I16UNTM2...		1.97	
	2 3/4-3 3/8	TMSH-D250-075-5	5I16UN TM2...		2.48	



* 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)

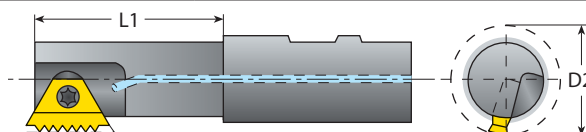
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UN - Internal (con't)

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	
	3/4	TMNC0625-3	3I12UNTM...028/020	0.87	0.61	
	13/16	TMC0625-3	3I12UNTM...028/020	0.87	0.67	
	7/8	TMNC0625-3	3I12UNTM2...	0.87	0.61	
	15/16	TMC0625-3	3I12UNTM2...	0.87	0.67	
	1	BTMC075-3B	3BI12UNTM2...	1.14	0.75	
	1 1/16	TMC075-3	3I12UNTM2...	1.69	0.79	
	1 1/8-1 1/4	TMLC100-3	3I12UNTM2...	0.98	0.87	
	1 5/16-1 7/16	TM2C100-3	3I12UNTM2...	1.69	1.02	
12	1 1/2-1 11/16	TMC100-5	5I12UNTM2...	2.05	1.18	0.048
	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	
	5/8	TMC075-2 124/206	2I11UNTM...028/018	0.61	0.47	
	3/4	TMC0625-3 124/201	3I10UNTM...028/019	0.81	0.61	
	7/8	TMC100-4 124/202	4I9UNTM...028/021	1.18	0.71	
	1-1 3/16	TMC100-4 124/207	4I8UNTM...028/022	1.57	0.79	
8	1 1/4-1 3/8	TMC100-5 124/204	5I8UNTM...028/024	1.57	0.98	0.072
	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	
	1 1/8-1 1/4	TMC100-4 124/202	4I7UNTM...028/023	1.18	0.71	
7	1 3/8-1 9/16	TMC100-5 124/204	5I6UNTM...028/025	1.57	0.98	0.082
	1 5/8-1 15/16	TMC100-5	5I6UNTM...028/025	2.05	1.18	
	2-2 1/8	TMC100-5	5I6UNTM2...	2.05	1.18	
	2 1/4	TMC125-5	5I6UNTM2...	2.28	1.46	
	2 3/8-2 1/2	TMC150-6B	6BI6UNTM2...	2.56	1.81	
	2 5/8-3 1/8	TM2C150-6B	6BI6UNTM2...	2.56	2.05	
	3 1/4-3 3/4	TMSH-D250-075-6B	6BI6UNTM2...		2.48	
	3 7/8-4	TMSH-D300-100-6B	6BI6UNTM2...		3.15	
5	1 3/4	TMC100-5	5I5UNTM...028/077	2.05	1.18	0.115
4.5	2-2 1/4	TMC125-6B	6BI4.5UNTM2...	2.17	1.38	0.128
	2 1/2	TMC150-6B	6BI4UNTM2...	2.56	1.81	
4	2 3/4-3	TM2C150-6B	6BI4UNTM2...	2.56	2.05	0.144
	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)

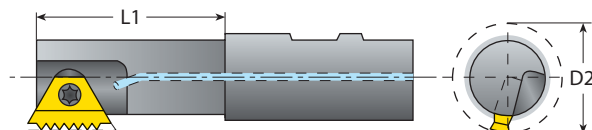
(For TM Solid Carbide tools see page 291)

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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)

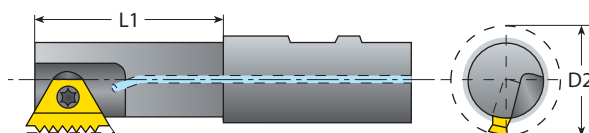
(For TM Solid Carbide tools see page 291)

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W - Internal

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



* The recommended holder is the largest for the given thread specification.

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

Tooling recommendation (con't)*

(For MiTM tools see page 258)

(For TMSD tools see page 277)

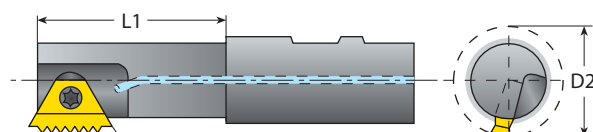
(For TM Solid Carbide tools see page 291)

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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 7/8 - 7	TMSH-D500-150-6B	6BEI6WTM2...		4.92	
5	3	TMC150-6B	6BEI5WTM2...	2.56	1.81	0.128
	3 1/4	TM2C150-6B	6BEI5WTM2...	2.56	2.05	
4.5	3 1/2	TMC150-6B	6BEI4.5WTM2...	2.56	1.81	0.142
	3 3/4 - 4	TM2C150-6B	6BEI4.5WTM2...	2.56	2.05	



* The recommended holder is the largest for the given thread specification.

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

Tooling recommendation (con't)*

(For MiTM tools see page 258)

(For TMSD tools see page 277)

(For TM Solid Carbide tools see page 291)

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BSP - Internal

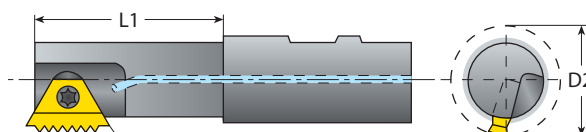
Pitch tpi	Nominal Dia. Inch	Holder	Insert	L1-Toolholder Overhang	D2-Tool Cutting dia.*	h min - Thread Profile depth
19	1/4	TMMC075-6.0	6.0EI19WTM...	0.67	0.35	0.034
	3/8	TMC075-2	2EI19WTM2...	0.79	0.45	
14	1/2-5/8	TMC075-2	2EI14WTM2...	0.79	0.45	0.046
	3/4-7/8	TMC0625-3	3EI14WTM2...	0.87	0.67	
11	1	TMC100-5 124/204	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	
11.5	1	TMNC075-3	3EI11.5NPTTM...	0.91	0.75	0.065
	1 1/4	TMC100-5	5EI11.5NPTTM...	2.05	1.18	
	1 1/2-2	TMNC125-5	5EI11.5NPTTM...	2.28	1.46	
8	2 1/2	TMNC125-5	5EI8NPTTM...	2.28	1.46	0.095
	3-24	TMC150-6B	6BEI8NPTTM...	2.56	1.81	



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

Tooling recommendation (con't)*

(For MiTM tools see page 258)

(For TMSD tools see page 277)

(For TM Solid Carbide tools see page 291)

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NPTF - Internal

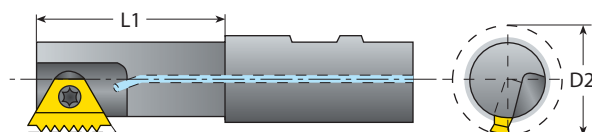
Pitch	Nominal Dia.	Holder	Insert	L1-Toolholder	D2-Tool	h min - Thread
tpi	Inch			Overhang	Cutting dia.*	Profile depth
18	1/4-3/8	TMC075-2 124/209	2I18NPTFTM...028/078	0.61	0.39	0.039
14	1/2	TMNC0625-3	3EI14NPTFTM...	0.87	0.61	0.053
	3/4	TMNC075-3	3EI14NPTFTM...	0.91	0.75	
11.5	1	TMNC075-3	3EI11.5NPTFTM...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

PG - Internal

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

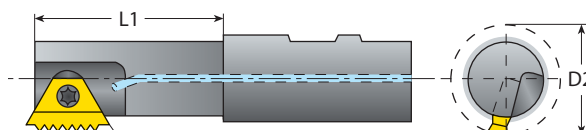
(For TM Solid Carbide tools see page 291)

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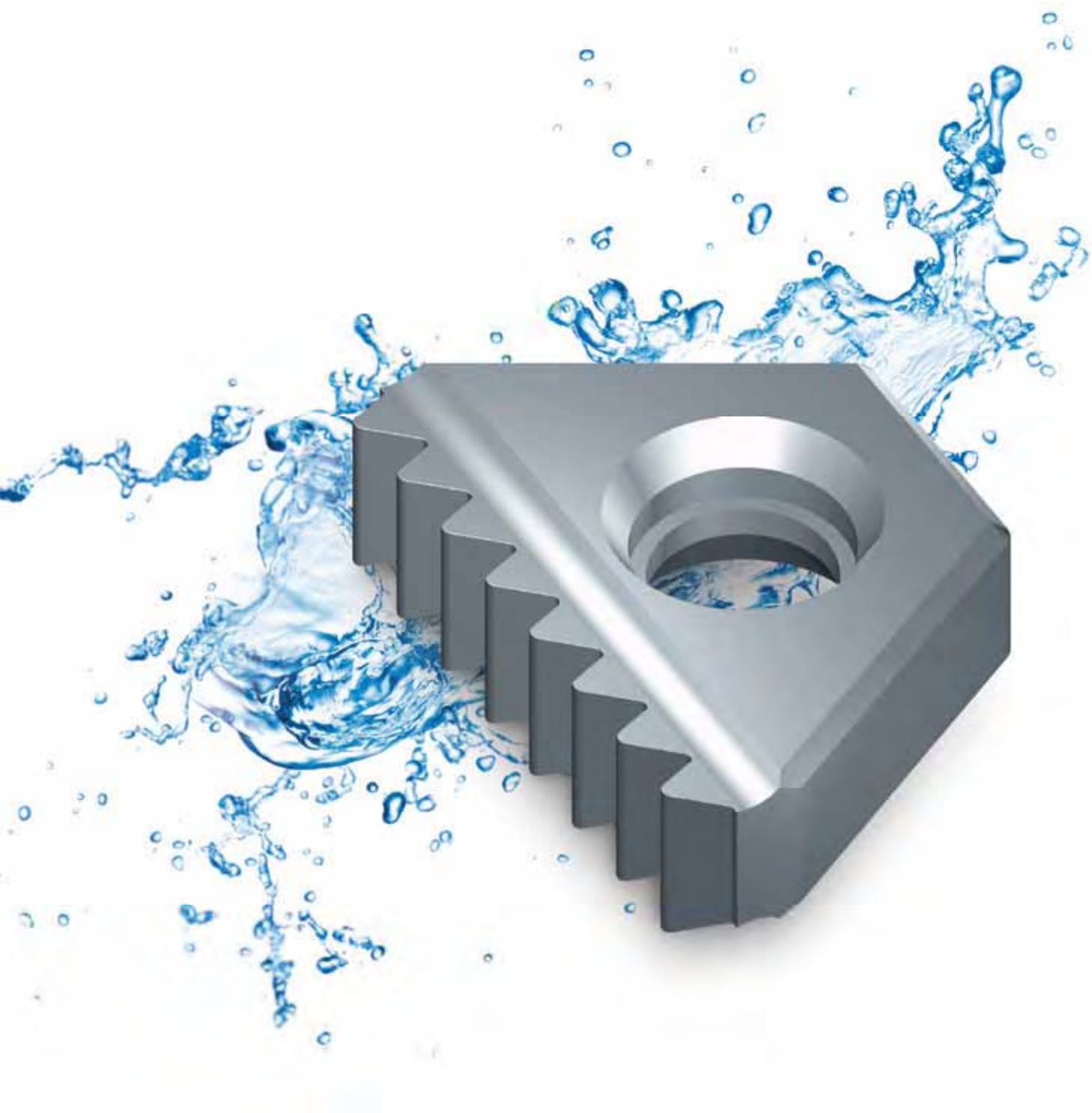
ACME - Internal

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



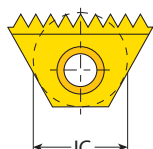
> Standard Inserts

THREAD MILLING INSERTS

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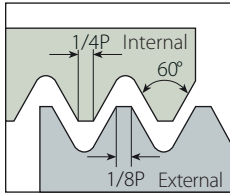
VarDEX Ordering Code System

Thread Milling Inserts

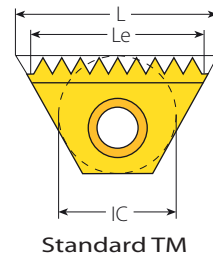
3	B	I	12	UN	TM2	F	VBX	028/...
1	2	3	4	5	6	7	8	9
1 - Insert Size 6.0 - 6.0 mm 2 - ¼" 3 - ⅜" 3B - ⅜"B 4 - ½" 5 - ⅝" 6B - ¾"B 			2 - Cutting Edge Length B - TMB			3 - Type of Insert E - External I - Internal EI - External + Internal		4 - Pitch 80 - 4(tpi) 0.35 - 6.0 (mm)
5 - Standard ISO- ISO Metric UN- American UN UNJ- UNJ W- Whitworth for BSW, BSP NPT - NPT NPTF- NPTF NPS- NPS BSPT- British Standard Pipe Thread PG- Pg DIN 40430 ACME- ACME TR- Trapez DIN 103						6 - System TM2 TM		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

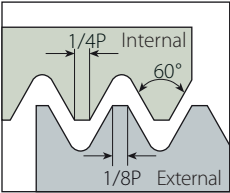
Standard TM

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	
3/8"B	0.87	13	3BE13UNTM2...	3BI13UNTM2...	0.85	11	
		12	3BE12UNTM2...	3BI12UNTM2...	0.83	10	

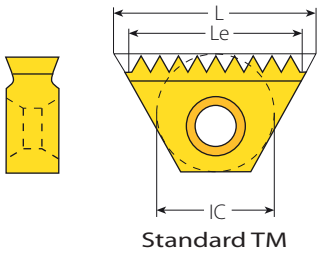
Sample order: **3E24UNTM2 VBX** All inserts have 2 cutting edges, except MiniTM (IC 6.0 mm), which has one cutting edge. For toolholder information, see page 236.

American UN (con't)

External / Internal



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



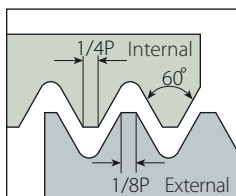
Standard TM

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	

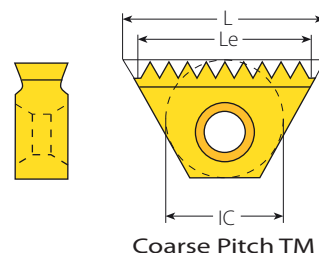
Sample order: 5E24UNTM2 VBX
All inserts have 2 cutting edges, except MiniTM (IC 6.0 mm), which has one cutting edge.
For toolholder information, see page 236.

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

continued on next page ►

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

Ordering codes:

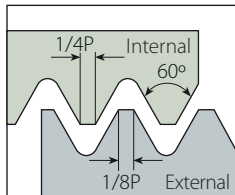
Insert: **2I12UNTM VBX 028/016**

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

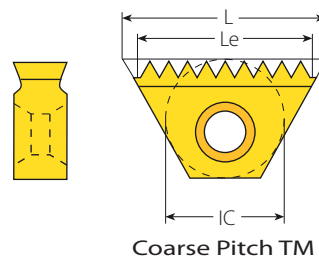
For toolholder information, see page 236.

American UN (con't)

Internal



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



Coarse Pitch TM (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:

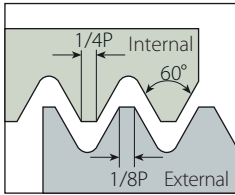
Insert: **5I6UNTM VBX 028/025**

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

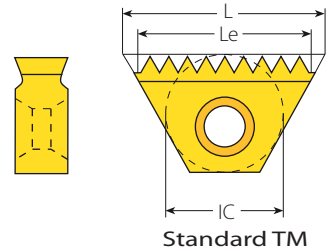
For toolholder information, see page 236.

American UN (con't)

External / Internal



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



Standard TM Inserts for TMO Toolholders

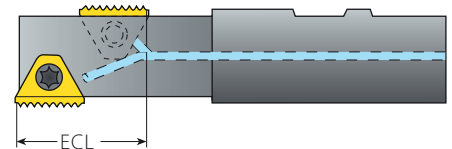
Insert Size		Pitch	Ordering Code		Toolholder	ECL
IC	L inch	tpi	External	Internal	TMO	inch
1/4"	0.43	48		2I48UNTM2...	TMOC075-2-1	0.77
		48		2I48UNTM2...	TMOC075-2-2	0.73
		48		2I48UNTM2...	TMOC075-2-9	0.75
		32		2I32UNTM2...	TMOC075-2-1	0.78
		28	2E28UNTM2...	2I28UNTM2...	TMOC075-2-3	0.68
		24	2E24UNTM2...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

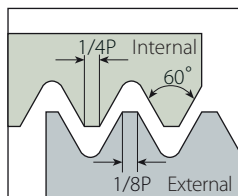
For toolholder information, see page 236.



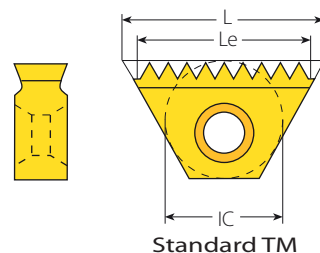
ECL - The Effective Cutting Length

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)

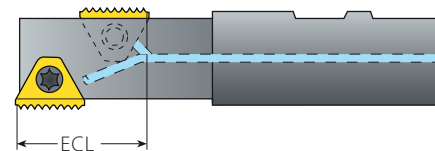
Insert Size		Pitch	Ordering Code		Toolholder	ECL
IC	L inch	tpi	External	Internal	TMO	inch
5/8"	1.06	24	5E24UNTM2...	5I24UNTM2...	TMOC100-5-1	2.00
		24	5E24UNTM2...	5I24UNTM2...	TMOC100-5-2	1.83
		20	5E20UNTM2...	5I20UNTM2...	TMOC100-5-1	2.00
		18	5E18UNTM2...	5I18UNTM2...	TMOC100-5-1	2.00
		18	5E18UNTM2...	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	5I5UNTM...028/077	5I5UNTM...028/077	TMOC100-5-7	1.60

Sample order: **5E16UNTM2 VBX**

For Le and number of teeth of the above inserts,

see table for standard inserts on page 211-212.

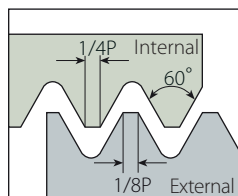
For toolholder information, see page 236.



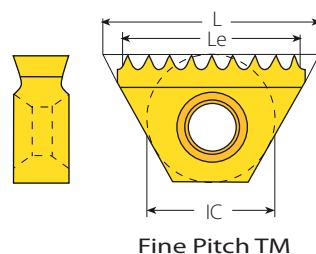
ECL - The Effective Cutting Length

American UN (con't)

External / Internal



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



Fine Pitch TM

Fine Pitch TM

Insert Size		Pitch	Ordering Code		Le	Teeth	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	
1/4"	0.43	32	6.0E32UNTMF...		0.34	6	TMC...-2 TMSH...-2
		80	2E80UNTM2F...	2I80UNTM2F...	0.39	16	
		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	
3/8"	0.63	36	2E36UNTM2F...		0.36	7	TMC...-3 TMSH...-3
		32	2E32UNTM2F...		0.34	6	
		80	3E80UNTM2F...	3I80UNTM2F...	0.56	23	
		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.

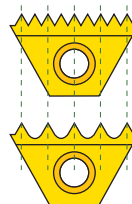
For toolholder information, see page 236.

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.

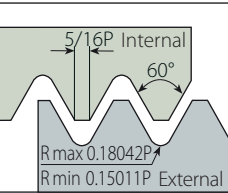
Important!

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

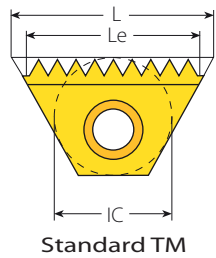
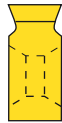


UNJ

External / Internal



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



Standard TM

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	3E12UNJTM2...	3I12UNJTM2...	0.58	7	TMC...-5 TMSH...-5
		16	5E16UNJTM2...	5I16UNJTM2...	1.00	16	
		12	5E12UNJTM2...	5I12UNJTM2...	1.00	12	
		11	5E11UNJTM2...	5I11UNJTM2...	1.00	11	

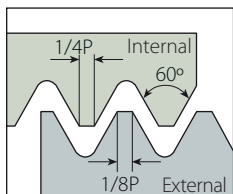
Insert ordering code: **3E16UNJTM2 VBX**

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

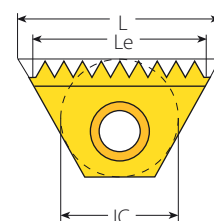
For toolholder information, see page 236.

ISO Metric

External / Internal



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



Standard TM

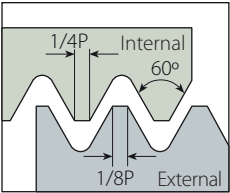
Standard TM

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	

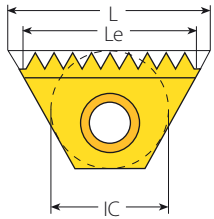
continued on next page ►

ISO Metric (con't)

External / Internal



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



Standard TM

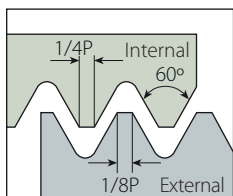
Standard TM (con't)

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	

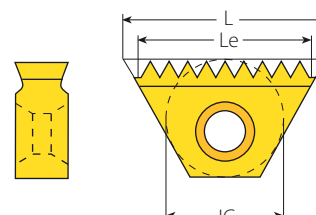
Sample order: 5I2.0ISOTM2 VBX
All inserts have 2 cutting edges, except MiniTM (IC 6.0 mm) which has one cutting edge.
For toolholder information, see page 236.

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:

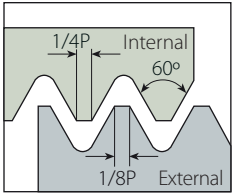
Insert: **2I2.0ISOTMVBX028/004**

Toolholder: **TMC075-2**

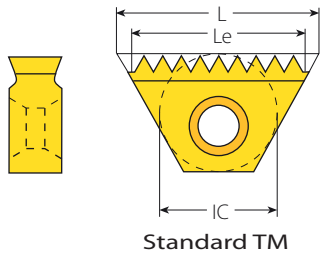
For toolholder information, see page 236.

ISO Metric (con't)

External / Internal



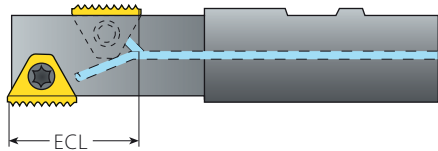
Defined by: R262 (DIN 13)
Tolerance class: 6g/6H



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

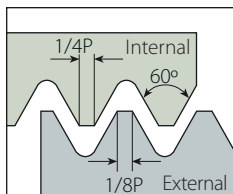
Sample order: 2E0.75ISOTM2 VBX
For Le and number of teeth of the above inserts,
see the table for standard inserts on pages 219-220.
For toolholder information see page 236.



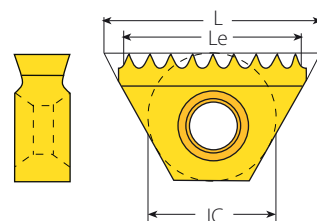
ECL - The Effective Cutting Length

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.

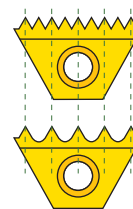
For toolholder information, see page 236.

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.

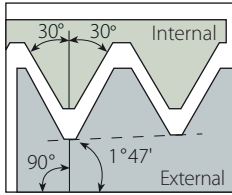
Important!

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

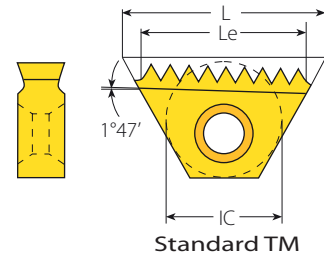


NPT

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	3EI18NPTTM2... **	0.56	10		
		14	3EI14NPTTM2...	0.57	8	TMNC...-3	TMNC...-3LH
		11.5	3EI11.5NPTTM2...	0.52	6		
3/8"B	0.87	14	3BEI14NPTTM2...	0.86	12	BTMNC...-3B	BTMNC...-3BLH
		11.5	3BEI11.5NPTTM2... *	0.78	9		
5/8"	1.06	11.5	5EI11.5NPTTM2...	0.96	11	TM.C...-5	TM.C...-5LH
		8	5EI8NPTTM2...	0.88	7		
3/4"B	1.52	11.5	6BEI11.5NPTTM2...	1.39	16	TMC...-6B	TMC...-6BLH
		8	6BEI8NPTTM2...	1.25	10		

* Single sided insert - RH only

** For external thread only

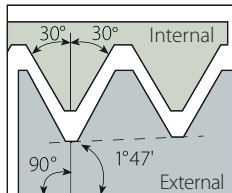
Sample order: **3EI14NPTTM VBX**

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

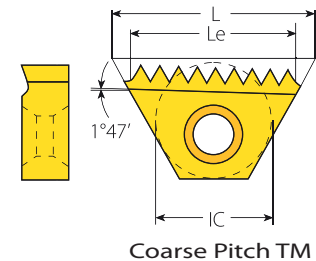
For toolholder information, see page 236.

NPT

Internal



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



Coarse Pitch TM

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

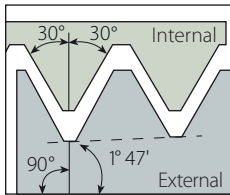
Sample order: **2I18NPTTM VBX 028/074**

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

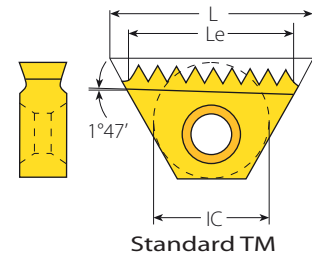
For toolholder information, see page 236.

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		
3/4"B	1.52	11.5	6EI11.5NPTFTM2...	1.39	16	TMC...-6B	TMC...-6BLH
		8	6EI8NPTFTM2...	1.25	10		

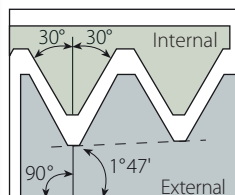
Sample order: **3EI14NPTFTM VBX**

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

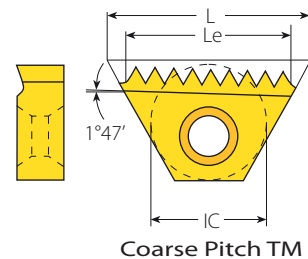
For toolholder information, see page 236.

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

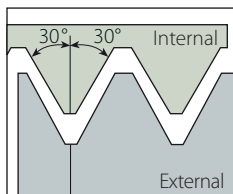
Sample tool requirement for thread 1/4" - 18NPTF

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

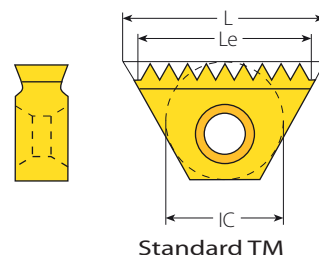
Toolholders: **TMC075-2 124/209**

NPS

External / Internal



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



Standard TM

Standard TM

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

Sample Order: 5EI11.5NPSTM2VBX

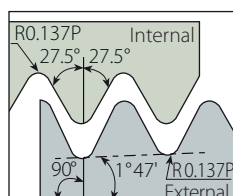
All inserts have 2 cutting edges.

For toolholder information, see page 236.

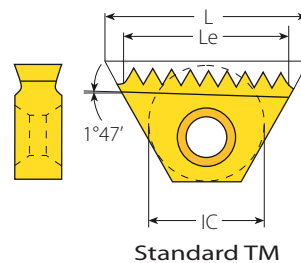
* One cutting edge.

BSPT

External / Internal



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



Standard TM

Standard TM

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

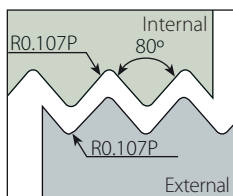
Sample Order: 5EI11BSPTTM VBX

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

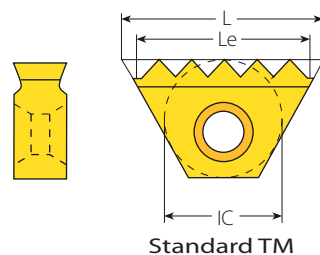
For toolholder information, see page 236.

Pg

External / Internal



Defined by: DIN 40430
Tolerance class: Standard



Standard TM

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
		20	2EI20PGTM2...	0.40	8	Pg7	TMC...-2
1/4"	0.43	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

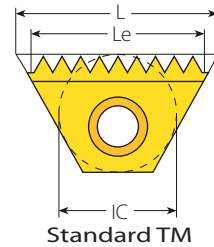
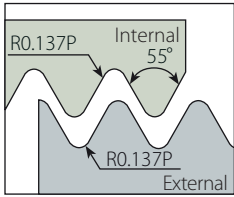
Insert Ordering Code: **5EI16PGTM2VBX**

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

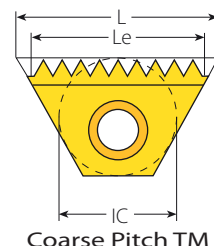
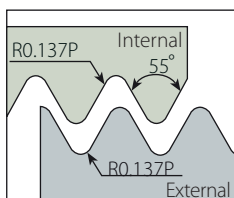
Tolerance class: BSW-Medium class A, BSP-Medium class

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	
3/8"	0.63	14	2EI14WTM2...	0.36	5	TMC...-3 TMSH...-3
		26	3EI26WTM2...	0.58	15	
		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	
3/8"B	0.87	12	3EI12WTM2...	0.58	7	TMC...-3B TMSH...-3B
		11	3EI11WTM2...	0.55	6	
		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	
5/8"	1.06	12	3BEI12WTM2...	0.83	10	TMC...-5 TMSH...-5
		11	3BEI11WTM2...	0.82	9	
		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	
3/4"	1.52	8	5EI8WTM2...	0.88	7	TMC...-6B TMSH...-6B
		7	5EI7WTM2...	0.86	6	
		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



Coarse Pitch TM

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

Coarse Pitch TM

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

Sample tool requirement for thread 7/16"-18 BSW

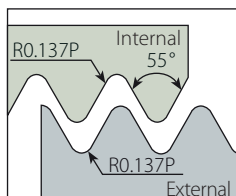
Ordering codes: Insert: **6.0I18WTMVBX 028/035** Toolholder: **TMMC 075-6.0**

For toolholder information, see page 236.

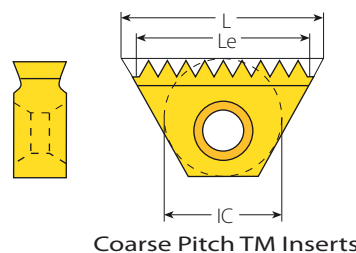
continued on next page ►

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

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

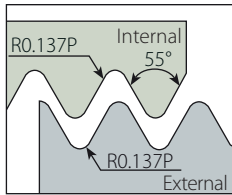
Ordering codes: Insert: **3I12WTM VBX 028/041**

Toolholder: **TMC 075-3**

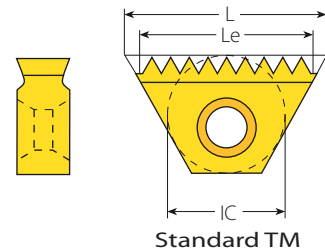
For toolholder information, see page 236.

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



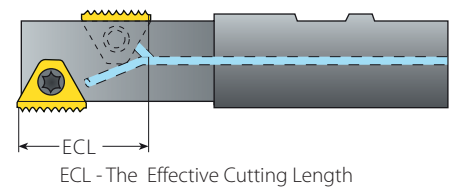
Standard TM Inserts for TMO Toolholders

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**

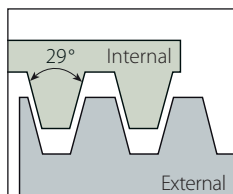
For Le and number of teeth of the above inserts, see the table for standard inserts on page 228.

For toolholder information see page 236.

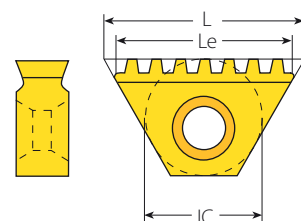


ACME

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

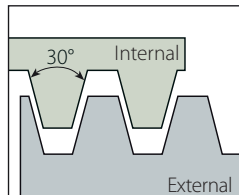
Sample tool requirement for thread ACME 1 3/4"-5

Ordering Code: Insert: 5I5ACMETM VBX 028/071 Toolholder: TMC100-5 124/204

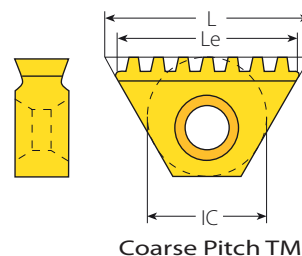
For toolholder information, see page 236.

TR

Internal



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



Coarse Pitch TM

Coarse Pitch TM

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

Sample tool requirement for thread TR 38x3.0

Ordering Code: Insert: **5I3.0TRTM VBX 028/033** Toolholder: **TMC100-5 124/204**

For toolholder information, see page 236.



Thread Milling



> Standard
Toolholders

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

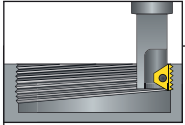
VarDEX Ordering Code System

Thread Milling Toolholders

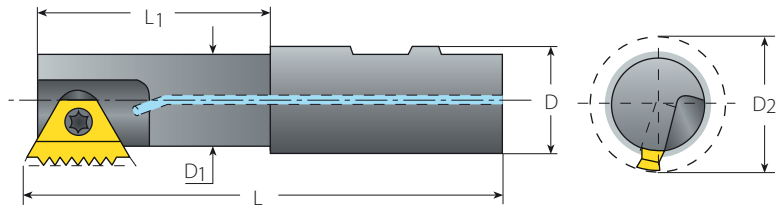
B	TM	N	C	0.75	-	3	B		CW	LH	
1	2	3	4	5		6	7	8	9	10	11
1 - Shank Type		2 - System		3 - Holder Type				4 - Cooling			
B - Anti Vibration System		TM - Thread Milling		2 - Twin Flute M - Mini L - Long Tool N - Tapered Holder				V - Vertical Holder S - Single Point O - Offset W - Wide Cut. Dia.			
5 - Shank 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"	
5 - Cut. Edge Length						3 - 3/8"	
B - TMB						3B - 3/8"B	
						5 - 5/8"	
						6B - 3/4"B	



External and Internal Toolholders

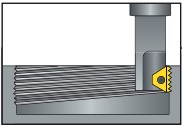


TM Standard

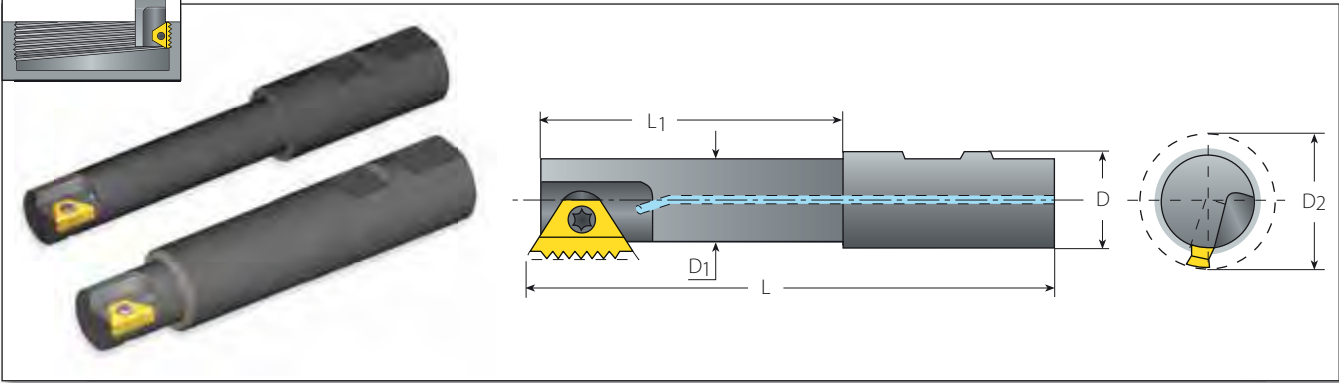
Spare Parts

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	0.47	0.50	0.27	0.35	SN7T	K7T
	TMMC075-6.0	67636	3.50	0.67	0.75	0.27	0.35		
1/4"	TMC050-2	67612	2.75	0.47	0.50	0.35	0.45	SN2TM	K2T
	TMC075-2	67614	3.50	0.79	0.75	0.35	0.45		
3/8"	TMC0625-3	67613	3.56	0.87	0.625	0.54	0.67	SN3TM	K3T
	TMC075-3	67615	3.75	1.69	0.75	0.65	0.79		
3/8"B	BTMC0625-3B	67600	3.15	1.14	0.625	0.53	0.67	SN3TM	K3T
	BTMC075-3B	67601	3.27	1.14	0.75	0.61	0.75		
	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



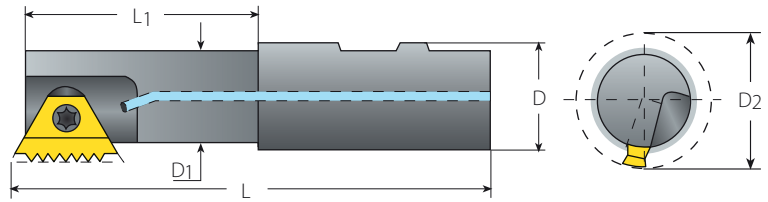
TML Long Tools

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



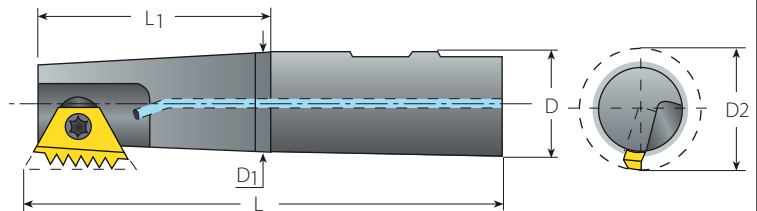
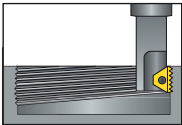
124/.. - For Coarse Pitch Threads

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"	TMC0625-3 124/201	67698	3.75	0.81	0.75	0.48	0.61		SN3TM	K3T
1/2"	TMC100-4 124/202	67699	3.58	1.18	1.00	0.53	0.71		SN4TM	K4T
	TMC100-4 124/207	67704	3.97	1.57	1.00	0.63	0.79		SA4TM	
5/8"	TMC100-5 124/204	67701	3.98	1.57	1.00	0.75	0.98		SA5TM	K5T
	TMC100-5 124/208	67705	3.98	1.57	1.00	0.65	0.87		SN5TM	

Sample Order: TMMC 075-6 124/203

External and Internal Toolholders



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

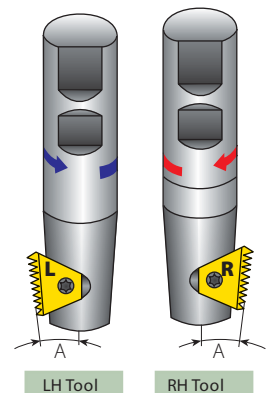
Spare Parts

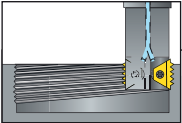
Insert Size	Ordering Code	EDP No.	EDP No.	Dimensions inch							
IC	RH		LH	L	L1	D	D1	D2		Insert Screw	Torx Key
3/8"	TMNC0625-3	67638	TMNC0625-3 LH	67639	3.56	0.87	0.625	0.49	0.61	SN3TM	K3T
	TMNC075-3	67640	TMNC075-3 LH	67641	3.38	0.91	0.75	0.59	0.75		
3/8"B	BTMNC0625-3B	67605	BTMNC0625-3B LH	67606	3.15	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

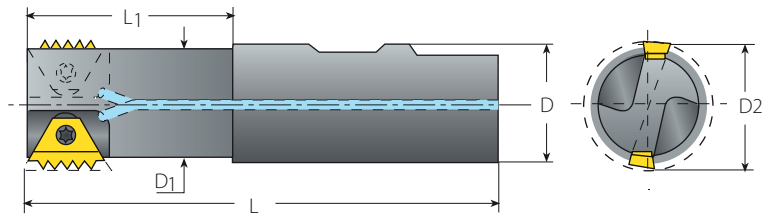
NOTE: To use the cutting edge marked "L", LH Cutter is required.

Add LH to the ordering code.





External and Internal Toolholders

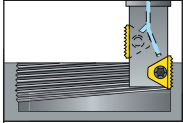


TM2 - Twin Flutes

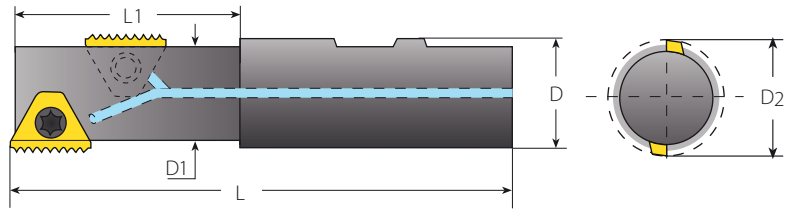
Spare Parts

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

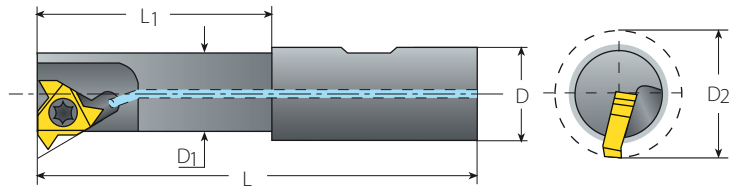


TMO - Twin Flute Offset

Spare Parts

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

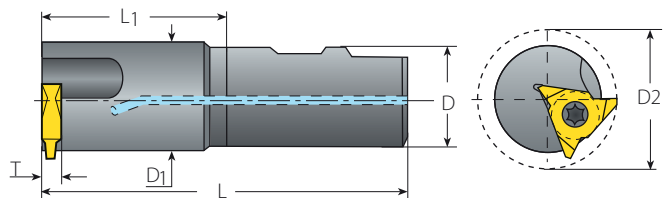
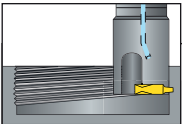
Insert Size	Ordering Code	EDP No.	Dimensions inch						
IC			L	L1	D	D1	D2	Insert Screw	Torx Key
1/4"	TMSC0375-2	67673	2.50	0.98	0.375	0.37	0.49	SN2T8	K2T

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)

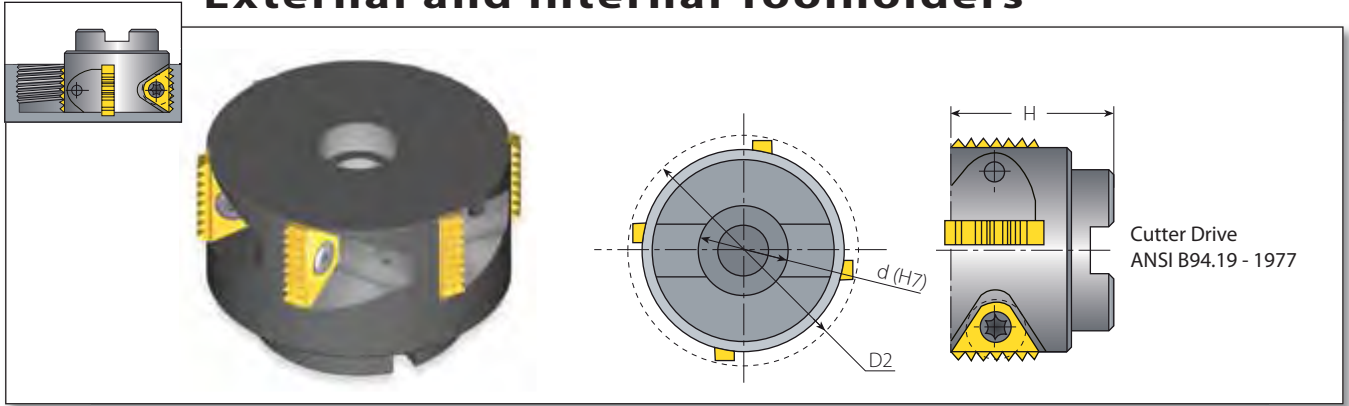
Spare Parts

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



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 3/8 X 24
1/4"	TMSH-D200-075-2	67101	8	1.97	3/4	1.58			
3/8"	TMSH-D200-075-3	67102	6	1.97	3/4	1.58	SN3TM	HK3T	3/8 X 24 3/8 X 24
3/8B"	TMSH-D250-075-3B	67103	6	2.48	3/4	1.58			
5/8"	TMSH-D250-075-5	67104	4	2.48	3/4	1.77	SN5TM	HK5T	3/8 X 24
3/4B"	TMSH-D250-075-6B	67112	4	2.48	3/4	1.97	SM7T	HK7T	3/8 X 24
5/8"	TMSH-D300-100-5	67105	6	3.15	1	2.00	SN5TM	HK5T	1/2 X 20
3/4B"	TMSH-D300-100-6B	67106	5	3.15	1	2.00	SM7T	HK7T	1/2 X 20
5/8"	TMSH-D400-125-5	67107	7	3.94	1 1/4	2.16	SN5TM	HK5T	5/8 X 18
3/4B"	TMSH-D400-125-6B	67772	6	3.94	1 1/4	2.16	SM7T	HK7T	5/8 X 18
5/8"	TMSH-D500-150-5	67109	9	4.92	1 1/2	2.50	SN5TM	HK5T	3/4 X 16
3/4B"	TMSH-D500-150-6B	67110	8	4.92	1 1/2	2.50	SM7T	HK7T	3/4 X 16

Spare Parts For VARDEX™ and TMSH Toolholders



Insert IC



Holder



Holder Screw



Insert Screw

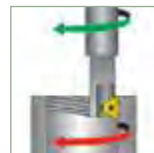


Torx Key

			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
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■ 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

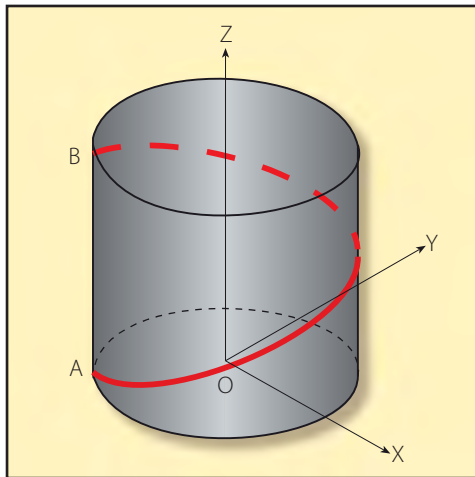


Fig. A

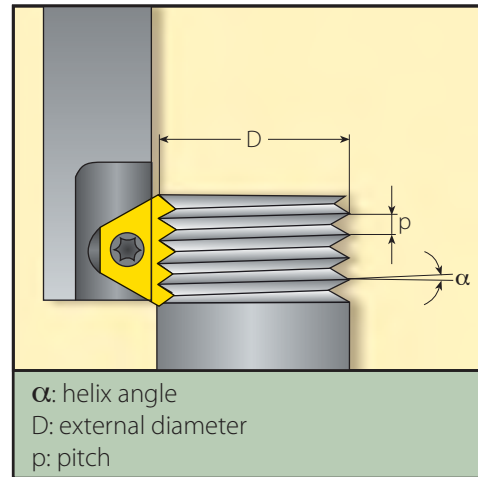


Fig. B

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:

u Tangential Arc Approach

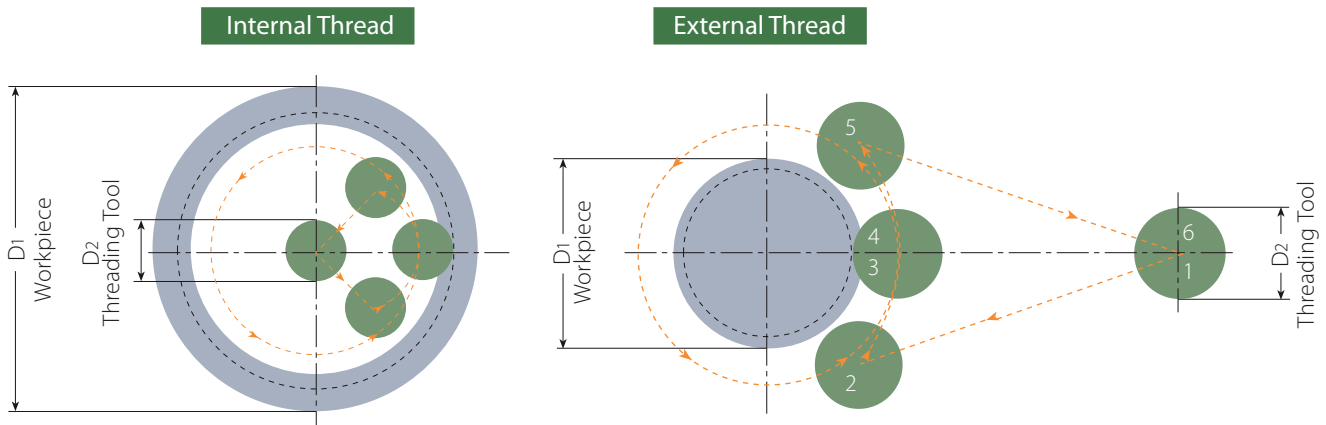
v Radial Approach

w Tangential Line Approach

u 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.



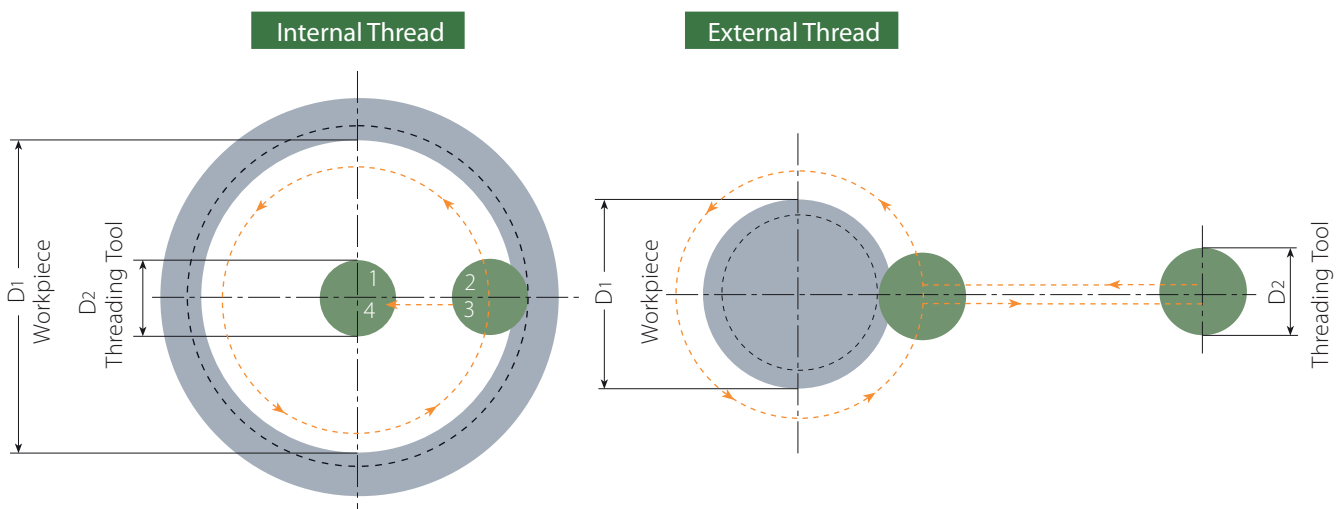
- 1-2:** Rapid approach
- 2-3:** Tool entry along tangential arc, with simultaneous feed along z-axis
- 3-4:** Helical movement during one full orbit (360°)
- 4-5:** Tool exit along tangential arc, with continuing feed along z-axis
- 5-6:** Rapid return

v 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.

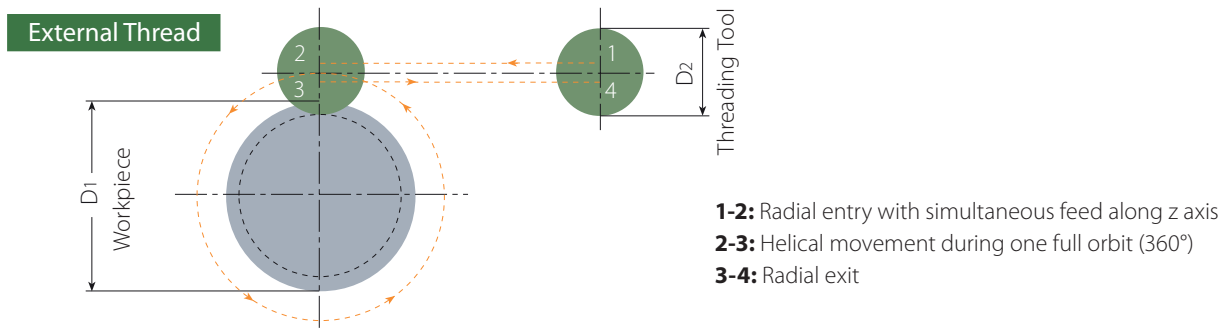
Note: Radial feed during entry to the full profile depth should only be $\frac{1}{3}$ of the subsequent circular feed !



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

w 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

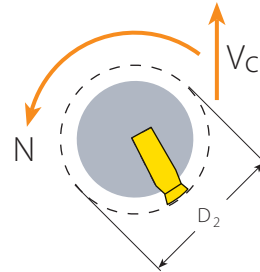
u Calculation of Rotational Velocity and Feed at the Cutting Edge

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

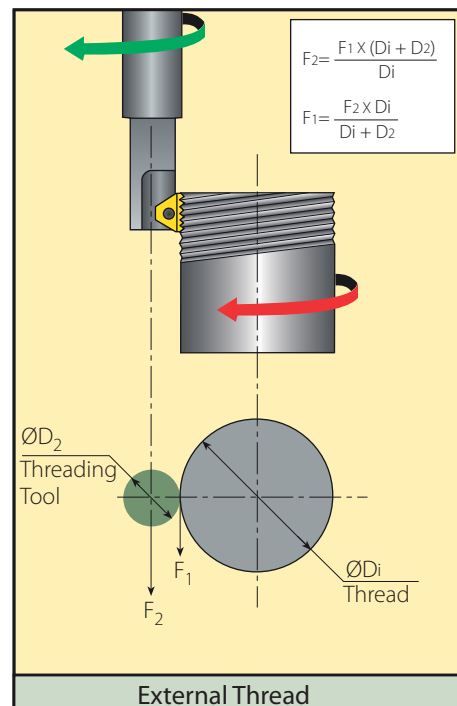
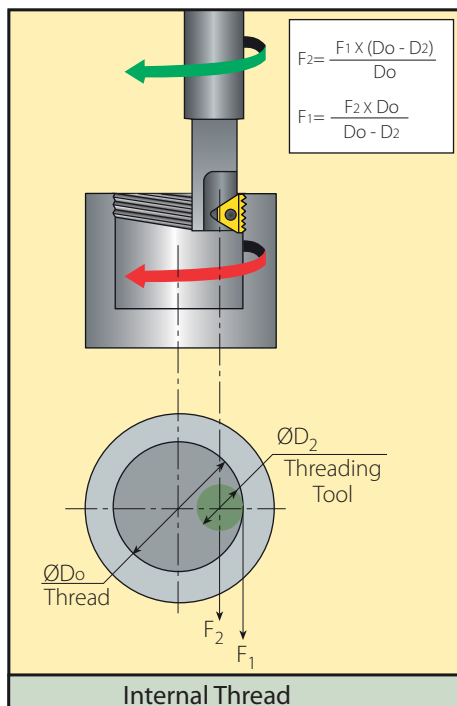
$$V = \frac{N \times \pi \times D_2}{12}$$

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

N - Rotational Velocity [R.P.M.]
V - Cutting Speed [ft/min]
D₂ - Toolholder Cutting Dia. [inch]
F₁ - Tool Feed Rate at the Cutting Edge [inch/min]
z - No. of Cutting Edges
f - Feed per Tooth per Rotation [inch/rev]



v 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

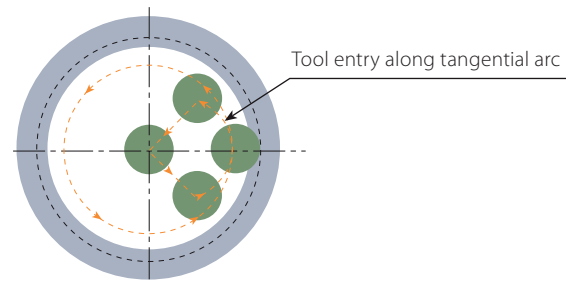
Recommendation:

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 [inch/tooth]



Minimum Bore Diameters for Thread Milling

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

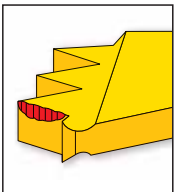
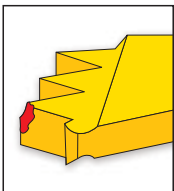
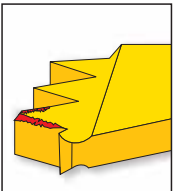
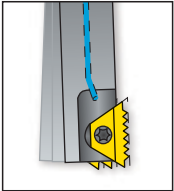
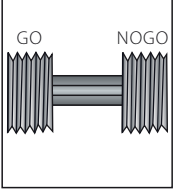
Minimum Bore Diameters for Thread Milling (con't)

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

Coarse Pitch Tooling:

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

Troubleshooting

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



MiTM

Super Fast Thread Milling System



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- > Technical Data

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

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

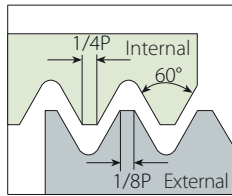
R	TM	C		100	067	-	110	S	2
1	2	3		4	5		6	7	8
1 - Product Line R - MiTM line BR - MiTM with anti vibration system	2 - Holder Type TM - Standard holder TMN - Conical holder	3 - Cooling C - Coolant Channel	4 - Shank Dia. [inch] 1, 1.25	5 - Cutting Dia. [inch] .54-1.42	6 - Tool Overhang [inch] 1.02-3.15	7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

MiTM Shell Mill

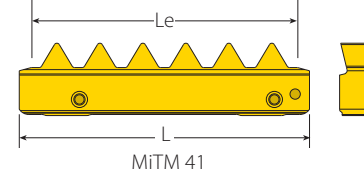
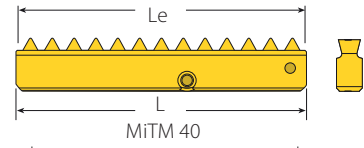
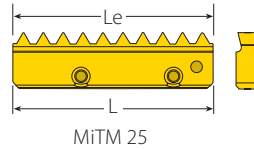
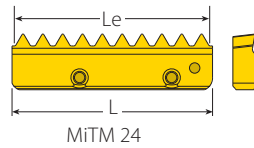
R	TM	C		D150	050	-	25S	5
1	2	3		4	5		6	7
1 - Product Line R - MiTM line	2 - Holder Type TM - Standard holder TMN - Conical holder	3 - Cooling C - Coolant Channel	4 - Cutting Dia. [inch] 1.54-2.48	5 - Drive Hole Dia. [inch] .5, .75, 1	6 - Insert Style 25S 40L 41B	7 - No. of Flutes 5 - 9		

American UN

External / Internal



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



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

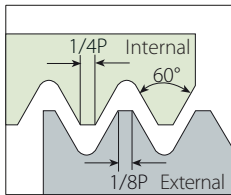
* Note: 8 UN & 9 UN inserts do not fit into toolholder RTMC100067....
For external insert 8 UN use for CNC program (D2 + 0.02")

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)...

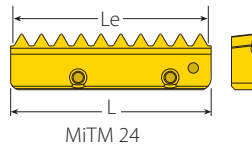


ISO Metric

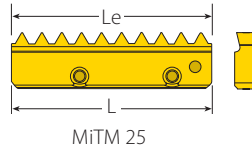
External / Internal



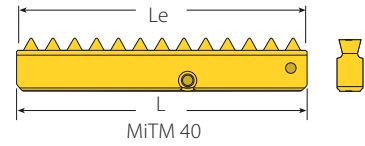
Defined by: R262 (DIN 13)
Tolerance class: 6g/6H



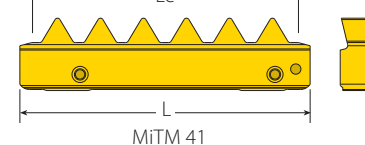
MiTM 24



MiTM 25



MiTM 40



MiTM 41

Standard MiTM

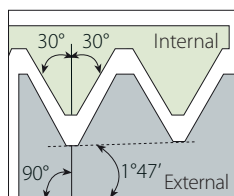
L	Pitch	Ordering Code	EDP No.	Ordering Code	EDP No.	Cutting Edge	Teeth	Toolholder
inch	tpi	External	VTX	VBX	Internal	VTX	VBX	Le Zt
.945" (24 mm)	0.50				R24I0.50ISOTM...	80753	80754	1 0.96 49
	0.75				R24I0.75ISOTM...	80755	80751	1 0.97 33
	1.00				R24I1.00ISOTM...	80756	80757	1 0.94 24
	1.25				R24I1.25ISOTM...	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
.988" (25 mm)	2.50				R24I2.50ISOTM...	80766	80767	1 0.98 10
	1.00	R25E1.00ISOTM...	80584	80585	R25I1.00ISOTM...	80482	80483	2 0.94 24
	1.50	R25E1.50ISOTM...	80587	80586	R25I1.50ISOTM...	80484	80485	2 0.94 16
	2.00	R25E2.00ISOTM...	80588	80589	R25I2.00ISOTM...	80486	80487	2 0.94 12
	2.50	R25E2.50ISOTM...	80590	80591	R25I2.50ISOTM...	80488	80489	2 0.98 10
	3.00	*R25E3.00ISOTM...	80592	80593	*R25I3.00ISOTM...	80490	80491	2 0.94 8
								* See note below
1.575" (40 mm)	1.00				R40I1.00ISOTM...	80702	80703	2 1.54 39
	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
	3.00	R41E3.00ISOTM...	80768	80769	R41I3.00ISOTM...	80782	80783	2 1.54 13
	3.50	R41E3.50ISOTM...	80770	80771	R41I3.50ISOTM...	80784	80785	2 1.52 11
1.614" (41 mm)	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")

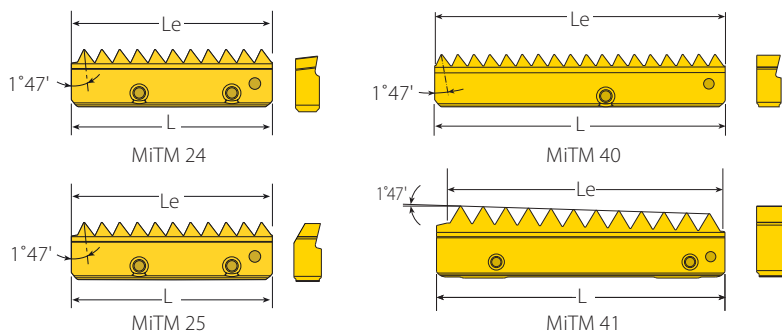
MiTM inserts 25, 40 and 41 are offered with 2 cutting edges. In case of chip flow difficulty, inserts with a single cutting edge can be ordered by request. Example: R25I2.00ISOTM(S)...

NPT

External / Internal



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



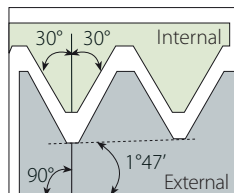
Standard MiTM



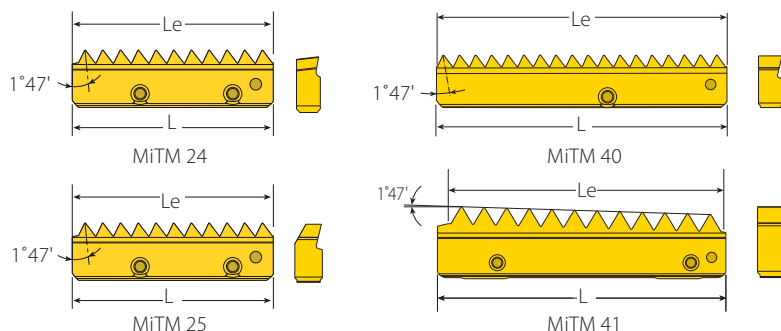
L	Pitch	Ordering Code	EDP No.		Cutting Edge	Teeth	Toolholder
inch	tpi	External + Internal	VTX	VBX		Le Zt	
.945" (24 mm)	18	R24EI18NPTTM...	80873	80874	1	0.94 17	RTMNC.... M
	14	R25EI14NPTTM...	80516	80517	1	0.93 13	RTMNC.... S
.988" (25 mm)	11.5	R25EI11.5NPTTM...	80518	80519	1	0.96 11	RTMNC-D150-050-25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

NPTF

External / Internal



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



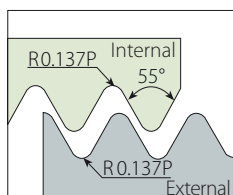
Standard MiTM



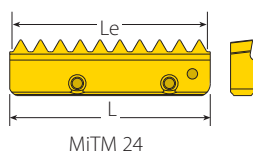
L	Pitch	Ordering Code	EDP No.		Cutting Edge	Teeth	Toolholder
inch	tpi	External + Internal	VTX	VBX		Le Zt	
.945" (24 mm)	18	R24EI18NPTFTM...	80875	80876	1	0.94 17	RTMNC.... M
	14	R25EI14NPTFTM...	80520	80521	1	0.93 13	RTMNC.... S
.988" (25 mm)	11.5	R25EI11.5NPTFTM...	80522	80523	1	0.96 11	RTMNC-D150-050-25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

Whitworth for BSF, BSP

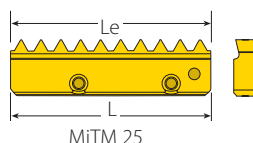
External / Internal



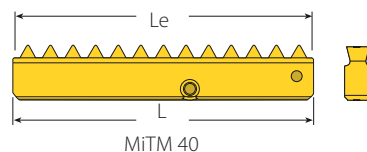
Defined by: B.S.84:1956, DIN 259,
ISO228/1:1982
Tolerance class: Medium Class A



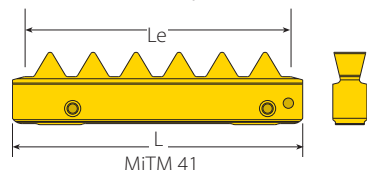
MiTM 24



MiTM 25



MiTM 40



MiTM 41

Standard MiTM

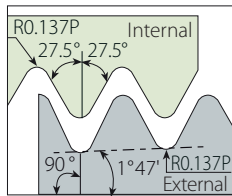
	L	Pitch	Ordering Code	EDP NO.	Ordering Code	EDP NO.	Cutting Edge	Teeth	Toolholder			
	inch	tpi	External + Internal	VTX	VBX	Internal	VTX	VBX	Le	Zt		
	.945" (24 mm)	19	R24EI19WTM...	80844	80845				1	0.95	18	RTMC.... M
		14	R24EI14WTM...	80846	80847				1	0.93	13	
		12	R24EI12WTM...	80848	80849				1	0.92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

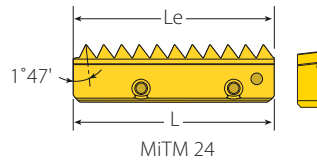


BSPT

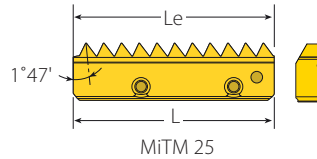
External / Internal



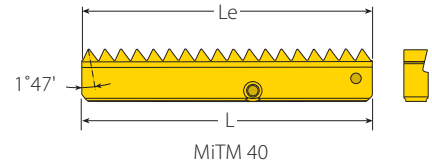
Defined by: B.S. 21:1985
Tolerance class: Standard BSPT



MiTM 24



MiTM 25



MiTM 40

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*

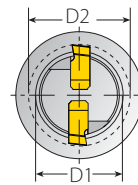
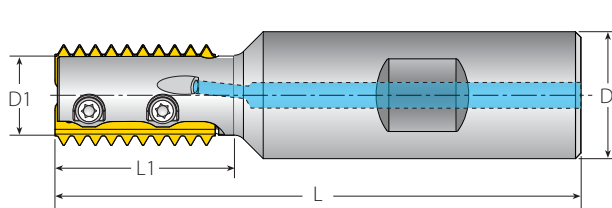


L	Ordering Code	EDP No.	Teeth	Toolholder
inch	External + Internal		Zt	
.945" (24 mm)	R24NC	80858	No Teeth	RTMC....M
.988" (25 mm)	R25NC	80532		(B)RTMC....S
1.575" (40 mm)	R40NC	80626		(B)RTMC....L
1.614" (41 mm)	R41NC	80859		RTMC....B

All Types

* 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 $D2 > 0.7 \times \text{nominal thread diameter}$

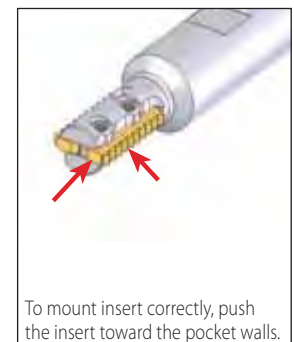
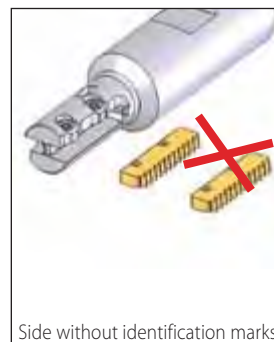
RTMC - for Standard Threads

Spare Parts (Ordering code & EDP No.)

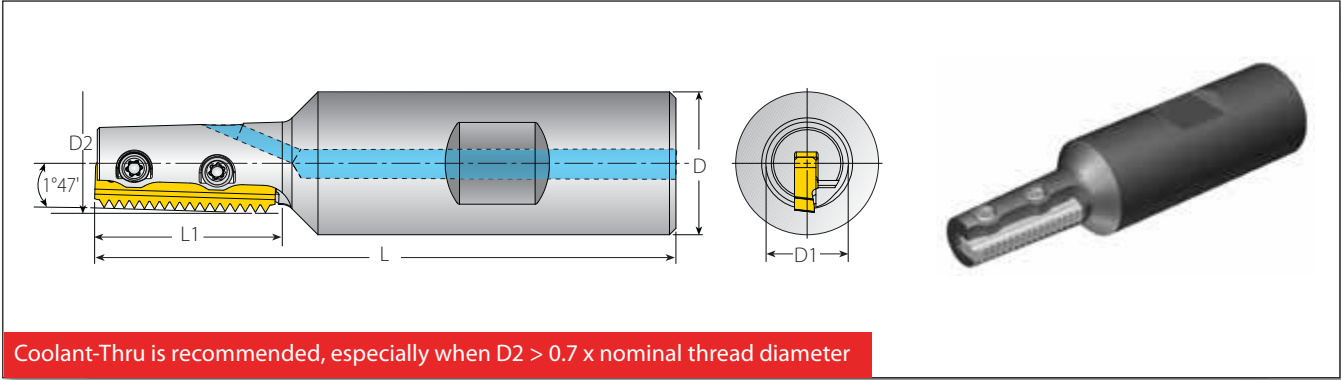
Insert Style	Ordering Code	EDP No.	Dimensions (inch)					No. of Flutes		
			L	L1	D	D1	D2	Z	Location Screw x2	Torx+ Screwdriver
.945" (24 mm)	RTMC 075053-102M1	80860	3.27	1.02	0.75	0.42	0.53	1	 SLD4IP8 (M4x0.7) (80533)	 KIP8 •Use the included Vardex Torx+ screwdriver only •Recommended max. torque 10.6 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	-	$\frac{1}{16}$ -12UN; $\frac{5}{16}$ -14UNS; $\frac{5}{16}$ -16UN; $\frac{5}{16}$ -18UNF; $\frac{5}{16}$ -20UN; $\frac{5}{16}$ -24UNEF; $\frac{5}{16}$ -28UN; $\frac{5}{16}$ -32UN		$\frac{1}{16}$ -14; $\frac{3}{4}$ -12	$\frac{3}{8}$ -19
RTMC 075059-118M1	0.59	M18x2.5	M16x0.5; M17x0.75; M17x1; M17x1.25; M17x1.5; M18x1.75; M18x2	$\frac{3}{4}$ -10	$\frac{3}{4}$ -12UN; $\frac{3}{4}$ -14UNS; $\frac{1}{16}$ -16UN; $\frac{1}{16}$ -20UN; $\frac{1}{16}$ -24UNEF; $\frac{1}{16}$ -28UN; $\frac{1}{16}$ -32UN		$\frac{3}{4}$ -12	-
RTMC 075063-110M2	0.63	M20x2.5	M17x0.5; M17x0.75; M18x1; M18x1.25; M18x1.5; M18x1.75; M19x2	$\frac{3}{4}$ -10	$\frac{3}{4}$ -12UN; $\frac{3}{4}$ -14UNS; $\frac{3}{4}$ -16UN; $\frac{3}{4}$ -18UNS; $\frac{3}{4}$ -20UNEF; $\frac{1}{16}$ -24UNEF; $\frac{1}{16}$ -28UN; $\frac{1}{16}$ -32UN		$\frac{3}{4}$ -12	-
RTMC 075063-142M1	0.63	M20x2.5	M17x0.5; M17x0.75; M18x1; M18x1.25; M18x1.5; M18x1.75; M19x2	$\frac{3}{4}$ -10	$\frac{3}{4}$ -12UN; $\frac{3}{4}$ -14UNS; $\frac{3}{4}$ -16UN; $\frac{3}{4}$ -18UNS; $\frac{3}{4}$ -20UNEF; $\frac{1}{16}$ -24UNEF; $\frac{1}{16}$ -28UN; $\frac{1}{16}$ -32UN		$\frac{3}{4}$ -12	-



Conical Toolholders (MiTM 24)

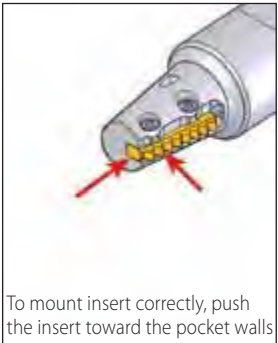
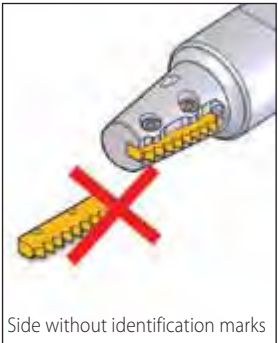
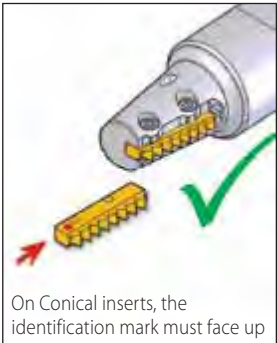


RTMC - for Standard Threads

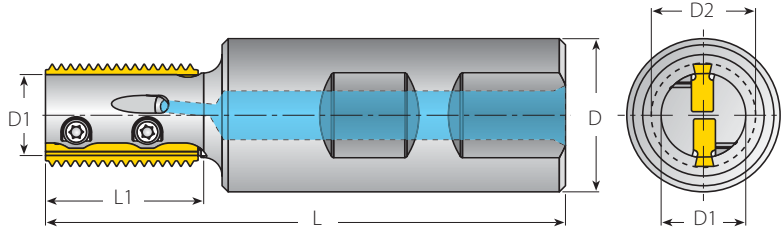
									Spare Parts (Ordering code & EDP No.)	
Insert Style	Ordering Code	EDP No.	Dimensions (inch)					No. of Flutes		
			L	L1	D	D1	D2	Z	Location Screw x2	Torx+ Screwdriver
.945" (24 mm)	RTMNC 075055-102M1	80863	3.23	1.02	0.75	0.45	0.55	1	SLD4IP8 (M4x0.7) (80533)	KIP8 •Use the included Vardex Torx+ screwdriver 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	3/8-18	3/8-18	3/8-19



Standard Toolholders (MiTM 25)



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

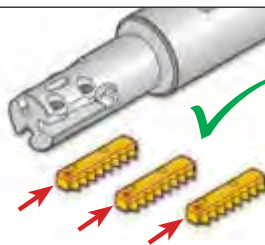
RTMC - for Standard Threads

Spare Parts (Ordering code & EDP No.)

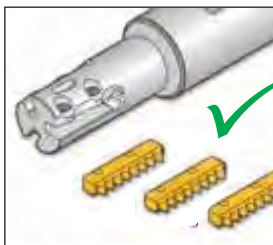
Insert Style	Ordering Code	EDP No.	Dimensions (inch)				No. of Flutes			
			L	L1	D	D1	D2	Z	Location Screw x2	Torx+ Screwdriver
.988" (25 mm)	RTMC 075067-110S2	80748	3.29	1.10	0.75	0.55	0.67	2	SLD4IP8 (M4x0.7) (80533)	KIP8 •Use the included Vardex Torx+ screwdriver only •Recommended max. torque 10.6 lbf·in (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

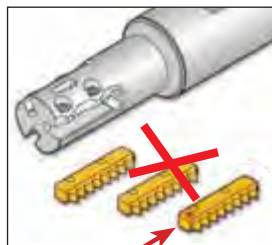
Toolholder				Min.Thread Ø			
	D2 (inch)	ISO (coarse)	ISO (fine)	UNC	UN/UNF/UNEF/UNS	BSF	BSP(G)
RTMC 075067-110S2	0.67	M20x2.5	M19x1; M19x1.5; M20x2	-	7⁄8-10UNS; 13⁄16-12UN; 7⁄8-14UNF; 3⁄4-16UNF; 3⁄4-18UNS; 3⁄4-20UNEF	7⁄8-11; 7⁄8-12; 7⁄8-14; 7⁄8-16	1⁄2-14
RTMC 075067-145S2							
RTMC 100067-110S2							
RTMC 100067-145S2							
RTMC 100075-125S2	0.75	M22x2.5 M24x3	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	5⁄8-14
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	5⁄8-14
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	3⁄4-14
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 3⁄8-12UN; 1 3⁄8-14UNS; 1 3⁄16-16UN; 1 3⁄16-18UNEF; 1 3⁄16-20UN	1 3⁄8-11; 1 3⁄8-12; 1 3⁄8-14; 1 3⁄8-16	1-11
BRTMC 100118-315S4							



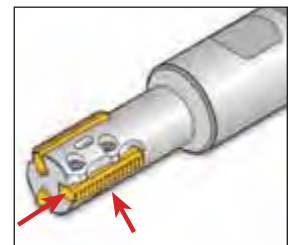
Side with identification marks



Side without identification marks

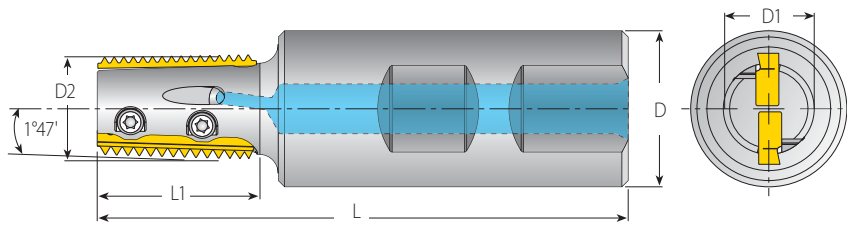


Always mount all inserts with identification marks on the same side



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

Conical Toolholders (MiTM 25)



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

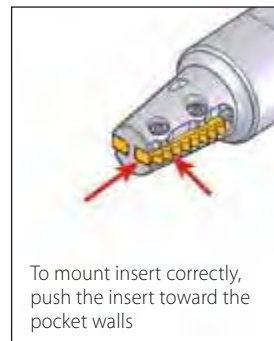
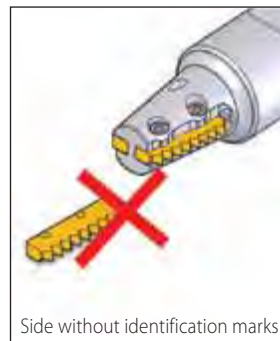
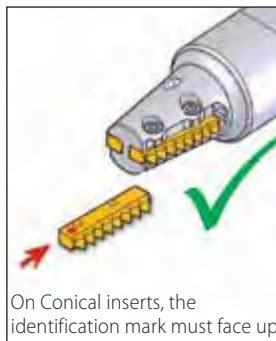
RTMNC - for Conical Threads

Spare Parts (Ordering code & EDP No.)

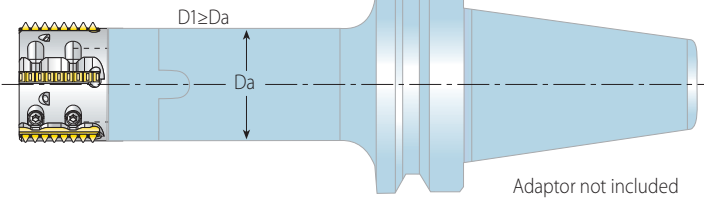
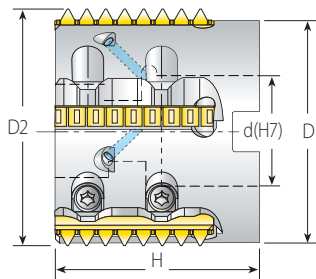
Insert Style	Ordering Code	EDP No.	Dimensions (inch)					No. of Flutes		
			L	L1	D	D1	D2	Z	Location Screw x2	Torx+ Screwdriver
.988" (25 mm)	RTMNC 075067-110S2	80749	3.29	1.10	0.75	0.55	0.67	2	SLD4IP8 (M4x0.7) (80533)	KIP8 •Use the included Vardex Torx+ screwdriver only •Recommended max. torque 10.6 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 $D2 > 0.7 \times \text{nominal thread diameter}$

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 x2	Torx+ Screwdriver	Holder Screw
Standard	.988" (25 mm)	RTMC-D150-050-25S5	80569	1.38	1.54	0.50	1.26	5	SLD4IP8 (M4x0.7) (80533)	KIP8 •Use the included Vardex Torx+ screwdriver only •Recommended max. torque 10.6 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)

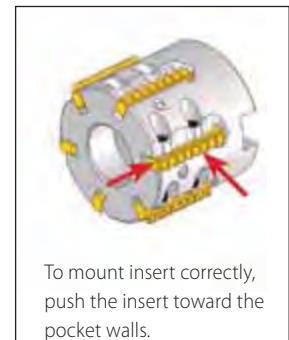
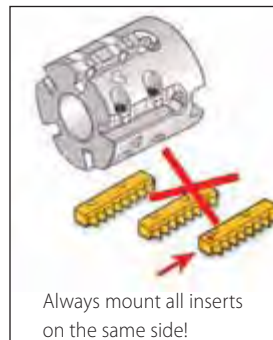
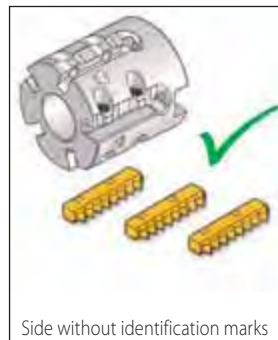
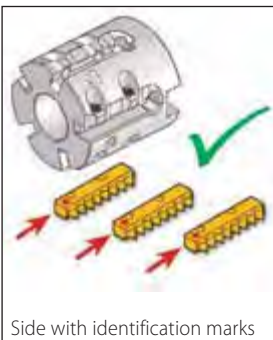
* For inserts 8NPT and 8NPTF use for CNC program (D2+0.024")

Standard Thread Applications by Toolholder

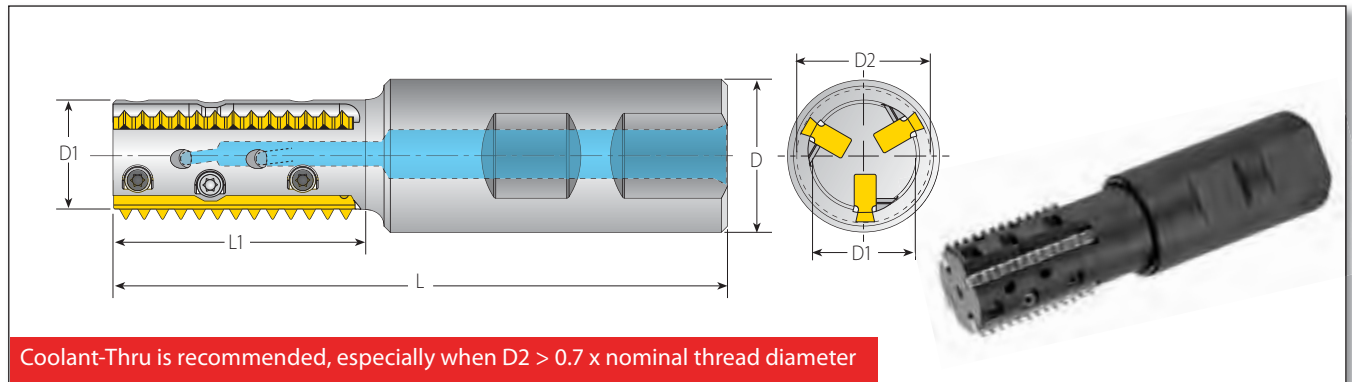
Toolholder			Min. Thread Ø			
D2(inch)			ISO (fine)	UN/UNF/UNEF/UNS	BSW	BSP(G)
Standard	RTMC-D150-050-25S5	1.54	M42x1 ; M42 x1.5; M45x2 ; M45x3	1 ¹¹ / ₁₆ -12UNF; 1 ³ / ₄ -14UNS; 1 ⁵ / ₈ -16UN 1 ⁵ / ₈ -18UNEF; 1 ⁵ / ₈ -20UN;	1 ³ / ₄ -16 1 ³ / ₄ -12	1 ¹ / ₂ - 11
	RTMC-D190-075-25S7	1.93	M52x1 ; M55x1.5; 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	1 ³ / ₄ - 11
	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	2 ¹ / ₄ - 11

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

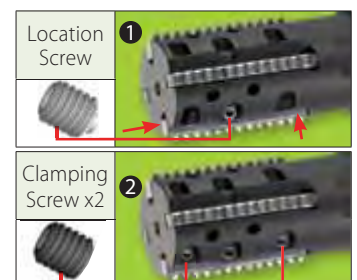
RTMC - for Standard Threads									Spare Parts (Ordering code & EDP No.)		
Insert Style	Ordering Code	EDP No.	Dimensions (inch)					No. of Flutes			
			L	L1	D	D1	D2	Z	Location Screw	Clamping Screw x2	Torx+ Screwdriver
1.575" (40 mm)	RTMC 100087-169L3	80618	4.00	1.69	1.00	0.71	0.87	3	SLD4IP8A (M4x0.7) (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

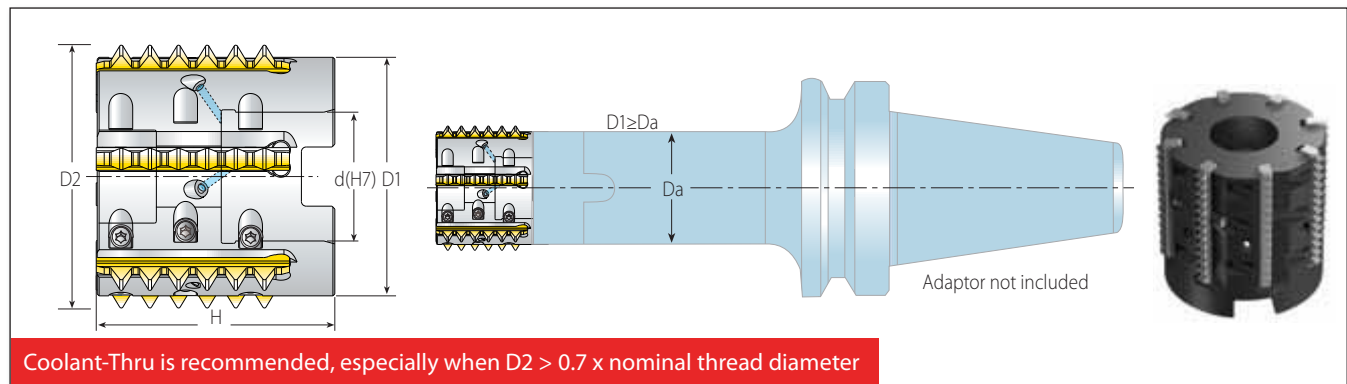
Toolholder		Min. Thread Ø						
	D2 (inch)	ISO (coarse)	ISO (fine)	UNC	UN/UNF/UNEF/UNS			BSP
RTMC 100087-169L3	0.87	M27x3	M24x1; M24x1.5 M25x2; M25x2.5	-	1 1/16-8UN; 1-9UN; 1-10UNS; 1-12UNF; 1-14UNS; 1-16UN; 1-18UN; 1 1/16-20UNEF			1-11; 1-12; 1-14; 1-16;
RTMC 100087-256L3	0.87	M27x3	M24x1; M24x1.5 M25x2;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



2 Step Clamping System!



Shell Mill (MiTM 40)



Conical and Standard Shell Mills

Spare Parts (Ordering code & EDP No.)

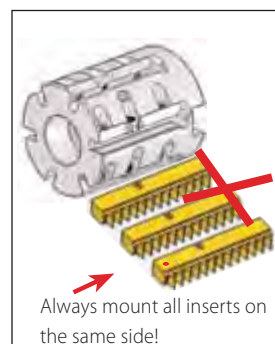
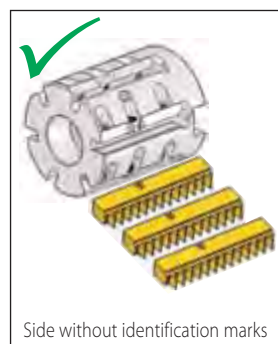
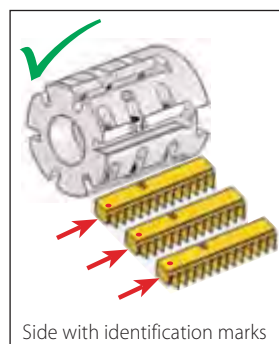
Insert Style		Ordering Code	EDP No.	Dimensions (inch)				No. of Flutes				
				D1	D2	d(H7)	H	Z	Location Screw	Clamping Screw x2	Torx+ Screwdriver	Holder Screw
Standard	1.575" (40 mm)	RTMC D190-075-40L7	80623	1.77	1.93	0.75	1.97	7	SLD4IP8A (M4x0.7) (80533)	SCD4IP8 (M4x0.7) (80622)	•Use the included Vardex 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

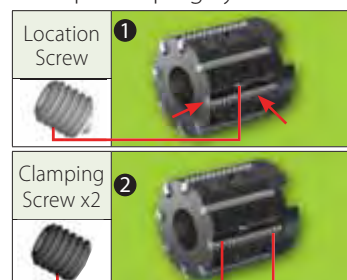
Toolholder			Min. Thread Ø				
		D2 (inch)	ISO (fine)	UN/UNF/UNEF/UNS		BSW	BSP(G)
Standard	RTMC D190-075-40L7	1.93	M52x1; M55x1.5; M55x2; M55x3	1 7/8-12UN; 1 13/16-16UN; 1 13/16-20UN; 1 15/16-8UN; 1 7/8-10UNS; 1 7/8-14UNS		2 1/4 -12; 2 1/4 -16	1 3/4 -11
	RTMC D230-100-40L9	2.32	M64x1; M64x1.5; M64x2; M65x3	2 1/4-8UN; 2 1/4-10UN; 2 1/4-12UN; 2 1/4-14UN; 2 1/4-16UN; 2 1/4-18UN; 2 1/4-20UN		2 1/2 -12; 2 1/2 -16	2 1/4 -11

Conical Thread Application by Toolholder

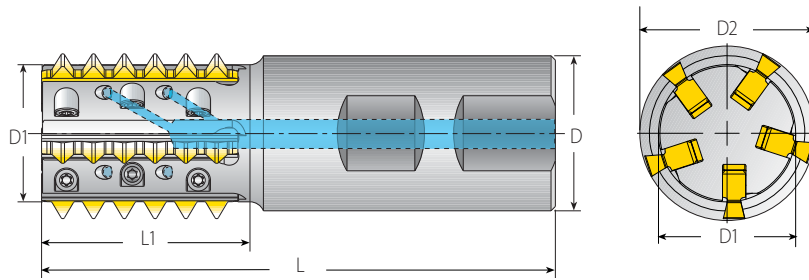
Toolholder			Min. Thread Ø			
		D2 (inch)	NPT	NPTF		BSPT
Conical	RTMNC D190-075-40L7	1.93	2-11.5; 2 1/2-8 (and up)	2-11.5; 2 1/2-8; 3-8		2-6x11



2 Step Clamping System!



Standard Toolholders (MiTM 41)



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

RTMC - for Standard Threads

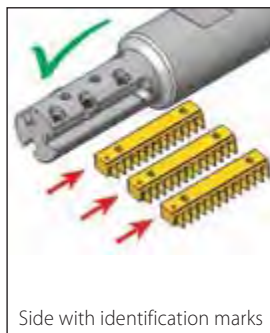
Spare Parts (Ordering code & EDP No.)

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			

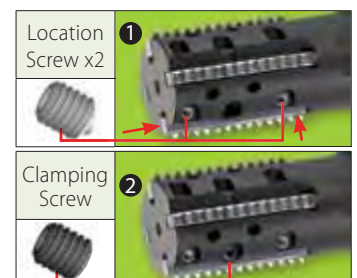
Standard Thread Application by Toolholder

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

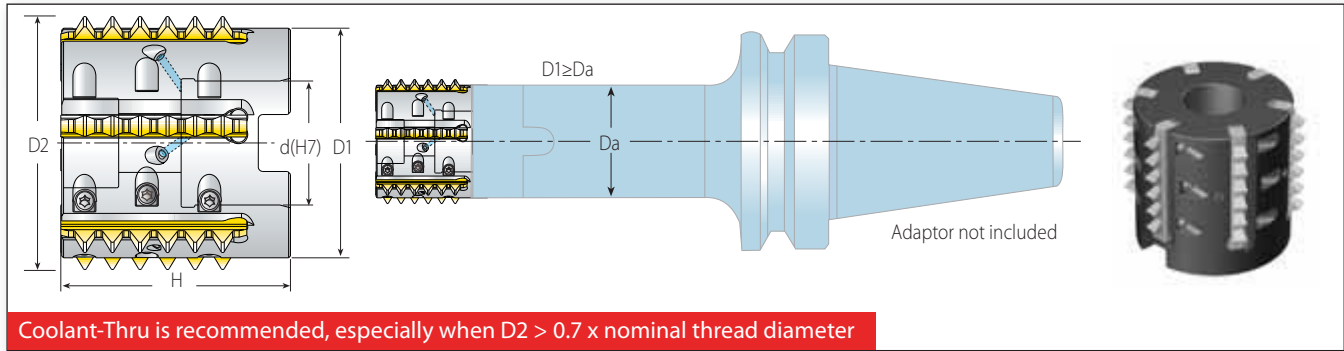
* For external applications, inserts R41E... use for CNC program (D2+0.024")



2 Step Clamping System!



Shell Mill (MiTM 41)



Standard Shell Mill

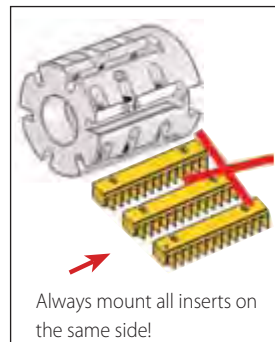
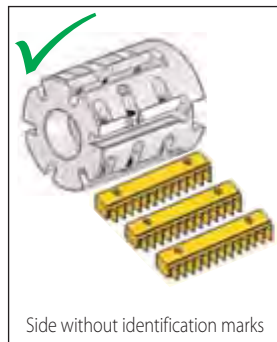
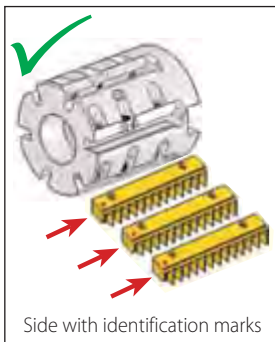
Spare Parts (Ordering code & EDP No.)

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 lbf·in (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)

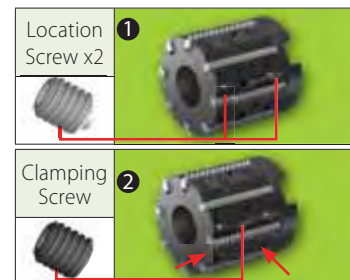
Standard Thread Application by Toolholder

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

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.	



TMSD

Thread Mill for Deep Holes



- > Inserts
- > Toolholders
- > Technical Data

TMSD - THREAD MILL FOR DEEP HOLES

■ VARDEX Ordering Code System.....	Page 278
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Inserts

■ Partial Profile 60°.....	Page 279
■ Partial Profile 55°.....	Page 280
■ Trapez.....	Page 281

Toolholders

■ Weldon Shank (Mini L-Style).....	Page 282
■ Carbide Cylindrical Shank (Mini L-Style).....	Page 283
■ Weldon Shank (U-Style).....	Page 284
■ Carbide Cylindrical Shank (U-Style).....	Page 285
■ Steel Cylindrical Shank (U-Style).....	Page 286
■ Shell Mill (U-Style).....	Page 287
■ Steel Cylindrical Shank (A-Style).....	Page 288

Technical Data

■ Recommended Cutting Speeds and Feed.....	Page 289
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A multi-flute, high-productivity, and economical solution for milling threads in deep holes

Smooth Cut

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

Wide Range of Pitches

- Partial profile

Cost Effective

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

Fast Machining

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

Long Overhang

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

Tool Cutting Diameter

- As small as 0.51"

Cooling Thru

- For improved chip evacuation and cooling the cutting corner



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

TMSD

Thread Mill for Deep Holes

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

Mini L

For Small Bores and Short L2

Weldon Shank



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

Carbide Cylindrical Shank



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

U Style

For Large Pitches

Weldon Shank



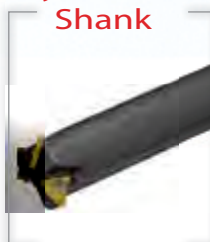
Tool Overhang (L1) 1.57-4.72
Cutting Dia. (D2) .58-1.66
No. of Flutes (Z) 1-4

Carbide Cylindrical Shank



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

Steel Cylindrical Shank



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

Shell Mill



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

A Style

For Shorter L2

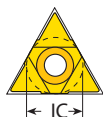
Steel Cylindrical Shank



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

Vardex Ordering Code System

TMSD Inserts

2	U	I	DB	60	TM	VBX																																																
1	2	3	4	5	6	7																																																
1 - Insert Size 5L - IC5.0L mm 2 - IC1/4" 3 - IC3/8" 4 - IC1/2" 	2 - Insert Style U -  A -  L - 	3 - Type of Insert I - Internal	4 - Pitch Full Profile - Pitch Range <table><tr><td>mm</td><td>tpi</td></tr><tr><td>2.0-5.0</td><td>-</td></tr></table> Partial Profile - Pitch Range <table><tr><td></td><td>mm</td><td>tpi</td></tr><tr><td>DA</td><td>0.5-1.5</td><td>48-16</td></tr><tr><td>DB</td><td>1.5-2.0</td><td>16-12</td></tr><tr><td>DC</td><td>2.5-4.0</td><td>10-6</td></tr><tr><td>DD</td><td>2.0-2.5</td><td>9-12</td></tr><tr><td>DE</td><td>2.5-3.5</td><td>10-7</td></tr><tr><td>DH</td><td>4.0-6.0</td><td>6-4</td></tr><tr><td>DK</td><td>6.0-8.0</td><td>4-3</td></tr><tr><td>DL</td><td>-</td><td>11-7</td></tr><tr><td>DM</td><td>2.5</td><td>10</td></tr><tr><td>DN</td><td>1.0-2.0</td><td>24-11</td></tr><tr><td>DP</td><td>1.5-3.0</td><td>16-8</td></tr><tr><td>DR</td><td>-</td><td>26-14</td></tr><tr><td>DT</td><td>2.0-4.0</td><td>12-6</td></tr></table>			mm	tpi	2.0-5.0	-		mm	tpi	DA	0.5-1.5	48-16	DB	1.5-2.0	16-12	DC	2.5-4.0	10-6	DD	2.0-2.5	9-12	DE	2.5-3.5	10-7	DH	4.0-6.0	6-4	DK	6.0-8.0	4-3	DL	-	11-7	DM	2.5	10	DN	1.0-2.0	24-11	DP	1.5-3.0	16-8	DR	-	26-14	DT	2.0-4.0	12-6	5 - Standard 60° - Partial Profile 60° 55° - Partial Profile 55° TR - Trapez DIN 103	6 - System TM	7 - Carbide Grade VBX, VTX
mm	tpi																																																					
2.0-5.0	-																																																					
	mm	tpi																																																				
DA	0.5-1.5	48-16																																																				
DB	1.5-2.0	16-12																																																				
DC	2.5-4.0	10-6																																																				
DD	2.0-2.5	9-12																																																				
DE	2.5-3.5	10-7																																																				
DH	4.0-6.0	6-4																																																				
DK	6.0-8.0	4-3																																																				
DL	-	11-7																																																				
DM	2.5	10																																																				
DN	1.0-2.0	24-11																																																				
DP	1.5-3.0	16-8																																																				
DR	-	26-14																																																				
DT	2.0-4.0	12-6																																																				

TMSD Toolholders

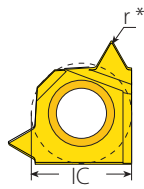
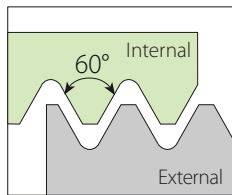
C	TM	2	S	C	056	C	068	-	235	-	2	U
1	2	3	4	5	6	7	8		9		10	11
1 - Shank Style None - Steel C - Carbide Shank	2 - System TM	3 - No. of Flutes 1-4	4 - Insert Type S - Single Point	5 - Cooling C - Coolant	6 - Shank Dia. .375-1.50	7 - Shank Type W - Weldon C - Cylindrical	8 - Cutting Dia. .51-1.65					
9 - Max. Tool Overhang .79-5.12	10 - Insert Size 5L - IC5.0L mm 2 - IC1/4" 3 - IC3/8" 4 - IC1/2"	11 - Insert Style U A L										

TMSD Shell Mill

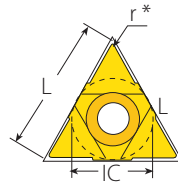
TM	4	S	C		D169	-	050	-	3	U
1	2	3	4		5		6		7	8
1 - System TM	2 - No. of Flutes 4-8	3 - Insert Type S - Single Point	4 - Cooling C - Coolant	5 - Cutting Dia. 1.69-4.35	6 - Drive Hole Dia. .50, .75, 1.0, 1.5	7 - Insert Size 3 - IC3/8" 4 - IC1/2"				
						8 - Insert Style U				

TMSD - Partial Profile 60°

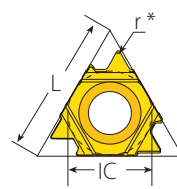
Internal



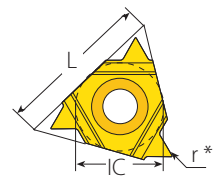
Mini L Style



U Style



2UIDB60 TM...
2UIDD60 TM...



A Style

Mini-L



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

U Style



2UIDB60 TM...
2UIDD60 TM...



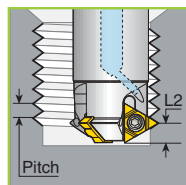
Insert Size		Pitch		Ordering Code	EDP No.		Dimensions (inch)	
IC	L inch	mm	tpi	Internal	VTX	VBX	r*	Toolholder
1/4"U	.43	0.5-1.5	48-16	2UIDA60 TM...	50305	50299	.002	TM.SC...2U
		1.5-2.0	16-12	2UIDB60 TM...	50018	50008	.002	CTM. SC...2U
		2.0-2.5	9-12	2UIDD60 TM...	50355	50352	.004	CTM2SC
		2.5	10	2UIDM60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

A Style

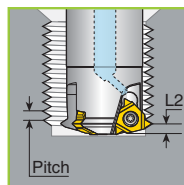


Insert Size		Pitch		Ordering Code	EDP No.		Dimensions (inch)	
IC	L inch	mm	tpi	Internal	VTX	VBX	r*	Toolholder
1/4"A	.43	1.5-3.0	16-8	2AIDP60 TM...	50219	50200	.002	TM.SC...2A
3/8"A	.63	2.0-4.0	12-6	3AIDT60 TM...	50227	50226	.003	TM.SC...3A

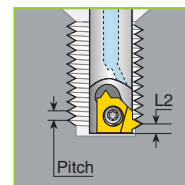
* The indicated radius (r) refers to the insert nose radius only



U Style
For Large Pitches



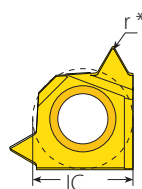
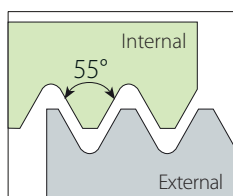
A Style
For Shorter L2



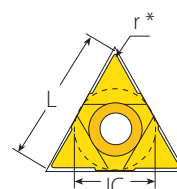
Mini-L Style
For Small Bores and Short L2

TMSD - Partial Profile 55°

Internal



Mini L Style



U Style

Mini-L



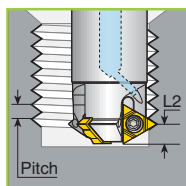
Insert Size	Pitch	Ordering Code	EDP No.		Dimensions (inch)	
IC	tpi	Internal	VTX	VBX	r*	Toolholder
5.0L	26-14	5LIDR55 TM...	50269	50268	.004	TM.SC...5L CTM. SC...5L

U Style

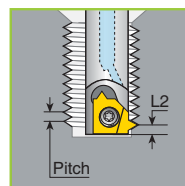


Insert Size		Pitch	Ordering Code	EDP No.		Dimensions (inch)	
IC	L inch	tpi	Internal	VTX	VBX	r*	Toolholder
1/4"U	.43	48-16	2UIDA55 TM...	50317	50309	.004	TM.SC...2U CTM. SC...2U
		16-12	2UIDB55 TM...	50055	50053	.003	
		11-7	2UIDL55 TM...	50061	50056	.010	
3/8"U	.63	16-12	3UIDB55 TM...	50067	50062	.003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

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



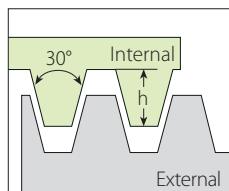
U Style
For Large Pitches



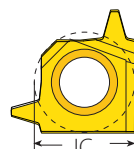
Mini-L Style
For Small Bores and Short L2

TMSD - Trapez

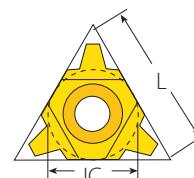
Internal



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



Mini L Style



U Style

Mini-L



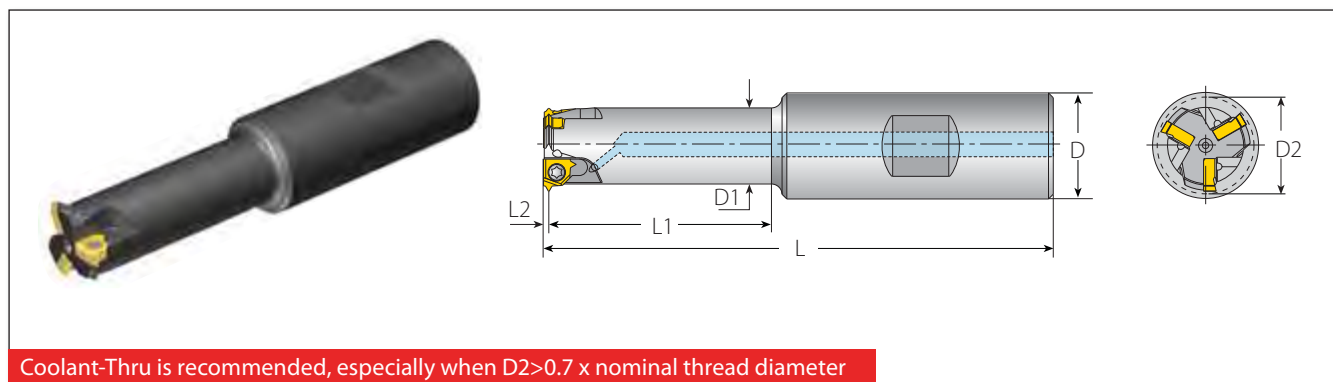
Insert Size	Pitch	Ordering Code	EDP No.		Application	
IC	mm	Internal	VTX	VBX	Internal	Toolholder
5.0L	2.0	5LI2.0TR-1 TM...	50359	50207	TR16x2, TR20x2	See pages 282-283
		5LI2.0TR-2 TM...	50367	50361	TR18x2	

U Style



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

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



Weldon Shank for Mini-L Style Inserts

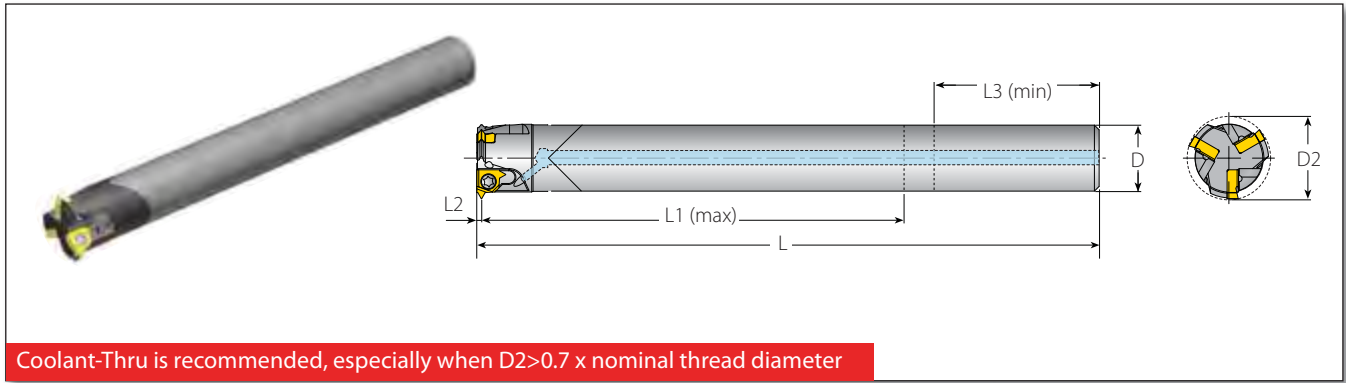
Spare Parts (Ordering code & EDP No.)

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

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

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

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



Carbide Cylindrical Shank for Mini-L Style Inserts

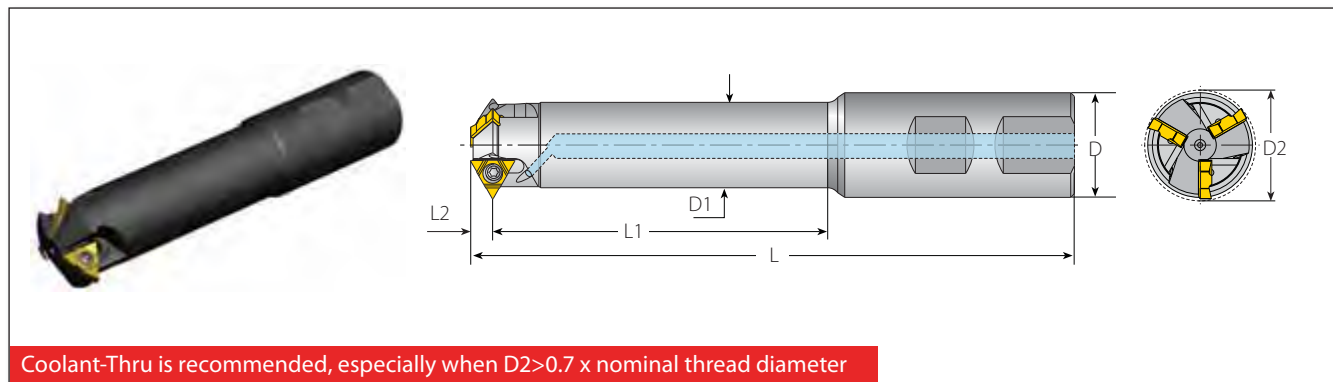
Spare Parts (Ordering code & EDP No.)

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

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

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

TMSD Standard Toolholder - Weldon Shank (U-Style)



Weldon Shank for U-Style Inserts

Spare Parts (Ordering code & EDP No.)

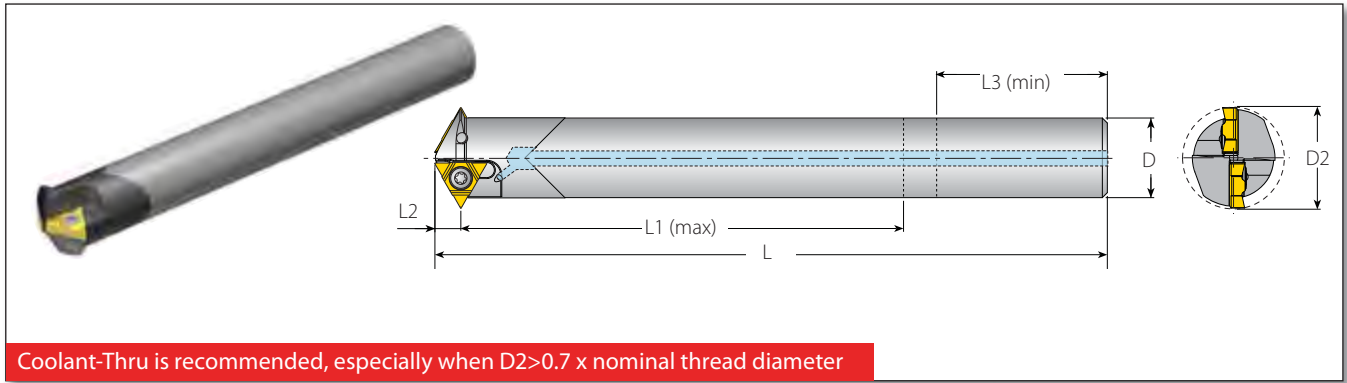
Insert Size	Ordering Code	EDP No.	Dimensions (inch)							No. of Flutes		
IC			L	L1	L2	D	D1	D2	Z		Insert Screw	Torx Key
1/4"U	TM1SC 062W059-157-2U	67116	3.76	1.57	0.21	0.625	0.43	0.58*	1	SN2T (70036)	HK2T (70227)	
	TM2SC 100W082-236-2U	67117	4.92	2.36		1.00	0.63	0.81*	2			
	TM2SC 100W90-275-2U	67722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

Thread Application for U-Style Toolholders (Weldon Shank)

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

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

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



Carbide Cylindrical Shank for U-Style Inserts

Spare Parts (Ordering code & EDP No.)

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

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

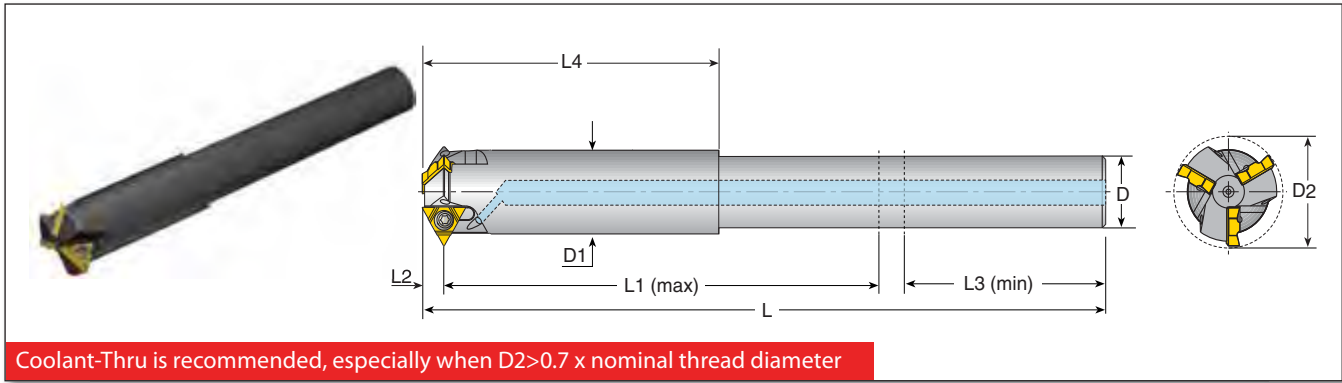
Toolholder		Min. Thread Ø							
	D2	ISO Coarse	ISO Fine	UNC	UN/UNF/UNEF/UNS	BSP (G)	Partial 55°	Trapez	
CTM1SC 031C059-157-2U	0.58*	M18x2.5, M24x3.0, M30x3.5, M36x4.0	M16x0.5, M16x0.75, M16x1.0, M17x1.25, M17x1.5, M17x2.0	3/4-10, 7/8-9, 1-8, 1 1/8-7, 1 3/8-6	5/8-32UN, 5/8-28UN, 5/8-27UNS, 1 1/16-24UNEF, 1 1/16-20UN, 1 1/16-16UN, 3/4-14UNS, 1 1/16-12UN	1/2-14, 1-11	1 1/16-26, 1 1/16-20, 1 1/16-16, 1 1/16-14, 3/4-12, 7/8-11, 3/4-10, 7/8-9, 1-8, 1 1/8-7	TR22x3, TR24x3, TR20x4, TR22x5, TR24x5, TR26x5, TR28x5	
CTM1SC 043C061-235-2U	0.60*	M18x2.5, M24x3.0	M16x0.5, M16x0.75, M16x1.0, M17x1.25, M17x1.5, M17x2.0	3/4-10, 7/8-9, 1-8	5/8-32UN, 5/8-28UN, 5/8-27UNS, 1 1/16-24UNEF, 1 1/16-20UN, 1 1/16-16UN, 3/4-14UNS, 1 1/16-12UN	1/2-14, 1-11	1 1/16-26, 1 1/16-20, 1 1/16-16, 1 1/16-14, 3/4-12, 7/8-11, 3/4-10, 7/8-9	TR22x3, TR24x3	
CTM2SC 056C068-235-2U	0.68**	M20x2.5, M22x2.5	M21x2.0	7/8-9	7/8-10UNS, 1 3/16-12UN	-	-	-	
CTM2SC 056C082-256-2U	0.81*	M24x3.0, M30x3.5, M36x4.0	M22x0.5, M22x0.75, M22x1.0, M23x1.25, M23x1.5, M23x2.0	1-8, 1 1/8-7, 1 3/8-6	7/8-32UN, 7/8-28UN, 7/8-27UNS, 7/8-24UNS, 7/8-20UNEF, 1-18UNS, 1 1/16-16UN, 1-14UNS, 1 1/16-12UN, 1-10UNS	3/4-14, 1-11	1-26, 1-20, 1-16, 1-12, 1-10, 1 1/8-9, 1-8, 1 1/8-7	(TR26-TR60)x3, TR28x4, (TR65-TR110)x4, TR28x5	
CTM2SC 062C082-315-2U	0.81*	M24x3.0, M30x3.5	M22x0.5, M22x0.75, M22x1.0, M23x1.25, M23x1.5, M23x2.0	1-8, 1 1/8-7, 1 3/8-6	7/8-32UN, 7/8-28UN, 7/8-27UNS, 7/8-24UNS, 7/8-20UNEF, 1-18UNS, 1 1/16-16UN, 1-14UNS, 1 1/16-12UN, 1-10UNS	3/4-14, 1-11	1-26, 1-20, 1-16, 1-12, 1-10, 1 1/8-9, 1-8, 1 1/8-7	(TR26-TR60)x3	

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

** To be used only with inserts 2UIDD60TM... or 2UIDM60TM...

For insert 2UIDD60 TM... use for CNC program (D2+0.028")

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



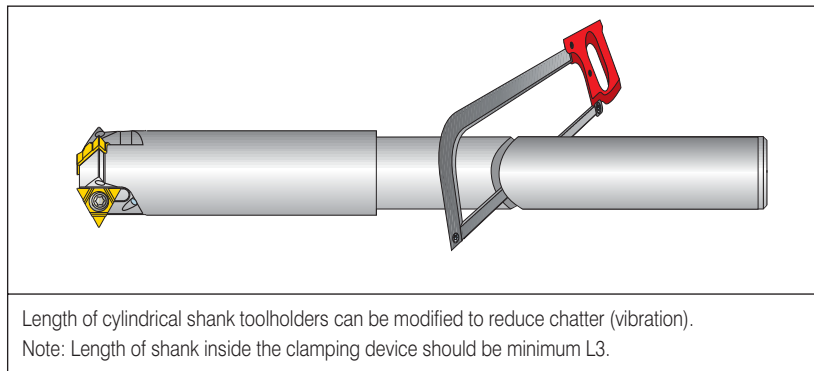
Steel Cylindrical Shank for U-Style Inserts

Spare Parts (Ordering code & EDP No.)

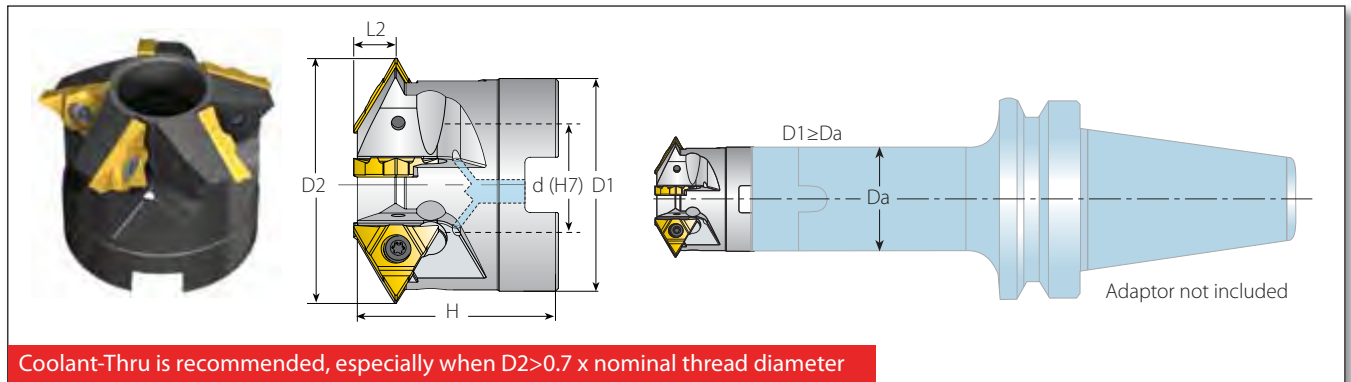
Insert Size	Ordering Code	EDP No.	Dimensions (inch)								No. of Flutes		
IC			L	L1 (max)	L2	L3 (min)	L4	D	D1	D2	Z	Insert Screw	Torx Key
1/4"U	TM2SC 062C090-300-2U	67744	5.60	3.00	0.21	1.35	2.16	0.625	0.70	0.91	2	SN2T (70036)	HK2T (70227)
	TM3SC 075C102-415-2U	67745	7.20	4.15	0.21	1.57	-	0.75	0.75	1.02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

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

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



TMSD - Shell Mill (U-Style)



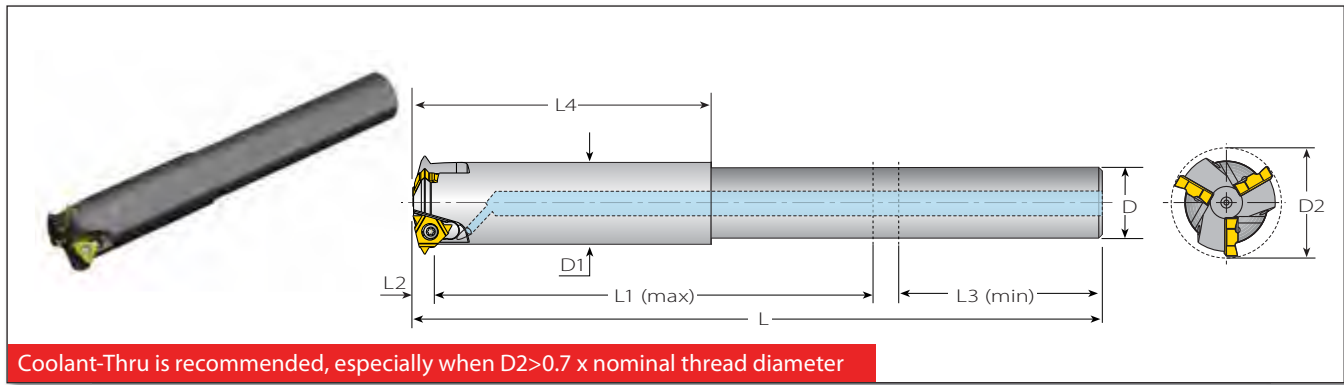
Shell Mill for U-style Inserts

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

Thread Application U-Style Shell Mill

Toolholder		Min. Thread Ø						
	D2	ISO Coarse	ISO Fine	UNC	UN/UNF/UNEF/UNS	BSP (G)	Partial 55°	
TM4SC D169-050-3U	1.69	M56x5.5, M64x6.0	M45x1.5, M48x2.0, M48x3.0, M48x4.0	2-4.5, 2½ - 4	1⅜-16UN, 1⅞-14UNS, 1⅜-12UN, 1⅞-10UNS, 1⅞-8UN, 1⅜-6UN	1½ - 11	1⅞-16, 1⅞-12, 1⅞-8, 2⅞-6, 2-4.5, 2¼-4	
TM5SC D208-075-3U	2.09	M64x6.0	M55x1.5, M56x2.0, M58x3.0, M58x4.0	2½ - 4	2¼-16UN, 2¼-14UNS, 2¼-12UN, 2¼-10UNS, 2¼-8UN, 2⅜-6UN	2 - 11	2¼-16, 2¼-12, 2⅜-8, 2⅜-6, 3-5, 3½-4.5	
TM6SC D346-100-4U	3.47	-	M95x6.0, M125x8	3¾ - 4	-	3½ - 11	4¼-4, 4-3	
TM7SC D435-150-4U	4.35	-	M120x6.0, M125x8	-	4¾-4UN	-	-	

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



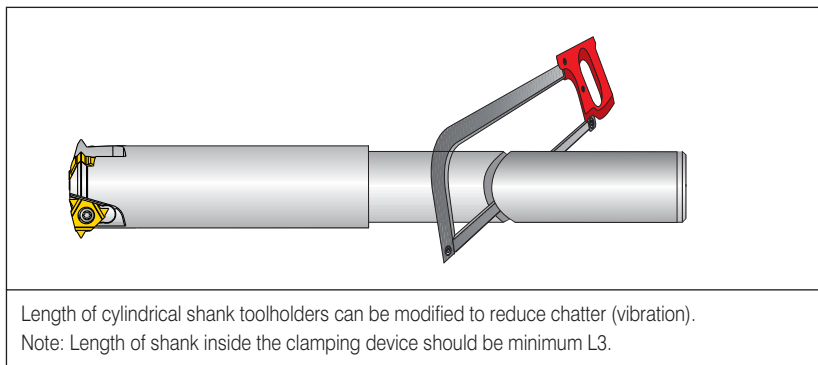
Steel Cylindrical Shank for A-Style Inserts

Spare Parts (Ordering code & EDP No.)

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

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

Toolholder	Min. Thread Ø					
	D2	ISO Coarse	ISO Fine	UNC	UN/UNF/UNEF/UNS	BSP (G)
TM3SC 075C102-415-2A	1.02	-	M28x1.5, M29x2.0, M30x2.5, M30x3.0	-	1 1/8-16UN, 1 1/8-14UNS, 1 3/16-12UN, 1 1/4-10UNS, 1 3/16-8UN	-
TM3SC 100C138-512-3A	1.39	-	M38x2.0, M39x2.5, M39x3.0, M40x4.0	-	1 1/16-12UN, 1 5/8-10UNS, 1 5/8-8UN, 1 5/8-6UN	-



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

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

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

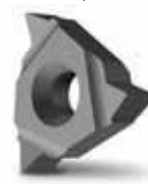
Grades

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

U Style



A Style



Mini-L Style





TM Solid

Solid Carbide Thread Milling Tools

> Tools

> Technical Data



■ Helicool - He-Lex Flute with Axial Coolant Thru	Page 294
■ Helicool R (HCR) - He-Lex Flute with Radial Coolant Thru	Page 299
■ Helicool C (HCC) - He-Lex Flute with Axial Coolant Thru and Chamfer	Page 300
■ HTC (Thriller) - Drill, Chamfer and Thread with Coolant Thru	Page 301
■ He-Lex - He-Lex Flute without Coolant Thru	Page 302
■ Deep Threading - Straight Flutes for Deep Holes	Page 305
■ MilliPro - Miniature Thread Mills	Page 306
■ MilliPro Dental - Miniature Thread Mills for Dental Implants	Page 310
■ MilliPro EL - Miniature Thread Mills, Extra Long Tools	Page 311
■ MilliPro HD - Miniature Thread Mills for Hard Materials	Page 312
■ Straight - Straight Flute	Page 314
■ Grades and Their Applications	Page 319
■ Cutting Speeds and Feeds	Page 320

TM Solid Carbide

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

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

7 - Pitch	8 - Standard	9 - System	10 - No. of Flutes	11 - Carbide Grade
Full Profile - Pitch Range	ISO - ISO Metric UN - American UN UNC - UN Coarse UNF - UN Fine UNEF - UN Extra Fine UNJ - UNJ MJ - MJ BSW - Whit. Coarse BSP - BSP BSF - Whit. Fine BSPT - BSPT NPT - NPT NPTF - NPTF PG - PG	TM TML - Extra Long	3 - 3 Flutes 5 - 5 Flutes Straight Flute, when two options are available	VTs VTH
Partial Profile - Pitch Range				
TA	0.5-0.8	32-56		
TB	0.5-1.0	24-56		
TC	1.0-1.50	16-24		
TD	1.0-1.75	14-24		
TF	0.5-1.25	20-48		

HTC - Thriller

HTC	M6	1.0	2D	VTN
1	2	3	4	5

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

A Tool for EVERY Thread Milling Job!

Miniature Threads

MilliPro

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

MilliPro HD
Up to 62 HRC

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



Long Thread Deep Threading

Full Profile

Partial Profile

Up to 3XDo



Normal Use Straight Flutes



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

Heavy Duty Helicool



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

Radial Coolant Helicool-R (HCR)



From No.10-32UNF

Helicool and Chamfer Helicool-C (HCC)



From No.10-32UNF

Economical Tool He-Lex



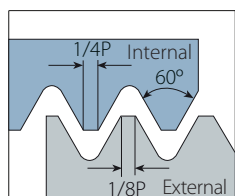
From M3x0.5 (No.10-32UNF)

Drill, Thread and Chamfer HTC

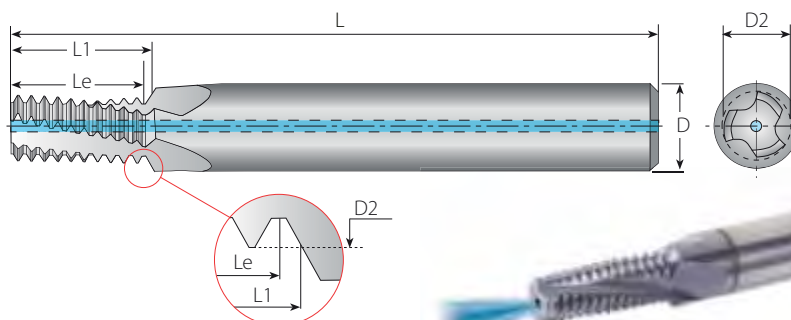


From M6x1.0

Internal



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



Helical Flutes with Thru-Hole Coolant

1.5 x Do ($L1 \leq 1.5 \times \text{Thread Diameter}$)

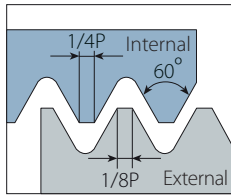
Thread			Pitch	Ordering Code	EDP No.	Dimensions inch					No. of Flutes	Teeth	Bore Dia.*
UNC	UNF	UNEF	tpi	Internal	VTH	D	D2	L	Le	L1	Z	Zt	inch
No.10-24	5/16", 3/8"x24	9/16"-11/16"x24	24	HC19141L03-I24UNC TM...	80360	3/16	.141	1.772	.292	.312	3	7	.150
No.12-24	5/16", 3/8"x24	9/16"-11/16"x24	24	HC25163L03-I24UNC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

Helical Flutes with Thru-Hole Coolant

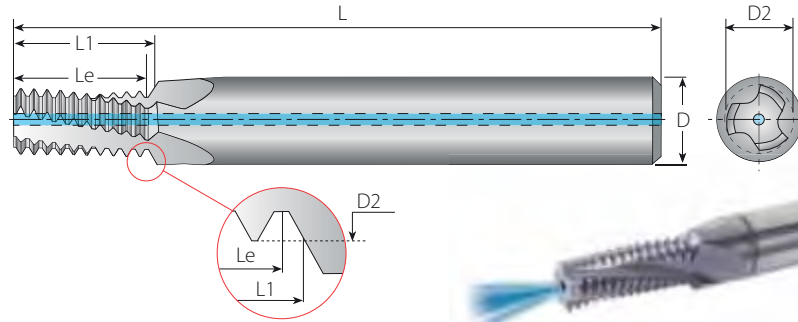
2 x Do ($L1 \leq 2 \times \text{Thread Diameter}$)

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

Internal



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



Helical Flutes with Thru-Hole Coolant

1.5 x Do ($L1 \leq 1.5 \times \text{Thread Diameter}$)

Thread		Pitch	Ordering Code	EDP No.	Dimensions inch					No. of Flutes	Teeth	Bore Dia.*
M Coarse	M Fine	mm	Internal	VTH	D	D2	L	Le	L1	Z	Zt	inch
M3x0.5	M3.5-M16x0.5	0.5	HC19094L01-I0.50ISO TM...	80337	3/16	.094	1.772	.177	.187	3	9	.098
M4x0.7		0.7	HC19124L02-I0.70ISO TM...	80355	3/16	.124	1.772	.248	.262	3	9	.129
M5x0.8		0.8	HC19159L02-I0.80ISO TM...	80356	3/16	.159	2.244	.283	.299	3	9	.165
M6x1.0	M8-M40x1.0	1.0	HC25189L03-I1.00ISO TM...	80343	1/4	.189	2.244	.354	.374	3	9	.197
M8x1.25		1.25	HC31256L05-I1.25ISO TM...	80357	5/16	.256	2.402	.492	.524	3	10	.268
M10x1.5	M12-M48x1.5	1.5	HC37323L06-I1.50ISO TM...	80346	3/8	.323	2.874	.591	.620	3	10	.335
M12x1.75		1.75	HC37370L07-I1.75ISO TM...	80358	3/8	.370	2.874	.689	.724	4	10	.405
M14x2.0	M17-M80x2.0	2.0	HC50457L08-I2.00ISO TM...	80351	1/2	.457	2.874	.787	.827	4	10	.472
M16x2.0	M17-M80x2.0	2.0	HC63535L09-I2.00ISO TM...	80353	5/8	.535	3.622	.945	.984	4	12	.551

Helical Flutes with Thru-Hole Coolant

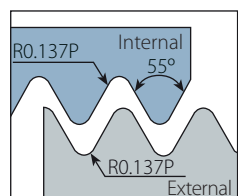
2 x Do ($L1 \leq 2 \times \text{Thread Diameter}$)

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

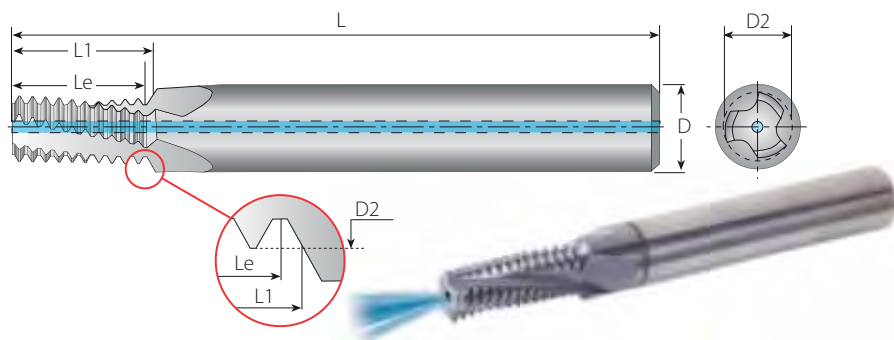
*Bore Diameter applies to smallest thread Dia.

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

External / Internal



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



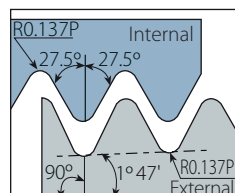
Helical Flutes with Thru-Hole Coolant

2 x Do (L1 ≤ 2 x Thread Diameter)

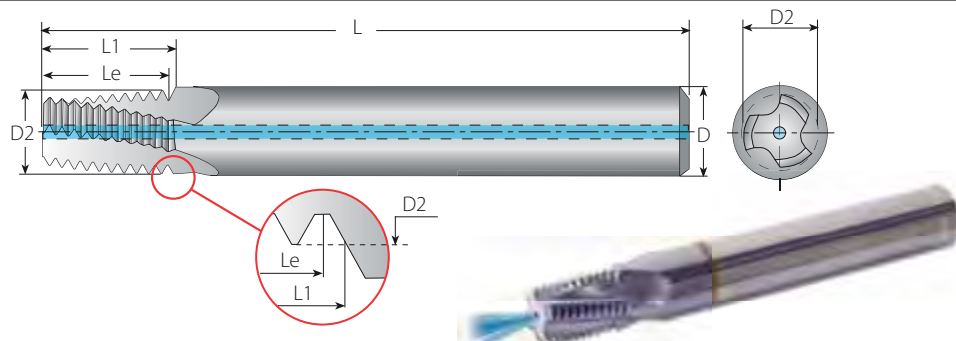
Thread		Pitch	Ordering Code	EDP No.	Dimensions inch					No. of Flutes	Teeth	Bore Dia.
BSW	BSF	tpi	External / Internal	VTH	D	D2	L	Le	L1	Z	Zt	inch
	1/4"x26	26	HC25197L05-EI26BSF TM...	80368	1/4	.197	2.244	.500	.519	3	13	.209
	5/16"x22	22	HC31250L06-EI22BSF TM...	80369	5/16	.250	2.402	.636	.659	3	14	.264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

BSPT

External / Internal



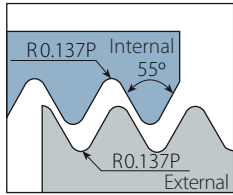
Defined by: B.S.21:1985
Tolerance class: Standard BSPT



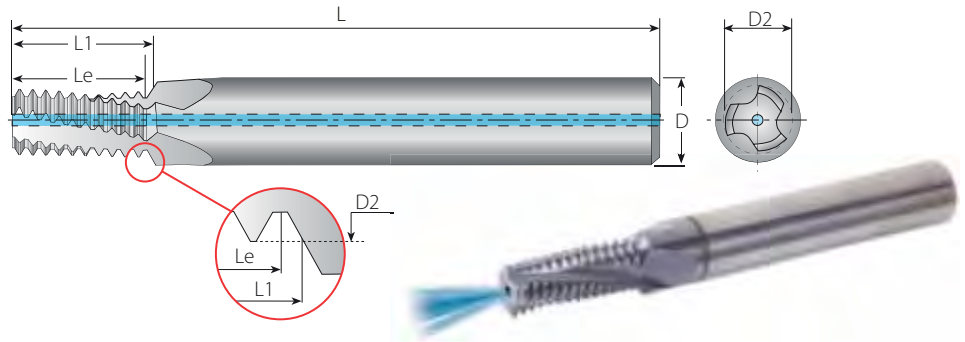
Helical Flutes with Thru-Hole Coolant

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

External / Internal



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



Helical Flutes with Thru-Hole Coolant

1.5 x Do ($L1 \leq 1.5 \times \text{Thread Diameter}$)

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

Helical Flutes with Thru-Hole Coolant

2 x Do ($L1 \leq 2 \times \text{Thread Diameter}$)

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

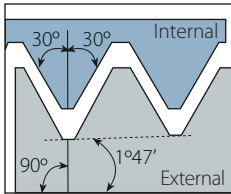
*Bore Diameter applies to smallest thread Dia.

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

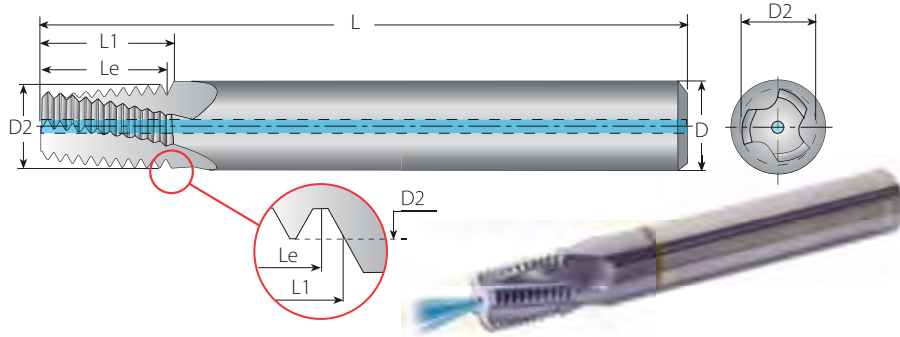
NPT

Helicool

External / Internal



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



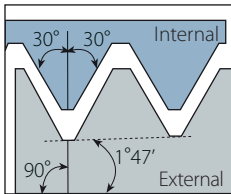
Helical Flutes with Thru-Hole Coolant

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

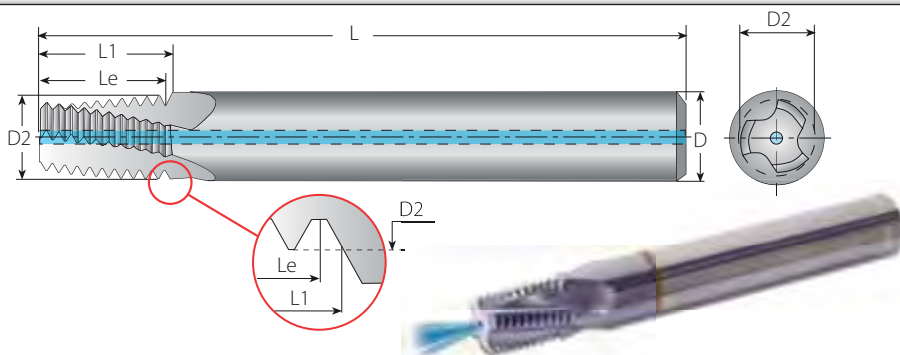
NPTF

Helicool

External / Internal



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



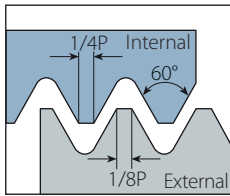
Helical Flutes with Thru-Hole Coolant

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

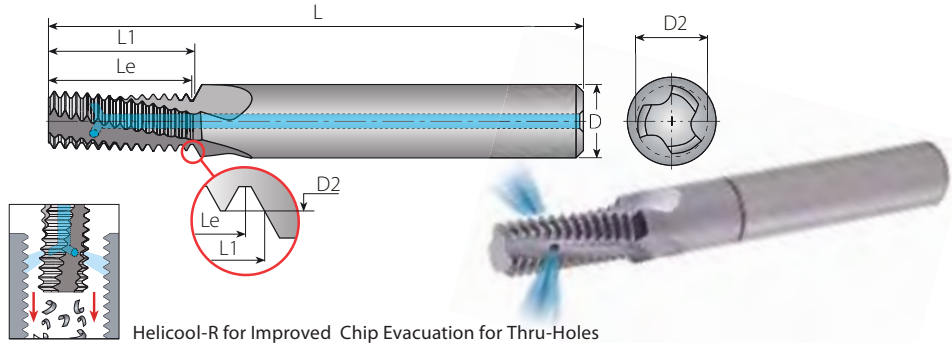
American UN

Helicool-R (HCR)

Internal



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



Helicool-R for Improved Chip Evacuation for Thru-Holes

HeliCool-R (HCR)

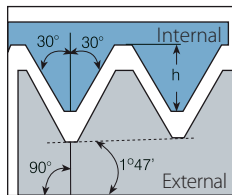
Helical Flutes with Radial Cooling

2 x Do (L1 ≤ 2 x Thread Diameter)

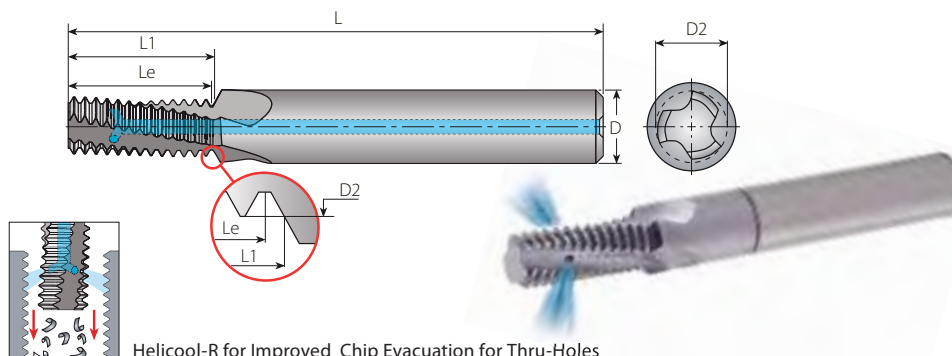
Thread		Pitch	Ordering Code	EDP No.	Dimensions inch					No. of Flutes	Teeth	Bore Dia.*	
UNC	UNF	UNEF	tpi	Internal	VTH	D	D2	L	Le	L1	Z	Zt	inch
	No.10-32	No.12-3/8"x32	32	HCR19150L03-I32UNF TM...	80458	3/16	.150	1.772	.375	.391	3	12	.157
	1/4"x28	7/16", 1/2"x28	28	HCR25203L05-I28UNF TM...	80459	1/4	.203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

NPT

External / Internal



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



Helicool-R for Improved Chip Evacuation for Thru-Holes

HeliCool-R (HCR)

Helical Flutes with Radial Cooling

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

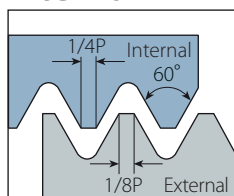
*Bore Diameter applies to smallest thread Dia.

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

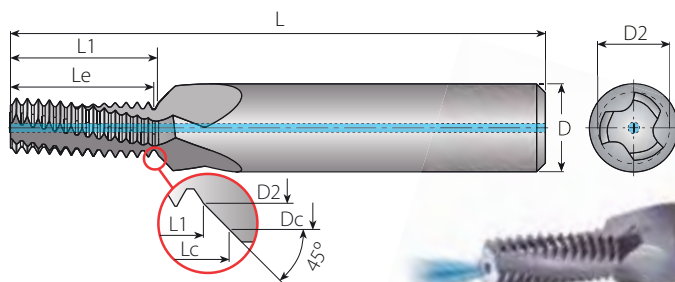
American UN

Helicool-C (HCC)

Internal



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



Dc = Minimum recommended chamfer diameter

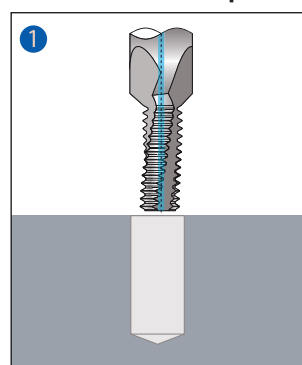
HeliCool-R (HCR)

Helical Flutes with Axial Coolant - Thru & Chamfer

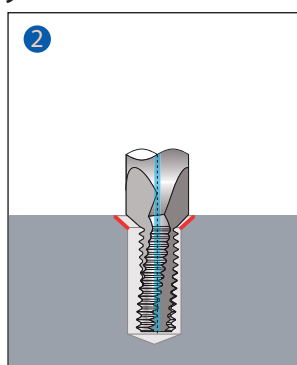
2 x Do (L1 ≤ 2 x Thread Diameter)

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

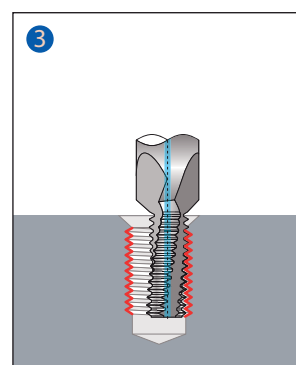
Helicool-C Operating Cycle



Positioning



Chamfering

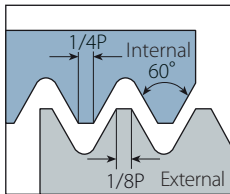


Thread Milling

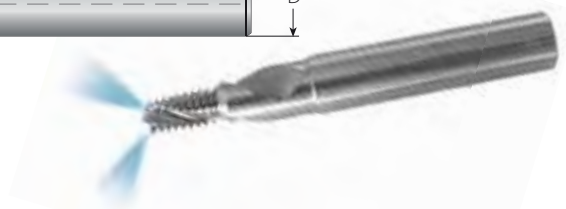
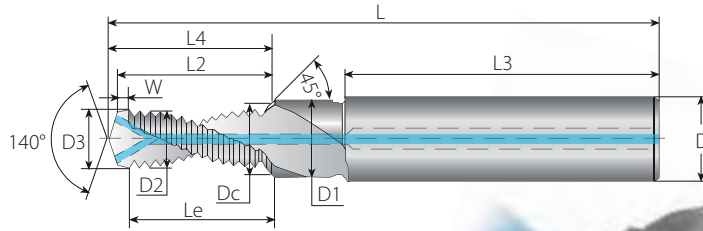
ISO Metric

HTC (Thriller)

Internal



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

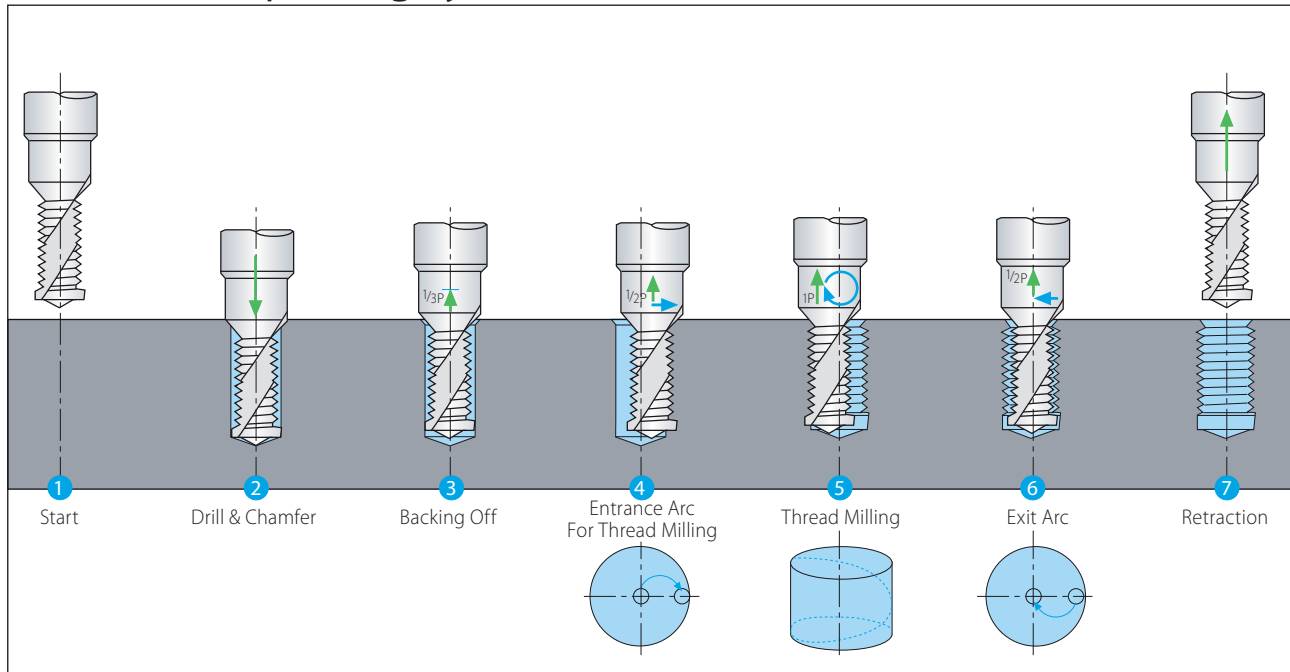


HTC (Thriller)

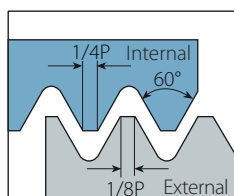
Drill, Chamfer & Thread with Coolant-Thru

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

HTC - Thriller Operating Cycle



External / Internal



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

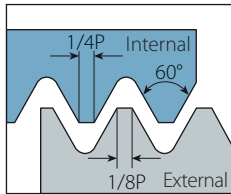


He-Lex Flutes - Internal

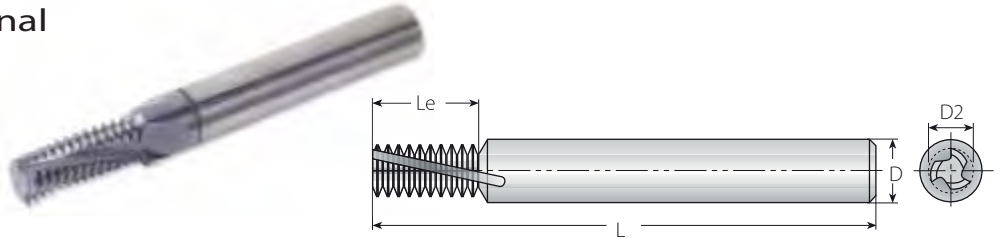
2 x Do (L1 ≤ 2 x Thread Diameter)

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

External / Internal



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



He-Lex Flutes - External

2 x Do (L1 ≤ 2 x Thread Diameter)

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

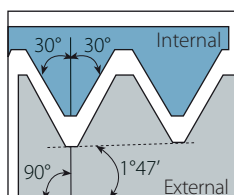
He-Lex Flutes - Internal

2 x Do (L1 ≤ 2 x Thread Diameter)

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

*Bore Diameter applies to smallest thread Dia.

External / Internal



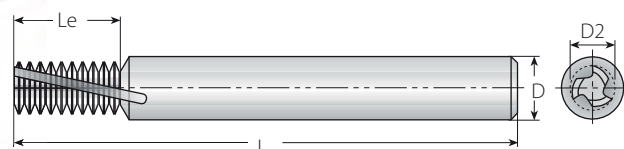
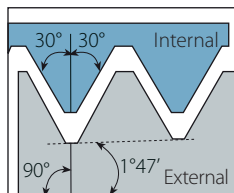
Defined by: USAS B2.1:1968
Tolerance class: Standard NPT

He-Lex Flutes

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

NPTF

External / Internal



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

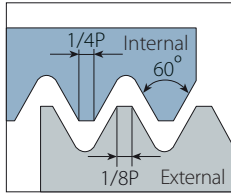
He-Lex Flutes

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

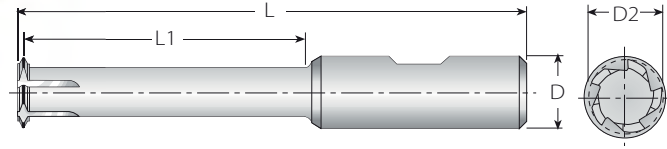
American UN

Deep Threading

Internal



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



Deep Threading - Long Tools for Deep Holes

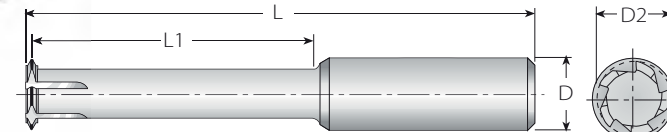
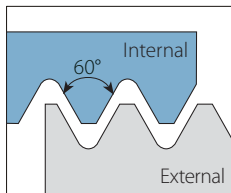
3 x Do (L1 ≤ 3 x Thread Diameter)

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

Partial Profile 60°

Deep Threading

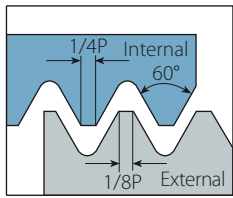
Internal



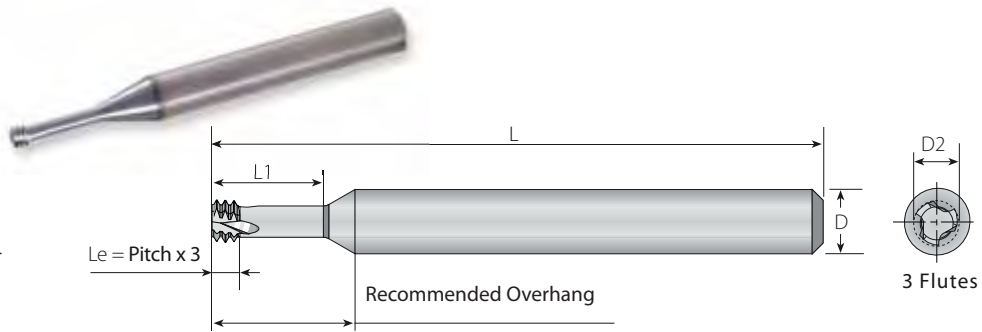
Deep Threading - Long Tools for Deep Holes

Min. Thread			Pitch		Ordering Code	EDP No.	Dimensions inch					
M coarse	M fine	UN, UNS, UNF, UNEF	mm	tpi	Internal	VTH	D	D2	L	L1	Z	Zt
M5x0.8	M5x0.5, M5X0.75	No.10-56UNS, No.10-48UNS, No.10-40UNS, No.10-36UNS, No.10-32UNF	0.5-0.8	32-56	D1T19154L063-ITA60 TM...	80414	3/16	0.154	1.750	0.63	4	1
M6x1.0	M6x0.5, M6X0.75	No.12-56UNS, No.12-48UNS, ¼-40UNS, ¼-36UNS, ¼-32UNEF, ¼-28UNF, ¼-27UNS, ¼-24UNS	0.5-1.0	24-56	D1T25191L079-ITB60 TM...	80415	1/4	0.191	2.000	0.79	5	1
M8x1.25	M7x0.5, M7x0.75, M7.5x1.0	⅝-48UNS, ⅝-40UNS, ⅝-36UNS, ⅝-32UNEF, ⅝-28UN, ⅝-27UNS, ⅝-24UNS, ⅝-20UN	0.5-1.25	20-48	D1T25232L100-ITF60 TM...	80416	1/4	0.232	2.500	1.00	5	1
-	M10.5x0.5, M11x0.75, M11x1.0	⅞-32UN, ⅞-28UNEF, ⅞-27UNS, ⅞-24UNS	0.5-1.0	24-56	D1T37370L138-ITB60 TM...	80417	3/8	0.39	3.000	1.38	6	1
M10x1.5	M10x1.0, M10X1.25	⅞-24UNF, ⅞-20UN, ⅞-18UNS, ⅞-16UN	1.0-1.50	16-24	D1T31307L126-ITC60 TM...	80423	5/16	0.311	2.500	1.26	6	1
M12x1.75	M12x1.0, M12X1.25, M12x1.5	1½-24UNS, 1½-20UNS, 1½-18UNS, 1½-16UNS, 1½-14UNS	1.0-1.75	14-24	D1T37370L150-ITD60 TM...	80424	3/8	0.39	3.000	1.50	6	1
-	M13.5x1.0, M14x1.25, M14x1.5	⅞-24UNEF	1.0-1.75	14-24	D1T50469L177-ITD60 TM...	80425	1/2	0.469	3.250	1.77	6	1

Internal



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



MilliPro

Miniature Thread Mills

2 x Do (L1 ≤ 2 x Thread Diameter)

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

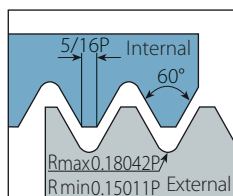
MilliPro

Miniature Thread Mills

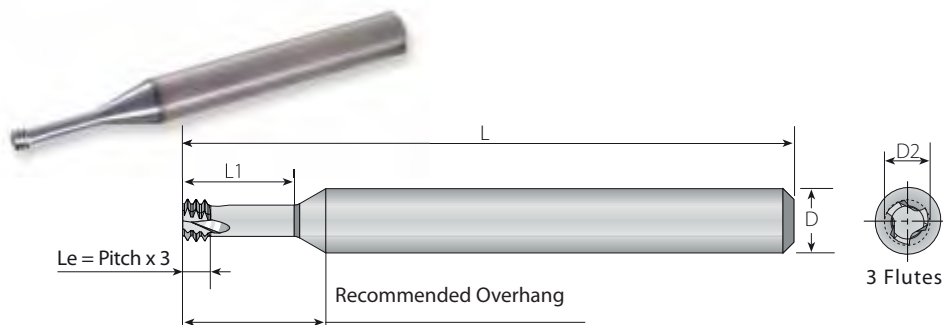
3 x Do (L1 ≤ 3 x Thread Diameter)

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

Internal



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



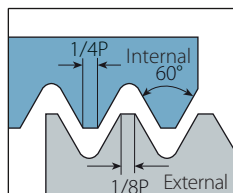
MilliPro - Miniature Thread Mills

3 x Do (L1 ≤ 3 x Thread Diameter)

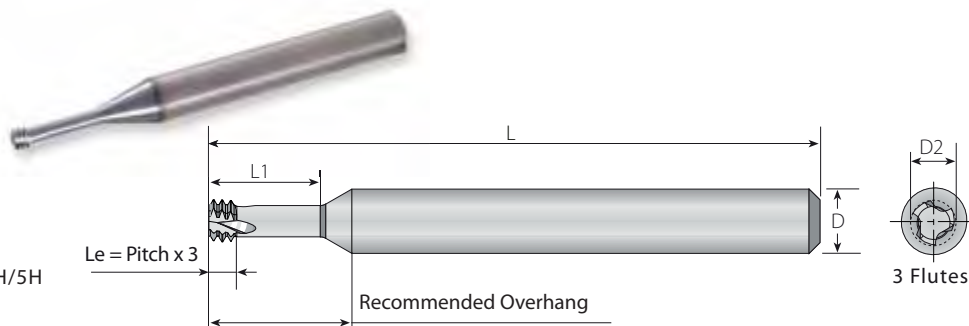
Thread	Pitch	Ordering Code	EDP No.	Dimensions inch				No. of Flutes	Teeth	Bore Dia.*	
UNJC	UNJF	tpi	Internal	VTH	D	D2	L	L1	Z	Zt	inch
0.138″(#6)	0.190″(#10)	32	D3T25106L043-I32UNJ TM...	80436	1/4	.106	2.244	.433	3	3	.110
	0.250″(1/4″)	28	D3T25213L076-I28UNJ TM...	80437	1/4	.213	2.244	.768	3	3	.220
0.190″(#10)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

MJ

Internal



Defined by: ISO 5855
Tolerance class: 4h/6h-4H/5H

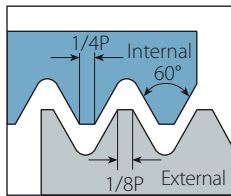


MilliPro - Miniature Thread Mills

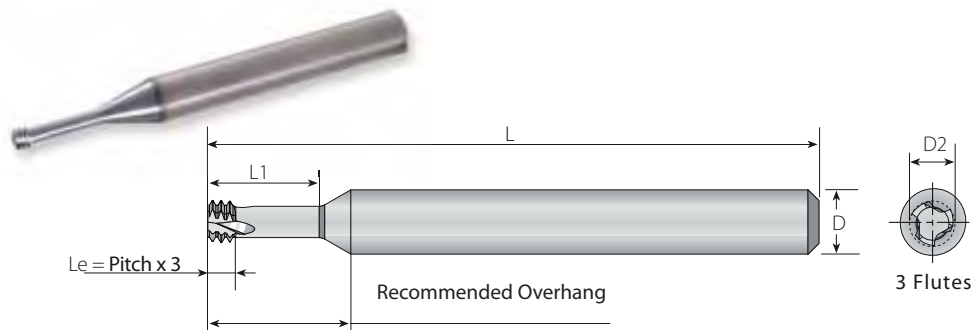
3 x Do (L1 ≤ 3 x Thread Diameter)

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

Internal



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



MilliPro

Miniature Thread Mills

$2 \times Do$ ($L1 \leq 2 \times \text{Thread Diameter}$)

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

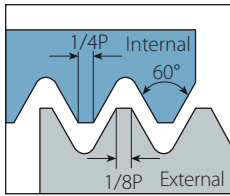
MilliPro

Miniature Thread Mills

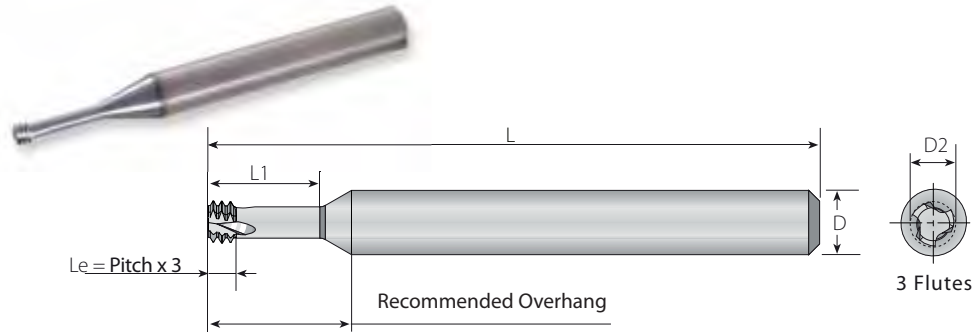
$3 \times Do$ ($L1 \leq 3 \times \text{Thread Diameter}$)

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

Internal



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



MilliPro (D-mm shank)

Miniature Thread Mills

2 x Do ($L1 \leq 2 \times \text{Thread Diameter}$)

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

MilliPro (D-mm shank)

Miniature Thread Mills

3 x Do ($L1 \leq 3 \times \text{Thread Diameter}$)

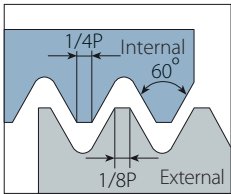
Thread		Pitch	Ordering Code	EDP No.	Dimensions inch			No. of Flutes	Teeth	Bore Dia.*
M Coarse	M Fine	mm	Internal		D (mm)	D2	L	L1	Z	Zt
M1.6x0.35		0.35	D3T03012L050-I0.35ISO TM...	80421	3	1.20	1.18	0.2	3	3
M2x0.4		0.4	D3T03015L062-I0.4ISO TM...	80966	3	1.55	1.18	0.24	3	3
M2x0.4		0.4	D3T06015L062-I0.4ISO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

*Bore Diameter applies to smallest thread Dia.

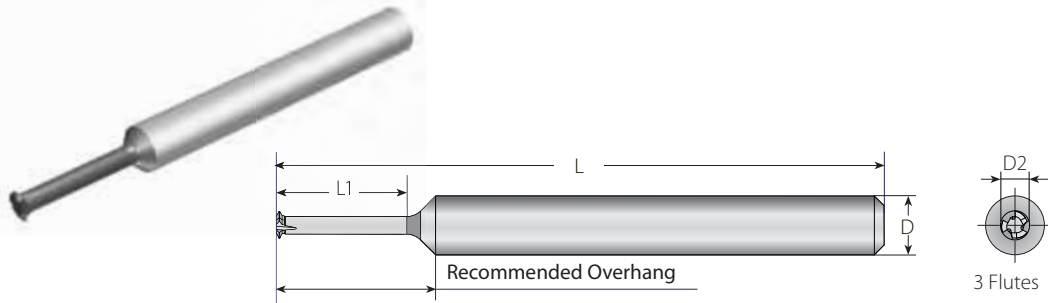
ISO Metric

MilliPro Dental

Internal



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



MilliPro Dental

Miniature Thread Mills for Dental Implants

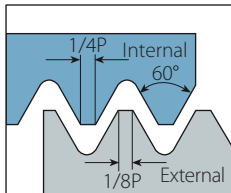
3xDo (L1 ≤ 3 x Thread Diameter)

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

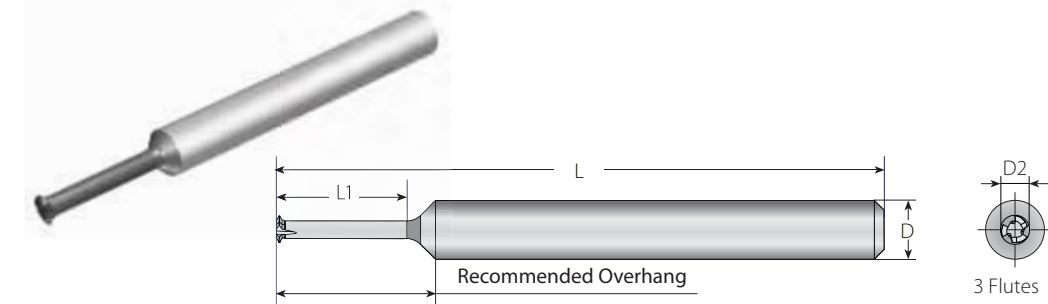
American UN

MilliPro Dental

Internal



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



MilliPro Dental

Miniature Thread Mills for Dental Implants

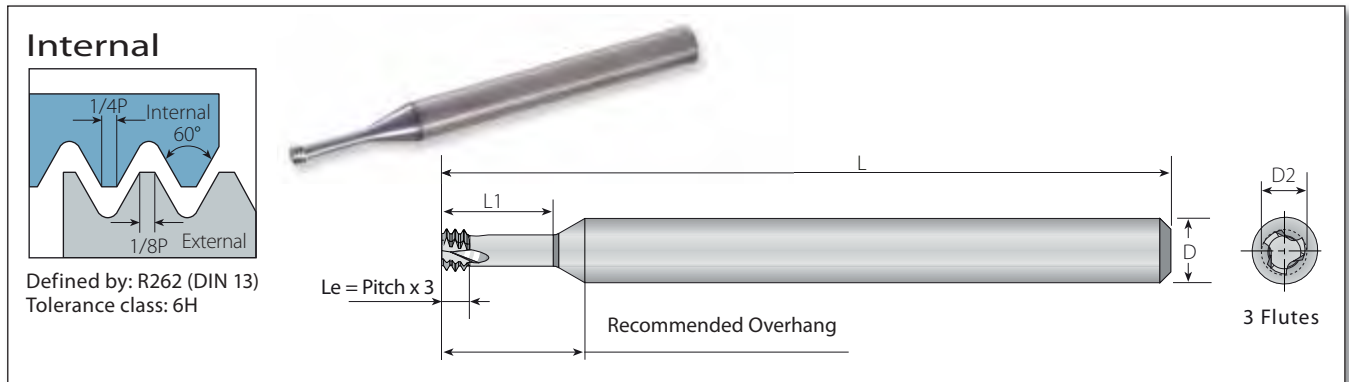
3xDo (L1 ≤ 3 x Thread Diameter)

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

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

ISO Metric

MilliPro EL



MilliPro EL

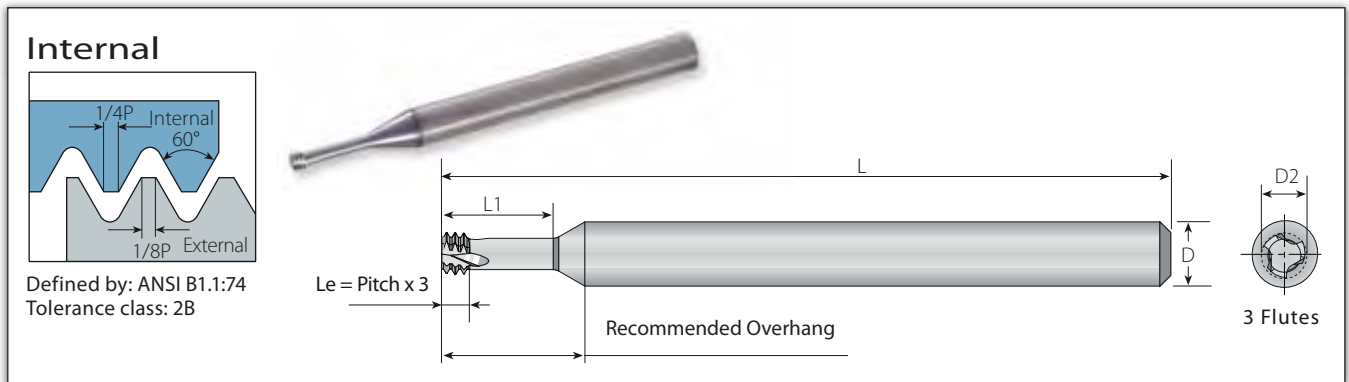
Miniature Thread Mills, Extra Long Tools

2 x Do (L1 ≤ 2 x Thread Diameter)

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

American UN

MilliPro EL



MilliPro EL

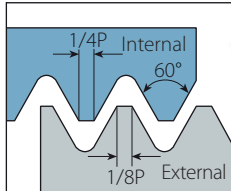
Miniature Thread Mills, Extra Long Tools

2 x Do (L1 ≤ 2 x Thread Diameter)

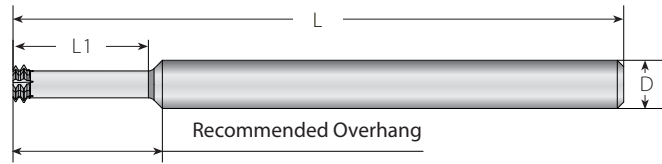
Thread		Pitch	Ordering Code	EDP No.	Dimensions inch				No. of Flutes	Teeth	Bore Dia.*
UNC	UNF	tpi	Internal	VTH	D	D2	L	L1	Z	Zt	inch
No.2-56	No.3-56	56	D3T25065L197-I56UN TML...	80430	1/4	.065	3.937	.197	3	3	.071
No.4, No.5-40	No.6-40	40	D3T25083L236-I40UN TML...	80431	1/4	.083	3.937	.236	3	3	.091
No.6,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

*Bore Diameter applies to smallest thread Dia.

Internal



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



Left Hand Tool

MilliPro HD

Miniature Thread Mills for Hard Materials Up to 62HRC

2 x Do (L1 ≤ 2 x Thread Diameter)

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

MilliPro HD

Miniature Thread Mills for Hard Materials Up to 62HRC

3 x Do (L1 ≤ 3 x Thread Diameter)

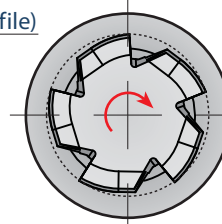
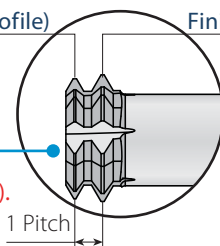
Thread		Pitch	Ordering Code	EDP No.	Dimensions inch				No. of Flutes	Teeth	Bore Dia.*
UNC	UNF	tpi	Internal	VTH	D	D2	L	L1	Z	Zt	inch
No.4-40, No.5-40	No.6-40	40	S2L25083L354-I40UN TM...	80952	1/4"	.083	3.00	.380	4	2	.093
No.5-40	No.6-40	40	S2L25096L394-I40UN TM...	80953	1/4"	.096	3.00	.410	4	2	.104
No.6-32,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

Roughing (Partial Profile)

Finish (Full Profile)

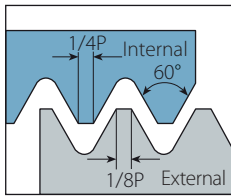
Two cutting teeth: Partial Profile for leading tooth followed by Full Profile for finishing.

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

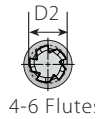
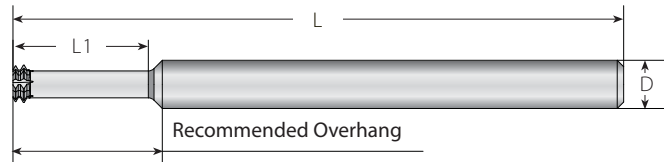


MilliPro HD Tools are left handed. For CNC use M04 code.

Internal



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



Left Hand Tool

MilliPro HD

Miniature Thread Mills for Hard Materials Up to 62HRC

2 x Do (L1 ≤ 2 x Thread Diameter)

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

MilliPro HD

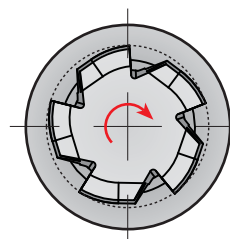
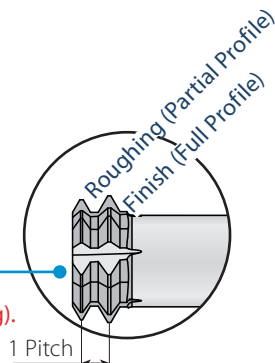
Miniature Thread Mills for Hard Materials Up to 62HRC

3 x Do (L1 ≤ 3 x Thread Diameter)

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

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

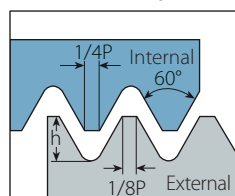
The work direction should be from the top to the bottom (Climb Milling).



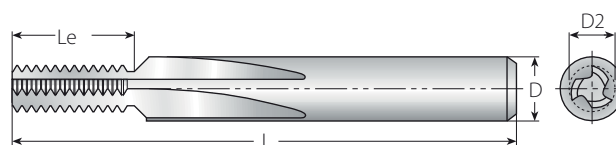
MilliPro HD Tools are left handed. For CNC use M04 code.

*Bore Diameter applies to smallest thread Dia.

External / Internal



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



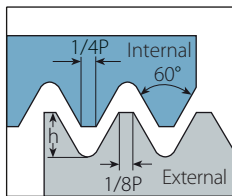
Straight Flutes - External

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

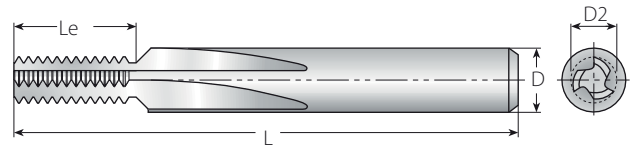
Straight Flutes - Internal

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

External / Internal



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



Straight Flutes - External

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

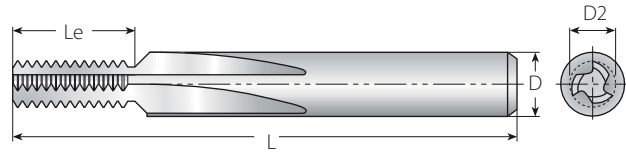
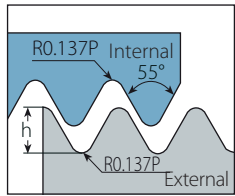
Straight Flutes - Internal

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

BSW

Straight

External / Internal



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

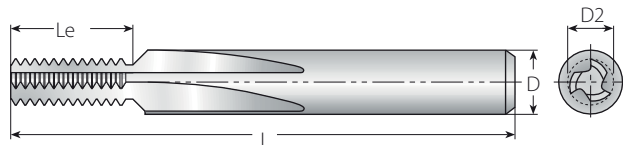
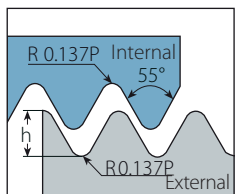
Straight Flutes

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

BSP

Straight

External / Internal



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

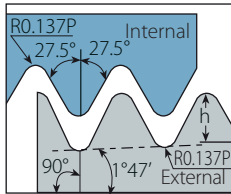
Straight Flutes

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

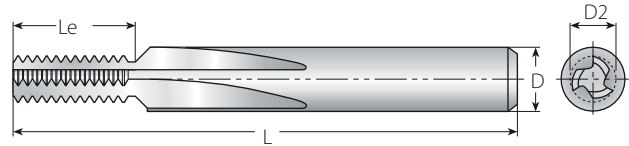
BSPT

Straight

External / Internal



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



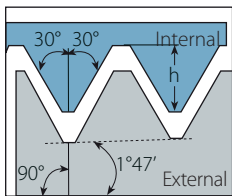
Straight Flutes

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

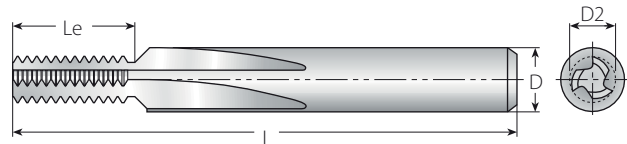
NPT

Straight

External / Internal



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



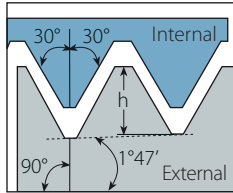
Straight Flutes

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

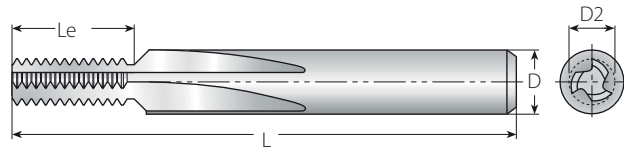
NPTF

Straight

External / Internal



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



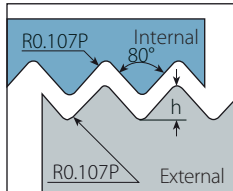
Straight Flutes

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

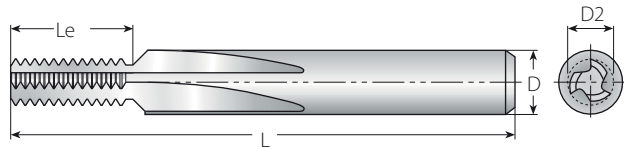
Pg

Straight

External / Internal



Defined by: DIN 40430
Tolerance class: Standard



Straight Flutes

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

Grades and Their Applications

VTH



VTS



VTS



VTN



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

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

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

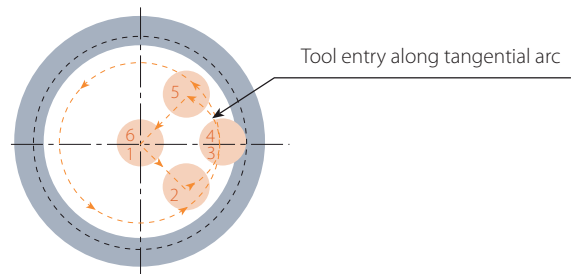
* Recommendation:

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

Example:

Threading Feed: 0.012[inch/tooth]

Tool entry Feed: 0.0035[inch/tooth]



MilliPro HD

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

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

HTC Recommended Grades, Cutting Speed and Feed

Material Group	Material		Hardness Brinell HB	Strength (N-mm ²)	Vc[ft/min]		fb[inch/rev]		fz[inch/tooth]	
					VTN	VTS	≤.24 inch	≤.47 inch	≤.24 inch	≤.47 inch
K Cast Iron	Cast Iron	Grey cast iron	≤150	≤500	165-260	260-390	.004-.006	.006-.009	.001-.002	.002-.004
		Grey cast iron, heat treated	150-300	500-1000	165-260	260-390	.004-.006	.006-.009	0.02-0.05	.002-.004
		Spher. graph. Cast Iron	≤200	≤700	165-260	260-390	.004-.006	.006-.009	0.02-0.05	.002-.004
N(K) Non-Ferrous Metals	Copper	Short Chips, Brass, Bronze, Red Brass	≤200	≤700	330-980	—	.004-.012	.002-.004	.001-.002	.002-.004
		Aluminium, Magnesium non-alloy	≤100	≤350	330-1310	330-1310	.004-.010	.010-.012	.001-.002	.002-.004
	Aluminium/Magnesium	Aluminium, Wrought Alloy, Breaking Strain (A5) < 14%	≤180	≤600	330-1310	330-1310	.004-.010	.010-.012	.001-.002	.002-.004
		Aluminium, Wrought Alloy, Breaking Strain (A5) ≥ 14%	≤180	≤600	330-1310	330-1310	.001-.002	.002-.005	.001-.002	.002-.004
		Aluminium, Cast Alloy, Si<10%	≤180	≤600	330-980	330-1310	.004-.010	.010-.012	.001-.002	.002-.004
		Aluminium, Cast Alloy, Si≥10%	≤180	≤600	—	330-980	.004-.010	.010-.012	.001-.002	.002-.004
Plastic		Thermoplastics	—	—	195-390	195-390	.004-.010	.010-.012	.001-.002	.002-.004
		Thermosetting Plastic	—	—	195-330	195-330	.004-.010	.010-.012	.001-.002	.002-.004
		Fibre Reinforce Plastic	—	—	130-195	195-260	.004-.006	.006-.009	.001-.002	.002-.004

Vc - Cutting Speed [ft/min]

fb (Drilling) - Feed per Revolution [inch/rev]

fz (Threading) - Feed per Tooth [inch/tooth]



Groove Milling

- > Inserts
- > Toolholders
- > Technical Data



GROOVE MILLING INSERTS

■ VARDEX Ordering Code.....	Page 324
■ Circlip Non Standard	Page 325
■ Circlip DIN 471/472	Page 326
■ O Ring DIN 3770	Page 326
■ O Ring BS 1806, DIN 3601, DIN 3771	Page 327
■ O Ring BS 4518	Page 327
■ Groove Milling Holders.....	Page 328
■ Groove Milling Technical Data	Page 330

VarDEX Ordering Code System

Groove Milling Inserts

4 1	W 2	GM 3	1.6 4	C 5	-	D3770 6	S 7	-	1.38 8	VKX 9
1 - Insert Size 4 - IC1/2"	2 - Insert Style W - Vertical Wide Inserts	3 - System GM - Groove Milling	4 - Groove Std. Width 0.043 - 0.124							
5 - Profile Shape C - With Chamfer	6 - Groove Standard CIRC - Circlip DIN471/472 DIN3770D DIN3770S BS1806 BS4518	7 - Groove Type D - Dynamic S - Static DP- Dynamic pneumatic DH- Dynamic hydraulic	8 - Groove Depth 0.012 - 0.150							
			9 - Carbide Grade VKX							

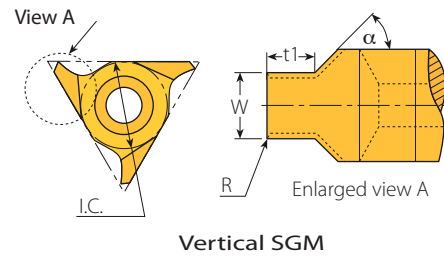
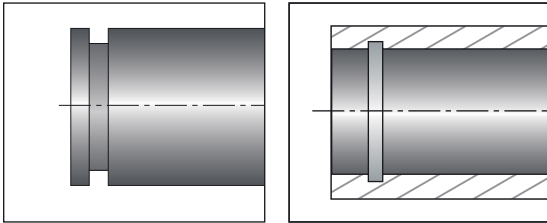
Groove Milling Shell Mill

SGM	-	D189	-	100	-	4
1		2		3		4

1 - System	2 - Cutting Dia.	3 - Drive Hole Dia.	4 - Insert Size
SGM - Shell Groove Milling	1.89, 2.48, 3.15	0.75, 100	4 - IC1/2"

Circlip Non Standard

External / Internal



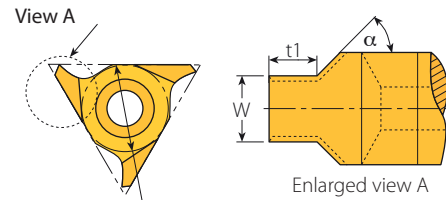
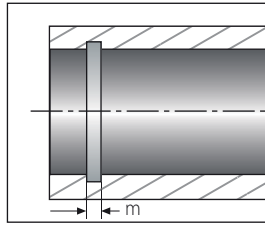
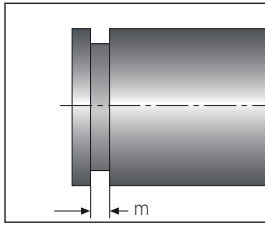
Vertical SGM



Insert Size		Ordering Code	Dimensions inch			α	Toolholder
IC	L inch		W	R	t1		
1/2"	0.87	4WGM.031C-CIRC-.06...	0.31	0.005	0.050	45°	SGM-D...-4
		4WGM.047C-CIRC-.083...	0.47	0.010	0.075		
		4WGM.058C-CIRC-.083...	0.58	0.010	0.075		
		4WGM.062C-CIRC-.102...	0.62	0.010	0.094		
		4WGM.072C-CIRC-.102...	0.72	0.010	0.094		
		4WGM.078C-CIRC-.102...	0.78	0.010	0.094		
		4WGM.088C-CIRC-.102...	0.88	0.010	0.094		
		4WGM.094C-CIRC-.157...	0.94	0.010	0.150		
		4WGM.097C-CIRC-.157...	0.97	0.010	0.150		
		4WGM.105C-CIRC-.157...	0.105	0.010	0.150		
		4WGM.110C-CIRC-.157...	0.110	0.010	0.150		
		4WGM.122C-CIRC-.157...	0.122	0.010	0.150		
		4WGM.125C-CIRC-.157...	0.125	0.010	0.150		
		4WGM.142C-CIRC-.157...	0.142	0.015	0.150		
		4WGM.156C-CIRC-.157...	0.156	0.010	0.150		

Circlip DIN 471/472

External / Internal



Vertical SGM

Vertical SGM

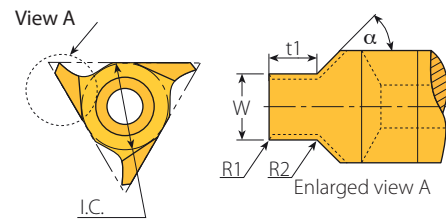
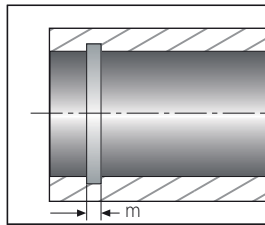
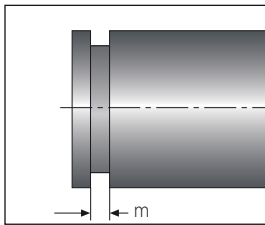


Insert Size		Ordering Code	Groove Std.			α	Toolholder
IC	L inch		*m(H13)	W	t1		
1/2"	0.87	4WGM1.1C-D471/472-0.35...	1.10	0.047	0.012	45°	SGM-D...-4
		4WGM1.1C-D471/472-0.40...	1.10	0.047	0.016		
		4WGM1.3C-D471/472-0.50...	1.30	0.055	0.016		
		4WGM1.3C-D471/472-0.55...	1.30	0.055	0.02		
		4WGM1.6C-D471/472-0.70...	1.60	0.067	0.024		
		4WGM1.6C-D471/472-0.85...	1.60	0.067	0.031		
		4WGM1.6C-D471/472-1.00...	1.60	0.067	0.035		
		4WGM1.85C-D471/472-1.25...	1.85	0.076	0.043		
		4WGM1.85C-D471/472-1.00...	1.85	0.076	0.035		
		4WGM2.15C-D471/472-1.50...	2.15	0.088	0.055		
		4WGM2.65C-D471/472-1.50...	2.65	0.108	0.055		
		4WGM2.65C-D471/472-1.75...	2.65	0.108	0.063		
		4WGM3.15C-D471/472-1.75...	3.15	0.128	0.063		

* Standard groove width in mm.

O Ring DIN 3770

External / Internal



Vertical SGM

Vertical SGM



Insert Size			Ordering Code	Groove Std.				α		
IC	L inch	St.Dy		*m(H13)	W	t	R1	R2	Toolholder	
1/2"	0.87	St.	4WGM1.6C-D3770S-1.38...	1.60	0.078	0.054	0.010	0.004	75°	SGM-D...-4
			4WGM2.0C-D3770S-1.72...	2.00	0.093	0.068	0.010	0.004		
			4WGM2.5C-D3770S-2.15...	2.50	0.119	0.085	0.010	0.004		
			4WGM3.15C-D3770S-2.70...	3.15	0.148	0.106	0.024	0.008		
		Dy.	4WGM1.6C-D3770D-1.47...	1.60	0.078	0.058	0.010	0.004		
			4WGM2.0C-D3770D-1.83...	2.00	0.093	0.072	0.010	0.004		

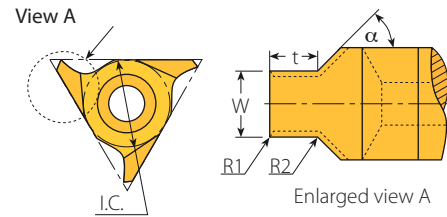
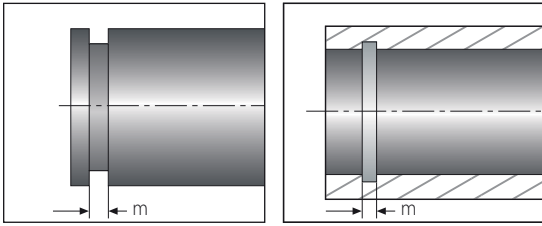
* Standard groove width in mm.

St. = Static

Dy. = Dynamic

O Ring BS 1806, DIN3601, DIN 3771

External / Internal



Vertical SGM

Vertical SGM



Insert Size			Ordering Code		Groove Std.				α	Toolholder
IC	L inch	St.Dy		*m(H13)	W	t	R1	R2		
1/2"	0.87	St.	4WGM1.80C-BS1806S-1.3...	1.80	0.093	0.051	0.008	0.024	75°	SGM-D...-4
			4WGM2.65C-BS1806S-2.0...	2.65	0.141	0.079	0.008	0.024		
		Dy.	4WGM1.80C-BS1806D-1.57...	1.80	0.093	0.061	0.008	0.024		
			4WGM2.65C-BS1806D-2.38...	2.65	0.141	0.091	0.008	0.024		

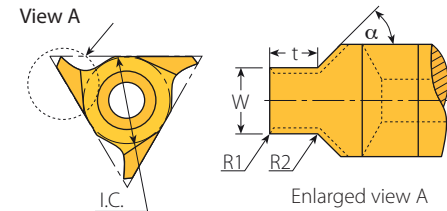
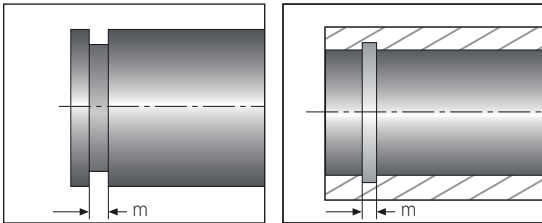
* Standard groove width in mm.

St. = Static

Dy. = Dynamic

BS 4518

External / Internal



Vertical SGM

Vertical SGM



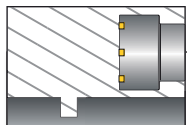
Insert Size			Ordering Code		Groove Std.				α	Toolholder
IC	L inch	St.Dy		*m(H13)	W	t	R1	R2		
1/2"	0.87	St.	4WGM1.6C-BS4518S-1.25...	1.60	0.093	0.049	0.020	0.008	75°	SGM-D...-4
			4WGM2.4C-BS4518S-1.95...	2.40	0.125	0.077	0.020	0.008		
			4WGM3.0C-BS4518S-2.51...	3.00	0.148	0.099	0.039	0.008		
		DyP	4WGM2.4C-BS4518DP-2.20...	2.40	0.129	0.087	0.020	0.008		
			4WGM3.0C-BS4518DP-2.77...	3.00	0.160	0.109	0.039	0.008		
		DyH	4WGM2.4C-BS4518DH-2.09...	2.40	0.129	0.082	0.020	0.008		
			4WGM3.0C-BS4518DH-2.60...	3.00	0.160	0.102	0.039	0.008		

* Standard groove width in mm.

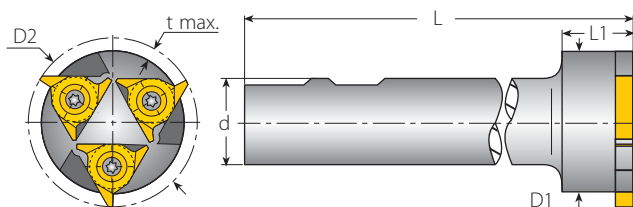
St. = Static

DyP = Dynamic pneumatic

DyH = Dynamic hydraulic



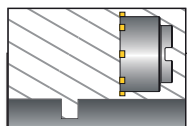
Toolholders



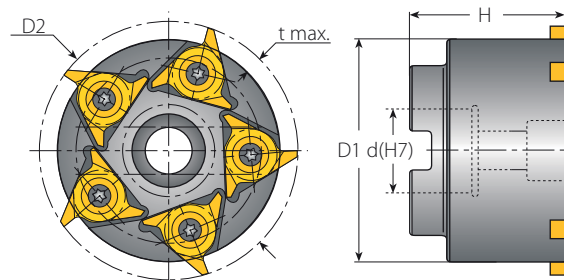
Multi Insert Holders (3)

Spare Parts

Insert Size	Ordering Code	EDP No.	Dimensions inch								
IC			D2	t max	L	L1	d(H7)	D1		Insert Screw	Torx Key
1/2"	SGM-D189-100-4	67717	1.89	0.137	5.0	0.874	1.0	1.574		SN4T-90	HK4T



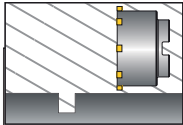
Toolholders



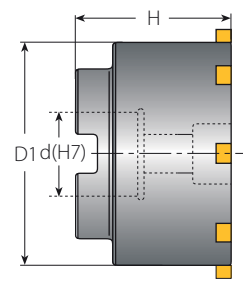
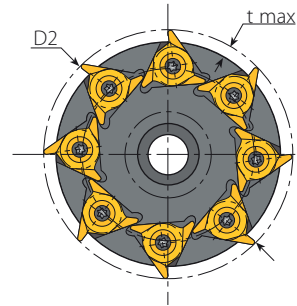
Multi Insert Holders (5)

Spare Parts

Insert Size	Ordering Code	EDP No.	Dimensions inch								
IC			D2	t max	d(H7)	D1	H		Insert Screw	Torx Key	Holder Screw
1/2"	SGM-D250-0.75-4	67721	2.48	0.137	3/4	2.342	1.614		SN4T-90	HK4T	3/8 - 24



Toolholders



Multi Insert Holders (8)

Spare Parts

Insert Size	Ordering Code	EPD No.	Dimensions inch								
IC			D2	t max	d(H7)	D1	H		Insert Screw	Torx Key	Holder Screw
1/2"	SGM-D300-100-4	67729	3.15	0.137	1.0	2.834	1.968		SN4T-90	HK4T	1/2 - 20

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

Material Group	VarDEX No.	Material		Hardness Brinell HB	Vc [ft/min]	Feed f [inch/tooth]
					VKX	f
P Steel	1	Unalloyed steel	Low carbon (C=0.1-0.25%)	125	327 - 719	0.002 - 0.0039
	2		Medium carbon (C=0.25-0.55%)	150	327 - 556	0.0012 - 0.0028
	3		High Carbon (C=0.55-0.85%)	170	327 - 523	0.0008 - 0.002
	4	Low alloy steel (alloying elements ≤5%)	Non hardened	180	262 - 491	0.002 - 0.0035
	5		Hardened	275	229 - 458	0.0012 - 0.0028
	6		Hardened	350	229 - 425	0.0008 - 0.002
	7	High alloy steel (alloying elements >5%)	Annealed	200	229 - 392	0.0012 - 0.0028
	8		Hardened	325	229 - 327	0.0012 - 0.002
	9	Cast steel	Low alloy (alloying elements <5%)	200	229 - 360	0.0012 - 0.002
	10		High alloy (alloying elements >5%)	225	164 - 262	0.0008 - 0.002
M Stainless Steel	11	Stainless steel Ferritic	Non hardened	200	262 - 491	0.0012 - 0.0028
	12		Hardened	330	262 - 491	0.0012 - 0.002
	13	Stainless steel Austenitic	Austenitic	180	196 - 392	0.0012 - 0.0028
	14		Super Austenitic	200	196 - 392	0.0012 - 0.002
	15	Stainless steel Cast Ferritic	Non hardened	200	196 - 392	0.0008 - 0.002
	16		Hardened	330	196 - 392	0.0004 - 0.0012
	17	Stainless steel Cast austenitic	Austenitic	200	164 - 327	0.0012 - 0.002
	18		Hardened	330	164 - 327	0.0004 - 0.0012
K Cast Iron	28	Malleable Cast iron	Ferritic (short chips)	130	196 - 360	0.0008 - 0.002
	29		Pearlitic (long chips)	230	164 - 327	0.0004 - 0.0012
	30	Grey cast iron	Low tensile strength	180	196 - 360	0.0012 - 0.0028
	31		High tensile strength	260	164 - 262	0.0012 - 0.002
	32	Nodular SG iron	Ferritic	160	164 - 327	0.0012 - 0.002
	33		Pearlitic	260	131 - 229	0.0012 - 0.002
N(K) Non-Ferrous Metals	34	Aluminium alloys Wrought	Non aging	60	327 - 654	0.0028 - 0.0059
	35		Aged	100	327 - 491	0.0012 - 0.002
	36	Aluminium alloys	Cast	75	327 - 589	0.0028 - 0.0059
	37		Cast & aged	90	196 - 392	0.002 - 0.0039
	38	Aluminium alloys	Cast Si 13-22%	130	327 - 491	0.002 - 0.0039
	39	Copper and copper alloys	Brass	90	196 - 392	0.002 - 0.0039
	40		Bronze and non leaded copper	100	164 - 327	0.0118 - 0.0031
S(M) Heat Resistant Material	19	High temperature alloys	Annealed (Iron based)	200	65 - 147	0.0004 - 0.0012
	20		Aged (Iron based)	280	65 - 98	0.0004 - 0.0012
	21		Annealed (Nickel or Cobalt based)	250	33 - 65	0.0004 - 0.0012
	22		Aged (Nickel or Cobalt based)	350	33 - 49	0.0004 - 0.0012
	23	Titanium alloys	Pure 99.5 Ti	400Rm	196 - 392	0.0008 - 0.002
	24		α+β alloys	1050Rm	65 - 164	0.0004 - 0.0012
H(K) Hardned Material	25	Extra hard steel	Hardened & tempered	45-50HRc	49 - 147	0.002 - 0.0039
	26			51-55HRc	49 - 131	0.002 - 0.0039

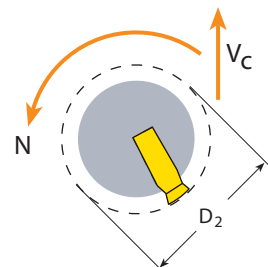
* Peripheral feed

Grades and Their Application

Grade	Application Type	Sample
VKX	Excellent for general use TiN coated	

$$N = \frac{12 \times V_c}{\pi \times D} \quad V_c = \frac{N \times \pi \times D}{12}$$

N - Rotational Velocity [R.P.M.]
V - Cutting Speed [ft/min]
D2 - Toolholder Cutting Dia. [inch]
F1 - Tool Feed Rate at the Cutting Edge [inch/min]
z - No. of Cutting Edges
f - Feed per Tooth per Rotation [inch/rev]



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