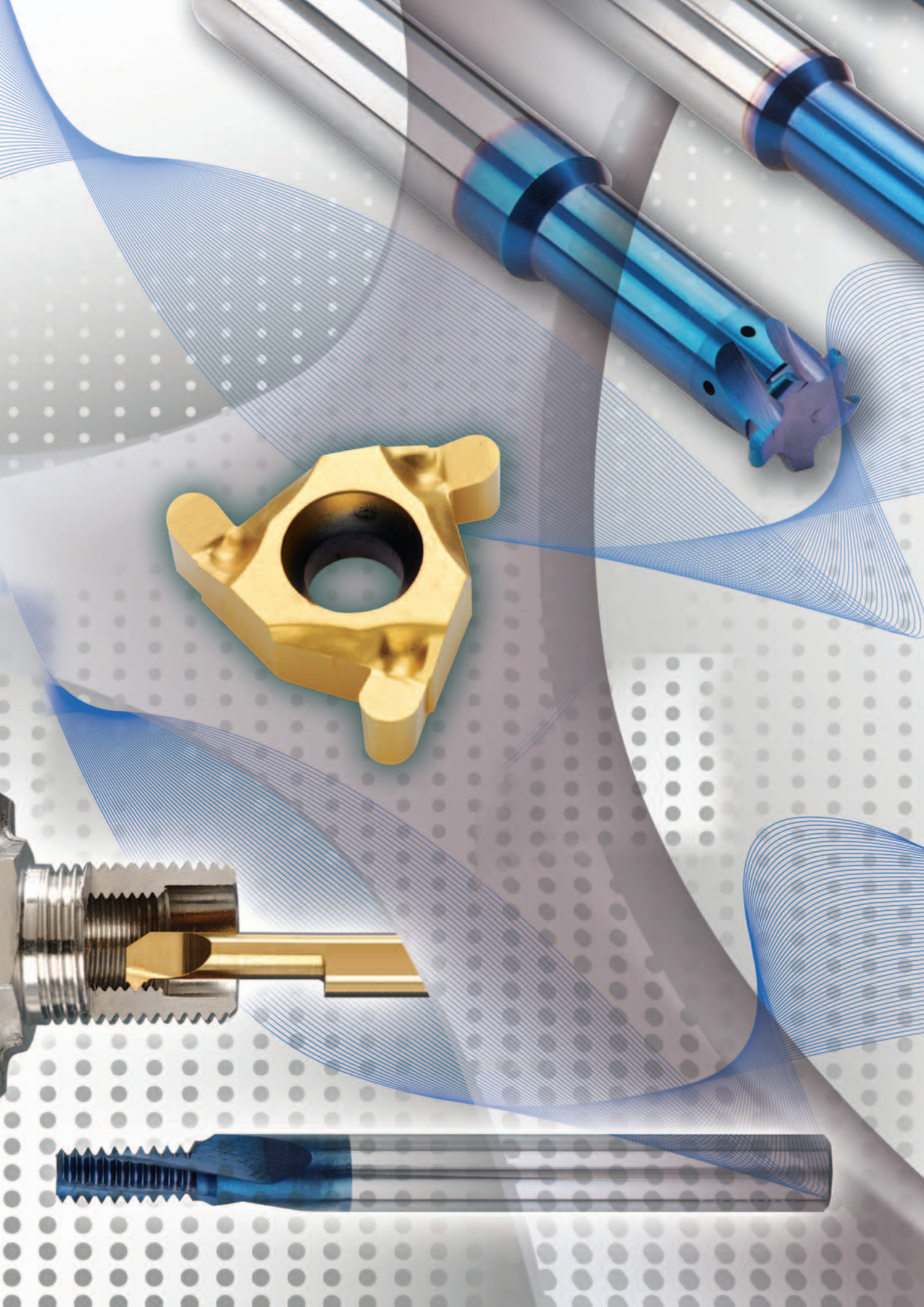
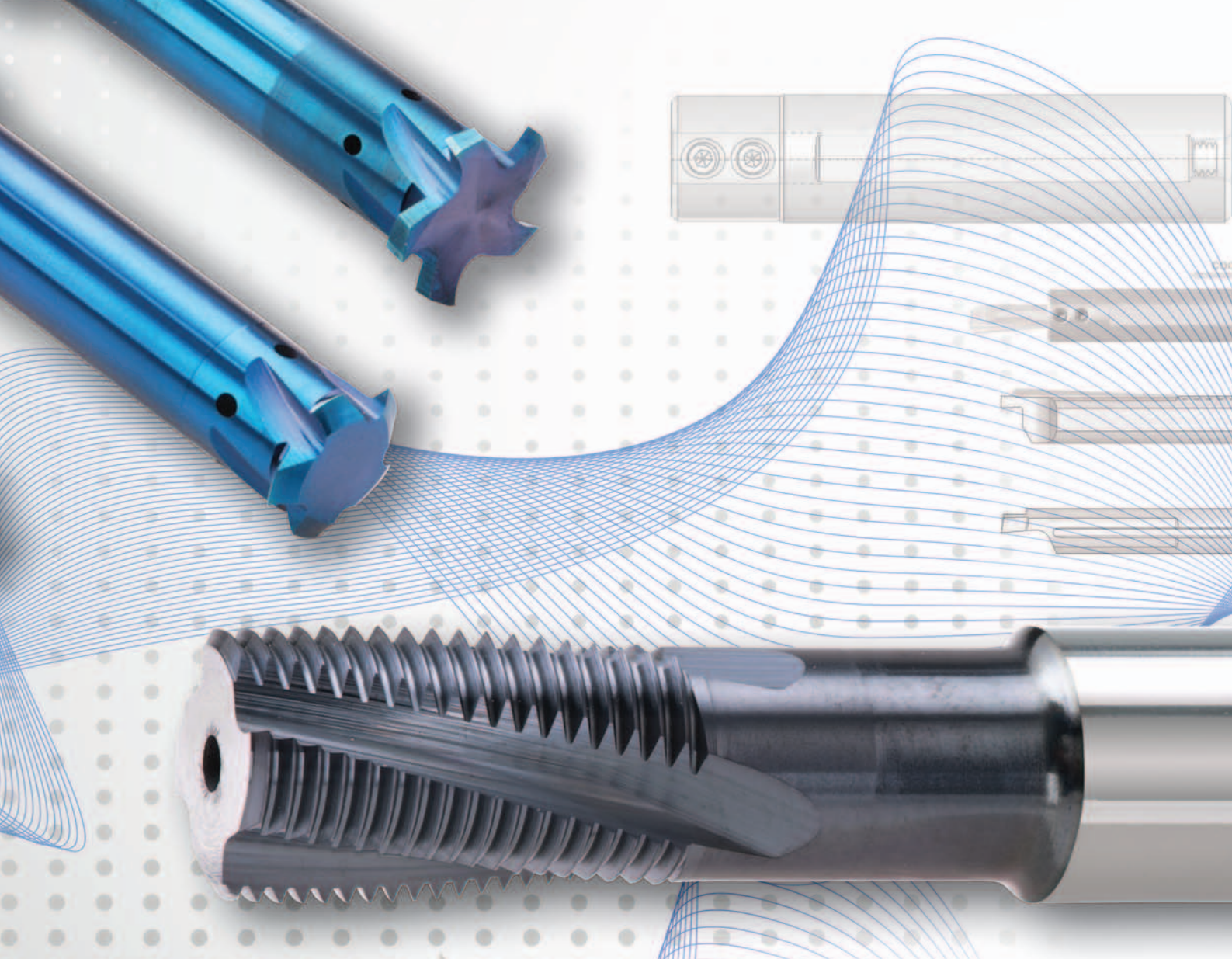
Metric 2009-10





Company Profile

CPT is a leading manufacturer of high quality cutting tools.

PRODUCT LINES

Thread Turning inserts and Tool holders, Mill-Thread inserts and Tool holders, Mill-Thread Solid Carbide, Spiral Mill-Thread, Grooving tools, Mini Chamfer mills and the Tiny-Tools line of small boring bars for threading, turning, grooving small parts. The company's different product lines are recognized worldwide as advanced technology, reliable full range lines that offer accurate geometry, excellent cutting performance and extended tool life. CPT also produces special tools in accordance with customer's requirements. CPT holds the ISO 9001:2008 certificate of international quality assurance. Our products and the service we provide, live up to the highest standards and outperform them. Most of our customers' requirements are supplied immediately from our readily available wide range of stock in Germany, as well as from our agents and distributors' stocks around the world. CPT is also in the process to be certified by the ISO 14001 environmental management systems as part of our policy of environmental care.

C.P.T.

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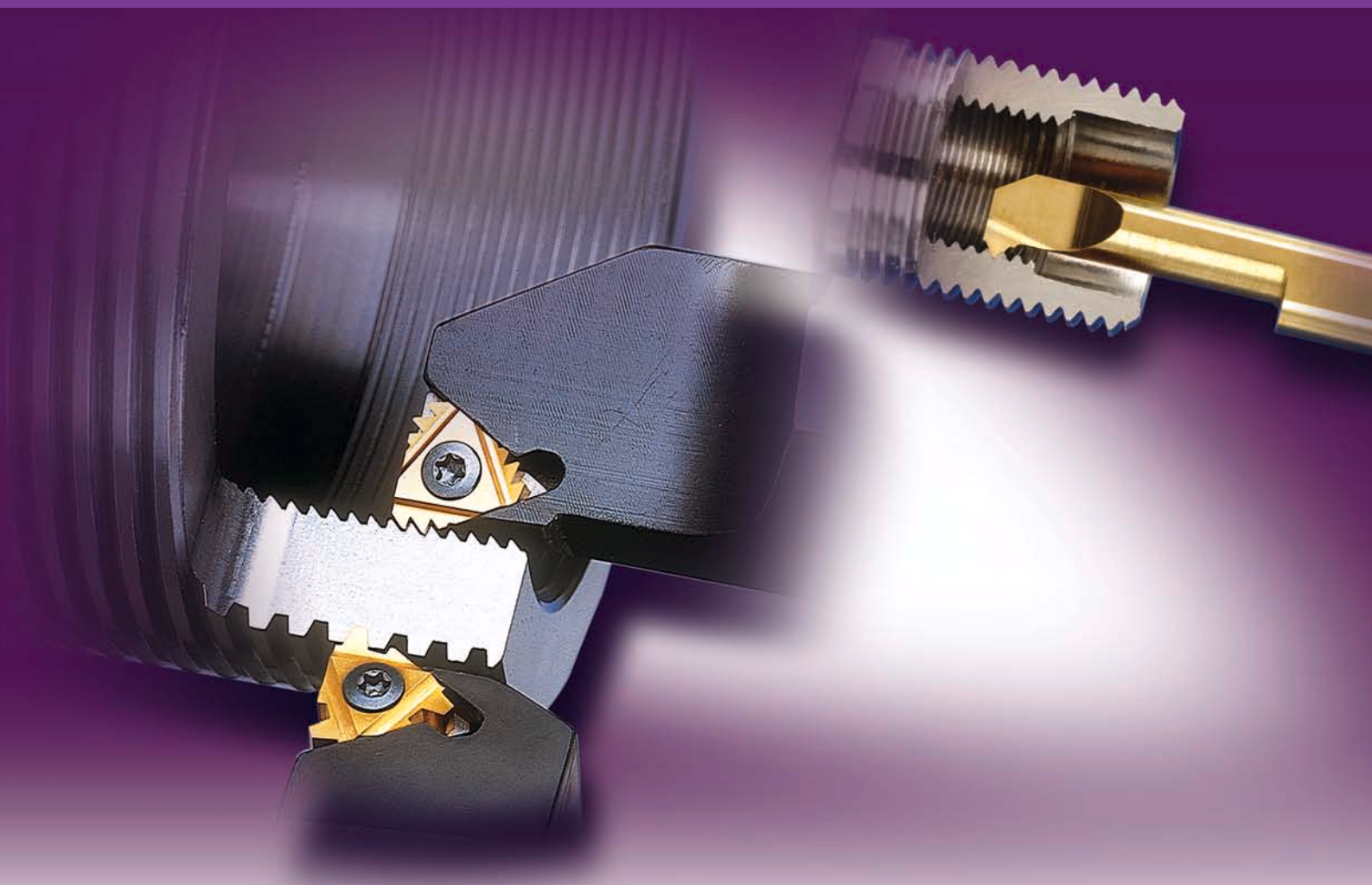
All specifications in this catalogue are subject to change without notice

Thread Turning Inserts



Type B Threading Inserts

A combination of ground profile and sintered chip-breaker threading inserts.

Unlike most other manufacturers' inserts, this combination ensures 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 C.P.T. Type B inserts are made of BMA: Sub - Micrograin grade with Titanium Aluminium Nitride multilayer coating.

Type B

EX-RH

IN-RH

Advantages:

- High profile accuracy
- A unique sintered chip-breaker form provides excellent performance
- Longer tool life

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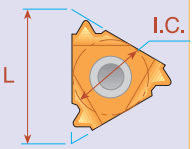
NPTF	19	American Buttress	27
BSPT	20	Oil Threads	28-30
Acme	21		
Stub Acme	22		

Product Identification

Thread Turning Inserts Ordering Codes

16	E	R		12	UN			BMA



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 = External
I = Internal

R = Right Hand
L = Left Hand

B = Type B

Pitch
in mm:
0.35-12

or TPI
(Threads
per Inch)
72-2

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

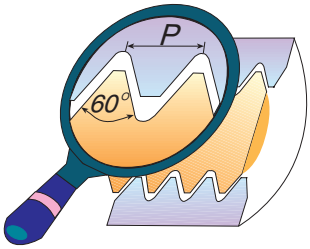
Partial Profiles:
A 60º
G 55º
AG
N
Q
U

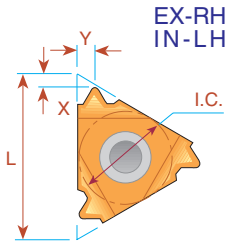
Multitooth style & number of teeth

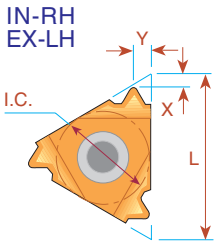
API size & taper

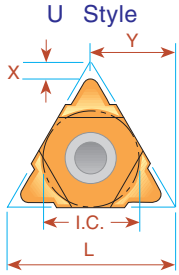
Carbide Grade:
P30
K20
BMA
MXC
P25C
BXC

Partial Profile 60°







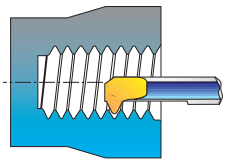


L	I.C. in	Pitch Range mm	Pitch Range TPI	EXTERNAL Ordering Code Right Hand	EXTERNAL Ordering Code Left Hand	INTERNAL Ordering Code Right Hand	INTERNAL Ordering Code Left Hand	X	Y
6	5/32	0.5 -1.25	48-20	*ULTRA MINIATURE* →		***06 IR A60**	***06 IL A60**	0.6	0.6
8	3/16	0.5 -1.5	48-16	*MINIATURE* →		***08 IR A60**	***08 IL A60**	0.6	0.7
8U	3/16U	1.75-2.0	14-11	*"U" MINIATURE* →		***08 IR/L U60**		0.8	4.0
11	1/4	0.5 -1.5	48-16	**11 ER A60**	**11 EL A60**	**11 IR A60**	**11 IL A60**	0.8	0.9
16	3/8	0.5 -1.5	48-16	**16 ER A60**	**16 EL A60**	**16 IR A60**	**16 IL A60**	0.8	0.9
16	3/8	1.75-3.0	14- 8	**16 ER G60**	**16 EL G60**	**16 IR G60**	**16 IL G60**	1.2	1.7
16	3/8	0.5 -3.0	48- 8	**16 ER AG60**	**16 EL AG60**	**16 IR AG60**	**16 IL AG60**	1.2	1.7
22	1/2	3.5 -5.0	7- 5	**22 ER N60**	**22 EL N60**	**22 IR N60**	**22 IL N60**	1.7	2.5
22U	1/2U	5.5 -8.0	4.5- 3.25	**22U E/I/R/L U60**				0.6	11.0
27	5/8	5.5 -6.0	4.5- 4	**27 ER Q60**	**27 EL Q60**	**27 IR Q60**	**27 IL Q60**	2.1	3.1
27U	5/8U	6.5 -9.0	4- 2.75	**27U E/I/R/L U60**				1.0	13.7

Order example: 16 ER G60 MXC

For small bore threading see page 146

* Available only in BXC grade



Type B

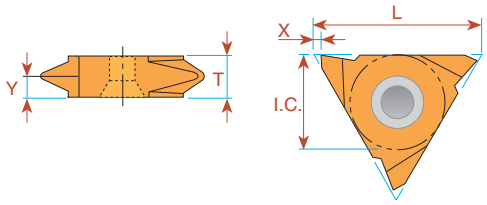
Ground Profile with Sintered Chip-breaker

L	I.C. in	Pitch Range mm	Pitch Range TPI	EXTERNAL Ordering Code Right Hand	INTERNAL Ordering Code Right Hand	X	Y
16	3/8	0.5 -1.5	48-16	**16 ER B A60**	**16 IR B A60**	0.8	0.9
16	3/8	1.75-3.0	14- 8	**16 ER B G60**	**16 IR B G60**	1.2	1.7
16	3/8	0.5 -3.0	48- 8	**16 ER B AG60**	**16 IR B AG60**	1.2	1.7

Order example: 16 ER B G60 BMA

For Carbide Grade and Cutting Speed see page 44

Partial Profile 60°
Vertical

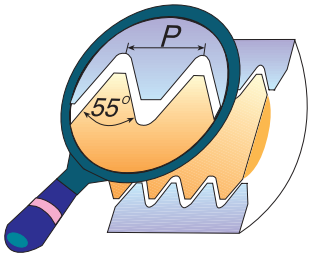


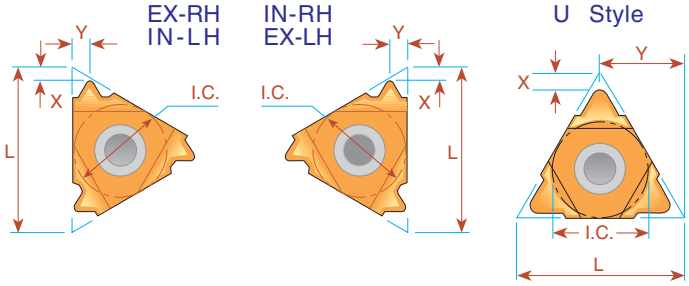
L	I.C. in	Pitch Range mm	TPI	EXTERNAL Ordering Code Right Hand	X	Y	T
16	3/8	0.5 -1.5	48-16	**16V ER A60**	1.0	0.9	3.6
16	3/8	1.75-3.0	14- 8	**16V ER G60**	1.0	1.8	3.6
16	3/8	0.5 -3.0	48- 8	**16V ER AG60**	1.0	1.8	3.6
22	1/2	1.75-3.0	14- 8	**22V ER G60**	1.2	1.7	4.0
22	1/2	3.5 -5.0	7- 5	**22V ER N60**	1.2	2.5	4.8

Order example: 16V ER G60 BMA

For Carbide Grade and Cutting Speed see page 44

Partial Profile 55°

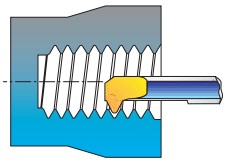




L	I.C. in	Pitch Range mm	Pitch Range TPI	EXTERNAL Ordering Code Right Hand	EXTERNAL Ordering Code Left Hand	INTERNAL Ordering Code Right Hand	INTERNAL Ordering Code Left Hand	X	Y
6	5/32	0.5 -1.25	48-20	*ULTRA MINIATURE* →		*06 IR A55	*06 IL A55	0.5	0.6
8	3/16	0.5 -1.5	48-16	*MINIATURE* →		*08 IR A55	*08 IL A55	0.6	0.7
8U	3/16U	1.75-2.0	14-11	*"U" MINIATURE* →		*08 IR/L U55		0.9	4.0
11	1/4	0.5 -1.5	48-16	11 ER A55	11 EL A55	11 IR A55	11 IL A55	0.8	0.9
16	3/8	0.5 -1.5	48-16	16 ER A55	16 EL A55	16 IR A55	16 IL A55	0.8	0.9
16	3/8	1.75-3.0	14- 8	16 ER G55	16 EL G55	16 IR G55	16 IL G55	1.2	1.7
16	3/8	0.5 -3.0	48- 8	16 ER AG55	16 EL AG55	16 IR AG55	16 IL AG55	1.2	1.7
22	1/2	3.5 -5.0	7- 5	22 ER N55	22 EL N55	22 IR N55	22 IL N55	1.7	2.5
22U	1/2U	5.5 -8.0	4.5- 3.25	22U E/I/R/L U55				0.9	11.0
27	5/8	5.5 -6.0	4.5- 4	27 ER Q55	27 EL Q55	27 IR Q55	27 IL Q55	2.0	2.9
27U	5/8U		4- 2.75	27U E/I/R/L U55				1.2	13.7

Order example: 16 ER G55 MXC

For small bore threading see page 146
* Available only in BXC grade



Type B

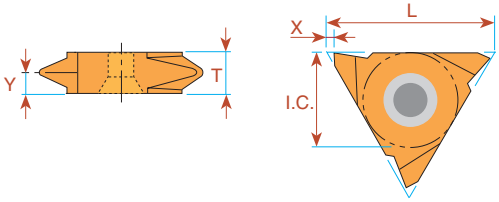
Ground Profile with Sintered Chip-breaker

L	I.C. in	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	1.2	1.7
16	3/8	0.5 -3.0	48- 8	16 ER B AG55	16 IR B AG55	1.2	1.7

Order example: 16 ER B G55 BMA

For Carbide Grade and Cutting Speed see page 44

Partial Profile 55°
Vertical

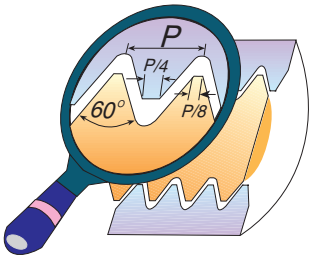


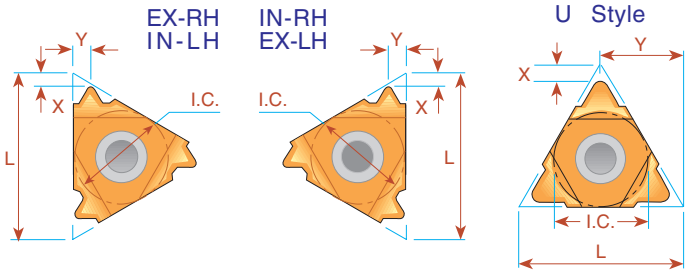
L	I.C. in	Pitch Range mm	Pitch Range TPI	EXTERNAL Ordering Code Right Hand	X	Y	T
16	3/8	0.5 -1.5	48-16	**16V ER A55**	1.0	0.9	3.6
16	3/8	1.75-3.0	14- 8	**16V ER G55**	1.0	1.7	3.6
16	3/8	0.5 -3.0	48- 8	**16V ER AG55**	1.0	1.8	3.6
22	1/2	3.5 -5.0	7- 5	**22V ER N55**	1.2	2.5	4.8

Order example: 22V ER N55 BMA

For Carbide grade and Cutting Speed see page 44

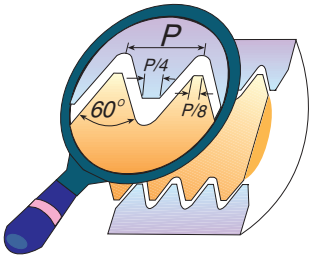
ISO - metric

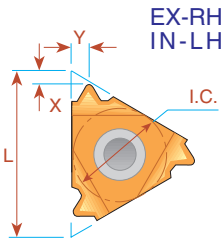


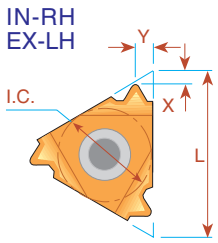


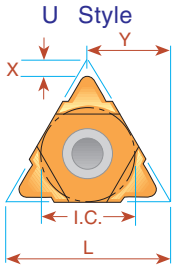
Pitch mm	L	I.C. in	EXTERNAL Ordering Code Right Hand	EXTERNAL Ordering Code Left Hand	X	Y	INTERNAL Ordering Code Right Hand	INTERNAL Ordering Code Left Hand	X	Y
0.5	6	5/32					*06 IR 0.5 ISO	*06 IL 0.5 ISO	0.9	0.5
0.75	6	5/32					*06 IR 0.75 ISO	*06 IL 0.75 ISO	0.8	0.5
1.0	6	5/32	ULTRA MINIATURE →				*06 IR 1.0 ISO	*06 IL 1.0 ISO	0.7	0.6
1.25	6	5/32					*06 IR 1.25 ISO	*06 IL 1.25 ISO	0.6	0.6
0.5	8	3/16					*08 IR 0.5 ISO	*08 IL 0.5 ISO	0.6	0.5
0.75	8	3/16					*08 IR 0.75 ISO	*08 IL 0.75 ISO	0.6	0.5
1.0	8	3/16					*08 IR 1.0 ISO	*08 IL 1.0 ISO	0.6	0.6
1.25	8	3/16	MINIATURE →				*08 IR 1.25 ISO	*08 IL 1.25 ISO	0.6	0.7
1.5	8	3/16					*08 IR 1.5 ISO	*08 IL 1.5 ISO	0.6	0.7
1.75	8	3/16					*08 IR 1.75 ISO	*08 IL 1.75 ISO	0.6	0.8
2.0	8U	3/16U	"U" MINIATURE →				*08U IR/L 2.0 ISO		0.9	4.0
0.35	11	1/4	11 ER 0.35 ISO	11 EL 0.35 ISO	0.8	0.4	11 IR 0.35 ISO	11 IL 0.35 ISO	0.8	0.3
0.4	11	1/4	11 ER 0.4 ISO	11 EL 0.4 ISO	0.7	0.4	11 IR 0.4 ISO	11 IL 0.4 ISO	0.8	0.4
0.45	11	1/4	11 ER 0.45 ISO	11 EL 0.45 ISO	0.7	0.4	11 IR 0.45 ISO	11 IL 0.45 ISO	0.8	0.4
0.5	11	1/4	11 ER 0.5 ISO	11 EL 0.5 ISO	0.6	0.6	11 IR 0.5 ISO	11 IL 0.5 ISO	0.6	0.6
0.6	11	1/4	11 ER 0.6 ISO	11 EL 0.6 ISO	0.6	0.6	11 IR 0.6 ISO	11 IL 0.6 ISO	0.6	0.6
0.7	11	1/4	11 ER 0.7 ISO	11 EL 0.7 ISO	0.6	0.6	11 IR 0.7 ISO	11 IL 0.7 ISO	0.6	0.6
0.75	11	1/4	11 ER 0.75 ISO	11 EL 0.75 ISO	0.6	0.6	11 IR 0.75 ISO	11 IL 0.75 ISO	0.6	0.6
0.8	11	1/4	11 ER 0.8 ISO	11 EL 0.8 ISO	0.6	0.6	11 IR 0.8 ISO	11 IL 0.8 ISO	0.6	0.6
1.0	11	1/4	11 ER 1.0 ISO	11 EL 1.0 ISO	0.7	0.7	11 IR 1.0 ISO	11 IL 1.0 ISO	0.6	0.7
1.25	11	1/4	11 ER 1.25 ISO	11 EL 1.25 ISO	0.8	0.9	11 IR 1.25 ISO	11 IL 1.25 ISO	0.8	0.8
1.5	11	1/4	11 ER 1.5 ISO	11 EL 1.5 ISO	0.8	1.0	11 IR 1.5 ISO	11 IL 1.5 ISO	0.8	1.0
1.75	11	1/4	11 ER 1.75 ISO	11 EL 1.75 ISO	0.8	1.1	11 IR 1.75 ISO	11 IL 1.75 ISO	0.8	1.1
2.0	11	1/4					11 IR 2.0 ISO	11 IL 2.0 ISO	0.8	0.9
2.5	11	1/4					11 IR 2.5 ISO	11 IL 2.5 ISO	0.8	1.2
0.35	16	3/8	16 ER 0.35 ISO	16 EL 0.35 ISO	0.8	0.4	16 IR 0.35 ISO	16 IL 0.35 ISO	0.8	0.3
0.4	16	3/8	16 ER 0.4 ISO	16 EL 0.4 ISO	0.7	0.4	16 IR 0.4 ISO	16 IL 0.4 ISO	0.8	0.4
0.45	16	3/8	16 ER 0.45 ISO	16 EL 0.45 ISO	0.7	0.4	16 IR 0.45 ISO	16 IL 0.45 ISO	0.8	0.4
0.5	16	3/8	16 ER 0.5 ISO	16 EL 0.5 ISO	0.6	0.6	16 IR 0.5 ISO	16 IL 0.5 ISO	0.6	0.6
0.6	16	3/8	16 ER 0.6 ISO	16 EL 0.6 ISO	0.6	0.6	16 IR 0.6 ISO	16 IL 0.6 ISO	0.6	0.6
0.7	16	3/8	16 ER 0.7 ISO	16 EL 0.7 ISO	0.6	0.6	16 IR 0.7 ISO	16 IL 0.7 ISO	0.6	0.6
0.75	16	3/8	16 ER 0.75 ISO	16 EL 0.75 ISO	0.6	0.6	16 IR 0.75 ISO	16 IL 0.75 ISO	0.6	0.6
0.8	16	3/8	16 ER 0.8 ISO	16 EL 0.8 ISO	0.6	0.6	16 IR 0.8 ISO	16 IL 0.8 ISO	0.6	0.6
1.0	16	3/8	16 ER 1.0 ISO	16 EL 1.0 ISO	0.7	0.7	16 IR 1.0 ISO	16 IL 1.0 ISO	0.6	0.7
1.25	16	3/8	16 ER 1.25 ISO	16 EL 1.25 ISO	0.8	0.9	16 IR 1.25 ISO	16 IL 1.25 ISO	0.8	0.9
1.5	16	3/8	16 ER 1.5 ISO	16 EL 1.5 ISO	0.8	1.0	16 IR 1.5 ISO	16 IL 1.5 ISO	0.8	1.0
1.75	16	3/8	16 ER 1.75 ISO	16 EL 1.75 ISO	0.9	1.2	16 IR 1.75 ISO	16 IL 1.75 ISO	0.9	1.2
2.0	16	3/8	16 ER 2.0 ISO	16 EL 2.0 ISO	1.0	1.3	16 IR 2.0 ISO	16 IL 2.0 ISO	1.0	1.3
2.5	16	3/8	16 ER 2.5 ISO	16 EL 2.5 ISO	1.1	1.5	16 IR 2.5 ISO	16 IL 2.5 ISO	1.1	1.5
3.0	16	3/8	16 ER 3.0 ISO	16 EL 3.0 ISO	1.2	1.6	16 IR 3.0 ISO	16 IL 3.0 ISO	1.1	1.5
3.5	16	3/8	16 ER 3.5 ISO	16 EL 3.5 ISO	1.2	1.7	16 IR 3.5 ISO	16 IL 3.5 ISO	1.2	1.7

ISO - metric







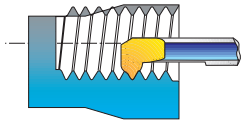


Pitch	L	I.C. in	EXTERNAL Ordering Code Right Hand	EXTERNAL Ordering Code Left Hand	X	Y	INTERNAL Ordering Code Right Hand	INTERNAL Ordering Code Left Hand	X	Y
3.5	22	1/2	22 ER 3.5 ISO	22 EL 3.5 ISO	1.6	2.3	22 IR 3.5 ISO	22 IL 3.5 ISO	1.6	2.3
4.0	22	1/2	22 ER 4.0 ISO	22 EL 4.0 ISO	1.6	2.3	22 IR 4.0 ISO	22 IL 4.0 ISO	1.6	2.3
4.5	22	1/2	22 ER 4.5 ISO	22 EL 4.5 ISO	1.7	2.4	22 IR 4.5 ISO	22 IL 4.5 ISO	1.6	2.4
5.0	22	1/2	22 ER 5.0 ISO	22 EL 5.0 ISO	1.7	2.5	22 IR 5.0 ISO	22 IL 5.0 ISO	1.6	2.3
5.5	22	1/2	22 ER 5.5 ISO	22 EL 5.5 ISO	1.7	2.6	22 IR 5.5 ISO	22 IL 5.5 ISO	1.6	2.3
6.0	22	1/2	22 ER 6.0 ISO	22 EL 6.0 ISO	1.9	2.7	22 IR 6.0 ISO	22 IL 6.0 ISO	1.6	2.4
5.5	22U	1/2U	22U ER/L 5.5 ISO		2.3	11.0	22U IR/L 5.5 ISO		2.4	11.0
6.0	22U	1/2U	22U ER/L 6.0 ISO		2.6	11.0	22U IR/L 6.0 ISO		2.1	11.0
5.5	27	5/8	27 ER 5.5 ISO	27 EL 5.5 ISO	1.9	2.7	27 IR 5.5 ISO	27 IL 5.5 ISO	1.6	2.3
6.0	27	5/8	27 ER 6.0 ISO	27 EL 6.0 ISO	2.0	2.9	27 IR 6.0 ISO	27 IL 6.0 ISO	1.8	2.5
8.0	27U	5/8U	27U ER/L 8.0 ISO		2.4	13.7	27U IR/L 8.0 ISO		2.4	13.7
12.0	33U	3/4U	33U ER/L 12.0 ISO		2.5	16.5	33U IR/L 12.0 ISO		3.5	16.9

Order example: 22 IR 3.5 ISO BMA

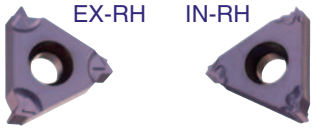
For small bore threading see page 147

* Available only in BXC grade



Type B

Ground Profile with Sintered Chip-breaker

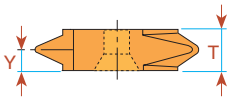


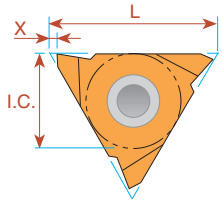
Pitch mm	L	I.C. in	EXTERNAL Ordering Code Right Hand	X	Y	INTERNAL Ordering Code Right Hand	X	Y
0.8	16	3/8	16 ER B 0.8 ISO	0.6	0.6			
1.0	16	3/8	16 ER B 1.0 ISO	0.7	0.7	16 IR B 1.0 ISO	0.6	0.7
1.25	16	3/8	16 ER B 1.25 ISO	0.8	0.9	16 IR B 1.25 ISO	0.8	0.9
1.5	16	3/8	16 ER B 1.5 ISO	0.8	1.0	16 IR B 1.5 ISO	0.8	1.0
1.75	16	3/8	16 ER B 1.75 ISO	0.9	1.2	16 IR B 1.75 ISO	0.9	1.2
2.0	16	3/8	16 ER B 2.0 ISO	1.0	1.3	16 IR B 2.0 ISO	1.0	1.3
2.5	16	3/8	16 ER B 2.5 ISO	1.1	1.5	16 IR B 2.5 ISO	1.1	1.5
3.0	16	3/8	16 ER B 3.0 ISO	1.2	1.6	16 IR B 3.0 ISO	1.1	1.5

Order example: 16 IR B 1.5 ISO BMA

For Carbide Grade and Cutting Speed see page 44

ISO - *metric*
Vertical

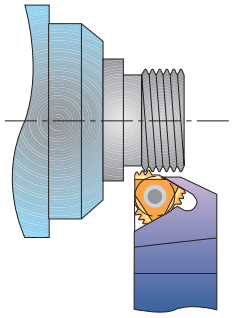


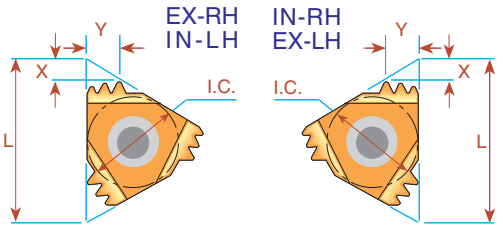


Pitch mm	L	I.C. in	*EXTERNAL* Ordering Code Right Hand	X	Y	T
1.0	16	3/8	**16V ER 1.0 ISO**	1.0	0.7	3.6
1.25	16	3/8	**16V ER 1.25 ISO**	1.0	0.9	3.6
1.5	16	3/8	**16V ER 1.5 ISO**	1.0	0.9	3.6
1.75	16	3/8	**16V ER 1.75 ISO**	1.0	1.2	3.6
2.0	16	3/8	**16V ER 2.0 ISO**	1.0	1.3	3.6
2.5	16	3/8	**16V ER 2.5 ISO**	1.0	1.5	3.6

Order example: 16V ER 1.5 ISO BMA

Multitooth





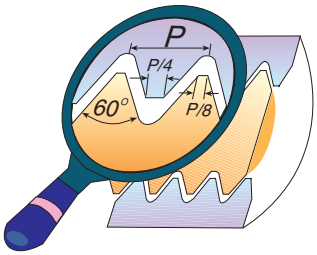
Pitch mm	L	I.C. in	Number of Teeth	*EXTERNAL* Ordering Code	Anvil	*INTERNAL* Ordering Code	Anvil	X	Y
1.0	16	3/8	3	**16 ER 1.0 ISO 3M**	AE16M	**16 IR 1.0 ISO 3M**	AI16M	1.7	2.5
1.5	16	3/8	2	**16 ER 1.5 ISO 2M**	AE16M	**16 IR 1.5 ISO 2M**	AI16M	1.5	2.3
1.5	22	1/2	3	**22 ER 1.5 ISO 3M**	AE22M	**22 IR 1.5 ISO 3M**	AI22M	2.3	3.7
2.0	22	1/2	2	**22 ER 2.0 ISO 2M**	AE22M	**22 IR 2.0 ISO 2M**	AI22M	2.0	3.0
2.0	22	1/2	3	**22 ER 2.0 ISO 3M**	AE22M	**22 IR 2.0 ISO 3M**	AI22M	3.1	5.0
3.0	27	5/8	2	**27 ER 3.0 ISO 2M**	AE27M	**27 IR 3.0 ISO 2M**	AI27M	2.9	4.6

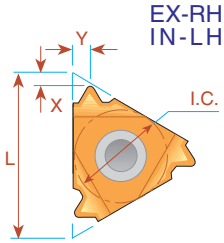
Order example: 22 IR 2.0 ISO 2M BMA

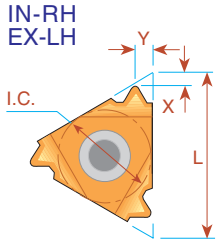
For recommended number of passes see page 45

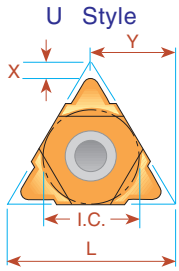
For Carbide grade and Cutting Speed see page 44

UN - Unified UNC, UNF, UNEF, UNS



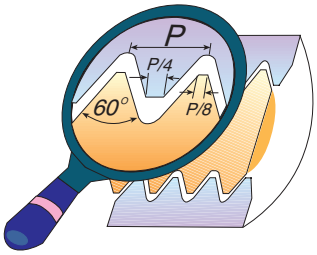


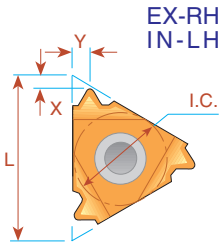


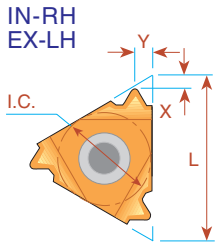


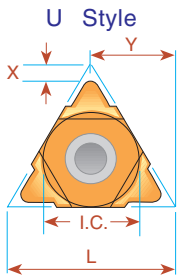
Pitch TPI	L	I.C. in	EXTERNAL Ordering Code Right Hand	EXTERNAL Ordering Code Left Hand	X	Y	INTERNAL Ordering Code Right Hand	INTERNAL Ordering Code Left Hand	X	Y
32	6	5/32					*06 IR 32 UN	*06 IL 32 UN	0.8	0.5
28	6	5/32					*06 IR 28 UN	*06 IL 28 UN	0.8	0.6
24	6	5/32	ULTRA MINIATURE →				*06 IR 24 UN	*06 IL 24 UN	0.7	0.6
20	6	5/32					*06 IR 20 UN	*06 IL 20 UN	0.6	0.6
18	6	5/32					*06 IR 18 UN	*06 IL 18 UN	0.6	0.7
32	8	3/16					*08 IR 32 UN	*08 IL 32 UN	0.6	0.5
28	8	3/16					*08 IR 28 UN	*08 IL 28 UN	0.6	0.6
24	8	3/16					*08 IR 24 UN	*08 IL 24 UN	0.6	0.6
20	8	3/16	MINIATURE →				*08 IR 20 UN	*08 IL 20 UN	0.6	0.7
18	8	3/16					*08 IR 18 UN	*08 IL 18 UN	0.6	0.7
16	8	3/16					*08 IR 16 UN	*08 IL 16 UN	0.6	0.7
14	8	3/16					*08 IR 14 UN	*08 IL 14 UN	0.6	0.8
13	8U	3/16U					*08U IR/L 13 UN		1.0	4.0
12	8U	3/16U	"U" MINIATURE →				*08U IR/L 12 UN		0.9	4.0
11	8U	3/16U					*08U IR/L 11 UN		0.9	4.0
72	11	1/4	11 ER 72 UN	11 EL 72 UN	0.8	0.4	11 IR 72 UN	11 IL 72 UN	0.8	0.3
64	11	1/4	11 ER 64 UN	11 EL 64 UN	0.8	0.4	11 IR 64 UN	11 IL 64 UN	0.8	0.4
56	11	1/4	11 ER 56 UN	11 EL 56 UN	0.7	0.4	11 IR 56 UN	11 IL 56 UN	0.7	0.4
48	11	1/4	11 ER 48 UN	11 EL 48 UN	0.6	0.6	11 IR 48 UN	11 IL 48 UN	0.6	0.6
44	11	1/4	11 ER 44 UN	11 EL 44 UN	0.6	0.6	11 IR 44 UN	11 IL 44 UN	0.6	0.6
40	11	1/4	11 ER 40 UN	11 EL 40 UN	0.6	0.6	11 IR 40 UN	11 IL 40 UN	0.6	0.6
36	11	1/4	11 ER 36 UN	11 EL 36 UN	0.6	0.6	11 IR 36 UN	11 IL 36 UN	0.6	0.6
32	11	1/4	11 ER 32 UN	11 EL 32 UN	0.6	0.6	11 IR 32 UN	11 IL 32 UN	0.6	0.6
28	11	1/4	11 ER 28 UN	11 EL 28 UN	0.6	0.7	11 IR 28 UN	11 IL 28 UN	0.6	0.7
27	11	1/4	11 ER 27 UN	11 EL 27 UN	0.7	0.8	11 IR 27 UN	11 IL 27 UN	0.7	0.8
24	11	1/4	11 ER 24 UN	11 EL 24 UN	0.7	0.8	11 IR 24 UN	11 IL 24 UN	0.7	0.8
20	11	1/4	11 ER 20 UN	11 EL 20 UN	0.8	0.9	11 IR 20 UN	11 IL 20 UN	0.8	0.9
18	11	1/4	11 ER 18 UN	11 EL 18 UN	0.8	1.0	11 IR 18 UN	11 IL 18 UN	0.8	1.0
16	11	1/4	11 ER 16 UN	11 EL 16 UN	0.9	1.1	11 IR 16 UN	11 IL 16 UN	0.9	1.1
14	11	1/4	11 ER 14 UN	11 EL 14 UN	0.9	1.1	11 IR 14 UN	11 IL 14 UN	0.9	1.1
13	11	1/4					11 IR 13 UN	11 IL 13 UN	0.8	1.0
12	11	1/4					11 IR 12 UN	11 IL 12 UN	0.9	1.1
11	11	1/4					11 IR 11 UN	11 IL 11 UN	0.8	1.1
72	16	3/8	16 ER 72 UN	16 EL 72 UN	0.8	0.4	16 IR 72 UN	16 IL 72 UN	0.8	0.3
64	16	3/8	16 ER 64 UN	16 EL 64 UN	0.8	0.4	16 IR 64 UN	16 IL 64 UN	0.8	0.4
56	16	3/8	16 ER 56 UN	16 EL 56 UN	0.7	0.4	16 IR 56 UN	16 IL 56 UN	0.7	0.4
48	16	3/8	16 ER 48 UN	16 EL 48 UN	0.6	0.6	16 IR 48 UN	16 IL 48 UN	0.6	0.6
44	16	3/8	16 ER 44 UN	16 EL 44 UN	0.6	0.6	16 IR 44 UN	16 IL 44 UN	0.6	0.6
40	16	3/8	16 ER 40 UN	16 EL 40 UN	0.6	0.6	16 IR 40 UN	16 IL 40 UN	0.6	0.6
36	16	3/8	16 ER 36 UN	16 EL 36 UN	0.6	0.6	16 IR 36 UN	16 IL 36 UN	0.6	0.6

UN - Unified UNC, UNF, UNEF, UNS







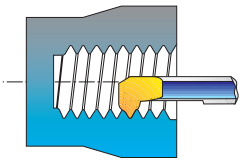


Pitch TPI	L	I.C. in	EXTERNAL Ordering Code Right Hand	EXTERNAL Ordering Code Left Hand	X	Y	INTERNAL Ordering Code Right Hand	INTERNAL Ordering Code Left Hand	X	Y
32	16	3/8	16 ER 32 UN	16 EL 32 UN	0.6	0.6	16 IR 32 UN	16 IL 32 UN	0.6	0.6
28	16	3/8	16 ER 28 UN	16 EL 28 UN	0.6	0.7	16 IR 28 UN	16 IL 28 UN	0.6	0.7
27	16	3/8	16 ER 27 UN	16 EL 27 UN	0.7	0.8	16 IR 27 UN	16 IL 27 UN	0.7	0.8
24	16	3/8	16 ER 24 UN	16 EL 24 UN	0.7	0.8	16 IR 24 UN	16 IL 24 UN	0.7	0.8
20	16	3/8	16 ER 20 UN	16 EL 20 UN	0.8	0.9	16 IR 20 UN	16 IL 20 UN	0.8	0.9
18	16	3/8	16 ER 18 UN	16 EL 18 UN	0.8	1.0	16 IR 18 UN	16 IL 18 UN	0.8	1.0
16	16	3/8	16 ER 16 UN	16 EL 16 UN	0.9	1.1	16 IR 16 UN	16 IL 16 UN	0.9	1.1
14	16	3/8	16 ER 14 UN	16 EL 14 UN	1.0	1.2	16 IR 14 UN	16 IL 14 UN	0.9	1.2
13	16	3/8	16 ER 13 UN	16 EL 13 UN	1.0	1.3	16 IR 13 UN	16 IL 13 UN	1.0	1.3
12	16	3/8	16 ER 12 UN	16 EL 12 UN	1.1	1.4	16 IR 12 UN	16 IL 12 UN	1.1	1.4
11.5	16	3/8	16 ER 11.5 UN	16 EL 11.5 UN	1.1	1.5	16 IR 11.5 UN	16 IL 11.5 UN	1.1	1.5
11	16	3/8	16 ER 11 UN	16 EL 11 UN	1.1	1.5	16 IR 11 UN	16 IL 11 UN	1.1	1.5
10	16	3/8	16 ER 10 UN	16 EL 10 UN	1.1	1.5	16 IR 10 UN	16 IL 10 UN	1.1	1.5
9	16	3/8	16 ER 9 UN	16 EL 9 UN	1.2	1.7	16 IR 9 UN	16 IL 9 UN	1.2	1.7
8	16	3/8	16 ER 8 UN	16 EL 8 UN	1.2	1.6	16 IR 8 UN	16 IL 8 UN	1.1	1.5
7	22	1/2	22 ER 7 UN	22 EL 7 UN	1.6	2.3	22 IR 7 UN	22 IL 7 UN	1.6	2.3
6	22	1/2	22 ER 6 UN	22 EL 6 UN	1.6	2.3	22 IR 6 UN	22 IL 6 UN	1.6	2.3
5	22	1/2	22 ER 5 UN	22 EL 5 UN	1.7	2.5	22 IR 5 UN	22 IL 5 UN	1.6	2.3
4.5	22U	1/2U	22U ER/L 4.5 UN		2.0	11.0	22U IR/L 4.5 UN		2.4	11.0
4	22U	1/2U	22U ER/L 4 UN		2.0	11.0	22U IR/L 4 UN		2.4	11.0
4.5	27	5/8	27 ER 4.5 UN	27 EL 4.5 UN	1.9	2.7	27 IR 4.5 UN	27 IL 4.5 UN	1.7	2.4
4	27	5/8	27 ER 4 UN	27 EL 4 UN	2.1	3.0	27 IR 4 UN	27 IL 4 UN	1.8	2.7
3	27U	5/8U	27U ER/L 3 UN		2.5	13.7	27U IR/L 3 UN		2.7	13.7
2	33U	3/4U	33U ER/L 2 UN		2.8	16.5	33U IR/L 2 UN		3.6	16.9

Order example: 16 ER 12 UN BMA

For small bore threading see page 147

* Available only in BXC grade

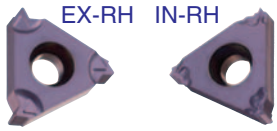


For Carbide Grade and Cutting Speed see page 44

UN - Unified UNC, UNF, UNEF, UNS

Type B

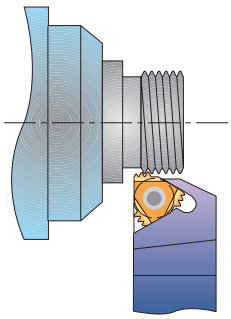
Ground Profile with Sintered Chip-breaker

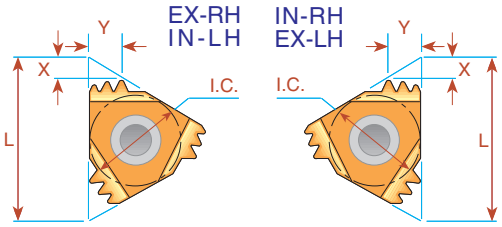


Pitch TPI	L	I.C. in	EXTERNAL Ordering Code Right Hand	X	Y	INTERNAL Ordering Code Right Hand	X	Y
24	16	3/8	16 ER B 24 UN	0.7	0.8	16 IR B 24 UN	0.7	0.8
20	16	3/8	16 ER B 20 UN	0.8	0.9	16 IR B 20 UN	0.8	0.9
18	16	3/8	16 ER B 18 UN	0.8	1.0	16 IR B 18 UN	0.8	1.0
16	16	3/8	16 ER B 16 UN	0.9	1.1	16 IR B 16 UN	0.9	1.1
14	16	3/8	16 ER B 14 UN	1.0	1.2	16 IR B 14 UN	0.9	1.2
13	16	3/8	16 ER B 13 UN	1.0	1.3			
12	16	3/8	16 ER B 12 UN	1.1	1.4	16 IR B 12 UN	1.1	1.4
11	16	3/8	16 ER B 11 UN	1.1	1.5			
10	16	3/8	16 ER B 10 UN	1.1	1.5	16 IR B 10 UN	1.1	1.5
9	16	3/8	16 ER B 9 UN	1.2	1.7			
8	16	3/8	16 ER B 8 UN	1.2	1.6	16 IR B 8 UN	1.1	1.1

Order example: 16 IR B 12 UN BMA

Multitooth





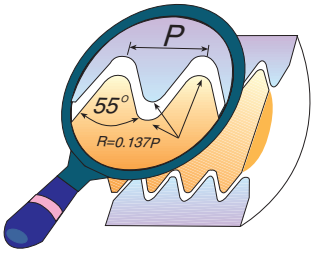
Pitch TPI	L	I.C. in	Number of Teeth	EXTERNAL Ordering Code	Anvil	INTERNAL Ordering Code	Anvil	X	Y
16	16	3/8	2	16 ER 16 UN 2M	AE16M	16 IR 16 UN 2M	AI16M	1.5	2.3
16	22	1/2	3	22 ER 16 UN 3M	AE22M	22 IR 16 UN 3M	AI22M	2.5	4.0
12	22	1/2	2	22 ER 12 UN 2M	AE22M	22 IR 12 UN 2M	AI22M	2.2	3.4
12	22	1/2	3	22 ER 12 UN 3M	AE22M	22 IR 12 UN 3M	AI22M	3.3	5.3
8	27	5/8	2	27 ER 8 UN 2M	AE27M	27 IR 8 UN 2M	AI27M	3.1	4.9

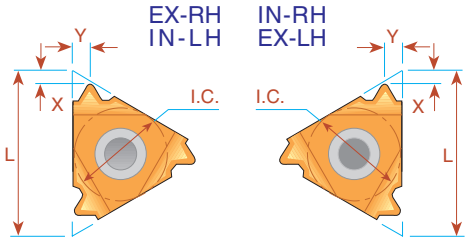
Order example: 22 IR 16 UN 3M BMA

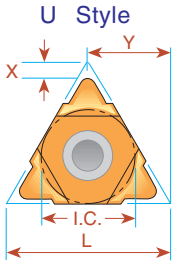
For recommended number of passes see page 45

For Carbide Grade and Cutting Speed see page 44

Whitworth - 55° BSW, BSF, BSP, BSB

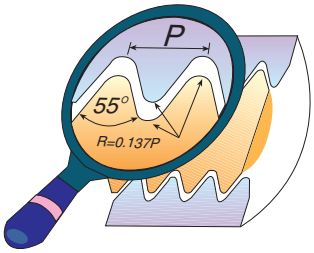


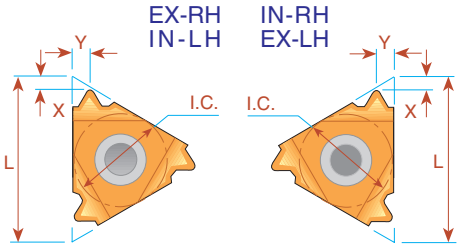


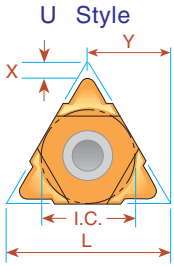


Pitch TPI	L	I.C. in	EXTERNAL Ordering Code Right Hand	EXTERNAL Ordering Code Left Hand	INTERNAL Ordering Code Right Hand	INTERNAL Ordering Code Left Hand	X	Y
26	6	5/32			*06 IR 26 W	*06 IL 26 W	0.7	0.6
22	6	5/32	ULTRA MINIATURE →		*06 IR 22 W	*06 IL 22 W	0.6	0.6
20	6	5/32			*06 IR 20 W	*06 IL 20 W	0.6	0.7
18	6	5/32			*06 IR 18 W	*06 IL 18 W	0.6	0.7
28	8	3/16			*08 IR 28 W	*08 IL 28 W	0.6	0.6
24	8	3/16			*08 IR 24 W	*08 IL 24 W	0.6	0.6
20	8	3/16	MINIATURE →		*08 IR 20 W	*08 IL 20 W	0.6	0.7
19	8	3/16			*08 IR 19 W	*08 IL 19 W	0.6	0.7
18	8	3/16			*08 IR 18 W	*08 IL 18 W	0.6	0.7
16	8	3/16			*08 IR 16 W	*08 IL 16 W	0.6	0.7
14	8U	3/16U			*08U IR/L 14 W		1.0	4.0
12	8U	3/16U	"U" MINIATURE →		*08U IR/L 12 W		0.9	4.0
11	8U	3/16U			*08U IR/L 11 W		0.9	4.0
72	11	1/4	11 ER 72 W	11 EL 72 W	11 IR 72 W	11 IL 72 W	0.7	0.4
60	11	1/4	11 ER 60 W	11 EL 60 W	11 IR 60 W	11 IL 60 W	0.7	0.4
56	11	1/4	11 ER 56 W	11 EL 56 W	11 IR 56 W	11 IL 56 W	0.7	0.4
48	11	1/4	11 ER 48 W	11 EL 48 W	11 IR 48 W	11 IL 48 W	0.6	0.6
40	11	1/4	11 ER 40 W	11 EL 40 W	11 IR 40 W	11 IL 40 W	0.6	0.6
36	11	1/4	11 ER 36 W	11 EL 36 W	11 IR 36 W	11 IL 36 W	0.6	0.6
32	11	1/4	11 ER 32 W	11 EL 32 W	11 IR 32 W	11 IL 32 W	0.6	0.6
28	11	1/4	11 ER 28 W	11 EL 28 W	11 IR 28 W	11 IL 28 W	0.6	0.7
26	11	1/4	11 ER 26 W	11 EL 26 W	11 IR 26 W	11 IL 26 W	0.7	0.7
24	11	1/4	11 ER 24 W	11 EL 24 W	11 IR 24 W	11 IL 24 W	0.7	0.8
22	11	1/4	11 ER 22 W	11 EL 22 W	11 IR 22 W	11 IL 22 W	0.8	0.9
20	11	1/4	11 ER 20 W	11 EL 20 W	11 IR 20 W	11 IL 20 W	0.8	0.9
19	11	1/4	11 ER 19 W	11 EL 19 W	11 IR 19 W	11 IL 19 W	0.8	1.0
18	11	1/4	11 ER 18 W	11 EL 18 W	11 IR 18 W	11 IL 18 W	0.8	1.0
16	11	1/4	11 ER 16 W	11 EL 16 W	11 IR 16 W	11 IL 16 W	0.9	1.1
14	11	1/4	11 ER 14 W	11 EL 14 W	11 IR 14 W	11 IL 14 W	0.9	1.1
12	11	1/4			11 IR 12 W	11 IL 12 W	1.0	1.1
11	11	1/4			11 IR 11 W	11 IL 11 W	0.9	1.2
72	16	3/8	16 ER 72 W	16 EL 72 W	16 IR 72 W	16 IL 72 W	0.7	0.4
60	16	3/8	16 ER 60 W	16 EL 60 W	16 IR 60 W	16 IL 60 W	0.7	0.4
56	16	3/8	16 ER 56 W	16 EL 56 W	16 IR 56 W	16 IL 56 W	0.7	0.4
48	16	3/8	16 ER 48 W	16 EL 48 W	16 IR 48 W	16 IL 48 W	0.6	0.6
40	16	3/8	16 ER 40 W	16 EL 40 W	16 IR 40 W	16 IL 40 W	0.6	0.6
36	16	3/8	16 ER 36 W	16 EL 36 W	16 IR 36 W	16 IL 36 W	0.6	0.6
32	16	3/8	16 ER 32 W	16 EL 32 W	16 IR 32 W	16 IL 32 W	0.6	0.6
28	16	3/8	16 ER 28 W	16 EL 28 W	16 IR 28 W	16 IL 28 W	0.6	0.7
26	16	3/8	16 ER 26 W	16 EL 26 W	16 IR 26 W	16 IL 26 W	0.7	0.7
24	16	3/8	16 ER 24 W	16 EL 24 W	16 IR 24 W	16 IL 24 W	0.7	0.8

Whitworth - 55° BSW, BSF, BSP, BSB







Pitch TPI	L	I.C. in	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	0.8	0.9
20	16	3/8	16 ER 20 W	16 EL 20 W	16 IR 20 W	16 IL 20 W	0.8	0.9
19	16	3/8	16 ER 19 W	16 EL 19 W	16 IR 19 W	16 IL 19 W	0.8	1.0
18	16	3/8	16 ER 18 W	16 EL 18 W	16 IR 18 W	16 IL 18 W	0.8	1.0
16	16	3/8	16 ER 16 W	16 EL 16 W	16 IR 16 W	16 IL 16 W	0.9	1.1
14	16	3/8	16 ER 14 W	16 EL 14 W	16 IR 14 W	16 IL 14 W	1.0	1.2
12	16	3/8	16 ER 12 W	16 EL 12 W	16 IR 12 W	16 IL 12 W	1.1	1.4
11	16	3/8	16 ER 11 W	16 EL 11 W	16 IR 11 W	16 IL 11 W	1.1	1.5
10	16	3/8	16 ER 10 W	16 EL 10 W	16 IR 10 W	16 IL 10 W	1.1	1.5
9	16	3/8	16 ER 9 W	16 EL 9 W	16 IR 9 W	16 IL 9 W	1.2	1.7
8	16	3/8	16 ER 8 W	16 EL 8 W	16 IR 8 W	16 IL 8 W	1.2	1.5
7	22	1/2	22 ER 7 W	22 EL 7 W	22 IR 7 W	22 IL 7 W	1.6	2.3
6	22	1/2	22 ER 6 W	22 EL 6 W	22 IR 6 W	22 IL 6 W	1.6	2.3
5	22	1/2	22 ER 5 W	22 EL 5 W	22 IR 5 W	22 IL 5 W	1.7	2.4
4.5	22U	1/2U	22U E/I/R/L 4.5W				2.3	11.0
4	22U	1/2U	22U E/I/R/L 4 W				1.8	11.0
4.5	27	5/8	27 ER 4.5W	27 EL 4.5W	27 IR 4.5W	27 IL 4.5W	1.8	2.6
4	27	5/8	27 ER 4 W	27 EL 4 W	27 IR 4 W	27 IL 4 W	2.0	2.9
3.5	27U	5/8U	27U E/I/R/L 3.5 W				2.1	13.7
3.25	27U	5/8U	27U EI/R/L 3.25W				2.0	13.7
3	27U	5/8U	27U E/I/R/L 3 W				2.3	13.7
2.75	27U	5/8U	27U E/I/R/L 2.75W				2.4	13.7

Order example: 16 IR 18 W BMA

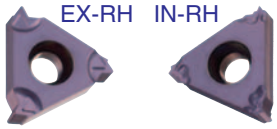
* Available only in BXC grade

For Carbide Grade and Cutting Speed see page 44

Whitworth - 55° BSW, BSF, BSP, BSB

Type B

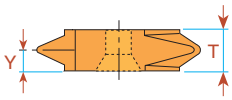
Ground Profile with Sintered Chip-breaker

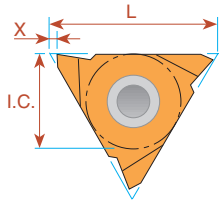


Pitch TPI	L	I.C. in	EXTERNAL Ordering Code Right Hand	INTERNAL Ordering Code Right Hand	X	Y
19	16	3/8	16 ER B 19 W	16 IR B 19 W	0.8	1.0
16	16	3/8	16 ER B 16 W	16 IR B 16 W	0.9	1.1
14	16	3/8	16 ER B 14 W	16 IR B 14 W	1.0	1.2
11	16	3/8	16 ER B 11 W	16 IR B 11 W	1.1	1.5
10	16	3/8	16 ER B 10 W	16 IR B 10 W	1.1	1.5

Order example: 16 IR B 10 W BMA

Vertical

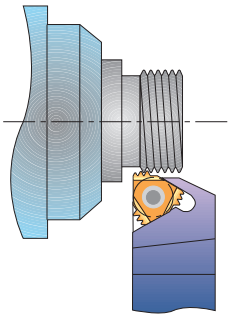


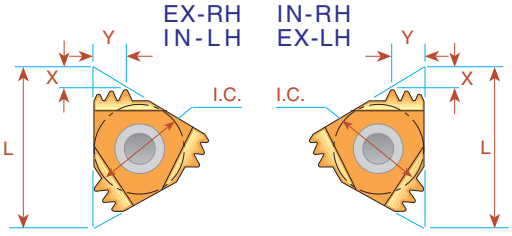


Pitch TPI	L	I.C. in	EXTERNAL Ordering Code Right Hand	X	Y	T
19	16	3/8	16V ER 19 W	1.0	0.9	3.6
14	16	3/8	16V ER 14 W	1.0	1.2	3.6
11	16	3/8	16V ER 11 W	1.0	1.5	3.6

Order example: 16V ER 14 W MXC

Multitooth





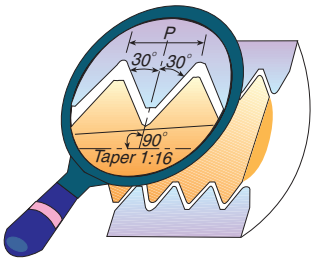
Pitch TPI	L	I.C. in	Number of Teeth	EXTERNAL Ordering Code	Anvil	INTERNAL Ordering Code	Anvil	X	Y
14	16	3/8	2	16 ER 14 W 2M	AE16M	16 IR 14 W 2M	AI16M	1.7	2.7
14	22	1/2	3	22 ER 14 W 3M	AE22M	22 IR 14 W 3M	AI22M	2.8	4.5
11	22	1/2	2	22 ER 11 W 2M	AE22M	22 IR 11 W 2M	AI22M	2.3	3.4

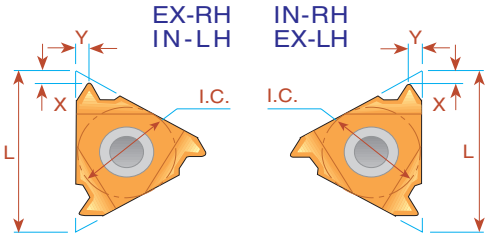
Order example: 22 IR 14 W 3M BMA

For recommended number of passes see page 45

For Carbide Grade and Cutting Speed see page 44

NPT





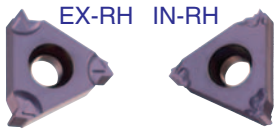
Pitch TPI	L	I.C. in	EXTERNAL Ordering Code Right Hand	EXTERNAL Ordering Code Left Hand	INTERNAL Ordering Code Right Hand	INTERNAL Ordering Code Left Hand	X	Y
27	6	5/32	*ULTRA MINIATURE* →		* 06 IR 27 NPT	* 06 IL 27 NPT	0.6	0.6
27	8	3/16	*MINIATURE* →		* 08 IR 27 NPT	* 08 IL 27 NPT	0.6	0.6
18	8	3/16			* 08 IR 18 NPT	* 08 IL 18 NPT	0.6	0.6
27	11	1/4	11 ER 27 NPT	11 EL 27 NPT	11 IR 27 NPT	11 IL 27 NPT	0.7	0.8
18	11	1/4	11 ER 18 NPT	11 EL 18 NPT	11 IR 18 NPT	11 IL 18 NPT	0.8	1.0
14	11	1/4	11 ER 14 NPT	11 EL 14 NPT	11 IR 14 NPT	11 IL 14 NPT	0.8	1.0
27	16	3/8	16 ER 27 NPT	16 EL 27 NPT	16 IR 27 NPT	16 IL 27 NPT	0.7	0.8
18	16	3/8	16 ER 18 NPT	16 EL 18 NPT	16 IR 18 NPT	16 IL 18 NPT	0.8	1.0
14	16	3/8	16 ER 14 NPT	16 EL 14 NPT	16 IR 14 NPT	16 IL 14 NPT	0.9	1.2
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	1.1	1.5
8	16	3/8	16 ER 8 NPT	16 EL 8 NPT	16 IR 8 NPT	16 IL 8 NPT	1.3	1.8

Order example: 16 ER 14 NPT MXC

* Available only in BXC grade

Type B

Ground Profile with Sintered Chip-breaker

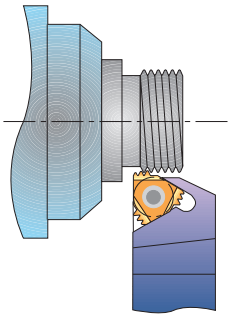


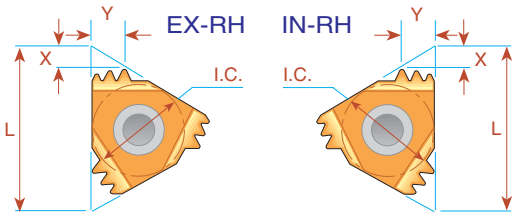
Pitch TPI	L	I.C. in	EXTERNAL Ordering Code Right Hand	INTERNAL Ordering Code Right Hand	X	Y
18	16	3/8	16 ER B 18 NPT	16 IR B 18 NPT	0.8	1.0
14	16	3/8	16 ER B 14 NPT	16 IR B 14 NPT	0.9	1.2
11.5	16	3/8	16 ER B 11.5 NPT	16 IR B 11.5 NPT	1.1	1.5
8	16	3/8	16 ER B 8 NPT	16 IR B 8 NPT	1.3	1.8

Order example: 16 IR B 11.5 NPT BMA

For Carbide Grade and Cutting Speed see page 44

NPT
Multitooth



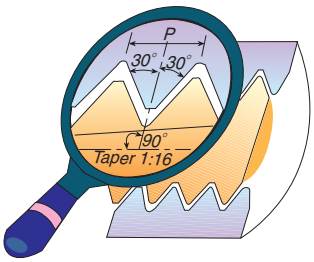


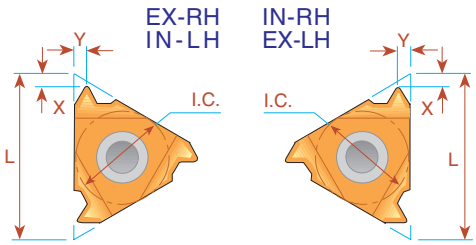
Pitch TPI	L	I.C. in	Number of Teeth	EXTERNAL Ordering Code	Anvil	INTERNAL Ordering Code	Anvil	X	Y
11.5	22	1/2	2	22 ER 11.5 NPT 2M	AE22M	22 IR 11.5 NPT 2M	AI22M	2.3	3.5
11.5	27	5/8	3	27 ER 11.5 NPT 3M	AE27M	27 IR 11.5 NPT 3M	AI27M	3.3	5.5
8	27	5/8	2	27 ER 8 NPT 2M	AE27M	27 IR 8 NPT 2M	AI27M	3.1	5.0

Order example: 27 IR 11.5 NPT 3M BMA

For recommended number of passes see page 45

NPTF - Dryseal





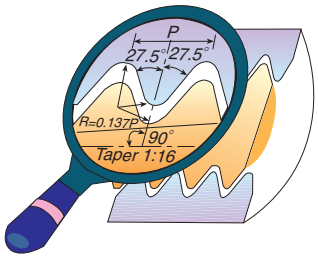
Pitch TPI	L	I.C. in	EXTERNAL Ordering Code Right Hand	EXTERNAL Ordering Code Left Hand	INTERNAL Ordering Code Right Hand	INTERNAL Ordering Code Left Hand	X	Y
27	6	5/32	ULTRA MINIATURE →		*06 IR 27 NPTF	*06 IL 27 NPTF	0.7	0.6
27	8	3/16	MINIATURE →		*08 IR 27 NPTF	*08 IL 27 NPTF	0.6	0.6
18	8	3/16			*08 IR 18 NPTF	*08 IL 18 NPTF	0.6	0.6
27	11	1/4	11 ER 27 NPTF	11 EL 27 NPTF	11 IR 27 NPTF	11 IL 27 NPTF	0.7	0.7
18	11	1/4	11 ER 18 NPTF	11 EL 18 NPTF	11 IR 18 NPTF	11 IL 18 NPTF	0.8	1.0
14	11	1/4	11 ER 14 NPTF	11 EL 14 NPTF	11 IR 14 NPTF	11 IL 14 NPTF	0.8	1.0
27	16	3/8	16 ER 27 NPTF	16 EL 27 NPTF	16 IR 27 NPTF	16 IL 27 NPTF	0.7	0.7
18	16	3/8	16 ER 18 NPTF	16 EL 18 NPTF	16 IR 18 NPTF	16 IL 18 NPTF	0.8	1.0
14	16	3/8	16 ER 14 NPTF	16 EL 14 NPTF	16 IR 14 NPTF	16 IL 14 NPTF	0.9	1.2
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	1.1	1.5
8	16	3/8	16 ER 8 NPTF	16 EL 8 NPTF	16 IR 8 NPTF	16 IL 8 NPTF	1.3	1.8

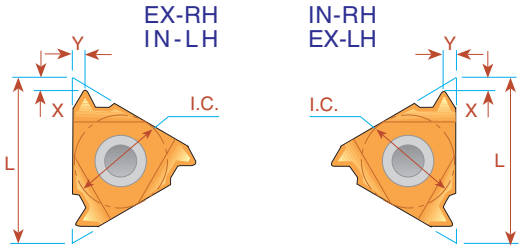
Order example: 11 ER 27 NPTF BMA

* Available only in BXC grade

For Carbide Grade and Cutting Speed see page 44

BSPT





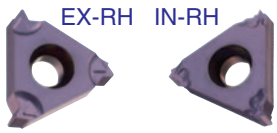
Pitch TPI	L	I.C. in	EXTERNAL Ordering Code Right Hand	EXTERNAL Ordering Code Left Hand	INTERNAL Ordering Code Right Hand	INTERNAL Ordering Code Left Hand	X	Y
28	6	5/32	*ULTRA MINIATURE* →		* 06 IR 28 BSPT	* 06 IL 28 BSPT	0.7	0.6
28	8	3/16	*MINIATURE* →		* 08 IR 28 BSPT	* 08 IL 28 BSPT	0.6	0.6
19	8	3/16			* 08 IR 19 BSPT	* 08 IL 19 BSPT	0.6	0.6
28	11	1/4			11 IR 28 BSPT	11 IL 28 BSPT	0.6	0.6
19	11	1/4			11 IR 19 BSPT	11 IL 19 BSPT	0.8	0.9
14	11	1/4			11 IR 14 BSPT	11 IL 14 BSPT	0.9	1.0
28	16	3/8	16 ER 28 BSPT	16 EL 28 BSPT	16 IR 28 BSPT	16 IL 28 BSPT	0.6	0.6
19	16	3/8	16 ER 19 BSPT	16 EL 19 BSPT	16 IR 19 BSPT	16 IL 19 BSPT	0.8	0.9
14	16	3/8	16 ER 14 BSPT	16 EL 14 BSPT	16 IR 14 BSPT	16 IL 14 BSPT	1.0	1.2
11	16	3/8	16 ER 11 BSPT	16 EL 11 BSPT	16 IR 11 BSPT	16 IL 11 BSPT	1.1	1.5

Order example: 11 IR 14 BSPT BMA

* Available only in BXC grade

Type B

Ground Profile with Sintered Chip-breaker

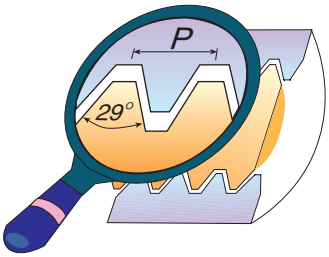


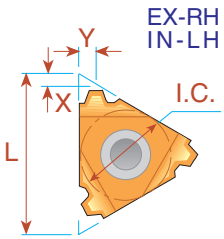
Pitch TPI	L	I.C. in	EXTERNAL Ordering Code Right Hand	INTERNAL Ordering Code Right Hand	X	Y
19	16	3/8	16 ER B 19 BSPT		1.0	1.1
14	16	3/8	16 ER B 14 BSPT	16 IR B 14 BSPT	1.2	1.0
11	16	3/8	16 ER B 11 BSPT	16 IR B 11 BSPT	1.5	1.1

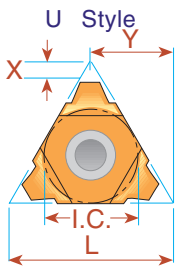
Order example: 16 ER B 11 BSPT BMA

For Carbide Grade and Cutting Speed see page 44

Acme







Pitch TPI	L	I.C. in	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	0.6	0.6
14	8U	3/16U			*08U IR/L 14 ACME		0.8	4.0
12	8U	3/16U	*"U" MINIATURE* →		*08U IR/L 12 ACME		0.8	4.0
10	8U	3/16U			*08U IR/L 10 ACME		0.8	4.0
16	11	1/4	11 ER 16 ACME	11 EL 16 ACME	11 IR 16 ACME	11 IL 16 ACME	0.9	1.0
16	16	3/8	16 ER 16 ACME	16 EL 16 ACME	16 IR 16 ACME	16 IL 16 ACME	0.9	1.0
14	16	3/8	16 ER 14 ACME	16 EL 14 ACME	16 IR 14 ACME	16 IL 14 ACME	1.0	1.2
12	16	3/8	16 ER 12 ACME	16 EL 12 ACME	16 IR 12 ACME	16 IL 12 ACME	1.1	1.2
10	16	3/8	16 ER 10 ACME	16 EL 10 ACME	16 IR 10 ACME	16 IL 10 ACME	1.3	1.3
8	16	3/8	16 ER 8 ACME	16 EL 8 ACME	16 IR 8 ACME	16 IL 8 ACME	1.5	1.5
6	16	3/8	16 ER 6 ACME	16 EL 6 ACME	16 IR 6 ACME	16 IL 6 ACME	1.7	1.8
6	22	1/2	22 ER 6 ACME	22 EL 6 ACME	22 IR 6 ACME	22 IL 6 ACME	1.8	2.1
5	22	1/2	22 ER 5 ACME	22 EL 5 ACME	22 IR 5 ACME	22 IL 5 ACME	2.0	2.3
4	22U	1/2U	22U ER/L 4 ACME		22U IR/L 4 ACME		2.3	11.0
4	27	5/8	27 ER 4 ACME	27 EL 4 ACME	27 IR 4 ACME	27 IL 4 ACME	2.3	2.7
3	27U	5/8U	27U ER/L 3 ACME		27U IR/L 3 ACME		2.8	13.7
2	33U	3/4U	33U ER/L 2 ACME		33U IR/L 2ACME		4.3	16.9

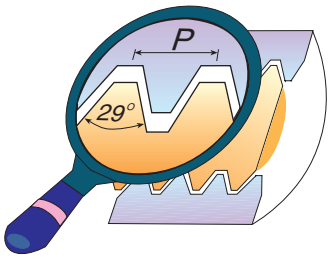
Order example: 16 ER 16 ACME MXC

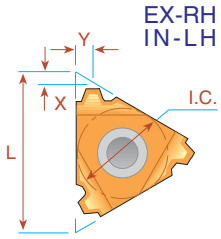
* Available only in BXC grade

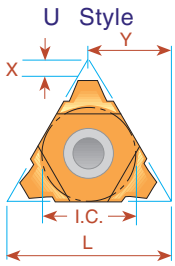
** One cutting edge

For Carbide Grade and Cutting Speed see page 44

Stub Acme







Pitch TPI	L	I.C. in	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 IR16 STACME	**08 IL16 STACME	0.6	0.6
14	8U	3/16U			*08U IR/L 14 STACME		0.8	4.0
12	8U	3/16U	*"U" MINIATURE* →		*08U IR/L 12 STACME		0.9	4.0
10	8U	3/16U			*08U IR/L 10 STACME		1.0	4.0
16	11	1/4	11 ER 16 STACME	11 EL 16 STACME			1.0	1.0
16	16	3/8	16 ER 16 STACME	16 EL 16 STACME	16 IR 16 STACME	16 IL 16 STACME	1.0	1.0
14	16	3/8	16 ER 14 STACME	16 EL 14 STACME	16 IR 14 STACME	16 IL 14 STACME	1.1	1.1
12	16	3/8	16 ER 12 STACME	16 EL 12 STACME	16 IR 12 STACME	16 IL 12 STACME	1.2	1.2
10	16	3/8	16 ER 10 STACME	16 EL 10 STACME	16 IR 10 STACME	16 IL 10 STACME	1.3	1.3
8	16	3/8	16 ER 8 STACME	16 EL 8 STACME	16 IR 8 STACME	16 IL 8 STACME	1.5	1.5
6	16	3/8	16 ER 6 STACME	16 EL 6 STACME	16 IR 6 STACME	16 IL 6 STACME	1.8	1.8
5	22	1/2	22 ER 5 STACME	22 EL 5 STACME	22 IR 5 STACME	22 IL 5 STACME	2.0	2.3
4	22U	1/2U	22U ER/L 4 STACME		22U IR/L 4 STACME		2.5	11.0
3	22U	1/2U	22U ER/L 3 STACME		22U IR/L 3 STACME		3.3	11.0
4	27	5/8	27 ER 4 STACME	27 EL 4 STACME	27 IR 4 STACME	27 IL 4 STACME	2.3	2.4
3	27	5/8	27 ER 3 STACME	27 EL 3 STACME	27 IR 3 STACME	27 IL 3 STACME	2.8	2.9
2	33U	3/4U	33U ER/L 2 STACME		33U IR/L 2 STACME		5.0	16.9

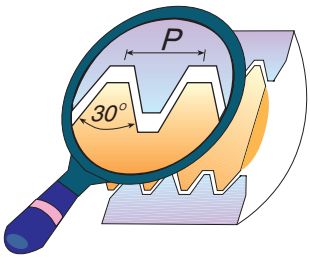
Order example: 22 IR 5 STACME MXC

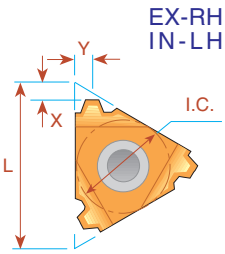
* Available only in BXC grade

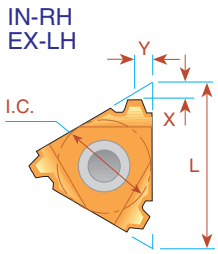
** One cutting edge

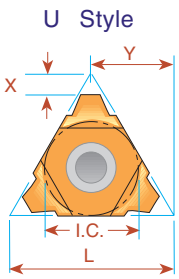
For Carbide Grade and Cutting Speed see page 44

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	0.6	0.6
2.0	8U	3/16U	*"U" MINIATURE* →		*08U IR/L 2 TR		0.9	4.0
1.5	16	3/8	16 ER 1.5 TR	16 EL 1.5 TR			1.0	1.1
2.0	16	3/8	16 ER 2 TR	16 EL 2 TR	16 IR 2 TR	16 IL 2 TR	1.0	1.3
3.0	16	3/8	16 ER 3 TR	16 EL 3 TR	16 IR 3 TR	16 IL 3 TR	1.3	1.5
4.0	22	1/2	22 ER 4 TR	22 EL 4 TR	22 IR 4 TR	22 IL 4 TR	1.8	1.9
5.0	22	1/2	22 ER 5 TR	22 EL 5 TR	22 IR 5 TR	22 IL 5 TR	2.0	2.4
6.0	22	1/2	22 ER 6 TR	22 EL 6 TR	22 IR 6 TR	22 IL 6 TR	2.0	2.4
6.0	22U	1/2U	22U ER/L 6 TR		22U IR/L 6 TR		2.0	11.00
7.0	22U	1/2U	22U ER/L 7 TR		22U IR/L 7 TR		2.3	11.00
8.0	22U	1/2U	22U ER/L 8 TR		22U IR/L 8 TR		2.5	11.00
6.0	27	5/8	27 ER 6 TR	27 EL 6 TR	27 IR 6 TR	27 IL 6 TR	2.3	2.7
7.0	27	5/8	27 ER 7 TR	27 EL 7 TR	27 IR 7 TR	27 IL 7 TR	2.2	2.6
8.0	27U	5/8U	27U ER/L 8 TR		27U IR/L 8 TR		2.5	13.7
9.0	27U	5/8U	27U ER/L 9 TR		27U IR/L 9 TR		3.0	13.7
10.0	27U	5/8U	**27U ER/L 10 TR		**27U IR/L 10 TR		3.2	13.7
12.0	33U	3/4U	33U ER/L 12 TR		33U IR/L 12 TR		3.9	16.9

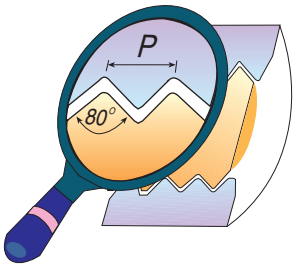
Order example: 22 IR 5 TR MXC

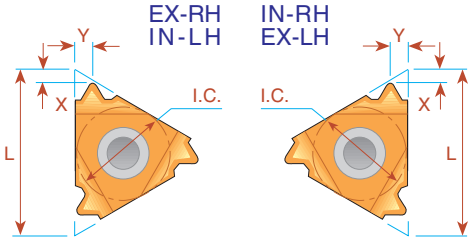
* Available only in BXC grade

** One cutting edge

For Carbide Grade and Cutting Speed see page 44

PG - DIN 40430



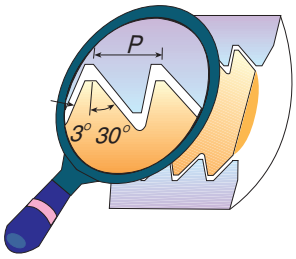


Pitch TPI	L	I.C. in	EXTERNAL Ordering Code Right Hand	Standard	INTERNAL Ordering Code Right Hand	Standard	X	Y
20	8	3/16	*MINIATURE* →		***08 IR 20 PG**	(PG 7)	0.6	0.7
18	11	1/4			**11 IR 18 PG**	(PG 9)	0.8	0.9
20	16	3/8	**16 ER 20 PG**	(PG 7)			0.7	0.8
18	16	3/8	**16 ER 18 PG**	(PG 9,11,13.5, 16)	**16 IR 18 PG**	(PG 11,13.5, 16)	0.8	0.9
16	16	3/8	**16 ER 16 PG**	(PG 21, 29, 36, 42, 48)	**16 IR 16 PG**	(PG 21, 29, 36, 42, 48)	0.8	1.0

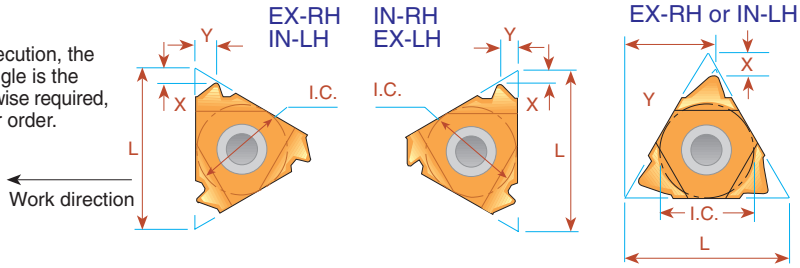
Order example: 16 ER 16 PG BMA

* Available only in BXC grade

Sagengewinde - DIN 513



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



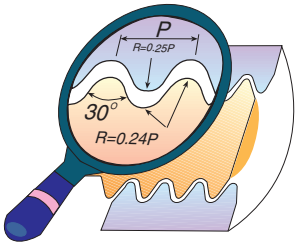
Pitch mm	L	I.C. in	EXTERNAL Ordering Code Right Hand	Left Hand	X	Y	INTERNAL Ordering Code Right Hand	Left Hand	X	Y
2.0	16	3/8	**16 ER 2 SAGE**	**16 EL 2 SAGE**	1.1	1.6	**16 IR 2 SAGE**	**16 IL 2 SAGE**	1.2	1.7
3.0	22	1/2	**22 ER 3 SAGE**	**22 EL 3 SAGE**	1.5	2.4	**22 IR 3 SAGE**	**22 IL 3 SAGE**	1.9	2.9
4.0	22	1/2	**22 ER 4 SAGE**	**22 EL 4 SAGE**	1.9	3.1	**22 IR 4 SAGE**	**22 IL 4 SAGE**	2.3	3.5
* 5.0	22U	1/2U	**22U ER 5 SAGE**	**22U EL 5 SAGE**	1.2	11.6	**22U IR 5 SAGE**	**22U IL 5 SAGE**	1.9	11.7
* 6.0	22U	1/2U	**22U ER 6 SAGE**	**22U EL 6 SAGE**	1.2	11.7	**22U IR 6 SAGE**	**22U IL 6 SAGE**	2.1	11.9

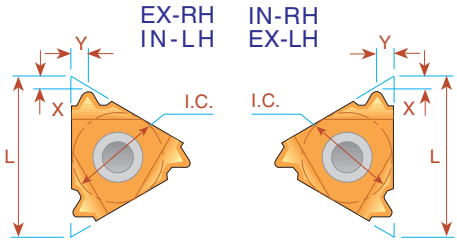
Order example: 22 IR 4 SAGE BMA

* Requires a special anvil

For Carbide Grade and Cutting Speed see page 44

Round - DIN 405

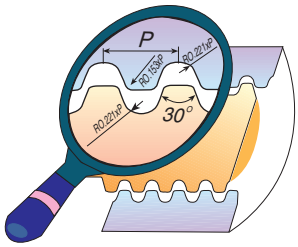


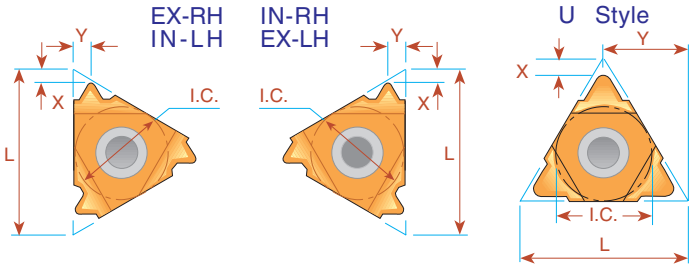


Pitch TPI	L	I.C. in	EXTERNAL Ordering Code Right Hand	EXTERNAL Ordering Code Left Hand	X	Y	INTERNAL Ordering Code Right Hand	INTERNAL Ordering Code Left Hand	X	Y
10	16	3/8	**16 ER 10 RD**	**16 EL 10 RD**	1.1	1.2	**16 IR 10 RD**	**16 IL 10 RD**	1.1	1.2
8	16	3/8	**16 ER 8 RD**	**16 EL 8 RD**	1.4	1.3	**16 IR 8 RD**	**16 IL 8 RD**	1.4	1.4
6	16	3/8	**16 ER 6 RD**	**16 EL 6 RD**	1.5	1.7	**16 IR 6 RD**	**16 IL 6 RD**	1.4	1.5
6	22	1/2	**22 ER 6 RD**	**22 EL 6 RD**	1.5	1.7	**22 IR 6 RD**	**22 IL 6 RD**	1.5	1.7
4	22	1/2	**22 ER 4 RD**	**22 EL 4 RD**	2.2	2.3	**22 IR 4 RD**	**22 IL 4 RD**	2.2	2.3
4	27	5/8	**27 ER 4 RD**	**27 EL 4 RD**	2.2	2.3	**27 IR 4 RD**	**27 IL 4 RD**	2.2	2.3

Order example: 27 IL 4 RD BMA

Round - DIN 20400





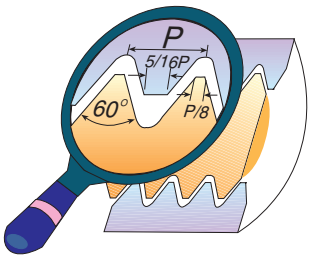
Pitch mm	L	I.C. in	EXTERNAL Ordering Code Right Hand	INTERNAL Ordering Code Right Hand	X	Y
4.0	22	1/2	**22 ER 4.0 RD 20400**	**22 IR 4.0 RD 20400**	1.4	1.4
5.0	22	1/2	**22 ER 5.0 RD 20400**	**22 IR 5.0 RD 20400**	1.7	1.8
6.0	22	1/2	**22 ER 6.0 RD 20400**	**22 IR 6.0 RD 20400**	1.7	2.0
8.0	27U	5/8U	*** 27U - 8.0 RD 20400**	***27U - 8.0 RD 20400**	3.0	13.7

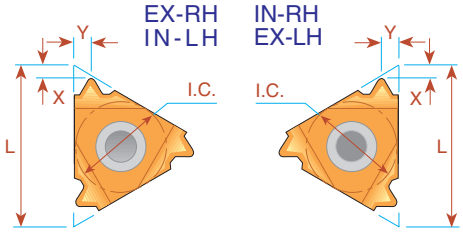
Order example: 22 ER 4.0 RD 20400 MXC

* Same insert for Internal and External Right Hand Thread

For Carbide Grade and Cutting Speed see page 44

UNJ UNJC, UNJF, UNJEF, UNJS



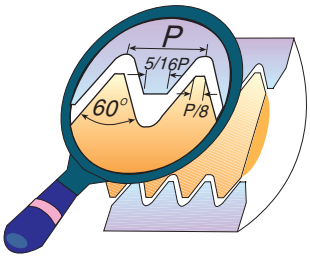


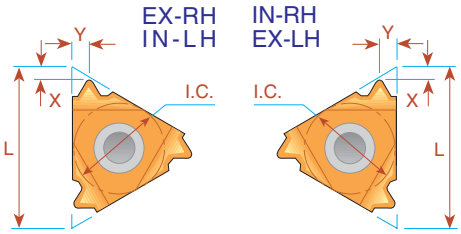
Pitch TPI	L	I.C. in	EXTERNAL Ordering Code Right Hand	EXTERNAL Ordering Code Left Hand	INTERNAL Ordering Code Right Hand	INTERNAL Ordering Code Left Hand	X	Y
48	11	1/4	11 ER 48 UNJ	11 EL 48 UNJ	11 IR 48 UNJ	11 IL 48 UNJ	0.6	0.6
44	11	1/4	11 ER 44 UNJ	11 EL 44 UNJ	11 IR 44 UNJ	11 IL 44 UNJ	0.6	0.6
40	11	1/4	11 ER 40 UNJ	11 EL 40 UNJ	11 IR 40 UNJ	11 IL 40 UNJ	0.6	0.6
36	11	1/4	11 ER 36 UNJ	11 EL 36 UNJ	11 IR 36 UNJ	11 IL 36 UNJ	0.6	0.6
32	11	1/4	11 ER 32 UNJ	11 EL 32 UNJ	11 IR 32 UNJ	11 IL 32 UNJ	0.6	0.6
28	11	1/4	11 ER 28 UNJ	11 EL 28 UNJ	11 IR 28 UNJ	11 IL 28 UNJ	0.6	0.6
24	11	1/4	11 ER 24 UNJ	11 EL 24 UNJ	11 IR 24 UNJ	11 IL 24 UNJ	0.7	0.8
20	11	1/4	11 ER 20 UNJ	11 EL 20 UNJ	11 IR 20 UNJ	11 IL 20 UNJ	0.8	0.9
18	11	1/4	11 ER 18 UNJ	11 EL 18 UNJ	11 IR 18 UNJ	11 IL 18 UNJ	0.8	1.0
16	11	1/4	11 ER 16 UNJ	11 EL 16 UNJ	11 IR 16 UNJ	11 IL 16 UNJ	0.8	1.0
14	11	1/4	11 ER 14 UNJ	11 EL14 UNJ	11 IR 14 UNJ	11 IL 14 UNJ	0.9	1.0
48	16	3/8	16 ER 48 UNJ	16 EL 48 UNJ	16 IR 48 UNJ	16 IL 48 UNJ	0.6	0.6
44	16	3/8	16 ER 44 UNJ	16 EL 44 UNJ	16 IR 44 UNJ	16 IL 44 UNJ	0.6	0.6
40	16	3/8	16 ER 40 UNJ	16 EL 40 UNJ	16 IR 40 UNJ	16 IL 40 UNJ	0.6	0.6
36	16	3/8	16 ER 36 UNJ	16 EL 36 UNJ	16 IR 36 UNJ	16 IL 36 UNJ	0.6	0.6
32	16	3/8	16 ER 32 UNJ	16 EL 32 UNJ	16 IR 32 UNJ	16 IL 32 UNJ	0.6	0.6
28	16	3/8	16 ER 28 UNJ	16 EL 28 UNJ	16 IR 28 UNJ	16 IL 28 UNJ	0.6	0.6
24	16	3/8	16 ER 24 UNJ	16 EL 24 UNJ	16 IR 24 UNJ	16 IL 24 UNJ	0.7	0.8
20	16	3/8	16 ER 20 UNJ	16 EL 20 UNJ	16 IR 20 UNJ	16 IL 20 UNJ	0.8	0.9
18	16	3/8	16 ER 18 UNJ	16 EL 18 UNJ	16 IR 18 UNJ	16 IL 18 UNJ	0.8	1.0
16	16	3/8	16 ER 16 UNJ	16 EL 16 UNJ	16 IR 16 UNJ	16 IL 16 UNJ	0.8	1.0
14	16	3/8	16 ER 14 UNJ	16 EL 14 UNJ	16 IR 14 UNJ	16 IL 14 UNJ	1.0	1.2
13	16	3/8	16 ER 13 UNJ	16 EL 13 UNJ	16 IR 13 UNJ	16 IL 13 UNJ	1.0	1.3
12	16	3/8	16 ER 12 UNJ	16 EL 12 UNJ	16 IR 12 UNJ	16 IL 12 UNJ	1.1	1.4
11	16	3/8	16 ER 11 UNJ	16 EL 11 UNJ	16 IR 11 UNJ	16 IL 11 UNJ	1.1	1.5
10	16	3/8	16 ER 10 UNJ	16 EL 10 UNJ	16 IR 10 UNJ	16 IL 10 UNJ	1.1	1.5
9	16	3/8	16 ER 9 UNJ	16 EL 9 UNJ	16 IR 9 UNJ	16 IL 9 UNJ	1.2	1.6
8	16	3/8	16 ER 8 UNJ	16 EL 8 UNJ	16 IR 8 UNJ	16 IL 8 UNJ	1.2	1.6

Order example: 16 IR 16 UNJ MXC

For Carbide Grade and Cutting Speed see page 44

MJ - ISO 5855

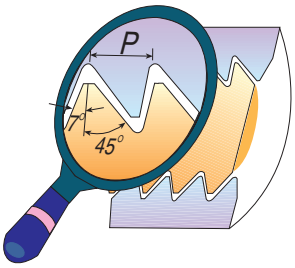




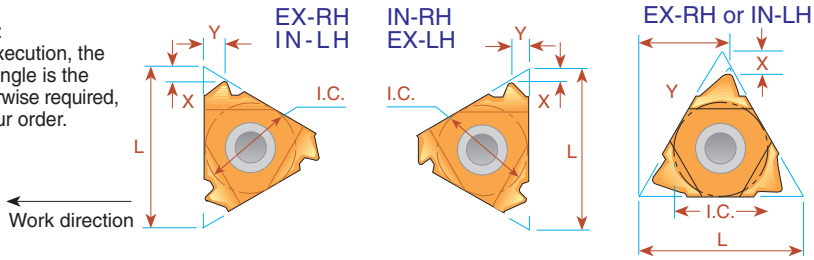
Pitch mm	L	I.C. in	EXTERNAL Ordering Code Right Hand	INTERNAL Ordering Code Right Hand	X	Y
1.0	11	1/4		11 IR 1.0 MJ	0.7	0.8
1.25	11	1/4		11 IR 1.25MJ	0.8	0.9
1.5	11	1/4		11 IR 1.5 MJ	0.8	1.0
2.0	11	1/4		11 IR 2.0 MJ	0.9	1.0
1.0	16	3/8	16 ER 1.0 MJ	16 IR 1.0 MJ	0.7	0.8
1.25	16	3/8	16 ER 1.25MJ	16 IR 1.25MJ	0.8	0.9
1.5	16	3/8	16 ER 1.5 MJ	16 IR 1.5 MJ	0.8	1.0
2.0	16	3/8	16 ER 2.0 MJ	16 IR 2.0 MJ	1.0	1.3

Order example: 16 ER 1.5 MJ BMA

American Buttress



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

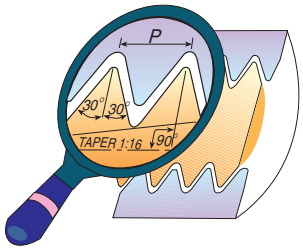


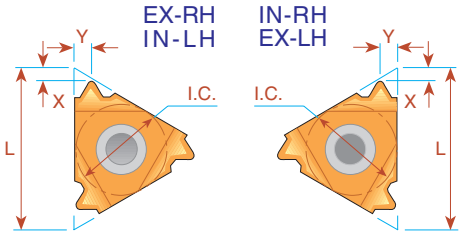
Pitch TPI	L	I.C. in	EXTERNAL Ordering Code Right Hand	EXTERNAL Ordering Code Left Hand	INTERNAL Ordering Code Right Hand	INTERNAL Ordering Code Left Hand	X	Y
20	11	1/4	11 ER 20 ABUT	11 EL 20 ABUT	11 IR 20 ABUT	11 IL 20 ABUT	1.0	1.3
16	11	1/4	11 ER 16 ABUT	11 EL 16 ABUT	11 IR 16 ABUT	11 IL 16 ABUT	1.0	1.5
20	16	3/8	16 ER 20 ABUT	16 EL 20 ABUT	16 IR 20 ABUT	16 IL 20 ABUT	1.0	1.3
16	16	3/8	16 ER 16 ABUT	16 EL 16 ABUT	16 IR 16 ABUT	16 IL 16 ABUT	1.0	1.5
12	16	3/8	16 ER 12 ABUT	16 EL 12 ABUT	16 IR 12 ABUT	16 IL 12 ABUT	1.4	2.0
10	16	3/8	16 ER 10 ABUT	16 EL 10 ABUT	16 IR 10 ABUT	16 IL 10 ABUT	1.5	2.3
8	22	1/2	22 ER 8 ABUT	22 EL 8 ABUT	22 IR 8 ABUT	22 IL 8 ABUT	2.1	3.3
6	22	1/2	22 ER 6 ABUT	22 EL 6 ABUT	22 IR 6 ABUT	22 IL 6 ABUT	2.1	3.4
4	22U	1/2U	22U ER 4 ABUT	22U EL 4 ABUT	22U IR 4 ABUT	22U IL 4 ABUT	2.3	9.5
3	27U	5/8U	27U ER 3 ABUT	27U EL 3 ABUT	27U IR 3 ABUT	27U IL 3 ABUT	3.1	11.7

Order example: 16 IL 12 ABUT MXC

For Carbide Grade and Cutting Speed see page 44

OIL Threads API Round

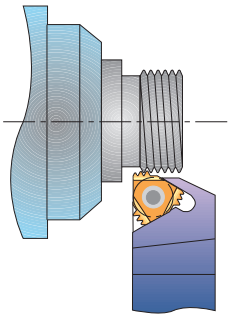


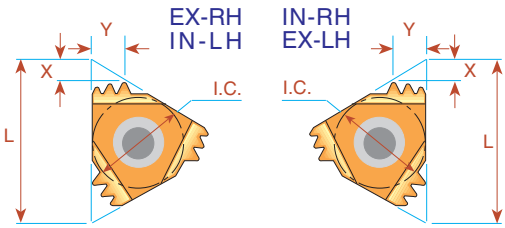


Pitch TPI	L	I.C. in	Taper IPF	EXTERNAL Ordering Code	INTERNAL Ordering Code	X	Y
10	16	3/8	0.75	16 ER 10 API RD	16 IR 10 API RD	1.5	1.4
8	16	3/8	0.75	16 ER 8 API RD	16 IR 8 API RD	1.3	1.6

Order example: 16 ER 10 API RD BMA

Multitooth





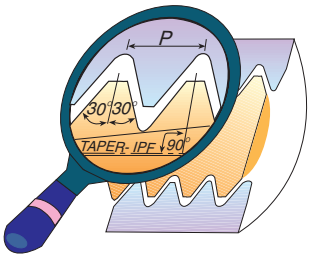
Pitch TPI	L	I.C. in	Number of Teeth	EXTERNAL Ordering Code	Anvil	INTERNAL Ordering Code	Anvil	X	Y
10	22	1/2	2	22 ER 10API RD 2M	AE22M	22 IR 10API RD 2M	AI22M	2.4	3.7
10	27	5/8	3	27 ER 10API RD 3M	AE27M	27 IR 10API RD 3M	AI27M	3.8	6.2
8	27	5/8	2	27 ER 8 API RD 2M	AE27M	27 IR 8 API RD 2M	AI27M	3.0	4.5

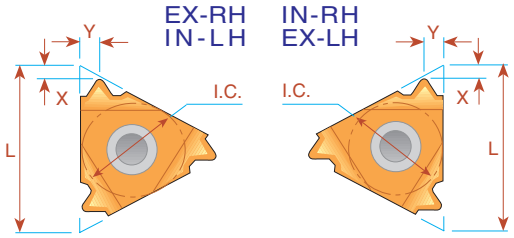
Order example: 27 IR 10 API RD 3M MXC

For recommended number of passes see page 45

For Carbide Grade and Cutting Speed see page 44

OIL Threads





V-0.040

Pitch TPI	L	I.C. in	Taper IPF	EXTERNAL Ordering Code	INTERNAL Ordering Code	X	Y	Connection No. or Size
5	22	1/2	3	22 ER 5 API 403	22 IR 5 API 403	1.8	2.5	2 3/8-4 1/2 REG

V-0.038R

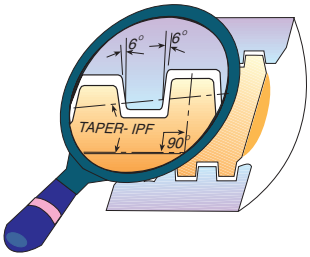
Pitch TPI	L	I.C. in	Taper IPF	EXTERNAL Ordering Code	INTERNAL Ordering Code	X	Y	Connection No. or Size
4	27	5/8	2	27 ER 4 API 382	27 IR 4 API 382	2.1	2.8	NC23-NC50
4	27	5/8	3	27 ER 4 API 383	27 IR 4 API 383	2.1	2.8	NC56-NC77

V-0.050

Pitch TPI	L	I.C. in	Taper IPF	EXTERNAL Ordering Code	INTERNAL Ordering Code	X	Y	Connection No. or Size
4	27	5/8	2	27 ER 4 API 502	27 IR 4 API 502	2.0	3.0	6 5/8 REG
4	27	5/8	3	27 ER 4 API 503	27 IR 4 API 503	2.0	3.0	5 1/2, 7 5/8, 8 5/8, REG

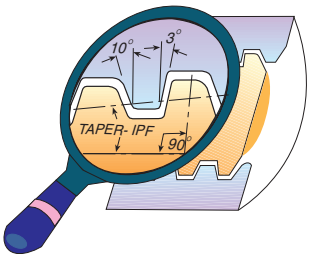
For Carbide Grade and Cutting Speed see page 44

OIL Threads
Extreme - Line Casing



Pitch TPI	L	I.C. in	Taper IPF	EXTERNAL Ordering Code	INTERNAL Ordering Code	X	Y	Connection No. or Size
6	22	1/2	1.50	**22 ER 6 EL 1.5**	**22 IR 6 EL 1.5**	1.9	1.9	5-7 5/8
5	22	1/2	1.25	**22 ER 5 EL 1.25**	**22 IR 5 EL 1.25**	2.4	2.3	8 5/8-10 3/4

Buttress Casing



Pitch TPI	L	I.C. in	Taper IPF	EXTERNAL Ordering Code	INTERNAL Ordering Code	X	Y	Connection No. or Size
5	22	1/2	0.75	**22 ER 5 BUT 0.75**	**22 IR 5 BUT 0.75**	2.2	2.4	4 1/2-13 3/8
5	22	1/2	1.00	**22 ER 5 BUT 1.0**	**22 IR 5 BUT 1.0**	2.3	2.4	16-20

Order example: 22 ER 5 BUT 0.75 MXC

For Carbide Grade and Cutting Speed see page 44

Thread Turning Toolholders and Kits

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Slim Throat Toolholders	34
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Internal Toolholders with Coolant Bore	36
Internal Toolholders with Top Clamp	36
Carbide Shank Boring Bars	37
Drophead Toolholders	37
Gang Toolholders	38

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Miniature & Ultra-miniature Kits	40
Threading & Boring Combination Kit	40
Anvils and Anvil Kits	41-42

Product Identification

Threading Toolholders Ordering Codes

S	E	R	2020	K	16	

Clamping Method
D = Clamp
S = Screw

E = External
I = Internal

R = Right Hand
L = Left Hand

Shank Cross Section:

External toolholders square shank

2020=20 mm x 20 mm

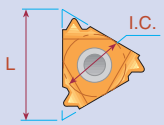
Internal toolholders & boring bars round shank

0020 = Diam. of 20 mm

Length of Toolholder:

	mm
D =	60
F =	80
H =	100
K =	125
L =	140
M =	150
P =	170
R =	200
S =	250
T =	300
U =	350
V =	400

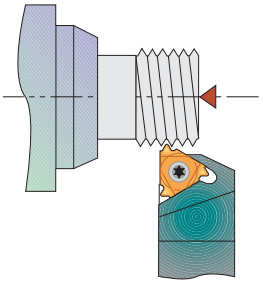
Insert Pocket Size

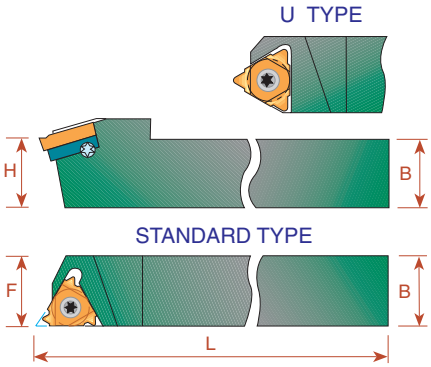


L	I.C.
06	5/32"
08	3/16"
08U	3/16"U
11	1/4"
16	3/8"
22	1/2"
22U	1/2"U
27	5/8"
27U	5/8"U
33U	3/4"U

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

External Toolholders





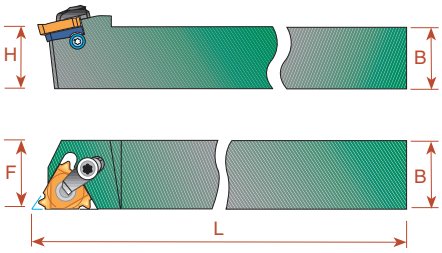
Ordering Code Right Hand		B = H	L	F	Insert Screw	Anvil Screw	Torx Key	RH Anvil	LH Anvil
* SER 8 8 H11	11	8	100	11	S11	-	K11	-	-
* SER 10 10 H11	11	10	100	11	S11	-	K11	-	-
* SER 12 12 K11	11	12	125	12	S11	-	K11	-	-
SER 12 12 F16	16	12	80	16	S16	A16	K16	AE16	AI16
SER 16 16 H16	16	16	100	16	S16	A16	K16	AE16	AI16
SER 20 20 K16	16	20	125	20	S16	A16	K16	AE16	AI16
SER 25 25 M16	16	25	150	25	S16	A16	K16	AE16	AI16
SER 32 32 P16	16	32	170	32	S16	A16	K16	AE16	AI16
SER 25 25 M22	22	25	150	25	S22	A22	K22	AE22	AI22
SER 32 32 P22	22	32	170	32	S22	A22	K22	AE22	AI22
SER 40 40 R22	22	40	200	40	S22	A22	K22	AE22	AI22
SER 25 25 M22U	22U	25	150	28	S22	A22	K22	AE22 U	AI22U
SER 32 32 P22U	22U	32	170	32	S22	A22	K22	AE22 U	AI22U
SER 40 40 R22U	22U	40	200	40	S22	A22	K22	AE22 U	AI22U
SER 25 25 M27	27	25	150	32	S27	A27	K27	AE27	AI27
SER 32 32 P27	27	32	170	32	S27	A27	K27	AE27	AI27
SER 40 40 R27	27	40	200	40	S27	A27	K27	AE27	AI27
SER 25 25 M27U	27U	25	150	32	S27	A27	K27	AE27 U	AI27U
SER 32 32 P27U	27U	32	170	32	S27	A27	K27	AE27 U	AI27U
SER 40 40 R27U	27U	40	200	40	S27	A27	K27	AE27 U	AI27U
* SER 25 25 M33U	33U	25	150	32	S33	-	K33	-	-
* SER 32 32 P33U	33U	32	170	32	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 in the technical section of this catalogue.

External toolholders with top clamp



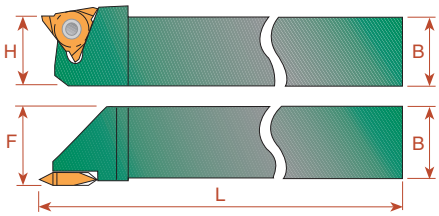
Ordering Code Right Hand		B=H	L	F	Insert Screw	Clamp	Anvil Screw	Torx Key	RH Anvil	LH Anvil
DER 1212 H16	16	12	100	16	S16	C16	A16S	K16	AE16	AI16
DER 1616 H16	16	16	100	16	S16	C16	A16S	K16	AE16	AI16
DER 2020 K16	16	20	125	20	S16	C16	A16S	K16	AE16	AI16
DER 2525 M16	16	25	150	25	S16	C16	A16S	K16	AE16	AI16
***DER 2525 M22**	22	25	150	25	S22	C22	A22	K22	AE22	AI22

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.

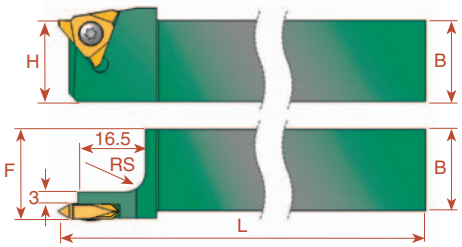
* Use K21 torx key with C22 clamp

Vertical toolholders



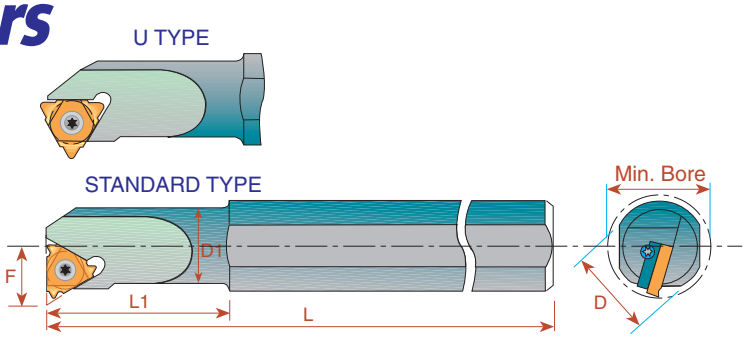
Ordering Code Right Hand		B=H	L	F	Insert Screw	Torx Key
SER 1616 H16V	16	16	100	18	S16S	K16
SER 2020 K16V	16	20	125	22	S16S	K16
SER 2525 M16V	16	25	150	27	S16S	K16
SER 2525 M22V	22	25	150	27.5	S22S	K22

Slim Throat toolholders



Ordering Code Right Hand		B=H	L	F	Insert Screw	Torx Key
SER 1616 H16VS	16	16	100	18	S16S	K16
SER 2020 K16VS	16	20	125	22	S16S	K16
SER 2525 M16VS	16	25	150	27	S16S	K16

Internal Toolholders



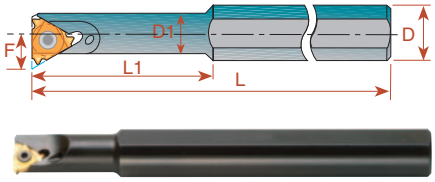
Ordering Code Right Hand		D	D1	Min Bore Diam.	L	L1	F	Insert Screw	Anvil Screw	Torx Key	RH Anvil	LH Anvil
* SIR 0005 H06	6	12	5.1	6.0	100	12	4.3	S06	-	K06	-	-
* SIR 0007 K08	8	16	6.6	7.8	125	18	5.3	S08	-	K08	-	-
* SIR 0008 K08U	8U	16	7.3	9.0	125	21	6.6	S08	-	K08	-	-
* SIR 0010 H11	11	10	10	12	100	-	7.4	S11	-	K11	-	-
* SIR 0010 K11	11	16	10	12	125	25	7.4	S11	-	K11	-	-
* SIR 0013 L11	11	16	13	15	140	32	8.9	S11	-	K11	-	-
* SIR 0013 M16	16	16	13	16	150	32	10.2	S16S	-	K16	-	-
* SIR 0016 P16	16	20	16	19	170	40	11.7	S16S	-	K16	-	-
SIR 0020 P16	16	20	20	24	170	-	13.7	S16	A16	K16	AI16	AE16
SIR 0025 R16	16	25	25	29	200	-	16.2	S16	A16	K16	AI16	AE16
SIR 0032 S16	16	32	32	36	250	-	19.7	S16	A16	K16	AI16	AE16
SIR 0040 T16	16	40	40	44	300	-	23.7	S16	A16	K16	AI16	AE16
SIR 0050 U16	16	50	50	54	350	-	28.7	S16	A16	K16	AI16	AE16
* SIR 0020 P22	22	20	20	24	170	-	15.6	S22S	-	K22	-	-
SIR 0025 R22	22	25	25	29	200	-	18.1	S22	A22	K22	AI22	AE22
SIR 0032 S22	22	32	32	38	250	-	21.6	S22	A22	K22	AI22	AE22
SIR 0040 T22	22	40	40	46	300	-	25.6	S22	A22	K22	AI22	AE22
SIR 0050 U22	22	50	50	56	350	-	30.6	S22	A22	K22	AI22	AE22
SIR 0032 S22U	22U	32	32	38	250	-	24.4	S22	A22	K22	AI22U	AE22U
SIR 0040 T22U	22U	40	40	46	300	-	28.1	S22	A22	K22	AI22U	AE22U
SIR 0050 U22U	22U	50	50	57	350	-	30.8	S22	A22	K22	AI22U	AE22U
SIR 0032 S27	27	32	32	40	250	-	22.6	S27	A27	K27	AI27	AE27
SIR 0040 T27	27	40	40	48	300	-	26.6	S27	A27	K27	AI27	AE27
SIR 0050 U27	27	50	50	58	350	-	31.6	S27	A27	K27	AI27	AE27
SIR 0060 V27	27	60	60	68	400	-	36.6	S27	A27	K27	AI27	AE27
SIR 0032 S27U	27U	32	32	40	250	-	25.8	S27	A27	K27	AI27U	AE27U
SIR 0040 T27U	27U	40	40	48	300	-	29.4	S27	A27	K27	AI27U	AE27U
SIR 0050 U27U	27U	50	50	58	350	-	34.3	S27	A27	K27	AI27U	AE27U
SIR 0060 V27U	27U	60	60	68	400	-	39.7	S27	A27	K27	AI27U	AE27U
SIR 0050 U33U	33U	50	50	62	350	-	37.5	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 in the technical section of this catalogue.

Internal toolholders with coolant bore



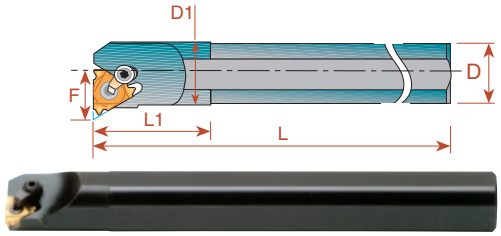
Ordering Code Right Hand		D	D1	Min Bore Diam.	L	L1	F	Insert Screw	Anvil Screw	Torx Key	RH Anvil	LH Anvil
* SIR 0010 K11B	11	16	10	12	125	25	7.4	S11	-	K11	-	-
* SIR 0013 M16B	16	16	13	16	150	32	10.2	S16S	-	K16	-	-
* SIR 0016 P16B	16	20	16	19	170	40	11.7	S16S	-	K16	-	-
SIR 0020 P16B	16	20	20	24	170	-	13.7	S16	A16	K16	AI16	AE16
SIR 0025 R16B	16	25	25	29	200	-	16.2	S16	A16	K16	AI16	AE16
SIR 0032 S16B	16	32	32	36	250	-	19.7	S16	A16	K16	AI16	AE16
SIR 0025 R22B	22	25	25	29	200	-	18.1	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 in the technical section of this catalogue.

Internal toolholders with top clamp



Ordering Code Right Hand		D	D1	Min Bore Diam.	L	L1	F	Insert Screw	Clamp	Anvil Screw	Torx Key	RH Anvil	LH Anvil
DIR 0020 P16	16	20	20	24	170	-	13.7	S16	C16	A16S	K16	AI16	AE16
DIR 0025 R16	16	25	25	29	200	-	16.2	S16	C16	A16S	K16	AI16	AE16
DIR 0032 S16	16	32	32	36	250	-	19.7	S16	C16	A16S	K16	AI16	AE16
* DIR 0025 R22	22	25	25	29	200	-	18.1	S22	C22	A22	K22	AI22	AE22

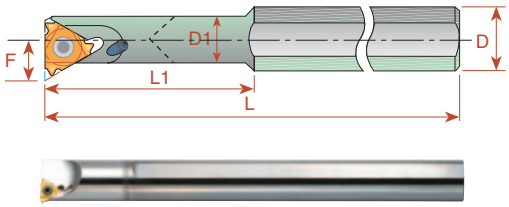
For **LEFT HAND** toolholders specify DI**L** instead of DI**R**

Two clamping methods can be used: screw or top clamp

* Use K21 torx key with C22 clamp

Carbide Shank Boring Bars
With coolant bore

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

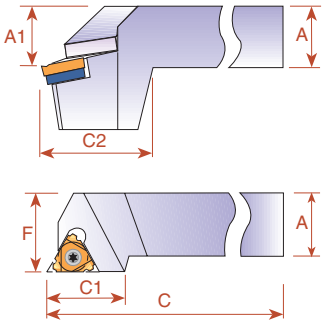


Ordering Code Right Hand		D	D1	Min Bore Diam.	L	L1	F	Insert Screw	Anvil Screw	Torx Key	RH Anvil	LH Anvil
SIR 0005 H06CB	6	6	5.1	6.0	100	26	4.3	S06	-	K06	-	-
SIR 0007 K08CB	8	8	6.6	7.8	125	31	5.3	S08	-	K08	-	-
SIR 0008 K08UCB	8U	8	7.3	9.0	125	35	6.6	S08	-	K08	-	-
SIR 0010 M11CB	11	10	10	12	150	-	7.4	S11	-	K11	-	-
SIR 0012 P11CB	11	12	12	15	170	-	8.4	S11	-	K11	-	-
SIR 0016 R16CB	16	16	16	19	200	-	11.7	S16S	-	K16	-	-
* **SIR 0020 S16CB**	16	20	20	23	250	-	13.7	S16	A16	K16	AI16	AE16
* **SIR 0025 S16CB**	16	25	25	28	250	-	16.2	S16	A16	K16	AI16	AE16

* Carbide shank boring bars with anvils

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

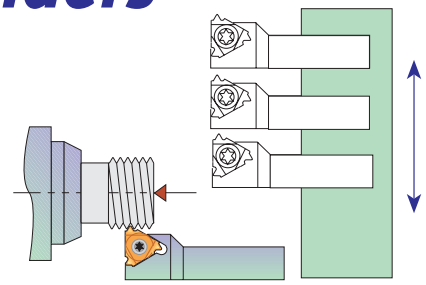
Drophead Toolholders

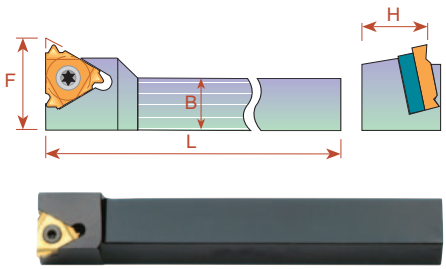


Ordering Code Right Hand		A	A1	C	C1	F	C2	Insert Screw	Anvil Screw	Torx Key	RH Anvil	LH Anvil
SER 2020 K16D	16	20	20	125	21.0	25	38	S16	A16	K16	AE16	AI16
SER 2525 M16D	16	25	25	150	21.0	32	38	S16	A16	K16	AE16	AI16
SER 2525 M22D	22	25	25	150	25.0	32	38	S22	A22	K22	AE22	AI22

Gang Toolholders

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





Ordering Code Right Hand		B = H	L	F	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 SEL instead of SER

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 ISO KIT
Ordering Code:KEG

INSERTS
16 ER A60 P25C
16 ER G60 P25C
16 ER 0.75 ISO P25C
16 ER 1.0 ISO P25C
16 ER 1.25 ISO P25C
16 ER 1.5 ISO P25C
16 ER 1.75 ISO P25C
16 ER 2.0 ISO P25C
16 ER 2.5 ISO P25C
16 ER 3.0 ISO P25C
TOOLHOLDER
SER 2020 K16
KEY
K16
SCREW
S16

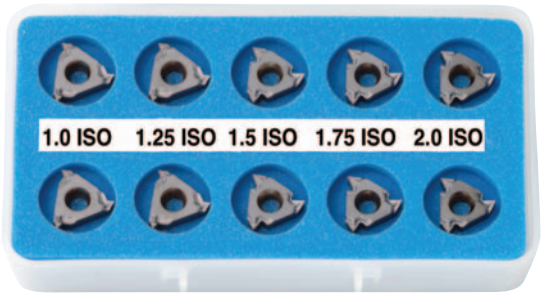
INTERNAL ISO KIT
Ordering Code:KIG

INSERTS
16 IR A60 P25C
16 IR G60 P25C
16 IR 0.75 ISO P25C
16 IR 1.0 ISO P25C
16 IR 1.25 ISO P25C
16 IR 1.5 ISO P25C
16 IR 1.75 ISO P25C
16 IR 2.0 ISO P25C
16 IR 2.5 ISO P25C
16 IR 3.0 ISO P25C
TOOLHOLDER
SIR 0020 P16
KEY
K16
SCREW
S16

If a larger toolholder with a 25 mm shank is required, add to the Kit “25”. For example: KIG-25

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.



TYPE B

IN-RH

EX-RH

EXTERNAL ISO KIT
KEMB-BMA

16 ER B 1.0	ISO BMA	2 Stk
16 ER B 1.25	ISO BMA	2 Stk
16 ER B 1.5	ISO BMA	2 Stk
16 ER B 1.75	ISO BMA	2 Stk
16 ER B 2.0	ISO BMA	2 Stk

INTERNAL ISO KIT
KIMB-BMA

16 IR B 1.0	ISO BMA	2 Stk
16 IR B 1.25	ISO BMA	2 Stk
16 IR B 1.5	ISO BMA	2 Stk
16 IR B 1.75	ISO BMA	2 Stk
16 IR B 2.0	ISO BMA	2 Stk

Miniature & Ultra-miniature Kits

Ordering Code	Type	No. of Inserts	Insert	Boring Bar	Key
KU60M-BXC	ULTRA	10	06 IR A60 BXC	SIR 0005 H06	K6
KM60M-BXC	MINI	10	08 IR A60 BXC	SIR 0007 K08	K8

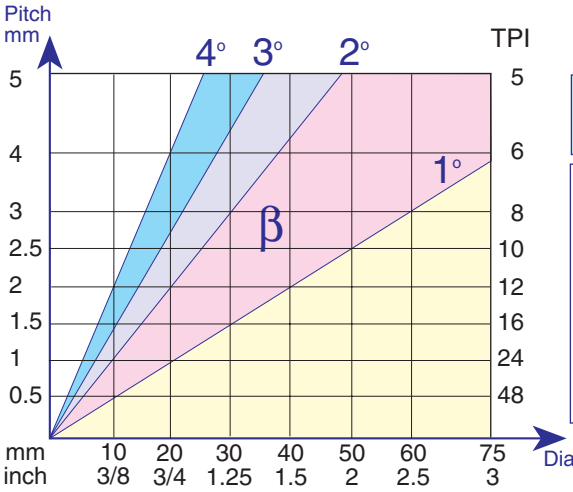
Threading & Boring Combination Kit

A practical and convenient combination kit for Ultra Miniature Threading and Boring. It enables Boring and Threading of mini bores as small as 6 mm diameter (1/4") with just one deep reaching CARBIDE shank ultra mini Boring Bar.

Ordering Code	Contents			
	Threading Insert	Turning Insert	Boring Bar	Key
KC6TM	06 IR A60 BXC 10 Pcs	06 IR TURN BMA 10 Pcs	SIR 0005 H06CB	K6

BMA - Coated carbide grade for medium to high cutting speeds
BXC - Coated carbide grade for low cutting speed - 40 to 90 m/min
CB - Carbide shank boring bar with coolant bore

Thread Helix Angle



$$\tan\beta = \frac{P}{\pi \times D}$$

Simplified formula

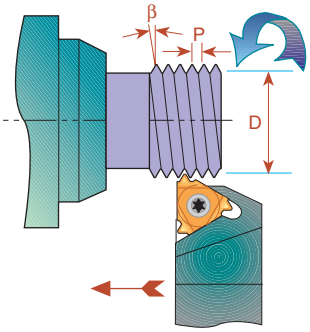
$\beta = 20P/D$

Example:

D = 30 mm (1.18 ")

P = 1.5 mm (16 TPI)

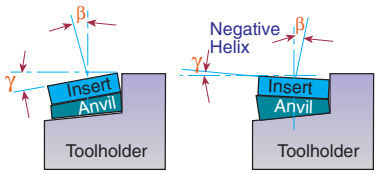
$$\beta = \frac{20 \times 1.5}{30} = 1^{\circ}$$



Standard and Slanted Anvils

C.P.T. Toolholders 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	IC	Pocket's 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

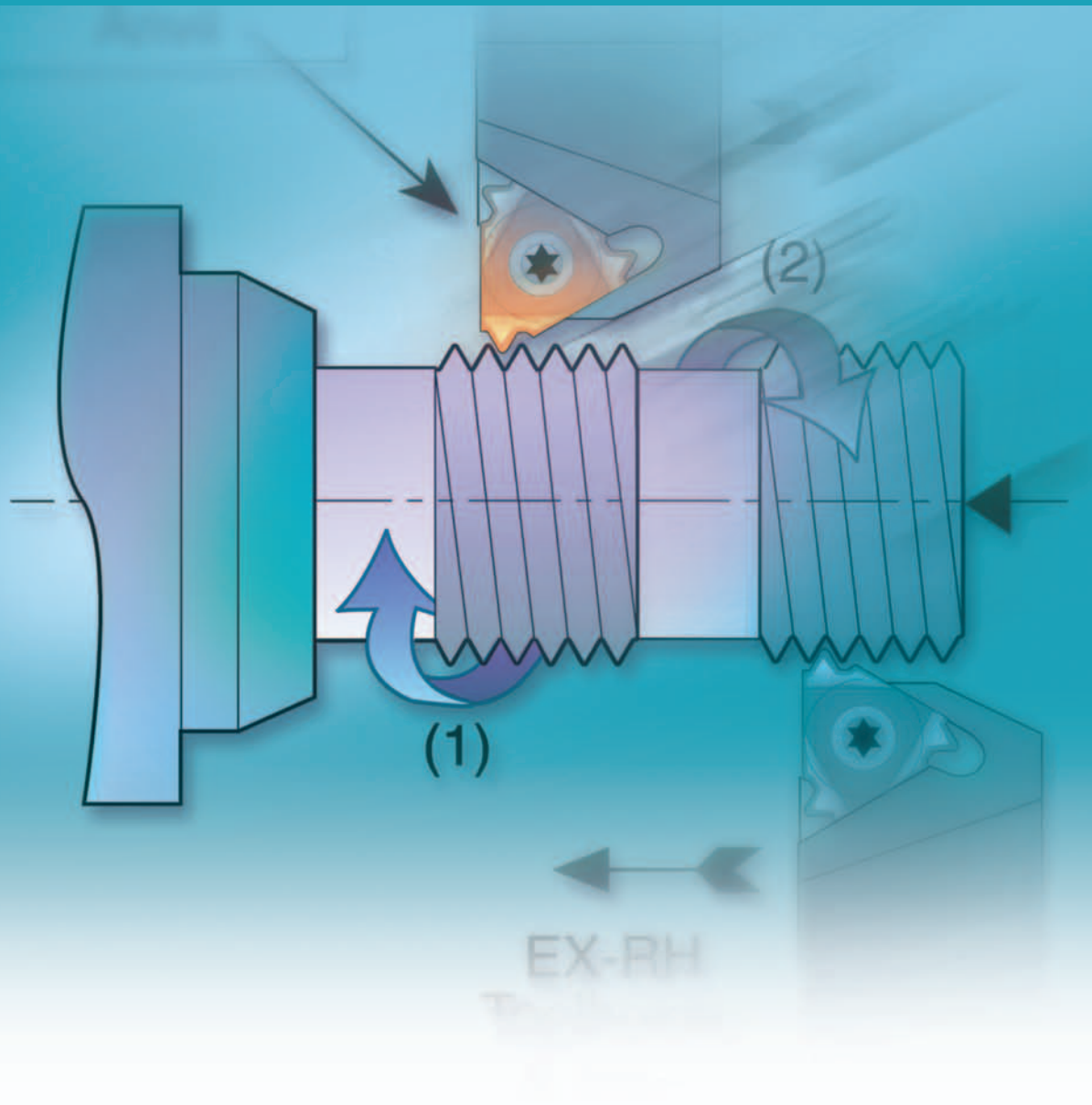
5 AE and 5 AI anvils with various helix angles

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

Thread Turning Technical Section



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Carbide Grade Selection

Choose the C.P.T. grade specifically formulated for your application from the following list:

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.

Coated Grades

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.

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

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

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

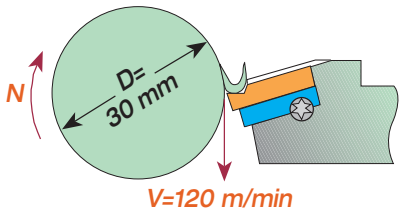
Recommended cutting speed (m/min) for thread turning inserts

		Coated				Uncoated	
ISO Standard	Materials	P25C•	MXC	BMA	BXC••	P30•	K20•
P	Steel: Low & Medium Carbon Steels	80-160	90-160	100-180	20-100	70-120	
	High Carbon Steels	80-120	80-150	90-160	30-80	60-100	
	Alloy Steels, Treated Steels	50-100	80-120	90-120	40-90	50-80	
	Cast Steel	80-140	100-140	120-160	30-80	50-100	
M	Stainless steel: Cast steels Stainless austenitic and austenitic ferritic steel and cast steel		70-120	90-130	30-90	70-100	80-100
K	Cast iron: Grey cast iron, cast iron with spherical graphite, malleable cast iron		80-130	80-150	30-90		60-100
N	Nonferrous Metal: Aluminium and other nonferrous metals, copper alloys non metallic		300-600		20-200		120-200
S	Super-alloys and Titanium: Heat resistant special alloys based on iron, nickel and cobalt, titanium and titanium alloys		40-80	50-100	15-30		
H	Hard Materials: Hardened steel, hardened cast iron materials, chilled cast iron		20-40	30-50	15-30		

• 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

$$N = \frac{V \times 1000}{\pi \times D} = \frac{120 \times 1000}{3.14 \times 30} = 1274 \text{ RPM}$$

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

	Pitch mm	Insert Size		No. of Teeth	Ordering Code	No. of Passes	Depth of Cut per Pass			
		L	I.C. (in)				1	2	3	4
ISO External	1.00	16	3/8	3	16 ER 1.0 ISO 3M	2	0.38	0.25		
	1.50	16	3/8	2	16 ER 1.5 ISO 2M	3	0.42	0.30	0.20	
	1.50	22	1/2	3	22 ER 1.5 ISO 3M	2	0.55	0.37		
	2.00	22	1/2	2	22 ER 2.0 ISO 2M	3	0.57	0.40	0.28	
	2.00	22	1/2	3	22 ER 2.0 ISO 3M	2	0.76	0.49		
	3.00	27	5/8	2	27 ER 3.0 ISO 2M	4	0.59	0.51	0.42	0.32
ISO Internal	1.00	16	3/8	3	16 IR 1.0 ISO 3M	2	0.33	0.25		
	1.50	16	3/8	2	16 IR 1.5 ISO 2M	3	0.38	0.29	0.20	
	1.50	22	1/2	3	22 IR 1.5 ISO 3M	2	0.50	0.37		
	2.00	22	1/2	2	22 IR 2.0 ISO 2M	3	0.52	0.37	0.26	
	2.00	22	1/2	3	22 IR 2.0 ISO 3M	2	0.70	0.45		
	3.00	27	5/8	2	27 IR 3.0 ISO 2M	4	0.58	0.46	0.39	0.30

	Pitch TPI	Insert Size		No. of Teeth	Ordering Code	No. of Passes	Depth of Cut per Pass			
		L	I.C. (in)				1	2	3	4
UN External	16	16	3/8	2	16 ER 16 UN 2M	3	0.44	0.31	0.22	
	16	22	1/2	3	22 ER 16 UN 3M	2	0.58	0.39		
	12	22	1/2	2	22 ER 12 UN 2M	3	0.59	0.42	0.30	
	12	22	1/2	3	22 ER 12 UN 3M	2	0.78	0.52		
	8	27	5/8	2	27 ER 8 UN 2M	4	0.62	0.54	0.45	0.35
UN Internal	16	16	3/8	2	16 IR 16 UN 2M	3	0.42	0.28	0.22	
	16	22	1/2	3	22 IR 16 UN 3M	2	0.55	0.37		
	12	22	1/2	2	22 IR 12 UN 2M	3	0.53	0.38	0.31	
	12	22	1/2	3	22 IR 12 UN 3M	2	0.74	0.48		
	8	27	5/8	2	27 IR 8 UN 2M	4	0.63	0.50	0.40	0.30
Whitworth 55° External	14	16	3/8	2	16 ER 14 W 2M	3	0.52	0.37	0.27	
	14	22	1/2	3	22 ER 14 W 3M	2	0.70	0.46		
	11	22	1/2	2	22 ER 11 W 2M	3	0.67	0.47	0.34	
Whitworth 55° Internal	14	16	3/8	2	16 IR 14 W 2M	3	0.52	0.37	0.27	
	14	22	1/2	3	22 IR 14 W 3M	2	0.70	0.46		
	11	22	1/2	2	22 IR 11 W 2M	3	0.67	0.47	0.34	
NPT External	11.5	16	3/8	2	16 ER 11.5 NPT 2M	4	0.54	0.47	0.37	0.30
	11.5	22	1/2	3	22 ER 11.5 NPT 3M	3	0.76	0.54	0.38	
	8	22	1/2	2	22 ER 8 NPT 2M	4	0.81	0.60	0.55	0.45
NPT Internal	11.5	16	3/8	2	16 IR 11.5 NPT 2M	4	0.54	0.47	0.37	0.30
	11.5	22	1/2	3	22 IR 11.5 NPT 3M	3	0.76	0.54	0.38	
	8	22	1/2	2	22 IR 8 NPT 2M	4	0.81	0.60	0.55	0.45
API Round External	10	22	1/2	2	22 ER 10 APIRD 2M	3	0.60	0.50	0.31	
	10	27	5/8	3	27 ER 10 APIRD 3M	2	1.00	0.41		
	8	27	5/8	2	27 ER 8 APIRD 2M	3	0.80	0.60	0.41	
API Round Internal	10	22	1/2	2	22 IR 10 APIRD 2M	3	0.60	0.50	0.31	
	10	27	5/8	3	27 IR 10 APIRD 3M	2	1.00	0.41		
	8	27	5/8	2	27 IR 8 APIRD 2M	3	0.80	0.60	0.41	

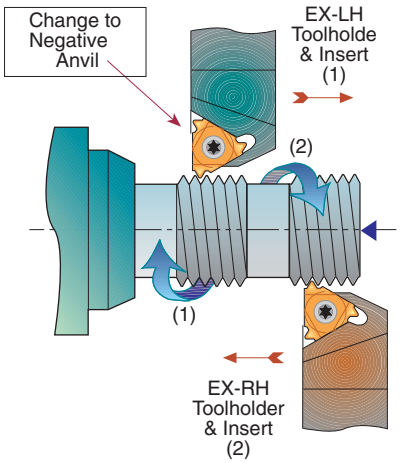
Number of threading passes selection for single point inserts

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

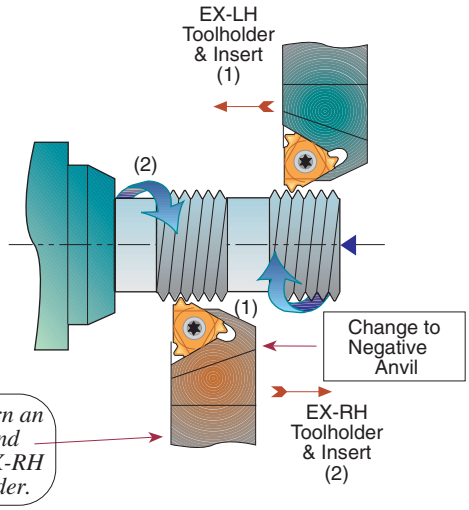
NOTES:
1. For most standard applications the middle of the range is a good starting point.
2. For most materials, the tougher the material, the higher the number of cutting passes you should select.
3. As a general rule of thumb, less passes are better than more speed.

Thread Turning Methods

EX-RH Thread



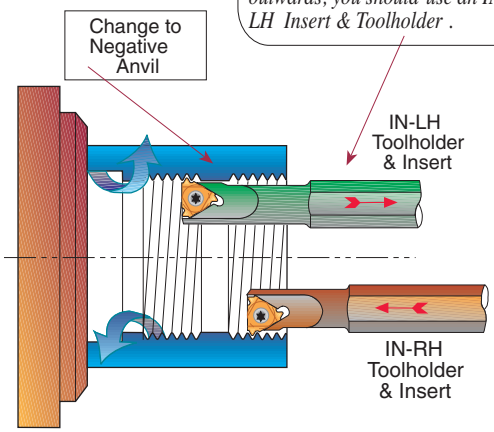
EX-LH Thread



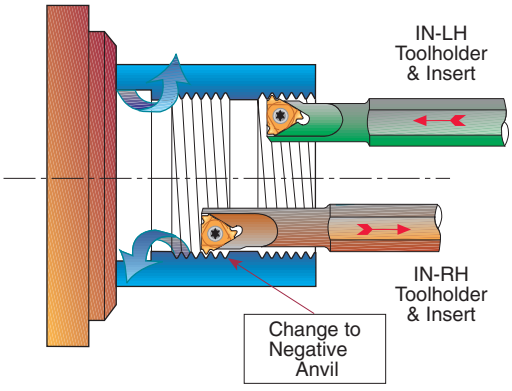
If you want to turn an EX-LH Thread and you only have EX-RH Insert & Toolholder.

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 .

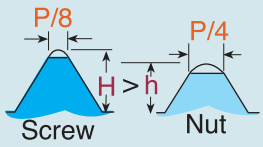


IN-LH Thread

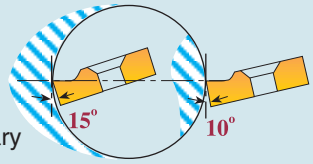


Important Points about C.P.T. Threading Inserts

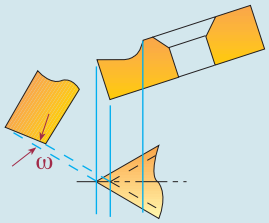
1. In most thread forms internal and external threads have different depth and radii, thus tools are not interchangeable



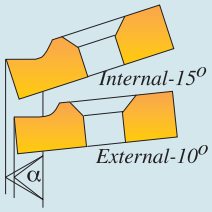
2. The Insert relief angle of a standard C.P.T. external toolholder is 10º; for an internal toolholder it is 15º. This 5º difference is to provide additional necessary radial clearance.



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



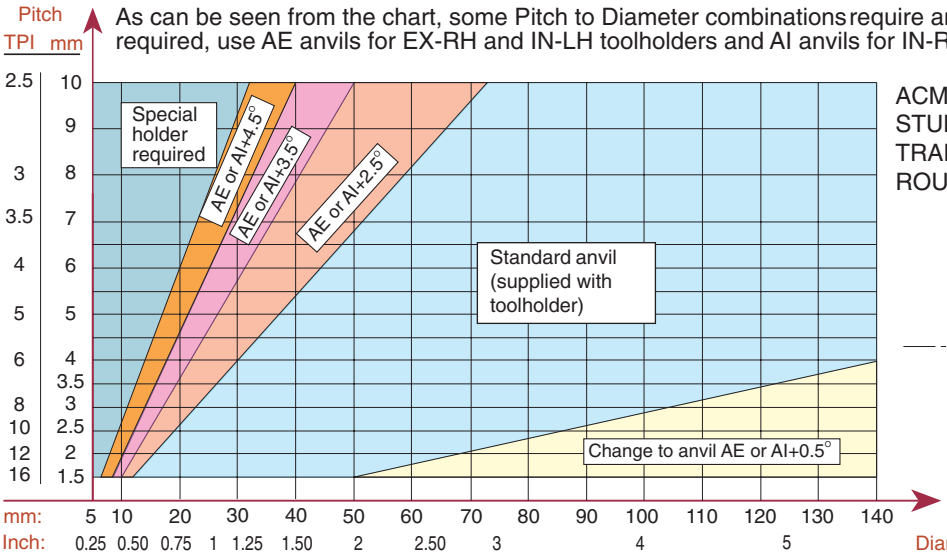
4. Profiles of C.P.T. internal & external threading inserts are precision grounded to ensure accurate thread geometry when used in their corresponding toolholders.
Using internal inserts with an external holder will result in distortion of angle and insert geometry.



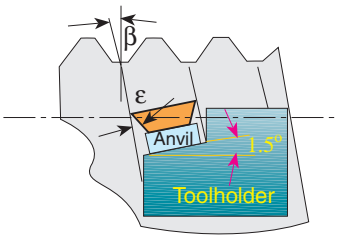
5. Insert and toolholder should always match.
An IN-RH insert must be used with an IN-RH toolholder.
No mismatch is allowed.

Anvil Change Recommendation

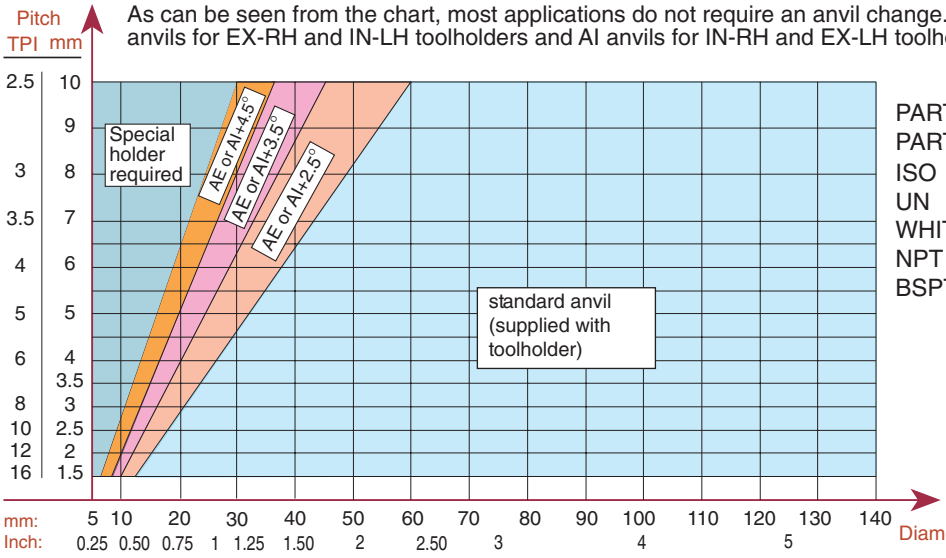
As can be seen from the chart, some Pitch to Diameter combinations require an anvil change. If change is required, use AE anvils for EX-RH and IN-LH toolholders and AI anvils for IN-RH and EX-LH toolholders.



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

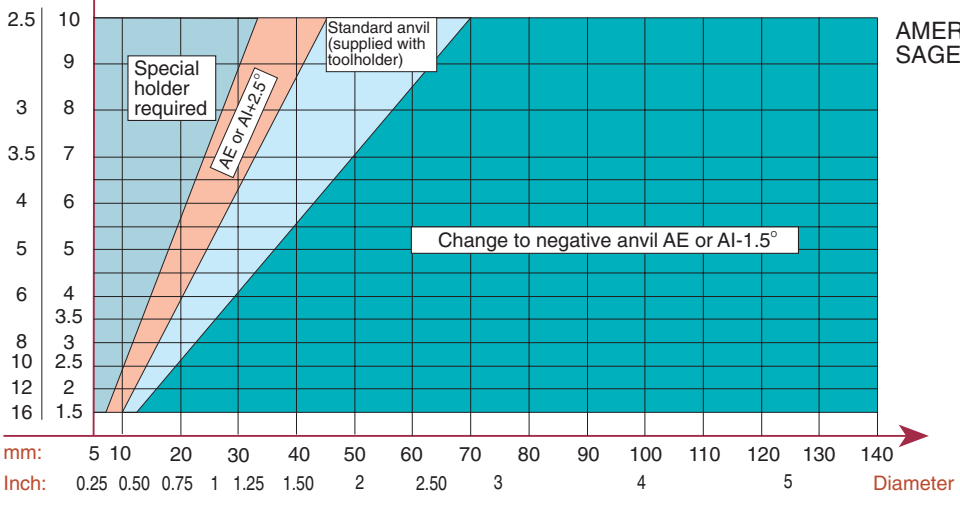


As can be seen from the chart, most applications do not require an anvil change. If change is required, use AE anvils for EX-RH and IN-LH toolholders and AI anvils for IN-RH and EX-LH toolholders

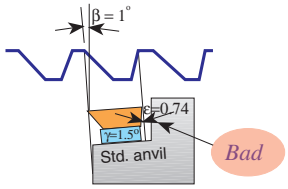


PARTIAL PROFILES 60°
PARTIAL PROFILES 55°
ISO
UN
WHIT.
NPT
BSPT

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

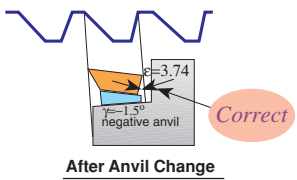


AMERICAN BUTTRESS
SAGENGEWINDE (DIN 513)



Before Anvil change

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



After Anvil Change

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" Ɛ. If Ɛ 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 46, we chose **EX - RH Insert & Toolholder**

Step 2: Choose Insert from page 9: **16 ER 1.5 ISO**

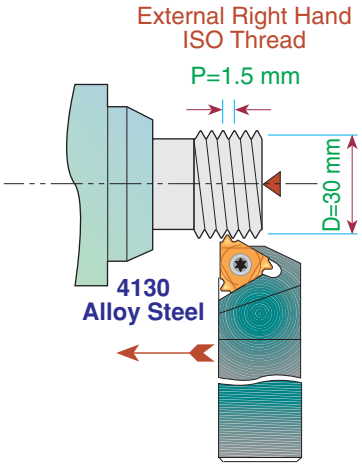
Step 3: Choose Toolholder from page 33: **SER 2020 K16**

Step 4: Choose Insert Grade from selection on page 44 Our choice for Alloy Steel is Grade **P25C**

Step 5: Choose Thread Turning Speed from chart on page 44, we chose **100 m/min**

Rotational Speed calculation: $N = \frac{100 \times 1000}{\pi \times 30} = 1065$ rpm

Step 6: Choose Number of Threading passes from table on page 45, we chose **8 passes**



Example No. 2:

Step 1: Choose Thread Turning Method from page 46 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**

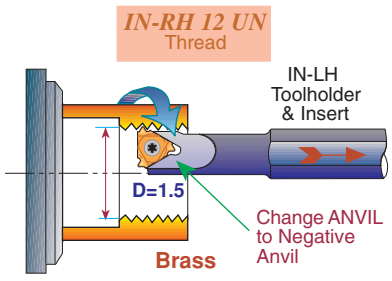
Step 3: Choose Toolholder from page 35 : **SIL 0025 R16** Note: since we thread cut IN-RH thread outward with an IN-LH tool, do not forget to replace the standard anvil (supplied with the holder) with a negative anvil **AE16-1.5**

Step 4: Choose Insert Grade from selection on page 44 Our choice for Brass is Grade **K20**

Step 5: Choose Thread Turning Speed from chart on page 44, we chose **150 m/min**

Rotational Speed calculation: $N = \frac{150 \times 1000}{\pi \times 38.1} = 1254$ RPM

Step 6: Choose Number of Threading passes from table on page 45, we chose **9 passes**



Example No. 3:

Step 1: Choose Thread Turning Method from page 46
We chose **EX-RH** Insert & Toolholder.

Step 2: Choose Insert from page 27: **16 ER 12 ABUT**

Step 3: Choose Toolholder from page 33: **SER 2525 M16**

Step 4: Choose Insert Grade from selection on page 44
Our choice for Stainless Steel is Grade **MXC**

Step 5: Choose Thread Turning Speed from chart on page 44
We chose **120 m/min.**
Rotational Speed calculation: $N = \frac{120 \times 1000}{\pi \times 40} = 954$ rpm

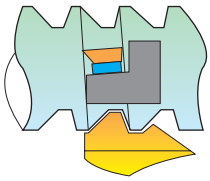
Step 6: Choose Number of Threading passes
from table on page 45. We chose **13 passes**

Step 7: Find Thread Helix Angle: on page 41
for Pitch of 12 TPI and 40 Diameter
Helix Angle as shown in the chart is 1º

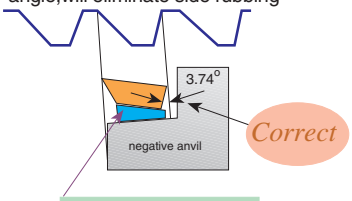
Step 8: Choose correct Anvil: As can be seen
from the chart on page 48, for AMERICAN
BUTTRESS Thread, for 12 TPI and 40 Diameter
a negative anvil **AE16-1.5** should replace the
standard anvil supplied with the toolholder

EX-RH. AMERICAN BUTTRESS
12 TPI on 40 mm diameter.

Stainless Steel 304



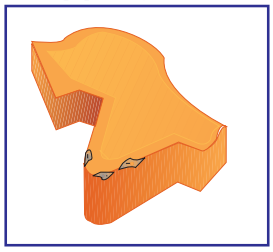
Replacing the standard anvil with an anvil with negative angle,will eliminate side rubbing



Anvil chosen: AE16-1.5

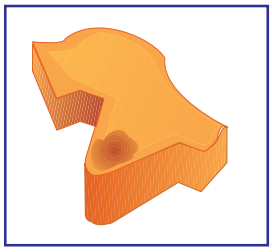
Troubleshooting

Chipping



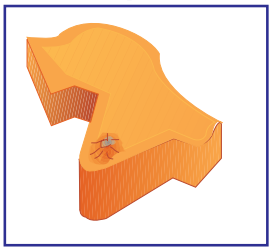
1. Use a harder carbide grade
2. Eliminate tool overhang
3. Check if insert is correctly clamped
4. Eliminate vibration

Crater Wear



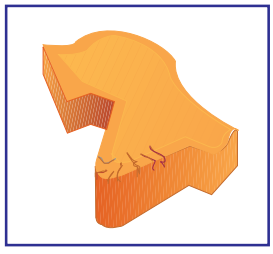
1. Reduce cutting speed
2. Apply coolant fluid
3. Use a harder carbide grade

Build-up Edge



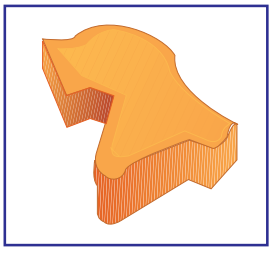
1. Apply coolant fluid
2. Increase cutting speed
3. Use a harder carbide grade

Thermal Cracking



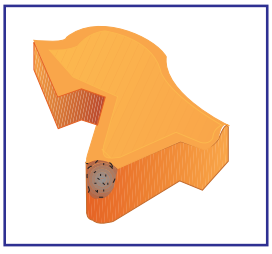
1. Reduce cutting speed
2. Apply coolant fluid
3. Use a harder carbide grade

Deformation



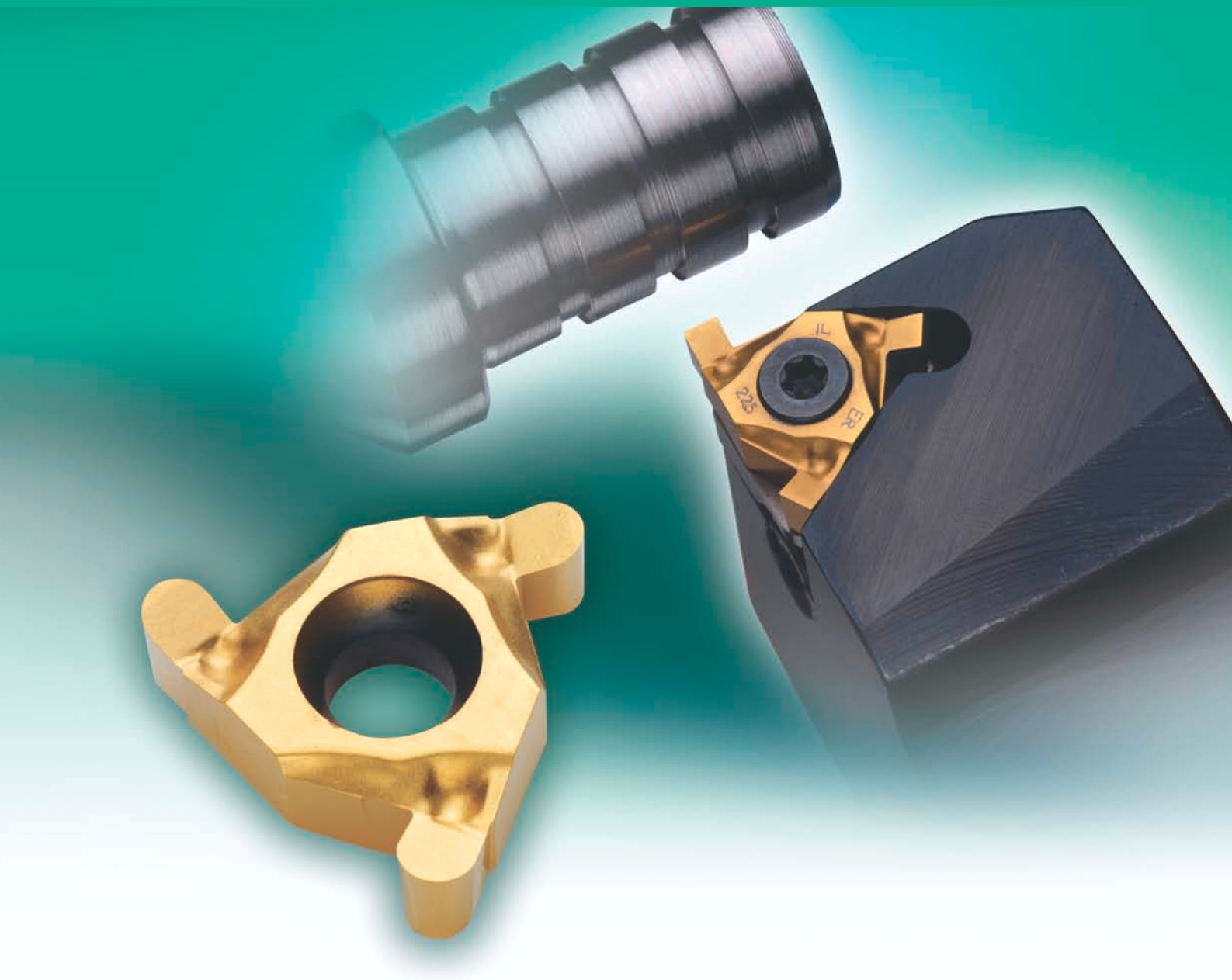
1. Use a harder carbide grade
2. Reduce cutting speed
3. Reduce depth of cut
4. Apply coolant fluid

Fracture



1. Use a harder 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**

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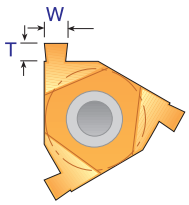
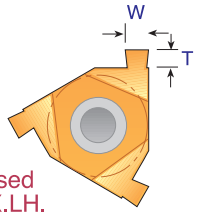
Grooving Inserts



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.

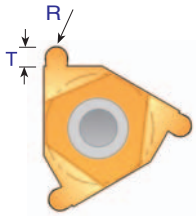


W ± 0.02	T	IC	Ordering Code ER/IL Inserts	Anvil	Ordering Code IR/EL Inserts	Anvil
1.00	1.4	3/8"	16 ER/IL 1.00	AE 16 - 0	16 IR/EL 1.00	AI 16 - 0
1.20	1.6	3/8"	16 ER/IL 1.20	AE 16 - 0	16 IR/EL 1.20	AI 16 - 0
1.40	1.8	3/8"	16 ER/IL 1.40	AE 16 - 0	16 IR/EL 1.40	AI 16 - 0
1.70	2.0	3/8"	16 ER/IL 1.70	AE 16 - 0	16 IR/EL 1.70	AI 16 - 0
1.95	2.0	3/8"	16 ER/IL 1.95	AE 16 - 0	16 IR/EL 1.95	AI 16 - 0
2.25	2.25	3/8"	16 ER/IL 2.25	AE 16 - 0	16 IR/EL 2.25	AI 16 - 0

Order example: 16 ER/IL 1.20 BXC

* The inserts should be used with our standard threading toolholders (See pages 33-38)
* Attention: The anvil must be changed to AE 16-0 or AI 16-0
* Other available blank sizes: I.C. 5/8", 1/2", 1/4", 3/16" & 5/32"

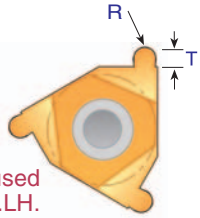
Grooving Inserts for Snap Ring



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 ±0.04	T	IC	Ordering Code ER/IL Inserts	Anvil	Ordering Code IR/EL Inserts	Anvil
0.5	1.4	3/8	**16 ER/IL R0.50**	AE 16 - 0	**16 IR/EL R0.50**	AI 16 - 0
0.6	1.6	3/8	**16 ER/IL R0.60**	AE 16 - 0	**16 IR/EL R0.60**	AI 16 - 0
0.9	2.0	3/8	**16 ER/IL R0.90**	AE 16 - 0	**16 IR/EL R0.90**	AI 16 - 0
1.0	2.0	3/8	**16 ER/IL R1.00**	AE 16 - 0	**16 IR/EL R1.00**	AI 16 - 0
1.1	2.15	3/8	**16 ER/IL R1.10**	AE 16 - 0	**16 IR/EL R1.10**	AI 16 - 0
1.2	2.25	3/8	**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 (See pages 33-38)
* Attention: The anvil must be changed to AE 16-0 or AI 16-0
* Other available blank sizes: I.C. 5/8", 1/2", 1/4", 3/16" & 5/32"

Grooving Kits

ER / IL INSERT
KGRO - EXTERNAL

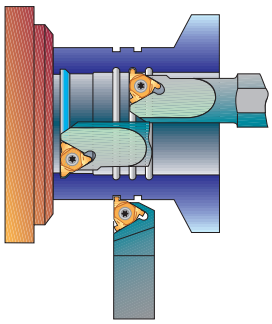
16	ER / IL 1.0	BXC	1 unit
16	ER / IL 1.2	BXC	1 unit
16	ER / IL 1.4	BXC	1 unit
16	ER / IL 1.7	BXC	1 unit
16	ER / IL 1.95	BXC	1 unit
16	ER / IL 2.25	BXC	1 unit
ANVIL	AE 16 - 0		1 unit

IR / EL INSERT
KGRO - INTERNAL

16	IR / EL 1.0	BXC	1 unit
16	IR / EL 1.2	BXC	1 unit
16	IR / EL 1.4	BXC	1 unit
16	IR / EL 1.7	BXC	1 unit
16	IR / EL 1.95	BXC	1 unit
16	IR / EL 2.25	BXC	1 unit
ANVIL	AI 16 - 0		1 unit

Technical Section

Cutting Speeds for Grooving Tools

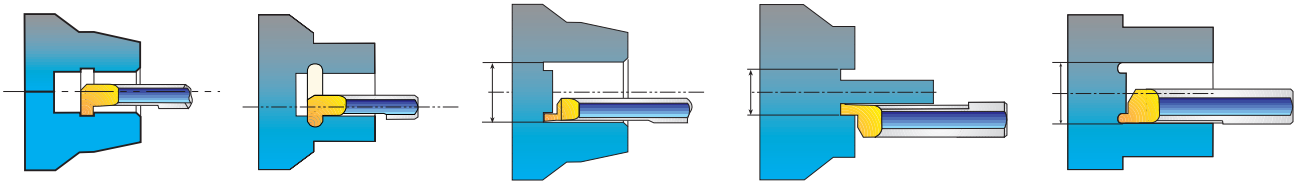


Carbide Grade: **BXC** (P30 - P50, K25 - K40)

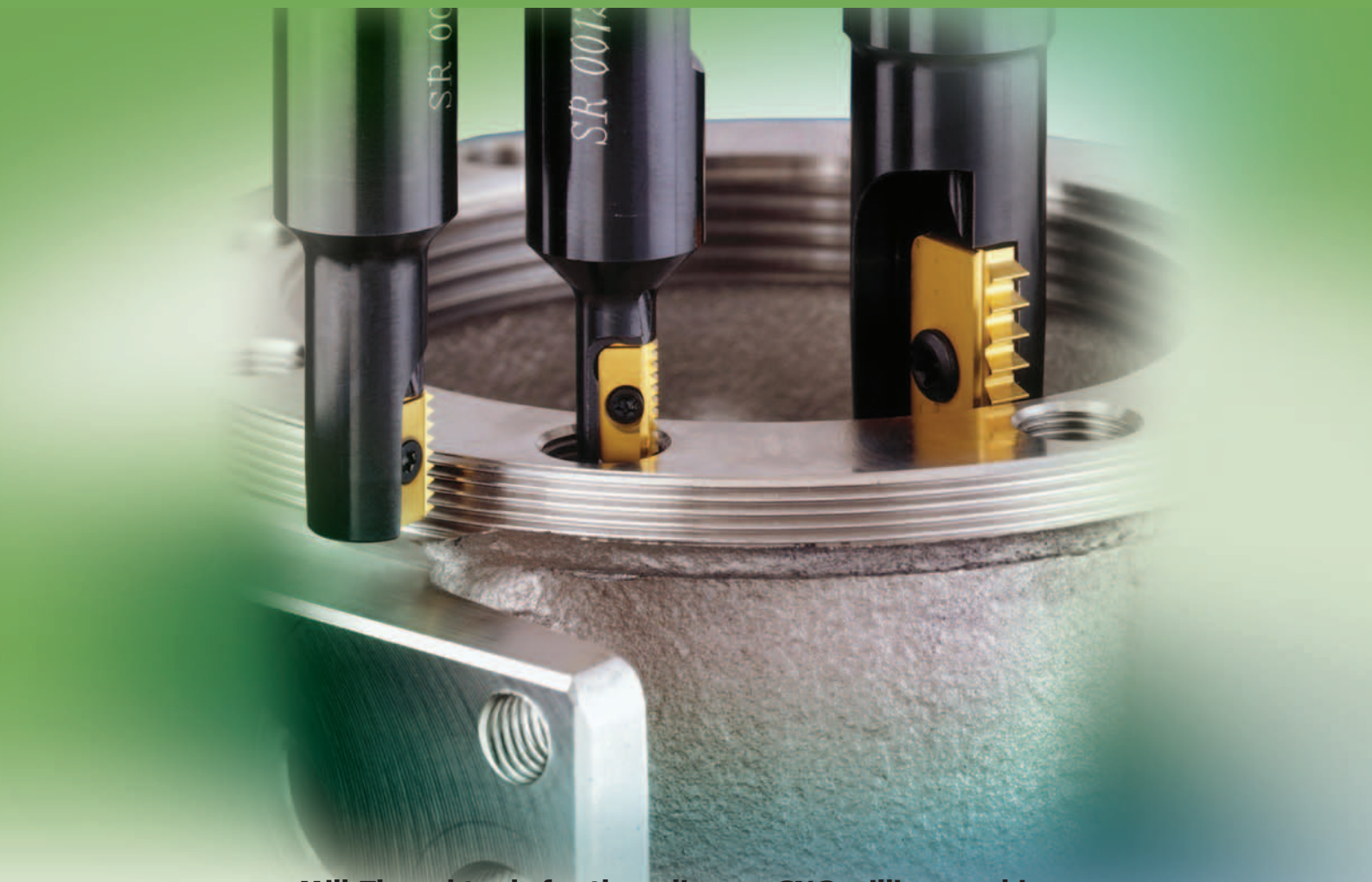
PVD TiN coated grade for low cutting speed. Works well with a wide range of stainless steels.

ISO Standard	Materials	Cutting Speed m/min
P	Low & Medium Carbon Steel	20-100
	High Carbon Steel	30-80
	Alloy Steels and Treated Steels	40-90
M	Stainless Steels	30-80
	Cast Steels	30-90
K	Cast Iron	30-90
N	Non-Ferrous & Aluminium	20-200

For grooving small bores see pages 150-155



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.

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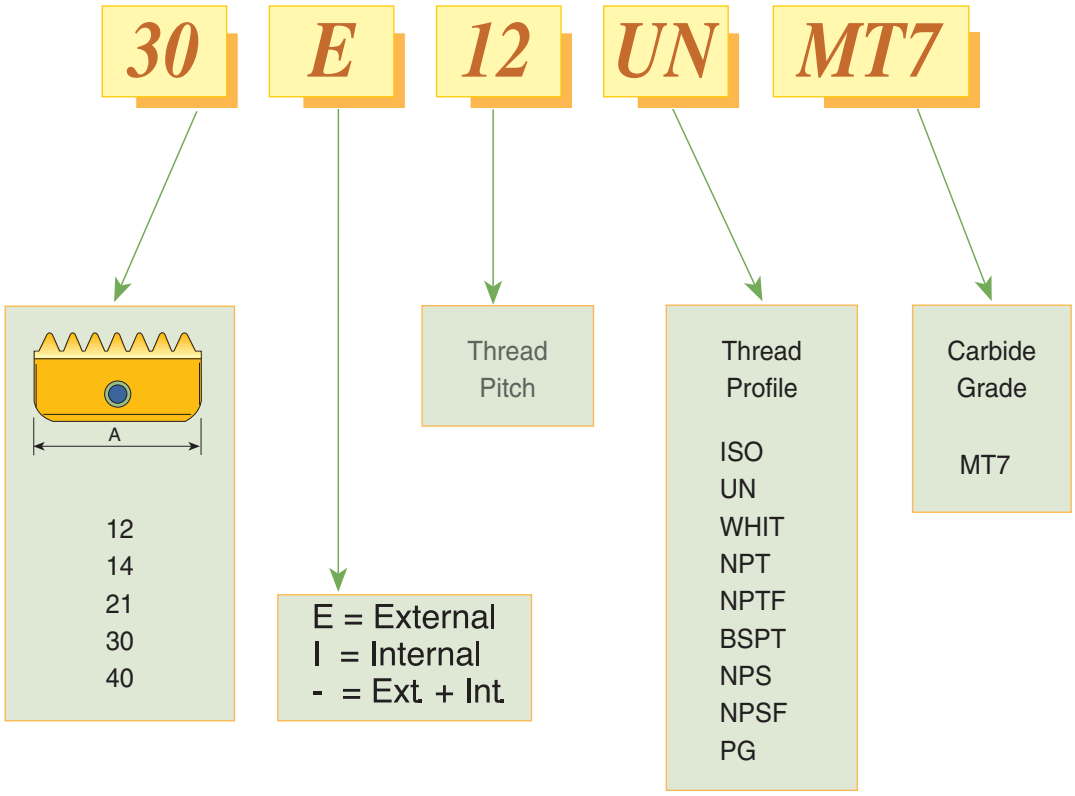
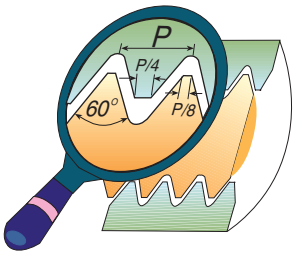
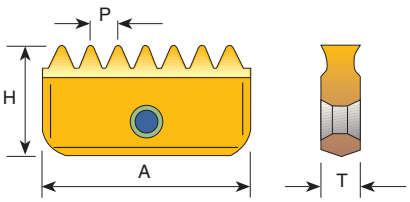
Product Identification

Mill-Thread Inserts Ordering Codes



ISO



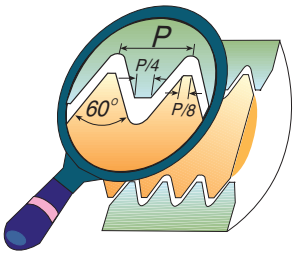


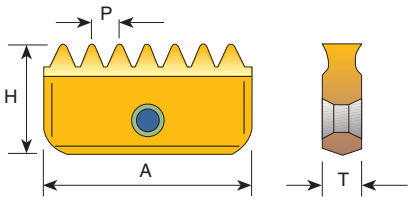
Pitch mm		Insert Size = A 12	14	21	30	40
0.5	Ext.					
0.5	Int.	*12 I 0.5 ISO	14 I 0.5 ISO			
0.75	Ext.		14 E 0.75 ISO			
0.75	Int.	*12 I 0.75 ISO	14 I 0.75 ISO			
1.0	Ext.		14 E 1.0 ISO	21 E 1.0 ISO		
1.0	Int.	*12 I 1.0 ISO	14 I 1.0 ISO	21 I 1.0 ISO		
1.25	Ext.		14 E 1.25 ISO			
1.25	Int.	*12 I 1.25 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.					40 I 5.5 ISO
6.0	Ext.					40 E 6.0 ISO
6.0	Int.					40 I 6.0 ISO
H		6.3	7.5	12	16	20
T		2.9	3.1	4.7	5.5	6.3

* One cutting edge

Order example: 14 I 1.5 ISO MT7

UN UNC, UNF, UNEF, UNS



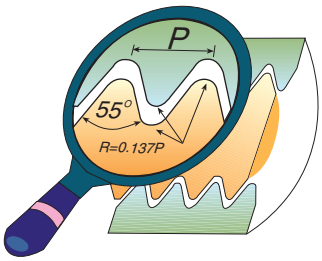


Pitch TPI		Insert Size = A 12	14	21	30	40
32	Ext.		14 E 32 UN			
32	Int.	*12 I 32 UN	14 I 32 UN			
28	Ext.		14 E 28 UN			
28	Int.	*12 I 28 UN	14 I 28 UN			
27	Ext.					
27	Int.		14 I 27 UN			
24	Ext.		14 E 24 UN	21 E 24 UN		
24	Int.	*12 I 24 UN	14 I 24 UN	21 I 24 UN		
20	Ext.		14 E 20 UN	21 E 20 UN	30 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.					
11	Int.		14 I 11 UN			
10	Ext.			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
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

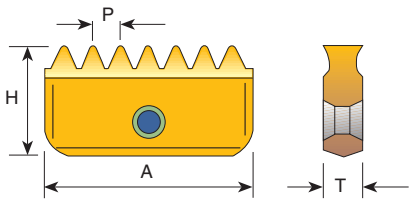
* One cutting edge

Order example: 21 E 18 UN MT7

WHIT BSW, BSF, BSP



Same Insert for External and Internal thread.

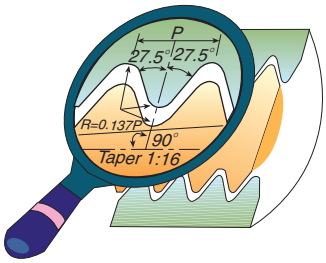


Pitch TPI	Insert Size = A 12	14	21	30	40
24		14-24 W			
20		14-20 W	21-20 W		
19	* 12-19 W	14-19 W	21-19 W		
16		14-16 W	21-16 W	30-16 W	
14		14-14 W	21-14 W	30-14 W	
11			21-11 W	30-11 W	40-11 W
8					40- 8 W
H	6.3	7.5	12	16	20
T	2.9	3.1	4.7	5.5	6.3

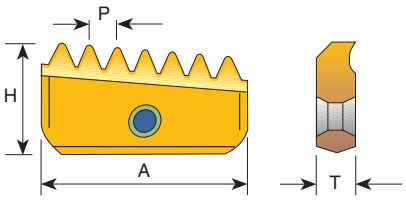
* One cutting edge

Order example: 21-11 W MT7

BSPT



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

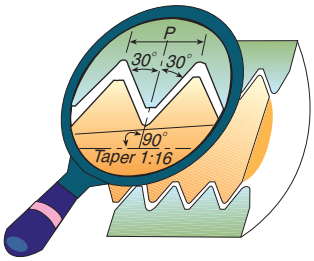


Pitch TPI	Insert Size = A 12	14	21	30	40
19	12-19 BSPT	14-19 BSPT			
14		14-14 BSPT	21-14 BSPT		
11			21-11 BSPT	30-11 BSPT	40-11 BSPT
H	6.3	7.5	12	16	20
T	2.9	3.1	4.7	5.5	6.3

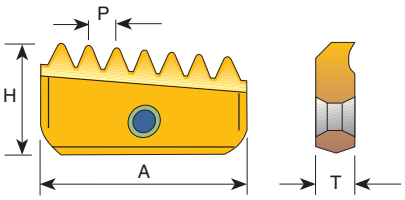
Order example: 14-19 BSPT MT7

For conical preparation end mills see page 100

NPT



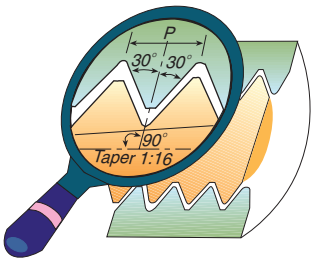
Conical pipe thread inserts are one-sided and may be used for both External and Internal threading.



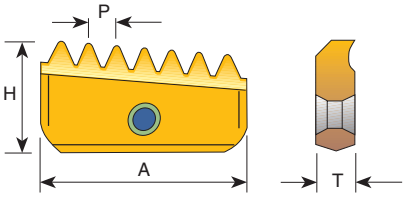
Pitch TPI	Insert Size = A 12	14	21	30	40
18	12-18 NPT	14-18 NPT			
14		14-14 NPT	21-14 NPT		
11.5			21-11.5 NPT	30-11.5 NPT	40-11.5 NPT
8				30- 8 NPT	40- 8 NPT
H	6.3	7.5	12	16	20
T	2.9	3.1	4.7	5.5	6.3

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.

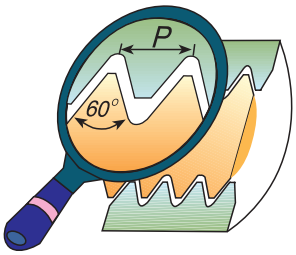


Pitch TPI	Insert Size = A 12	14	21	30	40
18	12-18 NPTF	14-18 NPTF			
14		14-14 NPTF	21-14 NPTF		
11.5			21-11.5 NPTF	30-11.5 NPTF	40-11.5 NPTF
8				30- 8 NPTF	40- 8 NPTF
H	6.3	7.5	12	16	20
T	2.9	3.1	4.7	5.5	6.3

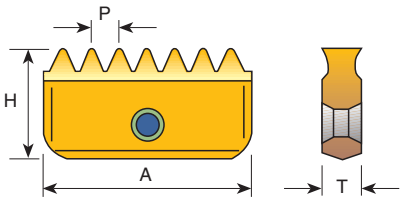
Order example: 21-14 NPTF MT7

For conical preparation end mills see page 100

NPS



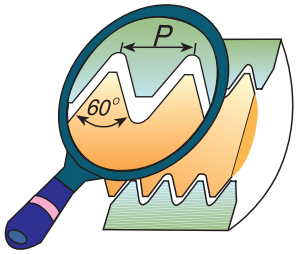
Same Insert for External and Internal thread



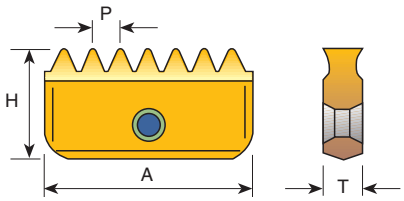
Pitch TPI	Insert Size = A 12	14	21	30	40
18	12-18 NPS	14-18 NPS			
14		14-14 NPS	21-14 NPS		
11.5			21-11.5 NPS	30-11.5 NPS	40-11.5 NPS
8				30- 8 NPS	40- 8 NPS
H	6.3	7.5	12	16	20
T	2.9	3.1	4.7	5.5	6.3

Order example: 30-11.5 NPS MT7

NPSF



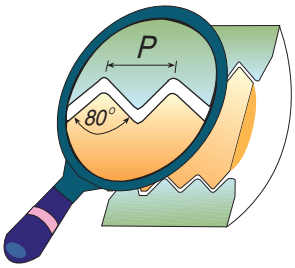
Same Insert for External and Internal thread



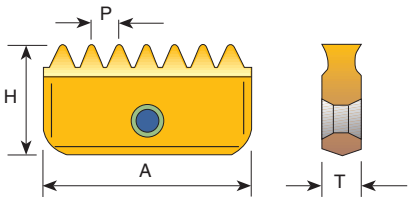
Pitch TPI	Insert Size = A 12	14	21	30	40
18	12-18 NPSF	14-18 NPSF			
14		14-14 NPSF	21-14 NPSF		
11.5			21-11.5 NPSF	30-11.5 NPSF	40-11.5 NPSF
8				30- 8 NPSF	40- 8 NPSF
H	6.3	7.5	12	16	20
T	2.9	3.1	4.7	5.5	6.3

Order example: 21-14 NPSF MT7

PG - DIN 40430



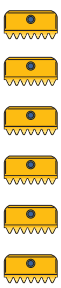
Same Insert for External and Internal thread

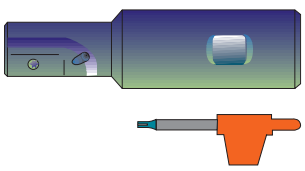


Pitch TPI	Insert Size = A 14	21	30
18	**14-18 PG** (PG 9, 11, 13.5, 16)	**21-18 PG** (PG 16)	
16		**21-16 PG** (PG 21, 29, 36, 42, 48)	**30-16 PG** (PG 36, 42, 48)
H	7.5	12	16
T	3.1	4.7	5.5

Order example: 21-18 PG MT7

Internal ISO Kits



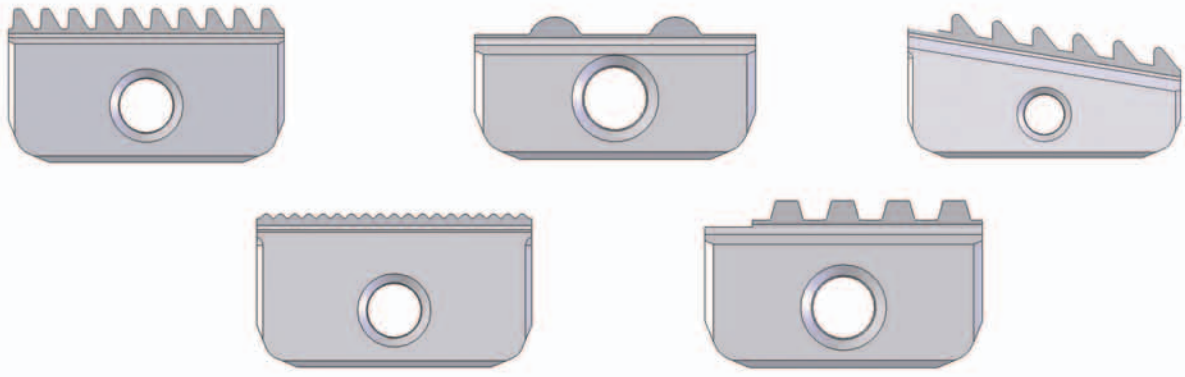


MTK 12 I ISO	MTK 14 I ISO
INSERTS	INSERTS
12 I 0.75 ISO 12 I 1.0 ISO 2 Pcs 12 I 1.25 ISO 12 I 1.5 ISO 2 Pcs	14 I 1.0 ISO 2 Pcs 14 I 1.5 ISO 2 Pcs 14 I 2.0 ISO 2 Pcs
TOOLHOLDER	TOOLHOLDER
SR 0009 H12	SR 0017 H14
KEY	KEY
K12	K14
SCREW	SCREW
S12	S14

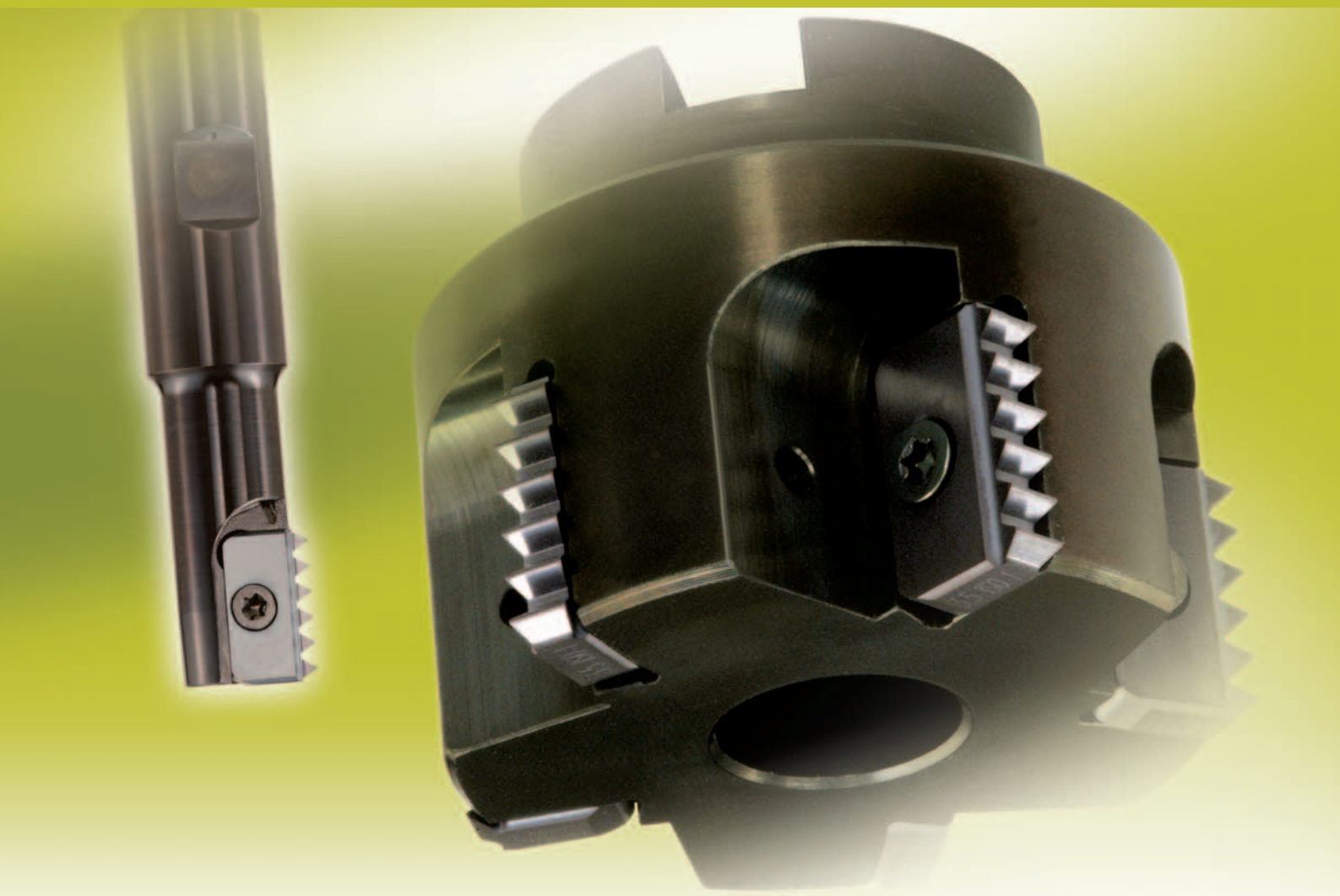
Order example : MTK 14 I ISO

Special Tools

In addition to standard products,
C.P.T. manufactures special tools and inserts
according to customers' requests.
Special tools are supplied in short delivery times.



Mill-Thread Toolholders



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Long Carbide Shank Toolholders	70
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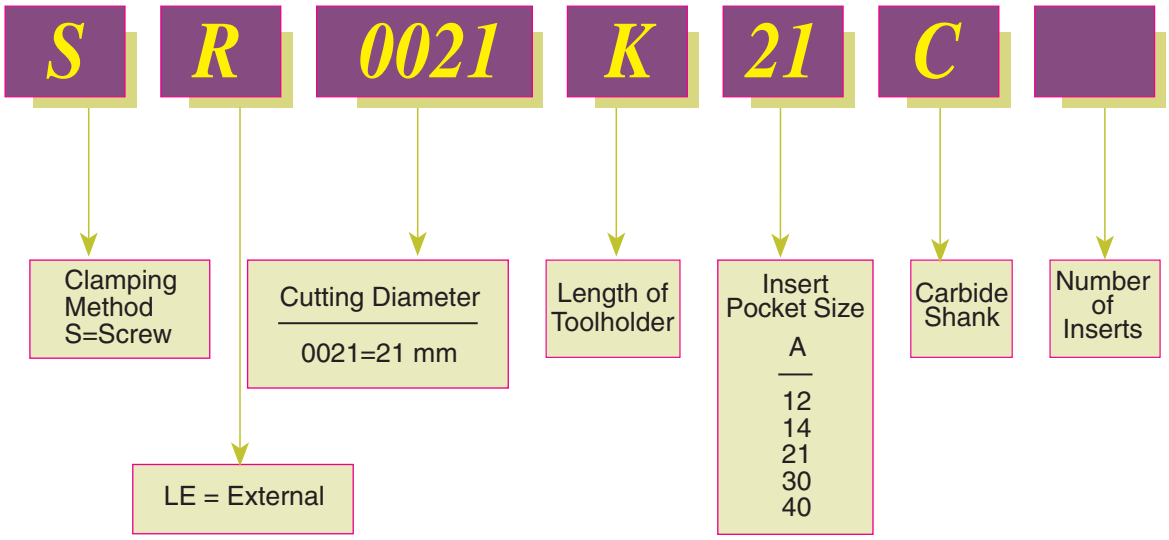
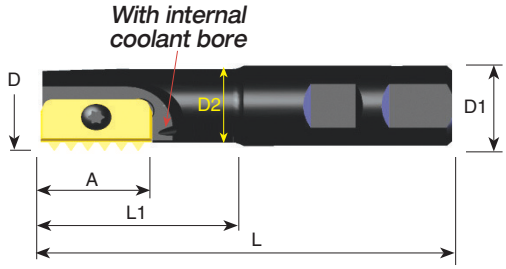
D-Thread Inserts and Toolholders	71-72

Product Identification

Mill-Thread Toolholders Ordering Codes



Single Insert Toolholders



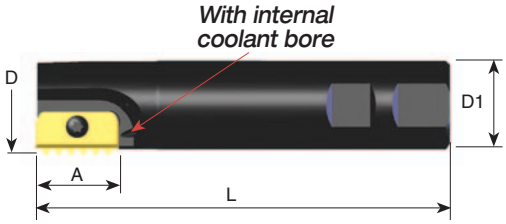
Ordering Code	A	D	D1	D2	L	L1	Insert Screw	Torx Key
SR0009H12	12	9.5	20	7.5	85	14	S12	K12
* **SR0010H12**	12	9.9	20	7.6	85	16	S12	K12
SR0012F14	14	12.0	20	8.9	75	20	S14	K14
SR0014H14	14	14.5	20	11.2	85	25	S14	K14
SR0017H14	14	17.0	20	13.4	85	30	S14	K14
** **SR0018H21**	21	18.0	20	14.4	85	30	S21	K21
SR0021H21	21	21.0	20	16.5	94	40	S21	K21
SR0029J30	30	29.0	25	22.4	110	50	S30	K30
SR0048M40	40	48.0	40	35.0	153	78	S40	K40

Order example: SR0029J30

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

** Cannot be used with the following inserts:
21 I 3.5 ISO, 21I 8 UN, 21I 7 UN, 21-11 BSPT, 21-11.5 NPT, 21-11.5 NPTF

Long Shank Toolholders

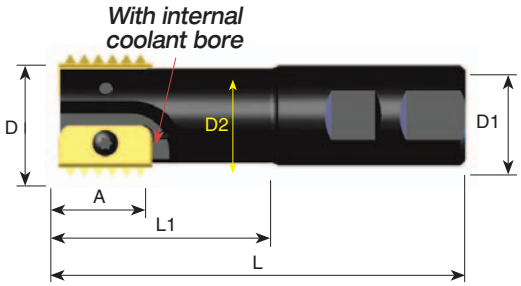


Ordering Code	A	D	D1	L	Insert Screw	Torx Key
SR0025K21	21	25	20	125	S21	K21
SR0031M30	30	31	25	150	S30	K30
SR0038M30	30	38	32	150	S30	K30
SR0048R40	40	48	40	210	S40	K40

Order example: SR0031M30

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

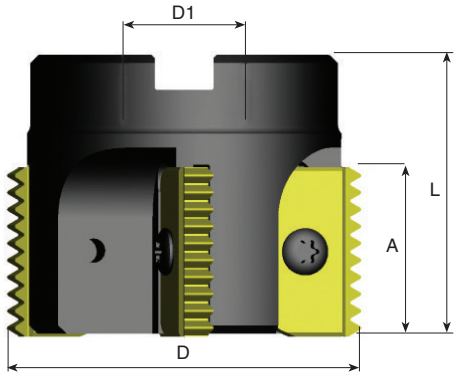
Twin Insert Toolholders



Ordering Code	A	D	D1	D2	L	L1	No. of Inserts	Insert Screw	Torx Key
SR0020H14-2	14	20	20	16	93	41	2	S14	K14
SR0030J21-2	21	30	25	24	108	52	2	S21	K21
SR0040L30-2	30	40	32	30	130	70	2	S30	K30
SR0050M40-2	40	50	40	38	153	78	2	S40	K40

Order example: SR0030J21-2

Multi Insert Toolholders

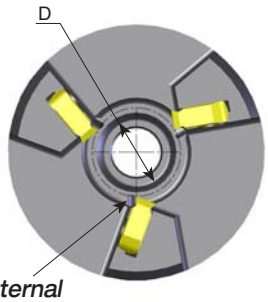


Ordering Code	A	D	D1	L	No. of Inserts	Insert Screw	Torx Key
SR0063C21-5	21	63	22	50	5	S21	K21
SR0063C30-4	30	63	22	50	4	S30	K30
SR0080D30-4	30	80	27	55	4	S30	K30
SR0100D30-4	30	100	32	60	4	S30	K30
SR0080D40-4	40	80	27	65	4	S40	K40
SR0100E40-4	40	100	32	70	4	S40	K40

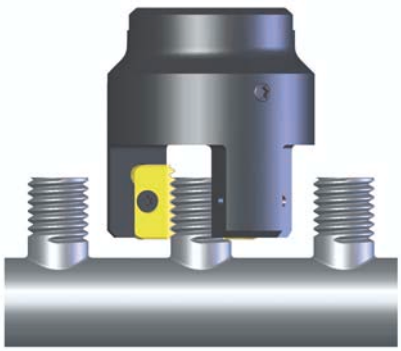
Order example: SR0080D30-4

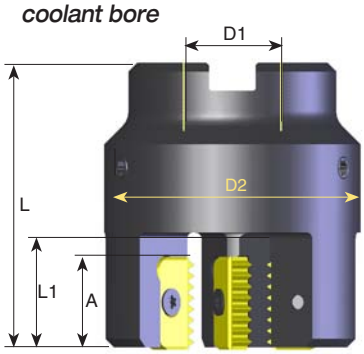
External Multi Insert Toolholder

- Reduced machining time
- Optimal coolant supply



With internal coolant bore

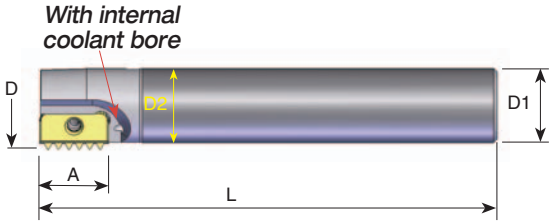




Ordering Code	A	D	D1	D2	L	L1	No. of Inserts	Insert Screw	Torx Key
SLE0020D21- 3	21	20	22	58	65	25	3	S21	K21
SLE0030D21- 3	21	30	22	68	65	25	3	S21	K21
SLE0045E21- 4	21	45	27	83	70	25	4	S21	K21

Order example: SLE 0030D21-3

Long Carbide Shank Toolholders



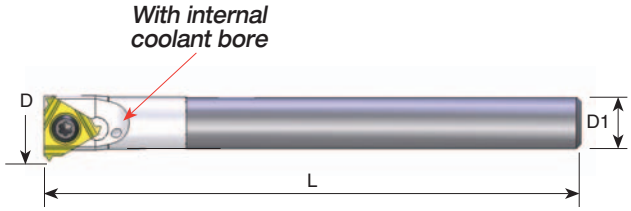
Ordering Code	A	D	D1	D2	L	Insert Screw	Torx Key
*SR0010K12C	12	9.9	8	8	125	S12	K12
SR0013H14C	14	13.2	10	10	110	S14	K14
SR0013J14C	14	13.2	10	10	150	S14	K14
SR0015K14C	14	15.2	12	12	175	S14	K14
SR0021K21C	21	21.0	16	16	130	S21	K21
SR0021M21C	21	21.0	16	16	200	S21	K21
SR0027S30C	30	27.0	20	20	270	S30	K30

Order example: SR0015K14C

* Without coolant bore

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		Pitch Range mm	Pitch Range TPI	D	D1	L	Insert Screw	Torx Key
* SR0005D06C	6	0.5-1.25	48-20	6.8	5.0	63	S06	K06
SR0006H08C	8	0.5-1.75	48-14	8.8	6.0	100	S08	K08
** SR0010M11C	11	0.5-2.00	48-11	13.2	10.0	150	S11	K11

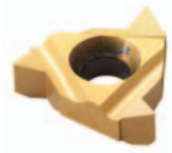
For Inserts see the Threading Tools section of this Catalogue
For an internal application use an internal R.H. insert.

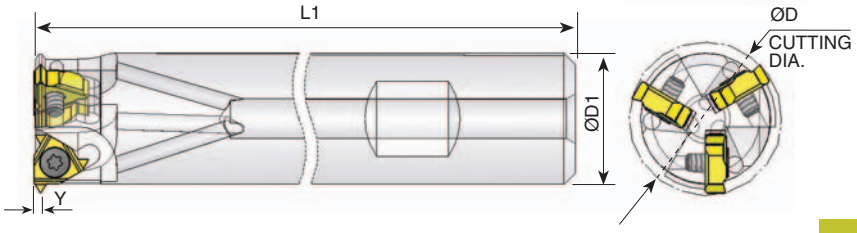
* Without coolant bore

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

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

- 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 a long overhang and includes internal coolant.
- Same insert and toolholder for both external and internal thread.





Ordering Code	Insert Size L	Insert Size I.C.	Y	D	D1	L1	No. of Inserts	Insert Screw	Torx Key
SR0023Q11	11	1/4	1	23.5	20	190	3	SE11	K11

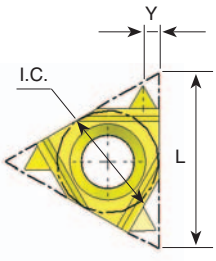
Partial 60° Size 11

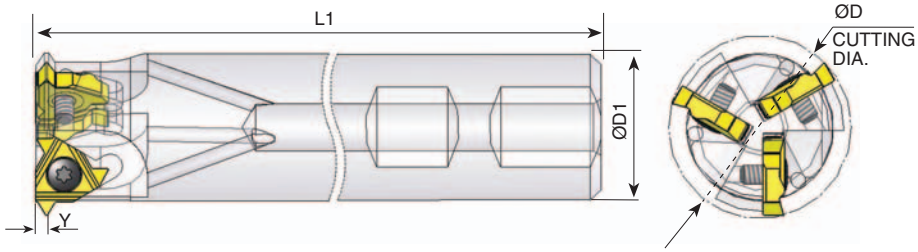
Ordering Code		Pitch mm	Pitch TPI
1160D	INT.	1.0 -2.0	24-12
	EX.	0.75-1.5	32-14

Coated Grade: BMA

Partial 55° Size 11

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





Ordering Code	Insert Size L	Insert Size I.C.	Y	D	D1	L1	No. of Inserts	Insert Screw	Torx Key
SR0031R16	16	3/8	1.8	31	25	225	3	SE16	K16

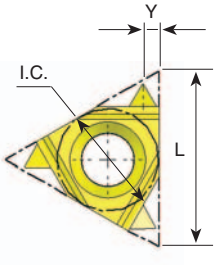
Partial 60° Size 16

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

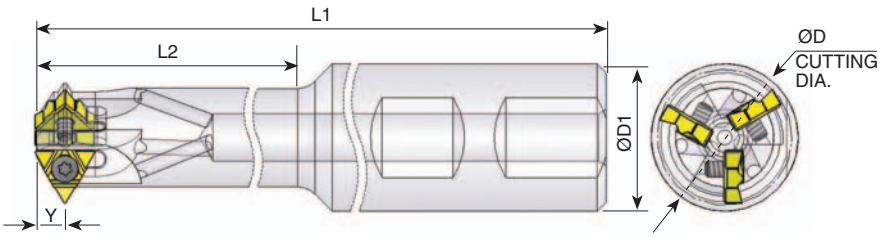
Coated Grade: BMA

Partial 55° Size 16

Ordering Code		Pitch TPI
1655D	INT./EX.	10-8



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



Ordering Code	Insert Size L	Insert Size I.C.	Y	D	D1	L1	L2	No. of Inserts	Insert Screw	Torx Key
SR0023Q11U	11U	1/4U	5	23	25	150	88	3	SE11	K11

Partial 60° Size 11U

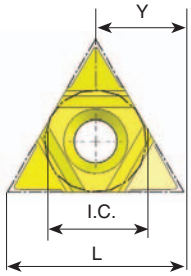
11U

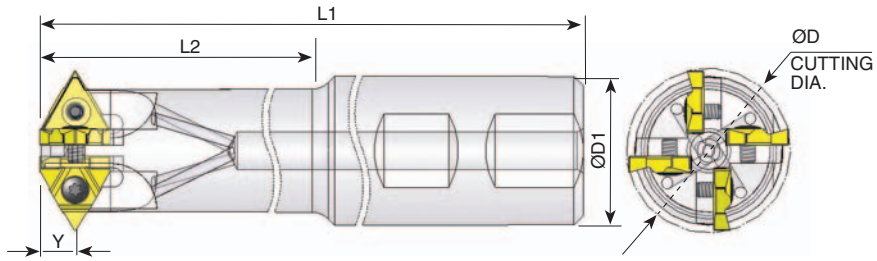
Ordering Code		Pitch mm	Pitch TPI
11U60D	**INT.**	2.5-4.0	10-6
	EX.	2.0-3.0	12-8

Coated Grade: BMA

Partial 55° Size 11U

Ordering Code		Pitch TPI
11U55D	**INT./EX.**	10-7





Ordering Code	Insert Size L	Insert Size I.C.	Y	D	D1	L1	L2	No. of Inserts	Insert Screw	Torx Key
SR0035R16U	16U	3/8U	7.6	33.5	32	220	155	4	SE16	K16

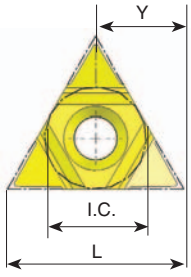
Partial 60° Size 16U

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

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 or 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, roughing and finishing.
- 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.

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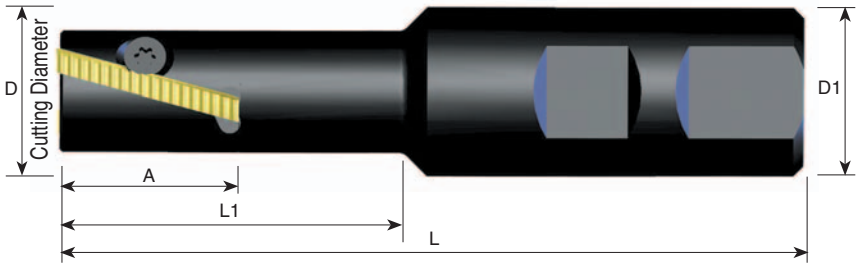
H23 Toolholder



Ordering Code	Insert Size A	D	D1	L	L1	No. of Inserts	Screw	Key
SRH23-2	27	23	25	110	50	2	S23	K21

H23 Threading Inserts

Spiral inserts have one cutting edge

ISO

Pitch mm	Ordering Code	Thread Size
1.0	H23 I 1.0 ISO	≥ M26
1.5	H23 I 1.5 ISO	≥ M27
2.0	H23 I 2.0 ISO	≥ M28
3.0	H23 I 3.0 ISO	≥ M30

For internal thread

UN

Pitch TPI	Ordering Code	Thread Size
24	H23 I 24 UN	≥ 1”
20	H23 I 20 UN	≥ 1”
18	H23 I 18 UN	≥ 1 1/16”
16	H23 I 16 UN	≥ 1 1/16”
14	H23 I 14 UN	≥ 1 1/8”
12	H23 I 12 UN	≥ 1 1/8”
8	H23 I 8 UN	≥ 1 3/16”
7	H23 I 7 UN	≥ 1 1/4”

For internal thread

Whitworth

Pitch TPI	Ordering Code	Thread Size
11	H23-11 W	≥ G 1”

Same insert for internal and external thread

BSPT

Pitch TPI	Ordering Code	Thread Size
11	**H23-11 BSPT**	≥ 1" BSPT

Same insert for internal and external thread

NPT

Pitch TPI	Ordering Code	Thread Size
11.5	**H23-11.5 NPT**	1"-2" NPT

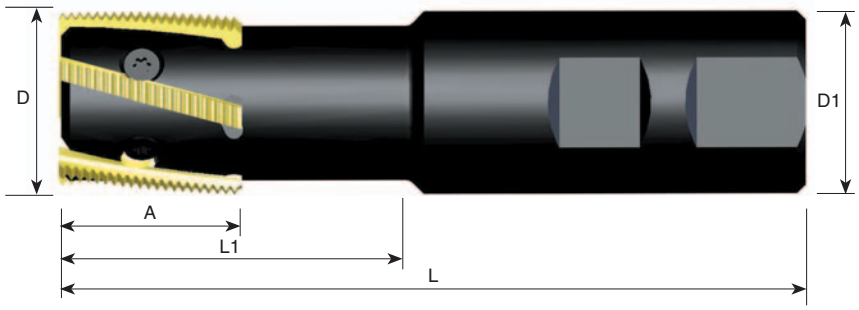
Same insert for internal and external thread

NPTF

Pitch TPI	Ordering Code	Thread Size
11.5	**H23-11.5 NPTF**	1"-2" NPTF

Same insert for internal and external thread

H32 Toolholder



Ordering Code	Insert Size A	D	D1	L	L1	No. of Inserts	Screw	Key
SRH32-5	32	32	32	130	60	5	S32	K22

H32 Threading Inserts

Spiral inserts have one cutting edge

ISO

Pitch mm	Ordering Code	Thread Size
1.5	**H32 I 1.5 ISO**	≥ M35
2.0	**H32 I 2.0 ISO**	≥ M36
3.0	**H32 I 3.0 ISO**	≥ M38
4.0	**H32 I 4.0 ISO**	≥ M40

For internal thread

UN

Pitch TPI	Ordering Code	Thread Size
20	**H32 I 20 UN**	≥1 3/8”
18	**H32 I 18 UN**	≥1 3/8”
16	**H32 I 16 UN**	≥1 3/8”
12	**H32 I 12 UN**	≥1 7/16”
8	**H32 I 8 UN**	≥1 1/2”
6	**H32 I 6 UN**	≥1 9/16”

For internal thread

Whitworth

Pitch TPI	Ordering Code	Thread Size
11	**H32-11 W**	Internal ≥ G 1 1/8” External ≥G 1”

Same insert for internal and external thread

BSPT

Pitch TPI	Ordering Code	Thread Size
11	**H32-11 BSPT**	Internal ≥ 1 1/8” BSPT External ≥ 1” BSPT

Same insert for internal and external thread

NPT

Pitch TPI	Ordering Code	Thread Size
11.5	**H32-11.5 NPT**	Internal 1 1/4”-2” NPT External 1”-2” NPT

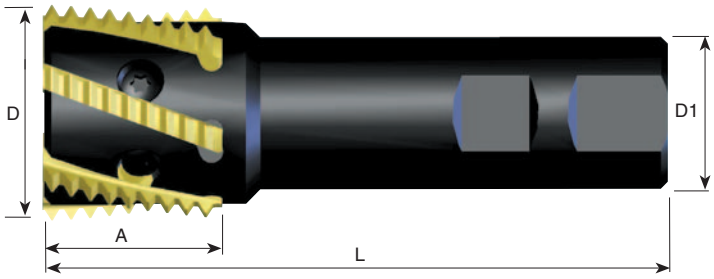
Same insert for internal and external thread

NPTF

Pitch TPI	Ordering Code	Thread Size
11.5	**H32-11.5 NPTF**	Internal 1 1/4”-2” NPTF External 1”-2” NPTF

Same insert for internal and external thread

H45 Toolholder



Ordering Code	Insert size A	D	D1	L	No. of Insert	Screw	Key
SRH45-6	37	45	32	130	6	S45	K40

H45 Threading Inserts

Spiral inserts have one cutting edge

ISO

Pitch mm	Ordering Code	Thread Size
1.5	H45 I 1.5 ISO	≥ M50
2.0	H45 I 2.0 ISO	≥ M50
3.0	H45 I 3.0 ISO	≥ M56
4.0	H45 I 4.0 ISO	≥ M56

For internal thread

UN

Pitch TPI	Ordering Code	Thread Size
16	H45 I 16 UN	≥ 2”
12	H45 I 12 UN	≥ 2”
8	H45 I 8 UN	≥ 2 1/4”
6	H45 I 6 UN	≥ 2 1/4”

For internal thread

Whitworth

Pitch TPI	Ordering Code	Thread Size
11	H45 - 11 W	Internal ≥ G 1 3/4” External ≥ G 1”

Same insert for internal and external thread

BSPT

Pitch TPI	Ordering Code	Thread Size
11	**H45 - 11 BSPT**	Internal ≥ 1 3/4" BSPT External ≥1" BSPT

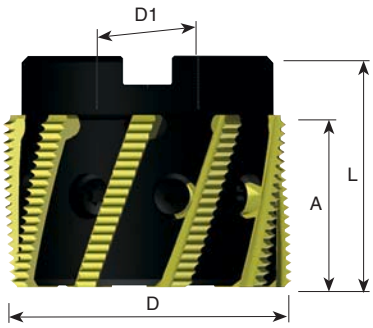
Same insert for internal and external thread

NPT

Pitch TPI	Ordering Code	Thread Size
11.5	**H45 - 11.5 NPT**	Internal 2" NPT External 1"-2" NPT

Same insert for internal and external thread

H63 Toolholder



Ordering Code	Insert size A	D	D1	L	No. of Insert	Screw	Key
SRH63-9	38	63	22	50	9	S63	K40

H63 Threading Inserts

Spiral inserts have one cutting edge

ISO

Pitch mm	Ordering Code	Thread Size
1.5	**H63 I 1.5 ISO**	≥ M70
2.0	**H63 I 2.0 ISO**	≥ M70
3.0	**H63 I 3.0 ISO**	≥ M75
4.0	**H63 I 4.0 ISO**	≥ M75

For internal thread

UN

Pitch TPI	Ordering Code	Thread Size
16	**H63 I 16 UN**	≥ 2 3/4”
12	**H63 I 12 UN**	≥ 2 3/4”
8	**H63 I 8 UN**	≥ 3”
6	**H63 I 6 UN**	≥ 3”

For internal thread

Whitworth

Pitch TPI	Ordering Code	Thread Size
11	**H63 - 11 W**	Internal ≥ G 2 1/2” External ≥ G 1”

Same insert for internal and external thread

BSPT

Pitch TPI	Ordering Code	Thread Size
11	**H63 - 11 BSPT**	Internal ≥ 2 1/2” BSPT External ≥ 1” BSPT

Same insert for internal and external thread

NPT

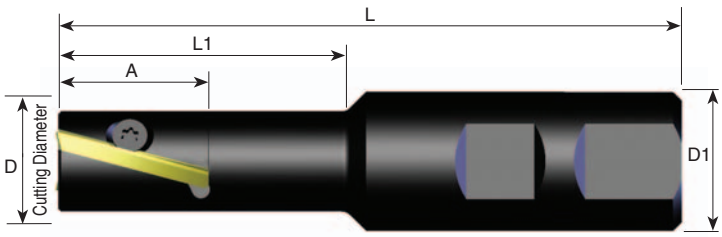
Pitch TPI	Ordering Code	Thread Size
11.5	**H63 - 11.5 NPT**	External ≥ 1” NPT

Same insert for internal and external thread

Spiral inserts and toolholders for finishing

- Milling a 90° shoulder with variety of corner radiuses
- Maximum depth of cut - 37 mm

H23 Toolholder

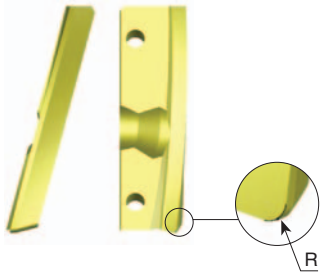


Ordering Code	Insert size A	D	D1	L	L1	No. of Insert	Screw	Key
SRH23-2	27	23	25	110	50	2	S23	K21

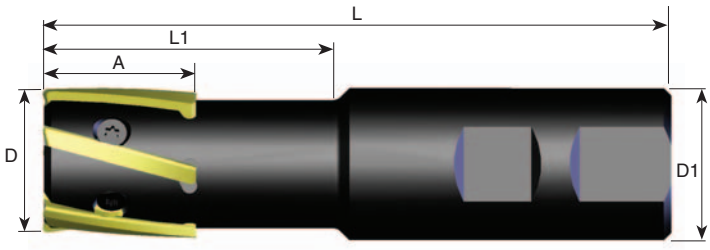
H23F Finishing Inserts

R	Ordering Code
0.2	H23 F R0.2
0.5	H23 F R0.5
1.0	H23 F R1.0

Spiral inserts have one cutting edge



H32 Toolholder

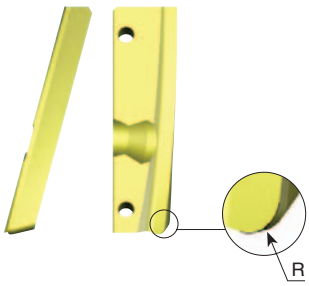


Ordering Code	Insert size A	D	D1	L	L1	No. of Insert	Screw	Key
SRH32-5	32	32	32	130	60	5	S32	K22

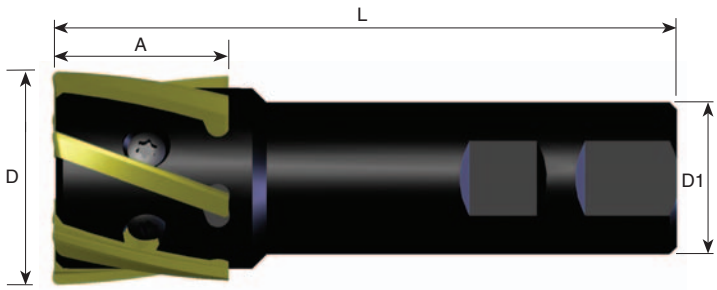
H32F Finishing Inserts

R	Ordering Code
0.2	H32 F R0.2
0.5	H32 F R0.5
1.0	H32 F R1.0

Spiral inserts have one cutting edge



H45 Toolholder

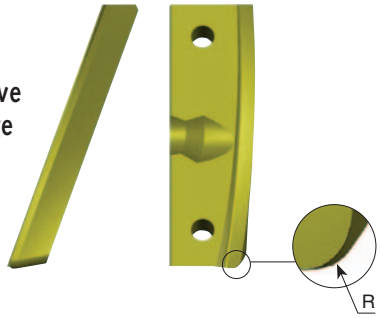


Ordering Code	Insert size A	D	D1	L	No. of Insert	Screw	Key
SRH45-6	37	45	32	130	6	S45	K40

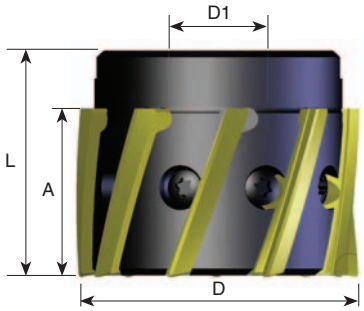
H45F Finishing Inserts

R	Ordering Code
0.2	H45 F R0.2
0.5	H45 F R0.5
1.0	H45 F R1.0
1.5	H45 F R1.5
2.0	H45 F R2.0

Spiral inserts have one cutting edge



H63 Toolholder

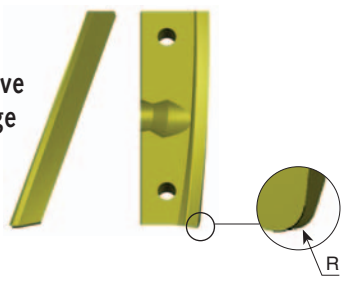


Ordering Code	Insert size A	D	D1	L	No. of Insert	Screw	Key
SRH63-9	38	63	22	50	9	S63	K40

H63F Finishing Inserts

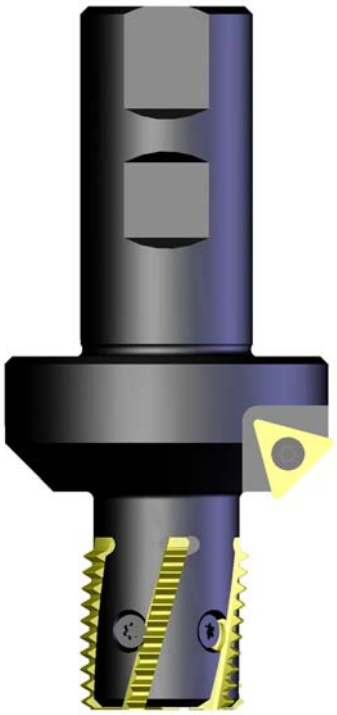
R	Ordering Code
0.2	H63 F R0.2
0.5	H63 F R0.5
1.0	H63 F R1.0
1.5	H63 F R1.5
2.0	H63 F R2.0

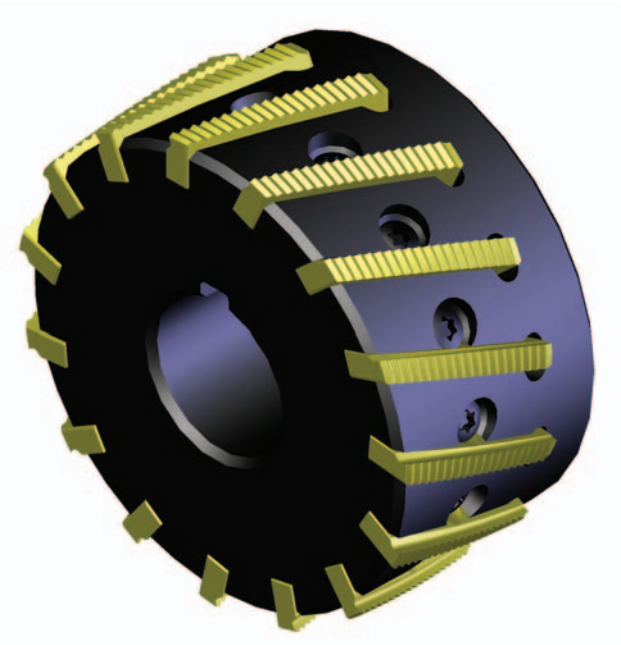
Spiral inserts have one cutting edge



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.

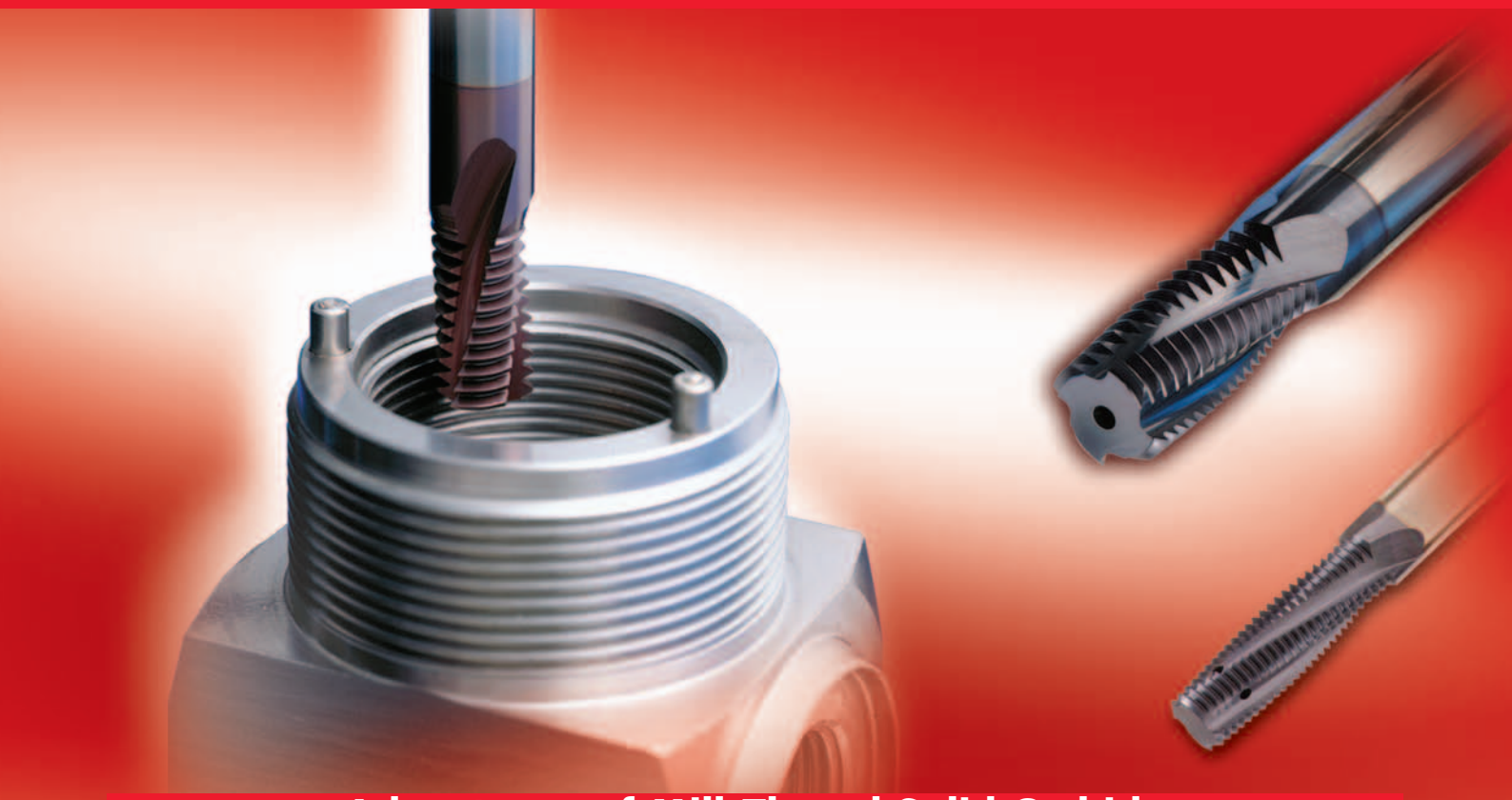
Special Tools





In addition to standard products, C.P.T. 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.

Mill-Thread Solid Carbide



Advantages of Mill-Thread Solid Carbide

Carbide grade: MT7 Sub-micron grade with Titanium Aluminium 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 holes.
- 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 hole**
- **Increased tool life**

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

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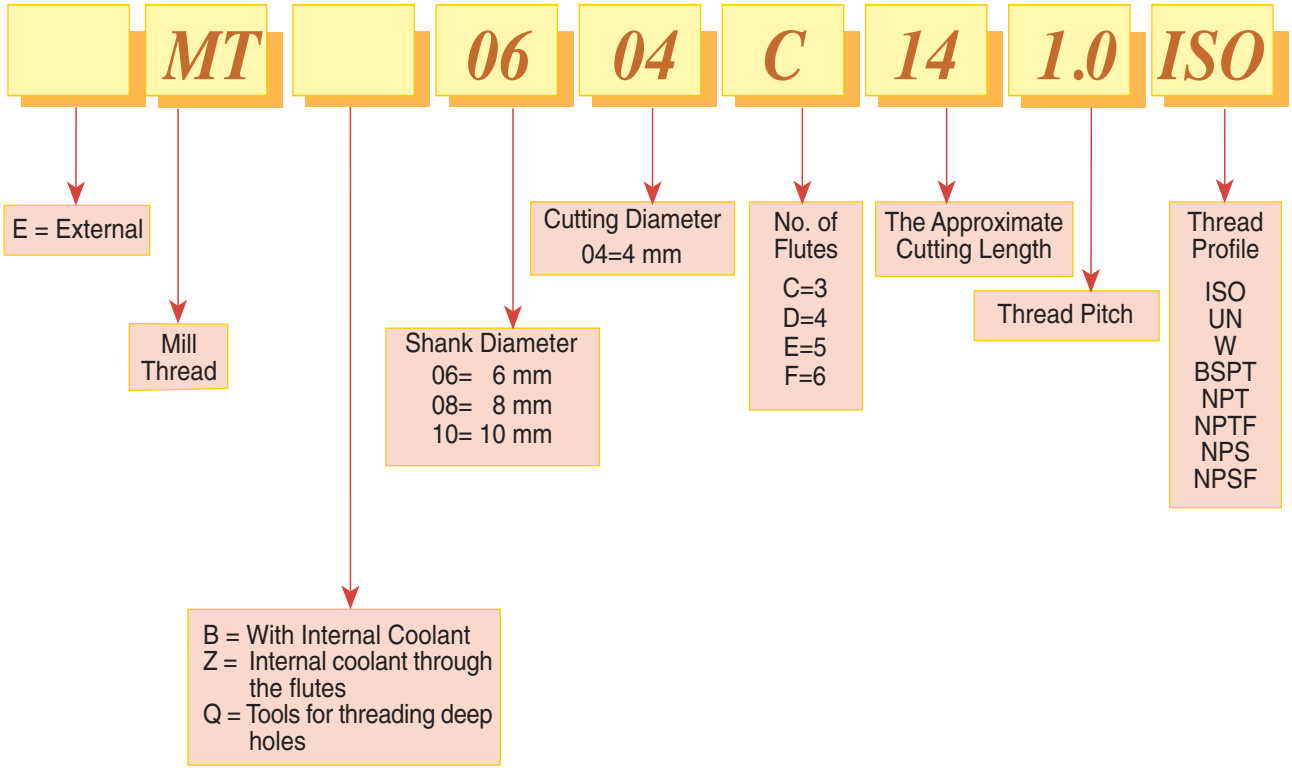
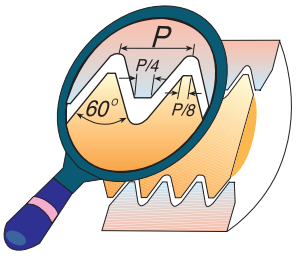
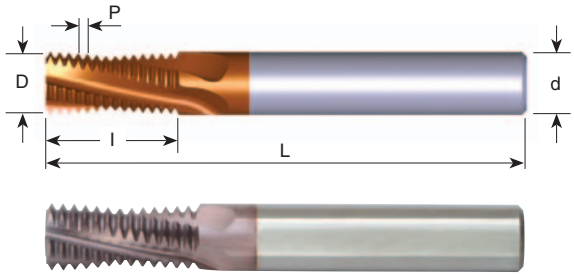
Product Identification

Mill-Thread Solid Carbide Ordering Codes



ISO
Tools for Internal Thread





Pitch mm	M coarse	M fine	Ordering Code	d	D	No. of Flutes	l	L
0.5	M3	∅≥ 4	MT06022C5 0.5 ISO	6	2.2	3	5.3	58
0.5		∅≥ 5	MT06038C10 0.5 ISO	6	3.8	3	10.3	58
0.7	M4	∅≥ 5	MT06031C7 0.7 ISO	6	3.1	3	7.4	58
0.75		∅≥ 6	MT06045C10 0.75ISO	6	4.5	3	10.1	58
0.8	M5	∅≥ 6	MT06036C9 0.8 ISO	6	3.6	3	9.2	58
1.0	M6	∅≥ 7	MT0604C10 1.0 ISO	6	4.0	3	10.5	58
1.0	M6	∅≥ 7	MT0604C14 1.0 ISO	6	4.0	3	14.5	58
1.0		∅≥ 9	MT0606C12 1.0 ISO	6	6.0	3	12.5	58
1.0		∅≥ 10	MT0808D16 1.0 ISO	8	8.0	4	16.5	64
1.25	M8	∅≥ 10	MT0605C14 1.25ISO	6	5.0	3	14.4	58
1.25	M8	∅≥ 10	MT0605C19 1.25ISO	6	5.0	3	19.4	58
1.5	M10	∅≥ 12	MT0807C17 1.5 ISO	8	7.0	3	17.3	64
1.5	M10	∅≥ 12	MT0807C24 1.5 ISO	8	7.0	3	24.8	76
1.5		∅≥ 14	MT1010D21 1.5 ISO	10	10.0	4	21.8	73
1.5		∅≥ 20	MT1616F33 1.5 ISO	16	16.0	6	33.8	105
1.75	M12	∅≥ 14	MT0808C20 1.75ISO	8	8.0	3	20.1	64
1.75	M12	∅≥ 14	MT0808C28 1.75ISO	8	8.0	3	28.9	76
2.0	M16	∅≥ 17	MT1010C27 2.0 ISO	10	10.0	3	27.0	73
2.0	M16	∅≥ 17	MT1010C39 2.0 ISO	10	10.0	3	39.0	105
2.0		∅≥ 18	MT1212D27 2.0 ISO	12	12.0	4	27.0	84
2.0		∅≥ 26	MT2020F41 2.0 ISO	20	20.0	6	41.0	105
2.5	M20	∅≥ 22	MT1414D33 2.5 ISO	14	14.0	4	33.8	84
2.5	M20	∅≥ 22	MT1414D48 2.5 ISO	14	14.0	4	48.8	105
3.0	M24	∅≥ 25	MT1616C40 3.0 ISO	16	16.0	3	40.5	105
3.0	M24	∅≥ 25	MT1616C58 3.0 ISO	16	16.0	3	58.5	120
3.0	M27	∅≥ 28	MT2020D43 3.0 ISO	20	20.0	4	43.5	105

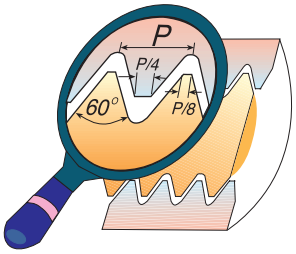
Order example: MT 1212D27 2.0 ISO MT7

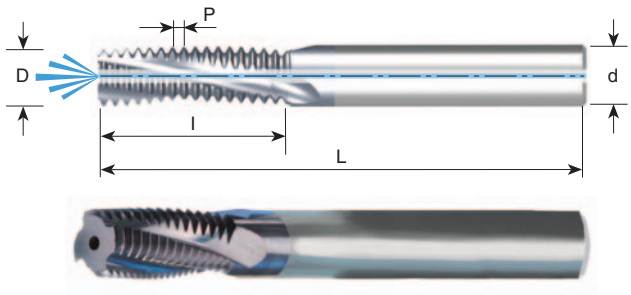
For thread mills with coolant bore see following pages

For small thread mills see pages 105 & 113

ISO With internal coolant bore

Tools for Internal Thread





Pitch mm	M coarse	M fine	Ordering Code	d	D	No. of Flutes	l	L
0.5		∅≥ 5	MTB06038C10 0.5 ISO	6	3.8	3	10.3	58
0.7	M 4	∅≥ 5	MTB06031C7 0.7 ISO	6	3.1	3	7.4	58
0.75		∅≥ 6	MTB06045C10 0.75 ISO	6	4.5	3	10.1	58
0.75		∅≥ 12	MTB1010D24 0.75 ISO	10	10.0	4	24.4	73
0.8	M 5	∅≥ 6	MTB06038C9 0.8 ISO	6	3.8	3	9.2	58
1.0	M 6	∅≥ 7	MTB06046C10 1.0 ISO	6	4.6	3	10.5	58
1.0	M 6	∅≥ 7	MTB06046C14 1.0 ISO	6	4.6	3	14.5	58
1.0		∅≥ 9	MTB0606C12 1.0 ISO	6	6.0	3	12.5	58
1.0		∅≥ 10	MTB0808D16 1.0 ISO	8	8.0	4	16.5	64
1.0		∅≥ 12	MTB1010D24 1.0 ISO	10	10.0	4	24.5	73
1.25	M 8	∅≥ 10	MTB0606C14 1.25 ISO	6	6.0	3	14.4	58
1.25	M 8	∅≥ 10	MTB0606C19 1.25 ISO	6	6.0	3	19.4	58
1.5	M10	∅≥ 12	MTB08078C17 1.5 ISO	8	7.8	3	17.3	64
1.5	M10	∅≥ 12	MTB08078C24 1.5 ISO	8	7.8	3	24.8	76
1.5		∅≥ 14	MTB1010D21 1.5 ISO	10	10.0	4	21.8	73
1.5		∅≥ 16	MTB1212D26 1.5 ISO	12	12.0	4	26.3	84
1.5		∅≥ 20	MTB1616F33 1.5 ISO	16	16.0	6	33.8	105
1.75	M12	∅≥ 12	MTB1009C20 1.75 ISO	10	9.0	3	20.1	73
1.75	M12	∅≥ 12	MTB1009C28 1.75 ISO	10	9.0	3	28.9	73
2.0	M14	∅≥ 15	MTB1010C27 2.0 ISO	10	10.0	3	27.0	73
2.0	M16	∅≥ 17	MTB12118D27 2.0 ISO	12	11.8	4	27.0	84
2.0	M16	∅≥ 17	MTB12118D39 2.0 ISO	12	11.8	4	39.0	105
2.0		∅≥ 26	MTB2020F41 2.0 ISO	20	20.0	6	41.0	105
2.5	M20	∅≥ 22	MTB1615E33 2.5 ISO	16	15.0	5	33.8	105
2.5	M20	∅≥ 22	MTB1615E48 2.5 ISO	16	15.0	5	48.8	105
3.0	M24	∅≥ 25	MTB2018D40 3.0 ISO	20	18.0	4	40.5	105
3.0	M24	∅≥ 25	MTB2018D58 3.0 ISO	20	18.0	4	58.5	120
3.0	M27	∅≥ 27	MTB2020D43 3.0 ISO	20	20.0	4	43.5	105

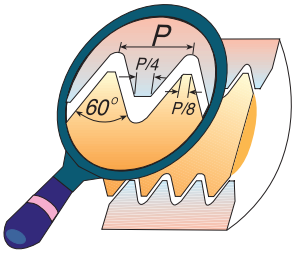
Order example: MTB 08078C17 1.5 ISO MT7

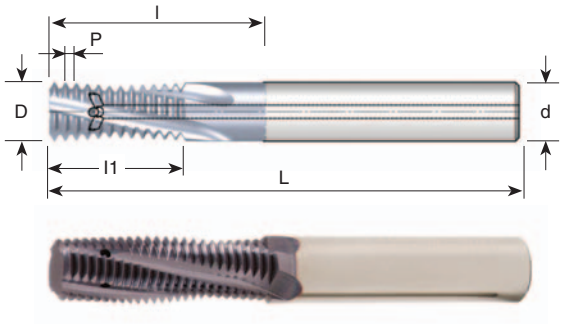
For thread mills with coolant through the flutes see next page

For small thread mills see pages 105 & 113

ISO With internal coolant through the flutes

Tools for Internal Thread





Pitch mm	M coarse	M fine	Ordering Code	d	D	No. of Flutes	l	L
1.0	M6	∅≥ 7	MTZ06048C10 1.0 ISO	6	4.8	3	10.5	58
1.0		∅≥ 9	MTZ0606C12 1.0 ISO	6	6.0	3	12.5	58
1.0		∅≥ 10	MTZ0808D16 1.0 ISO	8	8.0	4	16.5	64
1.25	M8	∅≥ 10	MTZ0606C14 1.25 ISO	6	6.0	3	14.4	58
1.25	M8	∅≥ 10	MTZ0606C19 1.25 ISO	6	6.0	3	19.4	58
1.5	M10	∅≥ 12	MTZ08078C17 1.5 ISO	8	7.8	3	17.3	64
1.5		∅≥ 14	MTZ1010D21 1.5 ISO	10	10.0	4	21.8	73
1.5		∅≥ 16	MTZ1212D26 1.5 ISO	12	12.0	4	26.3	84
1.5		∅≥ 20	MTZ1616E33 1.5 ISO	16	16.0	5	33.8	101
1.75	M12	∅≥ 12	MTZ1009C20 1.75 ISO	10	9.0	3	20.1	73
1.75	M12	∅≥ 12	MTZ1009C28 1.75 ISO	10	9.0	3	28.9	73
2.0	M14	∅≥ 15	MTZ1010C27 2.0 ISO	10	10.0	3	27.0	73
2.0	M16	∅≥ 17	MTZ12118D27 2.0 ISO	12	11.8	4	27.0	84
2.5	M20	∅≥ 22	MTZ1615E33 2.5 ISO	16	15.0	5	33.8	101

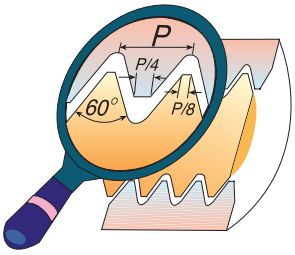
Order example: MTZ 08078C17 1.5 ISO MT7

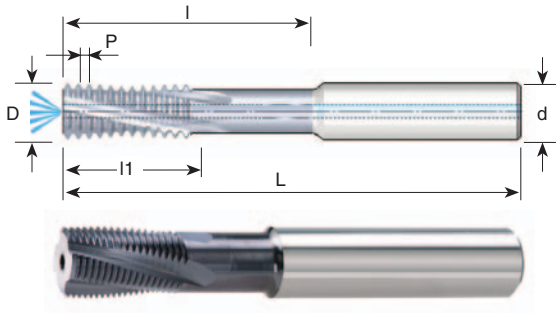
For thread mills with coolant bore for deep holes see next page

For small thread mills see pages 105 & 113

ISO With relieved neck and internal coolant bore

Tools for Internal Thread





Pitch mm	M fine	Ordering Code	d	D	No. of Flutes	l1	l	L
1.0	∅≥ 12	MTQ1010D32 1.0 ISO	10	10.0	4	18.0	32.0	73
1.0	∅≥ 14	MTQ1212D38 1.0 ISO	12	12.0	4	21.0	38.0	84
1.0	∅≥ 18	MTQ1616F45 1.0 ISO	16	16.0	6	26.0	45.0	105
1.5	∅≥ 13	MTQ1010D30 1.5 ISO	10	10.0	4	18.0	30.0	73
1.5	∅≥ 15	MTQ1212D34 1.5 ISO	12	12.0	4	19.5	34.5	84
1.5	∅≥ 19	MTQ1616F43 1.5 ISO	16	16.0	6	25.5	43.5	105
1.5	∅≥ 23	MTQ2020F60 1.5 ISO	20	20.0	6	36.0	60.0	105
2.0	∅≥ 16	MTQ1212D42 2.0 ISO	12	12.0	4	24.0	42.0	84
2.0	∅≥ 20	MTQ1616E45 2.0 ISO	16	16.0	5	26.0	45.0	105
2.0	∅≥ 24	MTQ2020F56 2.0 ISO	20	20.0	6	34.0	56.0	105
3.0	∅≥ 22	MTQ1616D45 3.0 ISO	16	16.0	4	30.0	45.0	105
3.0	∅≥ 26	MTQ2020E54 3.0 ISO	20	20.0	5	33.0	54.0	105
3.5	∅≥ 26	MTQ2020D45 3.5 ISO	20	20.0	4	28.0	45.5	105
4.0	∅≥ 31	MTQ2525D64 4.0 ISO	25	25.0	4	40.0	64.0	160

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

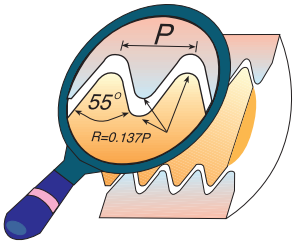
- To perform medium and large threads on relatively deep work pieces.
- To use overhang according to the application.
- To perform deep threads at the bottom of the application.

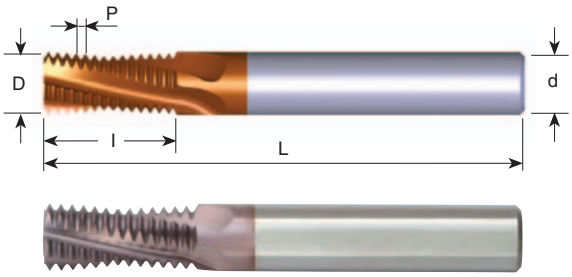
Advantages

- Provides high rigidity and stability (anti-vibrations).
- Accomplishes deep threads in one pass.
- Relatively low cutting forces due to short cutting length which enables reduction of the radial in feed required.
- Threads length up to 3D.

For small thread mills see pages 105 & 113

G (55°) BSF, BSP
Same Tool for Internal and External Thread

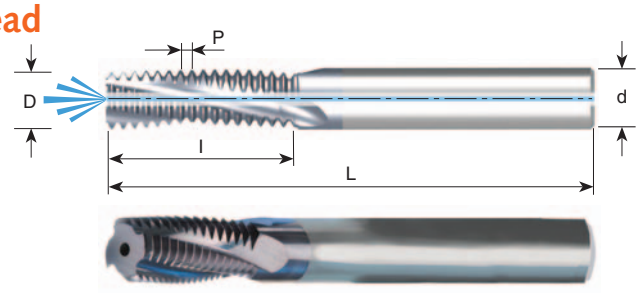




Pitch TPI	Standard	Ordering Code	d	D	No. of Flutes	l	L
28	G1/8	MT0606C9 28 W	6	6.0	3	9.5	58
19	G1/4-3/8	MT0808C14 19 W	8	8.0	3	14.0	64
14	G1/2-7/8	MT1212D19 14 W	12	12.0	4	19.0	84
14	G1/2-7/8	MT1212D26 14 W	12	12.0	4	26.3	84
11	G1-1 1/2	MT1212C24 11 W	12	12.0	3	24.2	84
11	G1-3	MT1616D38 11 W	16	16.0	4	38.1	105
11	G≥1	MT2020E47 11 W	20	20.0	5	47.3	105

Order example: MT 1212D19 14 W MT7

With internal coolant bore
Same Tool for Internal and External Thread



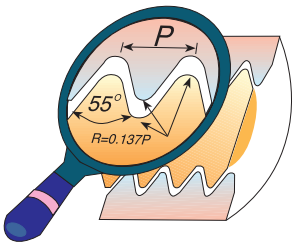
Pitch TPI	Standard	Ordering Code	d	D	No. of Flutes	l	L
28	G1/8	MTB08078C14 28W	8	7.8	3	14.1	64
19	G1/4-3/8	MTB1010D16 19W	10	10.0	4	16.7	73
14	G1/2-7/8	MTB1616E26 14W	16	16.0	5	26.3	105
11	G≥1	MTB1616D38 11W	16	16.0	4	38.1	105
11	G≥1	MTB2020E47 11W	20	20.0	5	47.3	105

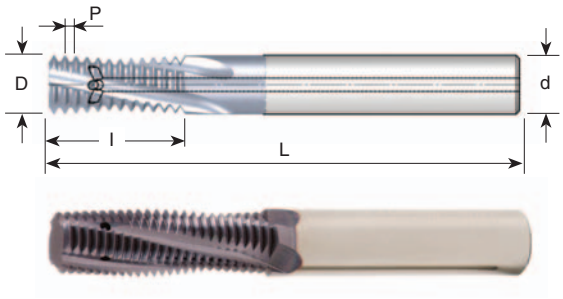
Order example: MTB 1010D16 19 W MT7

For thread mills with coolant through the flutes see next page

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

Same Tool for Internal and External Thread



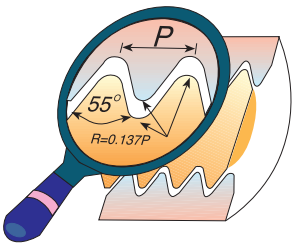


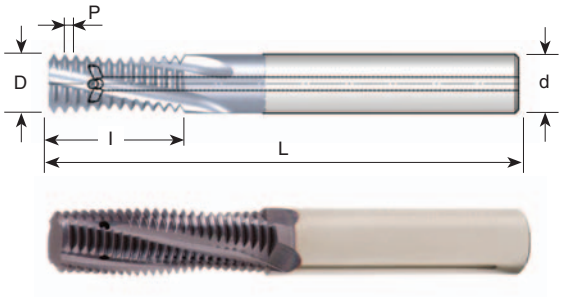
Pitch TPI	Standard	Ordering Code	d	D	No. of Flutes	l	L
28	G1/8	**MTZ08078C14 28W**	8	7.8	3	14.1	64
19	G1/4-3/8	**MTZ1010D16 19W**	10	10.0	4	16.7	73
14	G1/2-7/8	**MTZ1616E26 14W**	16	16.0	5	26.3	101
11	G≥1	**MTZ1616D38 11W**	16	16.0	4	38.1	101

Order example: MTZ 08078C14 28W MT7

Whitworth BSW With internal coolant through the flutes

Same Tool for Internal and External Thread





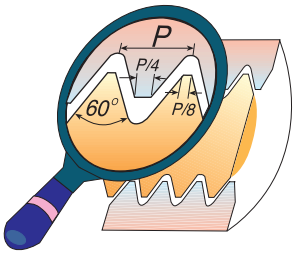
Pitch TPI	Standard	Ordering Code	d	D	No. of Flutes	l	L
* 20	1/4	**MTZ06046C12 20W**	6	4.6	3	12.1	58
18	5/16	**MTZ06053C14 18W**	6	5.3	3	14.8	58
16	3/8	**MTZ08068C16 16W**	8	6.8	3	16.7	64
16	1/2	**MTZ10092D24 16W**	10	9.2	4	24.6	73
14	7/16	**MTZ08078D20 14W**	8	7.8	4	20.9	64
12	1/2	**MTZ10086D24 12W**	10	8.6	4	24.4	73
11	5/8	**MTZ12109D28 11W**	12	10.9	4	28.9	84

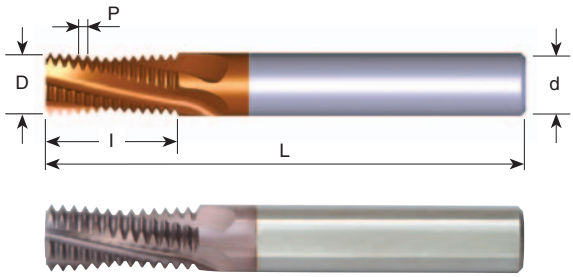
Order example: MTZ 08068C16 16 W MT7

* Cutter without coolant

UN

Tools for Internal Thread





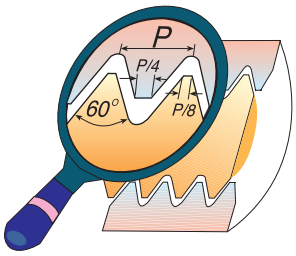
Pitch TPI	UNC	UNF	UNEF	Ordering Code	d	D	No. of Flutes	l	L
40	5			MT06025C6 40 UN	6	2.5	3	6.0	58
32	8	10	12	MT06032C6 32 UN	6	3.2	3	6.8	58
28		1/4		MT0604C11 28 UN	6	4.0	3	11.3	58
28			7/16-1/2	MT0606C14 28 UN	6	6.0	3	14.1	58
24		5/16		MT0605C14 24 UN	6	5.0	3	14.3	58
24		3/8	9/16-5/8	MT0807C21 24 UN	8	7.0	3	20.6	64
20	1/4			MT06045C12 20 UN	6	4.5	3	12.1	58
20		7/16-1/2		MT0807C21 20 UN	8	7.0	3	21.0	64
20			3/4-1	MT1212E27 20 UN	12	12.0	5	27.3	84
18	5/16			MT0605C14 18 UN	6	5.0	3	14.8	58
18		9/16-5/8	$1^{1/8}$-$1^{5/8}$	MT1010D26 18 UN	10	10.0	4	26.1	73
16	3/8			MT0606C16 16 UN	6	6.0	3	16.7	58
16		3/4		MT1212D31 16 UN	12	12.0	4	31.0	84
14	7/16			MT0807C20 14 UN	8	7.0	3	20.9	64
14		7/8		MT1615E37 14 UN	16	15.0	5	37.2	105
13	1/2			MT0808C22 13 UN	8	8.0	3	22.5	64
12	9/16			MT1010C26 12 UN	10	10.0	3	26.5	73
12		$1\text{-}1^{1/2}$		MT1616E41 12 UN	16	16.0	5	41.3	105
11	5/8			MT1010C28 11 UN	10	10.0	3	28.9	73
10	3/4			MT1212C34 10 UN	12	12.0	3	34.3	84
9	7/8			MT1615C38 9 UN	16	15.0	3	38.1	105
8	1			MT1616C42 8 UN	16	16.0	3	42.9	105
7	$1^{1/8}$ -$1^{1/4}$			MT2020D45 7 UN	20	20.0	4	45.3	105

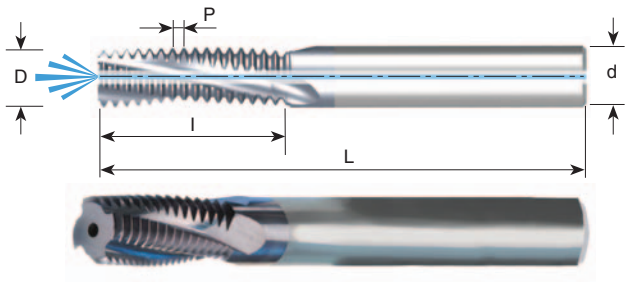
Order example: MT 1615E37 14UN MT7

For thread mills with coolant bore see following pages

For small thread mills see pages 106-107, 114

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	MTB06032C6 32 UN	6	3.2	3	6.8	58
32			5/16	MTB0606C14 32 UN	6	6.0	3	14.7	58
32			3/8	MTB0808D18 32 UN	8	8.0	4	18.7	64
28		1/4		MTB0605C11 28 UN	6	5.0	3	11.3	58
28			7/16-1/2	MTB0606C14 28 UN	6	6.0	3	14.1	58
24		5/16		MTB08066C14 24 UN	8	6.6	3	14.3	64
24		3/8	9/16-5/8	MTB0808D21 24 UN	8	8.0	4	20.6	64
20	1/4			MTB06047C12 20 UN	6	4.7	3	12.1	58
20		7/16		MTB0808C21 20 UN	8	8.0	3	21.0	64
20		1/2		MTB1010D22 20 UN	10	10.0	4	22.3	73
20			3/4-1	MTB1212E27 20 UN	12	12.0	5	27.3	84
18	5/16			MTB06056C14 18 UN	6	5.6	3	14.8	58
18		9/16-5/8	$1^{1/8}$-$1^{5/8}$	MTB12113D26 18 UN	12	11.3	4	26.1	84
16	3/8			MTB08067C16 16 UN	8	6.7	3	16.7	64
16		3/4		MTB1212D31 16 UN	12	12.0	4	31.0	84
14	7/16			MTB08077C20 14 UN	8	7.7	3	20.9	64
14		7/8		MTB1616E37 14 UN	16	16.0	5	37.2	105
13	1/2			MTB10092C22 13 UN	10	9.2	3	22.5	73
12	9/16			MTB12105C26 12 UN	12	10.5	3	26.5	84
12		$1\text{-}1^{1/2}$		MTB1616E41 12 UN	16	16.0	5	41.3	105
11	5/8			MTB12114C28 11 UN	12	11.4	3	28.9	84
10	3/4			MTB16144D34 10 UN	16	14.4	4	34.3	105
9	7/8			MTB1616C38 9 UN	16	16.0	3	38.1	105
8	1			MTB20195D42 8 UN	20	19.5	4	42.9	105
7	$1^{1/8}$-$1^{1/4}$			MTB2020D45 7 UN	20	20.0	4	45.3	105

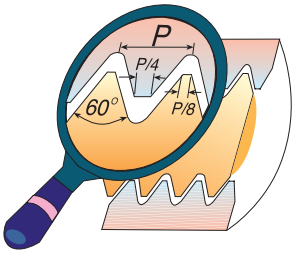
Order example: MTB 1212D31 16 UN MT7

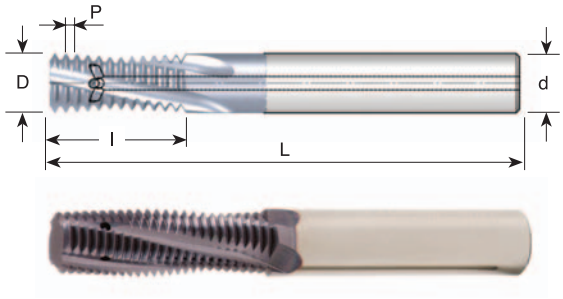
For thread mills with coolant through the flutes see next page

For small thread mills see pages 106-107, 114

UN With internal coolant through the flutes

Tools for Internal Thread





Pitch TPI	UNC	UNF	UNEF	Ordering Code	d	D	No. of Flutes	l	L
28		1/4		**MTZ0605C11 28 UN**	6	5.0	3	11.3	58
28			7/16-1/2	**MTZ0606C14 28 UN**	6	6.0	3	14.1	58
24		5/16		**MTZ08066C14 24 UN**	8	6.6	3	14.3	64
24		3/8	9/16-5/8	**MTZ0808D21 24 UN**	8	8.0	4	20.6	64
20		7/16		**MTZ0808C21 20 UN**	8	8.0	3	21.0	64
20		1/2		**MTZ1010D22 20 UN**	10	10.0	4	22.3	73
20			3/4-1	**MTZ1212E27 20 UN**	12	12.0	5	27.3	84
18	5/16			**MTZ06056C14 18 UN**	6	5.6	3	14.8	58
18		9/16-5/8	$_1$1/8-$_1$5/8	**MTZ12113D26 18 UN**	12	11.3	4	26.1	84
16	3/8			**MTZ08067C16 16 UN**	8	6.7	3	16.7	64
16		3/4		**MTZ1212D31 16 UN**	12	12.0	4	31.0	84
14	7/16			**MTZ08077C20 14 UN**	8	7.7	3	20.9	64
14		7/8		**MTZ1616E37 14 UN**	16	16.0	5	37.2	101
13	1/2			**MTZ10092C22 13 UN**	10	9.2	3	22.5	73
12	9/16			**MTZ12105C26 12 UN**	12	10.5	3	26.5	84
11	5/8			**MTZ12114C28 11 UN**	12	11.4	3	28.9	84
10	3/4			**MTZ16144D34 10 UN**	16	14.4	4	34.3	101

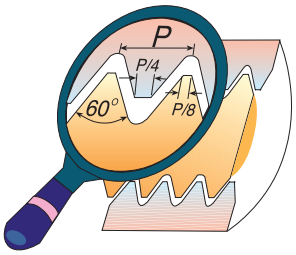
Order example: MTZ 0808D21 24UN MT7

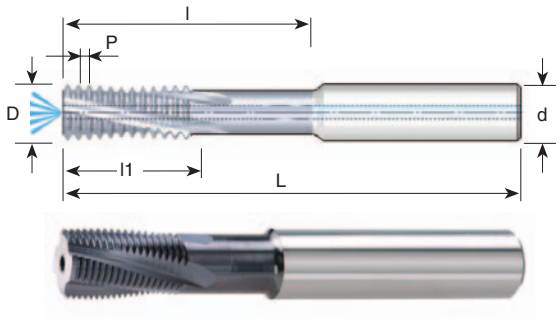
For thread mills with coolant bore for deep holes see next page

For small thread mills see pages 106-107, 114

UN With relieved neck and internal coolant bore

Tools for Internal Thread





Pitch TPI	Thread Size	Ordering Code	d	D	No. of Flutes	l1	l	L
20	∅≥ 12	**MTQ1010D30 20 UN**	10	10.0	4	17.8	30.5	73
20	∅≥ 14	**MTQ1212E35 20 UN**	12	12.0	5	20.3	35.6	84
20	∅≥ 18	**MTQ1616F43 20 UN**	16	16.0	6	25.4	43.2	105
18	∅≥ 15	**MTQ1212D35 18 UN**	12	12.0	4	19.7	35.3	84
16	∅≥ 15	**MTQ1212D35 16 UN**	12	12.0	4	20.7	35.0	84
16	∅≥ 19	**MTQ1616E42 16 UN**	16	16.0	5	25.4	42.9	105
16	∅≥ 23	**MTQ2020F58 16 UN**	20	20.0	6	36.5	58.8	105
14	∅≥ 20	**MTQ1616E45 14 UN**	16	16.0	5	25.4	45.3	105
12	∅≥ 16	**MTQ1212D42 12 UN**	12	12.0	4	25.4	42.3	84
12	∅≥ 24	**MTQ2020E55 12 UN**	20	20.0	6	33.9	55.1	105

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 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.

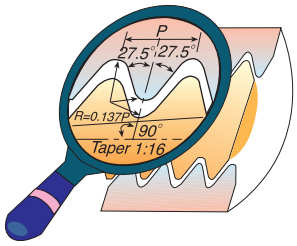
Advantages

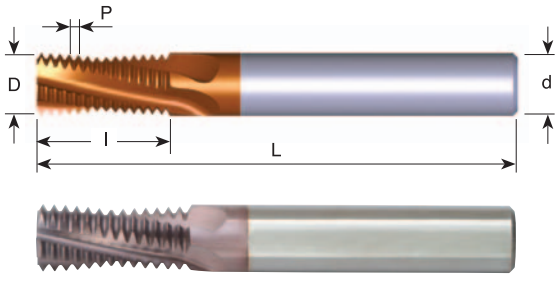
- Provides high rigidity and stability (anti-vibrations).
- Accomplishes deep threads in one pass.
- Relatively low cutting forces due to short cutting length which enables reduction of the radial in feed required.
- Threads length up to 3D.

For small thread mills see pages 106-107, 114

BSPT

Same Tool for Internal and External Thread





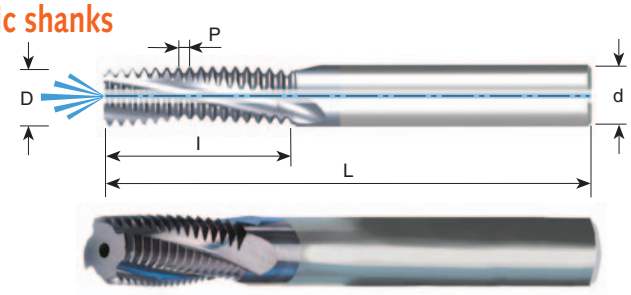
Pitch TPI	Standard	Ordering Code	d	D	No. of Flutes	l	L
28	RC1/8	**MT0606C9 28 BSPT**	6	6.0	3	9.5	58
19	RC1/4-3/8	**MT0808C14 19 BSPT**	8	8.0	3	14.0	64
14	RC1/2-7/8	**MT1212D19 14 BSPT**	12	12.0	4	19.1	84
11	RC1-2	**MT1616D28 11 BSPT**	16	16.0	4	28.9	105

Order example: MT 1616D28 11 BSPT MT7

For thread mills with coolant bore see next page

BSPT With internal coolant bore

Same Tool for Internal and External Thread - Metric shanks

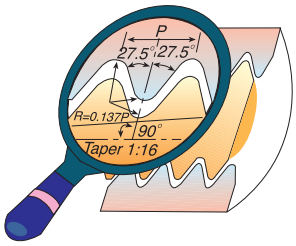


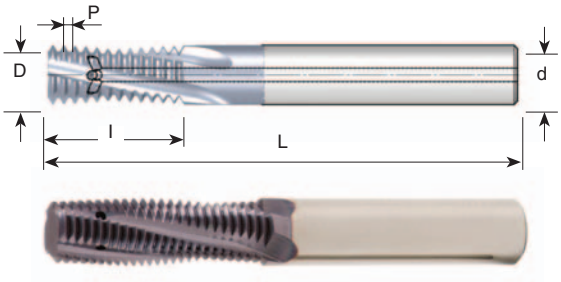
Pitch TPI	Standard	Ordering Code	d	D	No. of Flutes	l	L
28	RC1/8	**MTB08078C14 28 BSPT**	8	7.8	3	14.1	64
19	RC1/4-3/8	**MTB1010D16 19 BSPT**	10	10.0	4	16.7	73
14	RC1/2-7/8	**MTB1616E26 14 BSPT**	16	16.0	5	26.3	105
11	RC1-2	**MTB1616D28 11 BSPT**	16	16.0	4	28.9	105

Order example: MTB 08078C14 28 BSPT MT7

BSPT With internal coolant through the flutes

Same Tool for Internal and External Thread



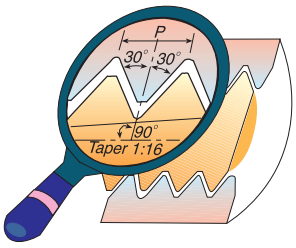


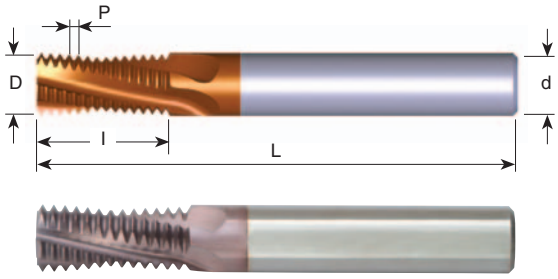
Pitch TPI	Standard	Ordering Code	d	D	No. of Flutes	l	L
28	RC1/8	**MTZ08078C14 28 BSPT**	8	7.8	3	14.1	64
19	RC1/4-3/8	**MTZ1010D16 19 BSPT**	10	10.0	4	16.7	73
14	RC1/2-7/8	**MTZ1616E26 14 BSPT**	16	16.0	5	26.3	101
11	RC1-2	**MTZ1616D28 11 BSPT**	16	16.0	4	28.9	101

Order example: MTZ 1010D16 19 BSPT MT7

For conical preparation end mills see page 100

NPT
Same Tool for Internal and External Thread

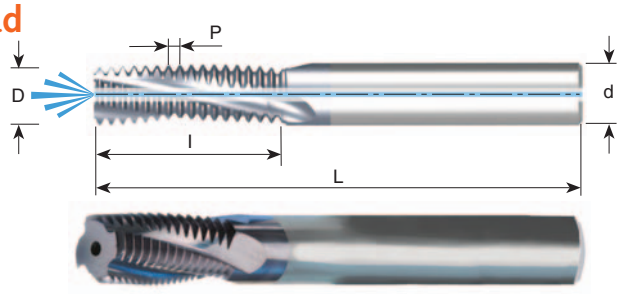




Pitch TPI	Standard	Ordering Code	d	D	No. of Flutes	l	L
27	1/16 -1/8	**MT0606C9 27 NPT**	6	6.0	3	9.9	58
18	1/4-3/8	**MT0808C14 18 NPT**	8	8.0	3	14.8	64
14	1/2-3/4	**MT1212D20 14 NPT**	12	12.0	4	20.9	84
11.5	1-2	**MT1616D27 11.5 NPT**	16	16.0	4	27.6	105
8	≥ 2 1/2	**MT2020D39 8 NPT**	20	20.0	4	39.7	105

Order example: MT 0808C14 18 NPT MT7

NPT With internal coolant
Same Tool for Internal and External Thread



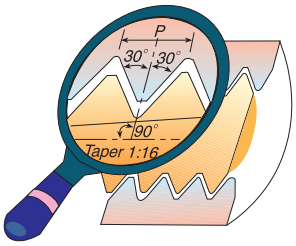
Pitch TPI	Standard	Ordering Code	d	D	No. of Flutes	l	L
27	1/8	**MTB08076C10 27 NPT**	8	7.6	3	10.8	64
18	1/4-3/8	**MTB1010D16 18 NPT**	10	10.0	4	16.2	73
14	1/2-3/4	**MTB16155D22 14 NPT**	16	15.5	4	22.7	105
11.5	1-2	**MTB2020D29 11.5 NPT**	20	20.0	4	29.8	105
8	≥ 2 1/2	**MTB2020D39 8 NPT**	20	20.0	4	39.7	105

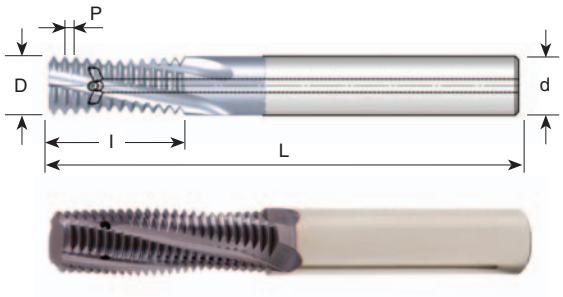
Order example: MTB 1010D16 18 NPT MT7

For thread mills with coolant through the flutes see next page
For conical preparation end mills see page 100

NPT With internal coolant through the flutes

Same Tool for Internal and External Thread



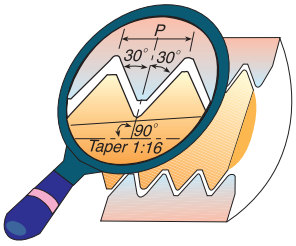


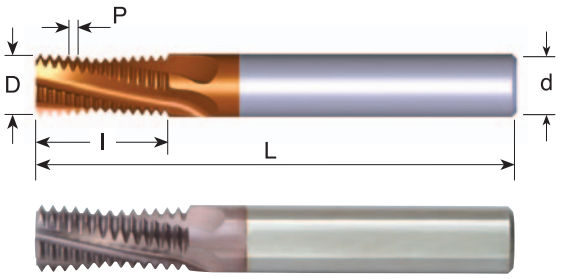
Pitch TPI	Standard	Ordering Code	d	D	No. of Flutes	l	L
27	1/8	**MTZ08076C10 27NPT**	8	7.6	3	10.8	64
18	1/4-3/8	**MTZ1010D16 18NPT**	10	10.0	4	16.2	73
14	1/2-3/4	**MTZ16155D22 14NPT**	16	15.5	4	22.7	101

Order example: MTZ 08076C10 27 NPT MT7

NPTF

Same Tool for Internal and External Thread



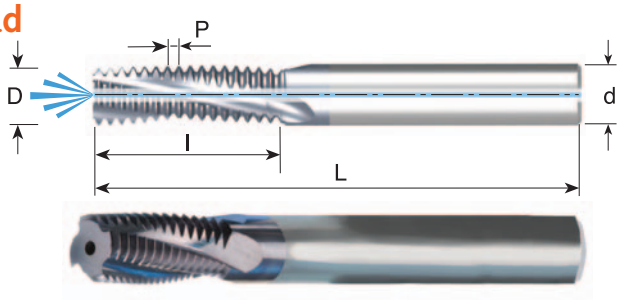


Pitch TPI	Standard	Ordering Code	d	D	No. of Flutes	l	L
27	1/16-1/8	**MT0606C9 27 NPTF**	6	6.0	3	9.9	58
18	1/4-3/8	**MT0808C14 18 NPTF**	8	8.0	3	14.8	64
14	1/2-3/4	**MT1212D20 14 NPTF**	12	12.0	4	20.9	84
11.5	1-2	**MT1616D27 11.5 NPTF**	16	16.0	4	27.6	105
8	≥2 1/2	**MT2020D39 8 NPTF**	20	20.0	4	39.7	105

Order example: MT 1212D20 14 NPTF MT7

For thread mills with coolant bore see next page
For conical preparation end mills see page 100

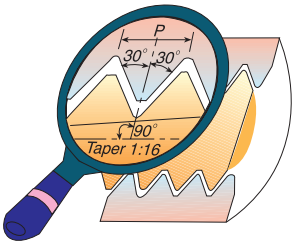
NPTF With internal coolant
Same Tool for Internal and External Thread

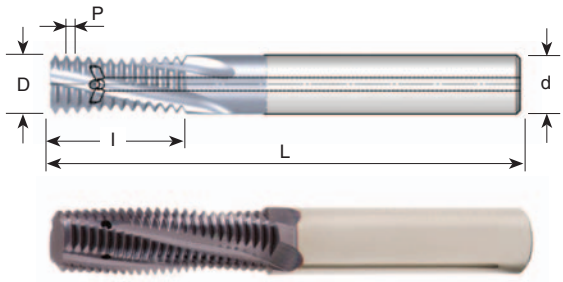


Pitch TPI	Standard	Ordering Code	d	D	No. of Flutes	l	L
27	1/8	**MTB08076C10 27 NPTF**	8	7.6	3	10.8	64
18	1/4-3/8	**MTB1010D16 18 NPTF**	10	10.0	4	16.2	73
14	1/2-3/4	**MTB16155D22 14 NPTF**	16	15.5	4	22.7	105
11.5	1-2	**MTB2020D29 11.5 NPTF**	20	20.0	4	29.8	105
8	≥ 2 1/2	**MTB2020D39 8 NPTF**	20	20.0	4	39.7	105

Order example: MTB 16155D22 14 NPTF MT7

NPTF With internal coolant through the flutes
Same Tool for Internal and External Thread





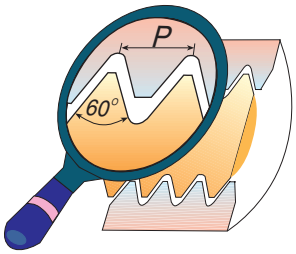
Pitch TPI	Standard	Ordering Code	d	D	No. of Flutes	l	L
27	1/8	**MTZ08076C10 27NPTF**	8	7.6	3	10.8	64
18	1/4-3/8	**MTZ1010D16 18NPTF**	10	10.0	4	16.2	73
14	1/2-3/4	**MTZ16155D22 14NPTF**	16	15.5	4	22.7	101

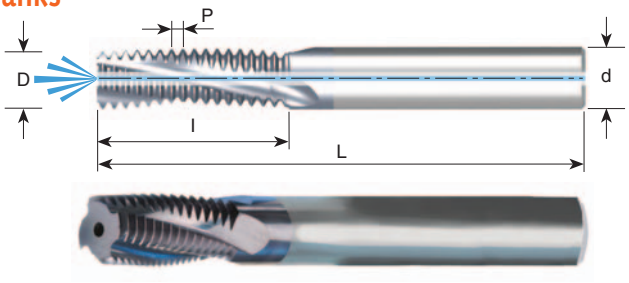
Order example: MTZ 1010D16 18 NPTF MT7

For conical preparation end mills see page 100

NPS With internal coolant

Same Tool for Internal and External Thread - Inch Shanks



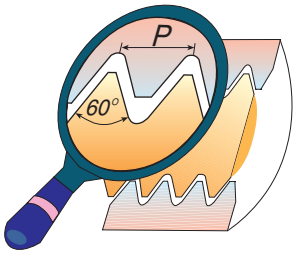


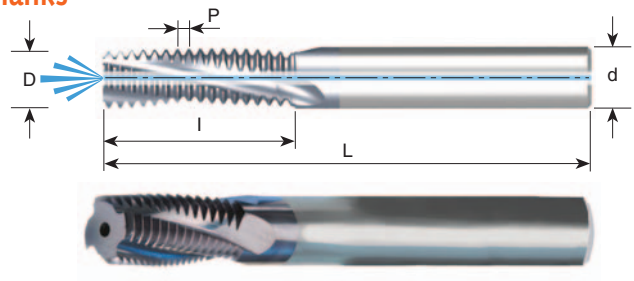
Pitch TPI	Standard	Ordering Code	d inch	D	No. of Flutes	l	L
27	1/8	MTB0312C04 27 NPS	5/16	7.6	3	10.8	63
18	1/4-3/8	MTB0375D06 18 NPS	3/8	9.5	4	16.2	76
14	1/2-3/4	MTB0625D08 14 NPS	5/8	15.5	4	22.7	101
11.5	1-2	MTB0750D11 11.5 NPS	3/4	19.0	4	29.8	101

Order example: MTB 0375D06 18 NPS MT7

NPSF With internal coolant

Same Tool for Internal and External Thread - Inch Shanks



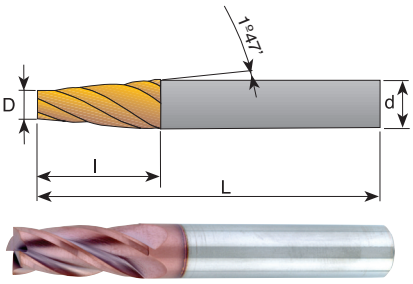


Pitch TPI	Standard	Ordering Code	d inch	D	No. of Flutes	l	L
27	1/8	MTB0312C04 27 NPSF	5/16	7.6	3	10.8	63
18	1/4-3/8	MTB0375D06 18 NPSF	3/8	9.5	4	16.2	76
14	1/2-3/4	MTB0625D08 14 NPSF	5/8	15.5	4	22.7	101
11.5	1-2	MTB0750D11 11.5 NPSF	3/4	19.0	4	29.8	101

Order example: MTB 0312C04 27 NPSF MT7

Solid Carbide Tapered End Mills

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



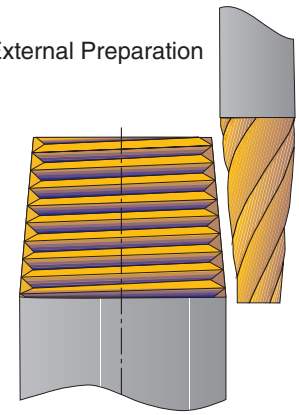
Advantages:

* 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.

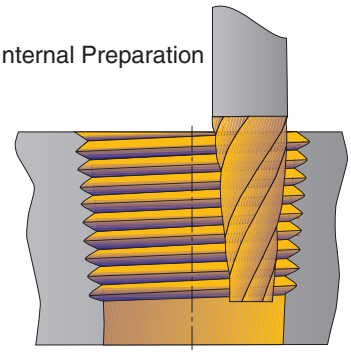
Ordering Code	d	D	l	L	No. of Flutes	Size
SC0652D12	6	5.2	12	58	4	NPT 1/16" - 1/8" NPTF 1/16" - 1/8" BSPT 1/16" - 1/8"
SC1085D24	10	8.5	24	73	4	NPT 1/8" - 1" NPTF 1/8" - 1" BSPT 1/8" - 1"
SC1210D32	12	10	32	84	4	NPT 1/4" - 3" NPTF 1/4" - 3" BSPT 1/4" - 3"

Order example: SC1085D24 MT7
Carbide grade: MT7

External Preparation



Internal Preparation

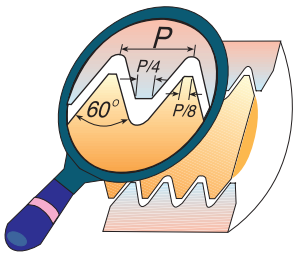


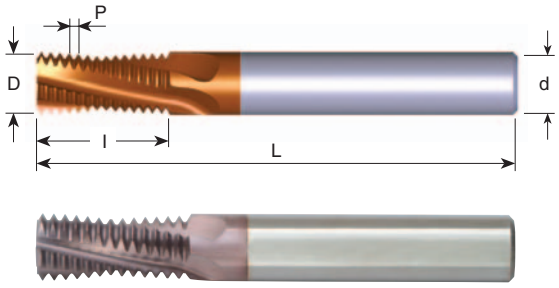
Mill - Thread Solid Carbide for External Threads

Advantages:

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

ISO

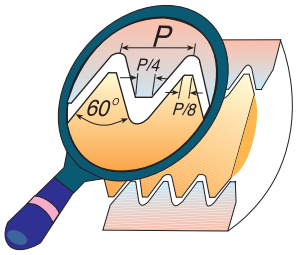


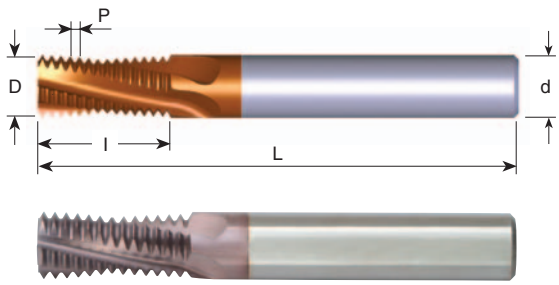


Pitch mm	Ordering Code	d	D	No. of Flutes	l	L
1.0	**EMT1010D16 1.0 ISO**	10	10.0	4	16.5	73
1.0	**EMT1212E20 1.0 ISO**	12	12.0	5	20.5	84
1.25	**EMT1010D16 1.25 ISO**	10	10.0	4	16.9	73
1.5	**EMT1010D15 1.5 ISO**	10	10.0	4	15.8	73
1.5	**EMT1212D20 1.5 ISO**	12	12.0	4	20.3	84
1.75	**EMT1212D20 1.75 ISO**	12	12.0	4	20.1	84
2.0	**EMT1010C17 2.0 ISO**	10	10.0	3	17.0	73
2.0	**EMT1212D21 2.0 ISO**	12	12.0	4	21.0	84

Order example: EMT 1010D15 1.5 ISO MT7

UN

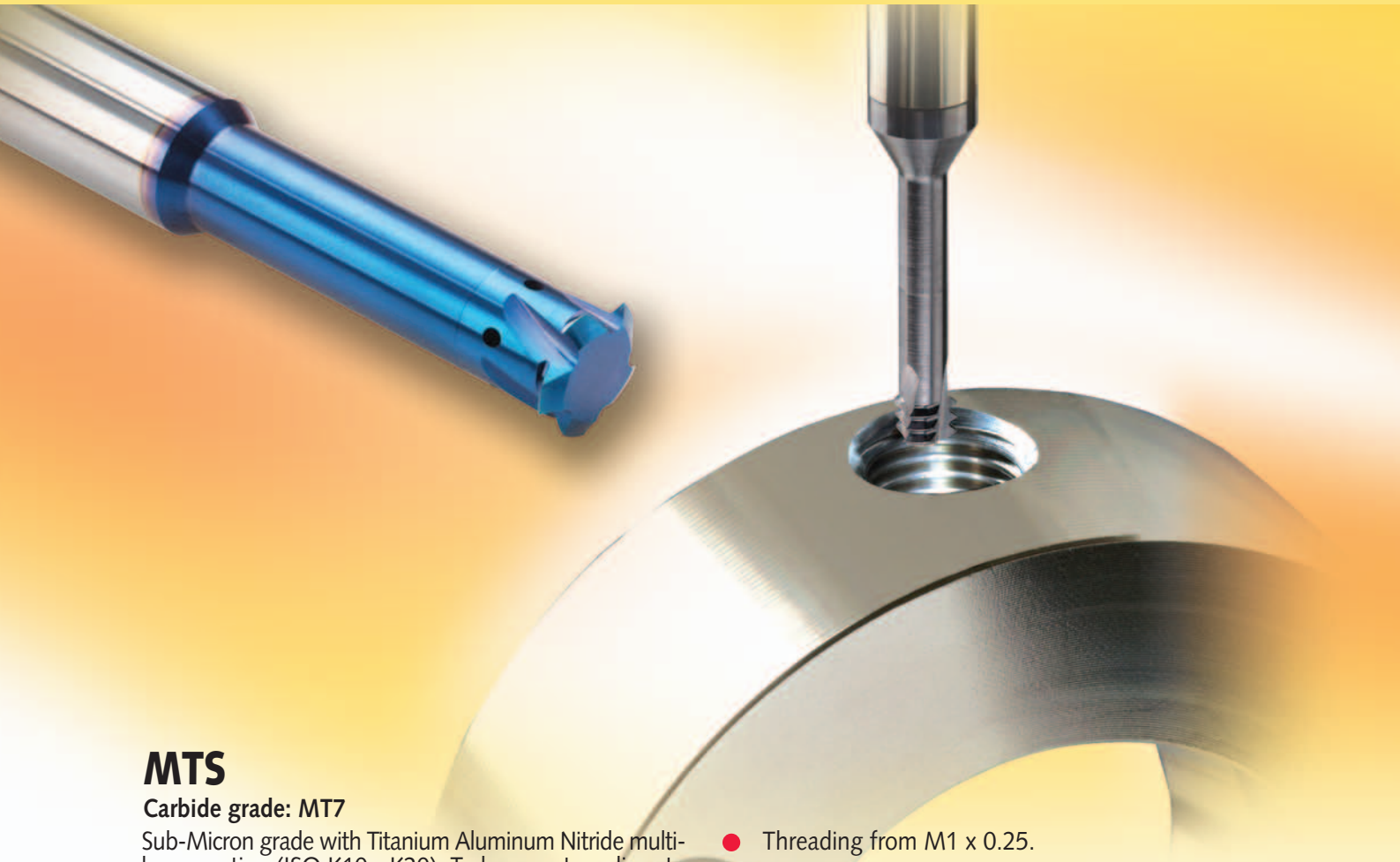




Pitch TPI	Ordering Code	d	D	No. of Flutes	l	L
24	**EMT1010D16 24 UN**	10	10.0	4	16.4	73
20	**EMT1212E21 20 UN**	12	12.0	5	21.0	84
18	**EMT1212D20 18 UN**	12	12.0	4	20.5	84
16	**EMT1212D21 16 UN**	12	12.0	4	21.4	84
14	**EMT1212D20 14 UN**	12	12.0	4	20.9	84
12	**EMT1212D20 12 UN**	12	12.0	4	20.1	84

Order example: EMT 1212D20 18 UN MT7

Mini Mill-Thread



MTS

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.

Advantages:

Specially designed solid-carbide thread mills for the production of internal threads in very small bores.

Due to the unique tool design, accurate geometries and high quality sub-micron carbide grade with Titanium Aluminum Nitride coating, the following are achieved:

- Threading from M1 x 0.25.
- Working in high cutting speed.
- Short machining time.
- Low cutting forces thanks to the short profile.
- No broken taps.

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.

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.

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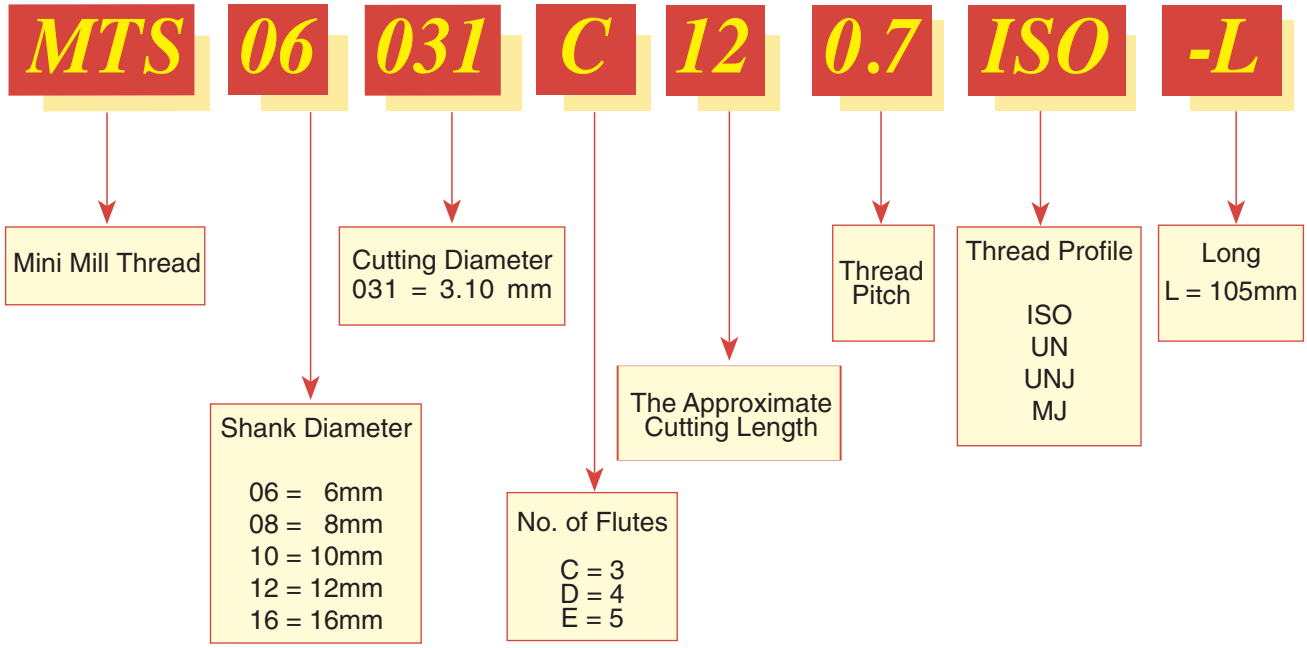
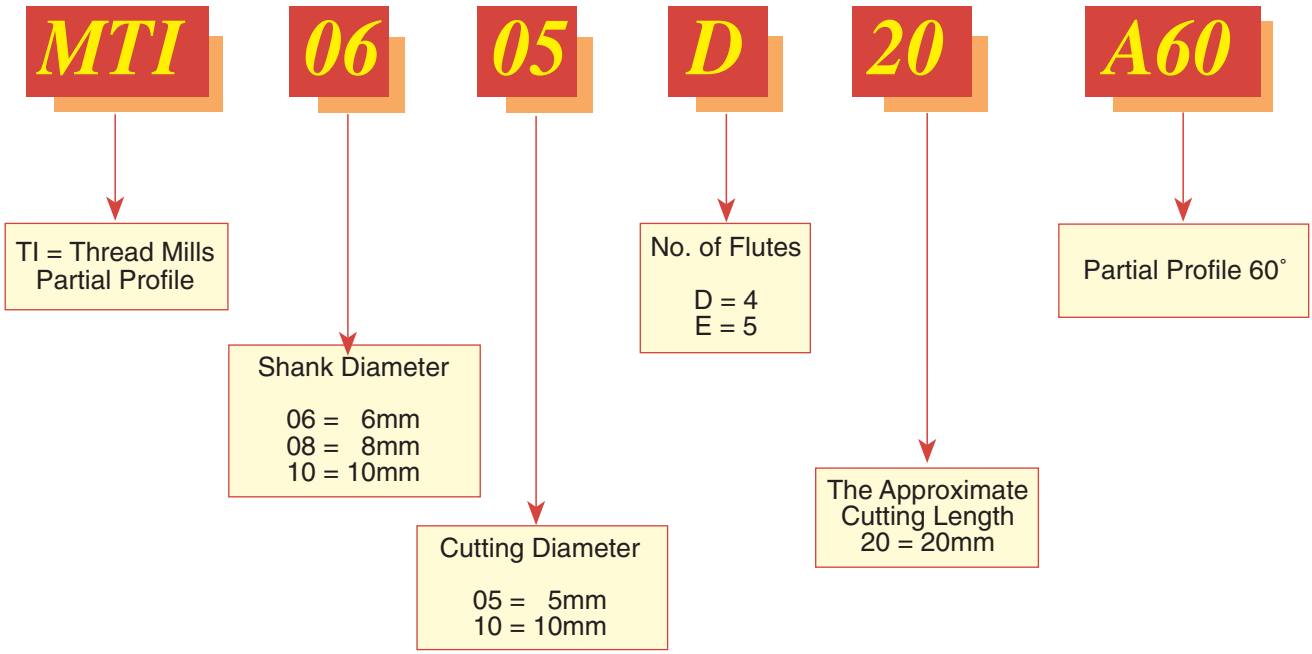
MTI - Partial Profile 60° 109

Product Identification

Mini Mill-Thread MTS Ordering Codes

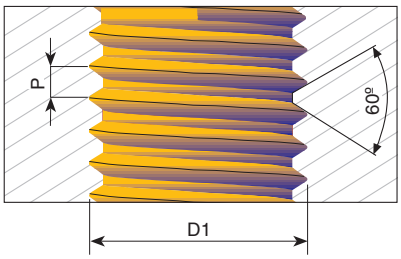


Mini Mill-Thread MTI Ordering Codes



ISO

Tools for Internal Thread



For thread depth up to 2xD1

Pitch mm	D1	Ordering Code	d	D	No. of Flutes	l	L
0.25	M1	MTS03007C2 0.25 ISO	3	0.72	3	2.5	39
0.25	M1.2	MTS03009C3 0.25 ISO	3	0.90	3	3.0	39
0.4	M2	MTS06016C4 0.4 ISO	6	1.55	3	4.5	58
0.4	M2	MTS06016C4 0.4 ISO-L	6	1.55	3	4.5	105
0.45	M2.2	MTS06017C5 0.45 ISO	6	1.65	3	5.0	58
0.45	M2.5	MTS0602C5 0.45 ISO	6	1.95	3	5.5	58
0.45	M2.5	MTS0602C5 0.45 ISO-L	6	1.95	3	5.5	105
0.5	M3	MTS06024C6 0.5 ISO	6	2.35	3	6.5	58
0.5	M3	MTS06024C6 0.5 ISO-L	6	2.35	3	6.5	105
0.6	M3.5	MTS06028C7 0.6 ISO	6	2.75	3	7.5	58
0.7	M4	MTS06031C9 0.7 ISO	6	3.10	3	9.0	58
0.75	M10	MTS0808D25 0.75 ISO	8	8.00	4	25.0	64
0.8	M5	MTS06038C12 0.8 ISO	6	3.80	3	12.5	58
1.0	M6	MTS06047C14 1.0 ISO	6	4.65	3	14.0	58
1.25	M8	MTS0606C18 1.25 ISO	6	5.95	3	18.0	58
1.5	M10	MTS08078C23 1.5 ISO	8	7.80	3	23.0	64
1.75	M12	MTS1009C26 1.75 ISO	10	9.00	3	26.0	73
2.0	M16	MTS12118D35 2.0 ISO	12	11.80	4	35.0	84
2.5	M20	MTS1615E43 2.5 ISO	16	15.00	5	43.0	105

For thread depth up to 3xD1

Pitch mm	D1	Ordering Code	d	D	No. of Flutes	l	L
* 0.3	M1.4	MTS03011C4 0.3 ISO	3	1.05	3	4.0	39
* 0.35	M1.6	MTS03012C5 0.35 ISO	3	1.20	3	4.8	39
* 0.4	M2	MTS03016C6 0.4 ISO	3	1.55	3	6.0	39
0.45	M2.5	MTS0602C7 0.45 ISO	6	1.95	3	7.5	58
0.5	M3	MTS06024C9 0.5 ISO	6	2.35	3	9.5	58
0.5	M3	MTS06024C9 0.5 ISO-L	6	2.35	3	9.5	105
0.6	M3.5	MTS06028C10 0.6 ISO	6	2.75	3	10.5	58
0.7	M4	MTS06031C12 0.7 ISO	6	3.10	3	12.5	58
0.7	M4	MTS06031C12 0.7 ISO-L	6	3.10	3	12.5	105
0.8	M5	MTS06038C16 0.8 ISO	6	3.80	3	16.0	58
0.8	M5	MTS06038C16 0.8 ISO-L	6	3.80	3	16.0	105
1.0	M6	MTS06047C20 1.0 ISO	6	4.65	3	20.0	58
1.0	M6	MTS06047C20 1.0 ISO-L	6	4.65	3	20.0	105
1.25	M8	MTS0606C24 1.25 ISO	6	5.95	3	24.0	58

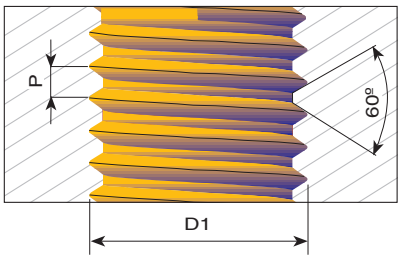
Order example: MTS 06024C9 0.5 ISO MT7

***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

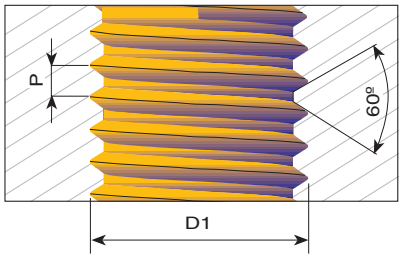


For thread depth up to 2xD1

Pitch TPI	UNC	UNF	Ordering Code	d	D	No. of Flutes	l	L
72		1	MTS06014C3 72 UN	6	1.45	3	3.7	58
64	1	2	MTS06014C3 64 UN	6	1.40	3	3.8	58
56	2	3	MTS06016C4 56 UN	6	1.65	3	4.4	58
48	3	4	MTS06019C5 48 UN	6	1.90	3	5.2	58
40	4		MTS06021C6 40 UN	6	2.10	3	6.3	58
40	4		MTS06021C6 40 UN-L	6	2.10	3	6.3	105
40	5	6	MTS06024C7 40 UN	6	2.45	3	7.0	58
36		8	MTS06033C9 36 UN	6	3.30	3	9.0	58
32	6		MTS06025C7 32 UN	6	2.55	3	7.1	58
32	6		MTS06025C7 32 UN-L	6	2.55	3	7.1	105
32	8		MTS06032C9 32 UN	6	3.20	3	9.5	58
32	8		MTS06032C9 32 UN-L	6	3.20	3	9.5	105
32		10	MTS06037C10 32 UN	6	3.70	3	10.5	58
28		12	MTS06042C11 28 UN	6	4.20	3	11.0	58
28		1/4	MTS0605C14 28 UN	6	5.00	3	14.5	58
24	10,12		MTS06035C10 24 UN	6	3.50	3	10.6	58
24		5/16, 3/8	MTS08066C17 24 UN	8	6.60	3	17.0	64
20	1/4		MTS06047C14 20 UN	6	4.75	3	14.0	58
20		7/16	MTS0808C25 20 UN	8	8.00	3	25.0	64
18	5/16		MTS0606C17 18 UN	6	6.00	3	17.0	58
18		5/8	MTS1212D35 18 UN	12	12.00	4	35.0	84
16	3/8		MTS08067C22 16 UN	8	6.70	3	22.0	64
14	7/16		MTS08077C25 14 UN	8	7.70	3	25.0	64
13	1/2		MTS10092C27 13 UN	10	9.20	3	27.5	73
12	9/16		MTS12105C31 12 UN	12	10.50	3	31.5	84
11	5/8		MTS12114C34 11 UN	12	11.40	3	34.5	84
10	3/4		MTS16144D41 10 UN	16	14.40	4	41.5	105

UN

Tools for Internal Thread



For thread depth up to 3xD1

Pitch TPI	UNC	UNF	Ordering Code	d	D	No. of Flutes	l	L
80		0	MTS06012C4 80 UN	6	1.15	3	4.0	58
* 72		1	MTS03015C6 72 UN	3	1.45	3	6.0	39
56	2	3	MTS03016C6 56 UN	3	1.65	3	6.6	39
56	2	3	MTS06016C6 56 UN	6	1.65	3	6.6	58
56	2	3	MTS06016C6 56 UN-L	6	1.65	3	6.6	105
40	4		MTS06021C8 40 UN	6	2.10	3	8.0	58
40	4		MTS06021C8 40 UN-L	6	2.10	3	8.0	105
40	5	6	MTS06024C9 40 UN	6	2.45	3	9.6	58
32	6		MTS03025C10 32 UN	3	2.55	3	10.5	39
32	6		MTS06025C10 32 UN	6	2.55	3	10.5	58
32	6		MTS06025C10 32 UN-L	6	2.55	3	10.5	105
32	8		MTS06032C12 32 UN	6	3.20	3	12.5	58
32	8		MTS06032C12 32 UN-L	6	3.20	3	12.5	105
32		10	MTS06037C15 32 UN	6	3.70	3	15.0	58
32		10	MTS06037C15 32 UN-L	6	3.70	3	15.0	105
28		1/4	MTS0605C19 28 UN	6	5.00	3	19.0	58
24		5/16, 3/8	MTS08066C24 24 UN	8	6.60	3	24.0	64
20	1/4		MTS06047C19 20 UN	6	4.75	3	19.0	58
20	1/4		MTS06047C19 20 UN-L	6	4.75	3	19.0	105
18	5/16		MTS0606C23 18 UN	6	6.00	3	23.0	58

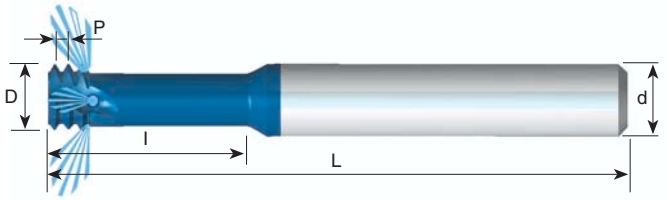
Order example: MTS 0605C19 28 UN MT7

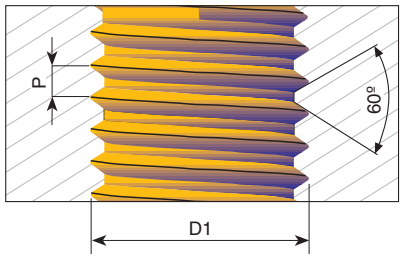
***Specially designed for the production of dental implants**

- 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.

UNJ With internal coolant through the flutes

Tools for Internal Thread





For thread depth up to 2.5xD1

Pitch TPI	UNJC	UNJF	Ordering Code	d	D	No. of Flutes	l	L
*32	8	10	MTS06033C10 32 UNJ	6	3.30	3	10.5	58
28		1/4	MTS08051C16 28 UNJ	8	5.10	3	16.0	64
24		5/16, 3/8	MTS08067C20 24 UNJ	8	6.70	3	20.0	64
*20	1/4		MTS06049C16 20 UNJ	6	4.90	3	16.0	58
20		7/16	MTS0808C28 20 UNJ	8	8.00	3	28.0	64
18	5/16		MTS08061C20 18 UNJ	8	6.15	3	20.0	64
16	3/8		MTS08069C24 16 UNJ	8	6.90	3	24.0	64
14	7/16		MTS08079C25 14 UNJ	8	7.90	3	25.0	64
13	1/2		MTS10094C27 13 UNJ	10	9.40	3	27.5	73

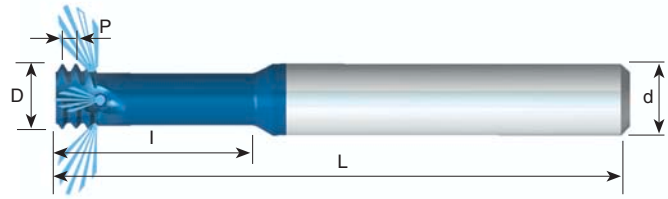
* Cutters without coolant

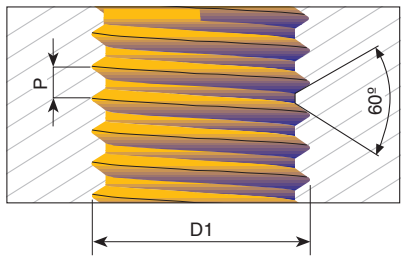
Order example: MTS 06049C16 20 UNJ MT8

Carbide grade MT8 Sub Micron grade with advanced PVD triple coating (ISO K 10-K20). Extremely high 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





For thread depth up to 2.5xD1

Pitch mm	D1	Ordering Code	d	D	No. of Flutes	l	L
* 0.7	MJ4	MTS06032C10 0.7 MJ	6	3.20	3	10.0	58
* 0.8	MJ5	MTS06039C12 0.8 MJ	6	3.90	3	12.5	58
* 1.0	MJ6	MTS06048C15 1.0 MJ	6	4.80	3	15.0	58
1.25	MJ8	MTS08061C20 1.25 MJ	8	6.10	3	20.0	64
1.5	MJ10	MTS0808C25 1.5 MJ	8	8.00	3	25.0	64
1.75	MJ12	MTS10092C30 1.75 MJ	10	9.20	3	30.0	73
2.0	MJ14, MJ16	MTS1010C35 2.0 MJ	10	10.00	3	35.0	73

* Cutters without coolant

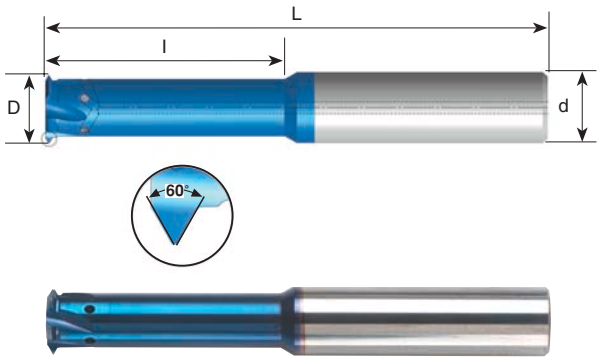
Order example: MTS 06048C15 1.0 MJ MT8

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

Partial Profile 60°

With internal coolant through the flutes

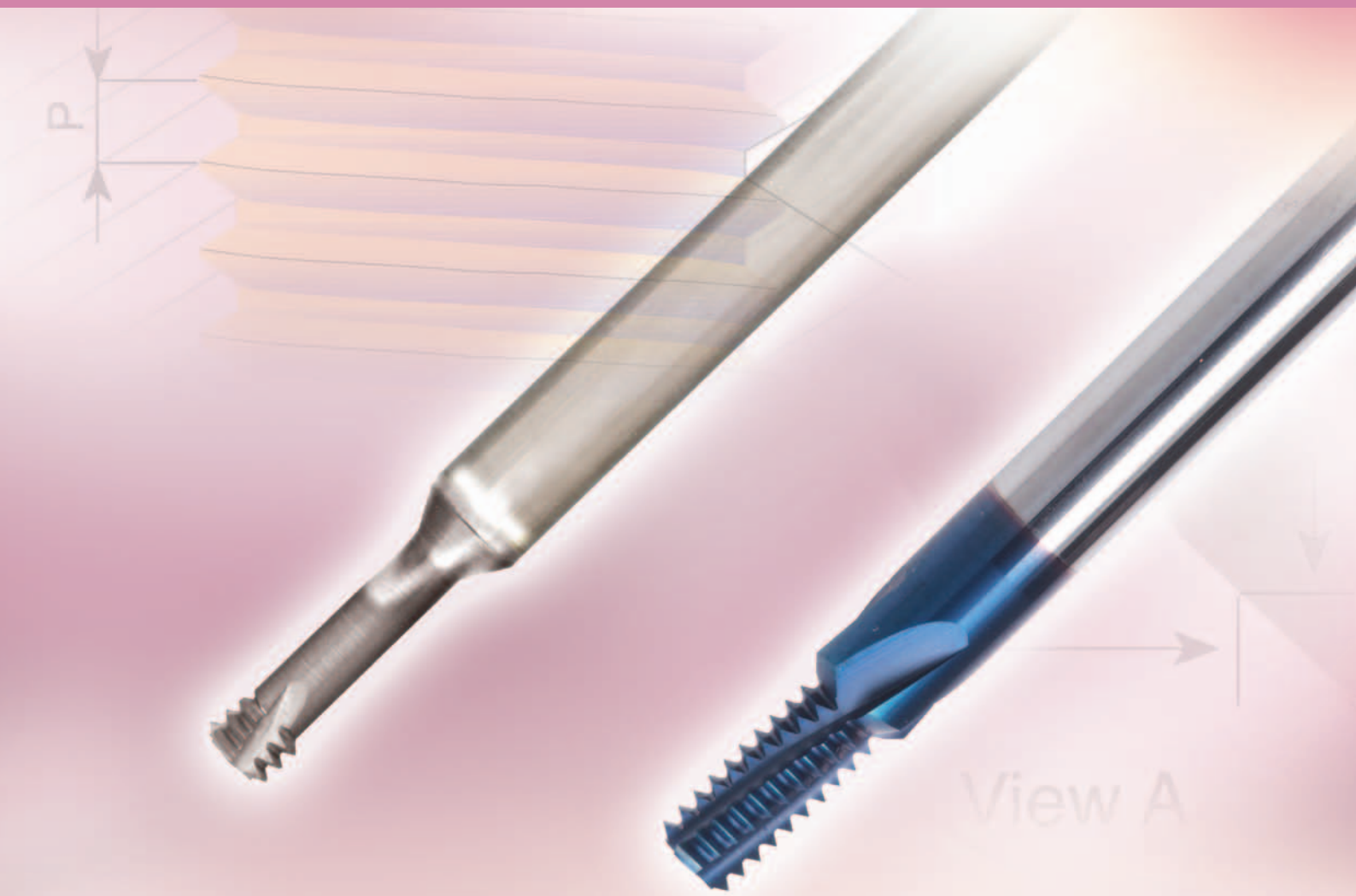
Same Tool for Internal and External Thread



For threading deep parts

Pitch mm	Pitch TPI	Thread Dia. (min.)	Ordering Code	d	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	5.0	4	20	58
		ø≥9	**MTI0808D28 A60**	8	8.0	4	28	64
		ø≥13	**MTI1212E38 A60**	12	12.0	5	38	84
Int. 1.0 - 1.75 Ex. 0.8 - 1.5	28-14 32-16	ø≥10	**MTI0808D30 A60**	8	8.0	4	30	64
		ø≥12	**MTI1010D35 A60**	10	10.0	4	35	73
		ø≥14	**MTI1212E39 A60**	12	12.0	5	39	84
Int. 2.0 - 3.0 Ex. 1.75-2.5	13- 8 15-10	ø≥16	**MTI1212E40 A60**	12	12.0	5	40	84
		ø≥18	**MTI1614E45 A60**	16	14.0	5	45	101
		ø≥20	**MTI1616E50 A60**	16	16.0	5	50	101

Order example: MTI 0808D28 A60 MT8



Mini Mill-Thread Type MTH Type

C.P.T. 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.

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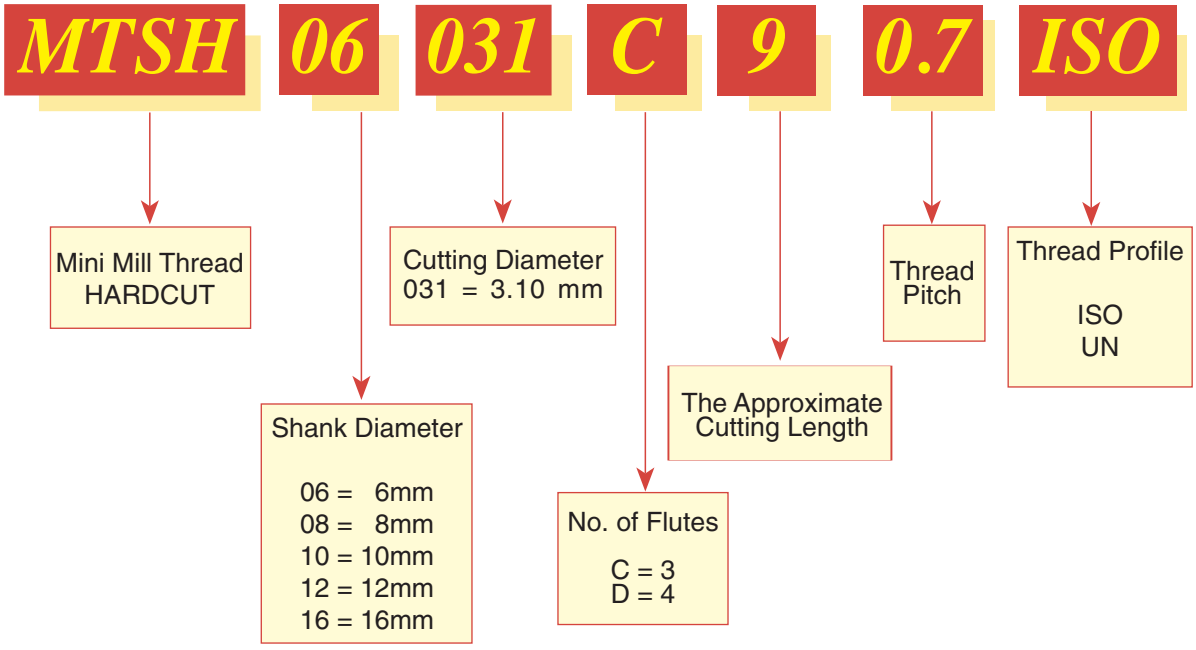
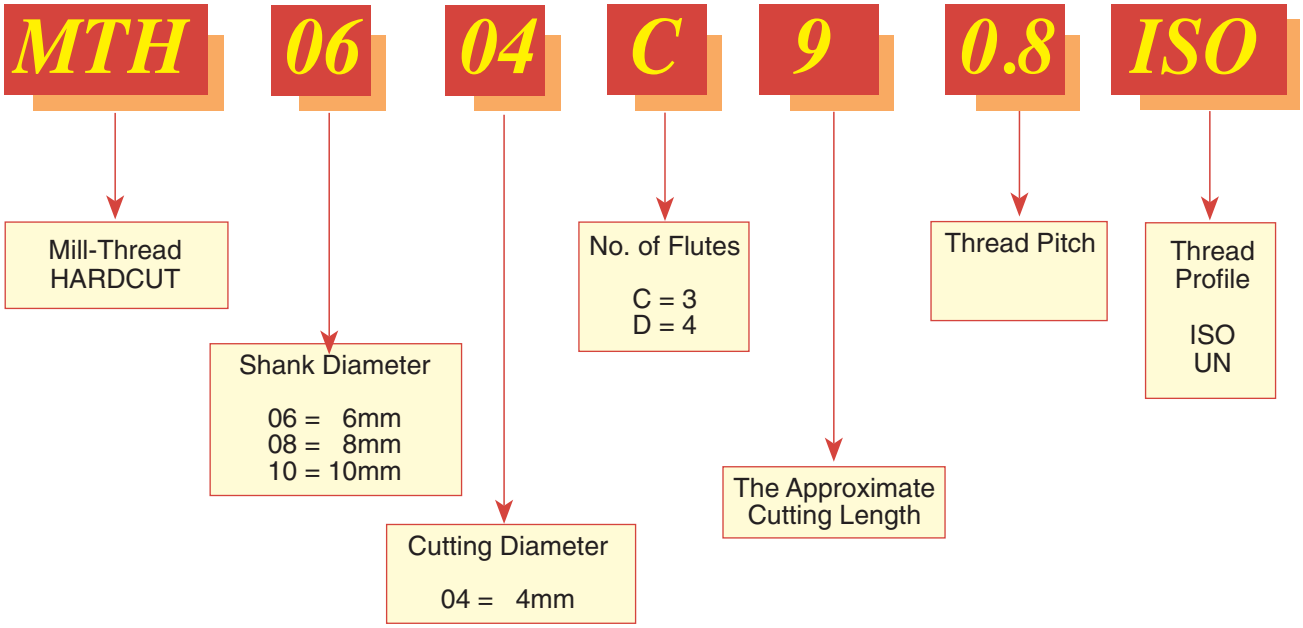
ISO 113
UN 114
MTH Type
ISO 115
UN 116

Product Identification

Mini Mill-Thread MTSH Type Ordering Codes

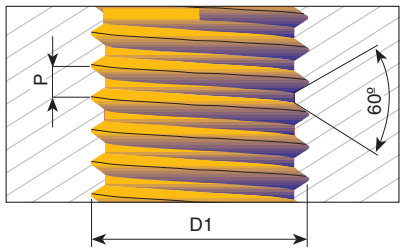


MTH Type Ordering Codes

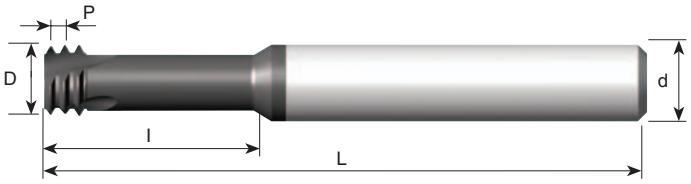


HARDCUT

A unique line of thread milling tools designed specifically for the machining of hardened materials up to 62HRc.
These tools provide high performance, improved cut and an excellent surface finish.



Carbide grade: MT9
Sub-micron carbide grade with advanced Titanium Aluminium Nitride coating.



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

ISO

Tools for Internal Thread

For thread depth up to 2xD1

Left hand cutting
For CNC code use M04

Pitch mm	D1	Ordering Code	d	D	No. of Flutes	l	L
0.4	M2	MTSH06016C4 0.4 ISO	6	1.55	3	4.5	58
0.45	M2.2	MTSH06017C5 0.45 ISO	6	1.65	3	5.0	58
0.45	M2.5	MTSH0602C5 0.45 ISO	6	1.95	3	5.5	58
0.5	M3	MTSH06024C6 0.5 ISO	6	2.35	3	6.5	58
0.6	M3.5	MTSH06028C7 0.6 ISO	6	2.75	3	7.5	58
0.7	M4	MTSH06031C9 0.7 ISO	6	3.10	3	9.0	58
0.8	M5	MTSH06038C12 0.8 ISO	6	3.80	3	12.5	58
1.0	M6	MTSH06047C14 1.0 ISO	6	4.65	3	14.0	58
1.25	M8	MTSH0606C18 1.25 ISO	6	5.95	3	18.0	58
1.5	M10	MTSH08078C23 1.5 ISO	8	7.80	3	23.0	64
1.75	M12	MTSH1009C26 1.75 ISO	10	9.00	3	26.0	73
2.0	M16	MTSH12118D35 2.0 ISO	12	11.80	4	35.0	84

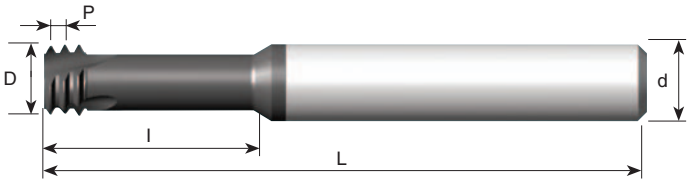
For thread depth up to 3xD1

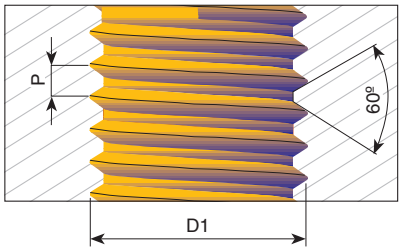
Pitch mm	D1	Ordering Code	d	D	No. of Flutes	l	L
0.3	M1.4	MTSH03011C4 0.3 ISO	3	1.05	3	4.0	39
0.35	M1.6	MTSH03012C5 0.35 ISO	3	1.20	3	4.8	39
0.4	M2	MTSH03016C6 0.4 ISO	3	1.55	3	6.0	39
0.45	M2.5	MTSH0602C7 0.45 ISO	6	1.95	3	7.5	58
0.5	M3	MTSH06024C9 0.5 ISO	6	2.35	3	9.5	58
0.7	M4	MTSH06031C12 0.7 ISO	6	3.10	3	12.5	58
0.8	M5	MTSH06038C16 0.8 ISO	6	3.80	3	16.0	58
1.0	M6	MTSH06047C20 1.0 ISO	6	4.65	3	20.0	58
1.25	M8	MTSH0606C24 1.25 ISO	6	5.95	3	24.0	58

Order example: MTSH 06031C9 C 0.7 ISO MT9

UN

Tools for Internal Thread





Left hand cutting
For CNC code use M04

For thread depth up to 2xD1

Pitch TPI	UNC	UNF	Ordering Code	d	D	No. of Flutes	l	L
72		1	MTSH06014C3 72 UN	6	1.45	3	3.7	58
64	1	2	MTSH06014C3 64 UN	6	1.40	3	3.8	58
56	2	3	MTSH06016C4 56 UN	6	1.65	3	4.4	58
48	3	4	MTSH06019C5 48 UN	6	1.90	3	5.2	58
40	4		MTSH06021C6 40 UN	6	2.10	3	6.3	58
40	5	6	MTSH06024C7 40 UN	6	2.45	3	7.0	58
36		8	MTSH06033C9 36 UN	6	3.30	3	9.0	58
32	6		MTSH06025C7 32 UN	6	2.55	3	7.1	58
32	8		MTSH06032C9 32 UN	6	3.20	3	9.5	58
32		10	MTSH06037C10 32 UN	6	3.70	3	10.5	58
28		12	MTSH06042C11 28 UN	6	4.20	3	11.0	58
28		1/4	MTSH0605C14 28 UN	6	5.00	3	14.5	58
24	10,12		MTSH06035C10 24 UN	6	3.50	3	10.6	58
24		5/16, 3/8	MTSH08066C17 24 UN	8	6.60	3	17.0	64
20	1/4		MTSH06047C14 20 UN	6	4.75	3	14.0	58
20		7/16	MTSH0808C25 20 UN	8	8.00	3	25.0	64
18	5/16		MTSH0606C17 18 UN	6	6.00	3	17.0	58
18		5/8	MTSH1212D35 18 UN	12	12.00	4	35.0	84
16	3/8		MTSH08067C22 16 UN	8	6.70	3	22.0	64
14	7/16		MTSH08077C25 14 UN	8	7.70	3	25.0	64
13	1/2		MTSH10092C27 13 UN	10	9.20	3	27.5	73
12	9/16		MTSH12105C31 12 UN	12	10.50	3	31.5	84
11	5/8		MTSH12114C34 11 UN	12	11.40	3	34.5	84

For thread depth up to 3xD1

Pitch TPI	UNC	UNF	Ordering Code	d	D	No. of Flutes	l	L
80		0	MTSH06012C4 80 UN	6	1.15	3	4.0	58
72		1	MTSH03015C6 72 UN	3	1.45	3	6.0	39
56	2	3	MTSH06016C6 56 UN	6	1.65	3	6.6	58
40	4		MTSH06021C8 40 UN	6	2.10	3	8.0	58
40	5	6	MTSH06024C9 40 UN	6	2.45	3	9.6	58
32	6		MTSH06025C10 32 UN	6	2.55	3	10.5	58
32	8		MTSH06032C12 32 UN	6	3.20	3	12.5	58
32		10	MTSH06037C15 32 UN	6	3.70	3	15.0	58
28		1/4	MTSH0605C19 28 UN	6	5.00	3	19.0	58
24		5/16, 3/8	MTSH08066C24 24 UN	8	6.60	3	24.0	64
20	1/4		MTSH06047C19 20 UN	6	4.75	3	19.0	58
18	5/16		MTSH0606C23 18 UN	6	6.00	3	23.0	58

Order example: MTSH 06047C14 20 UN MT9

MTH

C.P.T. 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).

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

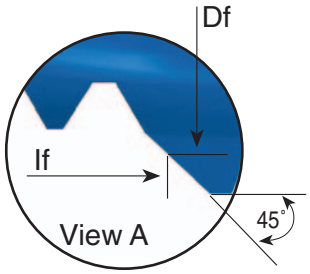
Principle
The tools provide the possibility to machine materials with a higher tensile strength and hardness using relatively high cutting data.

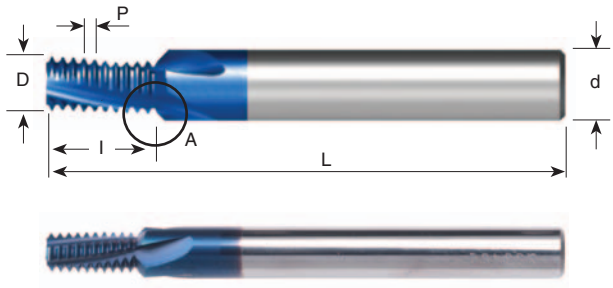
Advantages

- Same tool perfoms 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.

ISO

Tools for Internal Thread



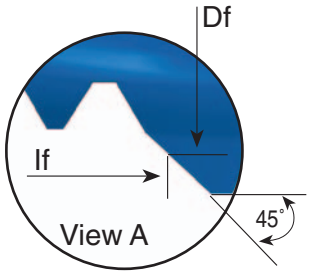


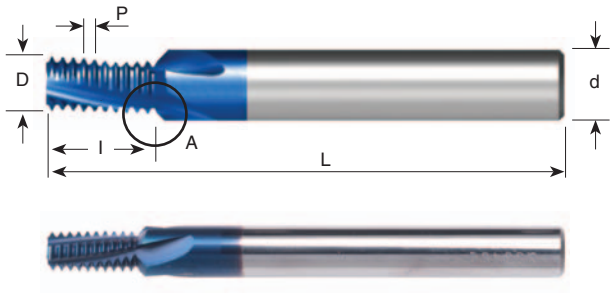
Pitch mm	M coarse	M fine	Ordering Code	d	D	Df	No. of Flutes	l	lf	L
0.5	M3	∅≥ 4	MTH06024C5 0.5 ISO	6	2.4	3.6	3	5.3	5.9	58
0.7	M4	∅≥ 5	MTH06031C7 0.7 ISO	6	3.1	4.3	3	7.4	8.0	58
0.8	M5	∅≥ 6	MTH0604C9 0.8 ISO	6	4.0	5.2	3	9.2	9.8	58
1.0	M6	∅≥ 7	MTH08048D10 1.0 ISO	8	4.8	6.4	4	10.5	11.3	64
1.0		∅≥ 9	MTH0806D13 1.0 ISO	8	6.0	7.6	4	13.5	14.3	64
1.0		∅≥ 10	MTH1008D16 1.0 ISO	10	8.0	9.6	4	16.5	17.3	73
1.25	M8	∅≥ 10	MTH0806D14 1.25 ISO	8	6.0	7.6	4	14.4	15.2	64
1.5	M10	∅≥ 12	MTH1008D17 1.5 ISO	10	8.0	9.8	4	17.3	18.2	73
1.5		∅≥ 14	MTH1210D21 1.5 ISO	12	10.0	11.8	4	21.8	22.7	84
1.75	M12	∅≥ 12	MTH12095D20 1.75 ISO	12	9.5	11.5	4	20.1	21.1	84

Order example: MTH 08048D10 1.0 ISO MT9

UN

Tools for Internal Thread





Pitch TPI	UNC	UNF	UNEF	Ordering Code	d	D	Df	No. of Flutes	l	lf	L
40	5	6		**MTH06025C6 40 UN**	6	2.5	3.7	3	6.0	6.6	58
32	6			**MTH06026C5 32 UN**	6	2.6	3.8	3	5.9	6.5	58
32	8			**MTH06032C7 32 UN**	6	3.2	4.4	3	7.5	8.1	58
32		10	12	**MTH06038C9 32 UN**	6	3.8	5.0	3	9.1	9.7	58
28		1/4		**MTH08052D11 28 UN**	8	5.2	6.8	4	11.3	12.1	64
28			7/16, 1/2	**MTH12096D20 28 UN**	12	9.6	11.2	4	20.4	21.2	84
24		5/16, 3/8	9/16, 5/8, 11/16	**MTH08066D14 24 UN**	8	6.6	8.0	4	14.3	15.0	64
20	1/4			**MTH06048C12 20 UN**	6	4.8	6.0	3	12.1	12.7	58
20		7/16, 1/2	3/4, 1	**MTH12092D21 20 UN**	12	9.2	10.8	4	21.0	21.8	84
18	5/16	9/16, 5/8	11/16	**MTH08057C14 18 UN**	8	5.7	7.5	3	14.8	15.7	64
16	3/8	3/4		**MTH10074C16 16 UN**	10	7.4	9.2	3	16.7	17.6	73
14	7/16	7/8		**MTH10085D20 14 UN**	10	8.5	9.9	4	20.9	21.6	73
13	1/2			**MTH12094D22 13 UN**	12	9.4	11.4	4	22.5	23.5	84

Order example: MTH 06048C12 20 UN MT9

Mill-Thread Technical Section

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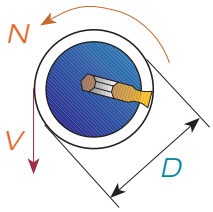
Conversion of Cutting Speed to Rotational Speed

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

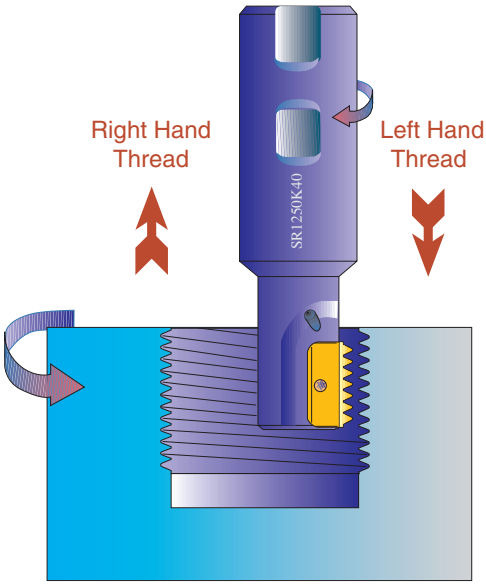
$$N = \frac{V \times 1000}{\pi \times D} = \frac{120 \times 1000}{3.14 \times 30} = 1274 \text{ RPM}$$



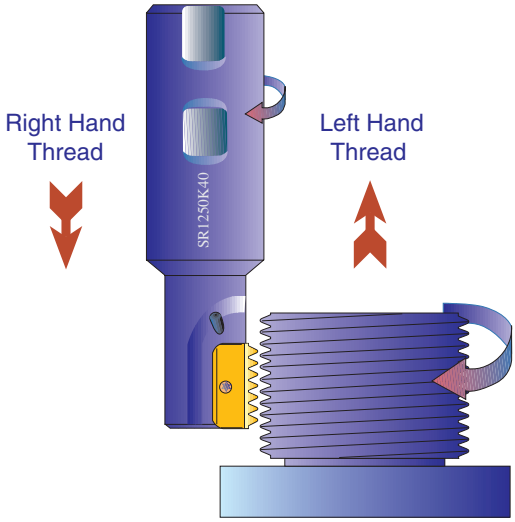
Example: V=120 m/min
D=30 mm

D=Cutting diameter

Internal Thread



External Thread

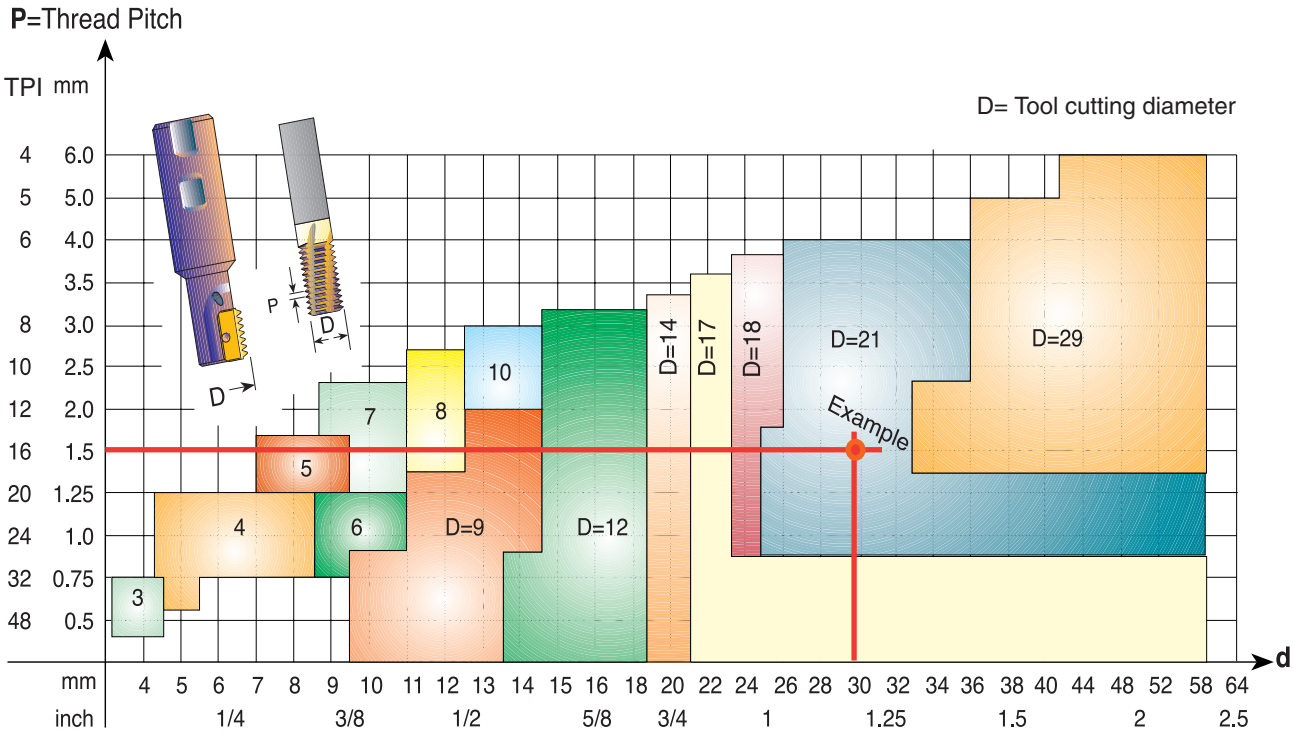


Tool Selection

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.



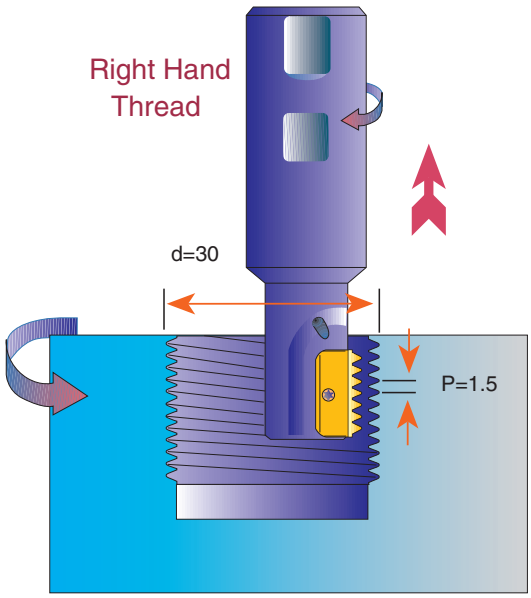
Any tool with a small cutting diameter can produce large diameter threads.

d=Thread Diameter

Example: Internal thread M30 x 1.5:
Find a Milling Tool to produce d=30 mm Internal right hand ISO thread with a thread pitch P=1.5 mm.
As can be seen from the chart above, the two red lines intersect at a selected tool with a cutting diameter of D=21 mm.

Chosen toolholder: SR0021H21

Insert: 21 I 1.5 ISO 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.

C.P.T. Mill-Thread catalogue and CNC programming Software

This software is provided by C.P.T. to assist you, the thread milling 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.

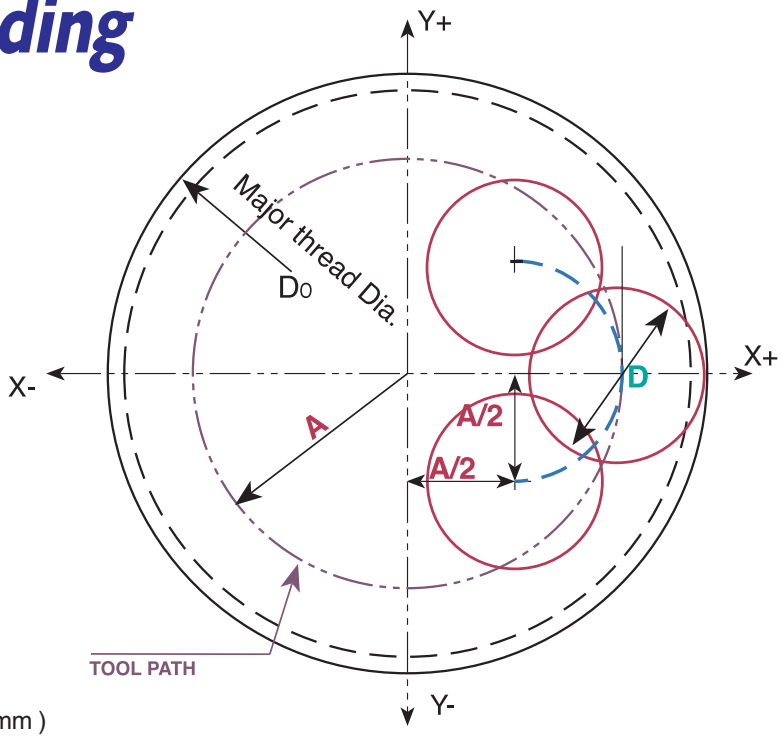
The software is available at our web site - **www.cpt-werkzeuge.de**

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.

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

A = Radius of tool path
Do = 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 : M 32 X 2.0 (Thread depth 18 mm)
TOOLHOLDER : SR0021 H21 (Cutting dia. 21 mm)
INSERT: 21 I 2.0 ISO
A = (32-21)/2 = 5.5

```
G90  G00 G54 G43 H1X0 Y0 Z10  S2800
G00  Z-18
G01  G91 G41X 2.75 Y-2.75  Z0 F85  D1
G03  X2.75 Y2.75 R2.75 Z0.25
G03  X0 Y0 I-5.5  J0  Z2
G03  X-2.75 Y2.75 R2.75 Z0.25
G01  G40 X-2.75 Y-2.75  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 m/min MT7
P	Low and Medium Carbon Steels	115-280
	High Carbon Steels	130-200
	Alloy Steels, Treated Steels	105-180
M	Stainless Steels	130-190
	Cast Steels	150-190
K	Cast Iron	80-170
N	Non- Ferrous and Aluminum	180-340
	Synthetics, Duroplastics, Thermoplastics	115-460
S	Nickel Alloys, Titanium Alloys	25- 90

Recommended FEED RATE : 0.05 - 0.15 mm

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 m/min MT7
P	Low and Medium Carbon Steels	145-360
	High Carbon Steels	165-255
	Alloy Steels, Treated Steels	135-230
M	Stainless Steels	165-245
	Cast Steels	190-245
K	Cast Iron	100-220
N	Non- Ferrous and Aluminum	230-440
	Synthetics, Duroplastics, Thermoplastics	145-590
S	Nickel Alloys, Titanium Alloys	30-115

Recommended FEED RATE : 0.05 - 0.15 mm

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

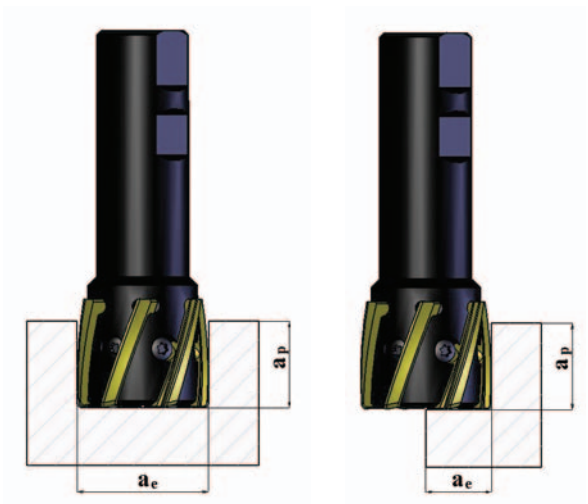
ISO	Materials	V_c (mm)	h_m (mm)
P	Low and Medium Carbon Steels	200-330	0.05-0.15
	High Carbon Steels	170-235	0.05-0.13
	Alloy Steels, Treated Steels	100-195	0.05-0.13
M	Stainless Steels	180-230	0.04-0.13
	Cast Steels	180-230	0.05-0.12
K	Cast Iron	200-350	0.05-0.11
N	Non- Ferrous and Aluminum	500-1100	0.05-0.15
	Synthetics, Duroplastics, Thermoplastics	400-1500	0.05-0.15
S	Nickel Alloys, Titanium Alloys	30-55	0.04-0.07

D = cutting diameter	ø23	ø32	ø45	ø63
a_p max	27	32	37	38

$$f_z = h_m \, x \sqrt{\frac{D}{a_e}}$$

h_m = average chip load f_z = tooth load

D	ø23		ø32		ø45		ø63	
h_m	0.05	0.15	0.05	0.15	0.05	0.15	0.05	0.15
a_e	f_z							
2	0.17	0.51	0.20	0.60	0.24	0.71	0.28	0.84
6	0.10	0.29	0.12	0.35	0.14	0.41	0.16	0.49
12	0.07	0.21	0.08	0.24	0.10	0.29	0.11	0.34
18	0.06	0.17	0.07	0.20	0.08	0.24	0.09	0.28
24	0.05	0.15	0.06	0.17	0.07	0.21	0.08	0.24
30	0.04	0.13	0.05	0.15	0.06	0.18	0.07	0.22
36	0.04	0.12	0.05	0.14	0.06	0.17	0.07	0.20



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 Standard	Material	Cutting Speed m/min	Feed mm/tooth										
			Ø2	Ø3	Ø4	Ø6	Ø8	Ø10	Ø12	Ø14	Ø16	Ø20	Ø25
P	Low and Medium Carbon Steels <0.55%C	100-250	0.03	0.04	0.04	0.06	0.07	0.08	0.09	0.11	0.12	0.15	0.18
	High Carbon Steels ≥0.55%C	110-180	0.02	0.03	0.03	0.05	0.06	0.07	0.08	0.09	0.10	0.12	0.15
	Alloy Steels, Treated Steels	90-160	0.02	0.02	0.03	0.03	0.04	0.05	0.05	0.06	0.07	0.08	0.10
M	Stainless Steels - Free Cutting	60-160	0.02	0.03	0.03	0.04	0.05	0.06	0.06	0.07	0.08	0.09	0.11
	Stainless Steels - Austenitic	60-120	0.02	0.02	0.03	0.03	0.04	0.05	0.05	0.06	0.07	0.08	0.10
	Cast Steels	130-170	0.02	0.02	0.03	0.03	0.04	0.05	0.05	0.06	0.07	0.08	0.10
K	Cast Iron	70-150	0.03	0.04	0.04	0.06	0.07	0.08	0.09	0.11	0.12	0.15	0.18
N	Aluminium ≤10%Si, Copper	150-350	0.03	0.04	0.04	0.06	0.07	0.08	0.09	0.11	0.12	0.15	0.18
	Aluminium ≥10% Si	100-250	0.02	0.02	0.03	0.03	0.04	0.05	0.05	0.06	0.07	0.08	0.10
	Synthetics, Duroplastics, Thermoplastics	100-400	0.05	0.06	0.07	0.08	0.10	0.11	0.12	0.14	0.15	0.18	0.22
S	Nickel Alloys, Titanium Alloys	20- 80	0.02	0.02	0.02	0.03	0.03	0.03	0.03	0.04	0.04	0.04	0.05

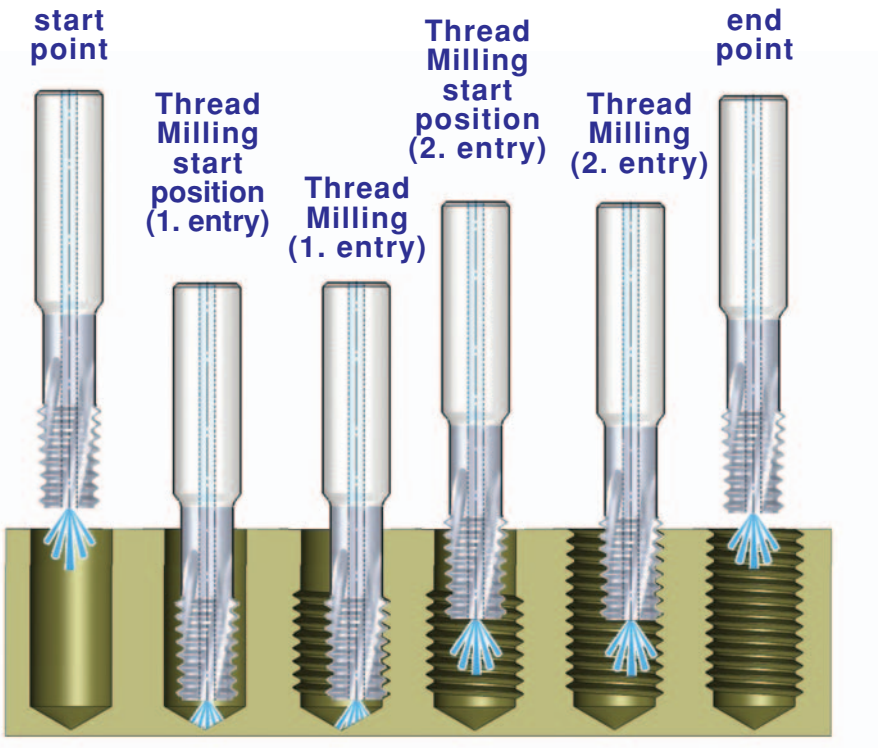
For cutters with long cutting length reduce feed rate by 40%

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 Standard	Material	Cutting Speed m/min	Feed mm/tooth					
			Ø10	Ø12	Ø14	Ø16	Ø20	Ø25
P	Low and Medium Carbon Steels <0.55%C	100-250	0.06	0.07	0.07	0.08	0.10	0.12
	High Carbon Steels ≥0.55%C	110-180	0.05	0.05	0.06	0.07	0.09	0.10
	Alloy Steels, Treated Steels	90-160	0.03	0.04	0.04	0.05	0.06	0.07
M	Stainless Steels - Free Cutting	60-160	0.04	0.04	0.05	0.06	0.06	0.08
	Stainless Steels - Austenitic	60- 120	0.04	0.04	0.04	0.05	0.06	0.07
	Cast Steels	130-170	0.03	0.04	0.04	0.05	0.06	0.07
K	Cast Iron	70-150	0.06	0.07	0.07	0.08	0.10	0.12
N	Aluminium ≤10%Si, Copper	150-350	0.06	0.07	0.07	0.08	0.10	0.12
	Aluminium ≥10% Si	100-250	0.03	0.04	0.04	0.05	0.06	0.07
	Synthetics, Duroplastics, Thermoplastics	100-400	0.08	0.09	0.10	0.11	0.13	0.15
S	Nickel Alloys, Titanium Alloys	20- 80	0.02	0.02	0.02	0.03	0.03	0.03

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

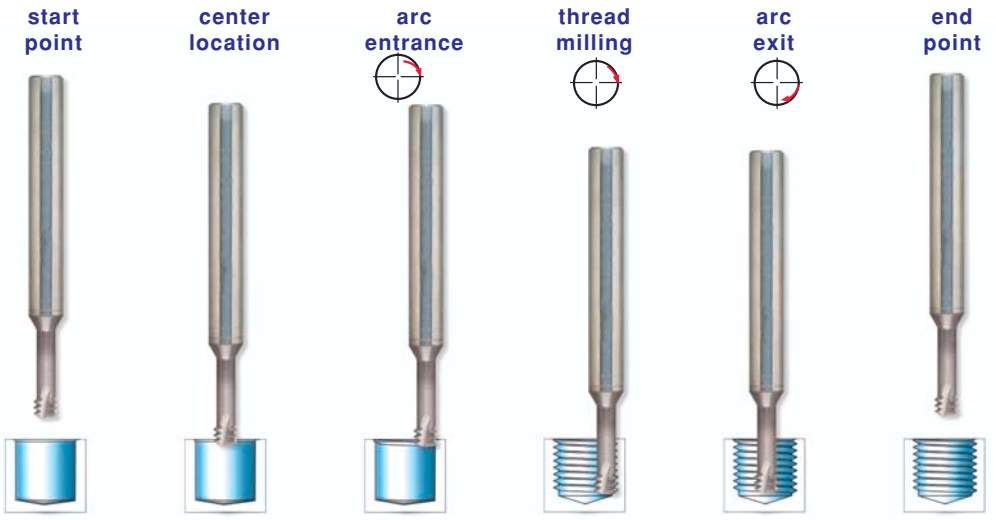


Mini Mill Thread MTS and MTI types

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 Aluminium 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.

ISO Standard	Material	Cutting Speed m/min	Feed mm/tooth Cutting Diameter = D													
			ø1	ø1.5	ø2	ø3	ø4	ø5	ø6	ø7	ø8	ø9	ø10	ø12	ø14	ø16
P	Low & Medium Carbon Steels < 0.55%C	60-120	0.04	0.05	0.05	0.07	0.09	0.11	0.13	0.14	0.15	0.16	0.16	0.17	0.18	0.18
	High Carbon Steels ≥ 0.55%C	60- 90	0.03	0.04	0.05	0.06	0.08	0.09	0.10	0.12	0.13	0.14	0.14	0.16	0.17	0.18
	Alloy Steels, Treated Steels	50- 80	0.03	0.04	0.04	0.05	0.05	0.06	0.07	0.07	0.08	0.09	0.10	0.12	0.13	0.14
M	Stainless Steels - Free Cutting	70-100	0.02	0.03	0.03	0.04	0.05	0.06	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.13
	Stainless Steel-Austenitic	60- 90	0.02	0.03	0.03	0.04	0.05	0.06	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.13
	Cast Steels	70- 90	0.03	0.04	0.04	0.05	0.05	0.06	0.07	0.07	0.08	0.09	0.10	0.12	0.13	0.14
K	Cast Iron	40- 80	0.04	0.05	0.05	0.07	0.09	0.11	0.13	0.14	0.15	0.16	0.16	0.17	0.18	0.18
N	Aluminium ≤10%Si, Copper	100-200	0.04	0.05	0.05	0.07	0.09	0.11	0.13	0.14	0.15	0.16	0.16	0.17	0.18	0.18
	Aluminium >10%Si	60-140	0.03	0.03	0.03	0.04	0.05	0.06	0.06	0.07	0.08	0.09	0.10	0.11	0.13	0.14
	Synthetics, Duroplastics, Thermoplastics	50-200	0.09	0.10	0.11	0.12	0.14	0.16	0.18	0.19	0.19	0.19	0.19	0.19	0.20	0.20
S	Nickel Alloys and Titanium Alloys	20-40	0.03	0.03	0.03	0.04	0.04	0.05	0.06	0.06	0.06	0.07	0.07	0.07	0.08	0.08



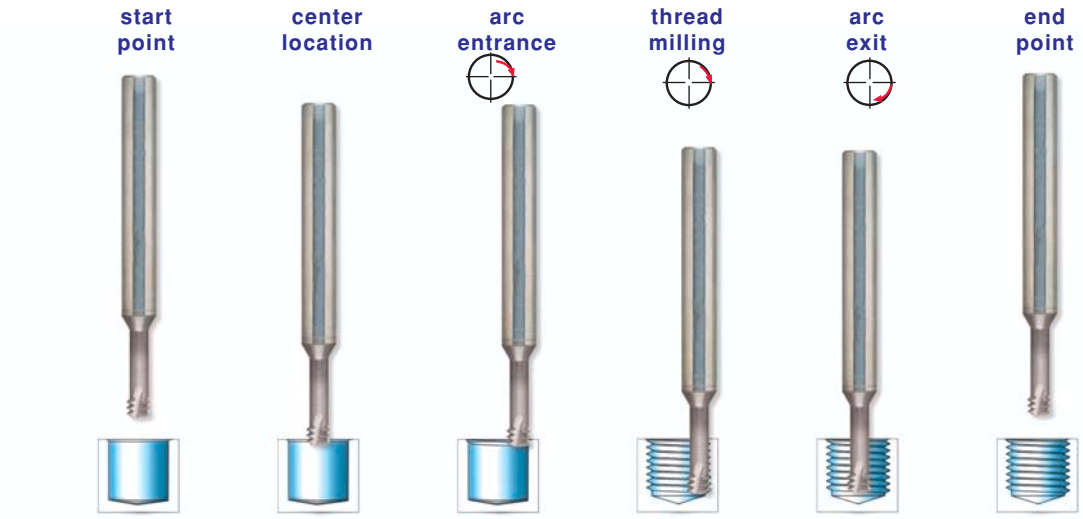
Mini Mill-Thread vs. Taps

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

Mini Mill Thread MTSH type

MT9 Sub-Micron Grade with advanced PVD triple coating.

ISO	Material	Hardness HRc	Cutting Speed m/min	Feed mm/tooth Cutting Diameter = D ø1	ø1.5	ø2	ø3	ø4	ø5	ø6	ø7	ø8	ø9	ø10	ø12	ø14	ø16
S	Nickel Alloys, Titanium Alloys and High Temp. Alloys		20-40	0.03	0.03	0.03	0.04	0.04	0.05	0.06	0.06	0.06	0.07	0.07	0.07	0.08	0.08
H	Hardened Steels	45-50	60-70	0.03	0.04	0.04	0.05	0.05	0.06	0.06	0.07	0.07	0.08	0.08	0.09	0.10	0.11
		51-55	50-60	0.02	0.03	0.03	0.04	0.04	0.05	0.05	0.06	0.06	0.07	0.07	0.08	0.09	0.10
		56-62	40-50	0.01	0.02	0.02	0.03	0.03	0.04	0.04	0.05	0.05	0.06	0.06	0.07	0.08	0.09



CASE STUDY

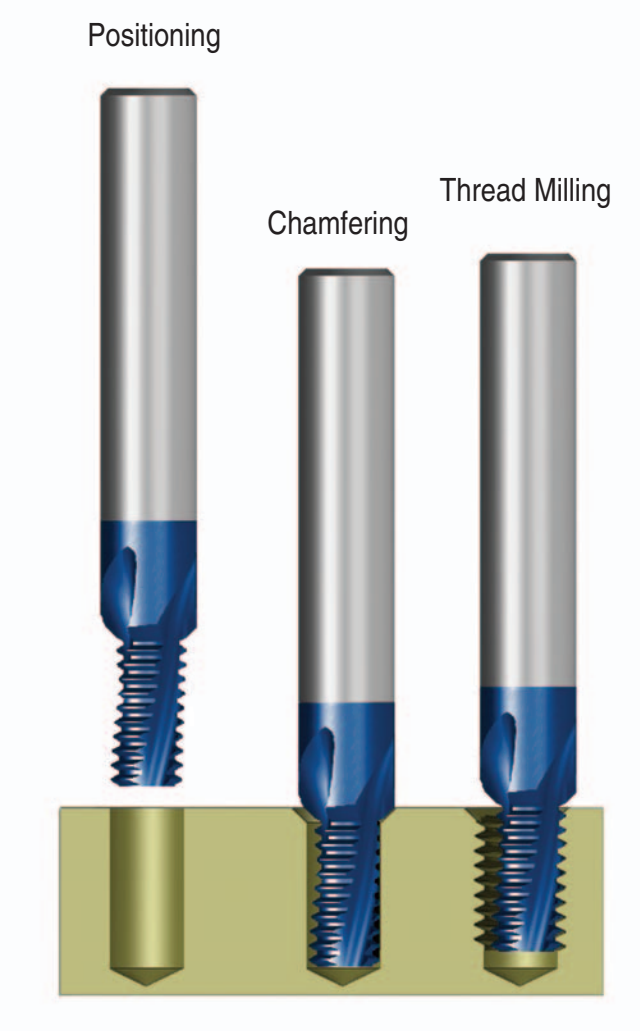
Application	Internal Thread M4 X 0.7
Thread Depth	8.0 mm
Workpiece Material	Tool Steel: D2
Hardness	60-62 (HRc)
Cutter Description	MTSH0250C35 0.7 ISO
Machining Conditions	Cutting Speed: 44 m / min Feed: 0.03 mm / tooth
Machine	Mori Seiki VN5000
Control	Fanuc
Cooling Lubricant	Emulsion
Tool Life (No. of Threads)	84

MTH type

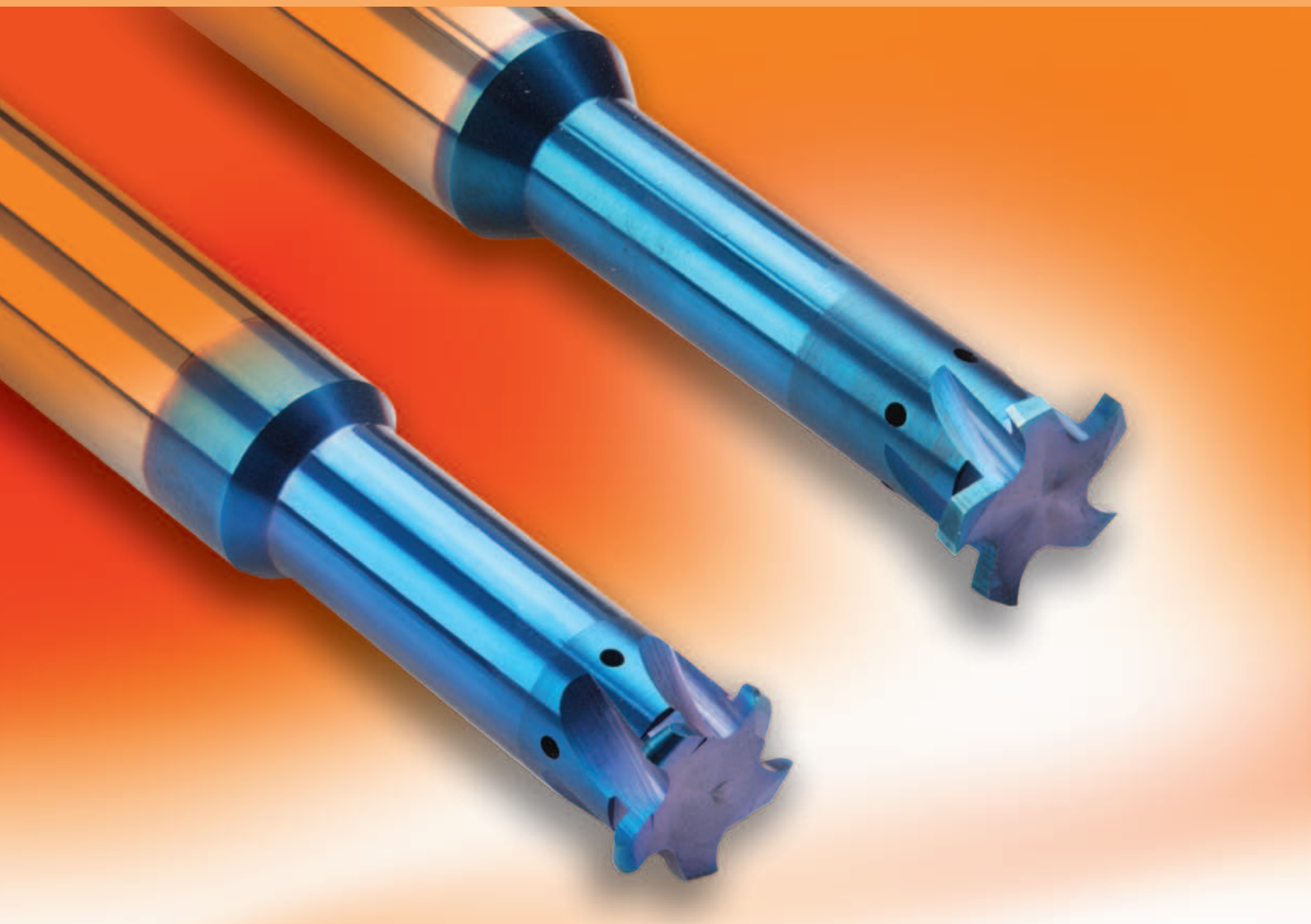
MT9 Sub-Micron Grade with advanced PVD triple coating.

ISO Standard	Material	Hardness HRc	Cutting Speed m/min	Feed mm/tooth Cutting Diameter = D Ø2.5	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8	Ø9	Ø10
S	Nickel Alloys, Titanium Alloys, High Temperature Alloys		20 - 50	0.02	0.02	0.02	0.02	0.03	0.03	0.03	0.03	0.04
H	Hardened Steels, Cast Iron	45 - 50	70 - 80	0.02	0.03	0.03	0.04	0.04	0.05	0.05	0.06	0.07
		51 - 55	60 - 70	0.01	0.02	0.02	0.03	0.03	0.04	0.04	0.05	0.06
		56 - 62	40 - 50	0.005	0.01	0.01	0.02	0.02	0.03	0.03	0.04	0.05

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..

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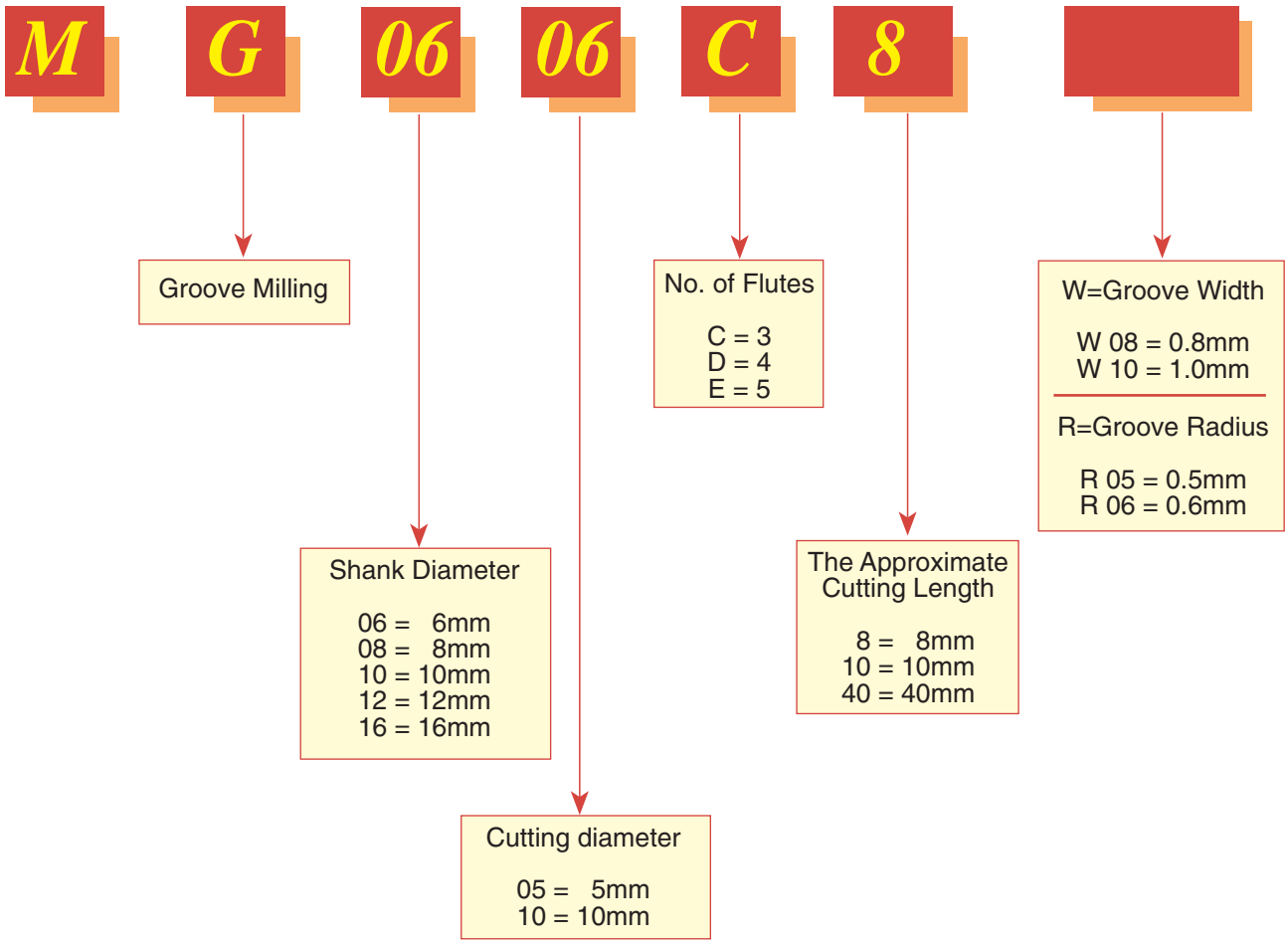
Groove Milling 131
Full Radius Groove Milling 131

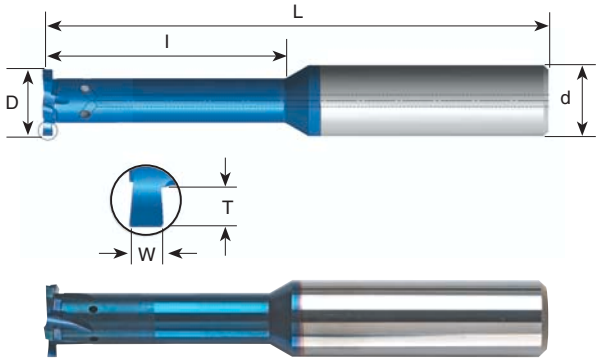
Product Identification

Groove Milling Ordering Codes



Groove Milling

With internal coolant through the flutes



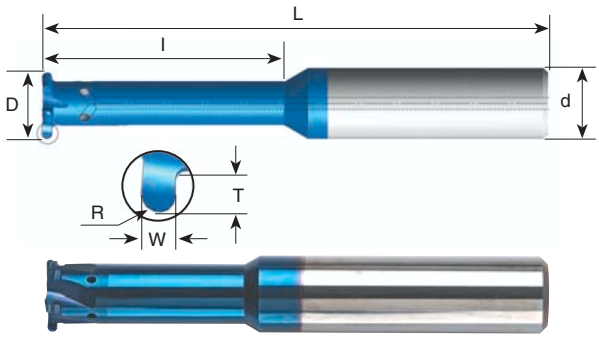
For grooving deep parts

W ± 0.02	T Max.	Groove Dia. (min)	Ordering Code	d	D	No. of Flutes	l	L
0.80	0.8	ø>6	MG0606C8 W08	6	6.0	3	8	58
1.00	1.2	ø≥8	MG08078D10 W10	8	7.8	4	10	64
1.20	1.4	ø≥10	MG10098D20 W12	10	9.8	4	20	73
1.40	1.8	ø>16	MG1616E30 W14	16	16.0	5	30	101
1.70	2.0	ø>16	MG1616E40 W17	16	16.0	5	40	101
1.95	2.2	ø>16	MG1616E45 W19	16	16.0	5	45	101

Order example: MG 10098D20 W12 MT8

Full Radius Groove Milling

With internal coolant through the flutes

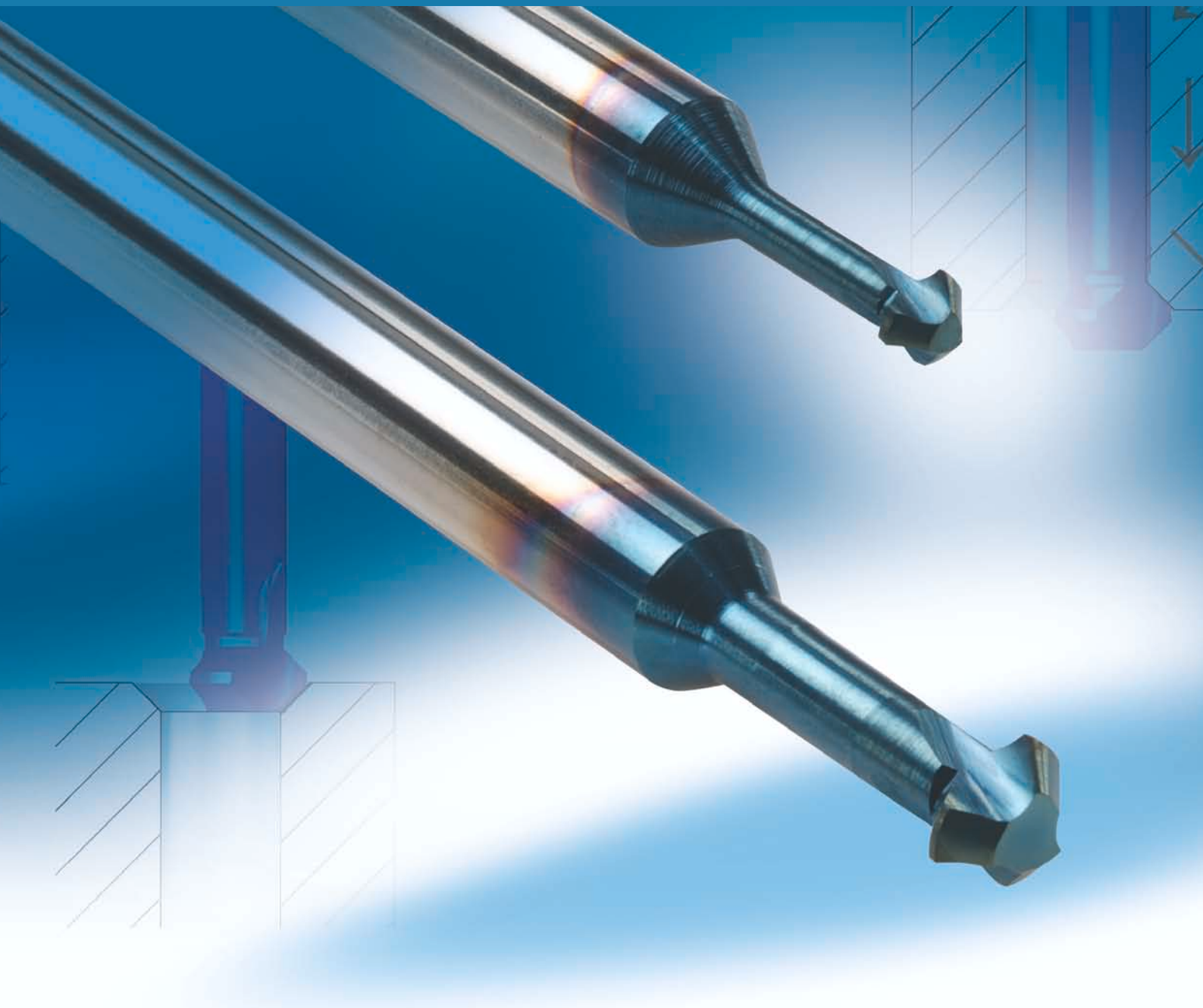


For grooving deep parts

R	W ± 0.02	T Max.	Groove Dia. (min)	Ordering Code	d	D	No. of Flutes	l	L
0.5	1.00	0.8	ø>6	MG0606C8 R05	6	6.0	3	8	58
0.5	1.00	1.0	ø>8.8	MG10088D16 R05	10	8.8	4	16	73
0.6	1.20	1.0	ø>10	MG1010D20 R06	10	10.0	4	20	73
0.9	1.80	1.4	ø>12	MG1212D30 R09	12	12.0	4	30	84
1.0	2.00	1.6	ø>16	MG1616E40 R10	16	16.0	5	40	101
1.5	3.00	2.2	ø>16	MG1616E40 R15	16	16.0	5	40	101

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

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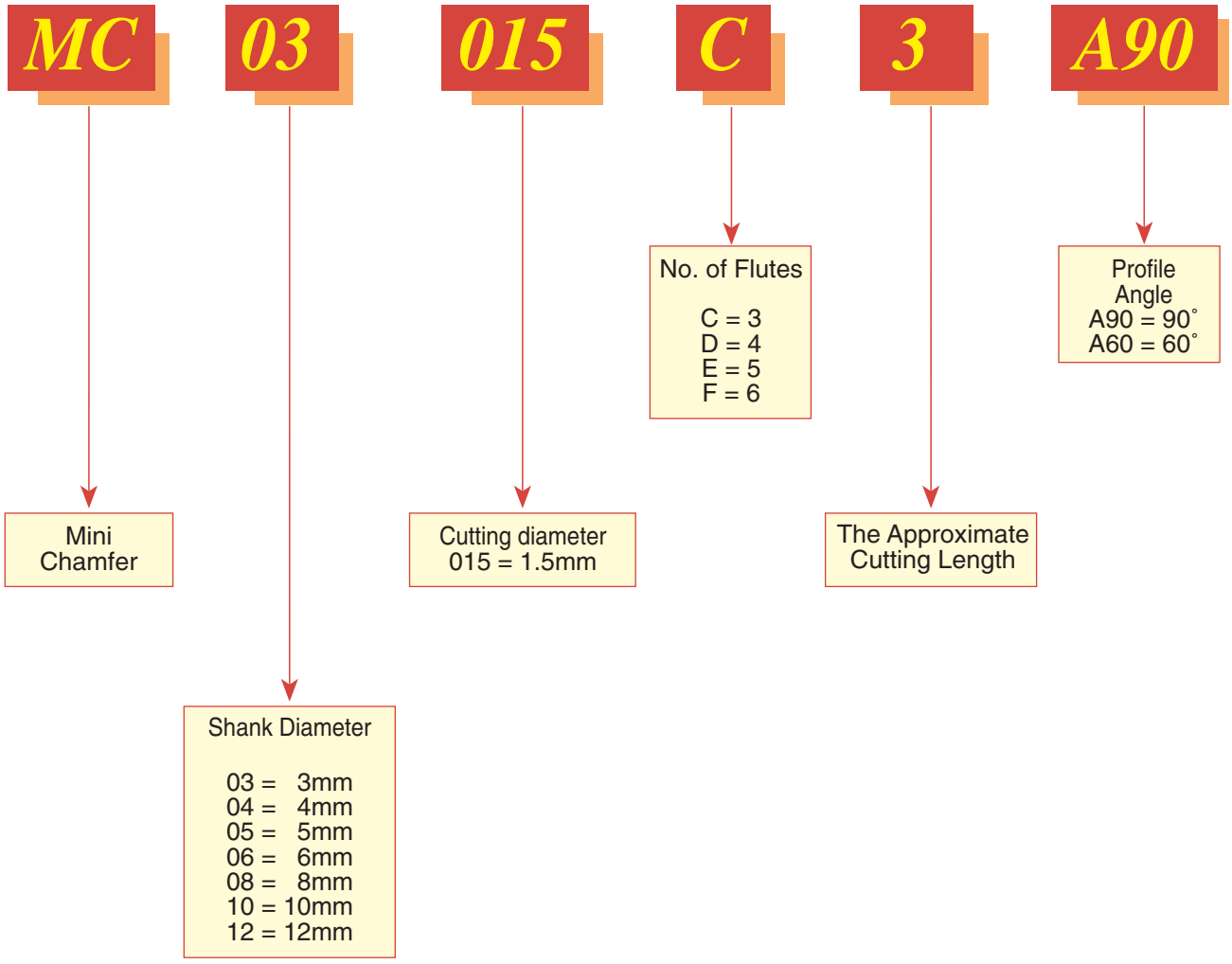
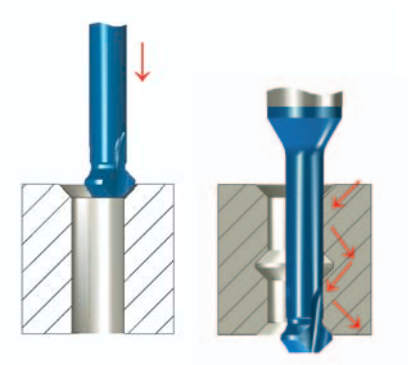
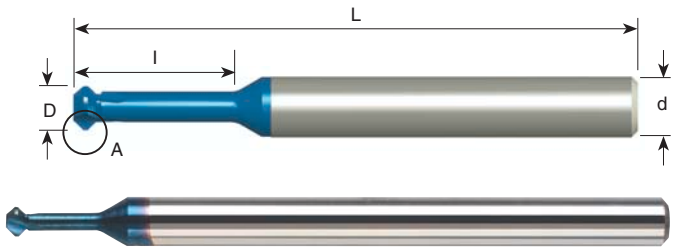
Product Identification

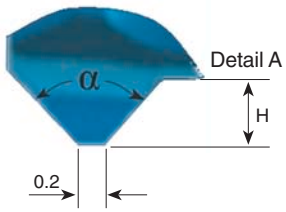
Mini Chamfer Ordering Codes:



Mini Chamfer







45°

Ordering Code	d	D	l	H	α	No. of Flutes	L
MC03015C3 A90	3	1.5	3.8	0.3	90°	3	39
MC0302C5 A90	3	2.0	5.0	0.4	90°	3	39
MC03025C6 A90	3	2.5	6.3	0.5	90°	3	39
MC0303C7 A90	3	3.0	7.5	0.6	90°	3	39
MC04035C9 A90	4	3.5	8.8	0.7	90°	3	51
MC0404C10 A90	4	4.0	10.0	0.8	90°	3	51
MC05045C11 A90	5	4.5	11.3	1.0	90°	3	51
MC0505C12 A90	5	5.0	12.5	1.1	90°	3	51
MC06055C13 A90	6	5.5	13.8	1.2	90°	3	51
MC0606C15 A90	6	6.0	15.0	1.5	90°	3	51

Long Reach 45°

Ordering Code	d	D	l	H	α	No. of Flutes	L
MC0303C12 A90	3	3.0	12.0	0.6	90°	3	39
MC04035C14 A90	4	3.5	14.0	0.7	90°	3	51
MC0404C16 A90	4	4.0	16.0	0.8	90°	3	51
MC05045C18 A90	5	4.5	18.0	1.0	90°	3	51
MC0505C20 A90	5	5.0	20.0	1.1	90°	3	51
MC06055C22 A90	6	5.5	22.0	1.2	90°	3	58
MC0606C24 A90	6	6.0	24.0	1.5	90°	3	58
MC0808D28 A90	8	8.0	28.0	1.6	90°	4	64
MC1010E35 A90	10	10.0	35.0	1.8	90°	5	73
MC1212F42 A90	12	12.0	42.0	2.1	90°	6	84

30°

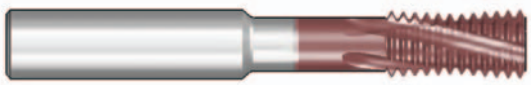
Ordering Code	d	D	l	H	α	No. of Flutes	L
MC0302C5 A60	3	2.0	5.0	0.4	60°	3	39
MC0303C7 A60	3	3.0	7.5	0.6	60°	3	39
MC04035C9 A60	4	3.5	8.8	0.7	60°	3	51
MC0404C10 A60	4	4.0	10.0	0.8	60°	3	51
MC05045C11 A60	5	4.5	11.3	1.0	60°	3	51
MC0505C12 A60	5	5.0	12.5	1.1	60°	3	51

Mini Chamfer Kit

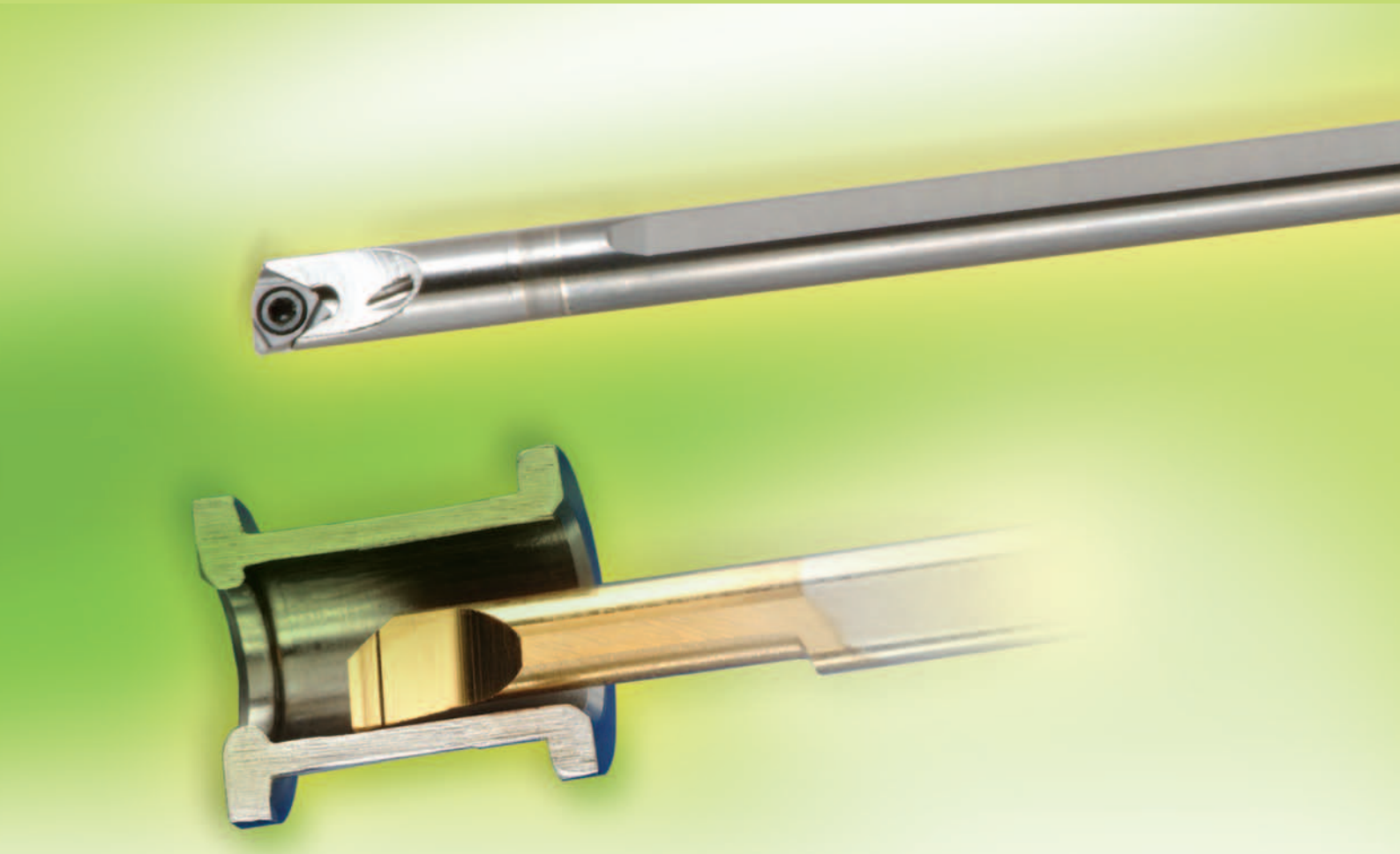
Kit KMC	Qty
MC 0303 C12 A90	1
MC 03025 C6 A90	1
MC 0404 C10 A90	1
MC 04035 C9 A90	1
MC 05045 C11 A90	1
MC 0606 C24 A90	1

Special Solid Carbide Tools

As part of being a service-oriented company,
C.P.T. produces specials according to customer's requirements.
Special tools are supplied in short delivery times.



Turning Tools



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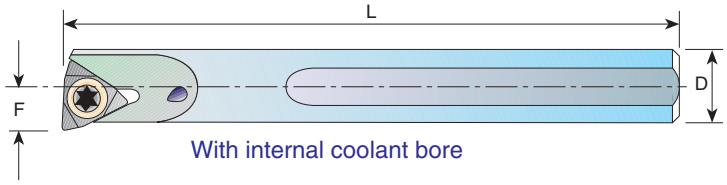
Carbide Shank Boring Bars and Inserts

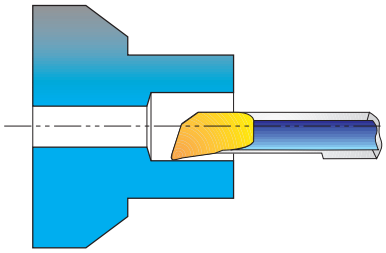


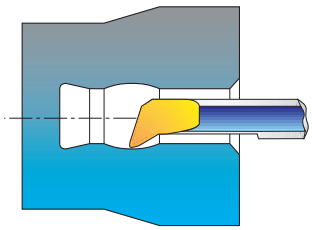
With internal coolant bore

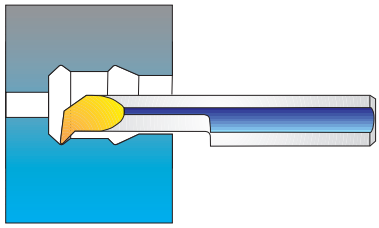
D	Ordering Code	L	F	Min. Bore Dia.	Screw	Key
6	**SIR 0006 H06CT**	100	3.3	6.5	S6	K6
8	**SIR 0008 K06CT**	125	4.3	8.6	S6	K6
10	**SIR 0010 M06CT**	150	5.3	10.6	S6	K6

Insert ordering code: 06 IR TURN BMA
Nose radius R= 0.2 mm

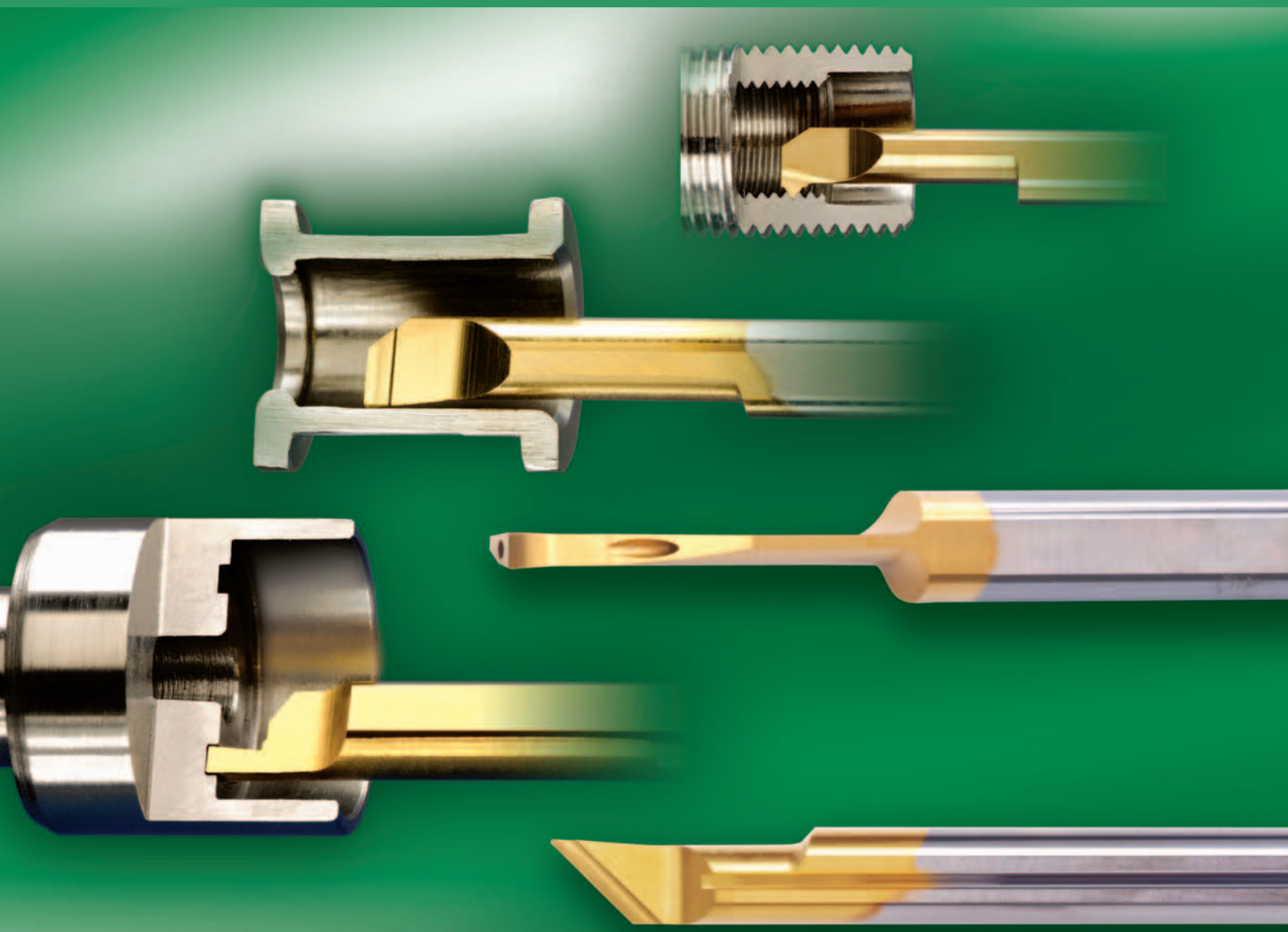
For turning small bores see pages 141-145







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 cooling channel on the shank, enabling the cooling fluid to reach efficiently the cutting edge, for easy chip removal and smooth cutting operations.

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MXR Back Turning Bars	142	MFR Face Grooving Bars	152
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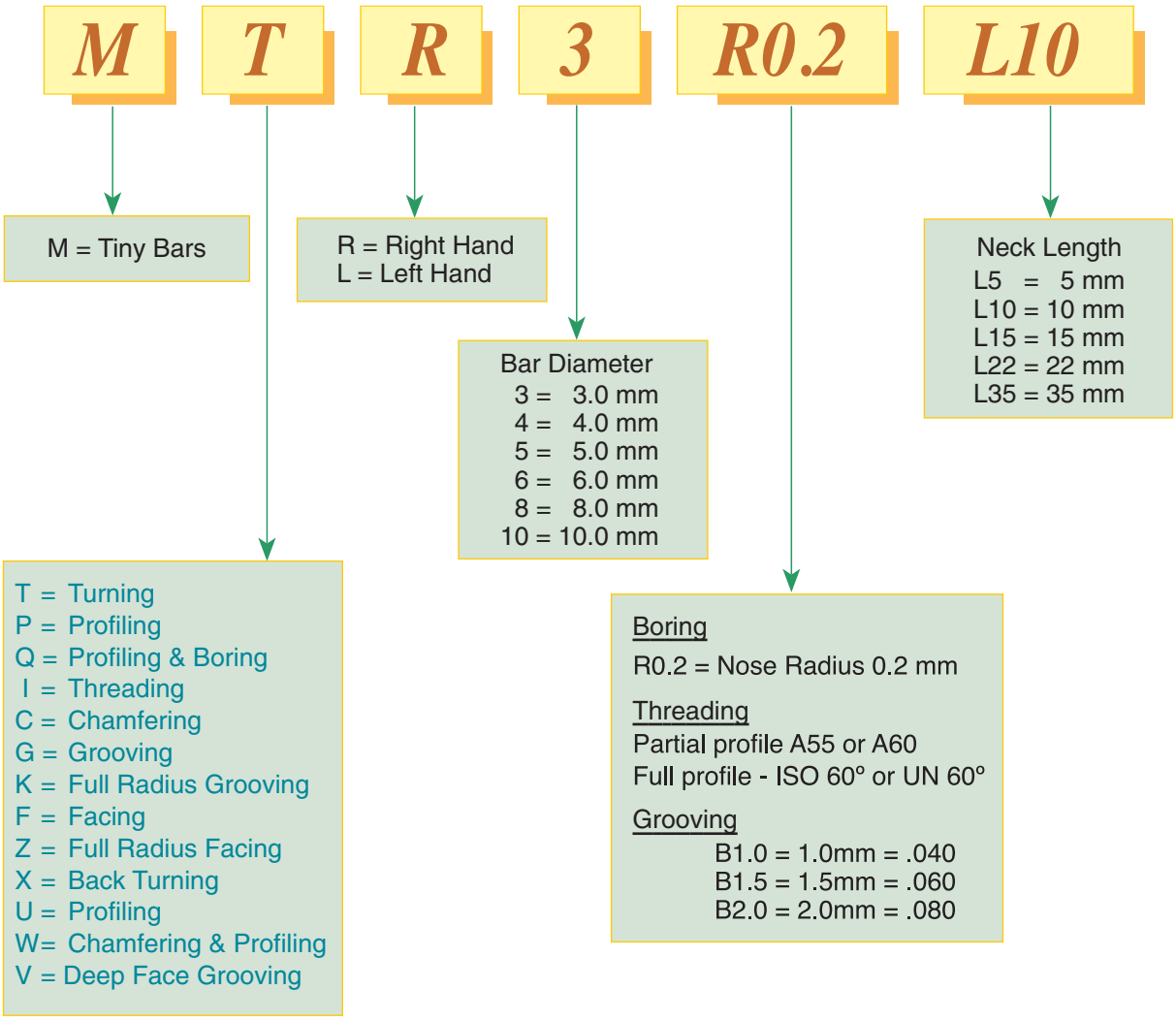
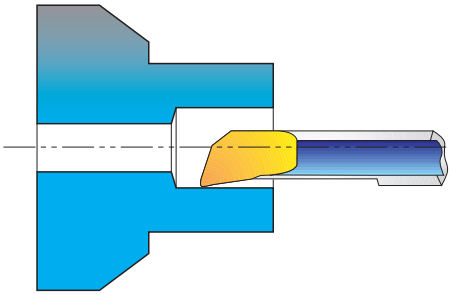
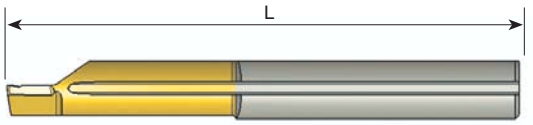
Product Identification

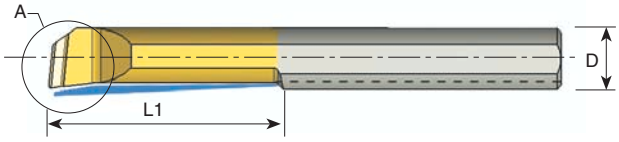
Tiny Bars Ordering Codes

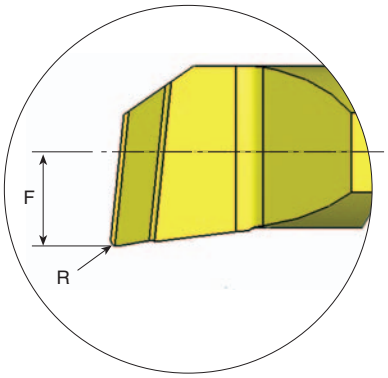


MTR Bars *Boring - with Coolant Channel*









Detail A

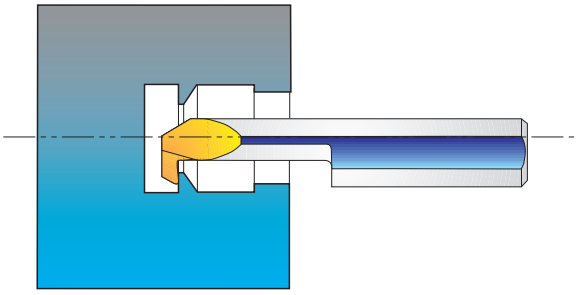
D	Ordering Code	L	L1	R	F	Min. Bore Dia.	Holder*
3.0	**MTR 1 R0.05 L4**	39	4	0.05	0.5	1.0	SIM 0020 H3
3.0	**MTR 1.5R0.10 L6**	39	6	0.10	0.7	1.5	SIM 0020 H3
3.0	**MTR 2 R0.15 L5**	39	5	0.15	0.8	2.1	SIM 0020 H3
3.0	**MTR 2 R0.15 L10**	39	10	0.15	0.8	2.1	SIM 0020 H3
3.0	**MTR 3 R0.05 L10**	39	10	0.05	1.3	3.1	SIM 0020 H3
3.0	**MTR 3 R0.05 L15**	39	15	0.05	1.3	3.1	SIM 0020 H3
3.0	**MTR 3 R0.2 L10**	39	10	0.20	1.3	3.1	SIM 0020 H3
3.0	**MTR 3 R0.2 L15**	39	15	0.20	1.3	3.1	SIM 0020 H3
4.0	**MTR 4 R0.2 L10**	50	10	0.20	1.7	4.1	SIM 0020 H4
4.0	**MTR 4 R0.2 L15**	50	15	0.20	1.7	4.1	SIM 0020 H4
5.0	**MTR 5 R0.2 L15**	50	15	0.20	2.1	5.1	SIM 0020 H5
5.0	**MTR 5 R0.2 L22**	50	22	0.20	2.1	5.1	SIM 0020 H5
6.0	**MTR 6 R0.2 L15**	50	15	0.20	2.8	6.1	SIM 0020 H6
6.0	**MTR 6 R0.2 L22**	50	22	0.20	2.8	6.1	SIM 0020 H6
6.0	**MTR 6 R0.2 L30**	58	30	0.20	2.8	6.1	SIM 0020 H6
8.0	**MTR 8 R0.2 L15**	63	15	0.20	3.8	8.1	SIM 0020 H8
8.0	**MTR 8 R0.2 L22**	63	22	0.20	3.8	8.1	SIM 0020 H8
10.0	**MTR10R0.2 L35**	72	35	0.20	4.8	10.1	SIM 0020 H10

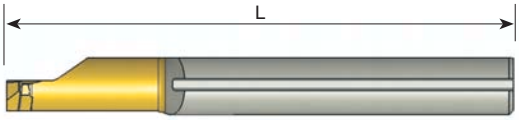
Order example: MTR 4 R0.2 L15 BXC

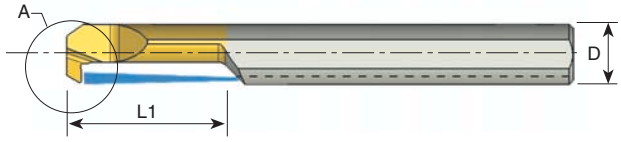
For L.H. bars specify MTL instead of MTR

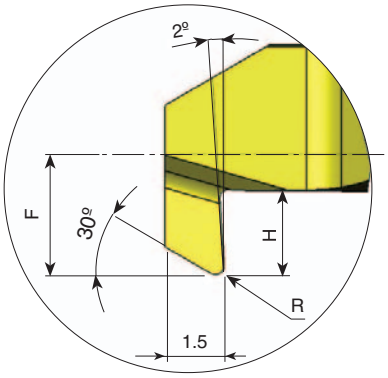
* For additional holders see page 156

MXR Bars Back Turning - with Coolant Channel









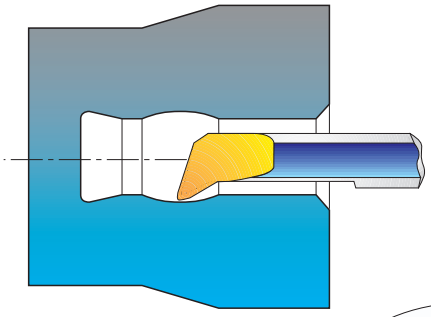
Detail A

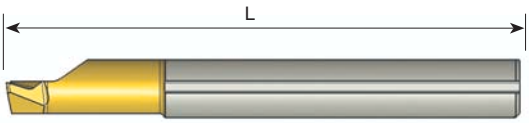
D	Ordering Code	L	L1	R	H	F	Min. Bore Dia.	Holder*
4.0	**MXR 4 R0.1 L10**	50	10	0.10	0.5	1.3	3.1	SIM 0020 H4
4.0	**MXR 4 R0.15 L10**	50	10	0.15	0.8	1.6	4.1	SIM 0020 H4
4.0	**MXR 4 R0.15 L15**	50	15	0.15	0.8	1.6	4.1	SIM 0020 H4
5.0	**MXR 5 R0.2 L15**	50	15	0.20	1.0	2.2	5.1	SIM 0020 H5
5.0	**MXR 5 R0.2 L22**	50	22	0.20	1.0	2.2	5.1	SIM 0020 H5
6.0	**MXR 6 R0.2 L15**	50	15	0.20	1.8	2.8	6.1	SIM 0020 H6
6.0	**MXR 6 R0.2 L22**	50	22	0.20	1.8	2.8	6.1	SIM 0020 H6

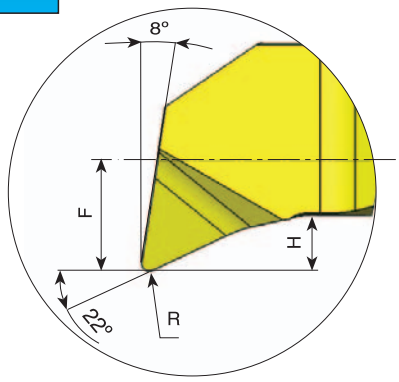
Order example: MXR 4 R0.15 L15 BXC

* For additional holders see page 156

MPR Bars *Profiling and Boring - with Coolant Channel*







Detail A

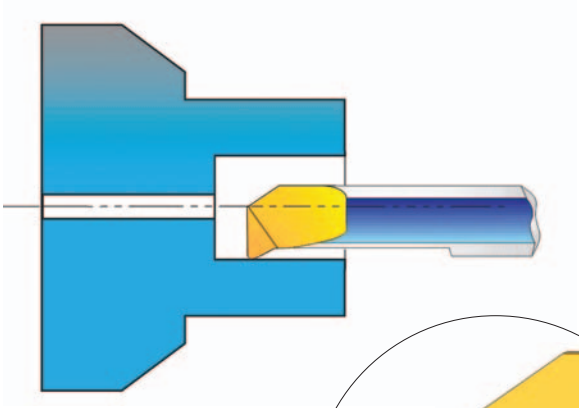
D	Ordering Code	L	L1	R	H	F	Min. Bore Dia.	Holder*
3.0	**MPR 1 R0.05 L4**	39	4	0.05	0.2	0.5	1.0	SIM 0020 H3
3.0	**MPR 1.5 R0.10L6**	39	6	0.10	0.3	0.7	1.5	SIM 0020 H3
3.0	**MPR 2 R0.15 L5**	39	5	0.15	0.5	0.8	2.1	SIM 0020 H3
3.0	**MPR 2 R0.15 L10**	39	10	0.15	0.5	0.8	2.1	SIM 0020 H3
3.0	**MPR 3 R0.05 L10**	39	10	0.05	0.7	1.3	3.1	SIM 0020 H3
3.0	**MPR 3 R0.05 L15**	39	15	0.05	0.7	1.3	3.1	SIM 0020 H3
3.0	**MPR 3 R0.2 L10**	39	10	0.20	0.7	1.3	3.1	SIM 0020 H3
3.0	**MPR 3 R0.2 L15**	39	15	0.20	0.7	1.3	3.1	SIM 0020 H3
4.0	**MPR 4 R0.2 L10**	50	10	0.20	0.8	1.7	4.1	SIM 0020 H4
4.0	**MPR 4 R0.2 L15**	50	15	0.20	0.8	1.7	4.1	SIM 0020 H4
5.0	**MPR 5 R0.2 L15**	50	15	0.20	1.2	2.1	5.1	SIM 0020 H5
5.0	**MPR 5 R0.2 L22**	50	22	0.20	1.2	2.1	5.1	SIM 0020 H5
6.0	**MPR 6 R0.2 L15**	50	15	0.20	1.4	2.8	6.1	SIM 0020 H6
6.0	**MPR 6 R0.2 L22**	50	22	0.20	1.4	2.8	6.1	SIM 0020 H6
8.0	**MPR 8 R0.2 L15**	63	15	0.20	1.6	3.8	8.1	SIM 0020 H8
8.0	**MPR 8 R0.2 L22**	63	22	0.20	1.6	3.8	8.1	SIM 0020 H8
10.0	**MPR 10R0.2 L35**	72	35	0.20	2.0	4.8	10.1	SIM 0020 H10

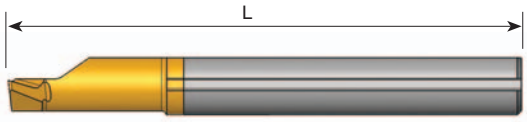
Order example: MPR 4 R0.2 L15 BXC

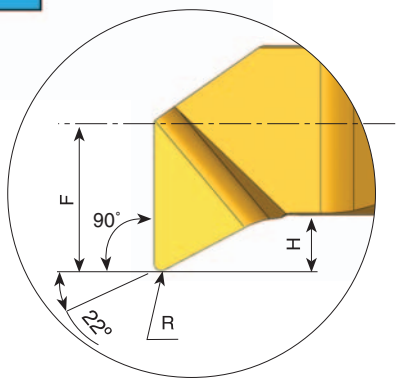
For L.H. bars specify MPL instead of MPR

* For additional holders see page 156

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







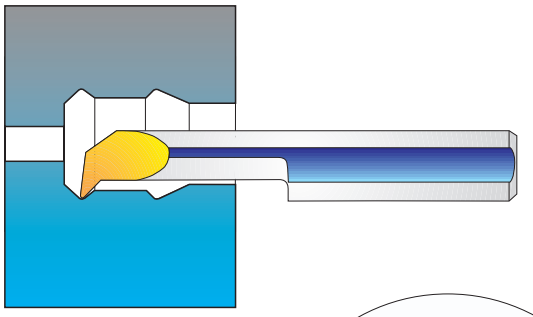
Detail A

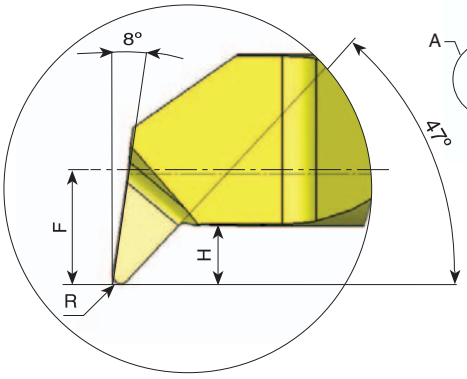
D	Ordering Code	L	L1	R	H	F	Min. Bore Dia.	Holder*
3.0	**MUR 3 R0.05 L10**	39	10	0.05	0.4	1.3	3.1	SIM 0020 H3
3.0	**MUR 3 R0.05 L15**	39	15	0.05	0.4	1.3	3.1	SIM 0020 H3
4.0	**MUR 4 R0.1 L10**	51	10	0.10	0.5	1.7	4.1	SIM 0020 H4
4.0	**MUR 4 R0.1 L15**	51	15	0.10	0.5	1.7	4.1	SIM 0020 H4
5.0	**MUR 5 R0.15 L15**	51	15	0.15	0.7	2.1	5.1	SIM 0020 H5
5.0	**MUR 5 R0.15 L22**	51	22	0.15	0.7	2.1	5.1	SIM 0020 H5
6.0	**MUR 6 R0.15 L15**	51	15	0.15	0.9	2.8	6.1	SIM 0020 H6
6.0	**MUR 6 R0.15 L22**	51	22	0.15	0.9	2.8	6.1	SIM 0020 H6
8.0	**MUR 8 R0.2 L22**	64	22	0.20	1.1	3.8	8.1	SIM 0020 H8

Order example: MUR 5 R0.15 L15 BXC

* For additional holders see page 156

MQR Bars *Profiling and Boring - with Coolant Channel*





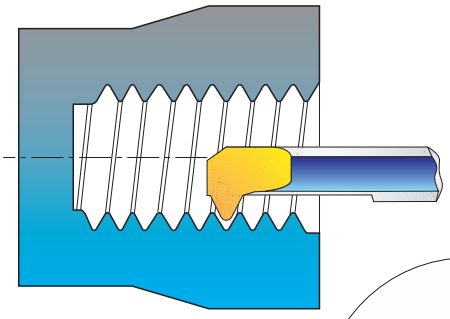
Detail A

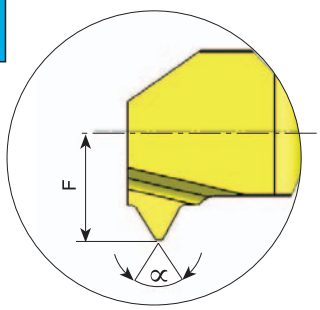
D	Ordering Code	L	L1	R	H	F	Min. Bore Dia.	Holder*
4.0	**MQR 4 R0.2 L10**	50	10	0.20	0.8	1.8	4.1	SIM 0020 H4
4.0	**MQR 4 R0.2 L15**	50	15	0.20	0.8	1.8	4.1	SIM 0020 H4
5.0	**MQR 5 R0.2 L15**	50	15	0.20	1.0	2.3	5.1	SIM 0020 H5
5.0	**MQR 5 R0.2 L22**	50	22	0.20	1.0	2.3	5.1	SIM 0020 H5
6.0	**MQR 6 R0.2 L15**	50	15	0.20	1.4	2.8	6.1	SIM 0020 H6
6.0	**MQR 6 R0.2 L22**	50	22	0.20	1.4	2.8	6.1	SIM 0020 H6
8.0	**MQR 8 R0.2 L22**	64	22	0.20	1.6	3.8	8.1	SIM 0020 H8

Order example: MQR 5 R0.2 L15 BXC

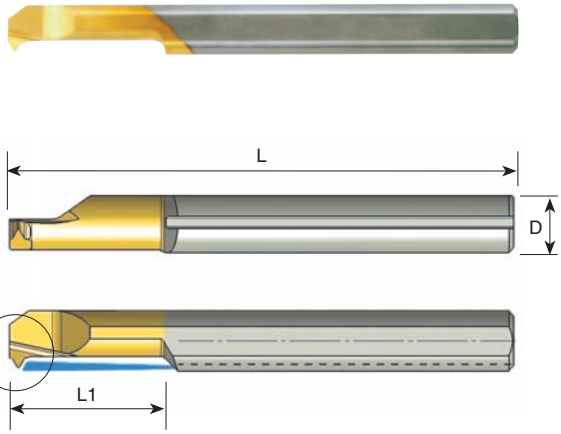
* For additional holders see page 156

MIR Bars *Threading - with Coolant Channel*





Detail A



Partial Profile 60° & 55°

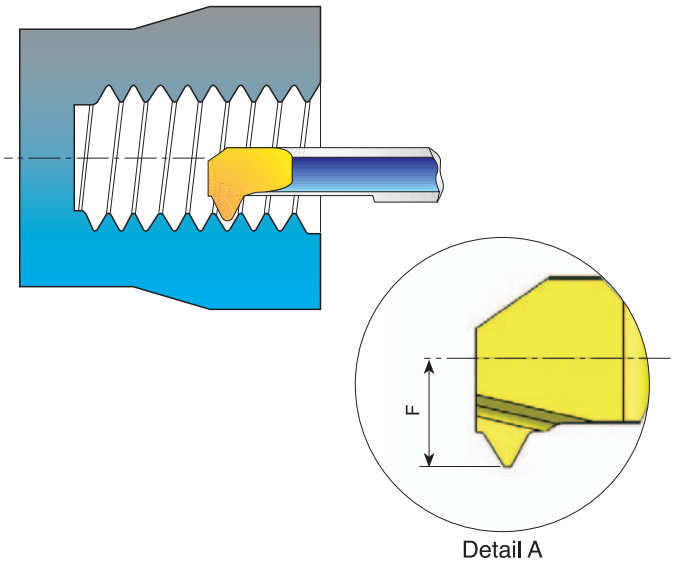
D	Ordering Code	L	L1	α	Pitch Range mm	Pitch Range TPI	F	Min. Bore Dia.	Holder*
3.0	**MIR 2 L8 A60**	39	8	60	0.45-0.7	56-32	1.0	2.1	SIM 0020 H3
3.0	**MIR 3 L15 A60**	39	15	60	0.8 -1.0	32-24	1.4	3.2	SIM 0020 H3
3.0	**MIR 3 L15 A55**	39	15	55	0.5 -1.0	48-24	1.4	3.2	SIM 0020 H3
4.0	**MIR 4 L15 A60**	50	15	60	0.8 -1.0	32-24	1.8	4.1	SIM 0020 H4
4.0	**MIR 4 L15 A55**	50	15	55	0.5 -1.0	48-24	1.8	4.1	SIM 0020 H4
5.0	**MIR 5 L15 A60**	50	15	60	1.0 -1.25	24-20	2.3	5.1	SIM 0020 H5
5.0	**MIR 5 L15 A55**	50	15	55	0.5 -1.25	48-20	2.3	5.1	SIM 0020 H5
6.0	**MIR 6 L15 A60**	50	15	60	1.0 -1.5	24-16	2.6	6.0	SIM 0020 H6
6.0	**MIR 6 L15 A55**	50	15	55	0.5 -1.5	48-16	2.6	6.0	SIM 0020 H6
8.0	**MIR 8 L22 A60**	64	22	60	1.0 -2.0	24-13	3.6	8.0	SIM 0020 H8

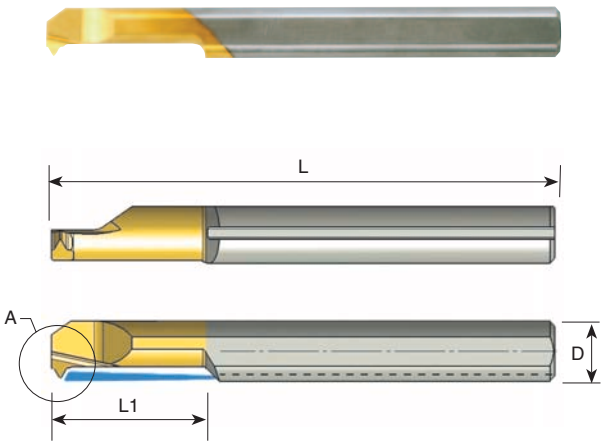
Order example: MIR 5 L15 A60 BXC

For L.H. bars specify MIL instead of MIR

* For additional holders see page 156

MIR Bars *Threading - with Coolant Channel*





Full Profile – ISO 60°

D	Ordering Code	Pitch mm	L	L1	F	Min. Bore Dia.	Holder*
3.0	**MIR 3 L15 0.5 ISO**	0.5	39	15	1.4	3.2	SIM 0020 H3
3.0	**MIR 3 L15 0.75 ISO**	0.75	39	15	1.4	3.2	SIM 0020 H3
4.0	**MIR 4 L15 0.5 ISO**	0.5	50	15	1.8	4.1	SIM 0020 H4
4.0	**MIR 4 L15 0.75 ISO**	0.75	50	15	1.8	4.1	SIM 0020 H4
5.0	**MIR 5 L15 1.0 ISO**	1.0	50	15	2.2	4.9	SIM 0020 H5
6.0	**MIR 6 L22 1.25 ISO**	1.25	50	22	2.8	6.1	SIM 0020 H6

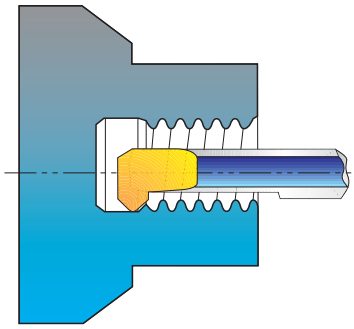
Order example: MIR 5 L15 1.0 ISO BXC

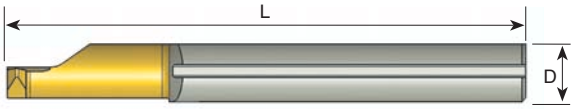
Full Profile – UN 60°

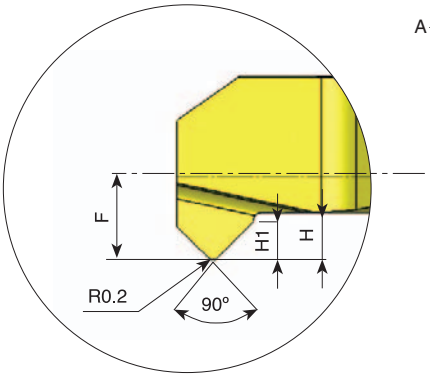
D	Ordering Code	Pitch TPI	L	L1	F	Min. Bore Dia.	Holder*
3.0	**MIR 3 L15 36 UN**	36	39	15	1.4	3.2	SIM 0020 H3
3.0	**MIR 3 L15 32 UN**	32	39	15	1.4	3.2	SIM 0020 H3
4.0	**MIR 4 L15 36 UN**	36	50	15	1.8	4.1	SIM 0020 H4
4.0	**MIR 4 L15 32 UN**	32	50	15	1.8	4.1	SIM 0020 H4
5.0	**MIR 5 L15 28 UN**	28	50	15	2.2	4.9	SIM 0020 H5
5.0	**MIR 5 L18 20 UN**	20	50	18	2.3	5.0	SIM 0020 H5

Order example: MIR 4 L15 36 UN BXC
For L.H. bars specify MIL instead of MIR
* For additional holders see page 156

MCR Bars *Chamfering and Boring - with Coolant Channel*







Detail A

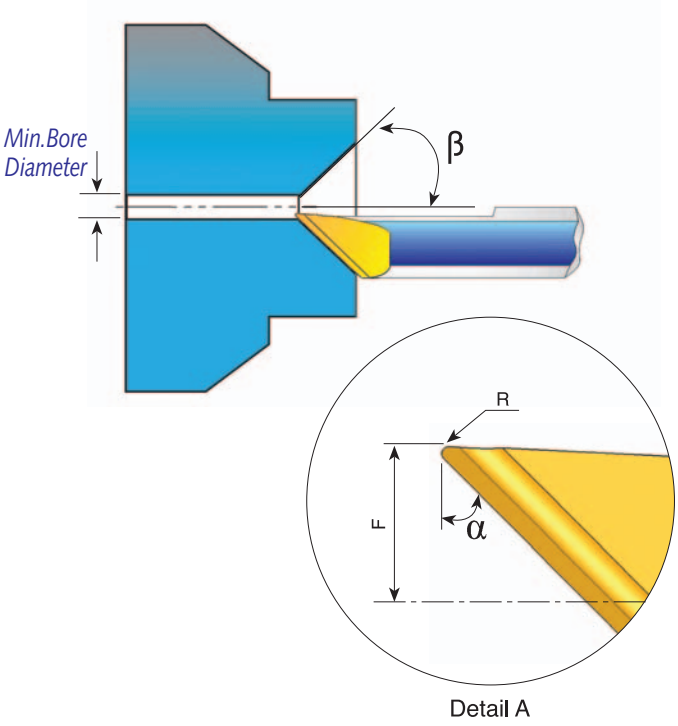
D	Ordering Code	L	L1	R	H	H1	F	Min. Bore Dia.	Holder*
3.0	**MCR 3 R0.2 L10**	39	10	0.20	0.7	0.3	1.3	3.1	SIM 0020 H3
4.0	**MCR 4 R0.2 L15**	50	15	0.20	0.8	0.4	1.7	4.1	SIM 0020 H4
5.0	**MCR 5 R0.2 L15**	50	15	0.20	1.2	0.7	2.1	5.1	SIM 0020 H5
6.0	**MCR 6 R0.2 L15**	50	15	0.20	1.4	0.7	2.8	6.1	SIM 0020 H6

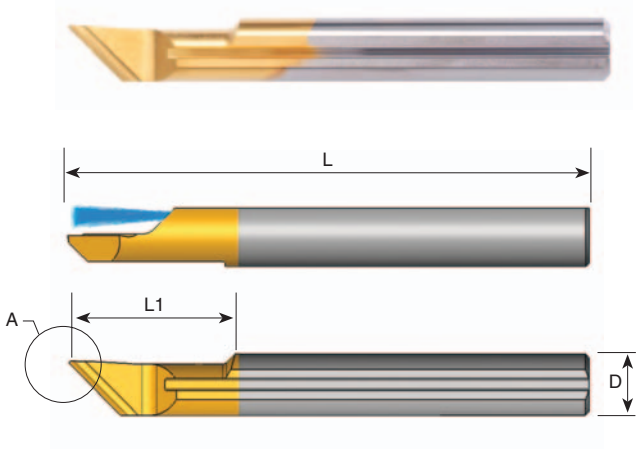
Order example: MCR 4 R0.2 L15 BXC

For L.H. bars specify MCL instead of MCR

* For additional holders see page 156

MWR Bars Chamfering and Profiling - with Coolant Channel



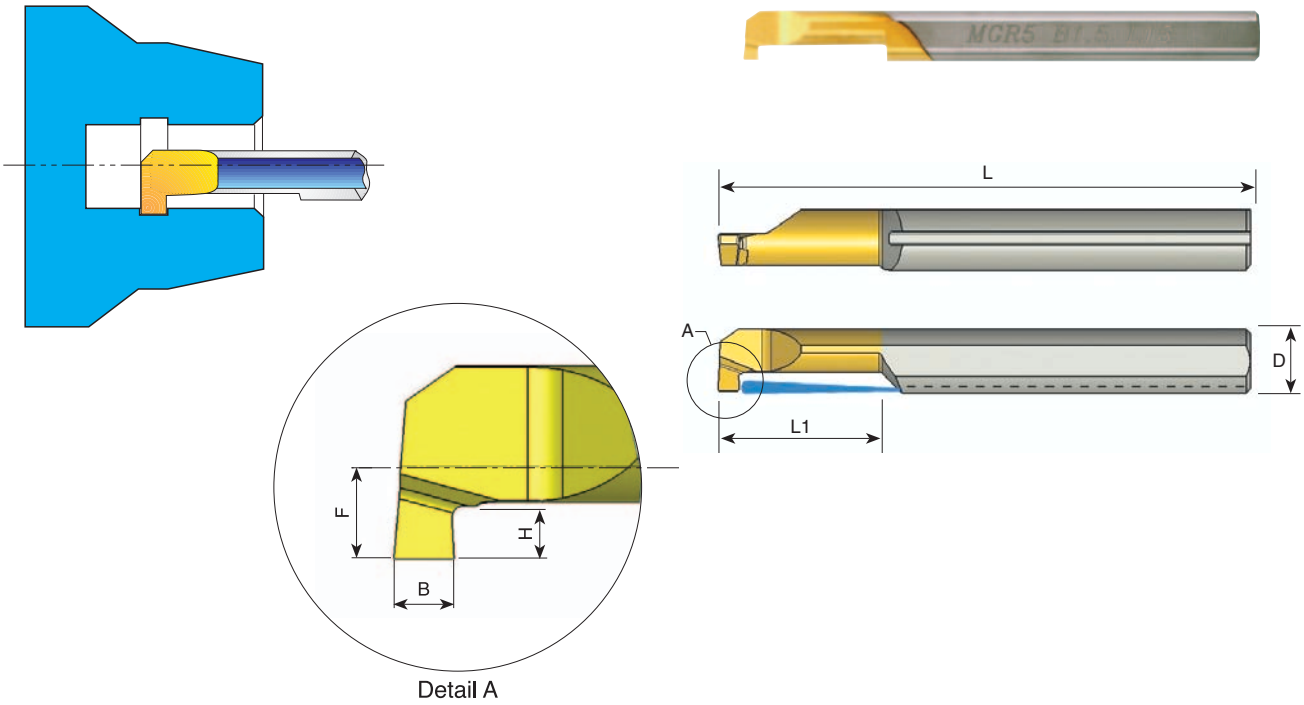


D	Ordering Code	L	L1	R	α	β	F	Min. Bore Dia.	Holder*
6.0	**MWR 6 R0.2 A90**	51	15.0	0.20	45˚	45˚	2.3	1.0	SIM 0020 H6
6.0	**MWR 6 R0.2 A60**	51	15.0	0.20	60˚	30˚	2.3	1.0	SIM 0020 H6

Order example: MWR 6 R0.2 A90 BXC

* For additional holders see page 156

MGR Bars *Grooving - with Coolant Channel*



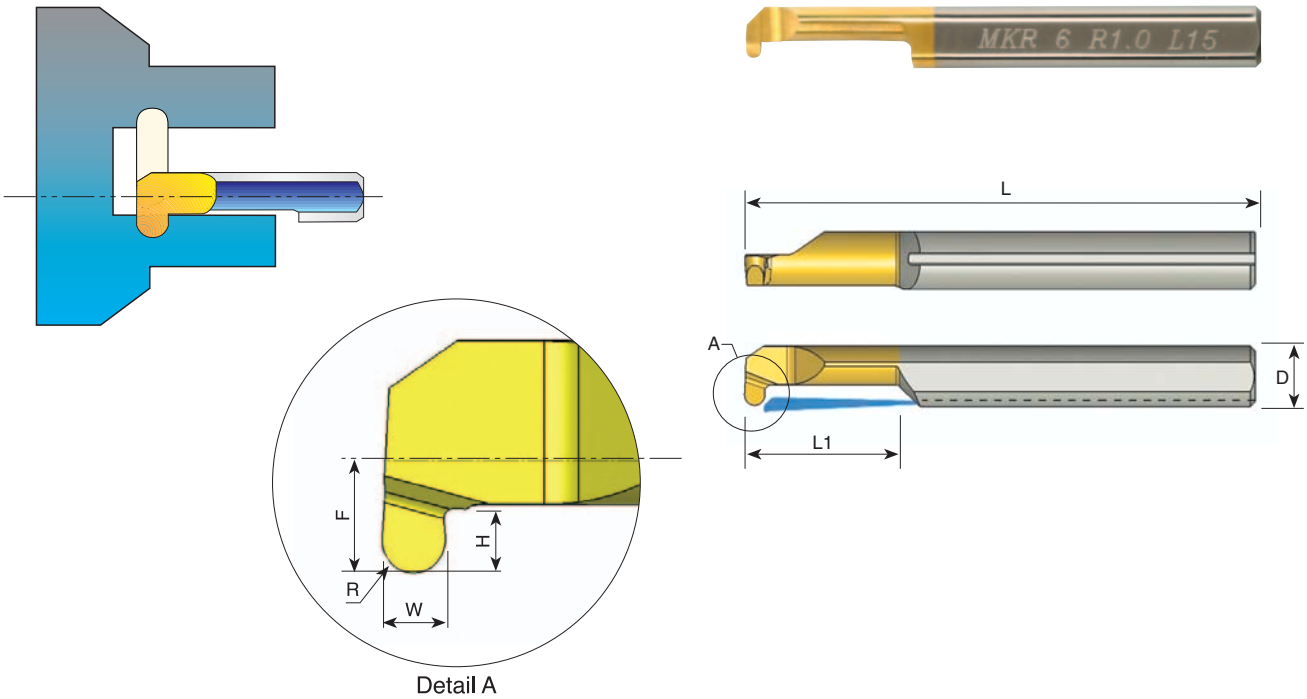
D	Ordering Code	L	L1	B	H	F	Min. Bore Dia.	Holder*
4.0	**MGR 4 B1.0 L10**	50	10	1.0	1.0	1.7	4.1	SIM 0020 H4
4.0	**MGR 4 B1.5 L10**	50	10	1.5	1.0	1.7	4.1	SIM 0020 H4
5.0	**MGR 5 B1.0 L15**	50	15	1.0	1.2	2.3	5.1	SIM 0020 H5
5.0	**MGR 5 B1.5 L15**	50	15	1.5	1.2	2.3	5.1	SIM 0020 H5
5.0	**MGR 5 B2.0 L15**	50	15	2.0	1.2	2.3	5.1	SIM 0020 H5
6.0	**MGR 6 B1.0 L15**	50	15	1.0	1.4	2.8	6.1	SIM 0020 H6
6.0	**MGR 6 B1.5 L15**	50	15	1.5	1.4	2.8	6.1	SIM 0020 H6
6.0	**MGR 6 B2.0 L15**	50	15	2.0	1.4	2.8	6.1	SIM 0020 H6

Order example: MGR 5 B1.5 L15 BXC

For L.H. bars specify MGL instead of MGR

* For additional holders see page 156

MKR Bars *Full Radius Grooving - with Coolant Channel*



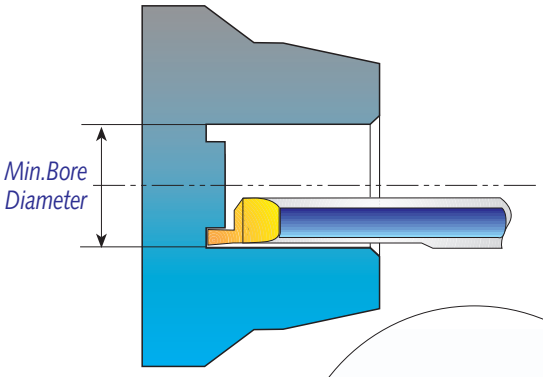
D	Ordering Code	L	L1	R	W	H	F	Min. Bore Dia.	Holder*
4.0	**MKR 4 R0.5 L10**	50	10	0.50	1.0	1.0	1.7	4.1	SIM 0020 H4
4.0	**MKR 4 R0.75 L10**	50	10	0.75	1.5	1.0	1.7	4.1	SIM 0020 H4
5.0	**MKR 5 R0.5 L15**	50	15	0.50	1.0	1.2	2.3	5.1	SIM 0020 H5
5.0	**MKR 5 R0.75 L15**	50	15	0.75	1.5	1.2	2.3	5.1	SIM 0020 H5
5.0	**MKR 5 R1.0 L15**	50	15	1.00	2.0	1.2	2.3	5.1	SIM 0020 H5
6.0	**MKR 6 R0.5 L15**	50	15	0.50	1.0	1.6	2.8	6.1	SIM 0020 H6
6.0	**MKR 6 R0.75 L15**	50	15	0.75	1.5	1.6	2.8	6.1	SIM 0020 H6
6.0	**MKR 6 R1.0 L15**	50	15	1.00	2.0	1.6	2.8	6.1	SIM 0020 H6

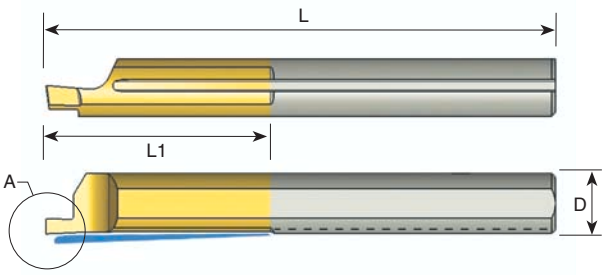
Order example: MKR 5 R1.0 L15 BXC

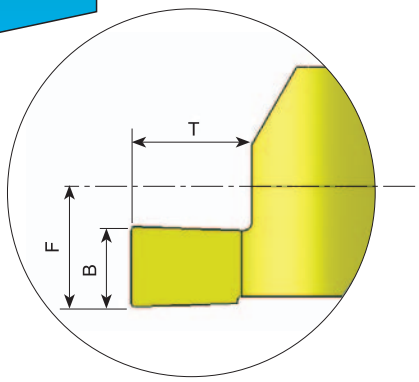
For L.H. bars specify MKL instead of MKR

* For additional holders see page 156

MFR Bars *Face Grooving - with Coolant Channel*







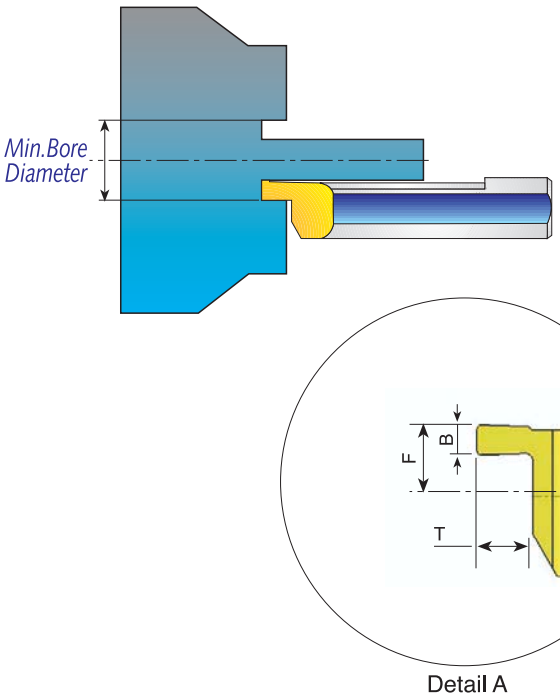
Detail A

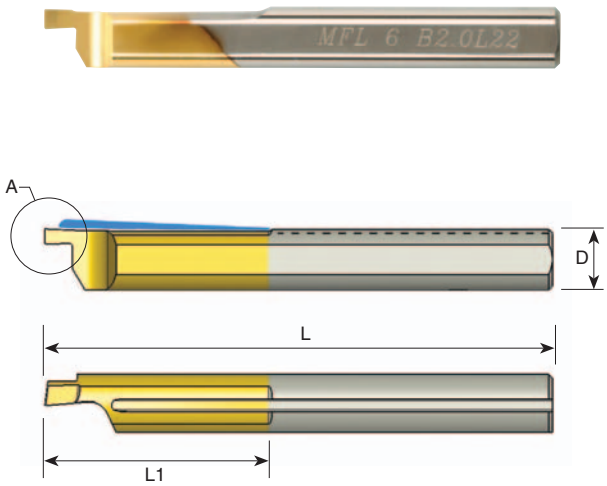
D	Ordering Code	L	L1	B	T	F	Min. Bore Dia.	Holder*
4.0	**MFR 4 B0.75 L15**	50	15	0.75	1.2	1.95	5.0	SIM 0020 H4
4.0	**MFR 4 B1.0 L15**	50	15	1.0	1.5	1.95	5.0	SIM 0020 H4
5.0	**MFR 5 B0.75 L22**	50	22	0.75	1.2	2.45	6.0	SIM 0020 H5
5.0	**MFR 5 B1.0 L22**	50	22	1.0	1.5	2.45	6.0	SIM 0020 H5
5.0	**MFR 5 B1.5 L22**	50	22	1.5	2.5	2.45	6.0	SIM 0020 H5
6.0	**MFR 6 B1.0 L22**	50	22	1.0	1.5	2.95	8.0	SIM 0020 H6
6.0	**MFR 6 B1.5 L22**	50	22	1.5	2.5	2.95	8.0	SIM 0020 H6
6.0	**MFR 6 B2.0 L22**	50	22	2.0	3.0	2.95	8.0	SIM 0020 H6
8.0	**MFR 8 B2.5 L22**	63	22	2.5	3.5	3.95	10.0	SIM 0020 H8

Order example: MFR 5 B1.0 L22 BXC

* For additional holders see page 156

MFL Bars *Face Grooving - with Coolant Channel*



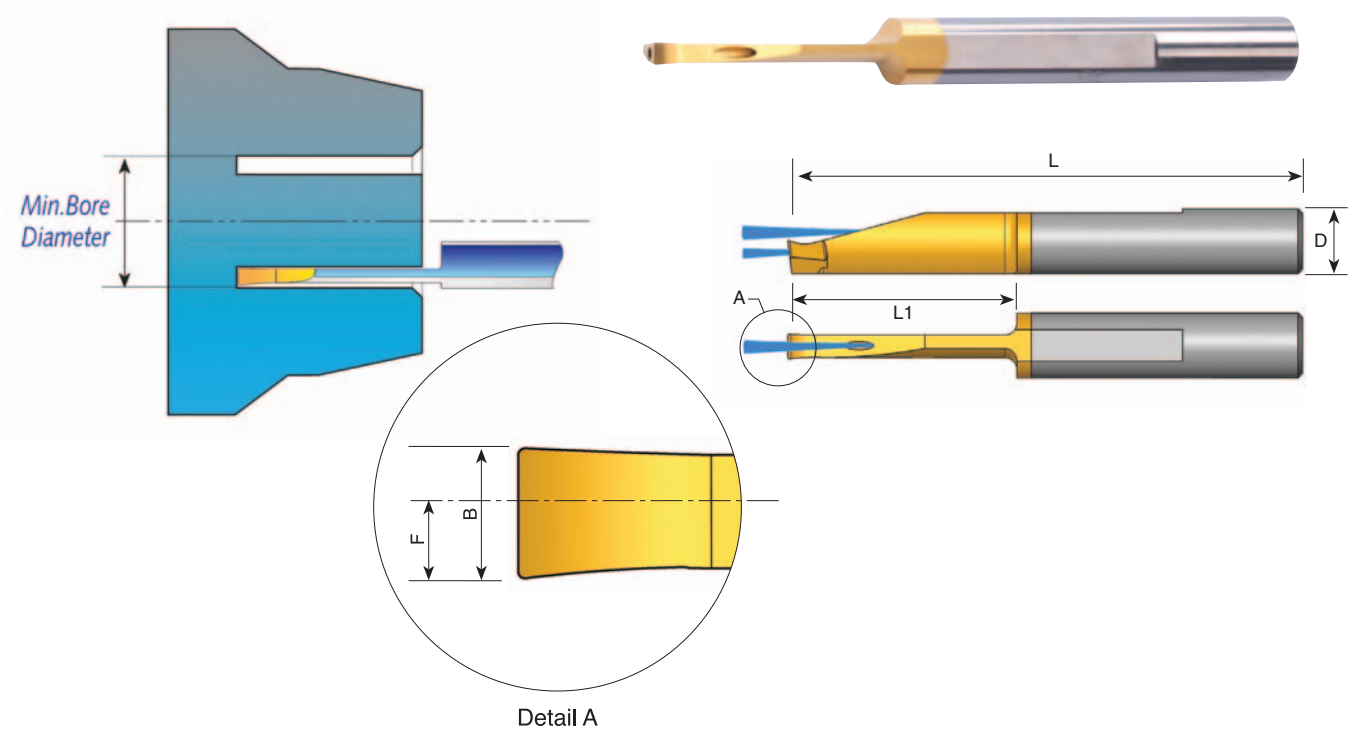


D	Ordering Code	L	L1	B	T	F	Min. Bore Dia.	Holder*
4.0	**MFL 4 B0.75 L15**	50	15	0.75	1.2	1.75	5.0	SIM 0020 H4
4.0	**MFL 4 B1.0 L15**	50	15	1.0	1.5	1.75	5.0	SIM 0020 H4
5.0	**MFL 5 B0.75 L22**	50	22	0.75	1.2	2.25	6.0	SIM 0020 H5
5.0	**MFL 5 B1.0 L22**	50	22	1.0	1.5	2.25	6.0	SIM 0020 H5
5.0	**MFL 5 B1.5 L22**	50	22	1.5	2.5	2.25	6.0	SIM 0020 H5
6.0	**MFL 6 B1.0 L22**	50	22	1.0	1.5	2.75	8.0	SIM 0020 H6
6.0	**MFL 6 B1.5 L22**	50	22	1.5	2.5	2.75	8.0	SIM 0020 H6
6.0	**MFL 6 B2.0 L22**	50	22	2.0	3.0	2.75	8.0	SIM 0020 H6
8.0	**MFL 8 B2.5 L22**	63	22	2.5	3.5	3.75	10.0	SIM 0020 H8

Order example: MFL 6 B1.0 L22 BXC

* For additional holders see page 156

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

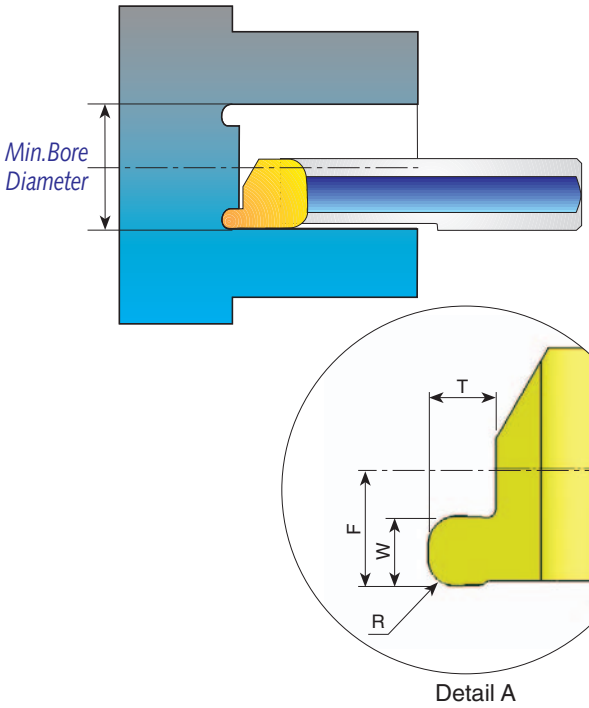


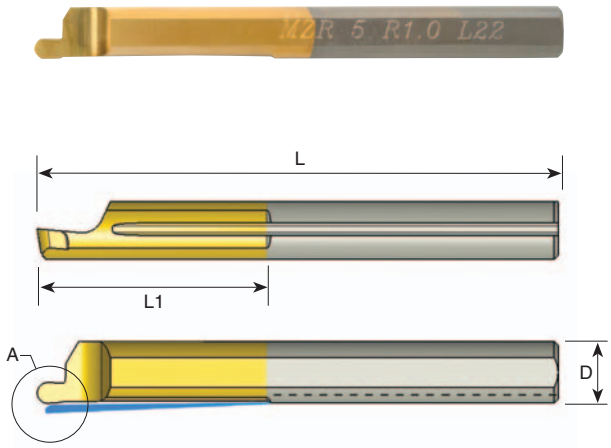
D	Ordering Code	L	L1	B	F	Min. Bore Dia.	Holder*
6.0	**MVR 6 B2.0 L15**	51	15	2.0	1.7	12.0	SIM 0020 H6
6.0	**MVR 6 B2.0 L22**	51	22	2.0	1.7	12.0	SIM 0020 H6
6.0	**MVR 6 B2.5 L22**	51	22	2.5	2.2	12.0	SIM 0020 H6
8.0	**MVR 8 B3.0 L27**	51	27	3.0	2.5	15.0	SIM 0020 H8

Order example: MVR 6 B2.0 L22 BXC

* For additional holders see page 156

MZR Bars Face Grooving - with Coolant Channel



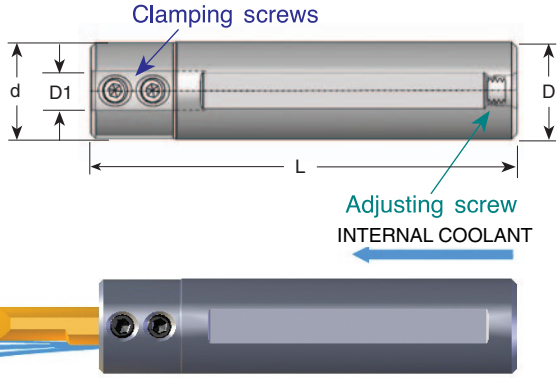


D	Ordering Code	L	L1	R	W	T	F	Min. Bore Dia.	Holder*
4.0	**MZR 4 R0.5 L15**	50	15	0.50	1.0	1.2	1.95	5.0	SIM 0020 H4
4.0	**MZR 4 R0.75 L15**	50	15	0.75	1.5	1.5	1.95	5.0	SIM 0020 H4
5.0	**MZR 5 R0.5 L22**	50	22	0.50	1.0	1.2	2.45	6.0	SIM 0020 H5
5.0	**MZR 5 R0.75 L22**	50	22	0.75	1.5	1.5	2.45	6.0	SIM 0020 H5
5.0	**MZR 5 R1.0 L22**	50	22	1.00	2.0	2.5	2.45	6.0	SIM 0020 H5
6.0	**MZR 6 R0.5 L22**	50	22	0.50	1.0	1.2	2.95	8.0	SIM 0020 H6
6.0	**MZR 6 R0.75 L22**	50	22	0.75	1.5	1.5	2.95	8.0	SIM 0020 H6
6.0	**MZR 6 R1.0 L22**	50	22	1.00	2.0	2.5	2.95	8.0	SIM 0020 H6

Order example: MZR 5 R0.5 L22 BXC

* For additional holders see page 156

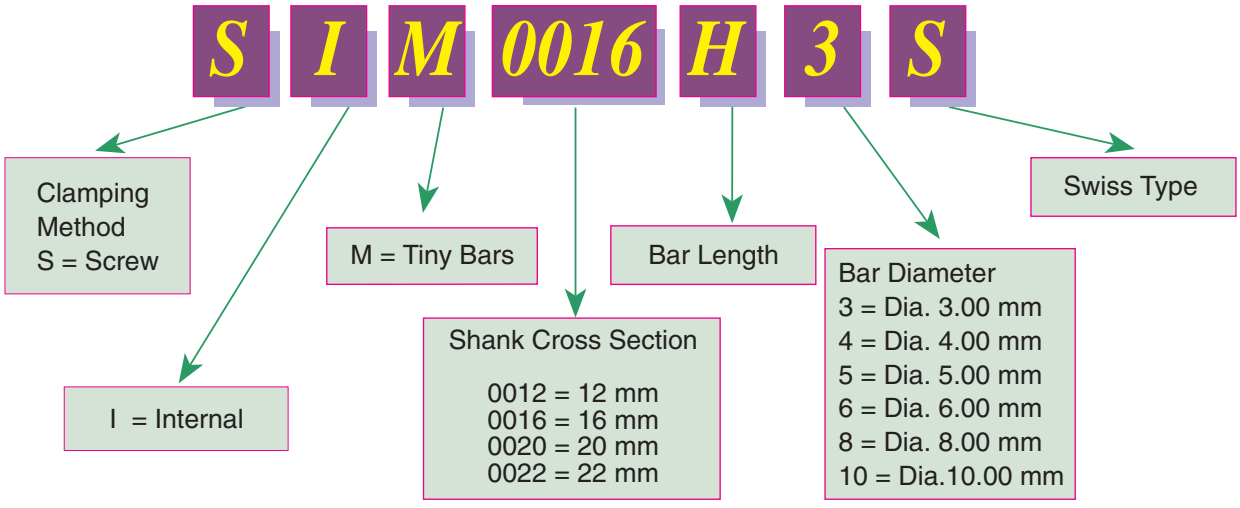
Tiny Tools Bar Holders



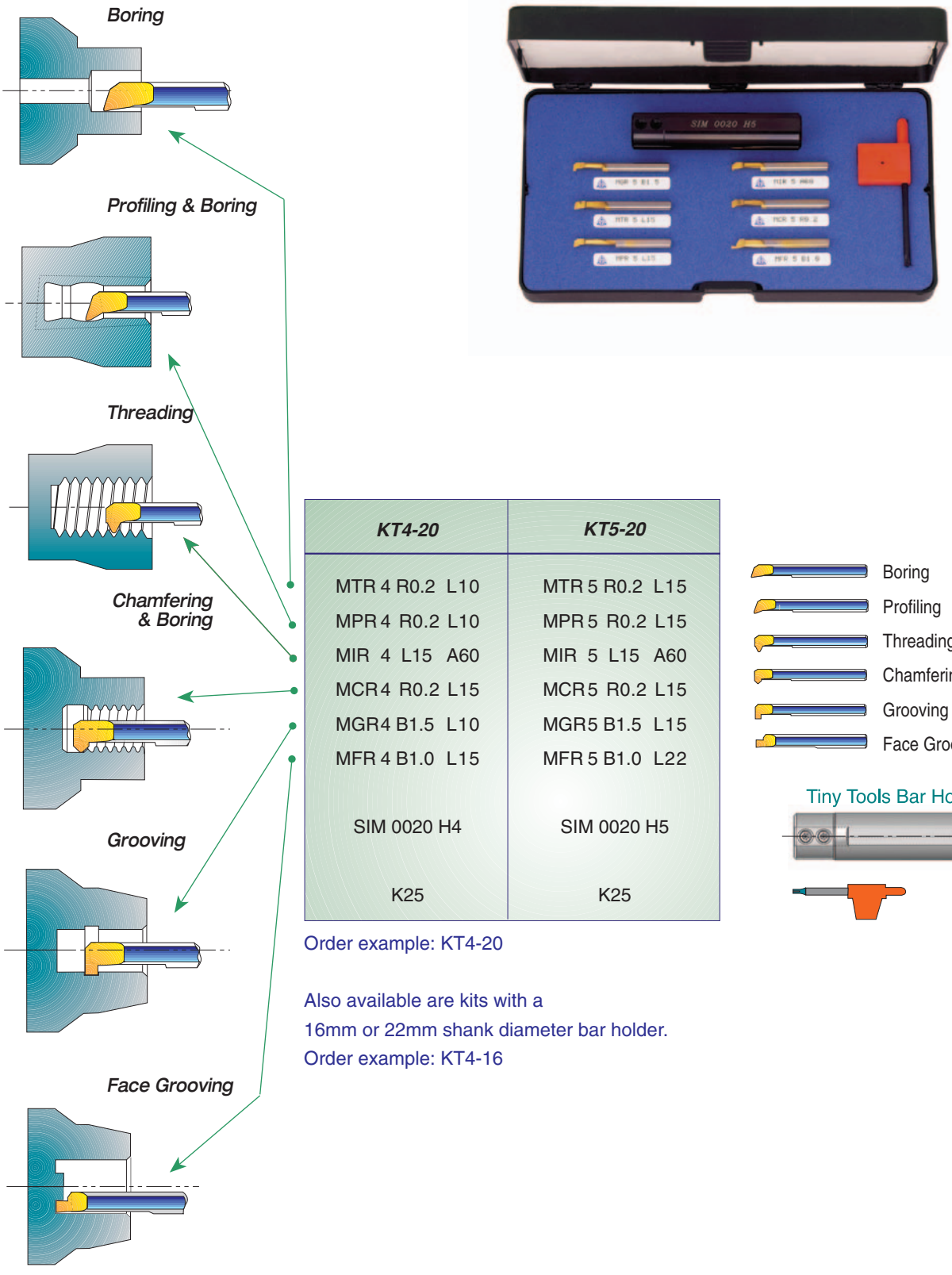
D1	Ordering Code	L	D	d	Key	Clamping Screw	Adjusting Screw
3.0	SIM0012 H3	88	12	12	K25	S24	S35
3.0	* SIM0016 H3S	75	16	20	K25	S25	S35S
3.0	SIM0016 H3	88	16	20	K25	S25	S35
3.0	SIM0020 H3	88	20	20	K25	S25	S35
3.0	* SIM0022 H3	88	22	22	K25	S25	S35
4.0	SIM0012 H4	88	12	12	K25	S24	S35
4.0	* SIM0016 H4S	75	16	20	K25	S25	S35S
4.0	SIM0016 H4	88	16	20	K25	S25	S35
4.0	SIM0020 H4	88	20	20	K25	S25	S35
4.0	* SIM0022 H4	88	22	22	K25	S25	S35
5.0	SIM0012 H5	88	12	12	K25	S24	S35
5.0	* SIM0016 H5S	75	16	20	K25	S25	S35S
5.0	SIM0016 H5	88	16	20	K25	S25	S35
5.0	SIM0020 H5	88	20	20	K25	S25	S35
5.0	* SIM0022 H5	75	22	22	K25	S25	S35
6.0	* SIM0016 H6S	75	16	20	K25	S25	S35S
6.0	SIM0016 H6	88	16	20	K25	S25	S35
6.0	SIM0020 H6	88	20	20	K25	S25	S35
6.0	* SIM0022 H6	88	22	22	K25	S25	S35
8.0	SIM0020 H8	88	20	20	K25	S25	S35
10.0	SIM0020 H10	88	20	20	K25	S25S	S35

*Can also be used with Swiss type lathe machines

Tiny Bar Holders Ordering Codes



Tiny Tools Kits

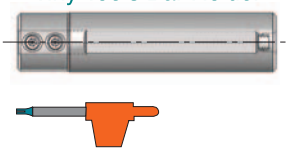


KT4-20	KT5-20
MTR 4 R0.2 L10	MTR 5 R0.2 L15
MPR 4 R0.2 L10	MPR 5 R0.2 L15
MIR 4 L15 A60	MIR 5 L15 A60
MCR 4 R0.2 L15	MCR 5 R0.2 L15
MGR 4 B1.5 L10	MGR 5 B1.5 L15
MFR 4 B1.0 L15	MFR 5 B1.0 L22
SIM 0020 H4	SIM 0020 H5
K25	K25

Order example: KT4-20

Also available are kits with a
16mm or 22mm shank diameter bar holder.
Order example: KT4-16

Tiny Tools Bar Holder



Technical Section

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

Cutting speed for Tiny Tools

ISO Standard	Materials	Cutting Speed m/min
P	Low & Medium Carbon Steel	20-140
	High Carbon Steel	30-100
	Alloy Steels & Treated Steels	40- 90
M	Stainless Steels	20- 90
	Cast Steels	40- 90
K	Cast Iron	40-120
N	Non-Ferrous & Aluminium	50-120
S	Super alloy and Titanium	15- 30
H	Hard Materials	13- 30

Recommended Feed Rate: 0.01 - 0.03 mm/rev

Threading Passes

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