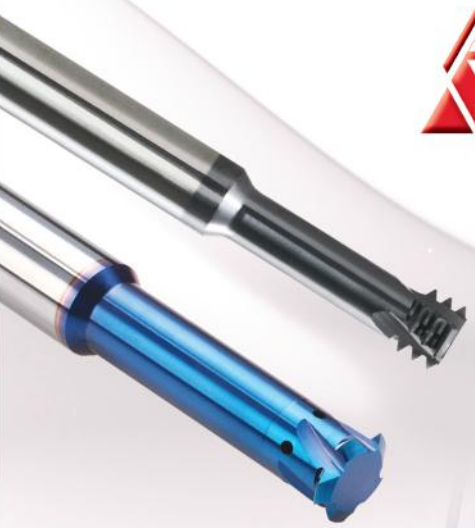
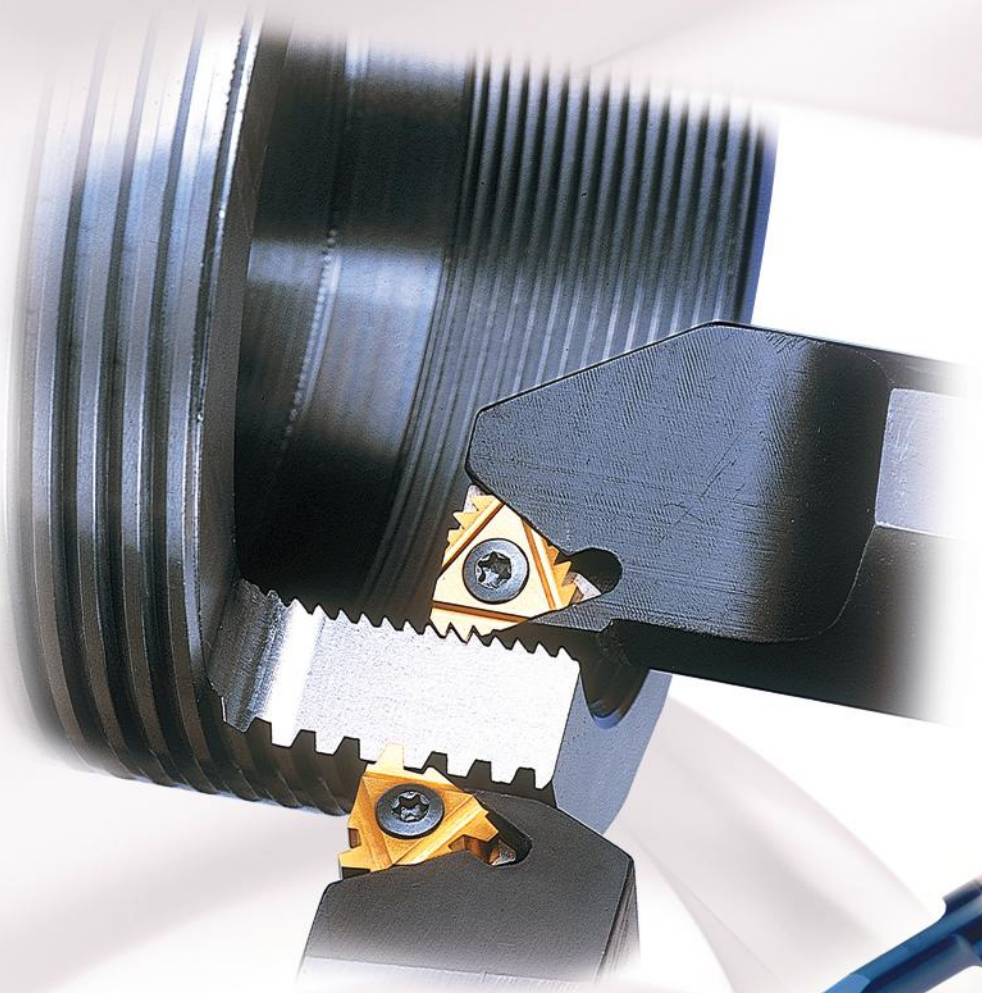
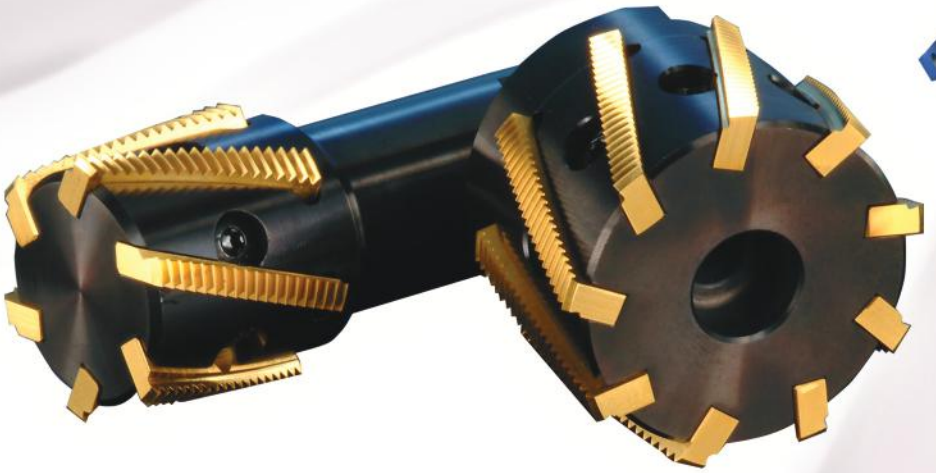
Carmex®
Precision Tools Ltd.

x-treme thread cutting™







Inch 2013

Company Profile

Carmex Precision Tools Ltd. is a leading manufacturer of high quality cutting tools. The company was founded in 1988 in Maalot, located in the beautiful North West region of Israel.

Product Lines

Carmex specializes in the production of threading tools for turning and milling. Our product lines include Thread Turning inserts and toolholders, Mill-Thread inserts and toolholders, Mill-Thread Solid Carbide and Spiral Mill-Thread. In addition to threading, we produce Grooving tools, Mini Chamfer mills and the Tiny Tools line of small boring bars for threading, turning and grooving of small parts. The company's different product lines are recognized worldwide for their advanced technology, reliable full range lines that offer accurate geometry, excellent cutting performance and extended tool life. Our products and service we provide live up to the highest standards and outperform them. Carmex also produces special tools in accordance with the customer's requirements.

Quality Assurance

In addition to our unyielding strive for high quality, speedy service and reliability, Carmex is certified by ISO 9001:2008, ISO 13485:2003, ISO 14001:2004, OHSAS 18001 and CE. Most of our customers' requirements are supplied immediately from our readily available wide range of inventory as well as from our agents and distributor's stocks around the world. In August 2008 Carmex completed its transfer to the new, state-of-the-art modern building. In addition to the construction we invested in advanced machinery and equipment as part of our strategy to keep our position in the first line of high technology.

Carmex Branches

In addition to its distributor's chain, Carmex has three independent sales branches. Each of them keeps Carmex's wide range of stock and employs talented, service oriented managers, engineers, technicians and administrators willing to fulfill the customers' needs.

2003 - C.P.T. GmbH, *a sales branch in Stuttgart Germany serving Europe.*

2004 - Carmex Precision Tools, LLC, *a sales branch in Winsconsin USA serving North America and Mexico.*

2008 - Carmex Italia Srl, *a sales branch in Modena, Italy.*

In addition to our customers' recognition of our high quality tools, we are well known as a service oriented company and as a very competitive supplier that pledge for customer satisfaction.

CERTIFIED QMS
SI
ISO 9001:
2008
THE STANDARDS INSTITUTION OF ISRAEL

CERTIFIED EMS
SI
ISO 14001:
2004
THE STANDARDS INSTITUTION OF ISRAEL

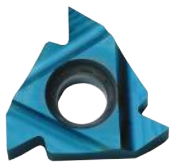
CERTIFIED OHS SYSTEM
SI
OHSAS
18001
THE STANDARDS INSTITUTION OF ISRAEL

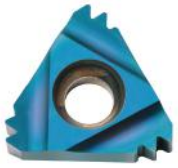
APPROVED MEDICAL DEVICES QMS
ISO 13485:
2003
THE STANDARDS INSTITUTION OF ISRAEL

Thread - Turning

New BLU Grade

Carmex presents a new sub-micrograin grade with PVD triple layer coating. The BLU grade provides a combination of very high strength with high wear resistance.





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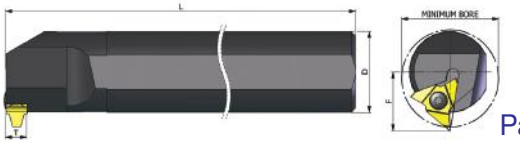
Large variety of vertical Inserts and Toolholders, sizes 16 up to 27



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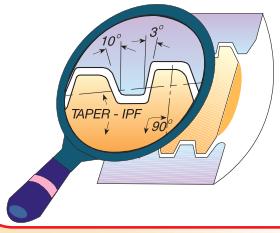
Thread Turning inserts for VAM profile



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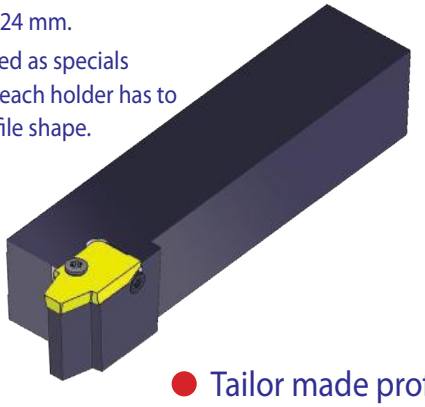
DSI - a unique line of 2 sided inserts including 6 cutting edges, a cost saving tool.

Page: 49-54

Large Profile Range

- Pitch Range: 14mm up to 24 mm.
- Tools and inserts are offered as specials (non catalogue), because each holder has to be modified to fit the profile shape.
- Rigid Clamping

External



Internal

- Tailor made profiles according to customer's request

Available Profile	Round (DIN 20400)	Trapez (DIN 103)	Acme, Stub Acme	American Buttress
Pitch	16 mm	14-24 mm	1.0 - 1.5 TPI	1.5 - 2.0 TPI

Grooving Inserts

Insert Size 11

Page: 64

Thread Whirling

Pages: 203-206

New Products

Carmex Precision Tools Ltd.

Mill - Thread

CMT - Vertical Mill-Thread

Pages: 97-105

Solid Carbide

Mini Mill - Thread
Mini Mill-Thread for G55° profile

Page: 133

MTI - for threading deep parts, ISO, UN Acme profiles and partial

Pages: 135-138

Mini Chamfer - Dovetail 45°

Page: 172

MTB - Solid Carbide with internal coolant bore for PG profile

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DMT - 3 in 1
Drill, Thread, Chamfer

Pages: 139-144

Tiny Tools

New Grade: BMK

Carbide Grade: BMK (K10 - K20)
Sub-micron grade with advanced PVD triple coating. Extremely high heat resistant and smooth cutting operation, for high performance, and normal machining conditions.
General purpose for all materials.

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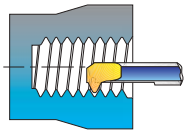
New Threading Tools for MIR family
NPT, Trapez, Acme



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New Products for MTR, MPR, MQR, MIR and MGR.

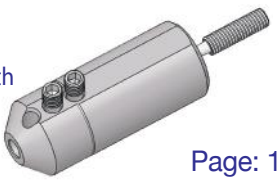
Page: 175-196

New Toolholders

- Toolholders for Swiss type machines.
- Toolholders with coolant channel.

Page: 197-198

-Toolholders with ø 25 mm



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Carmex Precision Tools Ltd.

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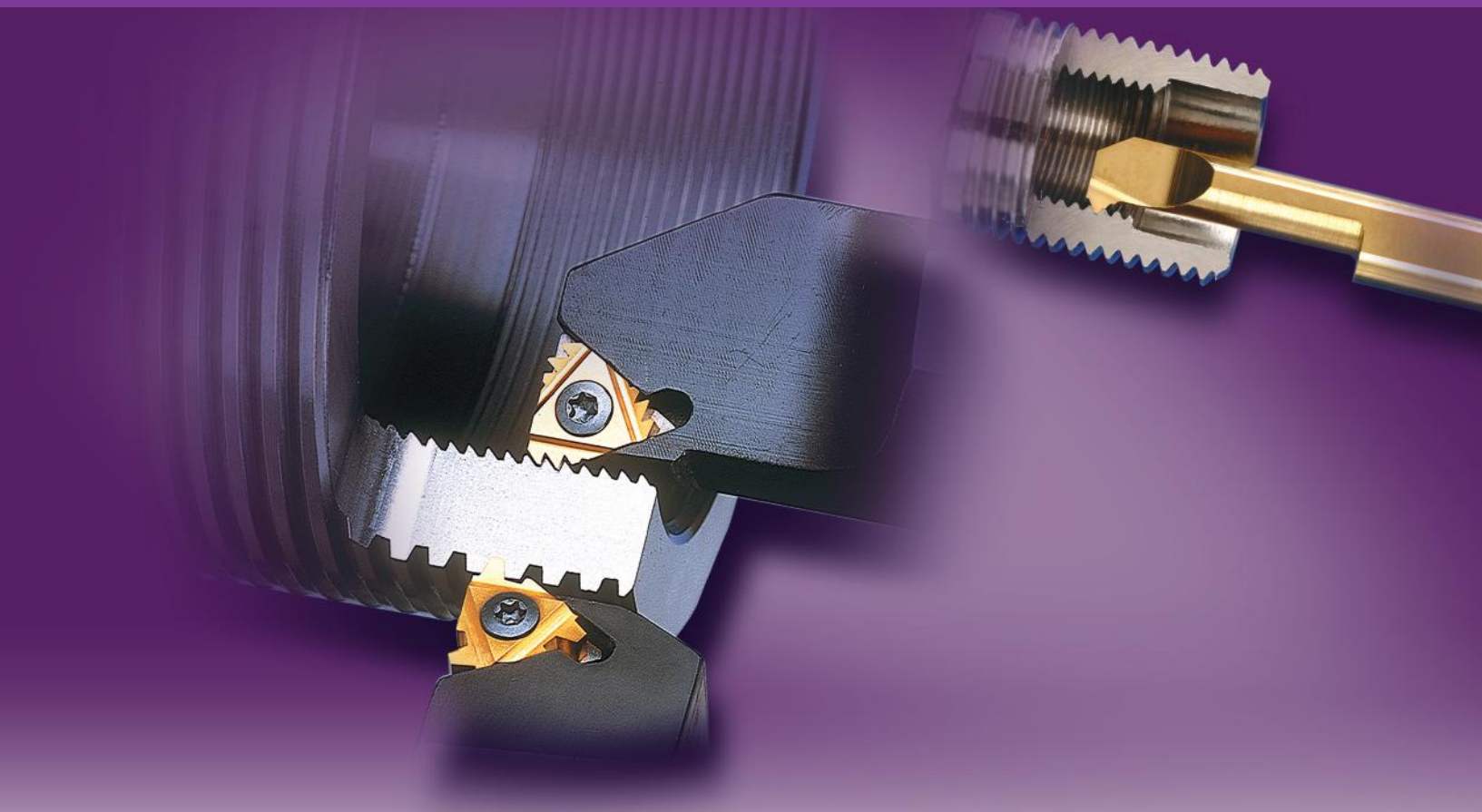
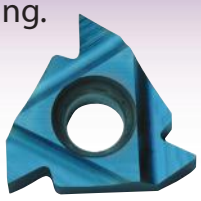
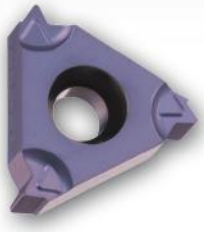
Thread Turning Inserts



New: BLU Grade

Carmex presents a new sub-micrograin grade with PVD triple layer coating.
The BLU grade provides a combination of very high strength with high wear resistance.





Type B - Threading Inserts

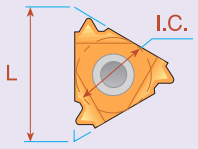
A combination of ground profile, and sintered chip-breaker threading inserts.
Unlike most other manufactures' inserts, this combination ensures a consistent high quality thread, with precise shape and dimensions.
Two different unique styles of chip-breaker were designed to suit the different specific requirements of Internal threads and External threads.
All of Carmex Type B inserts are made of BMA Sub-Micrograin grade.

Product Identification

Thread Turning Inserts Ordering Codes

16	E	R		12	UN		BMA

16



L	I.C.
06	5/32″
08	3/16″
08U	3/16″U
11	1/4″
16	3/8″
22	1/2″
22U	1/2″U
27	5/8″
27U	5/8″U
33U	3/4″U

E

E = External
I = Internal

R

R = Right Hand
L = Left Hand

B

B = Type B

12

Pitch
in mm:
0.35-12

or TPI
(Threads
per Inch)
72-2

UN

Full Profiles:
ISO
UN
WHIT
NPT
NPTF
BSPT
ACME
ST.ACME
TRAPEZ
ROUND
UNJ
MJ
PG
AM. BUTT.
SAGE
API
VAM

Partial Profiles:

A	60°
G	55°
AG	
N	
Q	
U	

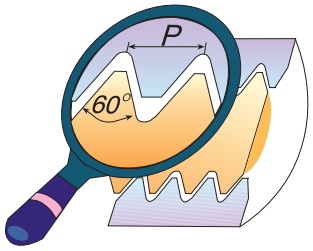
Multitooth style & number of teeth

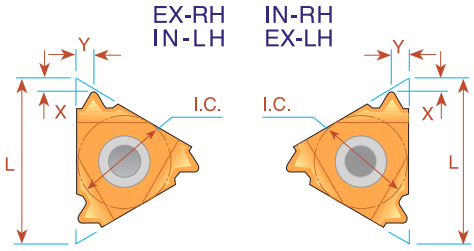
API size
& taper

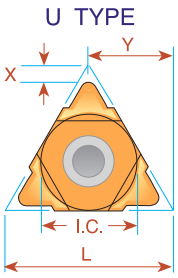
BMA

Carbide Grade:
P30
K20
BMA
MXC
P25C
BXC
BLU

Partial Profile 60°





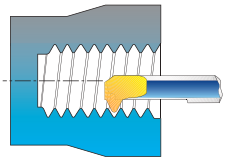


L mm	I.C.	Pitch Range mm	Pitch Range TPI	EXTERNAL Ordering Code Right Hand	EXTERNAL Ordering Code Left Hand	INTERNAL Ordering Code Right Hand	INTERNAL Ordering Code Left Hand	X	Y
6	5/32	0.5 -1.25	48-20	*ULTRA MINIATURE* →		*06 IR A60	*06 IL A60	.02	.02
8	3/16	0.5 -1.5	48-16	*MINIATURE* →		*08 IR A60	*08 IL A60	.02	.03
8U	3/16U	1.75-2.0	14-11	*"U" MINIATURE* →		*08U IR/L U60		.03	.16
11	1/4	0.5 -1.5	48-16	11 ER A60	11 EL A60	11 IR A60	11 IL A60	.03	.04
16	3/8	0.5 -1.5	48-16	16 ER A60	16 EL A60	16 IR A60	16 IL A60	.03	.04
16	3/8	1.75-3.0	14- 8	16 ER G60	16 EL G60	16 IR G60	16 IL G60	.05	.07
16	3/8	0.5 -3.0	48- 8	16 ER AG60	16 EL AG60	16 IR AG60	16 IL AG60	.05	.07
22	1/2	3.5 -5.0	7- 5	22 ER N60	22 EL N60	22 IR N60	22 IL N60	.07	.10
22U	1/2U	5.5 -8.0	4.5- 3.25	22U E/I/R/L U60				.02	.43
27	5/8	5.5 -6.0	4.5- 4	27 ER Q60	27 EL Q60	27 IR Q60	27 IL Q60	.08	.12
27U	5/8U	6.5 -9.0	4- 2.75	27U E/I/R/L U60				.04	.54

Order example: 16 ER G60 MXC

For small bore threading see page 184

* Available only in BXC grade



Type B

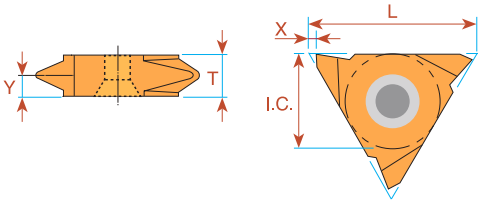
Ground Profile with Sintered Chip-breaker

L mm	I.C.	Pitch Range mm	Pitch Range TPI	EXTERNAL Ordering Code Right Hand	INTERNAL Ordering Code Left Hand	X	Y
16	3/8	0.5 -1.5	48-16	16 ER B A60	16 IR B A60	.03	.04
16	3/8	1.75-3.0	14- 8	16 ER B G60	16 IR B G60	.05	.07
16	3/8	0.5 -3.0	48- 8	16 ER B AG60	16 IR B AG60	.05	.07

Order example: 16 ER B G60 BMA

For Carbide Grade and Cutting Speed see page 56

Partial Profile 60°
Vertical

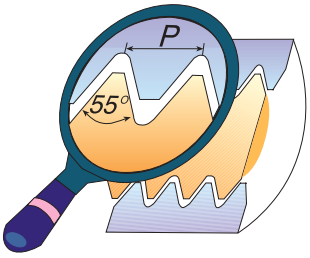


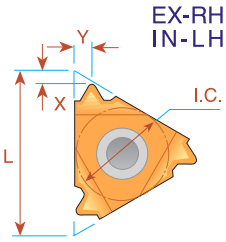
L mm	I.C.	Pitch Range mm	Pitch Range TPI	EXTERNAL Ordering Code Right Hand	EXTERNAL Ordering Code Left Hand	INTERNAL Ordering Code Right Hand	INTERNAL Ordering Code Left Hand	X	Y	T
16	3/8	0.5 - 1.5	48-16	**16V ER A60**	**16V EL A60**			.04	.04	.14
16	3/8	1.75- 3.0	14- 8	**16V ER G60**	**16V EL G60**			.04	.07	.14
16	3/8	0.5 - 3.0	48- 8	**16V ER AG60**	**16V EL AG60**			.04	.07	.14
22	1/2	1.75- 3.0	14- 8	**22V ER G60**	**22V EL G60**			.05	.07	.16
22	1/2	0.5 - 5.0	7- 5	**22V ER N60**	**22V EL N60**			.05	.10	.19
27	5/8	6.0 -10.0	4- 2.5	**27V ER V60**	**27V EL V60**	**27V IR V60**	**27V IL V60**	.07	.20	.41

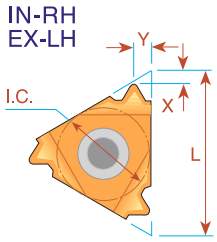
Order example: 16V ER G60 BMA

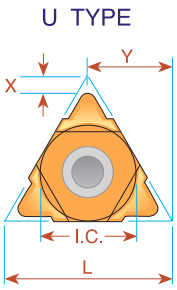
For Carbide Grade and Cutting Speed see page 56

Partial Profile 55°







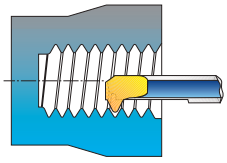


L mm	I.C.	Pitch Range mm	Pitch Range TPI	EXTERNAL Ordering Code Right Hand	EXTERNAL Ordering Code Left Hand	INTERNAL Ordering Code Right Hand	INTERNAL Ordering Code Left Hand	X	Y
6	5/32	0.5 -1.25	48-20	*ULTRA MINIATURE* →		*06 IR A55	*06 IL A55	.02	.02
8	3/16	0.5 -1.5	48-16	*MINIATURE* →		*08 IR A55	*08 IL A55	.02	.03
8U	3/16U	1.75-2.0	14-11	*"U" MINIATURE* →		*08U IR/L U55		.03	.16
11	1/4	0.5 -1.5	48-16	11 ER A55	11 EL A55	11 IR A55	11 IL A55	.03	.04
16	3/8	0.5 -1.5	48-16	16 ER A55	16 EL A55	16 IR A55	16 IL A55	.03	.04
16	3/8	1.75-3.0	14- 8	16 ER G55	16 EL G55	16 IR G55	16 IL G55	.05	.07
16	3/8	0.5 -3.0	48- 8	16 ER AG55	16 EL AG55	16 IR AG55	16 IL AG55	.05	.07
22	1/2	3.5 -5.0	7- 5	22 ER N55	22 EL N55	22 IR N55	22 IL N55	.07	.10
22U	1/2U	5.5 -8.0	4.5- 3.25	22U E/I/R/L U55				.04	.43
27	5/8	5.5 -6.0	4.5- 4	27 ER Q55	27 EL Q55	27 IR Q55	27 IL Q55	.08	.11
27U	5/8U	6.5 -9.0	4 - 2.75	27U E/I/R/L U55				.05	.54

Order example: 16 ER G55 MXC

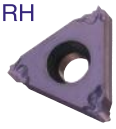
For small bore threading see page 184

* Available only in BXC and BMA grades



Type B

Ground Profile with Sintered Chip-breaker

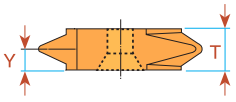


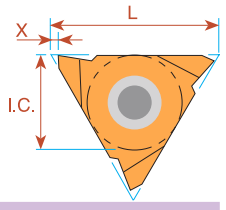
L mm	I.C.	Pitch Range mm	Pitch Range TPI	EXTERNAL Ordering Code Right Hand	INTERNAL Ordering Code Right Hand	X	Y
16	3/8	1.75-3.0	14-8	16 ER B G55	16 IR B G55	.05	.07
16	3/8	0.5-3.0	48-8	16 ER B AG55	16 IR B AG55	.05	.07

Order example: 16 ER B G55 BMA

For Carbide Grade and Cutting Speed see page 56

Partial Profile 55°
Vertical



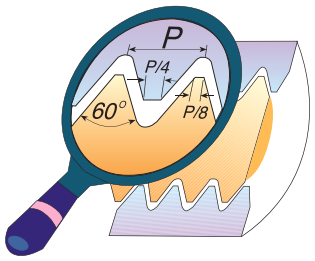


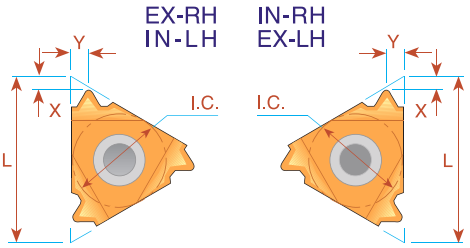
L mm	I.C.	Pitch Range mm	Pitch Range TPI	EXTERNAL Ordering Code Right Hand	EXTERNAL Ordering Code Left Hand	INTERNAL Ordering Code Right Hand	INTERNAL Ordering Code Left Hand	X	Y	T
16	3/8	0.5 - 1.5	48-16	**16V ER A55**	**16V EL A55**			.04	.04	.14
16	3/8	1.75- 3.0	14- 8	**16V ER G55**	**16V EL G55**			.04	.07	.14
16	3/8	0.5 - 3.0	48- 8	**16V ER AG55**	**16V EL AG55**			.04	.07	.14
22	1/2	3.5 - 5.0	7- 5	**22V ER N55**	**22V EL N55**			.05	.10	.19
27	5/8	6.0 -10.0	4- 2.5	**27V ER V55**	**27V EL V55**	**27V IR V55**	**27V IL V55**	.07	.20	.41

Order example: 22V ER N55 BMA

For Carbide Grade and Cutting Speed see page 56

ISO - metric

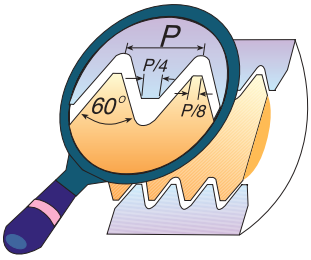


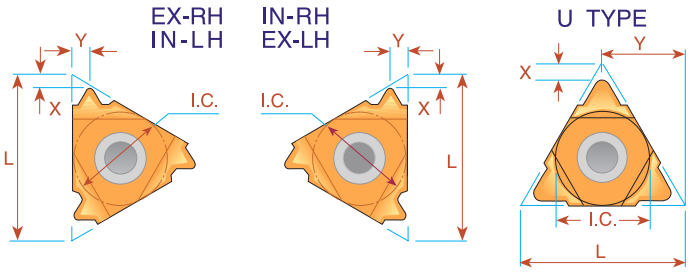


Pitch mm	L mm	I.C.	EXTERNAL Ordering Code Right Hand	EXTERNAL Ordering Code Left Hand	X	Y	INTERNAL Ordering Code Right Hand	INTERNAL Ordering Code Left Hand	X	Y
0.5	6	5/32					*06 IR 0.5 ISO	*06 IL 0.5 ISO	.04	.02
0.75	6	5/32	*ULTRA MINIATURE* →				*06 IR 0.75 ISO	*06 IL 0.75 ISO	.03	.02
1.0	6	5/32					*06 IR 1.0 ISO	*06 IL 1.0 ISO	.03	.02
1.25	6	5/32					*06 IR 1.25 ISO	*06 IL 1.25 ISO	.02	.02
0.5	8	3/16					*08 IR 0.5 ISO	*08 IL 0.5 ISO	.02	.02
0.75	8	3/16					*08 IR 0.75 ISO	*08 IL 0.75 ISO	.02	.02
1.0	8	3/16	*MINIATURE* →				*08 IR 1.0 ISO	*08 IL 1.0 ISO	.02	.02
1.25	8	3/16					*08 IR 1.25 ISO	*08 IL 1.25 ISO	.02	.03
1.5	8	3/16					*08 IR 1.5 ISO	*08 IL 1.5 ISO	.02	.03
1.75	8	3/16					*08 IR 1.75 ISO	*08 IL 1.75 ISO	.02	.03
2.0	8U	3/16U	*"U" MINIATURE* →				*08U IR/L 2.0 ISO		.04	.16
0.35	11	1/4	11 ER 0.35 ISO	11 EL 0.35 ISO	.03	.02	11 IR 0.35 ISO	11 IL 0.35 ISO	.03	.01
0.4	11	1/4	11 ER 0.4 ISO	11 EL 0.4 ISO	.03	.02	11 IR 0.4 ISO	11 IL 0.4 ISO	.03	.02
0.45	11	1/4	11 ER 0.45 ISO	11 EL 0.45 ISO	.03	.02	11 IR 0.45 ISO	11 IL 0.45 ISO	.03	.02
0.5	11	1/4	11 ER 0.5 ISO	11 EL 0.5 ISO	.02	.02	11 IR 0.5 ISO	11 IL 0.5 ISO	.02	.02
0.6	11	1/4	11 ER 0.6 ISO	11 EL 0.6 ISO	.02	.02	11 IR 0.6 ISO	11 IL 0.6 ISO	.02	.02
0.7	11	1/4	11 ER 0.7 ISO	11 EL 0.7 ISO	.02	.02	11 IR 0.7 ISO	11 IL 0.7 ISO	.02	.02
0.75	11	1/4	11 ER 0.75 ISO	11 EL 0.75 ISO	.02	.02	11 IR 0.75 ISO	11 IL 0.75 ISO	.02	.02
0.8	11	1/4	11 ER 0.8 ISO	11 EL 0.8 ISO	.02	.02	11 IR 0.8 ISO	11 IL 0.8 ISO	.02	.02
1.0	11	1/4	11 ER 1.0 ISO	11 EL 1.0 ISO	.03	.03	11 IR 1.0 ISO	11 IL 1.0 ISO	.02	.03
1.25	11	1/4	11 ER 1.25 ISO	11 EL 1.25 ISO	.03	.04	11 IR 1.25 ISO	11 IL 1.25 ISO	.03	.03
1.5	11	1/4	11 ER 1.5 ISO	11 EL 1.5 ISO	.03	.04	11 IR 1.5 ISO	11 IL 1.5 ISO	.03	.04
1.75	11	1/4	11 ER 1.75 ISO	11 EL 1.75 ISO	.03	.04	11 IR 1.75 ISO	11 IL 1.75 ISO	.03	.04
2.0	11	1/4					11 IR 2.0 ISO	11 IL 2.0 ISO	.03	.04
2.5	11	1/4					11 IR 2.5 ISO	11 IL 2.5 ISO	.03	.05
0.35	16	3/8	16 ER 0.35 ISO	16 EL 0.35 ISO	.03	.02	16 IR 0.35 ISO	16 IL 0.35 ISO	.03	.01
0.4	16	3/8	16 ER 0.4 ISO	16 EL 0.4 ISO	.03	.02	16 IR 0.4 ISO	16 IL 0.4 ISO	.03	.02
0.45	16	3/8	16 ER 0.45 ISO	16 EL 0.45 ISO	.03	.02	16 IR 0.45 ISO	16 IL 0.45 ISO	.03	.02
0.5	16	3/8	16 ER 0.5 ISO	16 EL 0.5 ISO	.02	.02	16 IR 0.5 ISO	16 IL 0.5 ISO	.02	.02
0.6	16	3/8	16 ER 0.6 ISO	16 EL 0.6 ISO	.02	.02	16 IR 0.6 ISO	16 IL 0.6 ISO	.02	.02
0.7	16	3/8	16 ER 0.7 ISO	16 EL 0.7 ISO	.02	.02	16 IR 0.7 ISO	16 IL 0.7 ISO	.02	.02
0.75	16	3/8	16 ER 0.75 ISO	16 EL 0.75 ISO	.02	.02	16 IR 0.75 ISO	16 IL 0.75 ISO	.02	.02
0.8	16	3/8	16 ER 0.8 ISO	16 EL 0.8 ISO	.02	.02	16 IR 0.8 ISO	16 IL 0.8 ISO	.02	.02
1.0	16	3/8	16 ER 1.0 ISO	16 EL 1.0 ISO	.03	.03	16 IR 1.0 ISO	16 IL 1.0 ISO	.02	.03
1.25	16	3/8	16 ER 1.25 ISO	16 EL 1.25 ISO	.03	.04	16 IR 1.25 ISO	16 IL 1.25 ISO	.03	.03
1.5	16	3/8	16 ER 1.5 ISO	16 EL 1.5 ISO	.03	.04	16 IR 1.5 ISO	16 IL 1.5 ISO	.03	.04
1.75	16	3/8	16 ER 1.75 ISO	16 EL 1.75 ISO	.04	.05	16 IR 1.75 ISO	16 IL 1.75 ISO	.04	.05
2.0	16	3/8	16 ER 2.0 ISO	16 EL 2.0 ISO	.04	.05	16 IR 2.0 ISO	16 IL 2.0 ISO	.04	.05
2.5	16	3/8	16 ER 2.5 ISO	16 EL 2.5 ISO	.04	.06	16 IR 2.5 ISO	16 IL 2.5 ISO	.04	.06
3.0	16	3/8	16 ER 3.0 ISO	16 EL 3.0 ISO	.05	.06	16 IR 3.0 ISO	16 IL 3.0 ISO	.04	.06
3.5	16	3/8	16 ER 3.5 ISO	16 EL 3.5 ISO	.05	.06	16 IR 3.5 ISO	16 IL 3.5 ISO	.05	.07

* Available only in BXC and BMA grades →

ISO - metric

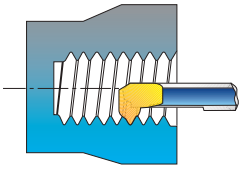




Pitch mm	L mm	I.C.	EXTERNAL Ordering Code Right Hand	EXTERNAL Ordering Code Left Hand	X	Y	INTERNAL Ordering Code Right Hand	INTERNAL Ordering Code Left Hand	X	Y
3.5	22	1/2	22 ER 3.5 ISO	22 EL 3.5 ISO	.06	.09	22 IR 3.5 ISO	22 IL 3.5 ISO	.06	.09
4.0	22	1/2	22 ER 4.0 ISO	22 EL 4.0 ISO	.06	.09	22 IR 4.0 ISO	22 IL 4.0 ISO	.06	.09
4.5	22	1/2	22 ER 4.5 ISO	22 EL 4.5 ISO	.07	.09	22 IR 4.5 ISO	22 IL 4.5 ISO	.06	.09
5.0	22	1/2	22 ER 5.0 ISO	22 EL 5.0 ISO	.07	.10	22 IR 5.0 ISO	22 IL 5.0 ISO	.06	.09
5.5	22	1/2	22 ER 5.5 ISO	22 EL 5.5 ISO	.07	.10	22 IR 5.5 ISO	22 IL 5.5 ISO	.06	.09
6.0	22	1/2	22 ER 6.0 ISO	22 EL 6.0 ISO	.07	.11	22 IR 6.0 ISO	22 IL 6.0 ISO	.06	.09
5.5	22U	1/2U	22U ER/L 5.5 ISO		.09	.43	22U IR/L 5.5 ISO		.09	.43
6.0	22U	1/2U	22U ER/L 6.0 ISO		.10	.43	22U IR/L 6.0 ISO		.08	.43
5.5	27	5/8	27 ER 5.5 ISO	27 EL 5.5 ISO	.07	.11	27 IR 5.5 ISO	27 IL 5.5 ISO	.06	.09
6.0	27	5/8	27 ER 6.0 ISO	27 EL 6.0 ISO	.08	.11	27 IR 6.0 ISO	27 IL 6.0 ISO	.07	.10
8.0	27U	5/8U	27U ER/L 8.0 ISO		.09	.54	27U IR/L 8.0 ISO		.09	.54
12.0	33U	3/4U	33U ER/L 12.0 ISO		.10	.65	33U IR/L 12.0 ISO		.14	.67

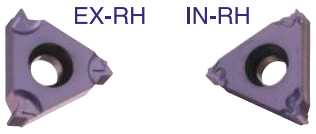
Order example: 22 IR 3.5 ISO BMA

For small bore threading see page 185



Type B

Ground Profile with Sintered Chip-breaker

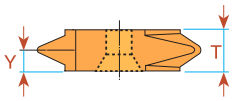


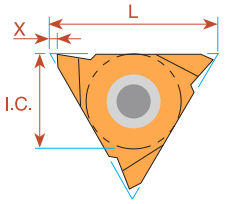
Pitch mm	L mm	I.C.	EXTERNAL Ordering Code Right Hand	X	Y	INTERNAL Ordering Code Right Hand	X	Y
0.8	16	3/8	16 ER B 0.8 ISO	.02	.02			
1.0	16	3/8	16 ER B 1.0 ISO	.03	.03	16 IR B 1.0 ISO	.02	.03
1.25	16	3/8	16 ER B 1.25 ISO	.03	.04	16 IR B 1.25 ISO	.03	.03
1.5	16	3/8	16 ER B 1.5 ISO	.03	.04	16 IR B 1.5 ISO	.03	.04
1.75	16	3/8	16 ER B 1.75 ISO	.04	.05	16 IR B 1.75 ISO	.04	.05
2.0	16	3/8	16 ER B 2.0 ISO	.04	.05	16 IR B 2.0 ISO	.04	.05
2.5	16	3/8	16 ER B 2.5 ISO	.04	.06	16 IR B 2.5 ISO	.04	.06
3.0	16	3/8	16 ER B 3.0 ISO	.05	.06	16 IR B 3.0 ISO	.04	.06

Order example: 16 IR B 1.5 ISO BMA

For Carbide Grade and Cutting Speed see page 56

ISO - metric
Vertical



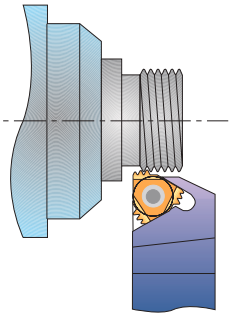


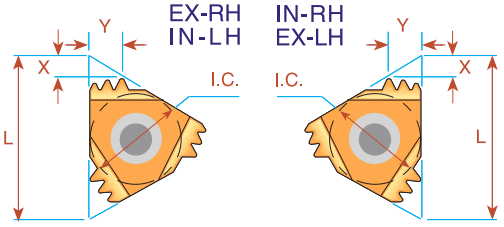
Pitch mm	L mm	I.C.	EXTERNAL Ordering Code Right Hand	EXTERNAL Ordering Code Left Hand	INTERNAL Ordering Code Right Hand	INTERNAL Ordering Code Left Hand	X	Y	T
0.5	16	3/8	**16V ER 0.5 ISO**	**16V EL 0.5 ISO**			.04	.02	.14
0.75	16	3/8	**16V ER 0.75 ISO**	**16V EL 0.75 ISO**			.04	.02	.14
0.8	16	3/8	**16V ER 0.8 ISO**	**16V EL 0.8 ISO**			.04	.02	.14
1.0	16	3/8	**16V ER 1.0 ISO**	**16V EL 1.0 ISO**			.04	.03	.14
1.25	16	3/8	**16V ER 1.25 ISO**	**16V EL 1.25 ISO**			.04	.04	.14
1.5	16	3/8	**16V ER 1.5 ISO**	**16V EL 1.5 ISO**			.04	.04	.14
1.75	16	3/8	**16V ER 1.75 ISO**	**16V EL 1.75 ISO**			.04	.05	.14
2.0	16	3/8	**16V ER 2.0 ISO**	**16V EL 2.0 ISO**			.04	.05	.14
2.5	16	3/8	**16V ER 2.5 ISO**	**16V EL 2.5 ISO**			.04	.06	.14
3.0	16	3/8	**16V ER 3.0 ISO**	**16V EL 3.0 ISO**			.04	.07	.14
* 8.0	27	5/8	**27V ER 8.0 ISO**	**27V EL 8.0 ISO**	**27V IR 8.0 ISO**	**27 IL 8.0 ISO**	.07	.20	.41
** 10.0	27	5/8	**27V ER 10.0 ISO**	**27V EL 10.0 ISO**	**27V IR 10.0 ISO**	**27 IL 10.0 ISO**	.07	.20	.41

Order example: 16V ER 1.5 ISO BMA

* Minimum bore: 2.36"
** Minimum bore: 2.83"

Multitooth



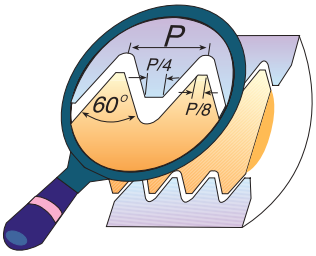


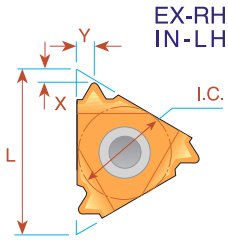
Pitch mm	L mm	I.C.	Number of Teeth	EXTERNAL Ordering Code	Anvil	INTERNAL Ordering Code	Anvil	X	Y
1.0	16	3/8	3	**16 ER 1.0 ISO 3M**	AE16M	**16 IR 1.0 ISO 3M**	AI16M	.07	.10
1.5	16	3/8	2	**16 ER 1.5 ISO 2M**	AE16M	**16 IR 1.5 ISO 2M**	AI16M	.06	.09
1.5	22	1/2	3	**22 ER 1.5 ISO 3M**	AE22M	**22 IR 1.5 ISO 3M**	AI22M	.09	.15
2.0	22	1/2	2	**22 ER 2.0 ISO 2M**	AE22M	**22 IR 2.0 ISO 2M**	AI22M	.08	.12
2.0	22	1/2	3	**22 ER 2.0 ISO 3M**	AE22M	**22 IR 2.0 ISO 3M**	AI22M	.12	.20
3.0	27	5/8	2	**27 ER 3.0 ISO 2M**	AE27M	**27 IR 3.0 ISO 2M**	AI27M	.11	.18

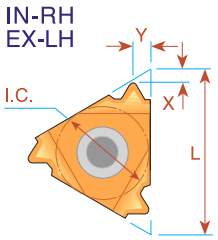
Order example: 22 IR B 2.0 ISO 2M BMA
For recommended number of passes see page 57

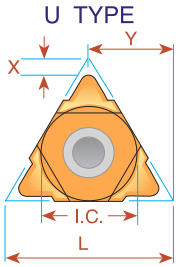
For Carbide Grade and Cutting Speed see page 56

UN - Unified UNC, UNF, UNEF, UNS





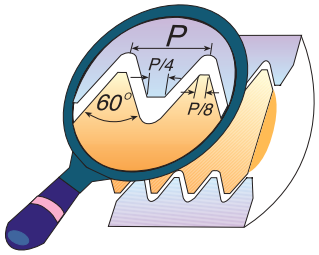


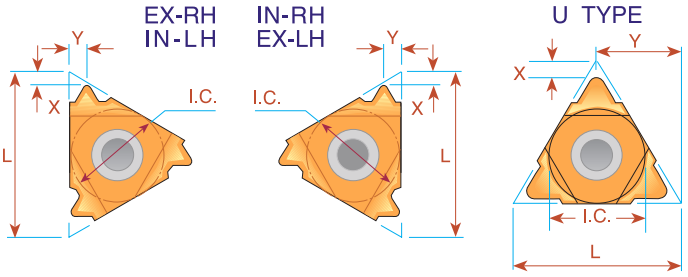


Pitch TPI	L mm	I.C.	EXTERNAL Ordering Code Right Hand	EXTERNAL Ordering Code Left Hand	EXTERNAL X	EXTERNAL Y	INTERNAL Ordering Code Right Hand	INTERNAL Ordering Code Left Hand	INTERNAL X	INTERNAL Y
32	6	5/32					*06 IR 32 UN	*06 IL 32 UN	.03	.02
28	6	5/32					*06 IR 28 UN	*06 IL 28 UN	.03	.02
24	6	5/32	*ULTRA MINIATURE*				*06 IR 24 UN	*06 IL 24 UN	.03	.02
20	6	5/32	→				*06 IR 20 UN	*06 IL 20 UN	.02	.02
18	6	5/32					*06 IR 18 UN	*06 IL 18 UN	.02	.03
32	8	3/16					*08 IR 32 UN	*08 IL 32 UN	.02	.02
28	8	3/16					*08 IR 28 UN	*08 IL 28 UN	.02	.02
24	8	3/16					*08 IR 24 UN	*08 IL 24 UN	.02	.02
20	8	3/16	*MINIATURE*				*08 IR 20 UN	*08 IL 20 UN	.02	.03
18	8	3/16					*08 IR 18 UN	*08 IL 18 UN	.02	.03
16	8	3/16	→				*08 IR 16 UN	*08 IL 16 UN	.02	.03
14	8	3/16					*08 IR 14 UN	*08 IL 14 UN	.02	.03
13	8	3/16					**08 IR 13 UN		.03	.04
13	8U	3/16U					*08U IR/L 13 UN		.04	.16
12	8U	3/16U	*"U" MINIATURE* →				*08U IR/L 12 UN		.04	.16
11	8U	3/16U					*08U IR/L 11 UN		.04	.16
72	11	1/4	11 ER 72 UN	11 EL 72 UN	.03	.02	11 IR 72 UN	11 IL 72 UN	.03	.01
64	11	1/4	11 ER 64 UN	11 EL 64 UN	.03	.02	11 IR 64 UN	11 IL 64 UN	.03	.02
56	11	1/4	11 ER 56 UN	11 EL 56 UN	.03	.02	11 IR 56 UN	11 IL 56 UN	.03	.02
48	11	1/4	11 ER 48 UN	11 EL 48 UN	.02	.02	11 IR 48 UN	11 IL 48 UN	.02	.02
44	11	1/4	11 ER 44 UN	11 EL 44 UN	.02	.02	11 IR 44 UN	11 IL 44 UN	.02	.02
40	11	1/4	11 ER 40 UN	11 EL 40 UN	.02	.02	11 IR 40 UN	11 IL 40 UN	.02	.02
36	11	1/4	11 ER 36 UN	11 EL 36 UN	.02	.02	11 IR 36 UN	11 IL 36 UN	.02	.02
32	11	1/4	11 ER 32 UN	11 EL 32 UN	.02	.02	11 IR 32 UN	11 IL 32 UN	.02	.02
28	11	1/4	11 ER 28 UN	11 EL 28 UN	.02	.03	11 IR 28 UN	11 IL 28 UN	.02	.03
27	11	1/4	11 ER 27 UN	11 EL 27 UN	.03	.03	11 IR 27 UN	11 IL 27 UN	.03	.03
24	11	1/4	11 ER 24 UN	11 EL 24 UN	.03	.03	11 IR 24 UN	11 IL 24 UN	.03	.03
20	11	1/4	11 ER 20 UN	11 EL 20 UN	.03	.04	11 IR 20 UN	11 IL 20 UN	.03	.04
18	11	1/4	11 ER 18 UN	11 EL 18 UN	.03	.04	11 IR 18 UN	11 IL 18 UN	.03	.04
16	11	1/4	11 ER 16 UN	11 EL 16 UN	.04	.04	11 IR 16 UN	11 IL 16 UN	.04	.04
14	11	1/4	11 ER 14 UN	11 EL 14 UN	.04	.04	11 IR 14 UN	11 IL 14 UN	.04	.04
13	11	1/4					11 IR 13 UN	11 IL 13 UN	.03	.04
12	11	1/4					11 IR 12 UN	11 IL 12 UN	.04	.04
11	11	1/4					11 IR 11 UN	11 IL 11 UN	.03	.04
72	16	3/8	16 ER 72 UN	16 EL 72 UN	.03	.02	16 IR 72 UN	16 IL 72 UN	.03	.01
64	16	3/8	16 ER 64 UN	16 EL 64 UN	.03	.02	16 IR 64 UN	16 IL 64 UN	.03	.02
56	16	3/8	16 ER 56 UN	16 EL 56 UN	.03	.02	16 IR 56 UN	16 IL 56 UN	.03	.02
48	16	3/8	16 ER 48 UN	16 EL 48 UN	.02	.02	16 IR 48 UN	16 IL 48 UN	.02	.02
44	16	3/8	16 ER 44 UN	16 EL 44 UN	.02	.02	16 IR 44 UN	16 IL 44 UN	.02	.02
40	16	3/8	16 ER 40 UN	16 EL 40 UN	.02	.02	16 IR 40 UN	16 IL 40 UN	.02	.02
36	16	3/8	16 ER 36 UN	16 EL 36 UN	.02	.02	16 IR 36 UN	16 IL 36 UN	.02	.02

* Available only in BXC and BMA grades

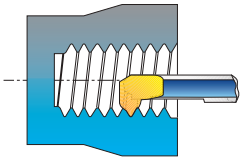
UN - Unified UNC, UNF, UNEF, UNS





Pitch TPI	L mm	I.C.	EXTERNAL Ordering Code Right Hand	EXTERNAL Ordering Code Left Hand	X	Y	INTERNAL Ordering Code Right Hand	INTERNAL Ordering Code Left Hand	X	Y
32	16	3/8	16 ER 32 UN	16 EL 32 UN	.02	.02	16 IR 32 UN	16 IL 32 UN	.02	.02
28	16	3/8	16 ER 28 UN	16 EL 28 UN	.02	.03	16 IR 28 UN	16 IL 28 UN	.02	.03
27	16	3/8	16 ER 27 UN	16 EL 27 UN	.03	.03	16 IR 27 UN	16 IL 27 UN	.03	.03
24	16	3/8	16 ER 24 UN	16 EL 24 UN	.03	.03	16 IR 24 UN	16 IL 24 UN	.03	.03
20	16	3/8	16 ER 20 UN	16 EL 20 UN	.03	.04	16 IR 20 UN	16 IL 20 UN	.03	.04
18	16	3/8	16 ER 18 UN	16 EL 18 UN	.03	.04	16 IR 18 UN	16 IL 18 UN	.03	.04
16	16	3/8	16 ER 16 UN	16 EL 16 UN	.04	.04	16 IR 16 UN	16 IL 16 UN	.04	.04
14	16	3/8	16 ER 14 UN	16 EL 14 UN	.04	.05	16 IR 14 UN	16 IL 14 UN	.04	.05
13	16	3/8	16 ER 13 UN	16 EL 13 UN	.04	.05	16 IR 13 UN	16 IL 13 UN	.04	.05
12	16	3/8	16 ER 12 UN	16 EL 12 UN	.04	.06	16 IR 12 UN	16 IL 12 UN	.04	.06
11.5	16	3/8	16 ER 11.5 UN	16 EL 11.5 UN	.04	.06	16 IR 11.5 UN	16 IL 11.5 UN	.04	.06
11	16	3/8	16 ER 11 UN	16 EL 11 UN	.04	.06	16 IR 11 UN	16 IL 11 UN	.04	.06
10	16	3/8	16 ER 10 UN	16 EL 10 UN	.04	.06	16 IR 10 UN	16 IL 10 UN	.04	.06
9	16	3/8	16 ER 9 UN	16 EL 9 UN	.05	.07	16 IR 9 UN	16 IL 9 UN	.05	.07
8	16	3/8	16 ER 8 UN	16 EL 8 UN	.05	.06	16 IR 8 UN	16 IL 8 UN	.04	.06
7	22	1/2	22 ER 7 UN	22 EL 7 UN	.06	.09	22 IR 7 UN	22 IL 7 UN	.06	.09
6	22	1/2	22 ER 6 UN	22 EL 6 UN	.06	.09	22 IR 6 UN	22 IL 6 UN	.06	.09
5	22	1/2	22 ER 5 UN	22 EL 5 UN	.07	.10	22 IR 5 UN	22 IL 5 UN	.06	.09
4.5	22U	1/2U	22U ER/L 4.5 UN		.08	.43	22U IR/L 4.5 UN		.09	.43
4	22U	1/2U	22U ER/L 4 UN		.08	.43	22U IR/L 4 UN		.09	.43
4.5	27	5/8	27 ER 4.5 UN	27 EL 4.5 UN	.07	.11	27 IR 4.5 UN	27 IL 4.5 UN	.07	.09
4	27	5/8	27 ER 4 UN	27 EL 4 UN	.08	.12	27 IR 4 UN	27 IL 4 UN	.07	.11
3	27U	5/8U	27U ER/L 3 UN		.10	.54	27U IR/L 3 UN		.11	.54
2	33U	3/4U	33U ER/L 2 UN		.11	.65	27U IR/L 2 UN		.14	.67

Order example: 22ER 7 UN BMA



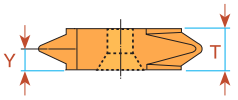
For small bore threading see page 185

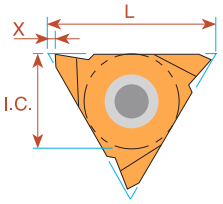
* Available only in BXC and BMA grades

** To be used with Holder SIR 0354 K08 on page 48

For Carbide Grade and Cutting Speed see page 56

UN - Unified
Vertical

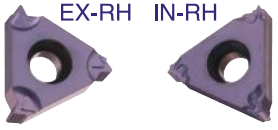




Pitch TPI	L mm	I.C.	EXTERNAL Ordering Code Right Hand	EXTERNAL Ordering Code Left Hand	INTERNAL Ordering Code Right Hand	INTERNAL Ordering Code Left Hand	X	Y	T
32	16	3/8	16V ER 32 UN	16V EL 32 UN			.04	.02	.14
28	16	3/8	16V ER 28 UN	16V EL 28 UN			.04	.03	.14
24	16	3/8	16V ER 24 UN	16V EL 24 UN			.04	.03	.14
20	16	3/8	16V ER 20 UN	16V EL 20 UN			.04	.03	.14
18	16	3/8	16V ER 18 UN	16V EL 18 UN			.04	.04	.14
16	16	3/8	16V ER 16 UN	16V EL 16 UN			.04	.04	.14
14	16	3/8	16V ER 14 UN	16V EL 14 UN			.04	.05	.14
12	16	3/8	16V ER 12 UN	16V EL 12 UN			.04	.05	.14
10	16	3/8	16V ER 10 UN	16V EL 10 UN			.04	.06	.14
8	16	3/8	16V ER 8 UN	16V EL 8 UN			.04	.06	.14
7	22	1/2	22V ER 7 UN	22V EL 7 UN			.05	.09	.19
* 3	27	5/8	27V ER 3 UN	27V EL 3 UN	27V IR 3 UN	27 IL 3 UN	.07	.20	.41

Order example: 22V ER 7UN MXC
* Minimum bore: Ø2.56"

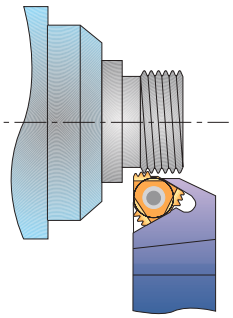
UN - Unified UNC, UNF, UNEF, UNS
Type B
Ground Profile with Sintered Chip-breaker

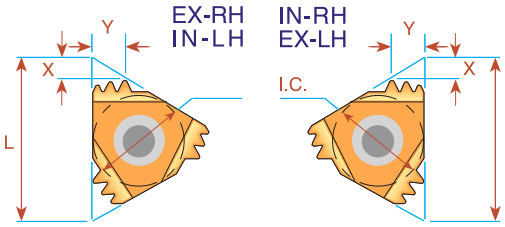


Pitch TPI	L mm	I.C.	EXTERNAL Ordering Code Right Hand	X	Y	INTERNAL Ordering Code Right Hand	X	Y
24	16	3/8	16 ER B 24 UN	.03	.03	16 IR B 24 UN	.03	.03
20	16	3/8	16 ER B 20 UN	.03	.04	16 IR B 20 UN	.03	.03
18	16	3/8	16 ER B 18 UN	.03	.04	16 IR B 18 UN	.03	.03
16	16	3/8	16 ER B 16 UN	.04	.04	16 IR B 16 UN	.04	.04
14	16	3/8	16 ER B 14 UN	.04	.05	16 IR B 14 UN	.04	.05
13	16	3/8	16 ER B 13 UN	.04	.05			
12	16	3/8	16 ER B 12 UN	.04	.06	16 IR B 12 UN	.04	.06
11	16	3/8	16 ER B 11 UN	.04	.06			
10	16	3/8	16 ER B 10 UN	.04	.06	16 IR B 10 UN	.04	.06
9	16	3/8	16 ER B 9 UN	.05	.07			
8	16	3/8	16 ER B 8 UN	.05	.06	16 IR B 8 UN	.04	.06

Order example: 16 IR B 12 UN BMA

Multitooth





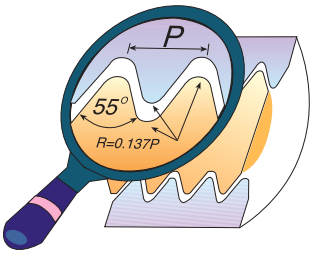
Pitch TPI	L mm	I.C.	Number of Teeth	***EXTERNAL*** Ordering Code	Anvil	***INTERNAL*** Ordering Code	Anvil	X	Y
16	16	3/8	2	**16 ER 16 UN 2M**	AE16M	**16 IR 16 UN 2M**	AI16M	.06	.09
16	22	1/2	3	**22 ER 16 UN 3M**	AE22M	**22 IR 16 UN 3M**	AI22M	.10	.16
12	22	1/2	2	**22 ER 12 UN 2M**	AE22M	**22 IR 12 UN 2M**	AI22M	.09	.13
12	22	1/2	3	**22 ER 12 UN 3M**	AE22M	**22 IR 12 UN 3M**	AI22M	.13	.21
8	27	5/8	2	**27 ER 8 UN 2M**	AE27M	**27 IR 8 UN 2M**	AI27M	.12	.19

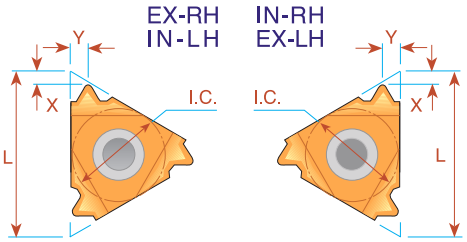
Order example: 22 IR 16 UN 3M BMA

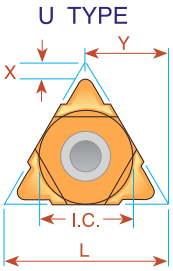
For recommended number of passes see page 57

For Carbide Grade and Cutting Speed see page 56

Whitworth - 55° BSW, BSF, BSP, BSB

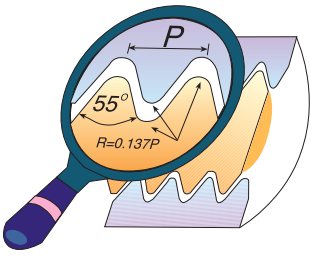


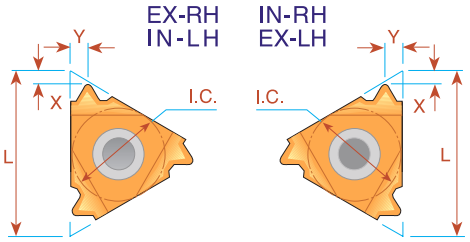




Pitch TPI	L mm	I.C.	EXTERNAL Ordering Code Right Hand	EXTERNAL Ordering Code Left Hand	INTERNAL Ordering Code Right Hand	INTERNAL Ordering Code Left Hand	X	Y
26	6	5/32			*06 IR 26 W	*06 IL 26 W	.03	.02
22	6	5/32	ULTRA MINIATURE →		*06 IR 22 W	*06 IL 22 W	.02	.02
20	6	5/32			*06 IR 20 W	*06 IL 20 W	.02	.03
18	6	5/32			*06 IR 18 W	*06 IL 18 W	.02	.03
28	8	3/16			*08 IR 28 W	*08 IL 28 W	.02	.02
24	8	3/16			*08 IR 24 W	*08 IL 24 W	.02	.02
20	8	3/16	→		*08 IR 20 W	*08 IL 20 W	.02	.03
19	8	3/16	MINIATURE		*08 IR 19 W	*08 IL 19 W	.02	.03
18	8	3/16			*08 IR 18 W	*08 IL 18 W	.02	.03
16	8	3/16			*08 IR 16 W	*08 IL 16 W	.02	.03
14	8U	3/16U			*08U IR/L 14 W		.04	.16
12	8U	3/16U	"U" MINIATURE →		*08U IR/L 12 W		.04	.16
11	8U	3/16U			*08U IR/L 11 W		.04	.16
72	11	1/4	11 ER 72 W	11 EL 72 W	11 IR 72 W	11 IL 72 W	.03	.02
60	11	1/4	11 ER 60 W	11 EL 60 W	11 IR 60 W	11 IL 60 W	.03	.02
56	11	1/4	11 ER 56 W	11 EL 56 W	11 IR 56 W	11 IL 56 W	.03	.02
48	11	1/4	11 ER 48 W	11 EL 48 W	11 IR 48 W	11 IL 48 W	.02	.02
40	11	1/4	11 ER 40 W	11 EL 40 W	11 IR 40 W	11 IL 40 W	.02	.02
36	11	1/4	11 ER 36 W	11 EL 36 W	11 IR 36 W	11 IL 36 W	.02	.02
32	11	1/4	11 ER 32 W	11 EL 32 W	11 IR 32 W	11 IL 32 W	.02	.02
28	11	1/4	11 ER 28 W	11 EL 28 W	11 IR 28 W	11 IL 28 W	.02	.03
26	11	1/4	11 ER 26 W	11 EL 26 W	11 IR 26 W	11 IL 26 W	.03	.03
24	11	1/4	11 ER 24 W	11 EL 24 W	11 IR 24 W	11 IL 24 W	.03	.03
22	11	1/4	11 ER 22 W	11 EL 22 W	11 IR 22 W	11 IL 22 W	.03	.04
20	11	1/4	11 ER 20 W	11 EL 20 W	11 IR 20 W	11 IL 20 W	.03	.04
19	11	1/4	11 ER 19 W	11 EL 19 W	11 IR 19 W	11 IL 19 W	.03	.04
18	11	1/4	11 ER 18 W	11 EL 18 W	11 IR 18 W	11 IL 18 W	.03	.04
16	11	1/4	11 ER 16 W	11 EL 16 W	11 IR 16 W	11 IL 16 W	.04	.04
14	11	1/4	11 ER 14 W	11 EL 14 W	11 IR 14 W	11 IL 14 W	.04	.04
12	11	1/4			11 IR 12 W	11 IL 12 W	.04	.04
11	11	1/4			11 IR 11 W	11 IL 11 W	.04	.05
72	16	3/8	16 ER 72 W	16 EL 72 W	16 IR 72 W	16 IL 72 W	.03	.02
60	16	3/8	16 ER 60 W	16 EL 60 W	16 IR 60 W	16 IL 60 W	.03	.02
56	16	3/8	16 ER 56 W	16 EL 56 W	16 IR 56 W	16 IL 56 W	.03	.02
48	16	3/8	16 ER 48 W	16 EL 48 W	16 IR 48 W	16 IL 48 W	.02	.02
40	16	3/8	16 ER 40 W	16 EL 40 W	16 IR 40 W	16 IL 40 W	.02	.02
36	16	3/8	16 ER 36 W	16 EL 36 W	16 IR 36 W	16 IL 36 W	.02	.02
32	16	3/8	16 ER 32 W	16 EL 32 W	16 IR 32 W	16 IL 32 W	.02	.02
28	16	3/8	16 ER 28 W	16 EL 28 W	16 IR 28 W	16 IL 28 W	.02	.03
26	16	3/8	16 ER 26 W	16 EL 26 W	16 IR 26 W	16 IL 26 W	.03	.03
24	16	3/8	16 ER 24 W	16 EL 24 W	16 IR 24 W	16 IL 24 W	.03	.03

Whitworth - 55° BSW, BSF, BSP, BSB





Pitch TPI	L mm	I.C.	EXTERNAL Ordering Code Right Hand	EXTERNAL Ordering Code Left Hand	INTERNAL Ordering Code Right Hand	INTERNAL Ordering Code Left Hand	X	Y
22	16	3/8	16 ER 22 W	16 EL 22 W	16 IR 22 W	16 IL 22 W	.03	.04
20	16	3/8	16 ER 20 W	16 EL 20 W	16 IR 20 W	16 IL 20 W	.03	.04
19	16	3/8	16 ER 19 W	16 EL 19 W	16 IR 19 W	16 IL 19 W	.03	.04
18	16	3/8	16 ER 18 W	16 EL 18 W	16 IR 18 W	16 IL 18 W	.03	.04
16	16	3/8	16 ER 16 W	16 EL 16 W	16 IR 16 W	16 IL 16 W	.04	.04
14	16	3/8	16 ER 14 W	16 EL 14 W	16 IR 14 W	16 IL 14 W	.04	.05
12	16	3/8	16 ER 12 W	16 EL 12 W	16 IR 12 W	16 IL 12 W	.04	.06
11	16	3/8	16 ER 11 W	16 EL 11 W	16 IR 11 W	16 IL 11 W	.04	.06
10	16	3/8	16 ER 10 W	16 EL 10 W	16 IR 10 W	16 IL 10 W	.04	.06
9	16	3/8	16 ER 9 W	16 EL 9 W	16 IR 9 W	16 IL 9 W	.05	.07
8	16	3/8	16 ER 8 W	16 EL 8 W	16 IR 8 W	16 IL 8 W	.05	.06
7	22	1/2	22 ER 7 W	22 EL 7 W	22 IR 7 W	22 IL 7 W	.06	.09
6	22	1/2	22 ER 6 W	22 EL 6 W	22 IR 6 W	22 IL 6 W	.06	.09
5	22	1/2	22 ER 5 W	22 EL 5 W	22 IR 5 W	22 IL 5 W	.07	.09
4.5	22U	1/2U	22U E/I/R/L 4.5 W				.09	.43
4	22U	1/2U	22U E/I/R/L 4 W				.07	.43
4.5	27	5/8	27 ER 4.5 W	27 EL 4.5 W	27 IR 4.5 W	27 IL 4.5 W	.07	.10
4	27	5/8	27 ER 4 W	27 EL 4 W	27 IR 4 W	27 IL 4 W	.08	.11
3.5	27U	5/8U	27U E/I/R/L 3.5 W				.08	.54
3.25	27U	5/8U	27U E/I/R/L 3.25 W				.08	.54
3	27U	5/8U	27U E/I/R/L 3 W				.09	.54
2.75	27U	5/8U	27U E/I/R/L 2.75 W				.09	.54

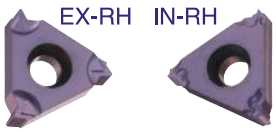
Order example: 16 IR 18 W BMA
* Available only in BXC and BMA grades

For Carbide Grade and Cutting Speed see page 56

Whitworth - 55° BSW, BSF, BSP, BSB

Type B

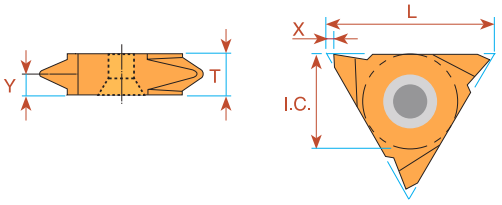
Ground Profile with Sintered Chip-breaker



Pitch TPI	L mm	I.C.	EXTERNAL Ordering Code Right Hand	INTERNAL Ordering Code Right Hand	X	Y
19	16	3/8	**16 ER B 19 W**	**16 IR B 19 W**	.03	.04
16	16	3/8	**16 ER B 16 W**	**16 IR B 16 W**	.04	.04
14	16	3/8	**16 ER B 14 W**	**16 IR B 14 W**	.04	.05
11	16	3/8	**16 ER B 11 W**	**16 IR B 11 W**	.04	.06
10	16	3/8	**16 ER B 10 W**	**16 IR B 10 W**	.04	.06

Order example: 16 IR B 10 W BMA

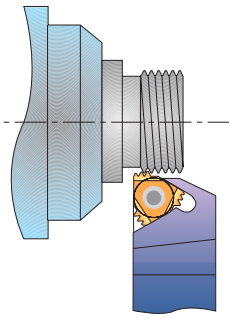
Vertical

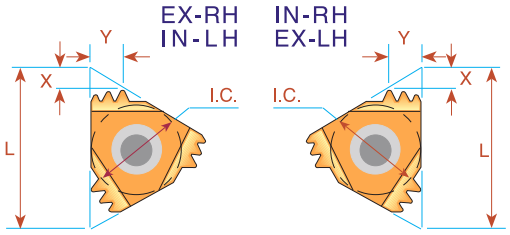


Pitch TPI	L mm	I.C.	EXTERNAL Ordering Code Right Hand	EXTERNAL Ordering Code Left Hand	X	Y	T
20	16	3/8	**16V ER 20 W**	**16V EL 20 W**	.04	.04	.14
19	16	3/8	**16V ER 19 W**	**16V EL 19 W**	.04	.04	.14
18	16	3/8	**16V ER 18 W**	**16V EL 18 W**	.04	.04	.14
16	16	3/8	**16V ER 16 W**	**16V EL 16 W**	.04	.04	.14
14	16	3/8	**16V ER 14 W**	**16V EL 14 W**	.04	.05	.14
12	16	3/8	**16V ER 12 W**	**16V EL 12 W**	.04	.05	.14
11	16	3/8	**16V ER 11 W**	**16V EL 11 W**	.04	.06	.14

Order example: 16V ER 14 W MXC

Multitooth





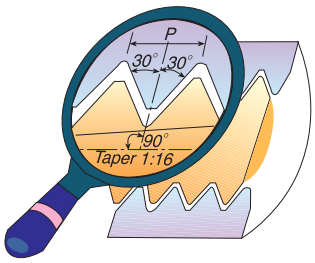
Pitch TPI	L mm	I.C.	Number of Teeth	***EXTERNAL*** Ordering Code	Anvil	***INTERNAL*** Ordering Code	Anvil	X	Y
14	16	3/8	2	**16 ER 14 W 2M**	AE16M	**16 IR 14 W 2M**	AI16M	.07	.11
14	22	1/2	3	**22 ER 14 W 3M**	AE22M	**22 IR 14 W 3M**	AI22M	.11	.18
11	22	1/2	2	**22 ER 11 W 2M**	AE22M	**22 IR 11 W 2M**	AI22M	.09	.13

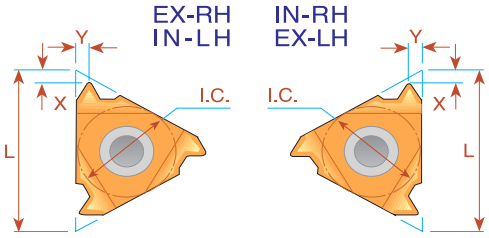
Order example: 16 ER 14 W 2M MXC

For recommended number of passes see page 57

For Carbide Grade and Cutting Speed see page 56

NPT



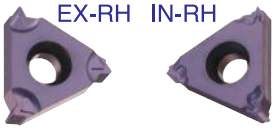


Pitch TPI	L mm	I.C.	EXTERNAL Ordering Code Right Hand	EXTERNAL Ordering Code Left Hand	INTERNAL Ordering Code Right Hand	INTERNAL Ordering Code Left Hand	X	Y
27	6	5/32	ULTRA MINIATURE →		*06 IR 27 NPT	*06 IL 27 NPT	.02	.02
27	8	3/16			*08 IR 27 NPT	*08 IL 27 NPT	.02	.02
18	8	3/16	MINIATURE →		*08 IR 18 NPT	*08 IL 18 NPT	.02	.02
27	11	1/4	11 ER 27 NPT	11 EL 27 NPT	11 IR 27 NPT	11 IL 27 NPT	.03	.03
18	11	1/4	11 ER 18 NPT	11 EL 18 NPT	11 IR 18 NPT	11 IL 18 NPT	.03	.04
14	11	1/4	11 ER 14 NPT	11 EL 14 NPT	11 IR 14 NPT	11 IL 14 NPT	.03	.04
27	16	3/8	16 ER 27 NPT	16 EL 27 NPT	16 IR 27 NPT	16 IL 27 NPT	.03	.03
18	16	3/8	16 ER 18 NPT	16 EL 18 NPT	16 IR 18 NPT	16 IL 18 NPT	.03	.04
14	16	3/8	16 ER 14 NPT	16 EL 14 NPT	16 IR 14 NPT	16 IL 14 NPT	.04	.05
11.5	16	3/8	16 ER 11.5 NPT	16 EL 11.5 NPT	16 IR 11.5 NPT	16 IL 11.5 NPT	.04	.06
8	16	3/8	16 ER 8 NPT	16 EL 8 NPT	16 IR 8 NPT	16 IL 8 NPT	.05	.07

Order example: 16 ER 14 NPT MXC
* Available only in BXC and BMA grades

Type B

Ground Profile with Sintered Chip-breaker

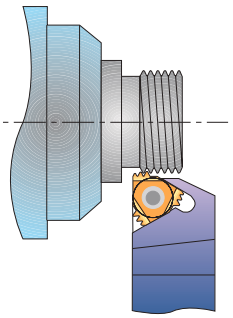


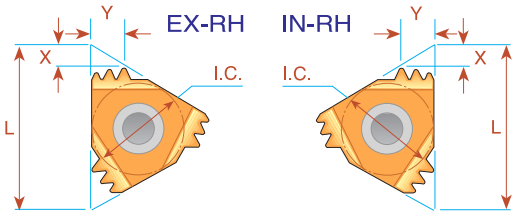
Pitch TPI	L mm	I.C.	EXTERNAL Ordering Code Right Hand	INTERNAL Ordering Code Right Hand	X	Y
18	16	3/8	16 ER B 18 NPT	16 IR B 18 NPT	.03	.04
14	16	3/8	16 ER B 14 NPT	16 IR B 14 NPT	.04	.05
11.5	16	3/8	16 ER B 11.5 NPT	16 IR B 11.5 NPT	.04	.06
8	16	3/8	16 ER B 8 NPT	16 IR B 8 NPT	.05	.07

Order example: 16 IR B 11.5 NPT BMA

For Carbide Grade and Cutting Speed see page 56

NPT
Multitooth



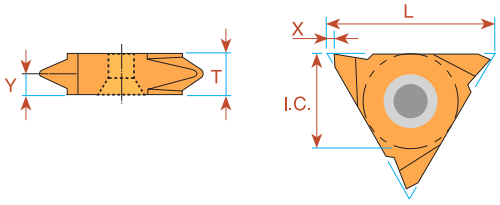


Pitch TPI	L mm	I.C.	Number of Teeth	EXTERNAL Ordering Code	Anvil	INTERNAL Ordering Code	Anvil	X	Y
14	16	3/8	2	**16 ER 14 NPT 2M**	AE16M	**16 IR 14 NPT 2M**	AI16M	.07	.11
11.5	22	1/2	2	**22 ER 11.5 NPT 2M**	AE22M	**22 IR 11.5 NPT 2M**	AI22M	.09	.14
11.5	27	5/8	3	**27 ER 11.5 NPT 3M**	AE27M	**27 IR 11.5 NPT 3M**	AI27M	.13	.22
8	27	5/8	2	**27 ER 8 NPT 2M**	AE27M	**27 IR 8 NPT 2M**	AI27M	.12	.20

Order example: 22 ER 11.5 NPT 2M MXC

For recommended number of passes see page 57

NPT
Vertical

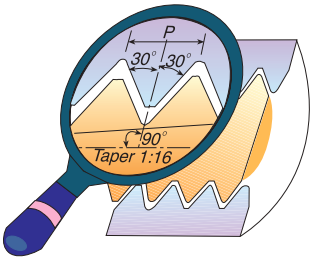


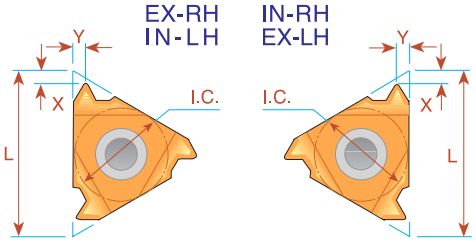
Pitch TPI	L mm	I.C.	EXTERNAL Ordering Code Right Hand	EXTERNAL Ordering Code Left Hand	X	Y	T
27	16	3/8	**16V ER 27 NPT**	**16V EL 27 NPT**	.04	.03	.14
18	16	3/8	**16V ER 18 NPT**	**16V EL 18 NPT**	.04	.04	.14
14	16	3/8	**16V ER 14 NPT**	**16V EL 14 NPT**	.04	.05	.14
11.5	16	3/8	**16V ER 11.5 NPT**	**16V EL 11.5 NPT**	.04	.06	.14

Order example: 16V ER 14 NPT BMA

For Carbide Grade and Cutting Speed see page 56

NPTF - Dryseal



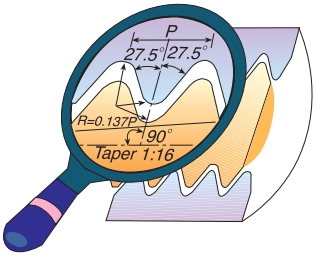


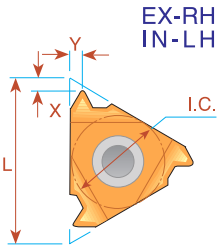
Pitch TPI	L mm	I.C.	EXTERNAL Ordering Code Right Hand	EXTERNAL Ordering Code Left Hand	INTERNAL Ordering Code Right Hand	INTERNAL Ordering Code Left Hand	X	Y
27	6	5/32	*ULTRA MINIATURE* →		*06 IR 27 NPTF	*06 IL 27 NPTF	.03	.02
27	8	3/16			*08 IR 27 NPTF	*08 IL 27 NPTF	.02	.02
18	8	3/16	*MINIATURE* →		*08 IR 18 NPTF	*08 IL 18 NPTF	.02	.02
27	11	1/4	11 ER 27 NPTF	11 EL 27 NPTF	11 IR 27 NPTF	11 IL 27 NPTF	.03	.03
18	11	1/4	11 ER 18 NPTF	11 EL 18 NPTF	11 IR 18 NPTF	11 IL 18 NPTF	.03	.04
14	11	1/4	11 ER 14 NPTF	11 EL 14 NPTF	11 IR 14 NPTF	11 IL 14 NPTF	.03	.04
27	16	3/8	16 ER 27 NPTF	16 EL 27 NPTF	16 IR 27 NPTF	16 IL 27 NPTF	.03	.03
18	16	3/8	16 ER 18 NPTF	16 EL 18 NPTF	16 IR 18 NPTF	16 IL 18 NPTF	.03	.04
14	16	3/8	16 ER 14 NPTF	16 EL 14 NPTF	16 IR 14 NPTF	16 IL 14 NPTF	.04	.05
11.5	16	3/8	16 ER 11.5 NPTF	16 EL 11.5 NPTF	16 IR 11.5 NPTF	16 IL 11.5 NPTF	.04	.06
8	16	3/8	16 ER 8 NPTF	16 EL 8 NPTF	16 IR 8 NPTF	16 IL 8 NPTF	.05	.07

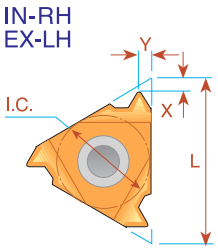
Order example: 11 ER 27 NPTF MXC
* Available only in BXC and BMA grades

For Carbide Grade and Cutting Speed see page 56

BSPT







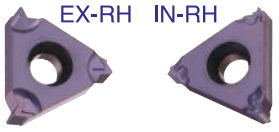
Pitch TPI	L mm	I.C.	EXTERNAL Ordering Code Right Hand	EXTERNAL Ordering Code Left Hand	INTERNAL Ordering Code Right Hand	INTERNAL Ordering Code Left Hand	X	Y
28	6	5/32	*ULTRA MINIATURE* →		***06 IR 28 BSPT**	***06 IL 28 BSPT**	.03	.02
28	8	3/16			***08 IR 28 BSPT**	***08 IL 28 BSPT**	.02	.02
19	8	3/16	*MINIATURE* →		***08 IR 19 BSPT**	***08 IL 19 BSPT**	.02	.02
28	11	1/4			**11 IR 28 BSPT**	**11 IL 28 BSPT**	.02	.02
19	11	1/4			**11 IR 19 BSPT**	**11 IL 19 BSPT**	.03	.04
14	11	1/4			**11 IR 14 BSPT**	**11 IL 14 BSPT**	.04	.04
11	11	1/4			**11 IR 11 BSPT**	**11 IL 11 BSPT**	.04	.05
28	16	3/8	**16 ER 28 BSPT**	**16 EL 28 BSPT**	**16 IR 28 BSPT**	**16 IL 28 BSPT**	.02	.03
19	16	3/8	**16 ER 19 BSPT**	**16 EL 19 BSPT**	**16 IR 19 BSPT**	**16 IL 19 BSPT**	.03	.04
14	16	3/8	**16 ER 14 BSPT**	**16 EL 14 BSPT**	**16 IR 14 BSPT**	**16 IL 14 BSPT**	.04	.05
11	16	3/8	**16 ER 11 BSPT**	**16 EL 11 BSPT**	**16 IR 11 BSPT**	**16 IL 11 BSPT**	.04	.06

Order example: 11 IR 14 BSPT BMA

* Available only in BXC and BMA grades

Type B

Ground Profile with Sintered Chip-breaker

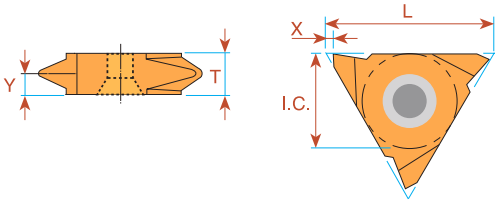


Pitch TPI	L mm	I.C.	EXTERNAL Ordering Code Right Hand	INTERNAL Ordering Code Right Hand	X	Y
19	16	3/8	**16 ER B 19 BSPT**		.04	.04
14	16	3/8	**16 ER B 14 BSPT**	**16 IR B 14 BSPT**	.04	.05
11	16	3/8	**16 ER B 11 BSPT**	**16 IR B 11 BSPT**	.04	.06

Order example: 16 ER B 11BSPT BMA

For Carbide Grade and Cutting Speed see page 56

BSPT
Vertical

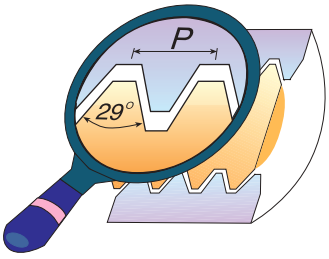


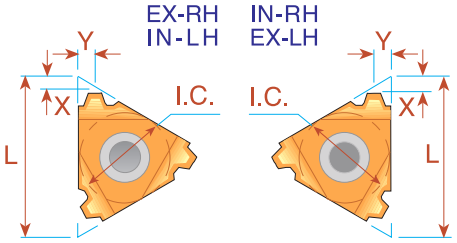
Pitch TPI	L mm	I.C.	EXTERNAL Ordering Code Right Hand	EXTERNAL Ordering Code Left Hand	X	Y	T
28	16	3/8	**16V ER 28 BSPT**	**16V EL 27 BSPT**	.04	.02	.14
19	16	3/8	**16V ER 19 BSPT**	**16V EL 19 BSPT**	.04	.04	.14
14	16	3/8	**16V ER 14 BSPT**	**16V EL 14 BSPT**	.04	.05	.14
11	16	3/8	**16V ER 11 BSPT**	**16V EL 11 BSPT**	.04	.06	.14

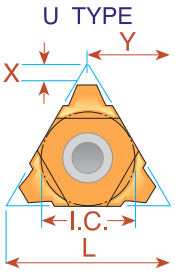
Order example: 16V ER 19 BSPT BMA

For Carbide Grade and Cutting Speed see page 56

Acme



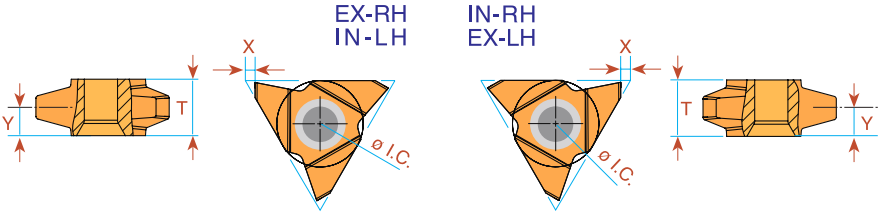




Pitch TPI	L mm	I.C.	EXTERNAL Ordering Code Right Hand	EXTERNAL Ordering Code Left Hand	INTERNAL Ordering Code Right Hand	INTERNAL Ordering Code Left Hand	X	Y
16	8	3/16	*MINIATURE* →		**08 IR 16 ACME	**08 IL 16 ACME	.02	.02
14	8U	3/16U	*"U" MINIATURE* →		*08U IR/L 14 ACME		.03	.16
12	8U	3/16U			*08U IR/L 12 ACME		.03	.16
10	8U	3/16U			*08U IR/L 10 ACME		.03	.16
16	11	1/4	11 ER 16 ACME	11 EL 16 ACME	11 IR 16 ACME	11 IL 16 ACME	.04	.04
16	16	3/8	16 ER 16 ACME	16 EL 16 ACME	16 IR 16 ACME	16 IL 16 ACME	.04	.04
14	16	3/8	16 ER 14 ACME	16 EL 14 ACME	16 IR 14 ACME	16 IL 14 ACME	.04	.05
12	16	3/8	16 ER 12 ACME	16 EL 12 ACME	16 IR 12 ACME	16 IL 12 ACME	.04	.05
10	16	3/8	16 ER 10 ACME	16 EL 10 ACME	16 IR 10 ACME	16 IL 10 ACME	.05	.05
8	16	3/8	16 ER 8 ACME	16 EL 8 ACME	16 IR 8 ACME	16 IL 8 ACME	.06	.05
6	16	3/8	16 ER 6 ACME	16 EL 6 ACME	16 IR 6 ACME	16 IL 6 ACME	.07	.07
6	22	1/2	22 ER 6 ACME	22 EL 6 ACME	22 IR 6 ACME	22 IL 6 ACME	.07	.08
5	22	1/2	22 ER 5 ACME	22 EL 5 ACME	22 IR 5 ACME	22 IL 5 ACME	.08	.09
4	22	1/2	22 ER 4 ACME	22 EL 4 ACME	22 IR 4 ACME	22 IL 4 ACME	.08	.09
4	22U	1/2U	22U ER/L 4 ACME		22U IR/L 4 ACME		.09	.43
4	27	5/8	27 ER 4 ACME	27 EL 4 ACME	27 IR 4 ACME	27 IL 4 ACME	.09	.11
3	27U	5/8U	27U ER/L 3 ACME		27U IR/L 3 ACME		.11	.54
2	33U	3/4U	33U ER/L 2 ACME		33U IR/L 2 ACME		.17	.67

Order example: 16 ER 16 ACME MXC
* Available only in BXC and BMA grades
** One cutting edge

Acme
Vertical

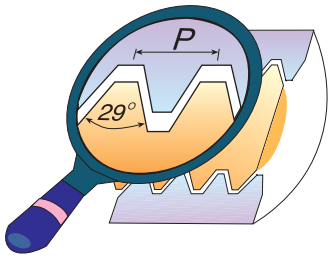


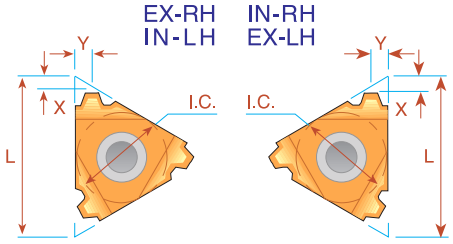
Pitch TPI	L mm	I.C.	EXTERNAL Ordering Code Right Hand	EXTERNAL Ordering Code Left Hand	X	Y	T	INTERNAL Ordering Code Right Hand	INTERNAL Ordering Code Left Hand	X	Y	T
* 3.5	27	5/8	27V ER 3.5 ACME	———	.07	.20	.41	27V IR 3.5 ACME	———	.07	.16	.41
** 3	27	5/8	27V ER 3 ACME	———	.07	.20	.41	27V IR 3 ACME	———	.07	.18	.41
*** 2	27	5/8	27V ER 2 ACME	27V EL 2 ACME	.07	.20	.41	27V IR 2 ACME	27V IL 2 ACME	.07	.20	.41

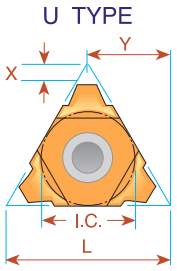
Order example: 27V ER 2 ACME BMA
* Minimum bore: Ø2.17" ** Minimum bore: Ø2.17" *** Minimum bore: Ø3"

For Carbide Grade and Cutting Speed see page 56

Stub Acme





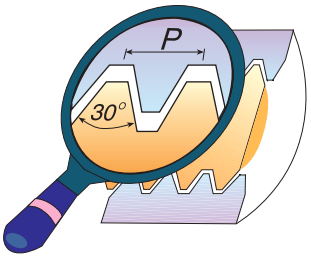


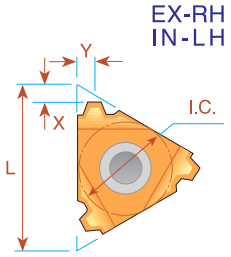
Pitch TPI	L mm	I.C.	EXTERNAL Ordering Code Right Hand	EXTERNAL Ordering Code Left Hand	INTERNAL Ordering Code Right Hand	INTERNAL Ordering Code Left Hand	X	Y
16	8	3/16	*MINIATURE* →		**08 IR 16 STACME	**08 IL 16 STACME	.02	.02
14	8U	3/16U			*08U IR/L 14 STACME		.03	.16
12	8U	3/16U	*"U" MINIATURE* →		*08U IR/L 12 STACME		.04	.16
10	8U	3/16U			*08U IR/L 10 STACME		.04	.16
16	11	1/4	11 ER 16 STACME	11 EL 16 STACME			.04	.04
16	16	3/8	16 ER 16 STACME	16 EL 16 STACME	16 IR 16 STACME	16 IL 16 STACME	.04	.04
14	16	3/8	16 ER 14 STACME	16 EL 14 STACME	16 IR 14 STACME	16 IL 14 STACME	.04	.04
12	16	3/8	16 ER 12 STACME	16 EL 12 STACME	16 IR 12 STACME	16 IL 12 STACME	.05	.05
10	16	3/8	16 ER 10 STACME	16 EL 10 STACME	16 IR 10 STACME	16 IL 10 STACME	.05	.05
8	16	3/8	16 ER 8 STACME	16 EL 8 STACME	16 IR 8 STACME	16 IL 8 STACME	.06	.06
6	16	3/8	16 ER 6 STACME	16 EL 6 STACME	16 IR 6 STACME	16 IL 6 STACME	.07	.07
5	22	1/2	22 ER 5 STACME	22 EL 5 STACME	22 IR 5 STACME	22 IL 5 STACME	.08	.09
4	22	1/2	22 ER 4 STACME	22 EL 4 STACME	22 IR 4 STACME	22 IL 4 STACME	.09	.09
4	22U	1/2U	22U ER/L 4 STACME		22U IR/L 4 STACME		.10	.43
3	22U	1/2U	22U ER/L 3 STACME		22U IR/L 3 STACME		.13	.43
4	27	5/8	27 ER 4 STACME	27 EL 4 STACME	27 IR 4 STACME	27 IL 4 STACME	.09	.09
3	27	5/8	27 ER 3 STACME	27 EL 3 STACME	27 IR 3 STACME	27 IL 3 STACME	.11	.11
2	33U	3/4U	33U ER/L 2 STACME		33U IR/L 2 STACME		.20	.67

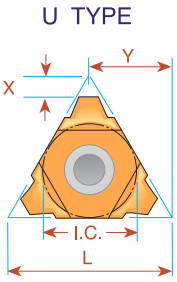
Order example: 22 IR 5 STACME MXC
* Available only in BXC and BMA grades
** One cutting edge

For Carbide Grade and Cutting Speed see page 56

Trapez - DIN 103



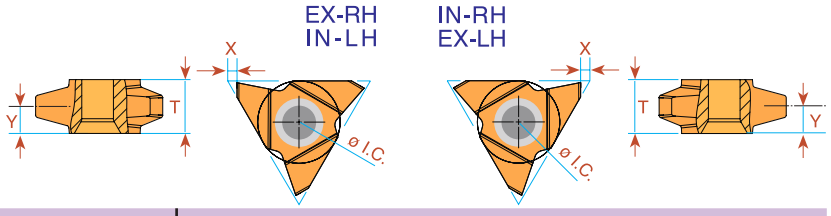




Pitch mm	L mm	I.C.	EXTERNAL Ordering Code Right Hand	EXTERNAL Ordering Code Left Hand	INTERNAL Ordering Code Right Hand	INTERNAL Ordering Code Left Hand	X	Y
1.5	8	3/16	*MINIATURE* →		**08 IR 1.5 TR	**08 IL 1.5 TR	.02	.02
2.0	8U	3/16U	*"U" MINIATURE* →		*08U IR/L 2 TR		.04	.16
1.5	16	3/8	16 ER 1.5 TR	16 EL 1.5 TR			.04	.04
2.0	16	3/8	16 ER 2 TR	16 EL 2 TR	16 IR 2 TR	16 IL 2 TR	.04	.05
3.0	16	3/8	16 ER 3 TR	16 EL 3 TR	16 IR 3 TR	16 IL 3 TR	.05	.06
4.0	16	3/8	16 ER 4 TR	16 EL 4 TR	16 IR 4 TR	16 IL 4 TR	.05	.06
4.0	22	1/2	22 ER 4 TR	22 EL 4 TR	22 IR 4 TR	22 IL 4 TR	.07	.07
5.0	22	1/2	22 ER 5 TR	22 EL 5 TR	22 IR 5 TR	22 IL 5 TR	.08	.09
6.0	22	1/2	22 ER 6 TR	22 EL 6 TR	22 IR 6 TR	22 IL 6 TR	.08	.09
6.0	22U	1/2U	22U ER/L 6 TR		22U IR/L 6 TR		.08	.43
7.0	22U	1/2U	22U ER/L 7 TR		22U IR/L 7 TR		.09	.43
8.0	22U	1/2U	22U ER/L 8 TR		22U IR/L 8 TR		.10	.43
6.0	27	5/8	27 ER 6 TR	27 EL 6 TR	27 IR 6 TR	27 IL 6 TR	.09	.11
7.0	27	5/8	27 ER 7 TR	27 EL 7 TR	27 IR 7 TR	27 IL 7 TR	.09	.10
8.0	27U	5/8U	27U ER/L 8 TR		27U IR/L 8 TR		.10	.54
9.0	27U	5/8U	27U ER/L 9 TR		27U IR/L 9 TR		.12	.54
10.0	27U	5/8U	**27U ER/L 10 TR		**27U IR/L 10 TR		.13	.54
12.0	33U	3/4U	33U ER/L 12 TR		33U IR/L 12 TR		.15	.67

Order example: 22 IR 5 TR MXC
* Available only in BXC and BMA grades
** One cutting edge

Trapez - DIN 103
Vertical



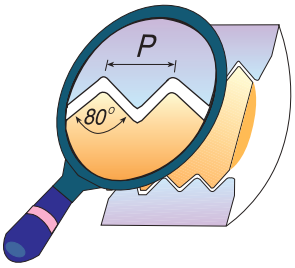
Pitch mm	L mm	I.C.	EXTERNAL Ordering Code Right Hand	EXTERNAL Ordering Code Left Hand	INTERNAL Ordering Code Right Hand	INTERNAL Ordering Code Left Hand	X	Y	T
* 9	27	5/8	27V ER 9 TR	27V EL 9 TR	27V IR 9 TR	27V IL 9 TR	.07	.21	.41
** 10	27	5/8	27V ER 10 TR	27V EL 10 TR	27V IR 10 TR	27V IL 10 TR	.07	.21	.41
*** 12	27	5/8	27V ER 12 TR	27V EL 12 TR	27V IR 12 TR	27V IL 12 TR	.07	.21	.41

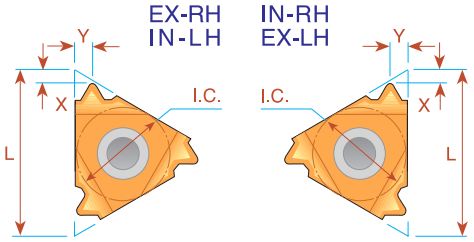
Order example: 27V ER 10 TR BMA

* Minimum bore: Ø2.56" ** Minimum bore: Ø2.56" *** Minimum bore: Ø2.87"

For Carbide Grade and Cutting Speed see page 56

PG - DIN 40430

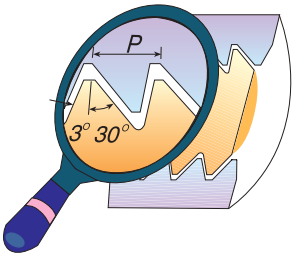




Pitch TPI	L mm	I.C.	EXTERNAL Ordering Code Right Hand	EXTERNAL Ordering Code Standard	INTERNAL Ordering Code Right Hand	INTERNAL Ordering Code Standard	X	Y
20	8	3/16	*MINIATURE* →		***08 IR 20 PG**	(PG 7)	.02	.03
18	11	1/4			**11 IR 18 PG**	(PG 9)	.03	.04
20	16	3/8	**16 ER 20 PG**	(PG 7)			.03	.03
18	16	3/8	**16 ER 18 PG**	(PG 9, 11, 13.5, 16)	**16 IR 18 PG**	(PG 11, 13.5, 16)	.03	.04
16	16	3/8	**16 ER 16 PG**	(PG 21, 29, 36, 42, 48)	**16 IR 16 PG**	(PG 21, 29, 36, 42, 48)	.03	.04

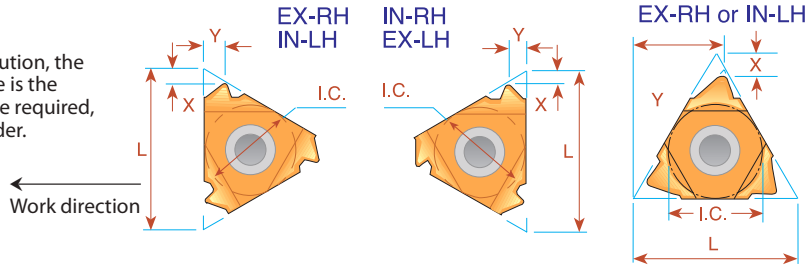
Order example: 16 ER 16 PG BMA
* Available only in BXC and BMA grades

Sagengewinde - DIN 513



IMPORTANT NOTE:
In Carmex standard execution, the flank with the large angle is the leading edge. If otherwise required, please specify in your order.

Work direction

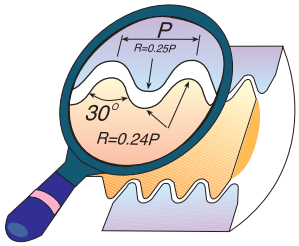


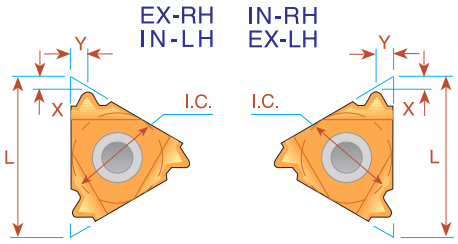
Pitch TPI	L mm	I.C.	EXTERNAL Ordering Code Right Hand	EXTERNAL Ordering Code Left Hand	X	Y	INTERNAL Ordering Code Right Hand	INTERNAL Ordering Code Left Hand	X	Y
2.0	16	3/8	**16 ER 2 SAGE**	**16 EL 2 SAGE**	.04	.06	**16 IR 2 SAGE**	**16 IL 2 SAGE**	.05	.07
3.0	22	1/2	**22 ER 3 SAGE**	**22 EL 3 SAGE**	.06	.09	**22 IR 3 SAGE**	**22 IL 3 SAGE**	.07	.11
4.0	22	1/2	**22 ER 4 SAGE**	**22 EL 4 SAGE**	.07	.12	**22 IR 4 SAGE**	**22 IL 4 SAGE**	.09	.14
*5.0	22U	1/2U	**22U ER 5 SAGE**	**22U EL 5 SAGE**	.05	.46	**22U IR 5 SAGE**	**22U IL 5 SAGE**	.07	.46
*6.0	22U	1/2U	**22U ER 6 SAGE**	**22U EL 6 SAGE**	.05	.46	**22U IR 6 SAGE**	**22U IL 6 SAGE**	.08	.47

Order example: 22 IR 4 SAGE BMA
* Requires a special anvil AER 22U-1.5 SAGE 5/6, AEL 22U-1.5 SAGE 5/6, AIR 22U-1.5 SAGE 5/6, AIL 22U-1.5 SAGE 5/6.

For Carbide Grade and Cutting Speed see page 56

Round - DIN 405

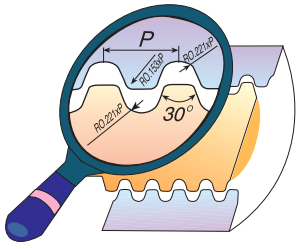


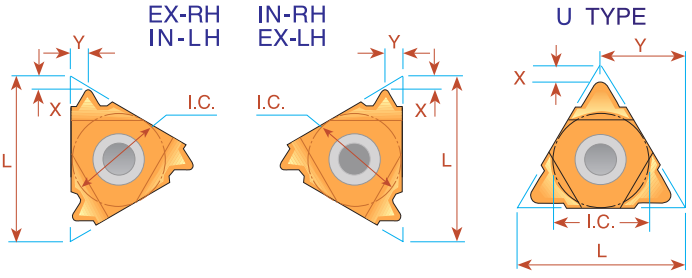


Pitch TPI	L mm	I.C.	EXTERNAL Ordering Code Right Hand	EXTERNAL Ordering Code Left Hand	X	Y	INTERNAL Ordering Code Right Hand	INTERNAL Ordering Code Left Hand	X	Y
10	16	3/8	**16 ER 10 RD**	**16 EL 10 RD**	.04	.05	**16 IR 10 RD**	**16 IL 10 RD**	.04	.05
8	16	3/8	**16 ER 8 RD**	**16 EL 8 RD**	.06	.05	**16 IR 8 RD**	**16 IL 8 RD**	.06	.06
6	16	3/8	**16 ER 6 RD**	**16 EL 6 RD**	.06	.07	**16 IR 6 RD**	**16 IL 6 RD**	.06	.06
6	22	1/2	**22 ER 6 RD**	**22 EL 6 RD**	.06	.07	**22 IR 6 RD**	**22 IL 6 RD**	.06	.07
4	22	1/2	**22 ER 4 RD**	**22 EL 4 RD**	.09	.09	**22 IR 4 RD**	**22 IL 4 RD**	.09	.09
4	27	5/8	**27 ER 4 RD**	**27 EL 4 RD**	.09	.09	**27 IR 4 RD**	**27 IL 4 RD**	.09	.09

Order example: 27 IL 4 RD BMA

Round - DIN 20400





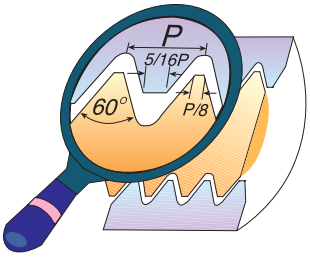
Pitch mm	L mm	I.C.	EXTERNAL Ordering Code Right Hand	INTERNAL Ordering Code Right Hand	X	Y
4.0	22	1/2	**22 ER 4.0 RD 20400**	**22 IR 4.0 RD 20400**	.06	.06
5.0	22	1/2	**22 ER 5.0 RD 20400**	**22 IR 5.0 RD 20400**	.07	.07
6.0	22	1/2	**22 ER 6.0 RD 20400**	**22 IR 6.0 RD 20400**	.07	.08
8.0	27U	5/8U	***27U - 8.0 RD 20400**		.12	.54
10.0	27U	5/8U	***27U - 10.0 RD 20400**		.13	.54

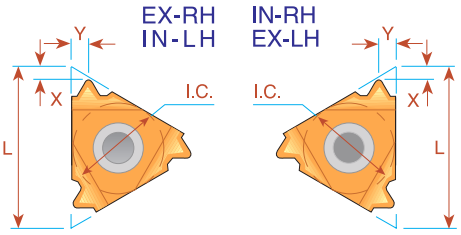
Order example: 22 ER 4.0 RD 20400 MXC

* Same insert for Internal and External Right Hand Thread

For Carbide Grade and Cutting Speed see page 56

UNJ UNJC, UNJF, UNJEF, UNJS



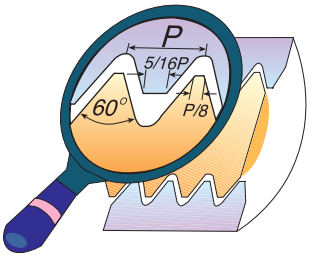


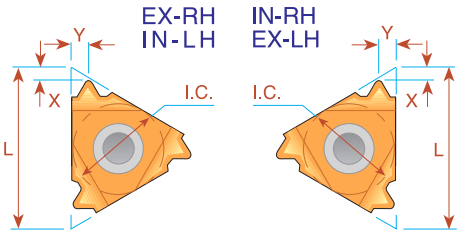
Pitch TPI	L mm	I.C.	EXTERNAL Ordering Code Right Hand	EXTERNAL Ordering Code Left Hand	INTERNAL Ordering Code Right Hand	INTERNAL Ordering Code Left Hand	X	Y
48	11	1/4	11 ER 48 UNJ	11 EL 48 UNJ	11 IR 48 UNJ	11 IL 48 UNJ	.02	.02
44	11	1/4	11 ER 44 UNJ	11 EL 44 UNJ	11 IR 44 UNJ	11 IL 44 UNJ	.02	.02
40	11	1/4	11 ER 40 UNJ	11 EL 40 UNJ	11 IR 40 UNJ	11 IL 40 UNJ	.02	.02
36	11	1/4	11 ER 36 UNJ	11 EL 36 UNJ	11 IR 36 UNJ	11 IL 36 UNJ	.02	.02
32	11	1/4	11 ER 32 UNJ	11 EL 32 UNJ	11 IR 32 UNJ	11 IL 32 UNJ	.02	.02
28	11	1/4	11 ER 28 UNJ	11 EL 28 UNJ	11 IR 28 UNJ	11 IL 28 UNJ	.02	.02
24	11	1/4	11 ER 24 UNJ	11 EL 24 UNJ	11 IR 24 UNJ	11 IL 24 UNJ	.03	.03
20	11	1/4	11 ER 20 UNJ	11 EL 20 UNJ	11 IR 20 UNJ	11 IL 20 UNJ	.03	.04
18	11	1/4	11 ER 18 UNJ	11 EL 18 UNJ	11 IR 18 UNJ	11 IL 18 UNJ	.03	.04
16	11	1/4	11 ER 16 UNJ	11 EL 16 UNJ	11 IR 16 UNJ	11 IL 16 UNJ	.03	.04
14	11	1/4	11 ER 14 UNJ	11 EL 14 UNJ	11 IR 14 UNJ	11 IL 14 UNJ	.04	.04
48	16	3/8	16 ER 48 UNJ	16 EL 48 UNJ	16 IR 48 UNJ	16 IL 48 UNJ	.02	.02
44	16	3/8	16 ER 44 UNJ	16 EL 44 UNJ	16 IR 44 UNJ	16 IL 44 UNJ	.02	.02
40	16	3/8	16 ER 40 UNJ	16 EL 40 UNJ	16 IR 40 UNJ	16 IL 40 UNJ	.02	.02
36	16	3/8	16 ER 36 UNJ	16 EL 36 UNJ	16 IR 36 UNJ	16 IL 36 UNJ	.02	.02
32	16	3/8	16 ER 32 UNJ	16 EL 32 UNJ	16 IR 32 UNJ	16 IL 32 UNJ	.02	.02
28	16	3/8	16 ER 28 UNJ	16 EL 28 UNJ	16 IR 28 UNJ	16 IL 28 UNJ	.02	.02
24	16	3/8	16 ER 24 UNJ	16 EL 24 UNJ	16 IR 24 UNJ	16 IL 24 UNJ	.03	.03
20	16	3/8	16 ER 20 UNJ	16 EL 20 UNJ	16 IR 20 UNJ	16 IL 20 UNJ	.03	.04
18	16	3/8	16 ER 18 UNJ	16 EL 18 UNJ	16 IR 18 UNJ	16 IL 18 UNJ	.03	.04
16	16	3/8	16 ER 16 UNJ	16 EL 16 UNJ	16 IR 16 UNJ	16 IL 16 UNJ	.03	.04
14	16	3/8	16 ER 14 UNJ	16 EL 14 UNJ	16 IR 14 UNJ	16 IL 14 UNJ	.04	.05
13	16	3/8	16 ER 13 UNJ	16 EL 13 UNJ	16 IR 13 UNJ	16 IL 13 UNJ	.04	.05
12	16	3/8	16 ER 12 UNJ	16 EL 12 UNJ	16 IR 12 UNJ	16 IL 12 UNJ	.04	.06
11	16	3/8	16 ER 11 UNJ	16 EL 11 UNJ	16 IR 11 UNJ	16 IL 11 UNJ	.04	.06
10	16	3/8	16 ER 10 UNJ	16 EL 10 UNJ	16 IR 10 UNJ	16 IL 10 UNJ	.04	.06
9	16	3/8	16 ER 9 UNJ	16 EL 9 UNJ	16 IR 9 UNJ	16 IL 9 UNJ	.05	.06
8	16	3/8	16 ER 8 UNJ	16 EL 8 UNJ	16 IR 8 UNJ	16 IL 8 UNJ	.05	.06

Order example: 16 IR 16 UNJ MXC

For Carbide Grade and Cutting Speed see page 56

MJ - ISO 5855



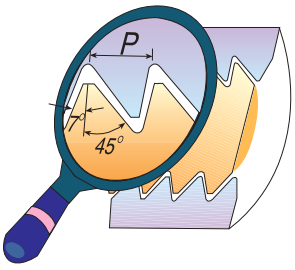


Pitch mm	L mm	I.C.	EXTERNAL Ordering Code Right Hand	INTERNAL Ordering Code Right Hand	X	Y
1.0	11	1/4		**11 IR 1.0 MJ**	.03	.03
1.25	11	1/4		**11 IR 1.25 MJ**	.03	.04
1.5	11	1/4		**11 IR 1.5 MJ**	.03	.04
2.0	11	1/4		**11 IR 2.0 MJ**	.04	.04
1.0	16	3/8	**16 ER 1.0 MJ**	**16 IR 1.0 MJ**	.03	.03
1.25	16	3/8	**16 ER 1.25 MJ**	**16 IR 1.25 MJ**	.03	.04
1.5	16	3/8	**16 ER 1.5 MJ**	**16 IR 1.5 MJ**	.03	.04
2.0	16	3/8	**16 ER 2.0 MJ**	**16 IR 2.0 MJ**	.04	.05

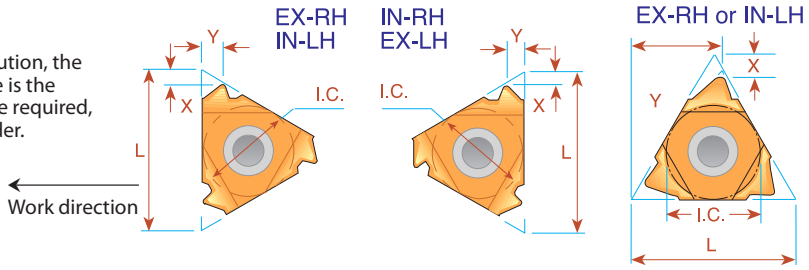
Order example: 16 ER 1.5 MJ BMA

For Carbide Grade and Cutting Speed see page 56

American Buttress



IMPORTANT NOTE:
In Carmex standard execution, the flank with the large angle is the leading edge. If otherwise required, please specify in your order.



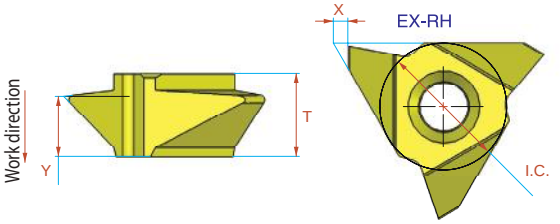
Pitch TPI	L mm	I.C.	EXTERNAL Ordering Code Right Hand	EXTERNAL Ordering Code Left Hand	INTERNAL Ordering Code Right Hand	INTERNAL Ordering Code Left Hand	X	Y
20	11	1/4	**11 ER 20 ABUT**	**11 EL 20 ABUT**	**11 IR 20 ABUT**	**11 IL 20 ABUT**	.04	.05
16	11	1/4	**11 ER 16 ABUT**	**11 EL 16 ABUT**	**11 IR 16 ABUT**	**11 IL 16 ABUT**	.04	.06
20	16	3/8	**16 ER 20 ABUT**	**16 EL 20 ABUT**	**16 IR 20 ABUT**	**16 IL 20 ABUT**	.04	.05
16	16	3/8	**16 ER 16 ABUT**	**16 EL 16 ABUT**	**16 IR 16 ABUT**	**16 IL 16 ABUT**	.04	.06
12	16	3/8	**16 ER 12 ABUT**	**16 EL 12 ABUT**	**16 IR 12 ABUT**	**16 IL 12 ABUT**	.06	.08
10	16	3/8	**16 ER 10 ABUT**	**16 EL 10 ABUT**	**16 IR 10 ABUT**	**16 IL 10 ABUT**	.06	.09
8	22	1/2	**22 ER 8 ABUT**	**22 EL 8 ABUT**	**22 IR 8 ABUT**	**22 IL 8 ABUT**	.08	.13
6	22	1/2	**22 ER 6 ABUT**	**22 EL 6 ABUT**	**22 IR 6 ABUT**	**22 IL 6 ABUT**	.08	.13
4	22U	1/2U	**22U ER 4 ABUT**	**22U EL 4 ABUT**	**22U IR 4 ABUT**	**22U IL 4 ABUT**	.09	.37
3	27U	5/8U	**27U ER 3 ABUT**	**27U EL 3 ABUT**	**27U IR 3 ABUT**	**27U IL 3 ABUT**	.12	.46

Order example: 16 IL 12 ABUT MXC

Most applications requires anvil change in toolholder see page 60

American Buttress

Vertical



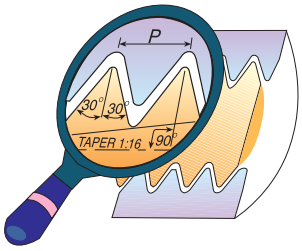
Pitch TPI	L mm	I.C.	EXTERNAL Ordering Code Right Hand	X	Y	T	INTERNAL Ordering Code Right Hand	X	Y	T
* 4	27	5/8	***27V ER 4 ABUT**	0.07	0.30	0.41	**27V IR 4 ABUT**	0.07	0.30	0.41
** 3	27	5/8	***27V ER 3 ABUT**	0.07	0.30	0.41	**27V IR 3 ABUT**	0.07	0.24	0.41

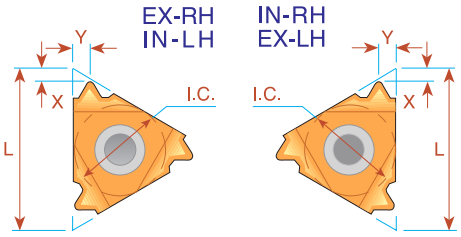
* For EXT. RH use only holders SER 1000M27V-ABUT 4/3-T10, SER1250P27V-ABUT 4/3-T10
* Minimum bore: Ø2.17" ** Minimum bore: Ø2.76"

For Carbide Grade and Cutting Speed see page 56

OIL Threads

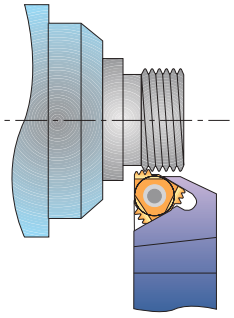
API Round

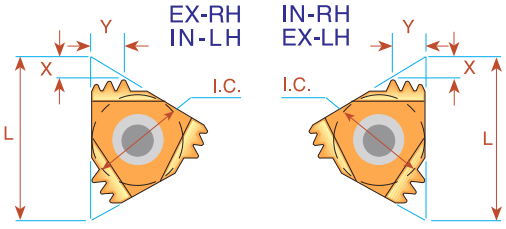




Pitch TPI	L mm	I.C.	Taper IPF	*EXTERNAL* Ordering Code Right Hand	*INTERNAL* Ordering Code Right Hand	X	Y
10	16	3/8	0.75	**16 ER 10 API RD**	**16 IR 10 API RD**	.06	.06
8	16	3/8	0.75	**16 ER 8 API RD**	**16 IR 8 API RD**	.05	.06

Multitooth





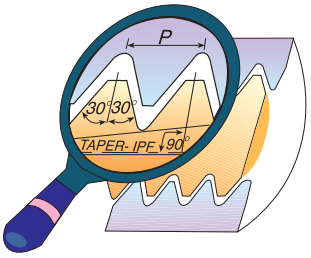
Pitch TPI	L mm	I.C.	Number of Teeth	*EXTERNAL* Ordering Code	Anvil	*INTERNAL* Ordering Code	Anvil	X	Y
10	22	1/2	2	**22 ER 10API RD 2M**	AE22M	**22 IR 10API RD 2M**	AI22M	.09	.15
10	27	5/8	3	**27 ER 10API RD 3M**	AE27M	**27 IR 10API RD 3M**	AI27M	.15	.24
8	27	5/8	2	**27 ER 8API RD 2M**	AE27M	**27 IR 8API RD 2M**	AI27M	.12	.18

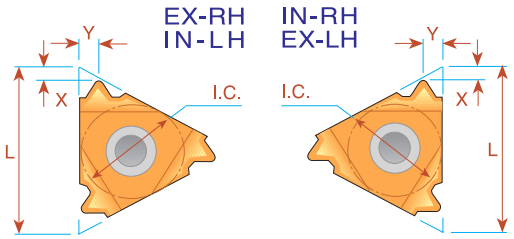
Order example: 27 IR 10 API RD 3M MXC

For recommended number of passes see page 57

For Carbide Grade and Cutting Speed see page 56

OIL Threads





V-0.040

Pitch TPI	L mm	I.C.	Taper IPF	EXTERNAL Ordering Code Right Hand	INTERNAL Ordering Code Right Hand	X	Y	Connection No. or Size
5	22	1/2	3	**22 ER 5 API 403**	**22 IR 5 API 403**	.07	.10	2 3/8-4 1/2 REG

V-0.038R

Pitch TPI	L mm	I.C.	Taper IPF	EXTERNAL Ordering Code Right Hand	INTERNAL Ordering Code Right Hand	X	Y	Connection No. or Size
4	27	5/8	2	**27 ER 4 API 382**	**27 IR 4 API 382**	.08	.08	NC23-NC50
4	27	5/8	3	**27 ER 4 API 383**	**27 IR 4 API 383**	.08	.11	NC56-NC77

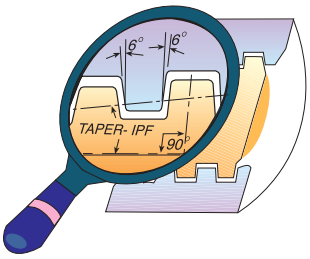
V-0.050

Pitch TPI	L mm	I.C.	Taper IPF	EXTERNAL Ordering Code Right Hand	INTERNAL Ordering Code Right Hand	X	Y	Connection No. or Size
4	27	5/8	2	**27 ER 4 API 502**	**27 IR 4 API 502**	.08	.12	6 5/8 REG
4	27	5/8	3	**27 ER 4 API 503**	**27 IR 4 API 503**	.08	.12	5 1/2, 7 5/8, 8 5/8 REG

For Carbide Grade and Cutting Speed see page 56

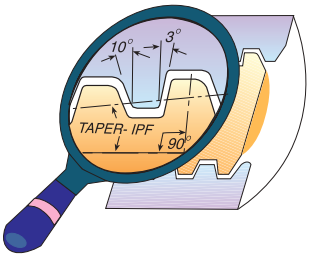
OIL Threads

Extreme - Line Casing



Pitch TPI	L mm	I.C.	Taper IPF	EXTERNAL Ordering Code Right Hand	INTERNAL Ordering Code Right Hand	X	Y	Connection No. or Size
6	22	1/2	1.50	**22 ER 6 EL 1.5**	**22 IR 6 EL 1.5**	.07	.07	5-7 5/8
5	22	1/2	1.25	**22 ER 5 EL 1.25**	**22 IR 5 EL 1.25**	.09	.09	8 5/8-10 3/4

Buttress Casing

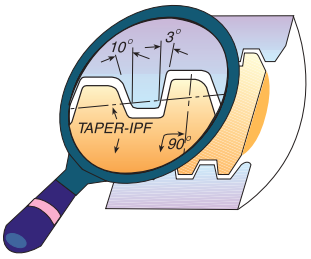


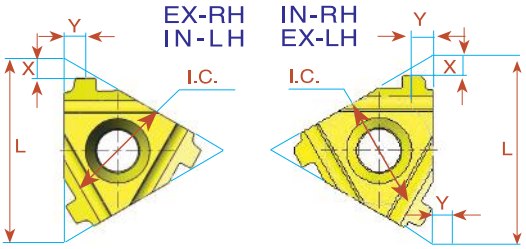
Pitch TPI	L mm	I.C.	Taper IPF	EXTERNAL Ordering Code Right Hand	INTERNAL Ordering Code Right Hand	X	Y	Connection No. or Size
5	22	1/2	0.75	**22 ER 5 BUT 0.75**	**22 IR 5 BUT 0.75**	.09	.09	4 1/2-13 3/8
5	22	1/2	1.00	**22 ER 5 BUT 1.0**	**22 IR 5 BUT 1.0**	.09	.09	16-20

Order example: 22 ER 5 BUT 0.75 MXC

For Carbide Grade and Cutting Speed see page 56

VAM





Pitch TPI	L mm	I.C.	Taper IPF	EXTERNAL Ordering Code Right Hand	X	Y	INTERNAL Ordering Code Right Hand	X	Y	Connection No. or Size
8	16	3/8	0.75	**16 ER 8 VAM**	.07	.07	**16 IR 8 VAM**	.07	.07	2 3/8" - 2 7/8"
6	22	1/2	0.75	**22 ER 6 VAM**	.09	.09	**22 IR 6 VAM**	.10	.10	3 1/2" - 4 1/2"
5	22	1/2	0.75	**22 ER 5 VAM**	.09	.11	**22 IR 5 VAM**	.09	.10	5" - 13 3/8"

Order example: 16 ER 8 VAM BMA

For Carbide Grade and Cutting Speed see page 56

Thread Turning Toolholders and Kits

Product Identification

Threading Toolholders Ordering Codes

S E R 0750 K 16 [ ]

S — Clamping Method
D = Clamp
S = Screw

E — E = External
I = Internal

R — R = Right Hand
L = Left Hand

0750 — Shank Cross Section:
External toolholders square shank

0750=3/4 x 3/4

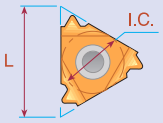
Internal toolholders & boring bars round shank

0750 = Diam. of 3/4

K — Length of Toolholder:

D = 2.5
F = 3.25
H = 4
K = 5
L = 5.5
M = 6
P = 7
R = 8
S = 10
T = 12
U = 14
V = 16

16 — Insert Pocket Size



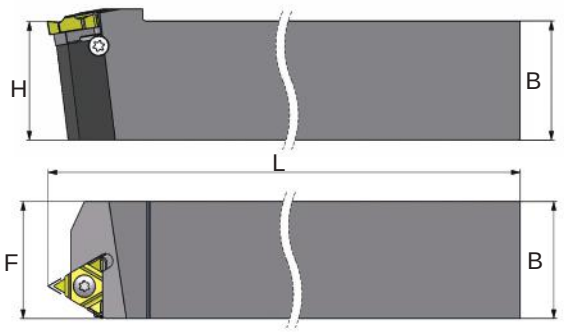
L mm	I.C.
06	5/32"
08	3/16"
08U	3/16"U
11	1/4"
16	3/8"
22	1/2"
22U	1/2"U
27	5/8"
27U	5/8"U
33U	3/4"U

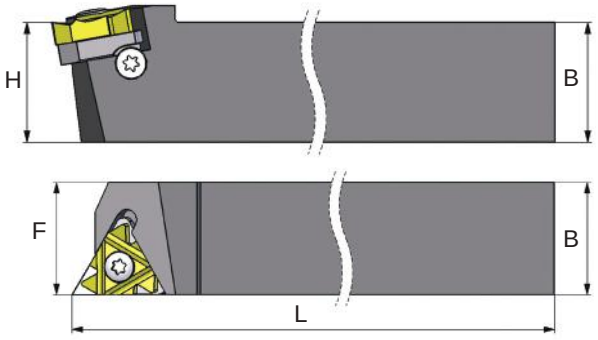
[ ]

B - With coolant bore
CB - Carbide shank
V - Vertical (on edge)
O - Offset style
D - Drop head
G - Gang tool
U - U type

External Toolholders

U TYPE





Ordering Code Right Hand	L mm	B=H	L	F	Insert Screw	Anvil Screw	Torx Key	RH Anvil	LH Anvil
***SER 0310 H11**	11	.31	4.00	.43	S11	-	K11	-	-
***SER 0375 H11**	11	.38	4.00	.43	S11	-	K11	-	-
SER 0375 D16	16	.38	2.50	.63	S16	A16	K16	AE16	AI16
SER 0500 F16	16	.50	3.25	.63	S16	A16	K16	AE16	AI16
SER 0625 H16	16	.63	4.00	.63	S16	A16	K16	AE16	AI16
SER 0750 K16	16	.75	5.00	.75	S16	A16	K16	AE16	AI16
SER 1000 M16	16	1.00	6.00	1.00	S16	A16	K16	AE16	AI16
SER 1250 P16	16	1.25	7.00	1.25	S16	A16	K16	AE16	AI16
SER 1000 M22	22	1.00	6.00	1.00	S22	A22	K22	AE22	AI22
SER 1250 P22	22	1.25	7.00	1.25	S22	A22	K22	AE22	AI22
SER 1500 R22	22	1.50	8.00	1.50	S22	A22	K22	AE22	AI22
SER 1000 M22U	22U	1.00	6.00	1.10	S22	A22	K22	AE22U	AI22U
SER 1250 P22U	22U	1.25	7.00	1.25	S22	A22	K22	AE22U	AI22U
SER 1500 R22U	22U	1.50	8.00	1.50	S22	A22	K22	AE22U	AI22U
SER 1000 M27	27	1.00	6.00	1.25	S27	A27	K27	AE27	AI27
SER 1250 P27	27	1.25	7.00	1.25	S27	A27	K27	AE27	AI27
SER 1500 R27	27	1.50	8.00	1.50	S27	A27	K27	AE27	AI27
SER 1000 M27U	27U	1.00	6.00	1.25	S27	A27	K27	AE27U	AI27U
SER 1250 P27U	27U	1.25	7.00	1.25	S27	A27	K27	AE27U	AI27U
SER 1500 R27U	27U	1.50	8.00	1.50	S27	A27	K27	AE27U	AI27U
SER 1000 M33U	33U	1.00	6.00	1.45	S33	-	K33	-	-
SER 1250 P33U	33U	1.25	7.00	1.45	S33	-	K33	-	-

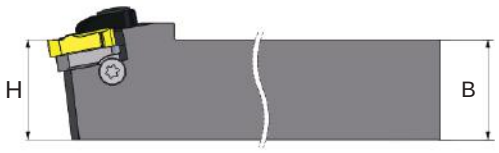
*Toolholders with no anvil

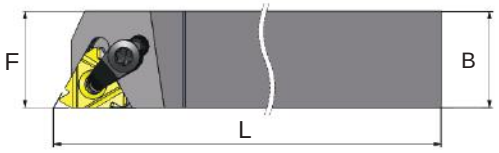
For **LEFT HAND** toolholders specify SE**L** instead of SE**R**

Toolholders are made with a **1.5˚ Helix Angle.** For other Helix Angles please consult helix angle chart (page 60) in the technical section of this catalogue.

Thread Turning Toolholders

External toolholders with top clamp

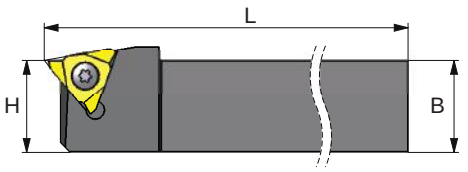




Ordering Code Right Hand	L mm	B=H	L	F	Insert Screw	Clamp	Anvil Screw	Torx Key	RH Anvil	LH Anvil
DER 0750 K16	16	.75	5.0	.75	S16	C16	A16S	K16	AE16	AI16
DER 1000 M16	16	1.00	6.0	1.00	S16	C16	A16S	K16	AE16	AI16
***DER 1000 M22**	22	1.00	6.0	1.00	S22	C22	A22	K22	AE22	AI22

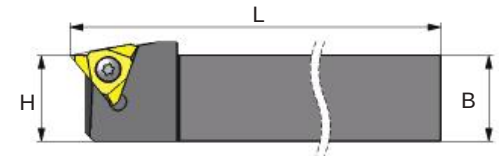
For **LEFT HAND** toolholders specify DE**L** instead of DE**R**
Toolholders are made with a **1.5˚ Helix Angle.** For other Helix Angles please consult helix angle chart in the technical section of this catalogue.
Two clamping methods can be used: screw or top clamp.
*Use K21 torx key for C22 clamp

Vertical toolholders



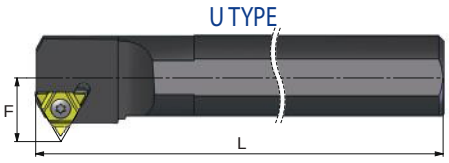
Ordering Code Right Hand	mm	B=H	L	F	Insert Screw	Torx Key
SER 0750 K16V	16	.75	5.0	.87	S16S	K16
SER 1000 M16V	16	1.00	6.0	1.06	S16S	K16
SER 1000 M22V	22	1.00	6.0	1.08	S22S	K22
SER 1000 M27V-T10	27	1.00	6.0	1.42	S27	K27
SER 1000 M27V-ABUT 4/3-T10	27	1.00	6.0	1.42	S27	K27
SER 1250 P27V-T10	27	1.25	7.0	1.42	S27	K27
SER 1250 P27V-ABUT 4/3-T10	27	1.25	7.0	1.42	S27	K27

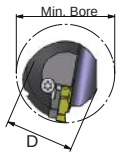
Slim Throat toolholders

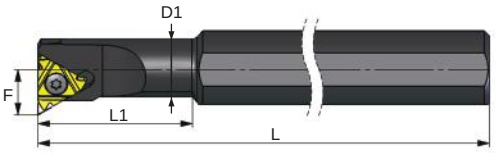


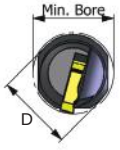
Ordering Code Right Hand	mm	B=H	L	F	Insert Screw	Torx Key
SER 0625 H16VS	16	0.63	4.0	0.71	S16S	K16
SER 0750 K16VS	16	0.75	5.0	0.87	S16S	K16
SER 1000 M16VS	16	1.00	6.0	1.06	S16S	K16

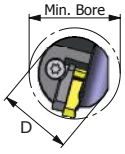
Internal Toolholders











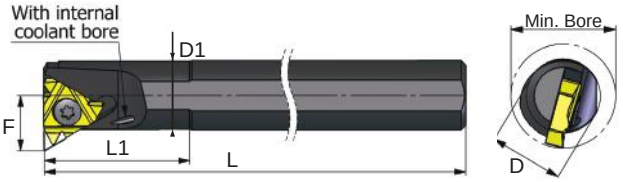
Ordering Code Right Hand	L mm	D	D1	Min Bore Diam.	L	L1	F	Insert Screw	Anvil Screw	Torx Key	RH Anvil	LH Anvil
***SIR 0205 H06**	6	.50	.20	.24	4.0	.47	.17	S06	-	K06	-	-
***SIR 0265 K08**	8	.62	.26	.31	5.0	.70	.21	S08	-	K08	-	-
***SIR 0310 K08U**	8U	.62	.29	.35	5.0	.83	.26	S08	-	K08	-	-
***SIR 0375 H11**	11	.38	.38	.47	4.0	-	.28	S11	-	K11	-	-
***SIR 0375 K11**	11	.62	.38	.47	5.0	1.00	.28	S11	-	K11	-	-
***SIR 0500 L11**	11	.62	.50	.58	5.5	1.25	.34	S11	-	K11	-	-
***SIR 0500 M16**	16	.62	.50	.64	6.0	1.25	.39	S16S	-	K16	-	-
***SIR 0625 P16**	16	.75	.62	.75	7.0	1.57	.45	S16S	-	K16	-	-
SIR 0750 P16	16	.75	.75	.90	7.0	-	.51	S16	A16	K16	AI16	AE16
SIR 1000 R16	16	1.00	1.00	1.16	8.0	-	.65	S16	A16	K16	AI16	AE16
SIR 1250 S16	16	1.25	1.25	1.40	10.0	-	.77	S16	A16	K16	AI16	AE16
SIR 1500 T16	16	1.50	1.50	1.65	12.0	-	.90	S16	A16	K16	AI16	AE16
***SIR 0750 P22**	22	.75	.75	.90	7.0	-	.59	S22S	-	K22	-	-
SIR 1000 R22	22	1.00	1.00	1.16	8.0	-	.71	S22	A22	K22	AI22	AE22
SIR 1250 S22	22	1.25	1.25	1.50	10.0	-	.85	S22	A22	K22	AI22	AE22
SIR 1500 T22	22	1.50	1.50	1.75	12.0	-	.98	S22	A22	K22	AI22	AE22
SIR 1250 S22U	22U	1.25	1.25	1.50	10.0	-	.95	S22	A22	K22	AI22U	AE22U
SIR 1500 T22U	22U	1.50	1.50	1.75	12.0	-	1.08	S22	A22	K22	AI22U	AE22U
SIR 1250 S27	27	1.25	1.25	1.56	10.0	-	.88	S27	A27	K27	AI27	AE27
SIR 1500 T27	27	1.50	1.50	1.80	12.0	-	1.00	S27	A27	K27	AI27	AE27
SIR 2000 U27	27	2.00	2.00	2.30	14.0	-	1.25	S27	A27	K27	AI27	AE27
SIR 2500 V27	27	2.50	2.50	2.80	16.0	-	1.50	S27	A27	K27	AI27	AE27
SIR 1250 S27U	27U	1.25	1.25	1.56	10.0	-	1.00	S27	A27	K27	AI27U	AE27U
SIR 1500 T27U	27U	1.50	1.50	1.80	12.0	-	1.13	S27	A27	K27	AI27U	AE27U
SIR 2000 U27U	27U	2.00	2.00	2.30	14.0	-	1.37	S27	A27	K27	AI27U	AE27U
SIR 2500 V27U	27U	2.50	2.50	2.80	16.0	-	1.61	S27	A27	K27	AI27U	AE27U
***SIR 2000 U33U**	33U	2.00	2.00	2.50	14.0	-	1.50	S33	-	K33	-	-

*Toolholders with no anvil

For **LEFT HAND** toolholders specify SI**L** instead of SI**R**

Toolholders are made with a **1.5˚ Helix Angle.** For other Helix Angles please consult helix angle chart (page 60) in the technical section of this catalogue.

Internal toolholders with coolant bore

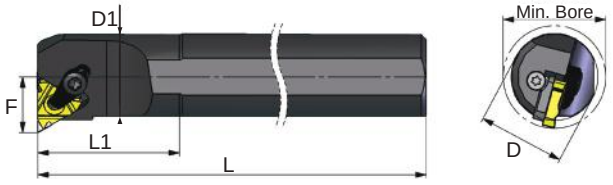


Ordering Code Right Hand	L mm	D	D1	Min Bore Diam.	L	L1	F	Insert Screw	Anvil Screw	Torx Key	RH Anvil	LH Anvil
*SIR 0375 K11B	11	.62	.38	.47	5.0	.98	.28	S11	-	K11	-	-
*SIR 0500 M16B	16	.62	.50	.64	6.0	1.26	.39	S16S	-	K16	-	-
*SIR 0625 P16B	16	.75	.63	.75	7.0	1.57	.45	S16S	-	K16	-	-
SIR 0750 P16B	16	.75	.75	.90	7.0	-	.90	S16	A16	K16	AI16	AE16
SIR 1000 R16B	16	1.00	1.00	1.16	8.0	-	.65	S16	A16	K16	AI16	AE16
SIR 1000 R22B	22	1.00	1.00	1.16	8.0	-	.71	S22	A22	K22	AI22	AE22

*Toolholders with no anvil
For **LEFT HAND** toolholders specify SI**L** instead of SI**R**

Toolholders are made with a **1.5˚ Helix Angle.** For other Helix Angles
please consult helix angle chart (page 60) in the technical section of this catalogue.

Internal toolholders with top clamp



Ordering Code Right Hand	L mm	D	D1	Min Bore Diam.	L	L1	F	Insert Screw	Clamp	Anvil Screw	Torx Key	RH Anvil	LH Anvil
DIR 0750 P16	16	.75	.75	.90	7.0	-	.51	S16	C16	A16S	K16	AI16	AE16
DIR 1000 R16	16	1.00	1.00	1.16	8.0	-	.65	S16	C16	A16S	K16	AI16	AE16
DIR 1250 S16	16	1.25	1.25	1.40	10.0	-	.77	S16	C16	A16S	K16	AI16	AE16
* DIR 1000 R22	22	1.00	1.00	1.16	8.0	-	.71	S22	C22	A22	K22	AI22	AE22

For **LEFT HAND** toolholders specify DI**L** instead of DI**R**
Two clamping methods can be used: screw or top clamp.
*Use K21 torx key for C22 clamp

Toolholders with 3.5˚ Helix Angle

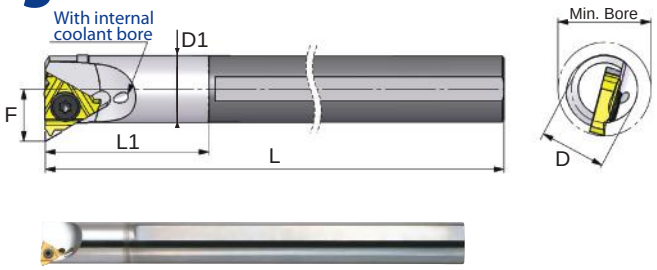
Ordering Code Right Hand	L mm	D mm	D1 mm	Min Bore Diam. mm	L mm	L1 mm	F mm	Insert Screw	Torx Key
SIR 0016 P16B-3.5	16	20	16	19	170	40	13.7	S16S	K16
SIR 0020 P22B-3.5	22	20	20	24	170	-	15.6	S22S	K22

For **LEFT HAND** toolholders specify SI**L** instead of SI**R**

Carbide Shank Threading Bars

With coolant bore

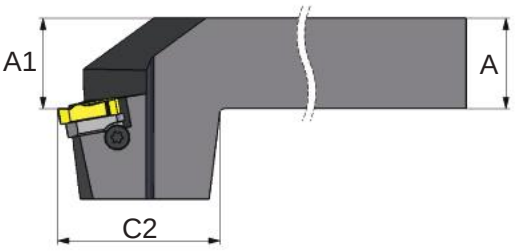
Carbide Shank Threading Bars are used when Chatter and deflection are expected due to long overhang in deep small bores.

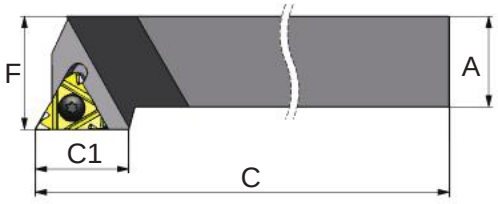


Ordering Code Right Hand	L mm	D	D1	Min Bore Diam.	L	L1	F	Insert Screw	Anvil Screw	Torx Key	RH Anvil	LH Anvil
SIR 0205 H06CB	6	.25	.20	.24	4.0	1.02	.17	S06	-	K06	-	-
SIR 0265 K08CB	8	.31	.26	.31	5.0	1.22	.21	S08	-	K08	-	-
SIR 0310 K08UCB	8U	.31	.29	.35	5.0	1.38	.26	S08	-	K08	-	-
SIR 0375 M11CB	11	.38	.38	.47	6.0	-	.28	S11	-	K11	-	-
SIR 0500 P11CB	11	.50	.50	.58	7.0	-	.34	S11	-	K11	-	-
SIR 0500 P16CB	16	.50	.50	.64	7.0	-	.40	S16S	-	K16	-	-
SIR 0625 R16CB	16	.62	.62	.75	8.0	-	.46	S16S	-	K16	-	-
***SIR 0750 S16CB**	16	.75	.75	.90	10.0	-	.54	S16	A16	K16	AI16	AE16
***SIR 1000 S16CB**	16	1.00	1.00	1.10	10.0	-	.64	S16	A16	K16	AI16	AE16

*Carbide shank Threading bars with anvil
For **LEFT HAND** toolholders specify SI**L** instead of SI**R**

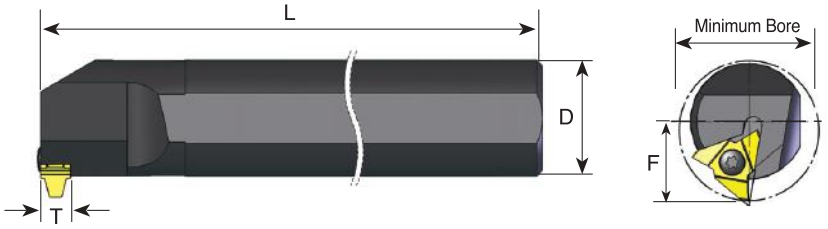
Drophead Toolholders





Ordering Code Right Hand	L mm	A	A1	C	C1	F	C2	Insert Screw	Anvil Screw	Torx Key	RH Anvil	LH Anvil
SER 0750 K16D	16	.75	.75	5.0	.84	1.00	1.5	S16	A16	K16	AE16	AI16
SER 1000 M16D	16	1.00	1.00	6.0	.84	1.25	1.5	S16	A16	K16	AE16	AI16
SER 1000 M22D	22	1.00	1.00	6.0	1.00	1.25	1.5	S22	A22	K22	AE22	AI22

Vertical Toolholders



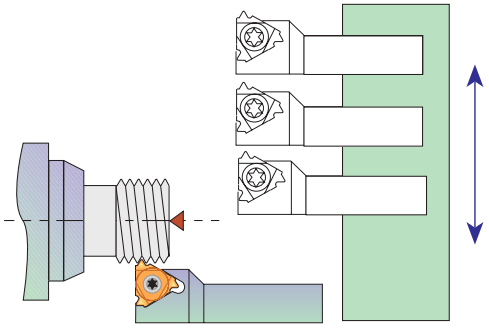
Ordering Code Right Hand	L	D	* Min Bore Diam.	L	F	T	Insert Screw	Torx Key
SIR 1250 S27V-T10	27	1.25	1.65	10	0.94	0.41	S27	K27
SIR 1500 T27V-T10	27	1.5	1.80	12	1.05	0.41	S27	K27
SIR 2000 U27V-T10	27	2.0	2.32	14	1.31	0.41	S27	K27
SIR 2500 V27V-T10	27	2.5	2.85	16	1.51	0.41	S27	K27

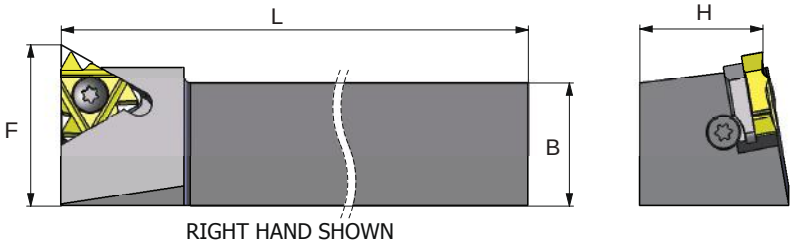
For **LEFT HAND** toolholders specify SI**L** instead of SI**R**

* To be compare with given minimum bore profile.

Gang Toolholders

Gang Toolholders are External Holders, used in small automatic machines with a gangtool post.





RIGHT HAND SHOWN

Ordering Code Right Hand	L mm	B=H mm	L mm	F mm	Insert Screw	Anvil Screw	Torx Key	RH Anvil	LH Anvil
***SER 8 8 H11G**	11	8	100	12.0	S11	-	K11	-	-
***SER 10 10 H11G**	11	10	100	14.0	S11	-	K11	-	-
SER 16 16 K16G	16	16	125	21.7	S16	A16	K16	AE16	AI16
SER 20 20 K16G	16	20	125	26.2	S16	A16	K16	AE16	AI16

*Toolholders with no anvil

For **LEFT HAND** toolholders specify SE**L** instead of SE**R**

Standard Kits

Threading Kits are a versatile solution for users that cut a variety of thread types in limited quantity and do not want to sacrifice thread quality.

External UN Kit Ordering Code:KEU

INSERTS
16 ER A60 P25C
16 ER G60 P25C
16 ER AG60 P25C
16 ER 8 UN P25C
16 ER 12 UN P25C
16 ER 14 UN P25C
16 ER 16 UN P25C
16 ER 18 UN P25C
16 ER 20 UN P25C
16 ER 24 UN P25C
TOOLHOLDERS
SER 0750 K16
KEY
K16
SCREW
S16

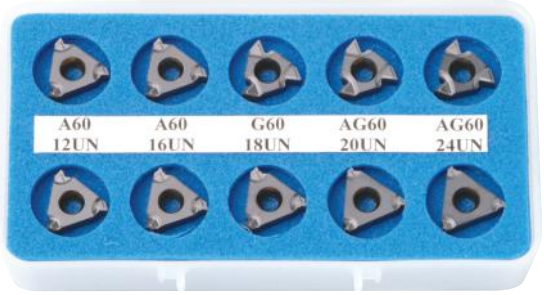
Internal UN Kit Ordering Code:KIU

INSERTS
16 IR A60 P25C
16 IR G60 P25C
16 IR AG60 P25C
16 IR 8 UN P25C
16 IR 12 UN P25C
16 IR 14 UN P25C
16 IR 16 UN P25C
16 IR 18 UN P25C
16 IR 20 UN P25C
16 IR 24 UN P25C
TOOLHOLDERS
SIR 0750 K16
KEY
K16
SCREW
S16

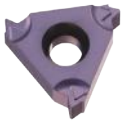
If a larger toolholders with a 1.0 inch shank is required, add to the kit 1.0. For example: KIU - 1.0

Type B Kits

Type B threading inserts.
A combination of ground profile and sintered chip-breaker threading inserts.
BMA Grade: Sub-Micron carbide grade with TiAlN multi-Layer Coating.



EXTERNAL UN KIT KEUB - BMA	
16 ER B A60	BMA-2 Pcs
16 ER B G60	BMA-1 Pcs
16 ER B AG60	BMA-2 Pcs
16 ER B 12 UN	BMA-1 Pcs
16 ER B 16 UN	BMA-1 Pcs
16 ER B 18 UN	BMA-1 Pcs
16 ER B 20 UN	BMA-1 Pcs
16 ER B 24 UN	BMA-1 Pcs



EX-RH

INTERNAL UN KIT KIUB - BMA	
16 IR B A60	BMA-2 Pcs
16 IR B G60	BMA-1 Pcs
16 IR B AG60	BMA-2 Pcs
16 IR B 12 UN	BMA-1 Pcs
16 IR B 16 UN	BMA-1 Pcs
16 IR B 18 UN	BMA-1 Pcs
16 IR B 20 UN	BMA-1 Pcs
16 IR B 24 UN	BMA-1 Pcs

IN-RH

Miniature & Ultra-miniature Kits

Ordering Code	Type	No. of Inserts	Contents Inserts	Contents Boring Bar	Key
KU60I - BXC	ULTRA	10	06 IR A60 BXC	SIR 0205 H06	K6
KM60I - BXC	MINI	10	08 IR A60 BXC	SIR 0265 K08	K8

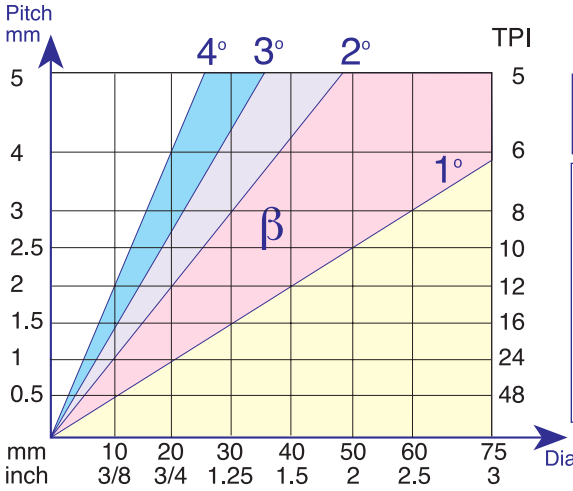
Threading & Boring Combination Kit

A practical and convenient combination kit for Ultra Miniature Threading and Boring. It enables Boring and Threading of mini bores as small as 1/4" diameter with just one deep reaching CARBIDE shank ultra mini Boring Bar.

Ordering Code	Contents Threading Insert	Turning Inserts	Boring Bar	Key
KC6TI	06 IR A60 BXC 10Pcs	06 IR TURN BMA 10Pcs	SIR 0205 H06CB	K6

BMA - Coated carbide grade for medium to high cutting speeds
BXC - Coated carbide grade for low cutting speed - 130 to 300 ft/min
CB - Carbide shank boring bar with coolant bore

Thread Helix Angle



$$\text{Tan } \beta = \frac{P}{\pi \times D}$$

Simplified formula

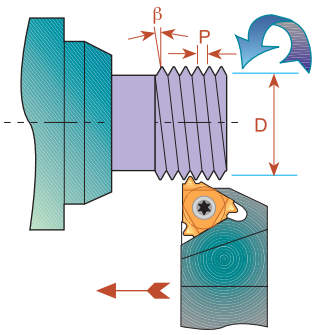
$\beta = 20P/D$

Example:

D = 1.18 "

P = 16 TPI

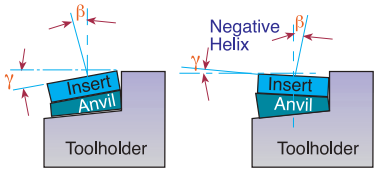
$$\beta = \frac{20}{16 \times 1.18} = 1^{\circ}$$



Standard and Slanted Anvils

CARMEX Toolholder Pockets have a built in 1.5° helix angle. This angle may be adjusted to better match the thread helix angle by simply changing the anvil.

Negative helix is usually used when threading RH thread with LH Holder or LH thread with RH Holder.



L mm	IC	Pocket Angle γ →	4.5˚	3.5˚	2.5˚	1.5˚ Standard	0.5˚	-0.5˚	-1.5˚
16	3/8	EX-RH OR IN-LH	AE16+4.5	AE16+3.5	AE16+2.5	**AE16**	AE16+0.5	AE16-0.5	AE16-1.5
16	3/8	EX-LH OR IN-RH	AI 16+4.5	AI 16+3.5	AI 16+2.5	**AI 16**	AI 16+0.5	AI 16-0.5	AI 16-1.5
22	1/2	EX-RH OR IN-LH	AE22+4.5	AE22+3.5	AE22+2.5	**AE22**	AE22+0.5	AE22-0.5	AE22-1.5
22	1/2	EX-LH OR IN-RH	AI 22+4.5	AI 22+3.5	AI 22+2.5	**AI 22**	AI 22+0.5	AI 22-0.5	AI 22-1.5
22U	1/2U	EX-RH OR IN-LH	AE22U+4.5	AE22U+3.5	AE22U+2.5	**AE22U**	AE22U+0.5	AE22U-0.5	AE22U-1.5
22U	1/2U	EX-LH OR IN-RH	AI 22U+4.5	AI 22U+3.5	AI 22U+2.5	**AI 22U**	AI 22U+0.5	AI 22U-0.5	AI 22U-1.5
27	5/8	EX-RH OR IN-LH	AE27+4.5	AE27+3.5	AE27+2.5	**AE27**	AE27+0.5	AE27-0.5	AE27-1.5
27	5/8	EX-LH OR IN-RH	AI 27+4.5	AI 27+3.5	AI 27+2.5	**AI 27**	AI 27+0.5	AI 27-0.5	AI 27-1.5
27U	5/8U	EX-RH OR IN-LH	AE27U+4.5	AE27U+3.5	AE27U+2.5	**AE27U**	AE27U+0.5	AE27U-0.5	AE27U-1.5
27U	5/8U	EX-LH OR IN-RH	AI 27U+4.5	AI 27U+3.5	AI 27U+2.5	**AI 27U**	AI 27U+0.5	AI 27U-0.5	AI 27U-1.5

Anvil Kits

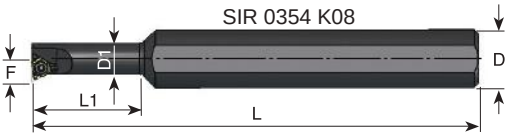
5 AE and 5 AI anvils with various helix angles

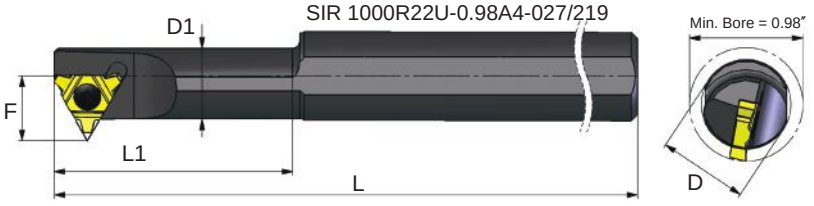
AE (FOR EX.RH. & IN.LH.)

AI (FOR IN.RH. & EX.LH.)

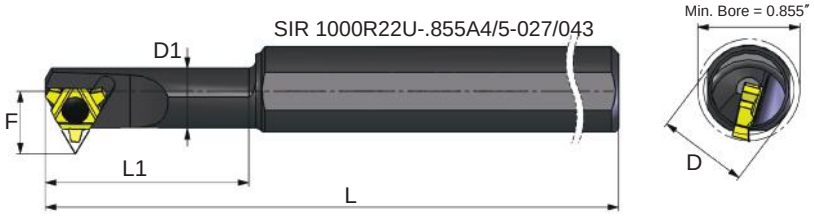
Ordering Code	Contents				
KA16	AE16+4.5 AI 16+4.5	AE16+3.5 AI 16+3.5	AE16+2.5 AI 16+2.5	AE16+0.5 AI 16+0.5	AE16-1.5 AI 16-1.5
KA22	AE22+4.5 AI 22+4.5	AE22+3.5 AI 22+3.5	AE22+2.5 AI 22+2.5	AE22+0.5 AI 22+0.5	AE22-1.5 AI 22-1.5
KA22U	AE22U+4.5 AI 22U+4.5	AE22U+3.5 AI 22U+3.5	AE22U+2.5 AI 22U+2.5	AE22U+0.5 AI 22U+0.5	AE22U-1.5 AI 22U-1.5
KA27	AE27+4.5 AI 27+4.5		AE27+2.5 AI 27+2.5		AE27-1.5 AI 27-1.5
KA27U	AE27U+4.5 AI 27U+4.5		AE27U+2.5 AI 27U+2.5		AE27U-1.5 AI 27U-1.5

Special Thread Turning Applications





*TO BE USED WITH CARMEX STANDARD 22UIRL4ACME



*TO BE USED WITH CARMEX SPECIAL INSERT 22UIRL4ACMESPEC-027/022MXC
& 22UIRL5ACMESPEC-027/015MXC

Ordering Code Right Hand		D	D1	L	L1	F	Thread	Insert Screw	Torx Key
***SIR 0354 K08**	8	0.63	0.34	5	1.18	0.25	**1/2 - 13UNC**	S08	K08
SIR 1000 R22U-0.98A4-027/219	22U	1.00	0.79	8	2.75	0.72	———	S22	K22
SIR 1000 R22U-855A4/5-027/043	22U	1.00	0.67	8	2.00	0.70	———	S22	K22

For LH holders call Carmex
* Only right hand available

Double Sided Thread Turning Inserts

Carmex presents a unique line of 2 sided inserts including 6 cutting edges, a cost saving tool.

PATENT PENDING

Advantages of DSI-Thread Turning Inserts

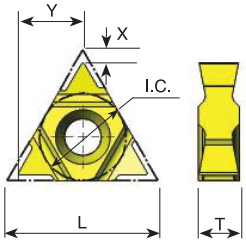
- Increased productivity thanks to the six cutting edges.
- U Style inserts for a wide range of full or partial profile standard threads.
- Same insert for right hand or left hand thread.
- Saving on tooling costs.
- Unique anti-vibration anvil design for clamping the insert and supporting the cutting edge.
- Simple insert's mounting and cutting edge indexing.
- Heavy duty toolholders designed specially for this line.

Contents: Page:

Product Identification

DSI Ordering Code

16U



L 16U — I.C. 3.8"U

E

E=External
I = Internal

R/L

R = Right Hand
L = Left Hand

1.5

Pitch
mm:
1.5-5.0
inch - TPI:
16-5

ISO

Full Profiles:
ISO
UN
WHIT
NPT

Partial Profiles:
G60 G55
AG60 AG55
N60 N55

6

Inserts with 6 cutting edges

BMA

Grade:
MXC
BMA

S

Clamping Method
S = Screw

E

E = External
I = Internal

R

R = Right Hand
L = Left Hand

0750

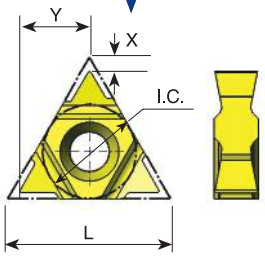
Shank Cross Section:
External toolholders
square shank
0750=3/4 x 3/4

Internal toolholders & boring bars round shank
0750 = Diam. of 3/4

K

Length of Toolholders:
K = 5
M = 6
P = 7
R = 8

16U

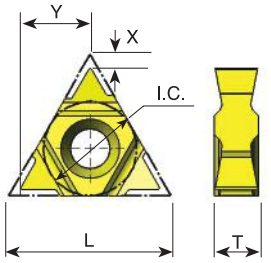


L 16U — I.C. 3.8"U

B: with internal coolant bore

6 - for DSI Thread Turning Insert

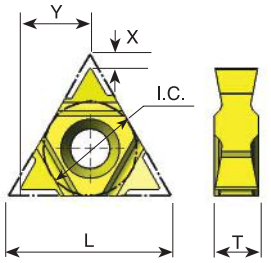
Partial Profile 60°



Pitch Range mm	Pitch Range TPI	L mm	I.C.	EXTERNAL Ordering Code	INTERNAL Ordering Code	X	Y	T
1.75 - 3.0	14-8	16U	3/8U	**16U ER/L G60-6**	**16U IR/L G60-6**	.06	.28	.18
0.5 - 3.0	48-8	16U	3/8U	**16U ER/L AG60-6**	**16U IR/L AG60-6**	.06	.28	.18
3.5 - 5.0	7-5	16U	3/8U	**16U ER/L N60-6**	**16U IR/L N60-6**	.05	.29	.18

Available coating grades: BMA or MXC

Partial Profile 55°

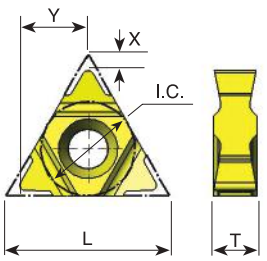


Pitch Range mm	Pitch Range TPI	L mm	I.C.	EXTERNAL Ordering Code	INTERNAL Ordering Code	X	Y	T
1.75 - 3.0	14-8	16U	3/8U	**16U ER/L G55-6**	**16U IR/L G55-6**	.06	.28	.18
0.5 - 3.0	48-8	16U	3/8U	**16U ER/L AG55-6**	**16U IR/L AG55-6**	.06	.28	.18
3.5 - 5.0	7-5	16U	3/8U	**16U ER/L N55-6**	**16U IR/L N55-6**	.05	.29	.18

Available coating grades: BMA or MXC

For Carbide Grade and Cutting Speed see page 56

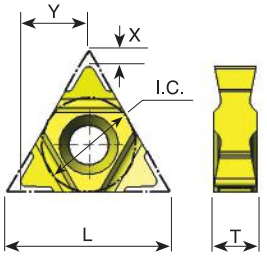
ISO



Pitch mm	L mm	I.C.	EXTERNAL Ordering Code	INTERNAL Ordering Code	X	Y	T
1.5	16U	3/8U	16U ER/L 1.5 ISO-6	16U IR/L 1.5 ISO-6	.06	.27	.18
1.75	16U	3/8U	16U ER/L 1.75 ISO-6	16U IR/L 1.75 ISO-6	.06	.27	.18
2.0	16U	3/8U	16U ER/L 2.0 ISO-6	16U IR/L 2.0 ISO-6	.06	.27	.18
2.5	16U	3/8U	16U ER/L 2.5 ISO-6	16U IR/L 2.5 ISO-6	.06	.27	.18
3.0	16U	3/8U	16U ER/L 3.0 ISO-6	16U IR/L 3.0 ISO-6	.06	.27	.18
3.5	16U	3/8U	16U ER/L 3.5 ISO-6	16U IR/L 3.5 ISO-6	.06	.27	.18
4.0	16U	3/8U	16U ER/L 4.0 ISO-6	16U IR/L 4.0 ISO-6	.06	.27	.18
4.5	16U	3/8U	16U ER/L 4.5 ISO-6	16U IR/L 4.5 ISO-6	.06	.27	.18
5.0	16U	3/8U	16U ER/L 5.0 ISO-6	16U IR/L 5.0 ISO-6	.06	.27	.18

Available coating grades: BMA or MXC

UN - Unified UNC, UNF, UNEF, UNS

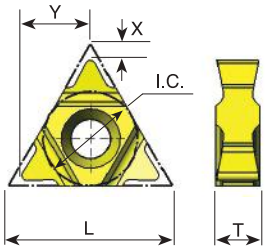


Pitch TPI	L mm	I.C.	EXTERNAL Ordering Code	INTERNAL Ordering Code	X	Y	T
16	16U	3/8U	16U ER/L 16 UN-6	16U IR/L 16 UN-6	.06	.27	.18
14	16U	3/8U	16U ER/L 14 UN-6	16U IR/L 14 UN-6	.06	.27	.18
13	16U	3/8U	16U ER/L 13 UN-6	16U IR/L 13 UN-6	.06	.27	.18
12	16U	3/8U	16U ER/L 12 UN-6	16U IR/L 12 UN-6	.06	.27	.18
11.5	16U	3/8U	16U ER/L 11.5 UN-6	16U IR/L 11.5 UN-6	.06	.27	.18
11	16U	3/8U	16U ER/L 11 UN-6	16U IR/L 11 UN-6	.06	.27	.18
10	16U	3/8U	16U ER/L 10 UN-6	16U IR/L 10 UN-6	.06	.27	.18
9	16U	3/8U	16U ER/L 9 UN-6	16U IR/L 9 UN-6	.06	.27	.18
8	16U	3/8U	16U ER/L 8 UN-6	16U IR/L 8 UN-6	.06	.27	.18
7	16U	3/8U	16U ER/L 7 UN-6	16U IR/L 7 UN-6	.06	.27	.18
6	16U	3/8U	16U ER/L 6 UN-6	16U IR/L 6 UN-6	.06	.27	.18
5	16U	3/8U	16U ER/L 5 UN-6	16U IR/L 5 UN-6	.06	.27	.18

Available coating grades: BMA or MXC

For Carbide Grade and Cutting Speed see page 56

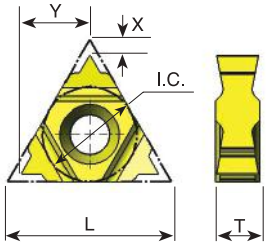
Whitworth 55° BSW, BSF, BSP, BSB



Pitch TPI	L mm	I.C.	EXTERNAL Ordering Code	INTERNAL Ordering Code	X	Y	T
16	16U	3/8U	16U ER/L 16 W-6	16U IR/L 16 W-6	.06	.27	.18
14	16U	3/8U	16U ER/L 14 W-6	16U IR/L 14 W-6	.06	.27	.18
12	16U	3/8U	16U ER/L 12 W-6	16U IR/L 12 W-6	.06	.27	.18
11	16U	3/8U	16U ER/L 11 W-6	16U IR/L 11 W-6	.06	.27	.18
10	16U	3/8U	16U ER/L 10 W-6	16U IR/L 10 W-6	.06	.27	.18
9	16U	3/8U	16U ER/L 9 W-6	16U IR/L 9 W-6	.06	.27	.18
8	16U	3/8U	16U ER/L 8 W-6	16U IR/L 8 W-6	.06	.27	.18
7	16U	3/8U	16U ER/L 7 W-6	16U IR/L 7 W-6	.06	.27	.18
6	16U	3/8U	16U ER/L 6 W-6	16U IR/L 6 W-6	.06	.27	.18
5	16U	3/8U	16U ER/L 5 W-6	16U IR/L 5 W-6	.06	.27	.18

Available coating grades: BMA or MXC

NPT



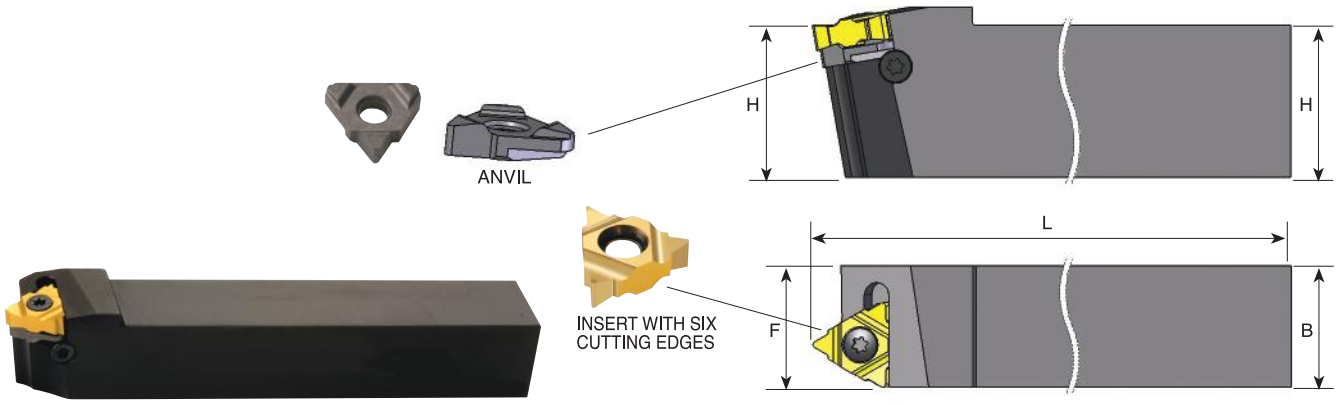
Pitch TPI	L mm	I.C.	EXTERNAL Ordering Code	INTERNAL Ordering Code	X	Y	T
14	16U	3/8U	16U ER/L 14 NPT-6	16U IR/L 14 NPT-6	.06	.27	.18
11.5	16U	3/8U	16U ER/L 11.5 NPT-6	16U IR/L 11.5 NPT-6	.06	.27	.18
8	16U	3/8U	16U ER/L 8 NPT-6	16U IR/L 8 NPT-6	.06	.27	.18

Available coating grades: BMA or MXC

For Carbide Grade and Cutting Speed see page 56

Heavy Duty Thread Turning Toolholders

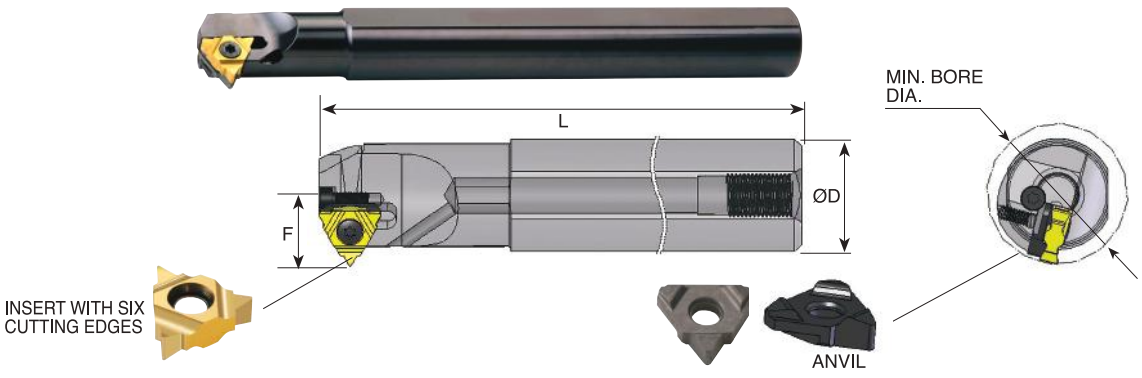
External



Ordering Code Right Hand	H	B	L	F	Insert Screw	Anvil Screw	Torx Key	RH Anvil	LH Anvil
SER 0750 K16U-6	0.75	0.75	5	0.75	S16	A16	K16	AER 16U-6	AEL 16U-6
SER 1079 M16U-6	1.0	0.79	6	0.79	S16	A16	K16	AER 16U-6	AEL 16U-6

For **LEFT HAND** toolholders specify SE**L** instead of SE**R**

Internal with Coolant Bore



Ordering Code Right Hand	ØD	Min. bore dia.	L	F	Insert Screw	Anvil Screw	Torx Key	RH Anvil	LH Anvil
SIR 0750 P16UB-6	0.75	0.94	7	0.57	S16	A16	K16	AIR 16U-6	AIL 16U-6
SIR 1000 R16UB-6	1.0	1.14	8	0.69	S16	A16	K16	AIR 16U-6	AIL 16U-6

For **LEFT HAND** toolholders specify SI**L** instead of SI**R**

Thread Turning Technical Section

Carbide Grade Selection

Choose the Carmex grade specifically formulated for your application from the following list:

Coated Grades

BLU• (M10-M20) (K05-K20) (N10-N20) (S10-S20) — PVD triple layer coated sub-micron grade for stainless steels, cast iron, titanium, non ferrous metals and most of the high temperature alloys.

BMA (P20-P40) (K20-K30) — PVD TiALN coated sub-micrograin grade for stainless steels and exotic materials at medium to high cutting speeds.

P25C (P15-P35) — PVD TiN coated grade for treated and hard alloy steels (25 HRc & up) at medium to low cutting speeds.

MXC (K10-K20) (P10-P25) — PVD TiN coated micrograin for free cutting untreated alloy steels (below 30 HRc), for stainless steels and cast iron.

BXC•• (P30-P50) (K25-K40) — PVD TiN coated grade for low cutting speed. Works well with wide range of stainless steels.

Uncoated Grades

P30* (P20-P30) — Carbide grade for carbon and cast steels, works well at medium to low cutting speeds.

K20* (K10-K30) — Carbide grade for non ferrous metals, aluminum and cast iron.

Note: Due to our unique and specialized production techniques, Carmex coated inserts provide superior cutting performance and exceptionally long tool life.

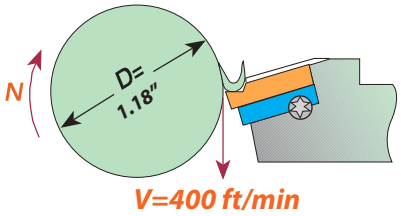
Recommended cutting speed (ft/min) for thread turning inserts

ISO Standard	Material		Condition	BLU	BMA	P25C	MXC	BXC	K20	P30
P	Non-Alloy Steel and Cast Steel, Free Cutting Steel	<0.25%C	Annealed	361-689	394-590	328-590	328-590	230-492		164-426
		≥0.25%C	Annealed							
		< 0.55%C	Quenched & Tempered							
		≥0.55%C	Annealed							
			Quenched & Tempered							
	Low Alloy Steel and Cast Steel (less than 5% alloying elements)		Annealed	295-459	262-426	230-394	230-394	197-295		164-262
			Quenched & Tempered							
	High Alloy Steel, Cast Steel, and Tool Steel		Annealed	230-295	197-262	164-197	180-230	164-197		131-164
			Quenched & Tempered							
M	Stainless Steel and Cast Steel		Ferritic/Martensitic	328-525	295-426	197-295	197-295	164-262	164-262	
			Martensitic							
			Austenitic							
K	Cast Iron Nodular (GGG)		Ferritic/Pearlitic	394-492	328-426		262-361	197-295		
			Pearlitic							
	Grey Cast Iron (GG)		Ferritic	459-492	394-426		295-328	213-297		
			Pearlitic							
	Malleable Cast Iron		Ferritic	361-459	328-426		262-328	197-279		
			Pearlitic							
N	Aluminum-Wrought Alloy		Not Cureable	2296-3280			1968-2624	1476-1968	1964-2624	1148-1640
			Cured							
	Aluminum-Cast, Alloyed	<=12% Si	Not Cureable	918-2460			565-1804	492-1148	656-1804	361-984
			Cured							
		>12% Si	High Temperature							
	Copper Alloys	>1% Pb	Free Cutting	623-1148			492-820	361-590	492-820	295-492
			Brass							
			Electrolytic Copper							
	Non Metallic		Duroplastics, Fiber Plastics				656-984	492-689	328-656	361-492
			Hard Rubber							
S	High Temp. Alloys, Super Alloys	Fe based	Annealed	98-213	82-197					
			Cured							
		Ni or Co based	Annealed							
			Cured							
			Cast							
	Titanium Alloys		Alpha+Beta Alloys Cured	131-164	115-148				115-148	
H	Hardened Steel		Hardened 45-50 HRc	131-164	115-148					
			Hardened 51-55 HRc							
			Hardened 56-62 HRc							
	Chilled Cast Iron		Cast	98-131	82-115					
	Cast Iron		Hardened	66-98	49-82					

• Available for size 16 mm inserts only
* Upon request
•• For miniature and ultra miniature insert

Conversion of Cutting Speed to Rotational Speed

Conversion of a selected cutting speed to rotational speed is calculated by the following formula:



Example

$$N = \frac{V \times 12}{\pi \times D} = \frac{400 \times 12}{3.14 \times 1.18} = 1294 \text{ RPM}$$

Number of passes and depth of cut per pass for multitooth insert

	Pitch mm / TPI	Insert Size		No. of Teeth	Ordering Code	No. of Passes	Depth of Cut per pass			
		L (mm)	I.C.				1	2	3	4
ISO External	1.00	16	3/8	3	16 ER 1.0 ISO 3M	2	.015	.010		
	1.50	16	3/8	2	16 ER 1.5 ISO 2M	3	.017	.012	.008	
	1.50	22	1/2	3	22 ER 1.5 ISO 3M	2	.022	.015		
	2.00	22	1/2	2	22 ER 2.0 ISO 2M	3	.022	.016	.011	
	2.00	22	1/2	3	22 ER 2.0 ISO 3M	2	.030	.019		
	3.00	27	5/8	2	27 ER 3.0 ISO 2M	4	.023	.020	.017	.013
ISO Internal	1.00	16	3/8	3	16 IR 1.0 ISO 3M	2	.013	.010		
	1.50	16	3/8	2	16 IR 1.5 ISO 2M	3	.015	.011	.008	
	1.50	22	1/2	3	22 IR 1.5 ISO 3M	2	.020	.015		
	2.00	22	1/2	2	22 IR 2.0 ISO 2M	3	.020	.014	.010	
	2.00	22	1/2	3	22 IR 2.0 ISO 3M	2	.028	.018		
	3.00	27	5/8	2	27 IR 3.0 ISO 2M	4	.023	.018	.015	.012
UN External	16	16	3/8	2	16 ER 16 UN 2M	3	.017	.012	.009	
	16	22	1/2	3	22 ER 16 UN 3M	2	.023	.015		
	12	22	1/2	2	22 ER 12 UN 2M	3	.023	.017	.012	
	12	22	1/2	3	22 ER 12 UN 3M	2	.031	.020		
	8	27	5/8	2	27 ER 8 UN 2M	4	.024	.021	.018	.014
UN Internal	16	16	3/8	2	16 IR 16 UN 2M	3	.017	.011	.009	
	16	22	1/2	3	22 IR 16 UN 3M	2	.022	.015		
	12	22	1/2	2	22 IR 12 UN 2M	3	.021	.015	.012	
	12	22	1/2	3	22 IR 12 UN 3M	2	.029	.019		
	8	27	5/8	2	27 IR 8 UN 2M	4	.025	.020	.016	.012
Whitworth 55° External	14	16	3/8	2	16 ER 14 W 2M	3	.020	.015	.011	
	14	22	1/2	3	22 ER 14 W 3M	2	.028	.030		
	11	22	1/2	2	22 ER 11 W 2M	3	.026	.019	.013	
Whitworth 55° Internal	14	16	3/8	2	16 IR 14 W 2M	3	.020	.015	.011	
	14	22	1/2	3	22 IR 14 W 3M	2	.028	.018		
	11	22	1/2	2	22 IR 11 W 2M	2	.026	.019	.013	
NPT External	14	16	3/8	2	16 ER 14 NPT 2M	3	.021	.018	.017	
	11.5	22	1/2	2	22 ER 11.5 NPT 2M	4	.019	.019	.017	.013
	11.5	27	5/8	3	27 ER 11.5 NPT 3M	4	.020	.019	.017	.012
	8	27	5/8	2	27 ER 8 NPT 2M	4	.029	.026	.024	.021
NPT Internal	14	16	3/8	2	16 IR 14 NPT 2M	3	.021	.018	.017	
	11.5	22	1/2	2	22 IR 11.5 NPT 2M	4	.019	.019	.017	.013
	11.5	27	5/8	3	27 IR 11.5 NPT 3M	4	.020	.019	.017	.012
	8	27	5/8	2	27 IR 8 NPT 2M	4	.029	.026	.024	.021
API Round External	10	22	1/2	2	22 ER 10 APIRD 2M	3	.024	.020	.012	
	10	27	5/8	3	27 ER 10 APIRD 3M	2	.039	.016		
	8	27	5/8	2	27 ER 8 APIRD 2M	3	.031	.024	.016	
API Round Internal	10	22	1/2	2	22 IR 10 APIRD 2M	3	.024	.020	.012	
	10	27	5/8	3	27 IR 10 APIRD 3M	2	.039	.016		
	8	27	5/8	2	27 IR 8 APIRD 2M	3	.031	.024	.016	

Number of threading passes selection for single point inserts

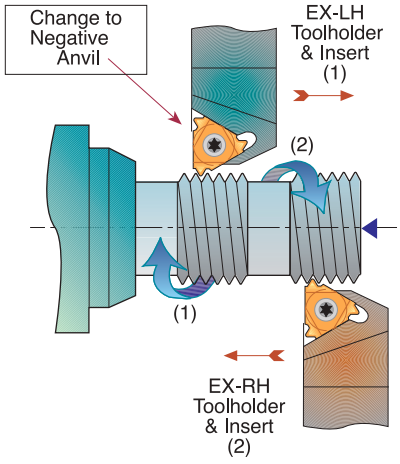
Pitch:	mm TPI	0.5 48	0.8 32	1.0 24	1.25 20	1.5 16	1.75 14	2.0 12	2.5 10	3.0 8	4.0 6	6.0 4
Number of Passes		3-6	4-7	4-9	6-10	5-11	9-12	6-13	7-15	8-17	10-20	11-22

NOTES:

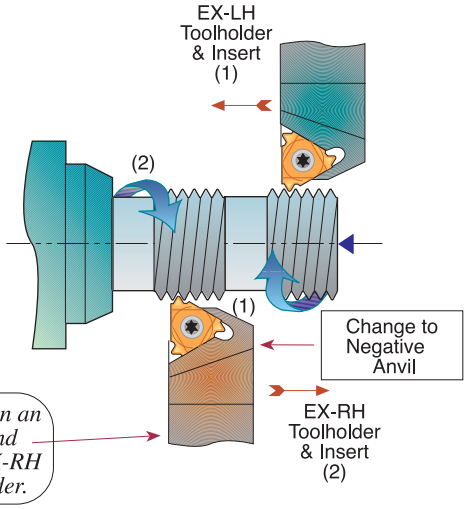
1. For most standard applications the middle of the range is a good starting point.
2. For most materials, the tougher the material, the higher the number of cutting passes you should select.
3. As a general rule of thumb, Fewer passes are better than more speed.

Thread Turning Methods

EX-RH Thread



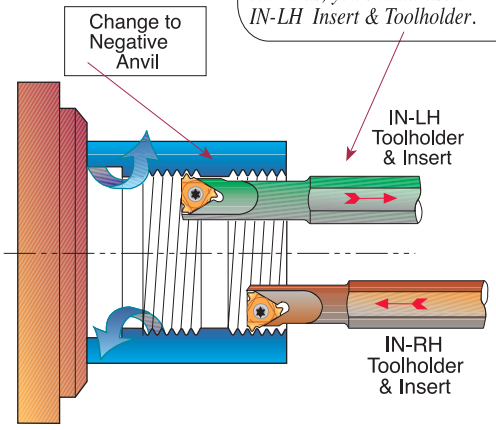
EX-LH Thread



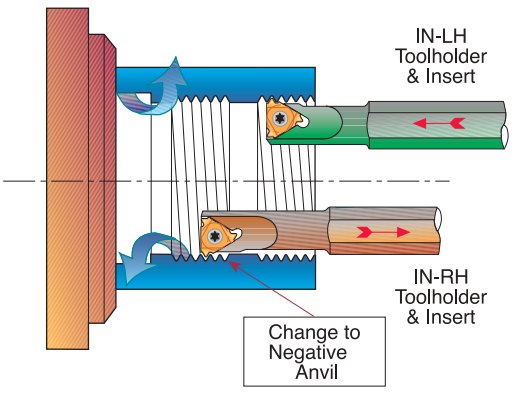
If you want to turn an EX-LH Thread and you only have EX-RH Insert & Toolholder.

IN-RH Thread

If you want to turn an IN-RH Thread but you prefer to pull the metal chips while Thread Turning outwards, you should use an IN-LH Insert & Toolholder.

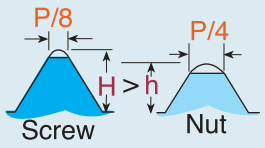


IN-LH Thread

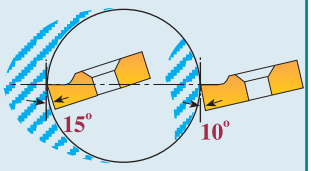


Important Points about Carmex Threading Inserts

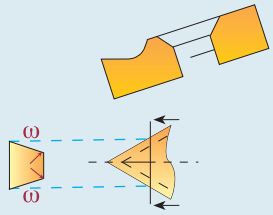
1. In most thread forms internal and external threads have different depth and radii, thus tools are not interchangeable



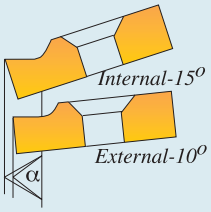
2. The Insert relief angle of a standard Carmex external toolholder is 10°; for an internal toolholder it is 15°. This 5° difference is to provide additional necessary radial clearance.



3. Our built-in relief angles ensure automatic insert flank angle clearance.



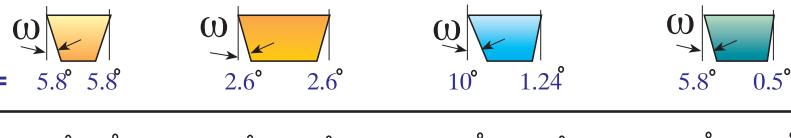
4. Profiles of Carmex internal & external threading inserts are precision ground to ensure accurate thread geometry when used in their corresponding toolholders.
Using internal inserts with an external holder will result in distortion of angle and insert geometry.



5. Insert and toolholder should always match.
An IN-RH insert must be used with an IN-RH toolholder.
No mismatch is allowed.

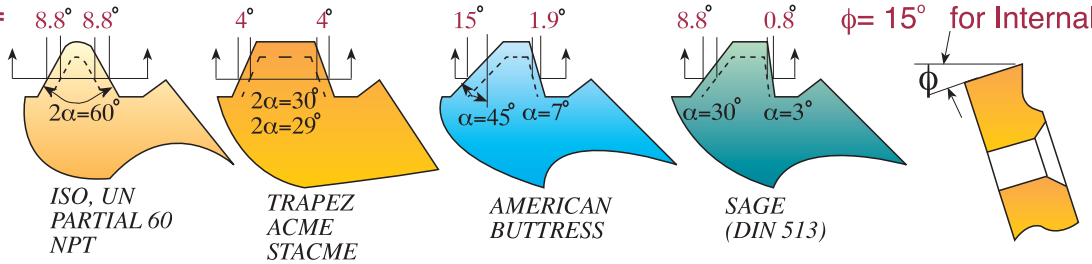
Flank Clearance Angle ω

$$\omega = ArcTan\ (Tan\ \alpha \times Tan\ \phi)$$



ϕ= 10° for External toolholders

ϕ= 15° for Internal toolholders



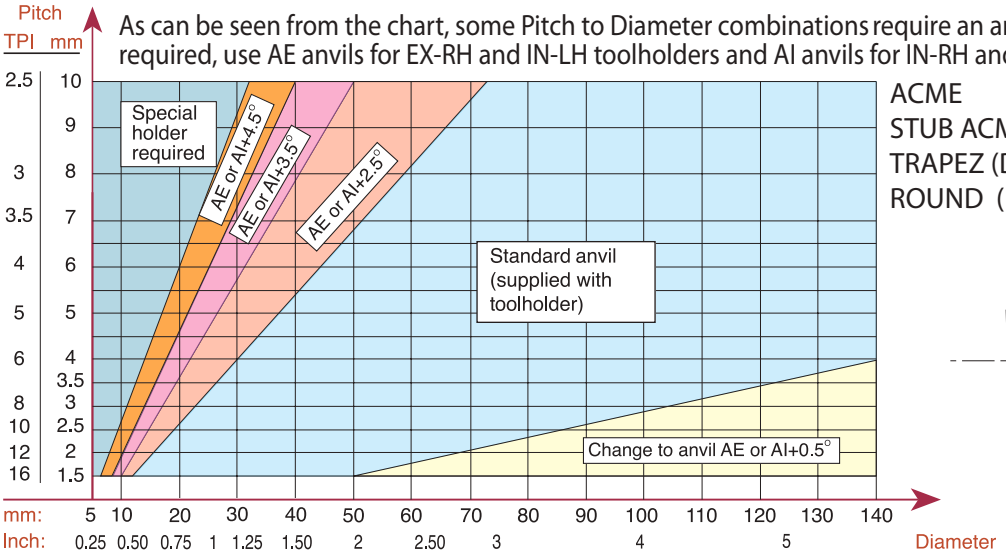
ISO, UN
PARTIAL 60
NPT

TRAPEZ
ACME
STACME

AMERICAN
BUTTRESS

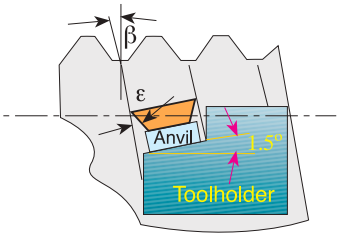
SAGE
(DIN 513)

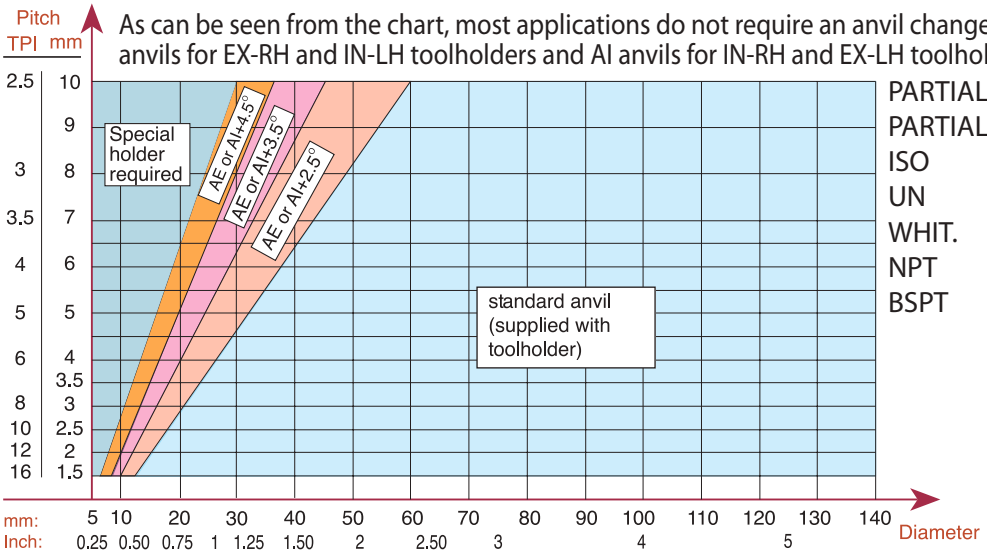
Anvil Change Recommendation



As can be seen from the chart, some Pitch to Diameter combinations require an anvil change. If change is required, use AE anvils for EX-RH and IN-LH toolholders and AI anvils for IN-RH and EX-LH toolholders.

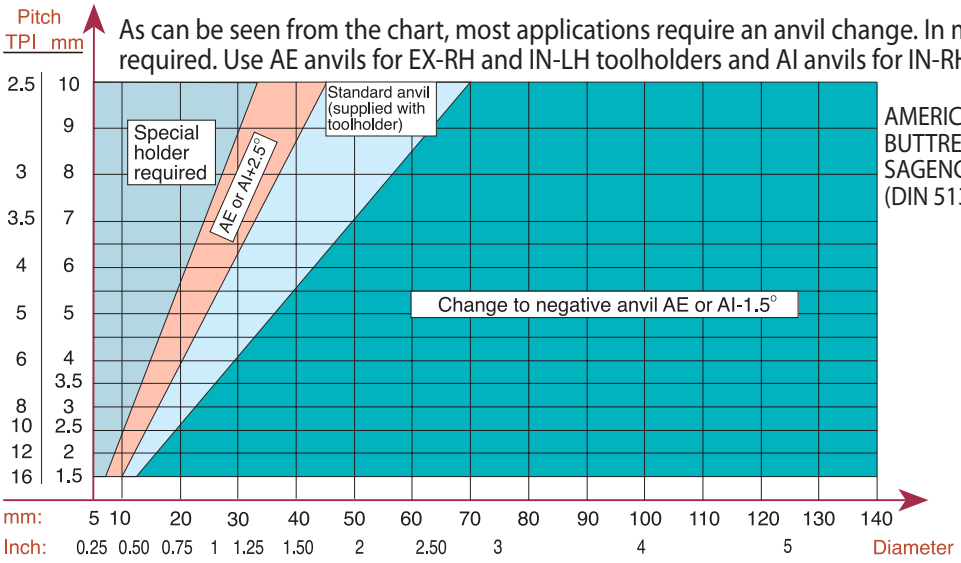
ACME
STUB ACME
TRAPEZ (DIN 103)
ROUND (DIN 405)





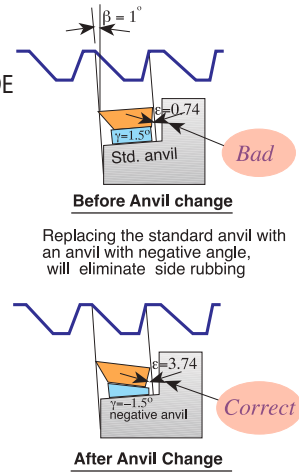
As can be seen from the chart, most applications do not require an anvil change. If change is required, use AE anvils for EX-RH and IN-LH toolholders and AI anvils for IN-RH and EX-LH toolholders.

PARTIAL PROFILE 60°
PARTIAL PROFILE 55°
ISO
UN
WHIT.
NPT
BSPT



As can be seen from the chart, most applications require an anvil change. In most cases a negative anvil is required. Use AE anvils for EX-RH and IN-LH toolholders and AI anvils for IN-RH and EX-LH toolholders.

AMERICAN BUTTRESS
SAGENGEWINDE (DIN 513)



Thread Turning - Step by Step

Step 1 : Choose Thread Turning Method
Step 2 : Choose Insert
Step 3 : Choose Toolholder
Step 4 : Choose Insert Grade
Step 5 : Choose Thread Turning Speed
Step 6 : Choose Number of Threading Passes

In most cases the above mentioned 6 steps would be the steps needed to ensure a good thread. When cutting more complicated threads such as TRAPEZ, ACME, BUTTRESS or SAGE, it is advisable to check the effect of the thread "HELIX ANGLE" β on the "RESULTANT FLANK CLEARANCE" ε. If ε is smaller than 2°, an anvil change is required.

Step 7 : Find Thread Helix Angle
Step 8 : Choose Correct Anvil

EXAMPLES:

Example No. 1:

Step 1: Choose Thread Turning Method
from page 58, we chose **EX - RH Insert & Toolholder**

Step 2: Choose Insert from page 13: **16 ER 16 UN**

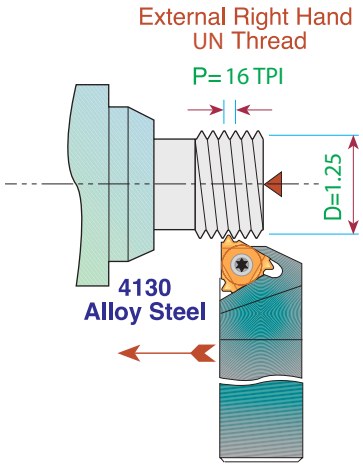
Step 3: Choose Toolholder from page 39: **SER 0750 K16**

Step 4: Choose Insert Grade from selection on page 56
Our choice for Alloy Steel is Grade **P25C**

Step 5: Choose Thread Turning Speed from chart on page 56,
we chose **330 ft/min**

Rotational Speed calculation: $N = \frac{330 \times 12}{\pi \times 1.25} = 1008$ rpm

Step 6: Choose Number of Threading passes
from table on page 57, we chose **8 passes**



Example No. 2:

Step 1: Choose Thread Turning Method from page 58
Usually, an IN-RH Toolholder and Insert will be chosen, however, in this particular case we prefer to pull the metal chips while thread turning outward, thus we chose to work with **IN-LH Insert & Toolholder**

Step 2: Choose Insert from page 13: **16 IL 12 UN**

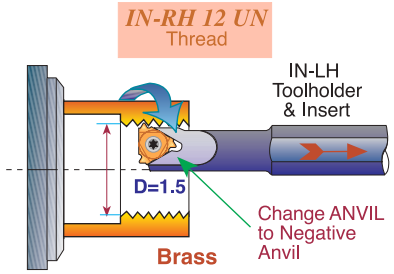
Step 3: Choose Toolholder from page 41: **SIL 1000 R16**
Note: since we thread cut IN-RH thread outward with an IN-LH tool, do not forget to replace the standard anvil (supplied with the holder) with a negative anvil **AE16-1.5**

Step 4: Choose Insert Grade from selection on page 56
Our choice for Brass is Grade **K20**

Step 5: Choose Thread Turning Speed from chart on page 56,
we chose **450 ft/min**

Rotational Speed calculation: $N = \frac{450 \times 12}{\pi \times 1.5} = 1146$ RPM

Step 6: Choose Number of Threading passes from table
on page 57, we chose **9 passes**



Example No. 3:

Step 1: Choose Thread Turning Method from page 58
We chose EX-RH Insert & Toolholder.

Step 2: Choose Insert from page 31: **16 ER 12 ABUT**

Step 3: Choose Toolholder from page 39: **SER 1000 M16**

Step 4: Choose Insert Grade from selection on page 56
Our choice for Stainless Steel is Grade **BMA**

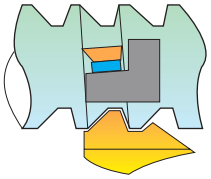
Step 5: Choose Thread Turning Speed from chart on page 57
We chose 360 ft/min.
Rotational Speed calculation: $N = \frac{360 \times 12}{\pi \times 1.5} = 917$ RPM

Step 6: Choose Number of Threading passes
from table on page 56. We chose **13 passes**

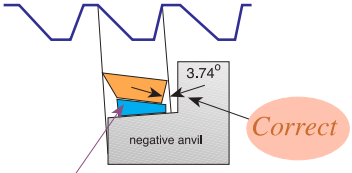
Step 7: Find Thread Helix Angle: on page 47
for Pitch of 12 TPI and 40 Diameter
Helix Angle as shown in the chart is 1°

Step 8: Choose correct Anvil: As can be seen
from the chart on page 60, for AMERICAN
BUTTRESS Thread, for 12 TPI and 40 Diameter
a negative anvil **AE16-1.5** should replace the
standard anvil supplied with the toolholder

EX-RH. AMERICAN BUTTRESS
12 TPI on 1.5" diameter.
Stainless Steel 304



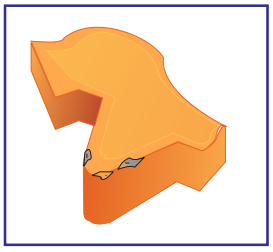
Replacing the standard anvil
with an anvil with negative
angle, will eliminate side rubbing



Anvil chosen:
AE16-1.5

Troubleshooting

Chipping

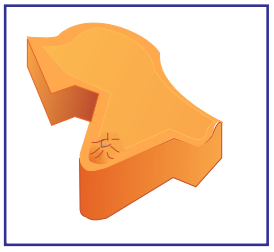


1. Use a tougher carbide grade
2. Eliminate tool overhang
3. Check if insert is correcting clamped
4. Eliminate vibration

Crater Wear

1. Reduce cutting speed
2. Apply coolant fluid
3. Use a harder carbide grade

Build-up Edge

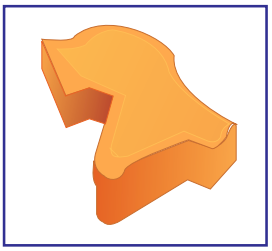


1. Increase cutting speed
2. Use a tougher carbide grade

Thermal Cracking

1. Reduce cutting speed
2. Apply coolant fluid
3. Use a tougher carbide grade

Deformation

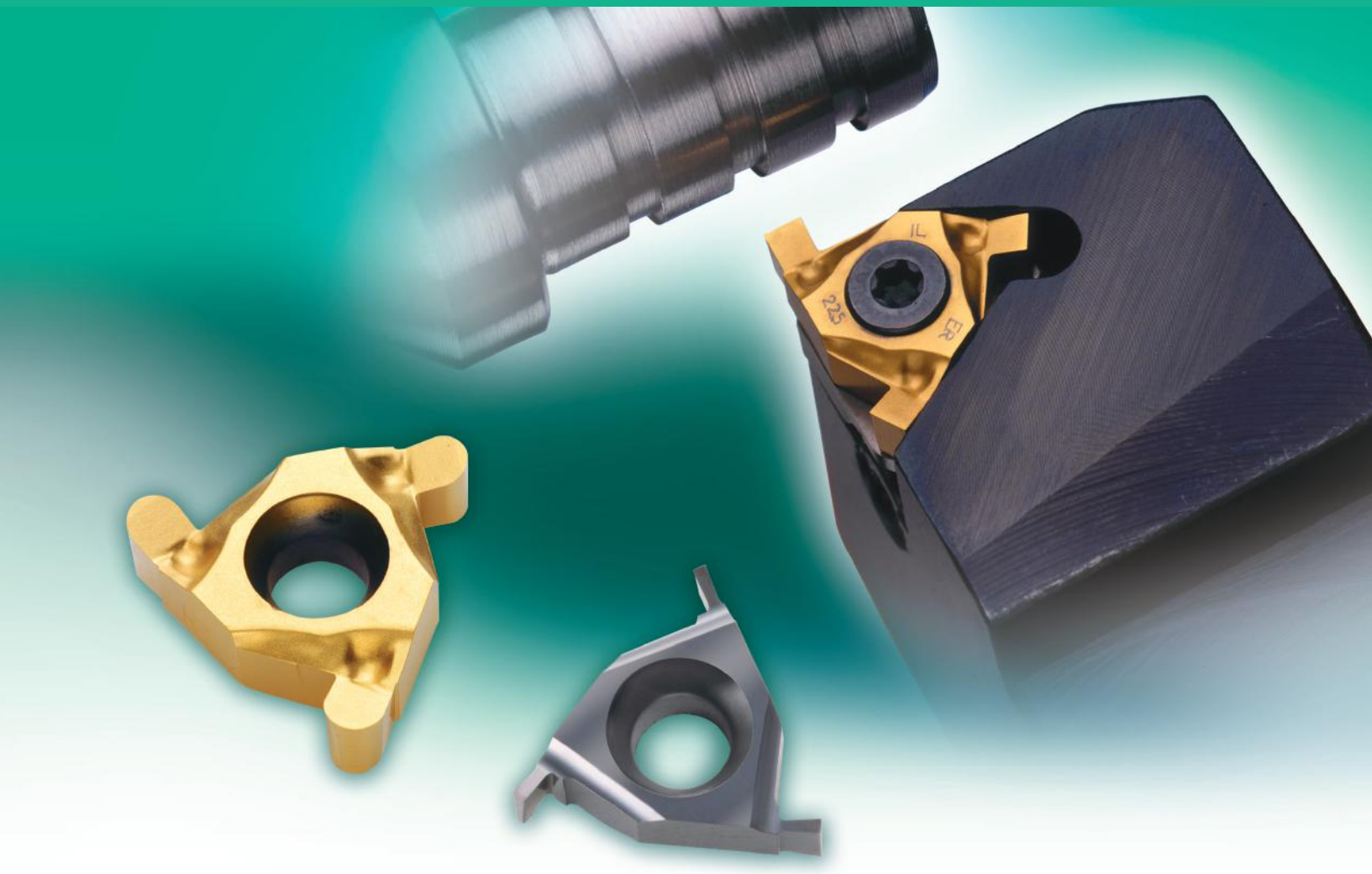


1. Use a harder carbide grade
2. Reduce cutting speed
3. Reduce depth of cut
4. Apply coolant fluid

Fracture

1. Use a tougher carbide grade
2. Reduce depth of cut
3. Index insert sooner
4. Check machine and tool stability

Grooving Tools



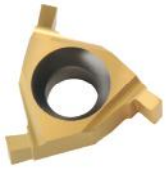
A combination of ground profile and sintered chip - breaker

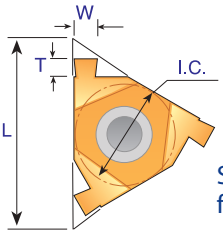
Advantages:

- Same Toolholder for Grooving and Threading
- Minimum Investment in Tooling
- Three cutting edges
- Precision Ground

Contents: Page:

Grooving Inserts

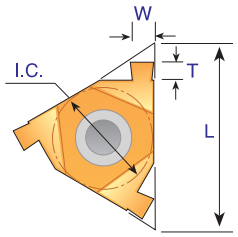




External & Internal

ER / IL
Same insert can be used for EX.RH and for IN.LH.

IR / EL
Same insert can be used for IN.RH and for EX.LH.

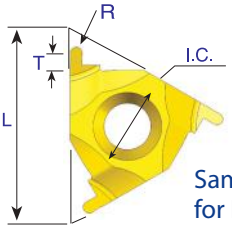


W ±.001	T	I.C.	L mm	Ordering Code ER/IL Inserts	Anvil	Ordering Code IR/EL Inserts	Anvil
.020	.055	1/4	11	**11 ER/IL .020**	-	**11 IR/EL .020**	-
.024	.055	1/4	11	**11 ER/IL .024**	-	**11 IR/EL .024**	-
.028	.055	1/4	11	**11 ER/IL .028**	-	**11 IR/EL .028**	-
.031	.055	1/4	11	**11 ER/IL .031**	-	**11 IR/EL .031**	-
.039	.051	1/4	11	**11 ER/IL .039**	-	**11 IR/EL .039**	-
.031	.055	3/8	16	**16 ER/IL .031**	AE 16-0	**16 IR/EL .031**	AI 16-0
.039	.055	3/8	16	**16 ER/IL .039**	AE 16-0	**16 IR/EL .039**	AI 16-0
.047	.063	3/8	16	**16 ER/IL .047**	AE 16-0	**16 IR/EL .047**	AI 16-0
.055	.071	3/8	16	**16 ER/IL .055**	AE 16-0	**16 IR/EL .055**	AI 16-0
.062	.075	3/8	16	**16 ER/IL .062**	AE 16-0	**16 IR/EL .062**	AI 16-0
.067	.079	3/8	16	**16 ER/IL .067**	AE 16-0	**16 IR/EL .067**	AI 16-0
.077	.079	3/8	16	**16 ER/IL .077**	AE 16-0	**16 IR/EL .077**	AI 16-0
.089	.089	3/8	16	**16 ER/IL .089**	AE 16-0	**16 IR/EL .089**	AI 16-0
.094	.089	3/8	16	**16 ER/IL .094**	AE 16-0	**16 IR/EL .094**	AI 16-0

Order example: 16 ER/IL .047 BXC
* The inserts should be used with our standard threading toolholders
* The anvil must be changed to AE 16-0 or AI 16-0 before using size 16mm (3/8") inserts
* Other available blank sizes: I.C. 5/8", 1/2", 3/16" & 5/32"

Grooving Inserts for Snap Ring

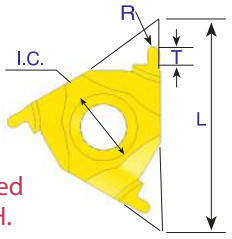
Carbide Grade: BXC



External & Internal Partial Profile Inserts

ER / IL
Same insert can be used for EX.RH and for IN.LH.

IR / EL
Same insert can be used for IN.RH and for EX.LH.



R ±.001	T	I.C.	L mm	Ordering Code ER/IL Inserts	Anvil	Ordering Code IR/EL Inserts	Anvil
.020	.055	3/8	16	**16 ER/IL R0.50**	AE 16 - 0	**16 IR/EL R0.50**	AI 16 - 0
.024	.063	3/8	16	**16 ER/IL R0.60**	AE 16 - 0	**16 IR/EL R0.60**	AI 16 - 0
.035	.079	3/8	16	**16 ER/IL R0.90**	AE 16 - 0	**16 IR/EL R0.90**	AI 16 - 0
.039	.079	3/8	16	**16 ER/IL R1.00**	AE 16 - 0	**16 IR/EL R1.00**	AI 16 - 0
.043	.087	3/8	16	**16 ER/IL R1.10**	AE 16 - 0	**16 IR/EL R1.10**	AI 16 - 0
.077	.089	3/8	16	**16 ER/IL R1.20**	AE 16 - 0	**16 IR/EL R1.20**	AI 16 - 0

Order example: 16ER/IL R1.20 BXC
* The inserts should be used with our standard threading toolholders
* The anvil must be changed to AE 16-0 or AI 16-0 before using size 16mm (3/8") inserts
* Other available blank sizes: I.C. 5/8", 1/2", 1/4", 3/16" & 5/32"

Grooving Kits

ER / IL INSERT

KGROI - EXTERNAL

16	ER / IL .031	BXC	1 unit
16	ER / IL .039	BXC	1 unit
16	ER / IL .047	BXC	1 unit
16	ER / IL .062	BXC	1 unit
16	ER / IL .077	BXC	1 unit
16	ER / IL .094	BXC	1 unit
ANVIL	AE 16 - 0		1 unit

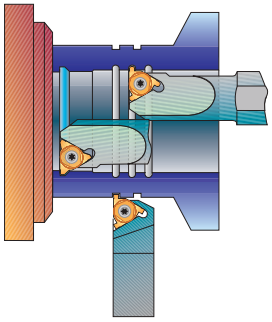
IR / EL INSERT

KGROI - INTERNAL

16	IR / EL .031	BXC	1 unit
16	IR / EL .039	BXC	1 unit
16	IR / EL .047	BXC	1 unit
16	IR / EL .062	BXC	1 unit
16	IR / EL .077	BXC	1 unit
16	IR / EL .094	BXC	1 unit
ANVIL	AI 16 - 0		1 unit

Technical Section

Cutting Speeds for Grooving Tools



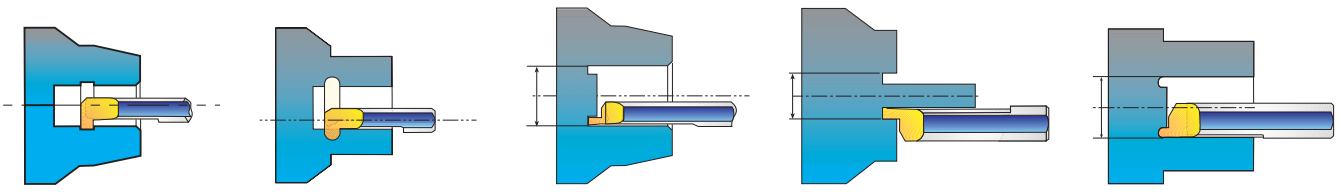
Carbide Grades:

BXC (P30 - P50, K25 - K40)
PVD TiN coated grade for low cutting speed. Works well with a wide range of stainless steels.

BMA (P20 - P40, K20 - K30)
PVD TiAlN coated sub-micrograin grade for stainless steels and exotic materials at medium to high cutting speeds.

ISO Standard	Materials	Cutting Speed ft/min
P	Low & Medium Carbon Steel	65-330
	High Carbon Steel	100-260
	Alloy Steels and Treated Steels	130-300
M	Stainless Steels	100-260
	Cast Steels	100-300
K	Cast Iron	100-300
N	Non-Ferrous & Aluminum	65-660

For grooving small bores see pages 191-196



Mill - Thread Inserts and Kits

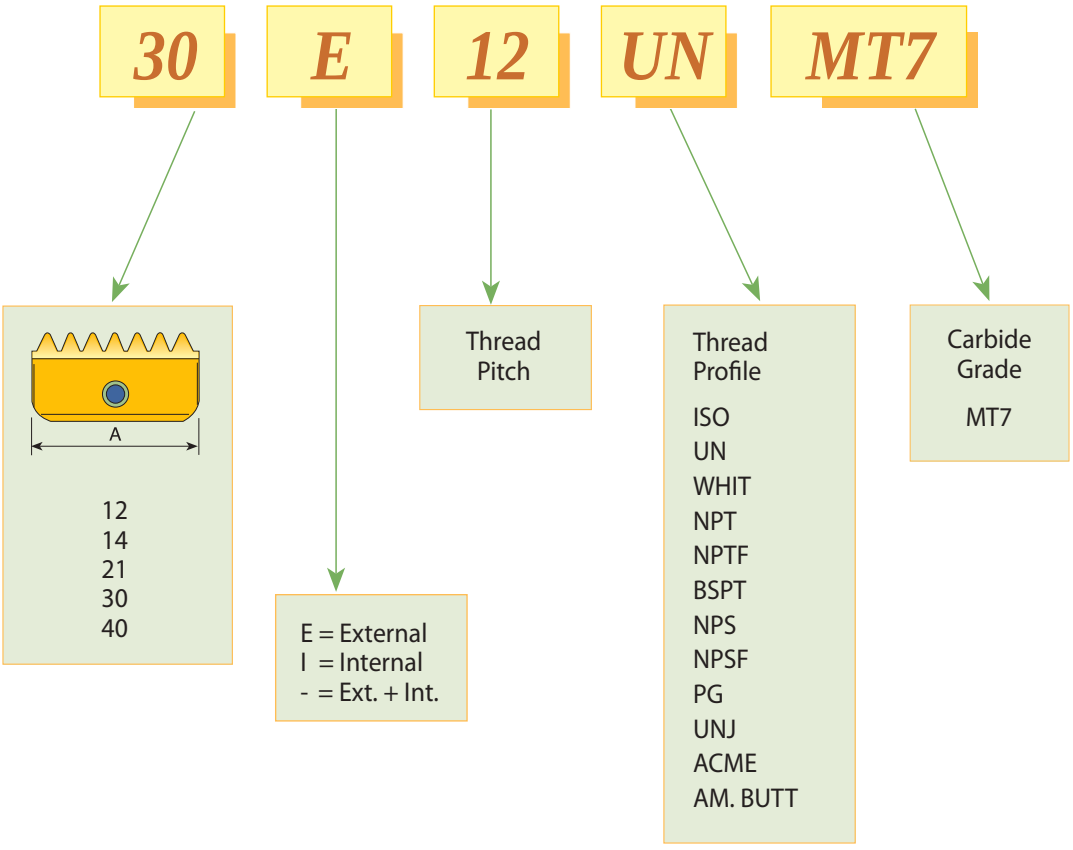
Mill-Thread tools for threading on CNC milling machines by using helical interpolation programs

Advantages of Mill-Thread Tools

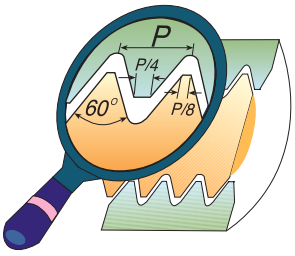
- Same toolholder and insert can produce both right-hand and left-hand threads.
- A single insert & toolholder can produce a given thread on many diameters (External & Internal).
- Prismatic shape of insert's tail ensures exact and reliable clamping in the toolholder.
- Most inserts are double sided, having two cutting edges.
- Thread is produced in one tool pass.
- MT tools can produce tapered threads.
- Improved productivity thanks to increased cutting speeds and multitooth type carbide inserts.
- Threading to one pitch of a shoulder in a blind hole.
- Longer tool life thanks to a special multilayer coating process.
- Lower tooling costs, considerably less expensive than using taps and dies.
- Since lower machine power is required, a smaller machine can produce larger threads in a single operation with less idle time and tool changes.

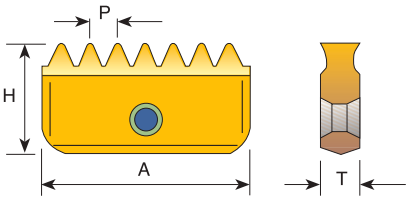
Product Identification

Mill-Thread Inserts Ordering Codes



ISO





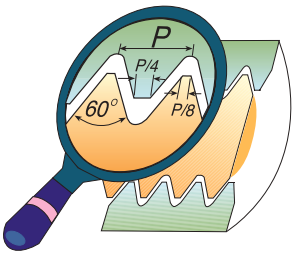
Pitch mm		Insert Size = A 12 mm .472	14 mm .551	21 mm .827	30 mm 1.181	40 mm 1.575
0.5	Ext.					
0.5	Int.	* 12 I 0.5 ISO	14 I 0.5 ISO			
0.75	Ext.		14 E 0.75 ISO			
0.75	Int.	* 12 I 0.75 ISO	14 I 0.75 ISO			
1.0	Ext.		14 E 1.0 ISO	21 E 1.0 ISO		
1.0	Int.	* 12 I 1.0 ISO	14 I 1.0 ISO	21 I 1.0 ISO		
1.25	Ext.		14 E 1.25 ISO			
1.25	Int.	* 12 I 1.25 ISO	14 I 1.25 ISO			
1.5	Ext.		14 E 1.5 ISO	21 E 1.5 ISO	30 E 1.5 ISO	40 E 1.5 ISO
1.5	Int.	* 12 I 1.5 ISO	14 I 1.5 ISO	21 I 1.5 ISO	30 I 1.5 ISO	40 I 1.5 ISO
1.75	Ext.		14 E 1.75 ISO			
1.75	Int.		14 I 1.75 ISO	21 I 1.75 ISO		
2.0	Ext.		14 E 2.0 ISO	21 E 2.0 ISO	30 E 2.0 ISO	40 E 2.0 ISO
2.0	Int.		14 I 2.0 ISO	21 I 2.0 ISO	30 I 2.0 ISO	40 I 2.0 ISO
2.5	Ext.		14 E 2.5 ISO	21 E 2.5 ISO		
2.5	Int.		14 I 2.5 ISO	21 I 2.5 ISO		
3.0	Ext.			21 E 3.0 ISO	30 E 3.0 ISO	40 E 3.0 ISO
3.0	Int.			21 I 3.0 ISO	30 I 3.0 ISO	40 I 3.0 ISO
3.5	Ext.				30 E 3.5 ISO	
3.5	Int.			21 I 3.5 ISO	30 I 3.5 ISO	40 I 3.5 ISO
4.0	Ext.				30 E 4.0 ISO	40 E 4.0 ISO
4.0	Int.				30 I 4.0 ISO	40 I 4.0 ISO
4.5	Ext.					
4.5	Int.				30 I 4.5 ISO	40 I 4.5 ISO
5.0	Ext.					40 E 5.0 ISO
5.0	Int.				30 I 5.0 ISO	40 I 5.0 ISO
5.5	Ext.					
5.5	Int.				30 I 5.5 ISO	40 I 5.5 ISO
6.0	Ext.					40 E 6.0 ISO
6.0	Int.					40 I 6.0 ISO

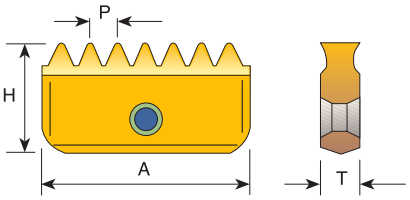
H	.248	.295	.472	.630	.787
T	.114	.122	.185	.217	.248

* One cutting edge

Order example: 14 I 1.5 ISO MT7

UN UNC, UNF, UNEF, UNS



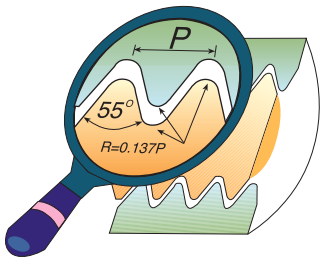


Pitch TPI		Insert Size = A				
		12 mm .472	14 mm .551	21 mm .827	30 mm 1.181	40 mm 1.575
32	Ext.		14 E 32 UN			
32	Int.	* 12 I 32 UN	14 I 32 UN			
28	Ext.		14 E 28 UN			
28	Int.	* 12 I 28 UN	14 I 28 UN			
27	Ext.					
27	Int.		14 I 27 UN			
24	Ext.		14 E 24 UN	21 E 24 UN		
24	Int.	* 12 I 24 UN	14 I 24 UN	21 I 24 UN		
20	Ext.		14 E 20 UN	21 E 20 UN	30 E 20 UN	
20	Int.	* 12 I 20 UN	14 I 20 UN	21 I 20 UN	30 I 20 UN	
18	Ext.		14 E 18 UN	21 E 18 UN	30 E 18 UN	
18	Int.	* 12 I 18 UN	14 I 18 UN	21 I 18 UN	30 I 18 UN	
16	Ext.		14 E 16 UN	21 E 16 UN	30 E 16 UN	40 E 16 UN
16	Int.	* 12 I 16 UN	14 I 16 UN	21 I 16 UN	30 I 16 UN	40 I 16 UN
14	Ext.		14 E 14 UN	21 E 14 UN	30 E 14 UN	40 E 14 UN
14	Int.		14 I 14 UN	21 I 14 UN	30 I 14 UN	40 I 14 UN
12	Ext.		14 E 12 UN	21 E 12 UN	30 E 12 UN	40 E 12 UN
12	Int.		14 I 12 UN	21 I 12 UN	30 I 12 UN	40 I 12 UN
11	Ext.		14 E 11 UN	21 E 11 UN		
11	Int.		14 I 11 UN			
10	Ext.		14 E 10 UN	21 E 10 UN	30 E 10 UN	40 E 10 UN
10	Int.		14 I 10 UN	21 I 10 UN	30 I 10 UN	40 I 10 UN
9	Ext.					
9	Int.		** 14 I 9 UN			
8	Ext.				30 E 8 UN	40 E 8 UN
8	Int.			21 I 8 UN	30 I 8 UN	40 I 8 UN
7	Ext.					
7	Int.			21 I 7 UN		
6	Ext.				30 E 6 UN	40 E 6 UN
6	Int.				30 I 6 UN	40 I 6 UN
5	Ext.					
5	Int.				30 I 5 UN	
4.5	Ext					
4.5	Int.					40 I 4.5UN
4	Ext					
4	Int.					40 I 4 UN
H		.248	.295	.472	.630	.787
T		.114	.122	.185	.217	.248

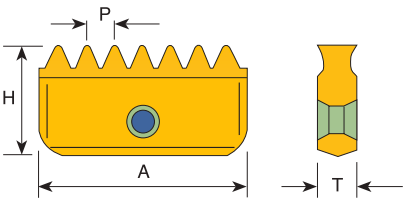
* One cutting edge
** Cannot be used with carbide shank Toolholders.
Order example: 21 I 18 UN MT7

Carmex Precision Tools Ltd.

WHIT BSW, BSF, BSP



Same Insert for External and Internal thread.

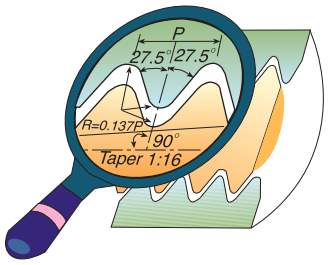


Pitch TPI	Insert Size = A 12 mm .472	14 mm .551	21 mm .827	30 mm 1.181	40 mm 1.575
24		14-24 W			
20		14-20 W	21-20 W		
19	* 12 - 19 W	14-19 W	21-19 W		
16		14-16 W	21-16 W	30-16 W	
14		14-14 W	21-14 W	30-14 W	
11		14-11 W	21-11 W	30-11 W	40-11 W
8					40- 8 W
H	.248	.295	.472	.630	.787
T	.114	.122	.185	.217	.248

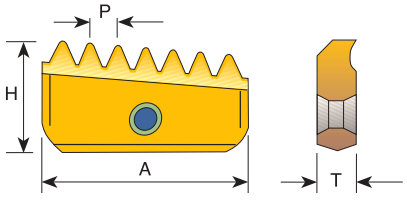
* One cutting edge

Order example: 21-11 W MT7

BSPT



Conical pipe thread inserts are one-sided and may be used for both External and Internal threading.

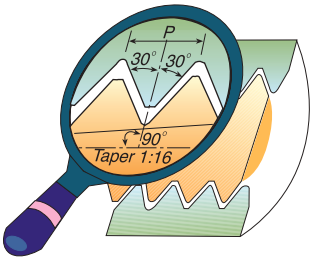


Pitch TPI	Insert Size = A 12 mm .472	14 mm .551	21 mm .827	30 mm 1.181	40 mm 1.575
19	12-19 BSPT	14-19 BSPT			
14		14-14 BSPT	21-14 BSPT		
11			21-11 BSPT	30-11 BSPT	40-11 BSPT
H	.248	.295	.472	.630	.787
T	.114	.122	.185	.217	.248

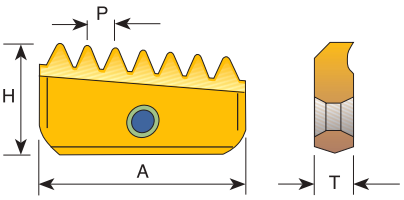
Order example: 14-19 BSPT MT7

For conical preparation end mills see page 125

NPT



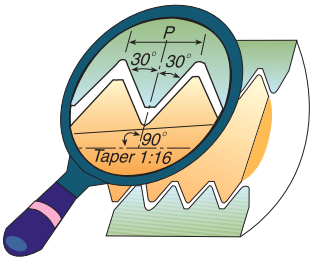
Conical pipe thread inserts are one-sided and may be used for both External and Internal threading.



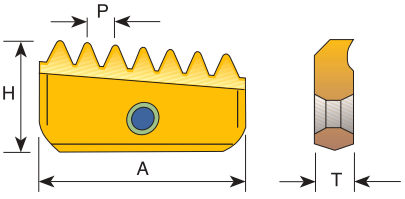
Pitch TPI	Insert Size = A				
	12 mm .472	14 mm .551	21 mm .827	30 mm 1.181	40 mm 1.575
18	12-18 NPT	14-18 NPT			
14		14-14 NPT	21-14 NPT		
11.5			21-11.5 NPT	30-11.5 NPT	40-11.5 NPT
8				30- 8 NPT	40- 8 NPT
H	.248	.295	.472	.630	.787
T	.114	.122	.185	.217	.248

Order example: 30-11.5 NPT MT7

NPTF



Conical pipe thread inserts are one-sided and may be used for both External and Internal threading.

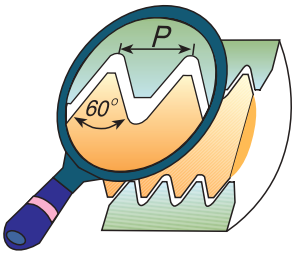


Pitch TPI	Insert Size = A				
	12 mm .472	14 mm .551	21 mm .827	30 mm 1.181	40 mm 1.575
18	12-18 NPTF	14-18 NPTF			
14		14-14 NPTF	21-14 NPTF		
11.5			21-11.5 NPTF	30-11.5 NPTF	40-11.5 NPTF
8				30- 8 NPTF	40- 8 NPTF
H	.248	.295	.472	.630	.787
T	.114	.122	.185	.217	.248

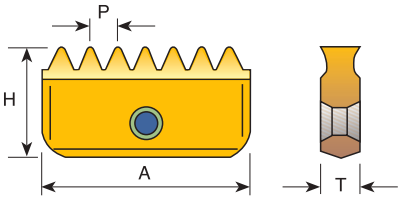
Order example: 21-14 NPTF MT7

For conical preparation end mills see page 125

NPS



Same Insert for External and Internal thread

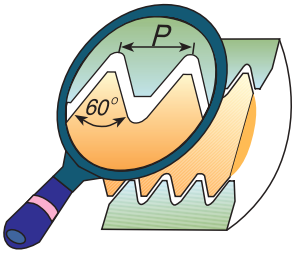


Pitch TPI	Insert Size = A				
	12 mm .472	14 mm .551	21 mm .827	30 mm 1.181	40 mm 1.575
18	* 12-18 NPS	14-18 NPS			
14		14-14 NPS	21-14 NPS		
11.5			21-11.5 NPS	30-11.5 NPS	40-11.5 NPS
8				30- 8 NPS	40- 8 NPS
H	.248	.295	.472	.630	.787
T	.114	.122	.185	.217	.248

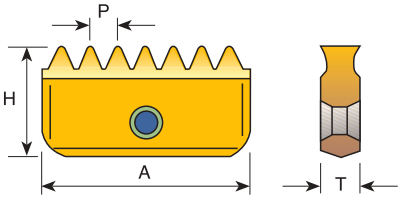
Order example: 30-11.5 NPS MT7

* One cutting edge

NPSF



Same Insert for External and Internal thread

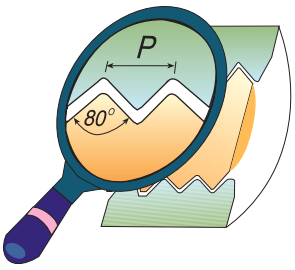


Pitch TPI	Insert Size = A				
	12 mm .472	14 mm .551	21 mm .827	30 mm 1.181	40 mm 1.575
18	* 12-18 NPSF	14-18 NPSF			
14		14-14 NPSF	21-14 NPSF		
11.5			21-11.5 NPSF	30-11.5 NPSF	40-11.5 NPSF
8				30- 8 NPSF	40- 8 NPSF
H	.248	.295	.472	.630	.787
T	.114	.122	.185	.217	.248

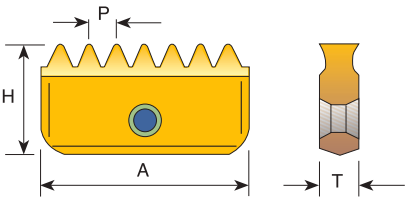
Order example: 21-14 NPSF MT7

* One cutting edge

PG - DIN 40430



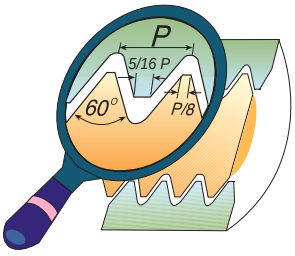
Same Insert for External and Internal thread



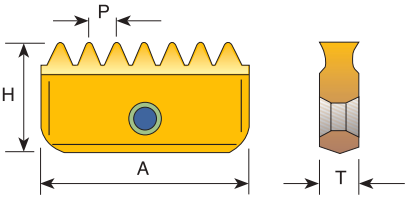
Pitch TPI	Insert Size = A		
	14 mm .551	21 mm .827	30 mm 1.181
18	14-18 PG (PG 9, 11, 13.5, 16)	21-18 PG (PG 16)	
16		21-16 PG (PG 21, 29, 36, 42, 48)	30-16 PG (PG 36, 42, 48)
H	.295	.472	.630
T	.122	.185	.217

Order example: 21-18 PG MT7

UNJ



Inserts for External thread

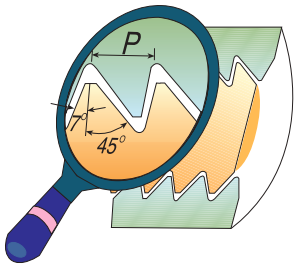


Pitch TPI		Insert Size = A	
		14 mm .551	21 mm .827
24	Ext.	14 E 24 UNJ	21 E 24 UNJ
20	Ext.	14 E 20 UNJ	21 E 20 UNJ
18	Ext.	14 E 18 UNJ	21 E 18 UNJ
16	Ext.	14 E 16 UNJ	21 E 16 UNJ
14	Ext.	14 E 14 UNJ	21 E 14 UNJ
12	Ext.	14 E 12 UNJ	21 E 12 UNJ
H		.295	.472
T		.122	.185

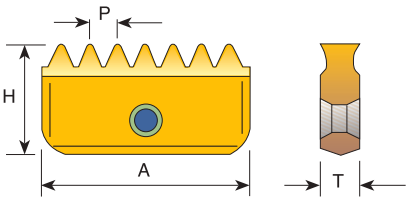
Order example: 21E 16 UNJ MT7

For internal UNJ threads it is common to use UN inserts as partial profile.

American Buttress



ABUT thread inserts are one-sided and may be used for both External and Internal threading

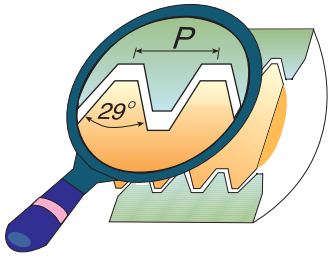


Pitch TPI	Insert Size = A 21 mm .827	30 mm 1.181	40 mm 1.575
16	21 - 16 ABUT	30 - 16 ABUT	
12	21 - 12 ABUT	30 - 12 ABUT	
10	21 - 10 ABUT	30 - 10 ABUT	
8	21 - 8 ABUT	30 - 8 ABUT	
6		30 - 6 ABUT	
4		* 30 - 4 ABUT	40 - 4 ABUT
H	.472	.630	.787
T	.185	.217	.248

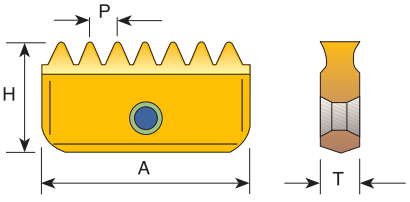
Order example: 30 - 6 ABUT MT7

* Inserts to be used only on Multi-Insert toolholders see page 83

ACME



Inserts for Internal threads



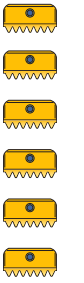
Pitch TPI		Insert Size = A 21 mm .827	30 mm 1.181	40 mm 1.575
12	Int.	21 I 12 ACME	30 I 12 ACME	
10	Int.	21 I 10 ACME	30 I 10 ACME	
8	Int.	21 I 8 ACME	30 I 8 ACME	
6	Int.		30 I 6 ACME	
5	Int.		30 I 5 ACME	
4	Int.		* 30 I 4 ACME	40 I 4 ACME
3.5	Int.			40 I 3.5 ACME
3	Int.			** 40 I 3 ACME
H		.472	.630	.787
T		.185	.217	.248

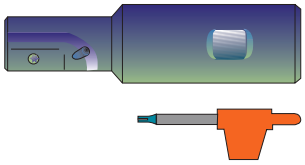
Order example: 21 I 8 ACME MT7

* Inserts to be used only on Multi-Insert toolholders see page 83

** One cutting edge

Internal UN Kits



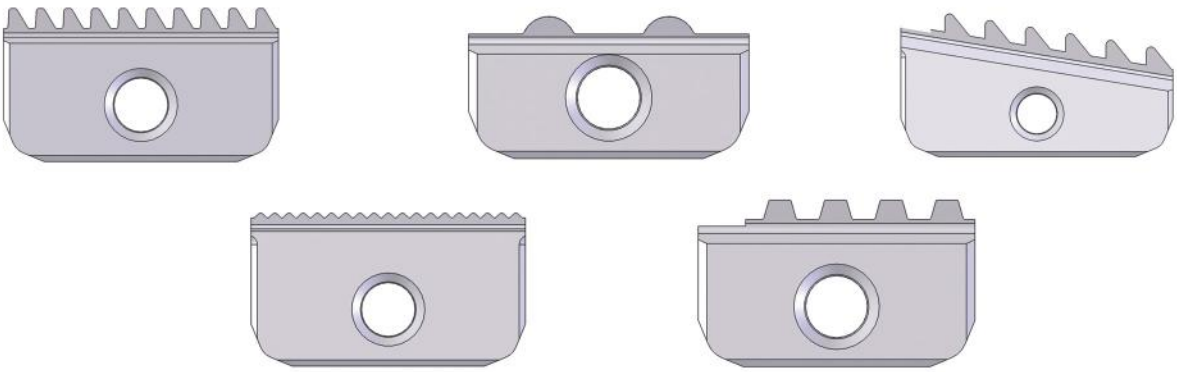


MTK 12 I UN	MTK 14 I UN
INSERTS	INSERTS
12 I 32 UN 12 I 24 UN 12 I 20 UN 12 I 20 UN 12 I 16 UN 12 I 16 UN	14 I 24 UN 14 I 24 UN 14 I 20 UN 14 I 20 UN 14 I 16 UN 14 I 16 UN
TOOLHOLDER	TOOLHOLDER
SR 0375 H12	SR 0670 H14
KEY	KEY
K12	K14
SCREW	SCREW
S12	S14

Order example : MTK 14 I UN

Special Tools

In addition to standard products,
Carmex manufactures special tools and inserts
according to customers' requests.
Special tools are supplied in short delivery times.

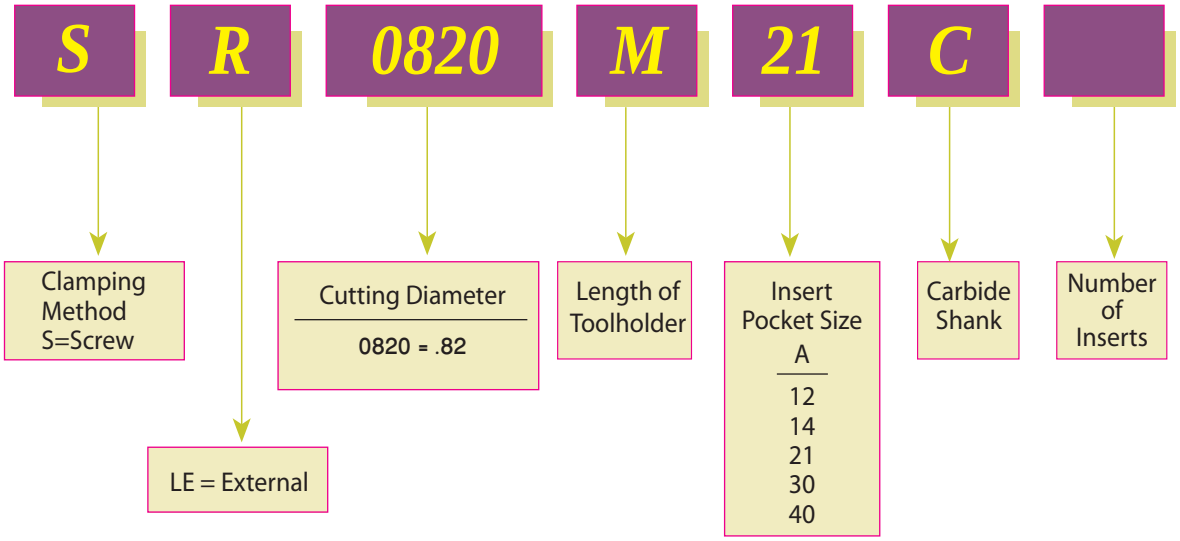


Mill-Thread Toolholders

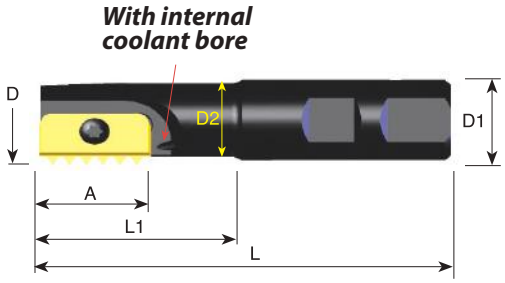
Contents: Page:

Product Identification

Mill-Thread Toolholders Ordering Codes



Single Insert Toolholders

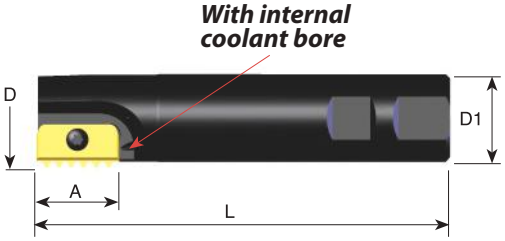


Ordering Code	A mm	D	D1	D2	L	L1	Insert Screw	Torx Key
SR0375H12	12	.37	.75	.30	3.35	.51	S12	K12
*SR0390H12	12	.39	.75	.30	3.35	.51	S12	K12
SR0500F14	14	.50	.75	.37	2.95	.70	S14	K14
SR0540F14	14	.54	.75	.38	2.98	.77	S14	K14
SR0570H14	14	.57	.75	.41	3.20	1.00	S14	K14
SR0670H14	14	.67	.75	.53	3.35	1.18	S14	K14
SR0790H21	21	.79	.75	.61	3.70	1.57	S21	K21
SR0790K21	21	.79	.75	.61	5.00	2.25	S21	K21
SR1140J30	30	1.14	1.00	.88	4.27	1.85	S30	K30
SR1500P40	40	1.50	1.25	1.13	7.00	4.25	S40	K40
SR1500R40	40	1.50	1.25	1.13	8.00	5.25	S40	K40
SR1730M40	40	1.73	1.50	1.38	6.02	3.19	S40	K40

Order example: SR0790H21

* For conical inserts: 12-18 NPT, 12-18 NPTF, 12-19 BSPT

Long Shank Toolholders

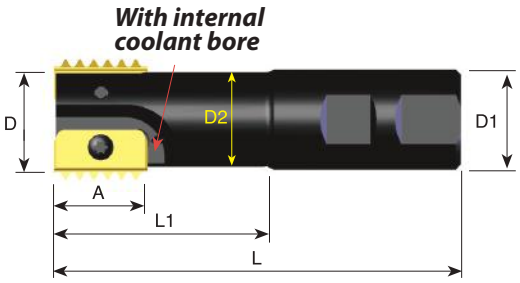


Ordering Code	A mm	D	D1	L	Insert Screw	Torx Key
SR0940K21	21	.94	.75	5.00	S21	K21
SR1240M30	30	1.24	1.00	6.00	S30	K30
SR1500M30	30	1.50	1.25	6.00	S30	K30

Order example: SR1240M30

For holders with long overhang reduce the cutting speed and feed rate between 20% to 40% (depends on workpiece material, pitch and overhang)

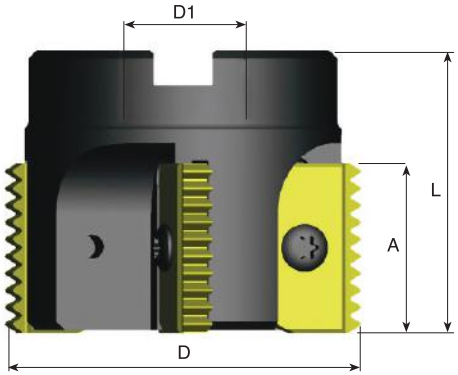
Twin Insert Toolholders



Ordering Code	A mm	D	D1	D2	L	L1	No. of Inserts	Insert Screw	Torx Key
SR0790H14-2	14	.79	.75	.63	3.66	1.54	2	S14	K14
SR1180J21-2	21	1.18	1.00	.95	4.25	1.97	2	S21	K21
SR1580L30-2	30	1.57	1.25	1.18	5.12	2.80	2	S30	K30
SR1970M40-2	40	1.97	1.50	1.49	6.02	3.35	2	S40	K40

Order example: SR1580L30-2

Multi Insert Toolholders

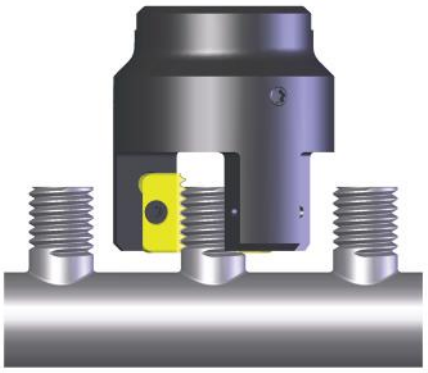


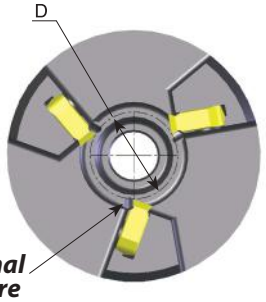
Ordering Code	A mm	D	D1	L	No. of Inserts	Insert Screw	Torx Key
SR2480C21-5	21	2.48	.75	1.97	5	S21	K21
SR2480C30-4	30	2.48	.75	1.97	4	S30	K30
SR3150D30-4	30	3.15	1.00	2.16	4	S30	K30
SR3940D30-4	30	3.94	1.25	2.36	4	S30	K30
SR3940D30-8	30	3.94	1.25	2.36	8	S30	K30
SR3150D40-4	40	3.15	1.00	2.56	4	S40	K40
SR3940E40-4	40	3.94	1.25	2.76	4	S40	K40
SR3940E40-6	40	3.94	1.25	2.76	6	S40	K40

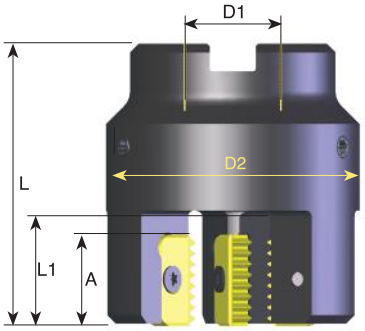
Order example: SR3940D30-4

External Multi Insert Toolholder

- Reduced machining time
- Optimal coolant supply



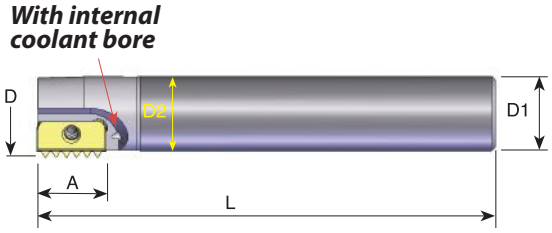




Ordering Code	A mm	D	D1	D2	L	L1	No. of Inserts	Insert Screw	Torx Key
SLE0790D21-3	21	.79	.75	2.28	2.56	.95	3	S21	K21
SLE1180D21-3	21	1.18	.75	2.68	2.56	.95	3	S21	K21
SLE1770E21-4	21	1.77	1.00	3.27	2.76	.95	4	S21	K21

Order example: SLE1180D21-3

Long Carbide Shank Toolholders

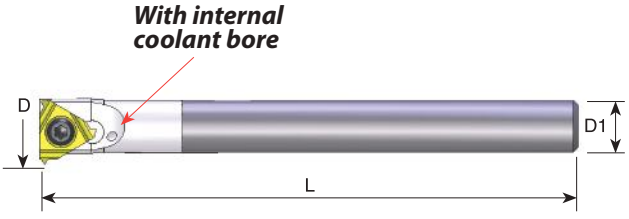


Ordering Code	A mm	D	D1	D2	L	Insert Screw	Torx Key
SR0390K12C	12	.39	.312	.312	5.0	S12	K12
SR0500J14C	14	.50	.375	.375	6.0	S14	K14
SR0620K14C	14	.62	.500	.500	7.0	S14	K14
SR0820M21C	21	.82	.625	.625	8.0	S21	K21

Order example: SR0620 K14C

For holders with long overhang reduce the cutting speed and feed rate between 20% to 40% (depends on workpiece material, pitch and overhang)

Carbide Shank Toolholders for Single Point Threading



Ordering Code	L mm	Pitch Range mm	Pitch Range TPI	D	D1	L	Insert Screw	Torx Key
* **SR0250H08C**	08	0.5-1.75	48-14	.35	.25	4.0	S08	K08
** **SR0375M11C**	11	0.5-2.00	48-11	.50	.38	6.0	S11	K11

For Inserts see the Thread Turning Tools section of this Catalogue
For an internal application use an internal R.H. insert.

* Without coolant bore

** For an external application use an external L.H. insert.

D-Thread

Mill-Thread Inserts & Toolholders for machining deep parts

- Improved productivity due to multi-insert toolholders.
- Partial Profile, standard or U-type inserts for a wide range of threads.
- Inserts with three cutting edges, reduces tooling costs.
- Low cutting resistance due to the single point inserts.
- Holder allows for a long overhang and includes internal coolant.
- Same insert and toolholder for both external and internal thread.

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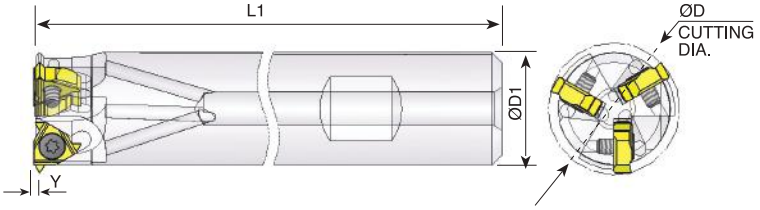
D-Thread *Mill-Thread Inserts & Toolholders for machining deep threads*



Ordering Code	Insert Size L mm	Insert Size I.C	Y	D	D1	L1	No. of Inserts	Insert Screw	Torx Key
SR0925Q11	11	1/4	.04	.925	.75	7.5	3	SE11	K11

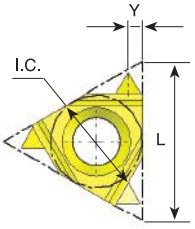
Partial 60˚ Size 11

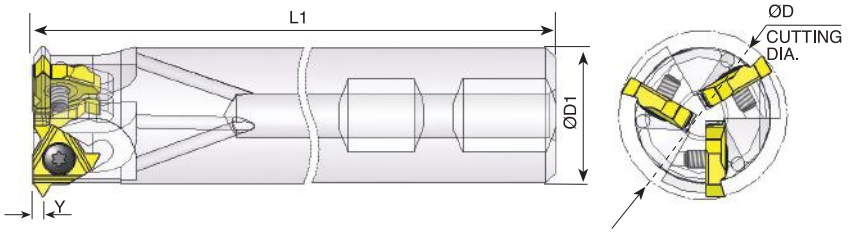
Ordering Code		Pitch Range mm	Pitch Range TPI
1160D	**INT.**	1.0 - 2.0	24 - 12
	EX.	0.75 - 1.5	32 - 14

Coated Grade: BMA

Partial 55˚ Size 11

Ordering Code		Pitch TPI
1155D	**INT./EX.**	24 - 14





Ordering Code	Insert Size L mm	Insert Size I.C	Y	D	D1	L1	No. of Inserts	Insert Screw	Torx Key
SR1220R16	16	3/8	.07	1.22	1	8.86	3	SE16	K16

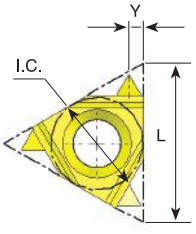
Partial 60˚ Size 16

Ordering Code		Pitch Range mm	Pitch Range TPI
1660D	**INT.**	2.5 - 3.5	10 - 7
	EX.	2.0 - 3.0	12 - 8

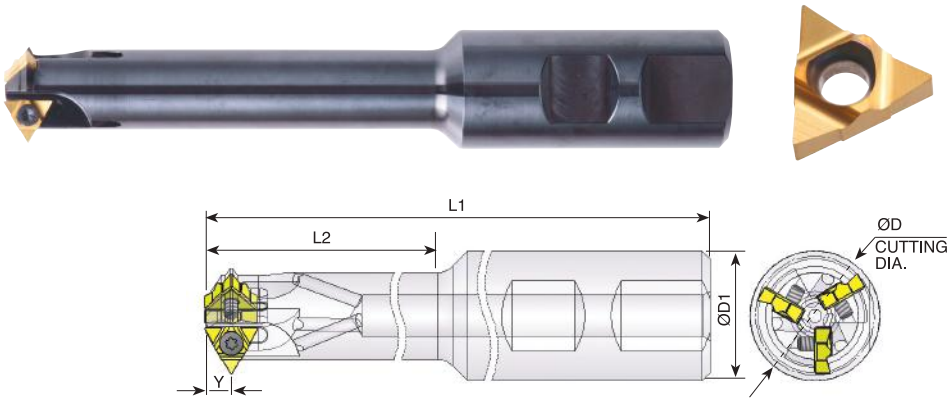
Coated Grade: BMA

Partial 55˚ Size 16

Ordering Code		Pitch TPI
1655D	**INT./EX.**	12 - 8



D-Thread *Mill-Thread Inserts & Toolholders for machining deep threads*



Ordering Code	Insert Size L mm	Insert Size I.C	Y	D	D1	L1	L2	No. of Inserts	Insert Screw	Torx Key
* SR0580M11U	11U	1/4U	.20	.580	.625	5.9	2.16	1	SE11	K11
** SR0810M11U	11U	1/4U	.20	.810	1	5.9	2.56	2	SE11	K11
SR0905M11U	11U	1/4U	.20	.905	1	5.9	3.46	3	SE11	K11

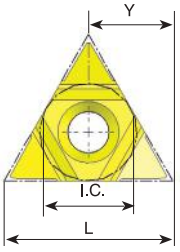
* Pitch limitations: for partial 60° - INT. - 10-9 TPI, EX. -12 - 10 TPI; for partial 55° - 12 - 9 TPI
** Pitch limitations: for partial 60° - INT. - 10-8 TPI, EX. -12 - 9 TPI; for partial 55° - 12 - 9 TPI

Partial 60˚ Size 11U

Ordering Code		Pitch Range mm	Pitch Range TPI
11U60D	INT.	2.5 - 4.0	10 - 6
	EX.	2.0 - 3.0	12 - 8
11U60D-18-12	INT.	1.5 - 2.0	18 - 12
	EX.	1.25 - 1.75	20 - 14

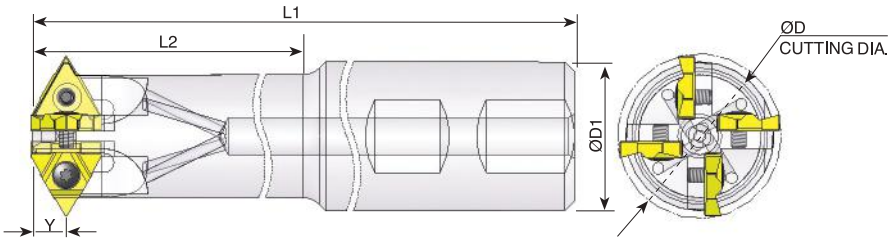
Partial 55˚ Size 11U

Ordering Code		Pitch TPI
11U55D	INT./EX.	12 - 7

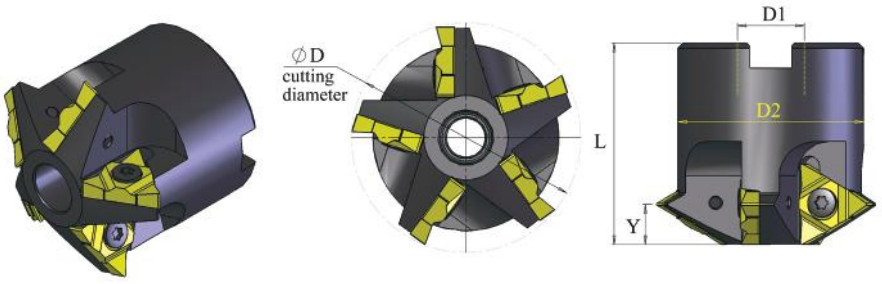


Coated Grade: BMA

D-Thread *Mill-Thread Inserts & Toolholders for machining deep threads*



Ordering Code	Insert Size L mm	Insert Size I.C	Y	D	D1	L1	L2	No. of Inserts	Insert Screw	Torx Key
SR1400R16U	16U	3/8U	.30	1.40	1.25	8.66	6.1	4	SE16	K16



Ordering Code	Insert Size L mm	Insert Size I.C	Y	D	D1	D2	L	No. of Inserts	Insert Screw	Torx Key
SR1710B16U - 5	16U	3/8U	.30	1.71	0.5	1.39	1.5	5	SE16	K16

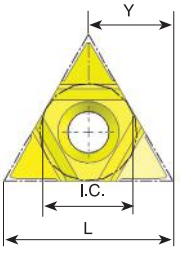
Partial 60˚ Size 16U

Ordering Code		Pitch Range mm	Pitch Range TPI
16U60D	**INT.**	4.0 - 6.0	6 - 4
	EX.	3.0 - 5.0	8 - 5
16U60D-16-8	**INT.**	1.5 - 3.0	16 - 8
	EX.	1.5 - 2.5	18 - 10

Coated Grade: BMA

Partial 55˚ Size 16U

Ordering Code		Pitch TPI
16U55D	**INT./EX.**	6 - 4.5



Spiral Mill-Thread

Advantages of Spiral Mill-Thread Tools

- The spiral designed tools enable a smooth cutting operation at a high feed rate and reduced machining time.
- The tools suit a wide range of applications, from machining small components in small machining centers to heavy-duty applications in high power milling machines.
- Spiral fluted toolholders hold 2 to 9 inserts in a comparatively small cutting diameter.
- The unique clamping method enables optimal indexability.
- Spiral tools reduce vibration and chatter.
- High grade finish is achieved in all applications: threading, end milling roughing and finishing.
- Inserts are available in MT7 Sub-Micron Grade with Titanium Aluminum Nitride multi-layer coating (ISO K10 - K20). This is a general purpose grade, which can be used with all materials.

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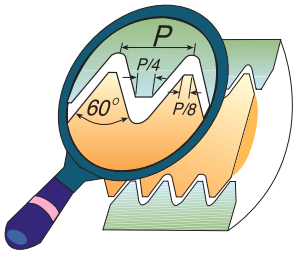
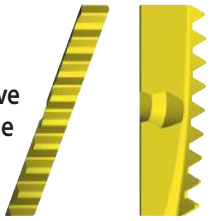
Spiral Mill - Thread Inserts

ISO

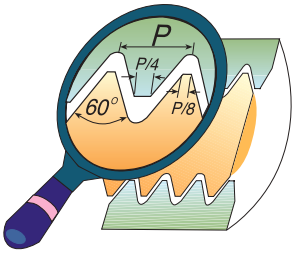


Spiral inserts have one cutting edge

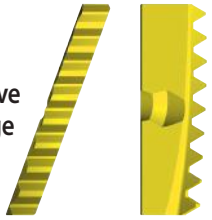


Insert Size	Pitch mm		Ordering code	Thread Size	Toolholder
H23	1.0	Ext.	**H23 E 1.0 ISO**		SR 091 H23 - 2 SR 091 H23M- 2
	1.0	Int.	**H23 I 1.0 ISO**	≥ M26	
	1.5	Ext.	**H23 E 1.5 ISO**		
	1.5	Int.	**H23 I 1.5 ISO**	≥ M27	
	2.0	Ext.	**H23 E 2.0 ISO**		
	2.0	Int.	**H23 I 2.0 ISO**	≥ M28	
	3.0	Ext.	**H23 E 3.0 ISO**		
	3.0	Int.	**H23 I 3.0 ISO**	≥ M30	
	3.5	Int.	**H23 I 3.5 ISO**	≥ M30	
	4.0	Int.	**H23 I 4.0 ISO**	≥ M36	
H32	1.0	Int.	**H32 I 1.0 ISO**	≥ M34	SR 126 H32 - 5 SR 126 H32P - 5
	1.5	Ext.	**H32 E 1.5 ISO**		
	1.5	Int.	**H32 I 1.5 ISO**	≥ M35	
	2.0	Ext.	**H32 E 2.0 ISO**		
	2.0	Int.	**H32 I 2.0 ISO**	≥ M36	
	3.0	Ext.	**H32 E 3.0 ISO**		
	3.0	Int.	**H32 I 3.0 ISO**	≥ M38	
	3.5	Int.	**H32 I 3.5 ISO**		
	4.0	Ext.	**H32 E 4.0 ISO**		
	4.0	Int.	**H32 I 4.0 ISO**	≥ M40	
	4.5	Int.	**H32 I 4.5 ISO**	≥ M42	
	5.0	Int.	**H32 I 5.0 ISO**	≥ M48	
H45	1.5	Ext.	**H45 E 1.5 ISO**		SR 177 H45 - 6 SR 177 H45 - 6M
	1.5	Int.	**H45 I 1.5 ISO**	≥ M50	
	2.0	Ext.	**H45 E 2.0 ISO**		
	2.0	Int.	**H45 I 2.0 ISO**	≥ M50	
	3.0	Int.	**H45 I 3.0 ISO**	≥ M52	
	3.5	Int.	**H45 I 3.5 ISO**		
	4.0	Int.	**H45 I 4.0 ISO**	≥ M56	
	4.5	Int.	**H45 I 4.5 ISO**		
	5.0	Int.	**H45 I 5.0 ISO**		
	5.5	Int.	**H45 I 5.5 ISO**	≥ M56	
	6.0	Int.	**H45 I 6.0 ISO**	≥ M64	
H63	1.5	Int.	**H63 I 1.5 ISO**	≥ M68	SR 248 H63 - 9
	2.0	Int.	**H63 I 2.0 ISO**	≥ M70	
	3.0	Int.	**H63 I 3.0 ISO**	≥ M70	
	4.0	Int.	**H63 I 4.0 ISO**	≥ M72	
	6.0	Int.	**H63 I 6.0 ISO**	≥ M76	

UN



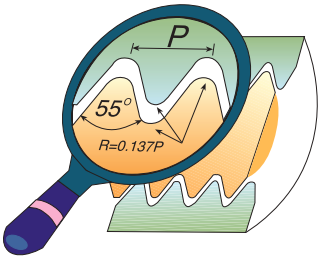
Spiral inserts have one cutting edge



Insert Size	Pitch TPI		Ordering code	Thread Size	Toolholder
H23	32	Int.	H23 I 32 UN	≥ 1”	SR 091 H23 - 2 SR 091 H23M- 2
	24	Int.	H23 I 24 UN	≥ 1”	
	20	Ext.	H23 E 20 UN		
	20	Int.	H23 I 20 UN	≥ 1”	
	18	Ext.	H23 E 18 UN		
	18	Int.	H23 I 18 UN	≥ 1 1/16”	
	16	Ext.	H23 E 16 UN		
	16	Int.	H23 I 16 UN	≥ 1 1/16”	
	14	Ext.	H23 E 14 UN		
	14	Int.	H23 I 14 UN	≥ 1 1/8”	
	12	Ext.	H23 E 12 UN		
	12	Int.	H23 I 12 UN	≥ 1 1/8”	
	10	Ext.	H23 E 10 UN		
	10	Int.	H23 I 10 UN	≥ 1 1/8”	
	8	Ext.	H23 E 8 UN		
	8	Int.	H23 I 8 UN	≥ 1 3/16”	
	7	Ext.	H23 E 7 UN		
	7	Int.	H23 I 7 UN	≥ 1 1/4”	
H28	12	Int.	H28 I 12 UN	≥ 1 5/16”	SR 110 H28 - 3
	8	Int.	H28 I 8 UN	≥ 1 3/8”	
	6	Int.	H28 I 6 UN	≥ 1 1/2”	
H32	24	Ext.	H32 E 24 UN		SR 126 H32 - 5 SR 126 H32P - 5
	20	Ext.	H32 E 20 UN		
	20	Int.	H32 I 20 UN	≥ 1 3/8”	
	18	Ext.	H32 E 18 UN		
	18	Int.	H32 I 18 UN	≥ 1 3/8”	
	16	Ext.	H32 E 16 UN		
	16	Int.	H32 I 16 UN	≥ 1 3/8”	
	12	Ext.	H32 E 12 UN		
	12	Int.	H32 I 12 UN	≥ 1 7/16”	
	8	Ext.	H32 E 8 UN		
	8	Int.	H32 I 8 UN	≥ 1 7/16”	
	6	Ext.	H32 E 6 UN		
	6	Int.	H32 I 6 UN	≥ 1 7/16”	
	5	Int.	H32 I 5 UN	≥ 1 7/16”	
H40	6	Int.	H40 I 6 UN	≥ 2”	SR 157 H40 - 4
	4.5	Int.	H40 I 4.5 UN	≥ 2”	
H45	16	Int.	H45 I 16 UN	≥ 2”	SR 177 H45 - 6 SR 177 H45 - 6M
	12	Int.	H45 I 12 UN	≥ 2”	
	8	Int.	H45 I 8 UN	≥ 2 1/4”	
	6	Int.	H45 I 6 UN	≥ 2 1/4”	
	4.5	Int.	H45 I 4.5 UN	≥ 2 1/4”	
	4	Int.	H45 I 4 UN	≥ 2 1/2”	
H63	16	Int.	H63 I 16 UN	≥ 2 3/4”	SR 248 H63 - 9
	12	Int.	H63 I 12 UN	≥ 2 3/4”	
	8	Int.	H63 I 8 UN	≥ 3”	
	6	Int.	H63 I 6 UN	≥ 3”	
	4	Int.	H63 I 4 UN	≥ 3”	

Whitworth

Same insert for internal and external thread

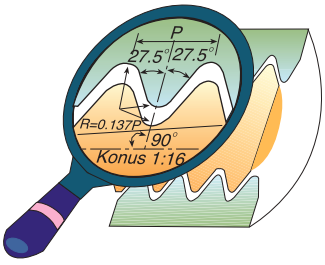


Spiral inserts have one cutting edge

Insert Size	Pitch TPI	Ordering code	Thread Size	Toolholder
H23	14	**H23-14 W**	Int. G 7/8" Ext. ≥ G 1/2"	SR 091 H23 - 2 SR 091 H23M- 2
	11	**H23-11 W**	≥ G1"	
H32	14	**H32-14 W**	Ext. ≥ G 1/2"	SR 126 H32 - 5 SR 126 H32P - 5
	11	**H32-11 W**	Int. ≥ G 1 1/8" Ext. ≥ G 1"	
H45	11	**H45-11 W**	Int. ≥ G 1 5/8" Ext. ≥ G 1"	SR 177 H45 - 6 SR 177 H45 - 6M
H63	11	**H63-11 W**	Int. ≥ G 2 3/8" Ext. ≥ G 1"	SR 248 H63 - 9

BSPT

Same insert for internal and external thread

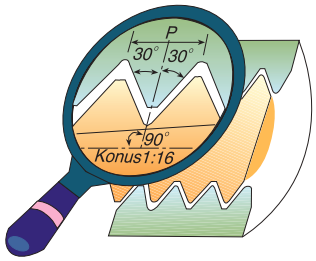


Spiral inserts have one cutting edge

Insert Size	Pitch TPI	Ordering code	Thread Size	Toolholder
H23	11	**H23-11 BSPT**	≥ 1" BSPT	SR 091 H23 - 2 SR 091 H23M- 2
H32	11	**H32-11 BSPT**	Int. ≥1 1/8" BSPT Ext. ≥1" BSPT	SR 126 H32 - 5 SR 126 H32P - 5
H45	11	**H45-11 BSPT**	Int. ≥1 3/4" BSPT Ext. ≥1" BSPT	SR 177 H45 - 6 SR 177 H45 - 6M
H63	11	**H63-11 BSPT**	Int. ≥2 1/2" BSPT Ext. ≥1" BSPT	SR 248 H63 - 9

NPT

Same insert for internal and external thread

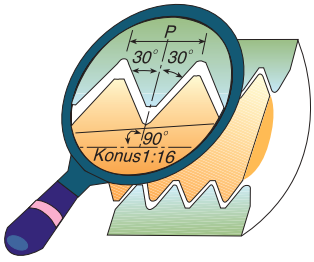


Spiral inserts have one cutting edge

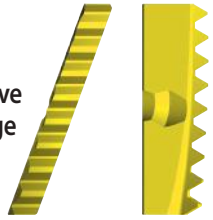
Insert Size	Pitch TPI	Ordering code	Thread Size	Toolholder
H23	11.5	**H23-11.5 NPT**	1"-2" NPT	SR 091 H23 - 2 SR 091 H23M- 2
H32	11.5	**H32-11.5 NPT**	Int. 1 1/4"-2" NPT Ext. 1" - 2" NPT	SR 126 H32 - 5 SR 126 H32P - 5
H45	11.5	**H45-11.5 NPT**	Int. ≥ NPT 1 5/8" Ext. ≥ NPT 1"	SR 177 H45 - 6 SR 177 H45 - 6M
	8	**H45- 8 NPT**	≥ 2 1/2" NPT	
H63	11.5	**H63-11.5 NPT**	Ext. 1-2" NPT	SR 248 H63 - 9
	8	**H63- 8 NPT**	≥ 3" NPT	

NPTF

Same insert for internal and external thread



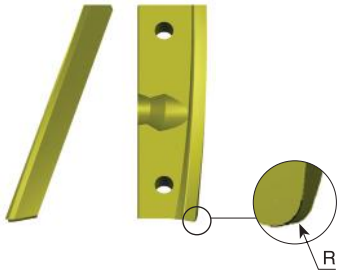
Spiral inserts have one cutting edge



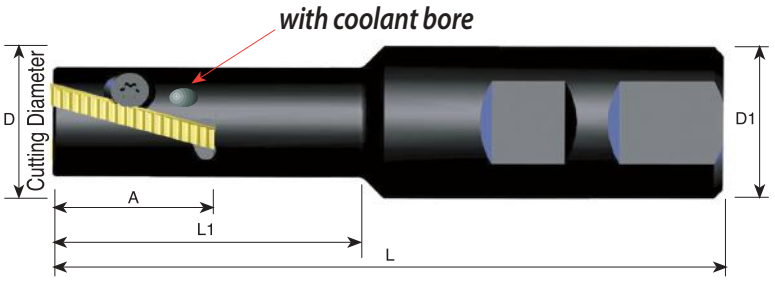
Insert Size	Pitch TPI	Ordering code	Thread Size	Toolholder
H23	11.5	**H23-11.5 NPTF**	1"-2" NPTF	SR 091 H23 - 2 SR 091 H23M- 2
H32	11.5	**H32-11.5 NPTF**	Int 1 1/4"-2" NPTF Ext. 1" -2" NPTF	SR 126 H32 - 5 SR 126 H32P - 5

Spiral Finishing Inserts

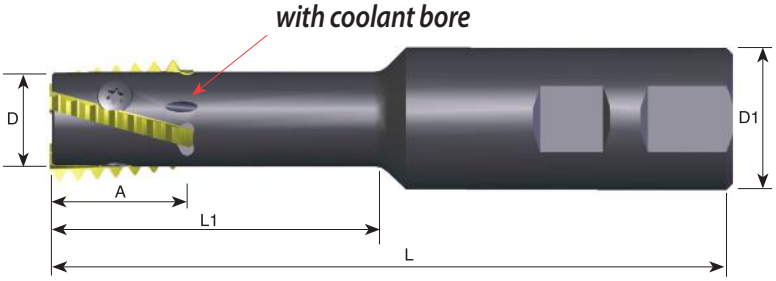
Spiral inserts have one cutting edge



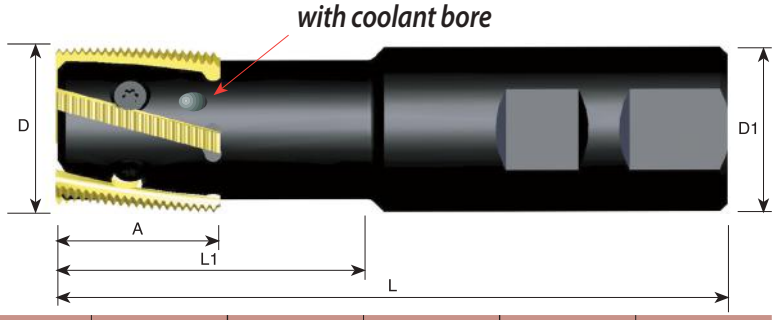
Insert Size	R	Ordering code	Toolholder
H23	0.2	**H23 F R 0.2**	SR 091 H23 - 2 SR 091 H23M - 2
	0.5	**H23 F R 0.5**	
	1.0	**H23 F R 1.0**	
H32	0.2	**H32 F R 0.2**	SR 126 H32 - 5 SR 126 H32P - 5
	0.5	**H32 F R 0.5**	
	1.0	**H32 F R 1.0**	
H45	0.2	**H45 F R 0.2**	SR 177 H45 - 6 SR 177 H45 - 6M
	0.5	**H45 F R 0.5**	
	1.0	**H45 F R 1.0**	
	1.5	**H45 F R 1.5**	
	2.0	**H45 F R 2.0**	
H63	0.2	**H63 F R 0.2**	SR 248 H63 - 9
	0.5	**H63 F R 0.5**	
	1.0	**H63 F R 1.0**	
	1.5	**H63 F R 1.5**	
	2.0	**H63 F R 2.0**	



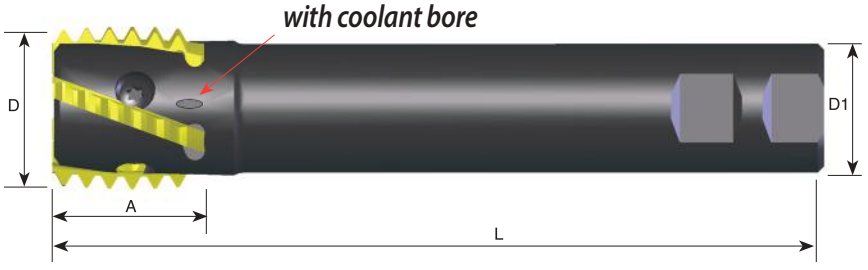
Ordering Code	A	D	D1	L	L1	No. of Inserts	Screw	Key
SR091H23 -2	1.06	0.91	1.0	4.5	2.00	2	S23	K21
SR091H23M-2	1.06	0.91	1.0	6.0	3.07	2	S23	K21



Ordering Code	A	D	D1	L	L1	No. of Inserts	Screw	Key
SR110H28 -3	1.26	1.10	1.25	6.0	3.0	3	S32S	K22

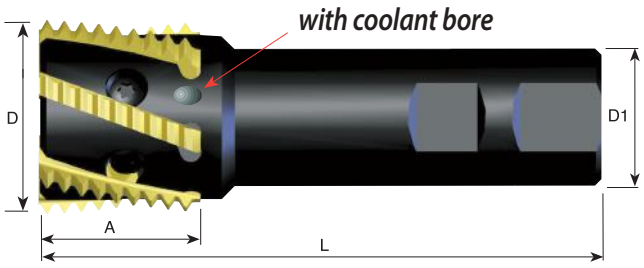


Ordering Code	A	D	D1	L	L1	No. of Inserts	Screw	Key
SR126H32 -5	1.26	1.26	1.25	5.0	2.36	5	S32	K22
SR126H32P-5	1.26	1.26	1.25	7.0	3.58	5	S32	K22

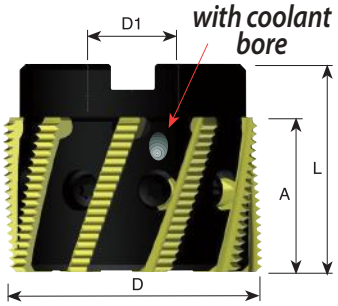


Ordering Code	A	D	D1	L	No. of Inserts	Screw	Key
SR157H40 -4	1.46	1.57	1.25	7.5	4	S45S	K40

Spiral Mill - Thread Toolholders



Ordering Code	A	D	D1	L	No. of Inserts	Screw	Key
SR177H45 - 6	1.46	1.77	1.25	5.0	6	S45S	K40

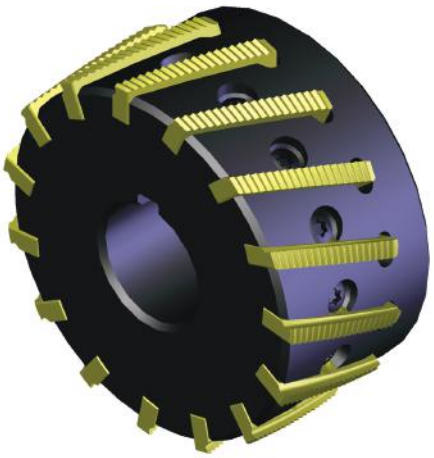


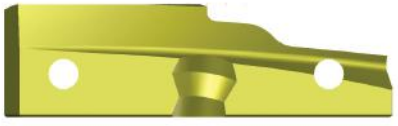
Ordering Code	A	D	D1	L	No. of Inserts	Screw	Key
SR177H45 - 6M	1.46	1.77	0.50	1.91	6	S45	K40
SR248H63 - 9	1.5	2.48	0.75	2.00	9	S63	K40

MT7 Inserts are available in MT7 Sub-Micron Grade with Titanium Aluminium Nitride multi-layer coating (ISO K10 - K20). This is a general purpose grade, which can be used with all materials.

Special Tools

In addition to standard products, Carmex manufactures special tools and inserts according to customers' requests. The toolholders are multi-purpose, making them suitable for both roughing and finishing inserts. Special tools are supplied in short delivery times.





CMT Vertical Mill-Thread

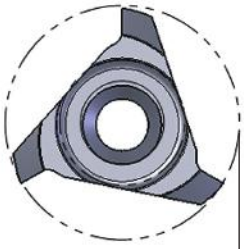
Carmex presents a new family of vertical thread milling indexable inserts and toolholders to perform a wide variety of threads.

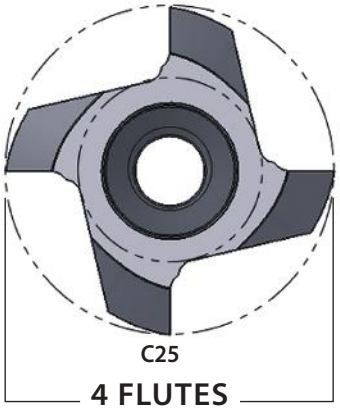
Advantages of CMT - Vertical Mill-Thread

- Ground profile inserts for high precision and excellent performance.
- Working at high machining parameters, with high surface quality.
- Solid and accurate clamping method enables full repeatability.
- Same insert for right-hand or left-hand threads.
- Toolholders include weldon shank and coolant bore.
- Chamfer inserts are also available.

Product Identification

CMT Ordering Codes





Inserts

C → CMT Line

18 → Cutting Diameter
10 = 10.0 mm
12 = 12.0 mm
18 = 17.8 mm
25 = 25.0 mm

I → I = Internal

I2 → Thread Pitch
A, D, G, N, Q = Partial Profile
C = Chamfering and Grooving
W = Grooving

UN → Thread Profile
60° & 55°
ISO
UN
Whitworth
Trapez
Acme
Chamfering

MT7 → **Carbide Grade:** MT 7

Toolholders

S → Clamping Method
S = Screw
C = Carbide shank

RC

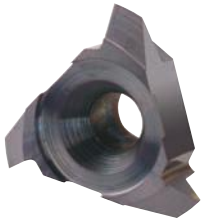
0750 → Shank Diameter

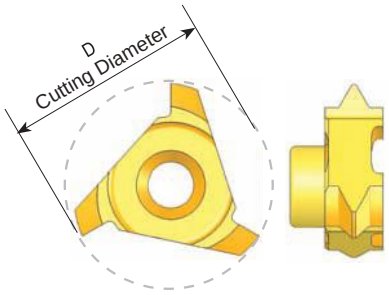
H → Length of Toolholders

I8 → **Cutting Diameter**
10 = 10.0 mm
12 = 12.0 mm
18 = 17.8 mm
25 = 25.0 mm

Partial Profile 60°

Same insert for internal and external thread

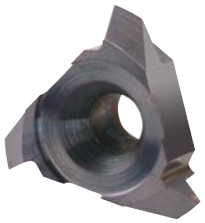


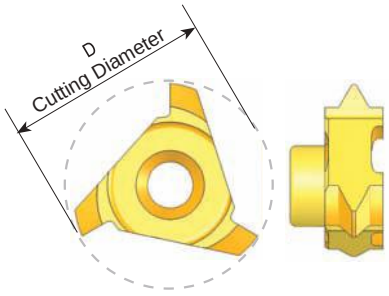


Insert Type	Pitch Range mm	Pitch Range TPI	Ordering Code	D	Thread Diameter (min) Pitch Low Range	Thread Diameter (min) Pitch High Range	Holder Code*
C10	Int. 0.5 - 0.8	56 - 28	**C10 A60**	.39	Ø ≥ .43	Ø ≥ .47	H1, 2, 12, 13
	Ex. 0.4 - 0.8	64 - 32					
	Int. 1.0 - 2.0	28 - 13	**C10 G60**		Ø ≥ .47	Ø ≥ .55	H1, 2, 12
	Ex. 0.8 - 1.75	32 - 15					
C12	Int. 0.5 - 0.8	56 - 28	**C12 A60**	.47	Ø ≥ .51	Ø ≥ .55	H3, 4, 5, 14
	Ex. 0.4 - 0.8	64 - 32					
	Int. 1.0 - 2.0	28 - 13	**C12 G60**	.49	Ø ≥ .55	Ø ≥ .63	
	Ex. 0.8 - 1.75	32 - 15					
C18	Int. 0.5 - 0.8	56 - 28	**C18 A60**	.70	Ø ≥ .75		H6, 7, 8, 9, 15
	Ex. 0.4 - 0.8	64 - 32					
	Int. 1.0 - 1.75	28 - 14	**C18 G60**		Ø ≥ .79	Ø ≥ .83	
	Ex. 0.8 - 1.5	32 - 16					
	Int. 2.0 - 3.0	13 - 8	**C18 D60**		Ø ≥ .83	Ø ≥ .91	
	Ex. 1.75 - 2.5	15 - 10					
C25	Int. 1.5 - 2.5	16 - 10	**C25 G60**	.98	Ø ≥ 1.10	Ø ≥ 1.18	H10, 11, 16, 17
	Ex. 1.0 - 2.0	28 - 13					
	Int. 3.0 - 5.0	8 - 5	**C25 N60**		Ø ≥ 1.18	Ø ≥ 1.34	
	Ex. 2.5 - 4.5	10 - 6					
	Int. 5.0 - 6.0	5 - 4	**C25 Q60**		Ø ≥ 1.34	Ø ≥ 1.38	
	Ex. 4.5 - 5.0	6 - 5					

Partial Profile 55°

Same insert for internal and external thread



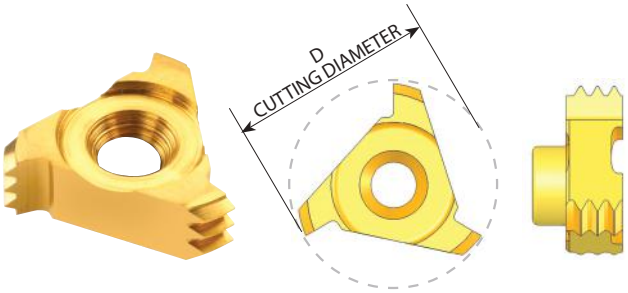


Insert Type	Pitch Range TPI	Ordering Code	D	Thread Dia. (min)	Holder Code*
C10	19-14	**C10 G55**	.39	Ø ≥ .51	H1, 2, 12
C12	28-19	**C12 G55**	.47	Ø ≥ .55	H3, 4, 5, 14
	14- 11	**C12 N55**	.48	Ø ≥ .63	
C18	14- 8	**C18 G55**	.71	Ø ≥ .91	H6, 7, 8, 9, 15
C25	7- 5	**C25 N55**	.98	Ø ≥ 1.22	H10, 11, 16, 17

* For complete toolholder description see pages 104 and 105

Full Profile

Inserts for internal thread



ISO

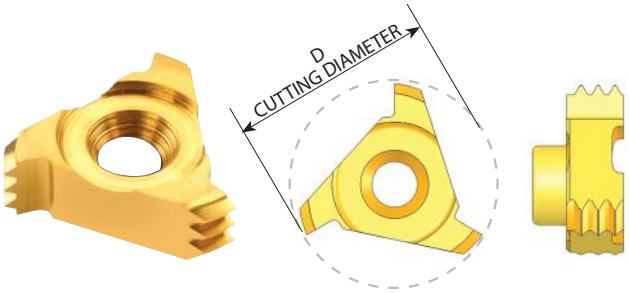
Insert Type	Pitch mm	M coarse	M fine	Ordering Code	Number of Teeth	D	Holder Code*
C10	0.5		Ø ≥ .39	**C10 I 0.5ISO**	6	.35	H1, 2, 12, 13
	1.0		Ø ≥ .47	**C10 I 1.0ISO**	3	.39	
	1.5		Ø ≥ .51	**C10 I 1.5ISO**	2		
	2.0	M14	Ø ≥ .55	**C10 I 2.0ISO**	1	.39	H1, 2, 12
C12	0.5		Ø ≥ .51	**C12 I 0.5 ISO**	6	.47	H3, 4, 5, 14
	0.75		Ø ≥ .51	**C12 I 0.75ISO**	4		
	1.0		Ø ≥ .55	**C12 I 1.0 ISO**	3		
	1.5		Ø ≥ .59	**C12 I 1.5 ISO**	2		
	2.0	M16	Ø ≥ .63	**C12 I 2.0 ISO**	1	.49	
	2.5	M18, M20	Ø ≥ .67	**C12 I 2.5 ISO**	1	.47	H3, 4, 5
	3.0		Ø ≥ .67	**C12 I 3.0 ISO**	1	.49	
C18	0.5		Ø ≥ .77	**C18 I 0.5 ISO**	9	.70	H6, 7, 8, 9, 15
	0.75		Ø ≥ .77	**C18 I 0.75ISO**	6		
	1.0		Ø ≥ .79	**C18 I 1.0 ISO**	5		
	1.5		Ø ≥ .79	**C18 I 1.5 ISO**	3		
	2.0		Ø ≥ .83	**C18 I 2.0 ISO**	2		
	2.5	M22	Ø ≥ .87	**C18 I 2.5 ISO**	2		
	3.0	M24, M27	Ø ≥ .91	**C18 I 3.0 ISO**	1		
	3.5	M30, M33	Ø ≥ .94	**C18 I 3.5 ISO**	1		
C25	3.0	M32, M33	Ø ≥ 1.18	**C25 I 3.0 ISO**	2	.98	H10, 11, 16, 17
	4.0	M36, M39	Ø ≥ 1.26	**C25 I 4.0 ISO**	1		
	4.5	M45	Ø ≥ 1.30	**C25 I 4.5 ISO**	1		
	5.0	M48, M52	Ø ≥ 1.34	**C25 I 5.0 ISO**	1		
	5.5	M60	Ø ≥ 1.38	**C25 I 5.5 ISO**	1		
	6.0	M64, M68	Ø ≥ 1.42	**C25 I 6.0 ISO**	1		

* For complete toolholder description see pages 104 and 105

Carmex Precision Tools Ltd.

Full Profile

Inserts for internal thread



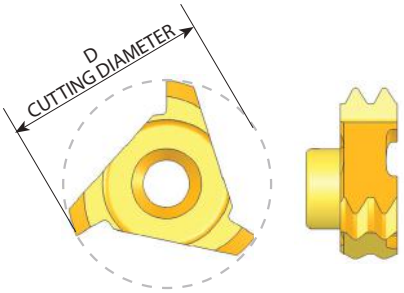
UN

Insert Type	Pitch TPI	Nominal Size	UNC	UNF	UNEF	Ordering Code	Number of Teeth	D	Holder Code*
C10	20			1/2		C10 I 20 UN	2	.39	H1, 2, 12, 13
	18			9/16		C10 I 18 UN	2		
	12	5/8, 11/16, 3/4	9/16			C10 I 12 UN	1	.39	H1, 2, 12
C12	32	9/16, 5/8				C12 I 32 UN	3	.47	H3, 4, 5, 14
	28	9/16, 5/8, 11/16				C12 I 28 UN	3		
	24				9/16, 5/8, 11/16	C12 I 24 UN	2		
	20	9/16, 5/8, 11/16			3/4	C12 I 20 UN	2		
	18			5/8		C12 I 18 UN	2		
	16	5/8, 11/16		3/4		C12 I 16 UN	1		
	11		5/8			C12 I 11 UN	1	.47	H3, 4, 5
	10		3/4			C12 I 10 UN	1		
C18	32	3/4, 13/16, 7/8				C18 I 32 UN	6	.70	H6, 7, 8, 9, 15
	28	3/4, 13/16, 7/8				C18 I 28 UN	5		
	24					C18 I 24 UN	4		
	20	1 1/16, 1 1/8			13/16, 7/8, 15/16	C18 I 20 UN	3		
	18					C18 I 18 UN	3		
	16	7/8, 1				C18 I 16 UN	3		
	14			7/8		C18 I 14 UN	2		
	12	7/8		1, 1 1/8		C18 I 12 UN	2		
	11					C18 I 11 UN	2		
	9		7/8			C18 I 9 UN	1		
	8		1			C18 I 8 UN	1		
C25	8	1 3/16, 1 1/4, 1 5/16				C25 I 8 UN	2	.98	H10, 11, 16, 17
	7		1 1/4			C25 I 7 UN	1		
	6	1 7/16, 1 9/16	1 3/8, 1 1/2			C25 I 6 UN	1		
	5		1 3/4			C25 I 5 UN	1		
	4		2 1/2, 2 3/4			C25 I 4 UN	1		

* For complete toolholder description see pages 104 and 105

G 55° BSW, BSF, BSP

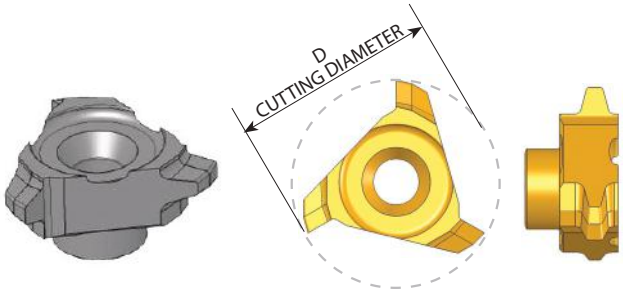
Same Insert for internal and external thread



Insert Type	Pitch TPI	Standard	Ordering Code	Number of Teeth	D	Holder Code*
C10	19	G 1/4	**C10 19 W**	2	.39	H1, 2, 12, 13
C12	19	G 3/8	**C12 19 W**	2	.47	H3, 4, 5, 14
C18	14	G 7/8	**C18 14 W**	2	.70	H6, 7, 8, 9, 15
	11	G≥1	**C18 11 W**	2		

Trapez - DIN 103

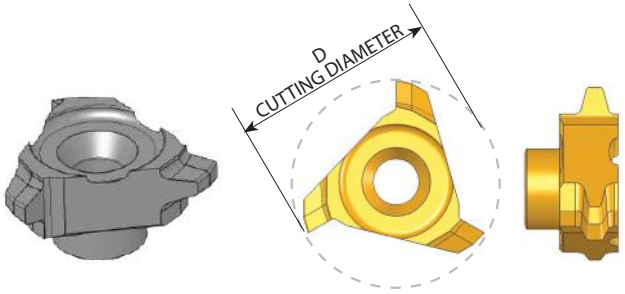
Inserts for internal thread



Insert Type	Pitch mm	Standard	Ordering Code	D	Holder Code*
C10	2.0	Ø ≥ .63	**C10 I 2 TR**	.39	H1, 2, 12,
C18	3.0	Ø ≥ .94	**C18 I 3 TR**	.70	H6, 7, 8, 9, 15
	4.0	Ø ≥ 1.02	**C18 I 4 TR**		H15
	5.0	Ø ≥ 1.10	**C18 I 5 TR**		
C25	6.0	Ø ≥ 1.42	**C25 I 6 TR**	.98	H10, 11, 16, 17

Acme

Inserts for internal thread

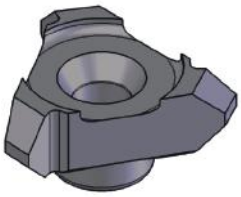


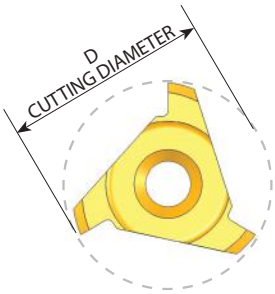
Insert Type	Pitch TPI	Standard	Ordering Code	D	Holder Code*
C18	5	1 1/8, 1 1/4	**C18 I 5 ACME**	.71	Metric CRC 1218 P
C25	4	1 1/2, 1 3/4, 2	**C25 I 4 ACME**	.98	H10, 11, 16, 17

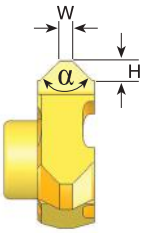
* For complete toolholder description see pages 104 and 105

Chamfering and Grooving

- Optimal for deburring, back chamfering and grooving
- Double side cutting
- General purpose for all materials

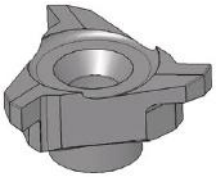


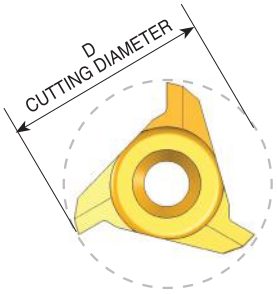


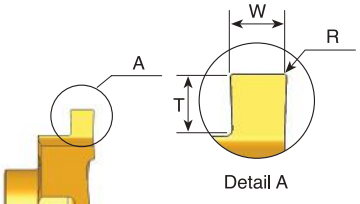


Insert Type	Ordering Code	D	H	W		Holder Code*
C10	**C10 C90**	.39	.051	.016	90˚	H1, 2, 12
C12	**C12 C90**	.47	.053	.012		H3, 4, 5
C18	**C18 C90**	.70	.077	.043		H6, 7, 8, 9, 15
C25	**C25 C90**	.98	.098	.039		H10, 11, 16, 17

Groove Milling



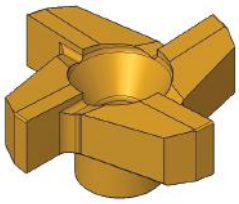


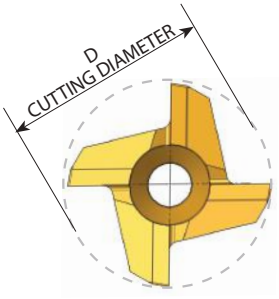


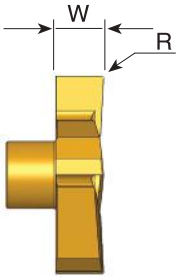
Insert Type	Ordering Code	D	W ±.001	T max.	R	Groove Dia. (min.)	Holder Code*
C10	**C10 W08**	.39	.031	.03	.004	Ø > .39	H1, 2, 12, 13
	C10 W09		.035	.04			
	C10 W10		.039	.04			
C12	**C12 W08**	.47	.031	.03	.004	Ø > .47	H3, 4, 5, 14
	C12 W10		.039	.04			
C18	**C18 W10**	.70	.039	.06	.004	Ø > .70	H6, 7, 8, 9, 15
	C18 W12		.047	.06			
	C18 W15		.059	.08			
	C18 W20		.079	.11			H15
C25	**C25 W20**	.98	.079	.12	.008	Ø > .98	H10, 11, 16, 17
	C25 W25		.098	.12			
	C25 W30		.118	.12			
	C25 W35		.138	.14			
	C25 W40		.157	.14			
	C25 W50		.197	.14			

* For complete toolholder description see pages 104 and 105

Face Milling and Finishing



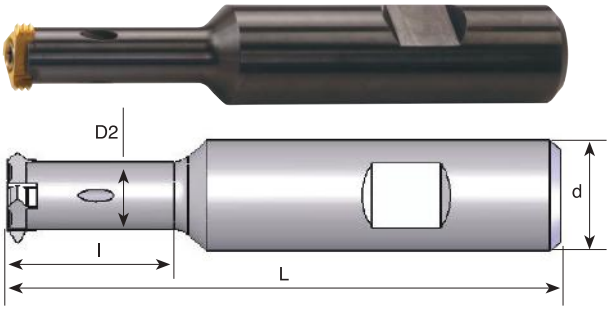




Insert Type	Ordering Code	D	W	R	Holder Code*
C18	**C18 F R0.1**	.70	.20	.004	H6, 7, 8, 9, 15
C25	**C25 F R0.2**	.98	.24	.008	H10, 11, 16, 17

Steel Toolholders

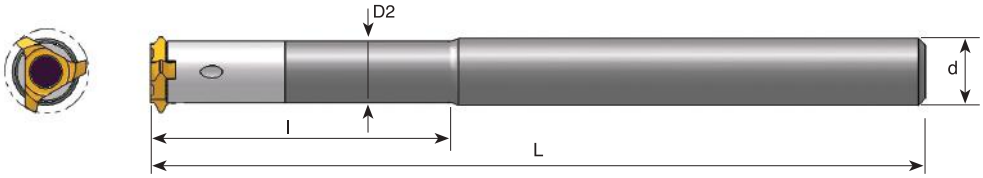
With internal coolant



Tool No.	Ordering Code	Insert Type	d	D2	l	L	Insert Screw	Torx Key
H1	**SRC 0500 E10**	C10	.500	.29	.75	2.8	S5	K5
H2	**SRC 0625 G10**		.625		.75	3.5		
H3	**SRC 0500 E12**	C12	.500	.35	.98	2.8	S10	K10
H4	**SRC 0625 G12**		.625		.98	3.5		
H5	**SRC 0625 H12**		.625		1.38	4.0		
H6	**SRC 0625 H18**	C18	.625	.54	1.89	4.0	S16	K16
H7	**SRC 0750 H18**		.750		1.26	4.0		
H8	**SRC 0750 J18**		.750		1.89	4.5		
H9	**SRC 0750 L18**		.750		2.91	5.5		
H10	**SRC 1000 J25**	C25	1.00	.69	1.77	4.5	S27	K27
H11	**SRC 1000 M25**				3.15	5.9		

Carbide Shank Toolholders

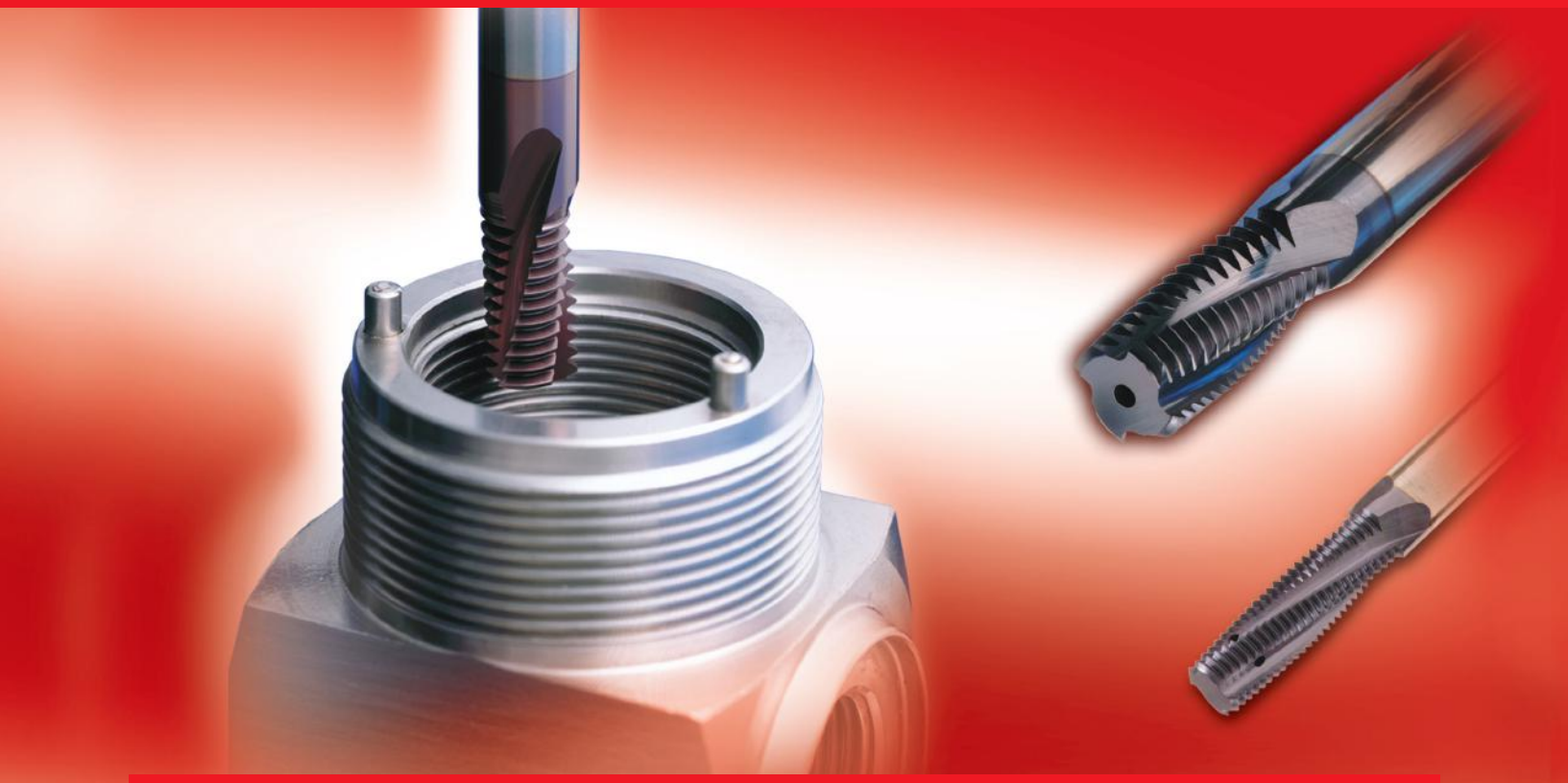
With internal coolant



Tool No.	Ordering Code	Insert Type	d	D2	l	L	Insert Screw	Torx Key
H12	**CRC 0312 L13 K10**	C10	.312	.287	1.38	5.0	S5	K5
H13	**CRC 0312 K10**		.312	.312	-	5.0		
H14	**CRC 0375 M12**	C12	.375	.375	-	6.0	S10	K10
H15	**CRC 0500 P18**	C18	.500	.500	-	7.0	S16	K16
H16	**CRC 0625 R25**	C25	.625	.625	-	8.2	S27	K27
H17	**CRC 0750 L33 S25**		.750	.689	3.35	10.0		

Toolholders without Weldon

Mill-Thread Solid Carbide



Advantages of Mill-Thread Solid Carbide

Carbide grade: MT7 Sub-Micron grade with Titanium Aluminum Nitride multi-layer coating (ISO K10 - K20). To be run at medium to high cutting speeds. General purpose for all materials

- Thread is generated in one pass.
- Spiral flutes allow smooth cutting action.
- Shorter machining time due to multi, 3 to 6, flutes.
- 2.2 mm and up cutting diameter.
- Threads up to shoulder in blind hole.
- Longer tool life due to special multi-layer coating.
- Same tool can be used for a variety of materials.
- Excellent surface finish.
- Low cutting pressure allows thin wall machining.
- Same tool used for R.H and L.H. threads.

Thread Mills with Internal Coolant

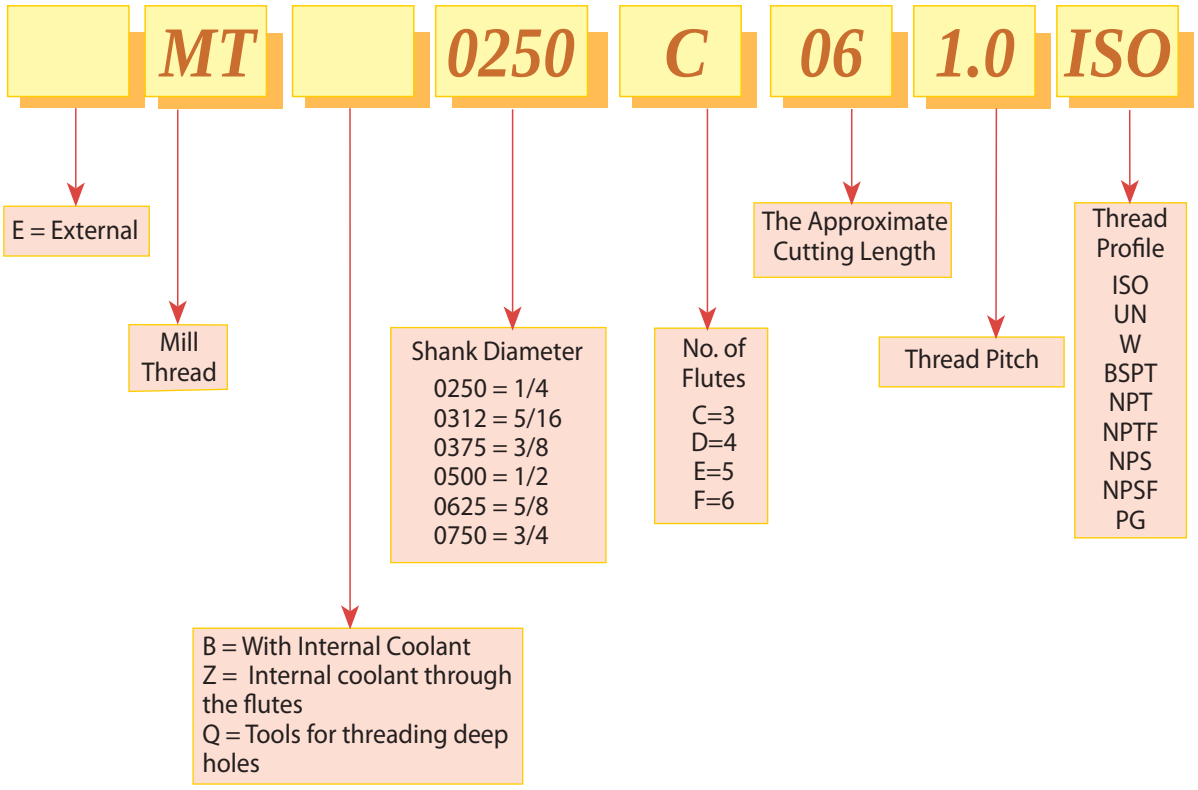
Coolant fluid washes the chips out of the hole. • Increased tool life.

MTB - Thread Mills with internal coolant bore for blind holes
MTZ - Thread Mills with internal coolant through the flutes
MTQ - Thread Mills that include relieved neck for deep work pieces

Contents:

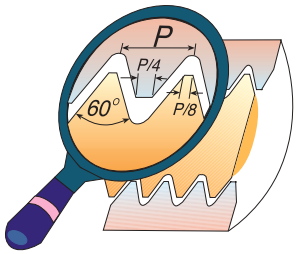
Product Identification

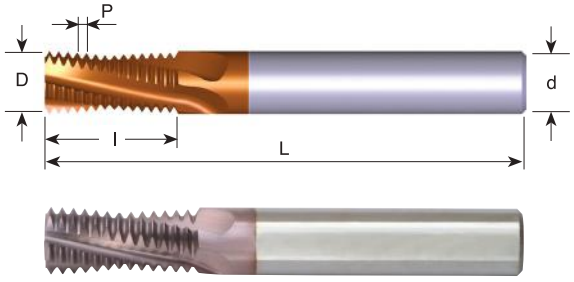
Mill-Thread Solid Carbide Ordering Codes



ISO

Tools for Internal thread





Pitch mm	M coarse	M fine mm	Ordering Code	d	D	No. of Flutes	l	L
0.5	M3	Ø ≥ 4	**MT0250C02 0.5 ISO**	1/4	.087	3	.21	2.5
0.5		Ø ≥ 5	**MT0250C04 0.5 ISO**	1/4	.150	3	.41	2.5
0.7	M4	Ø ≥ 5	**MT0250C03 0.7 ISO**	1/4	.122	3	.29	2.5
0.75		Ø ≥ 6	**MT0250C04 0.75 ISO**	1/4	.177	3	.40	2.5
0.8	M5	Ø ≥ 6	**MT0250C04 0.8 ISO**	1/4	.142	3	.36	2.5
1.0	M6	Ø ≥ 7	**MT0250C04 1.0 ISO**	1/4	.157	3	.41	2.5
1.0	M6	Ø ≥ 7	**MT0250C06 1.0 ISO**	1/4	.157	3	.57	2.5
1.0		Ø ≥ 9	**MT0250C05 1.0 ISO**	1/4	.236	3	.49	2.5
1.0		Ø ≥ 10	**MT0312D07 1.0 ISO**	5/16	.313	4	.65	2.5
1.25	M8	Ø ≥ 10	**MT0250C06 1.25 ISO**	1/4	.197	3	.57	2.5
1.25	M8	Ø ≥ 10	**MT0250C07 1.25 ISO**	1/4	.197	3	.76	2.5
1.5	M10	Ø ≥ 12	**MT0312C07 1.5 ISO**	5/16	.276	3	.68	2.5
1.5	M10	Ø ≥ 12	**MT0312C09 1.5 ISO**	5/16	.276	3	.98	2.5
1.5		Ø ≥ 14	**MT0375D09 1.5 ISO**	3/8	.375	4	.86	3.0
1.5		Ø ≥ 20	**MT0625F13 1.5 ISO**	5/8	.625	6	1.33	4.0
1.75	M12	Ø ≥ 14	**MT0312C08 1.75 ISO**	5/16	.313	3	.79	2.5
1.75	M12	Ø ≥ 14	**MT0312C11 1.75 ISO**	5/16	.313	3	1.14	2.5
2.0	M16	Ø ≥ 17	**MT0375C11 2.0 ISO**	3/8	.375	3	1.06	3.0
2.0	M16	Ø ≥ 17	**MT0375C15 2.0 ISO**	3/8	.375	3	1.54	4.0
2.0		Ø ≥ 18	**MT0500D11 2.0 ISO**	1/2	.472	4	1.06	3.5
2.0		Ø ≥ 26	**MT0750F16 2.0 ISO**	3/4	.750	6	1.61	4.0
2.5	M20	Ø ≥ 22	**MT0625D13 2.5 ISO**	5/8	.551	4	1.33	4.0
2.5	M20	Ø ≥ 22	**MT0625D19 2.5 ISO**	5/8	.551	4	1.92	4.0
3.0	M24	Ø ≥ 25	**MT0625C16 3.0 ISO**	5/8	.625	3	1.59	4.0
3.0	M24	Ø ≥ 25	**MT0625C23 3.0 ISO**	5/8	.625	3	2.31	4.5
3.0	M27	Ø ≥ 28	**MT0750D17 3.0 ISO**	3/4	.750	4	1.71	4.0

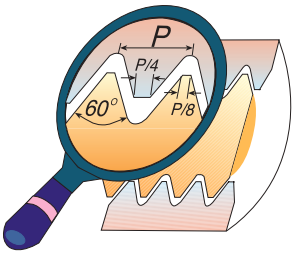
Order example: MT 0500D11 2.0 ISO MT7

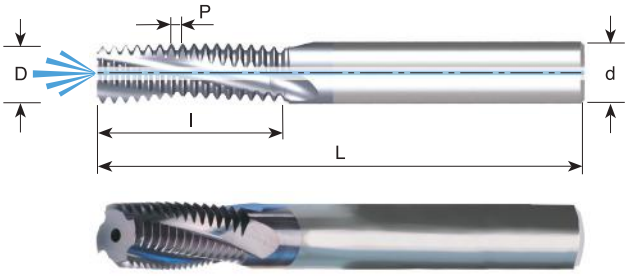
For thread mills with coolant bore see following pages

For small thread mills see pages 129-130 & 147

ISO With internal coolant bore

Tools for Internal thread





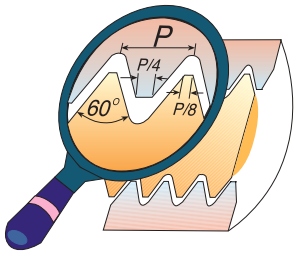
Pitch mm	M coarse	M fine mm	Ordering Code	d	D	No. of Flutes	l	L
0.5		Ø ≥ 5	**MTB0250C04 0.5 ISO**	1/4	.150	3	.41	2.5
0.7	M4	Ø ≥ 5	**MTB0250C02 0.7 ISO**	1/4	.122	3	.29	2.5
0.75		Ø ≥ 6	**MTB0250C04 0.75 ISO**	1/4	.177	3	.40	2.5
0.8	M5	Ø ≥ 6	**MTB0250C03 0.8 ISO**	1/4	.150	3	.36	2.5
1.0	M6	Ø ≥ 7	**MTB0250C04 1.0 ISO**	1/4	.181	3	.41	2.5
1.0	M6	Ø ≥ 7	**MTB0250C06 1.0 ISO**	1/4	.181	3	.60	2.5
1.0		Ø ≥ 9	**MTB0250C05 1.0 ISO**	1/4	.250	3	.50	2.5
1.0		Ø ≥ 10	**MTB0312D06 1.0 ISO**	5/16	.312	4	.65	2.5
1.0		Ø ≥ 12	**MTB0375D09 1.0 ISO**	3/8	.375	4	.96	3.0
1.25	M8	Ø ≥ 10	**MTB0250C05 1.25 ISO**	1/4	.250	3	.57	2.5
1.25	M8	Ø ≥ 10	**MTB0250C07 1.25 ISO**	1/4	.250	3	.76	2.5
1.5	M10	Ø ≥ 12	**MTB0312C06 1.5 ISO**	5/16	.307	3	.67	2.5
1.5	M10	Ø ≥ 12	**MTB0312C09 1.5 ISO**	5/16	.307	3	.98	2.5
1.5		Ø ≥ 14	**MTB0375D08 1.5 ISO**	3/8	.375	4	.86	3.0
1.5		Ø ≥ 16	**MTB0500D10 1.5 ISO**	1/2	.500	4	1.04	4.0
1.5		Ø ≥ 20	**MTB0625F13 1.5 ISO**	5/8	.625	6	1.33	4.0
1.75	M12	Ø ≥ 12	**MTB0375C07 1.75 ISO**	3/8	.354	3	.79	3.0
1.75	M12	Ø ≥ 12	**MTB0375C11 1.75 ISO**	3/8	.354	3	1.14	3.0
2.0	M14	Ø ≥ 15	**MTB0375C10 2.0 ISO**	3/8	.375	3	1.06	3.0
2.0	M16	Ø ≥ 17	**MTB0500D10 2.0 ISO**	1/2	.465	4	1.06	4.0
2.0	M16	Ø ≥ 17	**MTB0500D15 2.0 ISO**	1/2	.465	4	1.54	4.0
2.0		Ø ≥ 26	**MTB0750F16 2.0 ISO**	3/4	.750	6	1.61	4.0
2.5	M20	Ø ≥ 22	**MTB0625E13 2.5 ISO**	5/8	.591	5	1.33	4.0
2.5	M20	Ø ≥ 22	**MTB0625E19 2.5 ISO**	5/8	.591	5	1.92	4.0
3.0	M24	Ø ≥ 25	**MTB0750D15 3.0 ISO**	3/4	.709	4	1.59	4.0
3.0	M27	Ø ≥ 27	**MTB0750D17 3.0 ISO**	3/4	.750	4	1.71	4.0

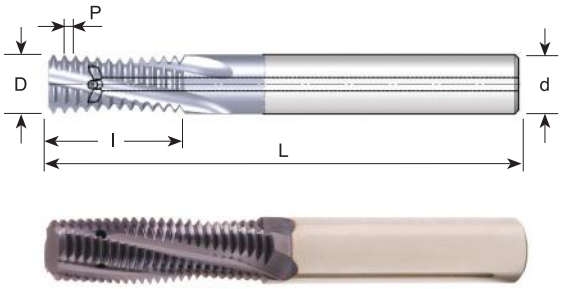
Order example: MTB 0312C06 1.5 ISO MT7

For thread mills with coolant through the flutes see next page
For small thread mills see pages 129-130 & 147

ISO With internal coolant through the flutes

Tools for Internal Thread - Metric Shanks





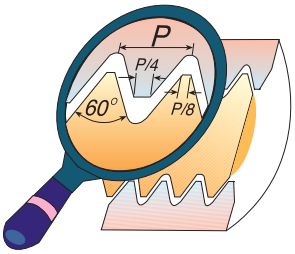
Pitch mm	M coarse	M fine mm	Ordering Code	d mm	D	No. of Flutes	l	L
1.0	M6	Ø ≥ 7	MTZ06048C10 1.0 ISO	6	.189	3	.41	2.3
1.0		Ø ≥ 9	MTZ0606C12 1.0 ISO	6	.236	3	.49	2.3
1.0		Ø ≥ 10	MTZ0808D16 1.0 ISO	8	.315	4	.65	2.5
1.25	M8	Ø ≥ 10	MTZ0606C14 1.25 ISO	6	.236	3	.57	2.3
1.25	M8	Ø ≥ 10	MTZ0606C19 1.25 ISO	6	.236	3	.76	2.3
1.5	M10	Ø ≥ 12	MTZ08078C17 1.5 ISO	8	.307	3	.67	2.5
1.5		Ø ≥ 14	MTZ1010D21 1.5 ISO	10	.394	4	.86	2.9
1.5		Ø ≥ 16	MTZ1212D26 1.5 ISO	12	.472	4	1.03	3.3
1.5		Ø ≥ 20	MTZ1616E33 1.5 ISO	16	.630	5	1.33	4.0
1.75	M12	Ø ≥ 12	MTZ1009C20 1.75 ISO	10	.354	3	.79	2.9
1.75	M12	Ø ≥ 12	MTZ1009C28 1.75 ISO	10	.354	3	1.14	2.9
2.0	M14	Ø ≥ 15	MTZ1010C27 2.0 ISO	10	.394	3	1.06	2.9
2.0	M16	Ø ≥ 17	MTZ12118D27 2.0 ISO	12	.465	4	1.06	3.3
2.5	M20	Ø ≥ 22	MTZ1615E33 2.5 ISO	16	.591	5	1.33	4.0

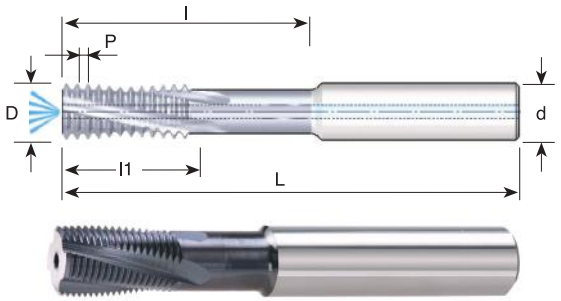
Order example: MTZ 08078C17 1.5 ISO MT7

For small thread mills see pages 129-130 & 147

ISO With relieved neck and internal coolant bore

Tools for Internal Thread - Metric Shank





Pitch mm	M fine mm	Ordering Code	d mm	D	No. of Flutes	l1	l	L
1.0	Ø ≥ 12	**MTQ1010D32 1.0 ISO**	10	.394	4	.71	1.26	2.9
1.0	Ø ≥ 14	**MTQ1212D38 1.0 ISO**	12	.472	4	.83	1.50	3.3
1.0	Ø ≥ 18	**MTQ1616F45 1.0 ISO**	16	.630	6	1.02	1.77	4.1
1.5	Ø ≥ 13	**MTQ1010D30 1.5 ISO**	10	.394	4	.71	1.18	2.9
1.5	Ø ≥ 15	**MTQ1212D34 1.5 ISO**	12	.472	4	.77	1.36	3.3
1.5	Ø ≥ 19	**MTQ1616F43 1.5 ISO**	16	.630	6	1.00	1.71	4.1
1.5	Ø ≥ 23	**MTQ2020F60 1.5 ISO**	20	.787	6	1.42	2.36	4.1
2.0	Ø ≥ 16	**MTQ1212D42 2.0 ISO**	12	.472	4	.94	1.65	3.3
2.0	Ø ≥ 20	**MTQ1616E45 2.0 ISO**	16	.630	5	1.02	1.77	4.1
2.0	Ø ≥ 24	**MTQ2020F56 2.0 ISO**	20	.787	6	1.34	2.20	4.1
3.0	Ø ≥ 22	**MTQ1616D45 3.0 ISO**	16	.630	4	1.18	1.77	4.1
3.0	Ø ≥ 26	**MTQ2020E54 3.0 ISO**	20	.787	5	1.30	2.13	4.1
3.5	Ø ≥ 26	**MTQ2020D45 3.5 ISO**	20	.787	4	1.10	1.79	4.1
4.0	Ø ≥ 31	**MTQ2525D64 4.0 ISO**	25	.984	4	1.58	2.52	6.3

Order example: MTQ 1010D30 1.5 ISO MT7

Thread mills with relieved neck and internal coolant for milling medium and large threads on relatively deep work pieces.

Carbide grade: MT7

- To perform medium and large threads on relatively deep work pieces.
- To use overhang according to the application.
- To perform deep threads at the bottom of the application.

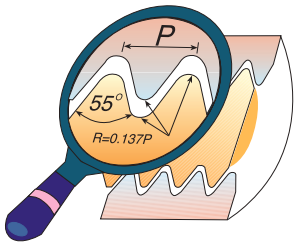
Advantages

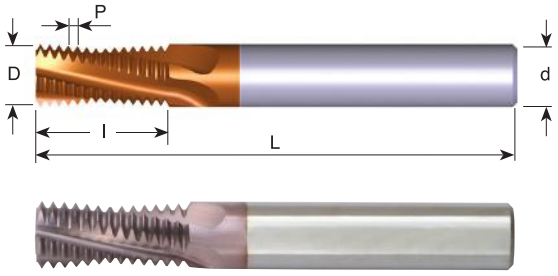
- Provides high rigidity and stability (anti-vibration).
- Accomplishes deep threads in one pass.
- Relatively low cutting forces due to short cutting length.
- Threads length up to 3D.

For small thread mills see pages 129-130 & 147

G (55°) BSF, BSP

Same Tool for Internal and External Thread - Metric shanks



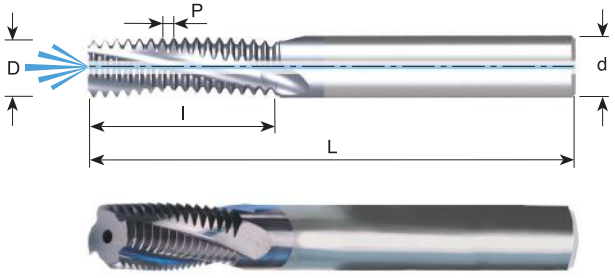


Pitch TPI	Standard	Ordering Code	d mm	D	No. of Flutes	l	L
28	G1/8	**MT0606C9 28 W**	6	.236	3	.38	2.3
19	G1/4-3/8	**MT0808C14 19 W**	8	.315	3	.55	2.5
14	G1/2-7/8	**MT1212D19 14 W**	12	.472	4	.75	3.3
14	G1/2-7/8	**MT1212D26 14 W**	12	.472	4	1.04	3.3
11	G1-1 1/2	**MT1212C24 11 W**	12	.472	3	.95	3.3
11	G≥1	**MT1616D38 11 W**	16	.630	4	1.50	4.1
11	G≥1	**MT2020E47 11 W**	20	.787	5	1.86	4.1

Order example: MT 1212D19 14 W MT7

With internal coolant bore

Same Tool for Internal and External Thread - Metric shanks



Pitch TPI	Standard	Ordering Code	d mm	D	No. of Flutes	l	L
28	G1/8	**MTB08078C14 28W**	8	.307	3	.56	2.5
19	G1/4-3/8	**MTB1010D16 19W**	10	.394	4	.66	2.9
14	G1/2-7/8	**MTB1616E26 14W**	16	.630	5	1.04	4.1
11	G≥1	**MTB1616D38 11W**	16	.630	4	1.50	4.1
11	G≥1	**MTB2020E47 11W**	20	.787	5	1.86	4.1

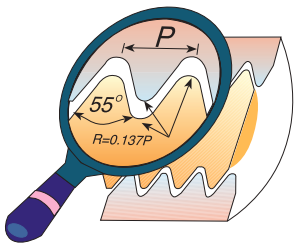
Order example: MTB 1010D16 19 W MT7

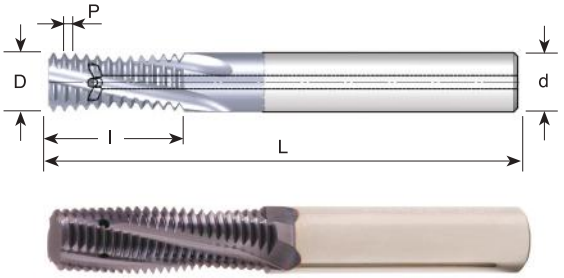
For thread mills with coolant bore through the flutes see next page

For small thread mills see page 133

G 55° BSF, BSP With internal coolant through the flutes

Same Tool for Internal and External Thread - Metric shanks





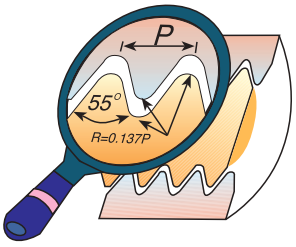
Pitch TPI	Standard	Ordering Code	d mm	D	No. of Flutes	l	L
28	G1/8	**MTZ08078C14 28W**	8	.307	3	.56	2.5
19	G1/4-3/8	**MTZ1010D16 19W**	10	.394	4	.66	2.9
14	G1/2-7/8	**MTZ1616E26 14W**	16	.630	5	1.04	4.0
11	G≥1	**MTZ1616D38 11W**	16	.630	4	1.50	4.0

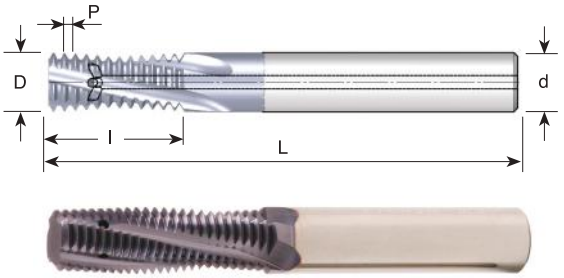
Order example: MTZ 08078C14 28 W MT7

For small thread mills see page 133

Whitworth BSW With internal coolant through the flutes

Same Tool for Internal and External Thread - Metric Shanks





Pitch TPI	Standard	Ordering Code	d mm	D	No. of Flutes	l	L
* 20	1/4	**MTZ06045C12 20W**	6	.181	3	.48	2.3
18	5/16	**MTZ06053C14 18W**	6	.209	3	.58	2.3
16	3/8	**MTZ08064C16 16W**	8	.268	3	.66	2.5
16	1/2	**MTZ10092D24 16W**	10	.362	4	.97	2.9
14	7/16	**MTZ08078D20 14W**	8	.307	4	.82	2.5
12	1/2	**MTZ10085D24 12W**	10	.339	4	.96	2.9
11	5/8	**MTZ12109D28 11W**	12	.429	4	1.14	3.3

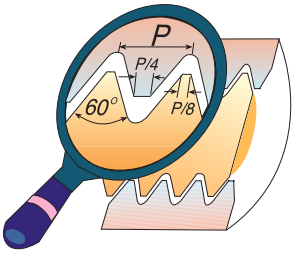
Order example: MTZ 08064C16 16 W MT7

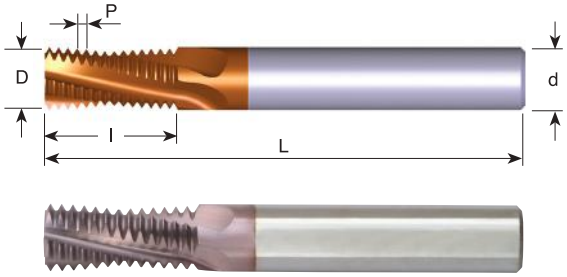
* Cutter without coolant

Carmex Precision Tools Ltd.

UN

Tools for Internal Thread





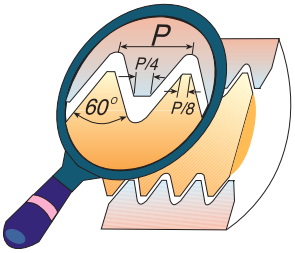
Pitch TPI	UNC	UNF	UNEF	Ordering Code	d	D	No. of Flutes	l	L
40	5			MT0250C02 40UN	1/4	.098	3	.24	2.5
32	8	10	12	MT0250C02 32UN	1/4	.126	3	.27	2.5
28		1/4		MT0250C04 28UN	1/4	.157	3	.45	2.5
28			7/16-1/2	MT0250C05 28UN	1/4	.236	3	.57	2.5
24		5/16		MT0250C06 24UN	1/4	.197	3	.56	2.5
24		3/8	9/16-5/8	MT0312C08 24UN	5/16	.276	3	.81	2.5
20	1/4			MT0250C05 20UN	1/4	.177	3	.48	2.5
20		7/16-1/2		MT0312C08 20UN	5/16	.276	3	.83	2.5
20			3/4-1	MT0500E11 20UN	1/2	.472	5	1.08	3.5
18	5/16			MT0250C06 18UN	1/4	.197	3	.58	2.5
18		9/16-5/8	$1^{1/8}$-$1^{5/8}$	MT0375D10 18UN	3/8	.375	4	1.03	3.0
16	3/8			MT0250C07 16UN	1/4	.236	3	.66	2.5
16		3/4		MT0500D12 16UN	1/2	.472	4	1.22	3.5
14	7/16			MT0312C08 14UN	5/16	.276	3	.82	2.5
14		7/8		MT0625E15 14UN	5/8	.591	5	1.46	4.0
13	1/2			MT0312C09 13UN	5/16	.313	3	.88	2.5
12	9/16			MT0375C10 12UN	3/8	.375	3	1.04	3.0
12		$1\text{-}1^{1/2}$		MT0625E16 12UN	5/8	.625	5	1.63	4.0
11	5/8			MT0375C11 11UN	3/8	.375	3	1.14	3.0
10	3/4			MT0500C14 10UN	1/2	.472	3	1.35	3.5
9	7/8			MT0625C15 9UN	5/8	.591	3	1.50	4.0
8	1			MT0625C17 8UN	5/8	.625	3	1.69	4.0
7	$1^{1/8}$-$1^{1/4}$			MT0750D17 7UN	3/4	.750	4	1.78	4.0

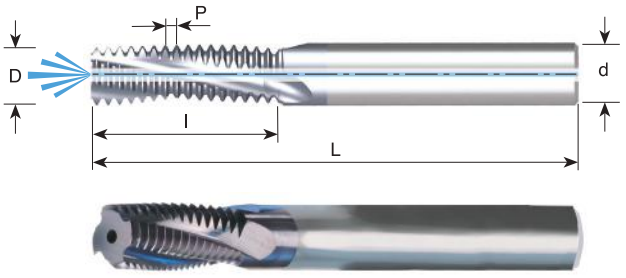
Order example: MT 0625E15 14 UN MT7

For thread mills with coolant bore see following pages
For small thread mills see pages 131-133 & 148

UN With internal coolant bore

Tools for Internal Thread





Pitch TPI	UNC	UNF	UNEF	Ordering Code	d	D	No. of Flutes	l	L
32	8	10	12	**MTB0250C02 32 UN**	1/4	.126	3	.27	2.5
32			5/16	**MTB0250C05 32 UN**	1/4	.250	3	.58	2.5
32			3/8	**MTB0312D07 32 UN**	5/16	.312	4	.74	2.5
28		1/4		**MTB0250C04 28 UN**	1/4	.197	3	.44	2.5
28			7/16-1/2	**MTB0250C05 28 UN**	1/4	.250	3	.56	2.5
24		5/16		**MTB0312C05 24 UN**	5/16	.260	3	.56	2.5
24		3/8	9/16-5/8	**MTB0312D08 24 UN**	5/16	.312	4	.81	2.5
20	1/4			**MTB0250C04 20 UN**	1/4	.185	3	.48	2.5
20		7/16		**MTB0312C08 20 UN**	5/16	.312	3	.83	2.5
20		1/2		**MTB0375D08 20 UN**	3/8	.375	4	.88	3.0
20			3/4-1	**MTB0500E10 20 UN**	1/2	.500	5	1.07	4.0
18	5/16			**MTB0250C05 18 UN**	1/4	.220	3	.58	2.5
18		9/16-5/8	$1^{1/8}$-$1^{5/8}$	**MTB0500D10 18 UN**	1/2	.445	4	1.03	4.0
16	3/8			**MTB0312C06 16 UN**	5/16	.264	3	.66	2.5
16		3/4		**MTB0500D12 16 UN**	1/2	.500	4	1.22	4.0
14	7/16			**MTB0312C08 14 UN**	5/16	.303	3	.82	2.5
14		7/8		**MTB0625E14 14 UN**	5/8	.625	5	1.46	4.0
13	1/2			**MTB0375C08 13 UN**	3/8	.362	3	.89	3.0
12	9/16			**MTB0500C10 12 UN**	1/2	.413	3	1.04	4.0
12		$1\text{-}1^{1/2}$		**MTB0625E16 12 UN**	5/8	.625	5	1.63	4.0
11	5/8			**MTB0500C11 11 UN**	1/2	.449	3	1.14	4.0
10	3/4			**MTB0625D13 10 UN**	5/8	.567	4	1.35	4.0
9	7/8			**MTB0625C15 9 UN**	5/8	.625	3	1.50	4.0
8	1			**MTB0750D16 8 UN**	3/4	.750	4	1.69	4.0
7	$1^{1/8}$-$1^{1/4}$			**MTB0750D17 7 UN**	3/4	.750	4	1.78	4.0

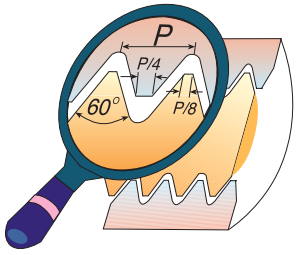
Order example: MTB 0625E14 14 UN MT7

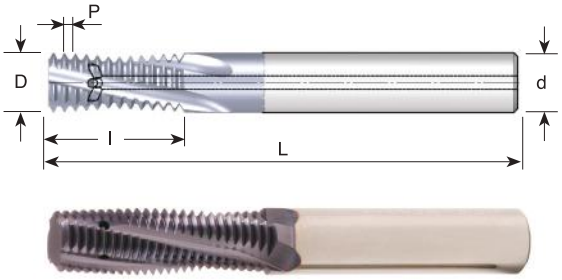
For thread mills with coolant through the flutes see next page
For small thread mills see pages 131-133 & 148

Carmex Precision Tools Ltd.

UN With internal coolant through the flutes

Tools for Internal Thread - Metric Shank





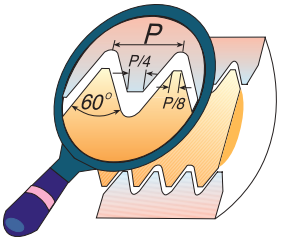
Pitch TPI	UNC	UNF	UNEF	Ordering Code	d mm	D	No. of Flutes	l	L
28		1/4		**MTZ0605C11 28 UN**	6	.197	3	.44	2.3
28			7/16-1/2	**MTZ0606C14 28 UN**	6	.236	3	.56	2.3
24		5/16		**MTZ08066C14 24 UN**	8	.260	3	.56	2.5
24		3/8	9/16-5/8	**MTZ0808D21 24 UN**	8	.315	4	.81	2.5
20		7/16		**MTZ0808C21 20 UN**	8	.315	3	.83	2.5
20		1/2		**MTZ1010D22 20 UN**	10	.394	4	.88	2.9
20			3/4-1	**MTZ1212E27 20 UN**	12	.472	5	1.07	3.3
18	5/16			**MTZ06056C14 18 UN**	6	.220	3	.58	2.3
18		9/16-5/8	$1^{1/8}$-$1^{5/8}$	**MTZ12113D26 18 UN**	12	.445	4	1.03	3.3
16	3/8			**MTZ08067C16 16 UN**	8	.264	3	.66	2.5
16		3/4		**MTZ1212D31 16 UN**	12	.472	4	1.22	3.3
14	7/16			**MTZ08077C20 14 UN**	8	.303	3	.82	2.5
14		7/8		**MTZ1616E37 14 UN**	16	.630	5	1.46	4.0
13	1/2			**MTZ10092C22 13 UN**	10	.362	3	.89	2.9
12	9/16			**MTZ12105C26 12 UN**	12	.413	3	1.04	3.3
11	5/8			**MTZ12114C28 11 UN**	12	.449	3	1.14	3.3
10	3/4			**MTZ16144D34 10 UN**	16	.567	4	1.35	4.0

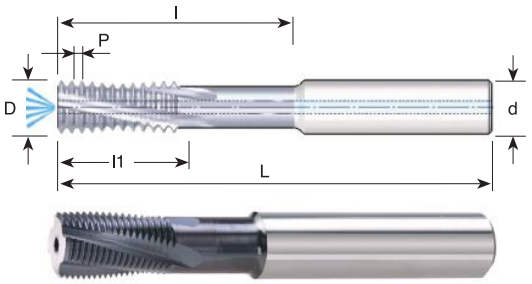
Order example: MTZ 0808D21 24 UN MT7

For small thread mills see pages 131-133 & 148

UN With relieved neck and internal coolant bore

Tools for Internal Thread - Metric Shank





Pitch TPI	Thread size	Ordering Code	d mm	D	No. of Flutes	I1	I	L
20	Ø ≥ .47	**MTQ1010D30 20 UN**	10	.394	4	.70	1.20	2.9
20	Ø ≥ .55	**MTQ1212E35 20 UN**	12	.472	5	.80	1.40	3.3
20	Ø ≥ .71	**MTQ1616F43 20 UN**	16	.630	6	1.00	1.70	4.1
18	Ø ≥ .59	**MTQ1212D35 18 UN**	12	.472	4	.78	1.39	3.3
16	Ø ≥ .59	**MTQ1212D35 16 UN**	12	.472	4	.81	1.38	3.3
16	Ø ≥ .75	**MTQ1616E42 16 UN**	16	.630	5	1.00	1.69	4.1
16	Ø ≥ .91	**MTQ2020F58 16 UN**	20	.787	6	1.44	2.31	4.1
14	Ø ≥ .79	**MTQ1616E45 14 UN**	16	.630	5	1.00	1.78	4.1
12	Ø ≥ .63	**MTQ1212D42 12 UN**	12	.472	4	1.00	1.67	3.3
12	Ø ≥ .95	**MTQ2020E55 12 UN**	20	.787	5	1.33	2.17	4.1

Order example: MTQ 1212D35 16 UN MT7

Thread mills with relieved neck and internal coolant for milling medium and large threads on relatively deep work pieces.

Carbide grade: MT7

- To produce medium and large threads on relatively deep work pieces.
- To use overhang according to the application.
- To perform deep threads at the bottom of the application.

Advantages

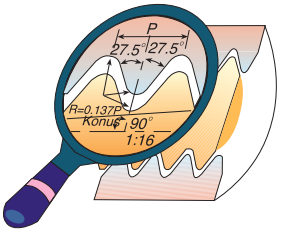
- Provides high rigidity and stability (anti-vibration).
- Accomplishes deep threads in one pass.
- Relatively low cutting forces due to short cutting length.
- Threads length up to 3D.

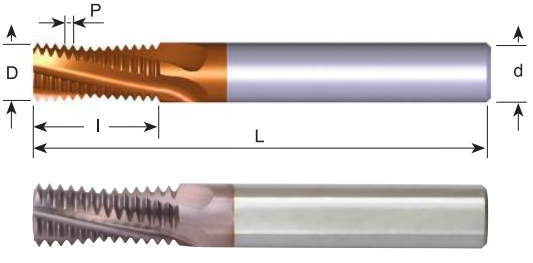
For small thread mills see pages 131-133 & 148

BSPT

Same Tool for Internal and External Thread

Metric Shank





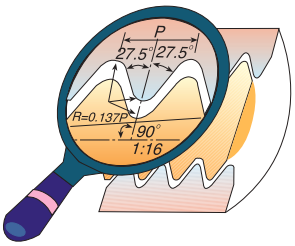
Pitch TPI	Standard	Ordering Code	d mm	D	No. of Flutes	I	L
28	RC1/8	**MT0606C9 28 BSPT**	6	.236	3	.38	2.3
19	RC1/4-3/8	**MT0808C14 19 BSPT**	8	.315	3	.55	2.5
14	RC1/2-7/8	**MT1212D19 14 BSPT**	12	.472	4	.75	3.3
11	RC1-2	**MT1616D28 11 BSPT**	16	.630	4	1.14	4.1

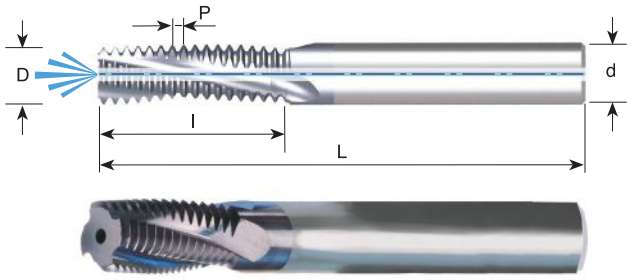
Order example: MT 1616D28 11 BSPT MT7

For thread mills with coolant through the flutes see next page

BSPT With internal coolant bore

Same Tool for Internal and External Thread - Metric Shank



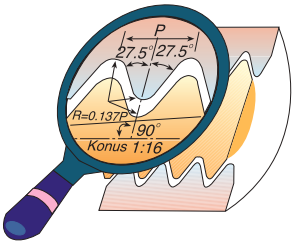


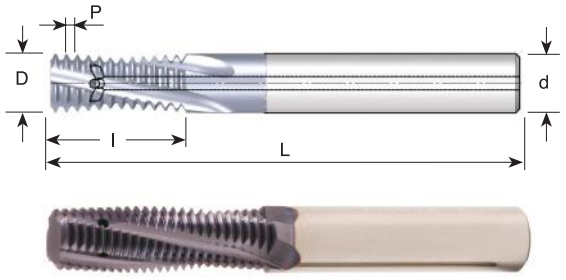
Pitch TPI	Standard	Ordering Code	d mm	D	No. of Flutes	l	L
28	RC1/8	**MTB08078C14 28 BSPT**	8	.307	3	.56	2.5
19	RC1/4-3/8	**MTB1010D16 19 BSPT**	10	.394	4	.66	2.9
14	RC1/2-7/8	**MTB1616E26 14 BSPT**	16	.630	5	1.04	4.1
11	RC1-2	**MTB1616D28 11 BSPT**	16	.630	4	1.14	4.1

Order example: MTB 08078C14 28 BSPT MT7

BSPT With internal coolant through the flutes

Same Tool for Internal and External Thread - Metric Shank





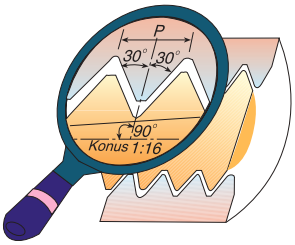
Pitch TPI	Standard	Ordering Code	d mm	D	No. of Flutes	l	L
28	RC1/8	**MTZ08078C14 28 BSPT**	8	.307	3	.56	2.5
19	RC1/4-3/8	**MTZ1010D16 19 BSPT**	10	.394	4	.66	2.9
14	RC1/2-7/8	**MTZ1616E26 14 BSPT**	16	.630	5	1.04	4.0
11	RC1-2	**MTZ1616D28 11 BSPT**	16	.630	4	1.14	4.0

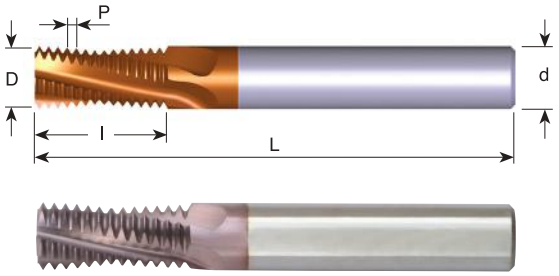
Order example: MTZ 1010D16 19 BSPT MT7

For conical preparation end mills see page 125

NPT

Same Tool for Internal and External Thread



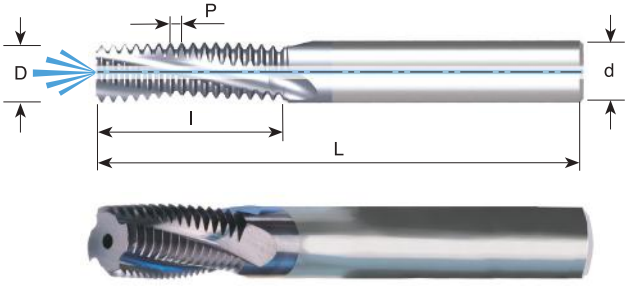


Pitch TPI	Standard	Ordering Code	d	D	No. of Flutes	l	L
27	1/16	MT0250C03 27 NPT	1/4	.230	3	.39	2.5
27	1/8	MT0250C04 27 NPT	1/4	.250	3	.39	2.5
18	1/4-3/8	MT0312C06 18 NPT	5/16	.312	3	.58	2.5
14	1/2-3/4	MT0500D08 14 NPT	1/2	.500	4	.82	3.5
11.5	1-2	MT0625D11 11.5 NPT	5/8	.625	4	1.09	4.0
8	≥ 2 1/2	MT0750D16 8 NPT	3/4	.750	4	1.56	4.0

Order example: MT 0312C06 18 NPT MT7

NPT With internal coolant

Same Tool for Internal and External Thread



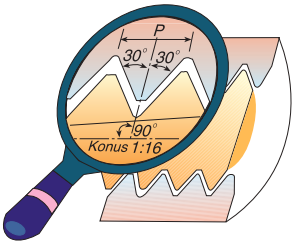
Pitch TPI	Standard	Ordering Code	d	D	No. of Flutes	l	L
27	1/8	MTB0312C04 27 NPT	5/16	.299	3	.43	2.5
18	1/4-3/8	MTB0375D06 18 NPT	3/8	.375	4	.64	3.0
14	1/2-3/4	MTB0625D08 14 NPT	5/8	.610	4	.89	4.0
11.5	1-2	MTB0750D11 11.5 NPT	3/4	.750	4	1.17	4.0
8	≥ 2 1/2	MTB0750D15 8 NPT	3/4	.750	4	1.56	4.0

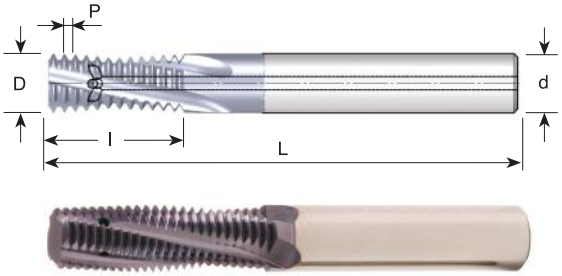
Order example: MTB 0312C04 27 NPT MT7

For thread mills with coolant through the flutes see next page
For conical preparation end mills see page 125

NPT With internal coolant through the flutes

Same Tool for Internal and External Thread - Metric Shank



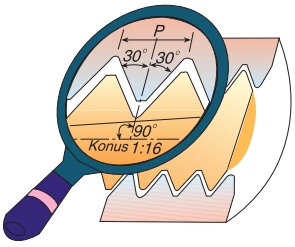


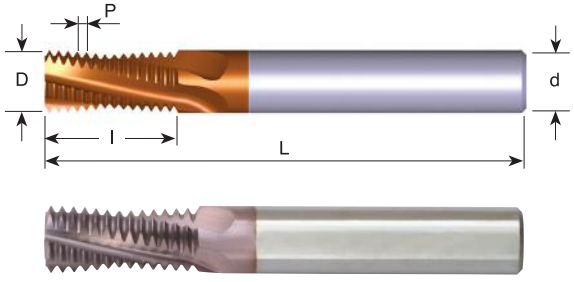
Pitch TPI	Standard	Ordering Code	d mm	D	No. of Flutes	l	L
27	1/8	**MTZ08076C10 27NPT**	8	.299	3	.43	2.5
18	1/4-3/8	**MTZ1010D16 18NPT**	10	.394	4	.64	2.9
14	1/2-3/4	**MTZ16155D22 14NPT**	16	.610	4	.89	4.0

Order example: MTZ 08076C10 27 NPT MT7

NPTF

Same Tool for Internal and External Thread





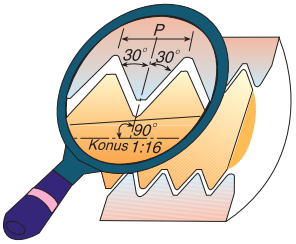
Pitch TPI	Standard	Ordering Code	d	D	No. of Flutes	l	L
27	1/16	**MT0250C03 27 NPTF**	1/4	.230	3	.39	2.5
27	1/8	**MT0250C04 27 NPTF**	1/4	.250	3	.39	2.5
18	1/4-3/8	**MT0312C06 18 NPTF**	5/16	.312	3	.58	2.5
14	1/2-3/4	**MT0500D08 14 NPTF**	1/2	.500	4	.82	3.5
11.5	1-2	**MT0625D11 11.5 NPTF**	5/8	.625	4	1.09	4.0
8	≥ 2 1/2	**MT0750D16 8 NPTF**	3/4	.750	4	1.56	4.0

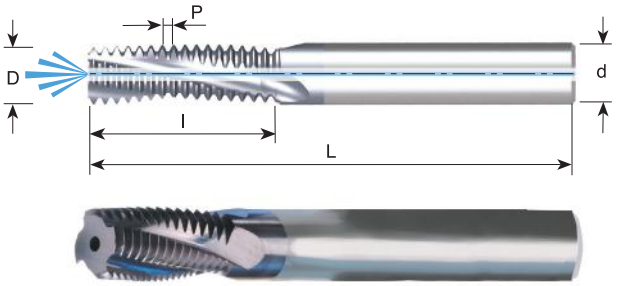
Order example: MT 0500D08 14 NPTF MT7

For thread mills with coolant bore see next page
For conical preparation end mills see page 125

NPTF With internal coolant bore

Same Tool for Internal and External Thread



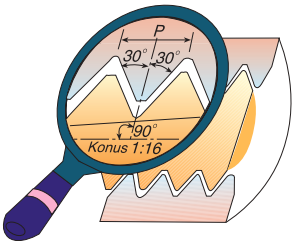


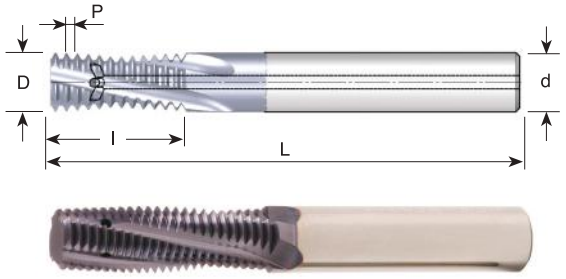
Pitch TPI	Standard	Ordering Code	d	D	No. of Flutes	l	L
27	1/8	MTB0312C04 27 NPTF	5/16	.299	3	.43	2.5
18	1/4-3/8	MTB0375D06 18 NPTF	3/8	.375	4	.64	3.0
14	1/2-3/4	MTB0625D08 14 NPTF	5/8	.610	4	.89	4.0
11.5	1-2	MTB0750D11 11.5 NPTF	3/4	.750	4	1.17	4.0
8	≥ 2 1/2	MTB0750D15 8 NPTF	3/4	.750	4	1.57	4.0

Order example: MTB 0312C04 27 NPTF MT7

NPTF With internal coolant through the flutes

Same Tool for Internal and External Thread - Metric Shank





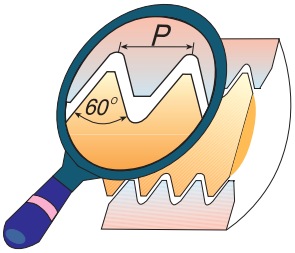
Pitch TPI	Standard	Ordering Code	d mm	D	No. of Flutes	l	L
27	1/8	MTZ08076C10 27 NPTF	8	.299	3	.43	2.5
18	1/4-3/8	MTZ1010D16 18 NPTF	10	.394	4	.64	2.9
14	1/2-3/4	MTZ16155D22 14 NPTF	16	.610	4	.89	4.0

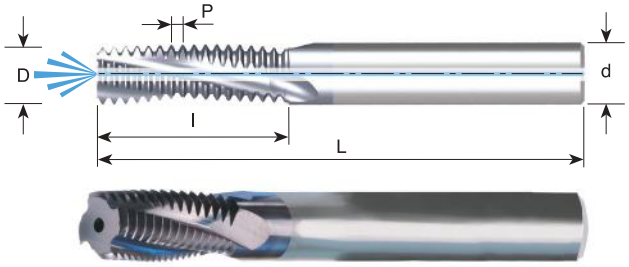
Order example: MTZ 1010D16 18 NPTF MT7

For conical preparation end mills see page 125

NPS With internal coolant bore

Same Tool for Internal and External Thread



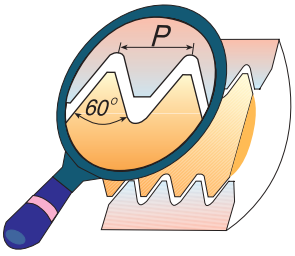


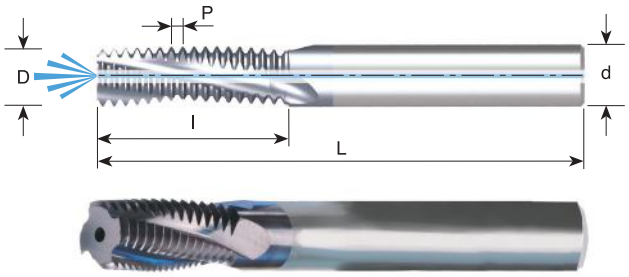
Pitch TPI	Standard	Ordering Code	d	D	No. of Flutes	l	L
27	1/8	**MTB0312C04 27 NPS**	5/16	.299	3	.43	2.5
18	1/4-3/8	**MTB0375D06 18 NPS**	3/8	.375	4	.64	3.0
14	1/2-3/4	**MTB0625D08 14 NPS**	5/8	.610	4	.89	4.0
11.5	1-2	**MTB0750D11 11.5 NPS**	3/4	.750	4	1.17	4.0

Order example: MTB 0375D06 18 NPS MT7

NPSF With internal coolant bore

Same Tool for Internal and External Thread



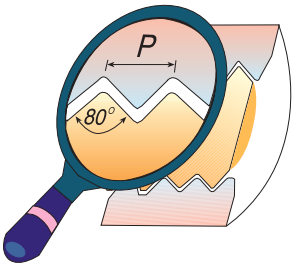


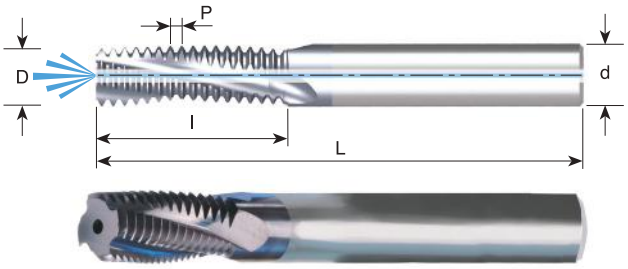
Pitch TPI	Standard	Ordering Code	d	D	No. of Flutes	l	L
27	1/8	**MTB0312C04 27 NPSF**	5/16	.299	3	.43	2.5
18	1/4-3/8	**MTB0375D06 18 NPSF**	3/8	.375	4	.64	3.0
14	1/2-3/4	**MTB0625D08 14 NPSF**	5/8	.610	4	.89	4.0
11.5	1-2	**MTB0750D11 11.5 NPSF**	3/4	.750	4	1.17	4.0

Order example: MTB 0312C04 27 NPSF MT7

PG DIN 40430 - With internal coolant bore

Same Tool for Internal and External Thread - Metric Shank





Pitch TPI	Standard	Ordering Code	d mm	D	No. of Flutes	l	L
20	Pg 7	**MTB1010D19 20 PG**	10	.394	4	.78	2.9
18	Pg 9, 11, 13.5, 16	**MTB1212D20 18 PG**	12	.472	4	.81	3.3
16	Pg 21, 29, 36, 42, 48	**MTB1212D23 16 PG**	12	.472	4	.91	3.3

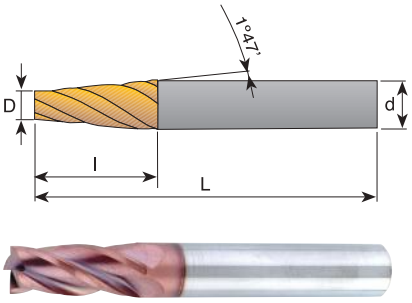
Order example: MTB 1212 D20 18 PG MT7

Solid Carbide Tapered End Mills

Solid carbide tapered end mills are used for milling preparation of conical threads before the thread milling operation.

Advantages:

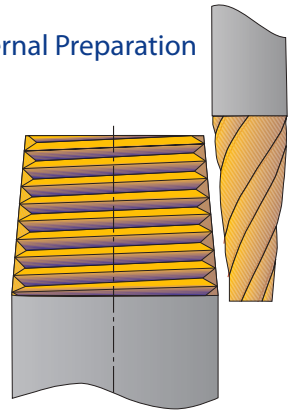
* Increases the tool life of mill thread cutters and indexable inserts.
* Equal and uniform load along the cutting edge of the mill thread cutter.
* Shorter machining time during the mill thread operation, due to the tapered preparation.



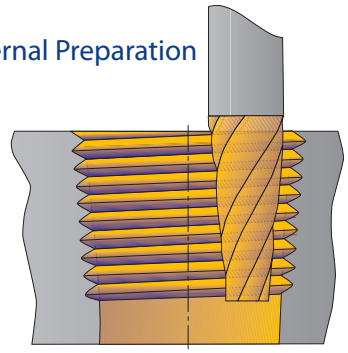
Ordering Code	d	D	l	L	No. of Flutes	Size
SC0375D09	3/8	.32	.95	3	4	NPT 1/8" - 1" NPTF 1/8" - 1" BSPT 1/8" - 1"
SC0500D12	1/2	.42	1.26	3.5	4	NPT 1/4" - 3" NPTF 1/4" - 3" BSPT 1/4" - 3"

Order example: SC 0500D12 MT7
Carbide grade: MT7

External Preparation



Internal Preparation



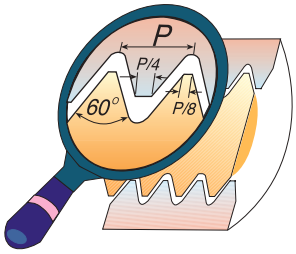
Mill - Thread Solid Carbide for External Threads

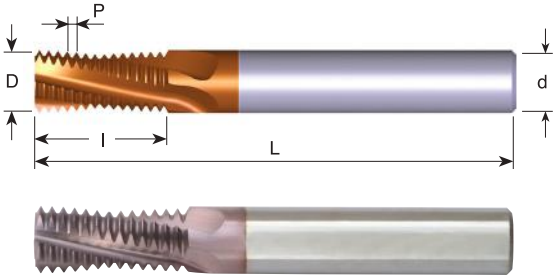
Advantages:

* Excellent surface finish thanks to the spiral flutes
* Short machining time due to multi 3 to 5 flutes

ISO

Metric Shank



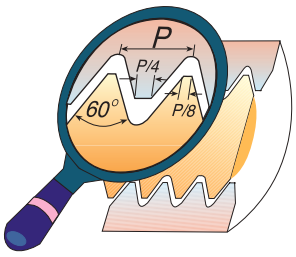


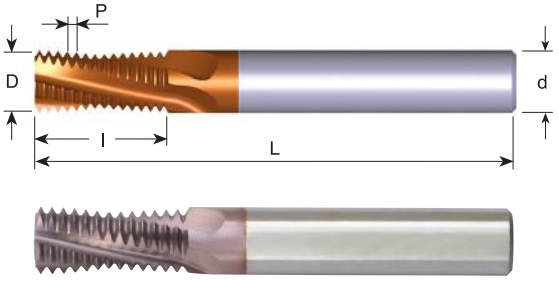
Pitch mm	Ordering Code	d mm	D	No. of Flutes	l	L
1.0	**EMT1010D16 1.0 ISO**	10	.394	4	.65	2.9
1.0	**EMT1212E20 1.0 ISO**	12	.472	5	.81	3.3
1.25	**EMT1010D16 1.25 ISO**	10	.394	4	.67	2.9
1.5	**EMT1010D15 1.5 ISO**	10	.394	4	.62	2.9
1.5	**EMT1212D20 1.5 ISO**	12	.472	4	.80	3.3
1.75	**EMT1212D20 1.75 ISO**	12	.472	4	.79	3.3
2.0	**EMT1010C17 2.0 ISO**	10	.394	3	.67	2.9
2.0	**EMT1212D21 2.0 ISO**	12	.472	4	.83	3.3

Order example: EMT 1010D15 1.5 ISO MT7

UN

Metric Shank

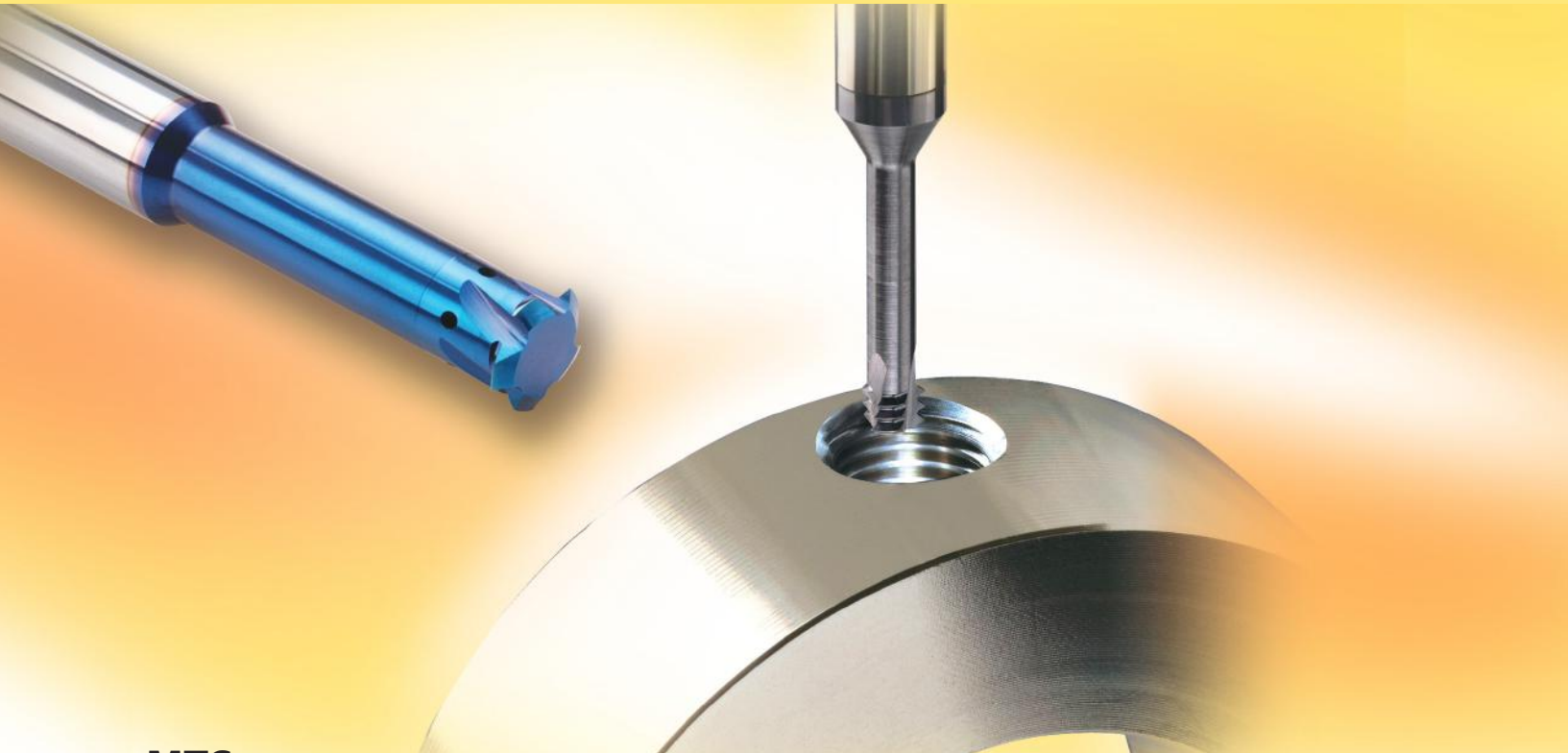




Pitch TPI	Ordering Code	d mm	D	No. of Flutes	l	L
24	**EMT1010D16 24 UN**	10	.394	4	.65	2.9
20	**EMT1212E21 20 UN**	12	.472	5	.83	3.3
18	**EMT1212D20 18 UN**	12	.472	4	.81	3.3
16	**EMT1212D21 16 UN**	12	.472	4	.84	3.3
14	**EMT1212D20 14 UN**	12	.472	4	.82	3.3
12	**EMT1212D20 12 UN**	12	.472	4	.79	3.3

Order example: EMT 1212D20 18 UN MT7

Mini Mill-Thread



MTS

- Threading from ISO M1 x 0.25 and 0-80UN.
- Working in high cutting speed.
- Short machining time.
- Low cutting forces thanks to the short profile.
- No broken taps.
- Machining of hardened materials up to 45 HRc.

Carbide grade: MT7
Sub-Micron grade with Titanium Aluminum Nitride multi-layer coating (ISO K10 - K20). To be run at medium to high cutting speeds. General purpose for all materials

MTI - For threading deep parts

Carbide grade: MT8 Sub-micron grade with advanced PVD triple coating (ISO K10-K20). Extremely high heat resistant and smooth cutting operation, for high performance, and normal machining conditions. General purpose for all materials.

MT11 Ultra-fine Sub-micron grade with advanced PVD triple blue coating

Advantages

- Enables machining in deep holes.
- Same tool can produce a wide range of threads and pitches.
- Same tool can produce both External and Internal threads.
- Coolant through the flutes is very effective for deep holes.
- Spiral flutes allow smooth cutting action.
- Shorter machining time due to multi (3 to 5) flutes.
- Longer tool life due to special triple coating.

Contents: Page:

Contents: Page:

Product Identification

Mini Mill-Thread MTS Ordering Codes

MTS
Mini Mill Thread
MTSH=HARDCUT

0250
Shank Diameter
Metric
03 = 3mm
06 = 6mm
08 = 8mm
10 = 10mm
12 = 12 mm
16 = 16 mm
Inch
0250 = 1/4
0312 = 5/16
0375 = 3/8
0500 = 1/2
0625 = 5/8

C
No. of Flutes
C = 3
D = 4
E = 5

35
The Approximate Cutting Length

0.7
Thread Pitch

ISO
Thread Profile
ISO
UN
G55°
UNJ
MJ

- L
Long
L = 4.1″

Mini Mill-Thread MTI Ordering Codes

MTI
MTI = Thread Mills
Partial Profile
60°C

06
Shank Diameter
Metric
03 = 6mm
06 = 6mm
08 = 8mm
10 = 10mm
12 = 12 mm
16 = 16 mm

05
Cutting Diameter
05 = .197
08 = .315
10 = .394
12 = .472
14 = .551
16 = .620

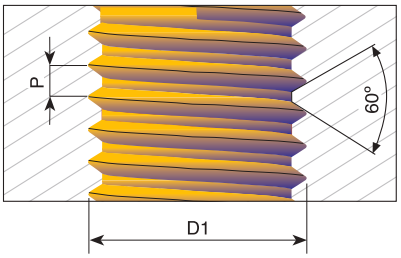
D
No. of Flutes
C = 3
D = 4
E = 5

20
Approximate Cutting Length
20 = .79
28 = 1.10
30 = 1.18
35 = 1.38
38 = 1.50
39 = 1.54
40 = 1.57
45 = 1.77
50 = 1.97

A60
Thread Profile
Partial Profile 60°
Partial Profile 55°
ISO
UN
ACME

ISO

Tools for Internal Thread



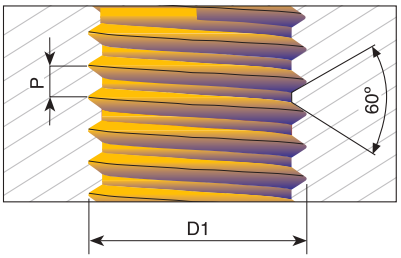
For thread depth up to 2 x D1

Pitch mm	D1	Ordering Code	d	D	No. of Flutes	l	L
0.25	M1	MTS03007C2 0.25 ISO	3 mm	.028	3	.10	1.5
0.25	M1.2	MTS03009C3 0.25 ISO	3 mm	.035	3	.12	1.5
0.4	M2	MTS0250C18 0.4 ISO	1/4	.061	3	.18	2.5
0.4	M2	MTS06016C4 0.4 ISO-L	6 mm	.061	3	.18	4.1
0.45	M2.2	MTS0250C20 0.45 ISO	1/4	.065	3	.20	2.5
0.45	M2.5	MTS0250C22 0.45 ISO	1/4	.077	3	.22	2.5
0.45	M2.5	MTS0602C5 0.45 ISO-L	6 mm	.077	3	.22	4.1
0.5	M3	MTS0250C26 0.5 ISO	1/4	.093	3	.26	2.5
0.5	M3	MTS06024C6 0.5 ISO-L	6 mm	.093	3	.26	4.1
0.6	M3.5	MTS0250C30 0.6 ISO	1/4	.108	3	.30	2.5
0.7	M4	MTS0250C35 0.7 ISO	1/4	.122	3	.35	2.5
0.75	M10	MTS0808D25 0.75 ISO	8 mm	.315	4	.98	2.5
0.8	M5	MTS0250C49 0.8 ISO	1/4	.150	3	.49	2.5
1.0	M6	MTS0250C55 1.0 ISO	1/4	.183	3	.55	2.5
1.25	M8	MTS0250C71 1.25 ISO	1/4	.234	3	.71	2.5
1.5	M10	MTS0312C91 1.5 ISO	5/16	.307	3	.91	2.5
1.75	M12	MTS0375C10 1.75 ISO	3/8	.354	3	1.02	3.0
2.0	M16	MTS0500D13 2.0 ISO	1/2	.465	4	1.38	3.5
2.5	M20	MTS0625E16 2.5 ISO	5/8	.591	5	1.69	4.0

Order example: MTS 0250 C26 0.5 ISO MT7

ISO

Tools for Internal Thread



For thread depth up to 3 x D1

Pitch mm	D1	Ordering Code	d	D	No. of Flutes	l	L
* 0.3	M1.4	MTS03011C4 0.3 ISO	3 mm	.041	3	.16	1.5
* 0.35	M1.6	MTS03012C5 0.35 ISO	3 mm	.047	3	.19	1.5
* 0.4	M2	MTS03016C6 0.4 ISO	3 mm	.061	3	.24	1.5
* 0.45	M2.2	MTS03017C7 0.45 ISO	3 mm	.065	3	.28	1.5
0.45	M2.5	MTS0250C30 0.45 ISO	1/4	.077	3	.30	2.5
0.5	M3	MTS0250C37 0.5 ISO	1/4	.093	3	.37	2.5
0.5	M3	MTS06024C9 0.5 ISO-L	6 mm	.093	3	.37	4.1
0.5	M6, M7	MTS06054D20 0.5 ISO	6 mm	.211	4	.79	2.3
0.6	M3.5	MTS06028C10 0.6 ISO	6 mm	.108	3	.41	2.3
0.7	M4	MTS0250C49 0.7 ISO	1/4	.122	3	.49	2.5
0.7	M4	MTS06031C12 0.7 ISO-L	6 mm	.122	3	.49	4.1
0.8	M5	MTS0250C63 0.8 ISO	1/4	.150	3	.63	2.5
0.8	M5	MTS06038C16 0.8 ISO-L	6 mm	.150	3	.63	4.1
1.0	M6	MTS0250C79 1.0 ISO	1/4	.183	3	.79	2.5
1.0	M6	MTS06047C20 1.0 ISO-L	6 mm	.183	3	.79	4.1
1.25	M8	MTS0250C94 1.25 ISO	1/4	.234	3	.94	2.5
1.5	M10	MTS08078C31 1.5 ISO	8 mm	.307	3	1.24	2.5
1.75	M12	MTS1009C37 1.75 ISO	10 mm	.354	3	1.49	2.9
2.0	M16	MTS12118D50 2.0 ISO	12 mm	.465	4	1.97	4.1

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- Machining Titanium, surgical stainless steels and hardened materials up to 45 HRc.
- Suitable for high speed air turbine machines (30,000-40,000 RPM) and for standard machining centers (6,000 RPM and higher).
- Can also be used for general purpose threading.

For thread depth up to 4 x D1

Pitch mm	D1	Ordering Code	d	D	No. of Flutes	l	L
0.5	M3	MTS03024C12 0.5 ISO	3 mm	.094	3	.49	1.5
0.7	M4	MTS06031C16 0.7 ISO	6 mm	.122	3	.66	2.3
0.8	M5	MTS0604C20 0.8 ISO	6 mm	.157	3	.82	2.3
1.0	M6	MTS06048C25 1.0 ISO	6 mm	.189	3	.98	2.3

For thread depth up to 5 x D1

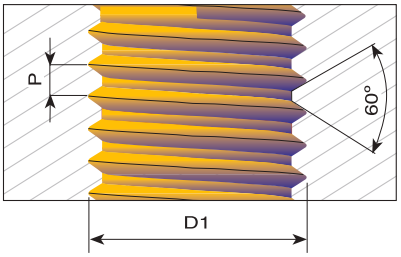
Pitch mm	D1	Ordering Code	d	D	No. of Flutes	l	L
0.5	M3	MTS03024C15 0.5 ISO	3 mm	.094	3	.61	1.5

Order example: MTS 03024C12 0.5 ISO MT7

Carmex Precision Tools Ltd.

UN

Tools for Internal Thread



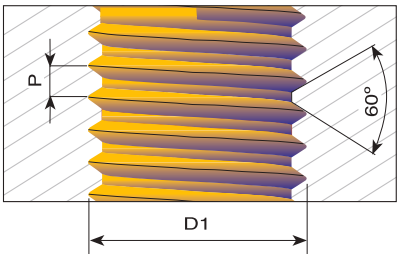
For thread depth up to 2 x D1

Pitch TPI	UNC	UNF	Ordering Code	d	D	No. of Flutes	l	L
72		1	**MTS0250C15 72 UN**	1/4	.057	3	.15	2.5
64	1	2	**MTS0250C15 64 UN**	1/4	.055	3	.15	2.5
56	2	3	**MTS0250C17 56 UN**	1/4	.065	3	.17	2.5
48	3	4	**MTS0250C20 48 UN**	1/4	.075	3	.20	2.5
40	4		**MTS0250C25 40 UN**	1/4	.083	3	.25	2.5
40	4		**MTS06021C6 40 UN-L**	6mm	.083	3	.25	4.1
40	5	6	**MTS0250C28 40 UN**	1/4	.096	3	.28	2.5
36		8	**MTS0250C35 36 UN**	1/4	.130	3	.35	2.5
32	6		**MTS0250C28 32 UN**	1/4	.100	3	.28	2.5
32	6		**MTS06025C7 32 UN-L**	6mm	.100	3	.28	4.1
32	8		**MTS0250C37 32 UN**	1/4	.126	3	.37	2.5
32	8		**MTS06032C9 32 UN-L**	6mm	.126	3	.37	4.1
32		10	**MTS0250C41 32 UN**	1/4	.146	3	.41	2.5
28		12	**MTS0250C43 28 UN**	1/4	.165	3	.43	2.5
28		1/4	**MTS0250C57 28 UN**	1/4	.197	3	.57	2.5
24	10, 12		**MTS0250C42 24 UN**	1/4	.138	3	.42	2.5
24		5/16, 3/8	**MTS0312C67 24 UN**	5/16	.260	3	.67	2.5
20	1/4		**MTS0250C55 20 UN**	1/4	.187	3	.55	2.5
20		7/16	**MTS0312C98 20 UN**	5/16	.312	3	.98	2.5
18	5/16		**MTS0250C67 18 UN**	1/4	236	3	.67	2.5
18	5/8		**MTS0500D14 18 UN**	1/2	.500	4	1.38	3.5
16	3/8		**MTS0312C87 16 UN**	5/16	.264	3	.87	2.5
14	7/16		**MTS0312C98 14 UN**	5/16	.303	3	.98	2.5
13	1/2		**MTS0375C10 13 UN**	3/8	.362	3	1.08	3.0
12	9/16		**MTS0500C12 12 UN**	1/2	.413	3	1.24	3.5
11	5/8		**MTS0500C13 11 UN**	1/2	.449	3	1.36	3.5
10	3/4		**MTS0625D16 10 UN**	5/8	.567	4	1.63	4.0

Order example: MTS 0250C28 40 UN MT7

UN

Tools for Internal Thread



For thread depth up to 3 x D1

Pitch TPI	UNC	UNF	Ordering Code	d	D	No. of Flutes	l	L
80		0	MTS0250C16 80 UN	1/4	.045	3	.16	2.5
* 72		1	MTS03015C6 72 UN	3 mm	.057	3	.24	1.5
56	2	3	MTS03016C6 56 UN	3 mm	.065	3	.26	1.5
56	2	3	MTS0250C26 56 UN	1/4	.065	3	.26	2.5
56	2	3	MTS06016C6 56 UN-L	6 mm	.065	3	.26	4.1
40	4		MTS03021C8 40 UN	3 mm	.083	3	.31	2.3
40	4		MTS0250C31 40 UN	1/4	.083	3	.31	2.5
40	4		MTS06021C8 40 UN-L	6 mm	.083	3	.31	4.1
40	5	6	MTS0250C38 40 UN	1/4	.096	3	.38	2.5
32	6		MTS03025C10 32 UN	3 mm	.100	3	.41	1.5
32	6		MTS0250C40 32 UN	1/4	.100	3	.41	2.5
32	6		MTS06025C10 32 UN-L	6 mm	.100	3	.41	4.1
32	8		MTS0250C49 32 UN	1/4	.126	3	.49	2.5
32	8		MTS06032C12 32 UN-L	6 mm	.126	3	.49	4.1
32		10	MTS0250C59 32 UN	1/4	.146	3	.59	2.5
32		10	MTS06037C15 32 UN-L	6 mm	.146	3	.59	4.1
28		1/4	MTS0250C75 28 UN	1/4	.197	3	.75	2.5
28		1/4	MTS0605C19 28 UN-L	6 mm	.197	3	.75	4.1
24	10, 12		MTS06035C15 24 UN	6 mm	.138	3	.61	2.3
24		5/16, 3/8	MTS0312C94 24 UN	5/16	.260	3	.94	2.5
20	1/4		MTS0250C75 20 UN	1/4	.187	3	.75	2.5
20	1/4		MTS06047C19 20 UN-L	6 mm	.187	3	.75	4.1
20		7/16	MTS0808C34 20 UN	8 mm	.315	3	1.36	2.5
18	5/16		MTS0250C91 18 UN	1/4	.236	3	.91	2.5
18	5/8		MTS1212D49 18 UN	12 mm	.472	4	1.93	4.1
16	3/8		MTS08067C30 16 UN	8 mm	.264	3	1.19	2.5
14	7/16		MTS08077C35 14 UN	8 mm	.303	3	1.39	2.5
13	1/2		MTS10092C40 13 UN	10 mm	.362	3	1.58	2.9
12	9/16		MTS12105C45 12 UN	12 mm	.413	3	1.77	4.1
11	5/8		MTS12114C50 11 UN	12 mm	.449	3	1.97	4.1
10	3/4		MTS16144D59 10 UN	16 mm	.567	4	2.35	4.1

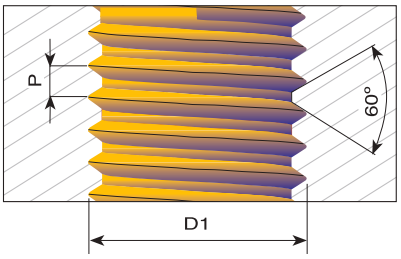
Order example: MTS 0250C26 56UN MT7

*Specially designed for the production of dental implants

- Machining Titanium, surgical stainless steels and hardened materials up to 45 HRc.
- Suitable for high speed air turbine machines (30,000-40,000 RPM) and for standard machining centers (6,000 RPM and higher).
- Can also be used for general purpose threading.

UN

Tools for Internal Thread - Metric Shanks



For thread depth up to 4 x D1

Pitch TPI	UNC	UNF	Ordering Code	d	D	No. of Flutes	l	L
56	2	3	**MTS03016C9 56 UN**	3 mm	.065	3	.36	1.5
40	4		**MTS03021C12 40 UN**	3 mm	.083	3	.47	1.5
32	6		**MTS03025C14 32 UN**	3 mm	.100	3	.58	1.5

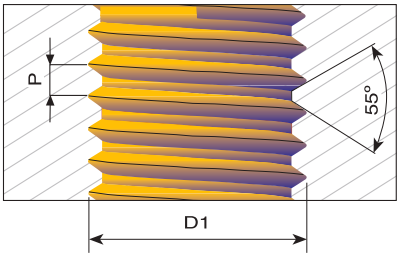
For thread depth up to 5 x D1

Pitch TPI	UNC	UNF	Ordering Code	d	D	No. of Flutes	l	L
80		0	**MTS03012C8 80 UN**	3 mm	.045	3	.31	1.5
56	2	3	**MTS03016C11 56 UN**	3 mm	.065	3	.45	1.5

Order example: MTS 03016C11 56 UN MT7

G 55° BSW, BSP

Same Tool for Internal and External Thread - Metric Shanks



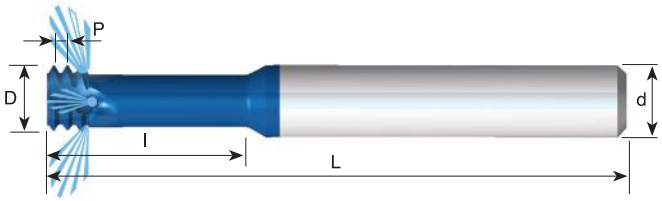
For thread depth up to 2 x D1

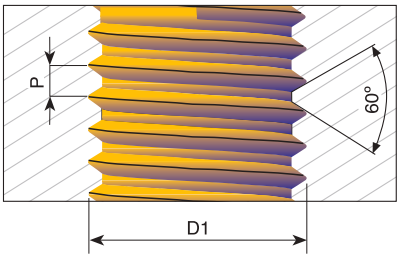
Pitch TPI	Standard	Ordering Code	d mm	D	No. of Flutes	l	L
28	G 1/8	**MTS08078C19 28 W**	8	.307	3	0.77	2.5
19	G 1/4 - 3/8	**MTS1010D30 19 W**	10	.393	4	1.18	2.9
14	G 1/2 - 7/8	**MTS1212D37 14 W**	12	.472	4	1.46	3.3
11	G ≥ 1	**MTS1616D44 11 W**	16	.630	4	1.73	4.1

Order example: MTS 1212D37 14 W MT7

UNJ With internal coolant through the flutes

Tools for Internal Thread - Metric Shanks





For thread depth up up to 2.5 x D1

Pitch TPI	UNJC	UNJF	Ordering Code	d mm	D	No. of Flutes	l	L
* 32	8	10	**MTS06033C10 32 UNJ**	6	.130	3	.41	2.3
28		1/4	**MTS08051C16 28 UNJ**	8	.201	3	.63	2.5
24		5/16, 3/8	**MTS08067C20 24 UNJ**	8	.264	3	.79	2.5
* 20	1/4		**MTS06049C16 20 UNJ**	6	.193	3	.63	2.3
20		7/16	**MTS0808C28 20 UNJ**	8	.315	3	1.10	2.5
18	5/16		**MTS08061C20 18 UNJ**	8	.242	3	.79	2.5
16	3/8		**MTS08069C24 16 UNJ**	8	.272	3	.94	2.5
14	7/16		**MTS08079C25 14 UNJ**	8	.311	3	.98	2.5
13	1/2		**MTS10094C27 13 UNJ**	10	.370	3	1.08	2.9

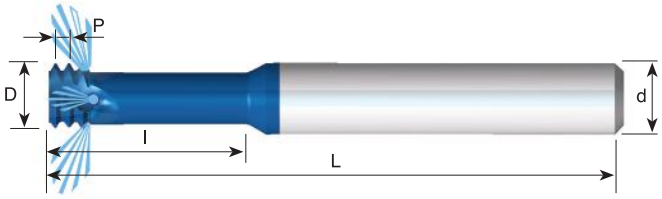
* Cutters without coolant

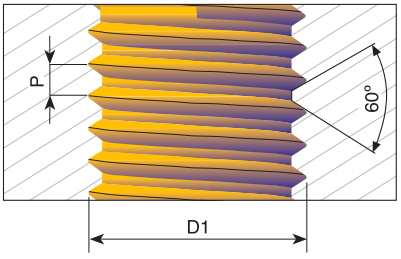
Order example: MTS 06049C16 20 UNJ MT8

Carbide grade MT8 Sub Micron grade with advanced PVD triple coating (ISO K 10-K20). Extremely high heat resistant and smooth cutting operation, for high performance, and normal machining conditions. General purpose for all materials

MJ With internal coolant through the flutes

Tools for Internal Thread - Metric Shanks





For thread depth up up to 2.5 x D1

Pitch TPI	D1	Ordering Code	d mm	D	No. of Flutes	l	L
* 0.7	MJ4	**MTS06032C10 0.7 MJ**	6	.126	3	.39	2.3
* 0.8	MJ5	**MTS06039C12 0.8 MJ**	6	.154	3	.49	2.3
* 1.0	MJ6	**MTS06048C15 1.0 MJ**	6	.189	3	.59	2.3
1.25	MJ8	**MTS08061C20 1.25 MJ**	8	.240	3	.79	2.5
1.5	MJ10	**MTS0808C25 1.5 MJ**	8	.315	3	.98	2.5
1.75	MJ12	**MTS10092C30 1.75 MJ**	10	.362	3	1.18	2.9
2.0	MJ14, MJ16	**MTS1010C35 2.0 MJ**	10	.394	3	1.38	2.9

* Cutters without coolant

Order example: MTS 06048C15 1.0 MJ MT8

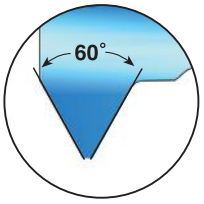
Carbide grade MT8 Sub Micron grade with advanced PVD triple coating (ISO K 10-K20). Extremely high heat resistant and smooth cutting operation, for high performance, and normal machining conditions. General purpose for all materials

Carmex Precision Tools Ltd.

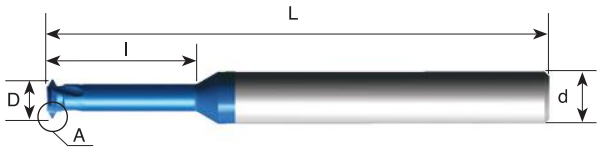
Partial Profile 60°

Same Tool for Internal and External Thread

Metric Shanks



Detail A



Pitch mm	Pitch TPI	Ordering Code	M Coarse	M Fine	UN, UNC, UNS UNF, UNEF	d mm	D	No. of Flutes	l	L
0.25-0.35	100-72	**MTI03012C3 A60**	M1.6 x 0.35	M1.6 x 0.25 M1.8 x 0.25 M2.0 x 0.25	0-80 UNF	3	.045	3	.12	1.5
0.35-0.45	72-56	**MTI03014C4 A60**	M2 x 0.4 M2.2 x 0.45	M2 x 0.35 M2.2 x 0.35	1-64 UNC, 1-72 UNF, 2-56 UNC, 2-64 UNF	3	.055	3	.15	1.5
0.35-0.6	72-40	**MTI03019C5 A60**	M2.5 x 0.45	M2.5 x 0.35 M3 x 0.35	3-84 UNC, 3-56 UNF, 4-40 UNC, 4-48 UNF	3	.075	3	.20	1.5
0.5 -0.8	48-32	**MTI03024C7 A60**	M3 x 0.5 M3.5 x 0.6	M3.5 x 0.5	5-40 UNC, 5-44 UNF, 6-32 UNC, 6-40 UNF	3	.096	3	.28	1.5
0.5 -1.0	48-24	**MTI06032C9 A60**	M4 x 0.7 M4.5 x 0.75	M4 x 0.5	8-32 UNC, 8-36 UNF, 10-24 UNC, 10-28 UNS, 10-32 UNF	6	.126	3	.37	2.3
0.5 -1.0	48-24	**MTI0604C12 A60**	M5 x 0.8 M6 x 1.0	M5 x 0.5 M5.5 x 0.5 M5 x 0.75	10-36 UNS, 10-40 UNS, 10-48 UNS, 12-24 UNC, 12-28 UNF	6	.157	3	.49	2.3

Order example: MTI 03024C7 A60 MT11

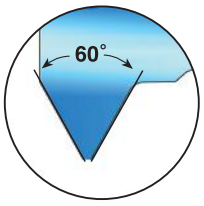
Carbide grade: MT11 Ultra-fine Sub-micron grade with PVD triple Blue coating

Partial Profile 60°

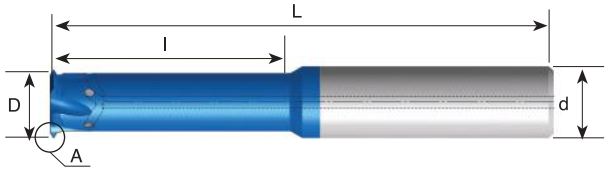
With internal coolant through the flutes

Same Tool for Internal and External Thread

Metric Shanks



Detail A



For threading deep parts

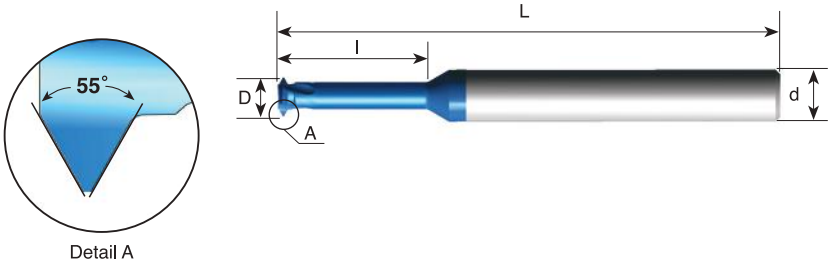
Pitch mm	Pitch TPI	Thread Dia. (mm)	Ordering Code	d mm	D	No. of Flutes	l	L
Int. 0.5 - 0.8 Ex. 0.4 - 0.8	56-28 64-32	ø≥ 6	**MTI0605D20 A60**	6	.197	4	.79	2.3
		ø≥ 9	**MTI0808D28 A60**	8	.315	4	1.10	2.5
		ø≥13	**MTI1212E38 A60**	12	.472	5	1.50	3.3
Int. 1.0 - 1.75 Ex. 0.8 - 1.5	28-14 32-16	ø≥10	**MTI0808D30 A60**	8	.315	4	1.18	2.5
		ø≥12	**MTI1010D35 A60**	10	.394	4	1.38	2.9
		ø≥14	**MTI1212E39 A60**	12	.472	5	1.54	3.3
Int. 2.0 - 3.0 Ex. 1.75-2.5	13- 8 15-10	ø≥16	**MTI1212E40 A60**	12	.472	5	1.57	3.3
		ø≥18	**MTI1614E45 A60**	16	.551	5	1.77	4.0
		ø≥20	**MTI1616E50 A60**	16	.630	5	1.97	4.0

Order example: MTI 0808D28 A60 MT8

Carbide grade: MT8 With triple Blue coating

Partial Profile 55°

Same Tool for Internal and External Thread - Metric Shanks



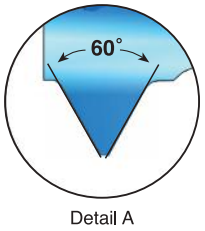
Pitch TPI	Ordering Code	d mm	D	No. of Flutes	l	L
40-32	**MTI03023C7 A55**	3	.089	3	.28	1.5
28-20	**MTI06044C14 A55**	6	.171	3	.55	2.3
28-18	**MTI06059C20 A55**	6	.230	3	.81	2.3
20-14	**MTI0807C23 A55**	8	.276	3	.91	2.5

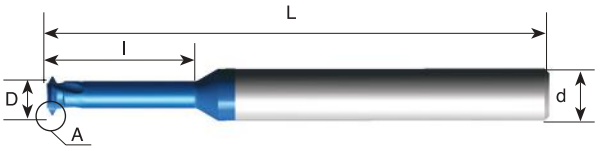
Order example: MTI 06044C14A55 MT11

Carbide grade: MT11 Ultra-fine Sub-micron grade with PVD triple Blue coating

ISO

Tools for Internal Thread
Metric Shanks





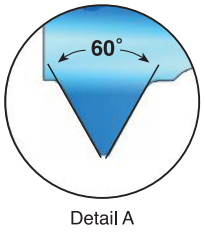
For thread depth up to 3.5 x D1

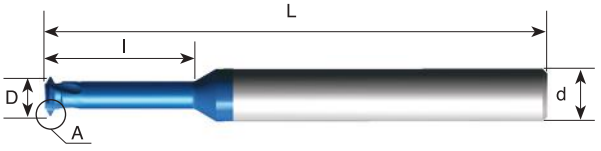
Pitch mm	M Coarse	M Fine	Ordering Code	d mm	D	No. of Flutes	l	L
0.25	M1 x 0.25		**MTI03007C3 0.25 ISO**	3	.028	3	.14	1.5
0.25	M1.2 x 0.25	M1.4 x 0.25 M1.6 x 0.25	**MTI03009C4 0.25 ISO**	3	.035	3	.17	1.5
0.3	M1.4 x 0.3		**MTI03011C5 0.3 ISO**	3	.041	3	.20	1.5
0.35	M1.6 x 0.35	M2 x 0.35 M2.2 x 0.35	**MTI03012C6 0.35 ISO**	3	.047	3	.22	1.5
0.4	M2 x 0.4		**MTI03016C7 0.4 ISO**	3	.061	3	.28	1.5
0.5	M3 x 0.5	M3.5 x 0.5 M4 x 0.5	**MTI03024C10 0.5 ISO**	3	.093	3	.42	1.5

Order example: MTI 03012C6 0.35 ISO MT11
Carbide grade: MT11 Ultra-fine Sub-micron grade with PVD triple Blue coating

UN

Tools for Internal Thread
Metric Shanks





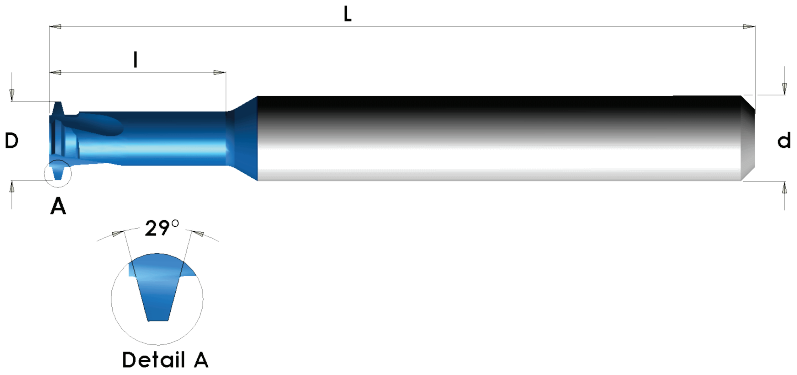
For thread depth up to 3.5 x D1

Pitch TPI	UNC	UNF	Ordering Code	d mm	D	No. of Flutes	l	L
80		0	**MTI03012C5 80 UN**	3	.045	3	.22	1.5
72		1	**MTI03015C7 72 UN**	3	.057	3	.26	1.5
56	2	3	**MTI03016C9 56 UN**	3	.065	3	.35	1.5
40	4		**MTI03021C10 40 UN**	3	.083	3	.40	1.5

Order example: MTI 03016C9 56 UN MT11
Carbide grade: MT11 Ultra-fine Sub-micron grade with PVD triple Blue coating

Acme

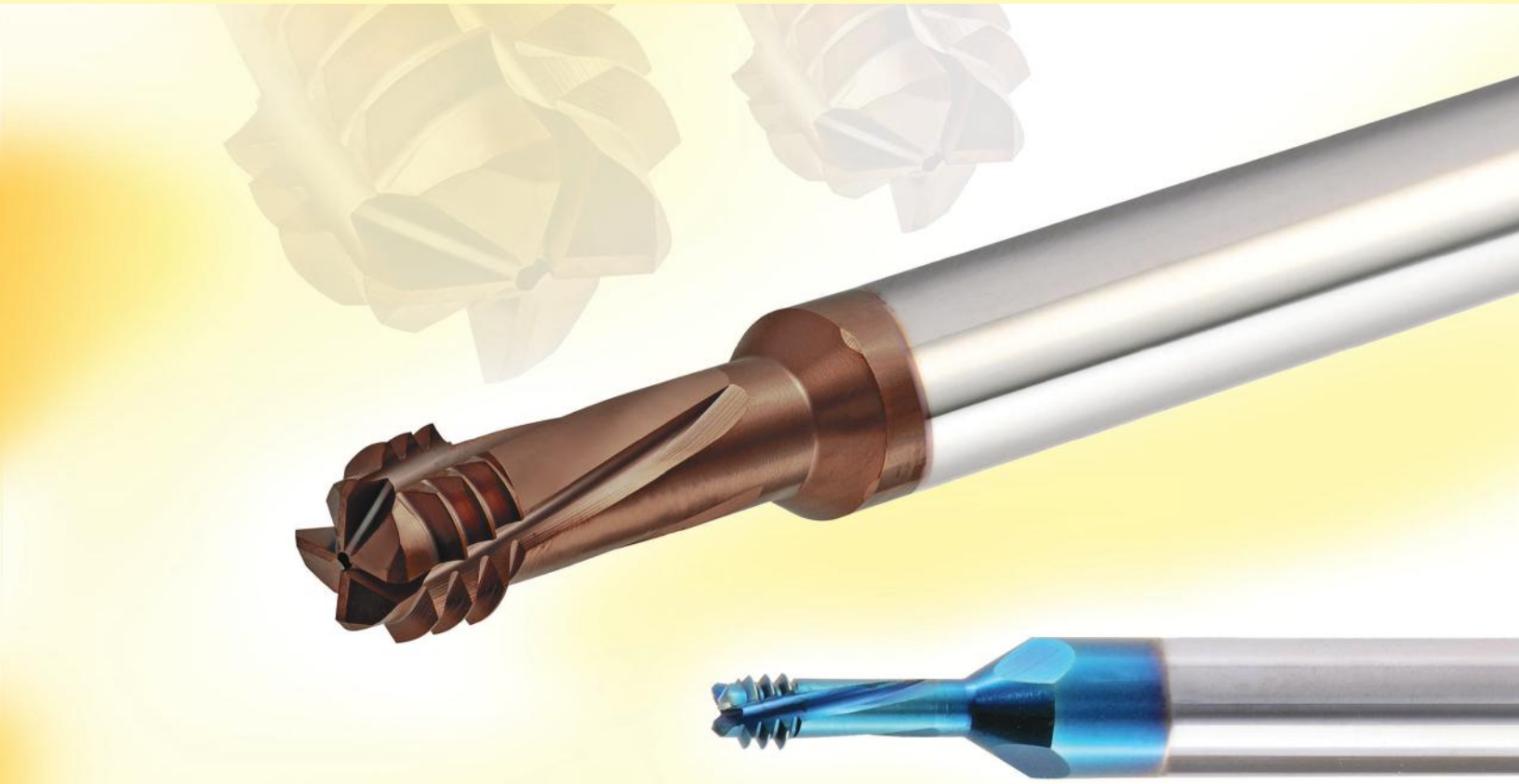
Tools for Internal Thread



Pitch TPI	Thread size	Ordering Code	d	D	No. of Flutes	l	L
16	1/4-16	**MTI0250C04 16 ACME**	1/4	.170	3	.38	2.5
14	5/16-14	**MTI0250C06 14 ACME**	1/4	.205	3	.60	2.5
12	3/8-12 7/16-12	**MTI0250C08 12 ACME**	1/4	.240	3	.75	2.5
10	1/2-10	**MTI0375D10 10 ACME**	3/8	.327	4	1.00	3.0
8	5/8-8	**MTI0500D11 8 ACME**	1/2	.410	4	1.10	3.5
6	3/4-6 7/8-6	**MTI0500D12 6 ACME**	1/2	.473	4	1.20	3.5
5	1-5 1 1/8-5 1 1/4-5	**MTI 0625E15 5 ACME**	5/8	.625	5	1.50	4.0

Order example: MTI 0375D10 10ACME MT8

DMT 3 in 1 - *Drill, Thread, Chamfer



High Performance tools with internal coolant supply for the production of internal threads.
***Circular movement produces the thread hole, the thread and a chamfer in one work process.**

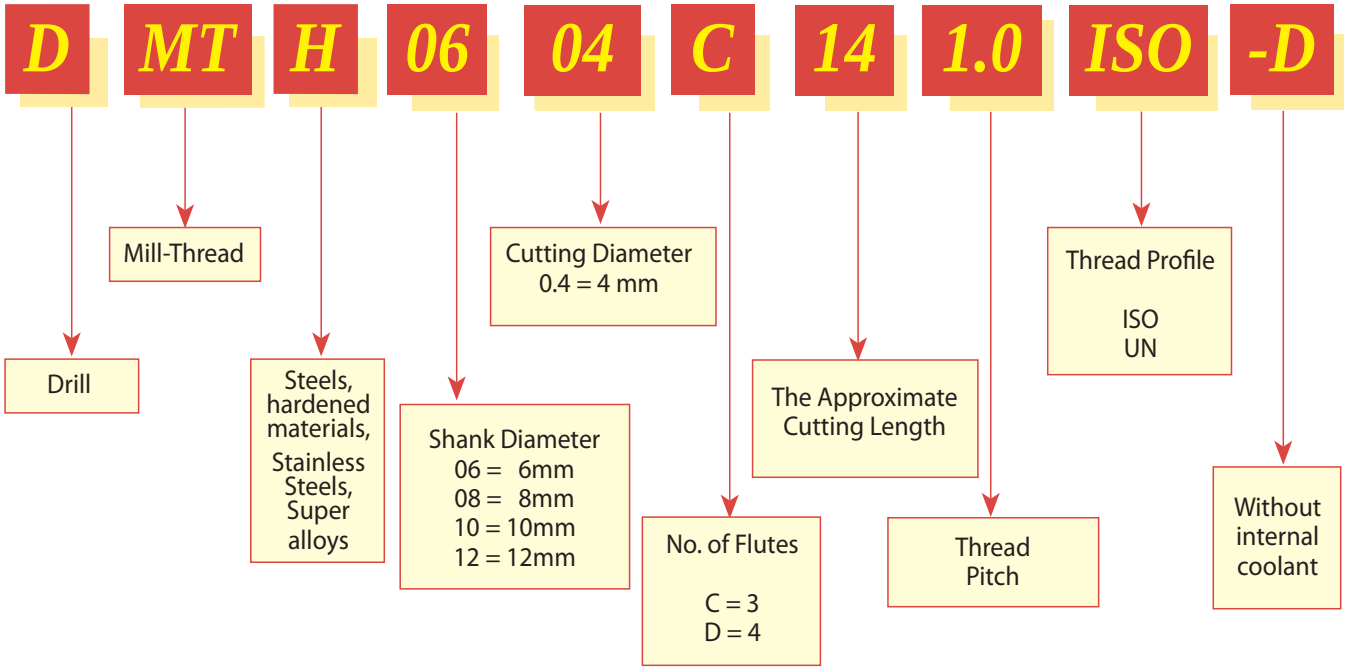
Carbide grade: MT7 Sub-micron grade with Titanium Aluminium Nitride multi-layer coating (ISO K10-K20).
MT11 Ultra - fine Sub-micron grade with advanced PVD triple Blue coating (for DMTH)

Advantages of DMT

- Cancels the need for drilling the hole.
- Short cycle time and high performance reduces machining costs.
- Suitable for both blind and through holes.
- Full Profile thread.
- No time lost for tool change, since drilling, chamfering and thread milling are done with one tool.
- Same tool for right-hand or left-hand threads.
- Cuts a wide range of materials.

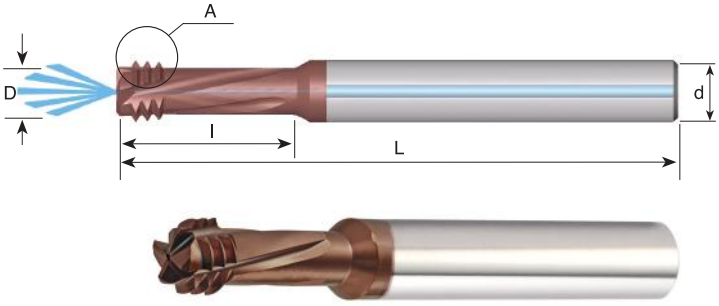
Product Identification

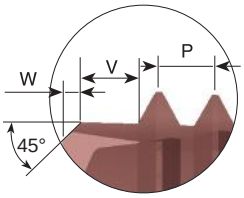
DMT 3 in 1 - *DRILL, THREAD, CHAMFER Ordering Codes



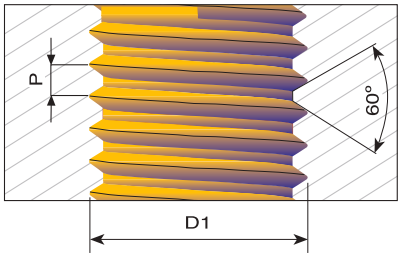
ISO internal coolant bore

Tools for Internal Thread - Metric Shanks





Detail A



Left hand cutting
For CNC code use M04

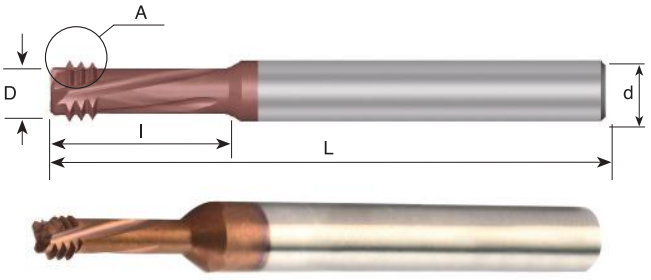
For thread depth up to 2 x D1

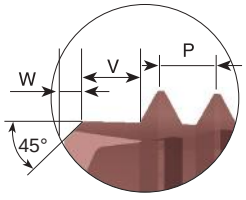
Pitch mm	D1	Ordering Code	d mm	D	No. of Flutes	l	W	V	L
1.0	M6 - M9	**DMT 08047C14 1.0 ISO**	8	.185	3	.55	.016	.039	2.5
1.25	M8 - M12	**DMT 08061D18 1.25 ISO**	8	.240	4	.71	.020	.049	2.5
1.5	M10 - M15	**DMT 08078D23 1.5 ISO**	8	.307	4	.91	.024	.059	2.5
1.75	M12	**DMT 1009D26 1.75 ISO**	10	.354	4	1.02	.024	.069	2.9
2.0	M16 - M23	**DMT 12118D35 2.0 ISO**	12	.465	4	1.38	.024	.079	3.3

Order example: DMT 08047C14 1.0 ISO MT7

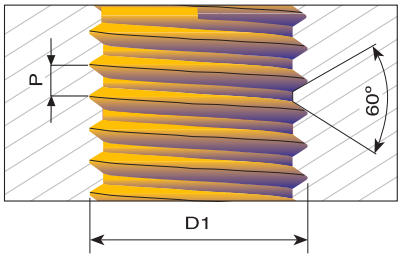
Carbide grade MT7 Sub-Micron grade with Titanium Aluminum Nitride multi-layer coating (ISO K10 - K20). To be run at medium to high cutting speeds. General purpose for all materials.

ISO without internal coolant Metric Shanks





Detail A



Left hand cutting
For CNC code use M04

For thread depth up to 2.5 x D1

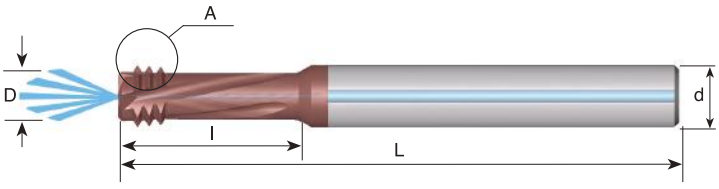
Pitch mm	D1	Ordering Code	d mm	D	No. of Flutes	l	W	V	L
0.7	M4	**DMT 06032C11 0.7 ISO-D**	6	.124	3	.46	.008	.028	2.3
0.8	M5	**DMT 0604C14 0.8 ISO-D**	6	.157	3	.57	.012	.031	2.3

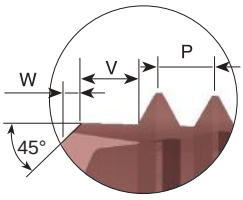
Order example: DMT 06032C11 0.7 ISO-D MT7

Carbide grade MT7 Sub-Micron grade with Titanium Aluminum Nitride multi-layer coating (ISO K10 - K20). To be run at medium to high cutting speeds. General purpose for all materials.

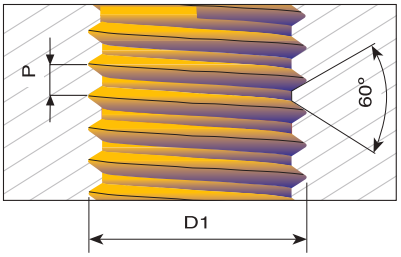
UN internal coolant bore

Tools for Internal Thread - Metric Shanks





Detail A



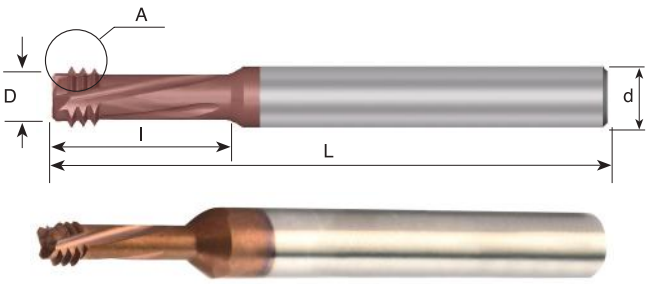
Left hand cutting
For CNC code use M04

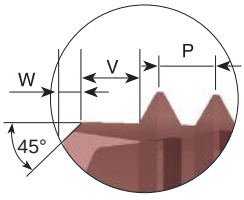
For thread depth up to 2 x D1

Pitch TPI	UN, UNEF, UNF UNC, UNS	Ordering Code	d mm	D	No. of Flutes	l	W	V	L
28	1/4 - 3/8	**DMT 0805C14 28 UN**	8	.197	3	.57	.016	.035	2.5
24	5/16 - 1/2	**DMT 08065D17 24 UN**	8	.256	4	.67	.020	.041	2.5
20	1/4 - 3/8	**DMT 08048C14 20 UN**	8	.189	3	.55	.016	.049	2.5
18	5/16 - 7/16	**DMT 0806D17 18 UN**	8	.236	4	.67	.020	.055	2.5
16	3/8 - 1/2	**DMT 08067C22 16 UN**	8	.264	3	.87	.020	.063	2.5

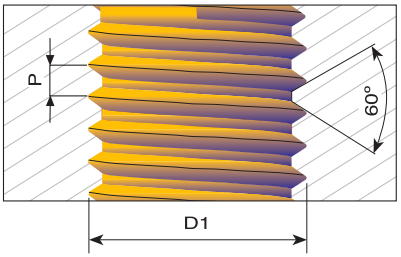
Order example: DMT 08067C 22 16 UN MT7

UN without internal coolant Metric Shanks





Detail A



Left hand cutting
For CNC code use M04

For thread depth up to 2.5 x D1

Pitch TPI	UNC	UNF	Ordering Code	d mm	D	No. of Flutes	l	W	V	L
36		8	**DMT 06033C12 36 UN-D**	6	.130	3	.47	.008	.028	2.3
32	8		**DMT 06032C12 32 UN-D**	6	.126	3	.48	.012	.031	2.3
32		10	**DMT 06038C14 32 UN-D**	6	.150	3	.55	.012	.031	2.3

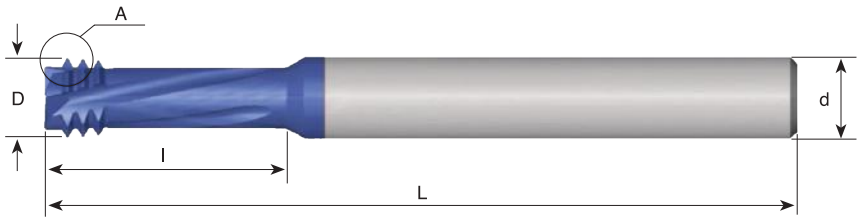
Order example: DMT 06032C12 32UN-D MT7

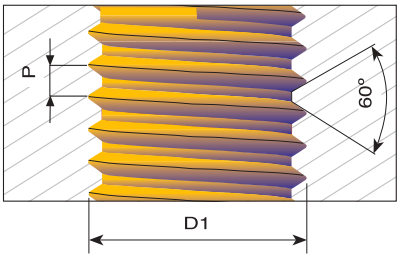
DMTH

The new DMTH tools expand the range of the existing DMT line providing the ability to cut steels, hardened materials, stainless steels and super alloys.

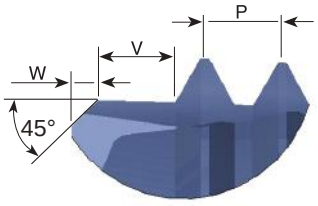
ISO

Tools for Internal Thread - Metric Shanks





Left hand cutting
For CNC code use M04



Detail A

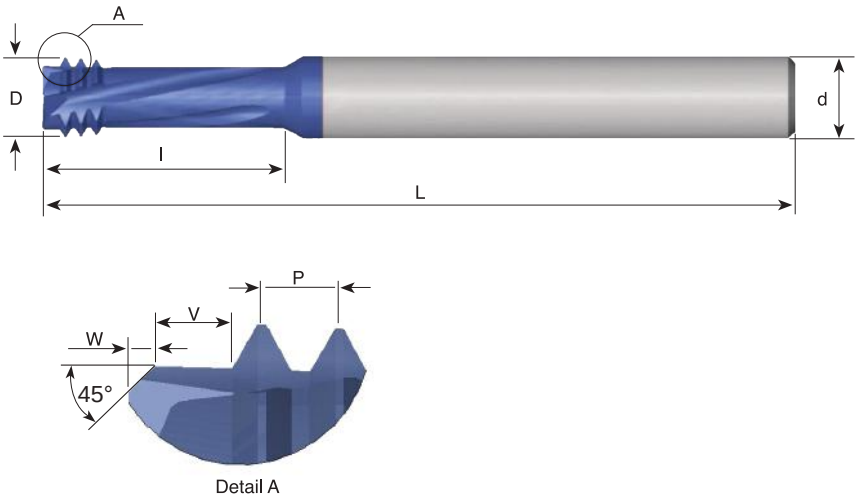
For thread depth up to 2 x D1

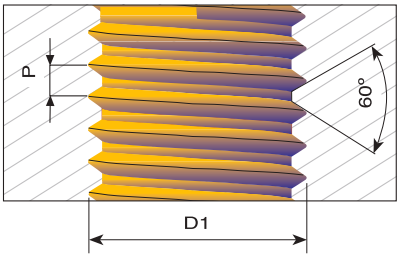
Pitch mm	D1	Ordering Code	d mm	D	No. of Flutes	l	W	V	L
1.0	M6 - M9	**DMTH 08047 C14 1.0 ISO**	8	.185	3	.57	.016	.039	2.5
1.25	M8 - M12	**DMTH 08061 D19 1.25 ISO**	8	.240	4	.75	.020	.049	2.5
1.5	M10- M15	**DMTH 08078 D23 1.5 ISO**	8	.307	4	.93	.024	.059	2.5
1.75	M12	**DMTH 1009 D28 1.75 ISO**	10	.354	4	1.11	.024	.069	2.9
2.0	M16- M23	**DMTH 12118 D36 2.0 ISO**	12	.465	4	1.44	.024	.079	3.3

Order example: DMTH 1009D28 1.75 ISO MT11

UN

Tools for Internal Thread - Metric Shanks





Left hand cutting
For CNC code use M04

For thread depth up to 2 x D1

Pitch TPI	UN, UNEF, UNF UNC, UNS	Ordering Code	d mm	D	No. of Flutes	l	W	V	L
40	4	**DMTH 06021 C7 40 UN**	6	.083	3	.28	.004	.024	2.3
32	6	**DMTH 06026 C8 32 UN**	6	.102	3	.34	.004	.031	2.3
28	1/4-3/8	**DMTH 0805 C14 28 UN**	8	.197	3	.59	.016	.035	2.5
24	5/16-1/2	**DMTH 08065 D18 24 UN**	8	.256	4	.73	.020	.041	2.5
20	1/4-3/8	**DMTH 08048 C15 20 UN**	8	.189	3	.61	.016	.049	2.5
18	5/16-7/16	**DMTH 0806 D19 18 UN**	8	.236	4	.76	.020	.055	2.5
16	3/8-1/2	**DMTH 08067 C22 16 UN**	8	.264	3	.90	.020	.063	2.5
13	1/2	**DMTH 10092 C30 13 UN**	10	.362	3	1.18	.024	.079	2.9
11	5/8	**DMTH 12114 C37 11 UN**	12	.449	3	1.46	.024	.091	3.3

Order example: DMTH 08048 C15 20UN MT11

HARDCUT
Mill-Thread Solid Carbide for machining hard materials

MTSH Type

Carmex is pioneer in offering solid carbide thread mills tools designed specifically for the machining of hardened materials up to 62HRc. These tools provide high performance, improved cut and an excellent surface finish.

HARDCUT MTSH & MTH Types

Carbide grade: MT9 / MT11 - *Ultra fine sub-micron grade with Advanced PVD Triple Coating*

- Threading from ISO M1.4 x 0.3 and 0-80UN
- Perfect solution for the Die and Mold industry
- Working at high cutting speeds
- Short machining time
- Low cutting forces thanks to the short profile

MTH Type

Carmex provide new innovative mill thread solid carbide tools for machining:

- Hardened steels and cast iron up to 62 HRc.
- High temperature alloys.
- Titanium alloys.
- Super Alloys (Hastelloy, Inconel, Nickel Base Alloys).

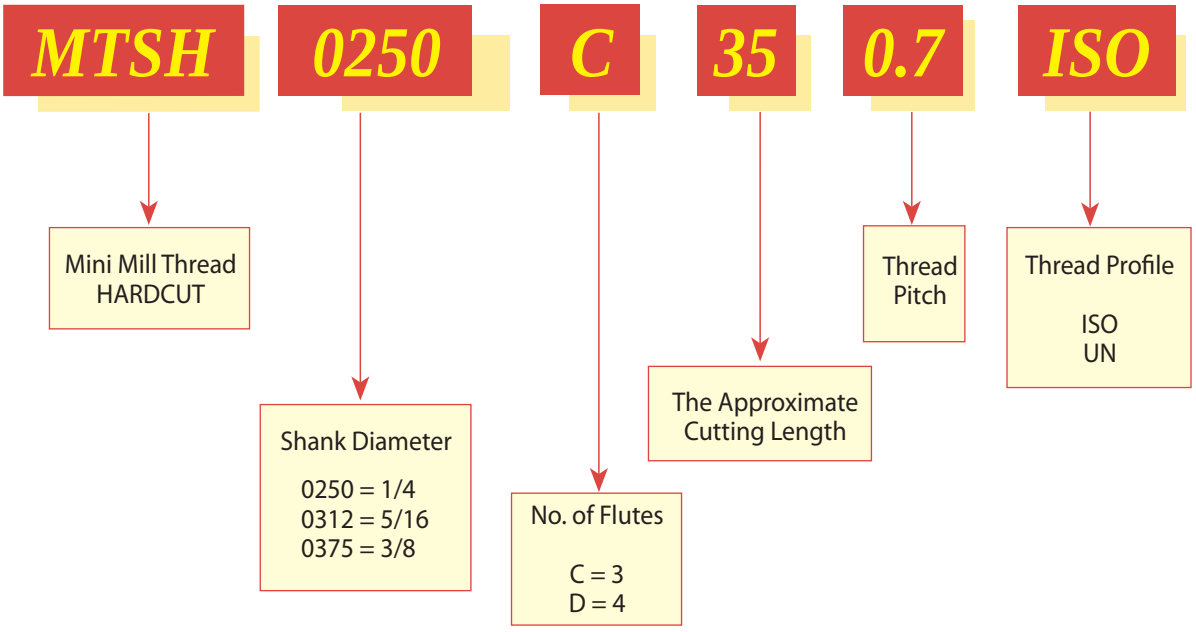
Advantages

- Same tool performs thread milling and chamfering - saves machining time.
- Increased cutting diameter - better rigidity and stability.
- Coating provides high wear and heat resistance.
- Ultra fine grade - dedicated for hardened materials.
- Short chips are produced, insure high process security.
- Short cycle time - increases productivity.
- Thread length up to 2xD.

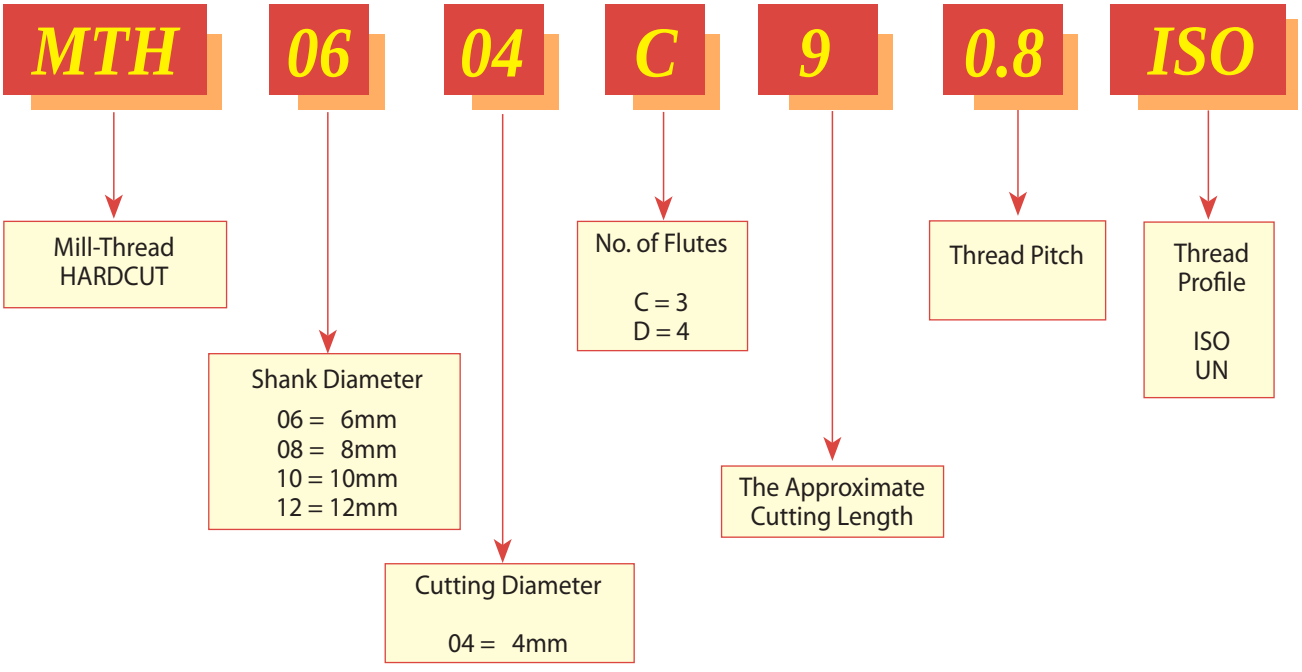
Contents: Page:

Product Identification

Mini Mill-Thread MTSH Type Ordering Codes

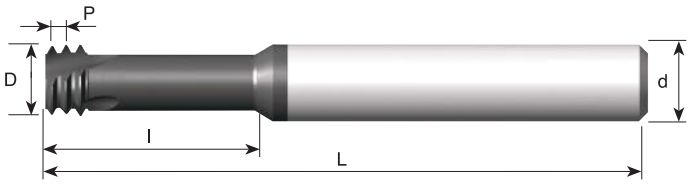


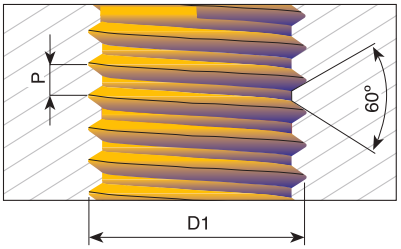
MTH Type Ordering Codes



ISO

Tools for Internal Thread





Left hand cutting
For CNC code use M04

For thread depth up to 2 x D1

Pitch mm	D1	Ordering Code	d	D	No. of Flutes	l	L
0.4	M2	**MTSH0250C18 0.4 ISO**	1/4	.061	3	.18	2.5
0.45	M2.2	**MTSH0250C20 0.45 ISO**	1/4	.065	3	.20	2.5
0.45	M2.5	**MTSH0250C22 0.45 ISO**	1/4	.077	3	.22	2.5
0.5	M3	**MTSH0250C26 0.5 ISO**	1/4	.093	3	.26	2.5
0.6	M3.5	**MTSH0250C30 0.6 ISO**	1/4	.108	3	.30	2.5
0.7	M4	**MTSH0250C35 0.7 ISO**	1/4	.122	3	.35	2.5
0.8	M5	**MTSH0250C49 0.8 ISO**	1/4	.150	3	.49	2.5
1.0	M6	**MTSH0250C55 1.0 ISO**	1/4	.183	3	.55	2.5
1.25	M8	**MTSH0250C71 1.25 ISO**	1/4	.234	3	.71	2.5
1.5	M10	**MTSH0312C91 1.5 ISO**	5/16	.307	3	.91	2.5
1.75	M12	**MTSH0375C10 1.75 ISO**	3/8	.354	3	1.02	3.0
2.0	M16	**MTSH12118D35 2.0 ISO**	12mm	.465	4	1.38	3.3

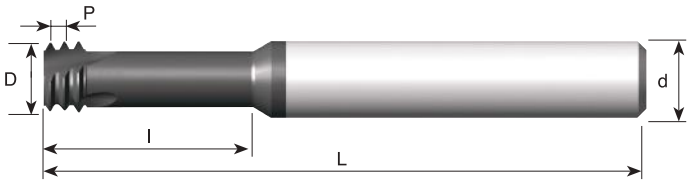
For thread depth up to 3 x D1

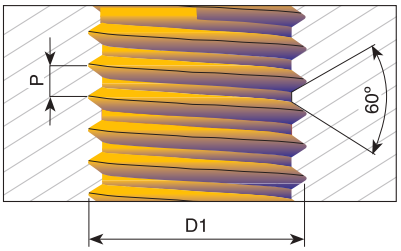
Pitch mm	D1	Ordering Code	d	D	No. of Flutes	l	L
0.3	M1.4	**MTSH03011C4 0.3 ISO**	3mm	.041	3	.16	1.5
0.35	M1.6	**MTSH03012C5 0.35 ISO**	3mm	.047	3	.19	1.5
0.4	M2	**MTSH03016C6 0.4 ISO**	3mm	.061	3	.24	1.5
0.45	M2.5	**MTSH0250C30 0.45 ISO**	1/4	.077	3	.30	2.5
0.5	M3	**MTSH0250C37 0.5 ISO**	1/4	.093	3	.37	2.5
0.7	M4	**MTSH0250C49 0.7 ISO**	1/4	.122	3	.49	2.5
0.8	M5	**MTSH0250C63 0.8 ISO**	1/4	.150	3	.63	2.5
1.0	M6	**MTSH0250C79 1.0 ISO**	1/4	.183	3	.79	2.5
1.25	M8	**MTSH0250C94 1.25 ISO**	1/4	.234	3	.94	2.5

Order example: MTSH 0250C35 0.7 ISO MT9

UN

Tools for Internal Thread





Left hand cutting
For CNC code use M04

For thread depth up to 2 x D1

Pitch TPI	UNC	UNF	Ordering Code	d	D	No. of Flutes	l	L
72		1	MTSH0250C15 72 UN	1/4	.057	3	.15	2.5
64	1	2	MTSH0250C15 64 UN	1/4	.055	3	.15	2.5
56	2	3	MTSH0250C17 56 UN	1/4	.065	3	.17	2.5
48	3	4	MTSH0250C20 48 UN	1/4	.075	3	.20	2.5
40	4		MTSH0250C25 40 UN	1/4	.083	3	.25	2.5
40	5	6	MTSH0250C28 40 UN	1/4	.096	3	.28	2.5
36		8	MTSH0250C35 36 UN	1/4	.130	3	.35	2.5
32	6		MTSH0250C28 32 UN	1/4	.100	3	.28	2.5
32	8		MTSH0250C37 32 UN	1/4	.126	3	.37	2.5
32		10	MTSH0250C41 32 UN	1/4	.146	3	.41	2.5
28		12	MTSH0250C43 28 UN	1/4	.165	3	.43	2.5
28		1/4	MTSH0250C57 28 UN	1/4	.197	3	.57	2.5
24	10, 12		MTSH0250C42 24 UN	1/4	.138	3	.42	2.5
24		5/16, 3/8	MTSH0312C67 24 UN	5/16	.260	3	.67	2.5
20	1/4		MTSH0250C55 20 UN	1/4	.187	3	.55	2.5
20		7/16	MTSH0312C98 20 UN	5/16	.312	3	.98	2.5
18	5/16		MTSH0250C67 18 UN	1/4	.236	3	.67	2.5
18		5/8	MTSH1212D35 18 UN	12mm	.472	4	1.38	3.3
16	3/8		MTSH0312C87 16 UN	5/16	.264	3	.87	2.5
14	7/16		MTSH0312C98 14 UN	5/16	.303	3	.98	2.5
13	1/2		MTSH0375C10 13 UN	3/8	.362	3	1.08	3.0
12	9/16		MTSH12105C31 12 UN	12mm	.413	3	1.24	3.3
11	5/8		MTSH12114C34 11 UN	12mm	.449	3	1.36	3.3

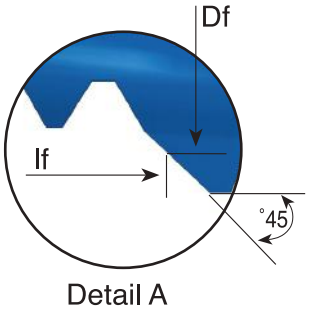
For thread depth up to 3 x D1

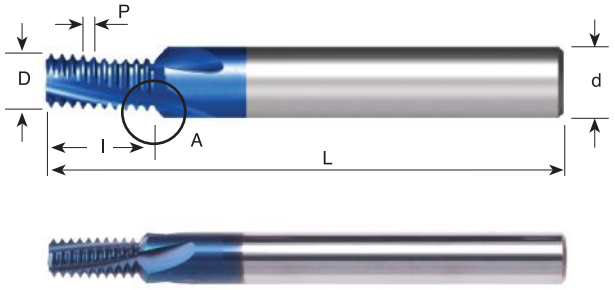
Pitch TPI	UNC	UNF	Ordering Code	d	D	No. of Flutes	l	L
80		0	MTSH0250C16 80 UN	1/4	.045	3	.16	2.5
72		1	MTSH03015C6 72 UN	3mm	.057	3	.24	1.5
56	2	3	MTSH0250C26 56 UN	1/4	.065	3	.26	2.5
40	4		MTSH0250C31 40 UN	1/4	.083	3	.31	2.5
40	5	6	MTSH0250C38 40 UN	1/4	.096	3	.38	2.5
32	6		MTSH0250C40 32 UN	1/4	.100	3	.41	2.5
32	8		MTSH0250C49 32 UN	1/4	.126	3	.49	2.5
32		10	MTSH0250C59 32 UN	1/4	.146	3	.59	2.5
28		1/4	MTSH0250C75 28 UN	1/4	.197	3	.75	2.5
24		5/16, 3/8	MTSH0312C94 24 UN	5/16	.260	3	.94	2.5
20	1/4		MTSH0250C75 20 UN	1/4	.187	3	.75	2.5
18	5/16		MTSH0250C91 18 UN	1/4	.236	3	.91	2.5

Order example: MTSH 0250C28 40 UN MT9

ISO

Tools for Internal Thread - Metric Shanks



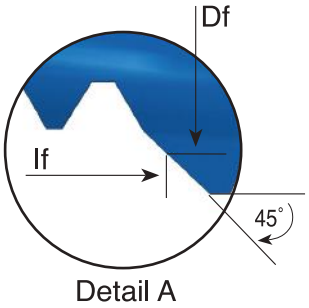


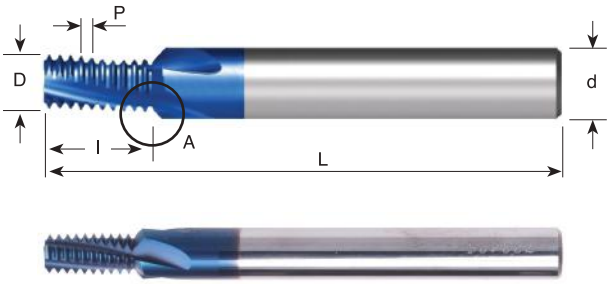
Pitch mm	M coarse	M fine	Ordering Code	d mm	D	Df	No. of Flutes	I	If	L
0.5	M3	Ø ≥ 4	**MTH06024C5 0.5 ISO**	6	.094	.142	3	.209	.232	2.3
0.7	M4	Ø ≥ 5	**MTH06031C7 0.7 ISO**	6	.122	.169	3	.291	.315	2.3
0.8	M5	Ø ≥ 6	**MTH0604C9 0.8 ISO**	6	.157	.205	3	.362	.386	2.3
1.0	M6	Ø ≥ 7	**MTH08048D10 1.0 ISO**	8	.189	.252	4	.413	.445	2.5
1.0		Ø ≥ 9	**MTH0806D13 1.0 ISO**	8	.236	.299	4	.531	.563	2.5
1.0		Ø ≥ 10	**MTH1008D16 1.0 ISO**	10	.315	.378	4	.650	.681	2.9
1.25	M8	Ø ≥ 10	**MTH0806D14 1.25 ISO**	8	.236	.299	4	.567	.598	2.5
1.5	M10	Ø ≥ 12	**MTH1008D17 1.5 ISO**	10	.315	.386	4	.681	.717	2.9
1.5		Ø ≥ 14	**MTH1210D21 1.5 ISO**	12	.394	.465	4	.858	.894	3.3
1.75	M12	Ø ≥ 12	**MTH12095D20 1.75 ISO**	12	.374	.453	4	.791	.831	3.3

Order example: MTH08048D10 1.0 ISO MT11

UN

Tools for Internal Thread - Metric Shanks





Pitch TPI	UNC	UNF	UNEF	Ordering Code	d mm	D	Df	No. of Flutes	I	If	L
40	5	6		**MTH06025C6 40 UN**	6	.098	.146	3	.236	.260	2.3
32	6			**MTH06026C5 32 UN**	6	.102	.150	3	.232	.256	2.3
32	8			**MTH06032C7 32 UN**	6	.126	.173	3	.295	.319	2.3
32		10	12	**MTH06038C9 32 UN**	6	.150	.197	3	.358	.382	2.3
28		1/4		**MTH08052D11 28 UN**	8	.205	.268	4	.445	.476	2.5
28			7/16, 1/2	**MTH12096D20 28 UN**	12	.378	.441	4	.803	.835	3.3
24		5/16, 3/8	9/16, 5/8, 11/16	**MTH08066D14 24 UN**	8	.260	.315	4	.563	.591	2.5
20	1/4			**MTH06048C12 20 UN**	6	.189	.236	3	.476	.500	2.3
20		7/16, 1/2	3/4, 1	**MTH12092D21 20 UN**	12	.362	.425	4	.827	.858	3.3
18	5/16	9/16, 5/8	11/16	**MTH08057C14 18 UN**	8	.224	.295	3	.583	.618	2.5
16	3/8	3/4		**MTH10074C16 16 UN**	10	.291	.362	3	.657	.693	2.9
14	7/16	7/8		**MTH10085D20 14 UN**	10	.335	.390	4	.823	.850	2.9
13	1/2			**MTH12094D22 13 UN**	12	.370	.449	4	.886	.925	3.3

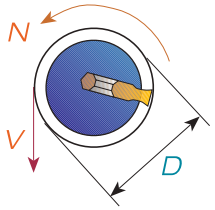
Order example: MTH06048C12 20 UN MT11

Mill-Thread Technical Section

Conversion of Cutting Speed to Rotational Speed

Conversion of selected cutting speed to rotational speed is calculated by the following formula:

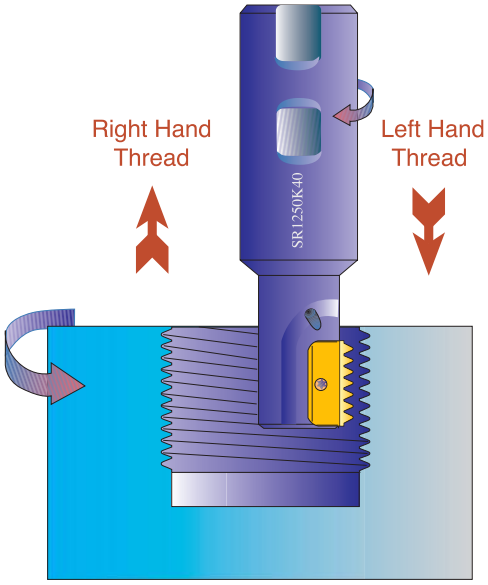
$$N = \frac{V \times 12}{\pi \times D} = \frac{400 \times 12}{3.14 \times 1.25} = 1222 \text{ RPM}$$



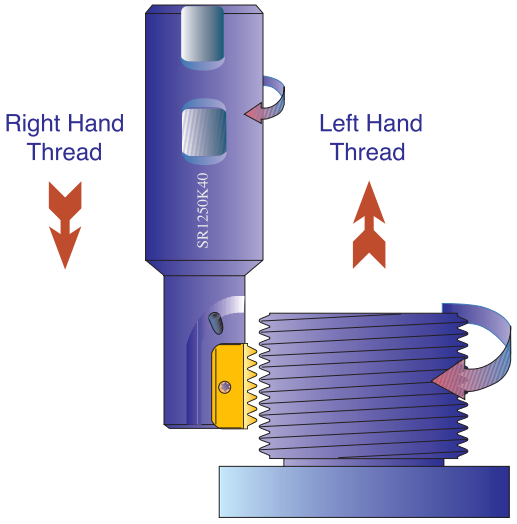
Example: *V=400 ft/min*
D=1.25

D=Cutting diameter

Internal Thread



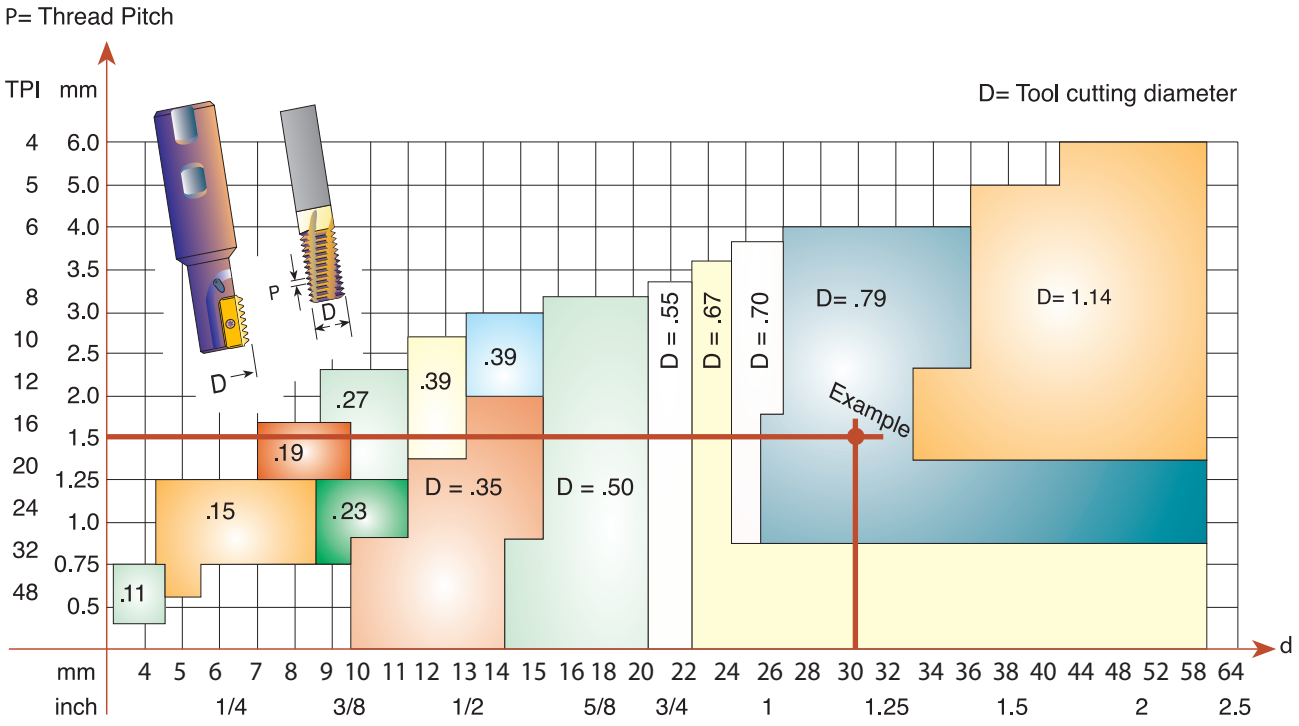
External Thread



Tool Selection

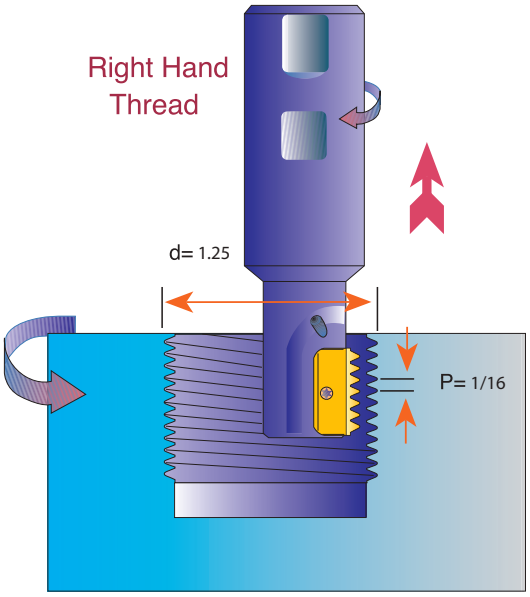
For indexable and solid carbide Mill Threads

The following chart provides a fairly accurate visual selection tool for Internal Threading.
The chart is suitable for the following thread forms: ISO, UN, WHIT, NPT, NPTF, BSPT and PG.



Any tool with a small cutting diameter can produce larger diameter threads.
Example: Internal thread 1 1/4 x 16UN:
Find a Milling Tool to produce d=1.25 Internal
right hand UN thread with a thread pitch P=1/16 inch
As can be seen from the chart above, the two red lines
intersect at a selected tool with a cutting diameter of D=79 inch

Chosen toolholder: SR0790 H21
Insert: 21 I 16 UN MT7



If you need assistance, please call your local distributor and ask for help in selecting the appropriate tool as well as for a CNC program to suit your CNC milling machine.

Carmex Mill-Thread catalog and CNC programming Software

This software is provided by Carmex to assist you, the threadmilling user, to select and apply the correct tool to machine threads on CNC machining centers. The program will find tools and inserts which are suitable for your application, calculate cutting data and generate a CNC program for a variety of controls.

The software is available at our web site and on a CD-ROM.

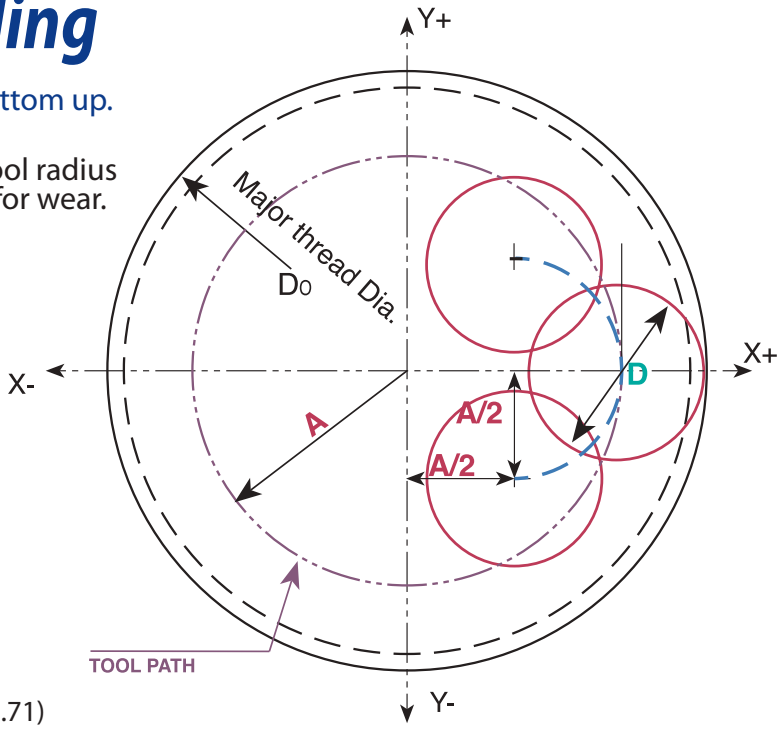
Example of Thread Milling CNC Program for Internal Threading

Right hand thread (climb milling) from bottom up.

Program is based on tool center.
This method of programming needs no tool radius compensation value other than an offset for wear.

$$A = \frac{D_o - D}{2}$$

A = Radius of tool path
D_o = Major thread dia.
D = Cutting dia.



General Program

```
G90  G00 G54 G43 H1X0 Y0 Z10 S---
G00  Z- ( TO THREAD DEPTH )
G01  G91 G41 D1 X(A/2) Y-(A/2) Z0  F---
G03  X(A/2) Y(A/2)  R(A/2) Z(1/8 PITCH)
G03  X0 Y0 I-(A) J0 Z(PITCH)
G03  X-(A/2) Y(A/2) R(A/2) Z(1/8 PITCH)
G01  G40 X-(A/2) Y-(A/2) Z0
G90  X0 Y0 Z0
```

Internal Thread

EXAMPLE : 11/4-12UN (Thread depth .71)
TOOLHOLDER : SR0790 H21 (Cutting Dia. .79)
INSERT: 21 I 12 UN
A = (1.25 - .79)/2 = .23

```
G90  G00 G54 G43 H1X0 Y0 Z0.39  S2800
G00  Z-0.71
G01  G91 G41X0.1150 Y-0.1150  Z0 F3.35  D1
G03  X0.1150
Y0.1150 R0.1150 Z0.0104
G03  X0 Y0 I-0.23  J0  Z0.0833
G03  X-0.1150 Y0.1150 R0.1150 Z0.0104
G01  G40 X-0.1150 Y-0.1150  Z0
G90  G0 X0 Y0 Z0
```

Mill-Thread Inserts Speed and Feed Selection

MT7 Sub-Micron Grade with Titanium Aluminum Nitride multi-layer coating (ISO K10 - K20). This is a general purpose grade, which can be used with all materials; it should be run at medium to high cutting speeds.

ISO	Materials	Cutting Speed ft/min MT7
P	Low and Medium Carbon Steels	380 - 920
	High Carbon Steels	430 - 660
	Alloy Steels, Treated Steels	340 - 590
M	Stainless Steels	430 - 620
	Cast Steels	490 - 620
K	Cast Iron	260 - 560
N	Non-Ferrous & Aluminum	590 - 1120
	Synthetics, Duroplastics, Thermoplastics	380 - 1500
S	Nickel Alloys, Titanium Alloys	80 - 300

Recommended FEED RATE: .002 - .006

Spiral Mill-Thread Inserts Speed and Feed Selection

MT7 Sub-Micron Grade with Titanium Aluminum Nitride multi-layer coating (ISO K10 - K20). This is a general purpose grade, which can be used with all materials; it should be run at medium to high cutting speeds.

ISO	Materials	Cutting Speed ft/min MT7
P	Low and Medium Carbon Steels	480 - 1200
	High Carbon Steels	540 - 840
	Alloy Steels, Treated Steels	440 - 755
M	Stainless Steels	540 - 800
	Cast Steels	620 - 800
K	Cast Iron	330 - 720
N	Non-Ferrous & Aluminum	755 - 1440
	Synthetics, Duroplastics, Thermoplastics	480 - 1940
S	Nickel Alloys, Titanium Alloys	100 - 380

Recommended FEED RATE: .002 - .006

As you may note, cutting speed is shown in range terms. In most standard cases choosing a speed in the middle of the range would be a good choice for a start.

For hard metals reduce cutting speed.

Spiral Finish Speed and Feed Selection

MT7 Sub-Micron Grade with Titanium Aluminum Nitride multi-layer coating (ISO K10 - K20). This is a general purpose grade, which can be used with all materials; it should be run at medium to high cutting speeds.

ISO	Materials	Cutting Speed (ft/min)
P	Low and Medium Carbon Steels	660 - 1080
	High Carbon Steels	560 - 770
	Alloy Steels, Treated Steels	330 - 640
M	Stainless Steels	590 - 755
	Cast Steels	590 - 755
K	Cast Iron	660 - 1150
N	Non-Ferrous & Aluminum	1640 - 3610
	Synthetics, Duroplastics, Thermoplastics	1310 - 4920
S	Nickel Alloys, Titanium Alloys	100 - 180

Cutting Data

D-Thread type

MT7 Sub-Micron Grade with Titanium Aluminum Nitride multi-layer coating (ISO K10 - K20). This is a general purpose grade, which can be used with all materials; it should be run at medium to high cutting speeds.

ISO	Materials	Cutting Speed (ft/min)
P	Low and Medium Carbon Steels <0.55%C	330 - 670
	High Carbon Steels ≥0.55%C	330 - 590
	Alloy Steels, Treated Steels	330 - 460
M	Stainless Steels - Free Cutting	280 - 410
	Stainless Steels - Austenitic	260 - 380
	Cast Steels	380 - 510
K	Cast Iron	250 - 480
N	Aluminum ≤12%Si, Copper	490 - 980
	Aluminum >12% Si	490 - 980
	Synthetics, Duroplastics, Thermoplastics	330 - 1150
S	Nickel Alloys, Titanium Alloys	150 - 310

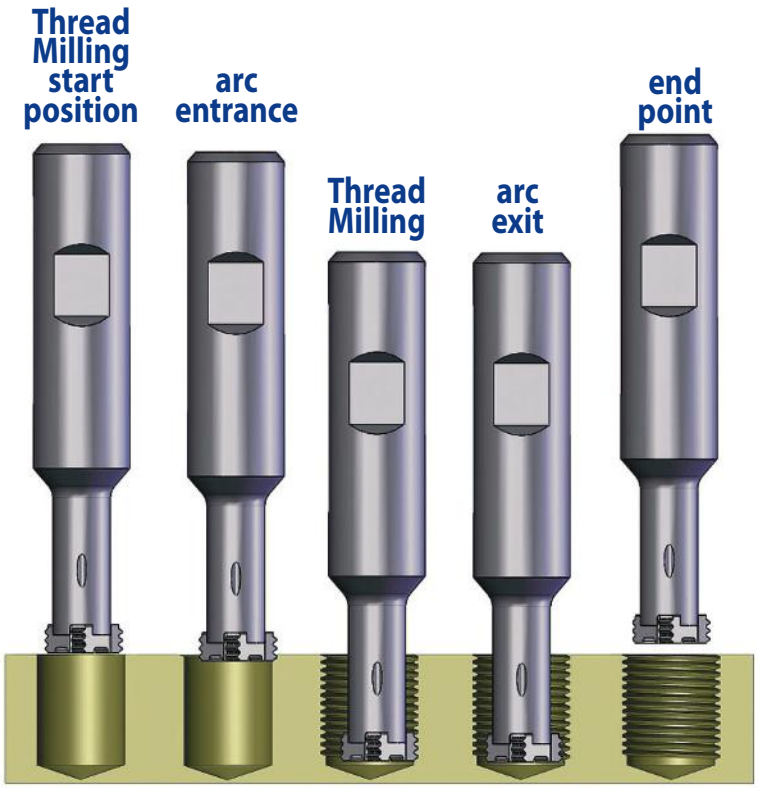
Recommended FEED RATE: .003 - .006

Cutting Data

CMT type

MT7 Sub-Micron Grade with Titanium Aluminum Nitride multi-layer coating (ISO K10 - K20). This is a general purpose grade, which can be used with all materials; it should be run at medium to high cutting speeds.

ISO	Materials	Cutting Speed ft/min	Feed inch/tooth Cutting Diameter=D			
			Ø.39	Ø.47	Ø.70	Ø.98
P	Low and Medium Carbon Steels <0.55%C	197 - 394	.0063	.0067	.0079	.0087
	High Carbon Steels ≥0.55%C	197 - 295	.0055	.0063	.0079	.0087
	Alloy Steels, Treated Steels	164 - 262	.0039	.0047	.0063	.0071
M	Stainless Steels - Free Cutting	230 - 328	.0039	.0043	.0059	.0067
	Stainless Steels - Austenitic	197 - 295	.0039	.0043	.0059	.0067
	Cast Steels	230 - 295	.0039	.0047	.0063	.0071
K	Cast Iron	131 - 262	.0063	.0067	.0079	.0087
N	Aluminum ≤12%Si, Copper	328 - 656	.0063	.0067	.0079	.0087
	Aluminum >12% Si	197 - 459	.0039	.0043	.0061	.0071
	Synthetics, Duroplastics, Thermoplastics	164 - 656	.0075	.0075	.0087	.0094
S	Nickel Alloys, Titanium Alloys	66 - 131	.0028	.0028	.0039	.0047
H	Hardened Steel 45 - 50HRc	197 - 230	.0035	.0035	.0051	.0059
	Hardened Steel 50 - 55HRc	164 - 197	.0031	.0031	.0047	.0055



Carmex Precision Tools Ltd.

Mill-Thread Solid Carbide Grades, Speed and Feed Selection

MT, MTB, MTZ, EMT Types

MT7 Sub-Micron Grade with Titanium Aluminum Nitride multi-layer coating (ISO K10 - K20). This is a general purpose grade, which can be used with all materials; it should be run at medium to high cutting speeds.

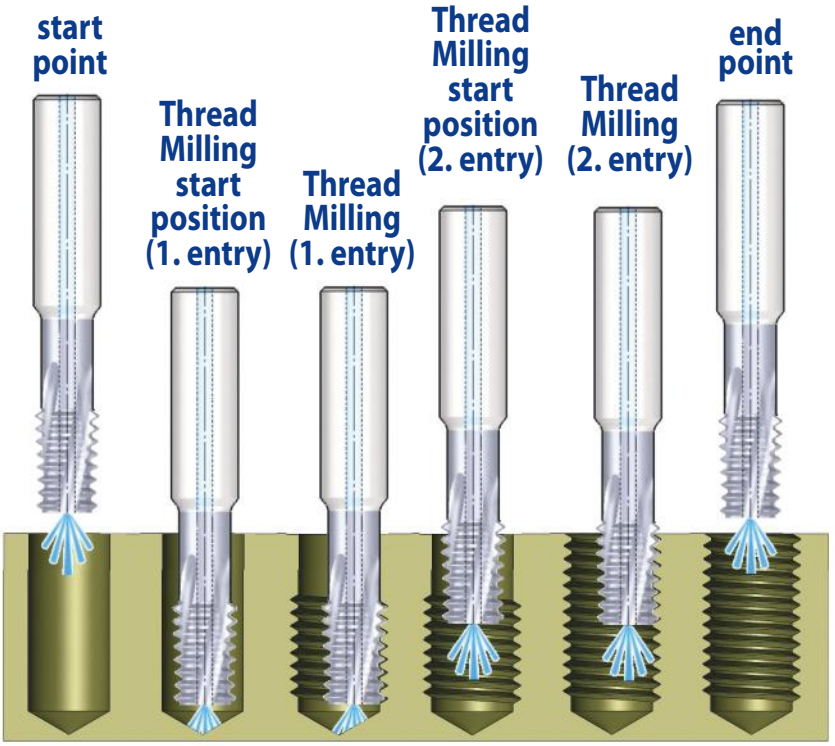
ISO	Materials	Cutting Speed ft/min	Feed inch/tooth Cutting Diameter=D										
			Ø.08	Ø.12	Ø.16	Ø.24	Ø.31	Ø.39	Ø.47	Ø.55	Ø.63	Ø.79	Ø.98
P	Low and Medium Carbon Steels <0.55%C	330- 820	.0012	.0016	.0016	.0024	.0028	.0032	.0037	.0042	.0047	.0057	.0070
	High Carbon Steels ≥0.55%C	360- 590	.0009	.0011	.0013	.0018	.0022	.0026	.0031	.0035	.0039	.0048	.0059
	Alloy Steels, Treated Steels	300- 520	.0008	.0009	.0010	.0013	.0016	.0018	.0021	.0023	.0026	.0031	.0038
M	Stainless Steels - Free Cutting	200- 520	.0008	.0012	.0010	.0016	.0020	.0024	.0024	.0028	.0031	.0035	.0043
	Stainless Steels - Austenitic	200- 390	.0008	.0008	.0010	.0012	.0016	.0020	.0020	.0024	.0028	.0031	.0039
	Cast Steels	430- 560	.0008	.0009	.0010	.0013	.0016	.0018	.0021	.0023	.0026	.0031	.0038
K	Cast Iron	230- 490	.0011	.0014	.002	.0022	.0027	.0032	.0037	.0042	.0047	.0057	.0070
N	Aluminum ≤12%Si, Copper	490-1150	.0011	.0014	.002	.0022	.0027	.0032	.0037	.0042	.0047	.0057	.0070
	Aluminum >12% Si	330- 820	.0008	.0009	.0010	.0013	.0016	.0018	.0021	.0023	.0026	.0031	.0038
	Synthetics, Duroplastics, Thermoplastics	330-1310	.0021	.0024	.003	.0032	.0038	.0043	.0049	.0054	.0060	.0071	.0085
S	Nickel Alloys, Titanium Alloys	70- 260	.0009	.0009	.0010	.0010	.0011	.0012	.0013	.0014	.0015	.0017	.0019

For cutters with long cutting length reduce feed rate by 40%

MTQ type

MT7 Sub-Micron Grade with Titanium Aluminum Nitride multi-layer coating (ISO K10 - K20). This is a general purpose grade, which can be used with all materials; it should be run at medium to high cutting speeds.

ISO	Materials	Cutting Speed ft/min	Feed inch/tooth Cutting Diameter=D					
			Ø.39	Ø.47	Ø.55	Ø.63	Ø.79	Ø.98
P	Low and Medium Carbon Steels <0.55%C	330 - 820	.0022	.0026	.0029	.0033	.0040	.0049
	High Carbon Steels ≥0.55%C	360 - 590	.0018	.0021	.0025	.0028	.0034	.0041
	Alloy Steels, Treated Steels	300 - 520	.0013	.0014	.0016	.0018	.0022	.0026
M	Stainless Steels - Free Cutting	200 - 520	.0017	.0017	.0019	.0022	.0025	.0030
	Stainless Steels - Austenitic	200 - 390	.0014	.0014	.0017	.0019	.0022	.0028
	Cast Steels	430 - 560	.0013	.0014	.0016	.0018	.0022	.0026
K	Cast Iron	230 - 490	.0022	.0026	.0029	.0033	.0040	.0049
N	Aluminum ≤12%Si, Copper	490 - 1150	.0022	.0026	.0029	.0033	.0040	.0049
	Aluminum >12% Si	330 - 820	.0013	.0014	.0016	.0018	.0022	.0026
	Synthetics, Duroplastics, Thermoplastics	330 - 1310	.0030	.0034	.0038	.0042	.0050	.0059
S	Nickel Alloys, Titanium Alloys	70 - 260	.0009	.0009	.0010	.0010	.0012	.0013



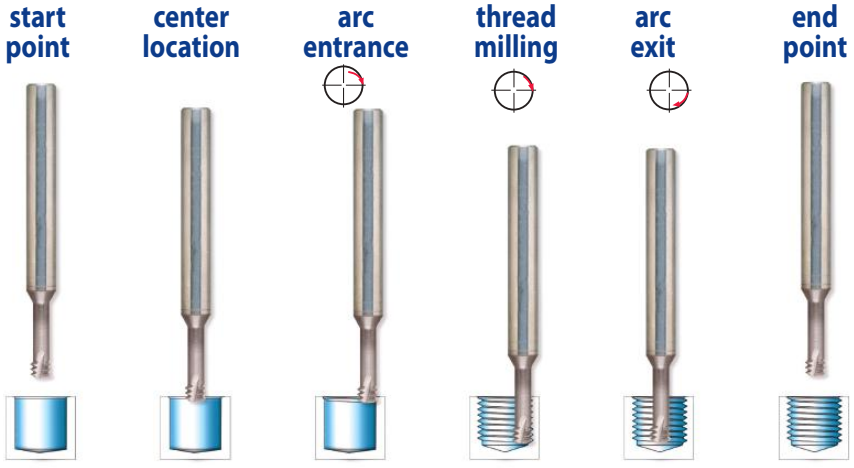
Mini Mill-Thread MTS and MTI types

MT7 Sub-Micron Grade with Titanium Aluminum Nitride multi-layer coating (ISO K10 - K20). This is a general purpose grade, which can be used with all materials; it should be run at medium to high cutting speeds.

MT8 Sub-Micron Grade with Aluminum Titanium Nitride (AlTiN) multi-layer coating (ISO K10-K20). Extremely high heat resistant and smooth cutting operation, for high performance, and normal machining conditions. General purpose for all materials.

MT11 Ultra-fine sub-micron grade with advanced PVD triple coating.

ISO Standard	Materials	Cutting Speed ft/min	Feed inch/tooth — Cutting Diameter = D													
			Ø.04	Ø.06	Ø.08	Ø.12	Ø.16	Ø.20	Ø.24	Ø.28	Ø.31	Ø.35	Ø.39	Ø.47	Ø.55	Ø.63
P	Low and Medium Carbon Steels <0.55%C	200-390	.0016	.0020	.0020	.0028	.0035	.0043	.0051	.0055	.0059	.0063	.0063	.0067	.0071	.0071
	High Carbon Steels ≥0.55%C	200-300	.0012	.0016	.0020	.0024	.0031	.0035	.0039	.0047	.0051	.0055	.0055	.0063	.0067	.0071
	Alloy Steels, Treated Steels	160-260	.0012	.0016	.0016	.0020	.0020	.0024	.0028	.0028	.0031	.0035	.0039	.0047	.0051	.0055
M	Stainless Steels - Free Cutting	230-330	.0008	.0012	.0012	.0016	.0020	.0024	.0024	.0028	.0031	.0035	.0039	.0043	.0047	.0051
	Stainless Steels - Austenitic	200-300	.0008	.0012	.0012	.0016	.0020	.0024	.0024	.0028	.0031	.0035	.0039	.0043	.0047	.0051
	Cast Steels	230-300	.0012	.0016	.0016	.0020	.0020	.0024	.0028	.0028	.0031	.0035	.0039	.0047	.0051	.0055
K	Cast Iron	130-260	.0016	.0020	.0020	.0028	.0035	.0043	.0051	.0055	.0059	.0063	.0063	.0067	.0071	.0071
N	Aluminum ≤12%Si, Copper	330-660	.0016	.0020	.0020	.0028	.0035	.0043	.0051	.0055	.0059	.0063	.0063	.0067	.0071	.0071
	Aluminum >12% Si	200-460	.0012	.0012	.0012	.0016	.0020	.0024	.0024	.0028	.0031	.0035	.0039	.0043	.0051	.0054
	Synthetics, Duroplastics, Thermoplastics	160-660	.0035	.0039	.0043	.0047	.0055	.0063	.0071	.0075	.0075	.0075	.0075	.0075	.0079	.0079
S	Nickel Alloys and Titanium Alloys	70-130	.0012	.0012	.0012	.0016	.0016	.0020	.0024	.0024	.0024	.0028	.0028	.0028	.0031	.0031



Mini Mill-Thread vs. Taps

Features	Mini Mill-Thread	Taps
Thread surface quality	High	Medium
Thread geometry	Very accurate	Medium
Thread tolerances	4H, 5H, 6H with std cutter	6H with standard tap, 4H with specific tap
Machining time	Same as tap or shorter	Short
Tool breakage	Almost not possible	Could happen often
Machining load	Very low	High
Range of thread diameters	Wide range of diameters	Specific tap for each diameter
Right/Left hand threading	Same cutter	Specific tap for each
Geometric shape	Full profile	Partial profile

DMT type

MT7 Sub-Micron Grade with Titanium Aluminum Nitride multi-layer coating (ISO K10 - K20). This is a general purpose grade, which can be used with all materials; it should be run at medium to high cutting speeds.

ISO	Materials	Cutting Speed ft/min	Feed inch/tooth Cutting Diameter=D						
			Ø.16	Ø.20	Ø.24	Ø.31	Ø.35	Ø.39	Ø.47
P	Low and Medium Carbon Steels <0.55%C	200-395	.0012	.0012	.0016	.0020	.0020	.0020	.0020
	High Carbon Steels ≥0.55%C	200-295	.0008	.0012	.0012	.0016	.0016	.0016	.0020
	Alloy Steels, Treated Steels	165-260	.0008	.0008	.0008	.0008	.0012	.0012	.0016
M	Stainless Steels - Free Cutting	230-330	.0008	.0008	.0008	.0008	.0012	.0012	.0012
	Stainless Steels - Austenitic	200-295	.0008	.0008	.0008	.0008	.0012	.0012	.0012
	Cast Steels	230-295	.0008	.0008	.0008	.0008	.0012	.0012	.0016
K	Cast Iron	130-260	.0012	.0012	.0016	.0020	.0020	.0020	.0020
N	Aluminum ≤12%Si, Copper	330-655	.0012	.0012	.0016	.0020	.0020	.0020	.0020
	Aluminum >12% Si	200-460	.0008	.0008	.0008	.0008	.0012	.0012	.0012
	Synthetics, Duroplastics, Thermoplastics	165-655	.0016	.0020	.0020	.0024	.0024	.0024	.0024

DMTH type

MT11 Ultra-fine Sub-Micron grade with advanced PVD triple Blue coating

ISO	Materials	Cutting Speed ft/min	Feed inch/tooth Cutting Diameter=D							
			Ø.08	Ø.12	Ø.16	Ø.20	Ø.24	Ø.31	Ø.35	Ø.39	Ø.47
P	Low and Medium Carbon Steels <0.55%C	190 - 390	.0008	.0008	.0012	.0012	.0016	.0020	.0020	.0020	.0020
	High Carbon Steels ≥0.55%C	190 - 290	.0008	.0008	.0008	.0012	.0012	.0016	.0016	.0016	.0020
	Alloy Steels, Treated Steels	160 - 260	.0008	.0008	.0008	.0008	.0008	.0008	.0012	.0012	.0016
M	Stainless Steels - Free Cutting	230 - 330	.0008	.0008	.0008	.0008	.0008	.0008	.0012	.0012	.0012
	Stainless Steels - Austenitic	190 - 290	.0008	.0008	.0008	.0008	.0008	.0008	.0012	.0012	.0012
	Cast Steels	230 - 290	.0008	.0008	.0008	.0008	.0008	.0008	.0012	.0012	.0016
K	Cast Iron	130 - 260	.0012	.0012	.0012	.0012	.0016	.0020	.0020	.0020	.0020
N	Aluminum ≤10%Si, Copper	330 - 650	.0012	.0012	.0012	.0012	.0016	.0020	.0020	.0020	.0020
	Aluminum >10% Si	190 - 460	.0008	.0008	.0008	.0008	.0008	.0008	.0012	.0012	.0012
	Synthetics, Duroplastics, Thermoplastics	160 - 650	.0016	.0020	.0016	.0020	.0020	.0024	.0024	.0024	.0024
S	Nickel Alloys, Titanium Alloys and High Temp. Alloys	65 - 130	.0008	.0012	.0012	.0016	.0020	.0020	.0024	.0024	.0024
H	Hardened Steels 45-50 HRc	190 - 230	.0008	.0008	.0008	.0012	.0016	.0016	.0020	.0020	.0020
	Hardened Steels 50-55 HRc	160 - 190	.0004	.0004	.0004	.0008	.0012	.0012	.0016	.0016	.0016

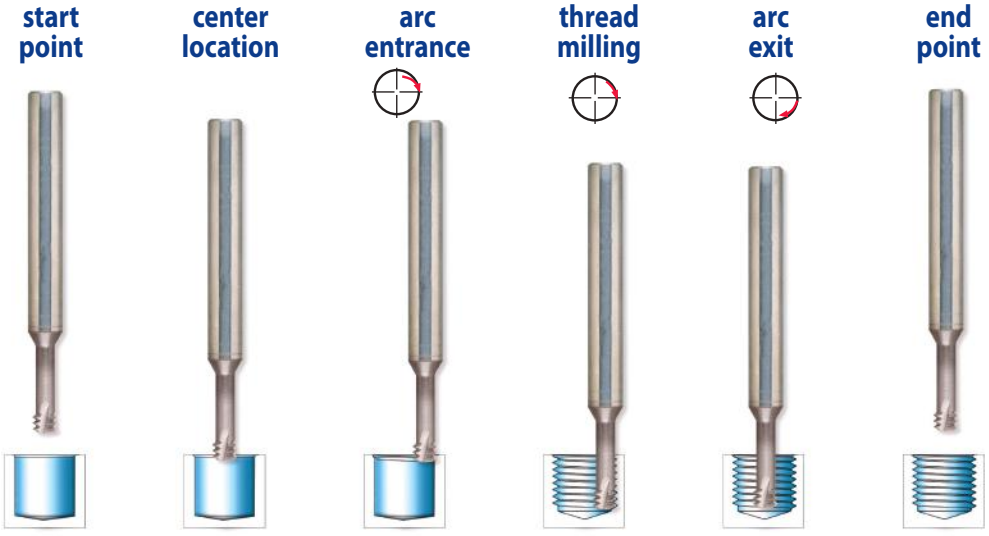
Carmex Precision Tools Ltd.

Mini Mill-Thread MTSH type

MT9 Sub-Micron Grade with advanced PVD triple coating.

Left hand cutting for CNC code use M04

ISO	Materials	Hardness HRc	Cutting Speed ft/min	Feed inch/tooth Cutting Diameter = D													
				Ø.04	Ø.06	Ø0.8	Ø.12	Ø.16	Ø.20	Ø.24	Ø.28	Ø.31	Ø.35	Ø.39	Ø.47	Ø.55	Ø.63
S	Nickel Alloys, Titanium Alloys and High Temp. Alloys		70-130	.0012	.0012	.0012	.0016	.0016	.0020	.0024	.0024	.0024	.0028	.0028	.0028	.0031	.0031
H	Hardened Steels	45-50	200-230	.0012	.0016	.0016	.0020	.0020	.0024	.0024	.0028	.0028	.0031	.0031	.0035	.0039	.0043
		51-55	160-200	.0008	.0012	.0012	.0016	.0016	.0020	.0020	.0024	.0024	.0028	.0028	.0031	.0035	.0039
		56-62	130-160	.0004	.0008	.0008	.0012	.0012	.0016	.0016	.0020	.0020	.0024	.0024	.0028	.0031	.0035



Case Study

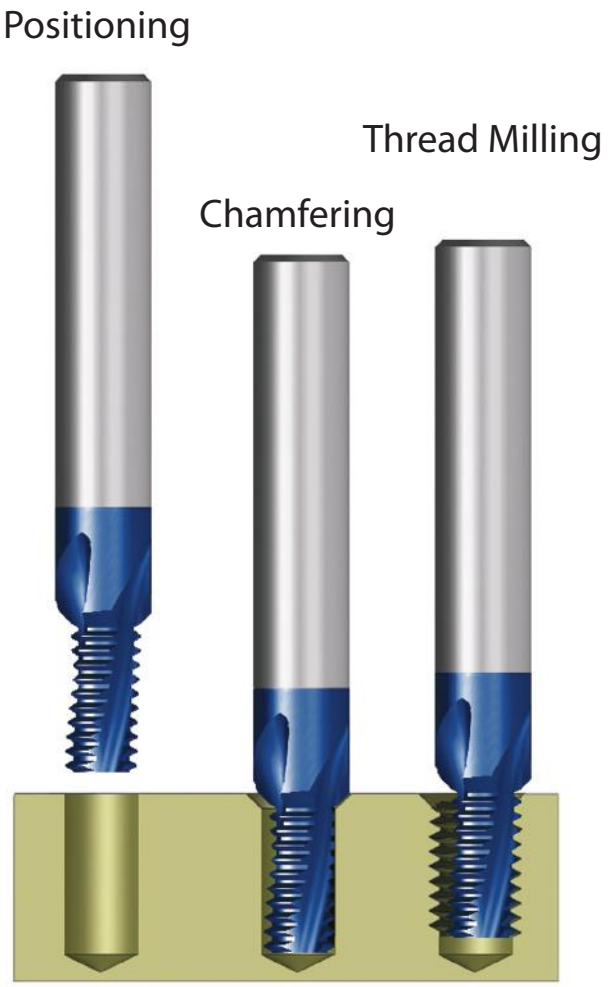
Application	Internal Thread M4 X 0.7
Thread Depth	8.0 mm
Workpiece Material	Tool Steel: D2
Hardness	60-62 (HRc)
Cutter Description	MTSH0250C35 0.7 ISO
Machining Conditions	Cutting Speed: 144 ft / min Feed: .0012 Inch / tooth
Machine	Mori Seiki VN5000
Control	Fanuc
Cooling Lubricant	Emulsion
Tool Life (No. of Threads)	84

MTH type

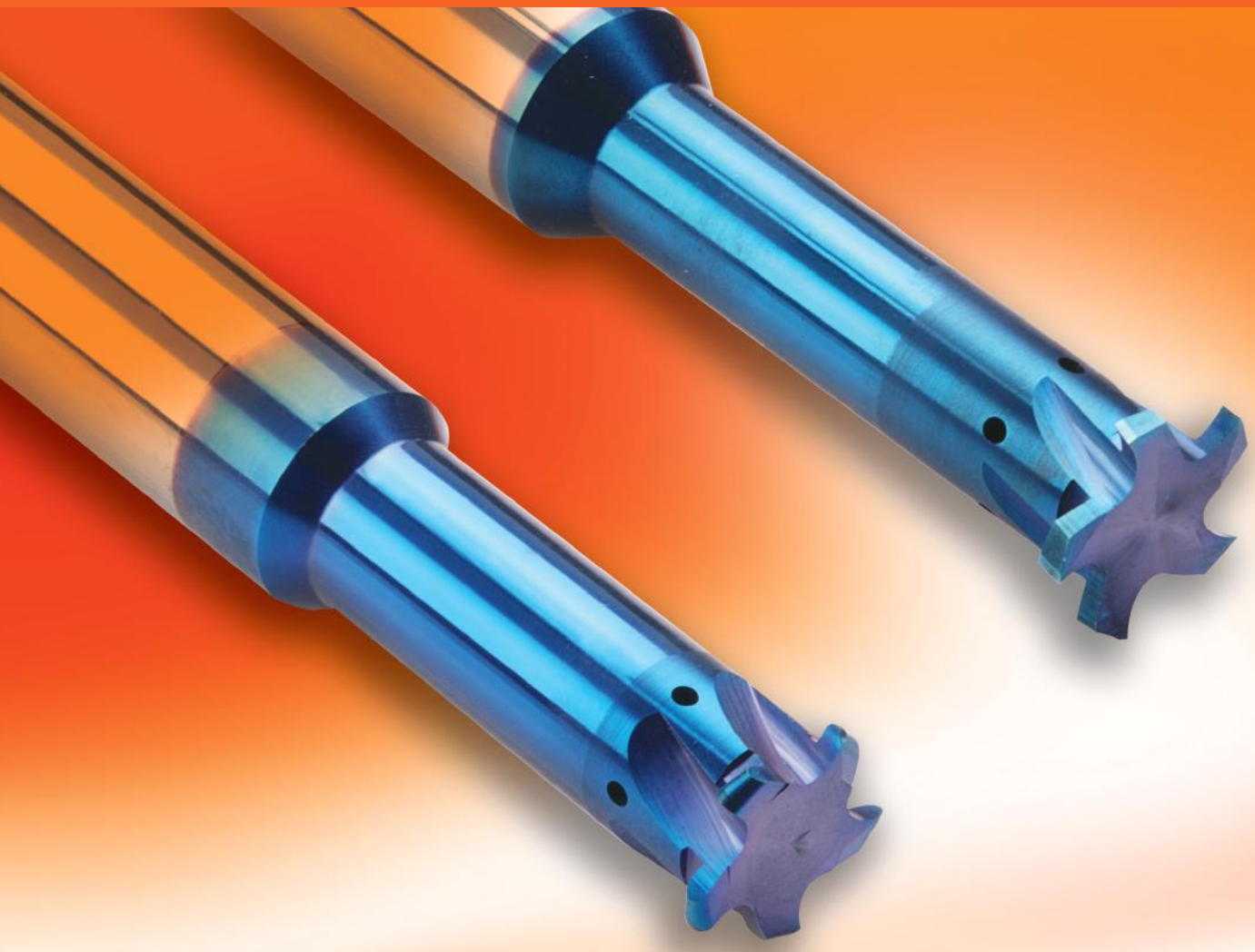
MT11 Sub-Micron Grade with advanced PVD triple coating.

ISO	Materials	Hardness HRc	Cutting Speed ft/min	Feed inch/tooth Cutting Diameter = D								
				Ø.10	Ø.12	Ø.16	Ø.20	Ø.24	Ø.28	Ø.31	Ø.35	Ø.39
S	Nickel Alloys, Titanium Alloys and High Temp. Alloys		66-164	.0008	.0008	.0008	.0008	.0012	.0012	.0012	.0012	.0016
H	Hardened Steels Cast Iron	45-50 51-55 56-62	230-262 197-230 131-164	.0008 .0004 .0002	.0012 .0008 .0004	.0012 .0008 .0004	.0016 .0012 .0008	.0016 .0012 .0008	.0020 .0016 .0012	.0020 .0016 .0012	.0024 .0020 .0016	.0028 .0024 .0020

For cutters with long cutting length reduce feed rate by 40%



Solid Carbide Milling Tools



For Grooving Deep Parts

Advantages

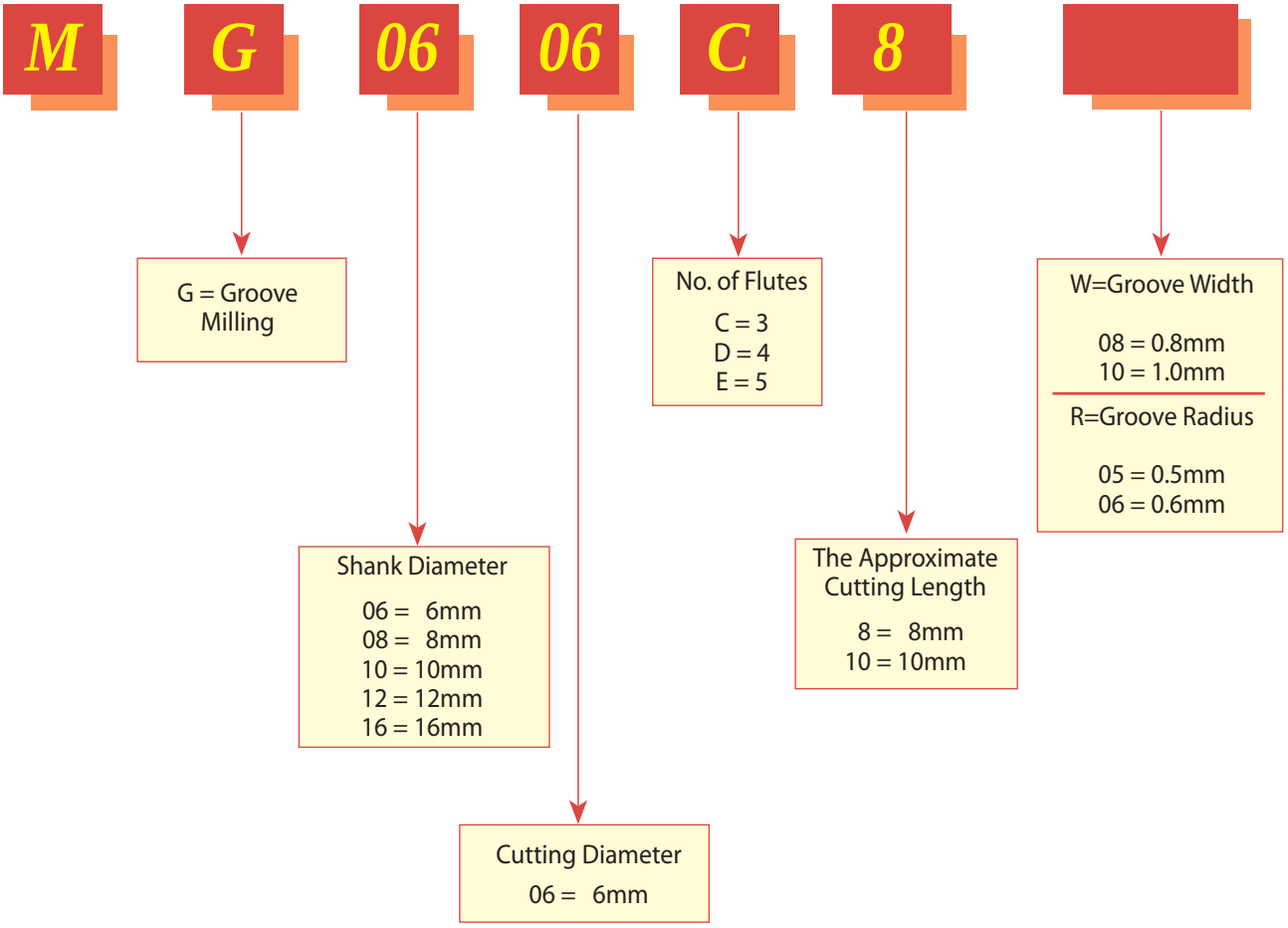
Carbide grade: MT8 Sub-micron grade with advanced PVD triple coating (ISO K10-K20). Extremely high heat resistant and smooth cutting operation, for high performance, and normal machining conditions. General purpose for all materials.

- Enables machining in deep holes
- Coolant through the flutes is very effective for deep holes.
- Spiral flutes allow smooth cutting action.
- Longer tool life due to special multi-layer coating.
- Shorter machining time due to multi (3 to 5) flutes.

Contents: Page:

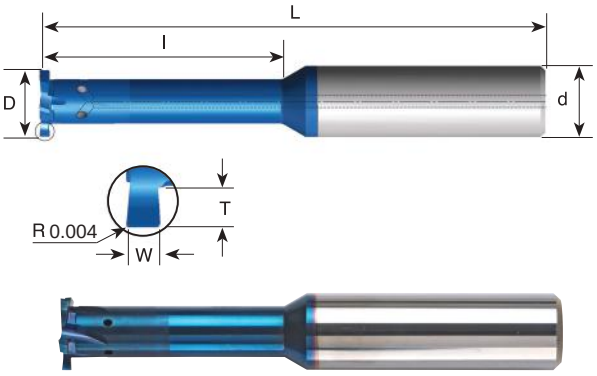
Product Identification

Groove Milling Ordering Codes



Groove Milling

with internal coolant through the flutes
Same Tool for Internal and External Grooving
Metric Shanks



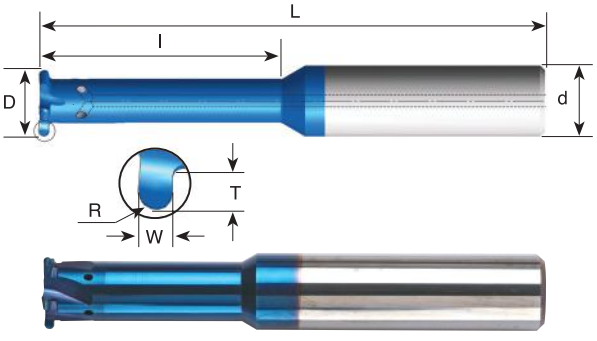
For grooving deep parts

W ± .001	T Max.	Groove Dia. (min.) mm	Ordering Code	d mm	D	No. of Flutes	l	L
.031	.03	ø> 6	**MG0606C8 W08**	6	.236	3	.31	2.3
.039	.05	ø≥ 8	**MG08078D10 W10**	8	.307	4	.39	2.5
.047	.06	ø≥10	**MG10098D20 W12**	10	.386	4	.79	2.9
.055	.07	ø>16	**MG1616E30 W14**	16	.630	5	1.18	4.0
.067	.08	ø>16	**MG1616E40 W17**	16	.630	5	1.57	4.0
.077	.10	ø>16	**MG1616E45 W19**	16	.630	5	1.77	4.0

Order example: MG 10098D20 W12 MT8

Full Radius Groove Milling

with internal coolant through the flutes
Same Tool for Internal and External Grooving
Metric Shanks



For grooving deep parts

R	W ± .001	T Max.	Groove Dia. (min.) mm	Ordering Code	d mm	D	No. of Flutes	l	L
.020	.039	.03	ø> 6	**MG0606C8 R05**	6	.236	3	.31	2.3
.020	.039	.04	ø> 8.8	**MG10088D16 R05**	10	.346	4	.63	2.9
.024	.047	.04	ø≥10	**MG1010D20 R06**	10	.394	4	.79	2.9
.035	.071	.06	ø>12	**MG1212D30 R09**	12	.472	4	1.18	3.3
.039	.079	.06	ø>16	**MG1616E40 R10**	16	.630	5	1.57	4.0
.059	.118	.09	ø>16	**MG1616E40 R15**	16	.630	5	1.57	4.0

Order example: MG 1010D20 R06 MT8

Mini Chamfer

Advantages

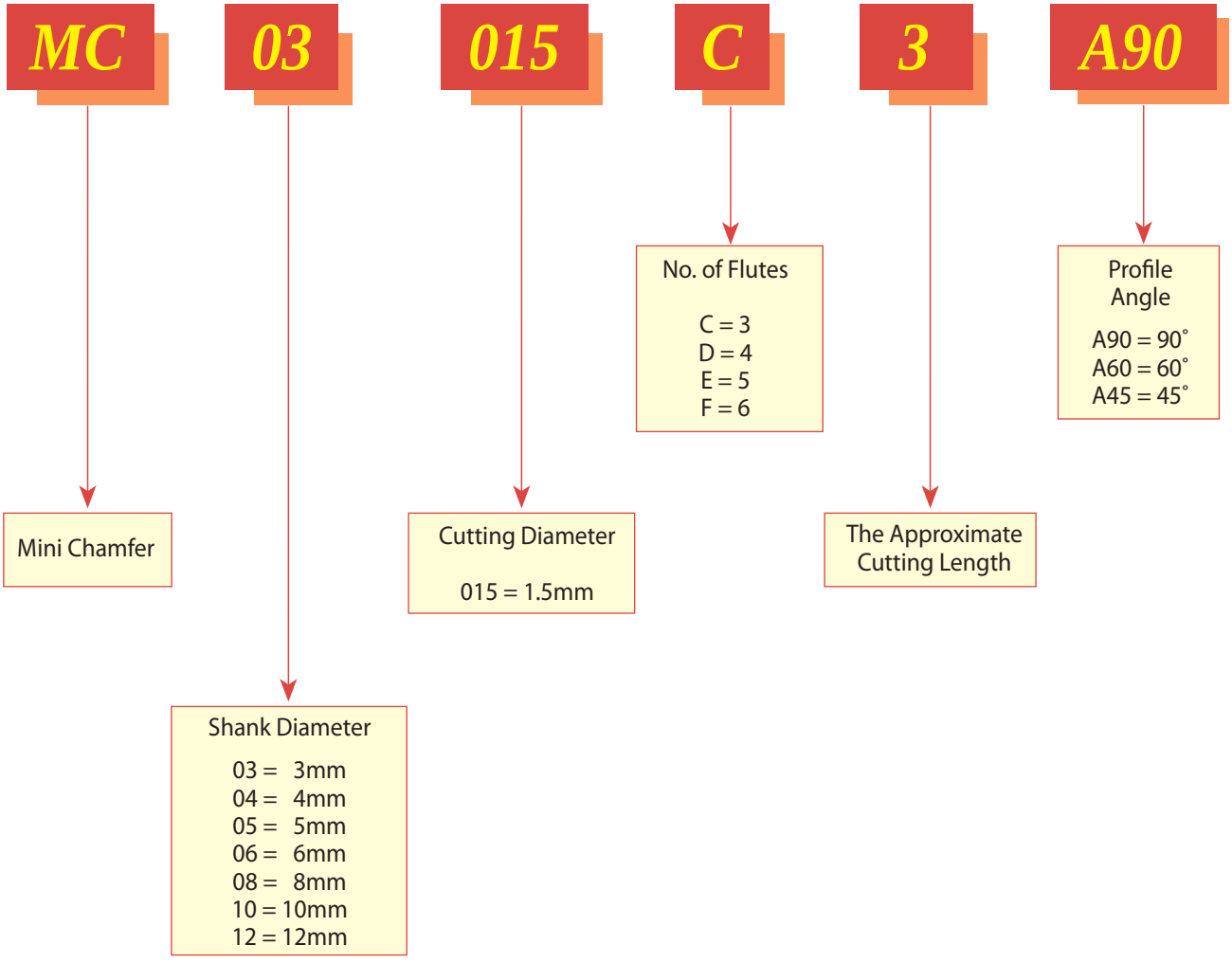
Carbide grade: MT8 Sub-micron grade with advanced PVD triple coating (ISO K10-K20). Extremely high heat resistant and smooth cutting operation, for high performance, and normal machining conditions. General purpose for all materials.

- Optimal for deburring, back chamfering and grooving.
- Double side cutting.
- Spiral flute allows smooth cutting action.

Contents: Page:

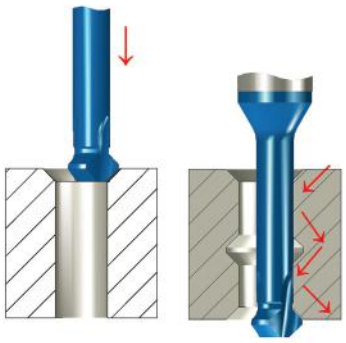
Product Identification

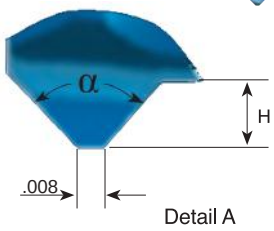
Mini Chamfer Ordering Codes

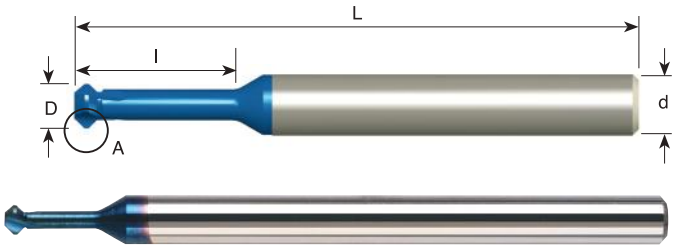


Mini Chamfer

Metric Shanks







45°

Ordering Code	d mm	D	l	H	α	No. of Flutes	L
MC03015C3 A90	3	.059	.15	.012	90˚	3	1.5
MC0302C5 A90	3	.079	.20	.016	90˚	3	1.5
MC03025C6 A90	3	.098	.25	.020	90˚	3	1.5
MC0303C7 A90	3	.118	.30	.024	90˚	3	1.5
MC04035C9 A90	4	.138	.35	.028	90˚	3	2.0
MC0404C10 A90	4	.157	.39	.031	90˚	3	2.0
MC05045C11 A90	5	.177	.44	.039	90˚	3	2.0
MC0505C12 A90	5	.197	.49	.043	90˚	3	2.0
MC06055C13 A90	6	.217	.54	.047	90˚	3	2.0
MC0606C15 A90	6	.236	.59	.059	90˚	3	2.0

Long Reach 45°

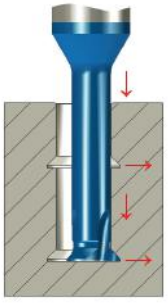
Ordering Code	d mm	D	l	H	α	No. of Flutes	L
MC0303C12 A90	3	.118	.47	.024	90˚	3	1.5
MC04035C14 A90	4	.138	.55	.028	90˚	3	2.0
MC0404C16 A90	4	.157	.63	.031	90˚	3	2.0
MC05045C18 A90	5	.177	.71	.039	90˚	3	2.0
MC0505C20 A90	5	.197	.79	.043	90˚	3	2.0
MC06055C22 A90	6	.217	.87	.047	90˚	3	2.3
MC0606C24 A90	6	.236	.94	.059	90˚	3	2.3
MC0808D28 A90	8	.315	1.10	.063	90˚	4	2.5
MC1010E35 A90	10	.394	1.38	.071	90˚	5	2.9
MC1212F42 A90	12	.472	1.65	.083	90˚	6	3.3

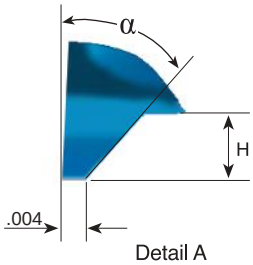
30°

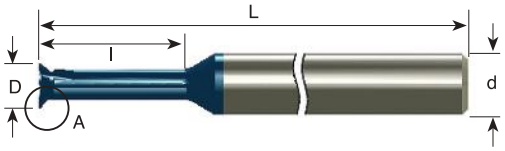
Ordering Code	d mm	D	l	H	α	No. of Flutes	L
MC0302C5 A60	3	.079	.20	.016	60˚	3	1.5
MC0303C7 A60	3	.118	.30	.024	60˚	3	1.5
MC04035C9 A60	4	.138	.35	.028	60˚	3	2.0
MC0404C10 A60	4	.157	.39	.031	60˚	3	2.0
MC05045C11 A60	5	.177	.44	.039	60˚	3	2.0
MC0505C12 A60	5	.197	.49	.043	60˚	3	2.0

Mini Chamfer

Metric Shanks







Dovetail 45° *

Ordering Code	d mm	D	l	H	α	No. of Flutes	L
MC03015C4 A45	3	.059	.18	.012	45˚	3	1.5
MC0302C6 A45	3	.079	.24	.016	45˚	3	1.5
MC03025C7 A45	3	.098	.30	.020	45˚	3	1.5
MC0303C12 A45	3	.118	.47	.024	45˚	3	1.5
MC04035C14 A45	4	.138	.55	.028	45˚	3	2.0
MC0404C16 A45	4	.157	.63	.031	45˚	3	2.0
MC05045C18 A45	5	.177	.71	.039	45˚	3	2.0
MC0505C20 A45	5	.197	.79	.043	45˚	3	2.0
MC06055C22 A45	6	.217	.87	.047	45˚	3	2.3
MC0606C24 A45	6	.236	.94	.059	45˚	3	2.3

* One side cutting

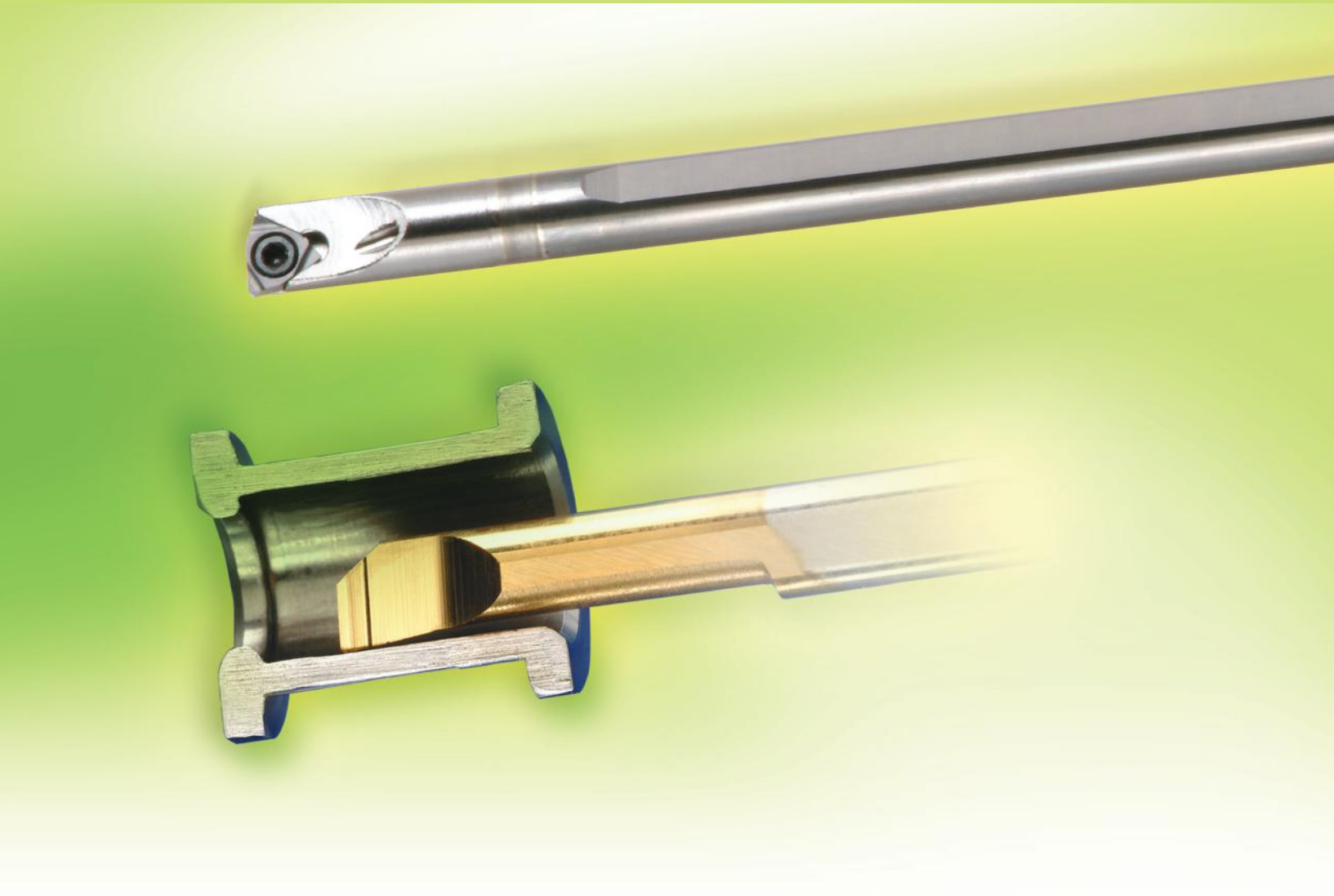
Mini Chamfer Kit

Kit KMC	Qty
MC 0303 C12 A90	1
MC 03025 C6 A90	1
MC 0404 C10 A90	1
MC 04035 C9 A90	1
MC 05045 C11 A90	1
MC 0606 C24 A90	1

Special Solid Carbide Tools

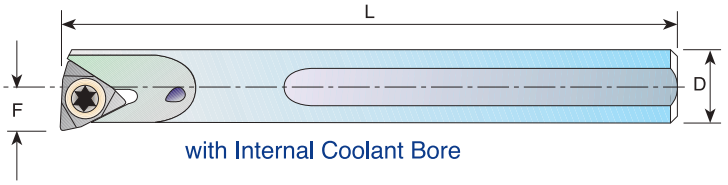
As part of being a service-orientated company,
Carmex produces specials according to
customer's requirements.
Special tools are supplied in short delivery times.

Turning Tools



Contents: Page:

Carbide Shank Boring Bars and Inserts

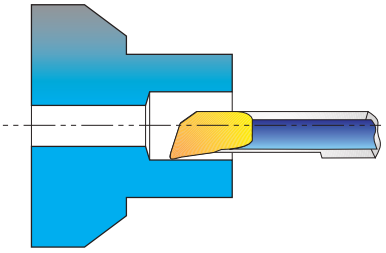


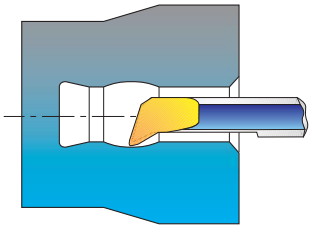
with Internal Coolant Bore

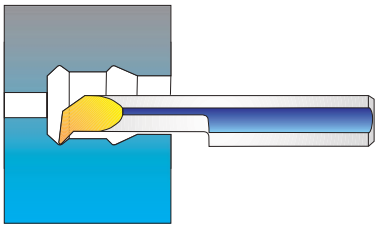
D	Ordering Code	L	F	Min. Bore Dia.	Screw	Key
1/4	**SIR 0250 H06CT**	4	.14	.27	S6	K6
5/16	**SIR 0310 K06CT**	5	.17	.34	S6	K6

Insert Ordering example: 06 IR TURN BMA
Nose radius R= .008

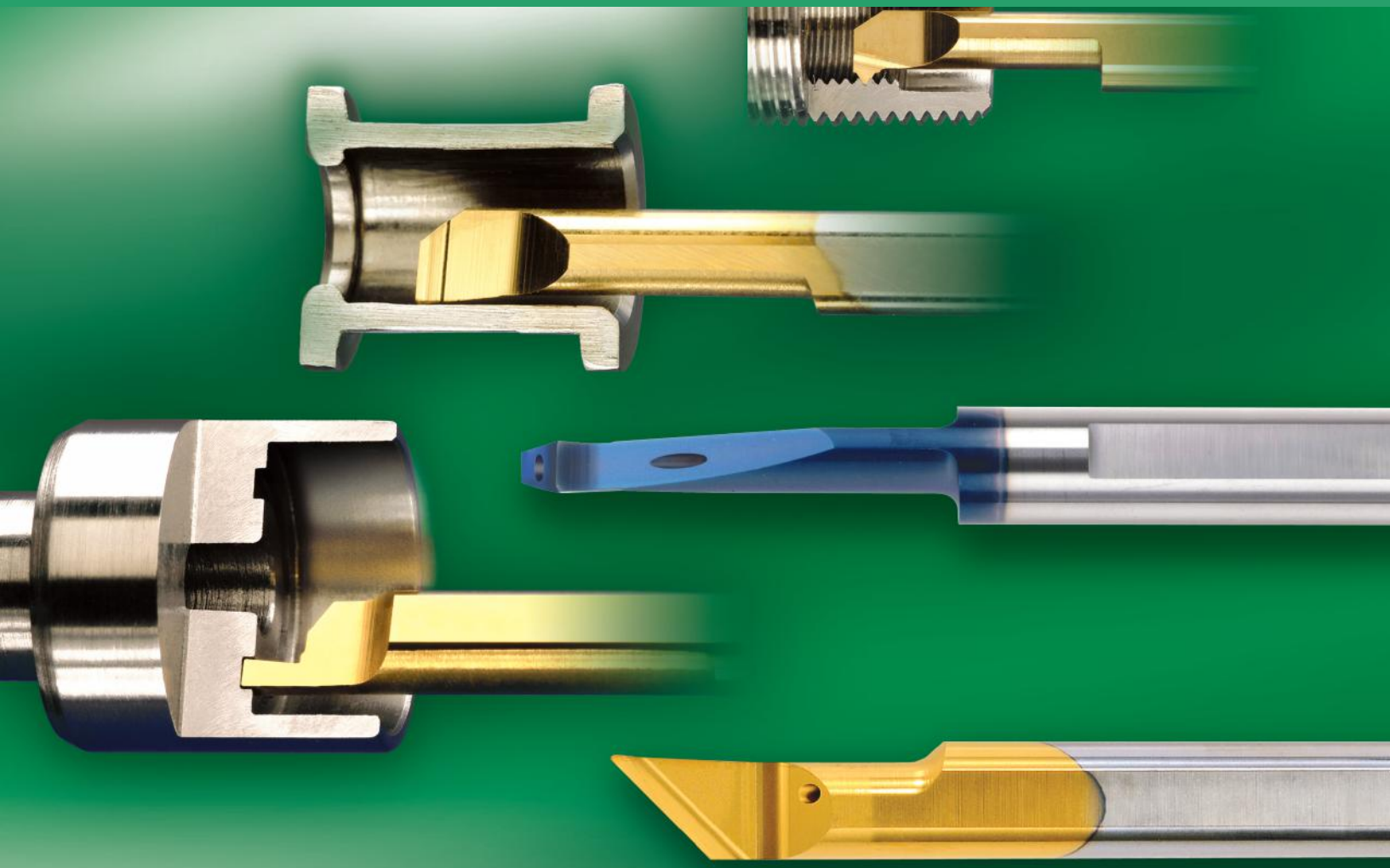
For turning small bores see pages 177-183







Tiny Tools

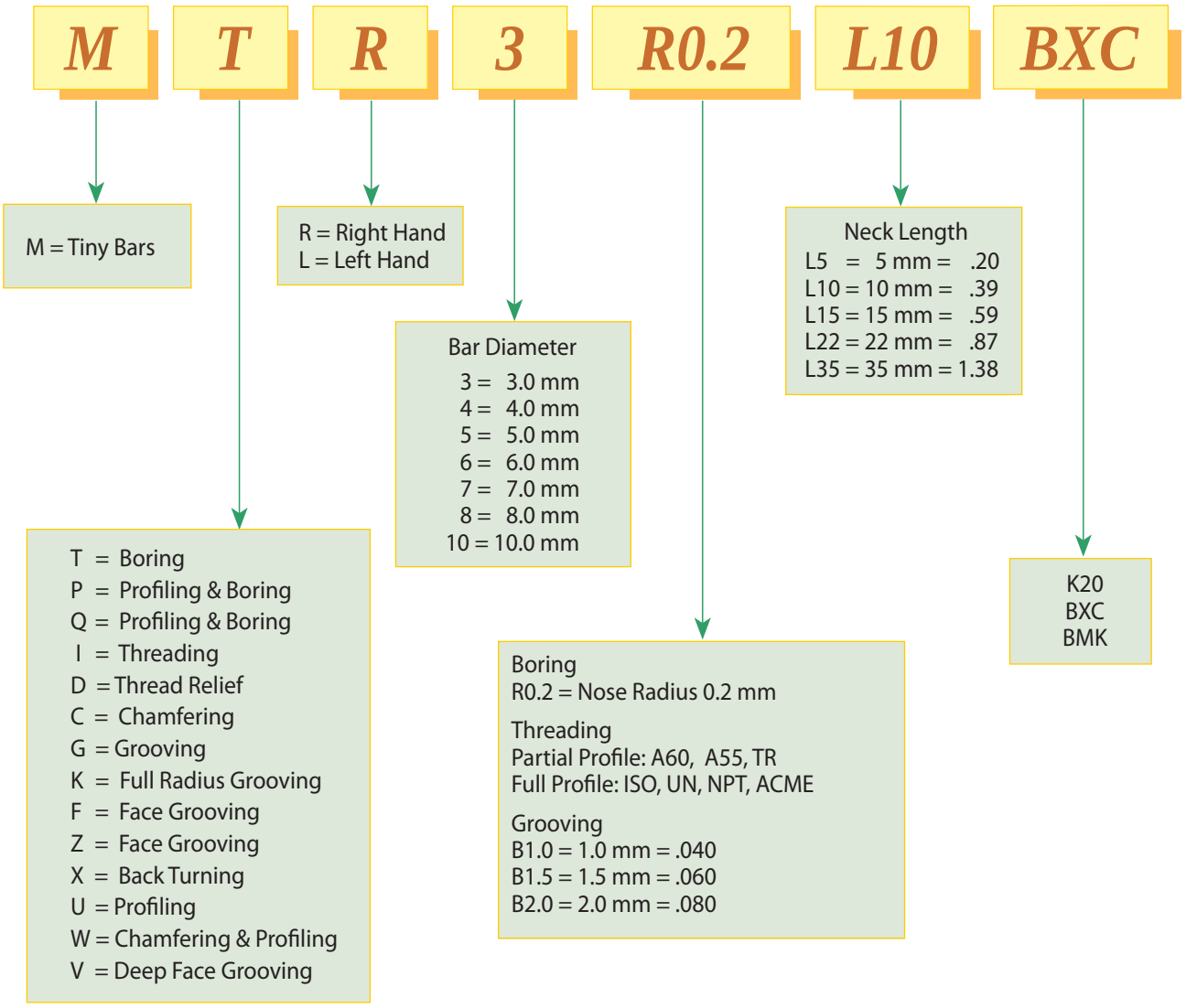


Solid Carbide tools for working in small bores

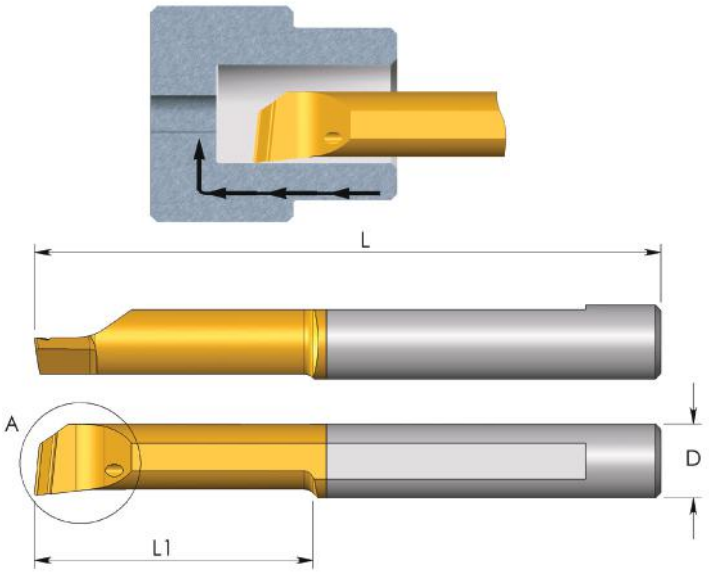
These tools are made for the high-tech, medical and small component industry. All tools include through coolant enabling the cooling fluid to reach the cutting edge efficiently, for easy chip removal and smooth cutting operations.

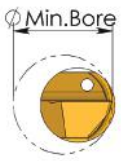
Product Identification

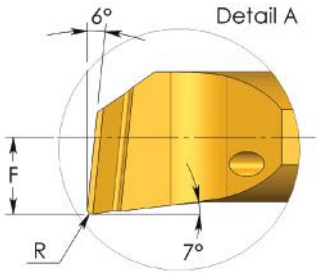
Tiny Bars Ordering Codes



MTR Bars *Boring - with through Coolant*



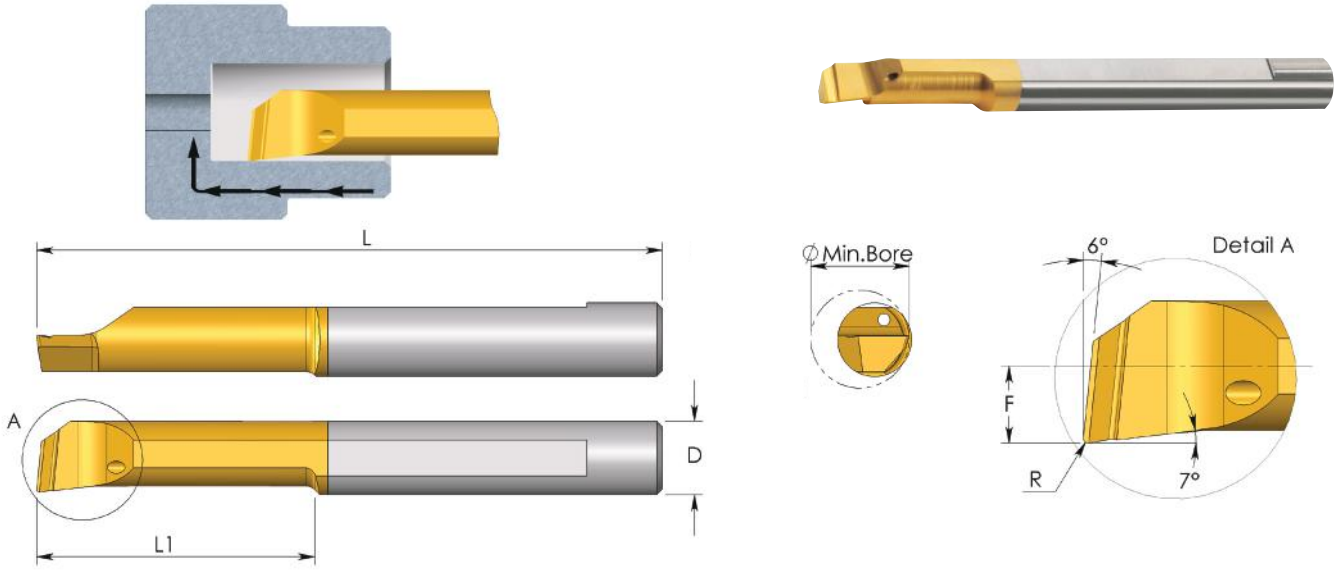




D mm	Ordering Code	L	L1	R	F	Min. Bore Dia.	Holder**
3.0	**MTR 1 R0.05 L4**	1.5	.16	.002	.02	.04	SIM ... H3
3.0	**MTR 1.5 R0.1 L6**	1.5	.24	.004	.03	.06	SIM ... H3
3.0	**MTR 2 R0.05 L10**	1.5	.39	.002	.03	.08	SIM ... H3
	MTR 2 R0.15 L5		.20	.006			
	MTR 2 R0.15 L10		.39	.006			
3.0	**MTR 3 R0.05 L10**	1.5	.39	.002	.05	.12	SIM ... H3
	MTR 3 R0.05 L15		.59	.002			
	MTR 3 R0.1 L15		.59	.004			
	MTR 3 R0.2 L10		.39	.008			
	MTR 3 R0.2 L15		.59	.008			
4.0	**MTR 4 R0.05 L15**	2.0	.59	.002	.07	.16	SIM ... H4
	MTR 4 R0.1 L10		.39	.004			
	MTR 4 R0.1 L15		.59	.004			
	MTR 4 R0.1 L22		.87	.004			
	MTR 4 R0.2 L10		.39	.008			
	MTR 4 R0.2 L15		.59	.008			
	MTR 4 R0.2 L22		.87	.008			

** For additional holders see pages 197-198

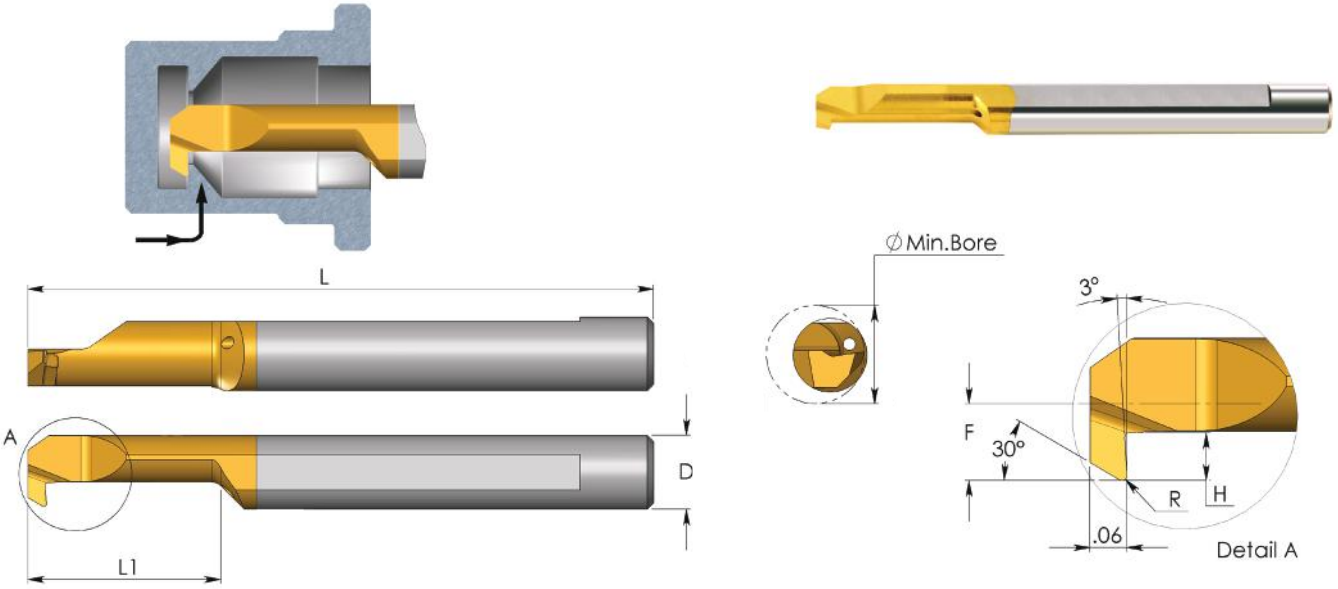
MTR Bars *Boring - with through Coolant*



D mm	Ordering Code	L	L1	R	F	Min. Bore Dia.	Holder**
5.0	**MTR 5 R0.05 L15**	2.0	.59	.002	.08	.20	SIM ... H5
	MTR 5 R0.1 L15		.59	.004			
	MTR 5 R0.1 L22		.87	.004			
	MTR 5 R0.1 L30	3.0	1.18	.004			
	MTR 5 R0.2 L15	2.0	.59	.008			
	MTR 5 R0.2 L22		.87	.008			
	MTR 5 R0.2 L30	3.0	1.18	.008			
6.0	**MTR 6 R0.05 L15**	2.0	.59	.002	.11	.24	SIM ... H6
	MTR 6 R0.1 L15		.59	.004			
	MTR 6 R0.2 L15		.59	.008			
	MTR 6 R0.2 L22		.87	.008			
	MTR 6 R0.2 L30	2.3	1.18	.008			
	MTR 6 R0.2 L35	3.0	1.38	.008			
7.0	**MTR 7 R0.2 L22**	2.4	.87	.008	.13	.28	SIM ... H7
	MTR 7 R0.2 L30		1.18				
8.0	**MTR 8 R0.2 L15**	2.5	.59	.008	.15	.32	SIM ... H8
	MTR 8 R0.2 L22		.87				
	MTR 8 R0.2 L35	3.0	1.38				
10.0	**MTR10R0.2 L35**	2.9	1.38	.008	.19	.40	SIM ... H10

Order example: MTR 4 R0.2 L15 BXC
For L.H. bars specify MTL instead of MTR
** For additional holders see pages 197-198

MXR Bars *Back Turning - with through Coolant*

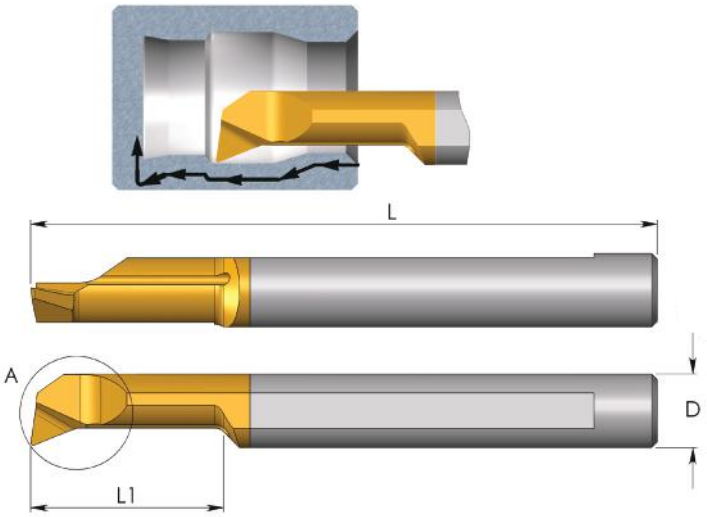


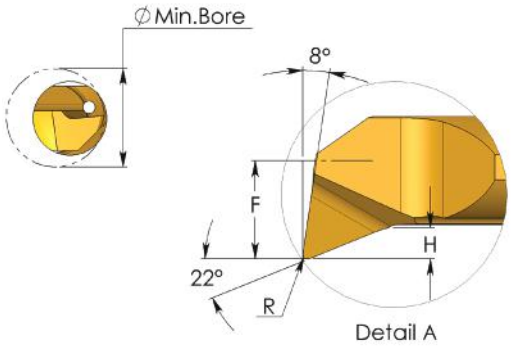
D mm	Ordering Code	L	L1	R	H	F	Min. Bore Dia.	Holder*
4.0	**MXR 4 R0.1 L10**	2.0	.39	.004	.02	.05	.12	SIM ... H4
4.0	**MXR 4 R0.15 L10**	2.0	.39	.006	.03	.06	.16	SIM ... H4
	MXR 4 R0.15 L15		.59					
5.0	**MXR 5 R0.2 L15**	2.0	.59	.008	.04	.09	.20	SIM ... H5
	MXR 5 R0.2 L22		.87					
6.0	**MXR 6 R0.2 L15**	2.0	.59	.008	.07	.11	.24	SIM ... H6
	MXR 6 R0.2 L22		.87					

Order example: MXR 4 R0.15 L15 BXC

* For additional holders see pages 197-198

MPR Bars *Profiling and Boring - with through Coolant*

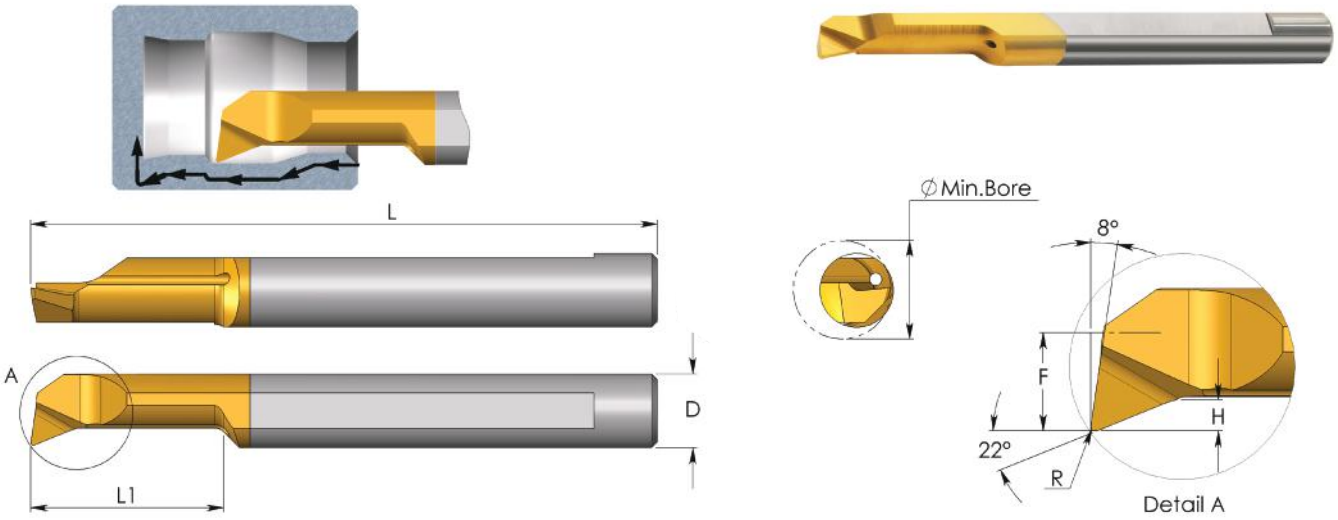




D mm	Ordering Code	L	L1	R	H	F	Min. Bore Dia.	Holder**
3.0	**MPR 1 R0.05 L4**	1.5	.16	.002	.01	.02	.04	SIM ... H3
3.0	**MPR 1.5 R0.1 L6**	1.5	.24	.004	.01	.03	.06	SIM ... H3
	MPR 1.5 R0.1 L10		.39					
3.0	**MPR 2 R0.05 L10**	1.5	.39	.002	.02	.03	.08	SIM ... H3
	MPR 2 R0.1 L10		.39	.004				
	MPR 2 R0.15 L5		.20	.006				
	MPR 2 R0.15 L10		.39	.006				
	MPR 2 R0.15 L15		.59	.006				
3.0	**MPR 3 R0.05 L10**	1.5	.39	.002	.03	.05	.12	SIM ... H3
	MPR 3 R0.05 L15		.59	.002				
	MPR 3 R0.1 L15		.59	.004				
	MPR 3 R0.1 L22	1.9	.87	.004				
	MPR 3 R0.2 L10	1.5	.39	.008				
	MPR 3 R0.2 L15		.59	.008				
	MPR 3 R0.2 L22	1.9	.87	.008				
4.0	**MPR 4 R0.1 L15**	2.0	.59	.004	.03	.07	.16	SIM ... H4
	MPR 4 R0.1 L22		.87	.004				
	MPR 4 R0.2 L10		.39	.008				
	MPR 4 R0.2 L15		.59	.008				
	MPR 4 R0.2 L22		.87	.008				

** For additional holders see pages 197-198

MPR Bars *Profiling and Boring - with through Coolant*



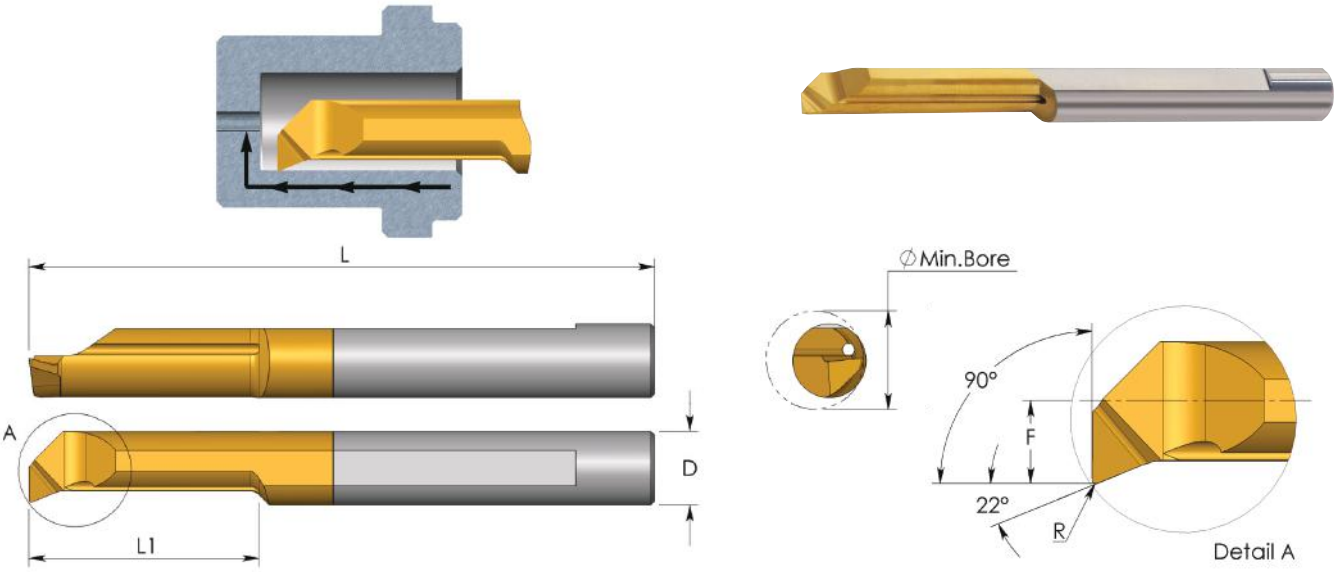
D mm	Ordering Code	L	L1	R	H	F	Min. Bore Dia.	Holder*
5.0	**MPR 5 R0.1 L22**	2.0	.87	.004	.05	.08	.20	SIM ... H5
	MPR 5 R0.1 L30	3.0	1.18	.004				
	MPR 5 R0.2 L15	2.0	.59	.008				
	MPR 5 R0.2 L22	2.0	.87	.008				
	MPR 5 R0.2 L30	3.0	1.18	.008				
6.0	**MPR 6 R0.2 L15**	2.0	.59	.008	.06	.11	.24	SIM ... H6
	MPR 6 R0.2 L22	2.0	.87	.008				
	MPR 6 R0.2 L30	3.0	1.18	.008				
7.0	**MPR 7 R0.2 L22**	2.4	.87	.008	.06	.13	.28	SIM ... H7
	MPR 7 R0.2 L30		1.18	.008				
	MPR 7 R0.2 L35		1.38	.008				
8.0	**MPR 8 R0.2 L15**	2.5	.59	.008	.06	.15	.32	SIM ... H8
	MPR 8 R0.2 L22	2.5	.87	.008				
	MPR 8 R0.2 L35	3.0	1.38	.008				
10.0	**MPR 10 R0.2 L35**	2.9	1.38	.008	.08	.19	.40	SIM ... H10

Order example: MPR 4 R0.2 L15 BXC

* For additional holders see pages 197-198

For L.H. Bars specify MPL instead of MPR

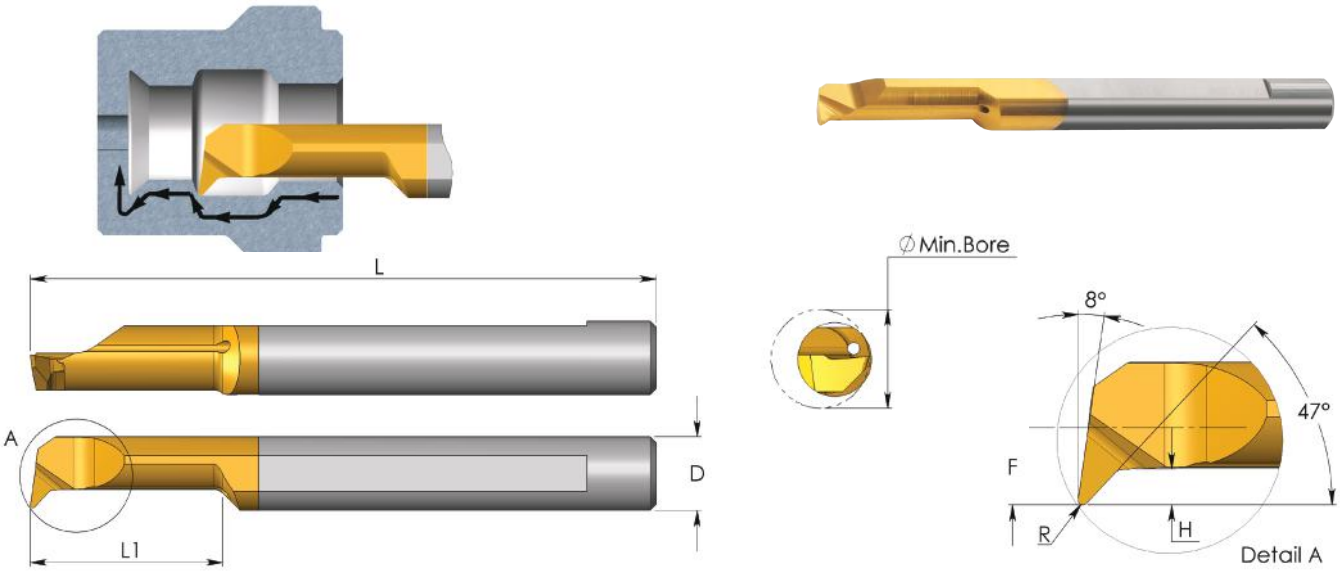
MUR Bars *Profiling, 90° Face Cutting - with through Coolant*



D mm	Ordering Code	L	L1	R	F	Min. Bore Dia.	Holder*
3.0	**MUR 3 R0.05 L10**	1.5	.39	.002	.05	.12	SIM ... H3
	MUR 3 R0.05 L15		.59				
4.0	**MUR 4 R0.1 L10**	2.0	.39	.004	.07	.16	SIM ... H4
	MUR 4 R0.1 L15		.59				
5.0	**MUR 5 R0.15 L15**	2.0	.59	.006	.08	.20	SIM ... H5
	MUR 5 R0.15 L22		.87				
6.0	**MUR 6 R0.15 L15**	2.0	.59	.006	.11	.24	SIM ... H6
	MUR 6 R0.15 L22		.87				
8.0	**MUR 8 R0.2 L22**	2.5	.87	.008	.15	.32	SIM ... H8

Order example: MUR 5 R0.15 L15 BXC
* For additional holders see pages 197-198

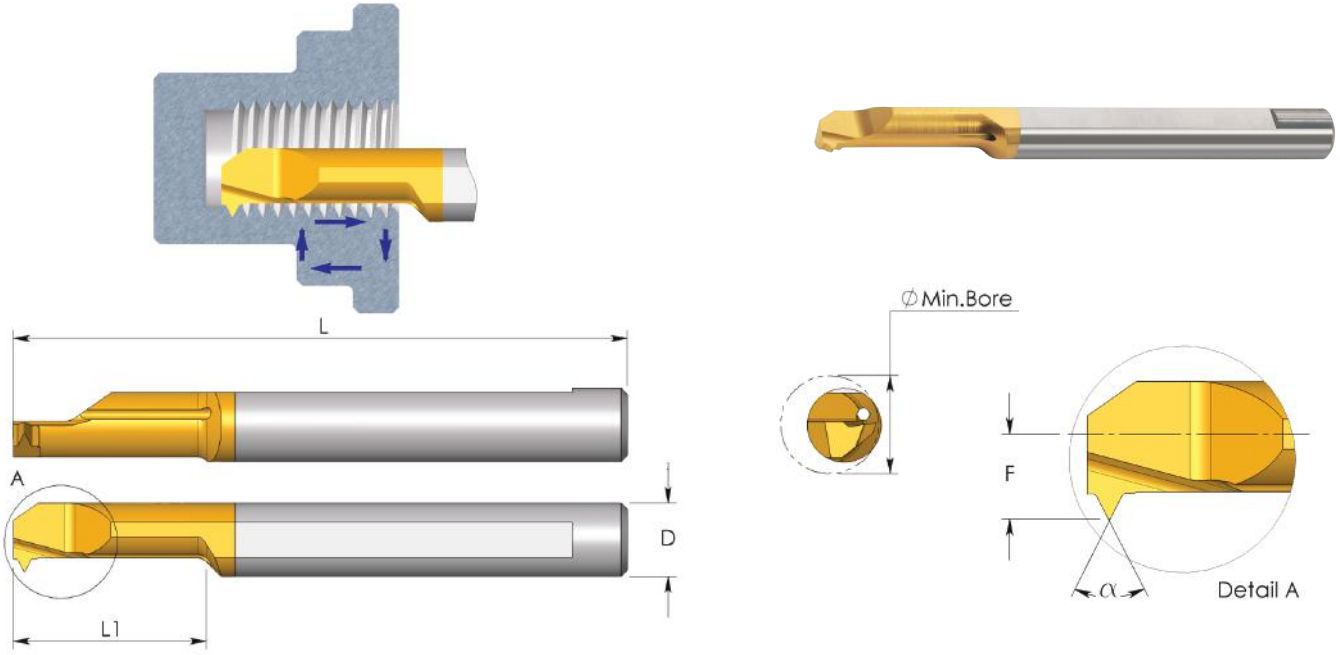
MQR Bars *Profiling and Boring - with through Coolant*



D mm	Ordering Code	L	L1	R	H	F	Min. Bore Dia.	Holder*
4.0	**MQR 4 R0.2 L10**	2.0	.39	.008	.03	.07	.16	SIM ... H4
	MQR 4 R0.2 L15		.59					
	MQR 4 R0.2 L22		.87					
5.0	**MQR 5 R0.2 L15**	2.0	.59	.008	.04	.09	.20	SIM ... H5
	MQR 5 R0.2 L22		.87					
6.0	**MQR 6 R0.2 L15**	2.0	.59	.008	.06	.11	.24	SIM ... H6
	MQR 6 R0.2 L22	2.0	.87					
	MQR 6 R0.2 L30	2.3	1.18					
8.0	**MQR 8 R0.2 L22**	2.5	.87	.008	.06	.15	.32	SIM ... H8
	MQR 8 R0.2 L27		1.06		.08			

Order example: MQR 5 R0.2 L15 BXC
For L.H. bars specify MQL instead of MQR
* For additional holders see pages 197-198

MIR Bars *Threading - with through Coolant*



Partial Profile 55°

D mm	Ordering Code	L	L1	α	Pitch Range mm	Pitch Range TPI	F	Min. Bore Dia.	Holder**
3.0	**MIR 3 L15 A55**	1.5	.59	55	0.5 - 1.0	48 - 24	.06	.13	SIM ... H3
4.0	**MIR 4 L15 A55**	2.0	.59	55	0.5 - 1.0	48 - 24	.07	.16	SIM ... H4
5.0	**MIR 5 L15 A55**	2.0	.59	55	0.5 - 1.25	48 - 20	.09	.20	SIM ... H5
	MIR 5 L22 A55		.87						
6.0	**MIR 6 L15 A55**	2.0	.59	55	0.5 - 1.5	48 - 16	.10	.24	SIM ... H6
	MIR 6 L22 A55		.87						

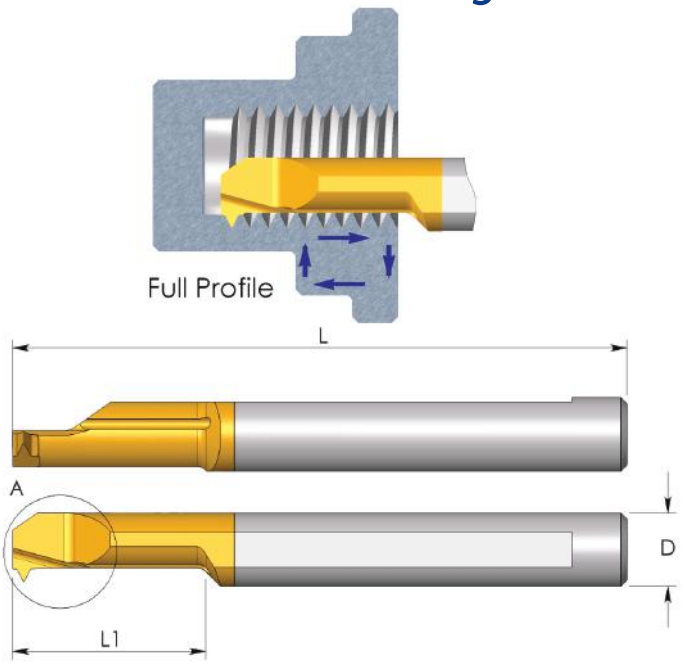
Order example: MIR 5 L15 A55 BXC

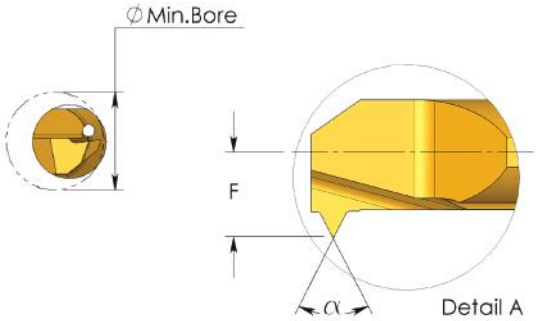
Partial Profile 60°

D mm	Ordering Code	L	L1	α	Pitch Range mm	Pitch Range TPI	F	Min. Bore Dia.	Holder**
3.0	**MIR 1 L5 A60**	1.5	.19	60	0.25 - 0.35	100 - 72	.02	.05	SIM ... H3
	MIR 1.5 L6 A60		.25		0.35 - 0.45	72 - 56	.03	.06	
3.0	**MIR 2 L8 A60**	1.5	.31	60	0.45 - 0.7	56 - 32	.04	.08	SIM ... H3
3.0	**MIR 3 L15 A60**	1.5	.59	60	0.8 - 1.0	32 - 24	.06	.13	SIM ... H3
4.0	**MIR 4 L15 A60**	2.0	.59	60	0.8 - 1.0	32 - 24	.07	.16	SIM ... H4
5.0	**MIR 5 L15 A60**	2.0	.59	60	1.0 - 1.25	24 - 20	.09	.20	SIM ... H5
	MIR 5 L22 A60		.87						
6.0	**MIR 6 L15 A60**	2.0	.59	60	1.0 - 1.5	24 - 16	.10	.24	SIM ... H6
	MIR 6 L22 A60		.87						
8.0	**MIR 8 L22 A60**	2.5	.87	60	1.0 - 2.0	24 - 13	.14	.32	SIM ... H8

Order example: MIR 5 L15 A60 BXC
For L.H. bars specify MIL instead of MIR
** For additional holders see pages 197-198

MIR Bars *Threading - with through Coolant*





Full Profile - ISO 60°

D mm	Ordering Code	Thread	L	L1	F	Min. Bore Dia.	Holder*
3.0	**MIR 3 L15 0.5 ISO**	M4 x 0.5	1.5	.59	.06	.13	SIM ... H3
	MIR 3 L15 0.7 ISO	M4 x 0.7					
	MIR 3 L15 0.75 ISO	M4.5 x 0.75					
4.0	**MIR 4 L15 0.5 ISO**	M5 x 0.5	2.0	.59	.07	.16	SIM ... H4
	MIR 4 L15 0.75 ISO	M5 x 0.75					
	MIR 4 L15 0.8 ISO	M5 x 0.8					
5.0	**MIR 5 L15 1.0 ISO**	M6 x 1.0	2.0	.59	.09	.19	SIM ... H5
6.0	**MIR 6 L22 1.25 ISO**	M8 x 1.25	2.0	.87	.11	.24	SIM ... H6

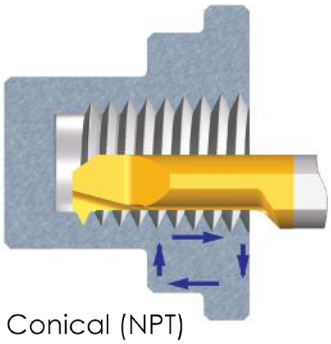
Order example: MIR 5 L15 1.0 ISO BXC

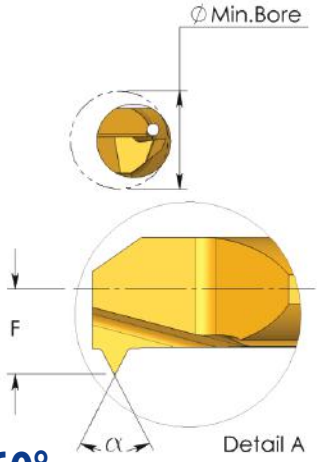
Full Profile - UN 60°

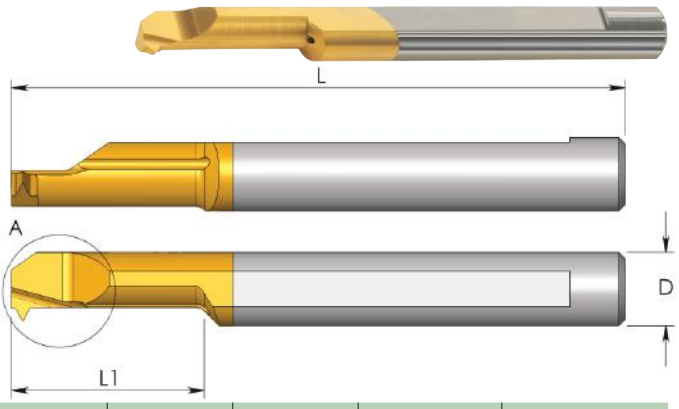
D mm	Ordering Code	Thread	L	L1	F	Min. Bore Dia.	Holder*
3.0	**MIR 3 L15 36 UN**	8-36 UNF	1.5	.59	.06	.13	SIM ... H3
	MIR 3 L15 32 UN	8-32 UNC					
4.0	**MIR 4 L15 36 UN**	12-36 UNS	2.0	.59	.07	.16	SIM ... H4
	MIR 4 L15 32 UN	12-32 UNEF					
5.0	**MIR 5 L15 28 UN**	1/4-28 UNF	2.0	.59	.09	.19	SIM ... H5
	MIR 5 L18 20 UN	1/4-20 UNC		.71		.20	
6.0	**MIR 6 L18 24 UN**	5/16-24UNF	2.0	.71	.11	.26	SIM ... H6
	MIR 6 L18 18 UN	5/16-18UNC				.24	

Order example: MIR 4 L15 36 UN BXC
For L.H. bars specify MIL instead of MIR
* For additional holders see pages 197-198

MIR Bars *Threading - with through Coolant*



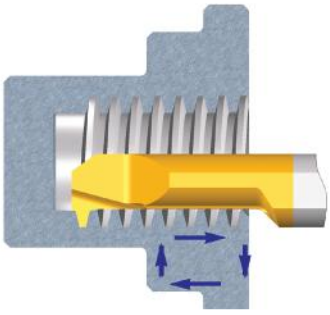


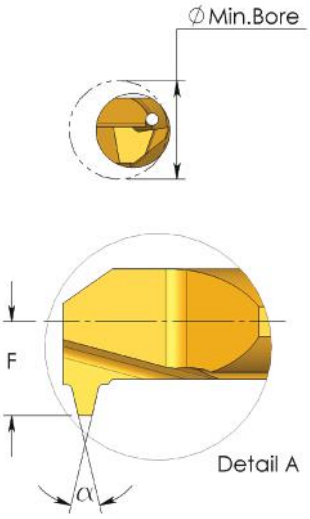


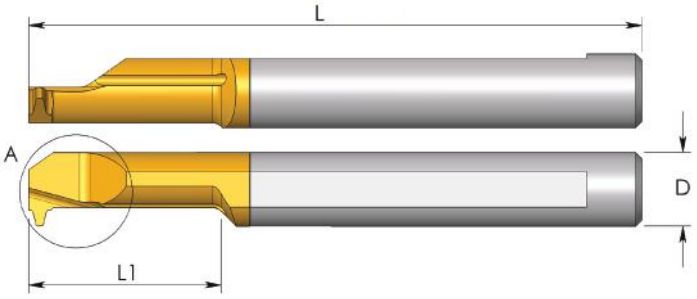
Full Profile - NPT 60°

D mm	Ordering Code	Pitch TPI	Thread Size	L	L1	F	Min. Bore Dia.	Holder*
6.0	**MIR 6 L15 27 NPT**	27	1/16 x 27 NPT 1/8 x 27 NPT	2.0	.59	.10	.23	SIM ... H6

Order example: MIR 6 L15 27 NPT BXC





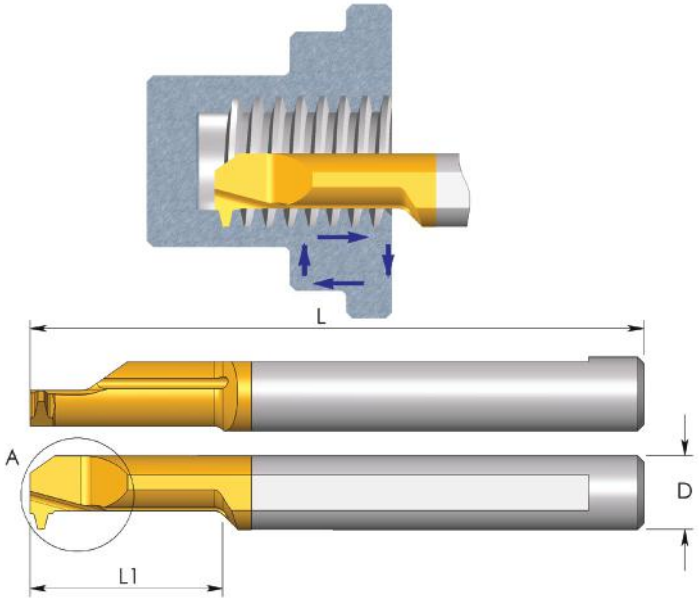


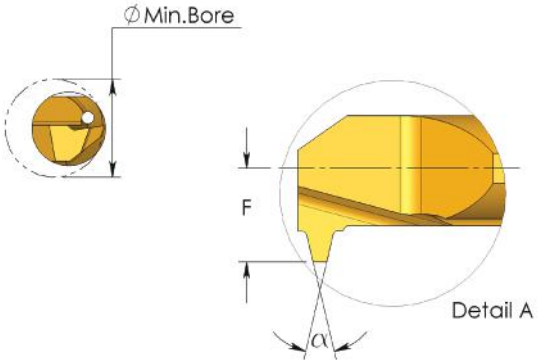
Acme

D mm	Ordering Code	Pitch TPI	Thread Size	L	L1	F	α	Min. Bore Dia.	Holder*
4.0	**MIR 4 L15 16 ACME**	16	1/4 x 16	2.0	.59	.07	29	.18	SIM ... H4
6.0	**MIR 6 L20 14 ACME**	14	5/16 x 14	2.0	.79	.11	29	.24	SIM ... H6
7.0	**MIR 7 L22 12 ACME**	12	3/8 x 12 7/16 x 12	2.4	.87	.13	29	.28	SIM ... H7
8.0	**MIR 8 L30 10 ACME**	10	1/2 x 10	3.0	1.18	.15	29	.39	SIM ... H8
10.0	**MIR 10 L35 8 ACME**	8	5/8 x 8	3.0	1.38	.19	29	.49	SIM ... H10
10.0	**MIR 10 L45 6 ACME**	6	3/4 x 6 7/8 x 6	4.1	1.77	.19	29	.57	SIM ... H10

Order example: MIR 6 L 20 14 ACME BXC
* For additional holders see pages 197-198

MIR Bars *Threading - with through Coolant*





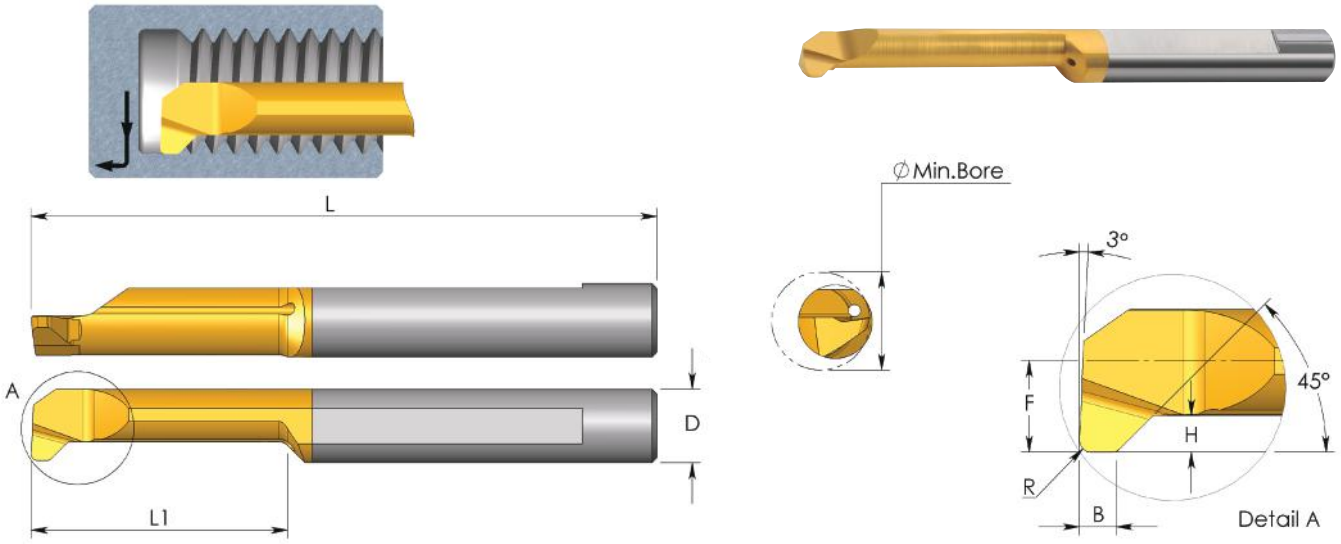
Partial Profile Trapez - DIN 103

D mm	Ordering Code	Pitch mm	Thread Size	L	L1	F	α	Min. Bore Dia.	Holder*
7.0	**MIR 7 L25 2 TR**	2	TR 9 x 2 TR10 x 2 TR11 x 2 TR12 x 2	2.4	.98	.13	30	.27	SIM ... H7
10.0	**MIR 10 L35 2 TR**	2	TR14 x 2 TR16 x 2 TR18 x 2 TR20 x 2	2.9	1.38	.19	30	.43	SIM ... H10
7.0	**MIR 7 L35 3 TR**	3	TR11 x 3 TR12 x 3	2.4	1.38	.13	30	.30	SIM ... H7
10.0	**MIR 10 L35 3 TR**	3	TR14 x 3 TR22 x 3 TR24 x 3 TR26 x 3 TR28 x 3	2.9	1.38	.19	30	.41	SIM ... H10
10.0	**MIR 10 L45 4 TR**	4	TR16 x 4 TR18 x 4 TR20 x 4	4.1	1.77	.19	30	.45	SIM ... H10
10.0	**MIR 10 L55 5 TR**	5	TR22 x 5 TR24 x 5 TR28 x 5	4.1	2.17	.19	30	.43	SIM ... H10

Order example: MIR 10 L35 3 TR BXC

* For additional holders see pages 197-198

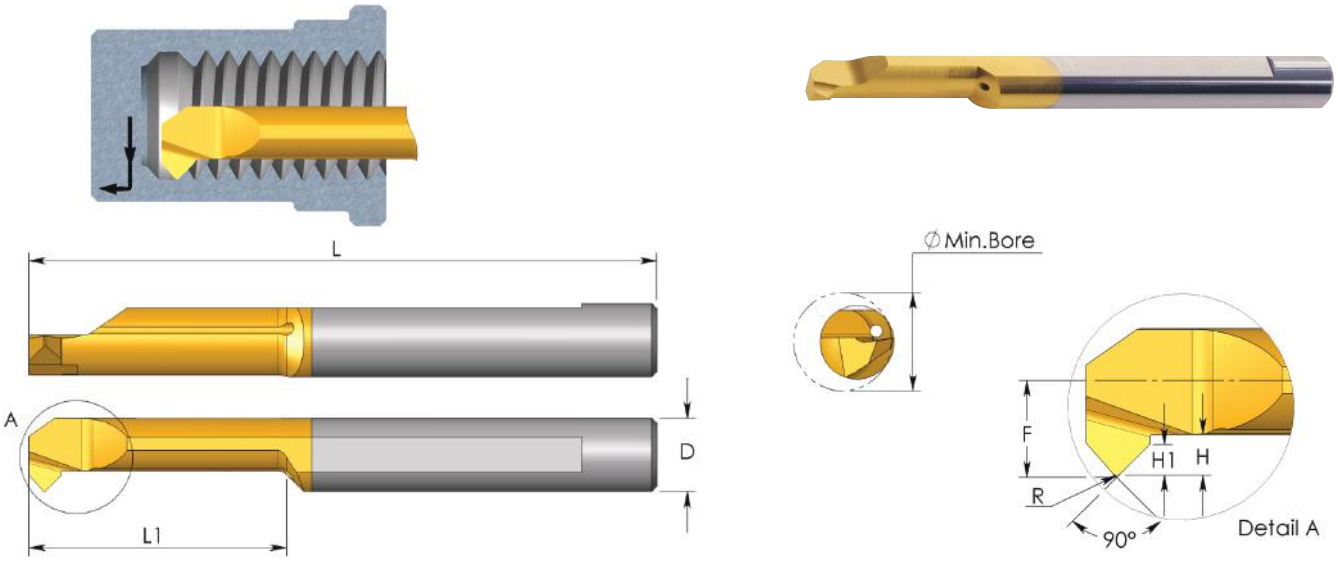
MDR Bars *Thread Relief, Chamfering and Grooving - with through Coolant*



D mm	Ordering Code	L	L1	B	R	H	F	Min. Bore Dia.	Holder*
4.0	**MDR 4 R0.5 L18**	2.0	.71	.06	.02	.03	.07	.16	SIM ... H4
5.0	**MDR 5 R0.5 L24**	2.0	.94	.06	.02	.05	.09	.20	SIM ... H5
6.0	**MDR 6 R0.5 L27**	2.3	1.06	.06	.02	.06	.11	.24	SIM ... H6

Order example: MDR 5 R0.5 L24 BXC
For L.H. bars specify MDL instead of MDR
* For additional holders see pages 197-198

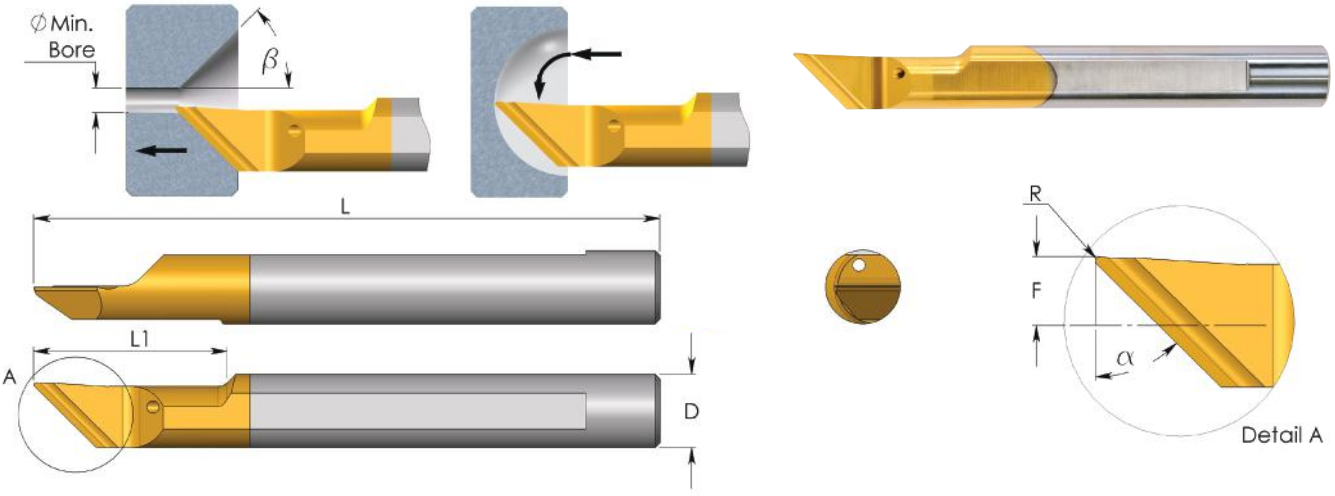
MCR Bars *Chamfering and Boring - with through Coolant*



D mm	Ordering Code	L	L1	R	H	H1	F	Min. Bore Dia.	Holder*
3.0	**MCR 3 R0.2 L10**	1.5	.39	.008	.03	.01	.05	.12	SIM ... H3
4.0	**MCR 4 R0.2 L15**	2.0	.59	.008	.03	.02	.07	.16	SIM ... H4
5.0	**MCR 5 R0.2 L15**	2.0	.59	.008	.05	.03	.08	.20	SIM ... H5
6.0	**MCR 6 R0.2 L15**	2.0	.59	.008	.06	.03	.11	.24	SIM ... H6
7.0	**MCR 7 R0.2 L20**	2.4	.79	.008	.06	.03	.13	.28	SIM ... H7

Order example: MCR 4 R0.2 L15 BXC
For L.H. bars specify MCL instead of MCR
* For additional holders see pages 197-198

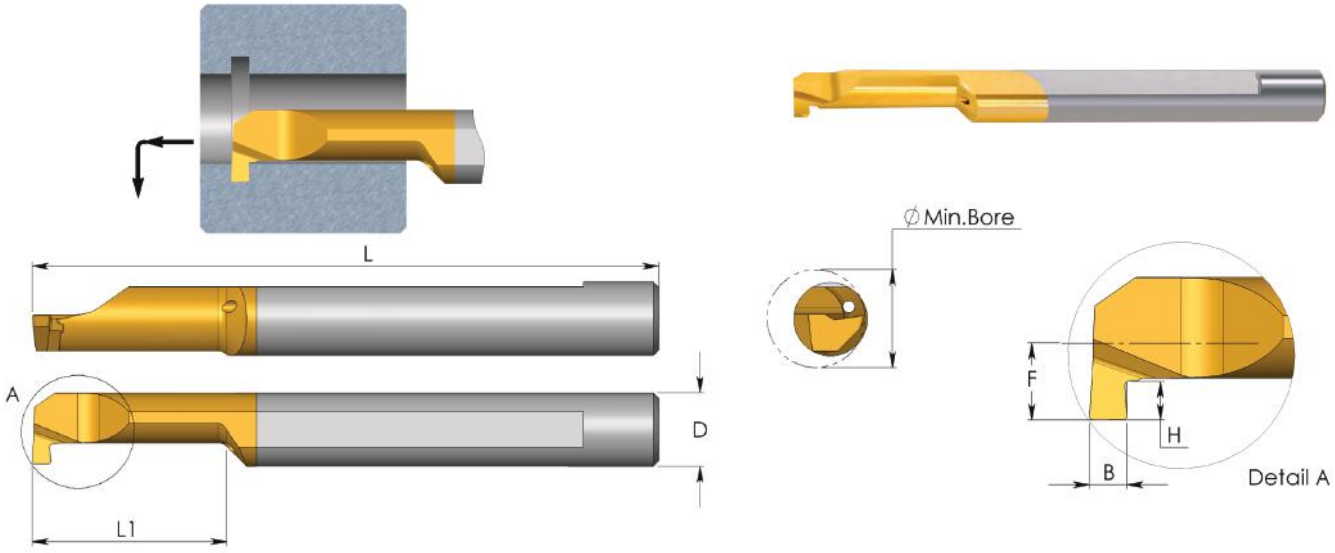
MWR Bars *Chamfering and Profiling - with through Coolant*



D mm	Ordering Code	L	L1	R	α	β	F	Min. Bore Dia.	Holder*
6.0	**MWR 6 R0.2 A90**	2.0	.59	.008	45°	45°	.09	.04	SIM ... H6
	MWR 6 R0.2 A60				60°	30°			

Order example: MWR 6 R0.2 A90 BXC
For L.H. bars specify MWL instead of MWR
* For additional holders see pages 197-198

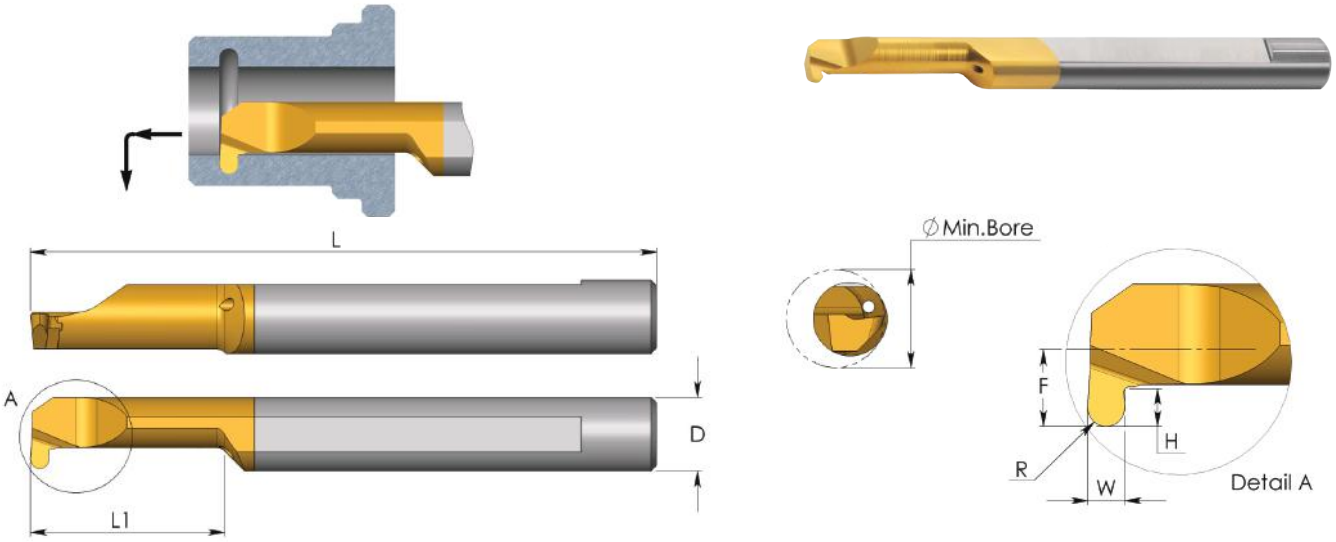
MGR Bars Grooving - with through Coolant



D mm	Ordering Code	L	L1	B	H	F	Min. Bore Dia.	Holder*
3.0	**MGR 3 B0.7 L10**	1.5	.39	.03	.02	.05	.12	SIM ... H3
4.0	**MGR 4 B1.0 L10**	2.0	.39	.04	.04	.07	.16	SIM ... H4
	MGR 4 B1.5 L10		.39	.06				
5.0	**MGR 5 B1.0 L15**	2.0	.59	.04	.05	.09	.20	SIM ... H5
	MGR 5 B1.0 L22		.87	.04				
	MGR 5 B1.5 L15		.59	.06				
	MGR 5 B1.5 L22		.87	.06				
	MGR 5 B2.0 L15		.59	.08				
	MGR 5 B2.0 L22		.87	.08				
6.0	**MGR 6 B1.0 L15**	2.0	.59	.04	.06	.11	.24	SIM ... H6
	MGR 6 B1.0 L22		.87	.04				
	MGR 6 B1.5 L15		.59	.06				
	MGR 6 B1.5 L22		.87	.06				
	MGR 6 B2.0 L15		.59	.08				
	MGR 6 B2.0 L22		.87	.08				
7.0	**MGR 7 B1.0 L15**	2.4	.59	.04	.10	.13	.28	SIM ... H7
	MGR 7 B1.0 L22		.87	.04				
	MGR 7 B1.0 L30		1.18	.04				
	MGR 7 B1.5 L15		.59	.06				
	MGR 7 B1.5 L22		.87	.06				
	MGR 7 B1.5 L30		1.18	.06				
	MGR 7 B2.0 L15		.59	.08				
	MGR 7 B2.0 L22		.87	.08				
	MGR 7 B2.0 L30		1.18	.08				
8.0	**MGR 8 B1.0 L22**	2.5	.87	.04	.07	.15	.32	SIM ... H8
	MGR 8 B1.5 L22		.87	.06	.07			
	MGR 8 B2.0 L22		.87	.08	.10			

Order example: MGR 5 B1.5 L15 BXC
For L.H. bars specify MGL instead of MGR
* For additional holders see pages 197-198

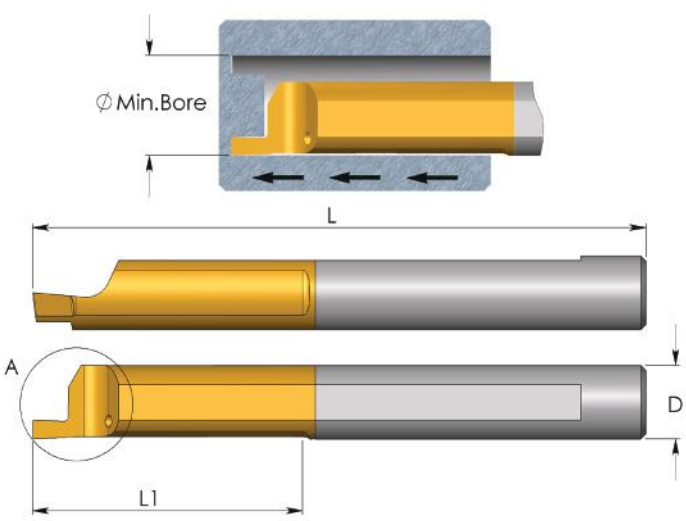
MKR Bars *Full Radius Grooving - with through Coolant*

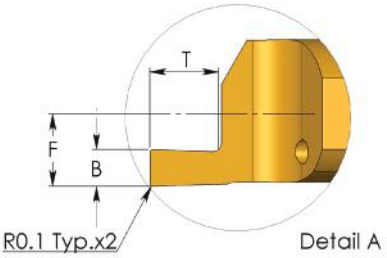


D mm	Ordering Code	L	L1	R	W	H	F	Min. Bore Dia.	Holder*
4.0	**MKR 4 R0.5 L10**	2.0	.39	.020	.04	.04	.07	.16	SIM ... H4
	MKR 4 R0.75 L10			.030	.06				
5.0	**MKR 5 R0.5 L15**	2.0	.59	.020	.04	.05	.09	.20	SIM ... H5
	MKR 5 R0.75 L15			.030	.06				
	MKR 5 R1.0 L15			.039	.08				
6.0	**MKR 6 R0.5 L15**	2.0	.59	.020	.04	.06	.11	.24	SIM ... H6
	MKR 6 R0.75 L15			.030	.06				
	MKR 6 R1.0 L15			.039	.08				

Order example: MKR 5 R1.0 L15 BXC
For L.H. bars specify MKL instead of MKR
* For additional holders see pages 197-198

MFR Bars Face Grooving - with through Coolant



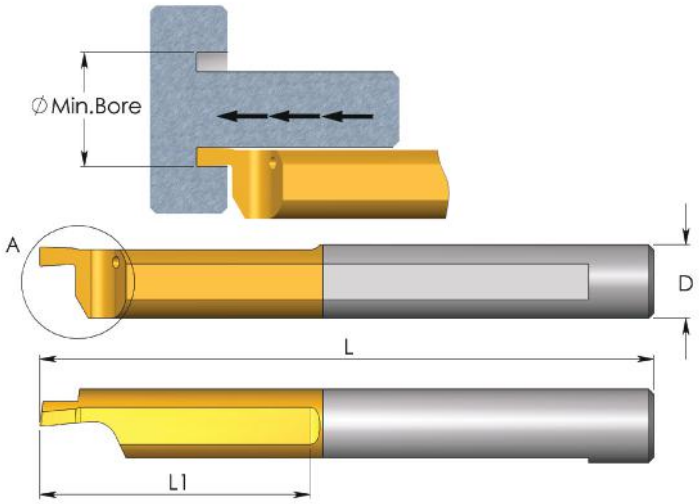


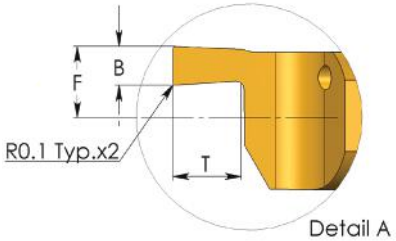
D mm	Ordering Code	L	L1	B	T	F	Min. Bore Dia.	Holder*
4.0	**MFR 4 B0.75 L15**	2.0	.59	.03	.05	.08	.20	SIM ... H4
	MFR 4 B1.0 L15			.04	.06			
	MFR 4 B1.5 L15			.06	.11			
5.0	**MFR 5 B0.75 L22**	2.0	.87	.03	.05	.10	.24	SIM ... H5
	MFR 5 B1.0 L22			.04	.06			
	MFR 5 B1.5 L22			.06	.10			
	MFR 5 B2.0 L22			.08	.15			
6.0	**MFR 6 B1.0 L22**	2.0	.87	.04	.06	.12	.31	SIM ... H6
	MFR 6 B1.5 L22			.06	.10			
	MFR 6 B2.0 L22			.08	.12			
	MFR 6 B2.5 L22			.10	.19			
	MFR 6 B3.0 L30	2.3	1.18	.12	.24			
8.0	**MFR 8 B2.5 L22**	2.5	.87	.10	.14	.16	.39	SIM ... H8

Order example: MFR 5 B1.0 L22 BXC

* For additional holders see pages 197-198

MFL Bars *Face Grooving - with through Coolant*



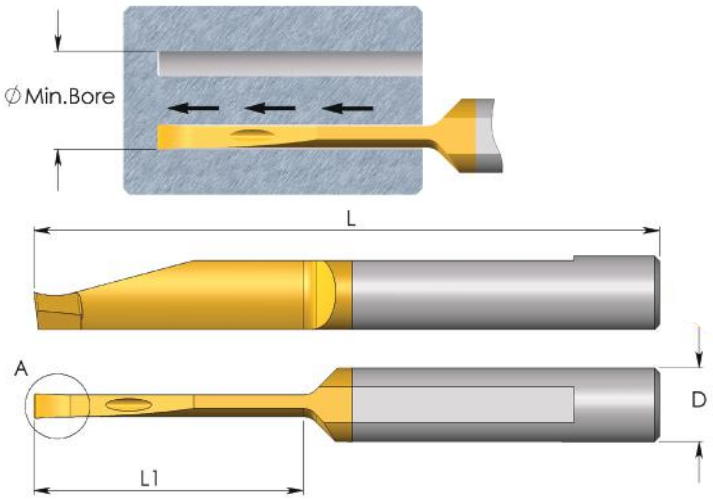


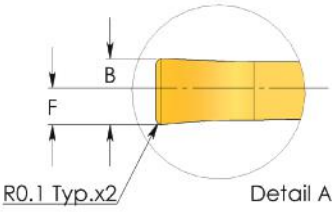
D mm	Ordering Code	L	L1	B	T	F	Min. Bore Dia.	Holder*
4.0	**MFL 4 B0.75 L15**	2.0	.59	.03	.05	.07	.20	SIM ... H4
	MFL 4 B1.0 L15			.04	.06			
	MFL 4 B1.5 L15			.06	.11			
5.0	**MFL 5 B0.75 L22**	2.0	.87	.03	.05	.09	.24	SIM ... H5
	MFL 5 B1.0 L22			.04	.06			
	MFL 5 B1.5 L22			.06	.10			
	MFL 5 B2.0 L22			.08	.15			
6.0	**MFL 6 B1.0 L22**	2.0	.87	.04	.06	.11	.31	SIM ... H6
	MFL 6 B1.5 L22			.06	.10			
	MFL 6 B2.0 L22			.08	.12			
	MFL 6 B2.5 L22			.10	.19			
	MFL 6 B3.0 L30	2.3	1.18	.12	.24			
8.0	**MFL 8 B2.5vL22**	2.5	.87	.10	.14	.15	.39	SIM ... H8

Order example: MFL 6 B1.0 L22 BXC

* For additional holders see pages 197-198

MVR Bars *Deep Face Grooving - with 2 Coolant Bores*



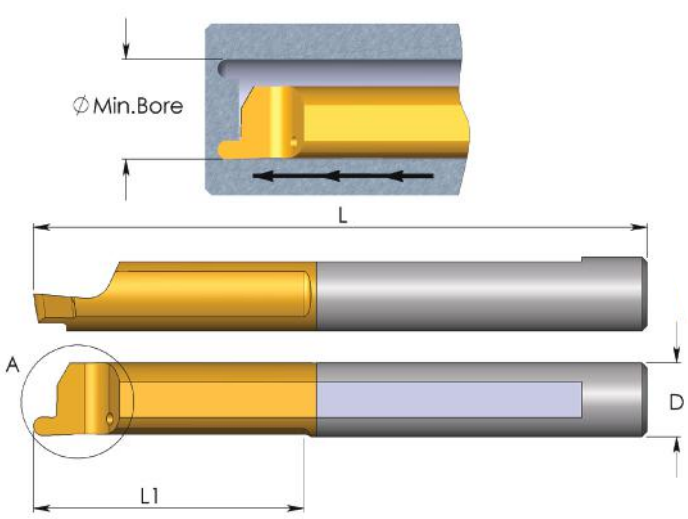


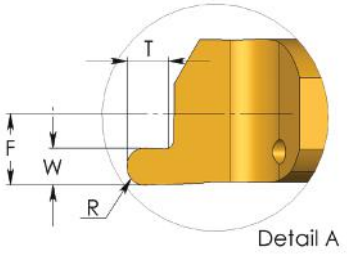
D mm	Ordering Code	L	L1	B	F	Min. Bore Dia.	Holder*
6.0	**MVR 6 B2.0 L15**	2.5	.59	.08	.04	.47	SIM ... H6
	MVR 6 B2.0 L22		.87	.08	.04		
	MVR 6 B2.5 L22		.87	.10	.06		
8.0	**MVR 8 B3.0 L27**	2.5	1.06	.12	.06	.59	
	MVR 8 B3.0 L43	3.1	1.69	.12	.06		SIM ... H8
8.0	**MVR 8 B4.0 L43**	3.1	1.69	.16	.08	.79	SIM ... H8

Order example: MVR 6 B2.0 L22 BXC

* For additional holders see pages 197-198

MZR Bars *Face Grooving - with through Coolant*



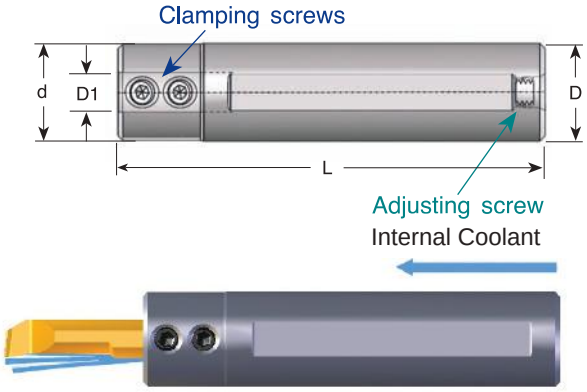


D mm	Ordering Code	L	L1	R	W	T	F	Min. Bore Dia.	Holder*
4.0	**MZR 4 R0.5 L15**	2.0	.59	.020	.04	.05	.08	.20	SIM ... H4
	MZR 4 R0.75 L15			.030	.06	.06			
5.0	**MZR 5 R0.5 L22**	2.0	.87	.020	.04	.05	.10	.24	SIM ... H5
	MZR 5 R0.75 L22			.030	.06	.06			
	MZR 5 R1.0 L22			.039	.08	.10			
6.0	**MZR 6 R0.5 L22**	2.0	.87	.020	.04	.05	.12	.31	SIM ... H6
	MZR 6 R0.75 L22			.030	.06	.06			
	MZR 6 R1.0 L22			.039	.08	.10			

Order example: MZR 5 R0.5 L22 BXC

* For additional holders see pages 197-198

Tiny Tools Bar Holders



Metric Shank Version

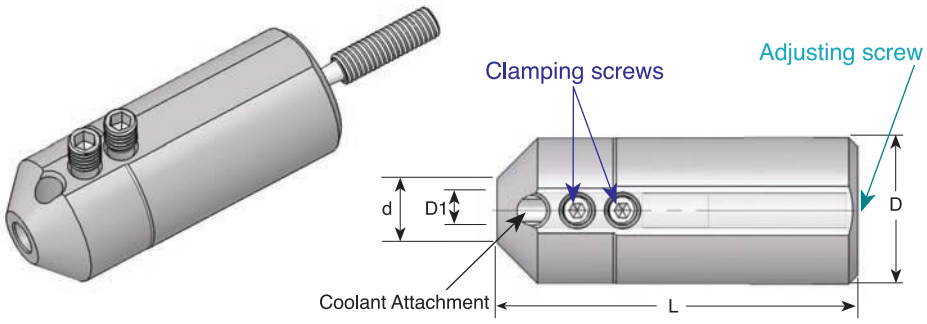
D1 mm	Ordering Code	D mm	d mm/in	L mm/in	Key	Clamping Screw	Adjusting Screw
3.0	**SIM 0012 H3**	12	12 / .47	88 / 3.5	K25	S24	S35
	*** SIM 0016 H3S**	16	20 / .79	75 / 3.0		S25	S35S
	SIM 0016 H3	16	20 / .79	88 / 3.5			S35
	SIM 0020 H3	20	20 / .79	88 / 3.5			S35
	*** SIM 0022 H3**	22	22 / .87	88 / 3.5			S35
4.0	**SIM 0012 H4**	12	12 / .47	88 / 3.5	K25	S24	S35
	*** SIM 0016 H4S**	16	20 / .79	75 / 3.0		S25	S35S
	SIM 0016 H4	16	20 / .79	88 / 3.5			S35
	SIM 0020 H4	20	20 / .79	88 / 3.5			S35
	*** SIM 0022 H4**	22	22 / .87	88 / 3.5			S35
5.0	**SIM 0012 H5**	12	12 / .47	88 / 3.5	K25	S24	S35
	*** SIM 0016 H5S**	16	20 / .79	75 / 3.0		S25	S35S
	SIM 0016 H5	16	20 / .79	88 / 3.5			S35
	SIM 0020 H5	20	20 / .79	88 / 3.5			S35
	*** SIM 0022 H5**	22	22 / .87	88 / 3.0			S35
6.0	*** SIM 0016 H6S**	16	20 / .79	75 / 3.0	K25	S25	S35S
	SIM 0016 H6	16	20 / .79	88 / 3.5			S35
	SIM 0020 H6	20	20 / .79	88 / 3.5			S35
	*** SIM 0022 H6**	22	22 / .87	88 / 3.5			S35
7.0	**SIM 0016 H7**	16	20 / .79	88 / 3.5	K25	S25	S35
	SIM 0020 H7	20	20 / .79	88 / 3.5			S35
8.0	**SIM 0016 H8**	16	20 / .79	88 / 3.5	K25	S25	S35
	SIM 0020 H8	20	20 / .79	88 / 3.5			S35
10.0	**SIM 0020 H10**	20	20 / .79	88 / 3.5	K25	S25	S35

* Can also be used with Swiss type lathe machines

Inch Shank Version

D1 mm	Ordering Code	D in	d mm/in	L mm/in	Key	Clamping Screw	Adjusting Screw
3.0	**SIM 0750 H3**	3/4	19.05 / .75	88 / 3.5	K25	S25	S35
	SIM 1000 H3	1	25.4 / 1.0	88 / 3.5	K25		S35
4.0	**SIM 0750 H4**	3/4	19.05 / .75	88 / 3.5	K25	S25	S35
	SIM 1000 H4	1	25.4 / 1.0	88 / 3.5	K25		S35
5.0	**SIM 0750 H5**	3/4	19.05 / .75	88 / 3.5	K25	S25	S35
	SIM 1000 H5	1	25.4 / 1.0	88 / 3.5	K25		S35
6.0	**SIM 0750 H6**	3/4	19.05 / .75	88 / 3.5	K25	S25	S35
	SIM 1000 H6	1	25.4 / 1.0	88 / 3.5	K25		S35
7.0	**SIM 1000 H7**	1	25.4 / 1.0	88 / 3.5	K25	S25	S35
8.0	**SIM 0750 H8**	3/4	19.05 / .75	88 / 3.5	K25	S25	S35

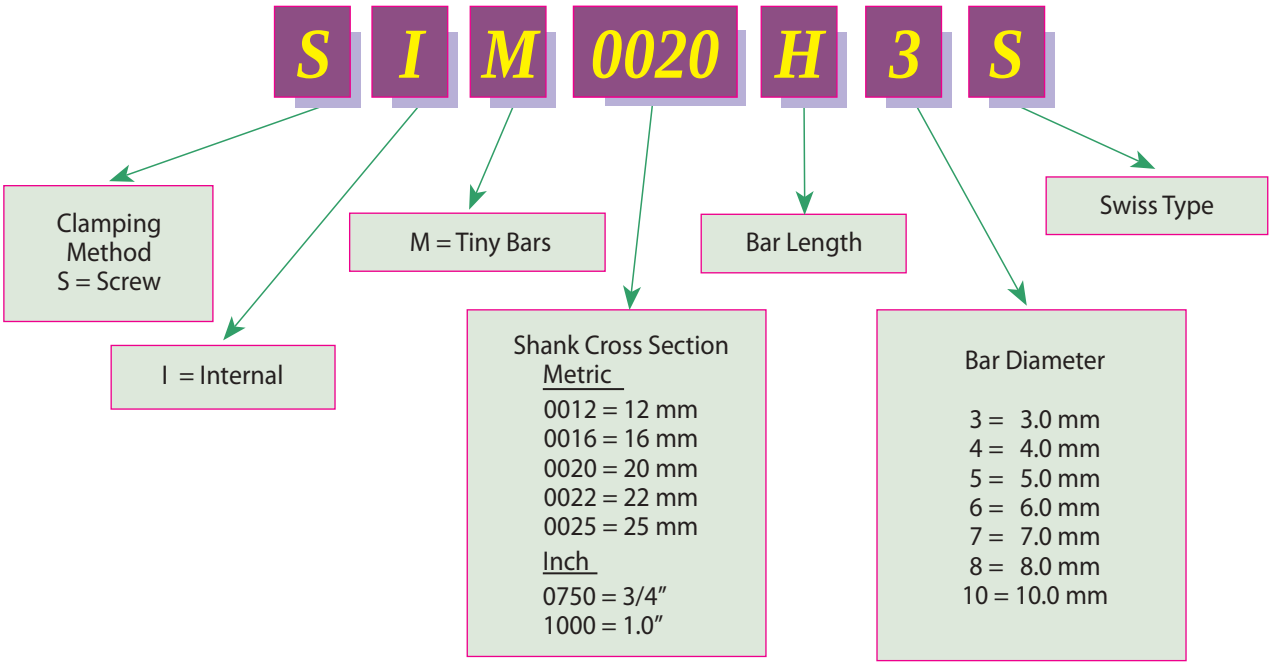
Tools Bar Holders



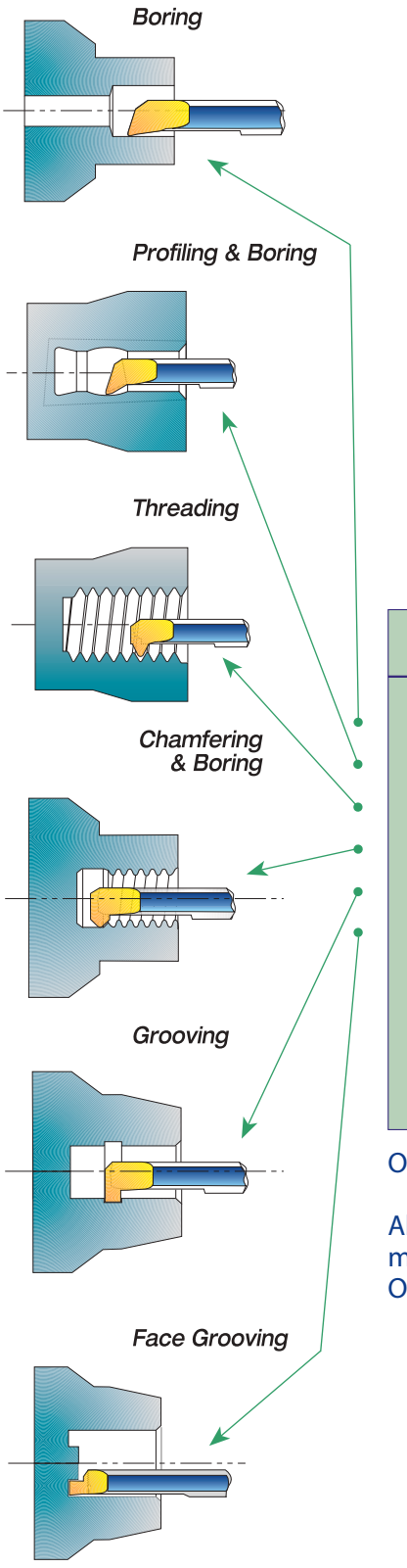
D1 mm	Ordering Code	D mm	d mm/in	L mm/in	Key	Clamping Screw	Adjusting Screw
3.0	SIM 0025 H3	25	10.8 / .43	62 / 2.4	K25	S25	S35M
4.0	SIM 0025 H4						
5.0	SIM 0025 H5						
6.0	SIM 0025 H6						

Product Identification

Tiny Bar Holders Ordering Codes



Tiny Tools Kits

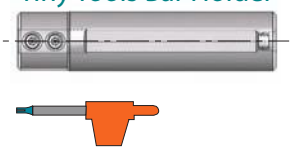


KT4-0750	KT5-0750
MTR 4 R0.2 L10	MTR 5 R0.2 L15
MPR 4 R0.2 L10	MPR 5 R0.2 L15
MIR 4 L15 A60	MIR 5 L15 A60
MCR 4 R0.2 L15	MCR 5 R0.2 L15
MGR 4 B1.5 L10	MGR 5 B1.5 L15
MFR 4 B1.0 L15	MFR 5 B1.0 L22
SIM 0750 H4	SIM 0750 H5
K25	K25

Order example: KT4-0750

Also available kits with
metric shank diameter bar holder.
Order example: KT4-16

Tiny Tools Bar Holder



Technical Section

Carbide Grades:

BXC (P30 - P50, K25 - K40)
PVD TiN coated grade for low cutting speed.
Works well with a wide range of stainless steels.

BMK (K10 - K20)
Sub-micron grade with advanced PVD triple coating. Extremely high heat resistant and smooth cutting operation, for high performance, and normal machining conditions. General purpose for all materials.

K20 (K10 - K30)
Uncoated Carbide grade for non ferrous metals, aluminum and cast iron.

Cutting speed for Tiny Tools

ISO Standard	Material		Condition	Cutting Speed ft/min	
				BXC	BMK
P	Non-Alloy steel and cast steel, free cutting steel	<0.25%C	Annealed	82-164	98-197
		≥0.25%C	Annealed		
		< 0.55%C	Quenched and tempered		
		≥0.55%C	Annealed		
			Quenched and tempered		
	Low alloy steel and cast steel (less than 5% alloying elements)		Annealed	66-82	79-98
			Quenched and tempered		
	High alloy steel, cast steel, and tool steel		Annealed	59-66	72-79
			Quenched and tempered		
M	Stainless steel and cast steel		Ferritic/martensitic	82-98	98-138
			Martensitic		
			Austenitic		
K	Cast iron nodular (GGG)		Ferritic/pearlitic	56-75	66-92
			Pearlitic		
	Grey cast iron (GG)		Ferritic	56-75	66-92
			Pearlitic		
	Malleable cast iron		Ferritic	56-75	66-92
			Pearlitic		
N	Aluminum-wrought alloy		Not cureable	164-230	197-276
			Cured		
	Aluminum-cast, alloyed	<=12% Si	Not cureable	98-131	118-157
			Cured		
		>12% Si	High temperature		
	Copper alloys	>1% Pb	Free cutting	72-82	79-98
			Brass		
			Electrolytic copper		
	Non metalic		Duroplastics, fiber plastics	115-148	
			Hard rubber		
S	High temp. alloys, Super alloys	Fe based	Annealed	49-66	59-79
			Cured		
		Ni or Co based	Annealed		
			Cured		
			Cast		
	Titanium alloys		Alpha+beta alloys cured	39-59	49-66
H	Hardened steel		Hardened 45-50 HRc	49-66	59-79
			Hardened 51-55 HRc		
			Hardened 56-62 HRc		
	Chilled cast iron		Cast	33-46	39-52
	Cast iron		Hardened	26-39	33-46

Recommended Feed Rate: .0005 - .001 inch/rev

Threading Passes

Pitch:	mm TPI	0.5 48	0.7 36	0.8 32	1.0 24	1.25 20	1.5 16	2-5
Number of Passes		6-12	7-14	7-16	8-18	8-20	10-22	20-38

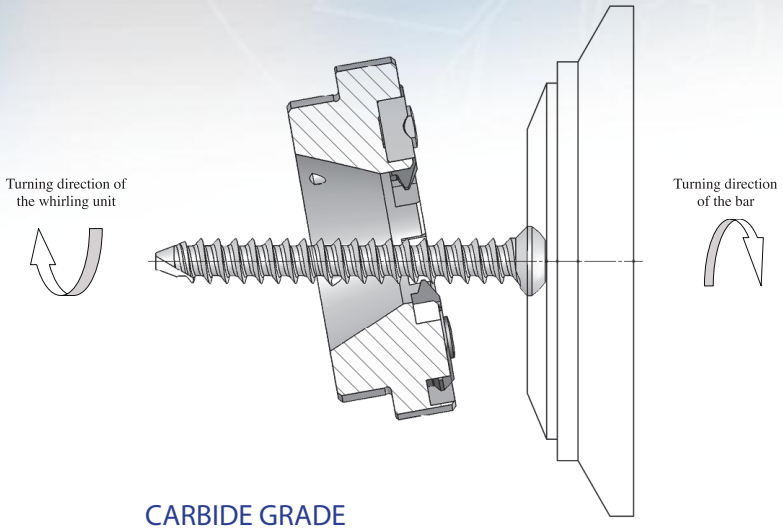
Thread Whirling Tools

For Perfect Long Threads on Swiss Type Machines

Thread Whirling is a fast and accurate way to thread long, small diameter parts in exotic materials such as titanium, stainless steel and Inconel.

Whirling inserts and holders can produce a wide range of medical parts such as dental implants and bone screws, automotive parts and semiconductor small parts.

Cutting is the result of the whirling ring rotating eccentrically at high speed about the slowly rotating workpiece. The advancement of the workpiece rotationally and the advancement of the tool head longitudinally correspond to the thread pitch required.



CARBIDE GRADE

BMA - PVD TiALN coated submicrograin for stainless steel, exotic materials.

Contents: **Page**

Thread Whirling Advantages

Thread Whirling offers several advantages over single point threading:

Enabling production of small diameter long threads when used on Swiss type machines, the thread whirling spindle works close to the guide bushing for increased support and rigidity.

Increased Productivity:

Thread Whirling is performed in a single pass, resulting in a shorter machining time.
This eliminates multiple passes required for a single point threading.
Thread whirling allows working at high feed rates and consequently short cycle times.

Very high surface quality and accurate geometry:

The use of up to 8 cutting edges, higher concentricity, special cutting edge geometry and ideal chip removal, enable top quality surfaces to be produced without burr.

Long tool life:

Whirling inserts have a stronger cutting edge than single point tools, because cutter side clearance is achieved by rotating the whirling spindle, not by relieving material under the cutting edge.

Faster Setup:

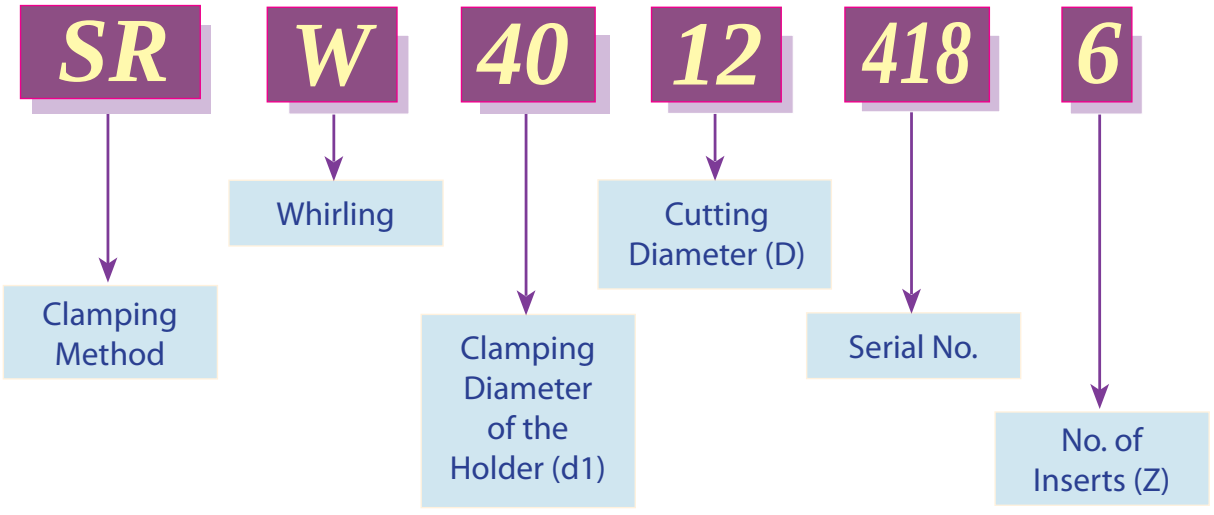
Thread whirling eliminates special support devices and expensive startup development costs.

Compensation of large helix angles:

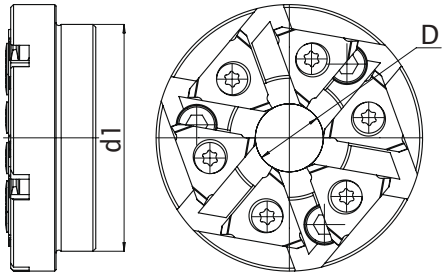
Large helix angles can be compensated by adjusting the whirling unit.

- One toolholder can be used for various applications.
- All toolholders are standard stock items.
- Inserts are made for each application as a special item.
- The toolholders are designed according to different machine types and manufacturers.
- Special adaptors for machine heads are available as stock items.

Product Identification



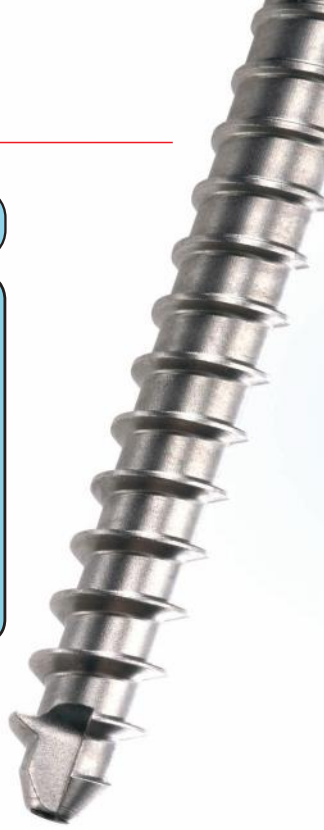
Toolholders



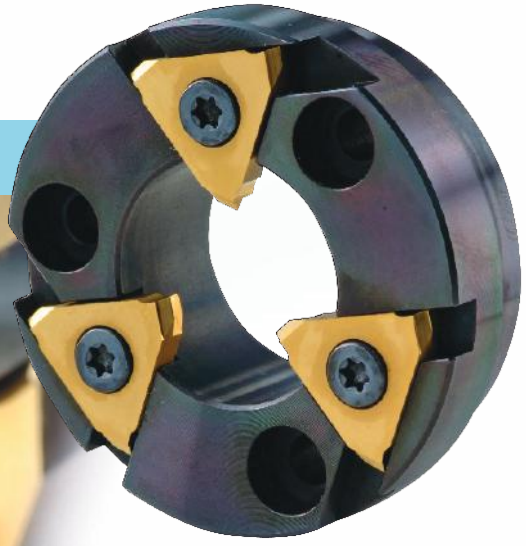
Machine		Drive Unit	Whirling Head Ordering Code	Z	D	d1	Insert Size	Insert Screw	Torx Key
Type	Model								
Star	SV12 / SV20	Star	**SRW4012 418 - 6**	6	12	40	16	SW16	KW16
			SRW4012 424 - 8	8			11	SW11	KW11
	SR20 / ECAS20		**SRW4012 419 - 6**	6	12	40	16	SW16	KW16
			SRW4012 425 - 8	8			11	SW11	KW11
Citizen	M12 / M16	PCM	**SRW4512 422 - 6**	6	12	45	16	SW16	KW16
			SRW4512 426 - 8	8			11	SW11	KW11
	M20 / M32		**SRW4512 423 - 6**	6	12	45	16	SW16	KW16
			SRW4512 427 - 8	8			11	SW11	KW11
Tornos	Deco 13 / 20	Tornos	**SRW4012 420 - 6**	6	12	40	16	SW16	KW16
	Evo Deco 16 / Deco 13	W & F	**SRW4012 419 - 6**						
Traub	TNL26 / TNK36	Traub	**SRW4116 421 - 6**	6	16	41	16	SW16	KW16
Hanwha	XD20	Maduala	**SRW4012 604 - 6**	6	12	40	16	SW16	KW16
Maier	ML20D	PCM	**SRW4012 417 - 5**	5	12	40	16	SW16	KW16
Nexturn	SA20	PCM	**SRW4512 642 - 6**	6	12	45	16	SW16	KW16
	SA20	WTO	**SRW4212 557 - 6**	6	12	45	16	SW16	KW16

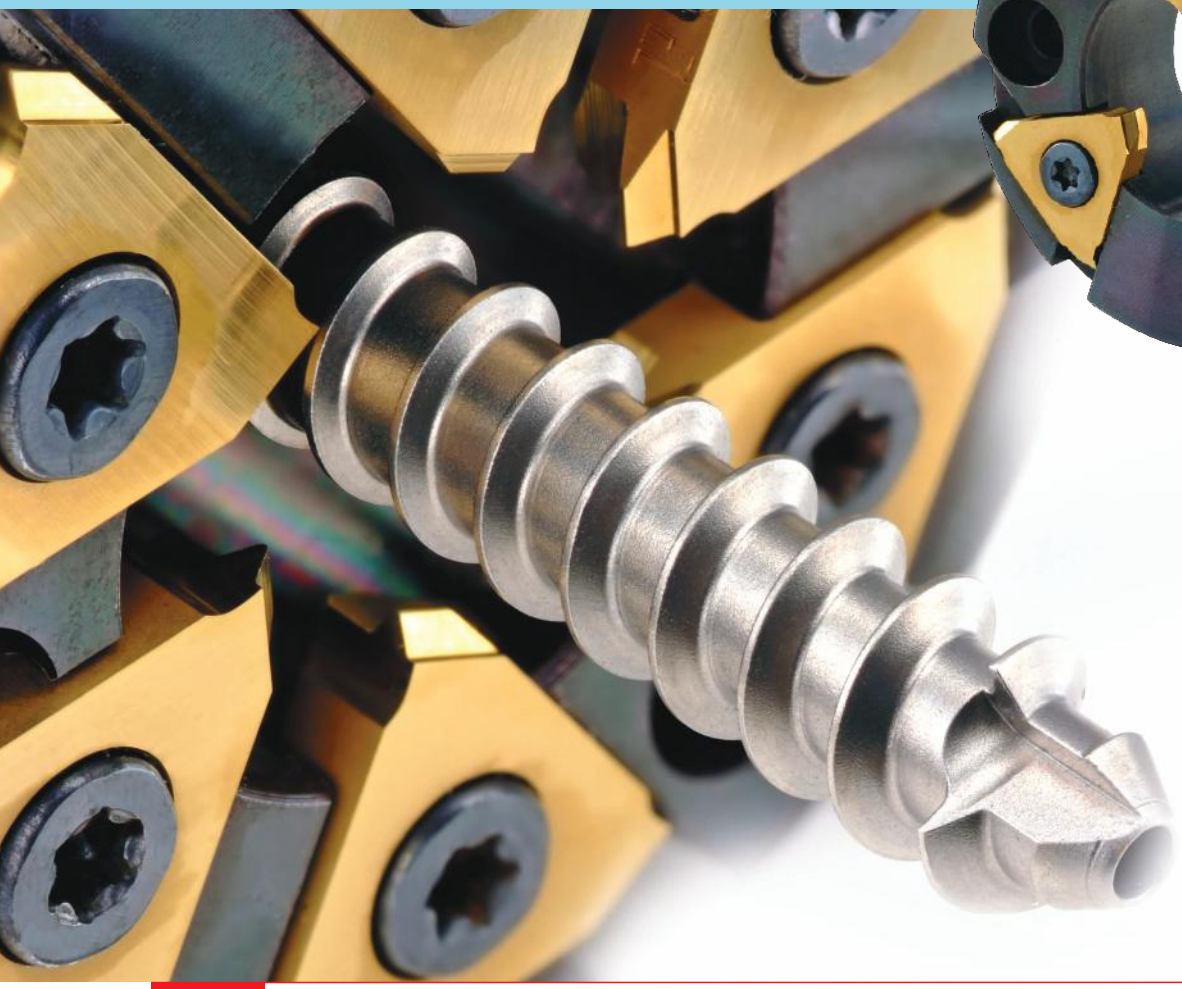
Case Study

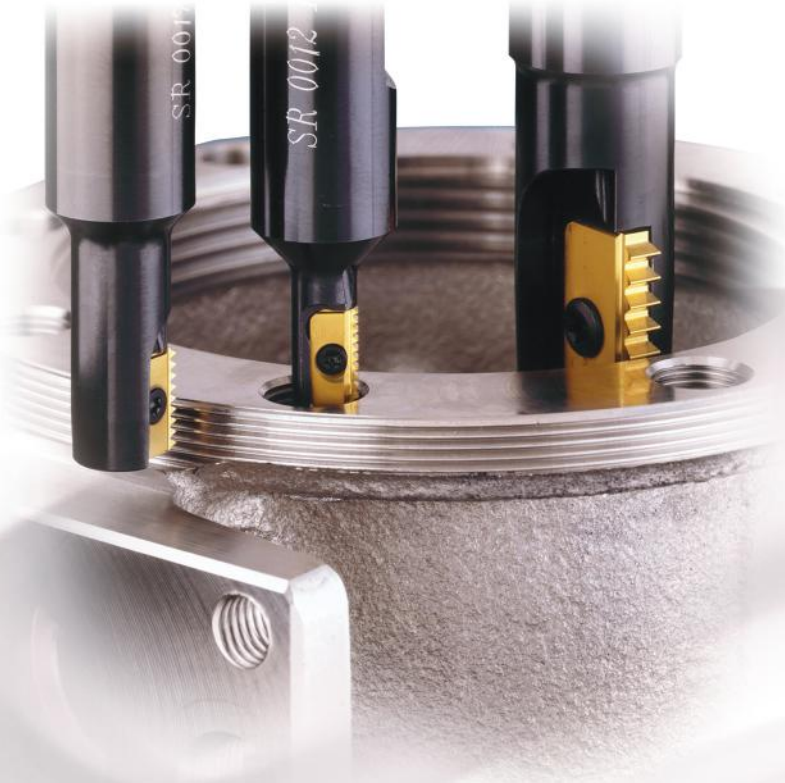
Machine:	Nexturn SA-20
Drive unit:	WTO
Application:	Bone screw
Material:	Ti-6Al-4V ELI
Carmex holder:	SRW4212 557-6
Vc [m/min]:	38
Tooth load [mm/tooth]:	0.04
No. of parts:	806



SPECIALS ARE OUR SPECIALTY







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Carmex®
Precision Tools Ltd.

x-treme thread cutting™

1st Hacharoshet St., Maalot Industrial Zone 2101302, ISRAEL
Tel: (972) 4-9077400, Fax: (972) 4-9077440.
E-mail: info @carmex.com Website: www.carmex.com
Postal address: P.O. Box 404, Maalot 2101302, ISRAEL.