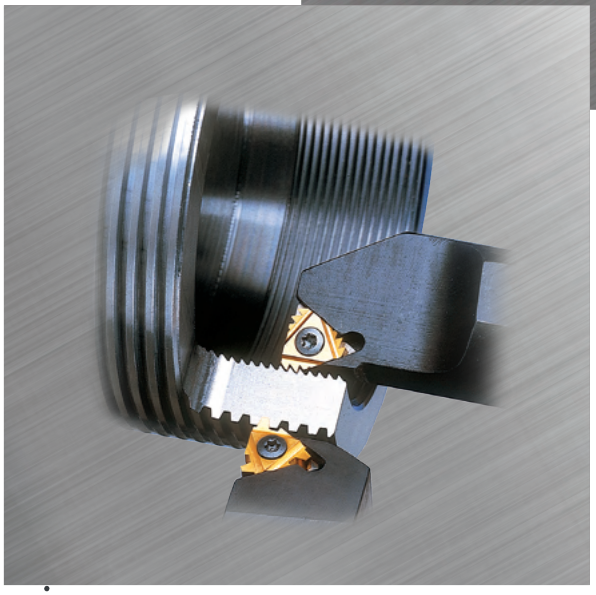
Carmex
Precision Tools Ltd.

The optimal tools for your industry™



SPT SUNCOAST INC.
PRECISION TOOLS
ESTABLISHED 1963

Inch

Company Profile

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

Product Lines

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

Quality Assurance

In addition to our unyielding strive for high quality, speedy service and reliability, Carmex is certified by ISO 9001:2015, ISO 13485:2016, ISO 14001:2015, OHSAS 45001:2018 and CE. 0483 Most of our customers' requirements are supplied immediately from our readily available wide range of inventory as well as from our agents and distributor's stocks around the world. In August 2008 Carmex completed its transfer to the new, state-of-the-art modern building. In addition to the construction we invested in advanced machinery and equipment as part of our strategy to keep our position in the first line of high technology.

Carmex Branches

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

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

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

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

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

CERTIFIED QMS
SI
ISO 9001:
2015

THE STANDARDS INSTITUTION OF ISRAEL

ISO 9001-2015
Quality Management Systems

APPROVED MEDICAL DEVICES QMS
ISO 13485: 2016
THE STANDARDS INSTITUTION OF ISRAEL

ISO 13485:2016
Medical Devices
Quality Management
Systems

CERTIFIED EMS
SI
ISO 14001: 2015
THE STANDARDS INSTITUTION OF ISRAEL

ISO 14001:2015
Environmental
Management
Systems

CERTIFIED OHS SYSTEM
ISO 45001 2018
THE STANDARDS INSTITUTION OF ISRAEL

ISO 45001:2018
Occupational
Health and Safety
Management Systems

CE 0483
European Conformity

EU consumer safety,
health and
environmental
requirements

Carmex Precision Tools Ltd.

Carmex Tool Wizard

Carmex offers an online software for Thread Turning and Mill-Thread to assist threading tools users to select and apply the correct tools to machine threads on CNC machining centers.

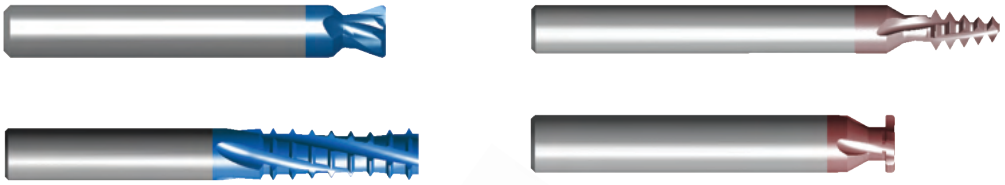
Both programs will find tools that are suitable for your application, calculate or adjust cutting data depending on the machining capability, and generate CNC program for a variety of controls.

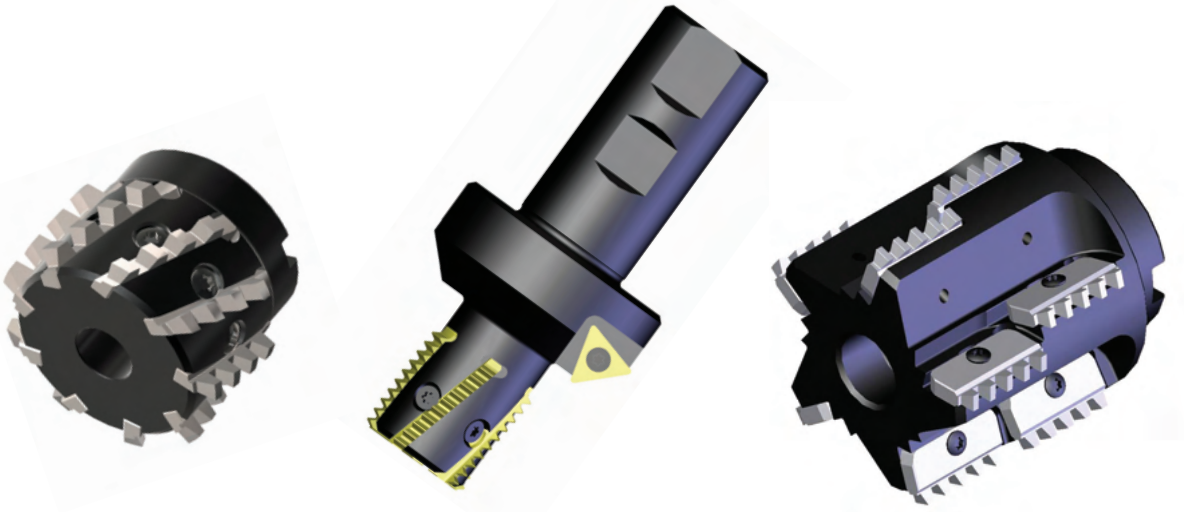
The software is available on our website **carmex.com**
Click on "Tool Wizard".

Special Tools

In addition to standard products, Carmex has a worldwide reputation for the design and manufacture of special tools according to customers' application.

Special tools are supplied in short delivery times.





Carmex and the Environment

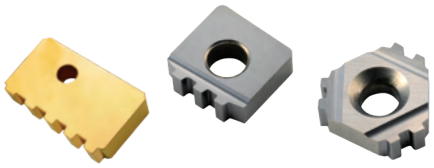
Carmex is fully committed to sustainable production methods.
Our green central filtration and waste management system is a good example.
This not only maximizes resource use, but also enables us to dispose of our waste in an environmentally responsible way.
Carmex is an ISO 14001: 2015 certified manufacturer for it's Environmental Management Systems.

New Products for this Catalog

Thread - Turning

Oil & Gas

Threading Tools for the Oil & Gas industries



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Modular Line

Turning adaptors and boring bars for internal threading and grooving applications

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Large Profile Inserts and Toolholders

Page: A01 45-53

New Inserts for most of the existing applications

Tiny Tools

MFR

New inserts for Face Grooving with chip former

Page: A06 25-26

CIM

Fast clamping system

PATENT PENDING

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New Inserts for most of the existing applications & new Toolholders

Square Shank Toolholders

For internal machining

Page: A06 39-41

New Products for this Catalog

Mini Tools

New Inserts

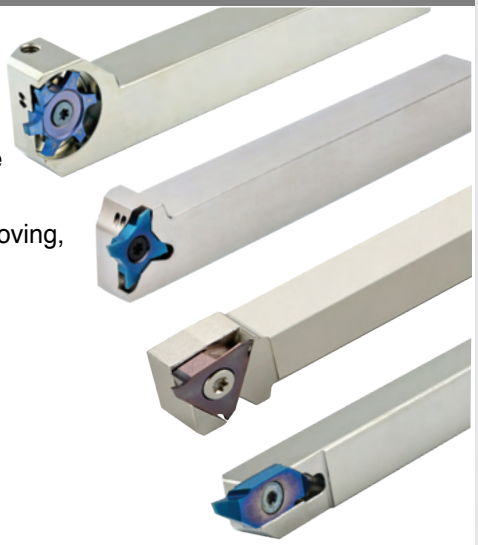
- Threading - Acme & Trapez DIN 103
- Grooving, Circlip Ring Grooves DIN 471/472

New Inserts for most of the existing applications & new Toolholders

Page: A07 1-14

Swiss Line

- New line of polygon inserts and toolholders
- New 25 and 40 mm sized polygon inserts
- New GX7 advanced grade - high toughness for optimized performance
- New line of 16 mm sized 3 cutting edges inserts and toolholders
- G4 - New line of 4 cutting edges turning inserts and toolholders for grooving, parting-off and threading applications
- G6 - New line of 6 cutting edges inserts and toolholders for grooving, parting, turning and threading



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Carbide Shank Turning Toolholders and Inserts

Expanded range of Carbide Shank Turning Toolholders

Page: A09 1-5

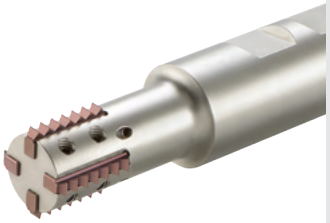
Carmex Precision Tools Ltd.

New Products for this Catalog

Slim MT

High productivity, Slim cost

A new product line of indexable Mill-Thread inserts and toolholders including multiple straight flutes for machining long threads from small to large diameters



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Spiral Mill-Thread

New H21 and H27 inserts with corresponding Toolholders

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CMT - Vertical Milling

New Inserts

- Dovetail 45˚
- Groove Milling DIN 471/472
- Groove Milling Multi - Flute DIN 471/472
- Front and back corner rounding
- Front and back corner rounding - Multi Flute

New Shell Mill Cutter

New inserts for most of the existing profiles

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Mill - Thread Solid Carbide

MTB

New Thread-Mills for Whitworth, MJ and UNJ profiles

Page: B08 17
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EMT - External Thread Mills

New Thread-Mills for MJ and UNJ profiles for Aerospace

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New Products for this Catalog

Carmex Precision Tools Ltd.

Mini Mill - Thread

MTS Dental

New Thread-Mills for the Dental Implants Industry

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MTSB

Solid Carbide Thread-Mills with internal coolant bore and increased number of flutes for high performance, shorter cycle time and improved tool life

Page: B09 10-12

FMTI Multi Flute

Solid Carbide Thread-Mills with a large number of flutes, for increased productivity and high performance

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Multi - Function Thread Mills 3 in 1 Operations

DMT

Thread-Mills for G (BSP) and NPT profiles

Page: B10 3-5

MT Drill - MTD

Designed to drill, chamfer and thread mill the hole in one operation

Page: B10 8-9

Hardcut

MTSH

Thread-Mills for MJ and UNJ profiles

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FSH

High productive Solid Carbide Thread-Mills with a large number of flutes for machining hard materials up to 65 HRC

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Supercut Solid Carbide Mills

High Performance CR - Supercut End - Mills

- Designed for high feed machining and high metal removal rate
- Compatible for a wide range of materials

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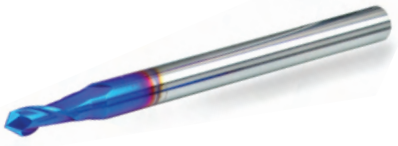
Multi - Function Milling Tools

Performs multiple operations with one tool

- Spotting and Drilling • Side Milling • Chamfering
- Slotting • Grooving • Engraving



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New Products for this Catalog

CR - Supercut High Feed End-Mills

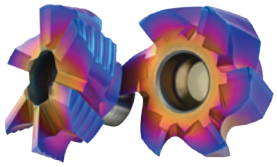
High performance milling tools, designed for high feed rates with shallow cutting depths

Page: B14 47-52

Indexable CMT Roughers and Finishers

For excellent performance

Modular system using the standard CMT tool holders with various shank options



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Mini Chamfer and Countersink

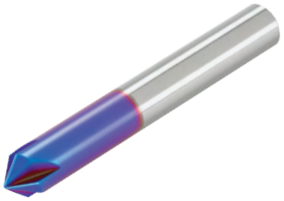
Solid Carbide Radius Fillet End-Mills

- Tools for different radius filleting
- Two, three and four flutes
- Cylindrical shank DIN6535-HA

Page: B15 6-7

Countersink - Solid Carbide Chamfering End-Mills

- Tools for 45˚ and 60˚ chamfering and deburring
- Four flutes
- Cylindrical shank DIN6535-HA (Weldon shank available upon request)



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Gear Milling

Innovative tools for gear, spline, and rack manufacturing

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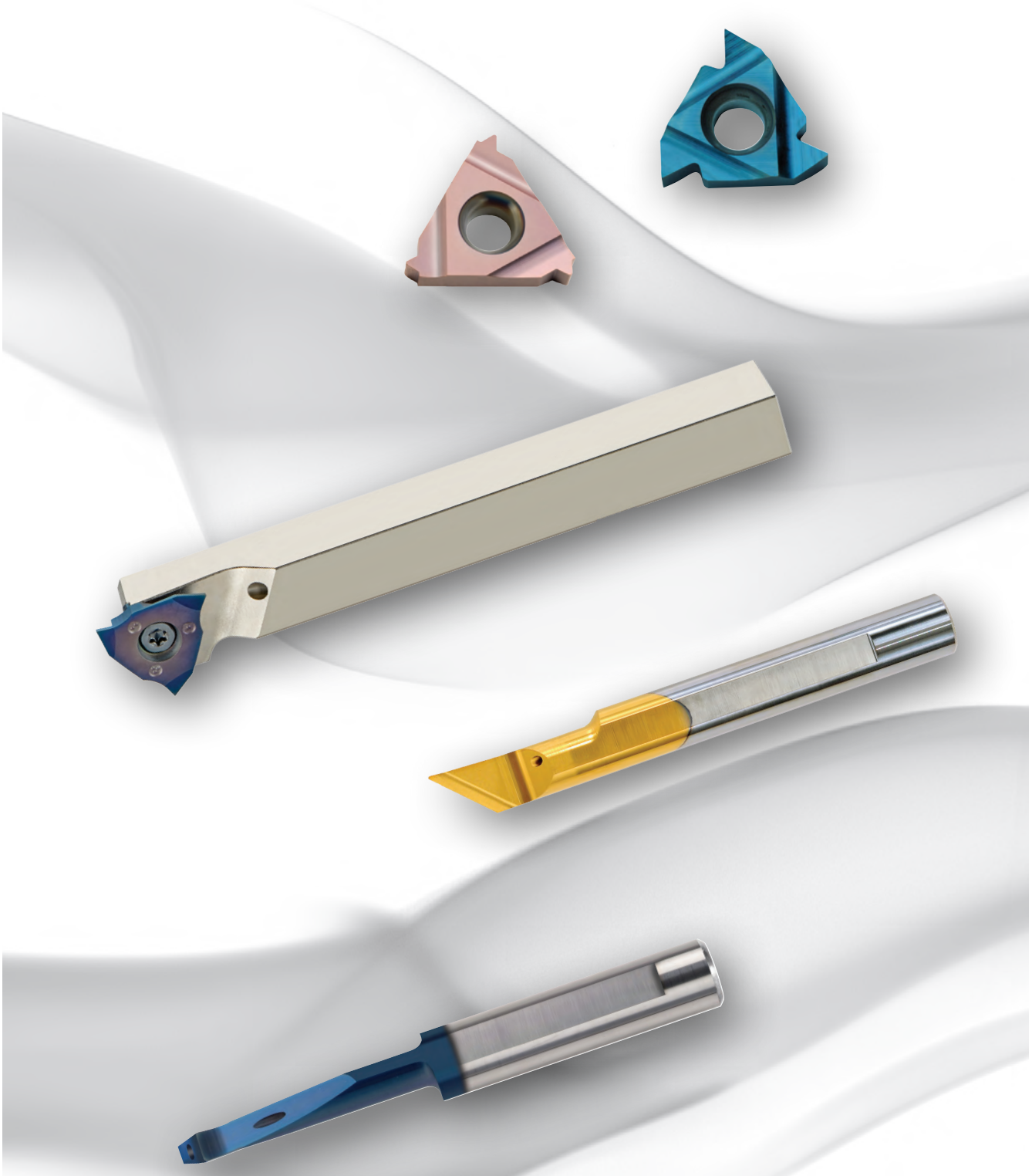
Turning Tools



A - Turning Tools

Carmex Precision Tools Ltd.

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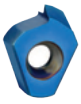
A07 | Mini Tools	1- 15	
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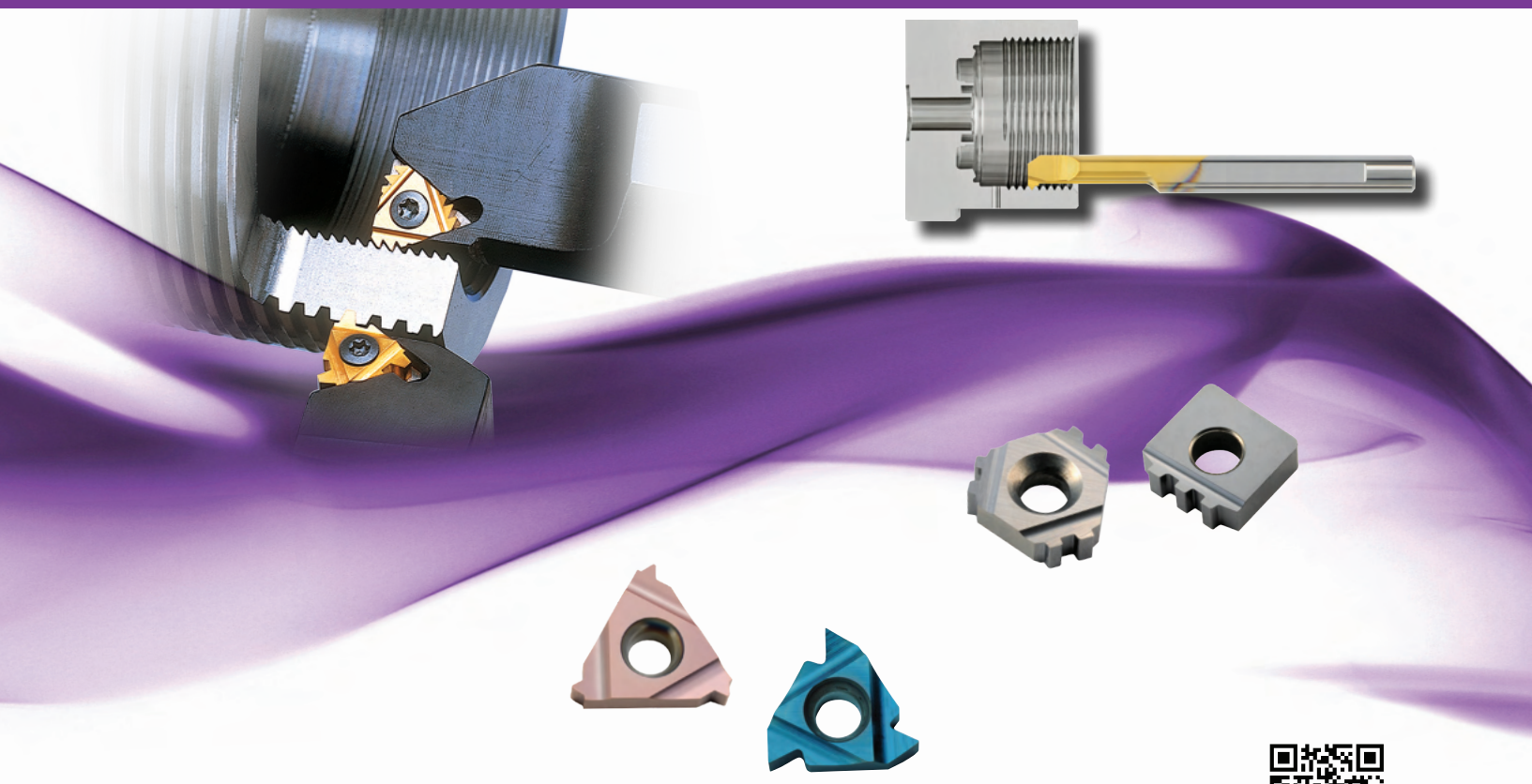
Thread Turning Inserts | A01



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Demonstration

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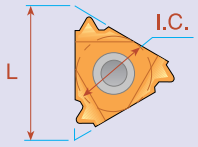
Product Identification

Thread Turning Inserts Ordering Codes

16	E	R		12	UN		BMA

16



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

E

E = External
I = Internal

R

R = Right Hand
L = Left Hand

B

B = Type B

12

Pitch
in mm:
0.25-12

or TPI
(Threads
per Inch)
80-2

UN

Full Profiles:
ISO
UN
WHIT
NPT
NPTF
BSPT
DIN 477
ACME
ST.ACME
TRAPEZ
ROUND
UNJ
MJ
PG
AM. BUTT.
SAGE
API
VAM

Partial Profiles:
A
G
AG
N
Q
U

Multitooth style & number of teeth

API size & taper

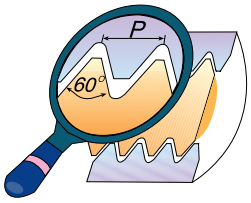
BMA

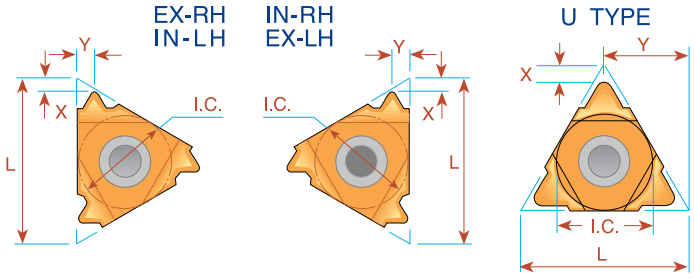
Carbide Grade:
P30
K20
BMA
MXC
P25C
BXC
BLU
HBA

Thread Turning Inserts

Carmex Precision Tools Ltd.

Partial Profile 60°

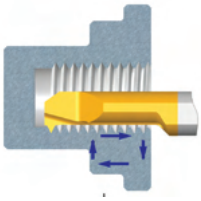




L mm	I.C.	Pitch Range mm	Pitch Range TPI	EXTERNAL Ordering Code Right Hand	EXTERNAL Ordering Code Left Hand	INTERNAL Ordering Code Right Hand	INTERNAL Ordering Code Left Hand	X	Y
6	5/32	0.5 - 1.25	48 - 20	*ULTRA MINIATURE* →		06 IR A60	06 IL A60	.02	.02
8	3/16	0.5 - 1.5	48 - 16	*MINIATURE* →		08 IR A60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

Order example: 16 ER G60 MXC

For small bore threading see page A06-12



Type B

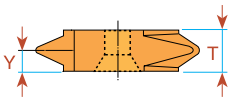
Ground profile with sintered chip-breaker

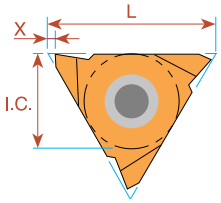
L mm	I.C.	Pitch Range mm	Pitch Range TPI	EXTERNAL Ordering Code Right Hand	INTERNAL Ordering Code Right Hand	X	Y
16	3/8	0.5 - 1.5	48 -16	16 ER B A60	16 IR B A60	.03	.04
16	3/8	1.75 - 3.0	14 - 8	16 ER B G60	16 IR B G60	.05	.07
16	3/8	0.5 - 3.0	48 - 8	16 ER B AG60	16 IR B AG60	.05	.07

Order example: 16 ER B G60 BMA

For carbide grade and cutting speed see page A04-2 and 3

Partial Profile 60°
Vertical





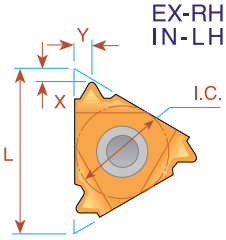
L mm	I.C.	Pitch Range mm	Pitch Range TPI	EXTERNAL Ordering Code Right Hand	EXTERNAL Ordering Code Left Hand	INTERNAL Ordering Code Right Hand	INTERNAL Ordering Code Left Hand	X	Y	T
16	3/8	0.5 - 1.5	48 - 16	16V ER A60	16V EL A60			.04	.04	.14
16	3/8	1.75 - 3.0	14 - 8	16V ER G60	16V EL G60			.04	.07	.14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

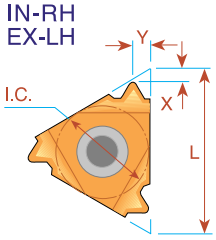
Order example: 16V ER G60 BMA

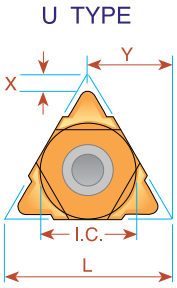
For carbide grade and cutting speed see page A04-2 and 3

Thread Turning Inserts

Partial Profile 55°



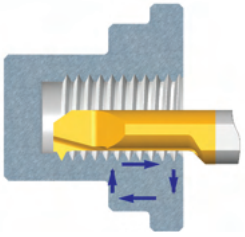




L mm	I.C.	Pitch Range mm	Pitch Range TPI	EXTERNAL Ordering Code Right Hand	EXTERNAL Ordering Code Left Hand	INTERNAL Ordering Code Right Hand	INTERNAL Ordering Code Left Hand	X	Y
6	5/32	0.5 - 1.25	48 - 20	*ULTRA MINIATURE* →		**06 IR A55**	**06 IL A55**	.02	.02
8	3/16	0.5 - 1.5	48 - 16	*MINIATURE* →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

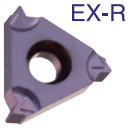
Order example: 16 ER G55 MXC

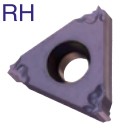
For small bore threading see page A06-12



Type B

Ground Profile with Sintered Chip-breaker



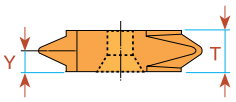


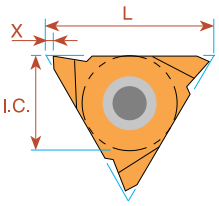
L mm	I.C.	Pitch Range mm	Pitch Range TPI	EXTERNAL Ordering Code Right Hand	INTERNAL Ordering Code Right Hand	X	Y
16	3/8	1.75 - 3.0	14 - 8	**16 ER B G55**	**16 IR B G55**	.05	.07
16	3/8	0.5 - 3.0	48 - 8	**16 ER B AG55**	**16 IR B AG55**	.05	.07

Order example: 16 ER B G55 BMA

For carbide grade and cutting speed see page A04-2 and 3

Partial Profile 55°
Vertical





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

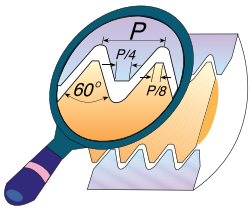
Order example: 22V ER N55 BMA

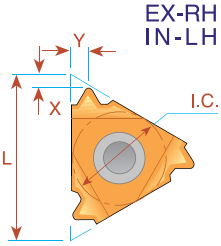
For carbide grade and cutting speed see page A04-2 and 3

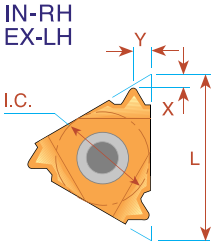
Thread Turning Inserts

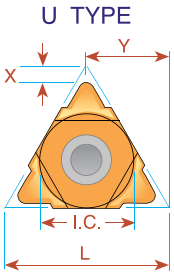
Carmex Precision Tools Ltd.

ISO - metric



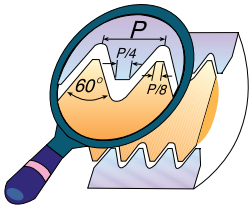


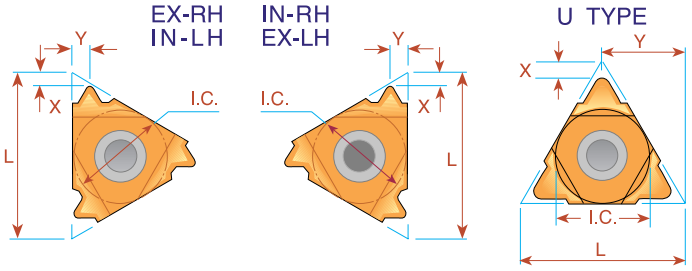




Pitch mm	L mm	I.C.	EXTERNAL Ordering Code Right Hand	EXTERNAL Ordering Code Left Hand	X	Y	INTERNAL Ordering Code Right Hand	INTERNAL Ordering Code Left Hand	X	Y
0.25	6	5/32					06 IR 0.25 ISO	06 IL 0.25 ISO	.03	.01
0.5	6	5/32					06 IR 0.5 ISO	06 IL 0.5 ISO	.04	.02
0.75	6	5/32	*ULTRA MINIATURE* →				06 IR 0.75 ISO	06 IL 0.75 ISO	.03	.02
1.0	6	5/32					06 IR 1.0 ISO	06 IL 1.0 ISO	.03	.02
1.25	6	5/32					06 IR 1.25 ISO	06 IL 1.25 ISO	.02	.02
0.25	8	3/16					08 IR 0.25 ISO	08 IL 0.25 ISO	.03	.01
0.5	8	3/16					08 IR 0.5 ISO	08 IL 0.5 ISO	.02	.02
0.75	8	3/16	*MINIATURE* →				08 IR 0.75 ISO	08 IL 0.75 ISO	.02	.02
1.0	8	3/16					08 IR 1.0 ISO	08 IL 1.0 ISO	.02	.02
1.25	8	3/16					08 IR 1.25 ISO	08 IL 1.25 ISO	.02	.03
1.5	8	3/16					08 IR 1.5 ISO	08 IL 1.5 ISO	.02	.03
1.75	8	3/16					08 IR 1.75 ISO	08 IL 1.75 ISO	.02	.03
2.0	8U	3/16U	*"U" MINIATURE* →				08U IR/L 2.0 ISO		.04	.16
0.25	11	1/4	11 ER 0.25 ISO	11 EL 0.25 ISO	.03	.01				
0.3	11	1/4	11 ER 0.3 ISO	11 EL 0.3 ISO	.02	.01				
0.35	11	1/4	11 ER 0.35 ISO	11 EL 0.35 ISO	.03	.02	11 IR 0.35 ISO	11 IL 0.35 ISO	.03	.01
0.4	11	1/4	11 ER 0.4 ISO	11 EL 0.4 ISO	.03	.02	11 IR 0.4 ISO	11 IL 0.4 ISO	.03	.02
0.45	11	1/4	11 ER 0.45 ISO	11 EL 0.45 ISO	.03	.02	11 IR 0.45 ISO	11 IL 0.45 ISO	.03	.02
0.5	11	1/4	11 ER 0.5 ISO	11 EL 0.5 ISO	.02	.02	11 IR 0.5 ISO	11 IL 0.5 ISO	.02	.02
0.6	11	1/4	11 ER 0.6 ISO	11 EL 0.6 ISO	.02	.02	11 IR 0.6 ISO	11 IL 0.6 ISO	.02	.02
0.7	11	1/4	11 ER 0.7 ISO	11 EL 0.7 ISO	.02	.02	11 IR 0.7 ISO	11 IL 0.7 ISO	.02	.02
0.75	11	1/4	11 ER 0.75 ISO	11 EL 0.75 ISO	.02	.02	11 IR 0.75 ISO	11 IL 0.75 ISO	.02	.02
0.8	11	1/4	11 ER 0.8 ISO	11 EL 0.8 ISO	.02	.02	11 IR 0.8 ISO	11 IL 0.8 ISO	.02	.02
1.0	11	1/4	11 ER 1.0 ISO	11 EL 1.0 ISO	.03	.03	11 IR 1.0 ISO	11 IL 1.0 ISO	.02	.03
1.25	11	1/4	11 ER 1.25 ISO	11 EL 1.25 ISO	.03	.04	11 IR 1.25 ISO	11 IL 1.25 ISO	.03	.03
1.5	11	1/4	11 ER 1.5 ISO	11 EL 1.5 ISO	.03	.04	11 IR 1.5 ISO	11 IL 1.5 ISO	.03	.04
1.75	11	1/4	11 ER 1.75 ISO	11 EL 1.75 ISO	.03	.04	11 IR 1.75 ISO	11 IL 1.75 ISO	.03	.04
2.0	11	1/4	11 ER 2.0 ISO	11 EL 2.0 ISO	.03	.04	11 IR 2.0 ISO	11 IL 2.0 ISO	.03	.04
2.5	11	1/4					11 IR 2.5 ISO	11 IL 2.5 ISO	.03	.05
0.25	16	3/8	16 ER 0.25 ISO	16 EL 0.25 ISO	.03	.01				
0.3	16	3/8	16 ER 0.3 ISO	16 EL 0.3 ISO	.02	.01				
0.35	16	3/8	16 ER 0.35 ISO	16 EL 0.35 ISO	.03	.02	16 IR 0.35 ISO	16 IL 0.35 ISO	.03	.01
0.4	16	3/8	16 ER 0.4 ISO	16 EL 0.4 ISO	.03	.02	16 IR 0.4 ISO	16 IL 0.4 ISO	.03	.02
0.45	16	3/8	16 ER 0.45 ISO	16 EL 0.45 ISO	.03	.02	16 IR 0.45 ISO	16 IL 0.45 ISO	.03	.02
0.5	16	3/8	16 ER 0.5 ISO	16 EL 0.5 ISO	.02	.02	16 IR 0.5 ISO	16 IL 0.5 ISO	.02	.02
0.6	16	3/8	16 ER 0.6 ISO	16 EL 0.6 ISO	.02	.02	16 IR 0.6 ISO	16 IL 0.6 ISO	.02	.02
0.7	16	3/8	16 ER 0.7 ISO	16 EL 0.7 ISO	.02	.02	16 IR 0.7 ISO	16 IL 0.7 ISO	.02	.02
0.75	16	3/8	16 ER 0.75 ISO	16 EL 0.75 ISO	.02	.02	16 IR 0.75 ISO	16 IL 0.75 ISO	.02	.02
0.8	16	3/8	16 ER 0.8 ISO	16 EL 0.8 ISO	.02	.02	16 IR 0.8 ISO	16 IL 0.8 ISO	.02	.02
1.0	16	3/8	16 ER 1.0 ISO	16 EL 1.0 ISO	.03	.03	16 IR 1.0 ISO	16 IL 1.0 ISO	.02	.03
1.25	16	3/8	16 ER 1.25 ISO	16 EL 1.25 ISO	.03	.04	16 IR 1.25 ISO	16 IL 1.25 ISO	.03	.03
1.5	16	3/8	16 ER 1.5 ISO	16 EL 1.5 ISO	.03	.04	16 IR 1.5 ISO	16 IL 1.5 ISO	.03	.04
1.75	16	3/8	16 ER 1.75 ISO	16 EL 1.75 ISO	.04	.05	16 IR 1.75 ISO	16 IL 1.75 ISO	.04	.05
2.0	16	3/8	16 ER 2.0 ISO	16 EL 2.0 ISO	.04	.05	16 IR 2.0 ISO	16 IL 2.0 ISO	.04	.05
2.5	16	3/8	16 ER 2.5 ISO	16 EL 2.5 ISO	.04	.06	16 IR 2.5 ISO	16 IL 2.5 ISO	.04	.06
3.0	16	3/8	16 ER 3.0 ISO	16 EL 3.0 ISO	.05	.06	16 IR 3.0 ISO	16 IL 3.0 ISO	.04	.06
3.5	16	3/8	16 ER 3.5 ISO	16 EL 3.5 ISO	.05	.06	16 IR 3.5 ISO	16 IL 3.5 ISO	.05	.07

ISO - metric



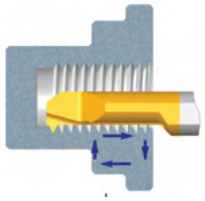


Pitch mm	L mm	I.C.	EXTERNAL Ordering Code Right Hand	EXTERNAL Ordering Code Left Hand	X	Y	INTERNAL Ordering Code Right Hand	INTERNAL Ordering Code Left Hand	X	Y
3.5	22	1/2	22 ER 3.5 ISO	22 EL 3.5 ISO	.06	.09	22 IR 3.5 ISO	22 IL 3.5 ISO	.06	.09
4.0	22	1/2	22 ER 4.0 ISO	22 EL 4.0 ISO	.06	.09	22 IR 4.0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

* Special holder required

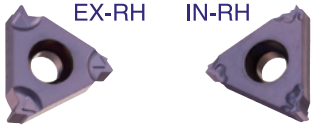
Order example: 22 IR 3.5 ISO BMA

For small bore threading see page A06-13



Type B

Ground Profile with Sintered Chip-breaker

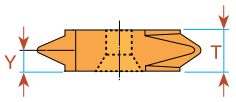


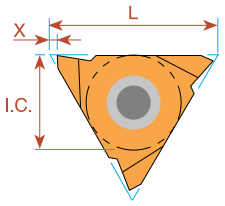
Pitch mm	L mm	I.C.	EXTERNAL Ordering Code Right Hand	X	Y	INTERNAL Ordering Code Right Hand	X	Y
0.5	11	1/4				11 IR B 0.5 ISO	.02	.02
0.75	11	1/4				11 IR B 0.75 ISO	.02	.02
0.8	11	1/4				11 IR B 0.8 ISO	.02	.02
1.0	11	1/4				11 IR B 1.0 ISO	.02	.02
1.25	11	1/4				11 IR B 1.25 ISO	.03	.04
1.5	11	1/4				11 IR B 1.5 ISO	.03	.04
1.75	11	1/4				11 IR B 1.75 ISO	.03	.04
2.0	11	1/4				11 IR B 2.0 ISO	.03	.04
0.8	16	3/8	16 ER B 0.8 ISO	.02	.02			
1.0	16	3/8	16 ER B 1.0 ISO	.03	.03	16 IR B 1.0 ISO	.02	.03
1.25	16	3/8	16 ER B 1.25 ISO	.03	.04	16 IR B 1.25 ISO	.03	.03
1.5	16	3/8	16 ER B 1.5 ISO	.03	.04	16 IR B 1.5 ISO	.03	.04
1.75	16	3/8	16 ER B 1.75 ISO	.04	.05	16 IR B 1.75 ISO	.04	.05
2.0	16	3/8	16 ER B 2.0 ISO	.04	.05	16 IR B 2.0 ISO	.04	.05
2.5	16	3/8	16 ER B 2.5 ISO	.04	.06	16 IR B 2.5 ISO	.04	.06
3.0	16	3/8	16 ER B 3.0 ISO	.05	.06	16 IR B 3.0 ISO	.04	.06

Order example: 16 IR B 1.5 ISO BMA

For carbide grade and cutting speed see page A04-2 and 3

ISO - metric
Vertical



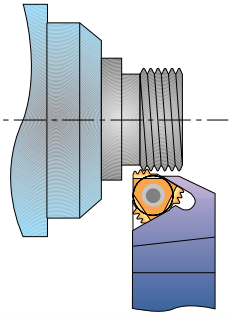


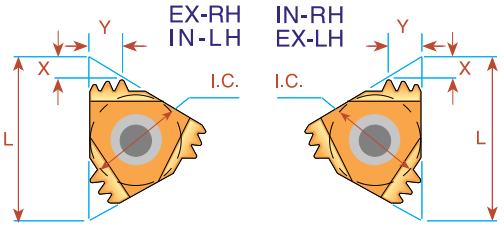
Pitch mm	L mm	I.C.	EXTERNAL Ordering Code Right Hand	EXTERNAL Ordering Code Left Hand	INTERNAL Ordering Code Right Hand	INTERNAL Ordering Code Left Hand	X	Y	T
0.5	16	3/8	16V ER 0.5 ISO	16V EL 0.5 ISO			.04	.02	.14
0.75	16	3/8	16V ER 0.75 ISO	16V EL 0.75 ISO			.04	.02	.14
0.8	16	3/8	16V ER 0.8 ISO	16V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

Order example: 16V ER 1.5 ISO BMA

* Minimum bore: 2.36
** Minimum bore: 2.83

Multitooth

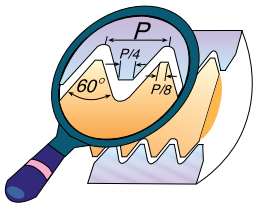


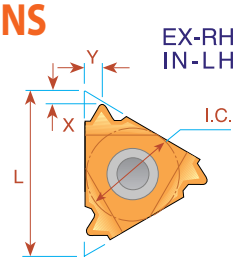


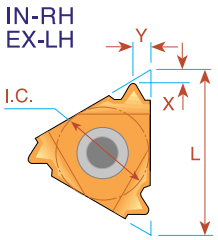
Pitch mm	L mm	I.C.	Number of Teeth	EXTERNAL Ordering Code	Anvil	INTERNAL Ordering Code	Anvil	X	Y
1.0	16	3/8	3	16 ER 1.0 ISO 3M	AE16M	16 IR 1.0 ISO 3M	AI16M	.07	.10
1.5	16	3/8	2	16 ER 1.5 ISO 2M	AE16M	16 IR 1.5 ISO 2M	AI16M	.06	.09
2.0	16	3/8	2	16 ER 2.0 ISO 2M	AE16M	16 IR 2.0 ISO 2M	AI16M	.06	.09
1.5	22	1/2	3	22 ER 1.5 ISO 3M	AE22M	22 IR 1.5 ISO 3M	AI22M	.09	.15
2.0	22	1/2	2	22 ER 2.0 ISO 2M	AE22M	22 IR 2.0 ISO 2M	AI22M	.08	.12
2.0	22	1/2	3	22 ER 2.0 ISO 3M	AE22M	22 IR 2.0 ISO 3M	AI22M	.12	.20
2.5	22	1/2	2	22 ER 2.5 ISO 2M	AE22M	22 IR 2.5 ISO 2M	AI22M	.09	.15
2.5	22	1/2	3	22 ER 2.5 ISO 3M	AE22M	22 IR 2.5 ISO 3M	AI22M	.15	.24
3.0	27	5/8	2	27 ER 3.0 ISO 2M	AE27M	27 IR 3.0 ISO 2M	AI27M	.11	.18

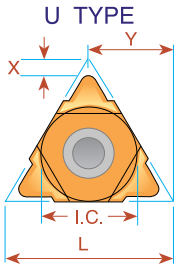
Order example: 22 IR 2.0 ISO 2M BMA
For recommended number of passes see page A04-4
For carbide grade and cutting speed see page A04-2 and 3

UN - Unified UNC, UNF, UNEF, UNS





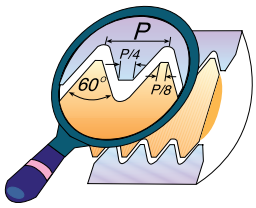


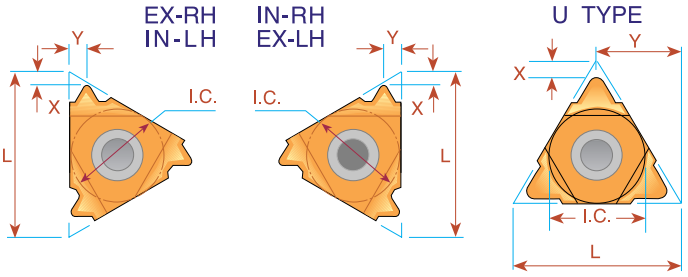


Pitch TPI	L mm	I.C.	EXTERNAL Ordering Code Right Hand	EXTERNAL Ordering Code Left Hand	EXTERNAL X	EXTERNAL Y	INTERNAL Ordering Code Right Hand	INTERNAL Ordering Code Left Hand	INTERNAL X	INTERNAL Y
32	6	5/32					06 IR 32 UN	06 IL 32 UN	.03	.02
28	6	5/32					06 IR 28 UN	06 IL 28 UN	.03	.02
24	6	5/32	*ULTRA MINIATURE* →				06 IR 24 UN	06 IL 24 UN	.03	.02
20	6	5/32					06 IR 20 UN	06 IL 20 UN	.02	.02
18	6	5/32					06 IR 18 UN	06 IL 18 UN	.02	.03
32	8	3/16					08 IR 32 UN	08 IL 32 UN	.02	.02
28	8	3/16					08 IR 28 UN	08 IL 28 UN	.02	.02
24	8	3/16					08 IR 24 UN	08 IL 24 UN	.02	.02
20	8	3/16	*MINIATURE* →				08 IR 20 UN	08 IL 20 UN	.02	.03
18	8	3/16					08 IR 18 UN	08 IL 18 UN	.02	.03
16	8	3/16					08 IR 16 UN	08 IL 16 UN	.02	.03
14	8	3/16					08 IR 14 UN	08 IL 14 UN	.02	.03
13	8	3/16					**08 IR 13 UN		.03	.04
13	8U	3/16U					08U IR/L 13 UN		.04	.16
12	8U	3/16U	*"U" MINIATURE* →				08U IR/L 12 UN		.04	.16
11	8U	3/16U					08U IR/L 11 UN		.04	.16
80	11	1/4	11 ER 80 UN	11 EL 80 UN	.03	.02	11 IR 80 UN	11 IL 80 UN	.03	.02
72	11	1/4	11 ER 72 UN	11 EL 72 UN	.03	.02	11 IR 72 UN	11 IL 72 UN	.03	.01
64	11	1/4	11 ER 64 UN	11 EL 64 UN	.03	.02	11 IR 64 UN	11 IL 64 UN	.03	.02
56	11	1/4	11 ER 56 UN	11 EL 56 UN	.03	.02	11 IR 56 UN	11 IL 56 UN	.03	.02
48	11	1/4	11 ER 48 UN	11 EL 48 UN	.02	.02	11 IR 48 UN	11 IL 48 UN	.02	.02
44	11	1/4	11 ER 44 UN	11 EL 44 UN	.02	.02	11 IR 44 UN	11 IL 44 UN	.02	.02
40	11	1/4	11 ER 40 UN	11 EL 40 UN	.02	.02	11 IR 40 UN	11 IL 40 UN	.02	.02
36	11	1/4	11 ER 36 UN	11 EL 36 UN	.02	.02	11 IR 36 UN	11 IL 36 UN	.02	.02
32	11	1/4	11 ER 32 UN	11 EL 32 UN	.02	.02	11 IR 32 UN	11 IL 32 UN	.02	.02
28	11	1/4	11 ER 28 UN	11 EL 28 UN	.02	.03	11 IR 28 UN	11 IL 28 UN	.02	.03
27	11	1/4	11 ER 27 UN	11 EL 27 UN	.03	.03	11 IR 27 UN	11 IL 27 UN	.03	.03
24	11	1/4	11 ER 24 UN	11 EL 24 UN	.03	.03	11 IR 24 UN	11 IL 24 UN	.03	.03
20	11	1/4	11 ER 20 UN	11 EL 20 UN	.03	.04	11 IR 20 UN	11 IL 20 UN	.03	.04
18	11	1/4	11 ER 18 UN	11 EL 18 UN	.03	.04	11 IR 18 UN	11 IL 18 UN	.03	.04
16	11	1/4	11 ER 16 UN	11 EL 16 UN	.04	.04	11 IR 16 UN	11 IL 16 UN	.04	.04
14	11	1/4	11 ER 14 UN	11 EL 14 UN	.04	.04	11 IR 14 UN	11 IL 14 UN	.04	.04
13	11	1/4					11 IR 13 UN	11 IL 13 UN	.03	.04
12	11	1/4					11 IR 12 UN	11 IL 12 UN	.04	.04
11	11	1/4					11 IR 11 UN	11 IL 11 UN	.03	.04
80	16	3/8	16 ER 80 UN	16 EL 80 UN	.03	.02	16 IR 80 UN	16 IL 80 UN	.03	.02
72	16	3/8	16 ER 72 UN	16 EL 72 UN	.03	.02	16 IR 72 UN	16 IL 72 UN	.03	.01
64	16	3/8	16 ER 64 UN	16 EL 64 UN	.03	.02	16 IR 64 UN	16 IL 64 UN	.03	.02
56	16	3/8	16 ER 56 UN	16 EL 56 UN	.03	.02	16 IR 56 UN	16 IL 56 UN	.03	.02
48	16	3/8	16 ER 48 UN	16 EL 48 UN	.02	.02	16 IR 48 UN	16 IL 48 UN	.02	.02
44	16	3/8	16 ER 44 UN	16 EL 44 UN	.02	.02	16 IR 44 UN	16 IL 44 UN	.02	.02
40	16	3/8	16 ER 40 UN	16 EL 40 UN	.02	.02	16 IR 40 UN	16 IL 40 UN	.02	.02
36	16	3/8	16 ER 36 UN	16 EL 36 UN	.02	.02	16 IR 36 UN	16 IL 36 UN	.02	.02

** To be used with Holder SIR 0009 K08 on page A02-10

UN - Unified UNC, UNF, UNEF, UNS

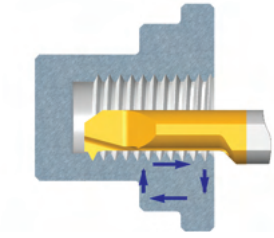




Pitch TPI	L mm	I.C.	EXTERNAL Ordering Code Right Hand	EXTERNAL Ordering Code Left Hand	X	Y	INTERNAL Ordering Code Right Hand	INTERNAL Ordering Code Left Hand	X	Y
32	16	3/8	16 ER 32 UN	16 EL 32 UN	.02	.02	16 IR 32 UN	16 IL 32 UN	.02	.02
28	16	3/8	16 ER 28 UN	16 EL 28 UN	.02	.03	16 IR 28 UN	16 IL 28 UN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

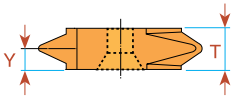
Order example: 22ER 7 UN BMA

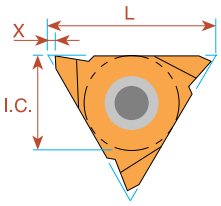
For small bore threading see page A06-13



For carbide grade and cutting speed see page A04-2 and 3

UN - Unified
Vertical

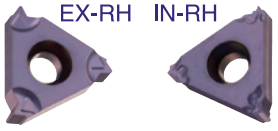




Pitch TPI	L mm	I.C.	EXTERNAL Ordering Code Right Hand	EXTERNAL Ordering Code Left Hand	INTERNAL Ordering Code Right Hand	INTERNAL Ordering Code Left Hand	X	Y	T
32	16	3/8	16V ER 32 UN	16V EL 32 UN			.04	.02	.14
28	16	3/8	16V ER 28 UN	16V EL 28 UN			.04	.03	.14
24	16	3/8	16V ER 24 UN	16V EL 24 UN			.04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

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

UN - Unified UNC, UNF, UNEF, UNS
Type B

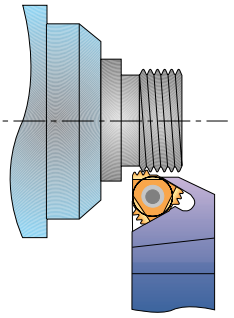


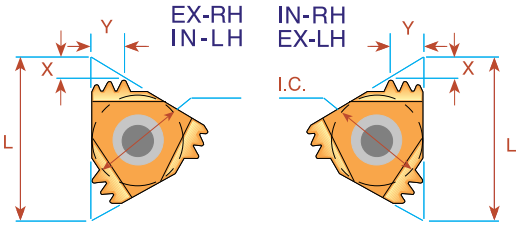
Ground Profile with Sintered Chip-breaker

Pitch TPI	L mm	I.C.	EXTERNAL Ordering Code Right Hand	X	Y	INTERNAL Ordering Code Right Hand	X	Y
32	11	1/4				11 IR B 32 UN	.02	.02
28	11	1/4				11 IR B 28 UN	.02	.02
24	11	1/4				11 IR B 24 UN	.02	.02
20	11	1/4				11 IR B 20 UN	.03	.04
18	11	1/4				11 IR B 18 UN	.03	.04
16	11	1/4				11 IR B 16 UN	.03	.04
14	11	1/4				11 IR B 14 UN	.03	.04
12	11	1/4				11 IR B 12 UN	.03	.04
24	16	3/8	16 ER B 24 UN	.03	.03	16 IR B 24 UN	.03	.03
20	16	3/8	16 ER B 20 UN	.03	.04	16 IR B 20 UN	.03	.03
18	16	3/8	16 ER B 18 UN	.03	.04	16 IR B 18 UN	.03	.03
16	16	3/8	16 ER B 16 UN	.04	.04	16 IR B 16 UN	.04	.04
14	16	3/8	16 ER B 14 UN	.04	.05	16 IR B 14 UN	.04	.05
13	16	3/8	16 ER B 13 UN	.04	.05			
12	16	3/8	16 ER B 12 UN	.04	.06	16 IR B 12 UN	.04	.06
11	16	3/8	16 ER B 11 UN	.04	.06			
10	16	3/8	16 ER B 10 UN	.04	.06	16 IR B 10 UN	.04	.06
9	16	3/8	16 ER B 9 UN	.05	.07			
8	16	3/8	16 ER B 8 UN	.05	.06	16 IR B 8 UN	.04	.06

Order example: 16 IR B 12 UN BMA

Multitooth





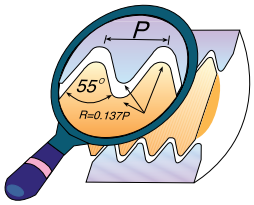
Pitch TPI	L mm	I.C.	Number of Teeth	***EXTERNAL*** Ordering Code	Anvil	***INTERNAL*** Ordering Code	Anvil	X	Y
24	16	3/8	2	16 ER 24 UN 2M	AE16M	16 IR 24 UN 2M	AI16M	.04	.07
20	16	3/8	2	16 ER 20 UN 2M	AE16M	16 IR 20 UN 2M	AI16M	.06	.08
18	16	3/8	2	16 ER 18 UN 2M	AE16M	16 IR 18 UN 2M	AI16M	.06	.09
16	16	3/8	2	16 ER 16 UN 2M	AE16M	16 IR 16 UN 2M	AI16M	.06	.09
14	16	3/8	2	16 ER 14 UN 2M	AE16M	16 IR 14 UN 2M	AI16M	.07	.11
12	16	3/8	2	16 ER 12 UN 2M	AE16M	16 IR 12 UN 2M	AI16M	.08	.12
16	22	1/2	3	22 ER 16 UN 3M	AE22M	22 IR 16 UN 3M	AI22M	.10	.16
13	22	1/2	3	22 ER 13 UN 3M	AE22M	-		.12	.19
12	22	1/2	2	22 ER 12 UN 2M	AE22M	22 IR 12 UN 2M	AI22M	.09	.13
12	22	1/2	3	22 ER 12 UN 3M	AE22M	22 IR 12 UN 3M	AI22M	.13	.21
8	27	5/8	2	27 ER 8 UN 2M	AE27M	27 IR 8 UN 2M	AI27M	.12	.19

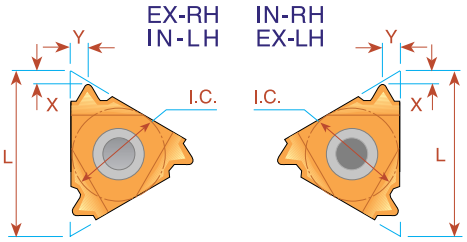
Order example: 22 IR 16 UN 3M BMA

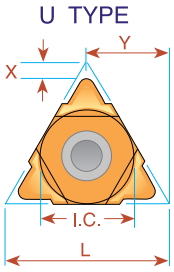
For recommended number of passes see page A04-4

For carbide grade and cutting speed see page A04-2 and 3

Whitworth - 55° BSW, BSF, BSP, BSB



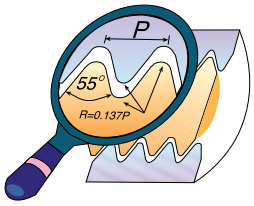


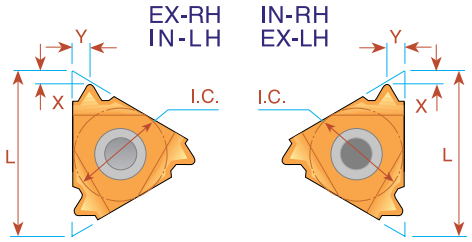


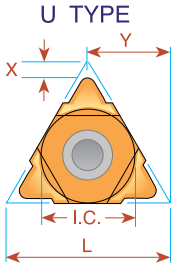
Pitch TPI	L mm	I.C.	EXTERNAL Ordering Code Right Hand	EXTERNAL Ordering Code Left Hand	INTERNAL Ordering Code Right Hand	INTERNAL Ordering Code Left Hand	X	Y
26	6	5/32			06 IR 26 W	06 IL 26 W	.03	.02
22	6	5/32	ULTRA MINIATURE →		06 IR 22 W	06 IL 22 W	.02	.02
20	6	5/32			06 IR 20 W	06 IL 20 W	.02	.03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

(1) Special holder is required or standard holder can be amended by customer.

Whitworth - 55° BSW, BSF, BSP, BSB







Pitch TPI	L mm	I.C.	EXTERNAL Ordering Code Right Hand	EXTERNAL Ordering Code Left Hand	INTERNAL Ordering Code Right Hand	INTERNAL Ordering Code Left Hand	X	Y
22	16	3/8	16 ER 22 W	16 EL 22 W	16 IR 22 W	16 IL 22 W	.03	.04
20	16	3/8	16 ER 20 W	16 EL 20 W	16 IR 20 W	16 IL 20 W	.03	.04
19	16	3/8	16 ER 19 W	16 EL 19 W	16 IR 19 W	16 IL 19 W	.03	.04
18	16	3/8	16 ER 18 W	16 EL 18 W	16 IR 18 W	16 IL 18 W	.03	.04
16	16	3/8	16 ER 16 W	16 EL 16 W	16 IR 16 W	16 IL 16 W	.04	.04
14	16	3/8	16 ER 14 W	16 EL 14 W	16 IR 14 W	16 IL 14 W	.04	.05
12	16	3/8	16 ER 12 W	16 EL 12 W	16 IR 12 W	16 IL 12 W	.04	.06
11	16	3/8	16 ER 11 W	16 EL 11 W	16 IR 11 W	16 IL 11 W	.04	.06
10	16	3/8	16 ER 10 W	16 EL 10 W	16 IR 10 W	16 IL 10 W	.04	.06
9	16	3/8	16 ER 9 W	16 EL 9 W	16 IR 9 W	16 IL 9 W	.05	.07
8	16	3/8	16 ER 8 W	16 EL 8 W	16 IR 8 W	16 IL 8 W	.05	.06
7	22	1/2	22 ER 7 W	22 EL 7 W	22 IR 7 W	22 IL 7 W	.06	.09
6	22	1/2	22 ER 6 W	22 EL 6 W	22 IR 6 W	22 IL 6 W	.06	.09
5	22	1/2	22 ER 5 W	22 EL 5 W	22 IR 5 W	22 IL 5 W	.07	.09
4.5	22U	1/2U	22U E/I/R/L 4.5 W				.09	.43
4	22U	1/2U	22U E/I/R/L 4 W				.07	.43
4.5	27	5/8	27 ER 4.5 W	27 EL 4.5 W	27 IR 4.5 W	27 IL 4.5 W	.07	.10
4	27	5/8	27 ER 4 W	27 EL 4 W	27 IR 4 W	27 IL 4 W	.08	.11
3.5	27U	5/8U	27U E/I/R/L 3.5 W				.08	.54
3.25	27U	5/8U	27U E/I/R/L 3.25 W				.08	.54
3	27U	5/8U	27U E/I/R/L 3 W				.09	.54
2.75	27U	5/8U	27U E/I/R/L 2.75 W				.09	.54
*2.625	27U	5/8U	27U E/I/R/L 2.625 W				.10	.54
*2.5	27U	5/8U	27U E/I/R/L 2.5 W				.11	.54

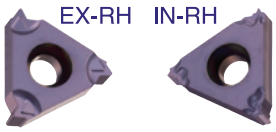
Order example: 16 IR 18 W BMA

For carbide grade and cutting speed see page A04-2 and 3

Whitworth - 55° BSW, BSF, BSP, BSB

Type B

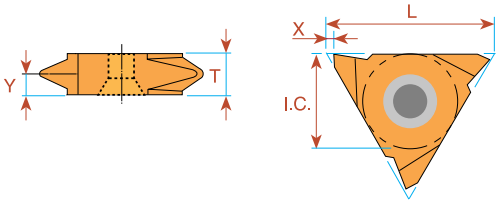
Ground Profile with Sintered Chip-breaker



Pitch TPI	L mm	I.C.	EXTERNAL Ordering Code Right Hand	INTERNAL Ordering Code Right Hand	X	Y
28	11	1/4		11 IR B 28 W	.02	.02
24	11	1/4		11 IR B 24 W	.02	.02
20	11	1/4		11 IR B 20 W	.03	.04
19	11	1/4		11 IR B 19 W	.03	.04
18	11	1/4		11 IR B 18 W	.03	.04
16	11	1/4		11 IR B 16 W	.03	.04
14	11	1/4		11 IR B 14 W	.03	.04
19	16	3/8	16 ER B 19 W	16 IR B 19 W	.03	.04
16	16	3/8	16 ER B 16 W	16 IR B 16 W	.04	.04
14	16	3/8	16 ER B 14 W	16 IR B 14 W	.04	.05
11	16	3/8	16 ER B 11 W	16 IR B 11 W	.04	.06
10	16	3/8	16 ER B 10 W	16 IR B 10 W	.04	.06

Order example: 16 IR B 10 W BMA

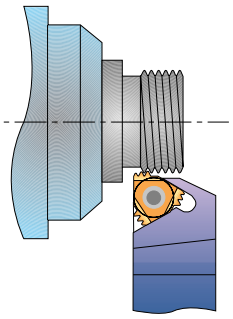
Vertical

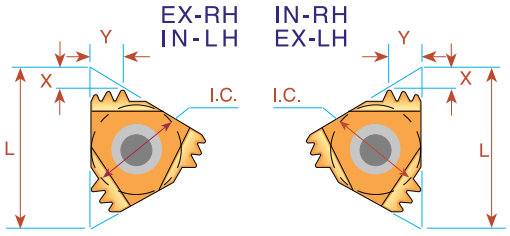


Pitch TPI	L mm	I.C.	EXTERNAL Ordering Code Right Hand	EXTERNAL Ordering Code Left Hand	X	Y	T
20	16	3/8	16V ER 20 W	16V EL 20 W	.04	.04	.14
19	16	3/8	16V ER 19 W	16V EL 19 W	.04	.04	.14
18	16	3/8	16V ER 18 W	16V EL 18 W	.04	.04	.14
16	16	3/8	16V ER 16 W	16V EL 16 W	.04	.04	.14
14	16	3/8	16V ER 14 W	16V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

Order example: 16V ER 14 W MXC

Multitooth





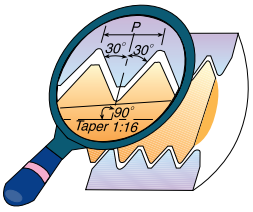
Pitch TPI	L mm	I.C.	Number of Teeth	***EXTERNAL*** Ordering Code	Anvil	***INTERNAL*** Ordering Code	Anvil	X	Y
14	16	3/8	2	**16 ER 14 W 2M**	AE16M	**16 IR 14 W 2M**	AI16M	.07	.11
14	22	1/2	3	**22 ER 14 W 3M**	AE22M	**22 IR 14 W 3M**	AI22M	.11	.18
11	22	1/2	2	**22 ER 11 W 2M**	AE22M	**22 IR 11 W 2M**	AI22M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

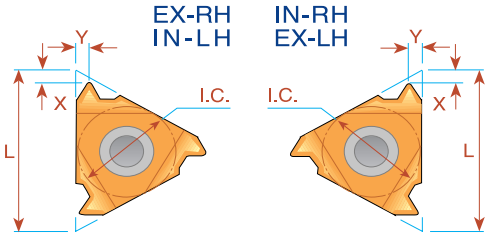
Order example: 16 ER 14 W 2M MXC

For recommended number of passes see page A04-4

For carbide grade and cutting speed see page A04-2 and 3

NPT

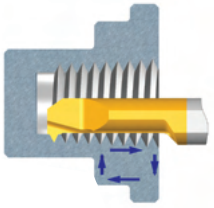




Pitch TPI	L mm	I.C.	EXTERNAL Ordering Code Right Hand	EXTERNAL Ordering Code Left Hand	INTERNAL Ordering Code Right Hand	INTERNAL Ordering Code Left Hand	X	Y
27	6	5/32	ULTRA MINIATURE →		06 IR 27 NPT	06 IL 27 NPT	.02	.02
27	8	3/16			08 IR 27 NPT	08 IL 27 NPT	.02	.02
18	8	3/16	MINIATURE →		08 IR 18 NPT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

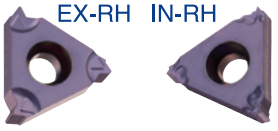
Order example: 16 ER 14 NPT MXC

For small bore threading see page A06-16



Type B

Ground Profile with Sintered Chip-breaker

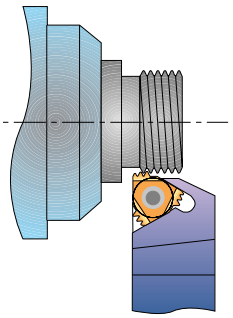


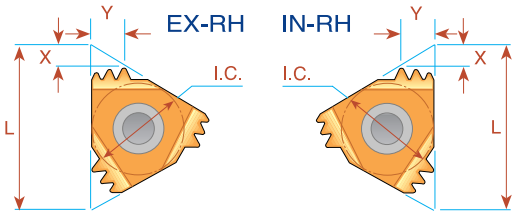
Pitch TPI	L	I.C. mm	EXTERNAL Ordering Code Right Hand	INTERNAL Ordering Code Right Hand	X	Y
18	11	1/4		11 IR B 18 NPT	.03	.04
18	16	3/8	16 ER B 18 NPT	16 IR B 18 NPT	.03	.04
14	16	3/8	16 ER B 14 NPT	16 IR B 14 NPT	.04	.05
11.5	16	3/8	16 ER B 11.5 NPT	16 IR B 11.5 NPT	.04	.06
8	16	3/8	16 ER B 8 NPT	16 IR B 8 NPT	.05	.07

Order example: 16 IR B 11.5 NPT BMA

For carbide grade and cutting speed see page A04-2 and 3

NPT
Multitooth



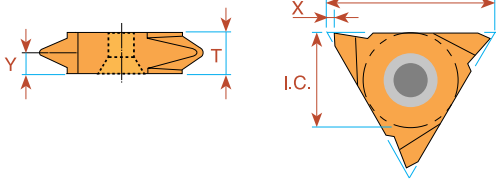


Pitch TPI	L mm	I.C.	Number of Teeth	EXTERNAL Ordering Code	Anvil	INTERNAL Ordering Code	Anvil	X	Y
14	16	3/8	2	16 ER 14 NPT 2M	AE16M	16 IR 14 NPT 2M	AI16M	.07	.11
11.5	22	1/2	2	22 ER 11.5 NPT 2M	AE22M	22 IR 11.5 NPT 2M	AI22M	.09	.14
11.5	27	5/8	3	27 ER 11.5 NPT 3M	AE27M	27 IR 11.5 NPT 3M	AI27M	.13	.22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

Order example: 22 ER 11.5 NPT 2M MXC

For recommended number of passes see page A04-4

NPT
Vertical

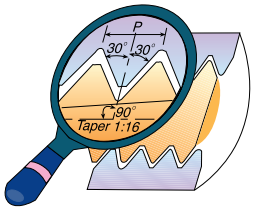


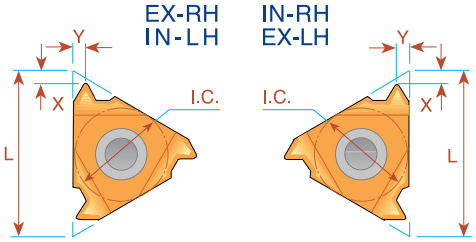
Pitch TPI	L mm	I.C.	EXTERNAL Ordering Code Right Hand	EXTERNAL Ordering Code Left Hand	X	Y	T
27	16	3/8	16V ER 27 NPT	16V EL 27 NPT	.04	.03	.14
18	16	3/8	16V ER 18 NPT	16V EL 18 NPT	.04	.04	.14
14	16	3/8	16V ER 14 NPT	16V EL 14 NPT	.04	.05	.14
11.5	16	3/8	16V ER 11.5 NPT	16V EL 11.5 NPT	.04	.06	.14

Order example: 16V ER 14 NPT BMA

For carbide grade and cutting speed see page A04-2 and 3

NPTF - Dryseal





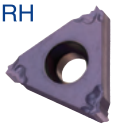
Pitch TPI	L mm	I.C.	EXTERNAL Ordering Code Right Hand	EXTERNAL Ordering Code Left Hand	INTERNAL Ordering Code Right Hand	INTERNAL Ordering Code Left Hand	X	Y
27	6	5/32	ULTRA MINIATURE →		06 IR 27 NPTF	06 IL 27 NPTF	.03	.02
27	8	3/16			08 IR 27 NPTF	08 IL 27 NPTF	.02	.02
18	8	3/16	MINIATURE →		08 IR 18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

Order example: 11 ER 27 NPTF MXC

Type B

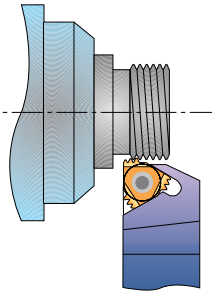
Ground Profile with Sintered Chip-breaker

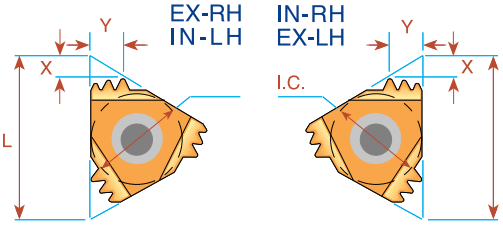
Pitch TPI	L mm	I.C.	INTERNAL Ordering Code Right Hand	X	Y
18	11	1/4	11 IR B 18 NPTF	.03	.04



Order example: 11 IR B 18 NPTF BMA

Multitooth





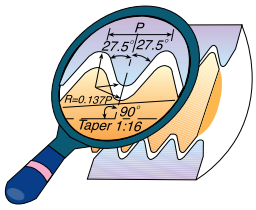
Pitch TPI	L mm	I.C.	Number of Teeth	EXTERNAL Ordering Code	Anvil	INTERNAL Ordering Code	Anvil	X	Y
11.5	22	1/2	2	22 ER 11.5 NPTF 2M	AE22M	22 IR 11.5 NPTF 2M	AI22M	.09	0.14

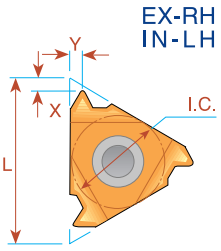
Order example: 22 ER 11.5 NPTF 2M BMA

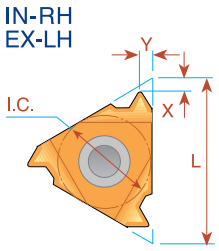
For carbide grade and cutting speed see page A04-2 and 3

Carmex Precision Tools Ltd.

BSPT







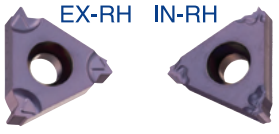
Pitch TPI	L mm	I.C.	EXTERNAL Ordering Code Right Hand	EXTERNAL Ordering Code Left Hand	INTERNAL Ordering Code Right Hand	INTERNAL Ordering Code Left Hand	X	Y
28	6	5/32	*ULTRA MINIATURE* →		06 IR 28 BSPT	06 IL 28 BSPT	.03	.02
28	8	3/16			08 IR 28 BSPT	08 IL 28 BSPT	.02	.02
19	8	3/16	*MINIATURE* →		08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

Order example: 11 IR 14 BSPT BMA

(1) Special holder is required or standard holder can be amended by customer.

Type B

Ground Profile with Sintered Chip-breaker



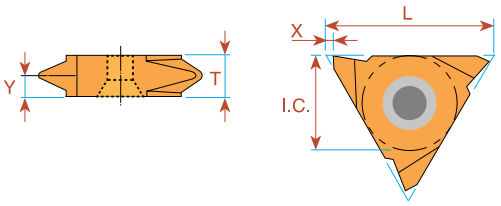
Pitch TPI	L mm	I.C.	EXTERNAL Ordering Code Right Hand	INTERNAL Ordering Code Right Hand	X	Y
19	11	1/4		11 IR B 19 BSPT	.03	.04
19	16	3/8	16 ER B 19 BSPT		.04	.04
14	16	3/8	16 ER B 14 BSPT	16 IR B 14 BSPT	.05	.04
11	16	3/8	16 ER B 11 BSPT	16 IR B 11 BSPT	.06	.04

Order example: 16 ER B 11BSPT BMA

For carbide grade and cutting speed see page A04-2 and 3

BSPT

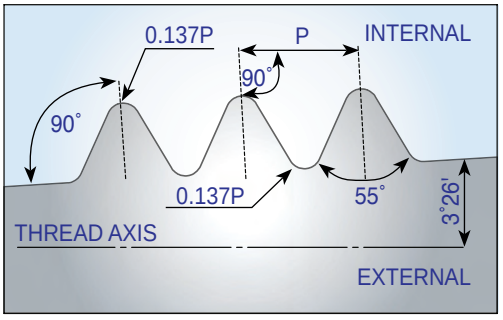
Vertical



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

Order example: 16V ER 19 BSPT BMA

DIN 477

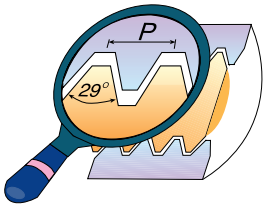


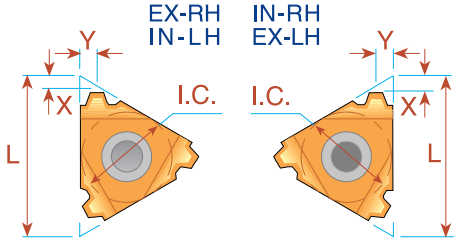
Pitch TPI	L mm	I.C.	Taper Ratio	EXTERNAL Ordering Code Right Hand	INTERNAL Ordering Code Right Hand	X	Y	Thread Designation
14	16	3/8	3/25	**16 ER 14 DIN477**		.04	.05	W19.8x1/14 keg(Ext.)
14	11	1/4	3/25	————	***11 IR 14 DIN477**	.04	.04	W19.8x1/14 keg(Int.)
14	16	3/8	3/25	**16 ER 14 DIN477**	****16 IR 14 DIN477**	.04	.05	W28.8x1/14 keg
14	16	3/8	3/25	**16 ER 14 DIN477**	*****16 IR 14 DIN477**	.04	.05	W31.3x1/14 keg

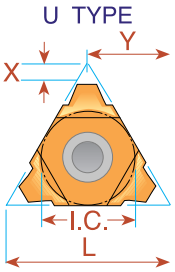
* Holder to use: SIR0375H11/SIR0375K11
** Holder to use: SIR0625H16
*** Holder to use: SIR0750P16
Order example: 16 IR 14 DIN477 BMA

For carbide grade and cutting speed see page A04-2 and 3

Acme
Semi full profile with breaking corners



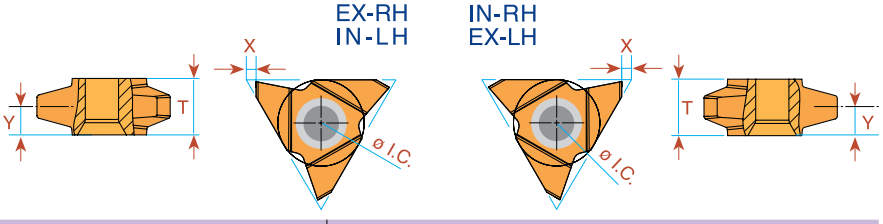




Pitch TPI	L mm	I.C.	EXTERNAL Ordering Code Right Hand	EXTERNAL Ordering Code Left Hand	INTERNAL Ordering Code Right Hand	INTERNAL Ordering Code Left Hand	X	Y
16	8	3/16	MINIATURE →		**08 IR 16 ACME	**08 IL 16 ACME	.02	.02
14	8U	3/16U	"U" MINIATURE →		08U IR/L 14 ACME		.03	.16
12	8U	3/16U			08U IR/L 12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

** One cutting edge
Order example: 16 ER 16 ACME MXC
(1) Special holder is required or standard holder can be amended by customer.

Acme
Vertical

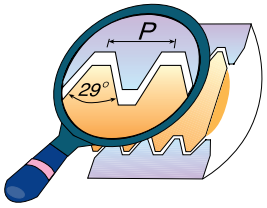


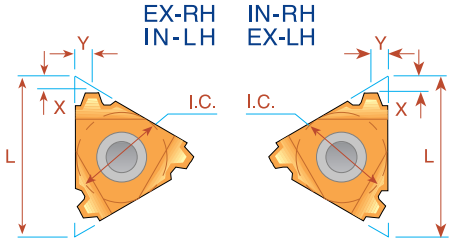
Pitch TPI	L mm	I.C.	EXTERNAL Ordering Code Right Hand	EXTERNAL Ordering Code Left Hand	X	Y	T	INTERNAL Ordering Code Right Hand	INTERNAL Ordering Code Left Hand	X	Y	T
* 3.5	27	5/8	27V ER 3.5 ACME	———	.07	.20	.41	27V IR 3.5 ACME	———	.07	.16	.41
** 3	27	5/8	27V ER 3 ACME	———	.07	.20	.41	27V IR 3 ACME	———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

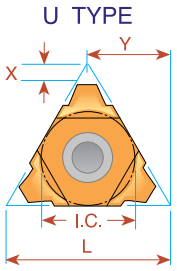
* Minimum bore: Ø2.17 ** Minimum bore: Ø2.17 *** Minimum bore: Ø3
Order example: 27V ER 2 ACME BMA
For carbide grade and cutting speed see page A04-2 and 3

Stub Acme

Semi full profile with breaking corners







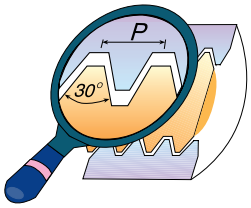
Pitch TPI	L mm	I.C.	EXTERNAL Ordering Code Right Hand	EXTERNAL Ordering Code Left Hand	INTERNAL Ordering Code Right Hand	INTERNAL Ordering Code Left Hand	X	Y
16	8	3/16	*MINIATURE* →		**08 IR 16 STACME	**08 IL 16 STACME	.02	.02
14	8U	3/16U			08U IR/L 14 STACME		.03	.16
12	8U	3/16U	*"U" MINIATURE* →		08U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

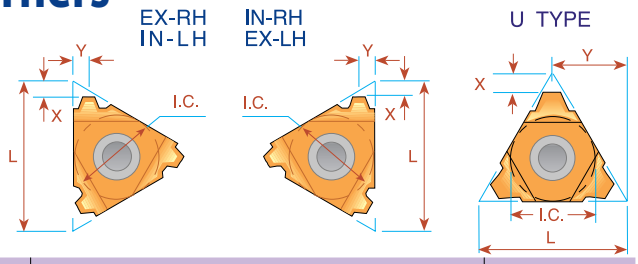
** One cutting edge

Order example: 22 IR 5 STACME MXC

For carbide grade and cutting speed see page A04-2 and 3

Trapez - DIN 103
Semi full profile with breaking corners

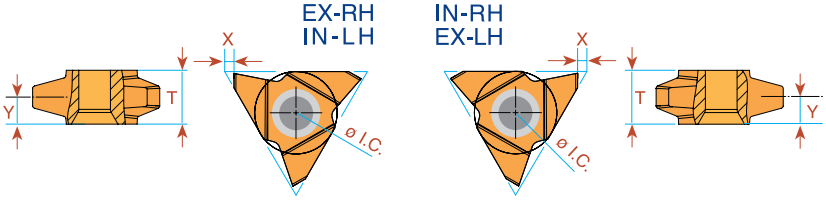




Pitch mm	L mm	I.C.	EXTERNAL Ordering Code Right Hand	EXTERNAL Ordering Code Left Hand	INTERNAL Ordering Code Right Hand	INTERNAL Ordering Code Left Hand	X	Y
1.5	8	3/16	*MINIATURE* →		**08 IR 1.5 TR	**08 IL 1.5 TR	.02	.02
2.0	8U	3/16U	*"U" MINIATURE* →		08U IR/L 2 TR		.04	.16
1.5	16	3/8	16 ER 1.5 TR	16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

Order example: 22 IR 5 TR MXC
** One cutting edge
(1) Special holder is required or standard holder can be amended by customer.

Trapez - DIN 103
Vertical



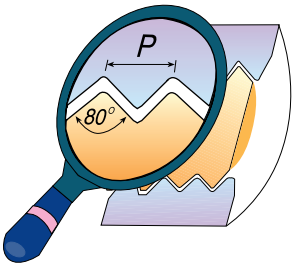
Pitch mm	L mm	I.C.	EXTERNAL Ordering Code Right Hand	EXTERNAL Ordering Code Left Hand	INTERNAL Ordering Code Right Hand	INTERNAL Ordering Code Left Hand	X	Y	T
* 9	27	5/8	27V ER 9 TR	27V EL 9 TR	27V IR 9 TR	27V IL 9 TR	.07	.21	.41
** 10	27	5/8	27V ER 10 TR	27V EL 10 TR	27V IR 10 TR	27V IL 10 TR	.07	.21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

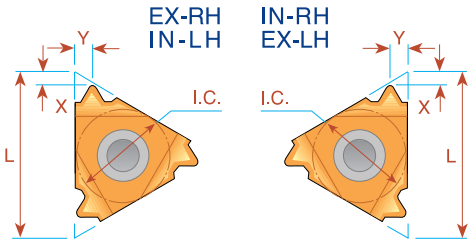
Order example: 27V ER 10 TR BMA

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

For carbide grade and cutting speed see page A04-2 and 3

PG - DIN 40430

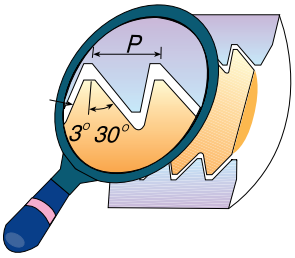




Pitch TPI	L mm	I.C.	EXTERNAL Ordering Code Right Hand	EXTERNAL Ordering Code Standard	INTERNAL Ordering Code Right Hand	INTERNAL Ordering Code Standard	X	Y
20	8	3/16	*MINIATURE* →		08 IR 20 PG	(PG 7)	.02	.03
18	11	1/4			11 IR 18 PG	(PG 9)	.03	.04
20	16	3/8	16 ER 20 PG	(PG 7)			.03	.03
18	16	3/8	16 ER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

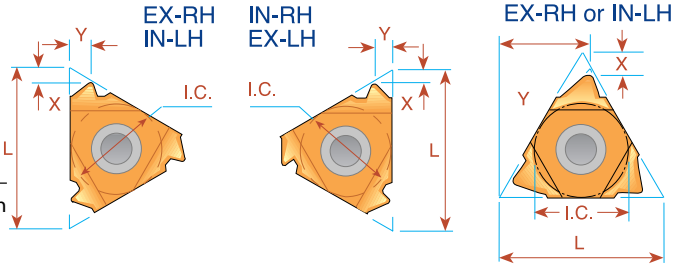
Order example: 16 ER 16 PG BMA

Sagengewinde - DIN 513



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

Work direction ←

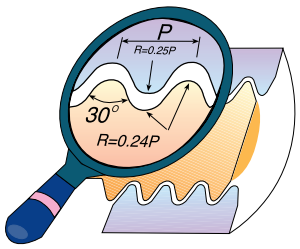


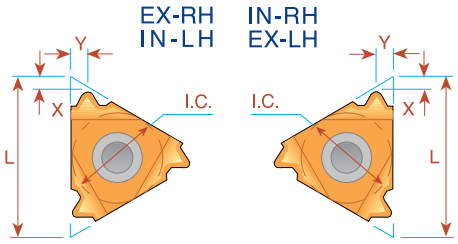
Pitch mm	L mm	I.C.	EXTERNAL Ordering Code Right Hand	EXTERNAL Ordering Code Left Hand	X	Y	INTERNAL Ordering Code Right Hand	INTERNAL Ordering Code Left Hand	X	Y
2.0	16	3/8	16 ER 2 SAGE	16 EL 2 SAGE	.04	.06	16 IR 2 SAGE	16 IL 2 SAGE	.05	.07
**3.0	22	1/2	22 ER 3 SAGE	22 EL 3 SAGE	.06	.09	22 IR 3 SAGE	22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

* Requires a special anvil AER 22U-1.5 SAGE 5/6, AEL 22U-1.5 SAGE 5/6, AIR 22U-1.5 SAGE 5/6, AIL 22U-1.5 SAGE 5/6
* * Requires a special anvil AER 22-1.5 SAGE 3/4, AEL 22-1.5 SAGE 3/4, AIR 22-1.5 SAGE 3/4, AIL 22-1.5 SAGE 3/4
Order example: 22 IR 4 SAGE BMA

For carbide grade and cutting speed see page A04-2 and 3

Round - DIN 405

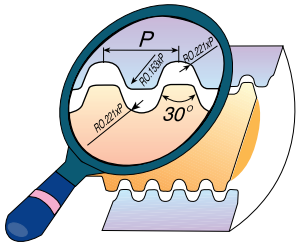


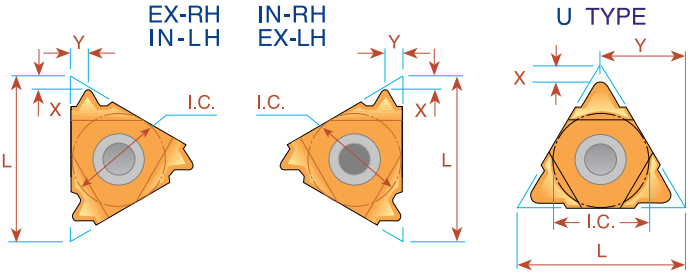


Pitch TPI	L mm	I.C.	EXTERNAL Ordering Code Right Hand	EXTERNAL Ordering Code Left Hand	X	Y	INTERNAL Ordering Code Right Hand	INTERNAL Ordering Code Left Hand	X	Y
10	16	3/8	16 ER 10 RD	16 EL 10 RD	.04	.05	16 IR 10 RD	16 IL 10 RD	.04	.05
8	16	3/8	16 ER 8 RD	16 EL 8 RD	.06	.05	16 IR 8 RD	16 IL 8 RD	.06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

Order example: 27 IL 4 RD BMA

Round - DIN 20400



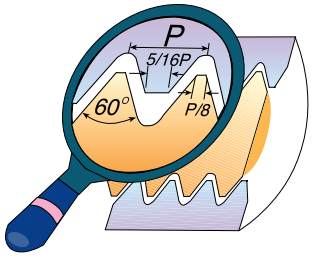


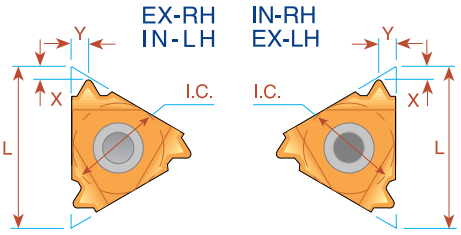
Pitch mm	L mm	I.C.	EXTERNAL Ordering Code Right Hand	INTERNAL Ordering Code Right Hand	X	Y
4.0	22	1/2	22 ER 4.0 RD 20400	22 IR 4.0 RD 20400	.06	.06
5.0	22	1/2	22 ER 5.0 RD 20400	22 IR 5.0 RD 20400	.07	.07
6.0	22	1/2	22 ER 6.0 RD 20400	22 IR 6.0 RD 20400	.07	.08
8.0	27U	5/8U	*27U E/I/R/L 8.0 RD 20400		.12	.54
10.0	27U	5/8U	*27U E/I/R/L 10.0 RD 20400		.13	.54
12.0	33U	3/4U	*33U E/I/R/L 12.0 RD 20400		.17	.67

* Same insert for Internal and External Right Hand Thread
Order example: 22 ER 4.0 RD 20400 MXC

For carbide grade and cutting speed see page A04-2 and 3

UNJ UNJC, UNJF, UNJEF, UNJS





Pitch TPI	L mm	I.C.	EXTERNAL Ordering Code Right Hand	EXTERNAL Ordering Code Left Hand	INTERNAL Ordering Code Right Hand	INTERNAL Ordering Code Left Hand	X	Y
28	08	3/16			08 IR 28 UNJ	08 IL 28 UNJ	.02	.02
24	08	3/16			08 IR 24 UNJ	08 IL 24 UNJ	.02	.02
20	08	3/16	*MINIATURE* →		08 IR 20 UNJ	08 IL 20 UNJ	.02	.03
18	08	3/16			08 IR 18 UNJ	08 IL 18 UNJ	.02	.03
13	08U	3/16U	*"U" MINIATURE* →		08 UIR/L 13 UNJ		.04	.16
48	11	1/4	11 ER 48 UNJ	11 EL 48 UNJ	11 IR 48 UNJ	11 IL 48 UNJ	.02	.02
44	11	1/4	11 ER 44 UNJ	11 EL 44 UNJ	11 IR 44 UNJ	11 IL 44 UNJ	.02	.02
40	11	1/4	11 ER 40 UNJ	11 EL 40 UNJ	11 IR 40 UNJ	11 IL 40 UNJ	.02	.02
36	11	1/4	11 ER 36 UNJ	11 EL 36 UNJ	11 IR 36 UNJ	11 IL 36 UNJ	.02	.02
32	11	1/4	11 ER 32 UNJ	11 EL 32 UNJ	11 IR 32 UNJ	11 IL 32 UNJ	.02	.02
28	11	1/4	11 ER 28 UNJ	11 EL 28 UNJ	11 IR 28 UNJ	11 IL 28 UNJ	.02	.02
24	11	1/4	11 ER 24 UNJ	11 EL 24 UNJ	11 IR 24 UNJ	11 IL 24 UNJ	.03	.03
20	11	1/4	11 ER 20 UNJ	11 EL 20 UNJ	11 IR 20 UNJ	11 IL 20 UNJ	.03	.04
18	11	1/4	11 ER 18 UNJ	11 EL 18 UNJ	11 IR 18 UNJ	11 IL 18 UNJ	.03	.04
16	11	1/4	11 ER 16 UNJ	11 EL 16 UNJ	11 IR 16 UNJ	11 IL 16 UNJ	.03	.04
14	11	1/4	11 ER 14 UNJ	11 EL 14 UNJ	11 IR 14 UNJ	11 IL 14 UNJ	.04	.04
48	16	3/8	16 ER 48 UNJ	16 EL 48 UNJ	16 IR 48 UNJ	16 IL 48 UNJ	.02	.02
44	16	3/8	16 ER 44 UNJ	16 EL 44 UNJ	16 IR 44 UNJ	16 IL 44 UNJ	.02	.02
40	16	3/8	16 ER 40 UNJ	16 EL 40 UNJ	16 IR 40 UNJ	16 IL 40 UNJ	.02	.02
36	16	3/8	16 ER 36 UNJ	16 EL 36 UNJ	16 IR 36 UNJ	16 IL 36 UNJ	.02	.02
32	16	3/8	16 ER 32 UNJ	16 EL 32 UNJ	16 IR 32 UNJ	16 IL 32 UNJ	.02	.02
28	16	3/8	16 ER 28 UNJ	16 EL 28 UNJ	16 IR 28 UNJ	16 IL 28 UNJ	.02	.02
24	16	3/8	16 ER 24 UNJ	16 EL 24 UNJ	16 IR 24 UNJ	16 IL 24 UNJ	.03	.03
20	16	3/8	16 ER 20 UNJ	16 EL 20 UNJ	16 IR 20 UNJ	16 IL 20 UNJ	.03	.04
18	16	3/8	16 ER 18 UNJ	16 EL 18 UNJ	16 IR 18 UNJ	16 IL 18 UNJ	.03	.04
16	16	3/8	16 ER 16 UNJ	16 EL 16 UNJ	16 IR 16 UNJ	16 IL 16 UNJ	.03	.04
14	16	3/8	16 ER 14 UNJ	16 EL 14 UNJ	16 IR 14 UNJ	16 IL 14 UNJ	.04	.05
13	16	3/8	16 ER 13 UNJ	16 EL 13 UNJ	16 IR 13 UNJ	16 IL 13 UNJ	.04	.05
12	16	3/8	16 ER 12 UNJ	16 EL 12 UNJ	16 IR 12 UNJ	16 IL 12 UNJ	.04	.06
11	16	3/8	16 ER 11 UNJ	16 EL 11 UNJ	16 IR 11 UNJ	16 IL 11 UNJ	.04	.06
10	16	3/8	16 ER 10 UNJ	16 EL 10 UNJ	16 IR 10 UNJ	16 IL 10 UNJ	.04	.06
9	16	3/8	16 ER 9 UNJ	16 EL 9 UNJ	16 IR 9 UNJ	16 IL 9 UNJ	.05	.06
8	16	3/8	16 ER 8 UNJ	16 EL 8 UNJ	16 IR 8 UNJ	16 IL 8 UNJ	.05	.06

Order example: 16 IR 16 UNJ MXC

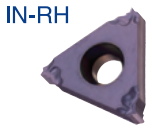
For carbide grade and cutting speed see page A04-2 and 3

UNJ UNJC, UNJF, UNJEF, UNJS

Type B

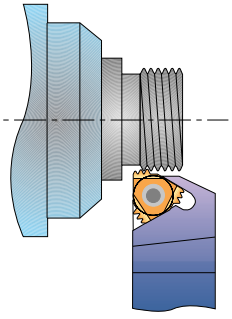
Ground Profile with Sintered Chip-breaker

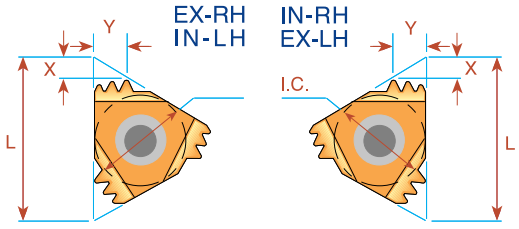
Pitch TPI	L mm	I.C.	INTERNAL Ordering Code Right Hand	X	Y
32	11	1/4	11 IR B 32 UNJ	.02	.02
28	11	1/4	11 IR B 28 UNJ	.02	.02
24	11	1/4	11 IR B 24 UNJ	.02	.02
20	11	1/4	11 IR B 20 UNJ	.03	.04
18	11	1/4	11 IR B 18 UNJ	.03	.04
16	11	1/4	11 IR B 16 UNJ	.03	.04
14	11	1/4	11 IR B 14 UNJ	.03	.04



Order example: 11 IR B 20 UNJ BMA

Multitooth



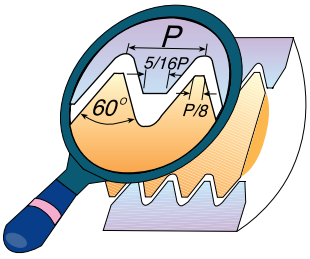


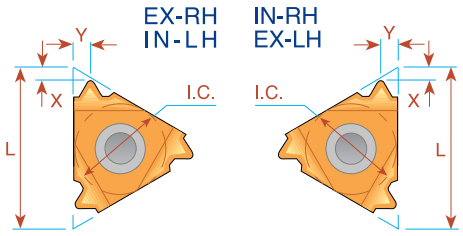
Pitch TPI	L mm	I.C.	Number of Teeth	EXTERNAL Ordering Code	Anvil	INTERNAL Ordering Code	Anvil	X	Y
16	16	3/8	2	16 ER 16 UNJ 2M	AE16M	-	-	.06	.09
16	22	1/2	3	22 ER 16 UNJ 2M	AE22M	-	-	.09	.15

Order example: 22 ER 16 UNJ 2M BMA

For carbide grade and cutting speed see page A04-2 and 3

MJ - ISO 5855





Pitch mm	L mm	I.C.	EXTERNAL Ordering Code Right Hand	INTERNAL Ordering Code Right Hand	X	Y
0.5	11	1/4		11 IR 0.5 MJ	.02	.02
0.7	11	1/4		11 IR 0.7 MJ	.02	.02
0.75	11	1/4		11 IR 0.75 MJ	.02	.02
0.8	11	1/4		11 IR 0.8 MJ	.02	.02
1.0	11	1/4	11 ER 1.0 MJ	11 IR 1.0 MJ	.03	.03
1.25	11	1/4	11 ER 1.25 MJ	11 IR 1.25 MJ	.03	.04
1.5	11	1/4	11 ER 1.5 MJ	11 IR 1.5 MJ	.03	.04
2.0	11	1/4		11 IR 2.0 MJ	.04	.04
0.5	16	3/8	16 ER 0.5 MJ		.02	.02
0.7	16	3/8	16 ER 0.7 MJ		.02	.02
0.75	16	3/8	16 ER 0.75 MJ	16 IR 0.75 MJ	.02	.02
0.8	16	3/8	16 ER 0.8 MJ	16 IR 0.8 MJ	.02	.02
1.0	16	3/8	16 ER 1.0 MJ	16 IR 1.0 MJ	.03	.03
1.25	16	3/8	16 ER 1.25 MJ	16 IR 1.25 MJ	.03	.04
1.5	16	3/8	16 ER 1.5 MJ	16 IR 1.5 MJ	.03	.04
1.75	16	3/8	16 ER 1.75 MJ	16 IR 1.75 MJ	.04	.04
2.0	16	3/8	16 ER 2.0 MJ	16 IR 2.0 MJ	.04	.05
3.0	16	3/8	16 ER 3.0 MJ	16 IR 3.0 MJ	.05	.06

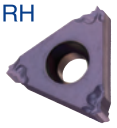
Order example: 16 ER 1.5 MJ BMA

Type B

Ground Profile with Sintered Chip-breaker

Pitch mm	L mm	I.C.	INTERNAL Ordering Code Right Hand	X	Y
1.0	11	1/4	11 IR B 1.0 MJ	.02	.02
1.5			11 IR B 1.5 MJ	.03	.04

IN-RH

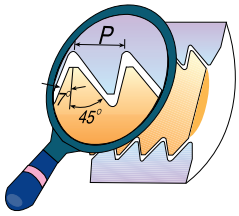


Order example: 11 IR B 1.5 MJ BMA

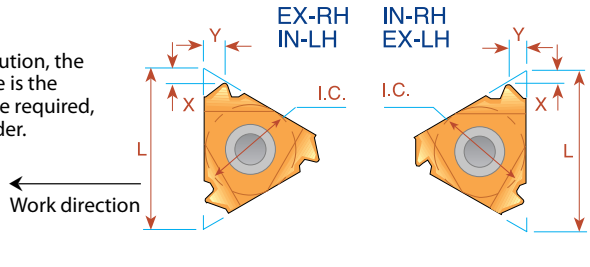
For carbide grade and cutting speed see page A04-2 and 3

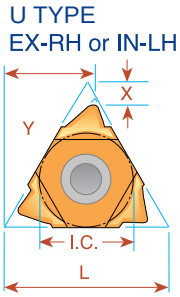
Carmex Precision Tools Ltd.

American Buttress



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

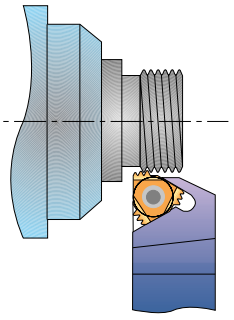


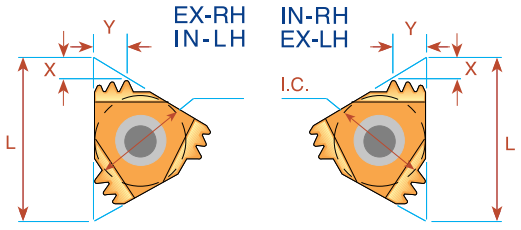


Pitch TPI	L mm	I.C.	EXTERNAL Ordering Code Right Hand	EXTERNAL Ordering Code Left Hand	INTERNAL Ordering Code Right Hand	INTERNAL Ordering Code Left Hand	X	Y
20	11	1/4	11 ER 20 ABUT	11 EL 20 ABUT	11 IR 20 ABUT	11 IL 20 ABUT	.04	.05
16	11	1/4	11 ER 16 ABUT	11 EL 16 ABUT	11 IR 16 ABUT	11 IL 16 ABUT	.04	.06
20	16	3/8	16 ER 20 ABUT	16 EL 20 ABUT	16 IR 20 ABUT	16 IL 20 ABUT	.04	.05
16	16	3/8	16 ER 16 ABUT	16 EL 16 ABUT	16 IR 16 ABUT	16 IL 16 ABUT	.04	.06
12	16	3/8	16 ER 12 ABUT	16 EL 12 ABUT	16 IR 12 ABUT	16 IL 12 ABUT	.06	.08
10	16	3/8	16 ER 10 ABUT	16 EL 10 ABUT	16 IR 10 ABUT	16 IL 10 ABUT	.06	.09
8	22	1/2	22 ER 8 ABUT	22 EL 8 ABUT	22 IR 8 ABUT	22 IL 8 ABUT	.08	.13
6	22	1/2	22 ER 6 ABUT	22 EL 6 ABUT	22 IR 6 ABUT	22 IL 6 ABUT	.08	.13
(1) 4	22U	1/2U	22U ER 4 ABUT	22U EL 4 ABUT	22U IR 4 ABUT	22U IL 4 ABUT	.09	.37
(3) 5	27	5/8	27 ER 5 ABUT	27 EL 5 ABUT	27 IR 5 ABUT	27 IL 5 ABUT	.11	.18
(2) 3	27U	5/8U	27U ER 3 ABUT	27U EL 3 ABUT	27U IR 3 ABUT	27U IL 3 ABUT	.12	.46

Order example: 16 IL 12 ABUT MXC
Most applications requires anvil change in toolholder see page A04-7
(1) Requires a special anvil AE 22U-1.5 ABUT4, AI22U-1.5 ABUT4
(2) Requires a special anvil AE 27U-1.5 ABUT3, AI27U-1.5 ABUT3
(3) Requires a special anvil AE 27-1.5 ABUT5, AI27-1.5 ABUT5

Multitooth





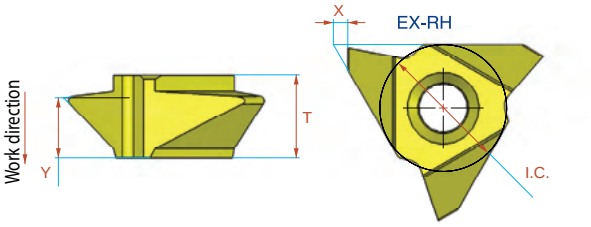
Pitch TPI	L mm	I.C.	Number of Teeth	EXTERNAL Ordering Code	Anvil	INTERNAL Ordering Code	Anvil	X	Y
12	22	1/2	2	22 ER 12 ABUT 2M	AE22M	22 IR 16 ABUT 2M	AI22M	.10	.16

Order example: 22 IR 16 ABUT 2M BMA

For carbide grade and cutting speed see page A04-2 and 3

American Buttress

Vertical



Pitch TPI	L mm	I.C.	EXTERNAL Ordering Code Right Hand	X	Y	T	INTERNAL Ordering Code Right Hand	X	Y	T
* 4	27	5/8	*27V ER 4 ABUT	.07	.30	.41	27V IR 4 ABUT	.07	.30	.41
** 3	27	5/8	*27V ER 3 ABUT	.07	.30	.41	27V IR 3 ABUT	.07	.24	.41

* For EXT. RH use only holders SER 1000M27V-ABUT 4/3-T10, SER1250P27V-ABUT 4/3-T10

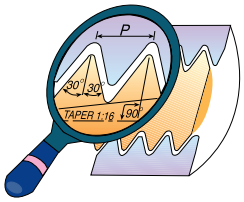
* Minimum bore: Ø2.17

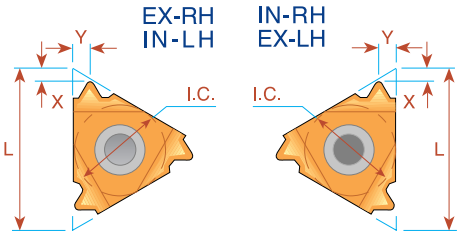
** Minimum bore: Ø2.76

For Carbide Grade and Cutting Speed see page A04 - 2-3

Threading Tools for the Oil & Gas Industries

API Round

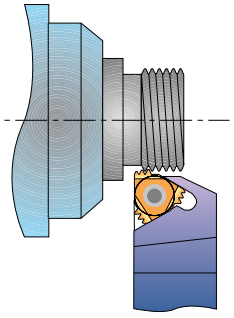


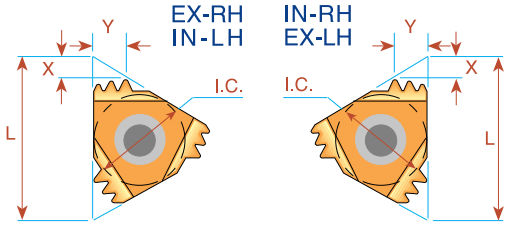


Pitch TPI	L mm	I.C.	Taper IPF	EXTERNAL Ordering Code Right Hand	INTERNAL Ordering Code Right Hand	X	Y
10	16	3/8	.75	16 ER 10 API RD	16 IR 10 API RD	.06	.06
8	16	3/8	.75	16 ER 8 API RD	16 IR 8 API RD	.05	.06

Order example: 16 ER 10 API RD BMA

Multitooth





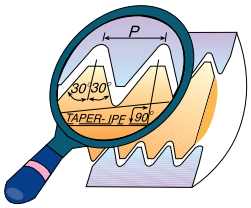
Pitch TPI	L mm	I.C.	Number of Teeth	EXTERNAL Ordering Code	Anvil	INTERNAL Ordering Code	Anvil	X	Y
10	22	1/2	2	22 ER 10API RD 2M	AE22M	22 IR 10API RD 2M	AI22M	.09	.15
10	27	5/8	3	27 ER 10API RD 3M	AE27M	27 IR 10API RD 3M	AI27M	.15	.24
8	27	5/8	2	27 ER 8API RD 2M	AE27M	27 IR 8API RD 2M	AI27M	.12	.18

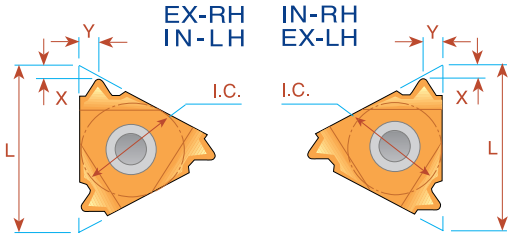
Order example: 27 IR 10 API RD 3M MXC

For recommended number of passes see page A04-4

For carbide grade and cutting speed see page A04-2 and 3

OIL Threads





V-0.040

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

(1) V-0.038R

Pitch TPI	L mm	I.C.	Taper IPF	EXTERNAL Ordering Code Right Hand	INTERNAL Ordering Code Right Hand	X	Y	Connection No. or Size
4	27	5/8	2	27 ER 4 API 382	27 IR 4 API 382	.08	.08	NC23-NC50
4	27	5/8	3	27 ER 4 API 383	27 IR 4 API 383	.08	.11	NC56-NC77
4	22	1/2	2	22 ER 4 API 382	22 IR 4 API 382	.08	.10	NC23-NC50
4	22	1/2	3	22 ER 4 API 383	22 IR 4 API 383	.08	.10	NC56-NC77

Order example: 27 ER 4 API 383 MXC

(1) V-0.050

Pitch TPI	L mm	I.C.	Taper IPF	EXTERNAL Ordering Code Right Hand	INTERNAL Ordering Code Right Hand	X	Y	Connection No. or Size
4	27	5/8	2	27 ER 4 API 502	27 IR 4 API 502	.08	.12	6 5/8 REG
4	27	5/8	3	27 ER 4 API 503	27 IR 4 API 503	.08	.12	5 1/2, 7 5/8, 8 5/8 REG
4	22	1/2	2	22 ER 4 API 502	22 IR 4 API 502	.075	.11	6 5/8 REG
4	22	1/2	3	22 ER 4 API 503	22 IR 4 API 503	.075	.11	5 1/2, 7 5/8, 8 5/8 REG

Order example: 22 ER 4 API 502 BMA

V-0.055

Macaroni Tubing (MT)
American Macaroni Tubing (AMT)
American Mining Macaroni Tubing (AMMT)

Pitch TPI	L mm	I.C.	Taper IPF	EXTERNAL Ordering Code Right Hand	INTERNAL Ordering Code Right Hand	X	Y	Connection No. or Size
6	22	1/2	1.5	22 ER 6 API 551.5	-	.08	.07	NC10,NC12,NC13,NC16
6	16	3/8	1.5	-	16 IR 6 API 551.5	.08	.07	NC10,NC12,NC13 *
6	22	1/2	1.5	-	22 IR 6 API 551.5	.08	.07	NC16 **

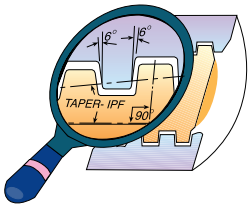
* For NC10,NC12 use holder SIR062516CB
For NC13 use holders SIR0750P16/SIR0750P16B/SIR0750S16CB

** For NC16 use holder SIR1000R22

For Carbide Grade and Cutting Speed see page A04-2 and 3

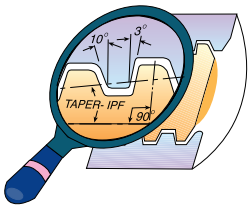
OIL Threads

Extreme - Line Casing



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

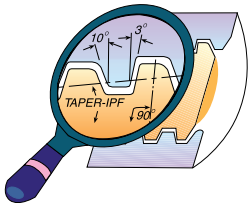
Buttress Casing

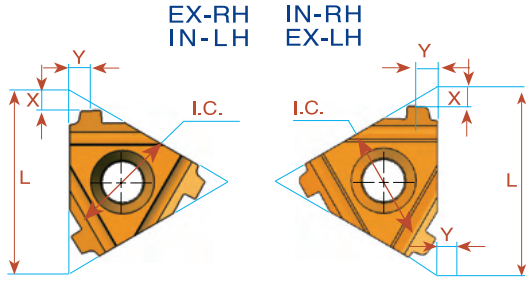


Pitch TPI	L mm	I.C.	Taper IPF	EXTERNAL Ordering Code Right Hand	INTERNAL Ordering Code Right Hand	X	Y	Connection No. or Size
5	22	1/2	.75	22 ER 5 BUT 0.75	22 IR 5 BUT 0.75	.09	.09	4 1/2-13 3/8
5	22	1/2	1.00	22 ER 5 BUT 1.0	22 IR 5 BUT 1.0	.09	.09	16-20

Order example: 22 ER 5 BUT 0.75 MXC

VAM

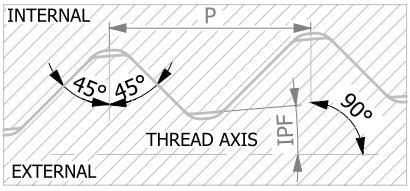


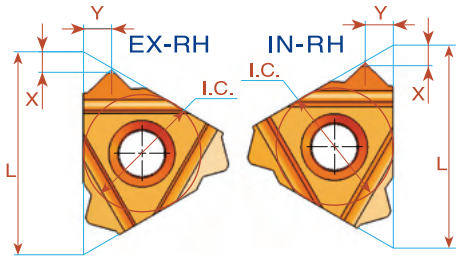


Pitch TPI	L mm	I.C.	Taper IPF	EXTERNAL Ordering Code Right Hand	X	Y	INTERNAL Ordering Code Right Hand	X	Y	Connection No. or Size
8	16	3/8	.75	16 ER 8 VAM	.07	.07	16 IR 8 VAM	.07	.07	2 3/8 - 2 7/8
6	22	1/2	.75	22 ER 6 VAM	.09	.09	22 IR 6 VAM	.10	.10	3 1/2 - 4 1/2
5	22	1/2	.75	22 ER 5 VAM	.09	.11	22 IR 5 VAM	.09	.10	5 - 13 3/8

For carbide grade and cutting speed see page A04-2 and 3

HUGHES

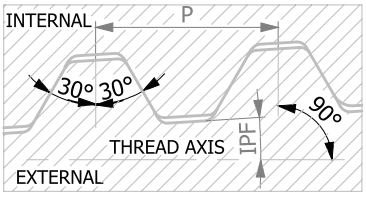


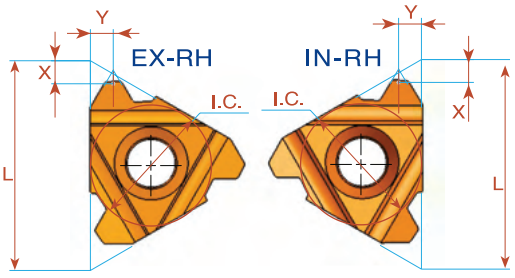


Pitch TPI	L mm	I.C.	Taper IPF	EXTERNAL Ordering Code Right Hand	INTERNAL Ordering Code Right Hand	X	Y	Connection No. or Size
3.5	27	5/8	2	27 ER 3.5 H 902	27 IR 3.5 H 902	.11	.15	3 1/2 - 6 5/8
3.5	27	5/8	3	27 ER 3.5 H 903	27 IR 3.5 H 903	.11	.15	7 - 8 5/8
3	27	5/8	1.25	27 ER 3 SLH 90	27 IR 3 SLH 90	.13	.18	2 3/8 - 3 1/2

Order example: 27 ER 3.5 H-903 BMA

PAC

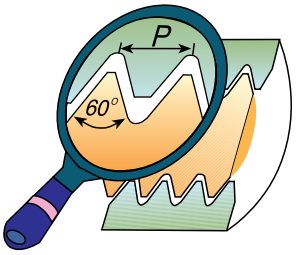


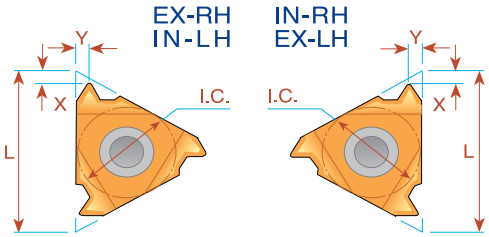


Pitch TPI	L mm	I.C.	Taper IPF	EXTERNAL Ordering Code Right Hand	INTERNAL Ordering Code Right Hand	X	Y	Connection No. or Size
4	22	1/2	1.5	22 ER 4 PAC	22 IR 4 PAC	.09	.09	2 1/2 - 2 7/8
4	27	5/8	1.5	27 ER 4 PAC	27 IR 4 PAC	.09	.09	2 1/2 - 2 7/8

Order example: 22 ER 4 PAC MXC

NPS

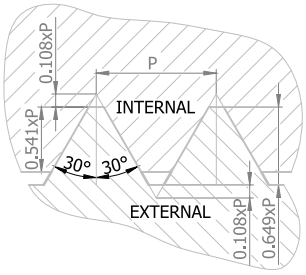


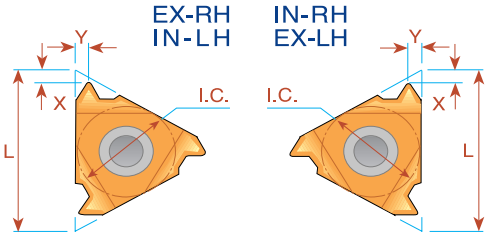


Pitch TPI	L mm	I.C.	EXTERNAL Ordering Code Right Hand	EXTERNAL Ordering Code Left Hand	INTERNAL Ordering Code Right Hand	INTERNAL Ordering Code Left Hand	X	Y
18	16	3/8	16 ER 18 NPS	16 EL 18 NPS	16 IR 18 NPS	16 IL 18 NPS	.03	.04
14	16	3/8	16 ER 14 NPS	16 EL 14 NPS	16 IR 14 NPS	16 IL 14 NPS	.04	.05
11.5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

Order example: 16 ER 18 NPS BMA

NPSM





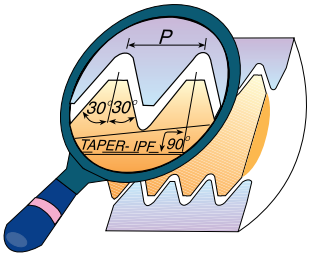
Pitch TPI	L mm	I.C.	EXTERNAL Ordering Code Right Hand	X	Y	INTERNAL Ordering Code Right Hand	X	Y
18	8	3/16				08 IR 18 NPSM	.03	.03
18	11	1/4				11 IR 18 NPSM	.03	.04
18	16	3/8	16 ER 18 NPSM	.03	.04			
14	16	3/8	16 ER 14 NPSM	.04	.05	16 IR 14 NPSM	.04	.05
11.5	16	3/8	16 ER 11.5 NPSM	.05	.06	16 IR 11.5 NPSM	.05	.06
8	16	3/8	16 ER 8 NPSM	.05	.06	16 IR 8 NPSM	.05	.06

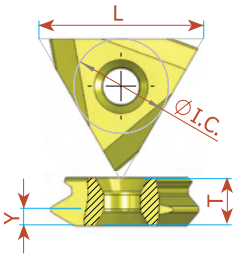
Order example: 16 IR 14 NPSM MXC

For Carbide Grade and Cutting Speed see page A04 - 2-3

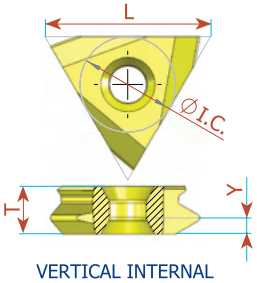
Vertical

API





VERTICAL EXTERNAL



VERTICAL INTERNAL

Thread Form	Pitch TPI	L mm	I.C.	Taper IPF	***EXTERNAL*** Ordering Code	Y	T	Connection No. or Size
V-0.040	5	27	5/8	3	TNMB 54 ER 5 API 403	.10	.25	2 3/8-4 1/2 REG
V-0.038R	4	27	5/8	2	TNMC 55 ER 4 API 382	.11	.31	NC23-NC50
V-0.038R	4	27	5/8	3	TNMC 55 ER 4 API 383	.11	.31	NC56-NC77
V-0.050	4	27	5/8	2	TNMC 55 ER 4 API 502	.12	.31	6 5/8 REG
V-0.050	4	27	5/8	3	TNMC 55 ER 4 API 503	.12	.31	5 1/2, 7 5/8, 8 5/8 REG

Vertical inserts to be used with compatible holders on the market

Order example: TNMC 55 ER 4 API 503 BMA

Thread Form	Pitch TPI	L mm	I.C.	Taper IPF	***INTERNAL*** Ordering Code	Y	T	Connection No. or Size
V-0.040	5	27	5/8	3	TNMB 54 IR 5 API 403	.10	.25	2 3/8-4 1/2 REG
V-0.038R	4	27	5/8	2	TNMC 55 IR 4 API 382	.11	.31	NC23-NC50
V-0.038R	4	27	5/8	3	TNMC 55 IR 4 API 383	.11	.31	NC56-NC77
V-0.050	4	27	5/8	2	TNMC 55 IR 4 API 502	.12	.31	6 5/8 REG
V-0.050	4	27	5/8	3	TNMC 55 IR 4 API 503	.12	.31	5 1/2, 7 5/8, 8 5/8 REG

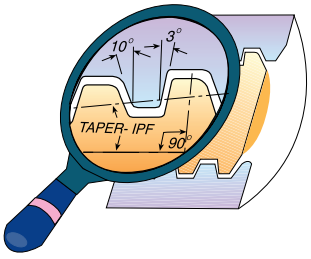
Vertical inserts to be used with compatible holders on the market

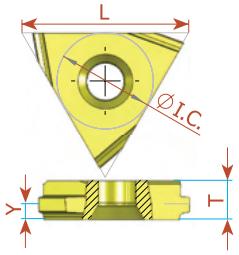
Order example: TNMC 55 IR 4 API 502 BMA

For carbide grade and cutting speed see page A04-2 and 3

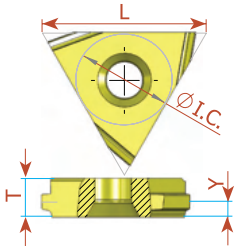
Vertical

API Buttress Casing





VERTICAL EXTERNAL



VERTICAL INTERNAL

Pitch TPI	L mm	I.C.	Taper IPF	***EXTERNAL*** Ordering Code	Y	T	Connection No. or Size
5	27	5/8	.75	TNMB 54 ER 5 BUT 0.75	.9	.25	4 1/2 -13 3/8
5	27	5/8	1.00	TNMB 54 ER 5 BUT 1.0	.9	.25	16-20

Order example: TNMB 54 ER 5 BUT 1.0 BMA

Pitch TPI	L mm	I.C.	Taper IPF	***INTERNAL*** Ordering Code	Y	T	Connection No. or Size
5	27	5/8	.75	TNMB 54 IR 5 BUT 0.75	.9	.25	4 1/2 -13 3/8
5	27	5/8	1.00	TNMB 54 IR 5 BUT 1.0	.9	.25	16-20

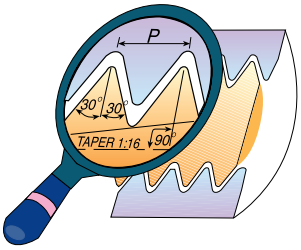
Vertical inserts to be used with compatible holders on the market

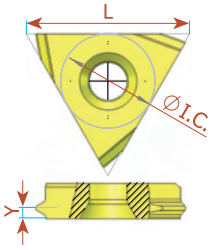
Order example: TNMB 54 IR 5 BUT 0.75 BMA

For carbide grade and cutting speed see page A04-2 and 3

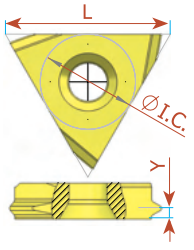
Vertical

API Round





VERTICAL EXTERNAL



VERTICAL INTERNAL

Pitch TPI	L mm	I.C.	Taper IPF	***EXTERNAL*** Ordering Code	Y	T
10	22	1/2	.75	TNMB 43 ER 10 API RD	.057	.19
8	22	1/2	.75	TNMB 43 ER 8 API RD	.065	.19

Order example: TNMB 43 ER 10 API RD BMA

Pitch TPI	L mm	I.C.	Taper IPF	***INTERNAL*** Ordering Code	Y	T
10	22	1/2	.75	TNMB 43 IR 10 API RD	.057	.19
8	22	1/2	.75	TNMB 43 IR 8 API RD	.065	.19

Vertical inserts to be used with compatible holders on the market

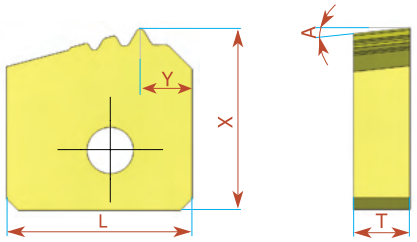
Order example: TNMB 43 IR 8 API RD BMA

For carbide grade and cutting speed see page A04-2 and 3

Carmex Precision Tools Ltd.

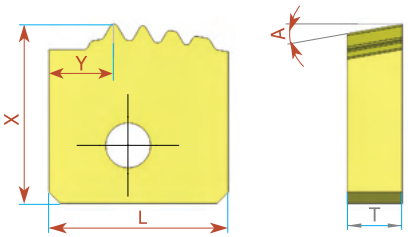
Chasers

API Round



Pitch TPI	L mm	Taper IPF	***EXTERNAL*** Ordering Code	X	Y	T	A	No. of Teeth
10	15.75	.75	15.75 ER 10 API RD 3T	.61	.17	.19	6°	3
8	15.75	.75	15.75 ER 8 API RD 3T	.62	.17	.19	6°	3

Order example: 15.75 ER 10 API RD 3T BMA



Pitch TPI	L mm	Taper IPF	***INTERNAL*** Ordering Code	X	Y	T	A	No. of Teeth
10	15.75	.75	15.75 IR 10 API RD 4T	.62	.22	.19	10°	4
8	15.875	.75	15.875 IR 8 API RD 4T	.62	.165	.19	10°	4

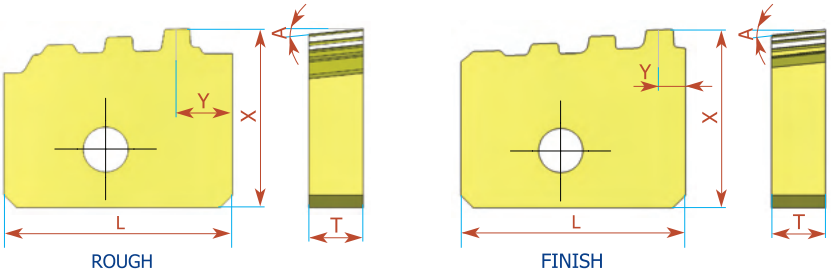
Chasers to be used with compatible holders on the market

Order example: 15.75 IR 10 API RD 4T BMA

For carbide grade see page A04-2

Chasers

API Buttress Casing



Pitch TPI	L mm	Taper IPF	EXTERNAL Ordering Code	X	Y	T	A	No. of Teeth
5	20	.75	20 ER 5 BUT 0.75R	.62	.19	.19	6°	3
5	20	.75	20 ER 5 BUT 0.75F	.625	.09	.19	6°	4

Order example: 20 ER 5 BUT 0.75F BMA

Chasers

OTTM Buttress Casing

Pitch TPI	L mm	Taper IPF	EXTERNAL Ordering Code	X	Y	T	A	No. of Teeth
5	20	.75	20 ER 5 OTTM 0.75R	.62	.19	.19	6°	3
5	20	.75	20 ER 5 OTTM 0.75F	.625	.09	.19	6°	4

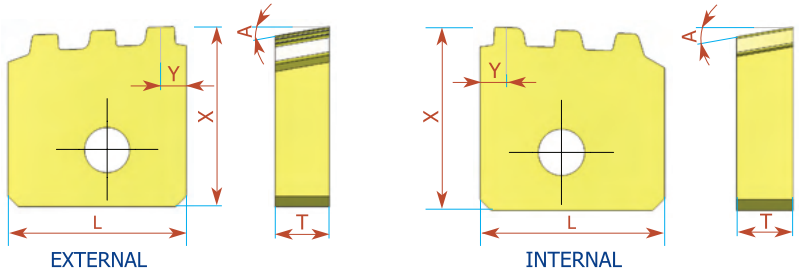
Chasers to be used with compatible holders on the market

Order example: 20 ER 5 OTTM 0.75F BMA

For carbide grade see page A04-2

Chasers

API Buttress Casing



Pitch TPI	L mm	Taper IPF	***EXTERNAL*** Ordering Code	X	Y	T	A	No. of Teeth
5	15.75	.75	15.75 ER 5 BUT 0.75 3T	.625	.09	.19	10°	3

Pitch TPI	L mm	Taper IPF	***INTERNAL*** Ordering Code	X	Y	T	A	No. of Teeth
5	15.875	.75	15.875 IR 5 BUT 0.75 3T	.62	.1	.19	10°	3

Order example: 15.75 ER 5 BUT 0.75 3T BMA

Chasers

OTTM Buttress Casing

Pitch TPI	L mm	Taper IPF	***EXTERNAL*** Ordering Code	X	Y	T	A	No. of Teeth
5	15.75	.75	15.75 ER 5 OTTM 0.75 3T	.62	.12	.19	6°	3

Pitch TPI	L mm	Taper IPF	***INTERNAL*** Ordering Code	X	Y	T	A	No. of Teeth
5	15.875	.75	15.875 IR 5 OTTM 0.75 3T	.625	.10	.19	10°	3

Chasers to be used with compatible holders on the market

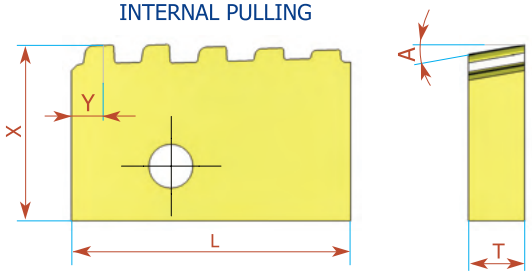
Order example: 15.75 ER 5 OTTM 0.75 3T BMA

For carbide grade see page A04-2

Chasers

API Buttress Casing

INTERNAL PULLING



Pitch TPI	L mm	Taper IPF	***INTERNAL*** Ordering Code	X	Y	T	A	No. of Teeth
5	25	.75	**25 IRP 5 BUT 0.75 5T**	.62	.10	.20	10°	5

Order example: 25 IRP 5 BUT 0.75 5T BMA

Chasers

OTTM Buttress Casing

Pitch TPI	L mm	Taper IPF	***INTERNAL*** Ordering Code	X	Y	T	A	No. of Teeth
5	25	.75	**25 IRP 5 OTTM 0.75 5T**	.62	.10	.20	10°	5

Chasers to be used with compatible holders on the market

Order example: 25 IRP 5 OTTM 0.75 5T BMA

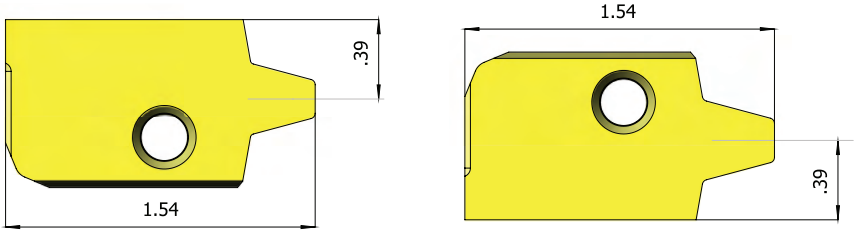
For carbide grade see page A04-2

Large Profile Inserts and Toolholders

- Wide range of pitches
- Rigid clamping
- Tailor made profiles according to customer's request are possible

External Internal

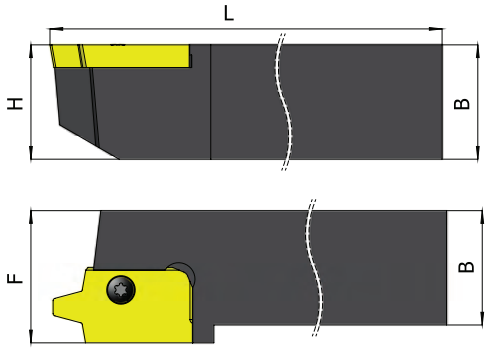
Large profile -Acme



Pitch TPI	Ordering Code EX RH	Holder Code	Ordering Code EX LH	Holder Code	Ordering Code IN RH	Holder Code	Ordering Code IN LH	Holder No.
1 1/2	40 ER 1.5 ACME	AC1	40 EL 1.5 ACME	AC2	40 IR 1.5 ACME	AC6,AC7	40 IL 1.5 ACME	AC5,AC8
1 1/3	40 ER 1.3 ACME	AC1	40 EL 1.3 ACME	AC2	40 IR 1.3 ACME	AC6,AC7	40 IL 1.3 ACME	AC5,AC8
1	40 ER 1 ACME	AC3	40 EL 1 ACME	AC4	40 IR 1 ACME	AC9	40 IL 1 ACME	AC10

Carbide Grade: BMA or MXC

External Holders-Acme



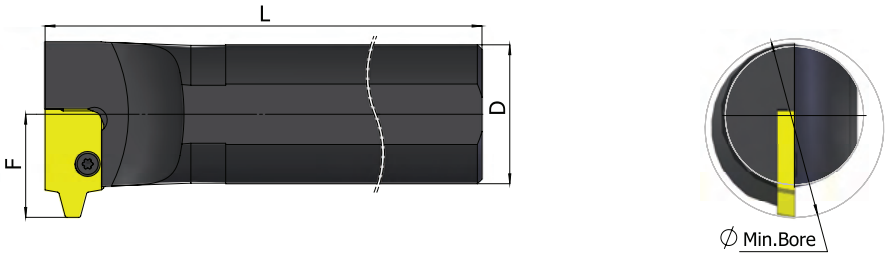
Pitch Range (TPI) 1 1/3-1 1/2 Ordering Code		B=H	L	F	Insert Screw	Torx Screw	Holder No.
EX-RH	SER 1250 P40 AC1	1.25	7	1.25	S40	K40	AC1
EX-LH	SEL 1250 P40 AC2	1.25	7	1.25	S40	K40	AC2

Pitch Range (TPI) 1 Ordering Code		B=H	L	F	Insert Screw	Side Screw	Torx Screw	Holder No.
EX-RH	SER 1250 P40 AC3	1.25	7	1.25	S40	A27	K40	AC3
EX-LH	SEL 1250 P40 AC4	1.25	7	1.25	S40	A27	K40	AC4

Pitch Range (TPI) 1 1/3-1 1/2 Ordering Code		B=H	L	F	Insert Screw	Torx Screw	Holder No.
EX-RH	*SER 1000 M40 AC5	1.00	6	1.25	S40	K40	AC5
EX-LH	*SEL 1000 M40 AC6	1.00	6	1.25	S40	K40	AC6

* toolholders to be used with toolbar provided by the customer

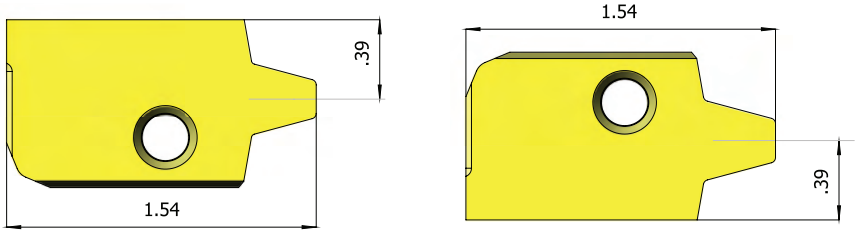
Internal Holders-Acme



Pitch Range (TPI) 1 1/2-1 1/3 Ordering Code		D	Min Bore Diam.	L	F	Insert Screw	Torx Screw	Holder No.
IN-RH	SIR 2000 V40 AC7	2.00	2.56	16	1.44	S40	K40	AC7
IN-LH	SIL 2000 V40 AC8	2.00	2.56	16	1.44	S40	K40	AC8

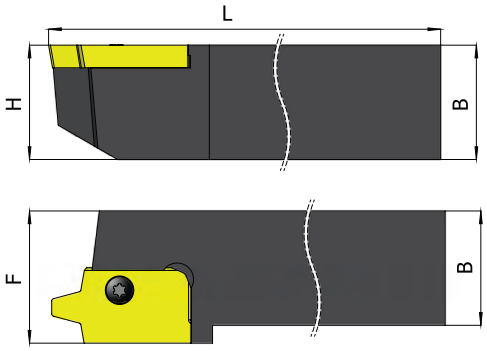
Pitch Range (TPI) 1 Ordering Code		D	Min Bore Diam.	L	F	Insert Screw	Side Screw	Torx Screw	Holder No.
IN-RH	SIR 2000 V40 AC9	2.00	2.75	16	1.58	S40	A27	K40	AC9
IN-LH	SIL 2000 V40 AC10	2.00	2.75	16	1.58	S40	A27	K40	AC10

Large profile- Stub Acme



Pitch TPI	Ordering Code EX RH	Holder Code	Ordering Code EX LH	Holder No.	Ordering Code IN RH	Holder Code	Ordering Code IN LH	Holder No.
1 1/2	40 ER 1.5 STACME	SA1	40 EL 1.5 STACME	SA2	40 IR 1.5 STACME	SA6,SA7	40 IL 1.5 STACME	SA5,SA8
1 1/3	40 ER 1.3 STACME	SA1	40 EL 1.3 STACME	SA2	40 IR 1.3 STACME	SA6,SA7	40 IL 1.3 STACME	SA5,SA8
1	40 ER 1 STACME	SA3	40 EL 1 STACME	SA4	40 IR 1 STACME	SA9	40 IL 1 STACME	SA10

External Holders- Stub Acme



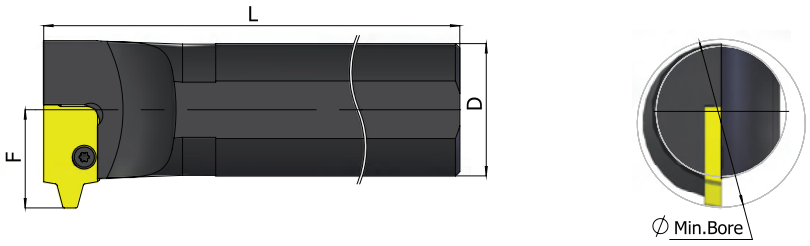
Pitch Range (TPI) 1 1/3 - 1 1/2 Ordering Code		B=H	L	F	Insert Screw	Torx Screw	Holder No.
EX-RH	**SER 1250 P40 SA1**	1.25	7	1.25	S40	K40	SA1
EX-LH	**SEL 1250 P40 SA2**	1.25	7	1.25	S40	K40	SA2

Pitch Range (TPI) 1 Ordering Code		B=H	L	F	Insert Screw	Side Screw	Torx Screw	Holder No.
EX-RH	**SER 1250 P40R SA3**	1.25	7	1.25	S40	A27	K40	SA3
EX-LH	**SEL 1250 P40R SA4**	1.25	7	1.25	S40	A27	K40	SA4

Pitch Range (TPI) 1 1/3 - 1 1/2 Ordering Code		B=H	L	F	Insert Screw	Torx Screw	Holder No.
EX-RH	***SER 1000 M40 SA5**	1.00	6	1.25	S40	K40	SA5
EX-LH	***SEL 1000 M40 SA6**	1.00	6	1.25	S40	K40	SA6

* toolholders to be used with toolbar provided by the customer

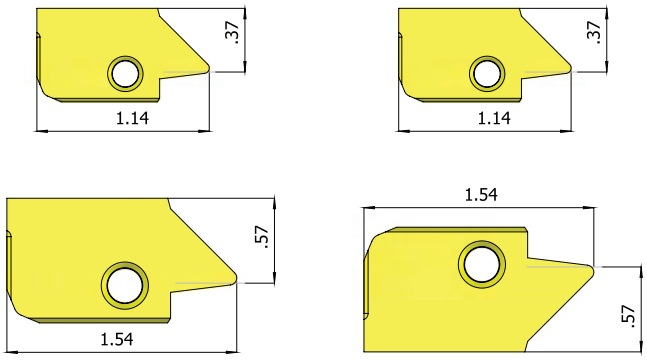
Internal Holders- Stub Acme



Pitch Range (TPI) 1 1/3-1 1/2 Ordering Code		D	Min Bore Diam.	L	F	Insert Screw	Torx Screw	Holder No.
IN-RH	SIR 2000 V40 SA7	2.00	2.36	16	1.26	S40	K40	SA7
IN-LH	SIL 2000 V40 SA8	2.00	2.36	16	1.26	S40	K40	SA8

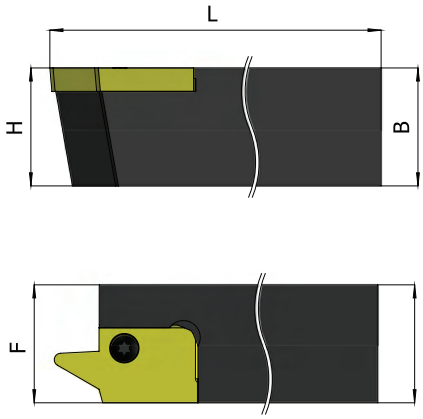
Pitch Range (TPI) 1 Ordering Code		D	Min Bore Diam.	L	F	Insert Screw	Side Screw	Torx Screw	Holder No.
IN-RH	SIR 2000 V40R SA9	2.00	2.44	16	1.34	S40	A27	K40	SA9
IN-LH	SIL 2000 V40R SA10	2.00	2.44	16	1.34	S40	A27	K40	SA10

Large profile -American Buttress



Pitch TPI	Ordering Code EX RH	Holder No.	Ordering Code EX LH	Holder Code	Ordering Code IN RH	Holder No.	Ordering Code IN LH	Holder No.
2 1/2	30 ER 2.5 ABUT	AB1,AB3	30 EL 2.5 ABUT	AB2,AB4	30 IR 2.5 ABUT	AB11	30 IL 2.5 ABUT	AB12
2	40 ER 2 ABUT	AB5,AB7	40 EL 2 ABUT	AB6,AB8	40 IR 2 ABUT	AB13, AB15	40 IL 2 ABUT	AB14, AB16
1 1/2	40 ER 1.5 ABUT	AB9	40 EL 1.5 ABUT	AB10	40 IR 1.5 ABUT	AB17, AB19	40 IL 1.5 ABUT	AB18, AB20
1 1/4	40 ER 1.25 ABUT	AB9	40 EL 1.25 ABUT	AB10	40 IR 1.25 ABUT	AB17, AB19	40 IL 1.25 ABUT	AB18, AB20

External Holders- American Buttress

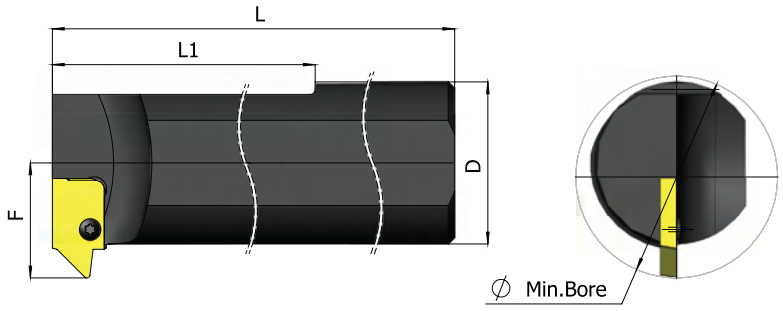


Pitch Range (TPI) 2 1/2 Ordering Code		B=H	L	F	Insert Screw	Torx Screw	Holder No.
EX-RH	**SER 1000 P30 AB1**	1.00	6	1.00	S30	K30	AB1
EX-LH	**SEL 1000 P30 AB2**	1.00	6	1.00	S30	K30	AB2
EX-RH	**SER 1250 P30 AB3**	1.25	7	1.25	S30	K30	AB3
EX-LH	**SEL 1250 P30 AB4**	1.25	7	1.25	S30	K30	AB4

Pitch Range (TPI) 2 Ordering Code		B=H	L	F	Insert Screw	Torx Screw	Holder No.
EX-RH	**SER 1000 M40 AB5**	1.00	6	1.25	S40	K40	AB5
EX-LH	**SEL 1000 M40 AB6**	1.00	6	1.25	S40	K40	AB6
EX-RH	**SER 1250 P40 AB7**	1.25	7	1.25	S40	K40	AB7
EX-LH	**SEL 1250 P40 AB8**	1.25	7	1.25	S40	K40	AB8

Pitch Range (TPI) 1 1/4 - 1 1/2 Ordering Code		B=H	L	F	Insert Screw	Side Screw	Torx Screw	Holder No.
EX-RH	**SER 1250 P40 AB9**	1.25	7	1.25	S40	A27	K40	AB9
EX-LH	**SEL 1250 P40 AB10**	1.25	7	1.25	S40	A27	K40	AB10

Internal Holders- American Buttress



Pitch Range (TPI) 2 1/2 Ordering Code		D	Min Bore Diam.	L	L1	F	Insert Screw	Torx Screw	Holder No.
IN-RH	**SIR 1250 S30 AB11**	1.25	1.57	10	4.72	24	S30	K30	AB11
IN-LH	**SIL 1250 S30 AB12**	1.25	1.57	10	4.72	24	S30	K30	AB12

Pitch Range (TPI) 2 Ordering Code		D	Min Bore Diam.	L	F	Insert Screw	Torx Screw	Holder No.
IN-RH	**SIR 1500 T40 AB13**	1.5	1.97	12	1.1	S40	K40	AB13
IN-LH	**SIL 1500 T40 AB14**	1.5	1.97	12	1.1	S40	K40	AB14
IN-RH	**SIR 2000 U40 AB15**	2.0	2.56	14	1.38	S40	K40	AB15
IN-LH	**SIL 2000 U40 AB16**	2.0	2.56	14	1.38	S40	K40	AB16

Pitch Range (TPI) 1.5-1.25 Ordering Code		D	Min Bore Diam.	L	F	Insert Screw	Side Screw	Torx Screw	Holder No.
IN-RH	**SIR 2000 U40 AB17**	2.0	2.76	14	1.5	S40	A27	K40	AB17
IN-LH	**SIL 2000 U40 AB18**	2.0	2.76	14	1.5	S40	A27	K40	AB18
IN-RH	**SIR 2500 V40 AB19**	2.5	3.23	16	1.77	S40	A27	K40	AB19
IN-LH	**SIL 2500 V40 AB20**	2.5	3.23	16	1.77	S40	A27	K40	AB20

Thread Turning Toolholders and Kits

A02

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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

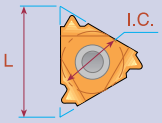
0750=3/4 x 3/4

Internal toolholders & boring bars round shank

0750 = Diam. of 3/4

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

Insert Pocket Size

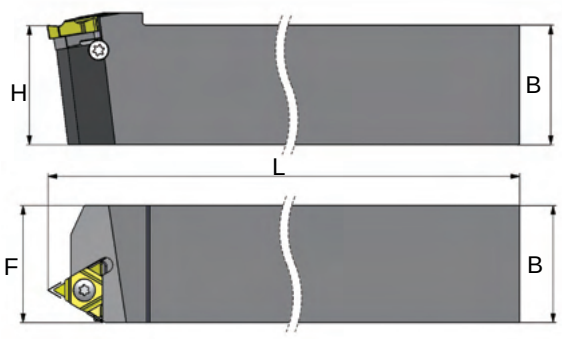


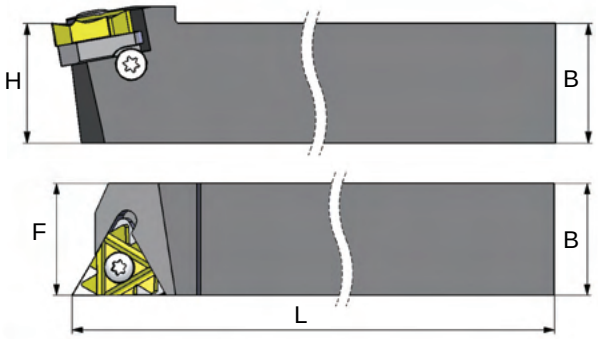
L	I.C.
06	5/32
08	3/16
08U	3/16U
11	1/4
16	3/8
22	1/2
22U	1/2U
27	5/8
27U	5/8U
33U	3/4U

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

External Toolholders

U TYPE





Ordering Code Right Hand	L mm	B=H	L	F	Insert Screw	Anvil Screw	Torx Key	RH Anvil	LH Anvil
*SER 0310 H11	11	.31	4.00	.43	S11	-	K11	-	-
*SER 0375 H11	11	.38	4.00	.43	S11	-	K11	-	-
*SER 0375 M11	11	.38	6.00	.43	S11	-	K11	-	-
*SER 0500 K11	11	.50	5.00	.50	S11	-	K11	-	-
*SER 0500 M11	11	.50	6.00	.50	S11	-	K11	-	-
SER 0375 D16	16	.38	2.50	.63	S16	A16	K16	AE16	AI16
SER 0500 F16	16	.50	3.25	.63	S16	A16	K16	AE16	AI16
SER 0625 H16	16	.63	4.00	.63	S16	A16	K16	AE16	AI16
SER 0750 K16	16	.75	5.00	.75	S16	A16	K16	AE16	AI16
SER 1000 M16	16	1.00	6.00	1.00	S16	A16	K16	AE16	AI16
SER 1250 P16	16	1.25	7.00	1.25	S16	A16	K16	AE16	AI16
SER 1000 M22	22	1.00	6.00	1.00	S22	A22	K22	AE22	AI22
SER 1250 P22	22	1.25	7.00	1.25	S22	A22	K22	AE22	AI22
SER 1500 R22	22	1.50	8.00	1.50	S22	A22	K22	AE22	AI22
SER 1000 M22U	22U	1.00	6.00	1.10	S22	A22	K22	AE22U	AI22U
SER 1250 P22U	22U	1.25	7.00	1.25	S22	A22	K22	AE22U	AI22U
SER 1500 R22U	22U	1.50	8.00	1.50	S22	A22	K22	AE22U	AI22U
SER 1000 M27	27	1.00	6.00	1.25	S27	A27	K27	AE27	AI27
SER 1250 P27	27	1.25	7.00	1.25	S27	A27	K27	AE27	AI27
SER 1500 R27	27	1.50	8.00	1.50	S27	A27	K27	AE27	AI27
SER 1000 M27U	27U	1.00	6.00	1.25	S27	A27	K27	AE27U	AI27U
SER 1250 P27U	27U	1.25	7.00	1.25	S27	A27	K27	AE27U	AI27U
SER 1500 R27U	27U	1.50	8.00	1.50	S27	A27	K27	AE27U	AI27U
SER 1000 M33U	33U	1.00	6.00	1.45	S33	-	K33	-	-
SER 1250 P33U	33U	1.25	7.00	1.45	S33	-	K33	-	-

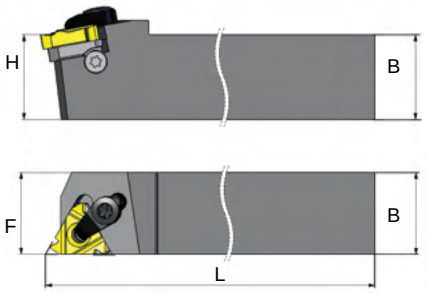
*Toolholders with no anvil

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

Toolholders are made with a **1.5° Helix Angle.** For other Helix Angles please see helix angle chart (page A04-7) in the technical section of this catalog

Thread Turning Toolholders

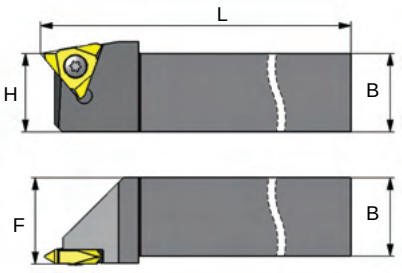
External toolholders with top clamp



Ordering Code Right Hand	L mm	B=H	L	F	Insert Screw	Clamp	Anvil Screw	Torx Key	RH Anvil	LH Anvil
DER 0500 H16	16	.50	4.0	.63	S16	C16	A16S	K16	AE16	AI16
DER 0625 H16	16	.63	4.0	.63	S16	C16	A16S	K16	AE16	AI16
DER 0750 K16	16	.75	5.0	.75	S16	C16	A16S	K16	AE16	AI16
DER 1000 M16	16	1.00	6.0	1.00	S16	C16	A16S	K16	AE16	AI16
*DER 1000 M22	22	1.00	6.0	1.00	S22	C22	A22	K22	AE22	AI22

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

Vertical toolholders



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

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

Slim Throat toolholders

Ordering Code Right Hand	mm	B=H	L	F	Insert Screw	Torx Key
SER 0625 H16VS	16	.63	4.0	.71	S16S	K16
SER 0750 K16VS	16	.75	5.0	.87	S16S	K16
SER 1000 M16VS	16	1.00	6.0	1.06	S16S	K16
SER 1000 M22VS	22	1.00	6.0	1.06	S22S	K22

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

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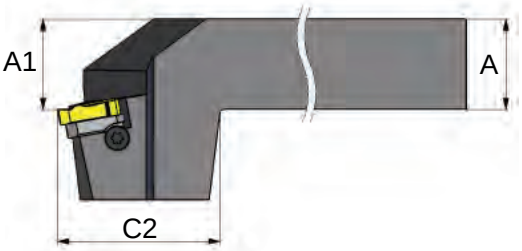
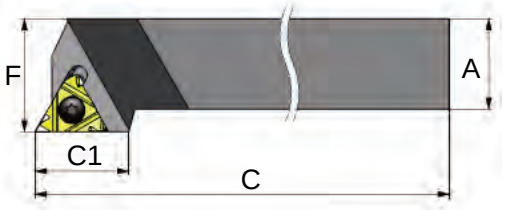
Drophead Toolholders



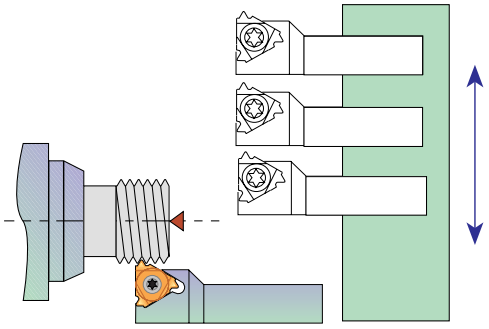


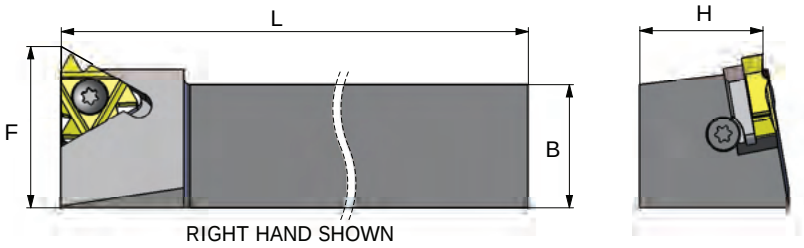
Ordering Code Right Hand	L mm	A	A1	C	C1	F	C2	Insert Screw	Anvil Screw	Torx Key	RH Anvil	LH Anvil
SER 0750 K16D	16	.75	.75	5.0	.84	1.00	1.5	S16	A16	K16	AE16	AI16
SER 1000 M16D	16	1.00	1.00	6.0	.84	1.25	1.5	S16	A16	K16	AE16	AI16
SER 1000 M22D	22	1.00	1.00	6.0	1.00	1.25	1.5	S22	A22	K22	AE22	AI22

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

Gang Toolholders

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





Ordering Code Right Hand	L mm	B=H mm	L	F	Insert Screw	Anvil Screw	Torx Key	RH Anvil	LH Anvil
*SER 8 8 H11G	11	8	3.9	.47	S11	-	K11	-	-
*SER 10 10 H11G	11	10	3.9	.55	S11	-	K11	-	-
SER 16 16 K16G	16	16	4.9	.85	S16	A16	K16	AE16	AI16
SER 20 20 K16G	16	20	4.9	1.03	S16	A16	K16	AE16	AI16

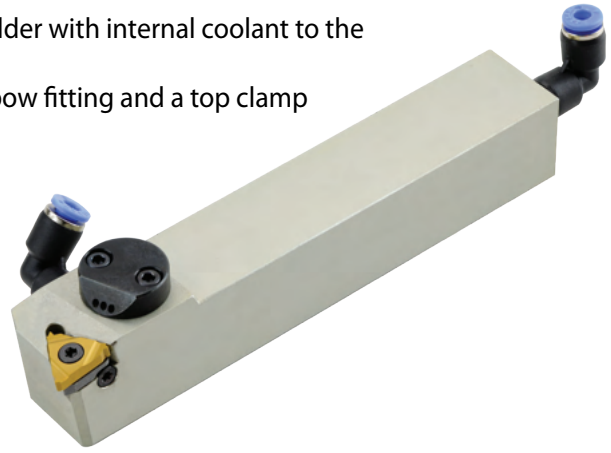
*Toolholders with no anvil

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

X-tream Jet

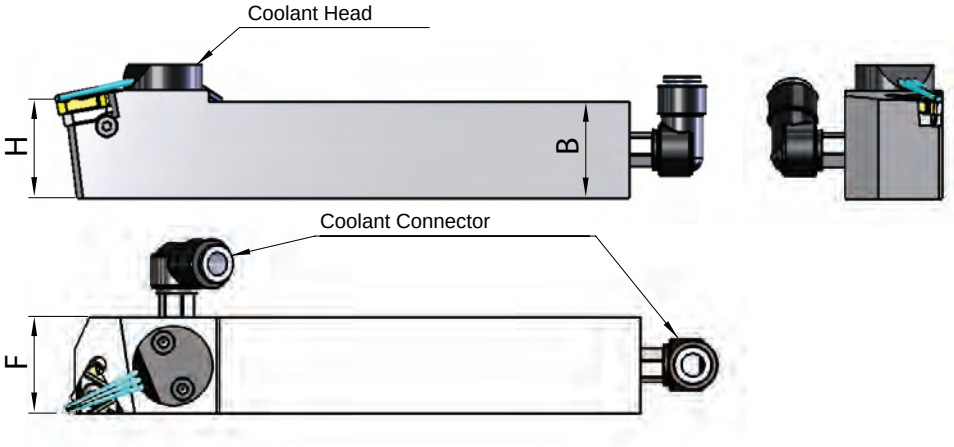
External Toolholder with Internal Coolant

Carmex has developed a unique external thread turning holder with internal coolant to the cutting edge.
The holder includes two connecting options through an elbow fitting and a top clamp directing the coolant flow to the cutting edge.



The coolant flow provides:

- Better chip control, and chip flow
- Longer tool life and high performance
- Reduces the cutting edge temperature
- Available RH and LH tool holders
- Coated holders provide abrasive resistance

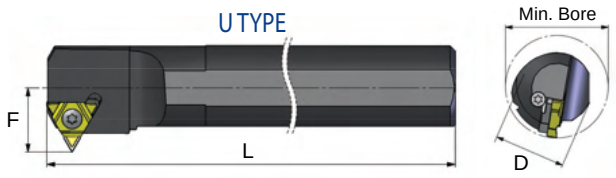


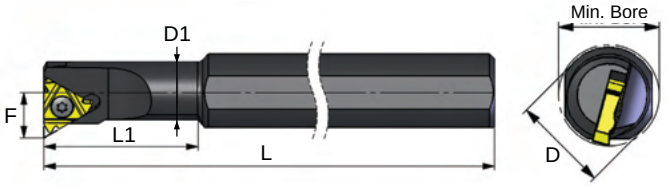
Ordering Code	L mm	B=H	L	F	Torx + Insert Screw	Torx + Anvil Screw	Torx + Key	RH Anvil	LH Anvil	Coolant* Connector mm
SER 0625 H16B	16	.63	4.0	.63	S16P	A16P	K16P	AE16	AI16	Ø4 / Ø6
SER 0750 K16B	16	.75	5.0	.75	S16P	A16P	K16P	AE16	AI16	Ø4 / Ø6
SER 1000 M16B	16	1.00	6.0	1.00	S16P	A16P	K16P	AE16	AI16	Ø4 / Ø6
SER 1000 M22B	22	1.00	6.0	1.00	S22P	A22P	K22P	AE22	AI16	Ø4 / Ø6
SER 1000 M27B	27	1.00	6.0	1.25	S27P	A27P	K27P	AE27	AI27	Ø4 / Ø6
SER 1250 P16B	16	1.25	7.0	1.25	S16P	A16P	K16P	AE16	AI16	Ø4 / Ø6
SER 1250 P22B	22	1.25	7.0	1.25	S22P	A22P	K22P	AE22	AI22	Ø4 / Ø6
SER 1250 P27B	27	1.25	7.0	1.25	S27P	A27P	K27P	AE27	AI27	Ø4 / Ø6

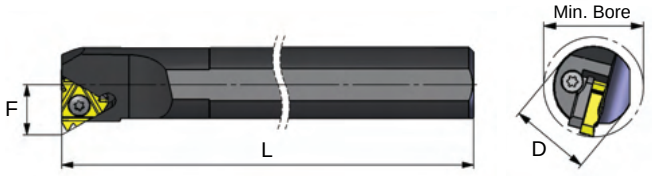
For **LEFT HAND** toolholders specify SE**L** instead of SE**R**
Toolholders made with 1.5^{0} helix angle
Please consult the helix angle chart page A04-7 in the technical section of this catalog
* Standard packing with ø6 mm

Carmex Precision Tools Ltd.

Internal Toolholders







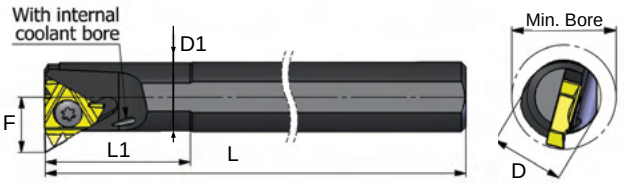
Ordering Code Right Hand	L mm	D	D1	Min Bore Diam.	L	L1	F	Insert Screw	Anvil Screw	Torx Key	RH Anvil	LH Anvil
*SIR 0205 H06	6	.50	.20	.24	4.0	.47	.17	S06	-	K06	-	-
*SIR 0265 K08	8	.62	.26	.31	5.0	.70	.21	S08	-	K08	-	-
*SIR 0310 K08U	8U	.62	.29	.35	5.0	.83	.26	S08	-	K08	-	-
*SIR 0375 H11	11	.38	.38	.47	4.0	-	.28	S11	-	K11	-	-
*SIR 0375 K11	11	.62	.38	.47	5.0	1.00	.28	S11	-	K11	-	-
*SIR 0500 L11	11	.62	.50	.58	5.5	1.25	.34	S11	-	K11	-	-
*SIR 0500 M16	16	.62	.50	.64	6.0	1.25	.39	S16S	-	K16	-	-
*SIR 0625 P16	16	.75	.62	.75	7.0	1.57	.45	S16S	-	K16	-	-
SIR 0750 P16	16	.75	.75	.90	7.0	-	.51	S16	A16	K16	AI16	AE16
SIR 1000 R16	16	1.00	1.00	1.16	8.0	-	.65	S16	A16	K16	AI16	AE16
SIR 1250 S16	16	1.25	1.25	1.40	10.0	-	.77	S16	A16	K16	AI16	AE16
SIR 1500 T16	16	1.50	1.50	1.65	12.0	-	.90	S16	A16	K16	AI16	AE16
SIR 2000 U16	16	2.00	2.00	2.30	14.0	-	1.20	S16	A16	K16	AI16	AE16
*SIR 0750 P22	22	.75	.75	.90	7.0	-	.59	S22S	-	K22	-	-
SIR 1000 R22	22	1.00	1.00	1.16	8.0	-	.71	S22	A22	K22	AI22	AE22
SIR 1250 S22	22	1.25	1.25	1.50	10.0	-	.85	S22	A22	K22	AI22	AE22
SIR 1500 T22	22	1.50	1.50	1.75	12.0	-	.98	S22	A22	K22	AI22	AE22
SIR 2000 U22	22	2.00	2.00	2.25	14.0	-	1.25	S22	A22	K22	AI22	AE22
SIR 1250 S22U	22U	1.25	1.25	1.50	10.0	-	.95	S22	A22	K22	AI22U	AE22U
SIR 1500 T22U	22U	1.50	1.50	1.75	12.0	-	1.08	S22	A22	K22	AI22U	AE22U
SIR 1250 S27	27	1.25	1.25	1.56	10.0	-	.88	S27	A27	K27	AI27	AE27
SIR 1500 T27	27	1.50	1.50	1.80	12.0	-	1.00	S27	A27	K27	AI27	AE27
SIR 2000 U27	27	2.00	2.00	2.30	14.0	-	1.25	S27	A27	K27	AI27	AE27
SIR 2500 V27	27	2.50	2.50	2.80	16.0	-	1.50	S27	A27	K27	AI27	AE27
SIR 1250 S27U	27U	1.25	1.25	1.56	10.0	-	1.00	S27	A27	K27	AI27U	AE27U
SIR 1500 T27U	27U	1.50	1.50	1.80	12.0	-	1.13	S27	A27	K27	AI27U	AE27U
SIR 2000 U27U	27U	2.00	2.00	2.30	14.0	-	1.37	S27	A27	K27	AI27U	AE27U
SIR 2500 V27U	27U	2.50	2.50	2.80	16.0	-	1.61	S27	A27	K27	AI27U	AE27U
*SIR 2000 U33U	33U	2.00	2.00	2.50	14.0	-	1.50	S33	-	K33	-	-

*Toolholders with no anvil

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

Toolholders are made with a **1.5˚ Helix Angle.** For other Helix Angles
please consult helix angle chart (page A04-7) in the technical section of this catalog.
For "U" type inserts Tr,Acme,Stub Acme ,see our software or contact main office for holder use.

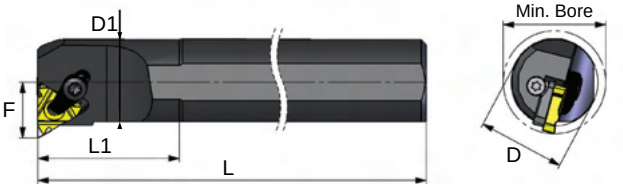
Internal toolholders with Coolant Bore



Ordering Code Right Hand	L mm	D	D1	Min Bore Diam.	L	L1	F	Insert Screw	Anvil Screw	Torx Key	RH Anvil	LH Anvil
*SIR 0375 K11B	11	.62	.38	.47	5.0	.98	.28	S11	-	K11	-	-
*SIR 0500 M16B	16	.62	.50	.64	6.0	1.26	.39	S16S	-	K16	-	-
*SIR 0625 P16B	16	.75	.63	.75	7.0	1.57	.45	S16S	-	K16	-	-
SIR 0750 P16B	16	.75	.75	.90	7.0	-	.90	S16	A16	K16	AI16	AE16
SIR 1000 R16B	16	1.00	1.00	1.16	8.0	-	.65	S16	A16	K16	AI16	AE16
SIR 1000 R22B	22	1.00	1.00	1.16	8.0	-	.71	S22	A22	K22	AI22	AE22
SIR 1225 S16B	16	1.25	1.25	1.4	10.0	-	.77	S16	A16	K16	AI16	AE16

*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 see helix angle chart (page A04-7) in the technical section of this catalog.

Internal toolholders with Top Clamp



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

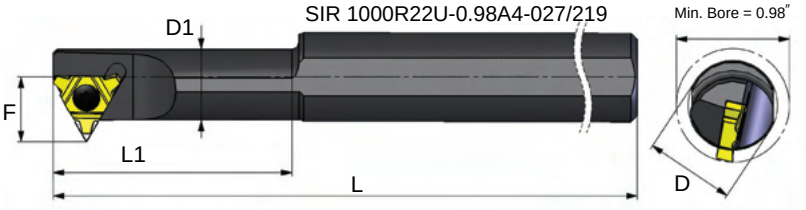
For **LEFT HAND** toolholders specify DI**L** instead of DI**R**
Two clamping methods can be used: screw or top clamp.
*Use K21 torx key for C22 clamp

Toolholders with 3.5˚ Helix Angle

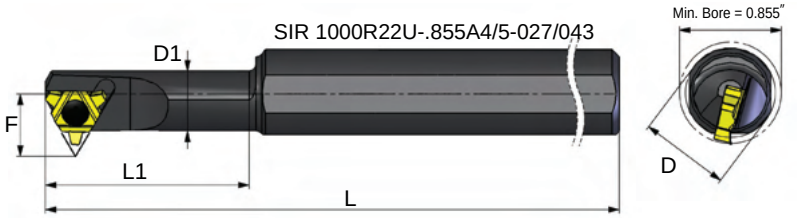
Ordering Code Right Hand	L mm	D mm	D1	Min Bore Diam.	L	L1	F	Insert Screw	Torx Key
SIR 0016 P16B-3.5	16	20	.630	.748	6.7	1.58	.540	S16S	K16
SIR 0020 P22B-3.5	22	20	.787	.945	6.7	-	.614	S22S	K22

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

Special Thread Turning Applications



*TO BE USED WITH CARMEX STANDARD 22UIRL4ACME



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

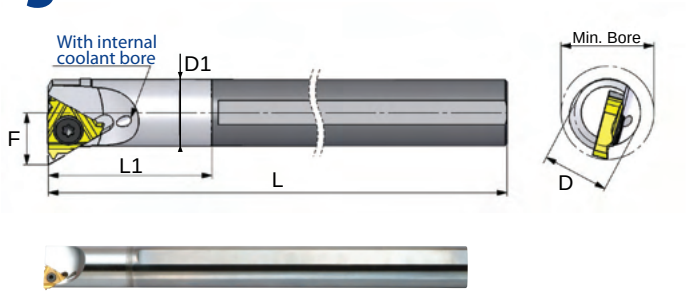
Ordering Code Right Hand	mm	D	D1	L	L1	F	Thread	Insert Screw	Torx Key
*SIR 0354 K08	8	.63	.34	5.0	1.18	.25	1/2 - 13UNC	S08	K08
SIR 1000 R22U-0.98A4-027/219	22U	1.00	.79	8.0	2.75	.72	———	S22	K22
SIR 1000 R22U-855A4/5-027/043	22U	1.00	.67	8.0	2.00	.70	———	S22	K22

For LH holders call Carmex
* Only right hand available

Carbide Shank Threading Bars

With coolant bore

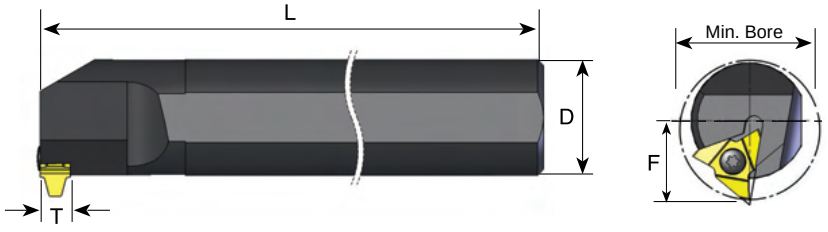
Carbide Shank Threading Bars are used when Chatter and deflection are expected due to long overhang in deep small bores.



Ordering Code Right Hand	L mm	D	D1	Min Bore Diam.	L	L1	F	Insert Screw	Anvil Screw	Torx Key	RH Anvil	LH Anvil
SIR 0205 H06CB	6	.25	.20	.24	4.0	1.02	.17	S06	-	K06	-	-
SIR 0265 K08CB	8	.31	.26	.31	5.0	1.22	.21	S08	-	K08	-	-
SIR 0310 K08UCB	8U	.31	.29	.35	5.0	1.38	.26	S08	-	K08	-	-
SIR 0375 M11CB	11	.38	.38	.47	6.0	-	.28	S11	-	K11	-	-
SIR 0500 P11CB	11	.50	.50	.58	7.0	-	.34	S11	-	K11	-	-
SIR 0500 P16CB	16	.50	.50	.64	7.0	-	.40	S16S	-	K16	-	-
SIR 0625 R16CB	16	.62	.62	.75	8.0	-	.46	S16S	-	K16	-	-
*SIR 0750 S16CB	16	.75	.75	.90	10.0	-	.54	S16	A16	K16	AI16	AE16
*SIR 1000 S16CB	16	1.00	1.00	1.10	10.0	-	.64	S16	A16	K16	AI16	AE16
SIR 0750 S22CB	22	.75	.76	.95	10.0	4.00	.61	S22	-	K22	-	-

* Carbide shank Threading bars with anvil
** Helix angle: 3.5˚
For **LEFT HAND** toolholders specify SI**L** instead of SI**R**

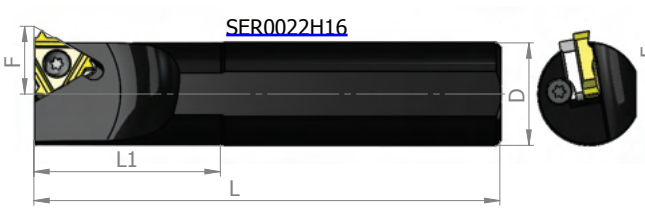
Vertical Toolholders

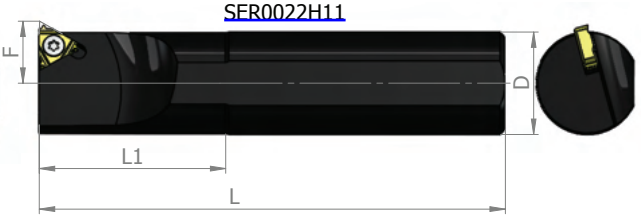


Ordering Code Right Hand	L mm	D	* Min Bore Diam.	L	F	T	Insert Screw	Torx Key
SIR 1250 S27V-T10	27	1.25	1.65	10	.94	.41	S27	K27
SIR 1500 T27V-T10	27	1.5	1.80	12	1.05	.41	S27	K27
SIR 2000 U27V-T10	27	2.0	2.32	14	1.31	.41	S27	K27
SIR 2500 V27V-T10	27	2.5	2.85	16	1.51	.41	S27	K27

* To be compared with given minimum bore profile.
For **LEFT HAND** toolholders specify SI**L** instead of SI**R**

Star Tolholders





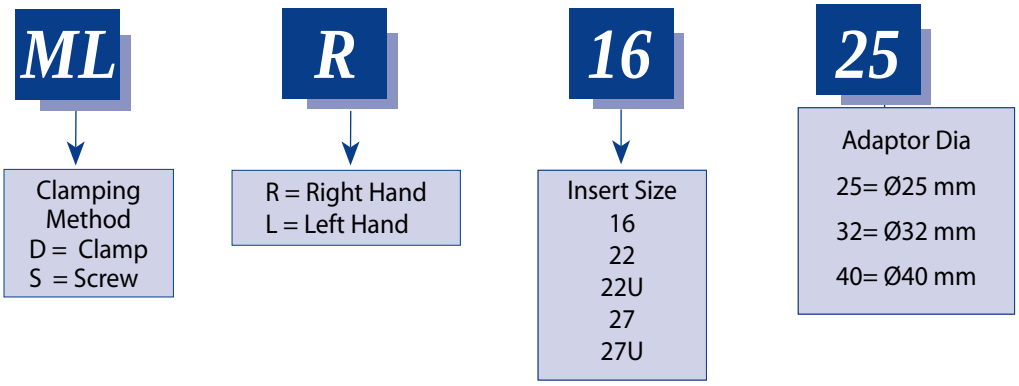
Ordering Code Right Hand	L	D mm	L	L1	F	Insert Screw	Anvil Screw	Torx Key	RH Anvil	LH Anvil
SER 0022 H11	11	22	3.94	1.57	.52	S11	-	K11	-	-
SER 0022 H16	16	22	3.94	1.57	.52	S16	A16	K16	AE16	AI16

High pressure coolant

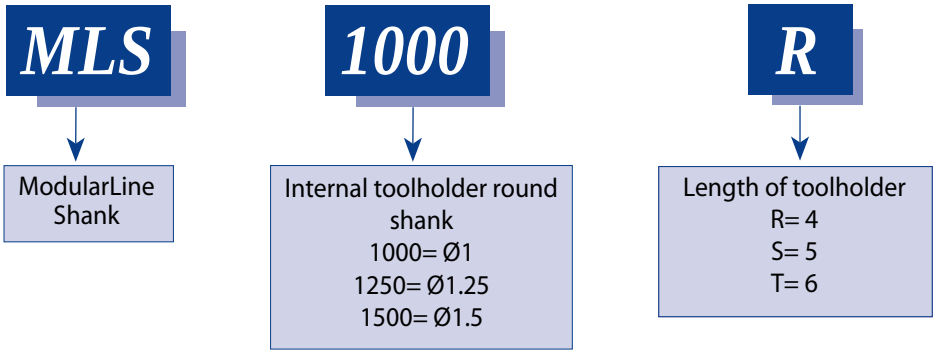
The boring bars and the ML adaptors are design with internal coolant allowing a high pressure up to 120 Bar.
A high pressure coolant helps to reduce the cutting edge temperature, provides a better chip evacuation and improves the insert tool life.
The tools can be used also with normal coolant pressure available on the customer machine.

Product Identification

Ordering Codes: ML Turning adaptors



Ordering Codes: Boring Bars



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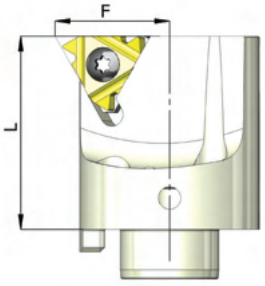
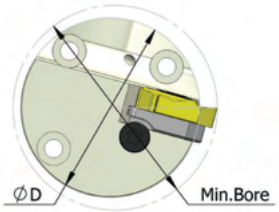
ML Turning adaptors



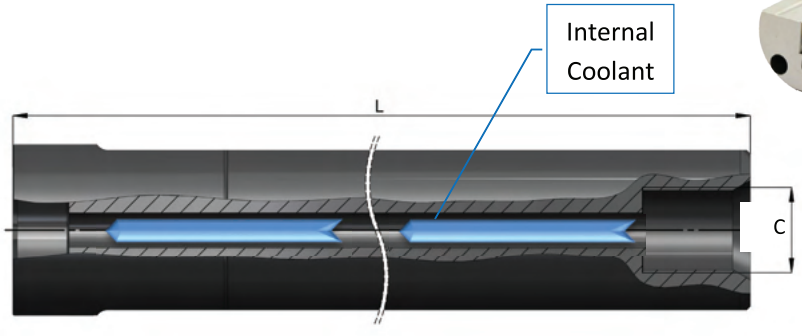


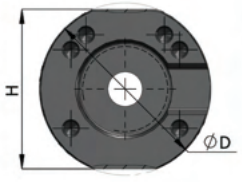
D	Ordering Code Right Hand	L	I.C.	Min Bore Diam.	L	F	Insert Screw Torx+	Anvil Screw Torx+	Torx+ key	RH Anvil	LH Anvil
25	*MLR 16-25	16	3/8	1.14	1.2	.65	S16P	---	K16P	---	---
25	*MLR 22-25	22	1/2	1.22	1.2	.71	S22P	---	K22P	---	---
32	MLR 16-32	16	3/8	1.42	1.7	.78	S16P	A16P	K16P	AI16	AE16
32	MLR 22-32	22	1/2	1.50	1.7	.85	S22P	A22P	K22P	AI22	AE22
32	MLR 22U-32	22U	1/2U	1.62	1.7	.96	S22P	A22P	K22P	AI22U	AE22U
40	MLR 16-40	16	3/8	1.73	1.7	.93	S16P	A16P	K16P	AI16	AE16
40	MLR 22-40	22	1/2	1.81	1.7	1.01	S22P	A22P	K22P	AI22	AE22
40	MLR 22U-40	22U	1/2U	1.81	1.7	1.12	S22P	A22P	K22P	AI22U	AE22U
40	MLR 27-40	27	5/8	1.90	1.7	1.05	S27P	A27P	K27P	AI27	AE27
40	MLR 27U-40	27U	5/8U	1.90	1.7	1.16	S27P	A27P	K27P	AI27U	AE27U

*Toolholders with no anvil

For left hand specify MLL… instead of MLR…

Boring Bars



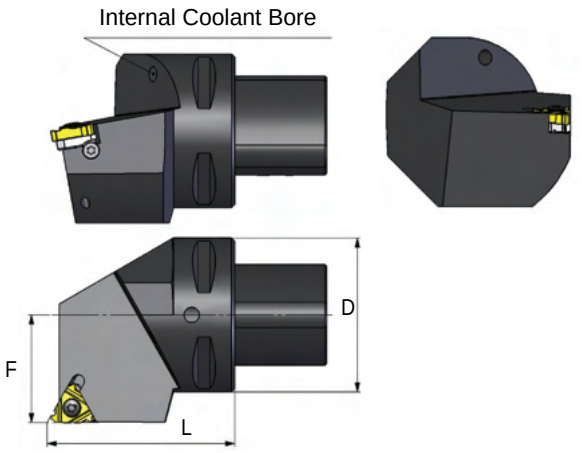


D	Ordering Code	L	H	C	Screw	Key
1.00	MLS 1000 R	8.0	.905	1/4 - 18NPT	S420, S435	K3
1.25	MLS 1250 S	10.0	1.12	3/8 - 18NPT	S520, S550	K4
1.50	MLS 1500 T	12.0	1.34	1/2 - 14NPT	S520, S550	K4

Thread Turning Toolholders

- Polygon shank
- ISO standard (26623) compliant for toolholding systems
- Polygon taper ensures automatic radial centering and even pressure around the coupling
- ISO standard coupling system with a 1.4 degree tapered polygon shank design enables quick tool changes
- Interchangeable with leading manufacturers

External Toolholders

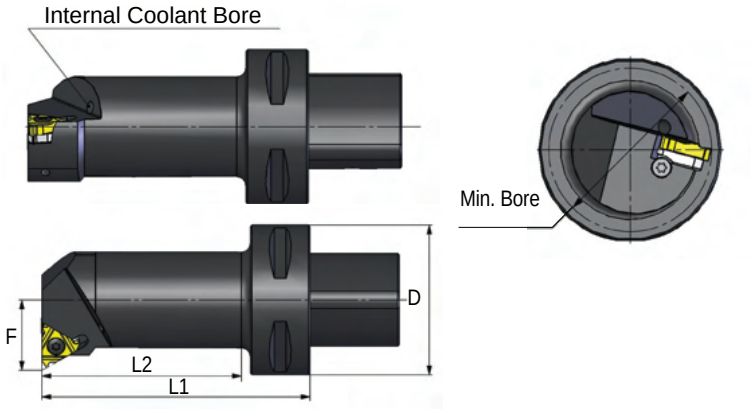


Equivalent to...	Ordering Code	mm	D mm	F	L	Insert Screw	Anvil Screw	Torx key	RH Anvil	LH Anvil
C4	P40-SER 27050-16	16	40	1.06	2.0	S16	A16	K16	AE16	AI16
C5	P50-SER 35060-16	16	50	1.38	2.4	S16	A16	K16	AE16	AI16
C6	P63-SER 45065-16	16	63	1.77	2.6	S16	A16	K16	AE16	AI16
C4	P40-SER 27050-22	22	40	1.06	2.0	S22	A22	K22	AE22	AI22
C5	P50-SER 35060-22	22	50	1.38	2.4	S22	A22	K22	AE22	AI22
C6	P63-SER 45065-22	22	63	1.77	2.6	S22	A22	K22	AE22	AI22
C8	P80-SER 55080-16	16	80	2.17	3.1	S16	A16	K16	AE16	AI16
C8	P80-SER 55080-22	22	80	2.17	3.1	S22	A22	K22	AE22	AI22
C6	P63-SER 45065-27	27	63	1.772	2.6	S27	A27	K27	AE27	AI27

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

Carmex Precision Tools Ltd.

Internal Toolholders

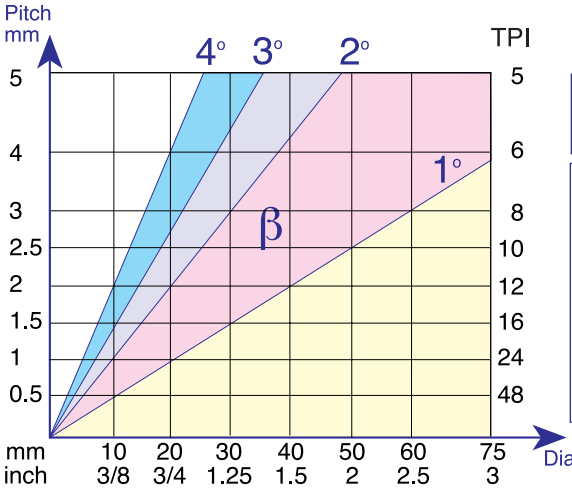


Equivalent to...	Ordering Code	mm	D mm	F	Min. Bore Dia.	L1	L2	Insert Screw	Anvil Screw	Torx key	RH Anvil	LH Anvil
C4	* P40-SIR 12060-16	16	40	.46	.79	2.36	1.46	S16	-	K16	-	-
	P40-SIR 14060-16	16	40	.53	.98	2.36	1.50	S16	A16	K16	AI16	AE16
	P40-SIR 17070-16	16	40	.63	1.14	2.76	1.89	S16	A16	K16	AI16	AE16
	P40-SIR 22090-16	16	40	.77	1.42	3.54	2.72	S16	A16	K16	AI16	AE16
	P40-SIR 27080-16	16	40	.93	1.73	3.15	2.36	S16	A16	K16	AI16	AE16
C5	* P50-SIR 12060-16	16	50	.46	.79	2.36	1.38	S16	-	K16	-	-
	P50-SIR 14060-16	16	50	.53	.98	2.36	1.42	S16	A16	K16	AI16	AE16
	P50-SIR 17070-16	16	50	.63	1.14	2.76	1.85	S16	A16	K16	AI16	AE16
	P50-SIR 22090-16	16	50	.77	1.42	3.54	2.68	S16	A16	K16	AI16	AE16
	P50-SIR 27105-16	16	50	.93	1.73	4.13	3.31	S16	A16	K16	AI16	AE16
C6	P63-SIR 14070-16	16	63	.53	.984	2.76	1.65	S16	A16	K16	AI16	AE16
	P63-SIR 17075-16	16	63	.63	1.14	2.95	1.89	S16	A16	K16	AI16	AE16
	P63-SIR 22090-16	16	63	.77	1.50	3.54	2.52	S16	A16	K16	AI16	AE16
	P63-SIR 27105-16	16	63	.93	1.81	4.13	3.15	S16	A16	K16	AI16	AE16
C4	* P40-SIR 15065-22	22	40	.61	.98	2.56	1.65	S22	-	K22	-	-
	P40-SIR 19070-22	22	40	.70	1.14	2.76	1.89	S22	A22	K22	AI22	AE22
	P40-SIR 22090-22	22	40	.84	1.50	3.54	2.72	S22	A22	K22	AI22	AE22
	P40-SIR 27080-22	22	40	1.00	1.81	3.15	2.36	S22	A22	K22	AI22	AE22
C5	* P50-SIR 15065-22	22	50	.61	.98	2.56	1.61	S22	-	K22	-	-
	P50-SIR 19070-22	22	50	.70	1.14	2.76	1.85	S22	A22	K22	AI22	AE22
	P50-SIR 22090-22	22	50	.84	1.50	3.54	2.68	S22	A22	K22	AI22	AE22
	P50-SIR 27105-22	22	50	1.00	1.81	4.13	3.31	S22	A22	K22	AI22	AE22
C6	P63-SIR 19075-22	22	63	.70	1.14	2.95	1.89	S22	A22	K22	AI22	AE22
	P63-SIR 22090-22	22	63	.84	1.47	3.54	2.52	S22	A22	K22	AI22	AE22
	P63-SIR 27105-22	63	63	1.00	1.81	4.13	3.15	S22	A22	K22	AI22	AE22

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

* Holders without anvil

Thread Helix Angle



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

Simplified formula

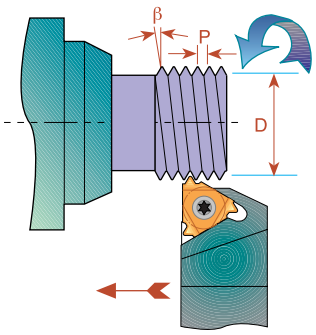
$\beta = 20P/D$

Example:

D = 1.18

P = 16 TPI

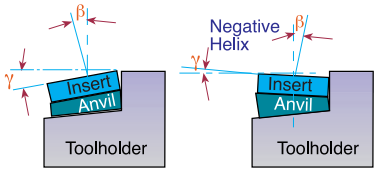
$$\beta = \frac{20}{16 \times 1.18} = 1^{\circ}$$



Standard and Slanted Anvils

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

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



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

Anvil Kits

5 AE and 5 AI anvils with various helix angles

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

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

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

Standard Kits

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

External UN Kit Ordering Code:KEU

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

Internal UN Kit Ordering Code:KIU

INSERTS
16 IR A60 P25C
16 IR G60 P25C
16 IR AG60 P25C
16 IR 8 UN P25C
16 IR 12 UN P25C
16 IR 14 UN P25C
16 IR 16 UN P25C
16 IR 18 UN P25C
16 IR 20 UN P25C
16 IR 24 UN P25C
TOOLHOLDERS
SIR 0750 P16
KEY
K16
SCREW
S16

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

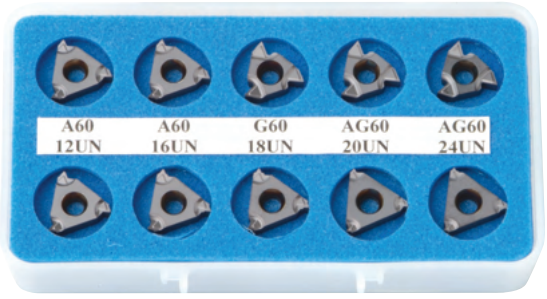
Miniature & Ultra-miniature Kits

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

Inserts Kits

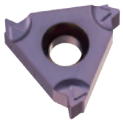
Type B Kits

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



EXTERNAL UN KIT
KEUB - BMA

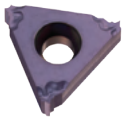
16 ER B	A60	BMA-2 Pcs
16 ER B	G60	BMA-1 Pcs
16 ER B	AG60	BMA-2 Pcs
16 ER B 12 UN		BMA-1 Pcs
16 ER B 16 UN		BMA-1 Pcs
16 ER B 18 UN		BMA-1 Pcs
16 ER B 20 UN		BMA-1 Pcs
16 ER B 24 UN		BMA-1 Pcs



EX-RH

INTERNAL UN KIT
KIUB - BMA

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



IN-RH

Standard Inserts Kits

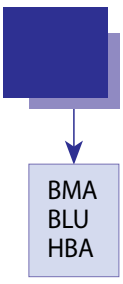
EXTERNAL ISO KIT

16 ER 1.0	ISO-2 Pcs	
16 ER 1.25	ISO-2 Pcs	
16 ER 1.5	ISO-2 Pcs	
16 ER 1.75	ISO-2 Pcs	
16 ER 2.0	ISO-2 Pcs	

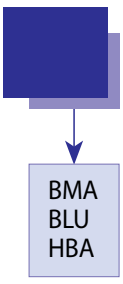
INTERNAL ISO KIT

16 IR 1.0	ISO-2 Pcs	
16 IR 1.25	ISO-2 Pcs	
16 IR 1.5	ISO-2 Pcs	
16 IR 1.75	ISO-2 Pcs	
16 IR 2.0	ISO-2 Pcs	

Ordering Code: KEM



Ordering Code: KIM



Threading & Boring Combination Kit

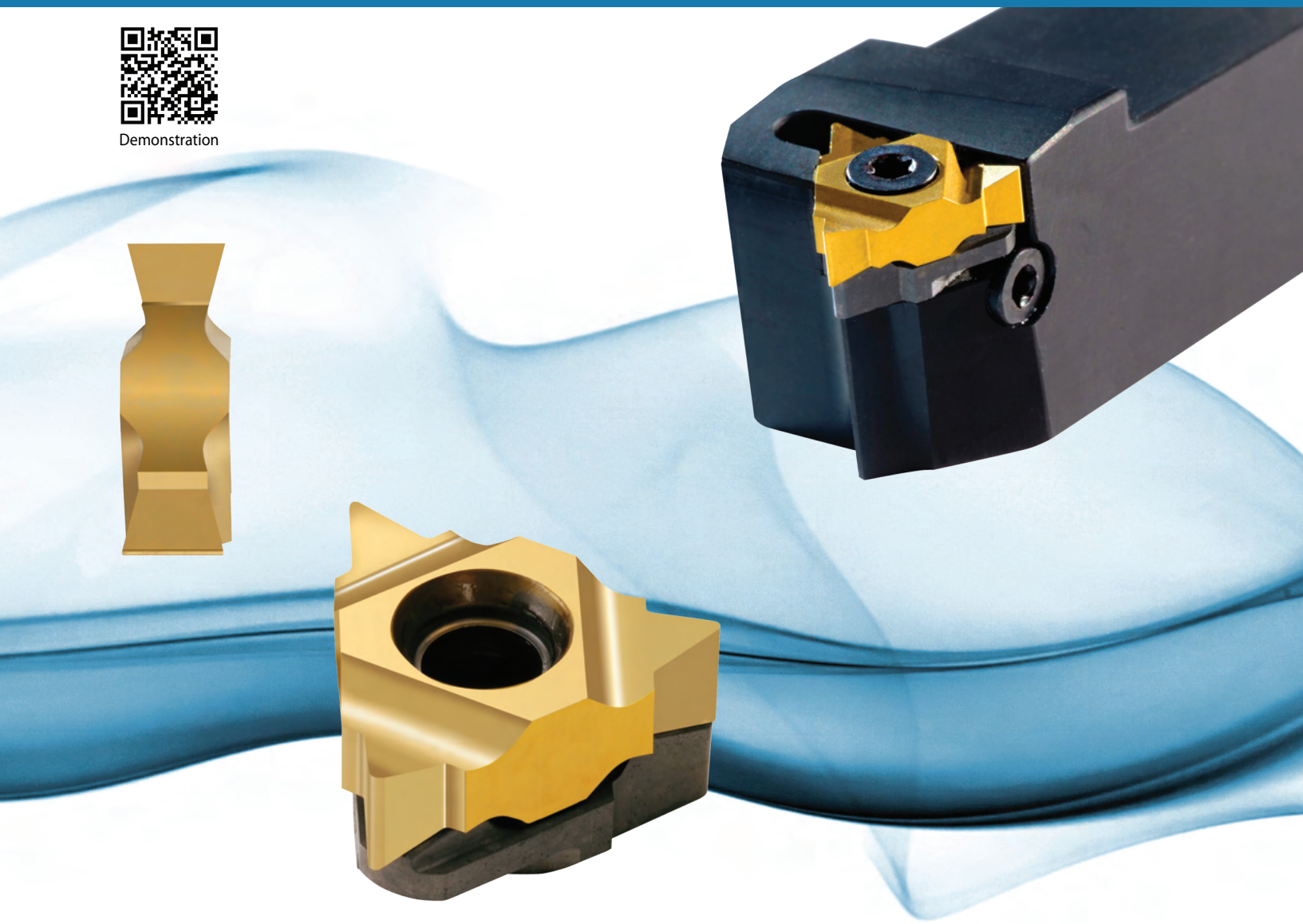
A practical and convenient combination kit for Ultra Miniature Threading and Boring. It enables Boring and Threading of mini bores as small as ø1/4 with just one deep reaching CARBIDE shank ultra mini Boring Bar.

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

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

Double Sided Thread Turning Inserts & Toolholders | A03

Demonstration



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

Advantages of DSI-Thread Turning Inserts

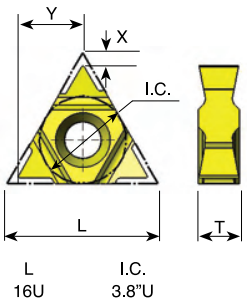
- Increased productivity thanks to the six cutting edges.
- U-Style inserts for a wide range of full or partial profile standard threads.
- Same insert for right hand or left hand thread.
- Saving on tooling costs.
- Unique anti-vibration anvil designed for clamping the insert and supporting the cutting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

Contents:	Page:	Contents:	Page:
Product Identification	2	Whitworth 55°	5
Partial Profile 60°	3	NPT	5
Partial Profile 55°	3	Heavy Duty Thread Turning Toolholders - External	6
ISO	4	Heavy Duty Thread Turning Toolholders - Internal	6
UN	4		

Product Identification

DSI Ordering Code

16U



E

E=External
I = Internal

R/L

R = Right Hand
L = Left Hand

1.5

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

ISO

Full Profiles:
ISO
UN
WHIT
NPT

Partial Profiles:

G60	G55
AG60	AG55
N60	N55

6

Inserts with 6 cutting edges

BMA

Grade:
MXC
BMA

S

Clamping Method
S = Screw

E

E = External
I = Internal

R

R = Right Hand
L = Left Hand

0750

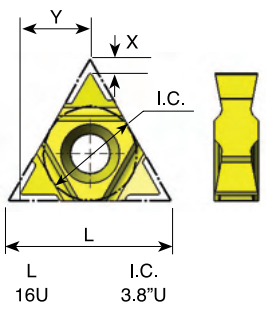
Shank Cross Section:
External toolholders
square shank
0750=3/4 x 3/4

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

K

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

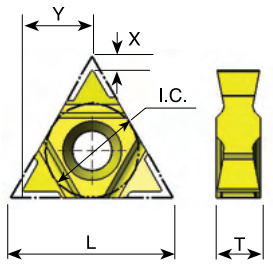
16U



B: with internal coolant bore

6 - for DSI Thread Turning Insert

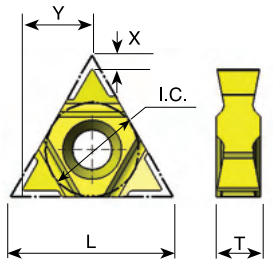
Partial Profile 60°



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

Available coating grades: BMA or MXC
Order example: 16U ER/L G60-6 BMA

Partial Profile 55°

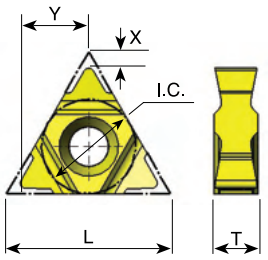


Pitch Range mm	Pitch Range TPI	L mm	I.C.	EXTERNAL Ordering Code	INTERNAL Ordering Code	X	Y	T
1.75 - 3.0	14-8	16U	3/8U	16U ER/L G55-6	16U IR/L G55-6	.06	.28	.18
0.5 - 3.0	48-8	16U	3/8U	16U ER/L AG55-6	16U IR/L AG55-6	.06	.28	.18
3.5 - 5.0	7-5	16U	3/8U	16U ER/L N55-6	16U IR/L N55-6	.05	.29	.18

Available coating grades: BMA or MXC

For carbide grade and cutting speed see page A04-2 and 3

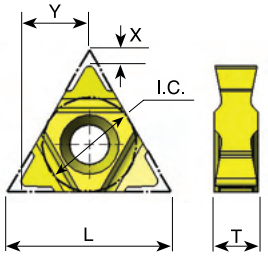
ISO



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

Available coating grades: BMA or MXC
Order example: 16U ER/L 1.75 ISO-6 BMA

UN - Unified UNC, UNF, UNEF, UNS

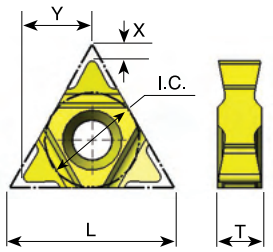


Pitch TPI	L mm	I.C.	EXTERNAL Ordering Code	INTERNAL Ordering Code	X	Y	T
16	16U	3/8U	16U ER/L 16 UN-6	16U IR/L 16 UN-6	.06	.27	.18
14	16U	3/8U	16U ER/L 14 UN-6	16U IR/L 14 UN-6	.06	.27	.18
13	16U	3/8U	16U ER/L 13 UN-6	16U IR/L 13 UN-6	.06	.27	.18
12	16U	3/8U	16U ER/L 12 UN-6	16U IR/L 12 UN-6	.06	.27	.18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

Available coating grades: BMA or MXC

For carbide grade and cutting speed see page A04-2 and 3

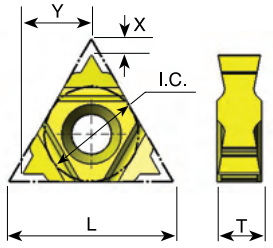
Whitworth 55° BSW, BSF, BSP, BSB



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

Available coating grades: BMA or MXC
Order example: 16U ER/L 9 W-6 BMA

NPT



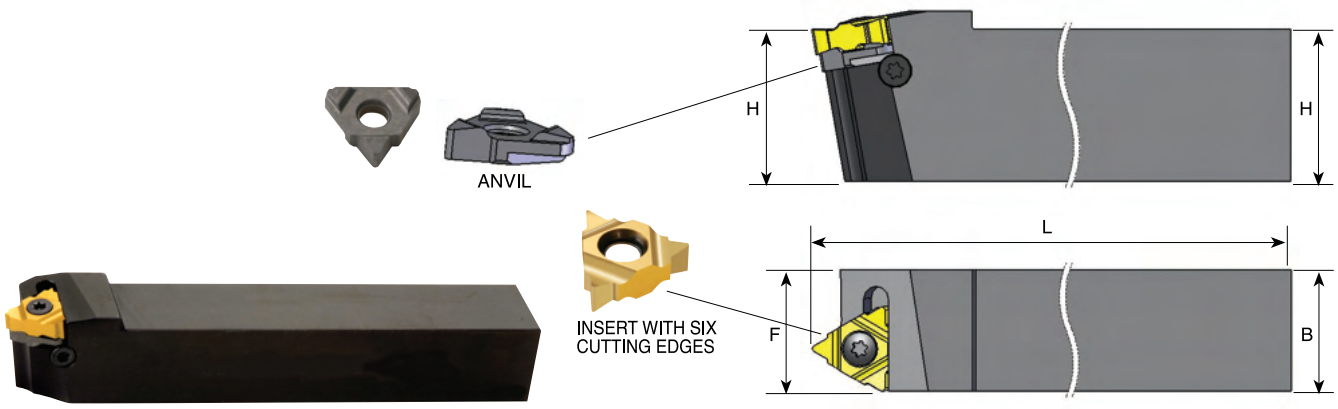
Pitch TPI	L mm	I.C.	EXTERNAL Ordering Code	INTERNAL Ordering Code	X	Y	T
14	16U	3/8U	16U ER/L 14 NPT-6	16U IR/L 14 NPT-6	.06	.27	.18
11.5	16U	3/8U	16U ER/L 11.5 NPT-6	16U IR/L 11.5 NPT-6	.06	.27	.18
8	16U	3/8U	16U ER/L 8 NPT-6	16U IR/L 8 NPT-6	.06	.27	.18

Available coating grades: BMA or MXC

For carbide grade and cutting speed see page A04-2 and 3

Heavy Duty Thread Turning Toolholders

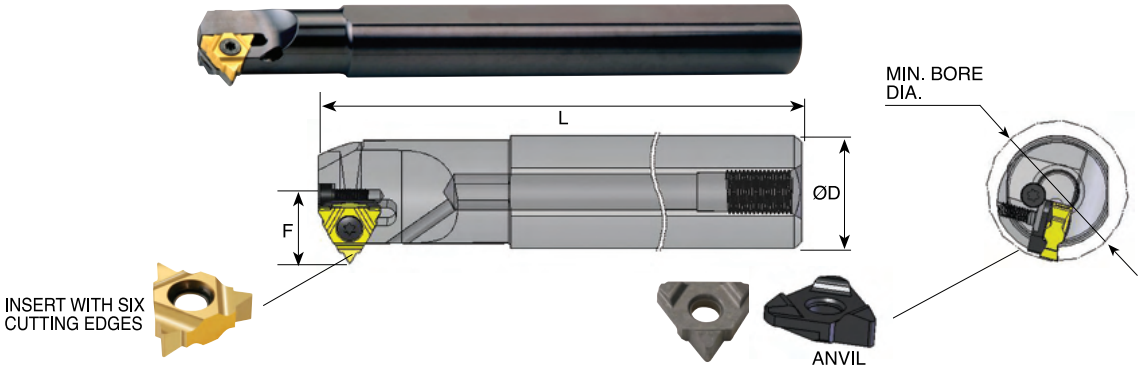
External



Ordering Code Right Hand	H	B	L	F	Insert Screw	Anvil Screw	Torx Key	RH Anvil	LH Anvil
SER 0750 K16U-6	.75	.75	5	.75	S16	A16	K16	AER 16U-6	AEL 16U-6
SER 1079 M16U-6	1.0	.79	6	.79	S16	A16	K16	AER 16U-6	AEL 16U-6

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

Internal with Coolant Bore



Ordering Code Right Hand	ØD	Min. bore dia.	L	F	Insert Screw	Anvil Screw	Torx Key	RH Anvil	LH Anvil
SIR 0750 P16UB-6	.75	.94	7	.57	S16	A16	K16	AIR 16U-6	AIL 16U-6
SIR 1000 R16UB-6	1.0	1.14	8	.69	S16	A16	K16	AIR 16U-6	AIL 16U-6

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

Thread Turning Technical Section

A04

Contents:	Page:
Carbide Grade Selection	2
Type B inserts	2
Recommended cutting speed	3
Conversion of Cutting Speed to Rotational Speed	4
Number of passes and depth of cut per pass for multitooth insert	4
Number of threading passes selection for single point inserts	5

Contents:	Page:
Thread Turning Methods	5
Important Points about Carmex Threading Inserts	6
Flank Clearance Angle	6
Anvil Change Recommendation	7
Thread Turning - Step by Step	8-9
Troubleshooting	9
Threading Inserts Standards	10

Carbide Grade Selection

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

Coated Grades

HBA (H10-H25) (S10-S25)	Extra-fine sub-micron grade with high toughness, for optimized performance on hardened steels and cast iron up to 62HRc, titanium alloys and super alloys (Hästelloy, Inconel and Nickel based alloys).
BLU (M10-M20) (K05-K20) (N10-N20) (S10-S20)	PVD triple layer coated sub-micron grade for stainless steels, cast iron, titanium, non ferrous metals and most of the high temperature alloys.
BMA (P20-P40) (K20-K30)	PVD TiAlN coated sub-micrograin grade for stainless steels and exotic materials at medium to high cutting speeds.
P25C (P15-P35)	PVD TiN coated grade for treated and hard alloy steels (25 HRc & up) at medium to low cutting speeds.
MXC (K10-K20) (P10-P25)	PVD TiN coated micrograin for free cutting untreated alloy steels (below 30 HRc), for stainless steels and cast iron.
BXC (P30-P50) (K25-K40)	PVD TiN coated grade for low cutting speed. Works well with wide range of stainless steels.

Uncoated Grades

P30* (P20-P30)	Carbide grade for carbon and cast steels, works well at medium to low cutting speeds.
K20* (K10-K30)	Carbide grade for non ferrous metals, aluminum and cast iron.

* Upon request

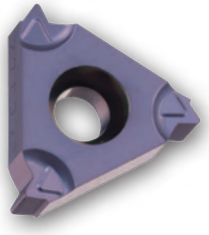
Note: Due to our unique and specialized production techniques, Carmex coated inserts provide superior cutting performance and exceptionally long tool life.

Grade availability per inserts size

Grade	HBA	BLU	BMA	P25C	MXC	BXC	P30	K20
Insert sizes	11, 16, 22, 27	11, 16, 22	06, 08, 11, 16, 22, 27, 33U,	11, 16, 22, 27, 33U	11, 16, 22, 27, 33U	06, 08	11, 16, 22, 27, 33U	06, 08 11, 16, 22, 27, 33U
		Type-B 11, 16	Type-B 11, 16					

Type B - Threading Inserts

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

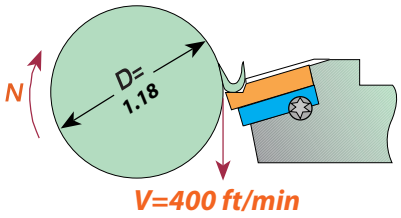


Recommended cutting speed (ft/min) for thread turning inserts

ISO Standard	Material		Condition	Carbide Grades							
				HBA	BLU	BMA	P25C	MXC	BXC	K20	P30
P	Non-Alloy Steel and Cast Steel, Free Cutting Steel	<0.25%C	Annealed		360-690	390-590	330-590	390-590	230-490		165-425
		≥0.25%C	Annealed								
		<0.55%C	Quenched & Tempered								
		≥0.55%C	Annealed								
			Quenched & Tempered								
	Low Alloy Steel and Cast Steel (less than 5% alloying elements)		Annealed Quenched & Tempered		295-460	260-425	230-394	230-390	195-295		165-260
	High Alloy Steel, Cast Steel, and Tool Steel		Annealed Quenched & Tempered		230-295	195-260	165-195	180-230	165-195		130-165
M	Stainless Steel and Cast Steel		Ferritic / Martensitic		360-525	295-425	195-295	195-295	165-260	165-260	
			Martensitic								
			Austenitic								
K	Cast Iron Nodular (GGG)		Ferritic / Pearlitic		390-490	330-425		260-360	195-295		
			Pearlitic								
	Grey Cast Iron (GG)		Ferritic		460-490	395-425		395-330	215-280		
			Pearlitic								
	Malleable Cast Iron		Ferritic		360-460	330-425		260-330	195-280		
			Pearlitic								
N	Aluminum-Wrought Alloy		Not Cureable		2300-3280			1970-2620	1480-1970	1970-2620	1150-1640
			Cured								
	Aluminum-Cast, Alloyed	<=12% Si	Not Cureable		920-2460			650-1800	490-1150	660-1800	360-985
			Cured								
		>12% Si	High Temperature								
	Copper Alloys	>1% Pb	Free Cutting		625-1150			490-820	360-590	490-820	295-490
			Brass								
			Electrolytic Copper								
	Non Metallic		Duroplastics, Fiber Plastics					655-985	490-690	330-655	360-490
			Hard Rubber								
S	High Temp. Alloys, Super Alloys	Fe based	Annealed	65-260	100-215	80-195					
			Cured								
		Ni or Co based	Annealed								
			Cured								
			Cast								
	Titanium Alloys		Alpha +Beta Alloys Cured	100-195	130-165	115-145				115-145	
H	Hardened Steel		Hardened 45-50 HRc	100-195	130-165	115-145					
			Hardened 51-55 HRc								
			Hardened 56-62 HRc								
	Chilled Cast Iron		Cast	65-165	100-130	80-115					
	Cast Iron		Hardened	65-130	65-100	50-80					

Conversion of Cutting Speed to Rotational Speed

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



Example

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

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

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

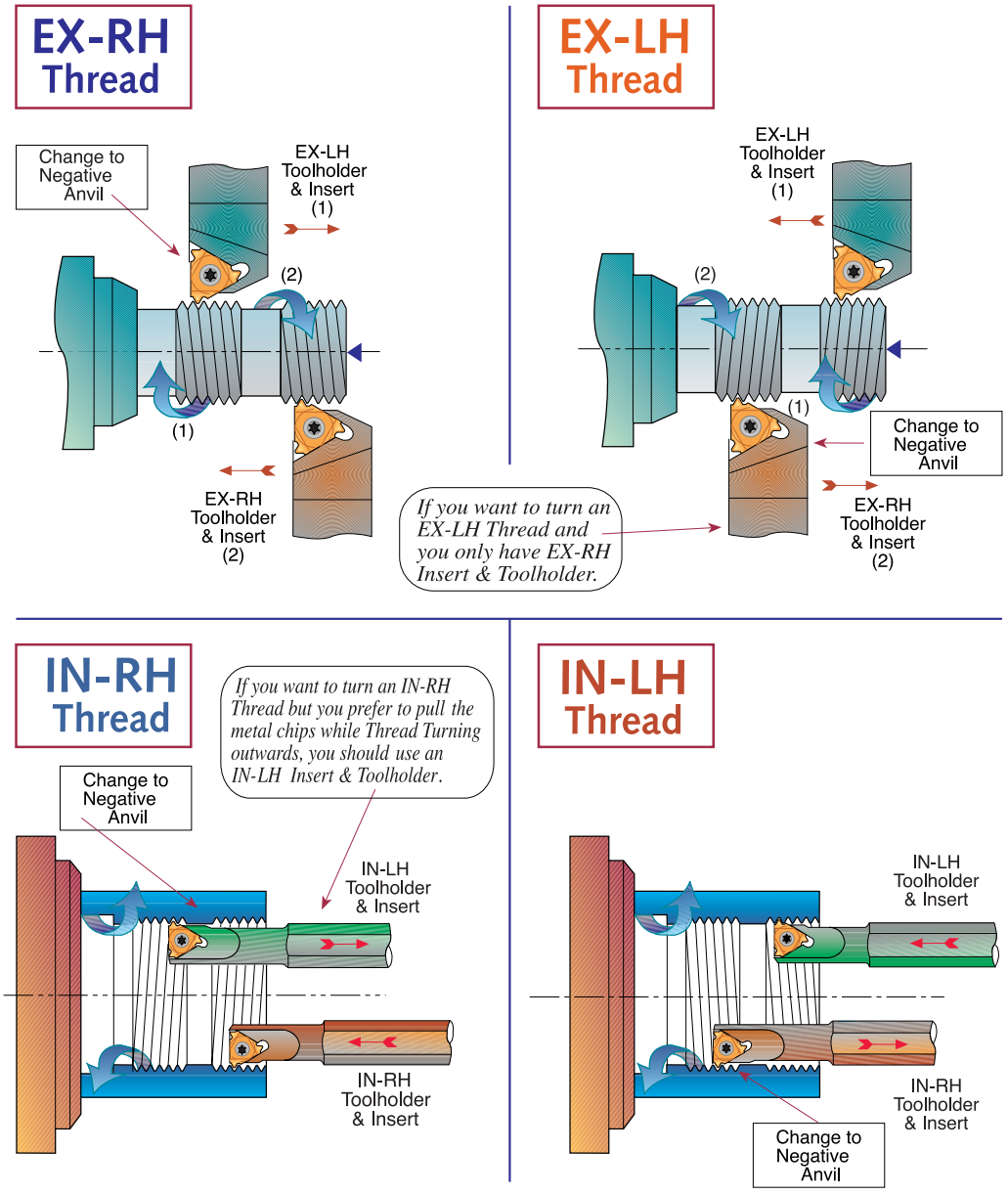
Number of threading passes selection for single point inserts

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

NOTES:

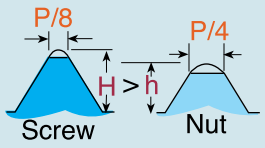
1. For most standard applications the middle of the range is a good starting point.
2. For most materials, the tougher the material, the higher the number of cutting passes you should select.
3. As a general rule of thumb, Fewer passes are better than more speed.

Thread Turning Methods

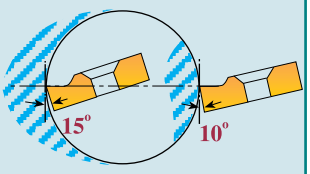


Important Points about Carmex Threading Inserts

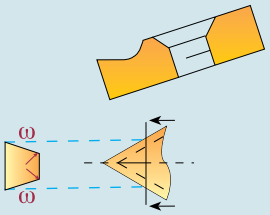
1. In most thread forms internal and external threads have different depth and radii, thus tools are not interchangeable



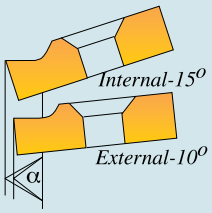
2. The Insert relief angle of a standard Carmex external toolholder is 10°; for an internal toolholder it is 15°. This 5° difference is to provide additional necessary radial clearance.



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



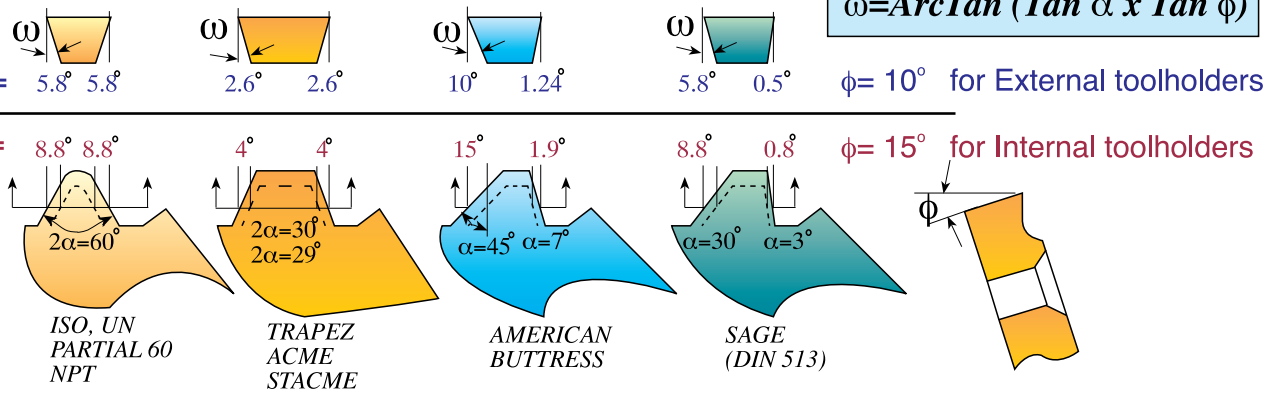
4. Profiles of Carmex internal & external threading inserts are precision ground to ensure accurate thread geometry when used in their corresponding toolholders. Using internal inserts with an external holder will result in distortion of angle and insert geometry.



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

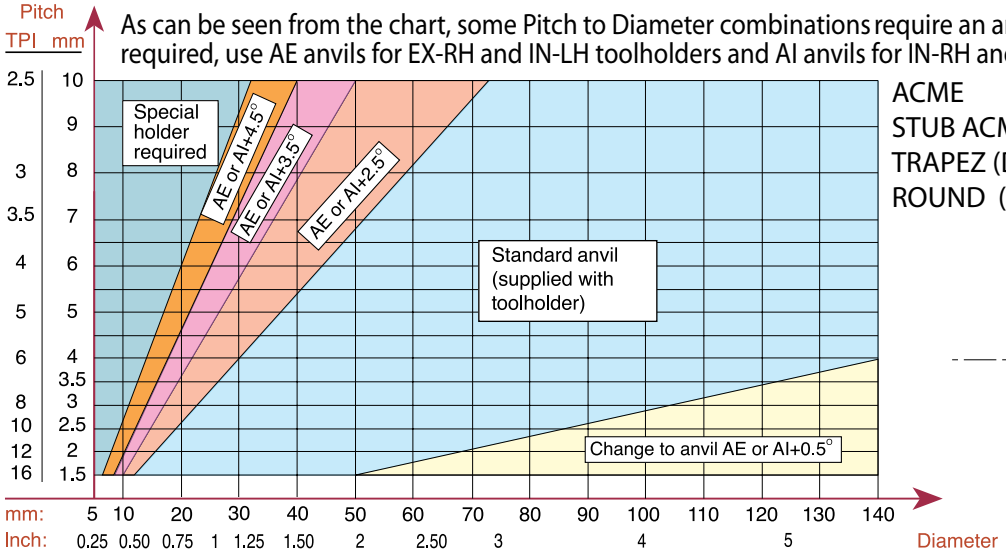
Flank Clearance Angle ω

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

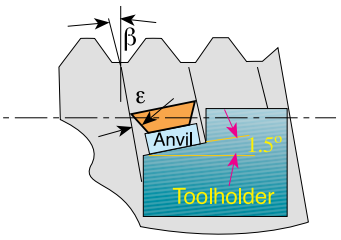


Anvil Change Recommendation

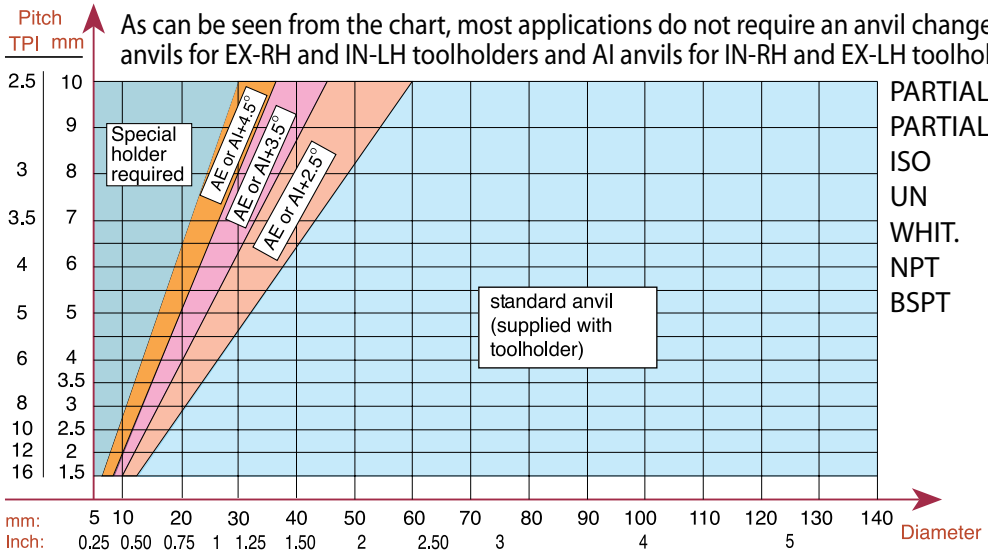
As can be seen from the chart, some Pitch to Diameter combinations require an anvil change. If change is required, use AE anvils for EX-RH and IN-LH toolholders and AI anvils for IN-RH and EX-LH toolholders.



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

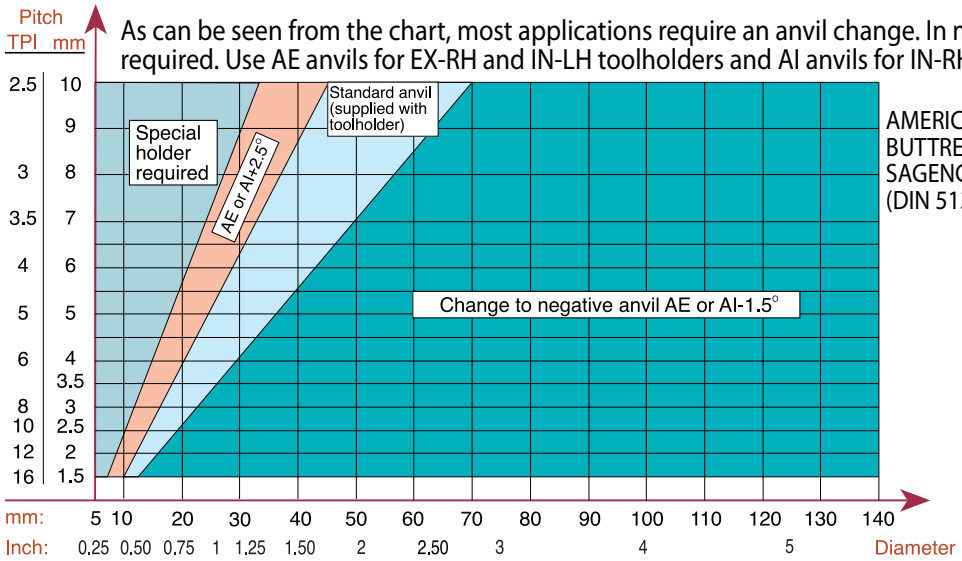


As can be seen from the chart, most applications do not require an anvil change. If change is required, use AE anvils for EX-RH and IN-LH toolholders and AI anvils for IN-RH and EX-LH toolholders.

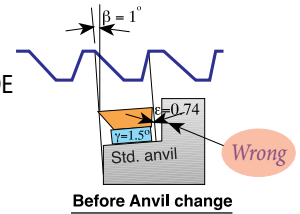


PARTIAL PROFILE 60°
PARTIAL PROFILE 55°
ISO
UN
WHIT.
NPT
BSPT

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

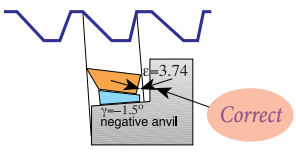


AMERICAN BUTTRESS
SAGENGEWINDE (DIN 513)



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" ε. If ε is smaller than 2°, an anvil change is required.

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

EXAMPLES:

Example No. 1:

Step 1: Choose Thread Turning Method from page A04-5, we chose **EX - RH Insert & Toolholder**

Step 2: Choose Insert from page A01-11: **16 ER 16 UN**

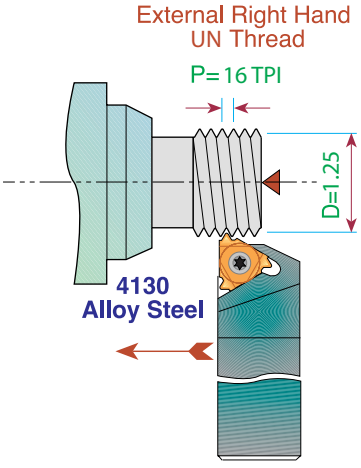
Step 3: Choose Toolholder from page A02-3: **SER 0750 K16**

Step 4: Choose Insert Grade from selection on page A04-2
Our choice for Alloy Steel is Grade **P25C**

Step 5: Choose Thread Turning Speed from chart on page A04-3, we chose **330 ft/min**

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

Step 6: Choose Number of Threading passes from table on page A04-5, we chose **8 passes**



Example No. 2:

Step 1: Choose Thread Turning Method from page A04-5
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 A01-11: **16 IL 12 UN**

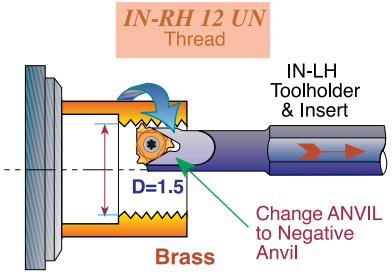
Step 3: Choose Toolholder from page A02-7: **SIL 1000 R16**
Note: since we thread cut IN-RH thread outward with an IN-LH tool, do not forget to replace the standard anvil (supplied with the holder) with a negative anvil **AE16-1.5**

Step 4: Choose Insert Grade from selection on page A04-2
Our choice for Brass is Grade **K20**

Step 5: Choose Thread Turning Speed from chart on page A04-3, we chose **450 ft/min**

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

Step 6: Choose Number of Threading passes from table on page A04-5, we chose **9 passes**



Example No. 3:

Step 1: Choose Thread Turning Method from page A04-5
We chose EX-RH Insert & Toolholder.

Step 2: Choose Insert from page A01-31: **16 ER 12 ABUT**

Step 3: Choose Toolholder from page A02-3: **SER 1000 M16**

Step 4: Choose Insert Grade from selection on page A04-2
Our choice for Stainless Steel is Grade **BMA**

Step 5: Choose Thread Turning Speed from chart on page A04-4
We chose 360 ft/min.
Rotational Speed calculation: $N = \frac{360 \times 12}{\pi \times 1.5} = 917$ RPM

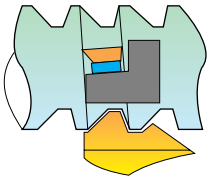
Step 6: Choose Number of Threading passes
from table on page A04-5. We chose **13 passes**

Step 7: Find Thread Helix Angle: on page A02-16
for Pitch of 12 TPI and 1.5 Diameter
Helix Angle as shown in the chart is 1°

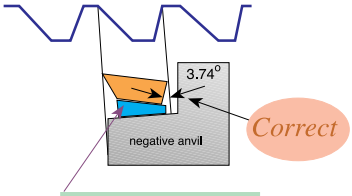
Step 8: Choose correct Anvil: As can be seen
from the chart on page A04-7, for AMERICAN
BUTTRESS Thread, for 12 TPI and 1.5 Diameter
a negative anvil **AE16-1.5** should replace the
standard anvil supplied with the toolholder

EX-RH. AMERICAN BUTTRESS
12 TPI on 1.5 diameter.

Stainless Steel 304



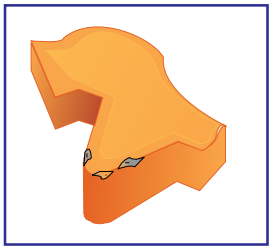
Replacing the standard anvil with an anvil with negative angle, will eliminate side rubbing



Anvil chosen: AE16-1.5

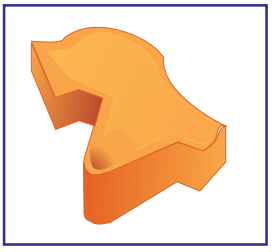
Troubleshooting

Chipping



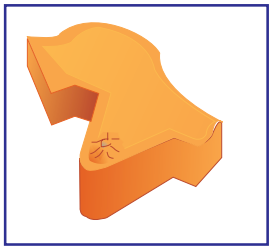
1. Use a tougher carbide grade
2. Eliminate tool overhang
3. Check if insert is correctly clamped
4. Eliminate vibration

Crater Wear



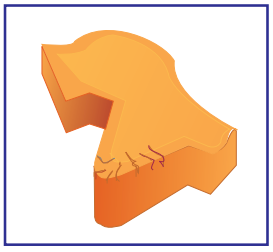
1. Reduce cutting speed
2. Apply coolant fluid
3. Use a harder carbide grade

Build-up Edge



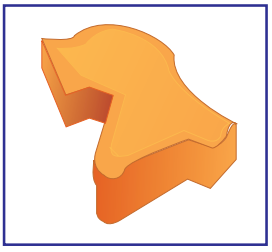
1. Increase cutting speed
2. Use a tougher carbide grade

Thermal Cracking



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

Deformation



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

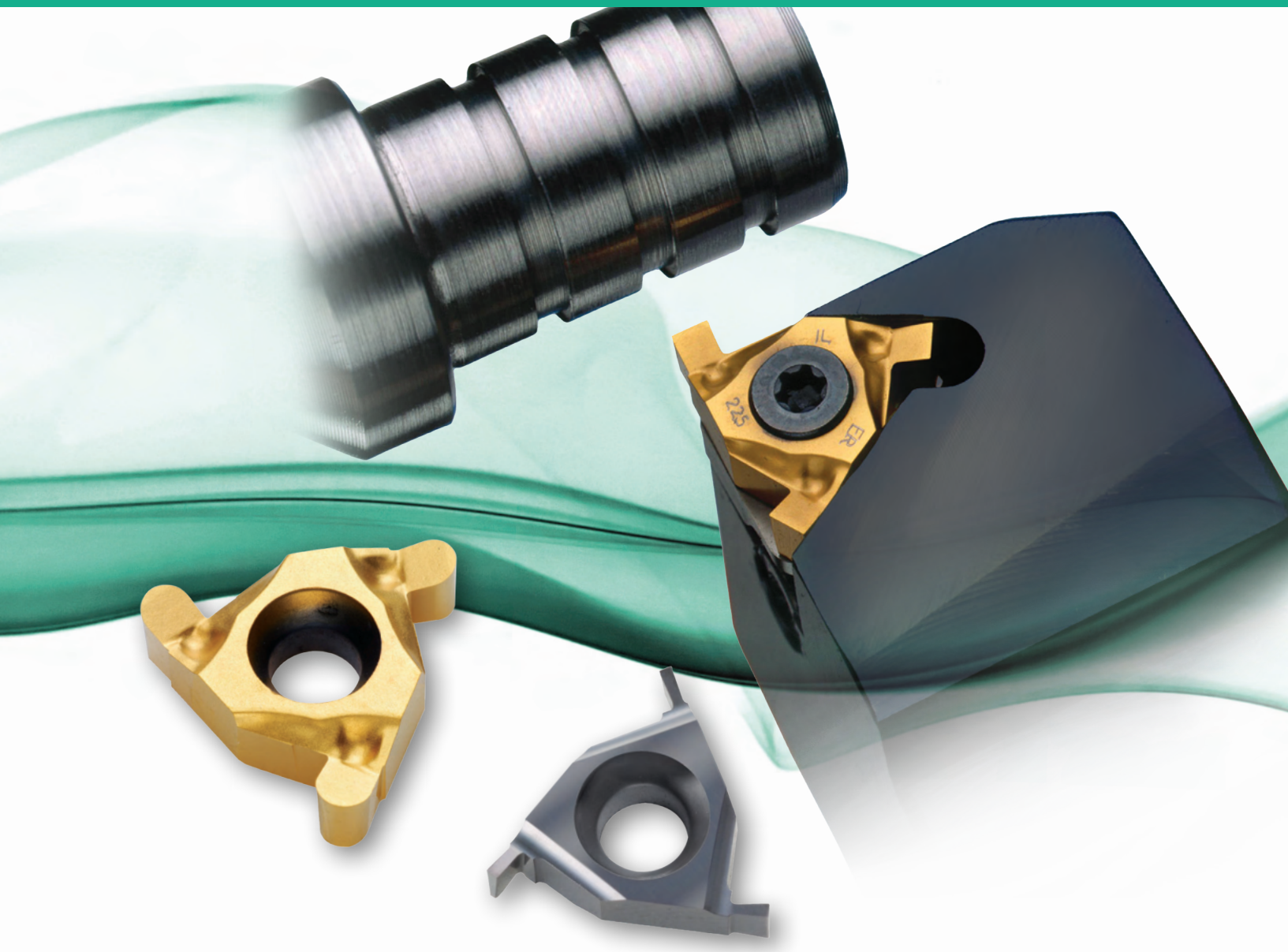
Fracture

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

Threading Inserts Standards

Thread Profile	Standard	Thread Class
ISO	DIN 13	6g / 6H
UN	ANSI B1.1-1989	2A / 2B
WHITWORTH	B.S. 84: 1956	Medium Class
NPT	ANSI B1.20.1-1983	-
NPTF	ANSI B1.20.3-1976	-
NPS	ANSI B1.20.1-1983	-
NPSM	ANSI B1.20.1-1983	-
BSPT	B.S. 21: 1957	-
DIN 477	DIN 477	-
ACME	ANSI B1.5-1988	3G (EXT), 3G / 2G (INT)
STUB ACME	ANSI B1.8-1988	2G
TRAPEZ	DIN 103	7e / 7H
ROUND	DIN 405	Class 7
UNJ	MIL-S-8879C	3A / 3B
MJ	ISO 5855	4h/6h, 4H/5H
AMERICAN BUTTRESS	ANSI B1.9-1973	Class 2
SAGENGEWINDE	DIN 513	-
PG	DIN 40430	-
V-0.040	API Spec7	-
V-0.038R	API Spec7	-
V-0.050	API Spec7	-
V-0.055	API Spec7	-
API ROUND	API Spec Standard 5B	-
EXTREME – LINE CASING	API Spec Standard 5B	-
BUTTRESS CASING	API Spec Standard 5B	-
VAM	VAM	-
HUGHES	HUGHES	-
PAC	PAC	-

DIN: **Deutsches Institut für Normung**
ANSI: **American National Standards Institute**
API: **American Petroleum Institute**
B.S.: **British Standards**
ISO: **International Organisation for Standardization**
MIL-S: **Military Specification**
NPT: **American National Standard Taper Pipe Thread**
NPTF: **National Standard Taper Fuel:Dryseal USA**
PAC: **Pacific Asia Connection**
NPS: **Straight thread,same as NPT without taper**
NPSM: **Free-Fitting Mechanical Joints**



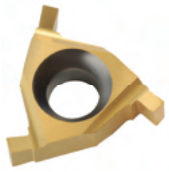
A combination of ground profile and sintered chip - breaker

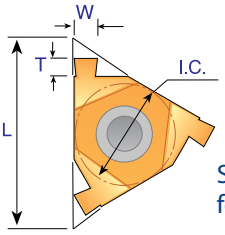
Advantages:

- Same Toolholder for Grooving and Threading
- Minimum Investment in Tooling
- Three Cutting Edges
- Precision Ground

Contents:	Page:	Contents:	Page:
Grooving Inserts	2	Grooving Kits	3
Grooving Inserts for Snap Ring	2	Technical Section	4
Product identification	3		

Grooving Inserts

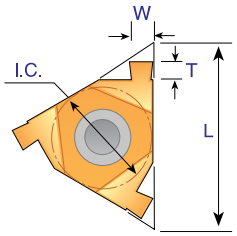




External & Internal

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.

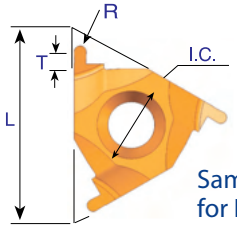


W ±.0008	T	I.C.	L mm	Ordering Code ER/IL Inserts	Anvil	Ordering Code IR/EL Inserts	Anvil
.020	.055	1/4	11	**11 ER/IL .020**	-	**11 IR/EL .020**	-
.024	.055	1/4	11	**11 ER/IL .024**	-	**11 IR/EL .024**	-
.028	.055	1/4	11	**11 ER/IL .028**	-	**11 IR/EL .028**	-
.031	.055	1/4	11	**11 ER/IL .031**	-	**11 IR/EL .031**	-
.039	.051	1/4	11	**11 ER/IL .039**	-	**11 IR/EL .039**	-
.031	.055	3/8	16	**16 ER/IL .031**	AE 16-0	**16 IR/EL .031**	AI 16-0
.039	.055	3/8	16	**16 ER/IL .039**	AE 16-0	**16 IR/EL .039**	AI 16-0
.047	.063	3/8	16	**16 ER/IL .047**	AE 16-0	**16 IR/EL .047**	AI 16-0
.055	.071	3/8	16	**16 ER/IL .055**	AE 16-0	**16 IR/EL .055**	AI 16-0
.062	.075	3/8	16	**16 ER/IL .062**	AE 16-0	**16 IR/EL .062**	AI 16-0
.067	.079	3/8	16	**16 ER/IL .067**	AE 16-0	**16 IR/EL .067**	AI 16-0
.077	.079	3/8	16	**16 ER/IL .077**	AE 16-0	**16 IR/EL .077**	AI 16-0
.089	.089	3/8	16	**16 ER/IL .089**	AE 16-0	**16 IR/EL .089**	AI 16-0
.094	.089	3/8	16	**16 ER/IL .094**	AE 16-0	**16 IR/EL .094**	AI 16-0

Order example: 16 ER/IL 1.20 BXC
* The inserts should be used with our standard threading toolholders
* The anvil must be changed to AE 16-0 or AI 16-0 before using size 16 mm (3/8) inserts
* Size 16 internal holders without anvil can't be used

Grooving Inserts for Snap Ring

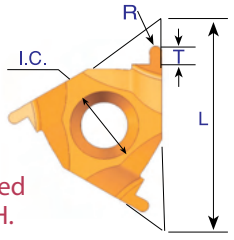
Carbide Grade: BXC



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.

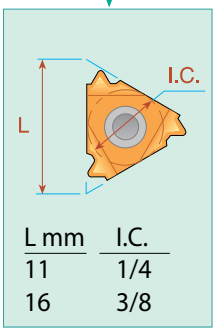


R ±.0016	T	I.C.	L mm	Ordering Code ER/IL Inserts	Anvil	Ordering Code IR/EL Inserts	Anvil
.020	.055	3/8	16	**16 ER/IL R.020**	AE 16 - 0	**16 IR/EL R.020**	AI 16 - 0
.024	.063	3/8	16	**16 ER/IL R.024**	AE 16 - 0	**16 IR/EL R.024**	AI 16 - 0
.035	.079	3/8	16	**16 ER/IL R.035**	AE 16 - 0	**16 IR/EL R.035**	AI 16 - 0
.039	.079	3/8	16	**16 ER/IL R.039**	AE 16 - 0	**16 IR/EL R.039**	AI 16 - 0
.043	.087	3/8	16	**16 ER/IL R.043**	AE 16 - 0	**16 IR/EL R.043**	AI 16 - 0
.047	.089	3/8	16	**16 ER/IL R.047**	AE 16 - 0	**16 IR/EL R.047**	AI 16 - 0

Order example: 16ER/IL R1.20 BXC
* The inserts should be used with our standard threading toolholders
* The anvil must be changed to AE 16-0 or AI 16-0 before using size 16 mm (3/8) inserts
* Size 16 internal holders without anvil can't be used

Product Identification

Grooving Inserts Ordering Codes

16	ER	IL		1.0	BMA
 L mm / I.C.: 11 – 1/4; 16 – 3/8	E = External I = Internal	R = Right Hand L = Left Hand	R = Radius	**Width** 0.50-2.25 mm or .020-.094 mm	**Carbide Grade:** BXC BMA

Grooving Kits

ER / IL INSERT
KGROI - EXTERNAL

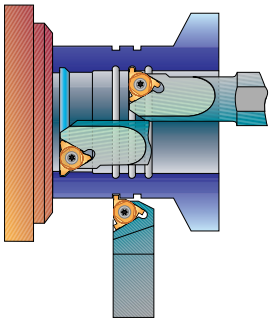
16 ER / IL	.031 BXC	1 unit
16 ER / IL	.039 BXC	1 unit
16 ER / IL	.047 BXC	1 unit
16 ER / IL	.062 BXC	1 unit
16 ER / IL	.077 BXC	1 unit
16 ER / IL	.094 BXC	1 unit
ANVIL AE 16 - 0		1 unit

IR / EL INSERT
KGROI - INTERNAL

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

Technical Section

Cutting Speeds for Grooving Tools



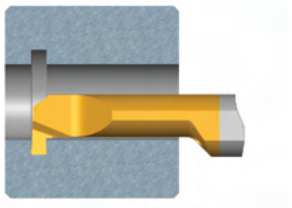
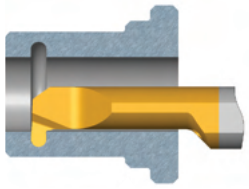
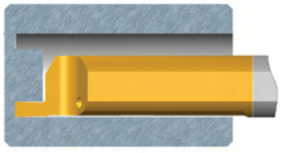
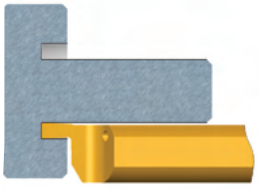
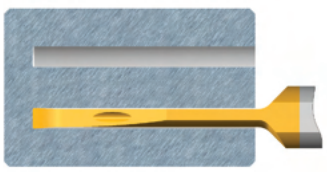
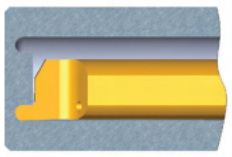
Carbide Grades:

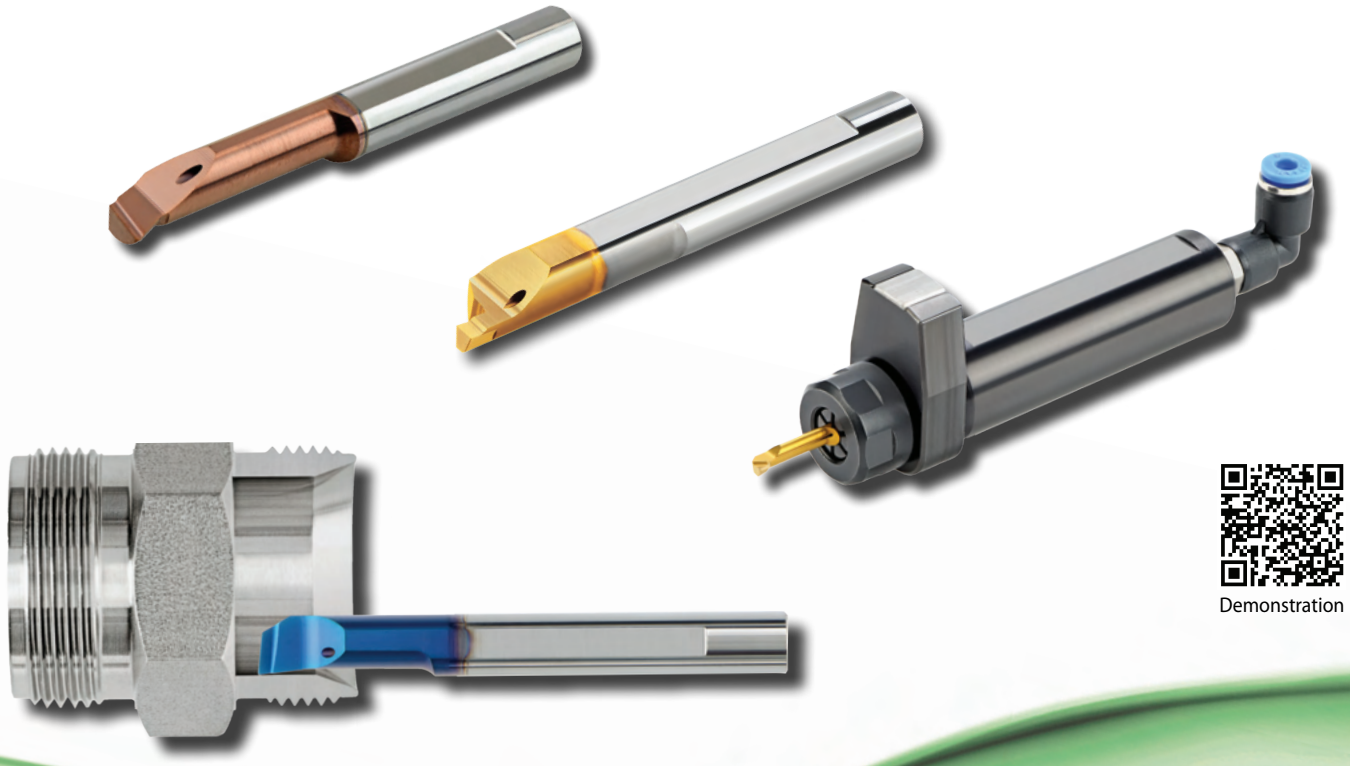
BXC (P30 - P50, K25 - K40)
PVD TiN coated grade for low cutting speed. Works well with a wide range of stainless steels.

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

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

For grooving small bores see pages A06-22- to 30



Demonstration

Solid Carbide tools for working in small bores

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

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MUR Profiling, 90° Face Cutting Bars	10
MQR Profiling and Boring Bars	11
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MFR Face Grooving Bars	25

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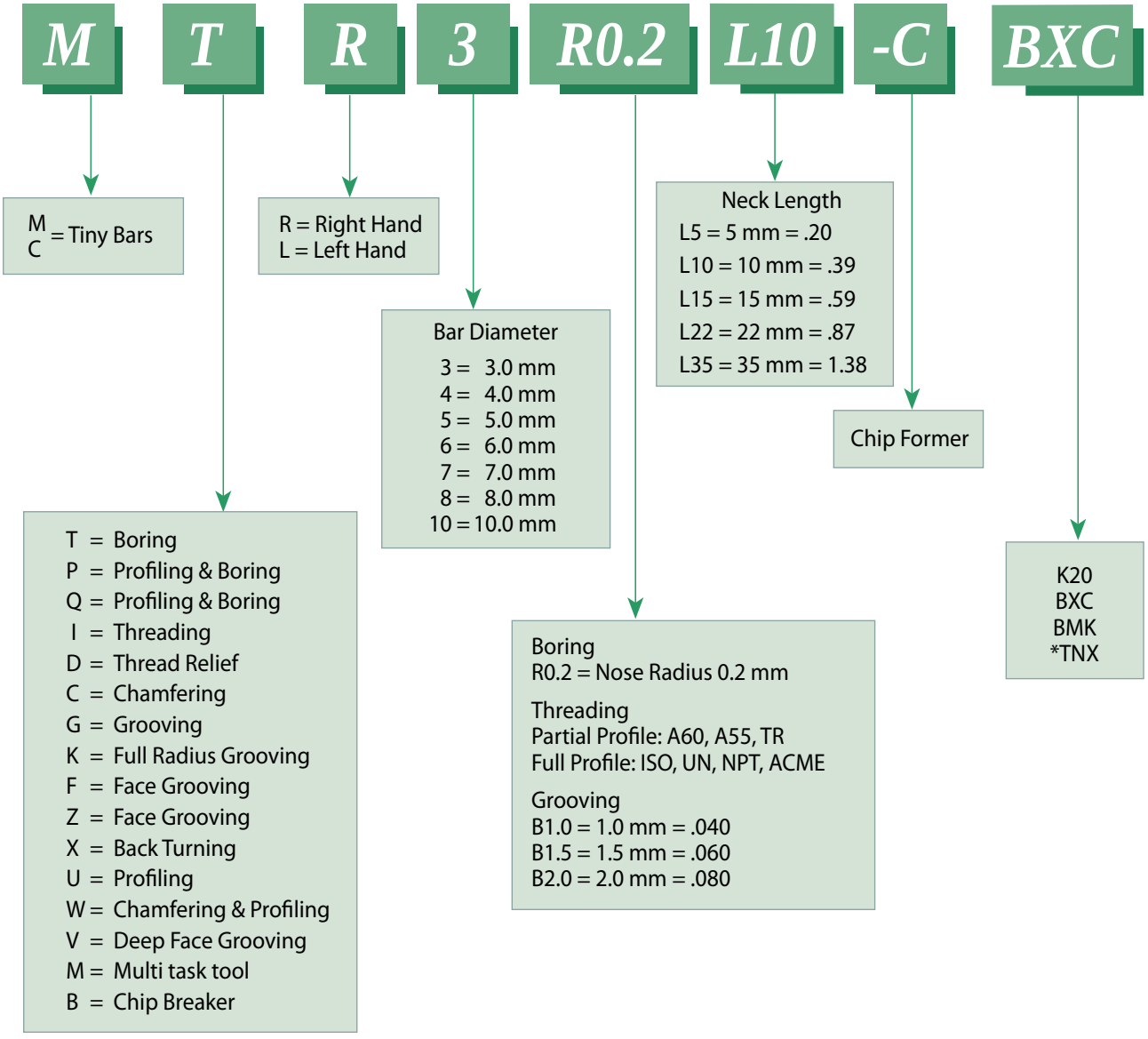
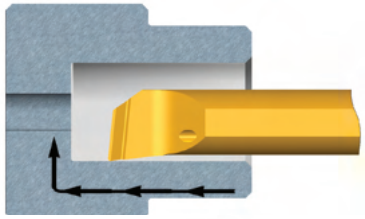
Product Identification

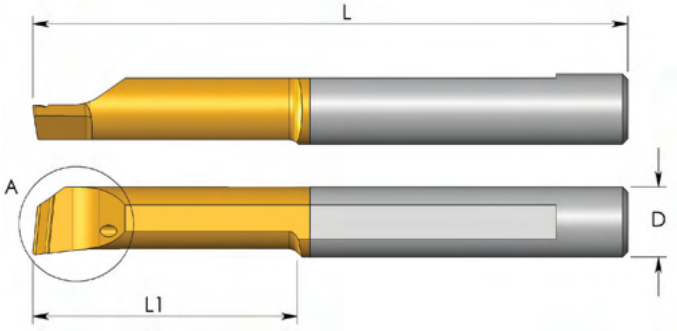
Tiny Bars Ordering Codes

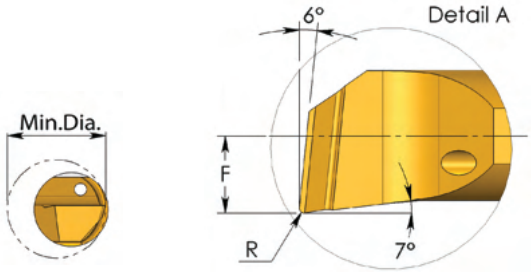


* Available only for CBR bars

MTR Bars Boring







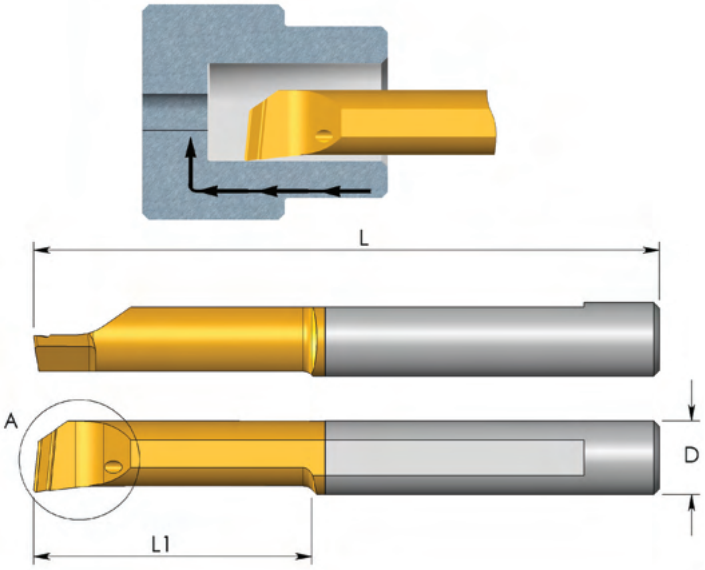
Grade	P	M	K	N	S	H
K20		○	○	●	○	
BXC	●	●	●	○	●	●
BMK	●	●	●	○	●	●

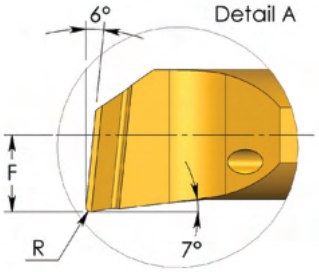
D mm	Ordering Code	L	L1	R	F	Min. Dia.	Holder
3.0	MTR 1 R0 L6	1.5	.24	0	.02	.04	SIM ... H3
	MTR 1 R0.05 L4	1.5	.16	.002	.02	.04	
	MTR 1 R0.05 L6	1.5	.24	.002	.02	.04	
3.0	MTR 1.2 R0 L7	1.5	.28	0	.02	.05	SIM ... H3
	MTR 1.2 R0 L9	1.5	.35	0	.02	.05	
3.0	MTR 1.5 R0 L6	1.5	.24	0	.03	.06	SIM ... H3
	MTR 1.5 R0.1 L6	1.5	.24	.004	.03	.06	
3.0	MTR 2 R0 L10	1.5	.39	0	.03	.08	SIM ... H3
	MTR 2 R0.05 L5	1.5	.20	.002	.03	.08	
	MTR 2 R0.05 L10	1.5	.39	.002	.03	.08	
	MTR 2 R0.1 L10	1.5	.39	.004	.03	.08	
	MTR 2 R0.1 L15	1.5	.59	.004	.03	.08	
	MTR 2 R0.15 L5	1.5	.20	.006	.03	.08	
	MTR 2 R0.15 L10	1.5	.39	.006	.03	.08	
4.0	MTR 2.5 R0 L10	2.0	.39	0	.04	.10	SIM ... H4
	MTR 2.5 R0.1 L10	2.0	.39	.004	.04	.10	
	MTR 2.5 R0.1 L15	2.0	.59	.004	.04	.10	
3.0	MTR 3 R0.05 L10	1.5	.39	.002	.05	.12	SIM ... H3
	MTR 3 R0.05 L15	1.5	.59	.002	.05	.12	
	MTR 3 R0.1 L10	1.5	.39	.004	.05	.12	
	MTR 3 R0.1 L15	1.5	.59	.004	.05	.12	
	MTR 3 R0.2 L10	1.5	.39	.008	.05	.12	
	MTR 3 R0.2 L15	1.5	.59	.008	.05	.12	
4.0	MTR 4 R0.05 L15	2.0	.59	.002	.07	.16	SIM ... H4
	MTR 4 R0.05 L22	2.0	.87	.002	.07	.16	
	MTR 4 R0.1 L10	2.0	.39	.004	.07	.16	
	MTR 4 R0.1 L15	2.0	.59	.004	.07	.16	
	MTR 4 R0.1 L22	2.0	.87	.004	.07	.16	
	MTR 4 R0.2 L10	2.0	.39	.008	.07	.16	
	MTR 4 R0.2 L15	2.0	.59	.008	.07	.16	
	MTR 4 R0.2 L22	2.0	.87	.008	.07	.16	
	MTR 4 R0.2 L30	2.4	1.18	.008	.07	.16	

For additional holders see page A06-32 to 41

● First choice ○ Alternative

MTR Bars Boring



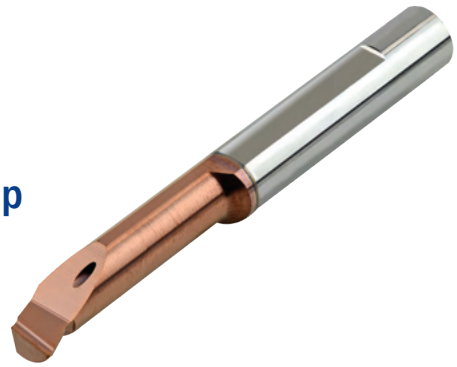


D mm	Ordering Code	L	L1	R	F	Min Dia.	Holder
5.0	MTR 5 R0.05 L15	2.0	.59	.002	.08	.20	SIM ... H5
	MTR 5 R0.1 L15	2.0	.59	.004	.08	.20	
	MTR 5 R0.1 L22	2.0	.87	.004	.08	.20	
	MTR 5 R0.1 L30	3.0	1.18	.004	.08	.20	
	MTR 5 R0.2 L10	2.0	.39	.008	.08	.20	
	MTR 5 R0.2 L15	2.0	.59	.008	.08	.20	
	MTR 5 R0.2 L22	2.0	.87	.008	.08	.20	
	MTR 5 R0.2 L30	3.0	1.18	.008	.08	.20	
	MTR 5 R0.2 L40	3.0	1.57	.008	.08	.20	
6.0	MTR 6 R0.05 L15	2.0	.59	.002	.11	.24	SIM ... H6
	MTR 6 R0.05 L22	2.0	.87	.002	.11	.24	
	MTR 6 R0.1 L15	2.0	.59	.004	.11	.24	
	MTR 6 R0.1 L22	2.0	.87	.004	.11	.24	
	MTR 6 R0.2 L15	2.0	.59	.008	.11	.24	
	MTR 6 R0.2 L22	2.0	.87	.008	.11	.24	
	MTR 6 R0.2 L30	2.3	1.18	.008	.11	.24	
	MTR 6 R0.2 L35	3.0	1.38	.008	.11	.24	
	MTR 6 R0.2 L40	3.0	1.57	.008	.11	.24	
7.0	MTR 7 R0.2 L22	2.4	.87	.008	.13	.28	SIM ... H7
	MTR 7 R0.2 L30	2.4	1.18	.008	.13	.28	
8.0	MTR 8 R0.2 L15	2.5	.59	.008	.15	.32	SIM ... H8
	MTR 8 R0.2 L22	2.5	.87	.008	.15	.32	
	MTR 8 R0.2 L35	3.0	1.38	.008	.15	.32	
10.0	MTR 10 R0.2 L35	2.9	1.38	.008	.19	.40	SIM ... H10

Order example: MTR 6 R0.2 L22 BXC
For L.H. bars specify MTL instead of MTR
For additional holders see page A06-32 to 41

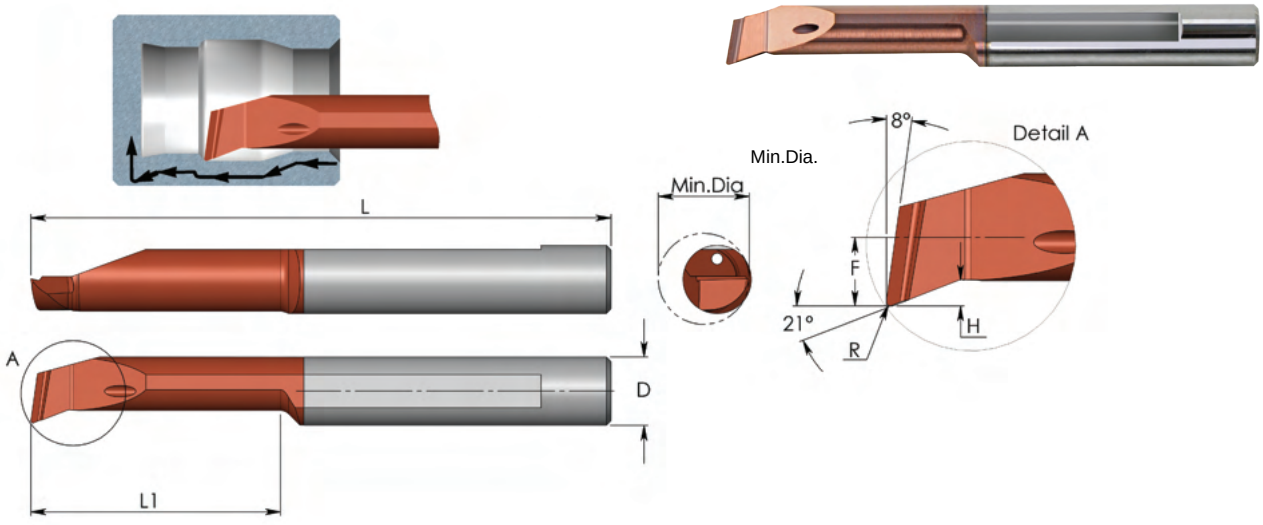
CBR Bars *Profiling and Boring*

With advanced Chip Breaker



Chip evacuation is obtained thanks to advanced Chip Breaker and the internal coolant through the tool, pushing the chips out of the hole.

Excellent solution for machining stainless steels, super alloys and other "difficult" materials that create curly chips around the tool and the application. Can be used also as general purpose for a wide range of materials.



Grade	P	M	K	N	S	H
TNX	●	●	●	●	●	●

D mm	Ordering Code	L	L1	R	H	F	Min. Dia.	Holder
4.0	CBR 4 R0.2 L10	2.0	.39	.008	.02	.07	.16	SIM ... H4
	CBR 4 R0.2 L15	2.0	.59	.008	.02	.07	.16	
5.0	CBR 5 R0.2 L15	2.0	.59	.008	.03	.09	.20	SIM ... H5
	CBR 5 R0.2 L22	2.0	.87	.008	.03	.09	.20	
6.0	CBR 6 R0.2 L15	2.0	.59	.008	.04	.11	.24	SIM ... H6
	CBR 6 R0.2 L22	2.0	.87	.008	.04	.11	.24	

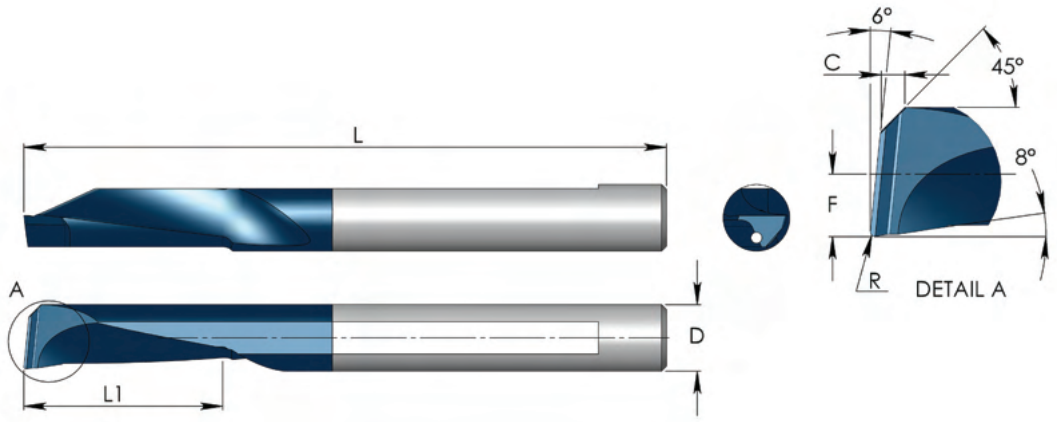
Order example: CBR 5 R0.2 L15 TNX

For L.H. bars specify CBL instead of CBR

For additional holders see page A06-32 to 41

CMR Multi-Task Tiny Bars

Multi-Task Tiny Tool CMR for Boring, Turning, Facing and Chamfering with a single tool



Grade	P	M	K	N	S	H
BMK	●	●	●	○	●	●

D mm	Ordering Code	L	L1	R	F	C	Hole Dia.*	Holder
4.0	CMR 4 R0.1 L10	2.0	.39	.004	.07	.04	.16	SIM...H4
	CMR 4 R0.1 L15	2.0	.59	.004	.07	.04	.16	
5.0	CMR 5 R0.2 L10	2.0	.39	.008	.09	.05	.20	SIM...H5
	CMR 5 R0.2 L15	2.0	.59	.008	.09	.05	.20	
6.0	CMR 6 R0.2 L12	2.3	.47	.008	.11	.06	.24	SIM...H6
	CMR 6 R0.2 L18	2.3	.71	.008	.11	.06	.24	

Order example: CMR 6 R0.2 L12 BMK

● First choice ○ Alternative

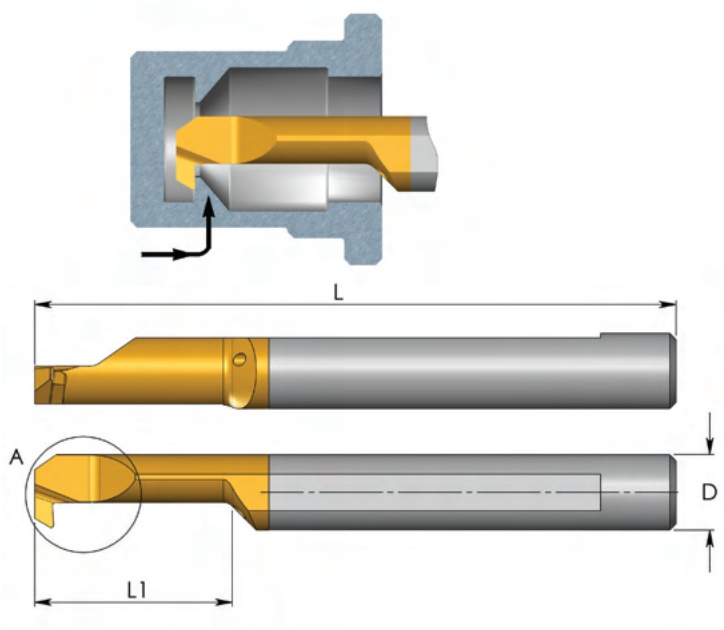
For L.H. bars specify CML instead of CMR

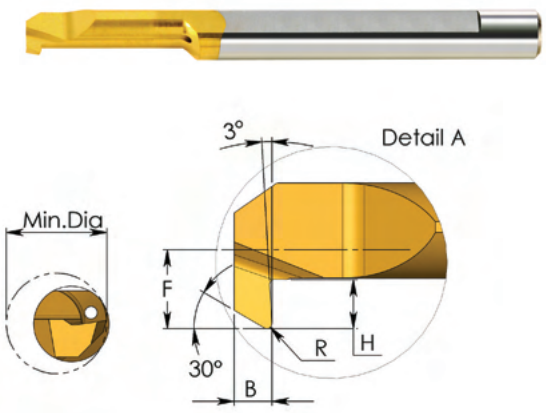
* The minimum diameter the tool can produce from a full material

For additional holders see page A06-32 to 41

Demonstration

MXR Bars Back Turning





Grade	P	M	K	N	S	H
K20		○	○	●	○	
BXC	●	●	●	○	●	●
BMK	●	●	●	○	●	●

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

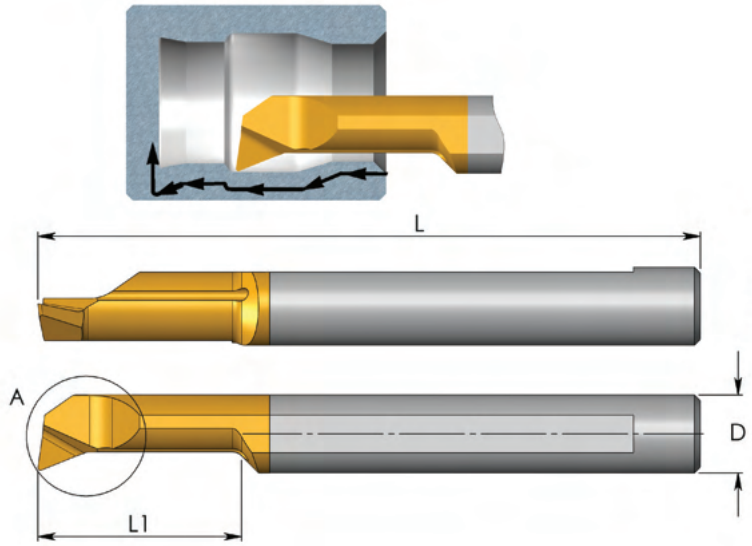
Order example: MXR 4 R0.15 L15 BXC

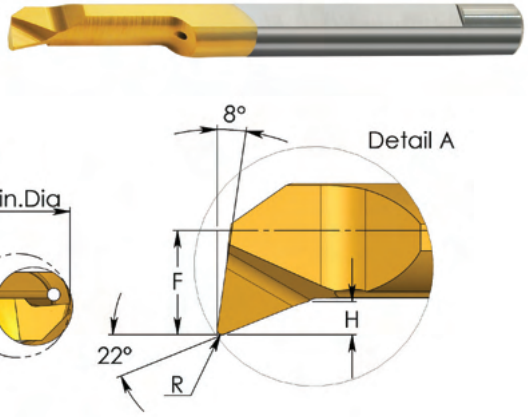
● First choice ○ Alternative

For L.H. bars specify MXL instead of MXR

For additional holders see page A06-32 to 41

MPR Bars Profiling and Boring





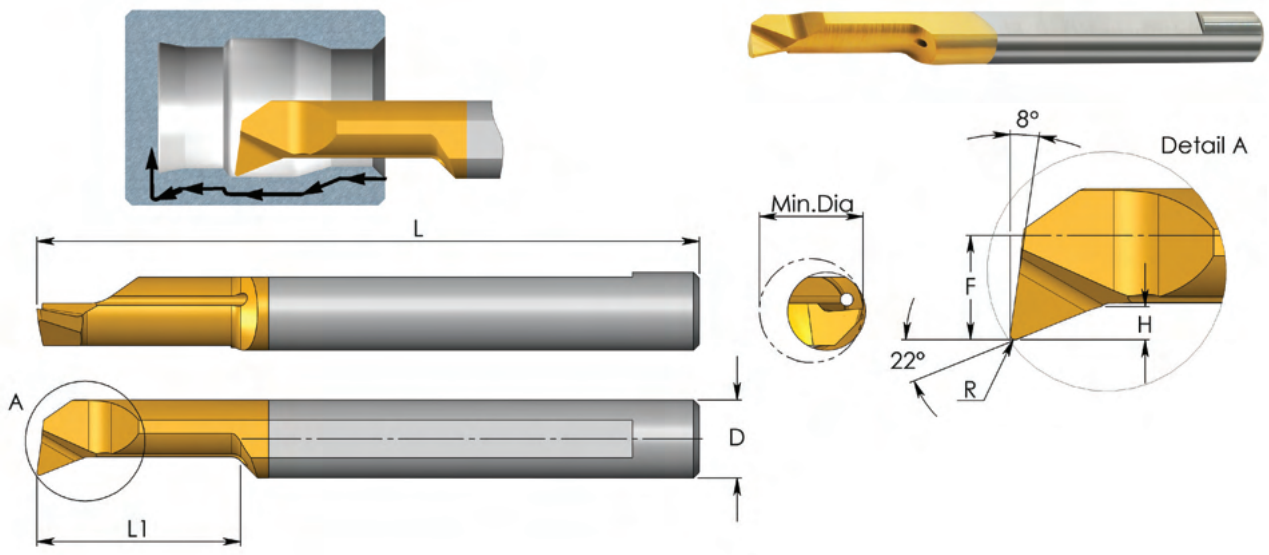
Grade	P	M	K	N	S	H
K20		○	○	●	○	
BXC	●	●	●	○	●	●
BMK	●	●	●	○	●	●

D mm	Ordering Code	L	L1	R	H	F	Min. Dia.	Holder
3.0	MPR 1 R0.05 L4	1.5	.16	.002	.01	.02	.04	SIM ... H3
	MPR 1 R0.05 L8	1.5	.31	.002	.01	.02	.04	
3.0	MPR 1.2 R0.1 L5	1.5	.20	.004	.01	.02	.05	SIM ... H3
	MPR 1.2 R0.1 L9	1.5	.35	.004	.01	.02	.05	
3.0	MPR 1.5 R0.05 L10	1.5	.39	.002	.01	.03	.06	SIM ... H3
	MPR 1.5 R0.1 L6	1.5	.24	.004	.01	.03	.06	
	MPR 1.5 R0.1 L10	1.5	.39	.004	.01	.03	.06	
3.0	MPR 2 R0.05 L10	1.5	.39	.002	.02	.03	.08	SIM ... H3
	MPR 2 R0.1 L10	1.5	.39	.004	.02	.03	.08	
	MPR 2 R0.15 L5	1.5	.20	.006	.02	.03	.08	
	MPR 2 R0.15 L10	1.5	.39	.006	.02	.03	.08	
	MPR 2 R0.15 L15	1.5	.59	.006	.02	.03	.08	
4.0	MPR 2.5 R0.1 L10	2.0	.39	.004	.02	.04	.10	SIM ... H4
	MPR 2.5 R0.1 L15	2.0	.59	.004	.02	.04	.10	
3.0	MPR 3 R0.05 L10	1.5	.39	.002	.03	.05	.12	SIM ... H3
	MPR 3 R0.05 L15	1.5	.59	.002	.03	.05	.12	
	MPR 3 R0.1 L10	1.5	.39	.004	.03	.05	.12	
	MPR 3 R0.1 L15	1.5	.59	.004	.03	.05	.12	
	MPR 3 R0.1 L22	1.9	.87	.004	.03	.05	.12	
	MPR 3 R0.2 L10	1.5	.39	.008	.03	.05	.12	
	MPR 3 R0.2 L15	1.5	.59	.008	.03	.05	.12	
	MPR 3 R0.2 L22	1.9	.87	.008	.03	.05	.12	
4.0	MPR 4 R0.1 L10	2.0	.39	.004	.03	.07	.16	SIM ... H4
	MPR 4 R0.1 L15	2.0	.59	.004	.03	.07	.16	
	MPR 4 R0.1 L22	2.0	.87	.004	.03	.07	.16	
	MPR 4 R0.2 L10	2.0	.39	.008	.03	.07	.16	
	MPR 4 R0.2 L15	2.0	.59	.008	.03	.07	.16	
	MPR 4 R0.2 L22	2.0	.87	.008	.03	.07	.16	
	MPR 4 R0.2 L30	2.4	1.18	.008	.03	.07	.16	

For additional holders see page A06-32 to 41

● First choice ○ Alternative

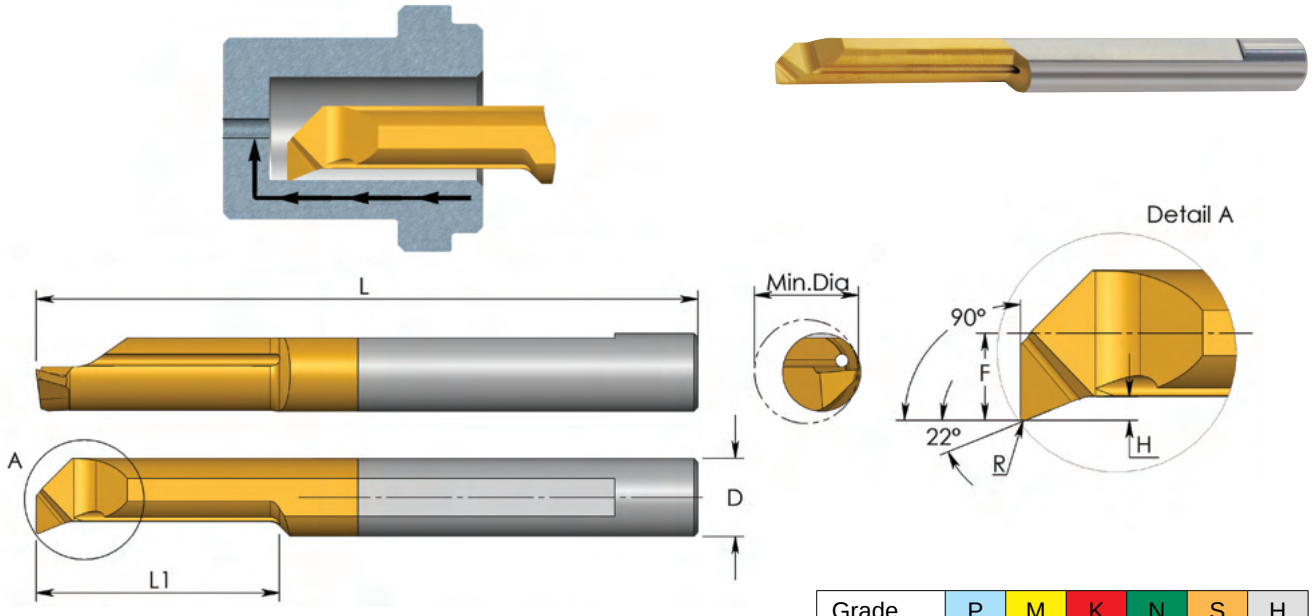
MPR Bars Profiling and Boring



D mm	Ordering Code	L	L1	R	H	F	Min. Dia.	Holder
5.0	MPR 5 R0.1 L22	2.0	.87	.004	.05	.08	.20	SIM ... H5
	MPR 5 R0.1 L30	3.0	1.18	.004	.05	.08	.20	
	MPR 5 R0.2 L10	2.0	.39	.008	.05	.08	.20	
	MPR 5 R0.2 L15	2.0	.59	.008	.05	.08	.20	
	MPR 5 R0.2 L22	2.0	.87	.008	.05	.08	.20	
	MPR 5 R0.2 L30	3.0	1.18	.008	.05	.08	.20	
	MPR 5 R0.2 L40	3.0	1.57	.008	.04	.08	.20	
6.0	MPR 6 R0.2 L10	2.0	.39	.008	.06	.11	.24	SIM ... H6
	MPR 6 R0.2 L15	2.0	.59	.008	.06	.11	.24	
	MPR 6 R0.2 L22	2.0	.87	.008	.06	.11	.24	
	MPR 6 R0.2 L30	3.0	1.18	.008	.06	.11	.24	
	MPR 6 R0.2 L40	3.0	1.57	.008	.04	.11	.24	
7.0	MPR 7 R0.2 L22	2.4	.87	.008	.06	.13	.28	SIM ... H7
	MPR 7 R0.2 L30	2.4	1.18	.008	.06	.13	.28	
	MPR 7 R0.2 L35	2.4	1.38	.008	.06	.13	.28	
8.0	MPR 8 R0.2 L15	2.5	.59	.008	.06	.15	.32	SIM ... H8
	MPR 8 R0.2 L22	2.5	.87	.008	.06	.15	.32	
	MPR 8 R0.2 L35	3.0	1.38	.008	.06	.15	.32	
10.0	MPR 10 R0.2 L35	2.9	1.38	.008	.08	.19	.40	SIM ... H10

Order example: MPR 4 R0.2 L15 BXC
For L.H. Bars specify MPL instead of MPR
For additional holders see page A06-32 to 41

MUR Bars *Profiling, 90° Face Cutting*



Grade	P	M	K	N	S	H
K20		○	○	●	○	
BXC	●	●	●	○	●	●
BMK	●	●	●	○	●	●

D mm	Ordering Code	L	L1	R	H	F	Min. Dia.	Holder
3.0	MUR 3 R0.05 L10	1.5	.39	.002	.016	.05	.12	SIM ... H3
	MUR 3 R0.05 L15	1.5	.59	.002	.016	.05	.12	
4.0	MUR 4 R0.1 L10	2.0	.39	.004	.020	.07	.16	SIM ... H4
	MUR 4 R0.1 L15	2.0	.59	.004	.020	.07	.16	
5.0	MUR 5 R0.15 L15	2.0	.59	.006	.030	.08	.20	SIM ... H5
	MUR 5 R0.15 L22	2.0	.87	.006	.030	.08	.20	
6.0	MUR 6 R0.15 L15	2.0	.59	.006	.035	.11	.24	SIM ... H6
	MUR 6 R0.15 L22	2.0	.87	.006	.035	.11	.24	
8.0	MUR 8 R0.2 L22	2.5	.87	.008	.043	.15	.32	SIM ... H8

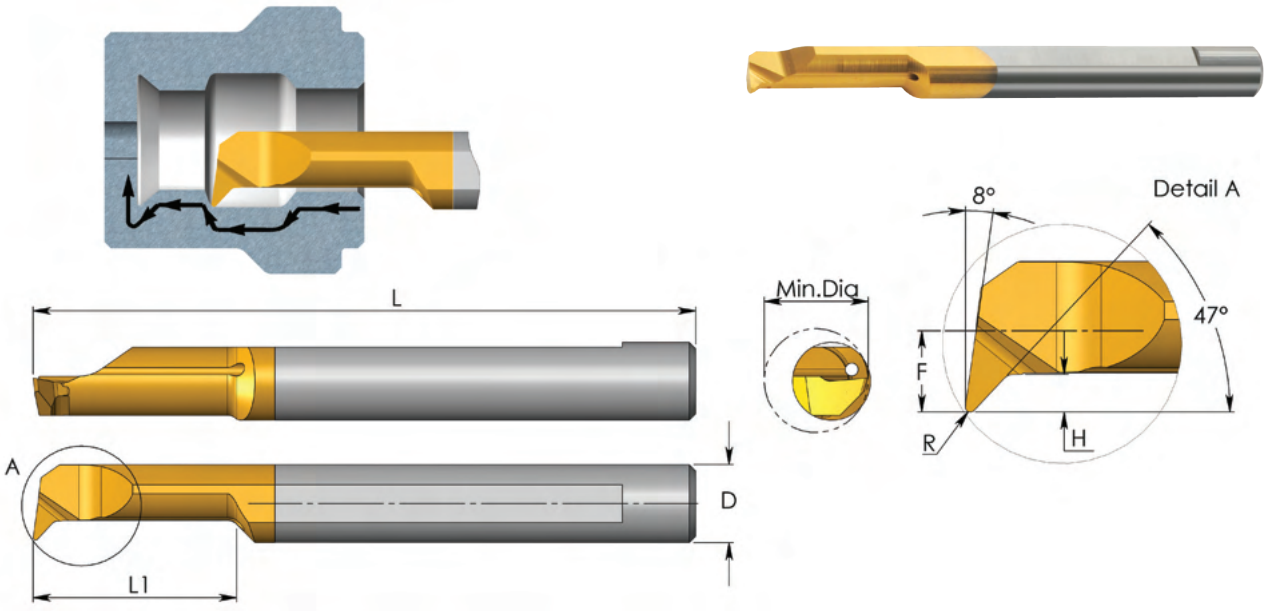
Order example: MUR 5 R0.15 L15 BXC

● First choice ○ Alternative

For L.H. bars specify MUL instead of MUR

For additional holders see page A06-32 to 41

MQR Bars *Profiling and Boring*



Grade	P	M	K	N	S	H
K20		○	○	●	○	
BXC	●	●	●	○	●	●
BMK	●	●	●	○	●	●

D mm	Ordering Code	L	L1	R	H	F	Min. Dia.	Holder
3.0	MQR 3 R0.1 L10	1.5	.39	.004	.02	.05	.12	SIM ... H3
	MQR 3 R0.1 L15	1.5	.59	.004	.02	.05	.12	
4.0	MQR 4 R0.1 L22	2.0	.87	.004	.03	.07	.16	SIM ... H4
	MQR 4 R0.2 L10	2.0	.39	.008	.03	.07	.16	
	MQR 4 R0.2 L15	2.0	.59	.008	.03	.07	.16	
	MQR 4 R0.2 L22	2.0	.87	.008	.03	.07	.16	
5.0	MQR 5 R0.2 L15	2.0	.59	.008	.04	.09	.20	SIM ... H5
	MQR 5 R0.2 L22	2.0	.87	.008	.04	.09	.20	
6.0	MQR 6 R0.2 L15	2.0	.59	.008	.06	.11	.24	SIM ... H6
	MQR 6 R0.2 L22	2.0	.87	.008	.06	.11	.24	
	MQR 6 R0.2 L30	2.3	1.18	.008	.06	.11	.24	
8.0	MQR 8 R0.2 L22	2.5	.87	.008	.06	.15	.32	SIM ... H8
	MQR 8 R0.2 L27	2.5	1.06	.008	.08	.15	.32	

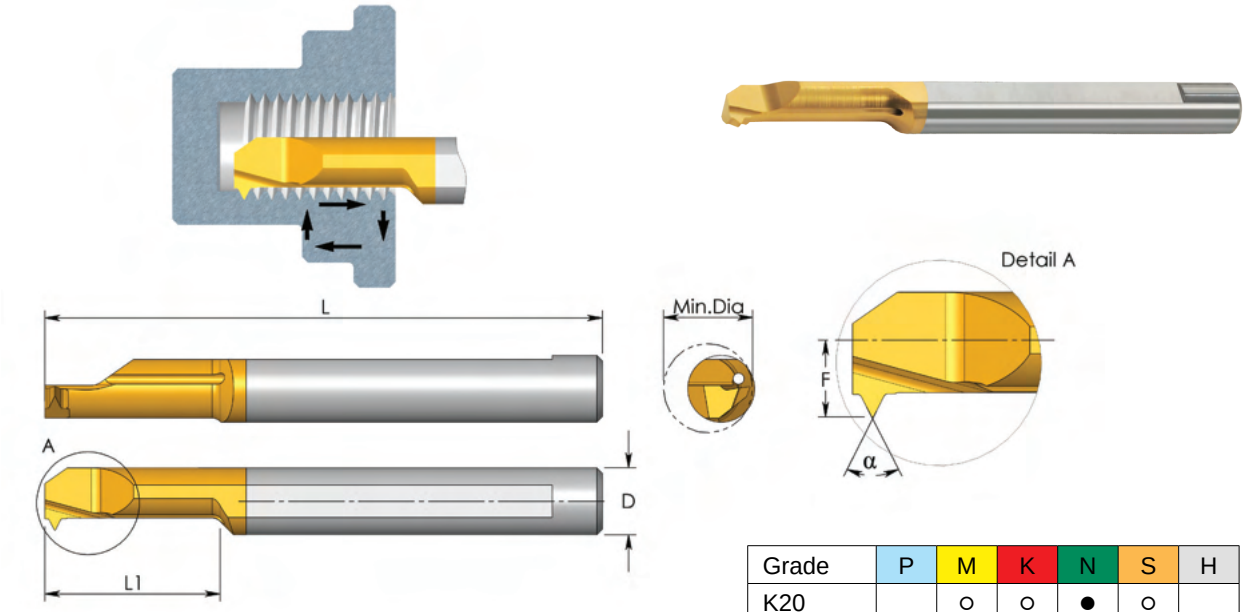
Order example: MQR 5 R0.2 L15 BXC

● First choice ○ Alternative

For L.H. bars specify MQL instead of MQR

For additional holders see page A06-32 to 41

MIR Bars Threading



Grade	P	M	K	N	S	H
K20		○	○	●	○	
BXC	●	●	●	○	●	●
BMK	●	●	●	○	●	●

Partial Profile 55°

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

Order example: MIR 5 L15 A55 BXC

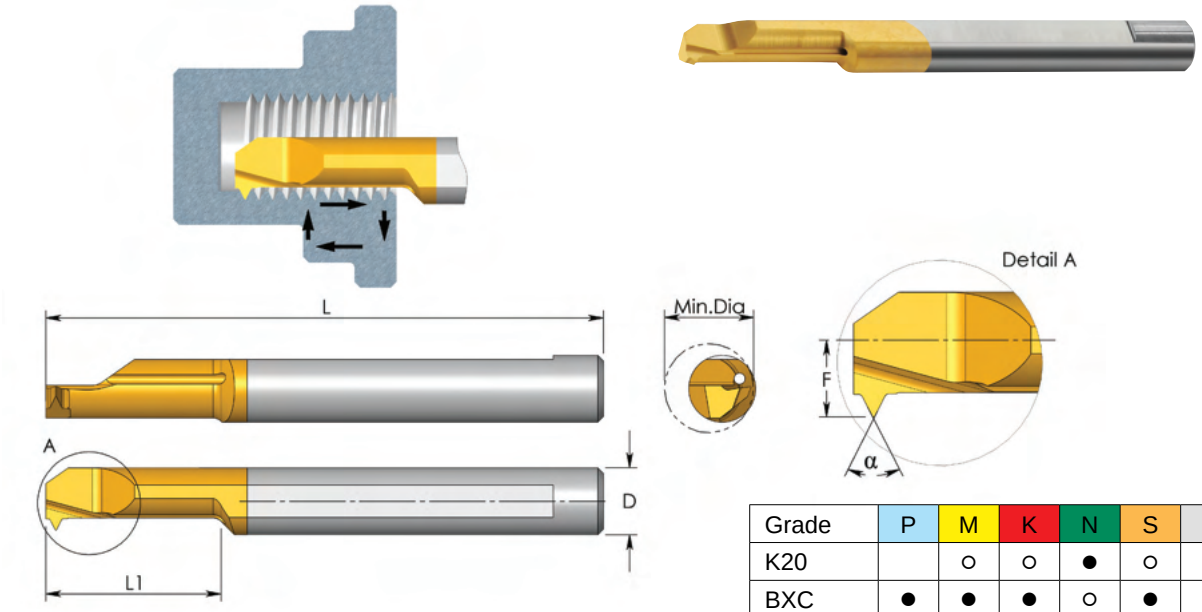
Partial Profile 60°

D mm	Ordering Code	Pitch Range mm	Pitch Range TPI	L	L1	α	F	Min. Dia.	Holder
3.0	MIR 1 L5 A60	0.25 - 0.35	100 - 72	1.5	.19	60	.02	.05	SIM ... H3
	MIR 1.5 L6 A60	0.35 - 0.45	72 - 56	1.5	.25	60	.03	.06	
3.0	MIR 2 L8 A60	0.45 - 0.7	56 - 32	1.5	.31	60	.04	.08	SIM ... H3
3.0	MIR 3 L15 A60	0.7 - 1.0	32 - 24	1.5	.59	60	.06	.13	SIM ... H3
4.0	MIR 4 L17 A60	0.35 - 0.45	72 - 56	2.0	.67	60	.07	.16	SIM ... H4
	MIR 4 L15 A60	0.8 - 1.0	32 - 24	2.0	.59	60	.07	.16	
5.0	MIR 5 L15 A60	1.0 - 1.25	24 - 20	2.0	.59	60	.09	.20	SIM ... H5
	MIR 5 L22 A60	1.0 - 1.25	24 - 20	2.0	.87	60	.09	.20	
6.0	MIR 6 L15 A60	1.0 - 1.5	24 - 16	2.0	.59	60	.10	.24	SIM ... H6
	MIR 6 L22 A60	1.0 - 1.5	24 - 16	2.0	.87	60	.10	.24	
8.0	MIR 8 L22 A60	1.0 - 2.0	24 - 13	2.5	.87	60	.15	.31	SIM ... H8

Order example: MIR 5 L15 A60 BXC
For L.H. bars specify MIL instead of MIR
For additional holders see page A06-32 to 41

● First choice ○ Alternative

MIR Bars Threading



Grade	P	M	K	N	S	H
K20		○	○	●	○	
BXC	●	●	●	○	●	●
BMK	●	●	●	○	●	●

Full Profile - ISO 60°

D mm	Ordering Code	Pitch mm	M Coarse	M Fine	L	L1	α	F	Min. Dia.	Holder
3.0	MIR 3 L10 0.5 ISO	0.5	M3	M3.5	1.5	.39	60	.04	.09	SIM ... H3
3.0	MIR 3 L15 0.5 ISO	0.5		M4	1.5	.59	60	.06	.13	SIM ... H3
	MIR 3 L15 0.7 ISO	0.7	M4		1.5	.59	60	.06	.13	
	MIR 3 L15 0.75 ISO	0.75	M4.5		1.5	.59	60	.06	.13	
4.0	MIR 4 L15 0.5 ISO	0.5		M5	2.0	.59	60	.07	.16	SIM ... H4
	MIR 4 L15 0.75 ISO	0.75		M5	2.0	.59	60	.07	.16	
	MIR 4 L15 0.8 ISO	0.8	M5		2.0	.59	60	.07	.16	
5.0	MIR 5 L15 1.0 ISO	1.0	M6, M7	M8	2.0	.59	60	.09	.19	SIM ... H5
6.0	MIR 6 L22 1.25 ISO	1.25	M8, M9	M10	2.0	.87	60	.11	.24	SIM ... H6
	MIR 6 L22 1.5 ISO	1.5	M10, M11		2.0	.87	60	.11	.24	

Order example: MIR 5 L15 1.0 ISO BXC

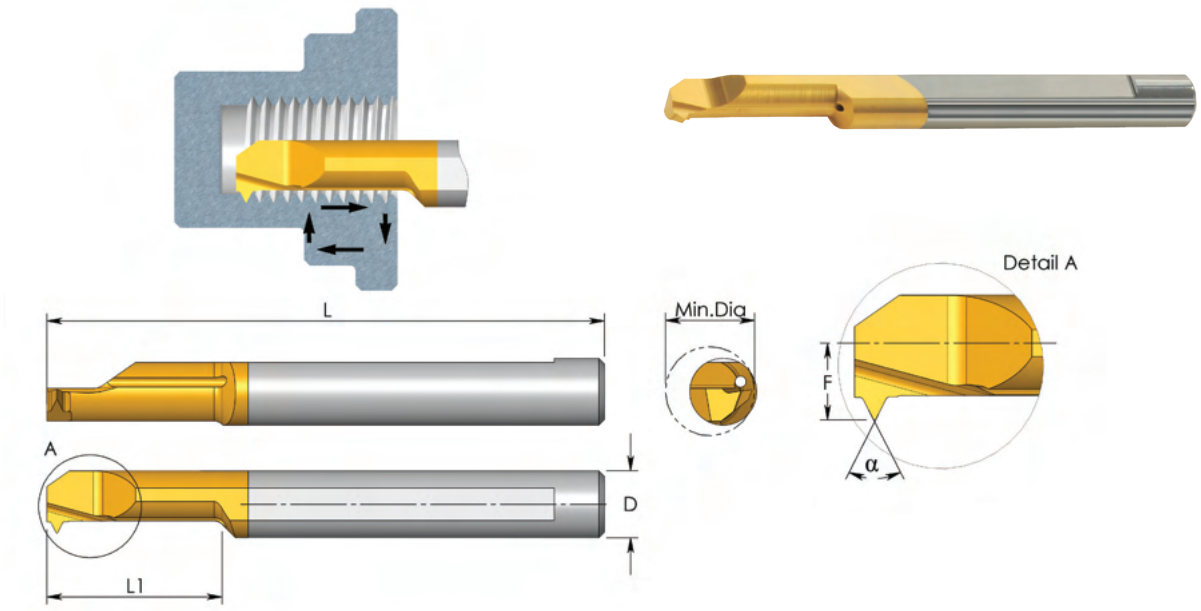
Full Profile - UN 60°

D mm	Ordering Code	Pitch TPI	UNC	UNF	UNEF	UNS	L	L1	α	F	Min. Dia.	Holder
3.0	MIR 3 L10 32 UN	32	6				1.5	.39	60	.04	.11	SIM...H3
3.0	MIR 3 L15 32 UN	32	8	10			1.5	.59	60	.06	.13	SIM...H3
	MIR 3 L15 36 UN	36		8		10	1.5	.59	60	.06	.13	
4.0	MIR 4 L15 36 UN	36				12	2.0	.59	60	.07	.16	SIM...H4
	MIR 4 L15 32 UN	32			12		2.0	.59	60	.07	.16	
5.0	MIR 5 L15 28 UN	28		1/4			2.0	.59	60	.09	.19	SIM...H5
	MIR 5 L18 20 UN	20	1/4				2.0	.71	60	.09	.20	
6.0	MIR 6 L18 24 UN	24		5/16			2.0	.71	60	.11	.26	SIM...H6
	MIR 6 L18 18 UN	18	5/6			3/8	2.0	.71	60	.11	.24	

Order example: MIR 4 L15 36 UN BXC
For L.H. bars specify MIL instead of MIR
For additional holders see page A06-32 to 41

● First choice ○ Alternative

MIR Bars Threading



Grade	P	M	K	N	S	H
K20		○	○	●	○	
BXC	●	●	●	○	●	●
BMK	●	●	●	○	●	●

Full Profile - MJ 60°

D mm	Ordering Code	Thread Size	L	L1	α	F	Min. Dia.	Holder
3.0	MIR 3 L15 0.7 MJ	MJ4x0.7	1.5	.59	60	.06	.13	SIM ... H3
4.0	MIR 4 L15 0.8 MJ	MJ5x0.8	2.0	.59	60	.07	.16	SIM ... H4
5.0	MIR 5 L15 1.0 MJ	MJ6x1.0	2.0	.59	60	.09	.19	SIM ... H5

Order example: MIR 4 L15 0.8 MJ BXC

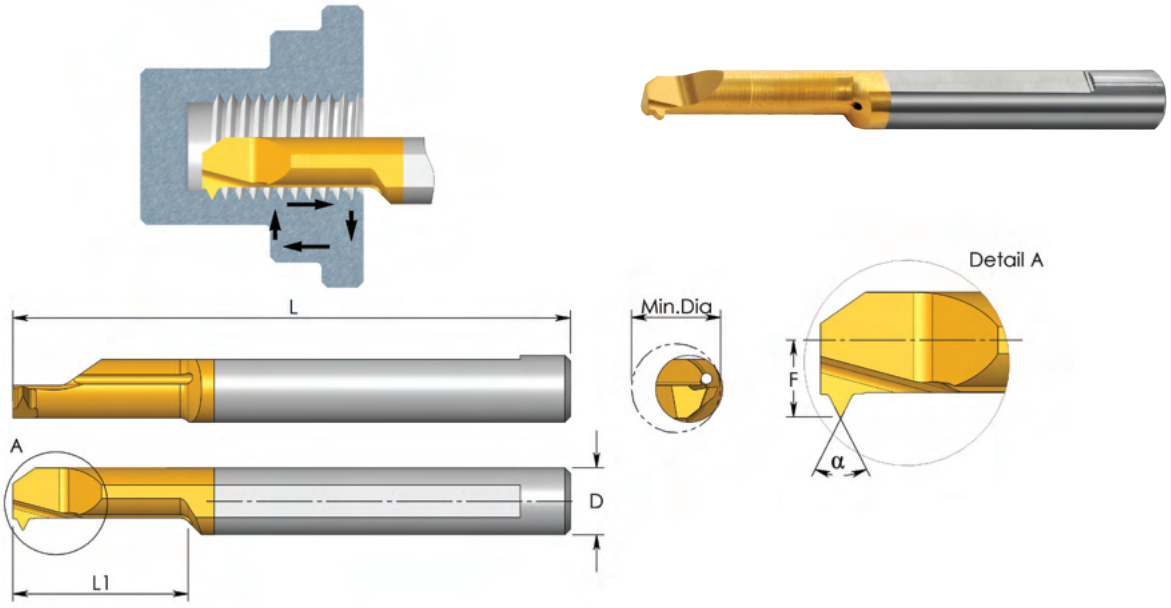
Full Profile - UNJ 60°

D mm	Ordering Code	Thread Size	L	L1	α	F	Min. Dia.	Holder
3.0	MIR 3 L15 32 UNJ	8-32 UNJC	1.5	.59	60	.06	.13	SIM...H3
5.0	MIR 5 L15 28 UNJ	1/4-28 UNJF	2.0	.59	60	.09	.19	SIM...H5
	MIR 5 L18 20 UNJ	1/4-20 UNJC	2.0	.71	60	.09	.20	SIM...H5

Order example: MIR 3 L15 32 UNJ BXC
For L.H. bars specify MIL instead of MIR
For additional holders see page A06-32 to 41

● First choice ○ Alternative

MIR Bars Threading



Grade	P	M	K	N	S	H
K20		○	○	●	○	
BXC	●	●	●	○	●	●
BMK	●	●	●	○	●	●

Full Profile - G 55° BSP

D mm	Ordering Code	Thread Size	L	L1	α	F	Min. Dia.	Holder
6.0	MIR 6 L17 28 W	1/16-28 BSP	2.0	.67	55	.11	.26	SIM ... H6
	MIR 6 L17 19 W	1/4 -19 BSP	2.0	.67	55	.11	.28	

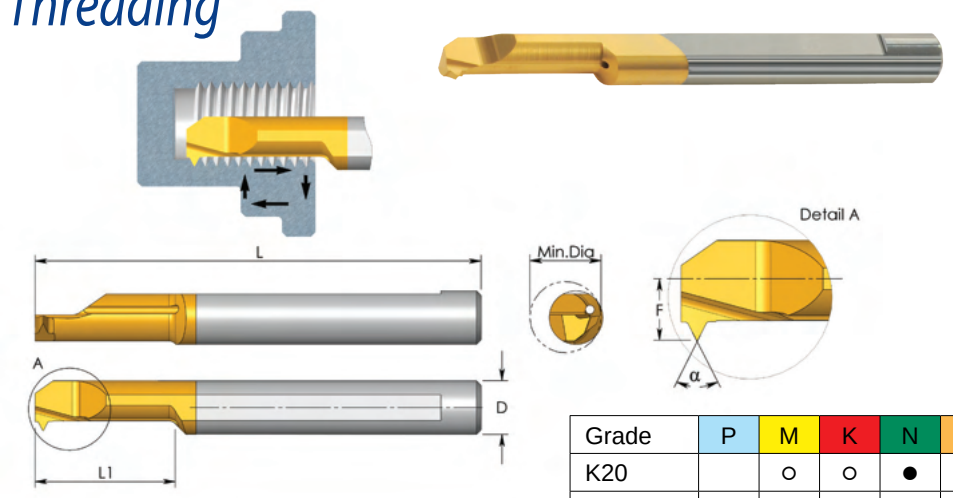
Full Profile - Whitworth 55° BSW

D mm	Ordering Code	Thread Size	L	L1	α	F	Min. Dia.	Holder
5.0	MIR 5 L17 20 W	1/4-20 BSW	2.0	.67	55	.08	.19	SIM ... H5

Order example: MIR 6 L17 28 W BMK
For L.H. bars specify MIL instead of MIR
For additional holders see page A06-32 to 41

● First choice ○ Alternative

MIR Bars Threading

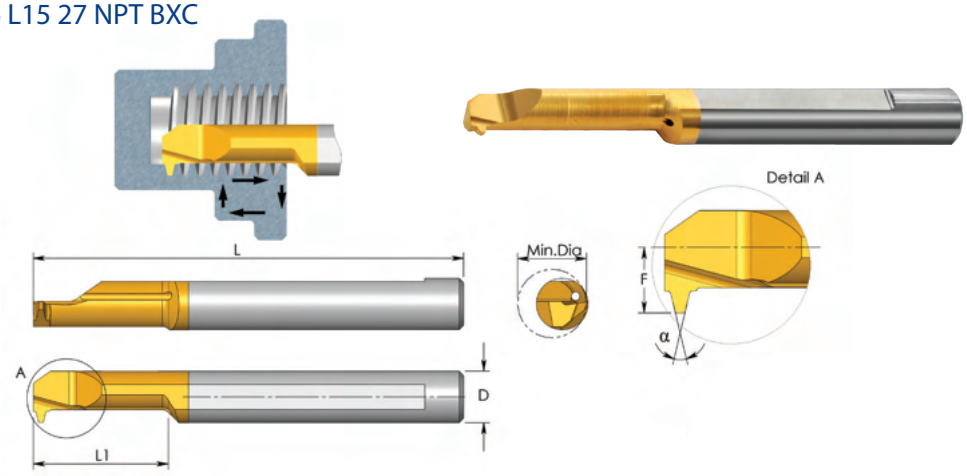


Grade	P	M	K	N	S	H
K20		○	○	●	○	
BXC	●	●	●	○	●	●
BMK	●	●	●	○	●	●

Full Profile - NPT 60°

D mm	Ordering Code	Pitch TPI	Thread Size	L	L1	α	F	Min. Dia.	Holder
6.0	MIR 6 L15 27 NPT	27	1/16 x 27 NPT 1/8 x 27 NPT	2.0	.59	60	.11	.23	SIM ... H6

Order example: MIR 6 L15 27 NPT BXC



Acme

D mm	Ordering Code	Pitch TPI	Thread Size	L	L1	α	F	Min. Dia.	Holder
4.0	MIR 4 L15 16 ACME	16	1/4 x 16	2.0	.59	29	.07	.18	SIM ... H4
6.0	MIR 6 L20 14 ACME	14	5/16 x 14	2.0	.79	29	.11	.24	SIM ... H6
7.0	MIR 7 L22 12 ACME	12	3/8 x 12 7/16 x 12	2.4	.87	29	.13	.28	SIM ... H7
8.0	MIR 8 L30 10 ACME	10	1/2 x 10	3.0	1.18	29	.15	.39	SIM ... H8
10.0	MIR 10 L35 8 ACME	8	5/8 x 8	2.9	1.38	29	.19	.49	SIM ... H10
10.0	MIR 10 L45 6 ACME	6	3/4 x 6 7/8 x 6	4.1	1.77	29	.19	.57	SIM ... H10
10.0	MIR 10 L52 5 ACME	5	1 x 5	4.1	2.05	29	.19	.79	SIM ... H10

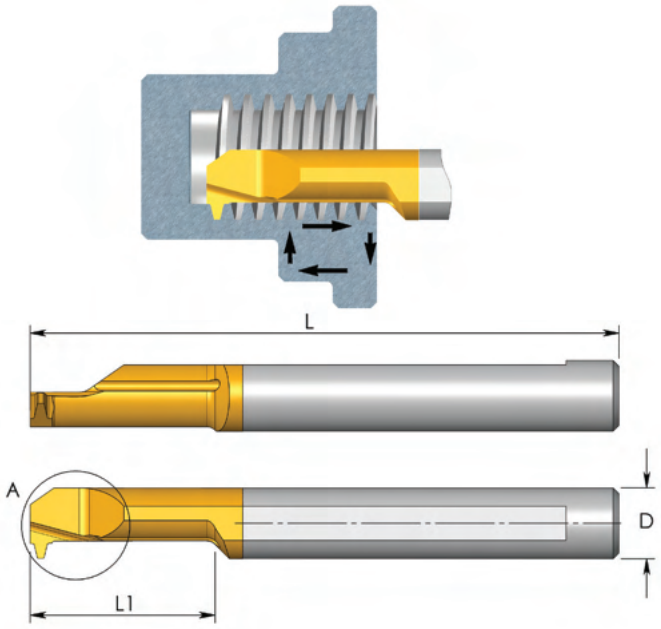
Order example: MIR 6 L 20 14 ACME BXC

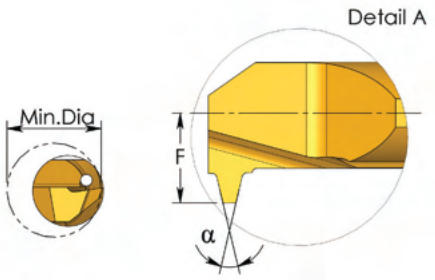
For L.H. bars specify MIL instead of MIR

For additional holders see page A06-32 to 41

● First choice ○ Alternative

MIR Bars Threading





Grade	P	M	K	N	S	H
K20		○	○	●	○	
BXC	●	●	●	○	●	●
BMK	●	●	●	○	●	●

Stub Acme

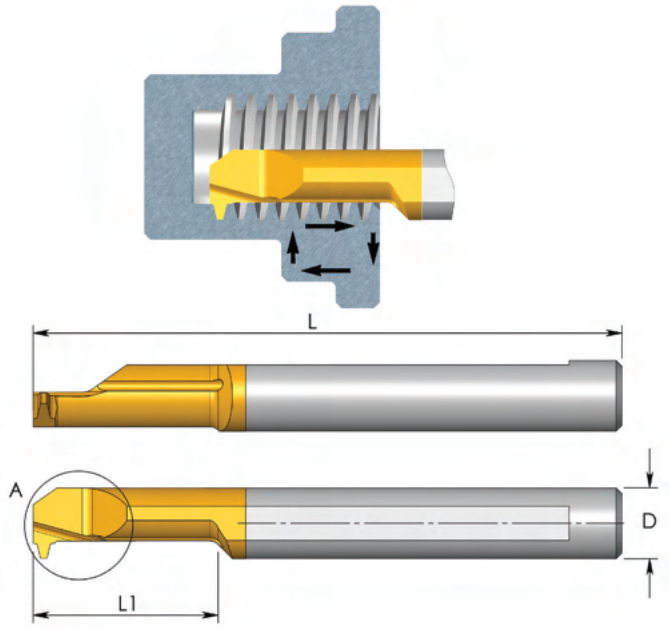
D mm	Ordering Code	Pitch TPI	Thread Size	L	L1	α	F	Min. Dia.	Holder
4.0	MIR 4 L15 16 STACME	16	1/4 x 16	2.0	.59	29	.07	.20	SIM ... H4
6.0	MIR 6 L20 14 STACME	14	5/16 x 14	2.0	.79	29	.11	.26	SIM ... H6
7.0	MIR 7 L22 12 STACME	12	3/8 x 12 7/16 x 12	2.4	.87	29	.13	.32	SIM ... H7
8.0	MIR 8 L30 10 STACME	10	1/2 x 10	3.0	1.18	29	.15	.43	SIM ... H8
10.0	MIR 10 L35 8 STACME	8	5/8 x 8	2.9	1.38	29	.19	.54	SIM ... H10
10.0	MIR 10 L45 6 STACME	6	3/4 x 6 7/8 x 6	4.1	1.77	29	.19	.64	SIM ... H10

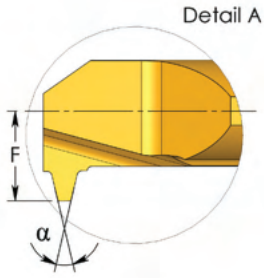
Order example: MIR 7 L22 12 STACME K20

● First choice ○ Alternative

For additional holders see page A06-32 to 41

MIR Bars Threading





Grade	P	M	K	N	S	H
K20		○	○	●	○	
BXC	●	●	●	○	●	●
BMK	●	●	●	○	●	●

Trapez - DIN 103

D mm	Ordering Code	Pitch mm	Thread Size	L	L1	α	F	Min. Dia.	Holder
6.0	MIR 6 L22 1.5 TR	1.5	TR 8 x 1.5 TR 9 x 1.5 TR10 x 1.5	2.0	.87	30	.11	.25	SIM ... H6
7.0	MIR 7 L25 2 TR	2	TR 9 x 2 TR10 x 2 TR11 x 2 TR12 x 2	2.4	.98	30	.13	.27	SIM ... H7
10.0	MIR 10 L35 2 TR	2	TR14 x 2 TR16 x 2 TR18 x 2 TR20 x 2	2.9	1.38	30	.19	.43	SIM ... H10
7.0	MIR 7 L35 3 TR	3	TR11 x 3 TR12 x 3	2.4	1.38	30	.13	.30	SIM ... H7
10.0	MIR 10 L35 3 TR	3	TR14 x 3 TR22 x 3 TR24 x 3 TR26 x 3 TR28 x 3	2.9	1.38	30	.19	.41	SIM ... H10
10.0	MIR 10 L45 4 TR	4	TR16 x 4 TR18 x 4 TR20 x 4	4.1	1.77	30	.19	.45	SIM ... H10
10.0	MIR 10 L55 5 TR	5	TR22 x 5 TR24 x 5 TR28 x 5	4.1	2.17	30	.19	.43	SIM ... H10

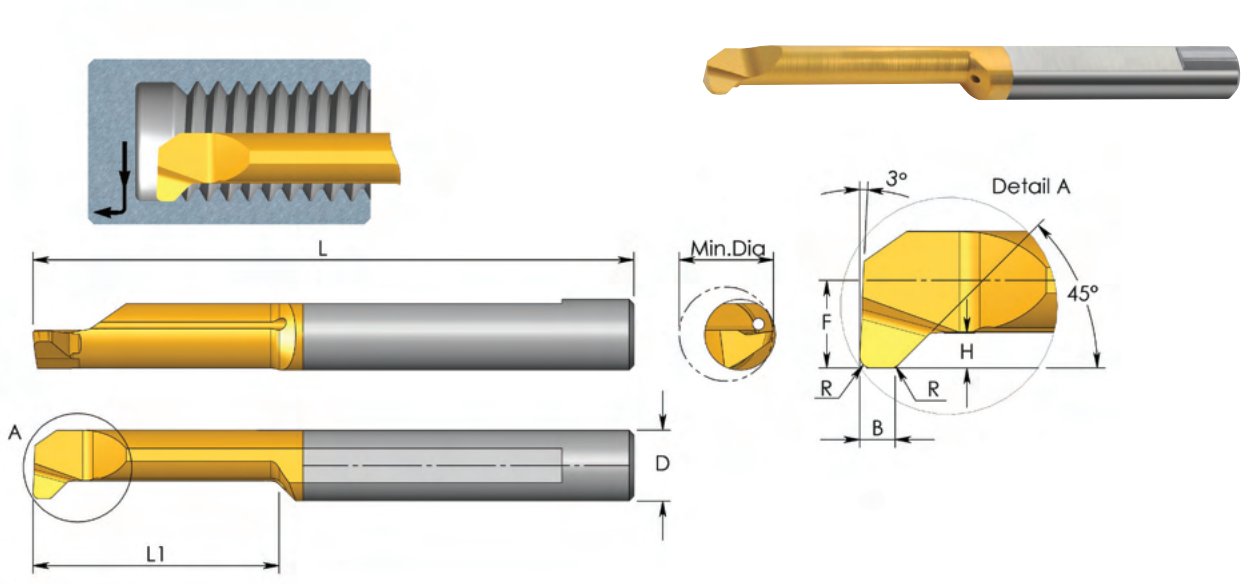
Order example: MIR 10 L35 3 TR BXC

● First choice ○ Alternative

For L.H. bars specify MIL instead of MIR

For additional holders see page A06-32 to 41

MDR Bars *Thread Relief, Chamfering and Grooving*



Grade	P	M	K	N	S	H
K20		○	○	●	○	
BXC	●	●	●	○	●	●
BMK	●	●	●	○	●	●

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

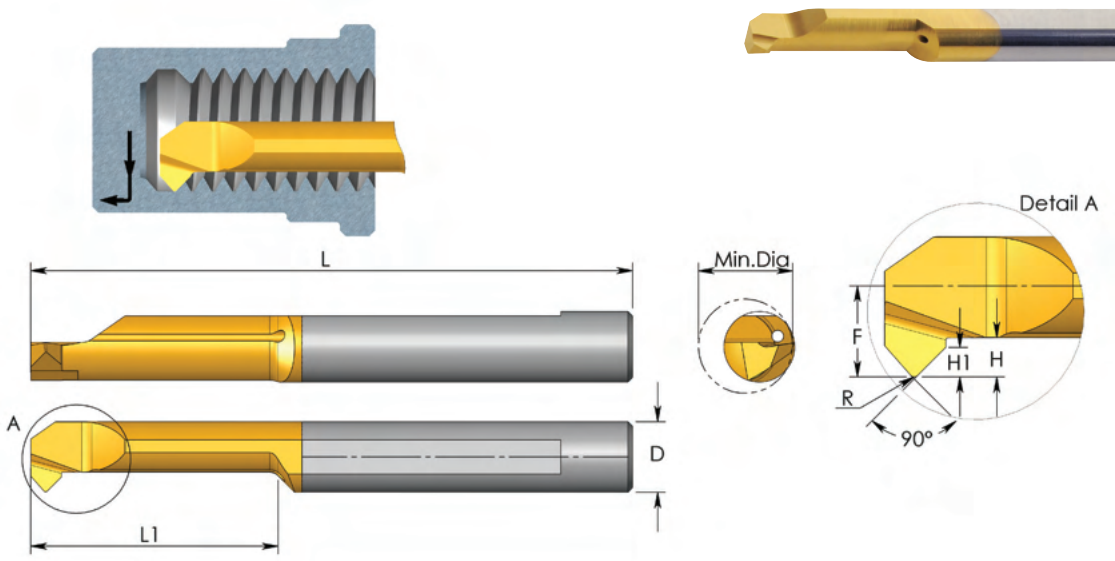
Order example: MDR 5 R0.5 L24 BXC

● First choice ○ Alternative

For L.H. bars specify MDL instead of MDR

For additional holders see page A06-32 to 41

MCR Bars Chamfering and Boring



Grade	P	M	K	N	S	H
K20		○	○	●	○	
BXC	●	●	●	○	●	●
BMK	●	●	●	○	●	●

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

Order example: MCR 4 R0.2 L15 BXC

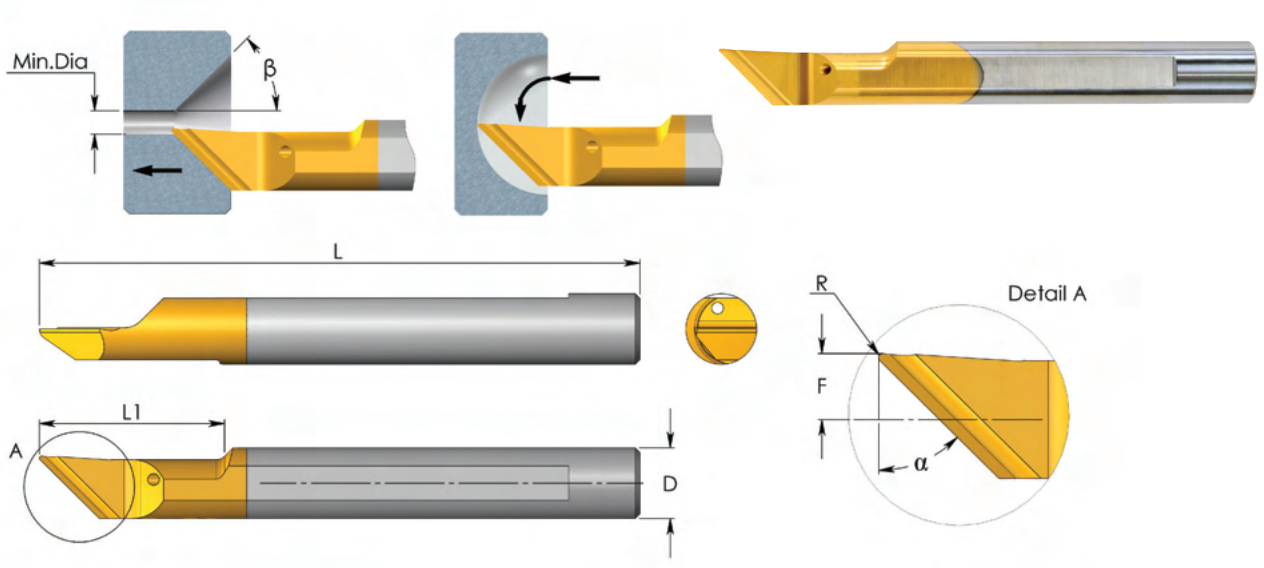
● First choice ○ Alternative

For L.H. bars specify MCL instead of MCR

For additional holders see page A06-32 to 41

Carmex Precision Tools Ltd.

MWR Bars *Chamfering and Profiling*



Grade	P	M	K	N	S	H
K20		○	○	●	○	
BXC	●	●	●	○	●	●
BMK	●	●	●	○	●	●

D mm	Ordering Code	L	L1	R	α	β	F	Min. Dia.	Holder
6.0	MWR 6 R0.2 A90	2.0	.59	.008	45°	45°	.09	.04	SIM ... H6
	MWR 6 R0.2 A60	2.0	.59	.008	60°	30°	.09	.04	
	* MWR 6 R0.4 A90	2.0	.87	.016	45°	45°	.09	.24	
	* MWR 6 R0.4 A60	2.0	.87	.016	60°	30°	.09	.24	

Order example: MWR 6 R0.2 A90 BXC

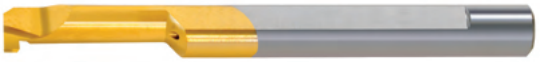
● First choice ○ Alternative

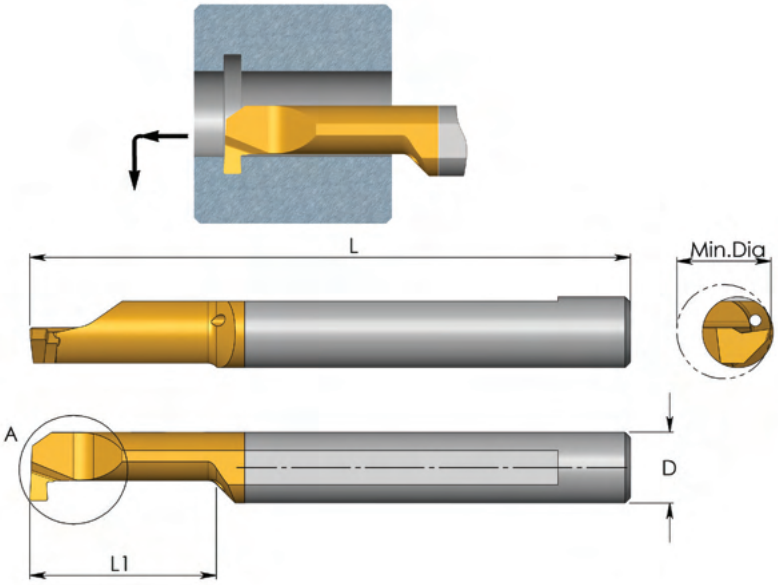
For L.H. bars specify MWL instead of MWR

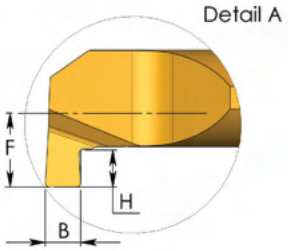
*Can be used also for boring

For additional holders see page A06-32 to 41

MGR Bars Grooving







Grade	P	M	K	N	S	H
K20		○	○	●	○	
BXC	●	●	●	○	●	●
BMK	●	●	●	○	●	●

D mm	Ordering Code	L	L1	B mm	B in	H	F	Min. Dia.	Holder
4.0	MGR 2 B0.5 L10	2.0	.39	0.5	.020	.02	.04	.08	SIM ... H4
3.0	MGR 3 B0.5 L10	1.5	.39	0.5	.020	.02	.05	.12	SIM ... H3
	MGR 3 B0.7 L10	1.5	.39	0.7	.028	.02	.05	.12	
4.0	MGR 4 B0.5 L10	2.0	.39	0.5	.020	.02	.07	.16	SIM ... H4
	MGR 4 B0.5 L15	2.0	.59	0.5	.028	.02	.07	.16	
	MGR 4 B0.7 L10	2.0	.39	0.7	.028	.02	.07	.16	
	MGR 4 B0.79 L15	2.0	.59	0.79	.031	.04	.07	.16	
	MGR 4 B0.79 L22	2.0	.87	0.79	.031	.04	.07	.16	
	MGR 4 B1.0 L10	2.0	.39	1.0	.039	.04	.07	.16	
	MGR 4 B1.0 L15	2.0	.59	1.0	.039	.04	.07	.16	
	MGR 4 B1.0 L22	2.0	.87	1.0	.039	.04	.07	.16	
	MGR 4 B1.5 L10	2.0	.39	1.5	.059	.04	.07	.16	
	MGR 4 B1.5 L15	2.0	.59	1.5	.059	.04	.07	.16	
	MGR 4 B1.5 L22	2.0	.87	1.5	.059	.04	.07	.16	
5.0	MGR 5 B0.79 L15	2.0	.59	0.79	.031	.04	.09	.20	SIM ... H5
	MGR 5 B0.79 L22	2.0	.87	0.79	.031	.04	.09	.20	
	MGR 5 B1.0 L15	2.0	.59	1.0	.039	.05	.09	.20	
	MGR 5 B1.0 L22	2.0	.87	1.0	.039	.05	.09	.20	
	MGR 5 B1.19 L15	2.0	.59	1.19	.047	.05	.09	.20	
	MGR 5 B1.19 L22	2.0	.87	1.19	.047	.05	.09	.20	
	MGR 5 B1.5 L15	2.0	.59	1.5	.059	.05	.09	.20	
	MGR 5 B1.5 L22	2.0	.87	1.5	.059	.05	.09	.20	
	MGR 5 B1.59 L15	2.0	.59	1.59	.063	.05	.09	.20	
	MGR 5 B1.59 L22	2.0	.87	1.59	.063	.05	.09	.20	
	MGR 5 B2.0 L10	2.0	.39	2.0	.079	.05	.09	.20	
	MGR 5 B2.0 L15	2.0	.59	2.0	.079	.05	.09	.20	
	MGR 5 B2.0 L22	2.0	.87	2.0	.079	.05	.09	.20	

● First choice ○ Alternative

For additional holders see page A06-32 to 41

MGR Bars Grooving

D mm	Ordering Code	L	L1	B mm	B in	H	F	Min. Dia.	Holder
6.0	MGR 6 B1.0 L15	2.0	.59	1.0	.039	.06	.11	.24	SIM ... H6
	MGR 6 B1.0 L22	2.0	.87	1.0	.039	.06	.11	.24	
	MGR 6 B1.5 L15	2.0	.59	1.5	.059	.06	.11	.24	
	MGR 6 B1.5 L22	2.0	.87	1.5	.059	.06	.11	.24	
	MGR 6 B2.0 L15	2.0	.59	2.0	.079	.06	.11	.24	
	MGR 6 B2.0 L22	2.0	.87	2.0	.079	.06	.11	.24	
6.0	MGR 6 B0.79 L17	2.0	.67	0.79	.031	.07	.11	.24	SIM ... H6
	MGR 6 B0.79 L23	2.0	.91	0.79	.031	.07	.11	.24	
	MGR 6 B1.0 L17	2.0	.67	1.0	.039	.07	.11	.24	
	MGR 6 B1.19 L17	2.0	.67	1.19	.047	.07	.11	.24	
	MGR 6 B1.19 L23	2.0	.91	1.19	.047	.07	.11	.24	
	MGR 6 B1.5 L17	2.0	.67	1.5	.059	.07	.11	.24	
	MGR 6 B1.5 L23	2.0	.91	1.5	.059	.07	.11	.24	
	MGR 6 B1.59 L17	2.0	.67	1.59	.063	.07	.11	.24	
	MGR 6 B1.59 L23	2.0	.91	1.59	.063	.07	.11	.24	
	MGR 6 B2.0 L17	2.0	.67	2.0	.079	.07	.11	.24	
	MGR 6 B2.0 L23	2.0	.91	2.0	.079	.07	.11	.24	
7.0	MGR 7 B1.0 L15	2.4	.59	1.0	.039	.10	.13	.28	SIM ... H7
	MGR 7 B1.0 L22	2.4	.87	1.0	.039	.10	.13	.28	
	MGR 7 B1.0 L30	2.4	1.18	1.0	.039	.10	.13	.28	
	MGR 7 B1.19 L22	2.4	.87	1.19	.047	.10	.13	.28	
	MGR 7 B1.19 L30	2.4	1.18	1.19	.047	.10	.13	.28	
	MGR 7 B1.5 L15	2.4	.59	1.5	.059	.10	.13	.28	
	MGR 7 B1.5 L22	2.4	.87	1.5	.059	.10	.13	.28	
	MGR 7 B1.5 L30	2.4	1.18	1.5	.059	.10	.13	.28	
	MGR 7 B1.59 L22	2.4	.87	1.59	.063	.10	.13	.28	
	MGR 7 B1.59 L30	2.4	1.18	1.59	.063	.10	.13	.28	
	MGR 7 B2.0 L15	2.4	.59	2.0	.079	.10	.13	.28	
	MGR 7 B2.0 L22	2.4	.87	2.0	.079	.10	.13	.28	
	MGR 7 B2.0 L30	2.4	1.18	2.0	.079	.10	.13	.28	
8.0	MGR 8 B1.0 L22	2.5	.87	1.0	.039	.07	.15	.32	SIM ... H8
	MGR 8 B1.5 L22	2.5	.87	1.5	.059	.07	.15	.32	
	MGR 8 B2.0 L15	2.5	.59	2.0	.079	.10	.15	.32	
	MGR 8 B2.0 L22	2.5	.87	2.0	.079	.10	.15	.32	
	MGR 8 B2.38 L15	2.5	.59	2.38	.094	.10	.15	.32	
	MGR 8 B2.38 L22	2.5	.87	2.38	.094	.10	.15	.32	

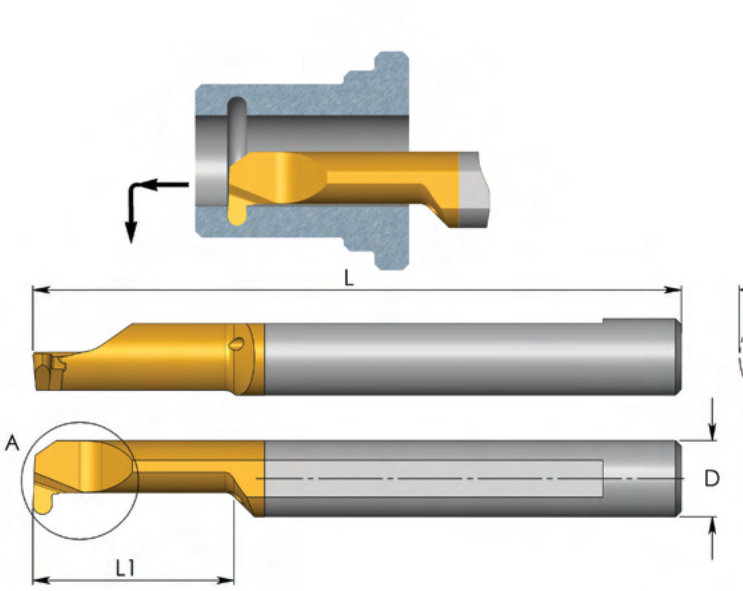
Tolerance: B±0.025 mm/.001

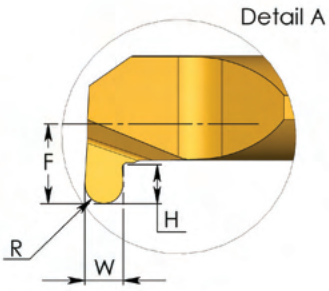
Order example: MGR 5 B1.5 L15 BXC

For L.H. bars specify MGL instead of MGR

For additional holders see page A06-32 to 41

MKR Bars Full Radius Grooving





Grade	P	M	K	N	S	H
K20		○	○	●	○	
BXC	●	●	●	○	●	●
BMK	●	●	●	○	●	●

D mm	Ordering Code	L	L1	R	W	H	F	Min. Dia.	Holder
4.0	MKR 4 R0.5 L10	2.0	.39	.020	.04	.04	.07	.16	SIM ... H4
	MKR 4 R0.5 L15	2.0	.59	.020	.04	.04	.07	.16	
	MKR 4 R0.75 L10	2.0	.39	.030	.06	.04	.07	.16	
5.0	MKR 5 R0.5 L15	2.0	.59	.020	.04	.05	.09	.20	SIM ... H5
	MKR 5 R0.75 L15	2.0	.59	.030	.06	.05	.09	.20	
	MKR 5 R1.0 L15	2.0	.59	.039	.08	.05	.09	.20	
	MKR 5 R1.0 L22	2.0	.87	.039	.08	.05	.09	.20	
6.0	MKR 6 R0.5 L15	2.0	.59	.020	.04	.06	.11	.24	SIM ... H6
	MKR 6 R0.75 L15	2.0	.59	.030	.06	.06	.11	.24	
	MKR 6 R1.0 L15	2.0	.59	.039	.08	.06	.11	.24	
	MKR 6 R1.0 L23	2.0	.91	.039	.08	.07	.11	.24	
7.0	MKR 7 R0.5 L22	2.4	.87	.020	.04	.10	.13	.28	SIM ... H7
	MKR 7 R0.75 L22	2.4	.87	.030	.06	.10	.13	.28	
	MKR 7 R1.0 L22	2.4	.87	.039	.08	.10	.13	.28	

Tolerance: R±.001

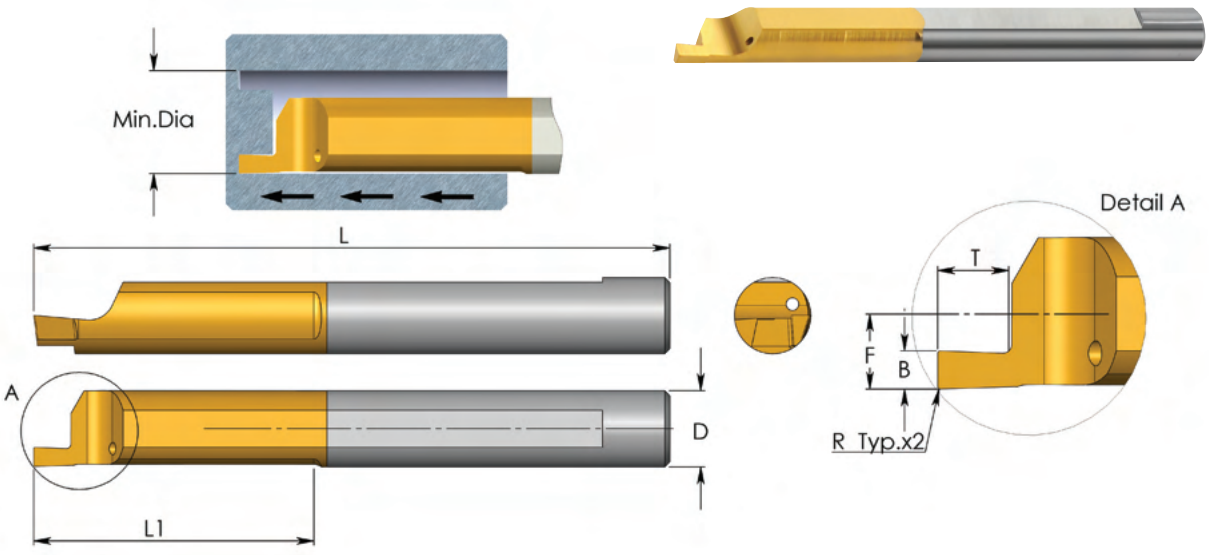
● First choice ○ Alternative

Order example: MKR 5 R1.0 L15 BXC

For L.H. bars specify MKL instead of MKR

For additional holders see page A06-32 to 41

MFR Bars Face Grooving



Grade	P	M	K	N	S	H
K20		○	○	●	○	
BXC	●	●	●	○	●	●
BMK	●	●	●	○	●	●

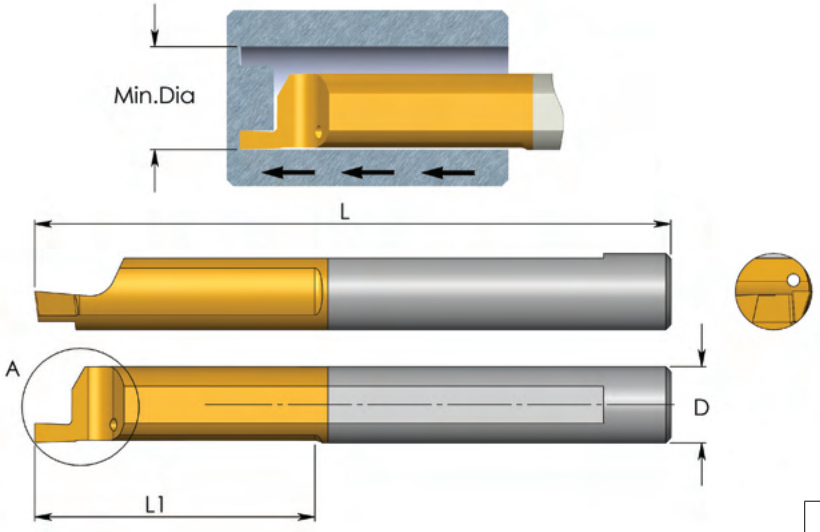
D mm	Ordering Code	L	L1	R	B	T	F	Min. Dia.	Holder
4.0	MFR 4 B0.5 L15	2.0	.59	.002	.02	.05	.08	.20	SIM ... H4
	MFR 4 B0.75 L15	2.0	.59	.004	.03	.05	.08	.20	
	MFR 4 B1.0 L15	2.0	.59	.004	.04	.06	.08	.20	
	MFR 4 B1.5 L15	2.0	.59	.004	.06	.11	.08	.20	
	MFR 4 B1.5 L17	2.0	.67	.004	.06	.14	.08	.20	
	MFR 4 B2.0 L17	2.0	.67	.004	.08	.20	.08	.20	
5.0	MFR 5 B0.5 L22	2.0	.87	.002	.02	.05	.10	.24	SIM ... H5
	MFR 5 B0.75 L22	2.0	.87	.004	.03	.05	.10	.24	
	MFR 5 B1.0 L22	2.0	.87	.004	.04	.06	.10	.24	
	MFR 5 B1.0 L23	2.0	.91	.004	.04	.10	.10	.24	
	MFR 5 B1.5 L22	2.0	.87	.004	.06	.10	.10	.24	
	MFR 5 B1.5 L23	2.0	.91	.004	.06	.14	.10	.24	
	MFR 5 B2.0 L22	2.0	.87	.004	.08	.15	.10	.24	
	MFR 5 B2.0 L23	2.0	.91	.004	.08	.20	.10	.24	
6.0	MFR 6 B1.0 L22	2.0	.87	.004	.04	.06	.12	.31	SIM ... H6
	MFR 6 B1.5 L22	2.0	.87	.004	.06	.10	.12	.31	
	MFR 6 B2.0 L22	2.0	.87	.004	.08	.12	.12	.31	
	MFR 6 B2.5 L22	2.0	.87	.004	.10	.19	.12	.31	
	MFR 6 B3.0 L30	2.3	1.18	.004	.12	.24	.12	.31	
8.0	MFR 8 B2.5 L22	2.5	.87	.004	.10	.14	.16	.39	SIM ... H8

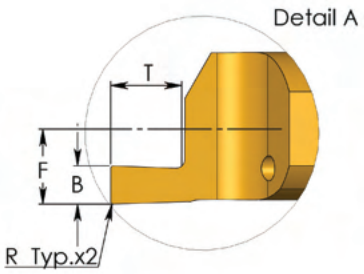
Order example: MFR 5 B1.0 L22 BXC

● First choice ○ Alternative

For additional holders see page A06-32 to 41

MFR Bars Face Grooving with Chip Former





Grade	P	M	K	N	S	H
K20		○	○	●	○	
BXC	●	●	●	○	●	●
BMK	●	●	●	○	●	●

D mm	Ordering Code	L	L1	R	B	T	F	Min. Dia.	Holder
4.0	MFR 4 B1.5 L15-C	2.0	.59	.004	.06	.11	.08	.20	SIM ... H4
5.0	MFR 5 B1.5 L22-C	2.0	.87	.004	.06	.10	.10	.24	SIM ... H5
	MFR 5 B2.0 L22-C	2.0	.87	.004	.08	.15	.10	.24	
6.0	MFR 6 B1.5 L22-C	2.0	.87	.004	.06	.10	.12	.31	SIM ... H6
	MFR 6 B2.0 L22-C	2.0	.87	.004	.08	.12	.12	.31	
	MFR 6 B3.0 L22-C	2.0	.87	.004	.12	.24	.12	.31	

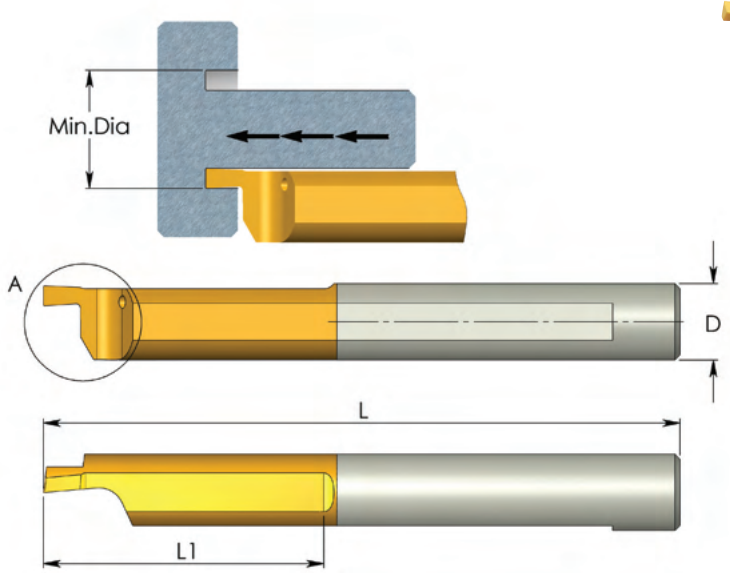
Order example: MFR 5 B2.0 L22-C BXC

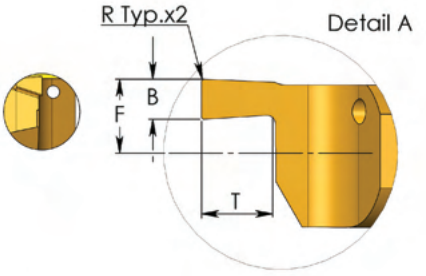
● First choice ○ Alternative

For L.H. bars specify MFL instead of MFR

For additional holders see page A06-32 to 41

MFL Bars Face Grooving





Grade	P	M	K	N	S	H
K20		○	○	●	○	
BXC	●	●	●	○	●	●
BMK	●	●	●	○	●	●

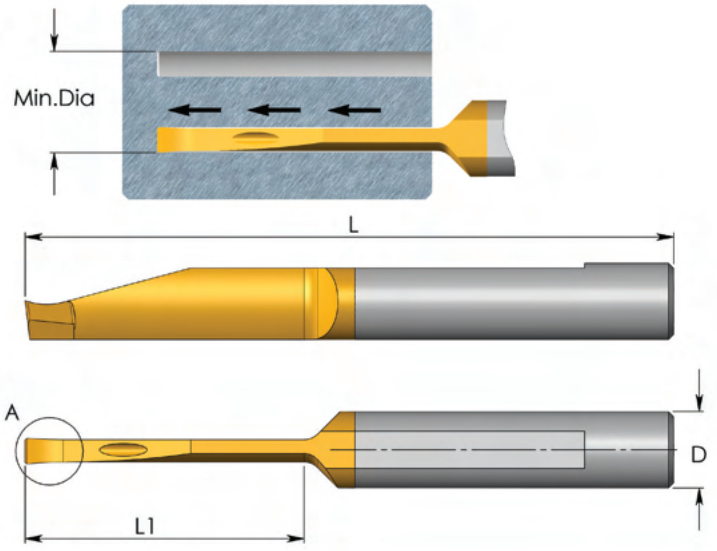
D mm	Ordering Code	L	L1	R	B	T	F	Min. Dia.	Holder
4.0	MFL 4 B0.5 L15	2.0	.59	.002	.02	.05	.07	.20	SIM ... H4
	MFL 4 B0.75 L15	2.0	.59	.004	.03	.05	.07	.20	
	MFL 4 B1.0 L15	2.0	.59	.004	.04	.06	.07	.20	
	MFL 4 B1.5 L15	2.0	.59	.004	.06	.11	.07	.20	
	MFL 4 B1.5 L17	2.0	.67	.004	.06	.14	.07	.20	
	MFL 4 B2.0 L17	2.0	.67	.004	.08	.20	.07	.20	
5.0	MFL 5 B0.5 L22	2.0	.87	.002	.02	.05	.09	.24	SIM ... H5
	MFL 5 B0.75 L22	2.0	.87	.004	.03	.05	.09	.24	
	MFL 5 B1.0 L22	2.0	.87	.004	.04	.06	.09	.24	
	MFL 5 B1.0 L23	2.0	.91	.004	.04	.10	.09	.24	
	MFL 5 B1.5 L22	2.0	.87	.004	.06	.10	.09	.24	
	MFL 5 B1.5 L23	2.0	.91	.004	.06	.14	.09	.24	
	MFL 5 B2.0 L22	2.0	.87	.004	.08	.15	.09	.24	
	MFL 5 B2.0 L23	2.0	.91	.004	.08	.20	.09	.24	
6.0	MFL 6 B1.0 L22	2.0	.87	.004	.04	.06	.11	.31	SIM ... H6
	MFL 6 B1.5 L22	2.0	.87	.004	.06	.10	.11	.31	
	MFL 6 B2.0 L22	2.0	.87	.004	.08	.12	.11	.31	
	MFL 6 B2.5 L22	2.0	.87	.004	.10	.19	.11	.31	
	MFL 6 B3.0 L30	2.3	1.18	.004	.12	.24	.11	.31	
8.0	MFL 8 B2.5 L22	2.5	.87	.004	.10	.14	.15	.39	SIM ... H8

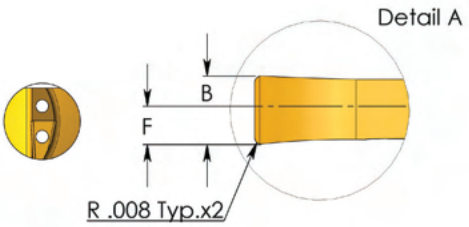
Order example: MFL 4 B2.0 L17 BMK

● First choice ○ Alternative

For additional holders see page A06-32 to 41

MVR Bars Deep Face Grooving - with 2 coolant bores





Grade	P	M	K	N	S	H
K20		○	○	●	○	
BXC	●	●	●	○	●	●
BMK	●	●	●	○	●	●

D mm	Ordering Code	L	L1	B	F	Min. Dia.	Holder
6.0	MVR 6 B2.0 L10	2.5	.39	.08	.04	.39	SIM ... H6
	MVR 6 B2.0 L15	2.5	.59	.08	.04	.47	
	MVR 6 B2.0 L22	2.5	.87	.08	.04	.47	
	MVR 6 B2.5 L15	2.5	.59	.10	.06	.39	
	MVR 6 B2.5 L22	2.5	.87	.10	.06	.47	
	MVR 6 B3.0 L22	2.5	.87	.12	.06	.39	
8.0	MVR 8 B3.0 L27	2.5	1.06	.12	.06	.59	SIM ... H8
	MVR 8 B3.0 L43	3.1	1.69	.12	.06	.59	
8.0	MVR 8 B4.0 L43	3.1	1.69	.16	.08	.79	SIM ... H8

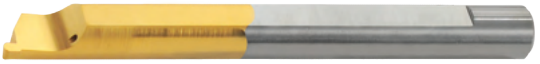
Order example: MVR 6 B2.0 L22 BXC

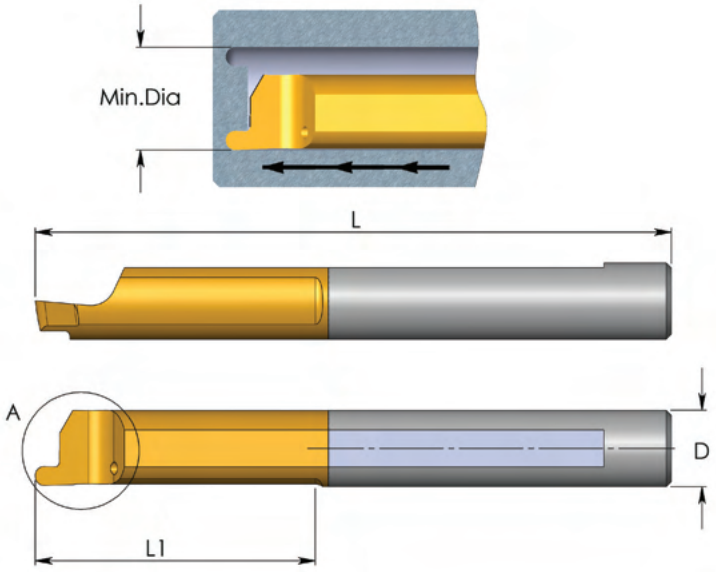
● First choice ○ Alternative

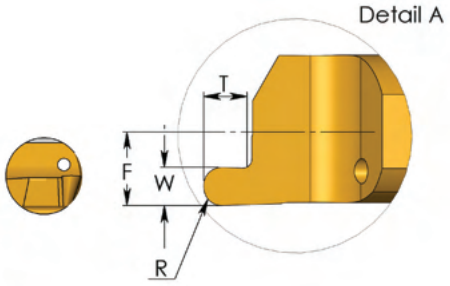
For L.H. bars specify MVL instead of MVR

For additional holders see page A06-32 to 41

MZR Bars Face Grooving







Grade	P	M	K	N	S	H
K20		○	○	●	○	
BXC	●	●	●	○	●	●
BMK	●	●	●	○	●	●

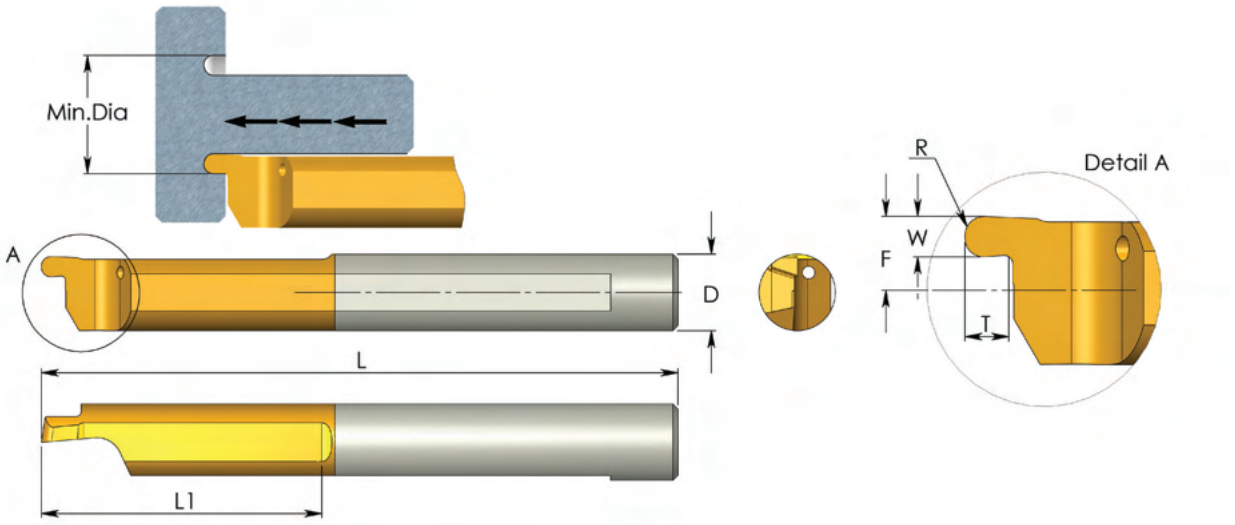
D mm	Ordering Code	L	L1	R	W	T	F	Min. Dia.	Holder
4.0	MZR 4 R0.5 L15	2.0	.59	.020	.04	.05	.08	.20	SIM ... H4
	MZR 4 R0.75 L15	2.0	.59	.030	.06	.06	.08	.20	
5.0	MZR 5 R0.5 L22	2.0	.87	.020	.04	.05	.10	.24	SIM ... H5
	MZR 5 R0.75 L22	2.0	.87	.030	.06	.06	.10	.24	
	MZR 5 R1.0 L22	2.0	.87	.039	.08	.10	.10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

Order example: MZR 5 R0.5 L22 BXC

● First choice ○ Alternative

For additional holders see page A06-32 to 41

MZL Bars Face Grooving



Grade	P	M	K	N	S	H
K20		○	○	●	○	
BXC	●	●	●	○	●	●
BMK	●	●	●	○	●	●

D mm	Ordering Code	L	L1	R	W	T	F	Min. Dia.	Holder
4.0	MZL 4 R0.5 L15	2.0	.59	.020	.04	.05	.07	.20	SIM ... H4
	MZL 4 R0.75 L15	2.0	.59	.030	.06	.06	.07	.20	
5.0	MZL 5 R0.5 L22	2.0	.87	.020	.04	.05	.09	.24	SIM ... H5
	MZL 5 R0.75 L22	2.0	.87	.030	.06	.06	.09	.24	
	MZL 5 R1.0 L22	2.0	.87	.039	.08	.10	.09	.24	
6.0	MZL 6 R0.5 L22	2.0	.87	.020	.04	.05	.11	.31	SIM ... H6
	MZL 6 R0.75 L22	2.0	.87	.030	.06	.06	.11	.31	
	MZL 6 R1.0 L22	2.0	.87	.039	.08	.10	.11	.31	

Order example: MZL 5 R0.5 L22 BXC

● First choice ○ Alternative

For additional holders see page A06-32 to 41

HK Broaching Tools for Hexagon Keys

Product Identification - Ordering Codes

HK — Hexagon Keys

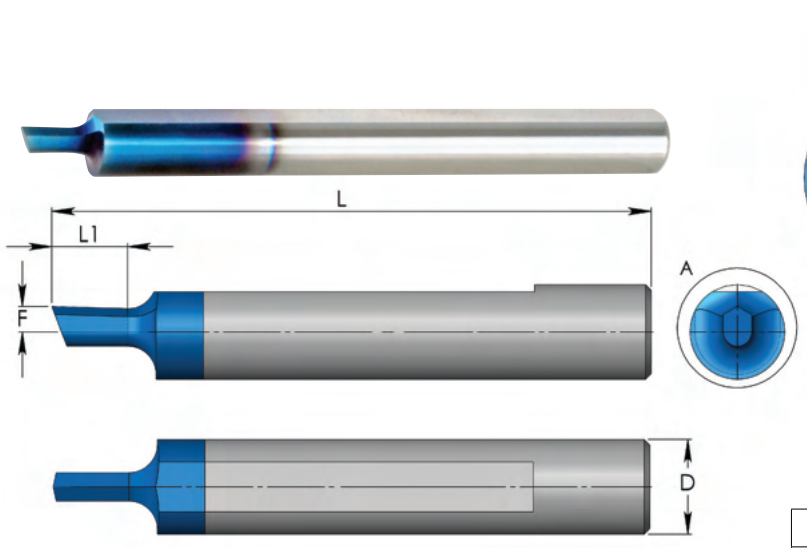
3 — Min. Bore Dia.
1 = .05 - .06
2 = .09
3 = .11
4 = .15
5 = .19

S30 — Socket Size
S12 = 1.2 - 1.6 mm
S16 = 1.6 - 2.3 mm
S23 = 2.3 - 2.9 mm
S30 = 3.0 - 4.0 mm
S40 = 4.0 - 5.0 mm
S50 = 5.0 - 8.0 mm

L5 — Maximum Cutting depth
L2= .09 - .10
L4 = .16
L5 = .22
L6 = .26
L9 = .37

BMK — Grade

Demonstration



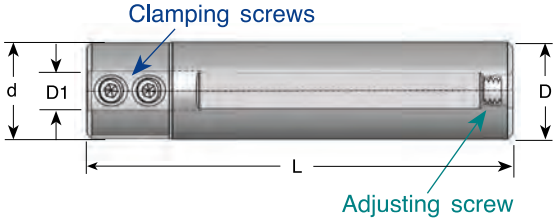
Grade	P	M	K	N	S	H
BMK	●	●	●	●	●	

D mm	S mm	S in	Ordering Code	L	L1	R	F	Min. Dia.	Holder
4.0	1.2-1.6	.050-.063	HK 1 S12 L2	2.0	.09	.002	.004	.05	SIM…H4
	1.6-2.3	.063-.090	HK 1 S16 L2	2.0	.10	.002	.004	.06	
5.0	2.3-2.9	.090-.114	HK 2 S23 L4	2.0	.16	.002	.053	.09	SIM…H5
	3.0-4.0	.118-.157	HK 3 S30 L5	2.0	.22	.002	.053	.11	
	4.0-5.0	.157-.197	HK 4 S40 L6	2.0	.26	.004	.053	.15	
7.0	5.0-8.0	.197-.315	HK 5 S50 L9	2.4	.37	.004	.053	.19	SIM…H7

S = Socket Size
Order example: HK 1 S12 L2 BMK
For additional holders see page A06-32 to 41

Tiny Tools Toolholders
Product Identification - Ordering Codes

S	I	M	0020	H3	
Clamping Method S = Screw	I = Internal	M = Tiny Bars	Shank Cross Section Metric 0012 = 12 mm 0016 = 16 mm 0020 = 20 mm 0022 = 22 mm 0025 = 25 mm Inch 0750 = 3/4 1000 = 1	Bar Diameter 3 = 3.0 mm 4 = 4.0 mm 5 = 5.0 mm 6 = 6.0 mm 7 = 7.0 mm 8 = 8.0 mm 10 = 10.0 mm	S = Swiss Type Total length K = 120 mm (4.7) M = 150 mm (5.7)



Metric Shank Version

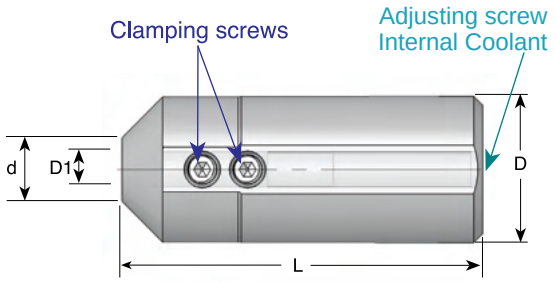
D1 mm	Ordering Code	D mm	d mm/in	L mm/in	Key	Clamping Screw	Adjusting Screw
3.0	SIM 0010 H3	10	12 / .47	65 / 2.6	K16	S24	S28M
	SIM 0012 H3	12	12 / .47	88 / 3.5	K16,K25	S24	S35
	SIM 0016 H3S	16	20 / .79	75 / 3.0	K25	S25	S35S
	SIM 0016 H3	16	20 / .79	88 / 3.5	K25	S25	S35
	SIM 0020 H3	20	20 / .79	88 / 3.5	K25	S25	S35
	SIM 0022 H3	22	22 / .87	88 / 3.5	K25	S25	S35
	SIM 0022 H3K	22	22 / .87	120 / 4.7	K25	S25	S55
	SIM 0025 H3M	25	25 / .98	150 / 5.9	K25	S25	---

D1 mm	Ordering Code	D mm	d mm/in	L mm/in	Key	Clamping Screw	Adjusting Screw
4.0	SIM 0010 H4	10	12 / .47	65 / 2.6	K16	S24	S28M
	SIM 0012 H4	12	12 / .47	88 / 3.5	K16, K25	S24	S35
	SIM 0016 H4S	16	20 / .79	75 / 3.0	K25	S25	S35S
	SIM 0016 H4	16	20 / .79	88 / 3.5	K25	S25	S35
	SIM 0020 H4	20	20 / .79	88 / 3.5	K25	S25	S35
	SIM 0022 H4	22	22 / .87	88 / 3.5	K25	S25	S35
	SIM 0022 H4K	22	22 / .87	120 / 4.7	K25	S25	S55
	SIM 0025 H4M	25	25 / .98	150 / 5.9	K25	S25	---
5.0	SIM 0010 H5	10	12 / .47	65 / 2.6	K16	S24	S28M
	SIM 0012 H5	12	12 / .47	88 / 3.5	K16, K25	S24	S35
	SIM 0016 H5S	16	20 / .79	75 / 3.0	K25	S25	S35S
	SIM 0016 H5	16	20 / .79	88 / 3.5	K25	S25	S35
	SIM 0020 H5	20	20 / .79	88 / 3.5	K25	S25	S35
	SIM 0022 H5	22	22 / .87	88 / 3.5	K25	S25	S35
	SIM 0022 H5K	22	22 / .87	120 / 4.7	K25	S25	S55
	SIM 0025 H5M	25	25 / .98	150 / 5.9	K25	S25	---
6.0	SIM 0012 H6	12	14 / .55	88 / 3.5	K16, K25	S24	S35
	SIM 0016 H6S	16	20 / .79	75 / 3.0	K25	S25	S35S
	SIM 0016 H6	16	20 / .79	88 / 3.5	K25	S25	S35
	SIM 0020 H6	20	20 / .79	88 / 3.5	K25	S25	S35
	SIM 0022 H6	22	22 / .87	88 / 3.5	K25	S25	S35
	SIM 0022 H6K	22	22 / .87	120 / 4.7	K25	S25	S55
	SIM 0025 H6M	25	25 / .98	150 / 5.9	K25	S25	---
7.0	SIM 0016 H7	16	20 / .79	88 / 3.5	K25	S25	S35
	SIM 0020 H7	20	20 / .79	88 / 3.5	K25	S25	S35
	SIM 0022 H7	22	22 / .79	88 / 3.5	K25	S25	S35
8.0	SIM 0016 H8	16	20 / .79	88 / 3.5	K25	S25	S35
	SIM 0020 H8	20	20 / .79	88 / 3.5	K25	S25	S35
	SIM 0022 H8	22	22 / .79	88 / 3.5	K25	S25	S35
10.0	SIM 0016 H10	16	20 / .79	88 / 3.5	K25	S25S	S35
	SIM 0020 H10	20	20 / .79	88 / 3.5	K25	S25S	S35
	SIM 0022 H10	22	22 / .87	88 / 3.5	K25	S25	S35

Inch Shank Version

D1 mm	Ordering Code	D	d	L	Key	Clamping Screw	Adjusting Screw
3.0	SIM 0750 H3	3/4	.75	3.5	K25	S25	S35
	SIM 0750 H3K	3/4	.75	4.7	K25	S25	S35
	SIM 1000 H3	1	1.00	3.5	K25	S25	S35
4.0	SIM 0750 H4	3/4	.75	3.5	K25	S25	S35
	SIM 0750 H4K	3/4	.75	4.7	K25	S25	S35
	SIM 1000 H4	1	1.00	3.5	K25	S25	S35
5.0	SIM 0750 H5	3/4	.75	3.5	K25	S25	S35
	SIM 1000 H5	1	1.00	3.5	K25	S25	S35
6.0	SIM 0750 H6	3/4	.75	3.5	K25	S25	S35
	SIM 0750 H6K	3/4	.75	4.7	K25	S25	S35
	SIM 1000 H6	1	1.00	3.5	K25	S25	S35
7.0	SIM 0750 H7	3/4	.75	3.5	K25	S25	S35
	SIM 1000 H7	1	1.00	3.5	K25	S25	S35
8.0	SIM 0750 H8	3/4	.75	3.5	K25	S25	S35
	SIM 1000 H8	1	1.00	3.5	K25	S25	S35
10.0	SIM 0750 H10	3/4	.75	3.5	K25	S25	S35
	SIM 1000 H10	1	1.00	3.5	K25	S25	S35

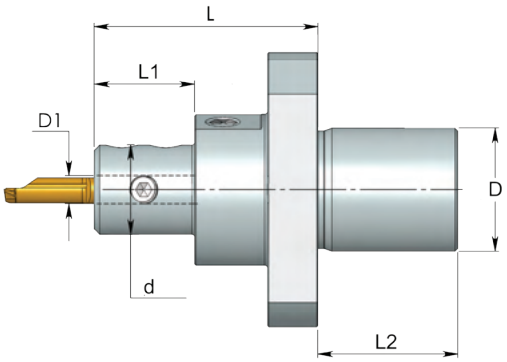
Metric Shank Version

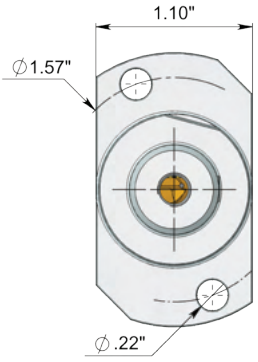


D1 mm	Ordering Code	D mm	d mm/in	L mm/in	Key	Clamping Screw	Adjusting Screw
3.0	SIM 0025 H3	25	10.8 / .43	62 / 2.4	K25	S25	S35M
4.0	SIM 0025 H4	25	10.8 / .43	62 / 2.4	K25	S25	S35M
5.0	SIM 0025 H5	25	10.8 / .43	62 / 2.4	K25	S25	S35M
6.0	SIM 0025 H6	25	10.8 / .43	62 / 2.4	K25	S25	S35M
7.0	SIM 0025 H7	25	10.8 / .43	62 / 2.4	K25	S25	S35M
8.0	SIM 0025 H8	25	10.8 / .43	62 / 2.4	K25	S25	S35M

Tiny Tools Toolholders for Star Swiss machines

Carmex has developed a unique external turning holder for the sub-spindle on CNC Swiss type lathes.

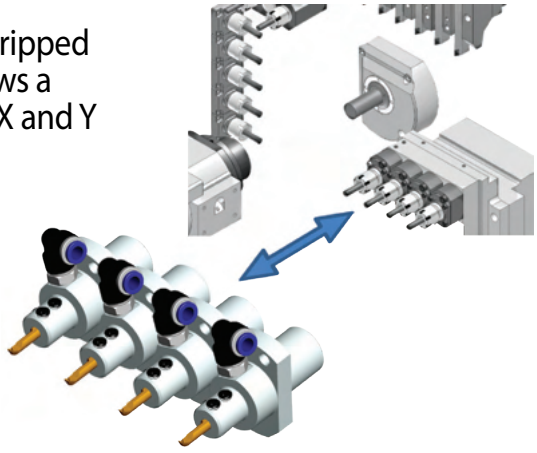


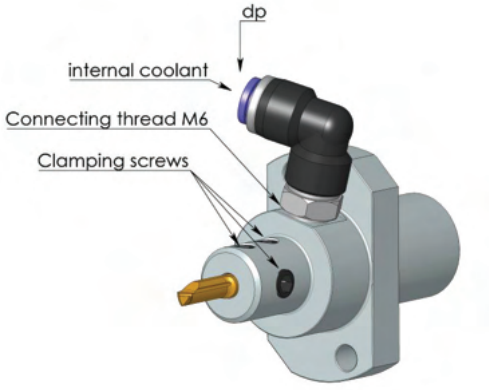


D1 mm	Ordering Code	D mm	d mm/in		L mm/in		L1 mm/in		L2 mm/in		*dp mm	key	Clamping Screw
3.0	SIM 22S H3	22	16	.63	40	1.57	18	.71	25	.98	4/6	K16, K25	S24P
	SIM 22S H3-L	22	16	.63	50	1.97	28	1.10	25	.98	4/6	K16, K25	S24P
4.0	SIM 22S H4	22	16	.63	40	1.57	18	.71	25	.98	4/6	K16, K25	S24P
	SIM 22S H4-L	22	16	.63	50	1.97	28	1.10	25	.98	4/6	K16, K25	S24P
5.0	SIM 22S H5	22	16	.63	40	1.57	18	.71	25	.98	4/6	K16, K25	S24M
	SIM 22S H5-L	22	16	.63	50	1.97	28	1.10	25	.98	4/6	K16, K25	S24M
6.0	SIM 22S H6	22	16	.63	40	1.57	18	.71	25	.98	4/6	K16, K25	S24M
	SIM 22S H6-L	22	16	.63	50	1.97	28	1.10	25	.98	4/6	K16, K25	S24M
7.0	SIM 22S H7	22	20	.79	40	1.57	18	.71	25	.98	4/6	K25	S25
8.0	SIM 22S H8	22	20	.79	40	1.57	18	.71	25	.98	4/6	K25	S25
	SIM 22S H8-L	22	20	.79	50	1.97	28	1.10	25	.98	4/6	K25	S25
10.0	SIM 22S H10	22	20	.79	40	1.57	18	.71	25	.98	4/6	K25	S25S
	SIM 22S H10-L	22	20	.79	50	1.97	28	1.10	25	.98	4/6	K25	S25S

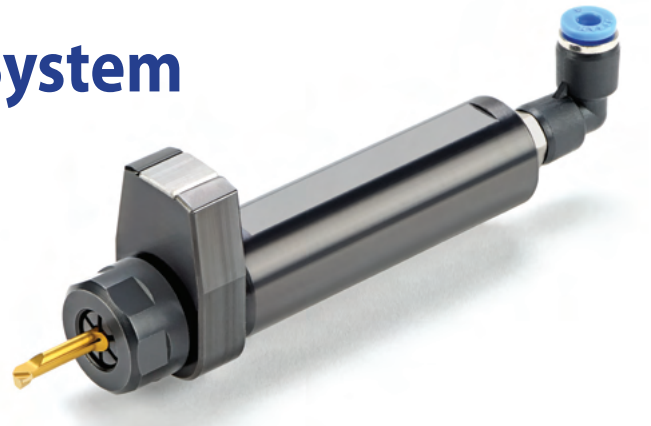
* Coolant pipe diameter. Standard packing with ø4 mm

The Tiny tool can be gripped in two directions, allows a turning operation on X and Y axis.





CIM-Fast Clamping System



The new innovative *CIM* clamping system provides high precision and repeatability of the Tiny Tools cutting edge, as well as fast and easy tool exchange without removing the holder.
The *CIM* system includes an internal tool indexing mechanism which index the tool in the correct orientation, as well as strong and rigid collet clamping for high stability.

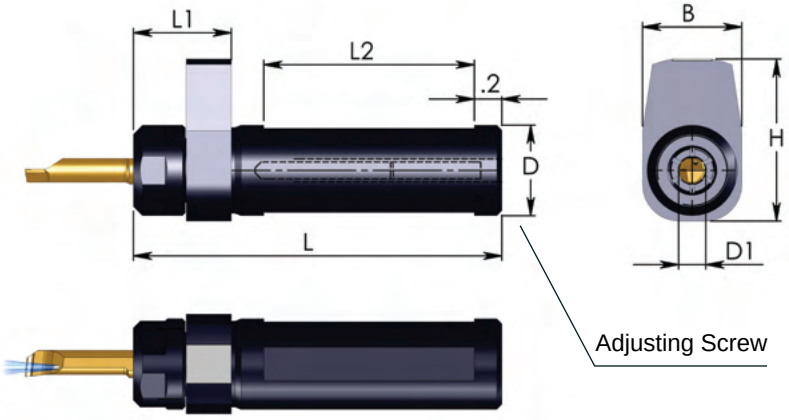
- No screws required
- Enable fast and accurate exchange of the Tiny Tool inside the machine without removing the *CIM* holder from the machine, or additional tool setup.
- Holders with three clamping flats on the shank for maximum flexibility.
- Fits standard and special Carmex Tiny Tools
- Internal coolant through the *CIM* holder and the Tiny Tool pointing to the cutting edge.

Product Identification - Ordering Codes

CIM – Toolholder

CIM	0016	H4
Clamping System C = Collet	Shank Cross Section **Metric Version** 16 = Ø16 mm 20 = Ø20 mm **Inch Version** 0625 = Ø5/8 0750 = Ø3/4	Tiny Tools, Bar Diameter 4 = 4.0 mm 5 = 5.0 mm 6 = 6.0 mm

Tiny Tools



Metric Version

D1 mm	Ordering Code	D mm	L	L1	L2	B	H
4.0	CIM 0016 H4	16	3.5	.87	2.3	.87	1.4
	CIM 0020 H4	20	3.5	.87	2.3	.87	1.4
5.0	CIM 0016 H5	16	3.5	.87	2.3	.87	1.4
	CIM 0020 H5	20	3.5	.87	2.3	.87	1.4
6.0	CIM 0016 H6	16	3.5	.87	2.3	.87	1.4
	CIM 0020 H6	20	3.5	.87	2.3	.87	1.4

Inch Version

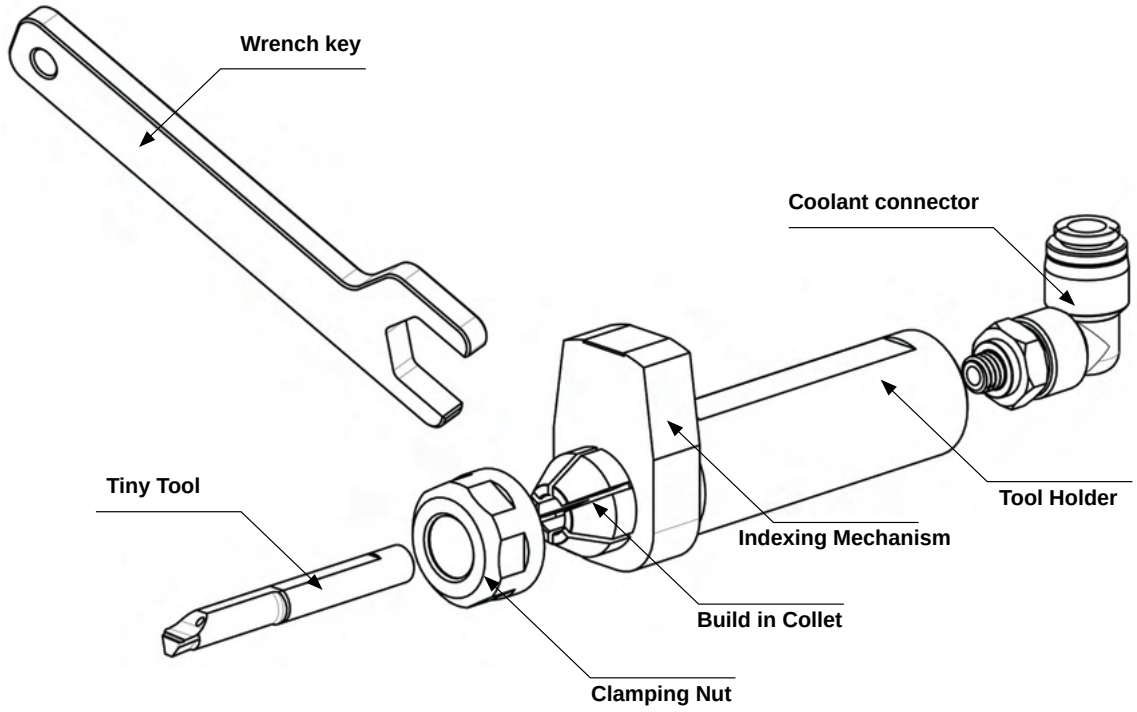
D1 mm	Ordering Code	D	L	L1	L2	B	H
4.0	CIM 0625 H4	5/8	3.5	.87	2.3	.87	1.4
	CIM 0750 H4	3/4	3.5	.87	2.3	.87	1.4
5.0	CIM 0625 H5	5/8	3.5	.87	2.3	.87	1.4
	CIM 0750 H5	3/4	3.5	.87	2.3	.87	1.4
6.0	CIM 0625 H6	5/8	3.5	.87	2.3	.87	1.4
	CIM 0750 H6	3/4	3.5	.87	2.3	.87	1.4

Spare parts

Clamping nut	Wrench key	Adjusting screw	Adjusting screw key	Coolant supply connector
CN19	WK19	S35	K25	P-M6-4*

* P-M6-6 also available

CIM – clamping system details



General instructions for use

The CIM toolholder system is designed for a fast and simple way of achieving correct indexing of Tiny Tools inside the machine.

Following is a recommended procedure for the first use:

1. Adjust the rear stopper screw according the tool required over-hang.
   Insert the Tiny Tool into the collet and push it gently until it passes the internal indexing mechanism.
   Adjust the rear stopper screw according the required overhang (do not set the final tool orientation).
   That procedure should be done only once and outside the machine.

2. Remove the Tiny Tool from the CIM toolholder and mount the holder on the machine.
   Clamp it well and it is ready to use. At that point the clamping nut should be screwed on the toolholder collet by hand and remain open.

3. Insert the Tiny Tool into the CIM collet and push it inside gently until you will hear a click.
   Rotate the tool by hand clock wise and counter clock wise until you hear a click and the indexing mechanism set the tool to center.

4. Close the nut by the wrench key.

In that point the tool is ready to use.

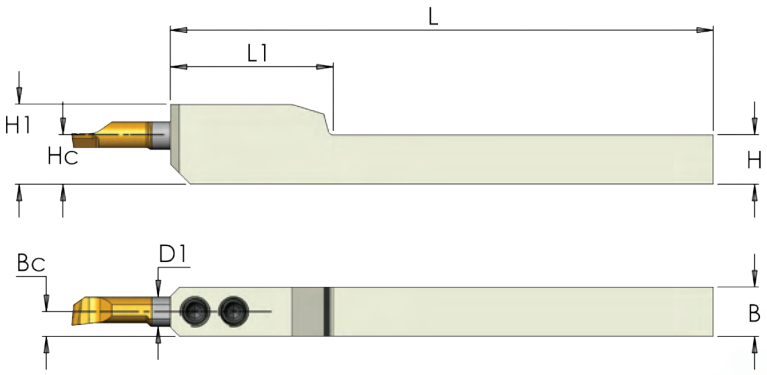
For a tool replacement, open the collet with the wrench key, replace the tool, close the collet and continue working.

Tiny Tools Toolholders - Square Shank

for internal machining

Product Identification - Ordering Codes

S	E	M	V	1212	H5
Clamping Method S = Screw	E = External Square Shank	M = Tiny	Vertical	Shank Cross Section 1010 = 10x10 mm 1212 = 12x12 mm	Bar Diameter H3 = 3.0 mm H4 = 4.0 mm H5 = 5.0 mm H6 = 6.0 mm

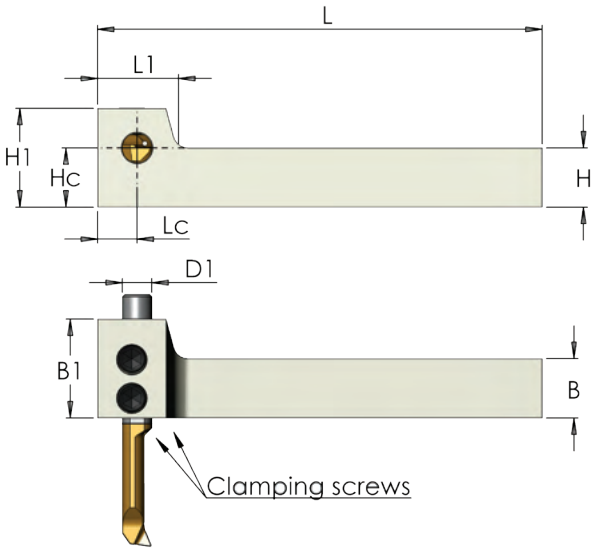


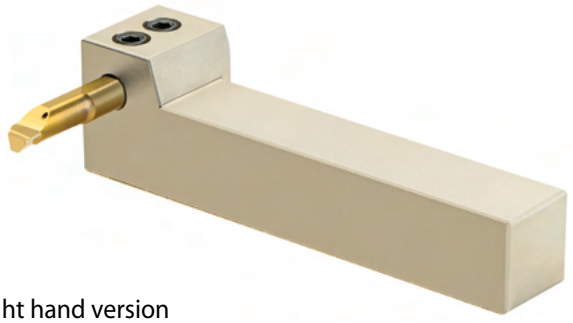
Metric Holders

D1 mm	Ordering Code	H=B mm	L1 mm/in		L mm/in		Hc mm/in		Bc mm/in		H1 mm/in		Key	Clamping Screw
3.0	SEMV 1010 H3	10	24	.94	110	4.3	10	.39	5	.20	14.7	.58	K16	S24
	SEMV 1212 H3	12	24	.94	110	4.3	12	.47	6	.24	16.7	.66	K16	S24
4.0	SEMV 1010 H4	10	36	1.42	110	4.3	10	.39	5	.20	15.2	.60	K16	S24
	SEMV 1212 H4	12	36	1.42	110	4.3	12	.47	6	.24	17.2	.68	K16	S24
5.0	SEMV 1010 H5	10	36	1.42	110	4.3	10	.39	5	.20	15.7	.62	K16	S24
	SEMV 1212 H5	12	36	1.42	110	4.3	12	.47	6	.24	17.7	.70	K16	S24
6.0	SEMV 1010 H6	10	33	1.30	110	4.3	10	.39	5	.20	16.2	.64	K16	S24
	SEMV 1212 H6	12	33	1.30	110	4.3	12	.47	6	.24	18.2	.72	K16	S24

Product Identification - Ordering Codes

S	E	M	R	1616	H5
Clamping Method S = Screw	E = External Square Shank	M = Tiny Bars / Tools	Right Hand	Shank Cross Section 1212 = 12x12 mm 1616 = 16x16 mm	Bar Diameter 3 = 3.0 mm 4 = 4.0 mm 5 = 5.0 mm 6 = 6.0 mm



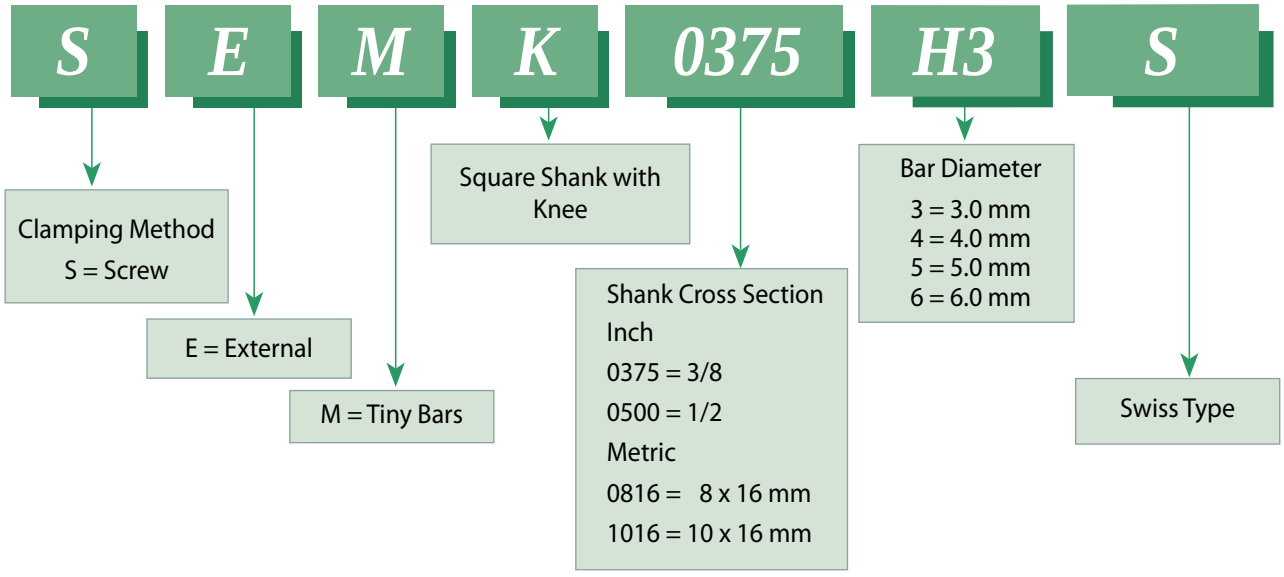


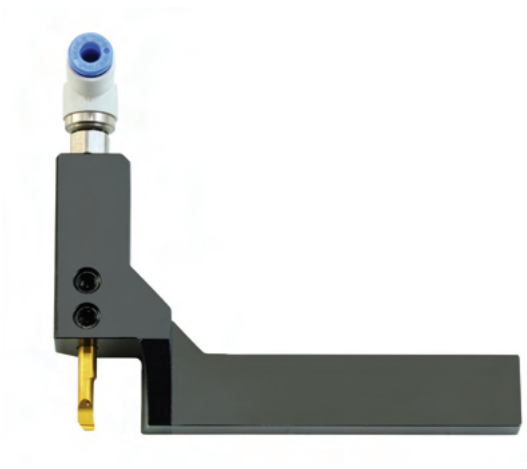
Right hand version

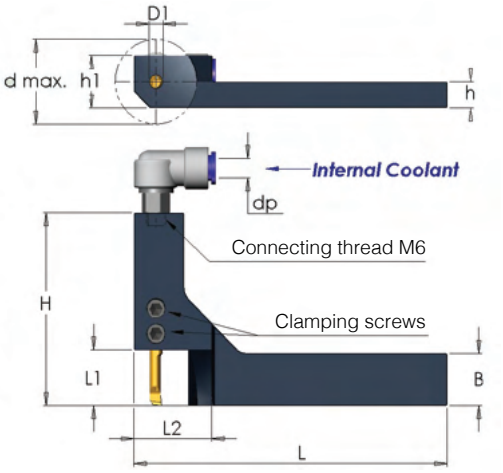
Metric Holders

D1 mm	Ordering Code	H=B mm	B1 mm/in		L mm/in		L1 mm/in		Hc mm/in		LC mm/in		H1 mm/in		Key	Clamping Screw
3.0	SEM R 1212 H3	12	20	.79	88	3.5	16	.63	12	.47	7	.28	20	.79	K25	S25
	SEM R 1616 H3	16	24	.94	120	4.7	16	.63	16	.63	7	.28	24	.94	K25	S25
4.0	SEM R 1212 H4	12	20	.79	88	3.5	16	.63	12	.47	7	.28	20	.79	K25	S25
	SEM R 1616 H4	16	24	.94	120	4.7	16	.63	16	.63	7	.28	24	.94	K25	S25
5.0	SEM R 1212 H5	12	20	.79	88	3.5	16	.63	12	.47	7	.28	20	.79	K25	S25
	SEM R 1616 H5	16	24	.94	120	4.7	16	.63	16	.63	7	.28	24	.94	K25	S25
6.0	SEM R 1212 H6	12	20	.79	88	3.5	16	.63	12	.47	7	.28	20	.79	K25	S25S
	SEM R 1616 H6	16	24	.94	120	4.7	16	.63	16	.63	7	.28	24	.94	K25	S25S

Product Identification - Ordering Codes







Metric Holders

D1 mm	Ordering Code	B mm	h mm	L mm/in	L1 mm/in	L2 mm/in	H mm/in	h1 mm/in	d max. mm/in	*dp mm	Key	Clamping Screw
3.0	SEMK 0816 H3S	16	8	100/ 3.9	17/.67	25/.98	46/1.81	16/.63	26/1.02	4/6	K25	S25
	SEMK 1016 H3S	16	10	100/ 3.9	17/.67	25/.98	46/1.81	18/.71	26/1.02	4/6	K25	
	SEMK 1216 H3S	16	12	100/ 3.9	17/.67	25/.98	46/1.81	20/.79	26/1.02	4/6	K25	
4.0	SEMK 0816 H4S	16	8	100/ 3.9	17/.67	25/.98	46/1.81	16/.63	26/1.02	4/6	K25	S25
	SEMK 1016 H4S	16	10	100/ 3.9	17/.67	25/.98	46/1.81	18/.71	26/1.02	4/6	K25	
	SEMK 1216 H4S	16	12	100/ 3.9	17/.67	25/.98	46/1.81	20/.79	26/1.02	4/6	K25	
5.0	SEMK 0816 H5S	16	8	100/ 3.9	17/.67	25/.98	46/1.81	16/.63	26/1.02	4/6	K25	S25
	SEMK 1016 H5S	16	10	100/ 3.9	17/.67	25/.98	46/1.81	18/.71	26/1.02	4/6	K25	
	SEMK 1216 H5S	16	12	100/ 3.9	17/.67	25/.98	46/1.81	20/.79	26/1.02	4/6	K25	
6.0	SEMK 0816 H6S	16	8	100/ 3.9	17/.67	25/.98	46/1.81	16/.63	26/1.02	4/6	K25	S25
	SEMK 1016 H6S	16	10	100/ 3.9	17/.67	25/.98	46/1.81	18/.71	26/1.02	4/6	K25	
	SEMK 1216 H6S	16	12	100/ 3.9	17/.67	25/.98	46/1.81	20/.79	26/1.02	4/6	K25	

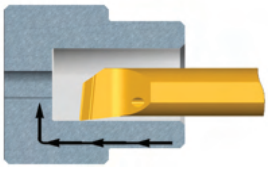
Inch Holders

D1 mm	Ordering Code	B	h	L	L1	L2	H	h1	d max.	*dp mm	Key	Clamping Screw
3.0	SEMK 0375 H3S	3/8	3/8	3.9	.67	.98	1.81	.69	1.02	4/6	K25	S25
	SEMK 0500 H3S	1/2	1/2	3.9	.67	.98	1.81	.81	1.02	4/6	K25	
4.0	SMEK 0375 H4S	3/8	3/8	3.9	.67	.98	2.28	.69	1.02	4/6	K25	S25
	SEMK 0500 H4S	1/2	1/2	3.9	.67	.98	2.28	.81	1.02	4/6	K25	
5.0	SMEK 0375 H5S	3/8	3/8	3.9	.67	.98	2.28	.69	1.02	4/6	K25	S25
	SEMK 0500 H5S	1/2	1/2	3.9	.67	.98	2.28	.81	1.02	4/6	K25	
6.0	SMEK 0375 H6S	3/8	3/8	3.9	.67	.98	2.28	.69	1.02	4/6	K25	S25
	SEMK 0500 H6S	1/2	1/2	3.9	.67	.98	2.28	.81	1.02	4/6	K25	

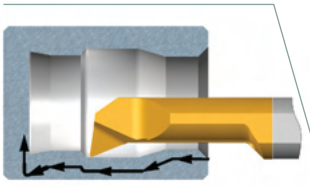
* Optional

Tiny Tools Kits

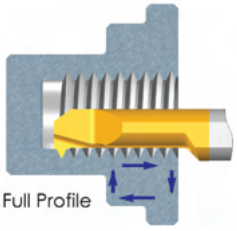
Boring



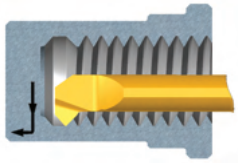
Profiling & Boring



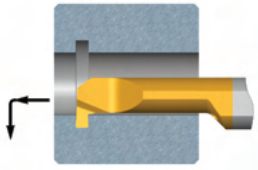
Threading



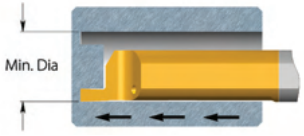
Chamfering & Boring



Grooving



Face Grooving



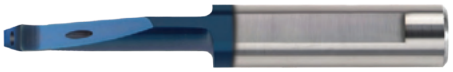
KT4-0750	KT5-0750	
MTR 4 R0.2 L10	MTR 5 R0.2 L15	Boring
MPR 4 R0.2 L10	MPR 5 R0.2 L15	Profiling
MIR 4 L15 A60	MIR 5 L15 A60	Threading
MCR 4 R0.2 L15	MCR 5 R0.2 L15	Chamfering
MGR 4 B1.5 L10	MGR 5 B1.5 L15	Grooving
MFR 4 B1.0 L15	MFR 5 B1.0 L22	Face Grooving
SIM 0750 H4	SIM 0750 H5	Holder
K25	K25	Key

Order example: KT4-0750

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

Technical Section

Carbide Grades:



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

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

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

TNX
New advanced carbide grade TN***X*** for higher feeds and high performance, at medium to high cutting speed. Extra fine grain size with high hardness and toughness combined with triple layer reddish coating, provides high edge stability and better chip flow.

Cutting speed for Tiny Tools

ISO Standard	Material		Condition	Cutting Speed ft/min			
				BXC	BMK	K20	TN***X***
P	Non-Alloy steel and cast steel, free cutting steel	<0.25%C	Annealed	82-230	98-262		118-262
		≥0.25%C	Annealed				
		< 0.55%C	Quenched and tempered				
		≥0.55%C	Annealed				
			Quenched and tempered				
	Low alloy steel and cast steel (less than 5% alloying elements)		Annealed	66-131	82-164		98-164
			Quenched and tempered				
	High alloy steel, cast steel, and tool steel		Annealed	66-131	82-164		98-164
			Quenched and tempered				
M	Stainless steel and cast steel		Ferritic/martensitic	82-131	98-197		118-197
			Martensitic				
			Austenitic				
K	Cast iron nodular (GGG)		Ferritic/pearlitic	82-197	98-262		118-262
			Pearlitic				
	Grey cast iron (GG)		Ferritic	98-230	98-262		118-262
			Pearlitic				
	Malleable cast iron		Ferritic	66-131	66-164		79-164
			Pearlitic				
N	Aluminum-wrought alloy		Not cureable	164-328	197-394	98-164	236-394
			Cured				
	Aluminum-cast, alloyed	<=12% Si	Not cureable	131-262	164-295	66-131	197-295
			Cured				
		>12% Si	High temperature				
	Copper alloys	>1% Pb	Free cutting	98-197	98-230	66-131	118-230
			Brass				
			Electrolytic copper				
	Non metalic		Duroplastics, fiber plastics	131-262		66-131	
			Hard rubber				
S	High temp. alloys, Super alloys	Fe based	Annealed	49-98	49-131		59-131
			Cured				
		Ni or Co based	Annealed				
			Cured				
			Cast				
	Titanium alloys		Alpha+beta alloys cured	33-98	33-98		39-98
H	Hardened steel		Hardened 45-50 HRc	33-98	49-131		59-131
			Hardened 51-55 HRc				
			Hardened 56-62 HRc				
	Chilled cast iron		Cast	33-98	33-98		39-98
	Cast iron		Hardened	33-66	33-66		39-66

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

Threading Passes

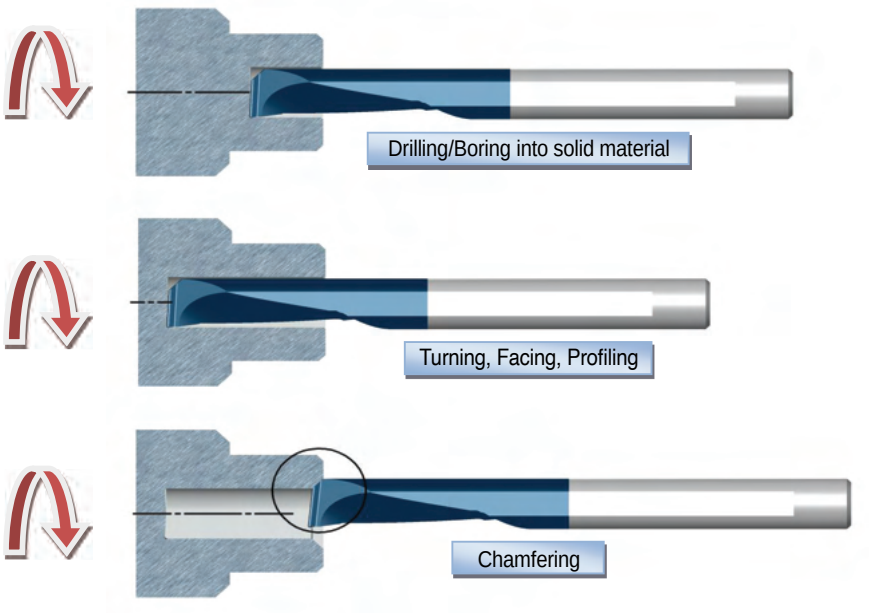
Pitch:	mm TPI	0.5 48	0.7 36	0.8 32	1.0 24	1.25 20	1.5 16	2-5 14-5
Number of Passes		6 - 12	7 - 14	7 - 16	8 - 18	8 - 20	10 - 22	20 - 38

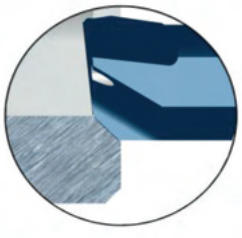
CMR Carmex Multi-Task Tiny Tools

- Carmex is introducing a new and innovative Multi-Task Tiny Tool **CMR** for Boring, Turning, Facing and Chamfering with a single tool.
- The unique design enables machining of the material without the need for a pilot hole.
- The new tool shortens the machining cycle time and the number of tools required - providing **High Productivity**.
- Effective through coolant hole with a spiral flute, evacuates the chips out of the hole uninterruptedly.
- Unique chip breaker and flute design.
- To use with standard SIM toolholders on Swiss Type or CNC lathe machines.
- Available in **BMK** Grade only.

Working Method

- The tool penetrates the work piece and produces the hole compliant with the minimum diameter the tool allows.
- The tool can penetrate the material in one pass or several passes depending on the work piece material, coolant pressure, machine power etc.
- The hole can be enlarged by multi radial passes.





The tool is equipped with an additional cutting edge, which is located across the main front edge. This allows production of an additional 45° chamfer on the work piece without the need to stop the spindle or processing operation.

CMR General Recommendations

Coolant fluid

Dry machining should not be performed under any circumstances.
It is necessary to use an internal coolant in all applications.
Oil or Emulsion lubricants are recommended for best performance.
In the event of low coolant pressure, adding an external coolant can improve the tool operation.

The cooling stream is designed to provide three benefits:
1. Cooling the cutting edge of the tool, and the contact area.
2. Pushing the chip away from the tool quickly, thereby reducing wear of the edge.
3. Helping to break the chip into smaller pieces and evacuating them from the cutting area.

Cutting Data

ISO Standard	Material	Cutting Speed ft/min
P	Low and Medium Carbon Steels <0.55%C	65-245
	High Carbon Steels ≥0.55%C	65-245
	Alloy Steels, Treated Steels	65-200
M	Stainless Steels - Free Cutting	65-200
	Stainless Steels - Austenitic	65-230
	Cast Steels	65-230
K	Cast Iron	65-330
N	Aluminum ≤12%Si, Copper	130-490
	Aluminum >12% Si	65-330
	Synthetics, Duroplastics, Thermoplastics	130-490
S	Nickel Alloys, Titanium Alloys	50-200
H	Hardened Steels	-

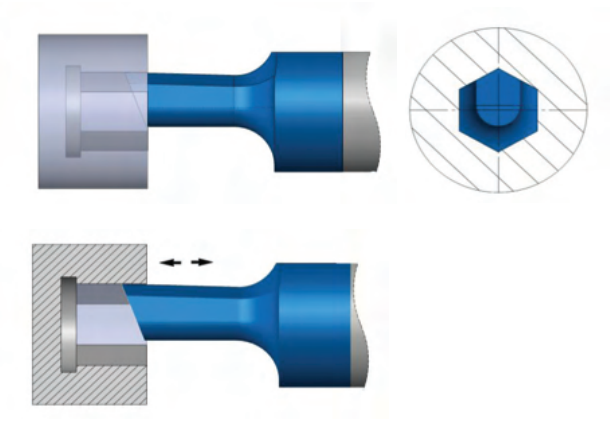
Recommended Feed Rate: .0005 - .001 inch/rev

HK Broaching Tools for Hexagon Keys

The HK broaching system have been developed to machine internal keyways inside blind or through holes, using CNC machines.

- To use with Carmex standard SIM Bar Holders
- The holder can be located directly in the turret or the machine spindle
- Holder with rear clamping screw for full support during operation
- Available in **BMK** Grade only.

Working Demo

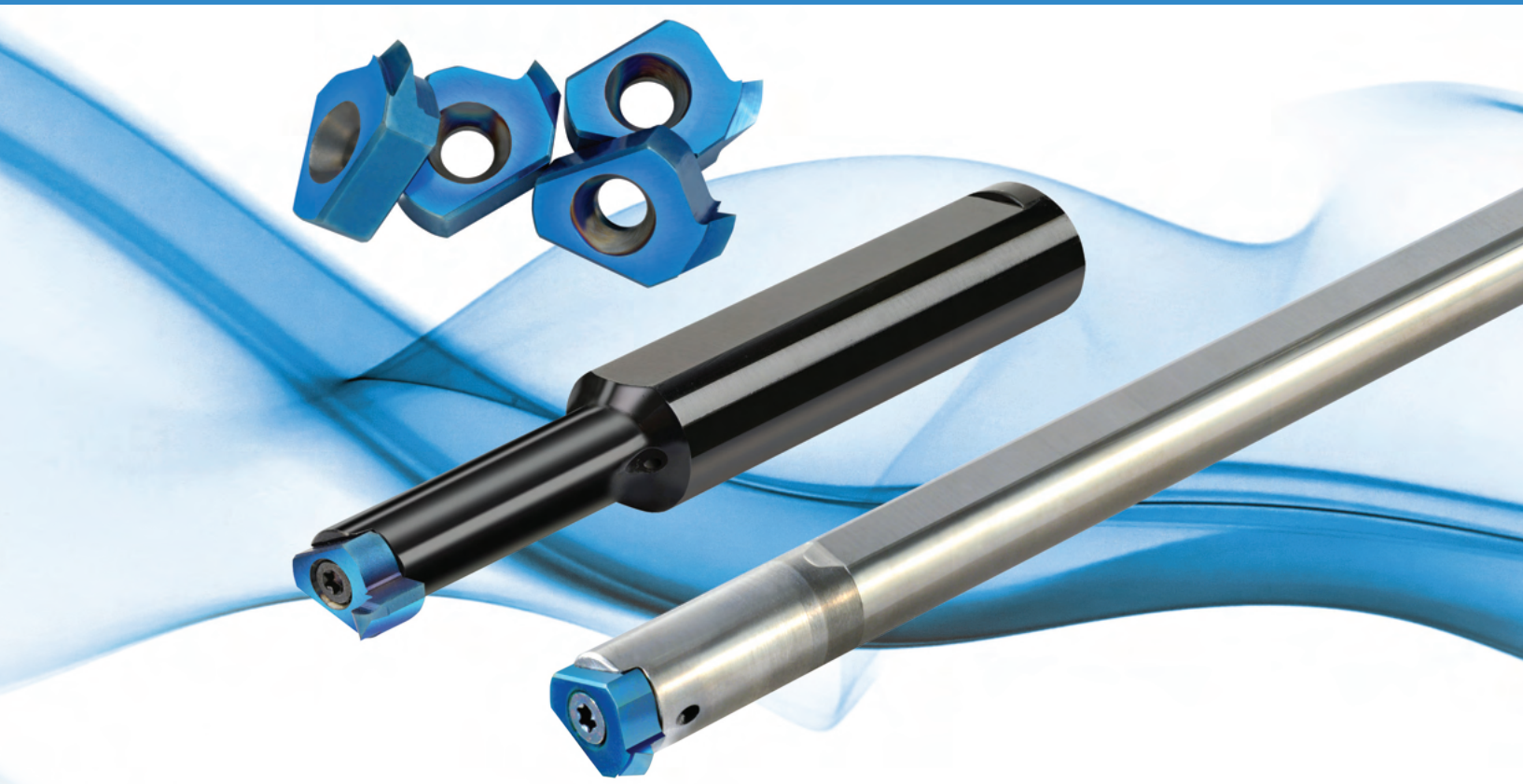


Cutting Data

Material Tensile Strength (lbs/in²)	Feed rate (in/min)	In-feed per stroke (inch)
58.000-94.000	276-354	.0024-.0035
101.000-123.000	197-256	.0016-.0028
130.500-145.000	157-217	.0012-.0022
160.500-174.000	118-177	.0008-.0016

The cutting data above is an initial recommendation and depends on the machine condition, workpiece profile and the application clamping

- A relief groove is highly recommended, if not possible a gradual volume decrease should be made at the end of the broaching groove
- The HK tool must be positioned outside of the hole/groove before each stroke
- After setup and first stroke, we recommend to observe the tool and the application to make sure no collision occurred



Vertical Inserts and Toolholders for threading, chamfering, grooving and turning

Advantages

Carbide grade: BLU-Sub-Micron grade with advanced PVD triple layer coating delivering high heat resistance and smooth cutting operation.

- Carbide shank toolholder provides excellent vibration resistance.
- Long reach.
- Through coolant.
- For threading, grooving, boring and chamfering.
- Quick indexing.

Typical Applications:

- Long threads or applications requiring over-hang.
- Enables production of threads with large pitch/profile.
- Threading, grooving, boring, profiling and chamfering - It's possible to offer most of the Tiny Tools profiles on the insert.

Contents:	Page:	Contents:	Page:
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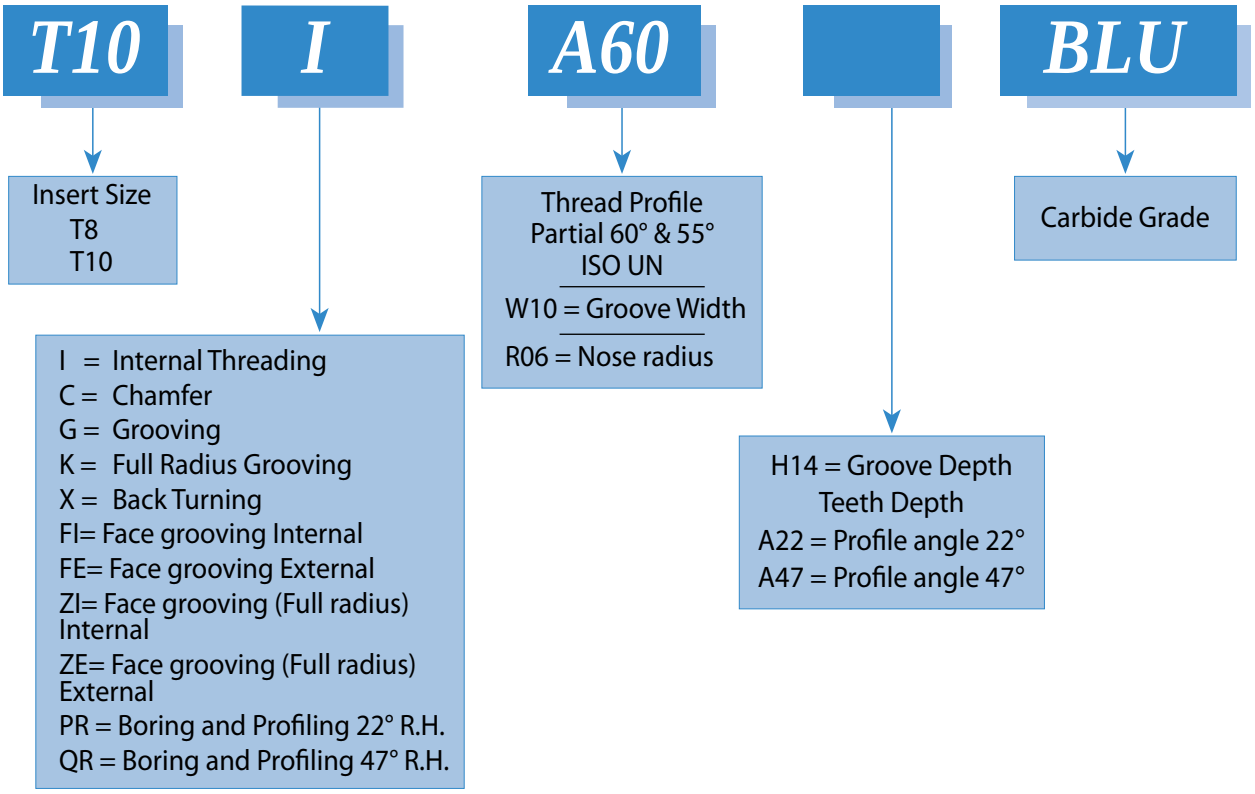
Partial Profile 60°	3	Back Turning	9
Partial Profile 55°	3	Boring and Profiling	10
Full Profile - ISO	4	Boring, Profiling and Facing	10
Full Profile - UN	4	Face grooving	11
Acme	5	Face grooving, Full radius	12
Trapez - DIN 103	5	Carbide Shank Toolholders	13
Chamfering	6	Steel Toolholders	14
Grooving	7	Technical Section	15
Grooving, Circlip Ring Grooves DIN 471/472	8		

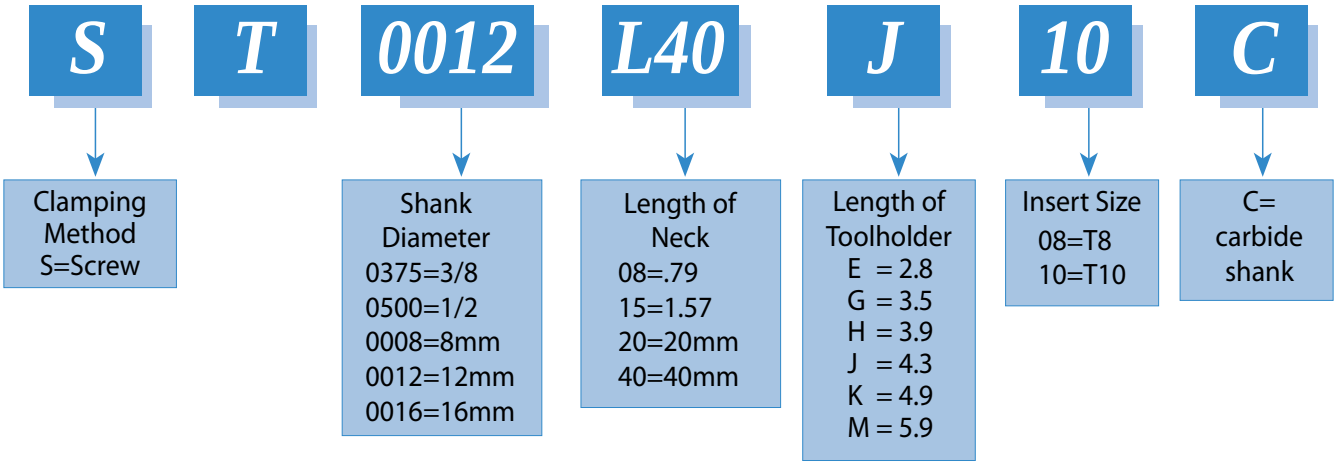
Product Identification

Mini Tools Ordering Code

Inserts

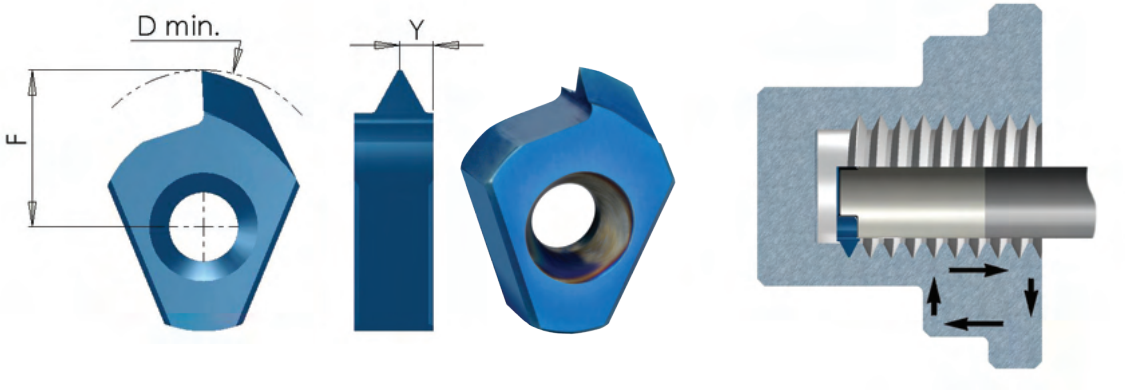


Toolholders



Partial Profile 60°

Same insert for internal and external thread



Insert Type	Ordering Code	Pitch Range mm	Pitch Range TPI	D min	F	Y
T8	T8 A60	Int 0.5 -0.75 Ex 0.4 -0.75	56-32 64-32	.31	.15	.02
	T8 G60	Int 1.0 -1.25 Ex 0.8 -1.0	28-20 32-28	.33	.16	.03
T10	T10 A60	Int 0.5 -0.8 Ex 0.4 -0.8	56-28 64-32	.46	.25	.02
	T10 G60	Int 1.0 -2.0 Ex 0.8 -1.75	28-13 32-15	.48	.28	.05
	T10 D60	Int 2.0 -3.0 Ex 1.75-2.5	13- 8 15-10	.52	.31	.06

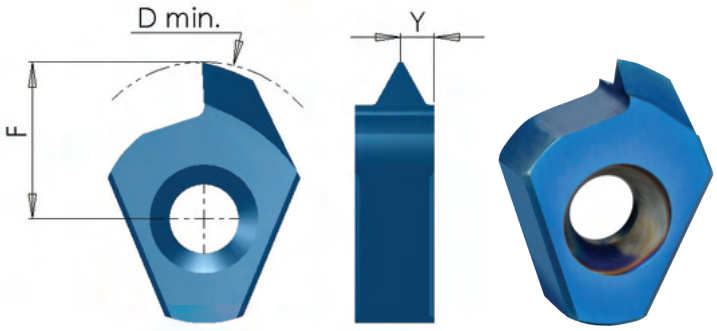
Order exaple: T8 G60 BLU

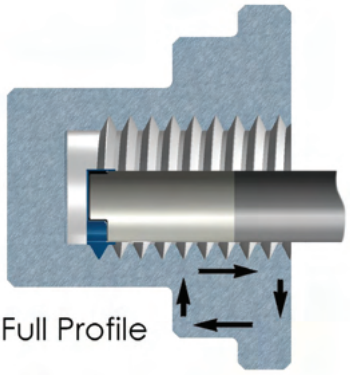
Partial Profile 55°

Same insert for internal and external thread

Insert Type	Ordering Code	Pitch Range mm	Pitch Range TPI	D min	F	Y
T8	T8 G55	1.25-1.5	19-18	.36	.19	.04
	T8 U55	1.75-2.0	16-14	.34	.17	.05
T10	T10 G55	1.25-2.0	19-14	.49	.28	.05

Full Profile





ISO

Inserts for internal thread

Insert Type	Ordering Code	Pitch mm	M coarse	M fine	D min	F	Y
T8	T8 I 0.5 ISO	0.5		M8.5	.31	.14	.02
	T8 I 0.75 ISO	0.75		M9	.32	.15	.02
	T8 I 1.0 ISO	1.0		M9	.31	.15	.03
	T8 I 1.25 ISO	1.25		M10	.32	.15	.03
	T8 I 1.5 ISO	1.5	M10	M12	.33	.16	.04
	T8 I 1.75 ISO	1.75	M12	-	.34	.17	.04
	T8 I 2.0 ISO	2.0	M14	M17	.35	.18	.05
T10	T10 I 0.5 ISO	0.5		M12	.44	.24	.02
	T10 I 0.75 ISO	0.75		M12	.44	.24	.02
	T10 I 1.0 ISO	1.0		M13	.46	.26	.03
	T10 I 1.5 ISO	1.5		M14	.46	.26	.04
	T10 I 2.0 ISO	2.0	M16	M17	.47	.27	.05
	T10 I 2.5 ISO	2.5	M18, M20	-	.50	.29	.06
	T10 I 3.0 ISO	3.0	M24	M28	.50	.29	.06

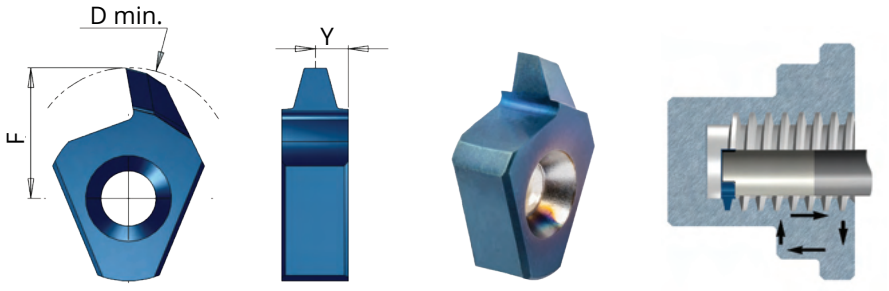
UN

Inserts for internal thread

Insert Type	Ordering Code	Pitch TPI	Nominal size	UNC	UNF	UNEF	D min	F	Y
T8	T8 I 32UN	32	7/16, 1/2			3/8	.33	.16	.02
	T8 I 28UN	28	3/8			7/16, 1/2	.33	.16	.03
	T8 I 24UN	24			3/8		.33	.16	.03
	T8 I 20UN	20	3/8		7/16, 1/2		.32	.15	.04
	T8 I 16UN	16	7/16, 1/2				.34	.17	.04
	T8 I 14UN	14		7/16			.35	.18	.05
	T8 I 13UN	13		1/2			.35	.18	.05
T10	T10 I 20UN	20	9/16, 5/8, 11/16			3/4	.47	.27	.04
	T10 I 18UN	18			9/16, 5/8		.47	.27	.04
	T10 I 16UN	16	9/16, 5/8, 11/16		3/4		.47	.27	.04
	T10 I 14UN	14			7/8		.48	.27	.05
	T10 I 12UN	12	5/8, 11/16, 3/4	9/16			.48	.27	.06
	T10 I 11UN	11		5/8			.49	.29	.06
	T10 I 10UN	10		3/4			.50	.29	.06

Acme

Inserts for internal thread

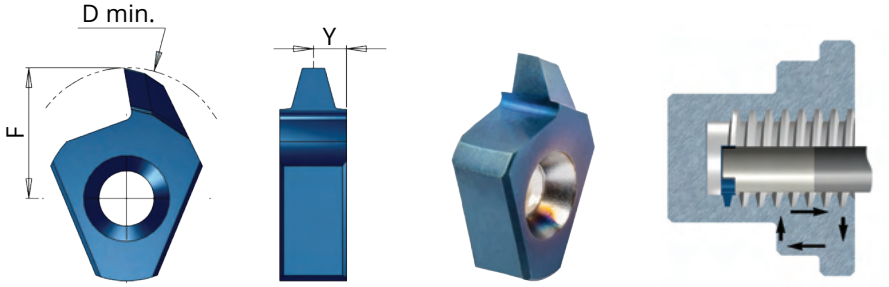


Insert Type	Ordering Code	Pitch TPI	Thread size	D min	F	Y
T8	T8 I 10 ACME	10	1/2-10	.40	.22	.05
T10	T10 I 8 ACME	8	5/8-8	.50	.29	.06
	T10 I 6 ACME	6	3/4-6	.58	.31	.08

Order example: T8 I 10 ACME BLU

Trapez - DIN103

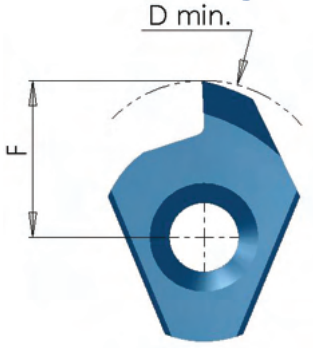
Inserts for internal thread

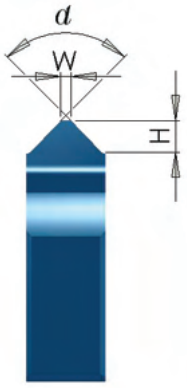


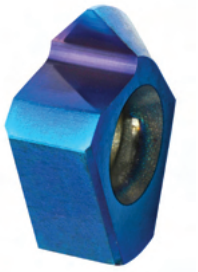
Insert Type	Ordering Code	Pitch mm	Thread size	D min	F	Y
T8	T8 I 2TR	2	Tr12x2, Tr14x2	.39	.19	.04
	T8 I 3TR	3	Tr14x3	.43	.23	.06
T10	T10 I 2TR	2	Tr16x2, Tr18x2, Tr20x2	.55	.28	.04
	T10 I 3TR	3	Tr22x3	.75	.31	.06
	*T10 I 4TR	4	Tr16x4, Tr18x4	.47	.26	.08

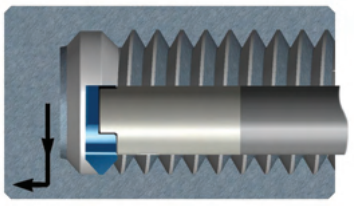
*To use with T10 toolholders version B

Chamfering





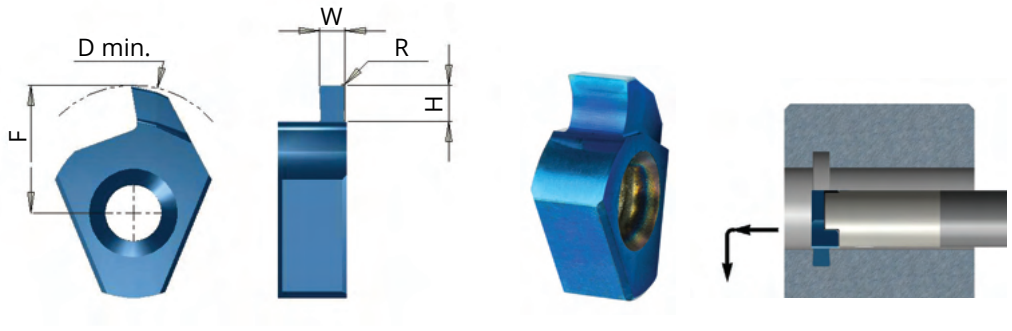




Insert Type	Ordering Code	W	H max	α	D min	F
T8	T8 C90	.008	.06	90°	.35	.18
T10	T10 C90	.008	.07	90°	.50	.30

Same insert for right and left hand cutting
Order exmaple: T8 C90 BLU

Grooving



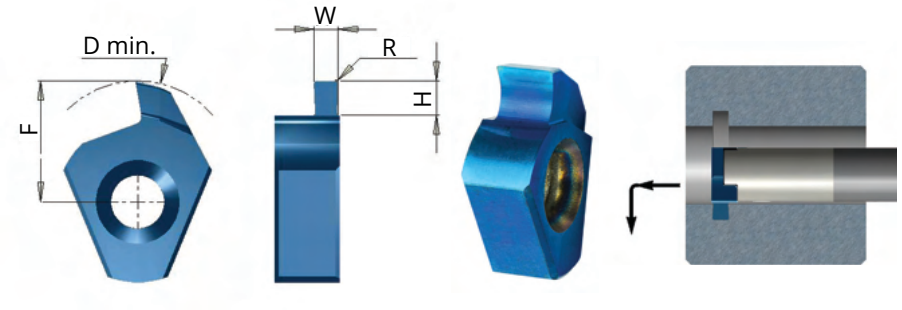
Insert Type	Ordering Code	W mm	W inch	R	H max	D min	F
T8	T8 G W08 H20	0.79	.031	.004	.08	.37	.20
	T8 G W10 H20	1.0	.039	.004	.08	.37	.20
	T8 G W12 H20	1.19	.047	.004	.08	.37	.20
	T8 G W15 H20	1.5	.059	.004	.08	.37	.20
	T8 G W16 H20	1.59	.063	.004	.08	.37	.20
	T8 G W20 H20	2.0	.079	.004	.08	.37	.20
	T8 G W24 H20	2.38	.094	.004	.08	.37	.20
	T8 G W25 H20	2.5	.098	.004	.08	.37	.20
	T8 G W30 H20	3.0	.118	.004	.08	.37	.20
T10	T10 G W08 H28	0.79	.031	.004	.11	.53	.31
	T10 G W10 H14	1.0	.039	.004	.06	.48	.28
	T10 G W10 H23	1.0	.039	.004	.09	.52	.31
	T10 G W12 H28	1.19	.047	.004	.11	.53	.31
	T10 G W15 H14	1.5	.059	.004	.06	.48	.28
	T10 G W15 H23	1.5	.059	.004	.09	.52	.31
	*T10 G W15 H40	1.5	.059	.004	.16	.53	.31
	T10 G W16 H28	1.59	.063	.004	.11	.53	.31
	T10 G W20 H14	2.0	.079	.004	.06	.48	.28
	T10 G W20 H23	2.0	.079	.004	.09	.52	.31
	*T10 G W20 H40	2.0	.079	.004	.16	.53	.31
	T10 G W24 H28	2.38	.094	.004	.11	.53	.31
	T10 G W25 H23	2.5	.098	.004	.09	.52	.31
	*T10 G W25 H40	2.5	.098	.004	.16	.53	.31
	T10 G W30 H23	3.0	.118	.004	.09	.52	.31
	*T10 G W30 H40	3.0	.118	.004	.16	.53	.31

*To use with T10 toolholders version B

Tolerance: W±0.02 mm/.001”

Order exmaple: T10 G W08 H28 BLU

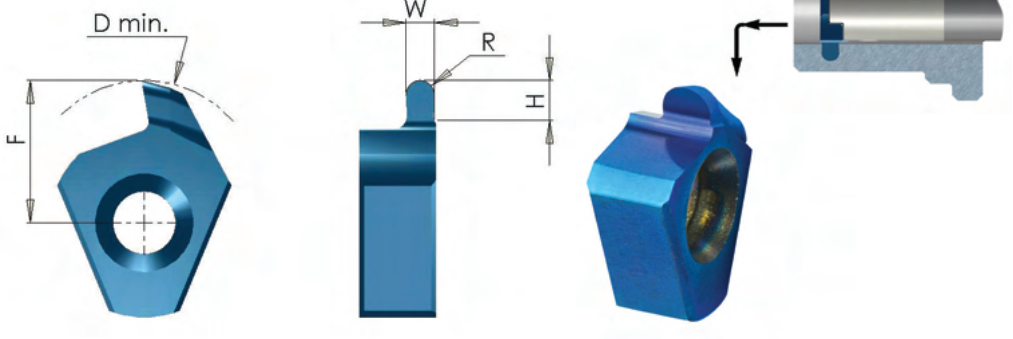
Grooving, Circlip Ring Grooves DIN 471/472



Insert Type	Ordering Code	Nom` groove width		W +.0012	R	H max	D min	F
		mm	in					
T8	TD8 G W07 H12	0.7	.028	.029	0	.05	.35	.17
	TD8 G W08 H13	0.8	.031	.033	0	.05	.35	.17
	TD8 G W09 H18	0.9	.035	.037	0	.07	.37	.19
	TD8 G W12 H18	1.1	.043	.047	0	.07	.37	.19
	TD8 G W14 H18	1.3	.051	.055	0	.07	.37	.19
	TD8 G W17 H18	1.6	.063	.067	0	.07	.37	.19
T10	TD10 G W07 H12	0.7	.028	.029	0	.05	.47	.25
	TD10 G W08 H13	0.8	.031	.033	0	.05	.47	.26
	TD10 G W09 H15	0.9	.035	.037	0	.06	.48	.26
	TD10 G W12 H28	1.1	.043	.047	0	.11	.53	.31
	TD10 G W14 H28	1.3	.051	.055	0	.11	.53	.31
	TD10 G W17 H28	1.6	.063	.067	0	.11	.53	.31

Order example: TD10 G W17 H28 BLU

Full Radius Grooving

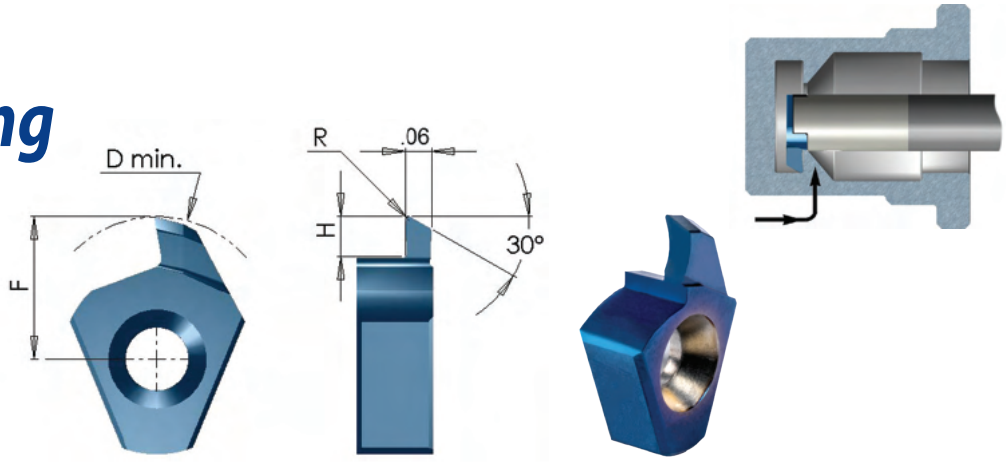


Insert Type	Ordering Code	W		R		H max	D min	F
		mm	in	mm	in			
T8	T8 K R04 H10	0.8	.031	0.4	.016	.04	.33	.16
	T8 K R06 H10	1.2	.047	0.6	.024	.04	.33	.16
	T8 K R09 H10	1.8	.071	0.9	.035	.04	.33	.16
T10	T10 K R04 H22	0.8	.031	0.4	.016	.09	.52	.31
	*T10 K R04 H40	0.8	.031	0.4	.016	.16	.53	.31
	T10 K R06 H22	1.2	.047	0.6	.024	.09	.52	.31
	*T10 K R06 H40	1.2	.047	0.6	.024	.16	.53	.31
	T10 K R09 H22	1.8	.071	0.9	.035	.09	.52	.31
	*T10 K R09 H40	1.8	.071	0.9	.035	.16	.53	.31
	T10 K R10 H22	2.0	.079	1.0	.039	.09	.52	.31
	*T10 K R10 H40	2.0	.079	1.0	.039	.16	.53	.31

*To use with T10 toolholders version B

Tolerance: W±0.02 mm/.0008"

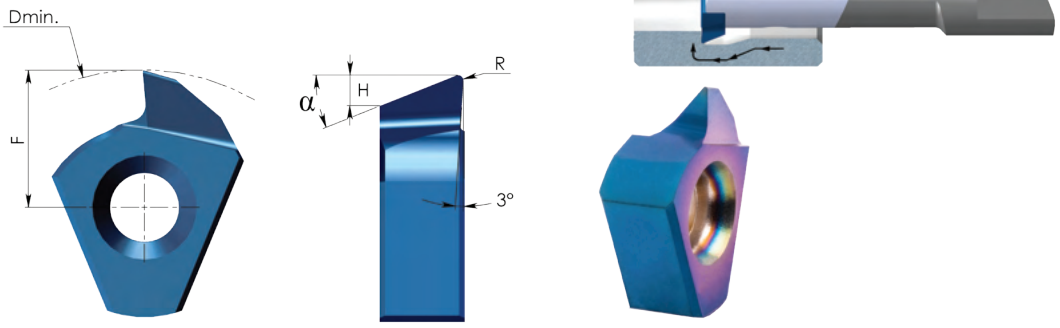
Back Turning



Insert Type	Ordering Code	R	H max	D min	F
T8	T8 X R02 H20	.008	.08	.37	.20
T10	T10 X R02 H23	.008	.09	.52	.31
	*T10 X R02 H35	.008	.14	.53	.31
	T10 X R04 H23	.016	.09	.52	.31

*To use with T10 toolholders version B

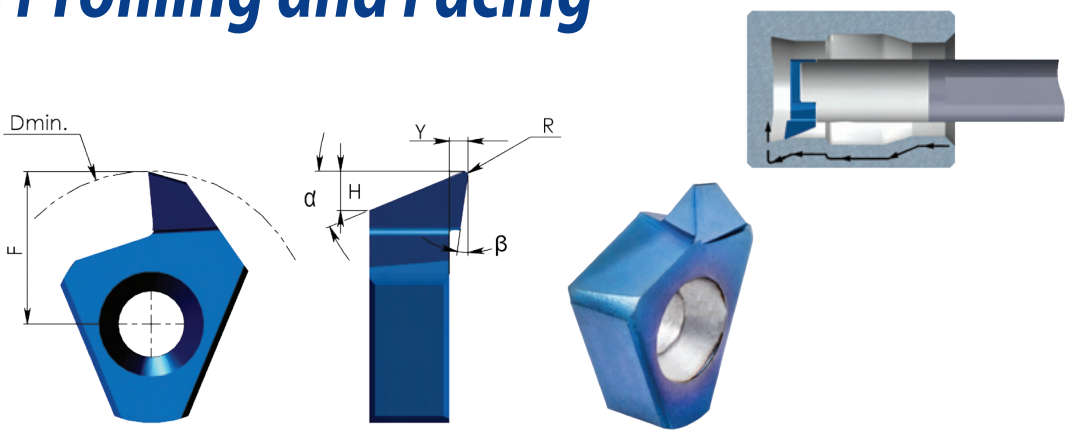
Boring and Profiling



Insert Type	Ordering Code	α	R	H	D min	F
T8	T8 PR R01 A22	22˚	.004	.039	.36	.20
	T8 PR R02 A22	22˚	.008	.039	.36	.20
	T8 QR R01 A47	47˚	.004	.075	.36	.20
	T8 QR R02 A47	47˚	.008	.075	.36	.20

Order exmaple: T8 PR R01 A22 BLU

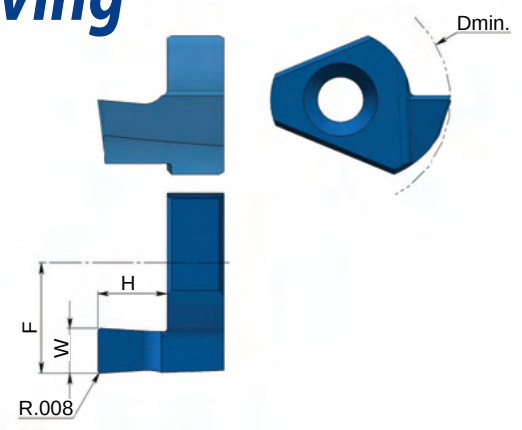
Boring, Profiling and Facing

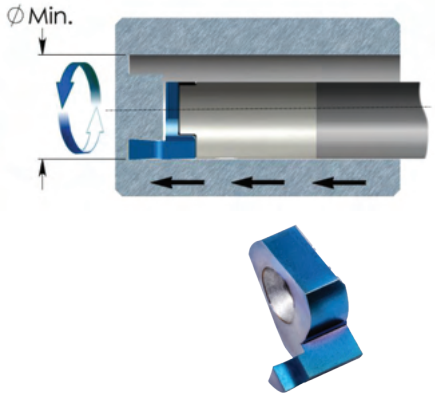


Insert Type	Ordering Code	α	β	R	H	Y	D min	F
T10	T10 PR R01 A22	22˚	8˚	.004	.075	.04	.51	.30
	T10 PR R02 A22	22˚	8˚	.008	.075	.04	.51	.30
	T10 QR R01 A47	47˚	3˚	.004	.102	.02	.51	.30
	T10 QR R02 A47	47˚	3˚	.008	.102	.02	.51	.30

Face Grooving

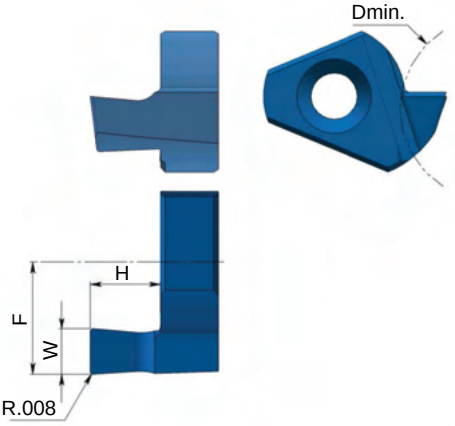
Internal

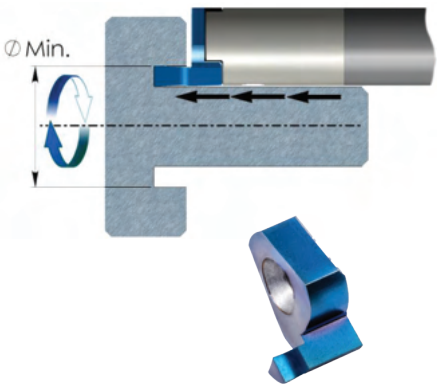




Insert Type	Ordering Code	W ± .0008	H max	D min	F
T10	T10 FI W10 H15	.039	.06	.55	.31
	T10 FI W15 H25	.059	.10		
	T10 FI W20 H30	.079	.12		
	T10 FI W20 H50	.079	.20		
	T10 FI W25 H30	.098	.12		
	T10 FI W25 H50	.098	.20		
	T10 FI W30 H30	.118	.12		
	T10 FI W30 H50	.118	.20		

External



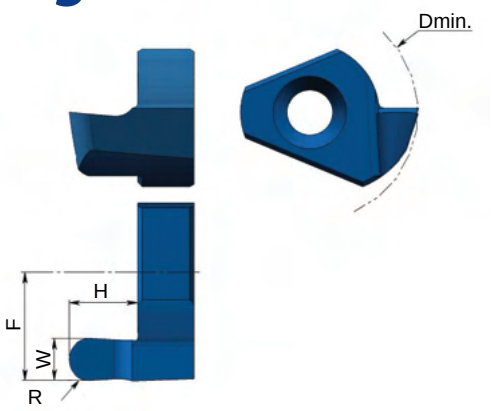


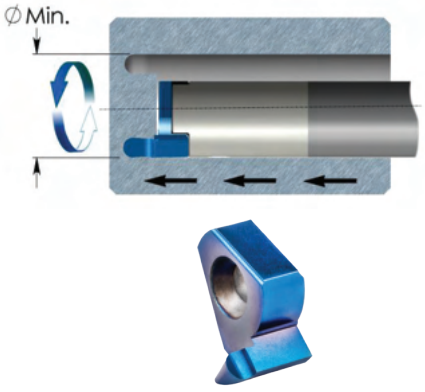
Insert Type	Ordering Code	W ± .0008	H max	D min	F
T10	T10 FE W10 H15	.039	.06	.47	.31
	T10 FE W15 H25	.059	.10		
	T10 FE W20 H30	.079	.12		
	T10 FE W20 H50	.079	.20		
	T10 FE W25 H30	.098	.12		
	T10 FE W25 H50	.098	.20		
	T10 FE W30 H30	.118	.12		
	T10 FE W30 H50	.118	.20		

Order exmaple: T10 FE W20 H30 BLU

Face Grooving, Full Radius

Internal

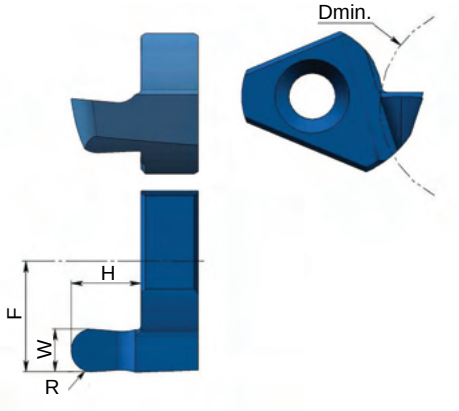


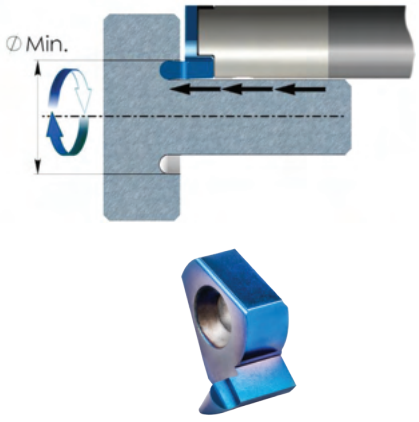


Insert Type	Ordering Code	W ± .0008	R	H max	D min	F
T10	T10 ZI R05 H15	.039	.020	.06	.55	.31
	T10 ZI R08 H25	.063	.031	.10		
	T10 ZI R10 H30	.079	.039	.12		
	T10 ZI R125 H30	.098	.049	.12		
	T10 ZI R15 H30	.118	.059	.12		

Order example: T10 ZI R15 H30 BLU

External



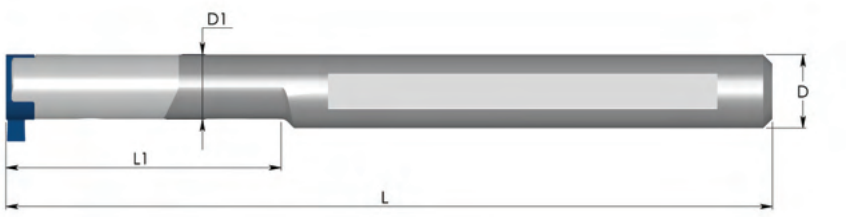


Insert Type	Ordering Code	W ± .0008	R	H max	D min	F
T10	T10 ZE R05 H15	.039	.020	.06	.47	.31
	T10 ZE R08 H25	.063	.031	.10		
	T10 ZE R10 H30	.079	.039	.12		
	T10 ZE R125 H30	.098	.049	.12		
	T10 ZE R15 H30	.118	.059	.12		

Carmex Precision Tools Ltd.

Carbide Shank Toolholders

With through coolant

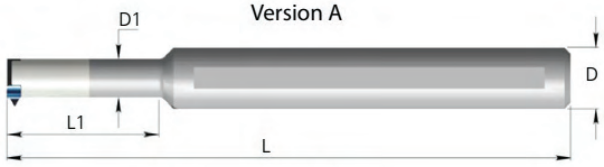


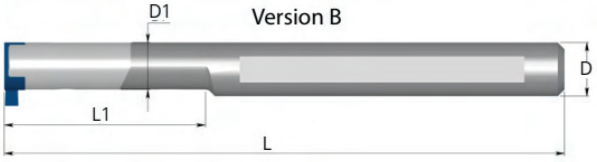
Inch Holders

Insert Type	Ordering Code	D	D1	L1	L	Insert Screw	Torx Key
T8	ST 0312 L08 F08C	5/16	.28	.79	3.1	S5	K5
	ST 0312 L11 G08C	5/16	.28	1.18	3.7	S5	K5
	ST 0312 L15 H08C	5/16	.28	1.57	4.1	S5	K5

Metric Holders

Insert Type	Ordering Code	D mm	D1	L1	L	Insert Screw	Torx Key
T8	ST 0008 L20 F08C	8	.28	.79	3.1	S5	K5
	ST 0008 L30 G08C	8	.28	1.18	3.7	S5	K5
	ST 0008 L40 H08C	8	.28	1.57	4.1	S5	K5





Inch Holders

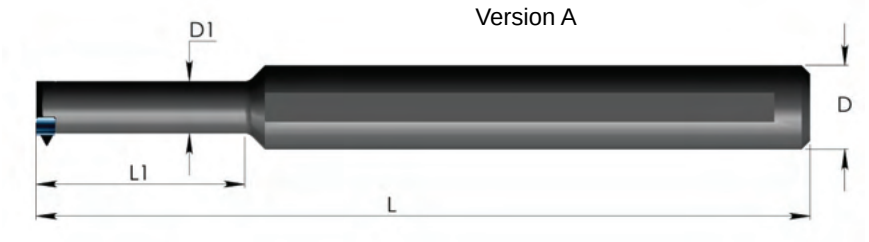
Insert Type	Ordering Code	D	D1	L1	L	Insert Screw	Torx Key	Tool holder Version
T10	ST 0375 M10C	3/8	.38	-	5.9	S11	K11	A
	ST 0500 L16 J10C	1/2	.40	1.6	4.3	S11	K11	A
	ST 0500 L22 K10C	1/2	.40	2.2	4.9	S11	K11	A

Metric Holders

Insert Type	Ordering Code	D mm	D1	L1	L	Insert Screw	Torx Key	Tool holder Version
T10	ST 0010 L29 H10C	10	.35	1.1	3.9	S11	K11	B
	ST 0010 L40 J10C	10	.35	1.6	4.3	S11	K11	B
	ST 0010 M10C	10	.39	---	5.9	S11	K11	A
	ST 0012 L37 J10C	12	.35	1.5	4.3	S11	K11	B
	ST 0012 L40 J10C	12	.39	1.6	4.3	S11	K11	A
	ST 0012 L50 K10C	12	.35	2.0	4.9	S11	K11	B
	ST 0012 L55 K10C	12	.39	2.2	4.9	S11	K11	A

Steel Toolholders

With through coolant



Inch Holders

Insert Type	Ordering Code	D	D1	L1	L	Insert Screw	Torx Key
T10	ST 0500 L10 E10	1/2	.40	1.0	2.8	S11	K11
	ST 0625 L10 G10	5/8	.40	1.0	3.5	S11	K11
	ST 0625 L14 H10	5/8	.40	1.4	3.9	S11	K11

Metric Holders

Insert Type	Ordering Code	D mm	D1	L1	L	Insert Screw	Torx Key
T10	ST 0012 L25 E10	12	.40	1.0	2.8	S11	K11
	ST 0016 L25 G10	16	.40	1.0	3.5	S11	K11
	ST 0016 L35 H10	16	.40	1.4	3.9	S11	K11

Order example: ST 0625 L14 H10

Technical Section

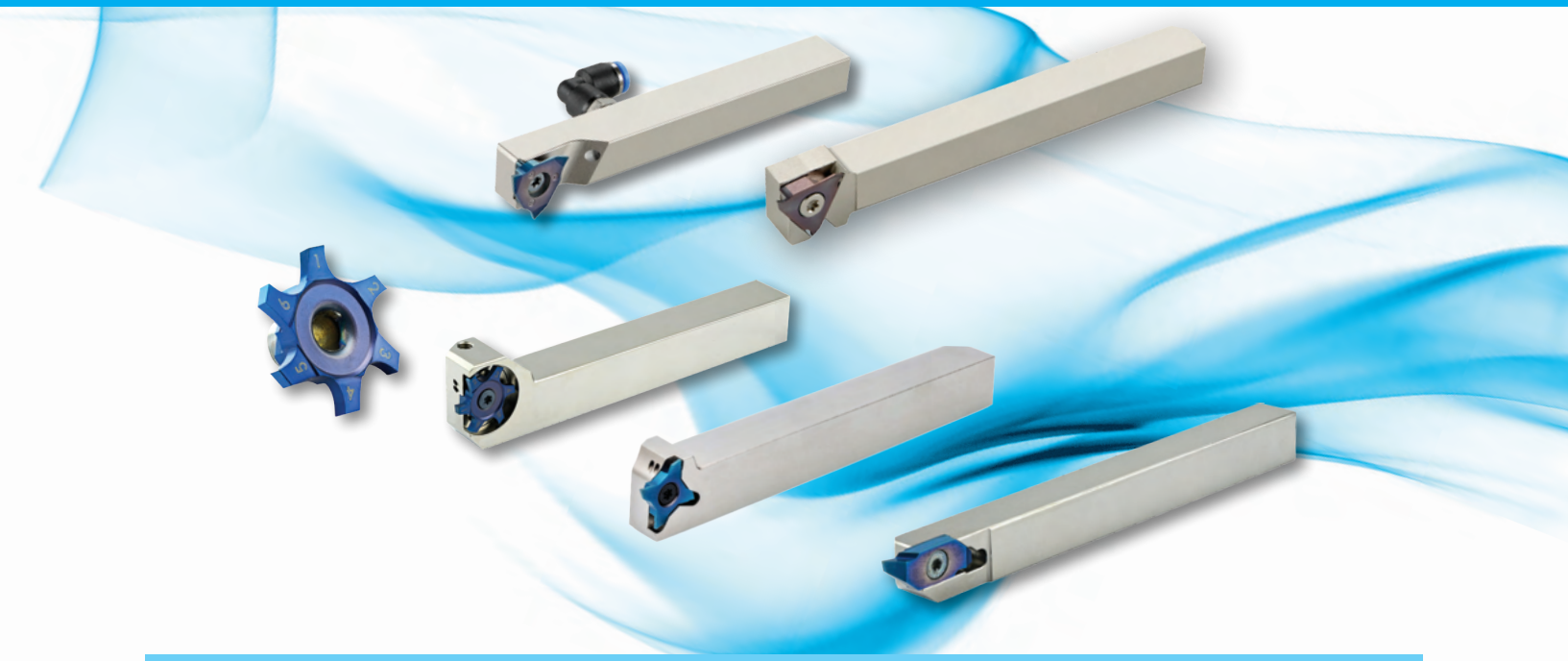
Cutting Data

ISO	Materials	Cutting Speed ft/min	Recommended feed rate inch/rev
P	Low and Medium Carbon Steels <0.55%C	80-230	Grooving: .0004 - .001 Back turning: .001 - .004 Face grooving: .0004 - .003 Chamfering: .001 - .003
	High Carbon Steels ≥0.55%C	65-165	
	Alloy Steels, Treated Steels	50-100	
M	Stainless Steels - Free Cutting	80-230	
	Stainless Steels - Austenitic	65-130	
	Cast Steels	100-230	
K	Cast Iron	50-100	
N	Aluminum ≤12%Si, Copper	100-300	
	Aluminum >12% Si	65-230	
	Synthetics, Duroplastics, Thermoplastics	65-230	
S	Nickel Alloys, Titanium Alloys	65-165	
H	Hardened Steel 45 - 50HRc	30-130	

Threading Passes

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

Swiss-Line A08



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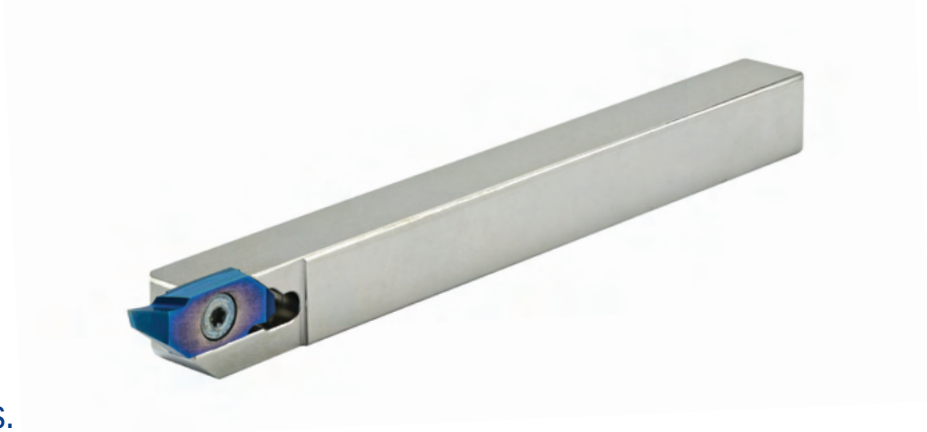
Swiss-Line

- Swiss style lathes are becoming a popular alternative to large lathes and machining centers in many companies.
- Carmex is introducing a new line of inserts and toolholders, developed for automatic and Swiss style lathes.
- Designed for economic production of parting, grooving, profiling threading and chamfering.

Polygon Swiss Line

Carmex extends the Swiss Line range by offering a new type of polygon inserts and tool holders for external turning, grooving, parting and threading on Swiss-Type machines. Specially designed for small parts machining.



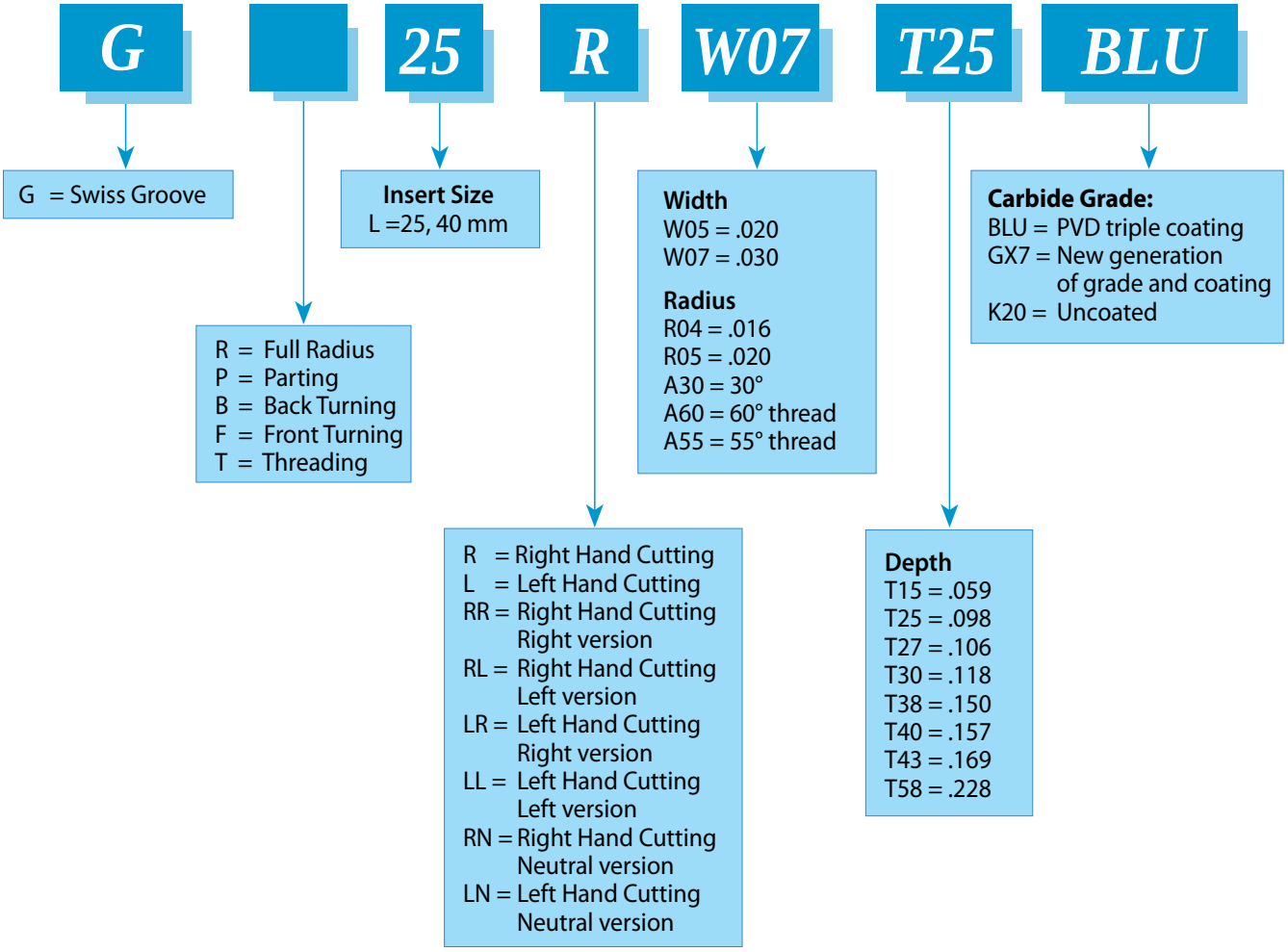
Features

- High precision ground inserts.
- All inserts can be used with same tool holders.
- A combination of the latest carbide and coating technologies guarantees maximum tool life and improved productivity.
- Compatible with a wide range of materials.
- Coated holders provide abrasive resistance.

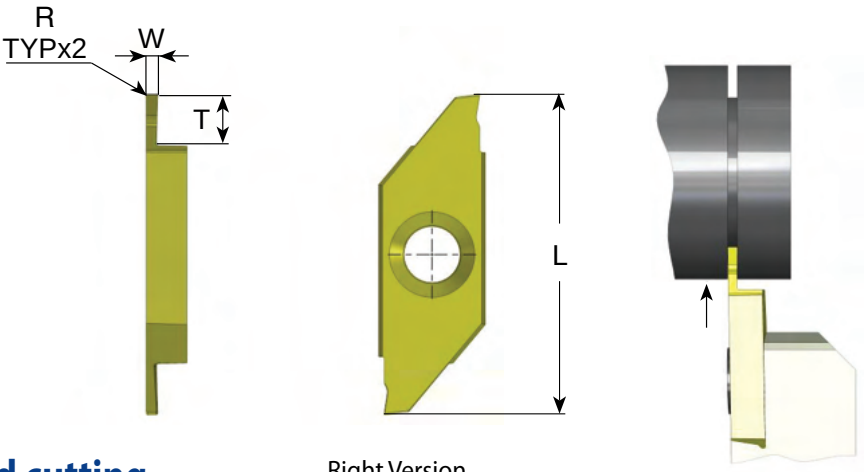
Carbide grades: BLU, GX7, K20

Product Identification

Polygon Inserts



Grooving and Turning



Right Version

Right hand cutting

Insert Size L mm	Ordering Code	W ± .001	T max	R	Feed inch/rev
25	G25 R W05 T15	.020	.059	0	.0004-.002
	G25 R W07 T25	.030	.098	0	.0008-.003
	G25 R W10 T27	.039	.106	.002	.0008-.004
	G25 R W12 T30	.047	.118	.002	.0008-.004
	G25 R W15 T38	.059	.150	.002	.0008-.005
	G25 R W20 T38	.079	.150	.002	.0008-.005
	G25 R W25 T38	.098	.150	.002	.0008-.006
40	G40 R W30 T80	.118	.315	.002	.0008-.006
	G40 R W40 T80	.157	.315	.002	.0008-.006

	K20	BLU	GX7*
P		●	●
M	●	●	●
K	●	○	○
N	●		
S	○	○	●
H		≤45 HRc	≤58 HRc

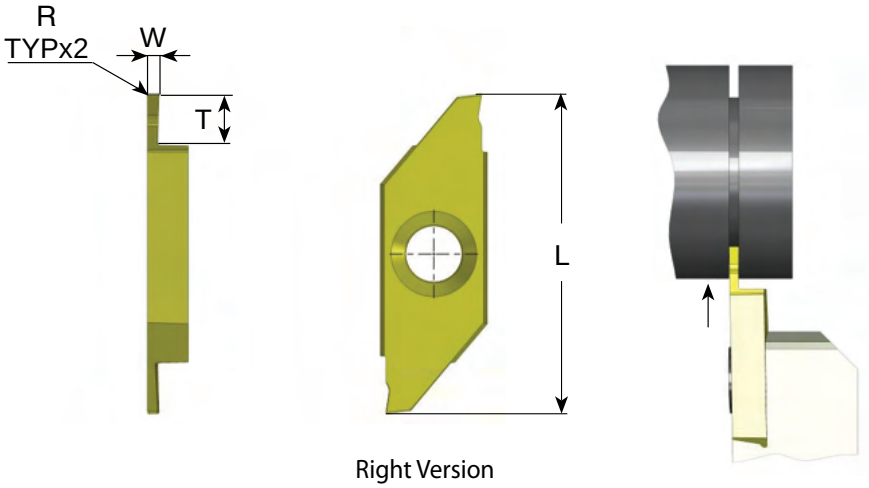
For L.H, specify G25 L instead of G25 R

* Available for insert size G25... only

● First choice ○ Alternative

Grooving, Circlip Ring Grooves

DIN 471/472



Right Version

Right hand cutting

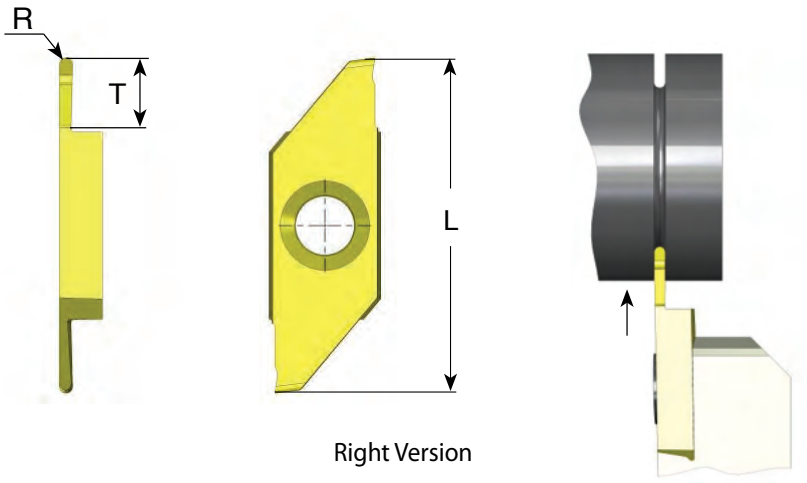
Insert Size L mm	Ordering Code	Nom` groove width	W - .002	T max	R	Feed Inch/rev
25	GD25 R W05 T16	.020	.022	.063	0	.0004-.002
	GD25 R W06 T17	.024	.026	.067	0	.0004-.002
	GD25 R W07 T19	.028	.030	.075	0	.0008-.003
	GD25 R W08 T22	.031	.034	.087	0	.0008-.004
	GD25 R W09 T24	.035	.038	.094	0	.0008-.004
	GD25 R W12 T31	.043	.049	.122	.002	.0008-.004
	GD25 R W14 T33	.051	.057	.130	.002	.0008-.005
	GD25 R W17 T33	.063	.069	.130	.002	.0008-.005
	GD25 R W19 T39	.073	.078	.154	.002	.0008-.005
	GD25 R W22 T45	.085	.090	.177	.002	.0008-.006
	GD25 R W27 T55	.104	.110	.217	.002	.0008-.006

	K20	BLU	GX7
P		●	●
M	●	●	●
K	●	○	○
N	●		
S	○	○	●
H		≤45 HRc	≤58 HRc

For L.H, specify GD25 L instead of GD25 R
Nom`= nominal

● First choice ○ Alternative

Grooving and Profiling (full radius)



Right Version

Right hand cutting

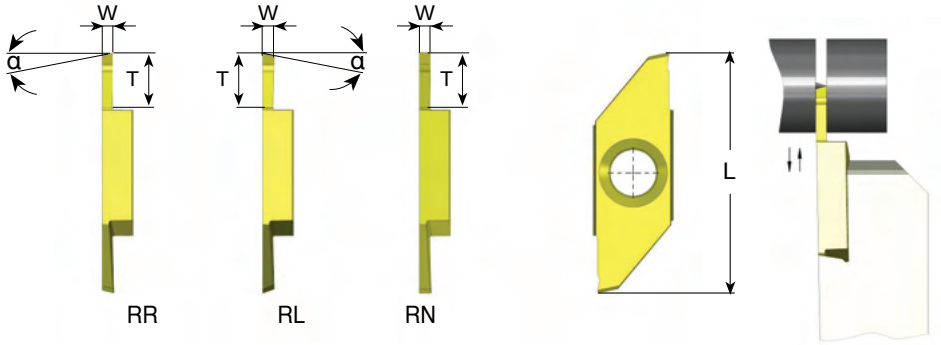
Insert Size L mm	Ordering Code	R±.001	T max	Feed inch/rev
25	GR25 R R02 T15	.010	.059	.0004-.002
	GR25 R R04 T25	.016	.098	.0008-.003
	GR25 R R05 T27	.020	.106	.0008-.004
	GR25 R R07 T27	.028	.106	.0008-.004

For L.H, specify GR25 L instead of GR25 R

	K20	BLU	GX7
P		●	●
M	●	●	●
K	●	○	○
N	●		
S	○	○	●
H		≤45 HRc	≤58 HRc

● First choice ○ Alternative

Parting Off and Grooving



Right Version

Right hand cutting

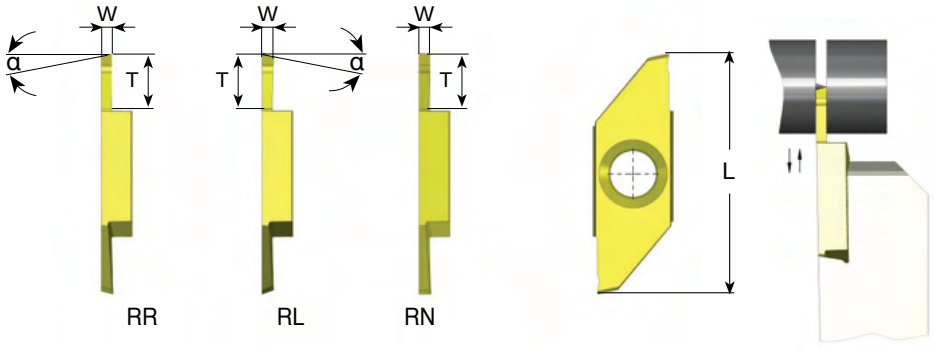
Insert Size L mm	Ordering Code	W	α°	T max	Feed inch/rev
25	GP25 RR W05 T30	.020	15	.118	.0008-.002
	GP25 RL W05 T30	.020	15	.118	.0008-.002
	GP25 RN W05 T30	.020	0	.118	.0008-.002
	GP25 RR W07 T43	.028	15	.169	.0008-.005
	GP25 RL W07 T43	.028	15	.169	.0008-.005
	GP25 RN W07 T43	.028	0	.169	.0008-.005
	GP25 RR W08 T50	.031	15	.197	.0008-.005
	GP25 RL W08 T50	.031	15	.197	.0008-.005
	GP25 RN W08 T50	.031	0	.197	.0008-.005
	GP25 RR W10 T58	.039	15	.228	.0008-.005
	GP25 RL W10 T58	.039	15	.228	.0008-.005
	GP25 RN W10 T58	.039	0	.228	.0008-.005
	GP25 RR W12 T58	.047	15	.228	.0008-.005
	GP25 RL W12 T58	.047	15	.228	.0008-.005
	GP25 RN W12 T58	.047	0	.228	.0008-.005
	GP25 RR W15 T58	.059	15	.228	.0008-.005
	GP25 RL W15 T58	.059	15	.228	.0008-.005
	GP25 RN W15 T58	.059	0	.228	.0008-.005
	GP25 RR W18 T58	.071	15	.228	.0008-.005
	GP25 RL W18 T58	.071	15	.228	.0008-.005
	GP25 RN W18 T58	.071	0	.228	.0008-.005
	GP25 RR W20 T58	.079	15	.228	.0008-.005
	GP25 RL W20 T58	.079	15	.228	.0008-.005
	GP25 RN W20 T58	.079	0	.228	.0008-.005
	GP25 RR W20 T75	.079	15	.295	.0008-.005
	GP25 RL W20 T75	.079	15	.295	.0008-.005
	GP25 RN W20 T75	.079	0	.295	.0008-.005
	GP25 RR W25 T58	.098	15	.228	.002 -.005
	GP25 RL W25 T58	.098	15	.228	.002 -.005
	GP25 RN W25 T58	.098	0	.228	.002 -.005

	K20	BLU	GX7
P		●	●
M	●	●	●
K	●	○	○
N	●		
S	○	○	●
H		≤45 HRc	≤58 HRc

For L.H, specify GP25 LR instead of GP25 RR
GP25 LL instead of GP25 RL
GP25 LN instead of GP25 RN

● First choice ○ Alternative

Parting Off and Grooving



Right Version

Right hand cutting

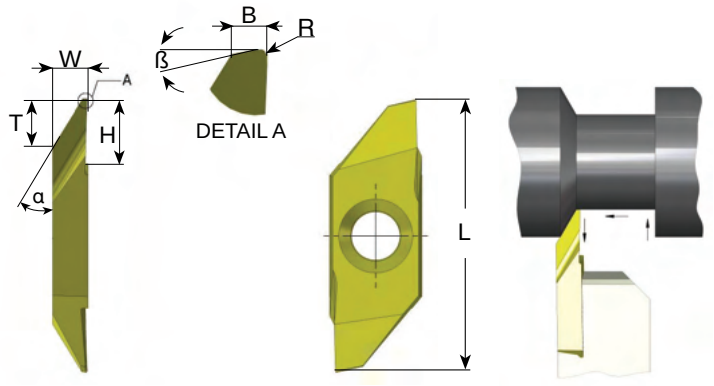
Insert Size L mm	Ordering Code	W	α°	T max	Feed inch/rev
40	GP40 RR W15 T80	.059	15	.315	.001-.003
	GP40 RL W15 T80	.059	15	.315	.001-.003
	GP40 RN W15 T80	.059	0	.315	.001-.003
	GP40 RR W18 T95	.071	15	.374	.001-.003
	GP40 RL W18 T95	.071	15	.374	.001-.003
	GP40 RN W18 T95	.071	0	.374	.001-.003
	GP40 RR W20 T110	.079	15	.433	.001-.003
	GP40 RL W20 T110	.079	15	.433	.001-.003
	GP40 RN W20 T110	.079	0	.433	.001-.003
	GP40 RR W25 T130	.098	15	.512	.001-.003
	GP40 RL W25 T130	.098	15	.512	.001-.003
	GP40 RN W25 T130	.098	0	.512	.001-.003
	GP40 RR W30 T130	.118	15	.512	.001-.003
	GP40 RL W30 T130	.118	15	.512	.001-.003
	GP40 RN W30 T130	.118	0	.512	.001-.003

	K20	BLU
P		●
M	●	●
K	●	○
N	●	
S	●	●
H		≤45 HRc

For L.H, specify GP40 LR instead of GP40 RR
GP40 LL instead of GP40 RL
GP40 LN instead of GP40 RN

● First choice ○ Alternative

Back Turning



Right Version

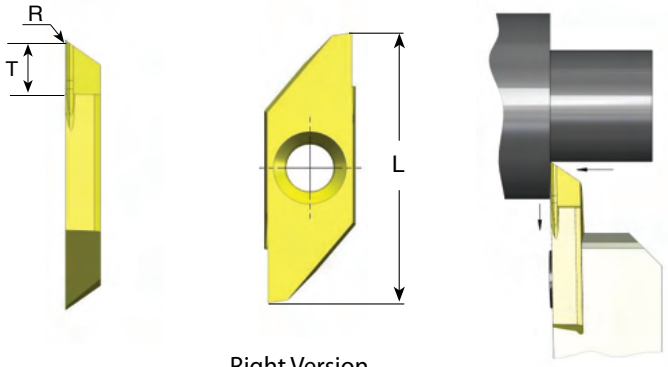
Right hand cutting

Insert Size L mm	Ordering Code	α°	ß°	R	W	T max	B	H	Feed inch/rev
25	GB25 R A30 R03	30	15	.001	.118	.157	.020	.315	.002-.005
	GB25 R A30 R10	30	15	.004	.118	.157	.020	.315	.002-.005
	GB25 R A30 R20	30	15	.008	.118	.157	.020	.315	.002-.005

	K20	BLU
P		●
M	●	●
K	●	o
N	●	
S	●	●
H		≤45 HRc

For L.H, specify GB25 L instead of GB25 R

Front Turning



Right Version

Right hand cutting

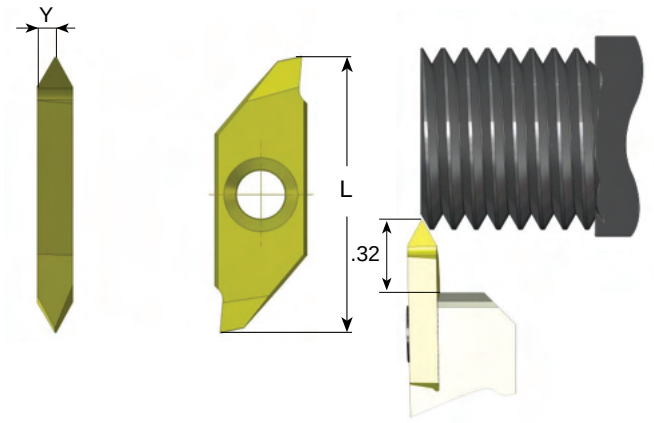
Insert Size L mm	Ordering Code	T max	R	Feed inch/rev
25	GF25 R T40	.157	.002	.002-.005
	GF25 R T40 R10	.157	.004	.002-.005
	GF25 R T70	.276	.002	.002-.003

	K20	BLU
P		●
M	●	●
K	●	o
N	●	
S	●	●
H		≤45 HRc

For L.H, specify GF25 L instead of GF25 R

● First choice o Alternative

Threading - Partial Profile 60°



Right Version

Right hand cutting

Insert Size L mm	Ordering Code	Pitch Range mm	Pitch Range TPI	Y
25	**GT25 R A60**	0.25-0.8	100-32	.028
	GT25 R G60	1.0 -3.0	24- 8	.063

For L.H, specify GT25 L instead of GT25 R

	K20	BLU
P		●
M	●	●
K	●	○
N	●	
S	●	●
H		≤45 HRc

Threading - Partial Profile 55°

Right hand cutting

Insert Size L mm	Ordering Code	Pitch Range mm	Pitch Range TPI	Y
25	**GT25 R A55**	0.5 -1.5	48-16	.039
	GT25 R G55	1.75-3.0	14- 8	.063

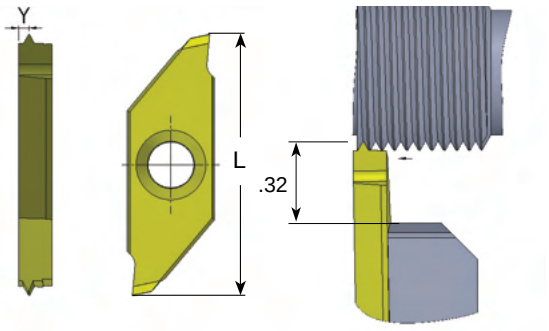
For L.H, specify GT25 L instead of GT25 R

	K20	BLU
P		●
M	●	●
K	●	○
N	●	
S	●	●
H		≤45 HRc

● First choice ○ Alternative

Threading - ISO metric 60° Full Profile

External thread



Right Version

Right hand cutting

Insert Size L mm	Ordering Code	Pitch mm	Y
25	GT25 R 0.5ISO	0.5	.024
	GT25 R 0.6ISO	0.6	.024
	GT25 R 0.7ISO	0.7	.028
	GT25 R 0.75ISO	0.75	.028
	GT25 R 0.8ISO	0.8	.028
	GT25 R 1.0ISO	1.0	.031
	GT25 R 1.25ISO	1.25	.039
	GT25 R 1.5ISO	1.5	.043

	K20	BLU
P		●
M	●	●
K	●	○
N	●	
S	●	●
H		≤45 HRc

For L.H, specify GT25 L instead of GT25 R

Threading - UN unified 60° Full Profile

External thread

Right hand cutting

Insert Size L mm	Ordering Code	Pitch TPI	Y
25	GT25 R 56UN	56	.024
	GT25 R 40UN	40	.028
	GT25 R 32UN	32	.028
	GT25 R 24UN	24	.031

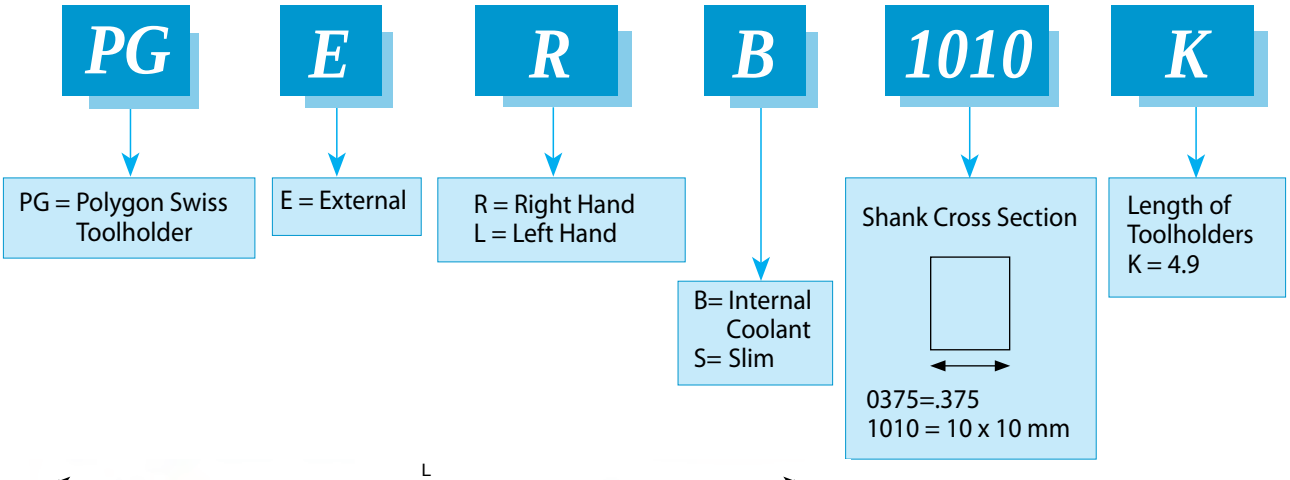
	K20	BLU
P		●
M	●	●
K	●	○
N	●	
S	●	●
H		≤45 HRc

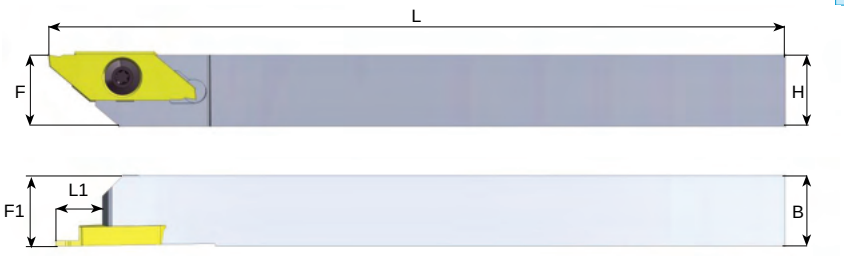
For L.H, specify GT25 L instead of GT25 R

● First choice ○ Alternative

External Toolholders

Product Identification - Polygon Toolholders





Right Version

Right hand cutting Inch holders

Insert Size L mm	Ordering Code	B	H	L1	L	F	F1	Insert Screw Torx+	Key Torx+
25	PGER 0315 K	.315	.315	.31	4.9	.375	.375	S26PD	K11P
	PGER 0375 K	.375	.375	.31	4.9	.375	.375	S26PD	K11P
	PGER 0500 K	.500	.500	.31	4.9	.500	.500	S26PD	K11P
	PGER 0625 K	.625	.625	.31	4.9	.625	.625	S26PD	K11P
	PGER 0750 K	.750	.750	.31	4.9	.750	.750	S26PD	K11P
40	PGER 0375 K40	.375	.375	.51	4.9	.375	.375	S26PD	K11P
	PGER 0500 K40	.500	.500	.51	4.9	.500	.500	S26PD	K11P
	PGER 0625 K40	.625	.625	.51	4.9	.625	.625	S26PD	K11P
	PGER 0750 K40	.750	.750	.51	4.9	.750	.750	S26PD	K11P
	PGER 1000 K40	1	1	.51	5.9	1	1	S26PD	K11P

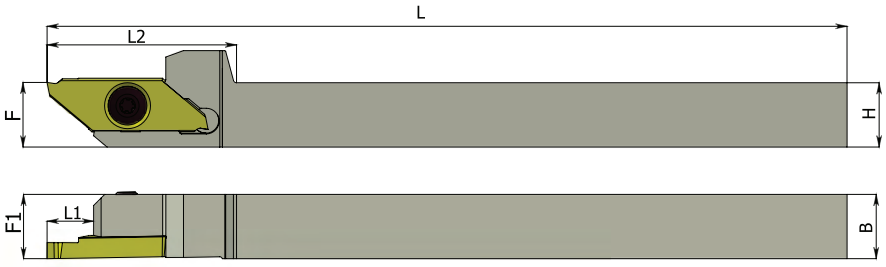
For L.H, specify PGE L instead of PGE R

Right hand cutting Metric holders

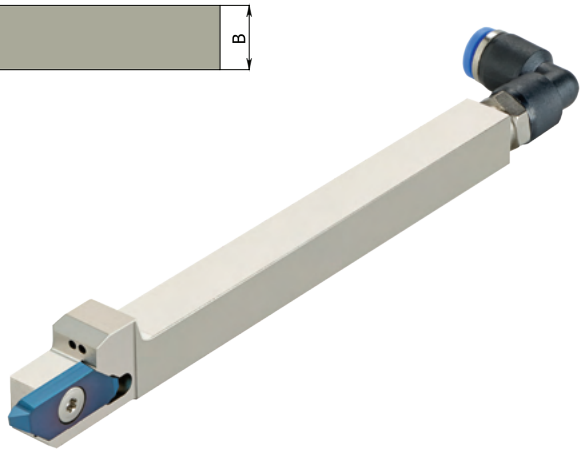
Insert Size L mm	Ordering Code	B mm	H mm	L1	L	F	F1	Insert Screw Torx+	Key Torx+
25	PGER 0808 K	8	8	.31	4.9	.394	.394	S26PD	K11P
	PGER 1010 K	10	10	.31	4.9	.394	.394	S26PD	K11P
	PGER 1212 K	12	12	.31	4.9	.472	.472	S26PD	K11P
	PGER 1616 K	16	16	.31	4.9	.630	.630	S26PD	K11P
	PGER 2020 K	20	20	.31	4.9	.787	.787	S26PD	K11P
40	PGER 1010 K40	10	10	.51	4.9	.394	.394	S26PD	K11P
	PGER 1212 K40	12	12	.51	4.9	.472	.472	S26PD	K11P
	PGER 1616 K40	16	16	.51	4.9	.630	.630	S26PD	K11P
	PGER 2020 K40	20	20	.51	4.9	.787	.787	S26PD	K11P
	PGER 2525 K40	25	25	.51	5.9	.984	.984	S26PD	K11P

For L.H, specify PGE L instead of PGE R

External Toolholders
with internal coolant



Right Version



Right hand cutting Inch holders

Insert Size L mm	Ordering Code	B	H	L1	L2	L	F	F1	Insert Screw Torx+	Key Torx+	*Coolant connector mm
25	**PGERB 0375 K**	.375	.375	.31	1.18	4.9	.375	.375	S26PD	K11P	Ø4/Ø6
	PGERB 0500 K	.500	.500	.31	1.18	4.9	.500	.500	S26PD	K11P	Ø4/Ø6
	PGERB 0625 K	.625	.625	.31	1.18	4.9	.625	.625	S26PD	K11P	Ø4/Ø6

Right hand cutting Metric holders

Insert Size L mm	Ordering Code	B mm	H mm	L1	L2	L	F	F1	Insert Screw Torx+	Key Torx+	*Coolant connector mm
25	**PGERB 1010 K**	10	10	.31	1.18	4.9	.394	.394	S26PD	K11P	Ø4/Ø6
	PGERB 1212 K	12	12	.31	1.18	4.9	.472	.472	S26PD	K11P	Ø4/Ø6
	PGERB 1616 K	16	16	.31	1.18	4.9	.630	.630	S26PD	K11P	Ø4/Ø6

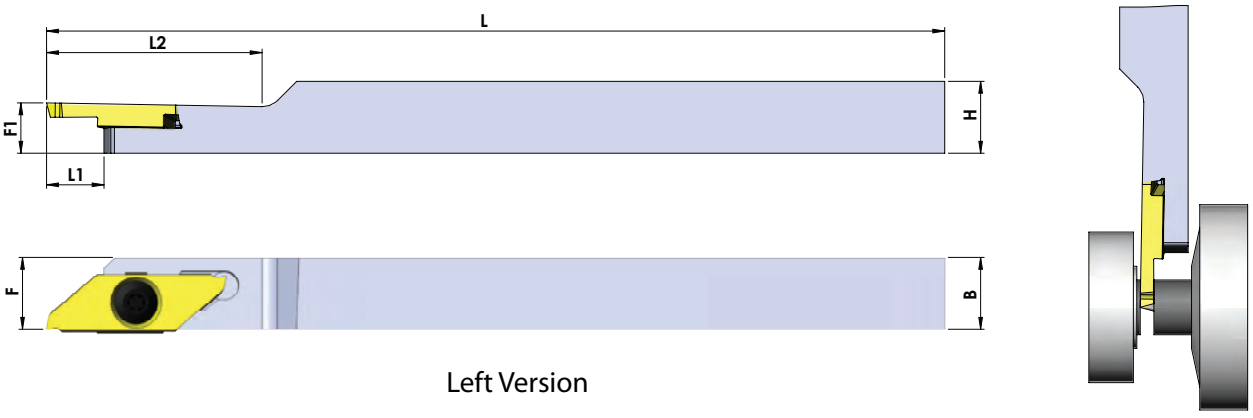
For L.H, specify PGE L B instead of PGE R B

* Coolant pipe diameter

● First choice ○ Alternative

External Toolholders

Slim



Left Version

Left hand cutting Inch holders

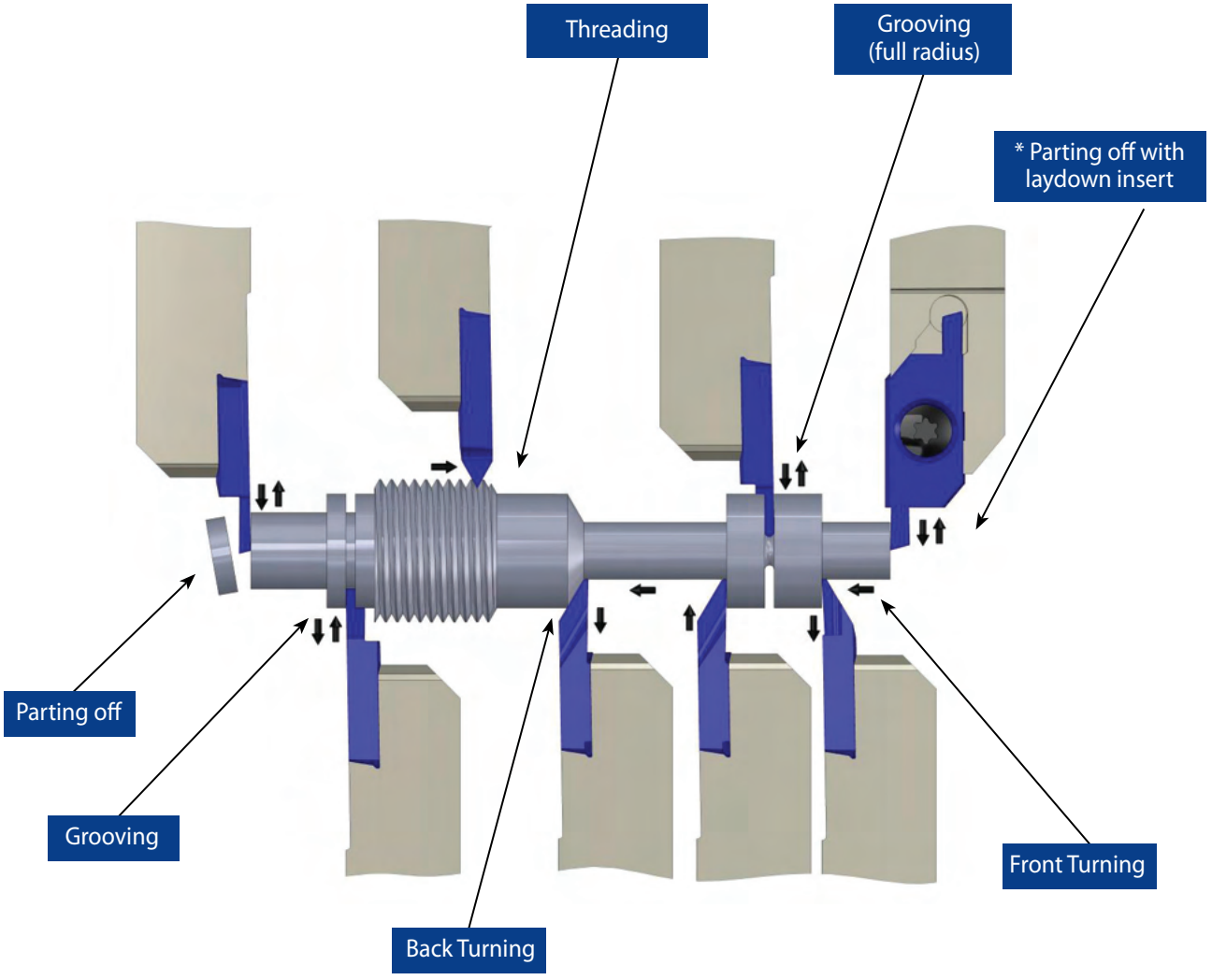
Insert Size L mm	Ordering Code	B	H	L1	L	F	F1	L2	Insert Screw Torx+	Key Torx+
25	**PGELS 0375 K**	.375	.375	.31	4.9	.375	.276	.94	S26PS	K11P
	PGELS 0500 K	.500	.500	.31	4.9	.500	.276	1.18	S26PS	K11P

Left hand cutting Metric holders

Insert Size L mm	Ordering Code	B mm	H mm	L1	L	F	F1	L2	Insert Screw Torx+	Key Torx+
25	**PGELS 1010 K**	10	10	.31	4.9	.394	.276	.94	S26PS	K11P
	PGELS 1212 K	12	12	.31	4.9	.472	.276	1.18	S26PS	K11P

Available only in L.H.
Coated holders provides a high abrasive resistance

Working Method



* Available upon request (grooving, parting, threading)

Polygon Swiss Line

Carbide Grades

BLU

PVD triple layer coated Sub-Micron grade for Steel, Stainless Steels, Titanium and hard materials.

GX7

New generation of PVD triple layer coated Sub-Micron grade for wide range of materials as:
Steel, Stainless Steels, Titanium and hard materials up to 58 HRc.
With high toughness for optimized performance.

K20

Uncoated Sub-Micron carbide grade for Aluminum and non-ferrous materials, Stainless Steels and Titanium.

Cutting Data

ISO Standard	Materials	Cutting Speed ft/min		
		K20	BLU	GX7*
P	Low & Medium Carbon Steels <0.55%C	---	260-490	230-530
	High Carbon Steels ≥0.55%C	---	230-395	200-430
	Alloy Steels, Treated Steels	---	130-260	130-330
M	Stainless Steel-Free Cutting	100-260	200-395	200-460
	Stainless Steel-Austenitic	65-230	100-295	100-390
	Cast Steels	100-260	165-395	165-460
K	Cast Iron	165-395	200-490	200-460
N	Aluminum ≤12%Si, Copper	395-820	---	---
	Aluminum >12%Si	295-656	---	---
	Synthetics, Duroplastics, Thermoplastics	230-490	---	---
S	Nickel Alloys, Titanium Alloys	65-165	100-230	100-460
H	Hardened Steel, 45-50HRc	---	65-165	65-230
	Hardened Steel, 50-58HRc	---	---	65-200

* Available for grooving and parting off, with G25 insert size

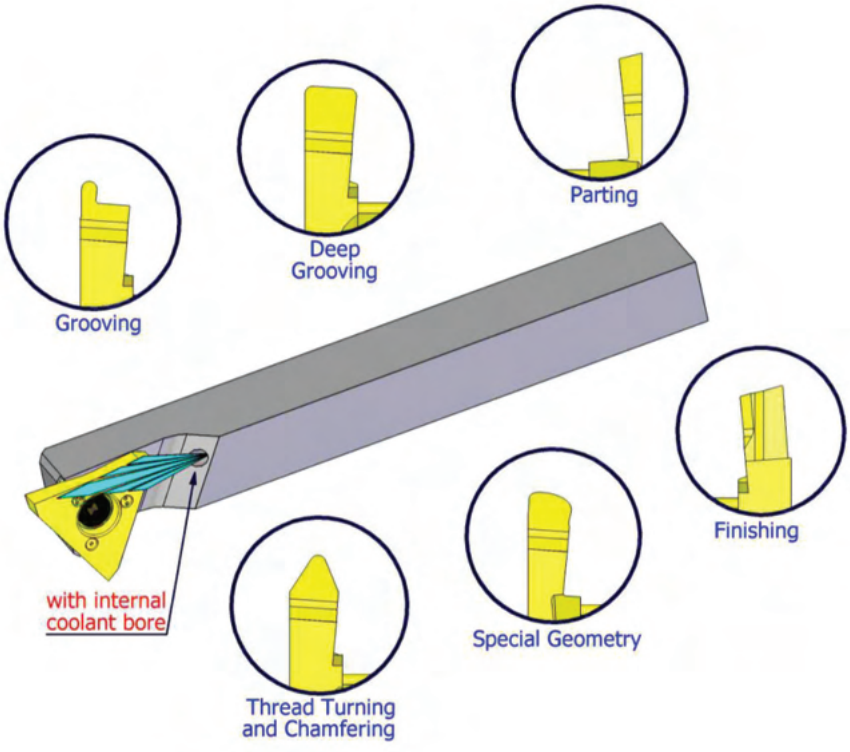
3 Cutting Edges Swiss Line Inserts and Toolholders

- **Swiss style lathes are becoming a popular alternative to large lathes and machining centers in many companies**
- **Carmex offers a large and versatile product line of inserts and toolholders, developed for automatic and Swiss style lathes**
- **Designed for economic production of parting, grooving, profiling and chamfering**

Advantages

Advanced sub-micron grade (K10-K30) - a combination of strength, toughness, wear resistance and edge sharpness

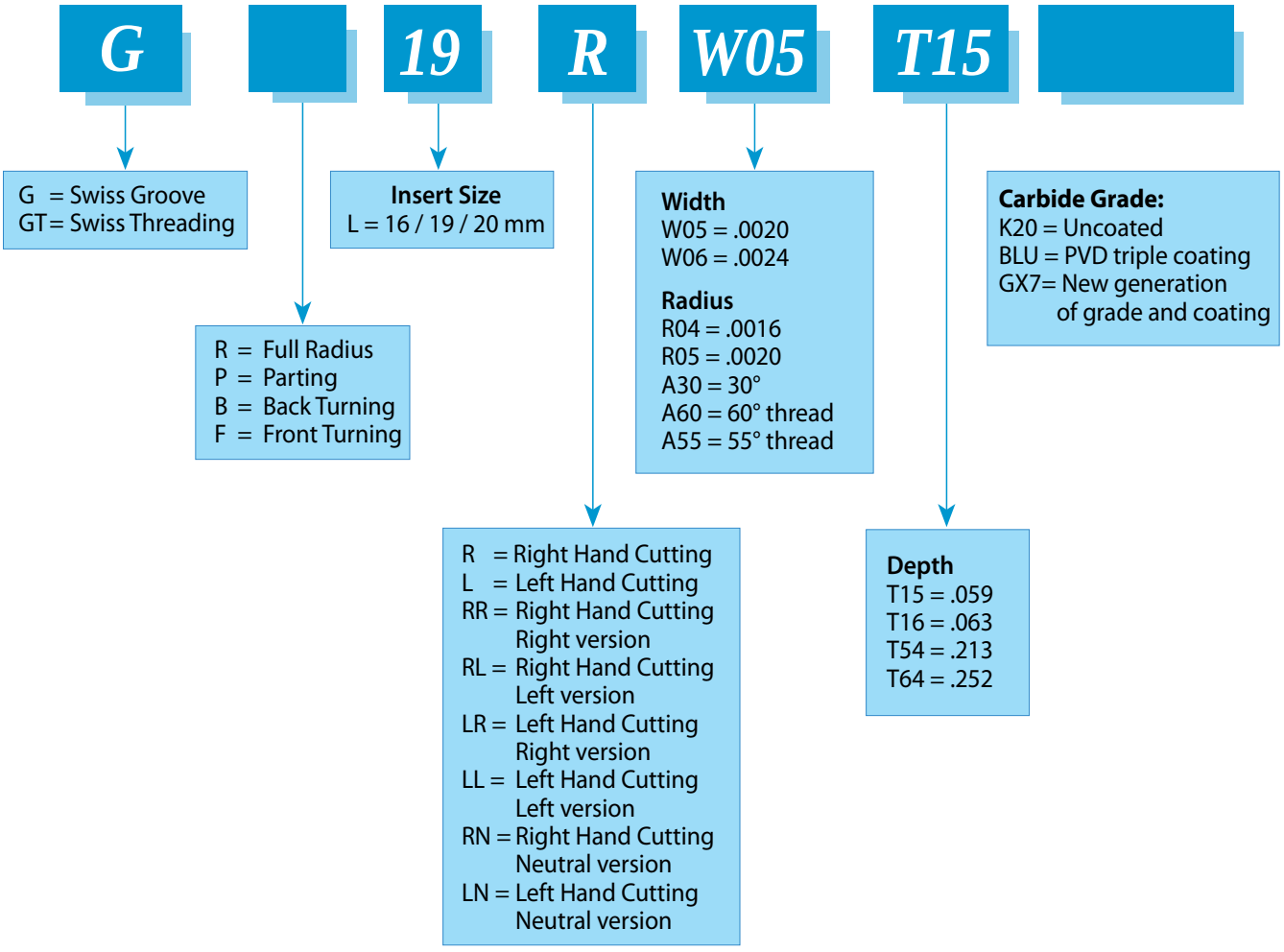
- Grounded cutting edges
- Advanced and unique PVD triple coating, for high wear and heat resistance
- For most types of material, including Stainless Steels, Titanium and Super Alloys



- Three cutting edges
- The insert can be indexed directly on the machine
- Internal coolant to the cutting edge

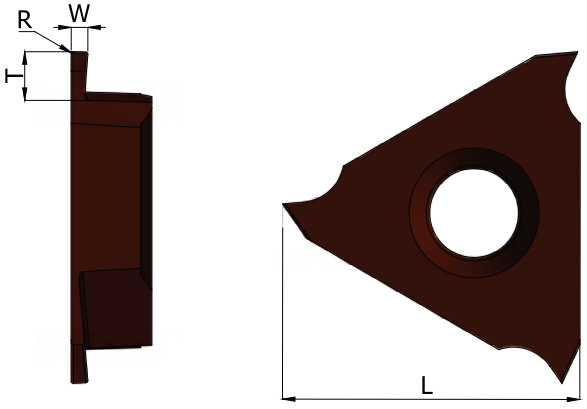
Product Identification

Inserts



16 mm Inserts and Toolholders

Grooving



Right Version

Right hand cutting

Insert Size L mm	Ordering Code	W ± .001	T max	R	Feed inch/rev	
					Radial	Axial
16	G16 R W05 T12	.020	.05	.002	.0004-.0024	.0008-.0031
	G16 R W10 T20	.039	.08	.002	.0008-.0028	.0008-.0039
	G16 R W15 T25	.059	.10	.004	.0012-.0031	.0008-.0039
	G16 R W20 T25	.079	.10	.006	.0020-.0039	.0008-.0039
	G16 R W25 T25	.098	.10	.008	.0020-.0039	.0008-.0059

	K20	GX7
P		●
M	●	●
K	●	○
N	●	
S	●	●
H		≤58 HRc

For L.H, specify G16 L instead of G16 R

Grooving, Circlip Ring Grooves

DIN 471/472

Right hand cutting

Insert Size L mm	Ordering Code	Nom` groove width	W-.002	T max	R	Feed inch/rev	
						Radial	Axial
16	G16 R W07 T20	.028	.030	.08	0	.0004-.0024	.0008-.0031
	G16 R W08 T20	.031	.034	.08	0	.0004-.0024	.0008-.0031
	G16 R W09 T25	.035	.038	.10	0	.0008-.0028	.0008-.0039
	G16 R W12 T25	.043	.049	.10	.002	.0008-.0028	.0008-.0039
	G16 R W14 T25	.051	.057	.10	.002	.0012-.0031	.0008-.0039
	G16 R W17 T25	.063	.069	.10	.002	.0012-.0031	.0008-.0039

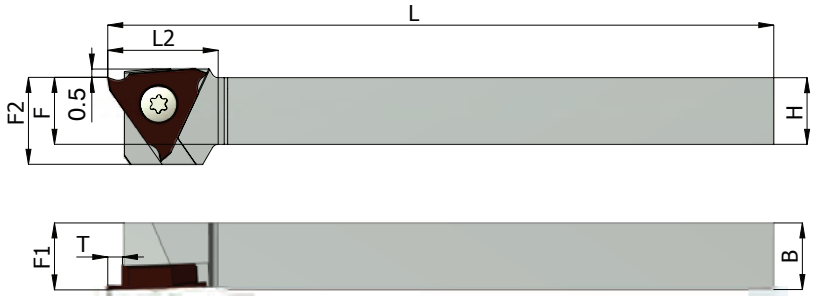
	K20	GX7
P		●
M	●	●
K	●	○
N	●	
S	●	●
H		≤58 HRc

For L.H, specify G16 L instead of G16 R

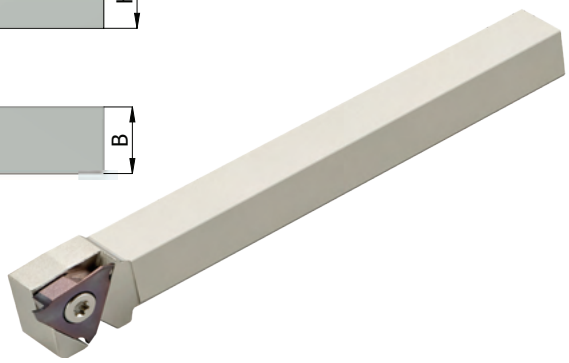
Nom` = nominal

● First choice ○ Alternative

External Toolholders



Right Version



Right hand cutting Inch holders

Ordering Code	B	H	T	L2	L	F	F1	F2	Insert Screw Torx+	Key Torx+
VGER 0315 K	.375	.315	.102	.67	4.9	.315	.375	.51	S16PS	K16P
VGER 0375 K	.375	.375	.102	.67	4.9	.375	.375	.51	S16PS	K16P
VGER 0500 K	.500	.500	.102	.67	4.9	.500	.500	.51	S16P	K16P
VGER 0625 K	.625	.625	.102	.67	4.9	.625	.625	.63	S16P	K16P

For L.H, specify VGE L instead of VGE R

Right hand cutting Inch holders

Ordering Code	B mm	H mm	T	L2	L	F	F1	F2	Insert Screw Torx+	Key Torx+
VGER 0810 K	10	8	.102	.67	4.9	.315	.394	.51	S16PS	K16P
VGER 1010 K	10	10	.102	.67	4.9	.394	.394	.51	S16PS	K16P
VGER 1212 K	12	12	.102	.67	4.9	.472	.472	.51	S16P	K16P
VGER 1616 K	16	16	.102	.67	4.9	.630	.630	.63	S16P	K16P

For L.H, specify VGE L instead of VGE R

3 Cutting Edges Swiss Line Inserts (16 mm)

Carbide Grades

GX7

New generation of PVD triple layer coated Sub-Micron grade for wide range of materials as: Steel, Stainless Steels, Titanium and hard materials up to 58 HRc.
With high toughness for optimized performance.

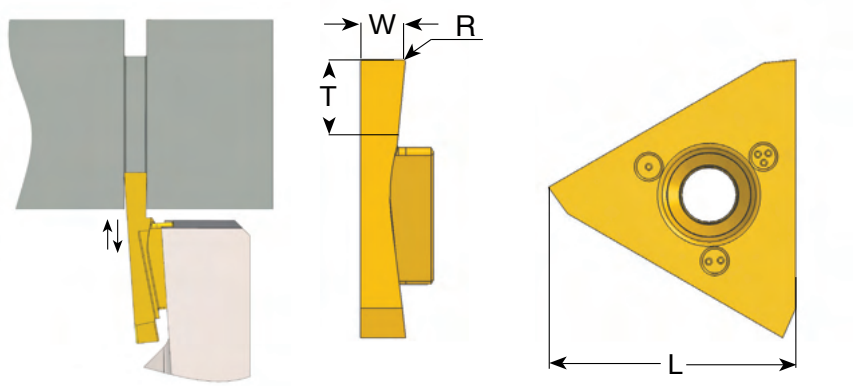
K20

Uncoated Sub-Micron carbide grade for Aluminum and non-ferrous materials, Stainless Steels and Titanium.

Cutting Data

ISO Standard	Materials	Cutting Speed ft/min	
		K20	GX7
P	Low & Medium Carbon Steels <0.55%C	---	265-495
	High Carbon Steels ≥0.55%C	---	230-395
	Alloy Steels, Treated Steels	---	130-265
M	Stainless Steel-Free Cutting	100-260	200-400
	Stainless Steel-Austenitic	65-230	100-300
	Cast Steels	100-260	165-400
K	Cast Iron	165-395	165-395
N	Aluminum ≤12%Si, Copper	395-820	---
	Aluminum >12%Si	295-650	---
	Synthetics, Duroplastics, Thermoplastics	230-490	---
S	Nickel Alloys, Titanium Alloys	65-165	100-230
H	Hardened Steel, 45-58HRc	---	65-165

Grooving and Turning



Right Version

Right hand cutting

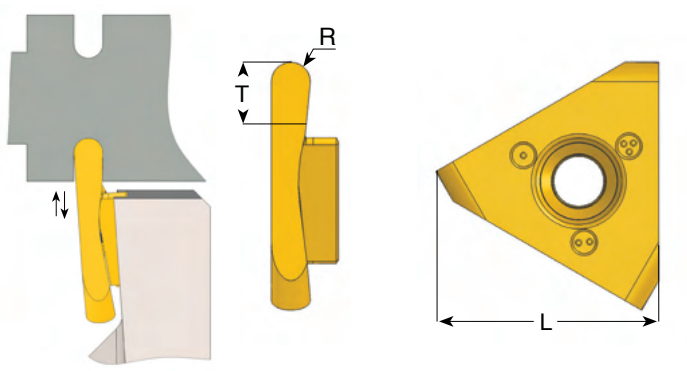
Insert Size L mm	Ordering Code	W ± .001	T max	R	Feed inch/rev	
					Radial	Axial
19	G19 R W05 T15	.020	.059	0	.0004-.0024	.001-.004
	G19 R W06 T16	.024	.063	0	.0004-.0024	.001-.004
	G19 R W07 T17	.030	.067	0	.0004-.0024	.001-.004
	G19 R W08 T18	.031	.079	.002	.0004-.0024	.001-.004
	G19 R W10 T22	.040	.098	.002	.001 -.003	.001-.004
	G19 R W12 T24	.047	.118	.002	.001 -.003	.001-.004
	G19 R W14 T28	.055	.118	.002	.001 -.003	.001-.004
	G19 R W15 T30	.059	.118	.002	.001 -.003	.001-.004
	G19 R W17 T34	.067	.157	.002	.0016-.0035	.001-.008
20	G20 R W20 T40	.079	.157	.004	.002 -.004	.001-.008
	G20 R W22 T45	.089	.197	.004	.002 -.004	.001-.008
	G20 R W25 T50	.098	.236	.004	.002 -.004	.001-.008
	G20 R W30 T60	.118	.236	.004	.002 -.004	.001-.008

	K20	BLU
P		●
M	●	●
K	●	○
N	●	
S	●	●
H		≤45 HRc

For left hand insert specify G19 L… or G20 L…

● First choice ○ Alternative

Grooving and Profiling (full radius)



Right Version

Right hand cutting

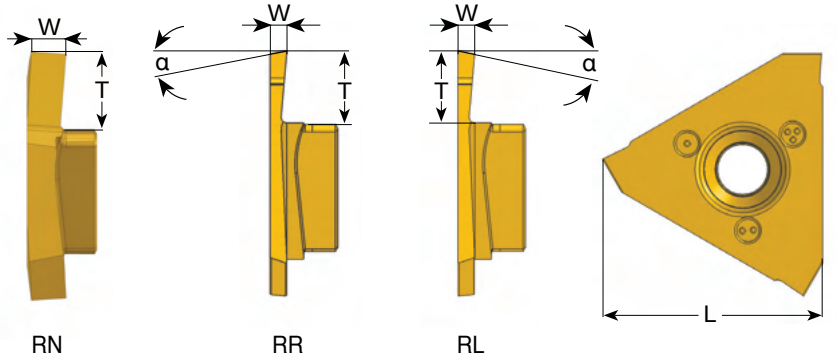
Insert Size L mm	Ordering Code	R ± .0012	T max	Feed mm/rev	
				Radial	Axial
19	GR19 R R02 T15	.010	.059	.0004-.0030	.001-.004
	GR19 R R04 T18	.016	.079	.0004-.0030	.001-.004
	GR19 R R05 T22	.020	.098	.0010-.0030	.001-.004
	GR19 R R06 T26	.024	.118	.0010-.0030	.001-.004
	GR19 R R08 T33	.031	.138	.0016-.0035	.001-.008
	GR19 R R10 T40	.040	.158	.0020-.0040	.001-.008
20	GR20 R R12 T50	.050	.236	.0020-.0040	.001-.008
	GR20 R R15 T60	.059	.236	.0020-.0040	.001-.008

	K20	BLU
P		●
M	●	●
K	●	○
N	●	
S	●	●
H		≤45 HRc

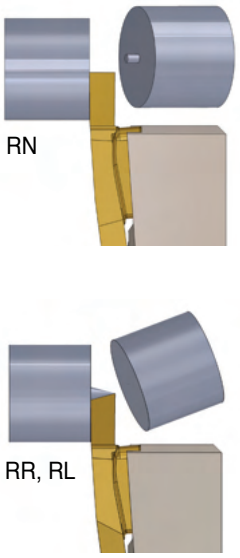
For left hand insert specify G19 L… or G20 L…

● First choice ○ Alternative

Parting Off



Right Version



Right hand cutting

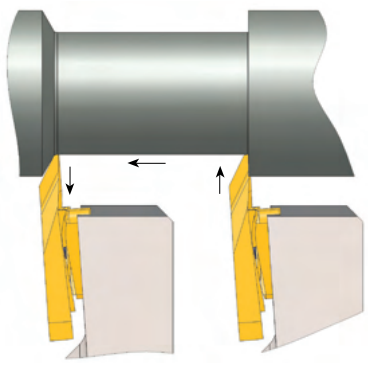
Insert Size L mm	Ordering Code	W	α°	T max	Feed inch/rev Radial
19	GP19 RR W10 T54	.039	15	.213	.0010-.0035
	GP19 RL W10 T54	.039	15	.213	
	GP19 RN W10 T54	.039	0	.213	
	GP19 RR W12 T54	.047	15	.213	.0010-.0035
	GP19 RL W12 T54	.047	15	.213	
	GP19 RN W12 T54	.047	0	.213	
20	GP20 RR W15 T64	.059	15	.252	.0016-.0040
	GP20 RL W15 T64	.059	15	.252	
	GP20 RN W15 T64	.059	0	.252	
	GP20 RR W18 T64	.071	15	.252	.0016-.0040
	GP20 RL W18 T64	.071	15	.252	
	GP20 RN W18 T64	.071	0	.252	
	GP20 RR W20 T64	.079	15	.252	.0020-.0047
	GP20 RL W20 T64	.079	15	.252	
	GP20 RN W20 T64	.079	0	.252	
	GP20 RR W25 T64	.098	15	.252	.0020-.0047
	GP20 RL W25 T64	.098	15	.252	
	GP20 RN W25 T64	.098	0	.252	
	GP20 RR W30 T64	.118	15	.252	.0020-.0047
	GP20 RL W30 T64	.118	15	.252	
	GP20 RN W30 T64	.118	0	.252	

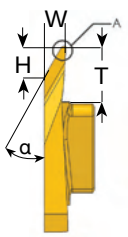
	K20	BLU
P		●
M	●	●
K	●	○
N	●	
S	●	●
H		≤45 HRc

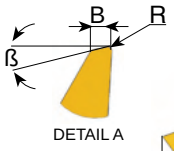
For left hand insert specify GP19 LR… or G20 LR…

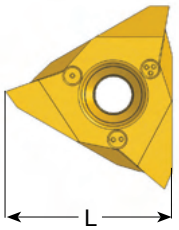
● First choice ○ Alternative

Back Turning









Right Version

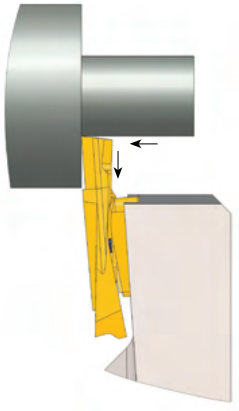
Right hand cutting

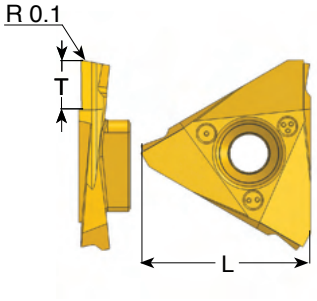
Insert Size L mm	Ordering Code	α°	ß°	R	W	H	B	T max	Feed inch/rev
19	**GB19 R A30**	30	12	.004	.134	.169	.002	.213	.002-.006
20	**GB20 R A30**	30	12	.004	.134	.169	.002	.252	.002-.006

For left hand insert specify GB19 L … or GB20 L …

	K20	BLU
P		●
M	●	●
K	●	o
N	●	
S	●	●
H		≤45 HRc

Front Turning





Right Version

Right hand cutting

Insert Size L mm	Ordering Code	T max	Feed inch/rev
19	**GF19 R T54**	.213	.002-.006
20	**GF20 R T64**	.252	.002-.006

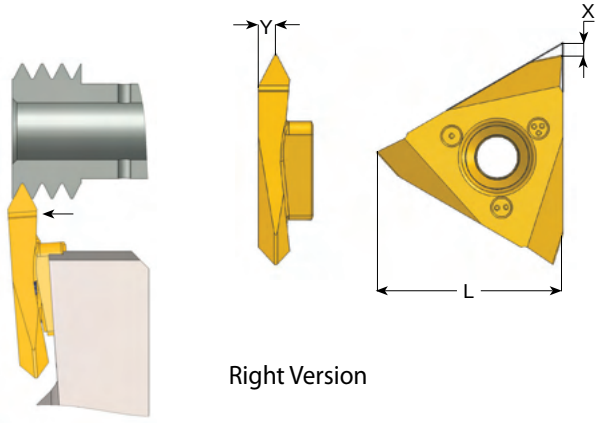
For left hand insert specify GF19 L… or GF20 L…

	K20	BLU
P		●
M	●	●
K	●	o
N	●	
S	●	●
H		≤45 HRc

● First choice o Alternative

Threading - Partial Profile 60°

External Thread



Right Version

Right hand cutting

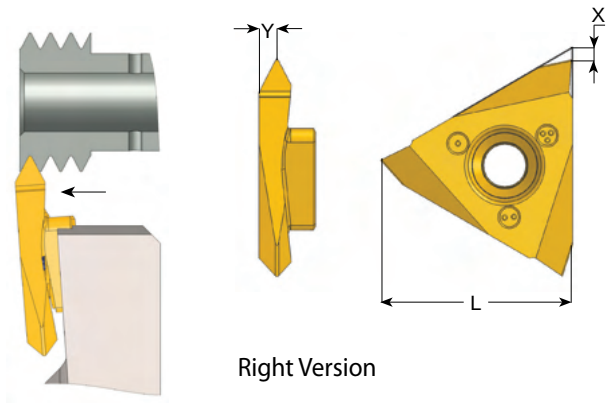
Insert Size L mm	Pitch Range		Ordering Code	X	Y
	mm	TPI			
19	0.5 -1.5	48-16	**GT19 R A60**	.11	.043
	1.75-3.0	14- 8	**GT19 R G60**	.11	.067
	0.5 -3.0	48- 8	**GT19 R AG60**	.11	.067

For left hand insert specify GT19 L

	K20	BLU
P		●
M	●	●
K	●	○
N	●	
S	●	●
H		≤45 HRc

Threading - Partial Profile 55°

External Thread



Right Version

Right hand cutting

Insert Size L mm	Pitch Range		Ordering Code	X	Y
	mm	TPI			
19	0.5- 1.5	48-16	**GT19 R A55**	.11	.039
	1.75-3.0	14- 8	**GT19 R G55**	.11	.067
	0.5- 3.0	48- 8	**GT19 R AG55**	.11	.067

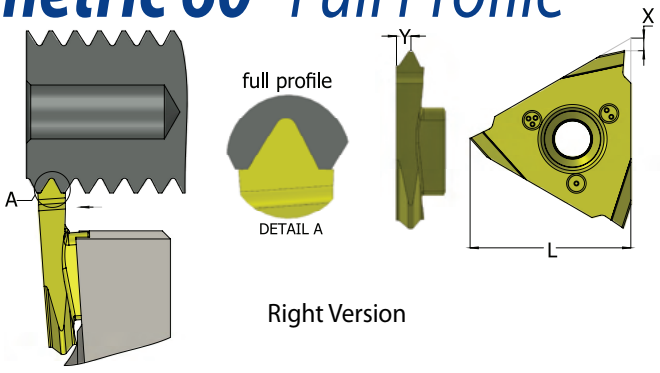
For left hand insert specify GT19 L

	K20	BLU
P		●
M	●	●
K	●	○
N	●	
S	●	●
H		≤45 HRc

● First choice ○ Alternative

Threading - ISO metric 60° Full Profile

External Thread



Right Version

Right hand cutting

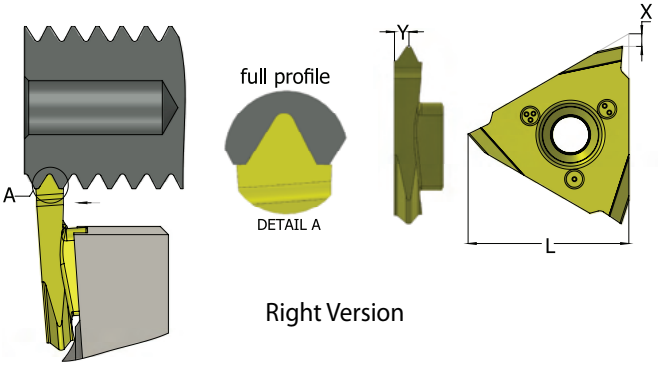
Insert Size L mm	Pitch mm	Ordering Code	X	Y
19	0.5	GT19 R 0.5 ISO	. 11	.024
	0.7	GT19 R 0.7 ISO	.11	.028
	0.75	GT19 R 0.75 ISO	.11	.028
	0.8	GT19 R 0.8 ISO	.11	.028
	1.0	GT19 R 1.0 ISO	.11	.032
	1.25	GT19 R 1.25 ISO	.11	.039
	1.5	GT19 R 1.5 ISO	.11	.043
	1.75	GT19 R 1.75 ISO	.11	.051

	K20	BLU
P		●
M	●	●
K	●	○
N	●	
S	●	●
H		≤45 HRc

For left hand insert specify GT19 L

Threading - UN unified 60° Full Profile

External Thread



Right Version

Right hand cutting

Insert Size L mm	Pitch TPI	Ordering Code	X	Y
19	72	GT19 R 72UN	. 11	.016
	56	GT19 R 56UN	.11	.024
	40	GT19 R 40UN	.11	.028
	32	GT19 R 32UN	.11	.028
	24	GT19 R 24UN	.11	.032
	14	GT19 R 20UN	.11	.032
	14	GT19 R 14UN	.11	.047

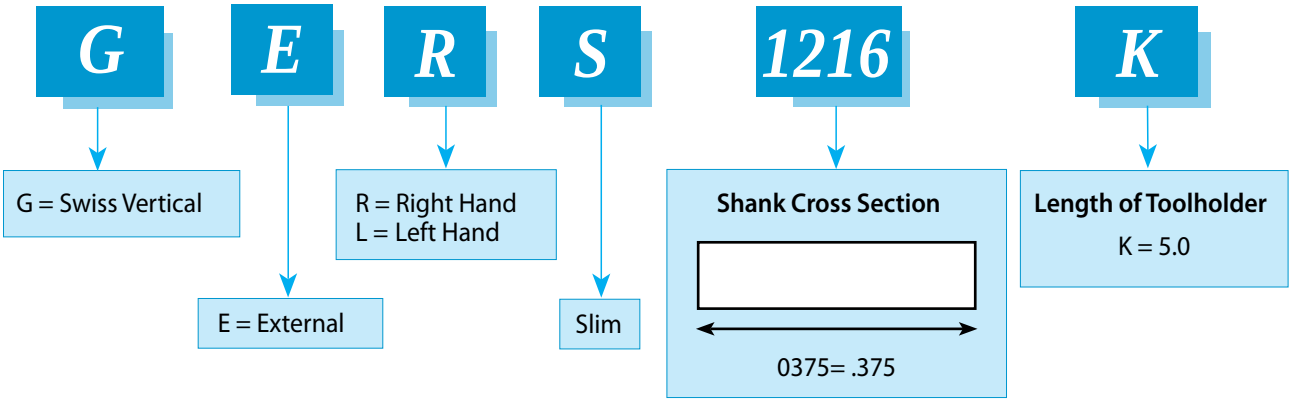
	K20	BLU
P		●
M	●	●
K	●	○
N	●	
S	●	●
H		≤45 HRc

For left hand insert specify GT19 L

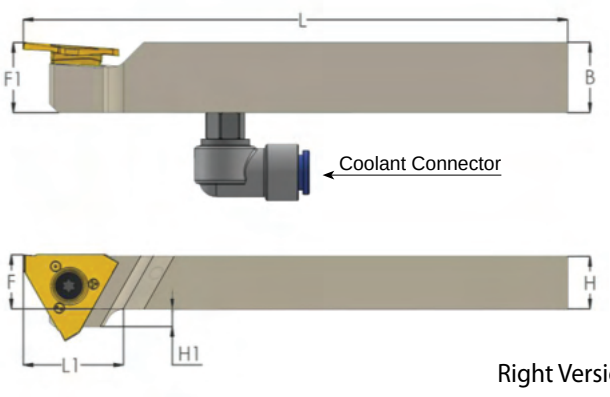
● First choice ○ Alternative

External Toolholders

Product Identification - Ordering Codes



- Coolant through toolholders, for external turning in Swiss type lathes machines.
- The high pressure coolant is directed towards the insert cutting edge, in order to evacuate the chips created and avoid build up edge.
- Includes a coolant connector for fast attachment on the machine.



Right Version

Right hand cutting Metric holders

Ordering Code	B mm	H mm	L1	L	F	F1	H1	Insert Screw	Torx Key	*Coolant connector mm
**GER 0816 K	16	8	.67	4.9	.315	.630	.31	S21	K21	---
GER 1016 K	16	10	.67	4.9	.394	.630	.24	S21	K21	Ø4 / Ø6
GER 1216 K	16	12	.67	4.9	.472	.630	.16	S21	K21	Ø4 / Ø6
GER 1616 K	16	16	----	4.9	.630	.630	0	S21	K21	Ø4 / Ø6
GER 2020 K	20	20	----	4.9	.787	.787	0	S21	K21	Ø4 / Ø6
GER 2525 M	25	25	----	5.9	.984	.984	0	S21	K21	Ø4 / Ø6

For left hand Toolholder specify GE L

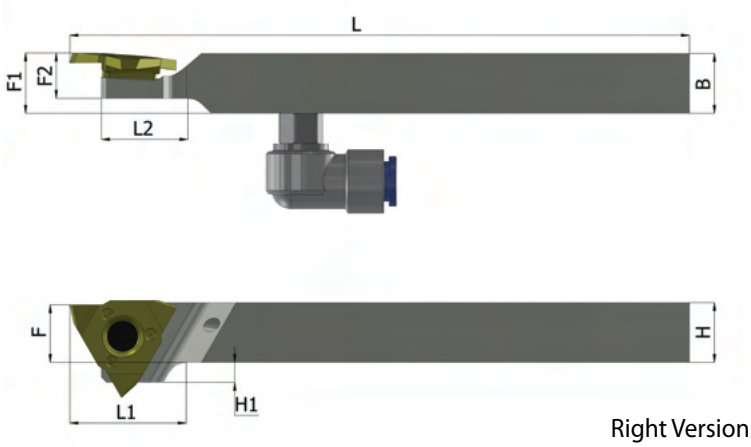
* Coolant pipe diameter

** Without coolant

Right hand cutting Inch holders

Ordering Code	B	H	L1	L	F	F1	H1	Insert Screw	Torx Key	*Coolant connector mm
GER 0315 K	.625	.315	.67	4.9	.315	.625	.32	S21	K21	Ø4 / Ø6
GER 0375 K	.625	.375	.67	4.9	.394	.625	.24	S21	K21	Ø4 / Ø6
GER 0500 K	.625	.500	.67	4.9	.472	.625	.16	S21	K21	Ø4 / Ø6
GER 0625 K	.625	.625	----	4.9	.625	.625	0	S21	K21	Ø4 / Ø6
GER 0750 K	.750	.750	----	4.9	.750	.750	0	S21	K21	Ø4 / Ø6
GER 1000 M	1	1	----	5.9	1	1	0	S21	K21	Ø4 / Ø6

Slim Holders



Right Version

Right hand cutting Metric holders

Ordering Code	B=H mm	L1	L2	L	F	F1	F2	H1	Insert Screw	Torx Key	*Coolant connector mm
GERS 1010 K	10	.67	.43	4.9	.394	.394	.394	.24	S21S	K21	Ø4 / Ø6
GERS 1212 K	12	.67	.43	4.9	.470	.470	.375	.16	S21S	K21	Ø4 / Ø6
GERS 1616 K	16	----	.43	4.9	.630	.630	.375	0	S21S	K21	Ø4 / Ø6
GERS 2020 K	20	----	.43	4.9	.787	.787	.375	0	S21S	K21	Ø4 / Ø6

For L.H, specify GELS instead of GERS

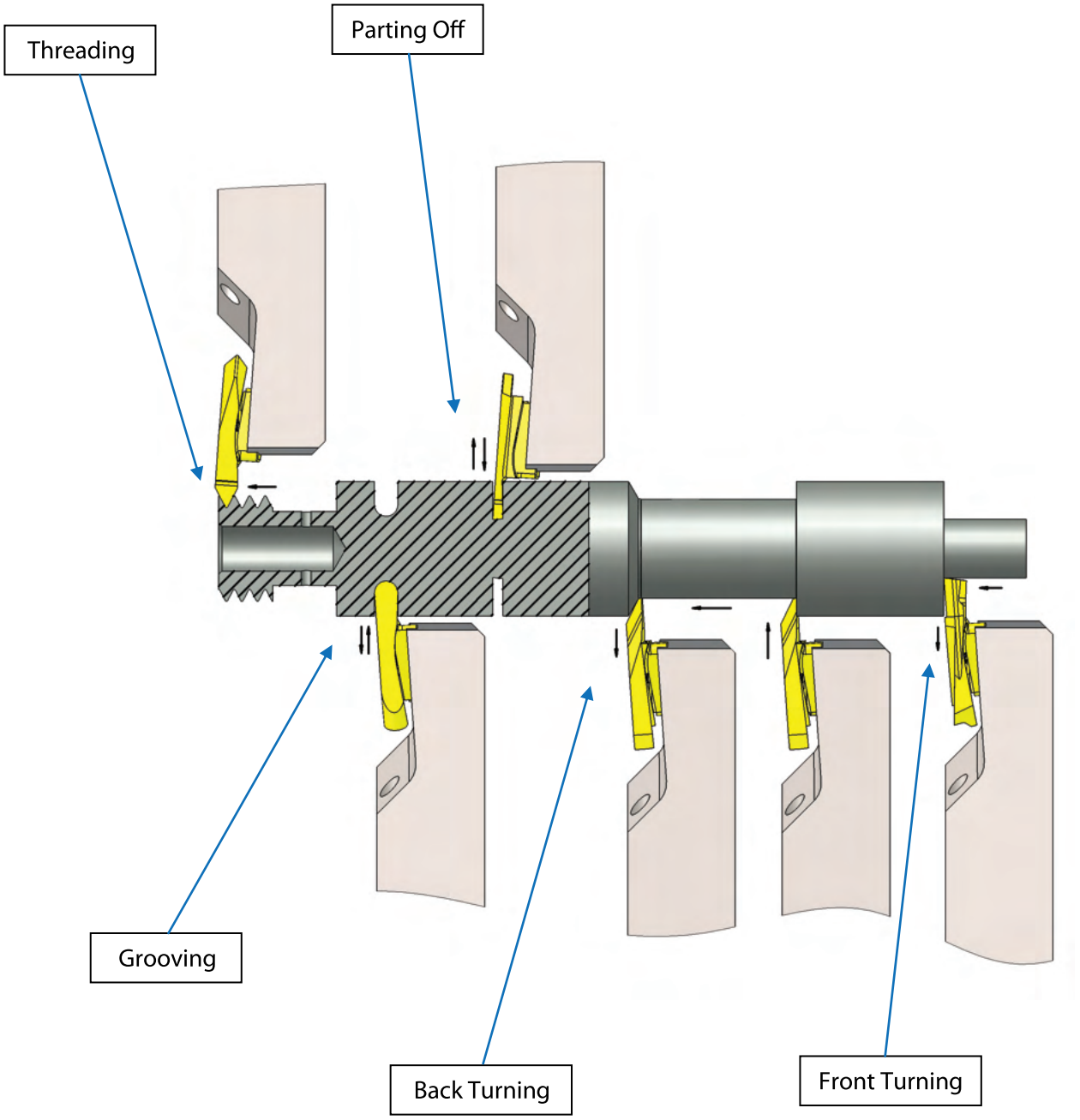
Right hand cutting Inch holders

Ordering Code	B=H	L1	L2	L	F	F1	F2	H1	Insert Screw	Torx Key	*Coolant connector mm
GERS 0375 K	.375	.67	.43	4.9	.375	.375	.375	.24	S21S	K21	Ø4 / Ø6
GERS 0500 K	.500	.67	.43	4.9	.500	.500	.374	.16	S21S	K21	Ø4 / Ø6
GERS 0625 K	.625	----	.43	4.9	.625	.625	.374	0	S21S	K21	Ø4 / Ø6
GERS 0750 K	.750	----	.43	4.9	.750	.750	.374	0	S21S	K21	Ø4 / Ø6

For L.H, specify GELS instead of GERS

Working Method

Grooving - Parting Off - Turning - Profiling - Threading



3 Cutting Edges Swiss Line Inserts (19,20 mm)

Carbide Grades

BLU

PVD triple layer coated Sub-Micron grade for Steel, Stainless Steels, Titanium and hard materials.

K20

Uncoated Sub-Micron carbide grade for Aluminum and non-ferrous materials, Stainless Steels and Titanium.

Cutting Data

ISO Standard	Materials	Cutting Speed ft/min	
		K20	BLU
P	Low & Medium Carbon Steels <0.55%C	---	262-492
	High Carbon Steels ≥0.55%C	---	230-394
	Alloy Steels, Treated Steels	---	131-262
M	Stainless Steel-Free Cutting	98-262	197-394
	Stainless Steel-Austenitic	66-230	98-295
	Cast Steels	98-262	164-394
K	Cast Iron	164-394	---
N	Aluminum ≤12%Si, Copper	394-820	---
	Aluminum >12%Si	295-656	---
	Synthetics, Duroplastics, Thermoplastics	230-492	---
S	Nickel Alloys, Titanium Alloys	66-164	98-230
H	Hardened Steel, 45-50HRc	---	66-164

4 Cutting Edges G4 Turning Inserts and Toolholders

For grooving, parting-off and threading applications

Benefits

- High productivity and cost efficient due to four cutting edges
- High precision thanks to the fully ground profile

Features

- Strong and stable clamping due to the unique insert shape and the holder pocket.
- High repeatability.
- Maximum versatility- a single holder for large range of inserts.
- Can be used with high machining parameters, and provides high surface finish.
- Internal coolant provides the coolant liquid towards the cutting edge.

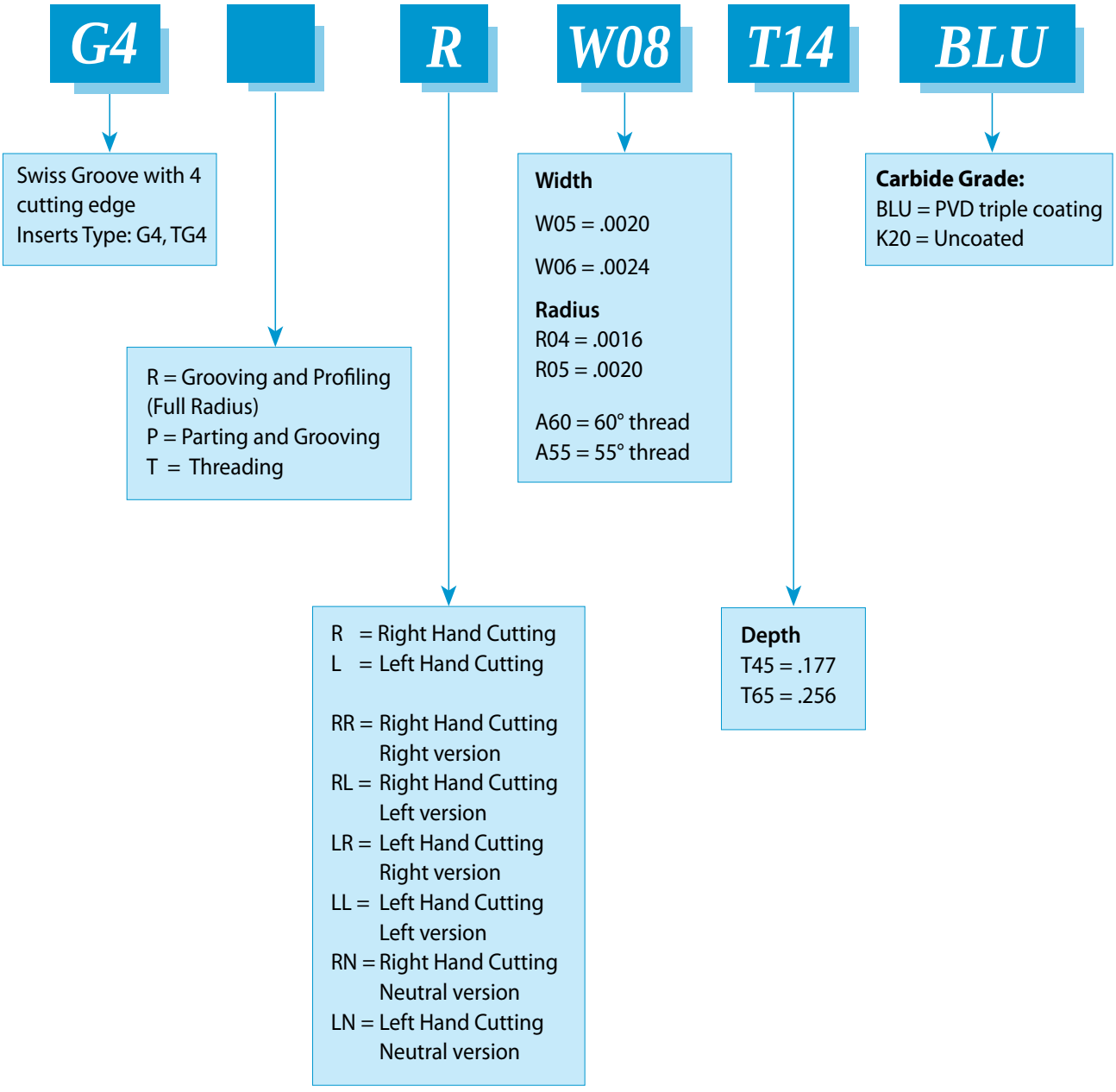
Application

- Multi-function inserts for grooving, parting, turning and threading.
- Fits to a large range of diameters, from very small applications with a thin wall up to 100 mm diameter.

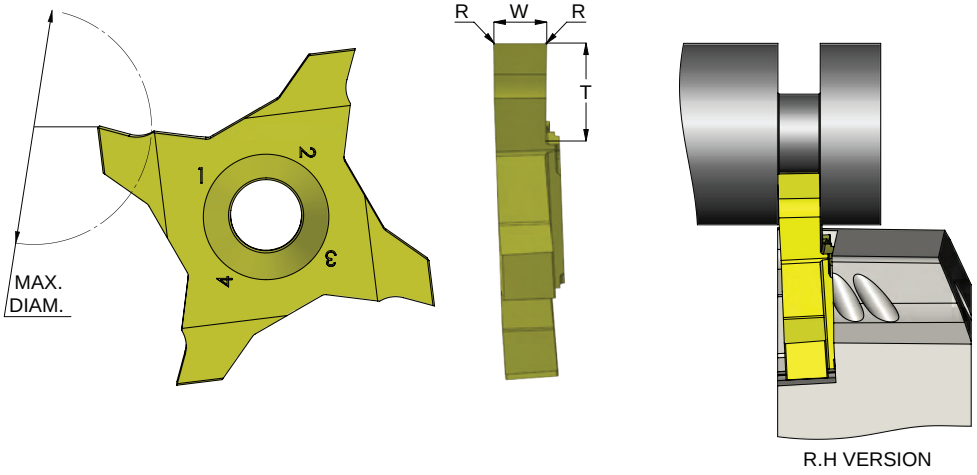
Carbide grades: BLU, K20

Product Identification - Ordering Codes

G4 Inserts



Grooving



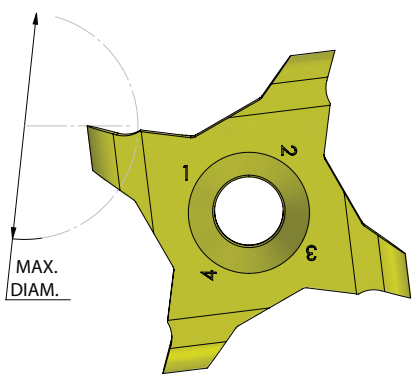
Insert Type	Ordering Code	W±.001	T max	R	MAX DIAM.	Feed inch/rev
G4	G4 R W05 T16	.020	.063	0	3.94	.0004-.0024
	G4 R W06 T16	.024	.063	0	3.94	.0004-.0024
	G4 R W07 T18	.028	.071	0	3.94	.0004-.0024
	G4 R W08 T20	.031	.079	0	3.94	.0008-.0028
	G4 R W10 T25	.039	.098	.002	3.94	.0008-.0035
	G4 R W12 T30	.047	.118	.002	3.94	.0008-.0035
	G4 R W14 T30	.055	.118	.002	3.94	.0008-.0047
	G4 R W15 T30	.059	.118	.002	3.94	.0008-.0047
	G4 R W16 T35	.063	.138	.002	3.94	.0008-.0047
	G4 R W17 T40	.067	.157	.002	3.94	.0008-.0047
	G4 R W20 T40	.079	.157	.002	3.94	.0008-.0051
TG4	TG4 R W22 T50	.089	.197	.002	3.94	.0008-.0055
	TG4 R W25 T50	.098	.197	.002	3.94	.0008-.0055
	TG4 R W27 T55	.108	.217	.002	3.94	.0008-.0047
	TG4 R W30 T65	.118	.256	.004	3.94	.0008-.0047
	TG4 R W32 T65	.125	.256	.004	3.94	.0008-.0047
	TG4 R W35 T65	.138	.256	.004	3.94	.0008-.0047

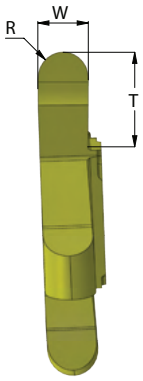
	K20	BLU
P		●
M	●	●
K	●	○
N	●	
S	●	●
H		≤45 HRc

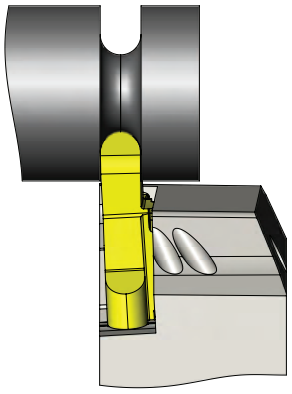
For L.H, specify G4 L instead of G4 R

● First choice ○ Alternative

Grooving and Profiling (full radius)







R.H VERSION

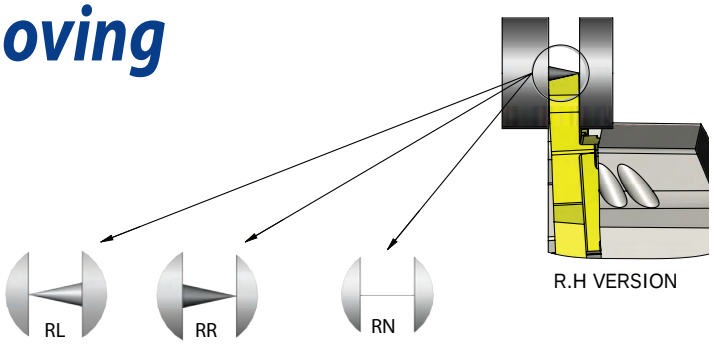
Insert Type	Ordering Code	R±.0012	W	T max	MAX DIAM.	Feed inch/rev
G4	G4R R R02 T15	.010	.020	.059	3.94	.0004-.0024
	G4R R R04 T20	.016	.031	.079	3.94	.0004-.0024
	G4R R R05 T25	.020	.039	.098	3.94	.0008-.0035
	G4R R R07 T38	.030	.059	.150	3.94	.0008-.0035
	G4R R R10 T45	.039	.079	.177	3.94	.0008-.0051
TG4	TG4R R R12 T50	.049	.098	.197	3.94	.0008-.0051
	TG4R R R15 T65	.059	.118	.256	3.94	.0008-.0047

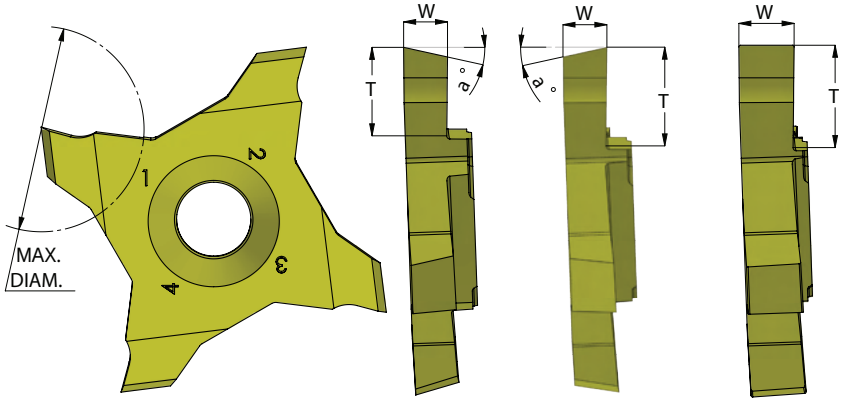
	K20	BLU
P		●
M	●	●
K	●	○
N	●	
S	●	●
H		≤45 HRc

For L.H, specify TG4R L instead of TG4R R

● First choice ○ Alternative

Parting off and Grooving

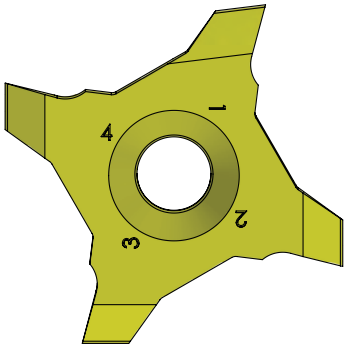


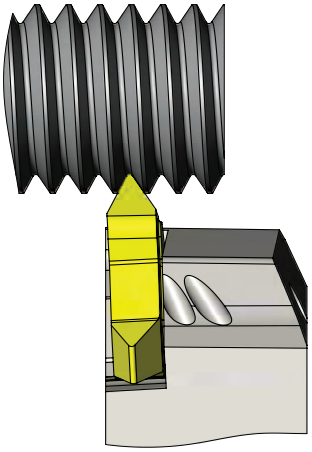


Insert Type	Ordering Code	W	α⁰	T max	MAX DIAM. Parting off	MAX DIAM. Grooving	Feed inch/rev
G4	G4P RR W05 T30	.020	15	.118	.24	3.94	.0008-.0024
	G4P RL W05 T30	.020	15	.118	.24	3.94	.0008-.0024
	G4P RN W05 T30	.020	0	.118	.24	3.94	.0008-.0024
	G4P RR W07 T43	.028	15	.169	.32	3.94	.0008-.0035
	G4P RL W07 T43	.028	15	.169	.32	3.94	.0008-.0035
	G4P RN W07 T43	.028	0	.169	.32	3.94	.0008-.0035
	G4P RR W08 T45	.031	15	.177	.35	3.94	.0008-.0035
	G4P RL W08 T45	.031	15	.177	.35	3.94	.0008-.0035
	G4P RN W08 T45	.031	0	.177	.35	3.94	.0008-.0035
TG4	TG4P RR W10 T58	.039	15	.228	.46	3.94	.0008-.0035
	TG4P RL W10 T58	.039	15	.228	.46	3.94	.0008-.0035
	TG4P RN W10 T58	.039	0	.228	.46	3.94	.0008-.0035
	TG4P RR W15 T65	.059	15	.256	.51	3.94	.0008-.0051
	TG4P RL W15 T65	.059	15	.256	.51	3.94	.0008-.0051
	TG4P RN W15 T65	.059	0	.256	.51	3.94	.0008-.0051
	TG4P RR W20 T65	.079	15	.256	.51	3.94	.0008-.0051
	TG4P RL W20 T65	.079	15	.256	.51	3.94	.0008-.0051
	TG4P RN W20 T65	.079	0	.256	.51	3.94	.0008-.0051
	TG4P RR W25 T65	.098	15	.256	.51	3.94	.0008-.0051
	TG4P RL W25 T65	.098	15	.256	.51	3.94	.0008-.0051
	TG4P RN W25 T65	.098	0	.256	.51	3.94	.0008-.0051

For L.H, specify G4P LR instead of G4P RR
For L.H, specify G4P LL instead of G4P RL
For L.H, specify G4P LN instead of G4P RN

Threading-Partial profile 60°





R.H VERSION

Insert Type	Ordering Code	Pitch		Y
		mm	TPI	
G4	G4T R AF60	0.25-0.8	100-32	.028
	G4T R A60	0.5 -1.5	46-16	.043
	G4T R G60	1.75-3.0	14- 8	.055
	G4T R AG60	0.5 -3.0	48- 8	.055

For L.H, specify G4T L instead of G4T R

	K20	BLU
P		●
M	●	●
K	●	○
N	●	
S	●	●
H		≤45 HRc

Threading-Partial profile 55°

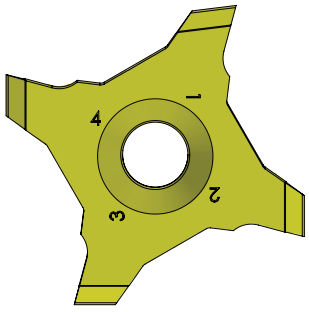
Insert Type	Ordering Code	Pitch		Y
		mm	TPI	
G4	G4T R A55	0.5 -1.5	46-16	.043
	G4T R G55	1.75-3.0	14- 8	.055
	G4T R AG55	0.5 -3.0	48- 8	.055

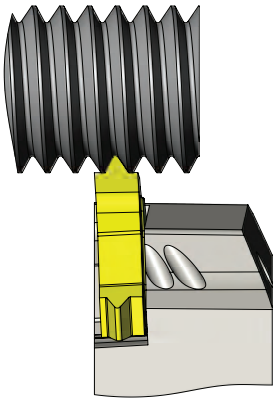
For L.H, specify G4T L instead of G4T R

	K20	BLU
P		●
M	●	●
K	●	○
N	●	
S	●	●
H		≤45 HRc

● First choice ○ Alternative

Threading-ISO metric 60° Full Profile





R.H VERSION

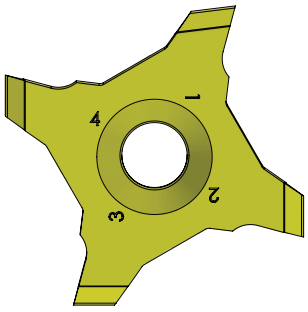
Insert Type	Ordering Code	Pitch mm	Y
G4	G4T R 0.5ISO	0.5	.024
	G4T R 0.6ISO	0.6	.024
	G4T R 0.7ISO	0.7	.028
	G4T R 0.75ISO	0.75	.028
	G4T R 0.8ISO	0.8	.028
	G4T R 1.0ISO	1.0	.031
	G4T R 1.25ISO	1.25	.039
	G4T R 1.5ISO	1.5	.043
TG4	TG4T R 1.75ISO	1.75	.047
	TG4T R 2.0ISO	2.0	.051
	TG4T R 3.0ISO	3.0	.067

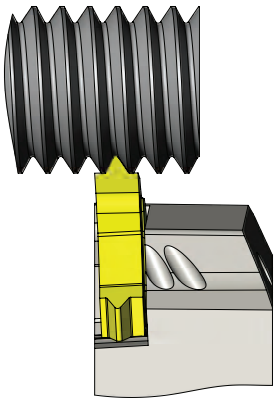
	K20	BLU
P		●
M	●	●
K	●	o
N	●	
S	●	●
H		≤45 HRc

For L.H, specify G4T L instead of G4T R

● First choice o Alternative

Threading-UN unified 60° Full Profile





R.H VERSION

Insert Type	Ordering Code	Pitch TPI	Y
G4	G4T R 72UN	72	.012
	G4T R 64UN	64	.016
	G4T R 56UN	56	.024
	G4T R 40UN	40	.028
	G4T R 32UN	32	.028
	G4T R 28UN	28	.031
	G4T R 24UN	24	.031
	G4T R 20UN	20	.035
	G4T R 18UN	18	.039
TG4	TG4T R 16UN	16	.043
	TG4T R 14UN	14	.047
	TG4T R 13UN	13	.051
	TG4T R 12UN	12	.055

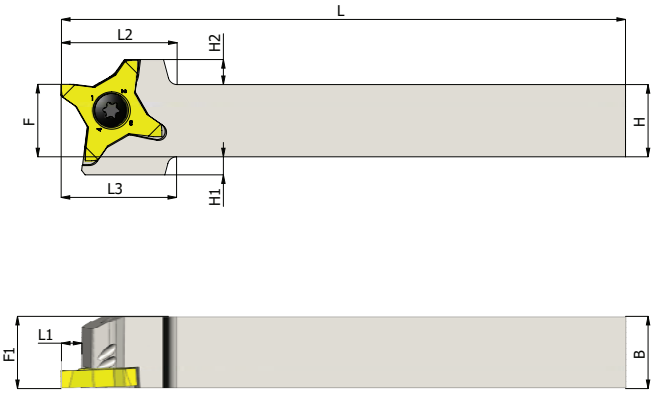
	K20	BLU
P		●
M	●	●
K	●	○
N	●	
S	●	●
H		≤45 HRc

For L.H, specify G4T L instead of G4T R

● First choice ○ Alternative

External Toolholders

Coated holders provide high abrasive resistance



Inch holders

Insert Type	Ordering Code	B	H	L1	L2	L3	L	F	F1	H1	H2	Insert Screw Torx +	Key Torx +	** Coolant connector mm
G4	*G4ER 0500 K	.500	.500	.177	.71	.71	4.9	.500	.500	.16	.16	S16P	IP10	---
	G4ER 0625 K	.625	.625	.177	.71	---	4.9	.625	.625	---	.16	S16P	IP10	Ø4/Ø6
	G4ER 0750 K	.750	.750	.177	.71	---	4.9	.750	.750	---	.16	S16P	IP10	Ø4/Ø6
	G4ER 1000 M	1	1	.177	.71	---	5.9	1	1	---	.16	S16P	IP10	Ø4/Ø6
TG4	TG4ER 0625 K	.625	.625	.256	1.02	1.02	4.9	.625	.625	.16	.24	S22P	IP20	Ø4/Ø6
	TG4ER 0750 K	.750	.750	.256	1.02	---	4.9	.750	.750	---	.24	S22P	IP20	Ø4/Ø6
	TG4ER 1000 M	1	1	.256	1.02	---	5.9	1	1	---	.24	S22P	IP20	Ø4/Ø6

Metric holders

Insert Type	Ordering Code	B mm	H mm	L1	L2	L3	L	F	F1	H1	H2	Insert Screw Torx +	Key Torx +	** Coolant connector mm
G4	*G4ER 1212 K	12	12	.177	.71	.71	4.9	.472	.63	.16	.16	S16P	IP10	---
	G4ER 1616 K	16	16	.177	.71	---	4.9	.630	.63	---	.16	S16P	IP10	Ø4/Ø6
	G4ER 2020 K	20	20	.177	.71	---	4.9	.787	.79	---	.16	S16P	IP10	Ø4/Ø6
	G4ER 2525 M	25	25	.177	.71	---	5.9	.984	.98	---	.16	S16P	IP10	Ø4/Ø6
TG4	TG4ER 1616 K	16	16	.256	1.02	1.02	4.9	.630	.63	.16	.24	S22P	IP20	Ø4/Ø6
	TG4ER 2020 K	20	20	.256	1.02	---	4.9	.787	.79	---	.24	S22P	IP20	Ø4/Ø6
	TG4ER 2525 M	25	25	.256	1.02	---	5.9	.984	.98	---	.24	S22P	IP20	Ø4/Ø6

* Without internal coolant
** Diameter of coolant pipe
For Left Hand:
specify G4EL… instead of G4ER…
specify TG4EL… instead of TG4ER…

Carbide Grades

BLU

PVD triple layer coated Sub-Micron grade for Steel, Stainless Steels, Super alloys and hard materials up to 45 HRc.

K20

Uncoated Sub-Micron carbide grade for Aluminum and non-ferrous materials, Stainless Steels and Titanium.

Cutting Data

ISO Standard	Materials	Cutting Speed ft/min	
		K20	BLU
P	Low & Medium Carbon Steels <0.55%C	---	260-490
	High Carbon Steels ≥0.55%C	---	230-390
	Alloy Steels, Treated Steels	---	130-260
M	Stainless Steel-Free Cutting	100-260	200-390
	Stainless Steel-Austenitic	65-230	100-300
	Cast Steels	100-260	165-390
K	Cast Iron	160-390	200-430
N	Aluminium ≤12%Si, Copper	390-820	---
	Aluminium >12%Si	300-660	---
	Synthetics, Duroplastics, Thermoplastics	230-490	---
S	Nickel alloys, Titanium alloys	65-165	100-230
H	Hardened Steel, ≤45 HRc	---	65-165

6 Cutting Edges G6 Turning Inserts and Toolholders

For grooving, parting-off and threading

Benefits

- High productivity and cost efficient due to G6 six cutting edges
- One holder for all inserts type- Maximum versatility
- High precision thanks to the fully ground profile

Features

- Strong and stable clamping due to the unique insert shape
- Can be used with high machining parameters, and provides high surface finish
- Internal coolant provides the cool liquid towards the cutting edge

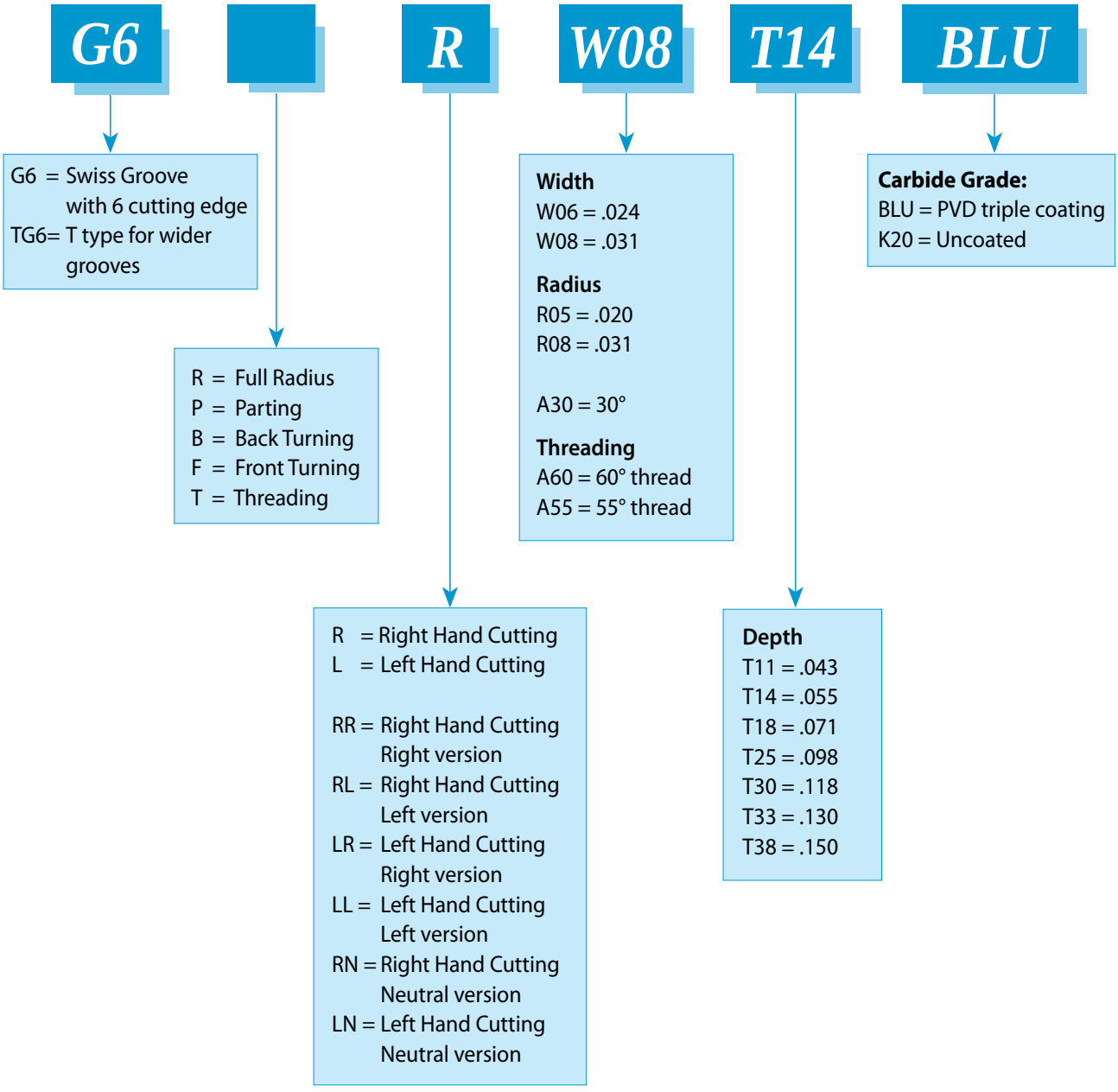
Application

- Multi-function inserts for threading, grooving, parting and turning
- Fit to a large range of diameters, from very small applications with a thin wall up to diameter of 60 mm.

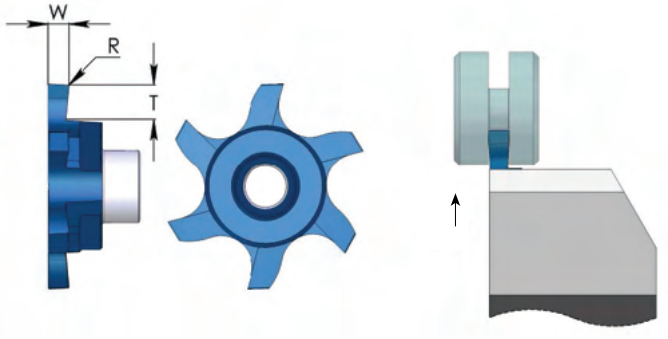
Carbide grades: BLU, K20

Product Identification - Ordering Codes

G6 Inserts



Grooving



Right Version

Right hand cutting

Insert Type	Ordering Code	W±.001	T max	R	Feed inch/rev
G6	G6 R W06 T11	.024	.043	0	.0004-.002
	G6 R W08 T14	.031	.055	0	.0008-.003
	G6 R W10 T18	.039	.071	.002	.0008-.004
	G6 R W15 T33	.059	.130	.002	.0008-.005
	G6 R W20 T38	.079	.150	.004	.0008-.005
	G6 R W25 T38	.098	.150	.004	.0008-.006
TG6	G6 R W30 T38	.118	.150	.004	.0008-.005
	G6 R W40 T38	.157	.150	.004	.0008-.005

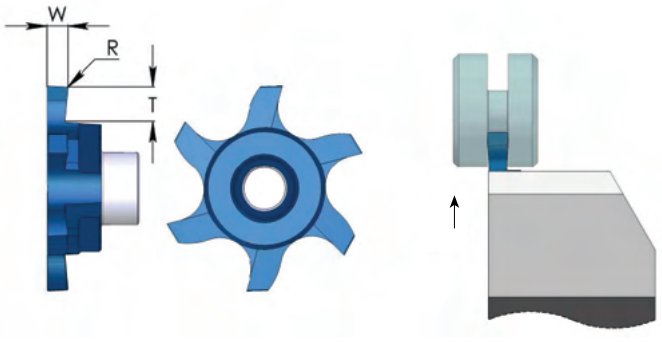
	K20	BLU
P		●
M	●	●
K	●	○
N	●	
S	●	●
H		≤45 HRc

For L.H, specify G6 L instead of G6 R

● First choice ○ Alternative

Grooving, Circlip Ring Grooves

DIN 471/472



Right Version

Right hand cutting

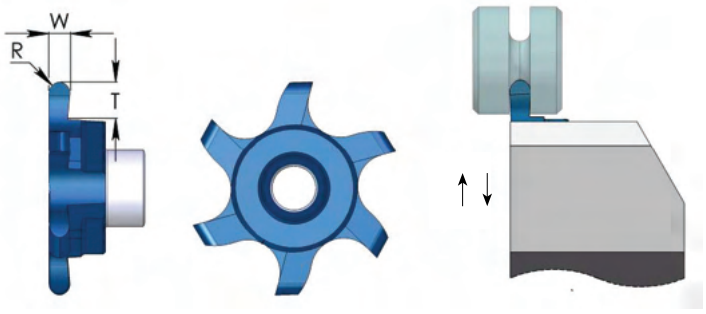
Insert Type	Ordering Code	Nom` groove width	W- .002	T max	R	Feed inch/rev
G6	G6D R W12 T31	.043	.049	.122	.0020	.001-.004
	G6D R W14 T33	.051	.057	.130	.0020	.001-.005
	G6D R W17 T33	.063	.069	.130	.0020	.001-.005

	K20	BLU
P		●
M	●	●
K	●	○
N	●	
S	●	●
H		≤45 HRc

For L.H, specify G6D L instead of G6D R

Nom`= nominal

Grooving and Profiling (full radius)



Right Version

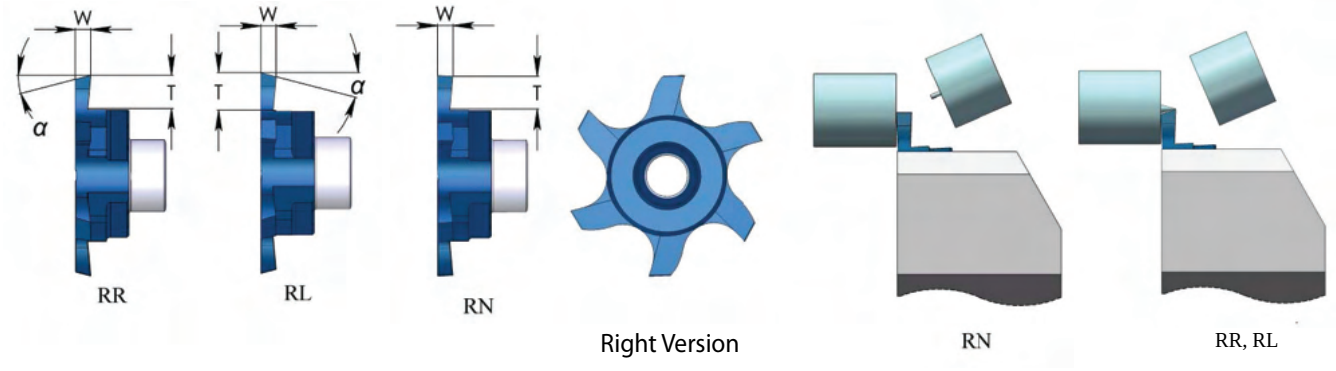
Right hand cutting

Insert Type	Ordering Code	R±.001	W	T max	Feed inch/rev
G6	G6R R R05 T25	.020	.039	.098	.0008-.004
	G6R R R08 T30	.031	.063	.118	.0008-.004
	G6R R R10 T38	.039	.079	.150	.0008-.005
	G6R R R12 T38	.049	.098	.150	.0008-.006
TG6	TG6R R R15 T38	.059	.118	.150	.0008-.005
	TG6R R R20 T38	.079	.157	.150	.0008-.005

	K20	BLU
P		●
M	●	●
K	●	○
N	●	
S	●	●
H		≤45 HRc

● First choice ○ Alternative

Parting Off and Grooving



Right hand cutting

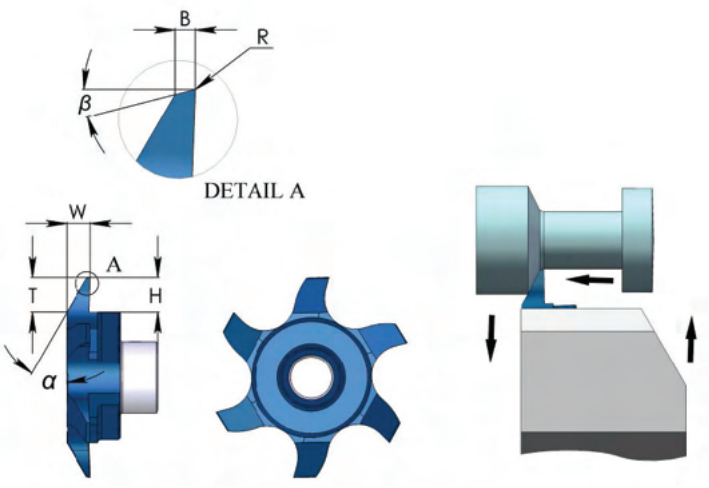
Insert Type	Ordering Code	W	α°	T max	Feed inch/rev
G6	G6P RR W08 T38	.039	15	.150	.0008-.004
	G6P RL W08 T38	.039	15	.150	.0008-.004
	G6P RN W08 T38	.039	0	.150	.0008-.004
	G6P RR W10 T38	.059	15	.150	.0008-.005
	G6P RL W10 T38	.059	15	.150	.0008-.005
	G6P RN W10 T38	.059	0	.150	.0008-.005
	G6P RR W15 T38	.079	15	.150	.0008-.005
	G6P RL W15 T38	.079	15	.150	.0008-.005
	G6P RN W15 T38	.079	0	.150	.0008-.005
	G6P RR W20 T38	.039	15	.150	.0008-.005
	G6P RL W20 T38	.039	15	.150	.0008-.005
	G6P RN W20 T38	.039	0	.150	.0008-.005

	K20	BLU
P		●
M	●	●
K	●	○
N	●	
S	●	●
H		≤45 HRc

For L.H, specify G6P LR instead of G6P RR
G6P LL instead of G6P RL
G6P LN instead of G6P RN

● First choice ○ Alternative

Back Turning



Right Version

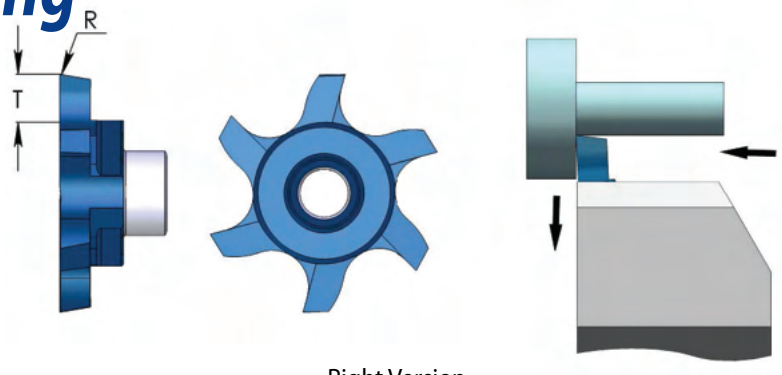
Right hand cutting

Insert Type	Ordering Code	α°	ß°	R	W	H	B	T max	Feed inch/rev
G6	**G6B R A30**	30	12	.004	.102	.150	.02	.150	.002-.005

For L.H, specify G6B L instead of G6B R

	K20	BLU
P		●
M	●	●
K	●	o
N	●	
S	●	●
H		≤45 HRc

Front Turning



Right Version

Right hand cutting

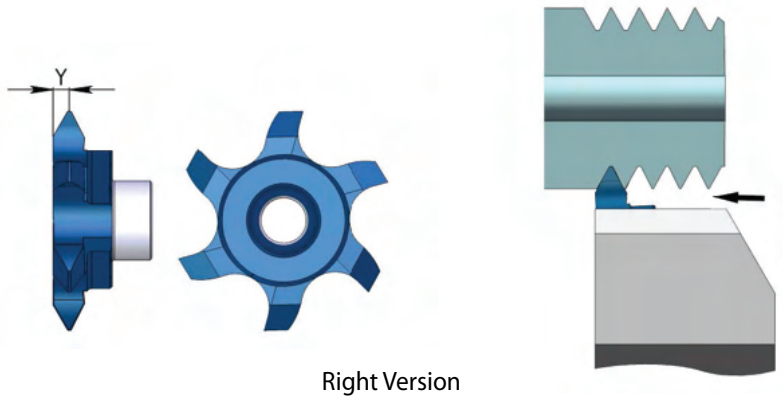
Insert Type	Ordering Code	T max	R	Feed inch/rev
G6	**G6F R T38**	.15	.004	.002-.005

For L.H, specify G6F L instead of G6F R

	K20	BLU
P		●
M	●	●
K	●	o
N	●	
S	●	●
H		≤45 HRc

● First choice o Alternative

Threading - Partial Profile 60°



Right Version

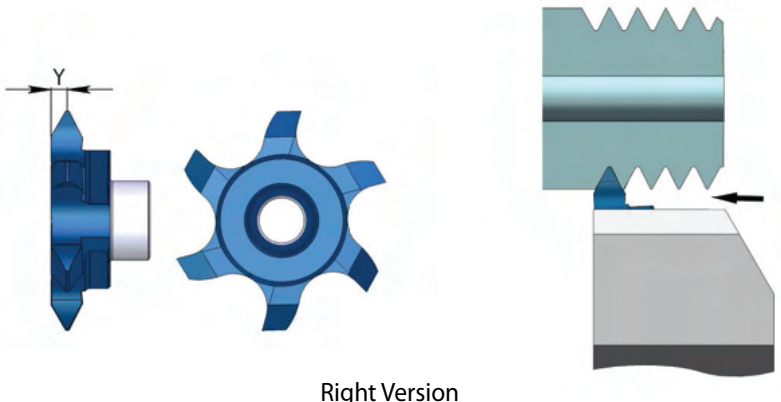
Right hand cutting

Insert Type	Ordering Code	Pitch Range mm	Pitch Range TPI	Y
G6	G6T R A60	0.5 -1.5	48-16	.031
	G6T R G60	1.75-3.0	14- 8	.059
	G6T R AG60	0.5 -3.0	48- 8	.059

For L.H, specify G6T L instead of G6T R

	K20	BLU
P		●
M	●	●
K	●	○
N	●	
S	●	●
H		≤45 HRc

Threading - Partial Profile 55°



Right Version

Right hand cutting

Insert Type	Ordering Code	Pitch Range mm	Pitch Range TPI	Y
G6	G6T R A55	0.5 -1.5	48-16	.031
	G6T R G55	1.75-3.0	14- 8	.059
	G6T R AG55	0.5 -3.0	48- 8	.059

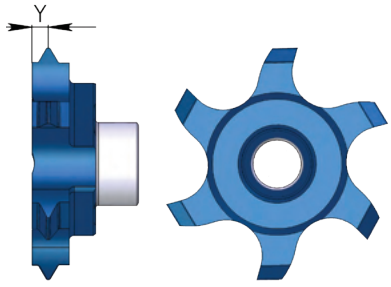
For L.H, specify G6T L instead of G6T R

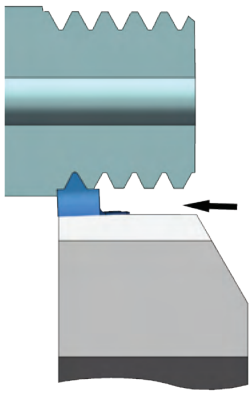
	K20	BLU
P		●
M	●	●
K	●	○
N	●	
S	●	●
H		≤45 HRc

● First choice ○ Alternative

Threading - ISO metric 60° Full Profile

External thread





Right Version

Right hand cutting

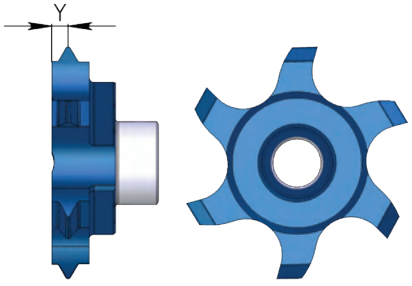
Insert Type	Ordering Code	Pitch mm	Y
G6	G6T R 1.0ISO	1.0	.028
	G6T R 1.5ISO	1.5	.039
	G6T R 2.0ISO	2.0	.051

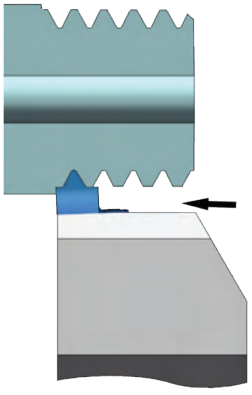
For L.H, specify G6T L instead of G6T R

	K20	BLU
P		●
M	●	●
K	●	○
N	●	
S	●	●
H		≤45 HRc

Threading - UN unified 60° Full Profile

External thread





Right Version

Right hand cutting

Insert Type	Ordering Code	Pitch TPI	Y
G6	G6T R 56UN	56	.024
	G6T R 40UN	40	.016
	G6T R 32UN	32	.028
	G6T R 24UN	24	.028

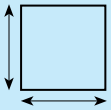
	K20	BLU
P		●
M	●	●
K	●	○
N	●	
S	●	●
H		≤45 HRc

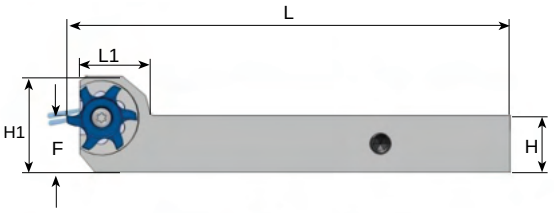
● First choice ○ Alternative

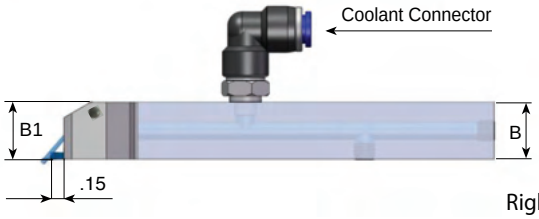
External Toolholders - For G6 Inserts

Coolant through toolholders, for external turning in Swiss type lathes machines. The high pressure coolant is directed towards the insert cutting edge in order to evacuate the chips created and avoid build up edge.
Includes a coolant connector for fast attachment on the machine.

Product Identification - Ordering Codes

T	G6	E	R	1212	K
T =Type	G6 = Swiss toolholder	E = External	R = Right Hand L = Left Hand	Shank Cross Section  0500 = .500 1212 = 12 x 12 mm	Length of Toolholders K = 4.9 M= 5.9 K = 125 mm M= 150 mm





Right Version

Right hand cutting Inch Holders

Insert Type	Ordering Code	B	H	L1	L	H1	F	B1	Insert Screw Torx +	Torx + Key	**Coolant connector (mm)
G6	*G6ER 0500 K	.500	.500	.8	4.9	.9	.500	.63	S16LP	K16P	Ø4 / Ø6
	G6ER 0625 K	.625	.625	.8	4.9	1.1	.625	.63	S16LP	K16P	Ø4 / Ø6
	G6ER 0750 K	.750	.750	.8	4.9	1.2	.750	.75	S16LP	K16P	Ø4 / Ø6
	G6ER 1000 M	1	1	.8	5.9	1.4	1	1	S16LP	K16P	Ø4 / Ø6
TG6	*TG6ER 0500 K	.500	.500	.8	4.9	.9	.500	.71	S16LP	K16P	Ø4 / Ø6
	TG6ER 0625 K	.625	.625	.8	4.9	1.1	.625	.71	S16LP	K16P	Ø4 / Ø6
	TG6ER 0750 K	.750	.750	.8	4.9	1.2	.750	.75	S16LP	K16P	Ø4 / Ø6
	TG6ER 1000 M	1	1	.8	5.9	1.4	1	1	S16LP	K16P	Ø4 / Ø6

* Without internal coolant ** Coolant pipe diameter, standard packing with Ø4 mm
For L.H, specify G6EL instead of G6ER
Coated holders provide high abrasive resistance

Right hand cutting Metric Holders

Insert Type	Ordering Code	B mm	H mm	L1	L	H1	F	B1	Insert Screw Torx +	Torx + Key	**Coolant connector (mm)
G6	*G6ER 1212 K	12	12	.8	4.9	.9	.472	.63	S16LP	K16P	---
	G6ER 1616 K	16	16	.8	4.9	1.1	.630	.63	S16LP	K16P	Ø4 / Ø6
	G6ER 2020 K	20	20	.8	4.9	1.2	.787	.79	S16LP	K16P	Ø4 / Ø6
	G6ER 2525 M	25	25	.8	5.9	1.4	.984	.98	S16LP	K16P	Ø4 / Ø6
TG6	*TG6ER 1212 K	12	12	.8	4.9	.9	.472	.71	S16LP	K16P	---
	TG6ER 1616 K	16	16	.8	4.9	1.1	.630	.71	S16LP	K16P	Ø4 / Ø6
	TG6ER 2020 K	20	20	.8	4.9	1.2	.787	.79	S16LP	K16P	Ø4 / Ø6
	TG6ER 2525 M	25	25	.8	5.9	1.4	.984	.98	S16LP	K16P	Ø4 / Ø6

* Without internal coolant ** Coolant pipe diameter, standard packing with Ø4 mm
For L.H, specify G6EL instead of G6ER
Coated holders provide high abrasive resistance

G6 Inserts

Carbide Grades

BLU PVD triple layer coated Sub-Micron grade for Steel, Stainless Steels, Titanium and hard materials.

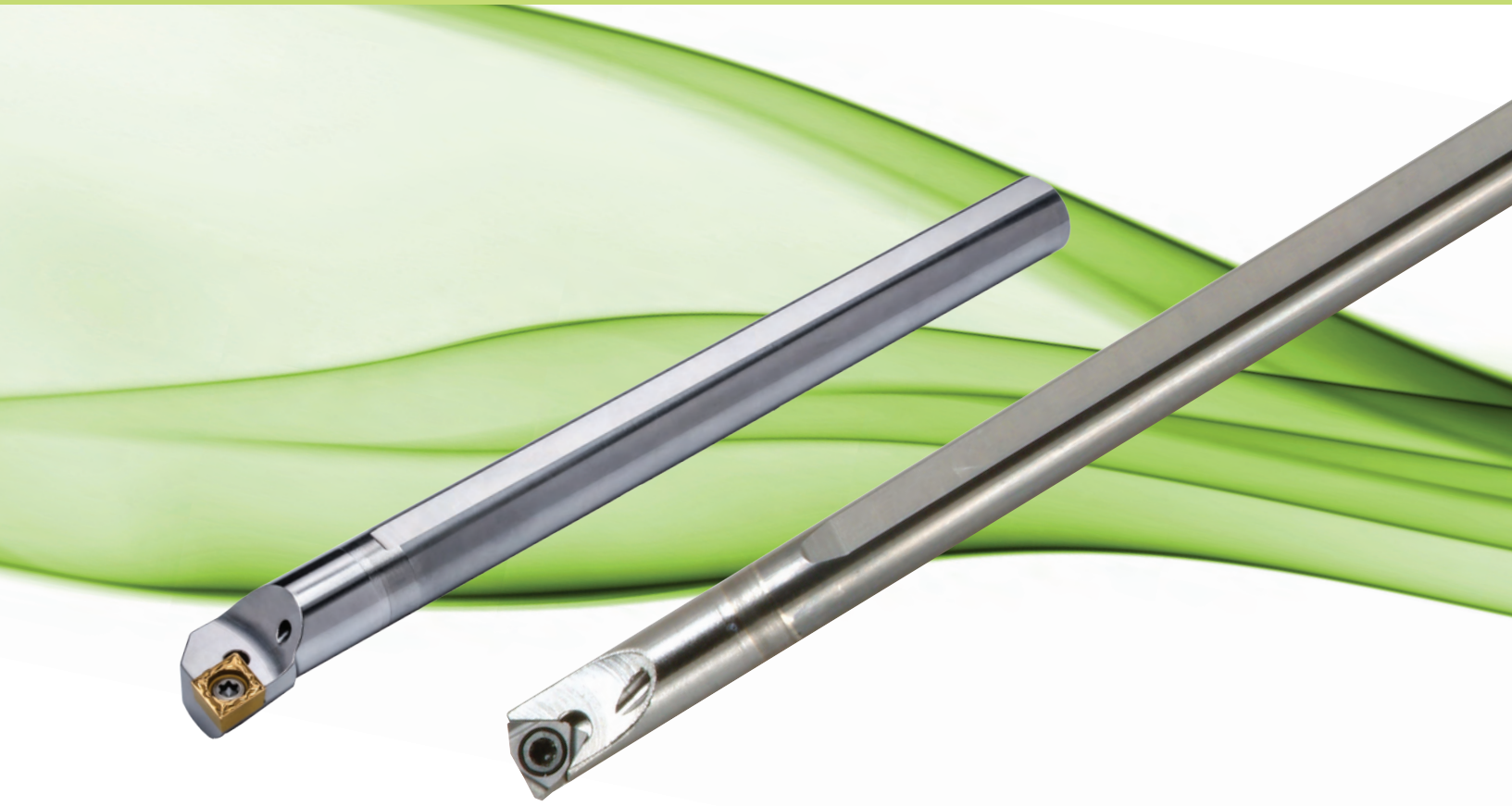
K20 Uncoated Sub-Micron carbide grade for Aluminum and non-ferrous materials, Stainless Steels and Titanium.

Cutting Data

ISO Standard	Material	Cutting Speed ft/min	
		K20	BLU
P	Low and Medium Carbon Steels <0.55%C	-	260-490
	High Carbon Steels ≥0.55%C	-	230-395
	Alloy Steels,Treated Steels	-	130-260
M	Stainless Steel-Free Cutting	100-260	200-395
	Stainless Steel-Austenitic	65-230	100-295
	Cast Steels	100-260	165-395
K	Cast Iron	165-395	200-490
N	Aluminum ≤12%Si, Copper	395-820	-
	Aluminum >12%Si	295-656	-
	Synthetics, Duroplastics, Thermoplastics	230-490	-
S	Nickel Alloys, Titanium Alloys.	65-165	100-230
H	Hardened Steel, ≤45 HRc	-	65-165

Carbide Shank Turning Toolholders and Inserts

A09



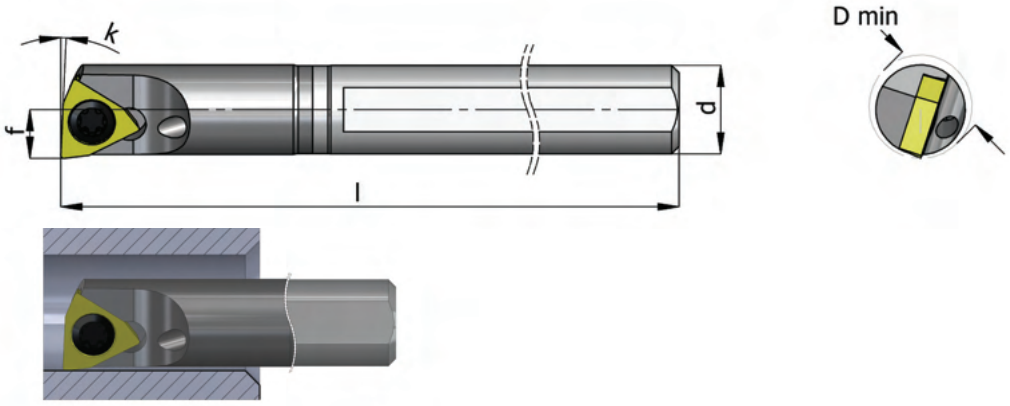
Toolholders Specifications

High performance Carbide Shank turning toolholders for internal machining from 6 mm (.236") minimum diameter and larger.

- Unique Carbide type for high rigidity
- Cylindrical shank
- Internal coolant supply to the cutting edge
- Screw clamping design
- Can be used also for standard ISO turn inserts

Contents:	Page:	Contents:	Page:
Boring bar, SWUBR/L type Lead angle k= 3˚ and Inserts	2	Boring bar, SDUCR/L type Lead angle k= 3˚	4
Boring bar, SCLCR/L type Lead angle k= 5˚	3	Boring bar, STFPR/L type Lead angle k= 1˚	5

Boring bar, SWUBR/L type *Lead angle k= 3°*



Metric Holders

Ordering Code	R. Hand L. Hand	d mm	Min Bore Dia	l	f	k	Insert Screw	Torx Key	Insert
E06H SWUBR-06 *(SIR 0006 H06CT)	R	6	.256	3.9	.126	3°	S06	K06	WBMT 06 01 02L
E06H SWUBL-06	L	6	.256	3.9	.126	3°	S06	K06	WBMT 06 01 02R
E08K SWUBR-06 *(SIR 0008 K06CT)	R	8	.339	4.9	.165	3°	S06	K06	WBMT 06 01 02L
E08K SWUBL-06	L	8	.339	4.9	.165	3°	S06	K06	WBMT 06 01 02R
E10M SWUBR-06 *(SIR 0010 M06CT)	R	10	.433	5.9	.217	3°	S06	K06	WBMT 06 01 02L
E10M SWUBL-06	L	10	.433	5.9	.217	3°	S06	K06	WBMT 06 01 02R

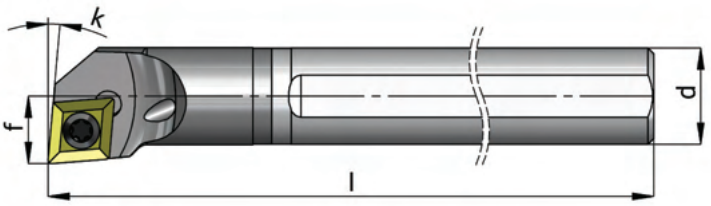
*Old item description

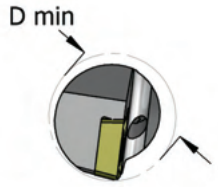
** Insert nose radius R=0.2 mm/.008

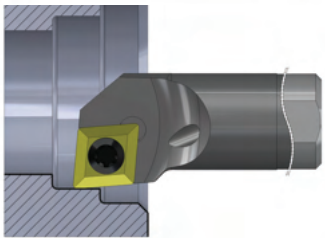
Inch Holders

Ordering Code	R. Hand L. Hand	d	Min Bore Dia	l	f	k	Insert Screw	Torx Key	Insert
E-SWUBR 4-5	R	1/4	.276	4	.134	3°	S06	K06	WBMT 06 01 02L
E-SWUBR 5-5	R	5/16	.331	5	.165	3°	S06	K06	WBMT 06 01 02L
E-SWUBR 6-5	R	3/8	.413	6	.210	3°	S06	K06	WBMT 06 01 02L

Boring bar, SCLCR/L type Lead angle k= 5˚







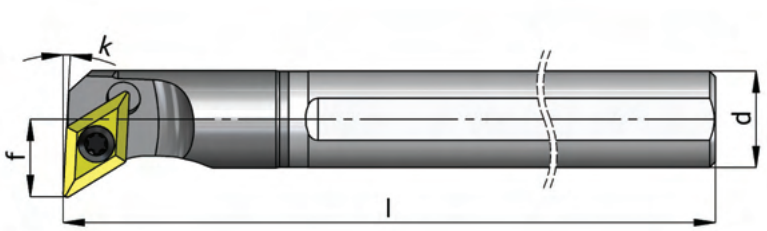
Metric Holders

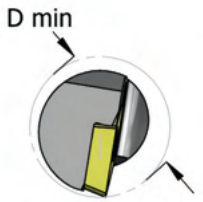
Ordering Code	R. Hand L. Hand	d mm	Min Bore Dia	l	f	k	Insert Screw	Torx Key	Insert*
E08K SCLCR-06	R	8	.394	4.9	.193	5˚	S09	K07	CC.. 06 02 ..
E08K SCLCL-06	L	8	.394	4.9	.193	5˚	S09	K07	CC.. 06 02 ..
E10M SCLCR-06	R	10	.551	5.9	.272	5˚	S09	K07	CC.. 06 02 ..
E10M SCLCL-06	L	10	.551	5.9	.272	5˚	S09	K07	CC.. 06 02 ..
E12P SCLCR-06	R	12	.630	6.7	.350	5˚	S09	K07	CC.. 06 02 ..
E12P SCLCL-06	L	12	.630	6.7	.350	5˚	S09	K07	CC.. 06 02 ..
E16R SCLCR-06	R	16	.787	7.9	.429	5˚	S09	K07	CC.. 06 02 ..
E16R SCLCL-06	L	16	.787	7.9	.429	5˚	S09	K07	CC.. 06 02 ..
E16R SCLCR-09	R	16	.787	7.9	.429	5˚	S20	K22	CC.. 09 T3 ..
E16R SCLCL-09	L	16	.787	7.9	.429	5˚	S20	K22	CC.. 09 T3 ..

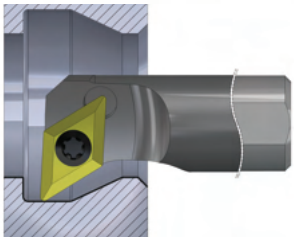
Inch Holders

Ordering Code	R. Hand L. Hand	d	Min Bore Dia	l	f	k	Insert Screw	Torx Key	Insert
E-SCLCR 5-2	R	5/16	.394	5	.193	5⁰	S09	K07	CC...06 02...
E-SCLCR 6-2	R	3/8	.461	6	.250	5⁰	S09	K07	CC...06 02...
E-SCLCR 8-2	R	1/2	.622	7	.353	5⁰	S09	K07	CC...06 02...
E-SCLCR 10-3	R	5/8	.787	8	.429	5⁰	S20	K22	CC...09 T3...
E-SCLCR 12-3	R	3/4	.985	10	.500	5⁰	S20	K22	CC...09 T3...

Boring bar, SDUCR/L type Lead angle k= 3˚







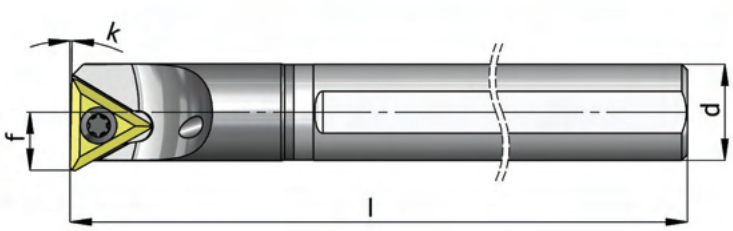
Metric Holders

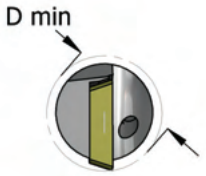
Ordering Code	R. Hand L. Hand	d mm	Min Bore Dia	l	f	k	Insert Screw	Torx Key	Insert*
E10M SDUCR-07	R	10	.551	5.9	.311	3˚	S09	K07	DC.. 07 02 ..
E10M SDUCL-07	L	10	.551	5.9	.311	3˚	S09	K07	DC.. 07 02 ..
E12P SDUCR-07	R	12	.630	6.7	.350	3˚	S09	K07	DC.. 07 02 ..
E12P SDUCL-07	L	12	.630	6.7	.350	3˚	S09	K07	DC.. 07 02 ..
E16R SDUCR-07	R	16	.787	7.9	.429	3˚	S09	K07	DC.. 07 02 ..
E16R SDUCL-07	L	16	.787	7.9	.429	3˚	S09	K07	DC.. 07 02 ..

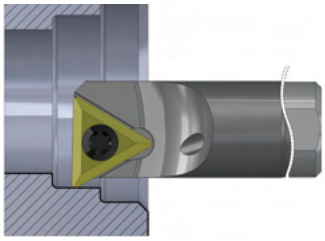
Inch Holders

Ordering Code	R. Hand L. Hand	d	Min Bore Dia	l	f	k	Insert Screw	Torx Key	Insert*
E-SDUCR 6-2	R	3/8	.563	6	.353	3⁰	S09	K07	DC...07 02....
E-SDUCR 8-2	R	1/2	.630	7	.353	3⁰	S09	K07	DC...07 02....
E-SDUCR 10-2	R	5/8	.787	8	.431	3⁰	S09	K07	DC...07 02....
E-SDUCR 12-3	R	3/4	.985	10	.500	3⁰	S20	K22	DC...11 T3....

Boring bar, STFPR/L type *Lead angle k= 1˚*







Metric Holders

Ordering Code	R. Hand L. Hand	d	Min Bore Dia	l	f	k	Insert Screw	Torx Key	Insert*
E10M STFPR-11	R	10	.433	5.9	.232	1˚	S18	K07	TPGB 11 03 04
E10M STFPL-11	L	10	.433	5.9	.232	1˚	S18	K07	TPGB 11 03 04
E12P STFPR-11	R	12	.551	6.7	.272	1˚	S18	K07	TPGB 11 03 04
E12P STFPL-11	L	12	.551	6.7	.272	1˚	S18	K07	TPGB 11 03 04

Inch Holders

Ordering Code	R. Hand L. Hand	d	Min Bore Dia	l	f	k	Insert Screw	Torx Key	Insert*
E-STFPR 6-2	R	3/8	.449	6	.217	1⁰	S18	K07	TPGB 11 03 04
E-STFPR 8-2	R	1/2	.555	7	.285	1⁰	S18	K07	TPGB 11 03 04
E-STFPR 10-2	R	5/8	.689	8	.343	1⁰	S18	K07	TPGB 11 03 04

Demonstration

For Perfect Long Threads on Swiss Type Machines

- Single pass working ability reduces machining time and increases productivity
- A high accuracy Holder-Insert system along with special cutting edge geometry leads to a high quality surface finish
- Multi-Insert holders reduce cycle time and increase tool life
- Whirling toolholders consist of 6 to 8 inserts
- Whirling inserts consist of three cutting edges with high indexability
- Whirling inserts can produce single or double start threads in one pass

Contents:	Page:	Contents:	Page:
Thread Whirling Advantages	2	Case Study	4
Applications	2	Specials	4
Product Identification	3		

Thread Whirling Tools

Thread Whirling is a fast and an accurate way to thread long, small diameter parts in exotic materials such as titanium, stainless steel and inconel.
Cutting is the result of the whirling ring rotating eccentrically at high speed about the slowly rotating workpiece. The advancement of the workpiece rotationally and the advancement of the tool head longitudinally correspond to the thread pitch required.

Advantages

Thread Whirling offers several advantages over single point threading:
Enables production of small diameter long threads when used on Swiss type machines. The thread whirling spindle works close to the guide bushing for increased support and rigidity.

Increased Productivity

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

Very high surface quality and accurate geometry

The use of 6 to 8 cutting edges, higher concentricity, special cutting edge geometry and ideal chip removal, enable top quality surfaces to be produced without burrs.

Long tool life

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

Faster Setup

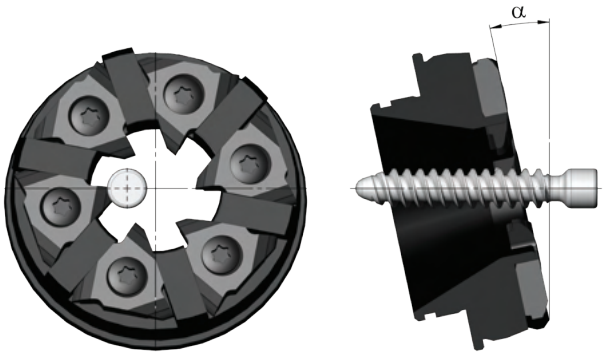
Thread whirling eliminates special support devices and expensive startup development costs.

Compensation of large helix angles

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

Short Delivery Time

Up to 3 weeks.



Applications

Carmex supports and offers high quality Thread Whirling tools for a wide range of applications, such as: Bone screws, Dental implants, Orthopedic screws, automotive parts, semiconductor small parts, etc.

Carmex holds in stock thread whirling holders that are compatible with all **Swiss Type machines** such as STAR, Citizen, Tornos, Hanwha, Tsugami, Nexturn, and **Whirling units** as PCM, WTO, H&F, MADAULA, etc.

Machine details and **Whirling unit** details are needed in order to offer a suitable toolholder.

Machine		Whirling Unit	Whirling Holder Ordering Code	Z	D	d1	Insert Size
Type	Model						
Star	SR20 / ECAS20	Star	SRW4012 730 - 6	6	12	40	18W
			SRW4012 425 - 8	8			11W
	SR20 / ECAS20	WTO	SRW4295 557 - 6	6	9.5	42	18W
			SRW4212 717 - 8	8	12	42	11W
Citizen	M20 / M32	PCM	SRW4512 719 - 6	6	12	45	18W
			SRW4512 427 - 8	8			11W

* The above table serves as an example.

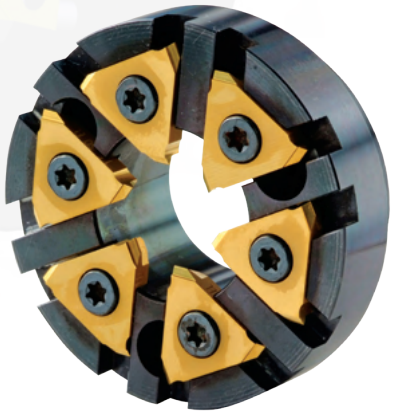
Product Identification - Ordering Codes

Toolholders

SR	W	40	12	730	6
Clamping Method	Whirling	Clamping Diameter	Cutting Diameter	Serial No.	No. of Inserts

Inserts

18W	E	L	1.75	SP		BMA
Insert size 11W 18W	E = External	R = Right Hand L = Left Hand	Pitch	Standard ISO UN SP	Serial no.	Carbide Grade: K20 BMA

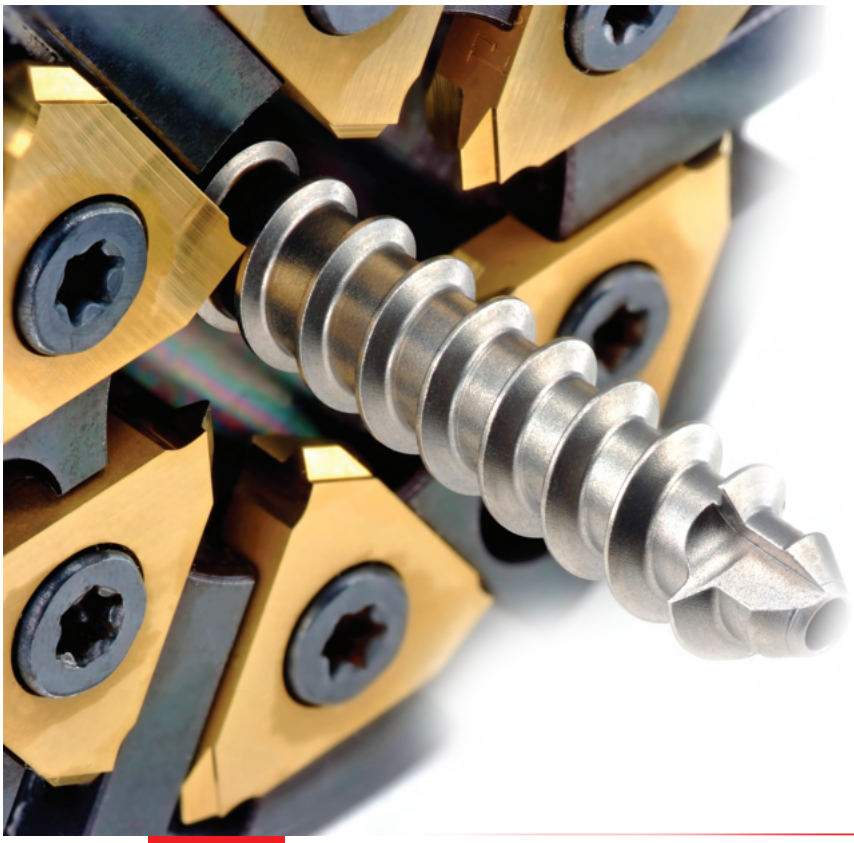


Case Study

Machine:	STAR SR20
Whirling unit:	STAR
Application:	Dental Implant
Material:	Ti-6Al-4V ELI
Carmex holder:	SRW4012 730-6
Vc [m/min]:	65
Tooth load [mm/tooth]:	0.03
No. of parts:	25,000 +

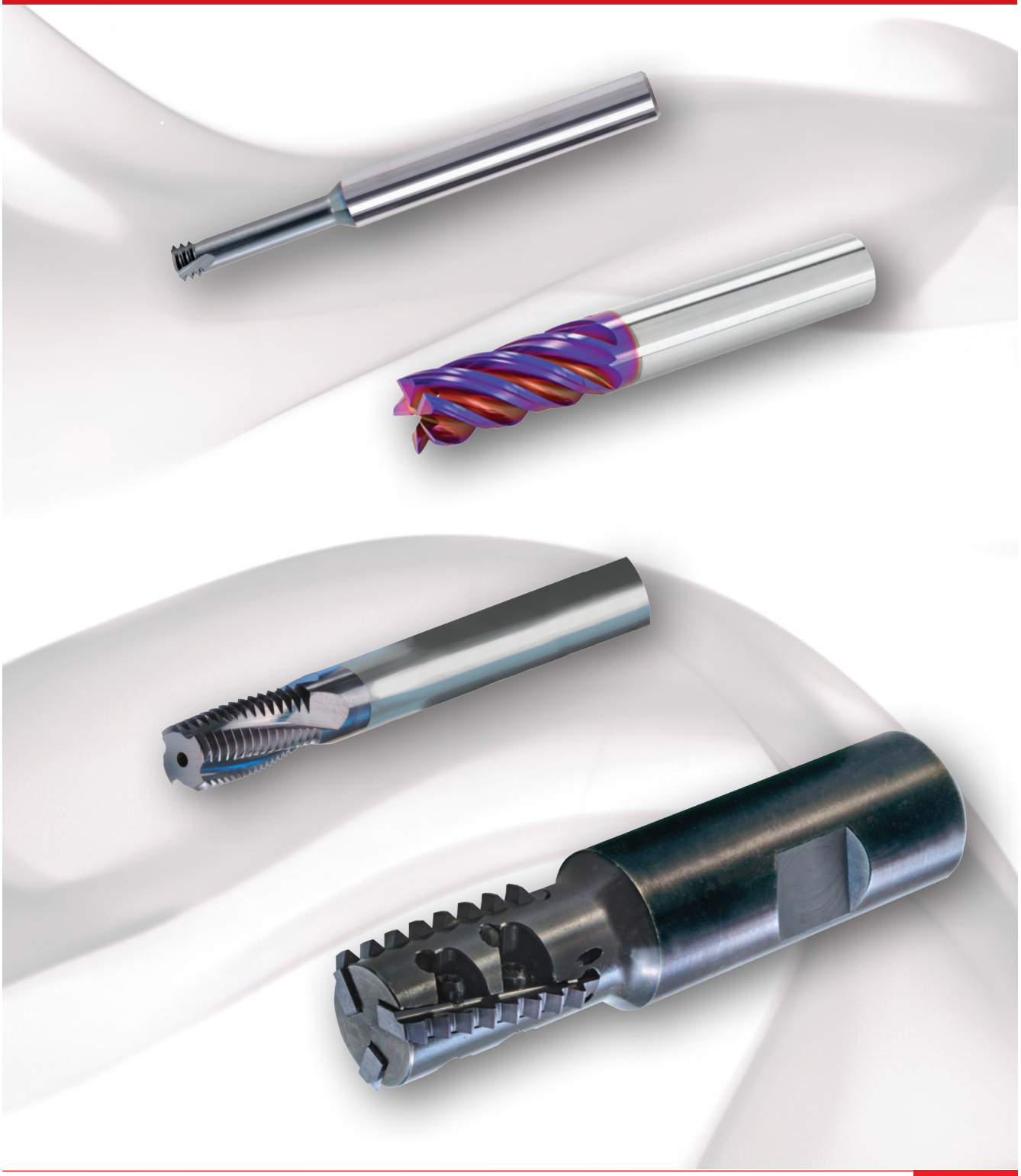
SPECIALS ARE OUR SPECIALTY

Carmex produce special tools in accordance with the customer's requirements



Carmex Precision Tools Ltd.

Milling Tools



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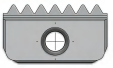
B01	Mill-Thread Inserts and Kits	1- 12	
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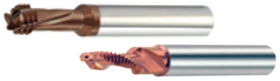
B10	Multi - Function Thread Mills 3 in 1 Operations	1- 9	
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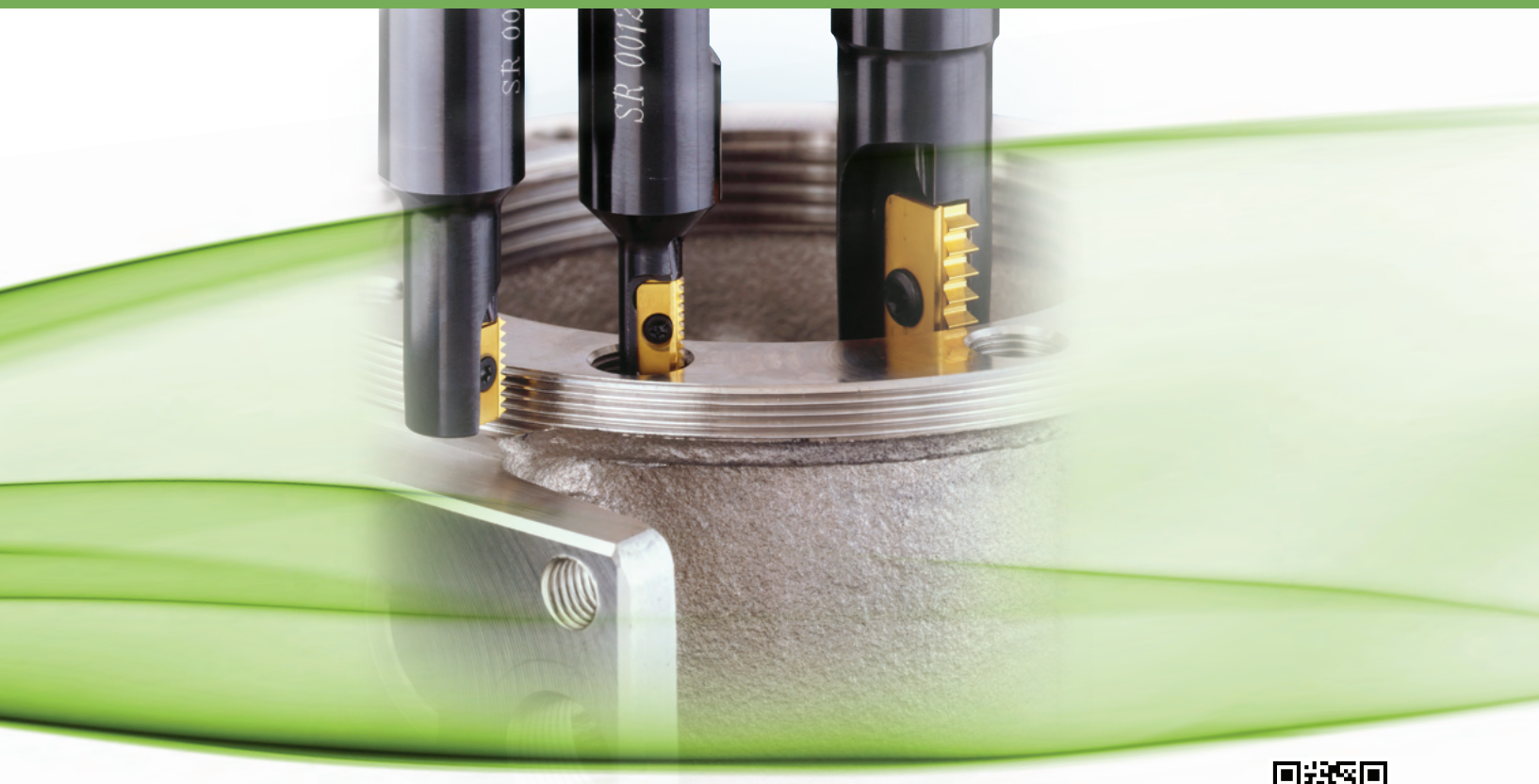
Mill - Thread Inserts and Kits | B01



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

Demonstration

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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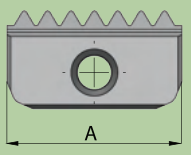
Product Identification

Mill-Thread Inserts Ordering Codes

30



12
14
21
30
40

E

E = External
I = Internal
- = Ext. + Int.

12

Thread Pitch

UN

Thread Profile

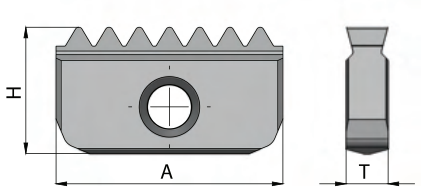
ISO
UN
WHIT
NPT
NPTF
BSPT
NPS
NPSF
PG
UNJ
ACME
AM. BUTT
NPSM
API RD

MT7

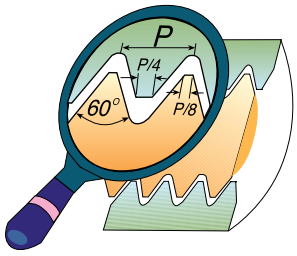
Carbide Grade

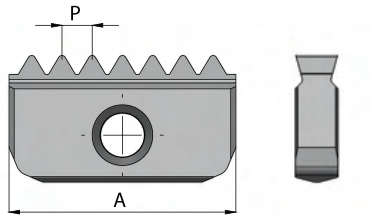
MT7

	Insert Size = A				
	12 mm	14 mm	21 mm	30 mm	40 mm
H	.248	.295	.472	.630	.787
T	.114	.122	.185	.217	.248



ISO



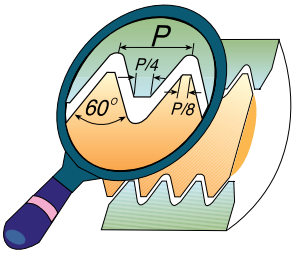


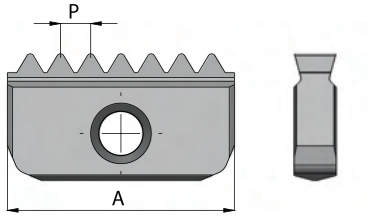
Pitch mm		Insert Size = A 12 mm .472	14 mm .551	21 mm .827	30 mm 1.181	40 mm 1.575
0.5	Ext.					
0.5	Int.	* 12 I 0.5 ISO	14 I 0.5 ISO			
0.75	Ext.		14 E 0.75 ISO			
0.75	Int.	* 12 I 0.75 ISO	14 I 0.75 ISO			
1.0	Ext.		14 E 1.0 ISO	21 E 1.0 ISO		
1.0	Int.	* 12 I 1.0 ISO	14 I 1.0 ISO	21 I 1.0 ISO		
1.25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

* One cutting edge

Order example: 14 I 1.5 ISO MT7

UN UNC, UNF, UNEF, UNS

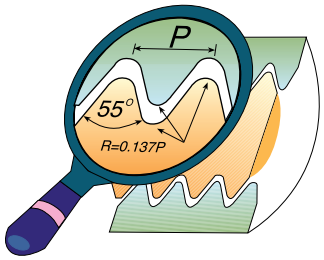




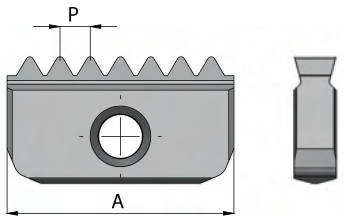
Pitch TPI		Insert Size = A				
		12 mm .472	14 mm .551	21 mm .827	30 mm 1.181	40 mm 1.575
32	Ext.		14 E 32 UN			
32	Int.	* 12 I 32 UN	14 I 32 UN			
28	Ext.		14 E 28 UN			
28	Int.	* 12 I 28 UN	14 I 28 UN			
27	Ext.					
27	Int.		14 I 27 UN			
24	Ext.		14 E 24 UN	21 E 24 UN		
24	Int.	* 12 I 24 UN	14 I 24 UN	21 I 24 UN		
20	Ext.		14 E 20 UN	21 E 20 UN	30 E 20 UN	
20	Int.	* 12 I 20 UN	14 I 20 UN	21 I 20 UN	30 I 20 UN	
18	Ext.		14 E 18 UN	21 E 18 UN	30 E 18 UN	
18	Int.	* 12 I 18 UN	14 I 18 UN	21 I 18 UN	30 I 18 UN	
16	Ext.		14 E 16 UN	21 E 16 UN	30 E 16 UN	40 E 16 UN
16	Int.	* 12 I 16 UN	14 I 16 UN	21 I 16 UN	30 I 16 UN	40 I 16 UN
14	Ext.		14 E 14 UN	21 E 14 UN	30 E 14 UN	40 E 14 UN
14	Int.		14 I 14 UN	21 I 14 UN	30 I 14 UN	40 I 14 UN
13	Ext.		14 E 13 UN			
12	Ext.		14 E 12 UN	21 E 12 UN	30 E 12 UN	40 E 12 UN
12	Int.		14 I 12 UN	21 I 12 UN	30 I 12 UN	40 I 12 UN
11	Ext.		14 E 11 UN	21 E 11 UN		
11	Int.		14 I 11 UN			
10	Ext.		* 14 E 10 UN	21 E 10 UN	30 E 10 UN	40 E 10 UN
10	Int.		14 I 10 UN	21 I 10 UN	30 I 10 UN	40 I 10 UN
9	Ext.					
9	Int.		** 14 I 9 UN			
8	Ext.				30 E 8 UN	40 E 8 UN
8	Int.			21 I 8 UN	30 I 8 UN	40 I 8 UN
7	Ext.					
7	Int.			21 I 7 UN		
6	Ext.				30 E 6 UN	40 E 6 UN
6	Int.				30 I 6 UN	40 I 6 UN
5	Ext.					
5	Int.				30 I 5 UN	
4.5	Ext					
4.5	Int.					40 I 4.5 UN
4	Ext					40 E 4 UN
4	Int.					40 I 4 UN

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

WHIT BSW, BSF, BSP



Same Insert for External and Internal thread.

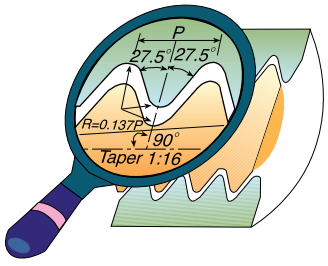


Pitch TPI	Insert Size = A				
	12 mm .472	14 mm .551	21 mm .827	30 mm 1.181	40 mm 1.575
24		14-24 W			
20		14-20 W	21-20 W		
19	* 12 - 19 W	14-19 W	21-19 W		
18		14-18 W			
16		14-16 W	21-16 W	30-16 W	
14		14-14 W	21-14 W	30-14 W	
12		14-12 W	21-12 W		
11		* 14-11 W	21-11 W	30-11 W	40-11 W
10			21-10 W		
8					40- 8 W

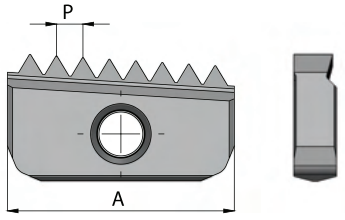
* One cutting edge

Order example: 21-11 W MT7

BSPT



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

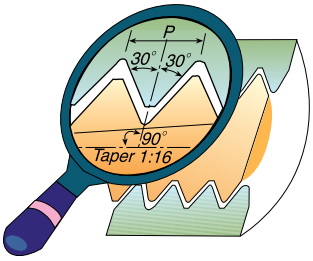


Pitch TPI	Insert Size = A				
	12 mm .472	14 mm .551	21 mm .827	30 mm 1.181	40 mm 1.575
19	12-19 BSPT	14-19 BSPT			
14		14-14 BSPT	21-14 BSPT		
11			21-11 BSPT	30-11 BSPT	40-11 BSPT

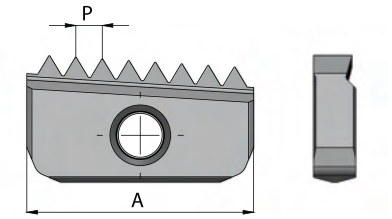
Order example: 14-19 BSPT MT7

For conical preparation end mills see page B08-23

NPT



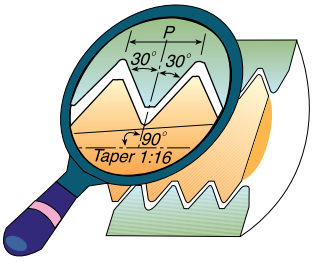
Conical pipe thread inserts are one-sided and may be used for both External and Internal threading.



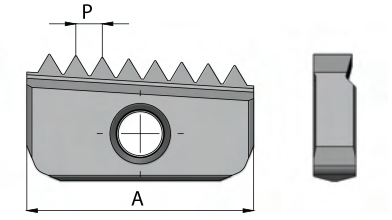
Pitch TPI	Insert Size = A				
	12 mm .472	14 mm .551	21 mm .827	30 mm 1.181	40 mm 1.575
18	12-18 NPT	14-18 NPT			
14		14-14 NPT	21-14 NPT		
11.5			21-11.5 NPT	30-11.5 NPT	40-11.5 NPT
8				30- 8 NPT	40- 8 NPT

Order example: 30-11.5 NPT MT7

NPTF



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

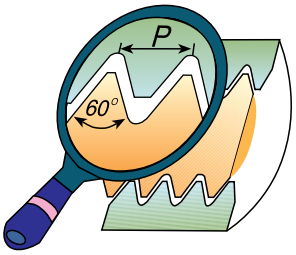


Pitch TPI	Insert Size = A				
	12 mm .472	14 mm .551	21 mm .827	30 mm 1.181	40 mm 1.575
18	12-18 NPTF	14-18 NPTF			
14		14-14 NPTF	21-14 NPTF		
11.5			21-11.5 NPTF	30-11.5 NPTF	40-11.5 NPTF
8				30- 8 NPTF	40- 8 NPTF

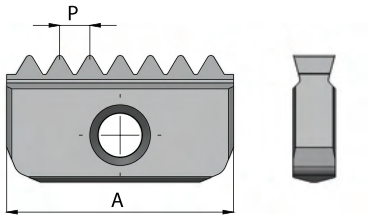
Order example: 21-14 NPTF MT7

For conical preparation end mills see page B08-23

NPS



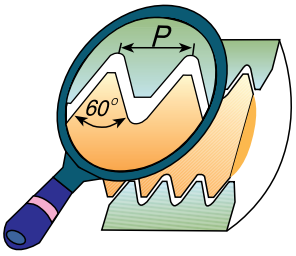
Same Insert for External and Internal thread



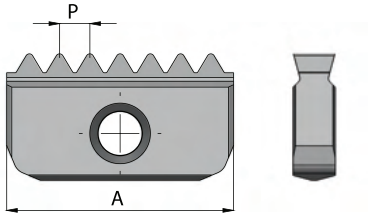
Pitch TPI	Insert Size = A				
	12 mm .472	14 mm .551	21 mm .827	30 mm 1.181	40 mm 1.575
18	* 12-18 NPS	14-18 NPS			
14		14-14 NPS	21-14 NPS		
11.5			21-11.5 NPS	30-11.5 NPS	40-11.5 NPS
8				30- 8 NPS	40- 8 NPS

Order example: 16 ER 14 NPS MXC

NPSF



Same Insert for External and Internal thread

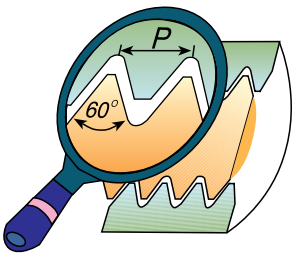


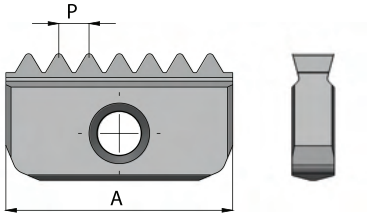
Pitch TPI	Insert Size = A				
	12 mm .472	14 mm .551	21 mm .827	30 mm 1.181	40 mm 1.575
18	* 12-18 NPSF	14-18 NPSF			
14		14-14 NPSF	21-14 NPSF		
11.5			21-11.5 NPSF	30-11.5 NPSF	40-11.5 NPSF
8				30- 8 NPSF	40- 8 NPSF

Order example: 21-14 NPSF MT7

* One cutting edge

NPSM

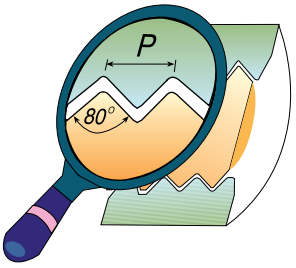




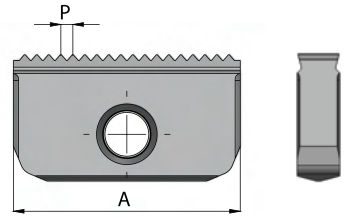
Pitch TPI		Insert Size = A 12 mm .472	14 mm .551	21 mm .827	30 mm 1.181	40 mm 1.575
18	Ext.		14 E 18 NPSM			
18	Int.	12 I 18 NPSM	14 I 18 NPSM			
14	Ext.			21 E 14 NPSM		
14	Int.		14 I 14 NPSM	21 I 14 NPSM		
11.5	Ext.			21 E 11.5 NPSM	30 E 11.5 NPSM	40 E 11.5 NPSM
11.5	Int.			21 I 11.5 NPSM	30 I 11.5 NPSM	40 I 11.5 NPSM
8	Ext.				30 E 8 NPSM	40 E 8 NPSM
8	Int.				30 I 8 NPSM	40 I 8 NPSM

Order example: 21 I 11.5 NPSM MT7

PG - DIN 40430



Same Insert for External and Internal thread

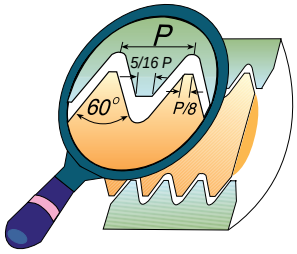


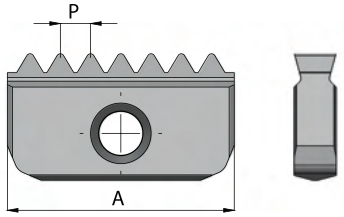
Pitch TPI	Insert Size = A 14 mm .551	21 mm .827	30 mm 1.181
18	14-18 PG (PG 9, 11, 13.5, 16)	21-18 PG (PG 16)	
16		21-16 PG (PG 21, 29, 36, 42, 48)	30-16 PG (PG 36, 42, 48)

Order example: 21-18 PG MT7

Carmex Precision Tools Ltd.

UNJ

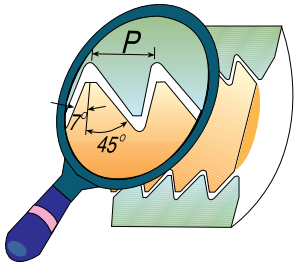




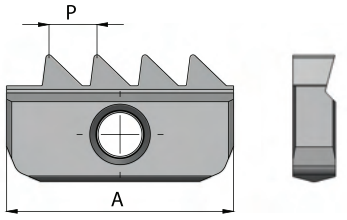
Pitch TPI		Insert Size = A 14 mm .551	21 mm .827
24	Ext.	14 E 24 UNJ	21 E 24 UNJ
24	Int.	14 I 24 UNJ	21 I 24 UNJ
20	Ext.	14 E 20 UNJ	21 E 20 UNJ
20	Int.	14 I 20 UNJ	21 I 20 UNJ
18	Ext.	14 E 18 UNJ	21 E 18 UNJ
18	Int.	14 I 18 UNJ	21 I 18 UNJ
16	Ext.	14 E 16 UNJ	21 E 16 UNJ
16	Int.	14 I 16 UNJ	21 I 16 UNJ
14	Ext.	14 E 14 UNJ	21 E 14 UNJ
14	Int.	14 I 14 UNJ	21 I 14 UNJ
12	Ext.	14 E 12 UNJ	21 E 12 UNJ
12	Int.	14 I 12 UNJ	21 I 12 UNJ

Order example: 21E 16 UNJ MT7

American Buttress



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

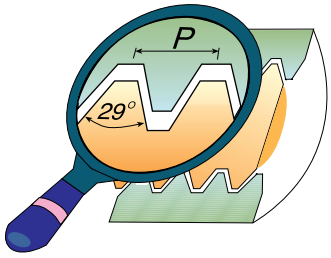


Pitch TPI	Insert Size = A 21 mm .827	30 mm 1.181	40 mm 1.575
16	21 - 16 ABUT	30 - 16 ABUT	
12	21 - 12 ABUT	30 - 12 ABUT	
10	21 - 10 ABUT	30 - 10 ABUT	
8	21 - 8 ABUT	30 - 8 ABUT	
6		30 - 6 ABUT	
4		* 30 - 4 ABUT	40 - 4 ABUT

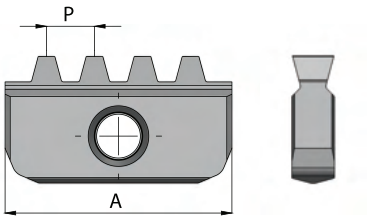
Order example: 30 - 6 ABUT MT7

* Inserts to be used only on Multi-Insert toolholders see page B02-5

ACME



Inserts for Internal threads



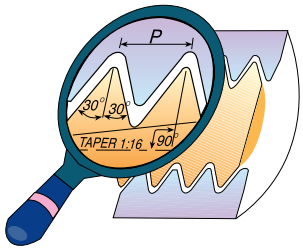
Pitch TPI		Insert Size = A 21 mm .827	30 mm 1.181	40 mm 1.575
12	Int.	21 I 12 ACME	30 I 12 ACME	
10	Int.	21 I 10 ACME	30 I 10 ACME	
8	Int.	21 I 8 ACME	30 I 8 ACME	
6	Int.		30 I 6 ACME	
5	Int.		30 I 5 ACME	
4	Int.		* 30 I 4 ACME	40 I 4 ACME
3.5	Int.			40 I 3.5 ACME
3	Int.			** 40 I 3 ACME

Order example: 21 I 8 ACME MT7

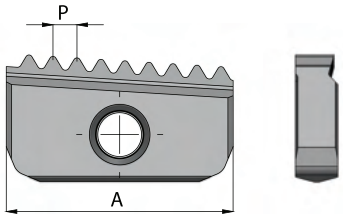
* Inserts to be used only on Multi-Insert toolholders see page B02-5

** One cutting edge

API RD



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



Pitch TPI	Insert Size = A 21 mm .827	30 mm 1.181	40 mm 1.575
10	21 - 10 API RD	30 - 10 API RD	
8		30 - 8 API RD	40 - 8 API RD

Order example: 30 - 8 API RD MT7

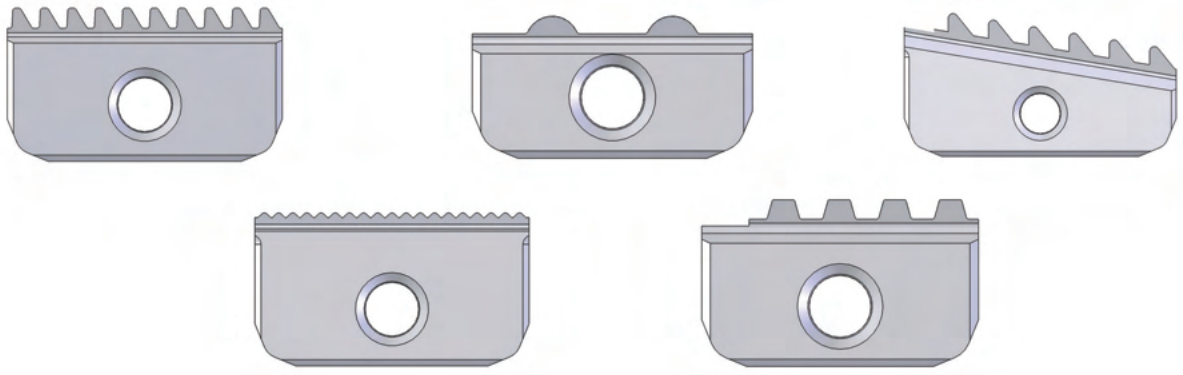
Internal UN Kits

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

Order example : MTK 14 I UN

Special Tools

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



Mill-Thread Toolholders | B02

Demonstration

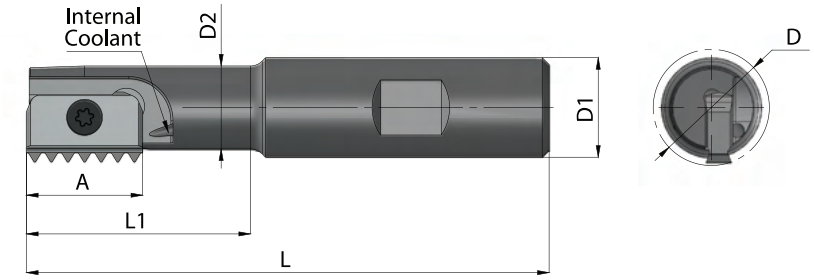
Contents:	Page:	Contents:	Page:
Product Identification	2	External Multi Insert Toolholder	5
Single Insert Toolholders	3	Long Carbide Shank Toolholders	6
Long Shank Toolholders	4	Carbide Shank Toolholders for Single Point Threading	6
Twin Insert Toolholders	4		
Multi Insert Toolholders	5		

Product Identification

Mill-Thread Toolholders Ordering Codes

S	R	0820	M	21	C	
Clamping Method S=Screw	LE = External	Cutting Diameter 0820 = .82	Length of Toolholder	Insert Pocket Size A 12 14 21 30 40	Carbide Shank	Number of Inserts

Single Insert Toolholders

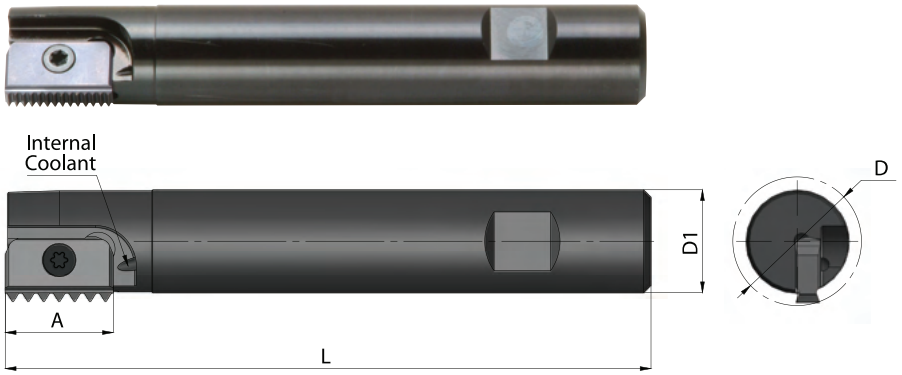


Ordering Code	A mm	D	D1	D2	L	L1	Insert Screw	Torx Key
SR0375H12	12	.37	.75	.30	3.35	.51	S12	K12
* SR0390H12	12	.39	.75	.30	3.35	.51	S12	K12
SR0500E14	14	.50	.75	.37	2.95	.70	S14	K14
SR0540E14	14	.54	.75	.38	2.98	.77	S14	K14
SR0570H14	14	.57	.75	.41	3.20	1.00	S14	K14
SR0670H14	14	.67	.75	.53	3.35	1.18	S14	K14
SR0790H21	21	.79	.75	.61	3.70	1.57	S21	K21
SR0790K21	21	.79	.75	.61	5.00	2.25	S21	K21
SR1140J30	30	1.14	1.00	.88	4.27	1.85	S30	K30
SR1500P40	40	1.50	1.25	1.13	7.00	4.25	S40	K40
SR1500R40	40	1.50	1.25	1.13	8.00	5.25	S40	K40
SR1730M40	40	1.73	1.50	1.38	6.02	3.19	S40	K40

Order example: SR0790H21

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

Long Shank Toolholders

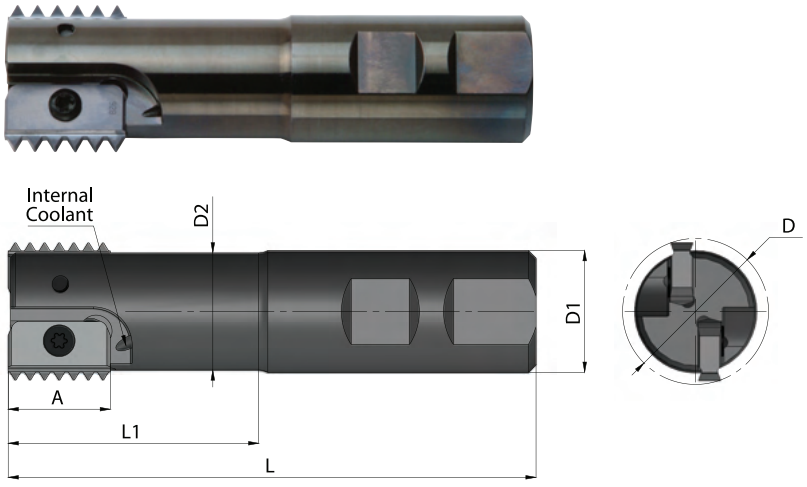


Ordering Code	A mm	D	D1	L	Insert Screw	Torx Key
SR0940K21	21	.94	.75	5.00	S21	K21
SR1240M30	30	1.24	1.00	6.00	S30	K30
SR1500M30	30	1.50	1.25	6.00	S30	K30

Order example: SR1240M30

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

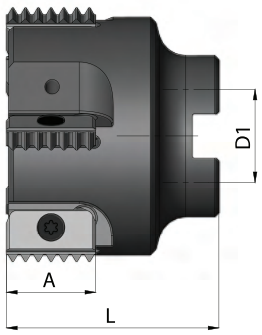
Twin Insert Toolholders

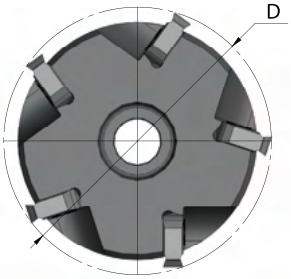


Ordering Code	A mm	D	D1	D2	L	L1	No. of Inserts	Insert Screw	Torx Key
SR0790H14-2	14	.79	.75	.63	3.66	1.54	2	S14	K14
SR1180J21-2	21	1.18	1.00	.95	4.25	1.97	2	S21	K21
SR1580L30-2	30	1.57	1.25	1.18	5.12	2.80	2	S30	K30
SR1970M40-2	40	1.97	1.50	1.49	6.02	3.35	2	S40	K40

Order example: SR1580L30-2

Multi Insert Toolholders



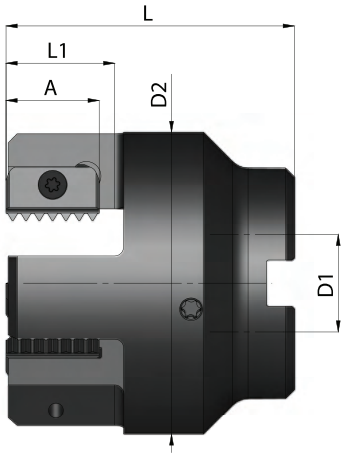


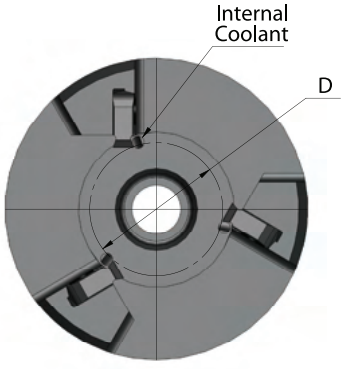
Ordering Code	A mm	D	D1	L	No. of Inserts	Insert Screw	Torx Key
SR2480C21-5	21	2.48	.75	1.97	5	S21	K21
SR2480C30-4	30	2.48	.75	1.97	4	S30	K30
SR3150D30-4	30	3.15	1.00	2.16	4	S30	K30
SR3940D30-4	30	3.94	1.25	2.36	4	S30	K30
SR3940D30-8	30	3.94	1.25	2.36	8	S30	K30
SR3150D40-4	40	3.15	1.00	2.56	4	S40	K40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

Order example: SR3940D30-4

External Multi Insert Toolholder

- Reduced machining time
- Optimal coolant supply

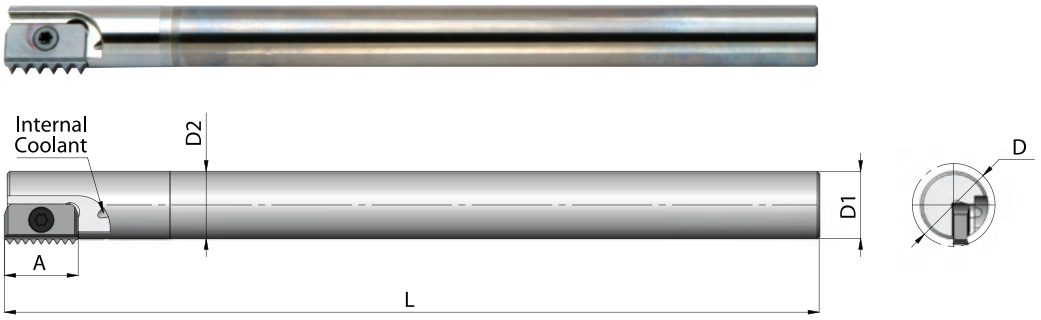




Ordering Code	A mm	D	D1	D2	L	L1	No. of Inserts	Insert Screw	Torx Key
SLE0790D21-3	21	.79	.75	2.28	2.56	.95	3	S21	K21
SLE1180D21-3	21	1.18	.75	2.68	2.56	.95	3	S21	K21
SLE1770E21-4	21	1.77	1.00	3.27	2.76	.95	4	S21	K21

Order example: SLE1180D21-3

Long Carbide Shank Toolholders

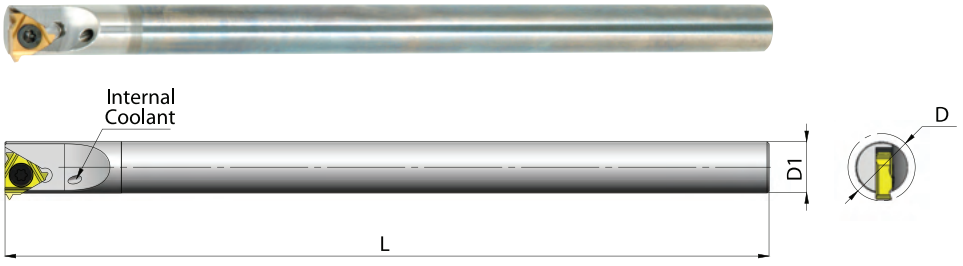


Ordering Code	A mm	D	D1	D2	L	Insert Screw	Torx Key
SR0390K12C	12	.39	.312	.312	5.0	S12	K12
SR0500J14C	14	.50	.375	.375	6.0	S14	K14
SR0620K14C	14	.62	.500	.500	7.0	S14	K14
SR0820M21C	21	.82	.625	.625	8.0	S21	K21
SR1020S30C	30	1.02	.750	.750	10.5	S30	K30

Order example: SR0620 K14C

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

Carbide Shank Toolholders for Single Point Threading



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

For Inserts see the Thread Turning Tools section of this catalog.
For an internal application use an internal R.H. insert.
* For an external application use an external L.H. insert.

Slim MT

B03

Contents:	Page:	Contents:	Page:
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UN	5	Toolholders for Conical Threads	9
WHIT BSW, BSF, BSP	6	Carbide Shank Toolholders	9
NPT	6	Multi-Insert Toolholders	10
NPTF	7		

Slim MT

High productivity, Slim cost.

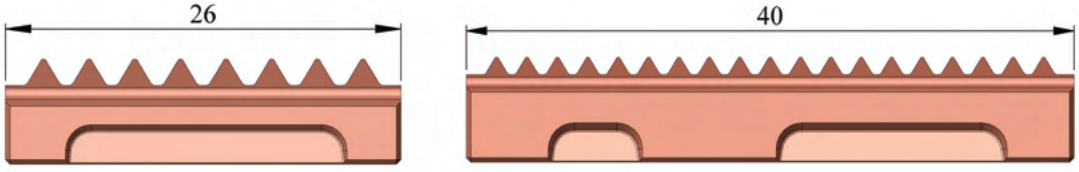
A new product line of indexable Mill-Thread inserts and tool holders including multiple straight flutes for machining long threads from small to large diameters.

- **Advanced carbide and coating combination for extended tool life and improved productivity.**
- **Most inserts are double sided.**
- **Nickel coated holders for high wear resistance.**
- **Unique clamping mechanism.**
- **Large variety of holders & inserts in accordance to international standards.**

Product Identification

Inserts

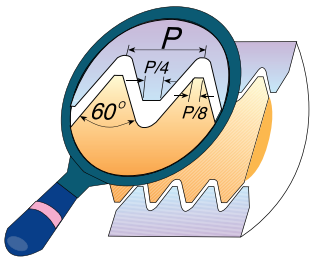
SL	26	I	16	UN	MT17
Slim MT	Insert Size 26 = 26mm (1.02") 40 = 40mm (1.57")	I = Internal E = External - = Ex + In	Thread Pitch	ISO UN WHIT NPT BSPT	Carbide Grade



Toolholders

SR	T	087		- 165	- SL26	- 3	C
SR Type	For Conical Inserts	Cutting Diameter 087 = .87"	Shank Diameter D1	Neck Length	Insert Size SL26 SL40	Number Of Inserts	Carbide Shank

ISO

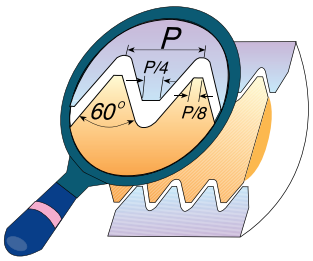


Insert size	Pitch mm	Ex/In	Ordering code	Toolholder
SL 26	0.5	In	SL26 I 0.5 ISO	SR ….. - SL26 - …
	0.75	In	SL26 I 0.75 ISO	
	1.0	In	SL26 I 1.0 ISO	
	1.0	Ex	SL26 E 1.0 ISO	
	1.5	In	SL26 I 1.5 ISO	
	1.5	Ex	SL26 E 1.5 ISO	
	2.0	In	SL26 I 2.0 ISO	
	2.0	Ex	SL26 E 2.0 ISO	
	2.5	In	SL26 I 2.5 ISO	
	2.5	Ex	SL26 E 2.5 ISO	
	3.0	In	* SL26 I 3.0 ISO	
	3.0	Ex	* SL26 E 3.0 ISO	
SL 40	1.5	In	SL40 I 1.5 ISO	SR ….. - SL40 - …
	2.0	In	SL40 I 2.0 ISO	
	2.5	In	SL40 I 2.5 ISO	
	3.0	In	SL40 I 3.0 ISO	

* Cannot be used with toolholder SR067- … -SL26-2

For tool holders see pages A01-6-8.
For carbide grade and cutting speed see page A01-9.

UN

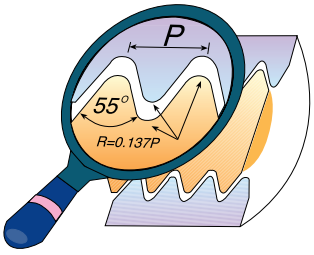


Insert size	Pitch TPI	Ex/In	Ordering code	Toolholder
SL 26	20	In	SL 26 I 20 UN	SR ..... - SL26 - ...
	20	Ex	SL 26 E 20 UN	
	18	In	SL 26 I 18 UN	
	18	Ex	SL 26 E 18 UN	
	16	In	SL 26 I 16 UN	
	16	Ex	SL 26 E 16 UN	
	14	In	SL 26 I 14 UN	
	14	Ex	SL 26 E 14 UN	
	12	In	SL 26 I 12 UN	
	12	Ex	SL 26 E 12 UN	
	10	In	SL 26 I 10 UN	
	10	Ex	SL 26 E 10 UN	
	9	In	* SL 26 I 9 UN	
	8	In	* SL 26 I 8 UN	
SL 40	16	In	SL 40 I 16 UN	SR ..... - SL40 - ...
	14	In	SL 40 I 14 UN	
	12	In	SL 40 I 12 UN	
	10	In	SL 40 I 10 UN	
	8	In	SL 40 I 8 UN	

* Cannot be used with toolholder SR067- ... -SL26-2

For tool holders see pages A01-6 - A01-8.
For carbide grade and cutting speed see page A01-9.

WHIT BSW, BSF, BSP

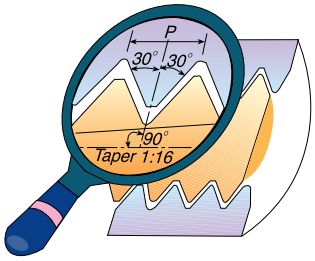


Same insert for External and Internal thread

Insert size	Pitch TPI	Ordering code	Toolholder
SL 26	14	SL 26 - 14 W	SR ..... - SL26 - ...
	11	SL 26 - 11 W	
SL 40	14	SL 40 - 14 W	SR ..... - SL40 - ...
	11	SL 40 - 11 W	

For tool holders see pages A01-6 - A01-8.
For carbide grade and cutting speed see page A01-9.

NPT



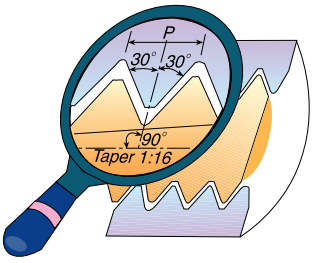
Conical pipe thread inserts are one-sided and may be used for both External and Internal threading

Insert size	Pitch TPI	Ordering code	Toolholder
SL 26	14	SL 26 - 14 NPT	SRT ..... - SL26 - ...
	11.5	* SL 26 - 11.5 NPT	

* Cannot be used with toolholder SRT067-...-SL26-2

For tool holders see pages A01-7.
For carbide grade and cutting speed see page A01-9.

NPTF



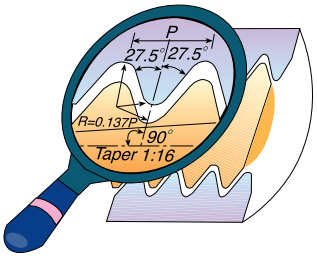
Conical pipe thread inserts are one-sided and may be used for both External and Internal threading

Insert size	Pitch TPI	Ordering code	Toolholder
SL 26	14	SL 26 - 14 NPTF	SRT ..... - SL26 - ...
	11.5	* SL 26 - 11.5 NPTF	

* Cannot be used with toolholder SRT067-...-SL26-2

For tool holders see pages A01-7.
For carbide grade and cutting speed see page A01-9.

BSPT



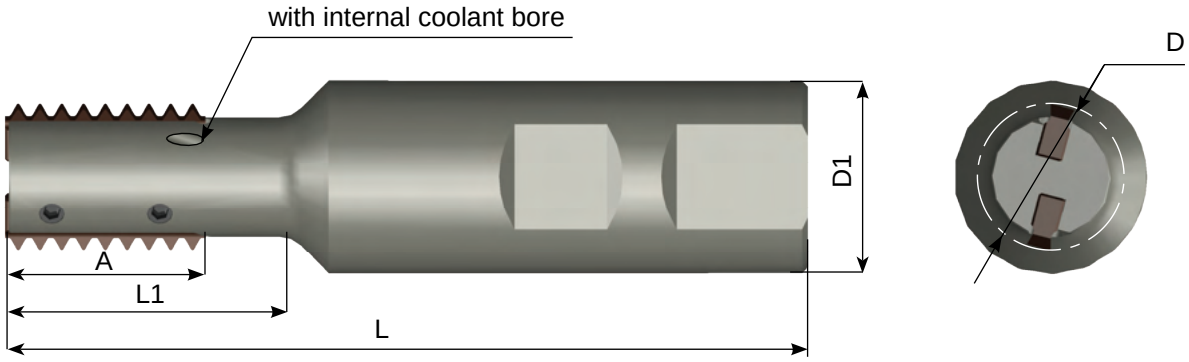
Conical pipe thread inserts are one-sided and may be used for both External and Internal threading

Insert size	Pitch TPI	Ordering code	Toolholder
SL 26	14	SL 26 - 14 BSPT	SRT ..... - SL26 - ...
	11	* SL 26 - 11 BSPT	

* Cannot be used with toolholder SRT067-...-SL26-2

For tool holders see pages A01-7.
For carbide grade and cutting speed see page A01-9.

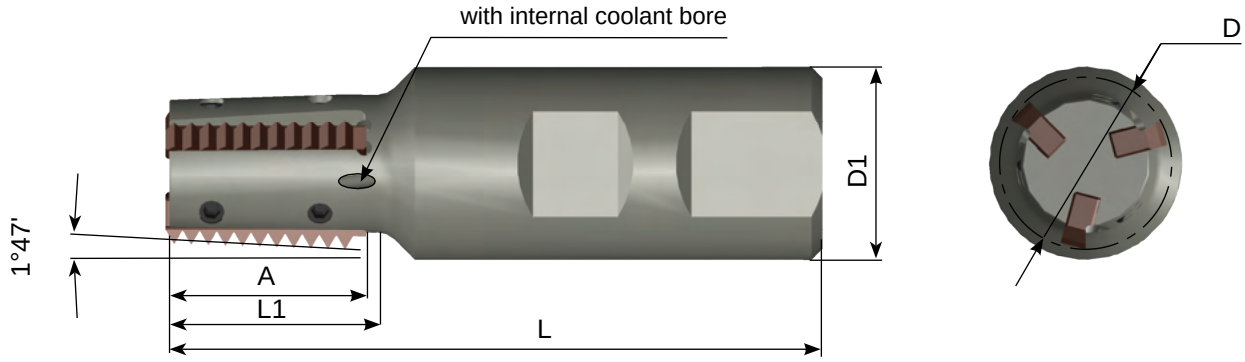
Toolholders



Ordering Code	Insert size=A	D	D1	L	L1	No. of Inserts	Screw	Key
*SR 067-075-106-SL 26-2	SL 26	.67	.75	3.75	1.06	2	S4P	K08P
*SR 067-075-142-SL 26-2		.67	.75	4.15	1.42	2	S4P	K08P
SR 067-106-SL 26-2		.67	1	3.75	1.06	2	S4P	K08P
SR 067-142-SL 26-2		.67	1	4.15	1.42	2	S4P	K08P
SR 075-106-SL 26-2		.75	1	3.75	1.06	2	S4P	K08P
SR 075-157-SL 26-2		.75	1	4.35	1.57	2	S4P	K08P
SR 081-106-SL 26-3		.81	1	3.75	1.06	3	S4P	K08P
SR 081-157-SL 26-3		.81	1	4.35	1.57	3	S4P	K08P
SR 081-225-SL 26-2		.81	1	5.00	2.25	2	S4P	K08P
SR 087-110-SL 26-3		.87	1	3.75	1.10	3	S4P	K08P
SR 087-165-SL 26-3		.87	1	4.35	1.65	3	S4P	K08P
SR 087-225-SL 26-2		.87	1	5.00	2.25	2	S4P	K08P
SR 118-315-SL 26-3		1.18	1	5.90	3.15	3	S4P	K08P
SR 087-165-SL 40-3	SL 40	.87	1	4.35	1.65	3	S4P	K08P
SR 087-250-SL 40-2		.87	1	5.25	2.50	2	S4P	K08P
SR 118-165-SL 40-4		1.18	1.25	4.95	1.65	4	S4P	K08P
SR 118-315-SL 40-3		1.18	1.25	5.90	3.15	3	S4P	K08P

* Straight shank Toolholder

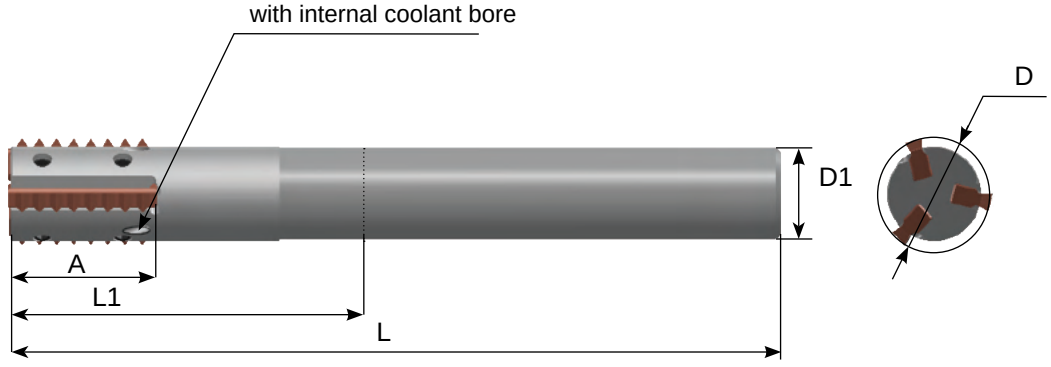
Toolholders for Conical Threads



Ordering Code	Insert size=A	D	D1	L	L1	No. of Inserts	Screw	Key
*SR T 067-075-106-SL 26-2	SL 26	.67	.75	3.75	1.06	2	S4P	K08P
SR T 067-106-SL 26-2		.67	1	3.75	1.06	2	S4P	K08P
SR T 087-106-SL 26-3		.87	1	3.75	1.06	3	S4P	K08P
SR T 106-106-SL 26-4		1.06	1	3.75	1.06	4	S4P	K08P

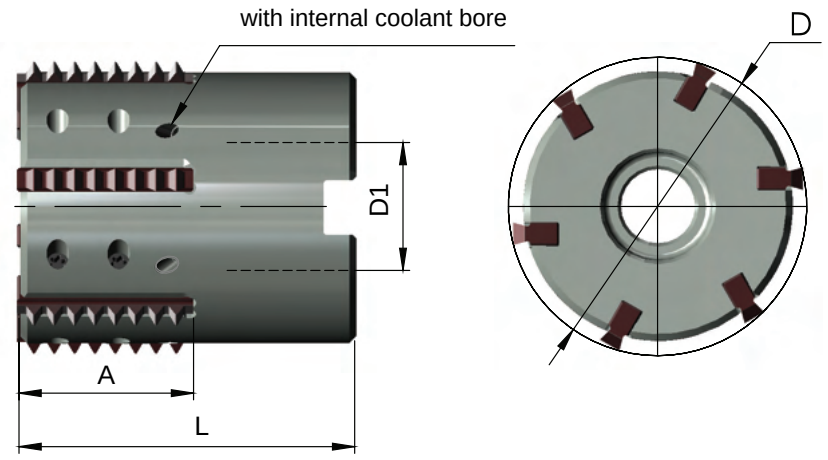
* Straight shank Toolholder

Carbide Shank Toolholders



Ordering Code	Insert size=A	D	D1	L	L1	No. of Inserts	Screw	Key
SR 075-440-SL 26-2 C	SL 26	.75	.625	7.00	4.40	2	S4P	K08P
SR 081-540-SL 26-3 C		.81	.625	8.00	5.40	3	S4P	K08P
SR 100-740-SL 26-3 C		1.00	.750	10.00	7.40	3	S4P	K08P
SR 075-275-SL 26-2 C		.75	.625	5.3	2.75	2	S4P	K08P
SR 081-275-SL26-2 C		.81	.625	5.3	2.75	3	S4P	K08P

Multi-Insert Toolholders



Ordering Code	Insert size=A	D	D1	L	No. of Inserts	Screw	Key
SR 150-050-SL 26-5	SL 26	1.50	.50	1.97	5	S4P	K08P
SR 175-075-SL 26-6		1.75	.75	1.97	6	S4P	K08P
SR 175-075-SL 40-6	SL 40	1.75	.75	2.56	6	S4P	K08P

Spiral Mill-Thread | B04

Demonstration

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 1 to 9 inserts in a comparatively small cutting diameter.
- The unique clamping method enables optimal indexability.
- Spiral tools reduce vibration and chatter.
- High grade finish is achieved in all applications: threading, end milling roughing and finishing.
- Inserts are available in MT7 Sub-Micron Grade with Titanium Aluminum Nitride multi-layer coating (ISO K10 - K20). This is a general purpose grade, which can be used with all materials.

Contents:	Page:	Contents:	Page:
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Whitworth	5	Toolholders	9-10
BSPT	6	Special Tools	11
NPT	6	Case Studies	12

Product Identification - Ordering Codes

Spiral Mill - Thread Inserts

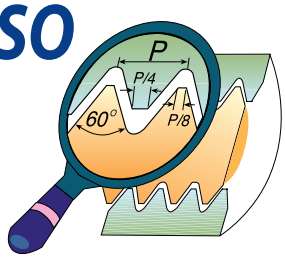
Inserts

H	19	I	3.0	ISO	MT7
Helical (Spiral)	Cutting Diameter 19 = 19 mm	I = Internal E = External - = Ext. + Int.	Thread Pitch	**Thread Profile:** ISO UN WHIT BSPT NPT NPTF NPS	Carbide Grade

Toolholders

S	R	0670	H	17	-	2
Clamping Method S=Screw		Cutting Diameter 0670 = .67"	Helical (Spiral)	Cutting Diameter 17=17 mm		Number of Inserts

ISO



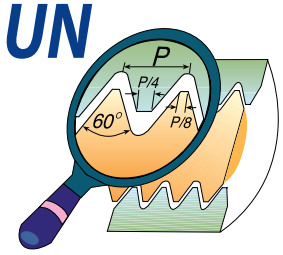
①

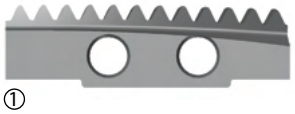
②

Insert Size	Fig.	Pitch mm	Ext./ Int.	M coarse	M fine	Ordering code	Toolholder
H13	1	1.0	Int.		≥ 15	H13 I 1.0 ISO	SR0510H13...
		1.5	Int.		≥ 16	H13 I 1.5 ISO	
		2.0	Int.	M16	≥ 17	H13 I 2.0 ISO	
H15	1	1.0	Int.		≥ 17	H15 I 1.0 ISO	SR0590H15...
		1.5	Int.		≥ 18	H15 I 1.5 ISO	
		2.0	Int.		≥ 19	H15 I 2.0 ISO	
		2.5	Int.	M18	≥ 20	H15 I 2.5 ISO	
H17	1	1.0	Int.		≥ 19	H17 I 1.0 ISO	SR0670H17...
		1.5	Int.		≥ 20	H17 I 1.5 ISO	
		2.0	Int.		≥ 21	H17 I 2.0 ISO	
		2.5	Int.	M20, M22	≥ 22	H17 I 2.5 ISO	
H19	1	1.5	Int.		≥ 22	H19 I 1.5 ISO	SR0750H19...
		2.0	Int.		≥ 23	H19 I 2.0 ISO	
		3.0	Int.	M24, M27	≥ 25	H19 I 3.0 ISO	
H21	1	3.0	Int.	M27	≥ 25	H21 I 3.0 ISO	SR083H21...
H23	2	1.0	Ext.			H23 E 1.0 ISO	SR091H23...
		1.0	Int.		≥ 25	H23 I 1.0 ISO	
		1.5	Ext.			H23 E 1.5 ISO	
		1.5	Int.		≥ 26	H23 I 1.5 ISO	
		2.0	Ext.			H23 E 2.0 ISO	
		2.0	Int.		≥ 27	H23 I 2.0 ISO	
		3.0	Ext.			H23 E 3.0 ISO	
		3.0	Int.		≥ 29	H23 I 3.0 ISO	
		3.5	Int.	M30, M33	≥ 30	H23 I 3.5 ISO	
		4.0	Int.	M36	≥ 31	H23 I 4.0 ISO	
H27	2	3.0	Int.		≥ 32	H27 I 3.0 ISO	SR106H27...
		4.0	Int.	M36, M39	≥ 40	H27 I 4.0 ISO	
H28	2	4.0	Int.	M36, M39	≥ 40	H28 I 4.0 ISO	SR110H28...
H32	2	1.0	Int.		≥ 34	H32 I 1.0 ISO	SR126H32...
		1.5	Ext.			H32 E 1.5 ISO	
		1.5	Int.		≥ 35	H32 I 1.5 ISO	
		2.0	Ext.			H32 E 2.0 ISO	
		2.0	Int.		≥ 36	H32 I 2.0 ISO	
		3.0	Ext.			H32 E 3.0 ISO	
		3.0	Int.		≥ 38	H32 I 3.0 ISO	
		3.5	Int.		≥ 39	H32 I 3.5 ISO	
		4.0	Ext.			H32 E 4.0 ISO	
		4.0	Int.	M39	≥ 40	H32 I 4.0 ISO	
		4.5	Int.	M42, M45	≥ 41	H32 I 4.5 ISO	
		5.0	Int.	M48	≥ 42	H32 I 5.0 ISO	
H45	2	1.5	Ext.			H45 E 1.5 ISO	SR177H45...
		1.5	Int.		≥ 48	H45 I 1.5 ISO	
		2.0	Ext.			H45 E 2.0 ISO	
		2.0	Int.		≥ 49	H45 I 2.0 ISO	
		3.0	Int.		≥ 51	H45 I 3.0 ISO	
		3.5	Int.		≥ 52	H45 I 3.5 ISO	
		4.0	Int.		≥ 53	H45 I 4.0 ISO	
		4.5	Int.		≥ 54	H45 I 4.5 ISO	
		5.0	Int.	M52	≥ 55	H45 I 5.0 ISO	
		5.5	Int.	M56, M60	≥ 56	H45 I 5.5 ISO	
		6.0	Int.	M64, M68	≥ 57	H45 I 6.0 ISO	
H63	2	1.5	Int.		≥ 66	H63 I 1.5 ISO	SR248H63...
		2.0	Int.		≥ 67	H63 I 2.0 ISO	
		3.0	Int.		≥ 69	H63 I 3.0 ISO	
		4.0	Int.		≥ 71	H63 I 4.0 ISO	
		6.0	Int.		≥ 75	H63 I 6.0 ISO	

Spiral Mill - Thread Inserts

UN

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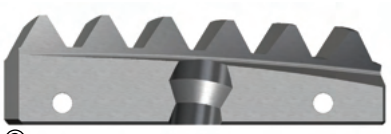
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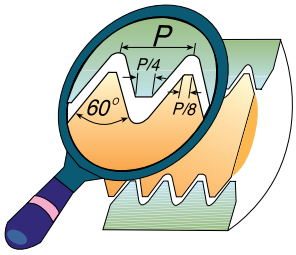
Insert Size	Fig.	Pitch TPI	Ext./ Int.	UN	UNC	UNF	UNS	Ordering code	Toolholder
H13	1	16	Int.	5/8, 11/16				H13 I 16 UN	SR0510H13...
		14	Int.				5/8	H13 I 14 UN	
		12	Int.	11/16				H13 I 12 UN	
H15	1	16	Int.			3/4		H15 I 16 UN	SR0590H15...
		14	Int.				3/4	H15 I 14 UN	
		12	Int.	3/4, 13/16				H15 I 12 UN	
		10	Int.		3/4		7/8 , 1	H15 I 10 UN	
H17	1	20	Int	1 1/16, 1 1/8		*13/16 - 1		H17 I 20 UN	SR0670H17...
		16	Int.	13/16 - 1				H17 I 16 UN	
		14	Int.			7/8 , 1		H17 I 14 UN	
		12	Int.	7/8				H17 I 12 UN	
		9	Int.		7/8			H17 I 9 UN	
H19	1	12	Int.	15/16		1		H19 I 12 UN	SR0750H19...
		8	Int.	1 1/16, 1 1/8	1			H19 I 8 UN	
H21	1	8	Int.	1 1/16, 1 1/8	1			H21 I 8 UN	SR083H21...
H23	2	32	Int.	1			1 - 1 1/4	H23 I 32 UN	SR091H23...
		24	Int.					H23 I 24 UN	
		20	Ext.					H23 E 20 UN	
		20	Int.	1 1/16 - 1 5/16				H23 I 20 UN	
		18	Ext.					H23 E 18 UN	
		18	Int.				1	H23 I 18 UN	
		16	Ext.					H23 E 16 UN	
		16	Int.	1 1/16 - 1 5/16				H23 I 16 UN	
		14	Ext.					H23 E 14 UN	
		14	Int.				≥1 1/8	H23 I 14 UN	
		12	Ext.					H23 E 12 UN	
		12	Int.	1 1/16 - 1 3/16		1 1/8		H23 I 12 UN	
		10	Ext.					H23 E 10 UN	
		10	Int.				≥1 1/8	H23 I 10 UN	
		8	Ext.					H23 E 8 UN	
		8	Int.	1 3/16 - 1 5/16				H23 I 8 UN	
		7	Ext.					H23 E 7 UN	
		7	Int.		1 1/4			H23 I 7 UN	
H27	2	12	Int.	1 5/16, 1 7/16		1 1/4, 1 3/8		H27 I 12 UN	SR106H27...
		8	Int.	1 5/16, 1 3/8, 1 7/16				H27 I 8 UN	
		7	Int.		1 1/4			H27 I 7 UN	
H28	2	12	Int.	1 5/16		1 1/4, 1 3/8		H28 I 12 UN	SR110H28...
		8	Int.	1 3/8 - 1 7/16				H28 I 8 UN	
		6	Int.	1 7/16, 1 9/16	1 3/8, 1 1/2			H28 I 6 UN	
H32	2	24	Ext.				≥1 3/8	H32 E 24 UN	SR126H32...
		20	Ext.					H32 E 20 UN	
		20	Int.	≥1 3/8				H32 I 20 UN	
		18	Ext.					H32 E 18 UN	
		18	Int.				≥1 3/4	H32 I 18 UN	
		16	Ext.					H32 E 16 UN	
		16	Int.	1 3/8 - 1 7/8				H32 I 16 UN	
		12	Ext.					H32 E 12 UN	
		12	Int.	1 7/16 - 1 7/8		1 1/2		H32 I 12 UN	
		8	Ext.					H32 E 8 UN	
		8	Int.	1 1/2 - 2				H32 I 8 UN	
		6	Ext.					H32 E 6 UN	
		6	Int.	1 5/8 - 1 7/8				H32 I 6 UN	
		5	Int.		1 3/4			H32 I 5 UN	
H40	2	6	Int.	1 15/16, 2				H40 I 6 UN	SR157H40...
		4.5	Int.		2			H40 I 4.5 UN	

*Only UNEF

Spiral Mill - Thread Inserts

Carmex Precision Tools Ltd.

UN



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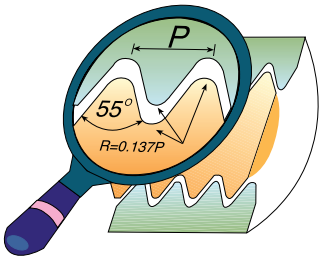
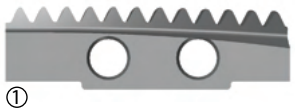
Insert Size	Fig.	Pitch TPI	Ext./ Int.	UN	UNC	UNF	UNS	Ordering code	Toolholder
H45	2	16	Int.	1 15/16 - 2 1/2			2 1/16 - 2	H45 I 16 UN	SR177H45...
		12	Int.	1 15/16 - 2 5/8				H45 I 12 UN	
		8	Int.	2 1/8- 2 5/8				H45 I 8 UN	
		6	Int.	2 1/8- 2 3/4				H45 I 6 UN	
		4.5	Int.		2 1/4			H45 I 4.5 UN	
		4	Int.		2 1/2- 2 3/4			H45 I 4 UN	
H63	2	16	Int.	≥2 5/8				H63 I 16 UN	SR248H63...
		12	Int.	≥2 3/4				H63 I 12 UN	
		8	Int.	≥2 3/4				H63 I 8 UN	
		6	Int.	≥2 7/8				H63 I 6 UN	
		4	Int.		≥3			H63 I 4 UN	

Whitworth

Same insert for internal and external thread

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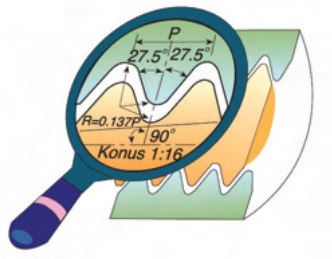
Insert Size	Fig.	Pitch TPI	Ordering code	Thread Size	Toolholder
H13	1	19	H13-19 W	G 3/8	SR0510H13...
H15	1	14	H15-14 W	G 1/2	SR0590H15...
H17	1	14	H17-14 W	G 1/2 - 5/8	SR0670H17...
		11	H17-11 W	G ≥ 1"	
H19	1	14	H19-14 W	G 3/4 - 7/8	SR0750H19...
		11	H19-11 W	G ≥ 1"	
H23	2	14	H23-14 W	Int. G 7/8" Ext. ≥ G 1/2"	SR091H23...
		11	H23-11 W	≥ G1"	
H27	2	11	H27- 11 W	≥ G1"	SR106H27…
H32	2	14	H32-14 W	Ext. ≥ G 1/2"	SR126H32...
		11	H32-11 W	Int. ≥ G 1 1/8" Ext. ≥ G 1"	
H45	2	11	H45-11 W	Int. ≥ G 1 5/8" Ext. ≥ G 1"	SR177H45...
H63	2	11	H63-11 W	Int. ≥ G 2 3/8" Ext. ≥ G 1"	SR248H63...

Spiral Mill - Thread Inserts

BSPT

Same insert for internal and external thread



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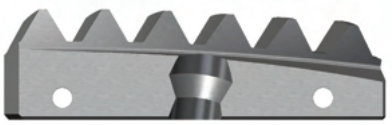
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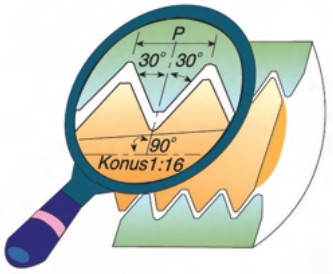
Insert Size	Fig.	Pitch TPI	Ordering code	Thread Size	Toolholder
H13	1	19	H13-19 BSPT	3/8	SR0510H13...
H15	1	14	H15-14 BSPT	1/2 - 3/4	SR0590H15...
H17	1	14	H17-14 BSPT	1/2 - 3/4	SR0670H17...
H23	2	11	H23-11 BSPT	≥ 1"	SR091H23...
H32	2	11	H32-11 BSPT	Int. ≥ 1 1/8" Ext. ≥ 1"	SR126H32...
H45	2	11	H45-11 BSPT	Int. ≥ 1 3/4" Ext. ≥ 1"	SR177H45...
H63	2	11	H63-11 BSPT	Int. ≥ 2 1/2" Ext. ≥ 1"	SR248H63...

NPT

Same insert for internal and external thread



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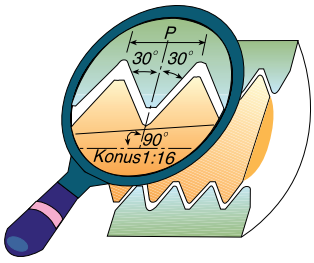
Insert Size	Fig.	Pitch TPI	Ordering code	Thread Size	Toolholder
H13	1	18	H13-18 NPT	3/8	SR0510H13...
H15	1	14	H15-14 NPT	1/2 - 3/4	SR0590H15...
H17	1	14	H17-14 NPT	1/2 - 3/4	SR0670H17...
H23	2	11.5	H23-11.5 NPT	1"-2"	SR091H23...
H27	2	11.5	H27- 11.5 NPT	1" - 2"	SR106H27...
H32	2	14	H32-14 NPT	Ext. 1/2" - 3/4"	SR126H32...
		11.5	H32-11.5 NPT	Int. 1 1/4"-2" Ext. 1"- 2"	
H45	2	11.5	H45-11.5 NPT	Int. ≥ 2" Ext. ≥ 1"	SR177H45...
		8	H45- 8 NPT	≥ 2 1/2"	
H63	2	11.5	H63-11.5 NPT	Ext. 1-2"	SR248H63...
		8	H63- 8 NPT	≥ 3"	

NPTF

Same insert for internal and external thread



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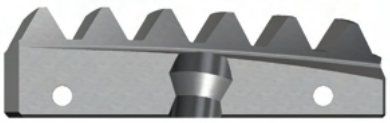

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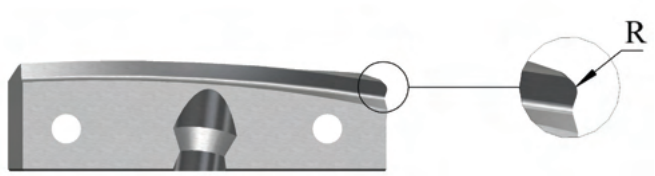
Insert Size	Fig.	Pitch TPI	Ordering code	Thread Size	Toolholder
H13	1	18	H13-18 NPTF	3/8	SR0510H13...
H15	1	14	H15-14 NPTF	1/2 - 3/4	SR0590H15...
H17	1	14	H17-14 NPTF	1/2 - 3/4	SR0670H17...
H23	2	11.5	H23-11.5 NPTF	1"-2"	SR091H23...
H32	2	11.5	H32-11.5 NPTF	Int. 1 1/4"-2" Ext. 1" -2"	SR126H32...

NPS

Same insert for internal and external thread

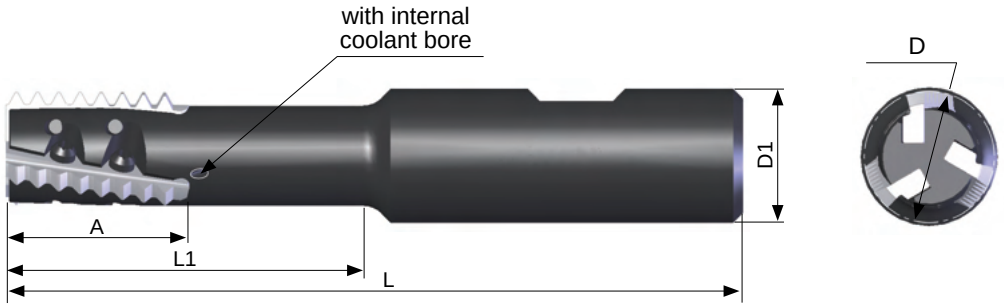
Insert Size	Pitch TPI	Thread	Ordering code	Toolholder
H13	18	3/8	H13-18 NPS	SR0510H13...
H15	14	1/2 - 3/4	H15-14 NPS	SR0590H15...
H17	14	1/2 - 3/4	H17-14 NPS	SR0670H17...

Spiral Finishing Inserts



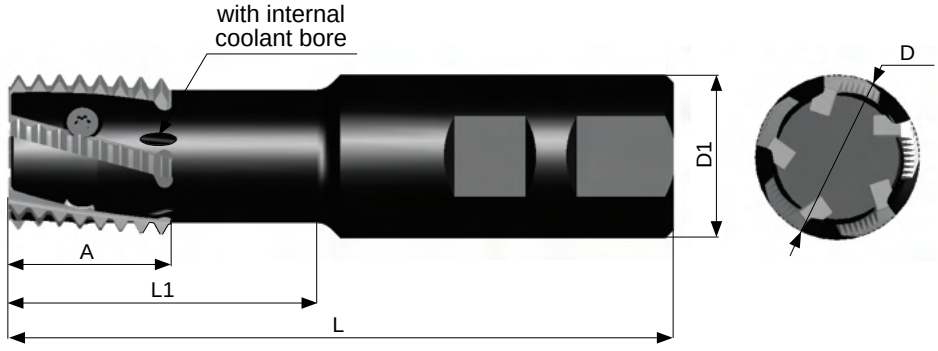
Insert Size	R	Ordering code	Toolholder
H23	0.2	H23 F R 0.2	SR091H23...
	0.5	H23 F R 0.5	
	1.0	H23 F R 1.0	
H32	0.2	H32 F R 0.2	SR126H32...
	0.5	H32 F R 0.5	
	1.0	H32 F R 1.0	
H45	0.2	H45 F R 0.2	SR177H45...
	0.5	H45 F R 0.5	
	1.0	H45 F R 1.0	
	1.5	H45 F R 1.5	
	2.0	H45 F R 2.0	
H63	0.2	H63 F R 0.2	SR248H63...
	0.5	H63 F R 0.5	
	1.0	H63 F R 1.0	
	1.5	H63 F R 1.5	
	2.0	H63 F R 2.0	

Toolholders



Ordering Code	Insert Type	Insert size A	D	D1	L	L1	No. of Inserts	Screw	Key
SR0510H13S-1	H13	1.06	.51	.75	3.15	1.04	1	S13	K16
SR0510H13 -1	H13	1.06	.51	.75	3.54	1.38	1	S13	K16
SR0590H15 -1	H15	1.06	.59	.75	3.74	1.57	1	S15	K16
*SR0670H17 -2	H17	1.06	.67	.75	3.35	1.18	2	S17	K16
*SR0670H17J-2	H17	1.06	.67	.75	3.94	1.77	2	S17	K16
** SR0670H17-NPT	H17	1.06	.67	1.0	3.35	.77	2	S17	K16
SR0750H19 -2	H19	1.06	.75	.75	3.35	1.18	2	S19	K16
SR0750H19J-2	H19	1.06	.75	.75	4.33	2.16	2	S19	K16
SR083H21-3	H21	1.06	.83	.75	4.33	2.15	3	S19	K16

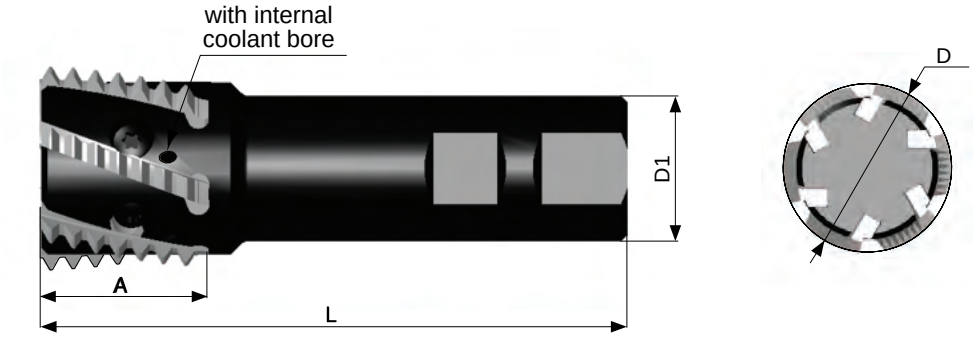
* When using NPT, NPTF, BSPT inserts the cutting diameter D = .71"
** Holder to be used only with H17-14 NPT inserts for 1/2 & 3/4 NPT threads



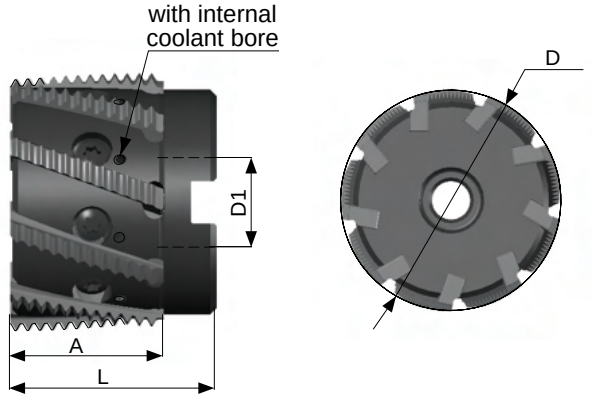
Ordering Code	Insert Type	Insert size A	D	D1	L	L1	No. of Inserts	Screw	Key
SR091H23 -2	H23	1.06	0.91	1.0	4.5	2.00	2	S23	K21
SR091H23M-2	H23	1.06	0.91	1.0	6.0	3.07	2	S23	K21
* SR106H27-4	H27	1.06	1.06	1.0	5.0	2.36	4	S23	K21
SR110H28 -3	H28	1.26	1.10	1.25	6.0	3.0	3	S32S	K22
SR126H32 -5	H32	1.26	1.26	1.25	5.0	2.36	5	S32	K22
SR126H32P-5	H32	1.26	1.26	1.25	7.0	3.58	5	S32	K22

* When using H27 I 7 UN insert the cutting diameter D = 1.04

Spiral Mill-Thread Toolholders



Ordering Code	Insert Type	Insert size A	D	D1	L	No. of Inserts	Screw	Key
SR157H40-4	H40	1.46	1.57	1.25	7.5	4	S45S	K40
SR177H45-6	H45	1.46	1.77	1.25	5.0	6	S45	K40



Ordering Code	Insert Type	Insert size A	D	D1	L	No. of Inserts	Screw	Key
SR126H32-5M	H32	1.26	1.26	0.50	2.05	5	S32S	K22
SR177H45-6M	H45	1.46	1.77	0.50	1.91	6	S45S	K40
SR248H63-9	H63	1.5	2.48	0.75	2.00	9	S63	K40

Special Tools

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

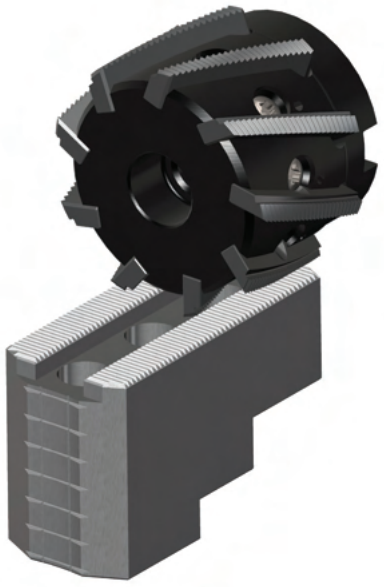
Case Studies

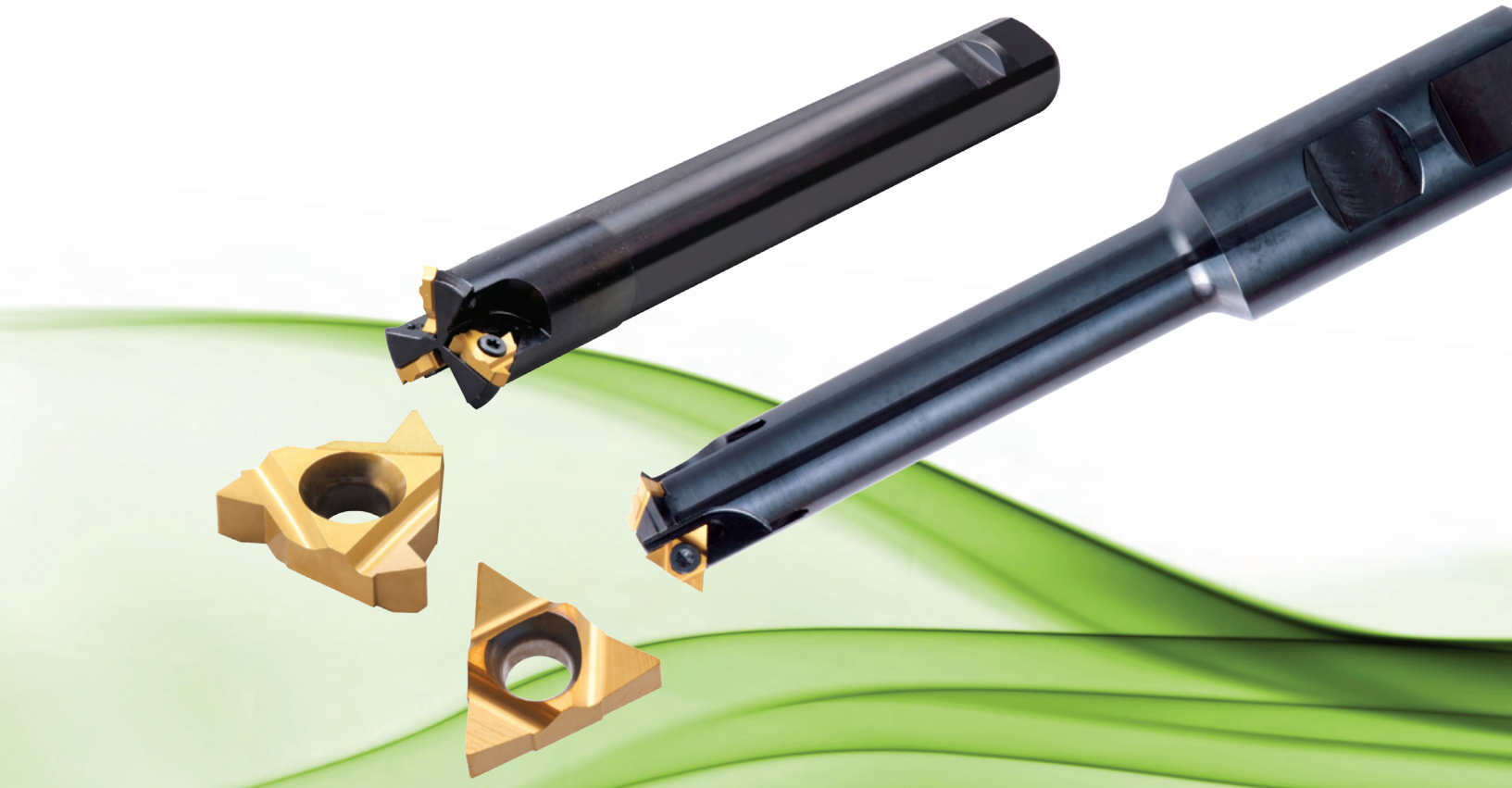
Case Study no. 1

Thread	M56x1.5
Internal/External	Internal
Thread Length	1.3"
Raw Material	Ductile Iron
Cutting Speed – Vc	427 ft/min
Tooth Load – Fz	0.0059 inch/tooth
Toolholder	SR177H45-6
Insert	H45 I 1.5 ISO MT7
Result	600 pcs with 0.0008" offset (Competitor – 40 pcs with 0.0059 offset)

Case Study no. 2

Application	Grooves Milling
Internal/External	External
Raw Material	Cast Steel
Cutting Speed – Vc	640 ft/min
Tooth Load – Fz	0.0039 inch/tooth
Toolholder	SR248H63-9
Insert	Taylor Made H63
Result	1350 pcs (Competitor – 540 pcs)





Demonstration

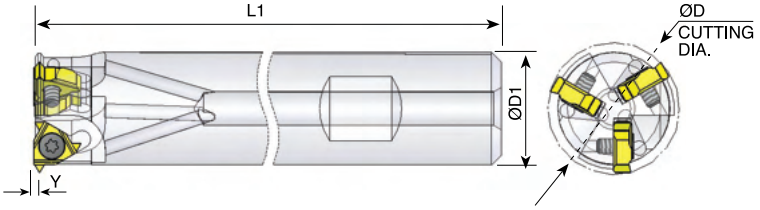
Mill-Thread Inserts and Toolholders for machining deep threads

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

Contents: Page:

Standard Toolholders and Inserts	2
U-Type Toolholders and Inserts	3-4

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



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

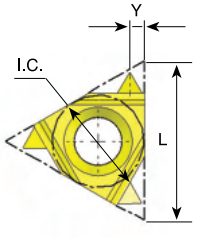
Partial 60˚ Size 11

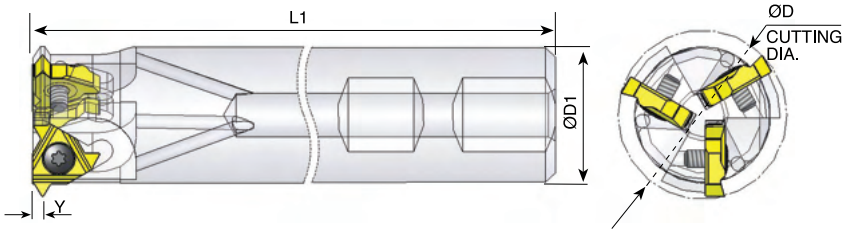
Ordering Code		Pitch Range mm	Pitch Range TPI
11 60D	INT.	1.0 - 2.0	24 - 12
	EX.	0.75 - 1.5	32 - 14

Coated Grade: BMA

Partial 55˚ Size 11

Ordering Code		Pitch TPI
11 55D	INT./EX.	24 - 14





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

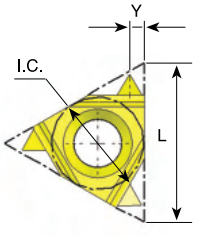
Partial 60˚ Size 16

Ordering Code		Pitch Range mm	Pitch Range TPI
16 60D	INT.	2.5 - 3.5	10 - 7
	EX.	2.0 - 3.0	12 - 8

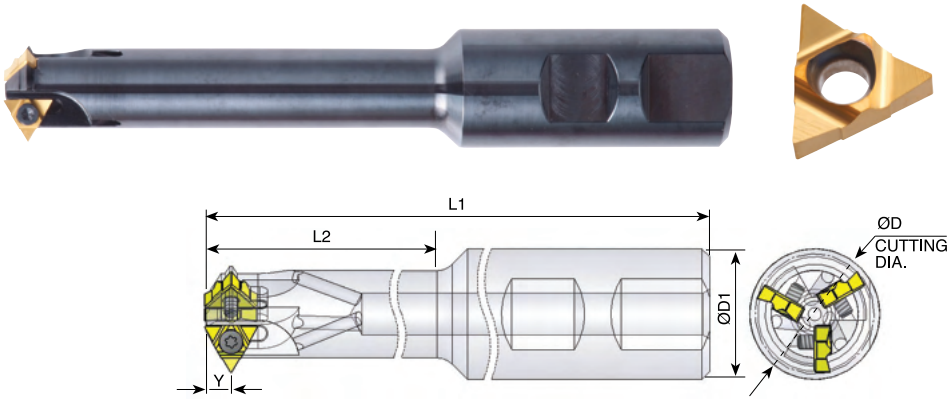
Coated Grade: BMA

Partial 55˚ Size 16

Ordering Code		Pitch TPI
16 55D	INT./EX.	12 - 8



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



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

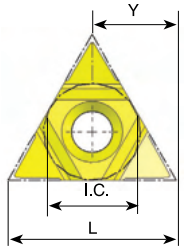
* Pitch limitations: for partial 60° - INT. - 10-9 TPI, EX. -12 - 10 TPI; for partial 55° - 12 - 9 TPI
** Pitch limitations: for partial 60° - INT. - 10-8 TPI, EX. -12 - 9 TPI; for partial 55° - 12 - 9 TPI

Partial 60˚ Size 11U

Ordering Code		Pitch Range mm	Pitch Range TPI
11U 60D	INT.	2.5 - 4.0	10 - 6
	EX.	2.0 - 3.0	12 - 8
11U 60D-18-12	INT.	1.5 - 2.0	18 - 12
	EX.	1.25 - 1.75	20 - 14

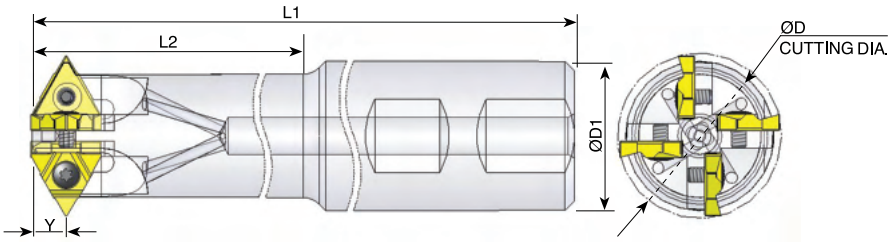
Partial 55˚ Size 11U

Ordering Code		Pitch TPI
11U 55D	INT./EX.	12 - 7

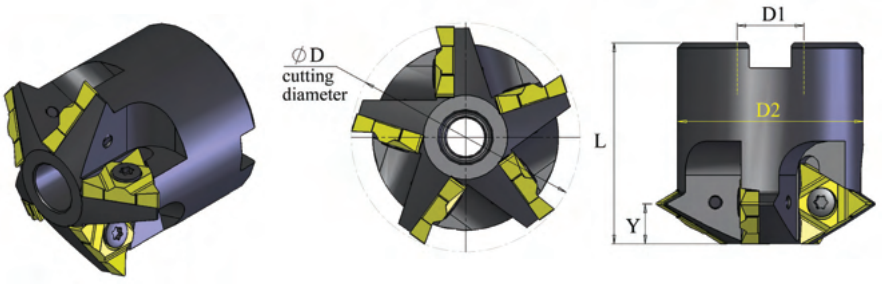


Coated Grade: BMA

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



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



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

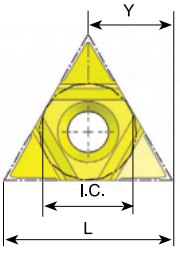
Partial 60˚ Size 16U

Ordering Code		Pitch Range mm	Pitch Range TPI
16U 60D	INT.	4.0 - 6.0	6 - 4
	EX.	3.0 - 5.0	8 - 5
16U 60D-16-8	INT.	1.5 - 3.0	16 - 8
	EX.	1.5 - 2.5	18 - 10

Coated Grade: BMA

Partial 55˚ Size 16U

Ordering Code		Pitch TPI
16U 55D	INT./EX.	6 - 4.5



Demonstration

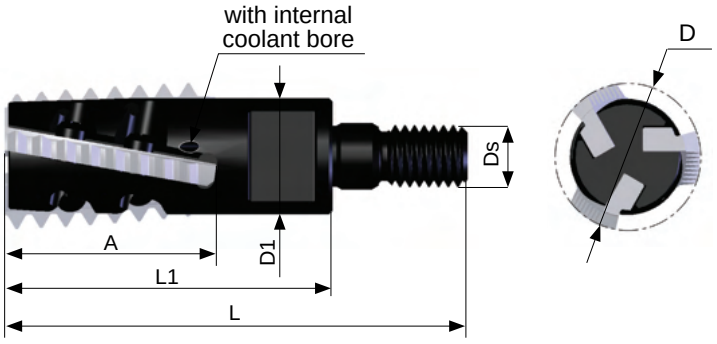
A Modular Line of Mill-Thread Toolholders

Contents:	Page:
Toolholders	2-4
Extensions	4

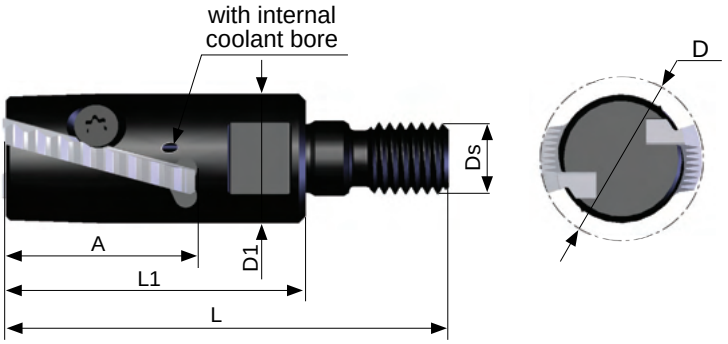
Carmex presents a modular line of Mill-Thread toolholders

- Carmex modular holders are ideal for deep reach applications.
- Unique clamping method enables optimal strength and indexability.
- Cost saving - Same shank can hold different heads.
- Toolholders with internal coolant bore.
- Screw connection allows long overhang.
- Carmex standard thread milling inserts fit these toolholders.
- Different steel extensions are available.
- Toolholders are compatible with common toolholding systems.

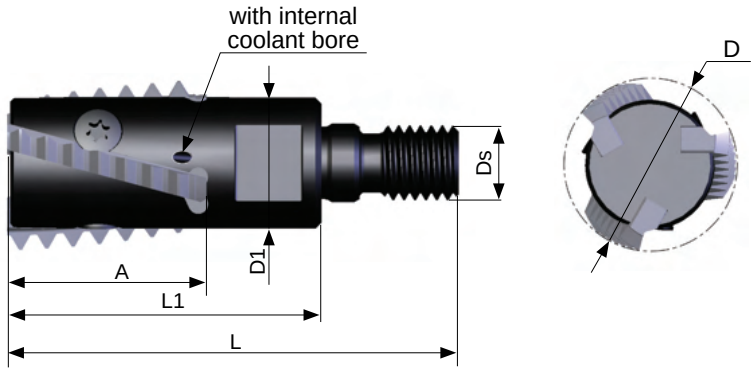
Toolholders



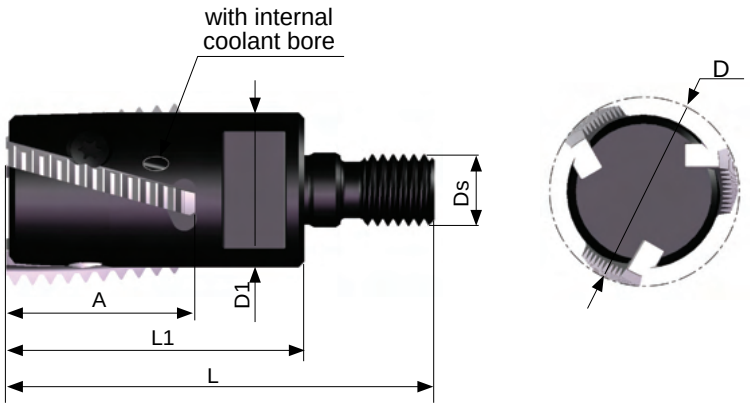
Ordering Code	Insert Type	Insert size A	D	D1	Ds	L1	L	No. of Inserts	Screw	Key
SR075H19 - 3 S	H19	1.06	.75	.59	M8	1.67	2.36	3	S19	K16



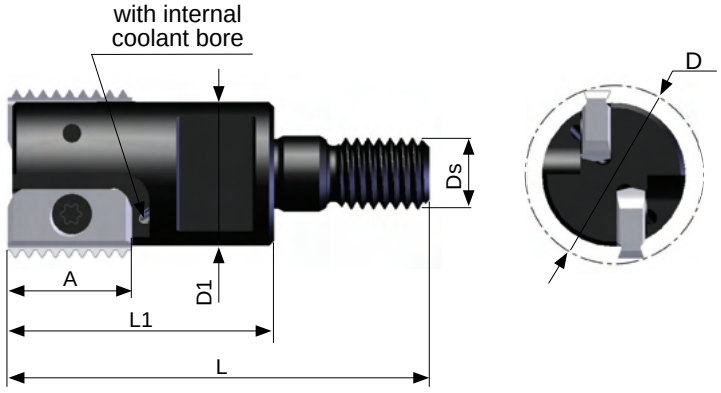
Ordering Code	Insert Type	Insert size A	D	D1	Ds	L1	L	No. of Inserts	Screw	Key
SR091H23 - 2 S	H23	1.06	.91	.71	M10	1.67	2.46	2	S23	K16



Ordering Code	Insert Type	Insert size A	D	D1	Ds	L1	L	No. of Inserts	Screw	Key
SR110H28 - 3 S	H28	1.26	1.10	.83	M12	1.97	2.83	3	S28	K16

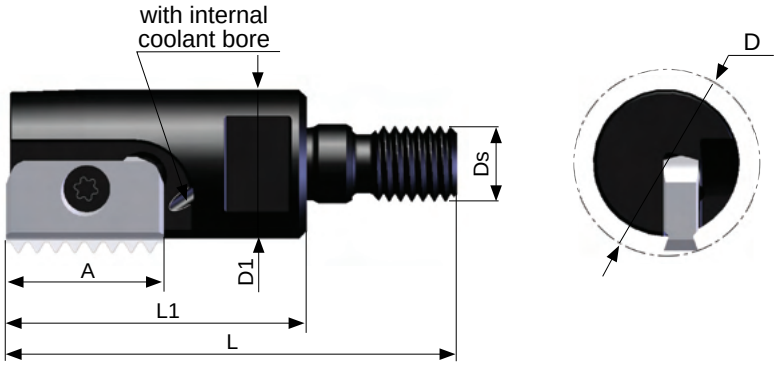


Ordering Code	Insert Type	Insert size A	D	D1	Ds	L1	L	No. of Inserts	Screw	Key
SR126H32 - 3 S	H32	1.26	1.26	1.02	M12	1.97	2.83	3	S32S	K16

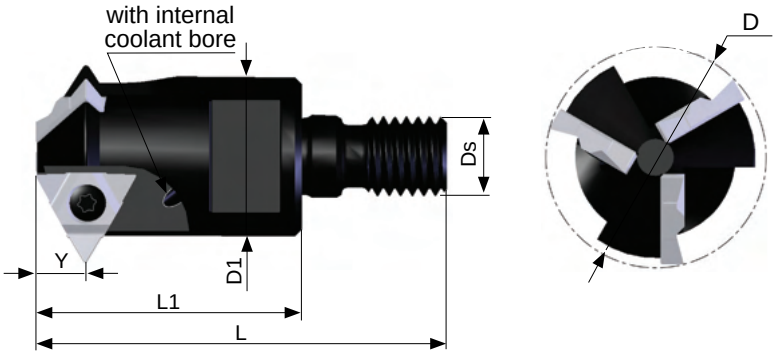


Ordering Code	Insert Type	Insert size A	D	D1	Ds	L1	L	No. of Inserts	Screw	Key
SR0790C14 - 2 S	MT14	.55	.79	.63	M8	1.20	1.89	2	S14	K14

Toolholders

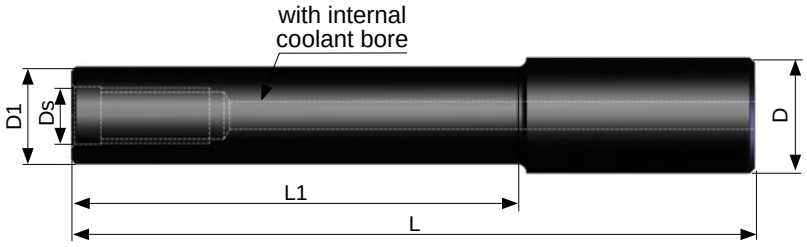


Ordering Code	Insert Type	Insert size A	D	D1	Ds	L1	L	No. of Inserts	Screw	Key
SR0980D21 - 1 S	MT21	.826	.98	.78	M10	1.57	2.36	1	S21	K21



Ordering Code	Insert Type	Insert size L	Insert size I.C.	Y	D	D1	Ds	L1	L	No. of Inserts	Screw	Key
SR1300D16U – 3 S	16U	16U	3/8U	.30	1.30	.94	M12	1.57	2.44	3	S16S	K16

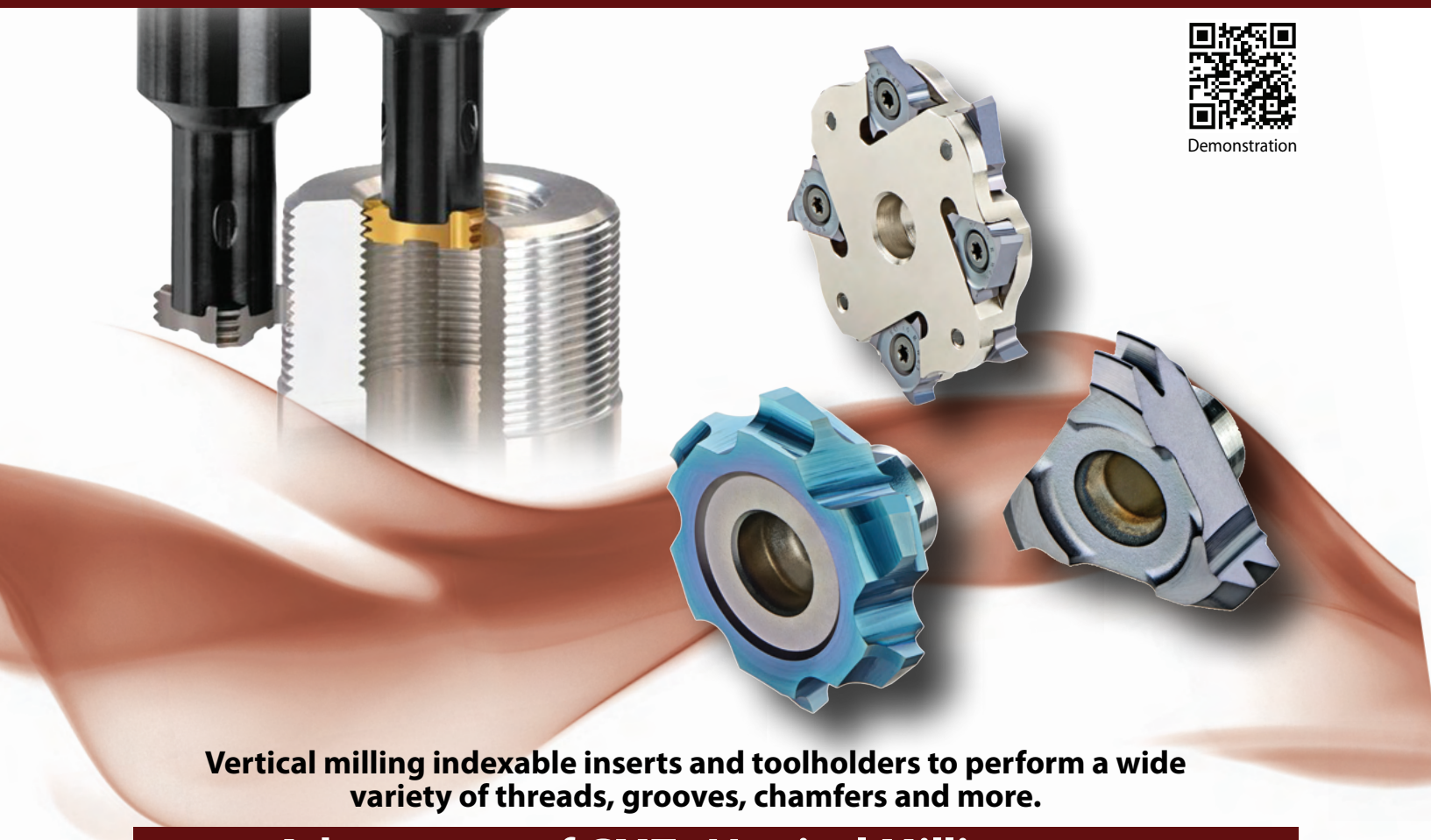
Extensions



Ordering Code	D	D1	Ds	L	L1
E.625 M08 L3.15	.625	.59	M08	3.15	1.18
E.75 M10 L3.15	.75	.71	M10	3.15	1.18
E.75 M10 L5.0	.75	.71	M10	5.0	3.15
E1 M12 L4.0	1.0	.83	M12	4.0	2.0
E1 M12 L6.0	1.0	.83	M12	6.0	4.0

CMT Vertical Milling | B07

Demonstration



Vertical milling indexable inserts and toolholders to perform a wide variety of threads, grooves, chamfers and more.

Advantages of CMT - Vertical Milling

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

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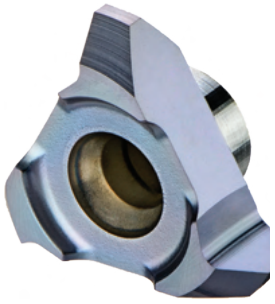
CMT
Vertical Milling

Advantages

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

CMT Straight Flute Inserts

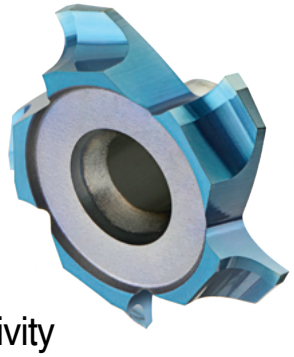


Carbide Grade: MT7

Inserts are available in MT7 Sub-Micron Grade with Titanium Aluminum Nitride multi-layer coating (ISO K10 - K20). This is a general purpose grade, covering a very wide range of materials.

CMT Spiral Multi Flute Inserts

- Multi flute: 4-8 cutting edges
- Spiral flute for smooth cutting



The new cutters are designed for large range of materials including hardened steel up to 62 HRc.

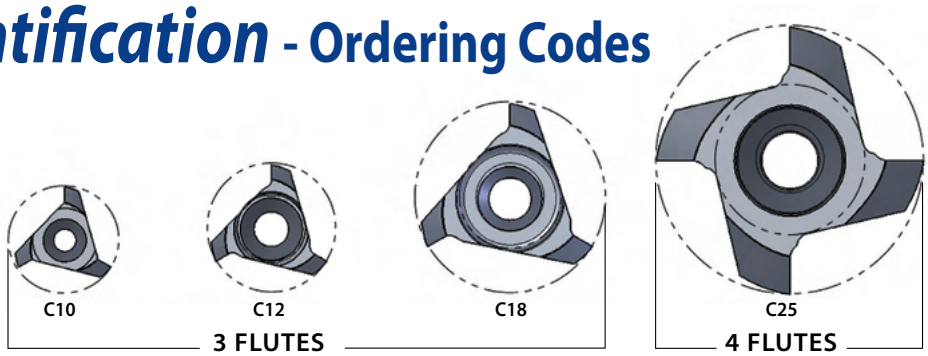
Advantages

- Longer tool life
- High material removal and higher feeds results increased productivity
- Excellent surface finish
- Reduced cycle time
- Low cutting forces due to the spiral multi flutes

Carbide Grade: MT8

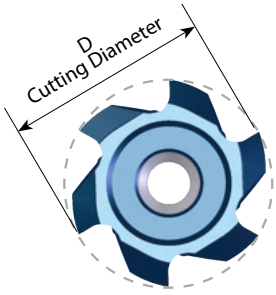
Sub Micron grade with advanced PVD triple coating (ISO K10-K20).
Extremely high heat resistant and smooth cutting operation, high performance, for all machining conditions.

Product Identification - Ordering Codes



C	18	I	12	UN	MT7
CMT Line	Cutting Diameter 10 = 10.0 mm 12 = 12.0 mm 18 = 17.8 mm 25 = 25.0 mm	I = Internal	Thread Pitch A, D, G, N, Q = Partial Profile C = Chamfering and Grooving CR = Corner Rounding F = Face Milling and Finishing W = Grooving	Thread Profile 60° & 55° ISO UN Whitworth Trapez Acme Chamfering	Carbide Grade

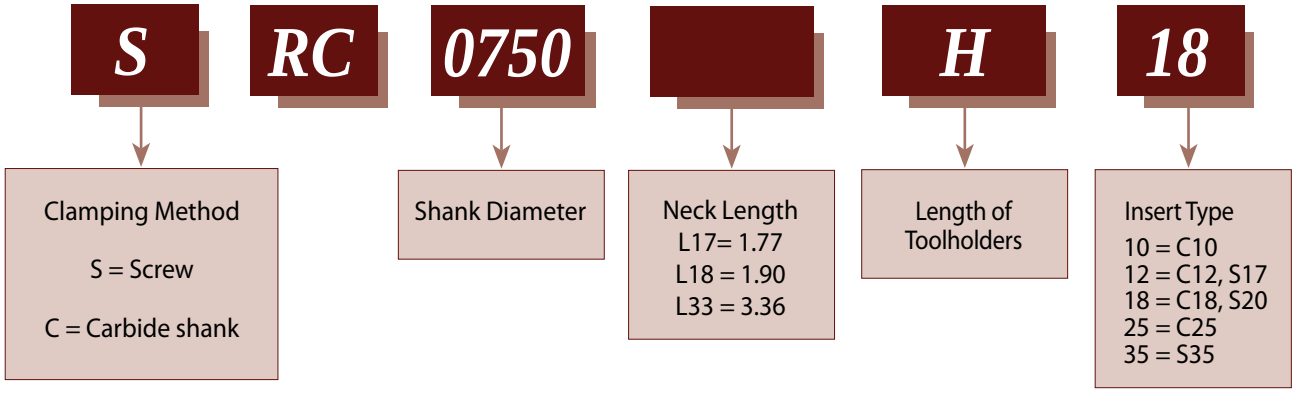
CMT Spiral Multi Flute Inserts



S	178	H	1.0	ISO	MT8
Spiral CMT line Multi flute	Cutting Diameter 178 = Ø17.8 mm 189 = Ø18.9 mm 200 = Ø20.0 mm 350 = Ø35.0 mm	Number of Flutes D = 4 E = 5 F = 6 H = 8	Thread Pitch G, N = Partial Profile H = Chamfering, Grooving and Boring W = Grooving R = Radius Groove Milling CR = Corner Rounding	Thread Profile Partial 60° & 55° ISO UN	Carbide Grade

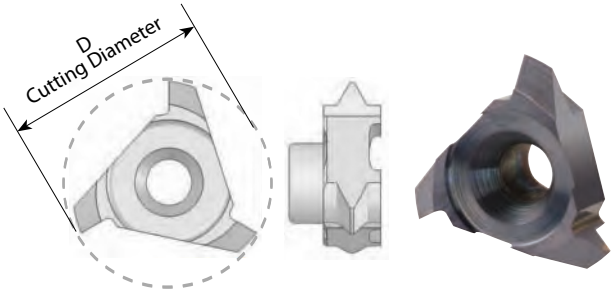
Product Identification - Ordering Codes

CMT Toolholders



Partial Profile 60° - ISO, UN

Same insert for internal and external thread



Insert Type	Ordering Code	Pitch Range mm	Pitch Range TPI	D	Thread Dia. (min) Pitch Low Range	Thread Dia. (min) Pitch High Range	Holder Code*
C10	C10 A60	Int. 0.5 - 0.8	56 - 28	.39	Ø ≥ .43	Ø ≥ .47	H1, 1.1, 2, 15, 16, 17
		Ex. 0.4 - 0.8	64 - 32				
	C10 G60	Int. 1.0 - 2.0	28 - 13	.39	Ø ≥ .47	Ø ≥ .55	H1, 2, 15, 17
		Ex. 0.8 - 1.75	32 - 15				
C12	C12 A60	Int. 0.5 - 0.8	56 - 28	.47	Ø ≥ .51	Ø ≥ .55	H3, 3.1, 4, 5, 18, 19, 20
		Ex. 0.4 - 0.8	64 - 32				
	C12 G60	Int. 1.0 - 2.0	28 - 13	.49	Ø ≥ .55	Ø ≥ .63	H3, 4, 5, 18, 19, 20
		Ex. 0.8 - 1.75	32 - 15				
	C12 AG60	Int. 1.5 - 2.5	18 - 11	.49	Ø ≥ .59	Ø ≥ .67	H3, 4, 5, 18, 20
		Ex. 1.25 - 2.0	24 - 13				
C18	C18 A60	Int. 0.5 - 0.8	56 - 28	.70	Ø ≥ .75	Ø ≥ .75	H5.1, 5.2, 6, 7, 8, 9, 20.1, 21, 22, 23
		Ex. 0.4 - 0.8	64 - 32				
	C18 G60	Int. 1.0 - 1.75	28 - 14	.70	Ø ≥ .79	Ø ≥ .83	
		Ex. 0.8 - 1.5	32 - 16				
	C18 D60	Int. 2.0 - 3.0	13 - 8	.70	Ø ≥ .83	Ø ≥ .91	
		Ex. 1.75 - 2.5	15 - 10				
C25	C25 G60	Int. 1.5 - 2.5	16 - 10	.98	Ø ≥ 1.10	Ø ≥ 1.18	H10, 11, 24, 25, 31
		Ex. 1.0 - 2.0	28 - 13				
	C25 N60	Int. 3.0 - 5.0	8 - 5	.98	Ø ≥ 1.18	Ø ≥ 1.34	
		Ex. 2.5 - 4.5	10 - 6				
	C25 Q60	Int. 5.0 - 6.0	5 - 4	.98	Ø ≥ 1.34	Ø ≥ 1.42	H10, 11, 24, 25
		Ex. 4.5 - 5.0	6 - 5				

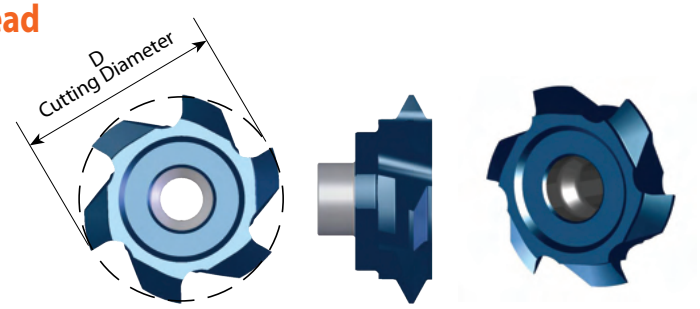
Order example: C18 D60 MT7

* For complete toolholder description see pages B07-22 and 23

Partial Profile 60° - ISO, UN

Same insert for internal and external thread

Multi Flute

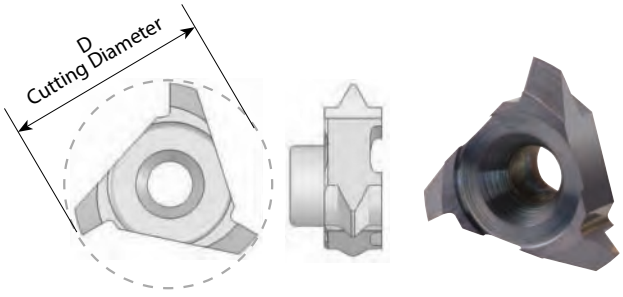


Insert Type	Ordering Code	Pitch Range mm	Pitch Range TPI	D	No. of Flutes	Thread Dia (min) Pitch Low range	Thread Dia (min) Pitch High range	Holder Code*
S17	S160 F AG60	Int. 1.0-3.5	28 - 7	.63	6	Ø ≥ .71	Ø ≥ .87	H3, 3.1, 4, 5, 18, 19, 20
		Ex. 0.8-3.0	32 - 8.5					
S20	S200 F G60	Int. 1.5-2.5	16 - 10	.79	6	Ø ≥ .91	Ø ≥ .98	H5.1, 5.2, 6, 7, 8, 9, 20.1, 21, 22, 23
		Ex. 1.0-2.0	28 - 13					
	S200 D N60	Int. 3.0-5.0	8 - 5	.79	4	Ø ≥ .98	Ø ≥ 1.14	H5.1, 5.2, 20.1, 21
		Ex. 2.5-4.5	10 - 6					
S35	S350 F N60	Int. 3.0-5.0	8 - 5	1.38	6	Ø ≥ 1.57	Ø ≥ 1.73	H12, 13, 14, 26, 32
		Ex. 2.5-4.5	10 - 6					
	S350 F Q60	Int. 5.0-6.0	5 - 4	1.38	6	Ø ≥ 1.73	Ø ≥ 1.81	H12, 13, 14, 26, 32
		Ex. 4.5-5.0	6 - 5					

Order example: S200 D N60 MT8

Partial Profile 60° - NPT

Same insert for internal and external thread

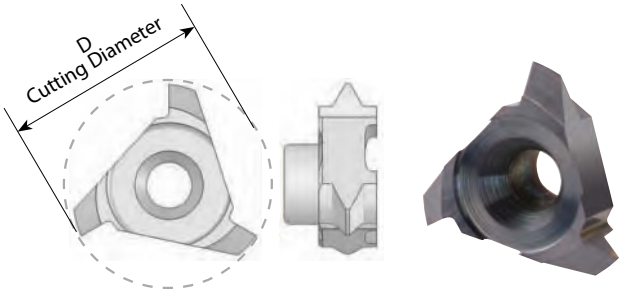


Insert Type	Ordering Code	Pitch TPI	Standard	D	Holder Code*
C10	C10 18 NPT	18	1/4 - 3/8	.39	H1, 1.1, 2, 15, 17
C18	C18 14 NPT	14	1/2 - 3/4	.62	H5.1, 5.2, 20.1, 21
C25	C25 11.5NPT	11.5	1-2	.98	H10, 11, 24, 25, 31
	C25 8 NPT	8	≥ 2 1/2	.98	

* For complete toolholder description see pages B07-22 and 23

Partial Profile 55° - BSP(G), BSF, BSW

Same insert for internal and external thread



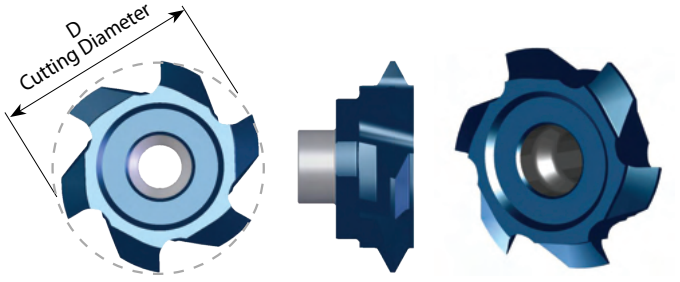
Insert Type	Ordering Code	Pitch Range TPI	D	Thread Dia. (min)	Holder Code*
C10	C10 G55	19 - 14	.39	Ø ≥ .51	H1, 2, 15,17
C12	C12 G55	28 - 19	.47	Ø ≥ .55	H3, 4, 5, 18, 19, 20
	C12 N55	14 - 11	.48	Ø ≥ .63	H3, 4, 5, 18, 20
C18	C18 G55	14 - 8	.71	Ø ≥ .91	H5.1, 5.2, 20.1, 21
C25	C25 N55	7 - 5	.98	Ø ≥ 1.34	H10, 11, 24, 25

Order example: C18 G55 MT7

Partial Profile 55° - BSP(G), BSF, BSW

Same insert for internal and external thread

Multi Flute



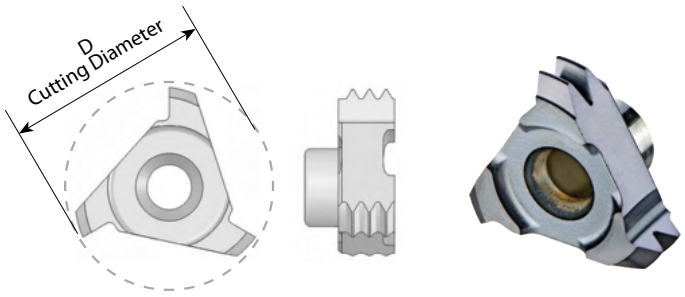
Insert Type	Ordering Code	Pitch Range TPI	D	No. of Flutes	Thread Dia. (min)	Holder Code*
S17	S170 F G55	11-8	.67	6	Ø ≥ .83	H3, 3.1, 4, 5, 18, 19, 20
S20	S195 F G55	14	.77	6	Ø ≥ .91	H5.1, 5.2, 6, 7, 8, 9, 20.1, 21, 22, 23
	S200 D N55	8-6	.79	4	Ø ≥ .98	

Order example: S200 D N55 MT8

* For complete toolholder description see pages B07-22 and 23

Full Profile - ISO

Inserts for internal thread



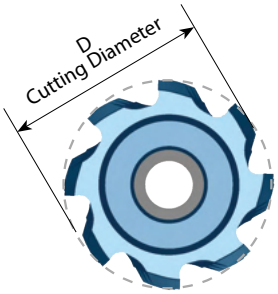
Insert Type	Ordering Code	Pitch mm	M coarse	M fine	Number of Teeth	D	Holder Code*
C10	C10 I 0.5 ISO	0.5		M10, M12	6	.35	H1, 1.1, 2, 15, 16, 17
	C10 I 0.75 ISO	0.75		M12	4	.39	
	C10 I 1.0 ISO	1.0		M12, M13	3	.39	
	C10 I 1.5 ISO	1.5		M13, M14	2	.39	
	C10 I 1.75 ISO	1.75	M12		1	.38	H1, 2, 15, 17
	C10 I 2.0 ISO	2.0	M14	M18	1	.39	
C12	C12 I 0.5 ISO	0.5		M13-M18	6	.47	H3, 3.1, 4, 5, 18, 19, 20
	C12 I 0.75 ISO	0.75		M13-M18	4	.47	
	C12 I 1.0 ISO	1.0		M14-M19	3	.47	
	C12 I 1.5 ISO	1.5		M15-M19	2	.47	
	C12 I 2.0 ISO	2.0	M16	M18, M20	1	.49	
	C12 I 2.5 ISO	2.5	M18, M20		1	.47	H3, 4, 5, 18, 20
	C12 I 3.0 ISO	3.0	M24		1	.49	
C18	C18 I 0.5 ISO	0.5		M19-M60	9	.70	H5.1, 5.2, 6, 7, 8, 9, 20.1, 21, 22, 23
	C18 I 0.75 ISO	0.75		M19-M60	6	.70	
	C18 I 1.0 ISO	1.0		M20-M60	5	.70	
	C18 I 1.25 ISO	1.25			4	.70	
	C18 I 1.5 ISO	1.5		M20-M60	3	.70	
	C18 I 2.0 ISO	2.0		M21-M60	2	.70	
	C18 I 2.5 ISO	2.5	M22		2	.70	
	C18 I 3.0 ISO	3.0	M24, M27	M28-M60	1	.70	
	C18 I 3.5 ISO	3.5	M30, M33		1	.70	
C25	C25 I 3.0 ISO	3.0	M32, M33	M30-M80	2	.98	H10, 11, 24, 25, 31
	C25 I 3.5 ISO	3.5	M33		1	.98	
	C25 I 4.0 ISO	4.0	M36, M39	M48-M80	1	.98	
	C25 I 4.5 ISO	4.5	M42, M45		1	.98	
	C25 I 5.0 ISO	5.0	M48, M52		1	.98	
	C25 I 5.5 ISO	5.5	M56, M60		1	.98	
	C25 I 6.0 ISO	6.0	M64, M68	M70-M80	1	.98	

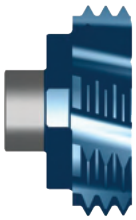
* For complete toolholder description see pages B07-22 and 23

Full Profile - ISO

Inserts for internal thread

Multi Flute





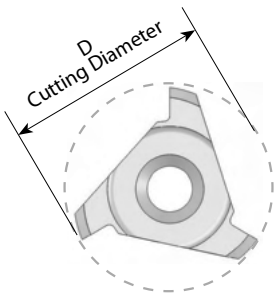
Insert Type	Ordering Code	Pitch mm	M coarse	M fine	Number of Teeth	D	No. of Flutes	Holder Code*
S17	S166 F 2.0 ISO	2.0		M20-M30	1	.65	6	H3, 3.1, 4, 5, 18, 19, 20
	S160 F 2.5 ISO	2.5	M20		1	.63	6	
S20	S163 H 1.0 ISO	1.0		M18-M60	5	.64	8	H5.1, 5.2, 6, 7, 8, 9, 20.1, 21, 22, 23
	S175 H 1.5 ISO	1.5		M20-M60	3	.69	8	
	S186 F 2.0 ISO	2.0		M22-M60	2	.73	6	
	S178 F 2.5 ISO	2.5	M22		2	.70	6	
	S189 F 3.0 ISO	3.0	M24, M27	M28-M60	1	.74	6	
	S200 F 3.5 ISO	3.5	M30, M33		1	.79	6	
	S200 F 4.0 ISO	4.0	M36, M39	M40-M60	1	.79	6	
	S200 F 4.5 ISO	4.5	M42		1	.79	5	
	S200 D 5.0 ISO	5.0	M48, M52		1	.79	4	
S35	S350 F 4.5 ISO	4.5	M45	M54	1	1.38	6	H12, 13, 14, 26, 32
	S350 F 6.0 ISO	6.0	M64, M68		1	1.38	6	
	S350 F 8.0 ISO	8.0		M130-M200	1	1.38	6	

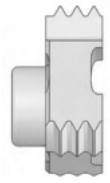
Order example: S350 F 6.0 ISO MT8

* For complete toolholder description see pages B07-22 and 23

Full Profile - UN

Inserts for internal thread





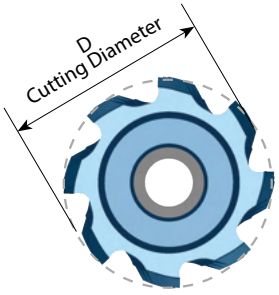
Insert Type	Ordering Code	Pitch TPI	Nominal Size	UNC	UNF	UNEF	Number of Teeth	D	Holder Code*
C10	C10 I 20 UN	20			1/2		2	.39	H1, 1.1, 2, 15, 16, 17
	C10 I 18 UN	18			9/16		2	.39	
	C10 I 13 UN	13		1/2			1	.39	H1, 2, 15, 17
	C10 I 12 UN	12	5/8, 11/16, 3/4	9/16			1	.39	
C12	C12 I 32 UN	32	9/16, 5/8				3	.47	H3, 3.1, 4, 5, 18, 19, 20
	C12 I 28 UN	28	9/16, 5/8, 11/16				3	.47	
	C12 I 24 UN	24				9/16, 5/8, 11/16	2	.47	
	C12 I 20 UN	20	9/16, 5/8, 11/16			3/4	2	.47	
	C12 I 18 UN	18			5/8		2	.47	
	C12 I 16 UN	16	5/8, 11/16		3/4		1	.47	
	C12 I 12 UN	12	5/8				1	.49	
	C12 I 11 UN	11		5/8			1	.47	H3, 4, 5, 18, 20
	C12 I 10 UN	10		3/4			1	.47	
C18	C18 I 32 UN	32	3/4, 13/16, 7/8				6	.70	H5.1, 5.2, 6, 7, 8, 9, 20.1, 21, 22, 23
	C18 I 28 UN	28	3/4, 13/16, 7/8				5	.70	
	C18 I 24 UN	24					4	.70	
	C18 I 20 UN	20	1 1/16, 1 1/8			13/16, 7/8, 15/16	3	.70	
	C18 I 18 UN	18					3	.70	
	C18 I 16 UN	16	7/8, 1				3	.70	
	C18 I 14 UN	14			7/8		2	.70	
	C18 I 12 UN	12	7/8		1, 1 1/8		2	.70	
	C18 I 11 UN	11					2	.70	
	C18 I 9 UN	9		7/8			1	.70	
	C18 I 8 UN	8		1			1	.70	
C25	C25 I 8 UN	8	1 3/16, 1 1/4, 1 5/16				2	.98	H10, 11, 24, 25, 31
	C25 I 7 UN	7		1 1/4			1	.98	
	C25 I 6 UN	6	1 7/16, 1 9/16	1 3/8, 1 1/2			1	.98	
	C25 I 5 UN	5		1 3/4			1	.98	
	C25 I 4 UN	4		2 1/2, 2 3/4			1	.98	H10, 11, 24, 25

* For complete toolholder description see pages B07-22 and 23

Full Profile - UN

Inserts for internal thread

Multi Flute



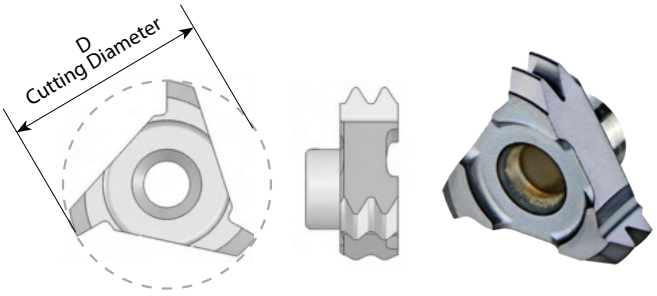
Insert Type	Ordering Code	Pitch TPI	Nominal size	UNC	UNF	UNEF	Number of Teeth	D	No. of Flutes	Holder Code*
S17	S150 F 10 UN	10		3/4			1	.59	6	H3, 3.1, 4, 5, 18, 19, 20
S20	S160 H 24 UN	24				11/16	4	.63	8	H5.1, 5.2, 6, 7, 8, 9, 20.1, 21, 22, 23
	S169 H 20 UN	20				3/4, 13/16, 7/8, 15/16, 1	4	.67	8	
	S164 F 16 UN	16	7/8, 15/16, 1		3/4		3	.65	6	
	S191 F 14 UN	14			7/8		2	.75	6	
	S186 F 12 UN	12	7/8, 15/16		1		2	.73	6	
	S178 F 9 UN	9		7/8			1	.70	6	
	S200 F 8 UN	8	1 1/8	1			1	.79	6	
	S200 F 7 UN	7		1 1/8, 1 1/4			1	.79	6	
	S200 E 6 UN	6	1 7/16	1 3/8, 1 1/2			1	.79	5	
	S200 D 5 UN	5		1 3/4			1	.79	4	
S35	S350 F 8 UN	8	1 5/8, 1 3/4				2	1.38	6	H12, 13, 14, 26, 32
	S350 F 4 UN	4		2 1/2, 2 3/4, 3			1	1.38	6	

Order example: S200 F 8 UN MT8

* For complete toolholder description see pages B07-22 and 23

G 55° BSW, BSF, BSP

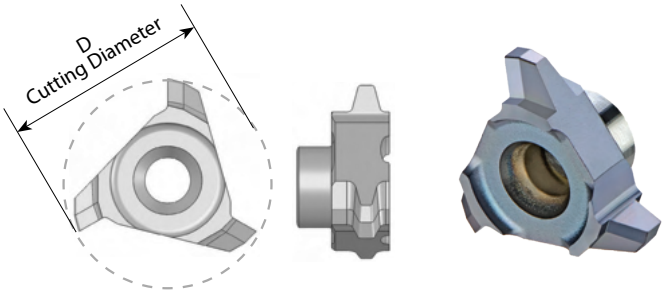
Same insert for internal and external thread



Insert Type	Ordering Code	Pitch TPI	Standard	Number of Teeth	D	Holder Code*
C10	C10 19 W	19	G 1/4	2	.39	H1, 1.1, 2, 15, 16, 17
C12	C12 19 W	19	G 3/8	2	.47	H3, 3.1, 4, 5, 18, 19, 20
C18	C18 14 W	14	G 1/2 - 7/8	2	.70	H5.1, 5.2, 6, 7, 8, 9, 20.1, 21, 22, 23
	C18 11 W	11	G ≥ 1	2	.70	
C25	C25 11 W	11	G ≥ 1	2	.98	H10, 11, 24, 25, 31

Trapez - DIN 103

Inserts for internal thread

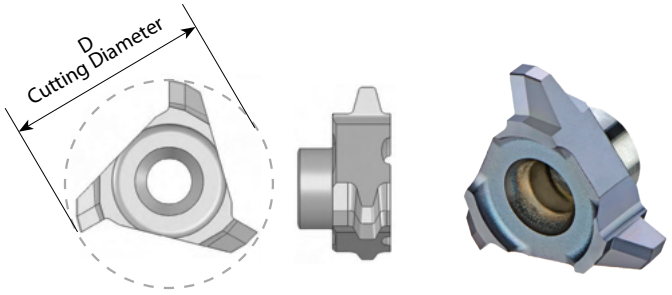


Insert Type	Ordering Code	Pitch mm	Standard	D	Holder Code*
C10	C10 I 2 TR	2.0	Tr16x2, Tr18x2	.39	H1, 2, 15, 17
C12	C12 I 2 TR	2.0	Tr20x2	.47	H3, 4, 5, 18, 20
C18	C18 I 3 TR	3.0	Tr24x3, Tr26x3	.70	H5.1, 5.2, 6, 7, 8, 9, 20.1, 21, 22, 23
	C18 I 4 TR	4.0	Tr26x4	.70	H5.1, 5.2, 20.1, 21
	C18 I 5 TR	5.0	Tr28x5	.70	H5.1 ,5.2 ,20.1
C25	C25 I 6 TR	6.0	Tr36x6	.98	H10, 11, 24, 25

* For complete toolholder description see pages B07-22 and 23

Acme

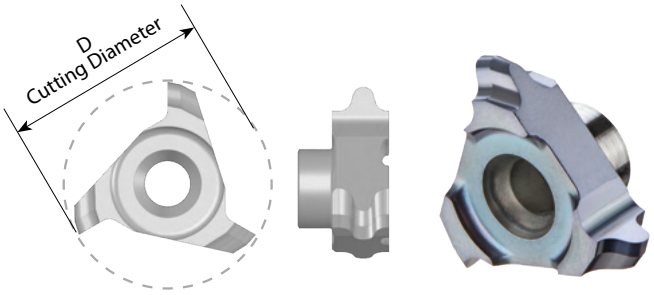
Inserts for internal thread



Insert Type	Ordering Code	Pitch TPI	Standard	D	Holder Code*
C18	C18 I 5 ACME	5	$1\frac{1}{8}$, $1\frac{1}{4}$	.71	H5.1, 5.2, 20.1
C25	C25 I 4 ACME	4	$1\frac{1}{2}$, $1\frac{3}{4}$, 2	.98	H10, 11, 24, 25

Round-DIN 405

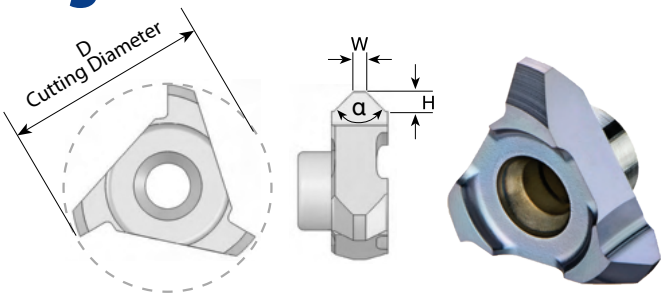
Inserts for internal thread



Insert Type	Ordering Code	Pitch TPI	Standard	D	Holder Code*
C18	C18 1/8 RD	8	1/8RD	.70	H5.1, 5.2, 6, 7, 8, 9, 20.1, 21, 22, 23
	C18 1/6 RD	6	1/6RD	.70	H5.1, 5.2, 20.1, 21
C25	C25 1/4 RD	4	1/4RD	.98	H10, 11, 24, 25, 31

* For complete toolholder description see pages B07-22 and 23

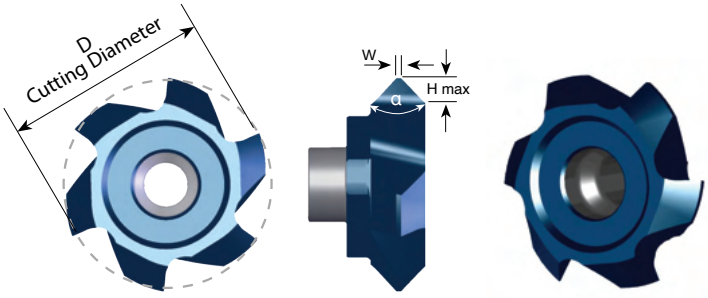
Chamfering and Grooving



Insert Type	Ordering Code	D	H	W	α	Holder Code*
C10	C10 C90	.39	.051	.016	90˚	H1, 2, 15, 17
C12	C12 C90	.47	.053	.012	90˚	H3, 4, 5, 18, 20
C18	C18 C90	.70	.077	.043	90˚	H5.1, 5.2, 6, 7, 8, 9, 20.1, 21, 22, 23
C25	C25 C90	.98	.098	.039	90˚	H10, 11, 24, 25, 31

Chamfering, Grooving and Boring

Multi Flute

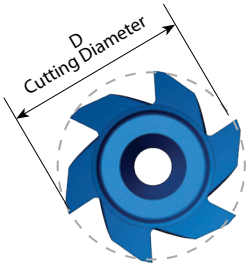


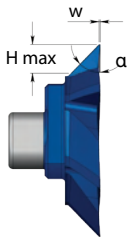
Insert Type	Ordering Code	D	H max	W	α	No. of Flutes	Holder Code*
S17	SC160 F H14	.63	.053	.008	90°	5	H3, 3.1, 4, 5,18,19, 20
S20	SC170 F H14	.67	.053	.008	90°	5	H6, 7, 8, 9, 21, 22, 23
	SC200 F H14	.79	.053	.008	90°	6	H5.1, 5.2, 6, 7, 8, 9, 20.1, 21, 22, 23
	SC200 F H24	.79	.093	.008	90°	6	
S35	SC350 F H42	1.38	.165	.008	90°	6	H12, 13, 14, 26, 32
S20	SC200 F H20	.79	.077	.039	90°	6	H5.1, 5.2, 6, 7, 8, 9, 20.1, 21, 22, 23
	SC200 F H17	.79	.067	.059	90°	6	
	SC200 F H15	.79	.059	.079	90°	6	
	SC200 F H12	.79	.047	.098	90°	6	

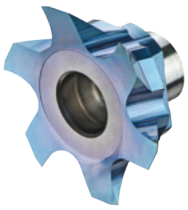
* For complete toolholder description see pages B07-22 and 23

Dovetail 45°

Multi Flute

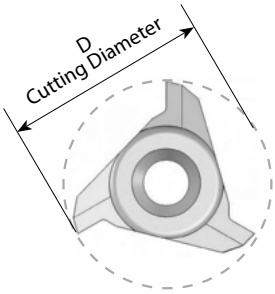


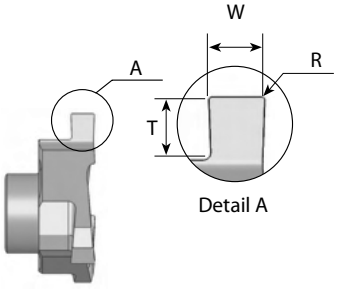


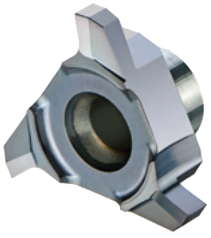


Insert Type	Ordering Code	D	H	W	α	No. of Flutes	Holder Code*
S17	SC170 F A45	.67	.10	.004	45°	6	H3, 3.1, 4, 5, 18, 19, 20
S20	SC200 F A45	.79	.12	.004	45°	6	H5.1, 5.2, 6, 7, 8, 9, 20.1, 21, 22, 23

Groove Milling





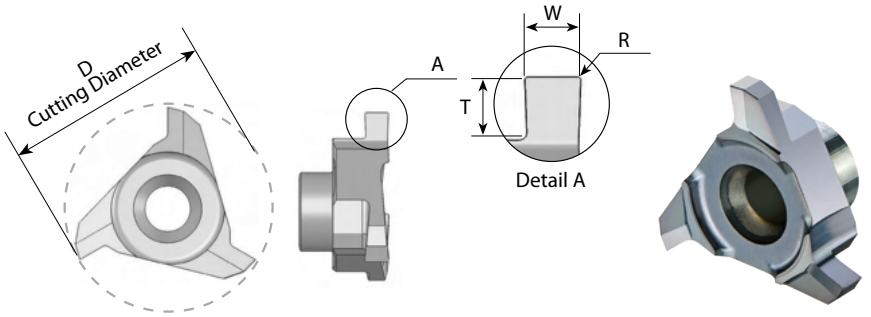


Insert Type	Ordering Code	D	W ±.001	T max.	R	Groove Dia. (min.)	Holder Code*
C10	C10 W08	.39	.031	.03	.004	Ø > .39	H1, 1.1, 2, 15, 16, 17
	C10 W09	.39	.035	.04	.004	Ø > .39	
	C10 W10	.39	.039	.04	.004	Ø > .39	
	C10 W15	.39	.059	.05	.004	Ø > .39	H1, 2, 15, 17
	C10 W20	.39	.079	.05	.004	Ø > .39	
C12	C12 W08	.47	.031	.03	.004	Ø > .47	H3, 3.1, 4, 5, 18, 19, 20
	C12 W10	.47	.039	.04	.004	Ø > .47	
	C12 W10T	.48	.039	.06	.008	Ø > .48	H3, 4, 5, 18, 20
	C12 W15	.49	.059	.06	.004	Ø > .49	
	C12 W20	.49	.079	.06	.004	Ø > .49	
	C12 W25	.49	.098	.06	.004	Ø > .49	
C18	C18 W10	.70	.039	.06	.004	Ø > .70	H5.1, 5.2, 6, 7, 8, 9, 20.1, 21, 22, 23
	C18 W12	.70	.047	.06	.004	Ø > .70	
	C18 W15	.70	.059	.08	.004	Ø > .70	
	C18 W16	.70	.063	.08	.004	Ø > .70	
	C18 W20	.70	.079	.11	.004	Ø > .70	H5.1, 5.2, 20.1
C25	C25 W20	.98	.079	.12	.008	Ø > .98	H10, 11, 24, 25, 31
	C25 W25	.98	.098	.12	.008	Ø > .98	
	C25 W30	.98	.118	.12	.008	Ø > .98	
	C25 W35	.98	.138	.14	.008	Ø > .98	
	C25 W40	.98	.157	.14	.008	Ø > .98	
	C25 W50	.98	.197	.14	.008	Ø > .98	

* For complete toolholder description see pages B07-22 and 23

Groove Milling

DIN 471/472



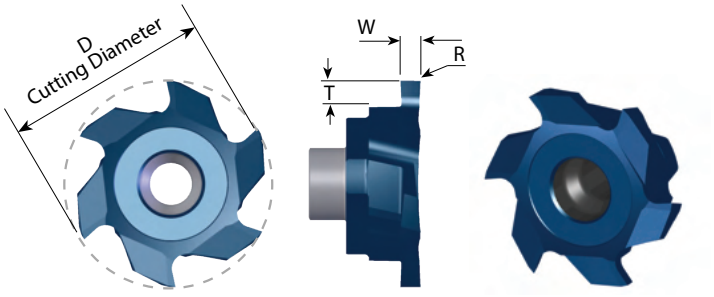
Insert Type	Ordering Code	D	Nom' groove width	W -.0016	T max.	R	Groove Dia. (min.)	Holder Code*
C10	C10 W087	.39	.031	.034	.051	0	Ø > .39	H1, 2, 15, 17
	C10 W097	.39	.035	.038	.051	0	Ø > .39	
	C10 W121	.39	.043	.048	.051	0	Ø > .39	
	C10 W141	.39	.051	.056	.051	.004	Ø > .39	
	C10 W171	.39	.063	.067	.051	.004	Ø > .39	
C12	C12 W121	.49	.043	.048	.067	0	Ø > .49	H3, 4, 5, 18, 20
	C12 W141	.49	.051	.056	.067	.004	Ø > .49	
	C12 W171	.49	.063	.067	.067	.004	Ø > .49	
C18	C18 W121	.70	.043	.048	.114	.004	Ø > .70	H5.1, 5.2, 20.1
	C18 W141	.70	.051	.056	.114	.004	Ø > .70	
	C18 W171	.70	.063	.067	.114	.004	Ø > .70	
	C18 W196	.70	.073	.077	.114	.006	Ø > .70	

Order example: C12 W141 MT7

* For complete toolholder description see pages B07-22 and 23

Groove Milling

Multi Flute



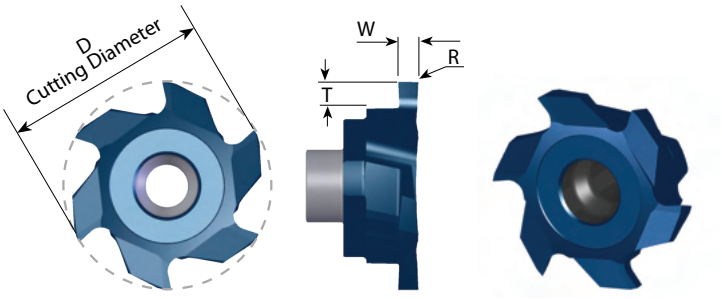
Insert Type	Ordering Code	D	W ±.001	T max.	R	Groove Dia. (min)	No. of Flutes	Holder Code*
S17	SG170 E W15	.67	.059	.11	.008	Ø > .67	6	H3, 3.1, 4, 5, 18, 19, 20
	SG170 E W20	.67	.079	.11	.008	Ø > .67	6	
	SG170 E W25	.67	.098	.11	.008	Ø > .67	6	
S20	SG200 E W15	.79	.059	.11	.008	Ø > .79	6	H5.1, 5.2, 6, 7, 8, 9, 20.1, 21, 22, 23
	SG200 E W20	.79	.079	.11	.008	Ø > .79	6	
	SG200 E W25	.79	.098	.11	.008	Ø > .79	6	
	SG200 E W30	.79	.118	.11	.008	Ø > .79	6	
	SG200 E W40	.79	.157	.11	.008	Ø > .79	6	
	SG200 E W49	.79	.193	.11	.008	Ø > .79	6	
S20	SG200 E W20T	.79	.079	.15	.008	Ø > .79	5	H5.1, 5.2, 20.1
	SG200 E W25T	.79	.098	.15	.008	Ø > .79	5	
	SG200 E W30T	.79	.118	.15	.008	Ø > .79	5	
S35	SG350 E W30T	1.38	.118	.26	.008	Ø > 1.38	6	H12, 13, 14, 26, 32
	SG350 E W40T	1.38	.157	.26	.008	Ø > 1.38	6	
	SG350 E W50T	1.38	.197	.26	.008	Ø > 1.38	6	
	SG350 E W60T	1.38	.236	.26	.008	Ø > 1.38	6	
	SG350 E W80T	1.38	.315	.26	.008	Ø > 1.38	6	

* For complete toolholder description see pages B07-22 and 23

Groove Milling

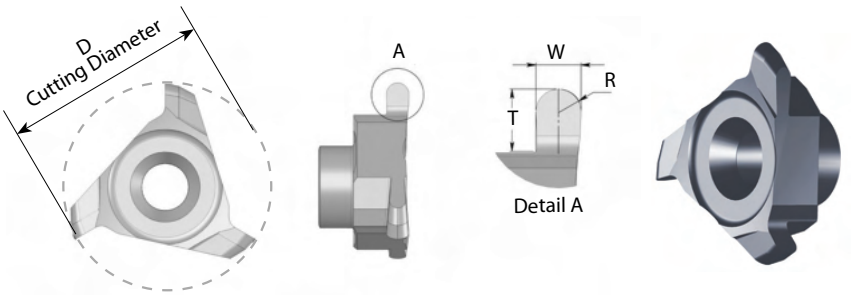
Multi Flute

DIN 471/472



Insert Type	Ordering Code	D	Nom` groove width	W -.0016	T Max.	R	Groove Dia. (min)	No. of Flutes	Holder Code*
S20	SG200 F W121	.79	.043	.048	.16	0	Ø > .79	6	H5.1, 5.2, 20.1
	SG200 F W141	.79	.051	.055	.16	.004	Ø > .79	6	
	SG200 F W171	.79	.063	.067	.16	.004	Ø > .79	6	
	SG200 F W196	.79	.073	.077	.16	.004	Ø > .79	6	

Full Radius Groove Milling

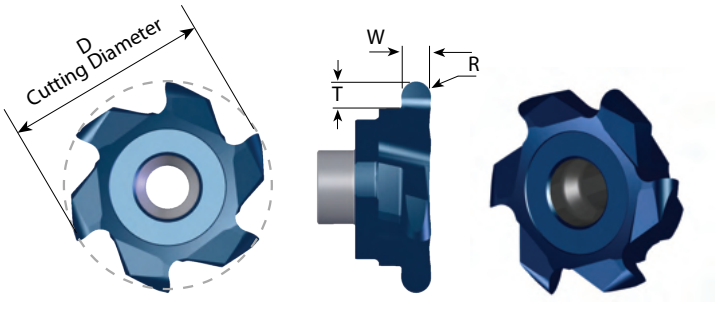


Insert Type	Ordering Code	D	R	W ±.001	T max.	Groove Dia. (min)	Holder Code*
C12	C12 R11	.49	.043	.087	.07	Ø >.49	H3, 4, 5, 18, 20
C18	C18 R08	.70	.031	.063	.11	Ø >.70	H5.1, 5.2, 20.1
	C18 R11	.70	.043	.087	.11	Ø >.70	

* For complete toolholder description see pages B07-22 and 23

Full Radius Groove Milling

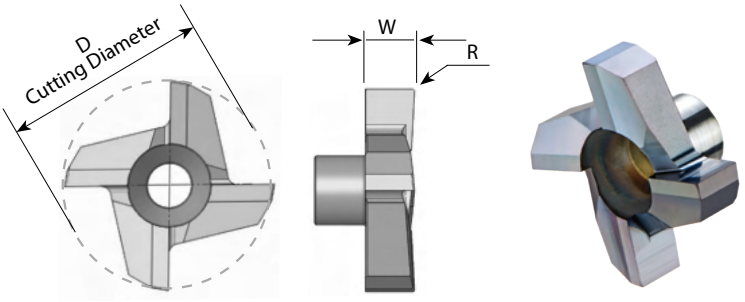
Multi Flute



Insert Type	Ordering Code	D	R	W ± .001	T Max.	Groove Dia. (min)	No. of Flutes	Holder Code*
S20	SG200 F R10	.79	.039	.079	.11	Ø > .79	6	H5.1, 5.2, 6, 7, 8, 9, 20.1, 21, 22, 23
	SG200 F R12	.79	.047	.094	.11	Ø > .79	6	
	SG200 F R15	.79	.059	.118	.11	Ø > .79	6	
	SG200 F R20	.79	.079	.157	.11	Ø > .79	6	

Order example: SG200 F R15 MT8

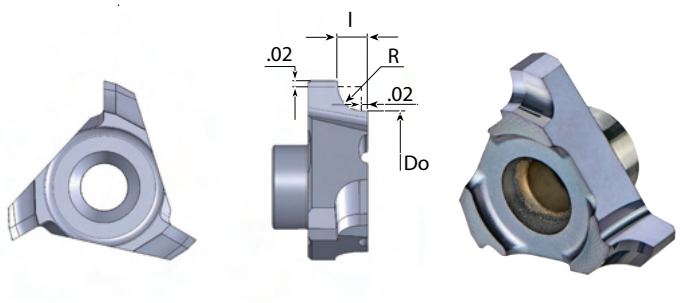
Face Milling and Finishing



Insert Type	Ordering Code	D	W ±.004	R	Holder Code*
C10	C10 F R0.1	.39	.12	.004	H1, 1.1, 2, 15, 16, 17
C12	C12 F R0.1	.47	.12	.004	H3, 3.1, 4, 5, 18, 19, 20
C18	C18 F R0.1	.70	.20	.004	H5.1, 5.2, 6, 7, 8, 9, 20.1, 21, 22, 23
C25	C25 F R0.2	.98	.24	.008	H10, 11, 24, 25, 31

* For complete toolholder description see pages B07-22 and 23

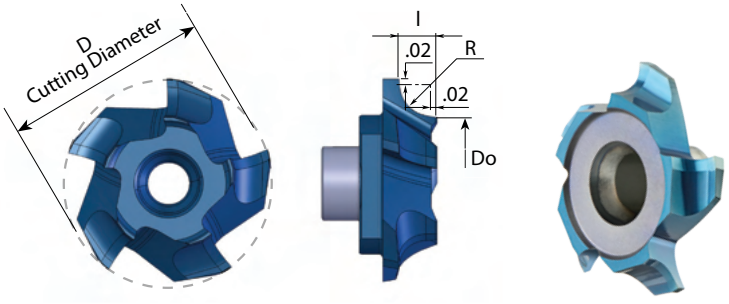
Corner Rounding



Insert Type	Ordering Code	D	Do	R	I	Holder Code*
C10	C10 CR05	.39	.31	.020	.04	H1, 1.1, 2, 15, 16, 17
	C10 CR10	.39	.27	.039	.06	
C18	C18 CR13	.70	.56	.049	.07	H5.1, 5.2, 6, 7, 8, 9, 20.1, 21, 22, 23
	C18 CR15	.70	.54	.059	.08	
	C18 CR20	.70	.50	.079	.10	
C25	C25 CR30	.98	.70	.118	.14	H10, 11, 24, 25

Corner Rounding

Multi Flute

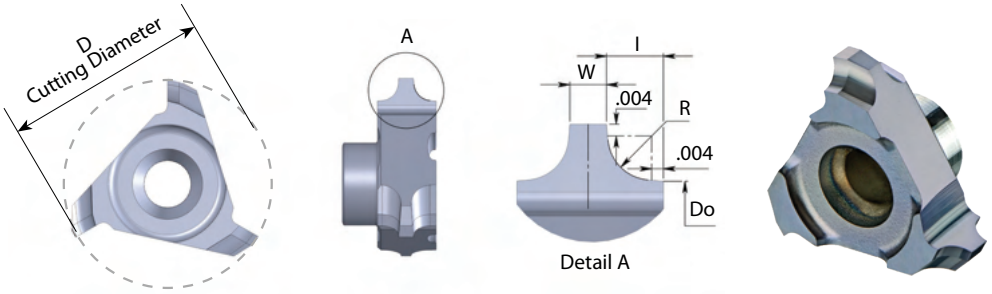


Insert Type	Ordering Code	D	Do	R	I	No. of Flutes	Holder Code*
S17	S170 E CR10	.67	.55	.039	.06	5	H3, 3.1, 4, 5, 18, 19, 20
	S170 E CR13	.67	.53	.049	.07	5	
	S170 E CR15	.67	.51	.059	.08	5	

Order example: S170 E CR13 MT8

* For complete toolholder description see pages B07-22 and 23

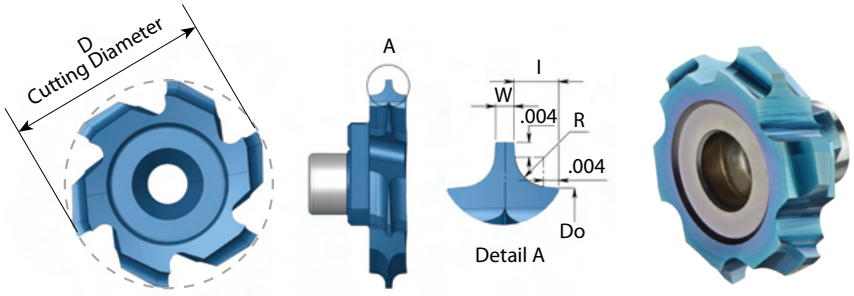
Front and Back Corner Rounding



Insert Type	Ordering Code	D	Do	R	W	I	Holder Code*
C10	C10 CRD08	.39	.32	.031	.05	.035	H1, 1.1, 2, 15, 16, 17
C18	C18 CRD15	.70	.57	.059	.07	.063	H5.1, 5.2, 6, 7, 8, 9, 20.1, 21, 22, 23
C25	C25 CRD20	.98	.81	.079	.08	.083	H10, 11, 24, 25, 31

Front and Back Corner Rounding

Multi Flute



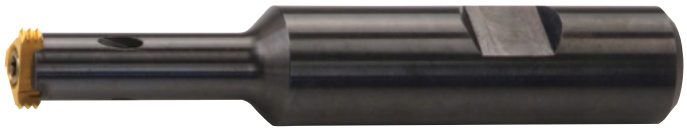
Insert Type	Ordering Code	D	Do	R	W	I	No. of Flutes	Holder Code*
S17	S170 F CRD08	.67	.60	.031	.05	.035	6	H3, 3.3, 4, 5, 18, 19, 20
S20	S200 F CRD15	.79	.66	.059	.07	.063	6	H5.1, 5.2, 6, 7, 8, 9, 20.1, 21, 22, 23

Order example: S200 F CRD15 MT8

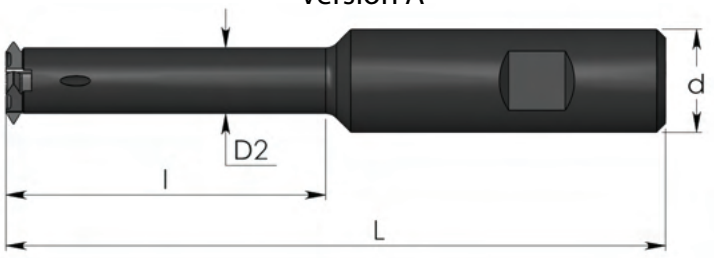
* For complete toolholder description see pages B07-22 and 23

Steel Toolholders

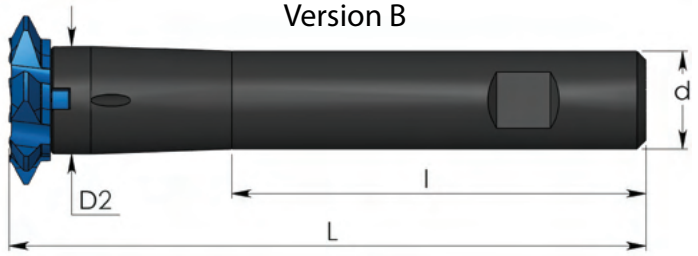
With internal coolant



Version A



Version B



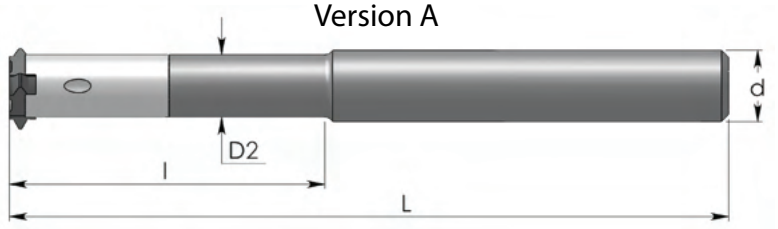
Tool No.	Ordering Code	Insert Type	d	D2	l	L	Insert Screw	Torx Key	Version
H1	SRC 0500 E10	C10	1/2	.29	.74	2.8	S5	K5	A
H1.1	SRC 0500 E10		1/2	.31	.98	3.1	S5	K5	A
H2	SRC 0625 G10		5/8	.29	.74	3.5	S5	K5	A
H3	SRC 0500 E12	C12, S17	1/2	.35	.98	2.8	S10	K10	A
H3.1	SRC 0500 G12		1/2	.39	1.57	3.5	S10	K10	A
H4	SRC 0625 G12		5/8	.35	.98	3.5	S10	K10	A
H5	SRC 0625 H12		5/8	.35	1.37	4.0	S10	K10	A
H5.1	SRC 0625 E18	C18, S20	5/8	.47	.98	3.1	S16	K16	A
H5.2	SRC 0625 G18		5/8	.47	1.57	3.5	S16	K16	A
H6	SRC 0625 H18		5/8	.54	1.90	4.0	S16	K16	A
H7	SRC 0750 H18		3/4	.54	1.27	4.0	S16	K16	A
H8	SRC 0750 J18		3/4	.54	1.90	4.5	S16	K16	A
H9	SRC 0750 L18		3/4	.54	2.92	5.5	S16	K16	A
H10	SRC 1000 J25	C25	1	.69	1.91	4.5	S27	K27	A
H11	SRC 1000 M25		1	.69	3.28	5.9	S27	K27	A
H12	SRC 0750 P35	S35	3/4	.87	4.41	6.7	S33	K33	B
H13	SRC 1000 H35		1	.87	1.55	3.9	S33	K33	A
H14	SRC 1000 K35		1	.87	2.34	5.1	S33	K33	A

Order example: SRC 0625 H18

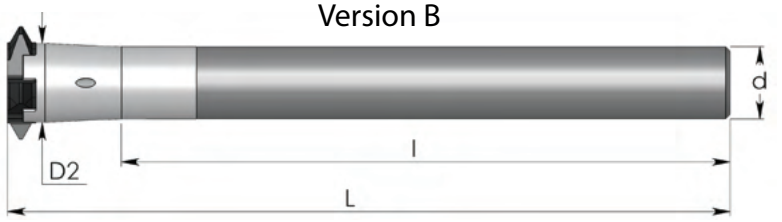
Carbide Shank Toolholders

With internal coolant

Version A



Version B



Tool No.	Ordering Code	Insert Type	d	D2	l	L	Insert Screw	Torx Key	Version
H15	CRC 0312 L13 K10	C10	5/16	.29	1.37	5.0	S5	K5	A
H16	CRC 0312 K10		5/16	.312	---	5.0	S5	K5	A
H17	CRC 0375 L17 M10		3/8	.29	1.77	5.9	S5	K5	A
H18	CRC 0375 L15 M12	C12, S17	3/8	.35	1.65	6.0	S10	K10	A
H19	CRC 0375 M12		3/8	.375	---	6.0	S10	K10	A
H20	CRC 0500 L22 P12		1/2	.35	2.28	6.8	S10	K10	A
H20.1	CRC 0500 L22 P18	C18, S20	1/2	.47	2.28	7.0	S10	K16	A
H21	CRC 0500 P18		1/2	.500	---	7.0	S16	K16	A
H22	CRC 0625 L18 R18		5/8	.54	1.90	7.8	S16	K16	A
H23	CRC 0625 L29 R18		5/8	.54	2.92	7.8	S16	K16	A
H24	CRC 0625 R25	C25	5/8	.69	7.11	8.2	S27	K27	B
H25	CRC 0750 L33 S25		3/4	.69	3.36	10.0	S27	K27	A
H26	CRC 0750 S35	S35	3/4	.87	8.84	10.4	S33	K33	B

Order example: CRC 0625 L18 R18

Toolholders without Weldon

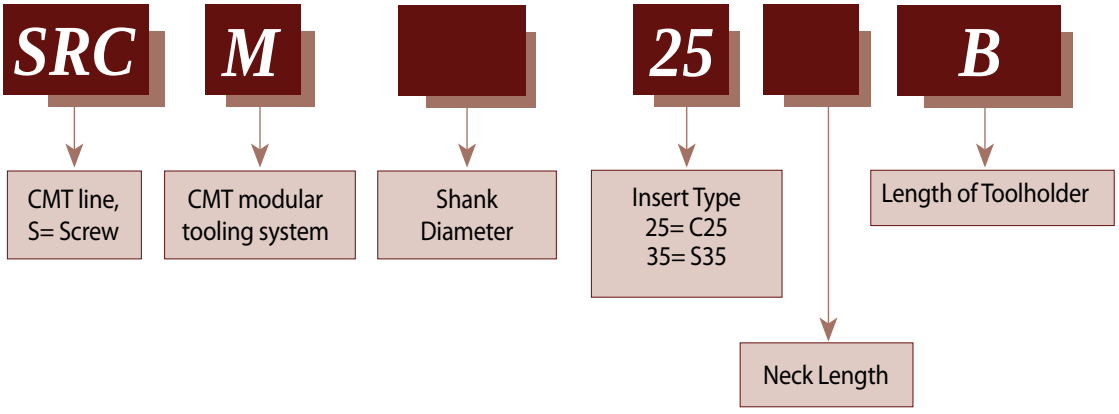
Modular Holders

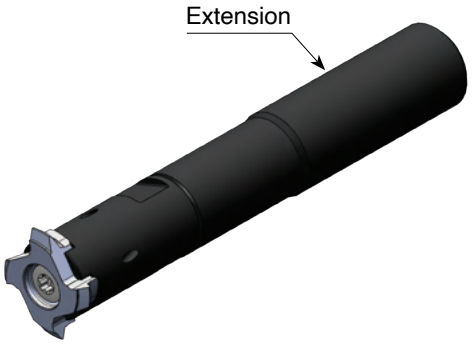
Carmex presents a new CMT modular tooling system ***SRCM***, provides efficiency and flexibility.
The modular system enables you to assemble an optimized tools per application, and eliminates the need for specials.

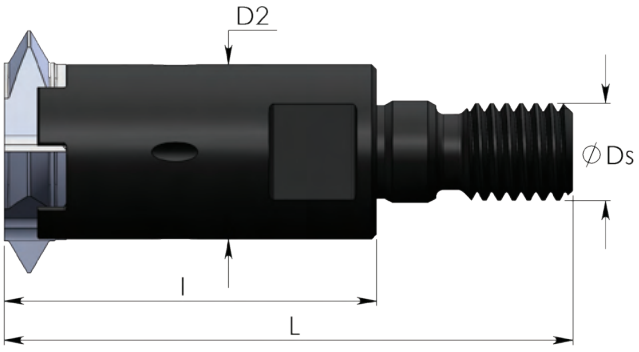
Features and Benefits:

- High stability and accuracy.
- A rigid tool assembly allows to increase cutting depth without losing stability.
- Substantial reduction of tool inventory.
- Can be used with the standard CMT inserts C25/S35.
- With internal coolant supply.
- Each modular CMT tool can be used with large range of Carmex extensions, also compatible with common steel or carbide extensions available in the market.

Product Identification - Ordering Codes





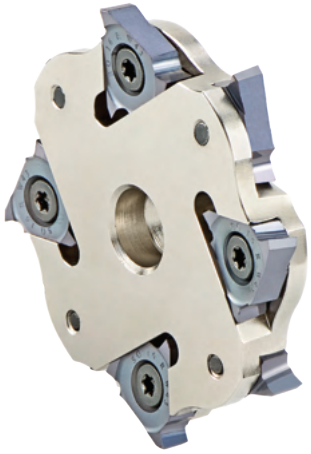


Tool No.	Ordering Code	Insert Type	D2	Ds	l	L	Insert Screw	Torx Key
H31	SRCM 25 B	C25	.71	M10x1.5	1.50	2.3	S27	K27
H32	SRCM 35 C	S35	.66	M12x1.75	1.97	2.8	S33	K33

For Carmex Extensions, see page B06-4

CMT Multi Insert Milling Cutters

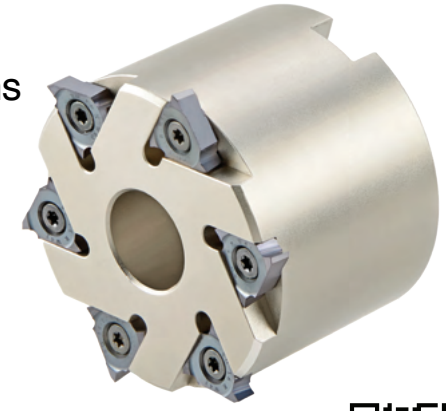
CMT indexable milling inserts and cutters for Grooving, Chamfering and Threading



Inserts

- Insert profiles are fully ground
- Spiral inserts for smooth cutting operation
- Three cutting edges on each insert
- For a wide range of materials and applications

Carbide grade: MT7



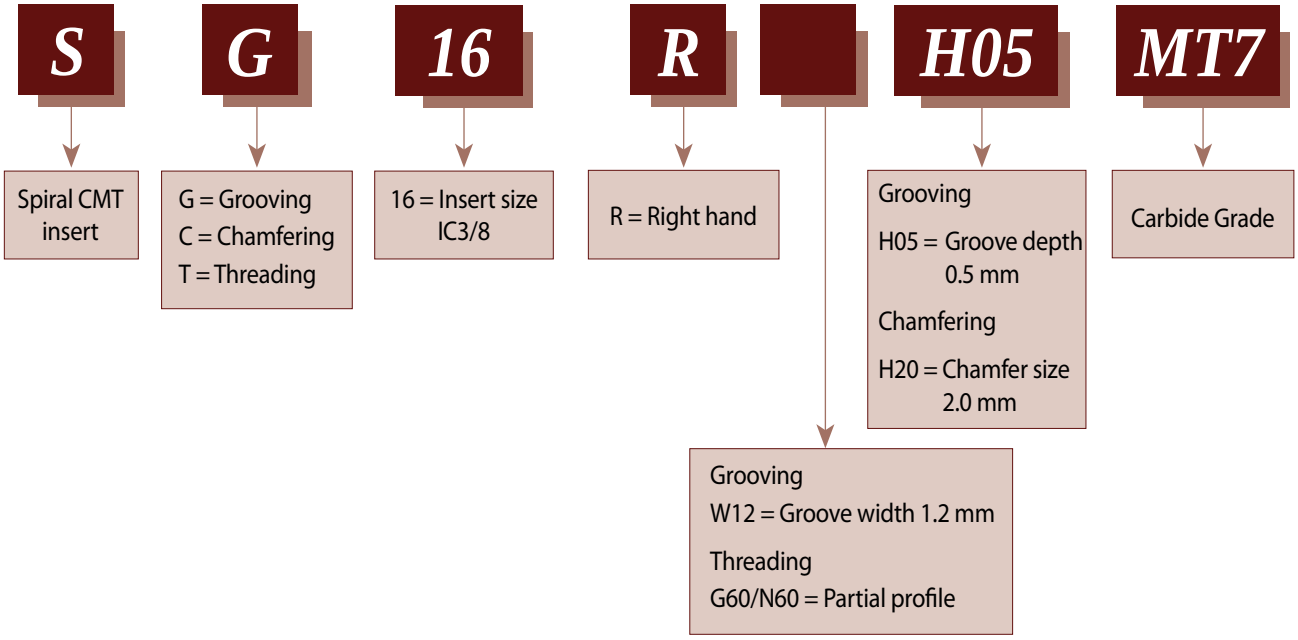
Milling cutters / Disc milling cutter

Demonstration

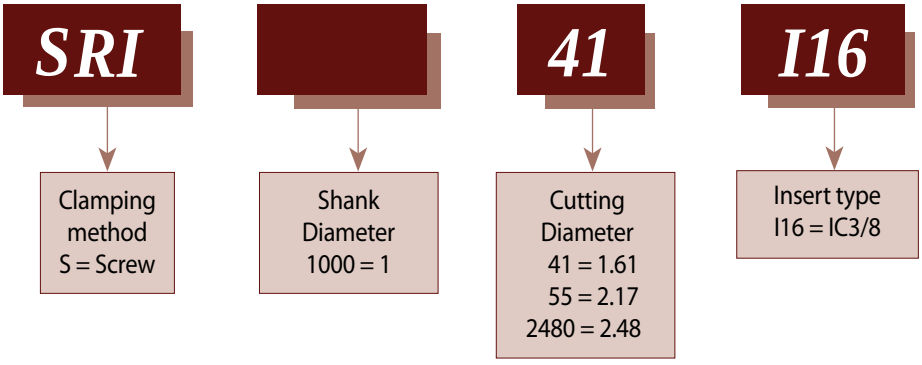
- 4 - 8 inserts per holder, for high productivity
- For use with Carmex standard CMT S35 toolholders
- The milling cutters are coated with a special layer (silver color) for high anti-corrosive resistance and extra protection against cutting burrs

Product Identification - Ordering Codes

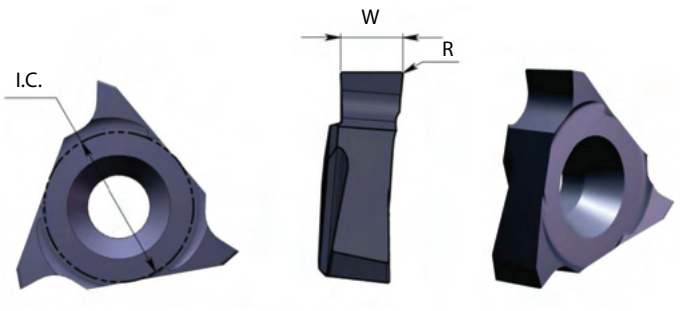
Inserts



Toolholders



Groove Milling



DIN 471 / 472

Insert Type	I.C.	Ordering Code	W	R	Holder Code*
SI16	3/8	SG 16 R W14	.055	.004	H27, 28, 29
		SG 16 R W17	.067	.004	
		SG 16 R W19	.077	.006	
		SG 16 R W22	.089	.006	
		SG 16 R W27	.108	.008	
		SG 16 R W32	.128	.008	
		SG 16 R W42	.167	.008	
		SG 16 R W43	.171	.008	H27, 29, 30

Right hand cutting

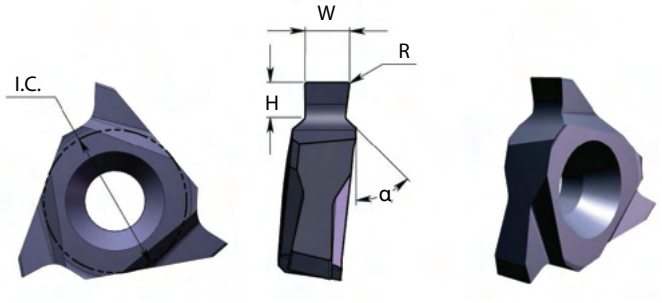
Insert Type	I.C.	Ordering Code	W	R	Holder Code*
SI16	3/8	SG 16 L W43	.171	.008	H30

Left hand cutting

*Maximum groove depth (T max) according to the toolholder.

* For complete toolholder description see pages B07-29 and 30

Groove Milling with Chamfer

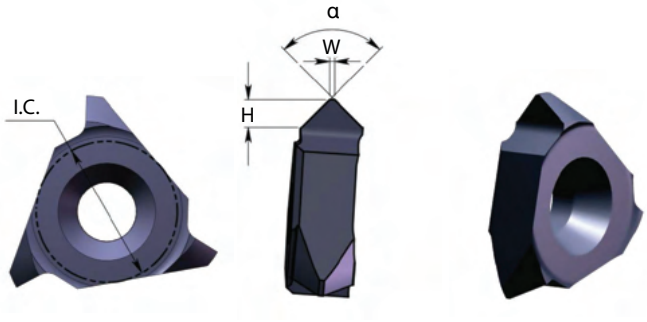


DIN 471 / 472

Insert Type	I.C.	Ordering Code	W	H max	R	α	Holder Code*
SI16	3/8	SG 16 R W12 H05	.047	.020	.004	45°	H27, 28, 29
		SG 16 R W14 H07	.055	.028			
		SG 16 R W14 H08	.055	.033			
		SG 16 R W17 H08	.067	.033			
		SG 16 R W17 H10	.067	.039			
		SG 16 R W19 H12	.077	.049	.006	45°	
		SG 16 R W22 H15	.089	.059			
		SG 16 R W27 H15	.108	.059			
		SG 16 R W27 H17	.108	.069			
		SG 16 R W32 H17	.128	.069			
		SG 16 R W42 H20	.167	.079			
		SG 16 R W42 H25	.167	.098			

Right hand cutting

Chamfering



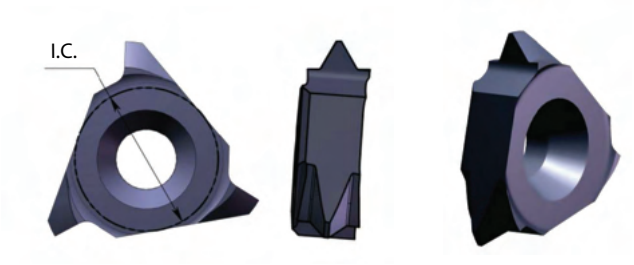
Insert Type	I.C.	Ordering Code	H max	W	α	Holder Code*
SI16	3/8	SC 16 R H20	.079	.008	90°	H27, 28, 29
		SC 16 R H19	.075	.020	90°	

Right hand cutting

* For complete toolholder description see pages B07-29 and 30

Partial Profile 60° - ISO, UN

Same insert for internal and external thread



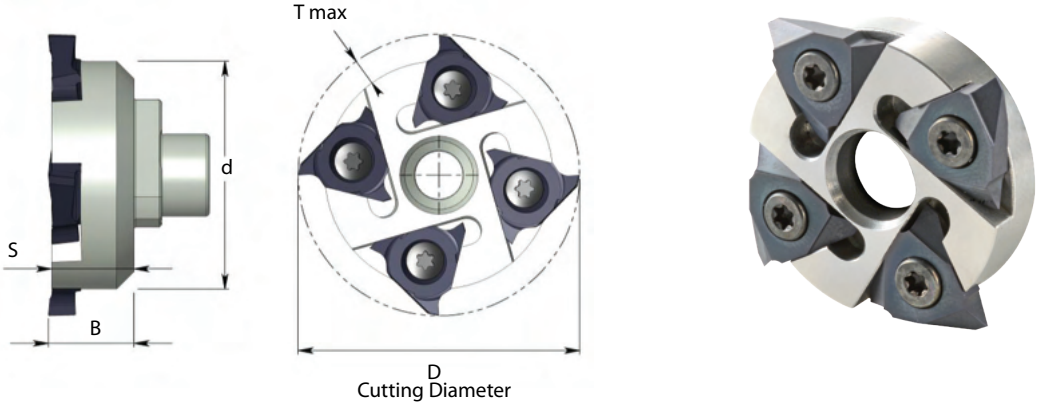
Insert Type	I.C.	Ordering Code	Pitch Range mm	Pitch Range TPI	Holder Code*
SI16	3/8	ST 16 R G60	Int. 1.5 -3.0	Int. 16-8	H27, 28, 29
			Ex. 1.25-3.0	Ex. 20-8	
		ST 16 R N60	Int. 3.5 -5.0	Int. 7-5	
			Ex. 3.0 -4.5	Ex. 8-6	

Right hand cutting

* For complete toolholder description see pages B07-29 and 30

Toolholders

Milling Cutter - Arbor

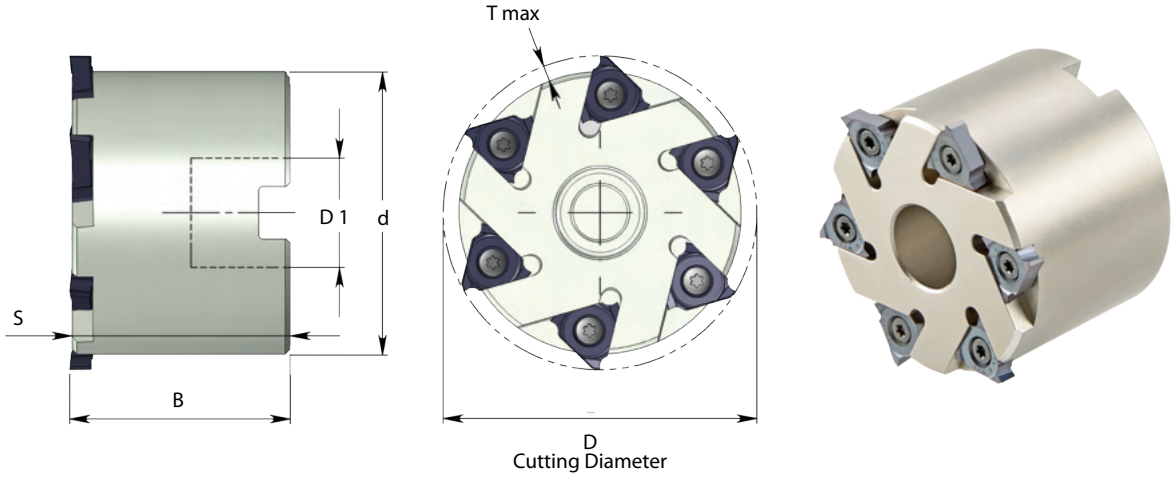


Tool No.	Ordering Code	Insert Type	D	d	T max	B	S	Insert Screw	Torx Key
H27	SRI 41- I16	SI16	1.61	1.31	.14	.49	.47	S16S	K16

Right hand cutting

To connect to the standard CMT toolholders S35: SRC 2035 K, SRC 2535 H, SRC 2535 K, CRC 2035 S

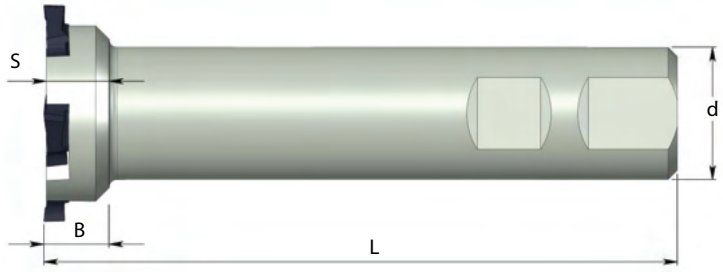
Milling Cutter - Shell Mill

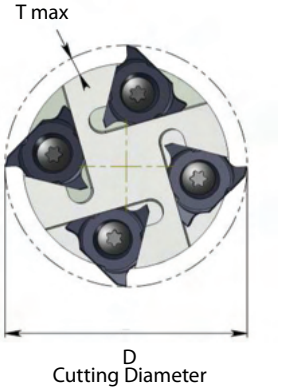


Tool No.	Ordering Code	Insert Type	D	d	T max	B	S	D1	Insert Screw	Torx Key
H28	SRI 2480-I16	SI16	2.48	2.24	.12	1.75	1.73	1.00	S16S	K16

Right hand cutting

Milling Cutter - Weldon Shank

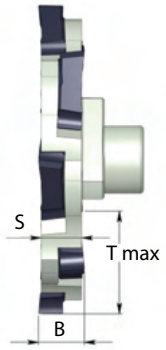


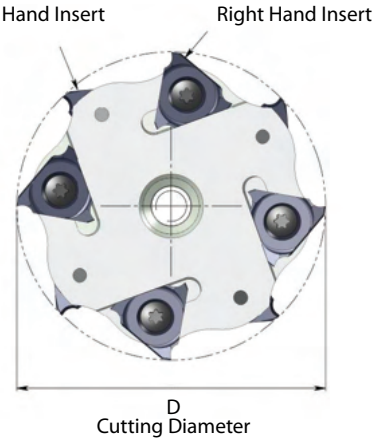


Tool No.	Ordering Code	Insert Type	D	d	T max	B	S	L	Insert Screw	Torx Key
H29	SRI 1000-I16	SI16	1.61	1.00	.14	.49	.47	4.9	S16S	K16

Right hand cutting

Milling Cutter - Disc Milling





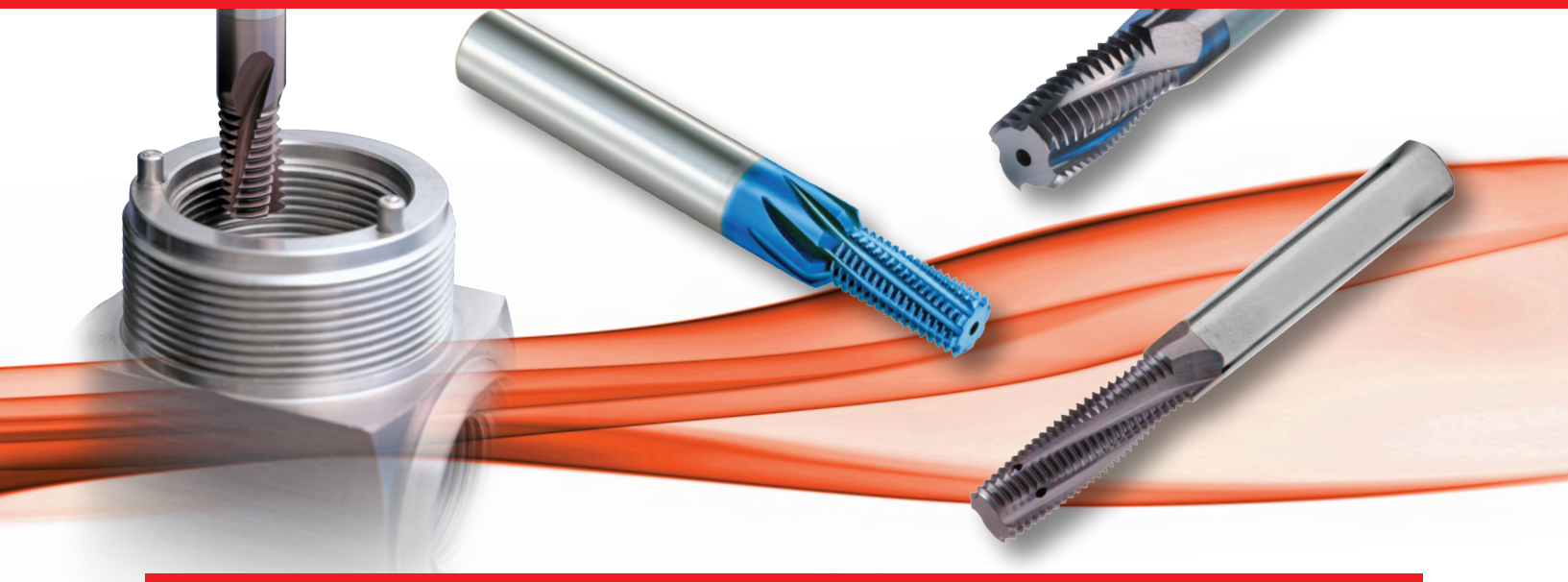
Tool No.	Ordering Code	Insert Type	D	T max	B	S	Insert Screw	Torx Key
H30	SRI 55-I16	SI16	2.17	.61	.32	.28	S16M	K16

Right hand cutting

To use only with inserts SG 16 R W43, and SG 16 L W43

To connect to the standard CMT toolholders S35: SRC 0750 P35, SRC 1000 H35, SRC 1000 K35, CRC 0750 S35.

Mill-Thread Solid Carbide | B08



Advantages of Mill-Thread Solid Carbide

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

Demonstration

MT - Thread Mills without internal coolant
MTB - Thread Mills with internal coolant bore for blind holes
MTZ - Thread Mills with internal coolant through the flutes
MTQ - Thread Mills that include relieved neck for deep work pieces
FMT - Fast Thread Mills with internal coolant bore
AMT - Solid Carbide Thread Mills for Aluminum machining
EMT - Thread Mills For External Threads

Demonstration

Contents: Page:

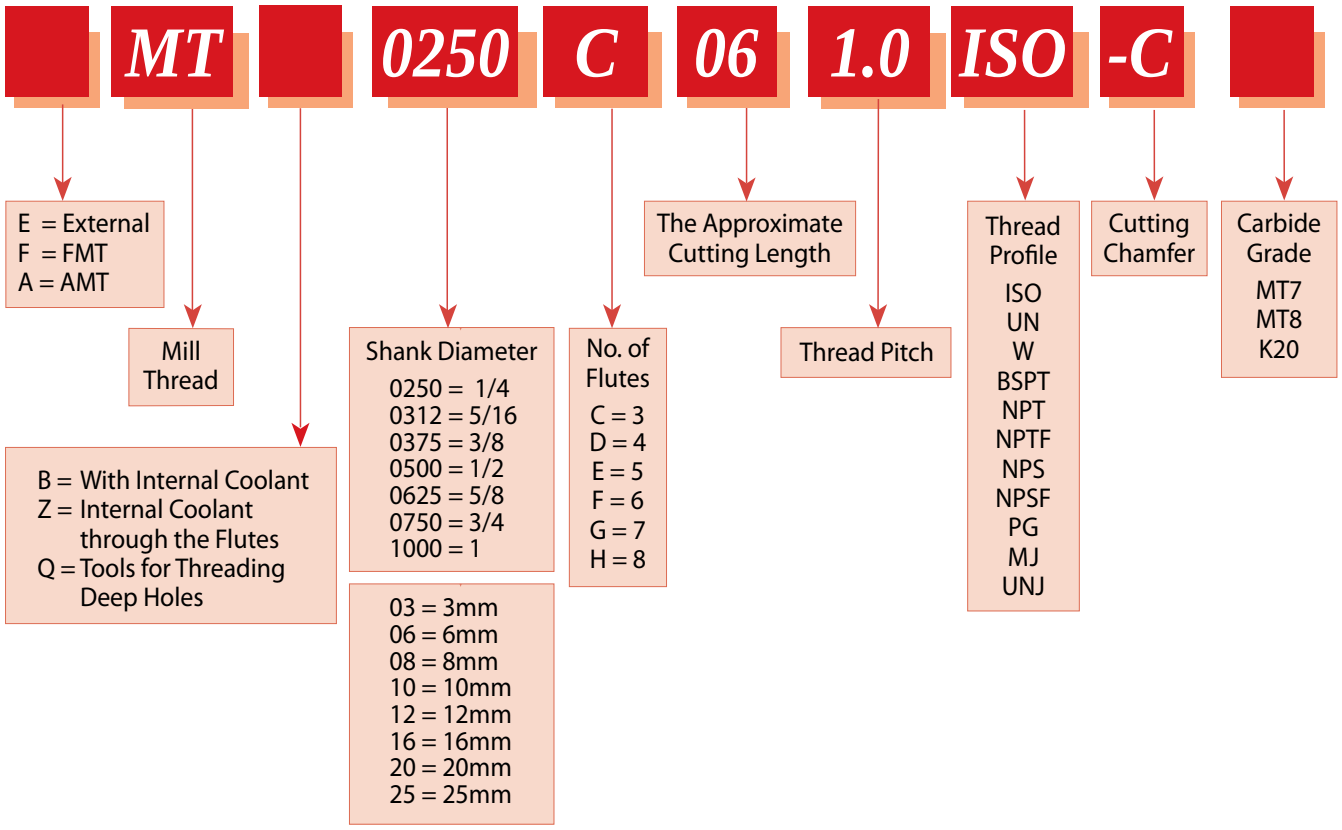
Product Identification 2
ISO - without coolant bore - MT 3
with internal coolant bore - MTB 4
with internal coolant through the flutes - MTZ 5
with relieved neck and internal coolant bore - MTQ 6
with internal coolant bore - FMT 7
with internal coolant bore - AMT 8
with internal coolant bore and cutting chamfer - AMT 8
UN - without coolant bore - MT 9
with internal coolant bore - MTB 10
with internal coolant through the flutes - MTZ 11
with relieved neck and internal coolant bore - MTQ 12
with internal coolant bore - FMT 13
with internal coolant bore - AMT 13
with internal coolant bore and cutting chamfer - AMT 14
G (55˚) - without coolant bore - MT 14
with internal coolant bore - MTB 15
with internal coolant through the flutes - MTZ 15
with internal coolant bore - FMT 16
Whitworth - with internal coolant bore - MTB 17
with internal coolant through the flutes - MTZ 17

Contents: Page:

BSPT - without coolant bore - MT 18
with internal coolant bore - MTB 18
with internal coolant through the flutes - MTZ 19
NPT - without coolant bore - MT 20
with internal coolant bore - MTB 20
with internal coolant through the flutes - MTZ 21
NPTF - without coolant bore - MT 21
with internal coolant bore - MTB 22
with internal coolant through the flutes - MTZ 22
Solid Carbide Tapered End Mills 23
NPS - with internal coolant bore - MTB 24
NPSF - with internal coolant bore - MTB 24
MJ - Internal Thread - MTB 25
UNJ - Internal Thread - MTB 25
PG DIN 40430 - with internal coolant bore MTB 26
Mill - Thread Solid Carbide for External Threads EMT 27
ISO 27
UN 27
MJ 28
UNJ 28

Product Identification

Mill-Thread Solid Carbide Ordering Codes

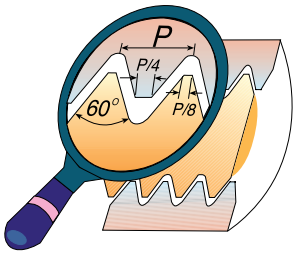


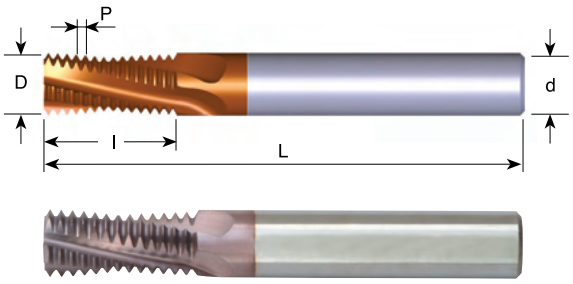
Mill-Thread Solid Carbide

Carmex Precision Tools Ltd.

ISO

Tools for Internal Thread





Grade	P	M	K	N	S	H
MT7	●	○	●	○	○	

Pitch mm	M coarse	M fine	Ordering Code	d	D	No. of Flutes	l	L
0.5	M3	M4	MT 0250 C02 0.5 ISO	1/4	.087	3	.21	2.5
0.5		M5	MT 0250 C04 0.5 ISO	1/4	.150	3	.41	2.5
0.5		M6, M8	MT 0250 D04 0.5 ISO	1/4	.209	4	.41	2.5
0.7	M4		MT 0250 C03 0.7 ISO	1/4	.122	3	.29	2.5
0.75		M6, M8	MT 0250 C04 0.75 ISO	1/4	.177	3	.40	2.5
0.75		M6, M8	MT 0250 C05 0.75 ISO	1/4	.197	3	.52	2.5
0.8	M5		MT 0250 C04 0.8 ISO	1/4	.142	3	.36	2.5
0.8	M5		MT 0250 C05 0.8 ISO	1/4	.157	3	.52	2.5
1.0	M6	M8	MT 0250 C04 1.0 ISO	1/4	.157	3	.41	2.5
1.0	M6	M8	MT 0250 C06 1.0 ISO	1/4	.157	3	.57	2.5
1.0		M8, M9	MT 0250 C05 1.0 ISO	1/4	.236	3	.49	2.5
1.0		M10	MT 0312 D07 1.0 ISO	5/16	.313	4	.65	2.5
1.25	M8	M10	MT 0250 C06 1.25 ISO	1/4	.197	3	.57	2.5
1.25	M8	M10	MT 0250 C07 1.25 ISO	1/4	.197	3	.76	2.5
1.5	M10	M12	MT 0312 C07 1.5 ISO	5/16	.276	3	.68	2.5
1.5	M10	M12	MT 0312 C09 1.5 ISO	5/16	.276	3	.98	2.5
1.5		M14	MT 0375 D09 1.5 ISO	3/8	.375	4	.86	3.0
1.5		M14	MT 0500 D11 1.5 ISO	1/2	.472	4	1.15	3.5
1.5		M16, M18	MT 0625 D12 1.5 ISO	5/8	.551	4	1.27	4.0
1.5		M20	MT 0625 E13 1.5 ISO	5/8	.625	6	1.33	4.0
1.75	M12		MT 0312 C08 1.75 ISO	5/16	.313	3	.79	2.5
1.75	M12		MT 0312 C011 1.75 ISO	5/16	.313	3	1.14	2.5
2.0	M14	M17	MT 0375 C11 2.0 ISO	3/8	.375	3	1.06	3.0
2.0	M14	M17	MT 0375 C15 2.0 ISO	3/8	.375	3	1.54	4.0
2.0	M16	M18, M20	MT 0500 D11 2.0 ISO	1/2	.472	4	1.06	3.5
2.0	M16	M18, M20	MT 0500 D15 2.0 ISO	1/2	.500	4	1.54	4.0
2.0		M26	MT 0750 E16 2.0 ISO	3/4	.750	6	1.61	4.0
2.5	M18, M20		MT 0625 D13 2.5 ISO	5/8	.551	4	1.33	4.0
2.5	M18, M20		MT 0625 D19 2.5 ISO	5/8	.551	4	1.92	4.0
3.0	M24	M28	MT 0625 C16 3.0 ISO	5/8	.625	3	1.59	4.0
3.0	M24	M28	MT 0625 C23 3.0 ISO	5/8	.625	3	2.31	4.5
3.0	M27	M28, M30	MT 0750 D17 3.0 ISO	3/4	.750	4	1.71	4.0

Order example: MT 1212 D27 2.0 ISO MT7

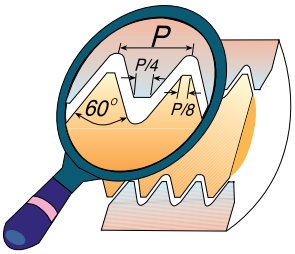
● First choice ○ Alternative

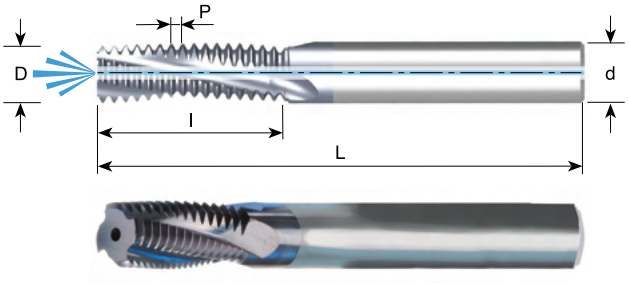
For thread mills with coolant bore see following pages

For small thread mills see pages B09-3, 4, 11, 15, 17 and B11-3, 6

ISO With internal coolant bore

Tools for Internal Thread





Grade	P	M	K	N	S	H
MT7	●	●	●	○	●	≤47 HRc

Pitch mm	M coarse	M fine	Ordering Code	d	D	No. of Flutes	l	L
0.5		M5	MTB 0250 C04 0.5 ISO	1/4	.150	3	.41	2.5
0.7	M4		MTB 0250 C02 0.7 ISO	1/4	.122	3	.29	2.5
0.75		M6, M8	MTB 0250 C04 0.75 ISO	1/4	.177	3	.40	2.5
0.75		M12, M14	MTB 0375 D09 0.75 ISO	3/8	.375	4	.96	3.0
0.8	M5		MTB 0250 C03 0.8 ISO	1/4	.150	3	.36	2.5
0.8	M5		MTB 0250 C05 0.8 ISO	1/4	.157	3	.52	2.5
1.0	M6		MTB 0250 C04 1.0 ISO	1/4	.181	3	.41	2.5
1.0	M6		MTB 0250 C06 1.0 ISO	1/4	.181	3	.57	2.5
1.0		M8	MTB 0250 C05 1.0 ISO	1/4	.250	3	.50	2.5
1.0		M10	MTB 0312 D06 1.0 ISO	5/16	.312	4	.65	2.5
1.0		M12	MTB 0375 D09 1.0 ISO	3/8	.375	4	.96	3.0
1.25	M8	M10	MTB 0250 C05 1.25 ISO	1/4	.249	3	.57	2.5
1.25	M8	M10	MTB 0250 C07 1.25 ISO	1/4	.249	3	.76	2.5
1.5	M10	M12	MTB 0312 C06 1.5 ISO	5/16	.306	3	.67	2.5
1.5	M10	M12	MTB 0312 C09 1.5 ISO	5/16	.306	3	.98	2.5
1.5		M14	MTB 0375 D08 1.5 ISO	3/8	.375	4	.86	3.0
1.5		M15-M19	MTB 0500 D10 1.5 ISO	1/2	.500	4	1.04	4.0
1.5		M20	MTB 0625 E13 1.5 ISO	5/8	.625	6	1.33	4.0
1.75	M12		MTB 0375 C07 1.75 ISO	3/8	.354	3	.79	3.0
1.75	M12		MTB 0375 C11 1.75 ISO	3/8	.354	3	1.14	3.0
2.0	M14	M17	MTB 0375 C10 2.0 ISO	3/8	.375	3	1.06	3.0
2.0	M14	M17	MTB 0500 D16 2.0 ISO	1/2	.433	4	1.54	4.0
2.0	M16	M18, M20	MTB 0500 D10 2.0 ISO	1/2	.465	4	1.06	4.0
2.0	M16	M18, M20	MTB 0500 D15 2.0 ISO	1/2	.465	4	1.54	4.0
2.0		M26	MTB 0750 E16 2.0 ISO	3/4	.750	6	1.61	4.0
2.5	M20		MTB 0625 E13 2.5 ISO	5/8	.591	5	1.33	4.0
2.5	M20		MTB 0625 E19 2.5 ISO	5/8	.591	5	1.92	4.0
3.0	M24	M28	MTB 0750 D15 3.0 ISO	3/4	.709	4	1.59	4.0
3.0	M24	M28	MTB 0750 D23 3.0 ISO	3/4	.709	4	2.30	5.0
3.0	M27	M28, M30	MTB 0750 D17 3.0 ISO	3/4	.750	4	1.71	4.0

Order example: MTB 08078 C17 1.5 ISO MT7

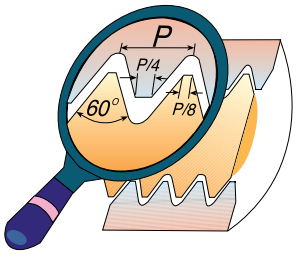
● First choice ○ Alternative

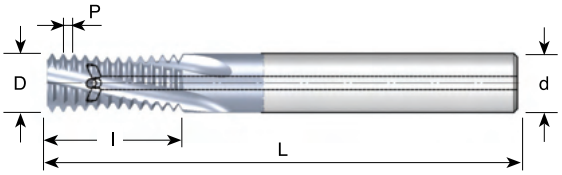
For thread mills with coolant through the flutes see next page

For small thread mills see pages B09-3, 4, 11, 15, 17 and B11-3, 6

ISO With internal coolant through the flutes

Tools for Internal Thread





Grade	P	M	K	N	S	H
MT7	●	●	●	○	●	≤47 HRc

Pitch mm	M coarse	M fine	Ordering Code	d mm	D	No. of Flutes	l	L
1.0	M6	M8	MTZ 06048 C10 1.0 ISO	6	.189	3	.41	2.3
1.0		M8, M9	MTZ 0606 C12 1.0 ISO	6	.236	3	.49	2.3
1.0		M10	MTZ 0808 D16 1.0 ISO	8	.315	4	.65	2.5
1.25	M8	M10	MTZ 0606 C14 1.25 ISO	6	.236	3	.57	2.3
1.25	M8	M10	MTZ 0606 C19 1.25 ISO	6	.236	3	.76	2.3
1.5	M10	M12	MTZ 08078 C17 1.5 ISO	8	.307	3	.67	2.5
1.5	M10	M12	MTZ 0808 C23 1.5 ISO	8	.315	3	.92	2.5
1.5		M14	MTZ 1010 D21 1.5 ISO	10	.394	4	.86	2.9
1.5		M14, M16	MTZ 1212 D26 1.5 ISO	12	.472	4	1.03	3.3
1.5		M16, M18	MTZ 1414 D32 1.5 ISO	14	.551	4	1.27	4.0
1.5		M20	MTZ 1616 E33 1.5 ISO	16	.630	5	1.33	4.0
1.75	M12		MTZ 1009 C20 1.75 ISO	10	.354	3	.79	2.9
1.75	M12		MTZ 1009 C28 1.75 ISO	10	.354	3	1.14	2.9
2.0	M14	M17	MTZ 1010 C27 2.0 ISO	10	.394	3	1.06	2.9
2.0	M16	M18, M20	MTZ 12118 D27 2.0 ISO	12	.465	4	1.06	3.3
2.5	M20		MTZ 1615 E33 2.5 ISO	16	.591	5	1.33	4.0

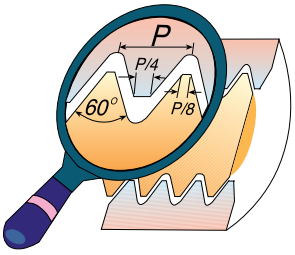
Order example: MTZ 08078 C17 1.5 ISO MT7

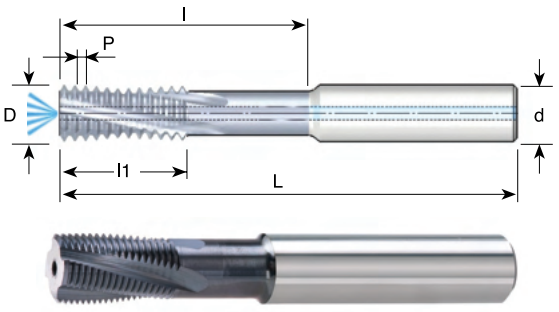
● First choice ○ Alternative

For small thread mills see pages B09-3, 4, 11, 15, 17 and B11-3, 6

ISO With relieved neck and internal coolant bore

Tools for Internal Thread





Grade	P	M	K	N	S	H
MT7	●	●	●	○	●	≤47 HRc

Pitch mm	M fine	Ordering Code	d mm	D	No. of Flutes	l1	l	L
1.0	Ø ≥ 12	MTQ 1010 D32 1.0 ISO	10	.394	4	.71	1.26	2.9
1.0	Ø ≥ 14	MTQ 1212 D38 1.0 ISO	12	.472	4	.83	1.50	3.3
1.0	Ø ≥ 18	MTQ 1616 E45 1.0 ISO	16	.630	6	1.02	1.77	4.1
1.5	Ø ≥ 13	MTQ 1010 D30 1.5 ISO	10	.394	4	.71	1.18	2.9
1.5	Ø ≥ 15	MTQ 1212 D34 1.5 ISO	12	.472	4	.77	1.36	3.3
1.5	Ø ≥ 19	MTQ 1616 E43 1.5 ISO	16	.630	6	1.00	1.71	4.1
1.5	Ø ≥ 23	MTQ 2020 E60 1.5 ISO	20	.787	6	1.42	2.36	4.1
2.0	Ø ≥ 16	MTQ 1212 D42 2.0 ISO	12	.472	4	.94	1.65	3.3
2.0	Ø ≥ 20	MTQ 1616 E45 2.0 ISO	16	.630	5	1.02	1.77	4.1
2.0	Ø ≥ 24	MTQ 2020 E56 2.0 ISO	20	.787	6	1.34	2.20	4.1
3.0	Ø ≥ 22	MTQ 1616 D45 3.0 ISO	16	.630	4	1.18	1.77	4.1
3.0	Ø ≥ 26	MTQ 2020 E54 3.0 ISO	20	.787	5	1.30	2.13	4.1
3.5	Ø ≥ 26	MTQ 2020 D45 3.5 ISO	20	.787	4	1.10	1.79	4.1
4.0	Ø ≥ 31	MTQ 2525 D64 4.0 ISO	25	.984	4	1.58	2.52	6.3

Order example: MTQ 1010 D30 1.5 ISO MT7

● First choice ○ Alternative

For small thread mills see pages B09-3, 4, 11, 15, 17 and B11-3, 6

Mill-Thread Solid Carbide

Carmex Precision Tools Ltd.

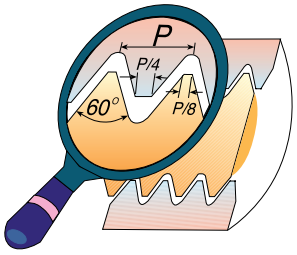
ISO Fast MT with internal coolant bore

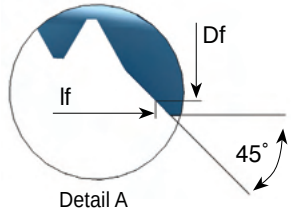
Tools for Internal Thread

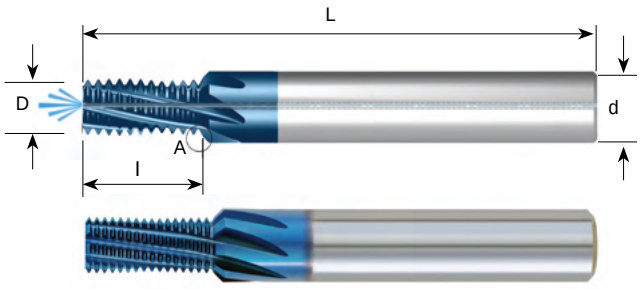
- A unique line of solid carbide thread milling tools (FMT) for increased productivity and extended tool life.
- Large number of flutes results in significantly shorter machining time.

Carbide grade MT8:

Sub Micron grade with advanced PVD triple coating (ISO K10-K20).
Extremely high heat resistance and smooth cutting operation for high performance in normal and general machining conditions on all materials.







Grade	P	M	K	N	S	H
MT8	●	●	●	○	●	≤52 HRc

Pitch mm	M coarse	M fine	Ordering Code	d mm	D	Df	Flutes	I	If	L
0.5	M3	M3.5	*EMT 06024 D6 0.5 ISO	6	.094	.173	4	.25	.29	2.3
0.5		M4,M5	EMT 06033 E8 0.5 ISO	6	.130	.209	5	.33	.37	2.3
0.7	M4		EMT 06032 E7 0.7 ISO	6	.126	.189	5	.29	.32	2.3
0.75		M6	EMT 0805 E12 0.75 ISO	8	.197	.276	6	.49	.53	2.5
0.8	M5		EMT 0604 E9 0.8 ISO	6	.157	.224	5	.36	.40	2.3
1.0	M6	M8	EMT 08048 E10 1.0 ISO	8	.189	.268	6	.41	.45	2.5
1.0	M10	M12	EMT 12087 G20 1.0 ISO	12	.343	.461	7	.81	.87	3.3
1.25	M8	M10	EMT 10064 G14 1.25 ISO	10	.252	.378	7	.57	.63	2.9
1.5	M10	M14	EMT 1008 G17 1.5 ISO	10	.315	.386	7	.68	.72	2.9
1.75	M12		EMT 12095 G20 1.75 ISO	12	.374	.461	7	.79	.83	3.3
2.0	M14, M16	M18	EMT 1411 G29 2.0 ISO	14	.433	.528	7	1.14	1.19	3.3

Order example: FMT 1008 G17 1.5 ISO MT8

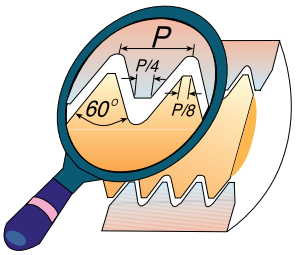
● First choice ○ Alternative

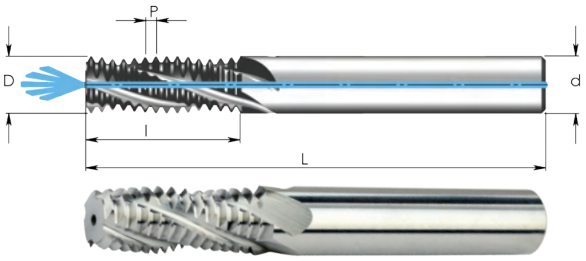
* Without internal coolant

For small thread mills see page B09-17

ISO With internal coolant bore

Tools for Internal Thread





Thread length: 2xD

Grade	P	M	K	N	S	H
K20	○	○	●	●	●	

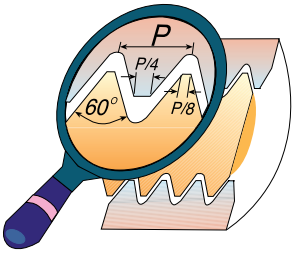
Pitch mm	M coarse	M fine	Ordering Code	d mm	D	No. of Flutes	l	L
0.5	M3	M4	* AMT 03024 C6 0.5 ISO	3	.094	3	.27	1.5
0.5		M5	AMT 06043 C10 0.5 ISO	6	.169	3	.42	2.3
0.7	M4		AMT 06031 C8 0.7 ISO	6	.122	3	.35	2.3
0.75		M6	AMT 0605 C13 0.75 ISO	6	.197	3	.52	2.3
0.8	M5		AMT 0604 C10 0.8 ISO	6	.157	3	.42	2.3
1.0	M6		AMT 06048 C13 1.0 ISO	6	.189	3	.53	2.3
1.0		M10	AMT 0808 D21 1.0 ISO	8	.315	4	.85	2.5
1.25	M8	M10	AMT 08064 C16 1.25 ISO	8	.252	3	.66	2.5
1.5	M10		AMT 0808 C21 1.5 ISO	8	.315	3	.86	2.5
1.5		M14	AMT 12112 D29 1.5 ISO	12	.441	4	1.15	3.3
1.75	M12		AMT 10095 D25 1.75 ISO	10	.374	4	1.00	2.9
2.0	M16	M17	AMT14126 D35 2.0 ISO	14	.496	4	1.38	3.3

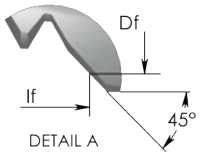
Order example: AMT 08064 C16 1.25 ISO K20

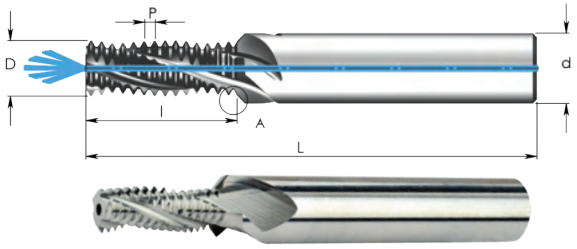
* Without internal coolant

ISO With internal coolant bore and cutting chamfer

Tools for Internal thread







Thread length: 2xD

Grade	P	M	K	N	S	H
K20	○	○	●	●	●	

Pitch mm	M coarse	M fine	Ordering Code	d mm	D	Df	No. of Flutes	l	lf	L
0.8	M5		AMT 0604 C10 0.8 ISO-C	6	.157	.21	3	.42	.45	2.3
1.0	M6		AMT 08048 C13 1.0 ISO-C	8	.189	.25	3	.52	.56	2.5
1.25	M8	M10	AMT 10064 C16 1.25 ISO-C	10	.252	.33	3	.66	.70	2.9
1.5	M10		AMT 1208 C21 1.5 ISO-C	12	.315	.41	3	.36	.91	3.3

Order example: AMT 10064 C16 1.25 ISO-C K20

For information about AMT Thread Mills and cutting data see page B12-16

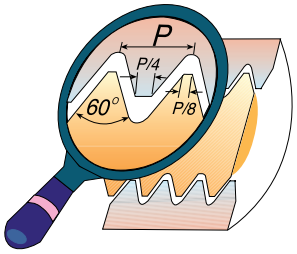
● First choice ○ Alternative

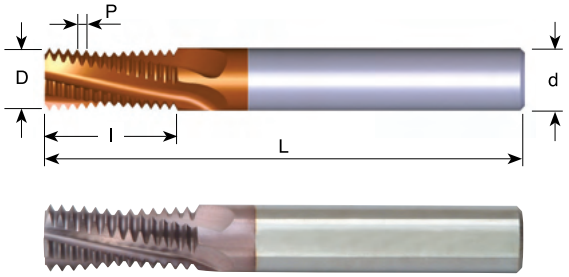
Mill-Thread Solid Carbide

Carmex Precision Tools Ltd.

UN

Tools for Internal Thread





Grade	P	M	K	N	S	H
MT7	●	○	●	○	○	

Pitch TPI	UNC	UNF	UNEF	Ordering Code	d	D	No. of Flutes	l	L
40	5			MT 0250 C02 40 UN	1/4	.098	3	.24	2.5
32	8	10	12	MT 0250 C02 32 UN	1/4	.126	3	.27	2.5
28		1/4		MT 0250 C04 28 UN	1/4	.157	3	.45	2.5
28		1/4		MT 0250 C06 28 UN	1/4	.205	3	.59	2.5
28			7/16-1/2	MT 0250 C05 28 UN	1/4	.236	3	.57	2.5
24		5/16		MT 0250 C06 24 UN	1/4	.197	3	.56	2.5
24		3/8	9/16-5/8	MT 0312 C08 24 UN	5/16	.276	3	.81	2.5
20	1/4			MT 0250 C05 20 UN	1/4	.177	3	.48	2.5
20		7/16-1/2		MT 0312 C08 20 UN	5/16	.276	3	.83	2.5
20			3/4-1	MT 0500 E11 20 UN	1/2	.472	5	1.08	3.5
18	5/16			MT 0250 C06 18 UN	1/4	.197	3	.58	2.5
18	5/16			MT 0250 C08 18 UN	1/4	.236	3	.81	2.5
18		9/16-5/8	1 1/8-1 5/8	MT 0375 D10 18 UN	3/8	.375	4	1.03	3.0
16	3/8			MT 0250 C07 16 UN	1/4	.236	3	.66	2.5
16	3/8			MT 0312 C09 16 UN	5/16	.291	3	.97	2.5
16		3/4		MT 0500 D12 16 UN	1/2	.472	4	1.22	3.5
14	7/16			MT 0312 C08 14 UN	5/16	.276	3	.82	2.5
14	7/16			MT 0375 C11 14 UN	3/8	.335	3	1.11	3.0
14		7/8		MT 0625 E15 14 UN	5/8	.591	5	1.46	4.0
13	1/2			MT 0312 C09 13 UN	5/16	.312	3	.88	2.5
13	1/2			MT 0375 D12 13 UN	3/8	.375	4	1.27	3.0
12	9/16			MT 0375 C10 12 UN	3/8	.375	3	1.04	3.0
12	9/16			MT 0500 D14 12 UN	1/2	.457	4	1.46	3.5
12		1 - 1 1/2		MT 0625 E16 12 UN	5/8	.625	5	1.63	4.0
11	5/8			MT 0375 C11 11 UN	3/8	.375	3	1.14	3.0
11	5/8			MT 0500 D15 11 UN	1/2	.472	4	1.50	3.5
10	3/4			MT 0500 C14 10 UN	1/2	.472	3	1.35	3.5
10	3/4			MT 0625 E19 10 UN	5/8	.579	5	1.95	4.0
9	7/8			MT 0625 C15 9 UN	5/8	.591	3	1.50	4.0
8	1			MT 0625 C17 8 UN	5/8	.625	3	1.69	4.0
7	1 1/8 - 1 1/4			MT 0750 D17 7 UN	3/4	.750	4	1.78	4.0

Order example: MT 1615 E37 14 UN MT7

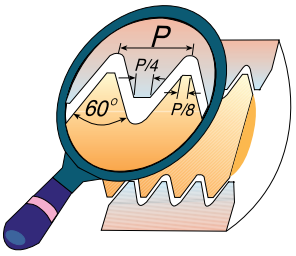
● First choice ○ Alternative

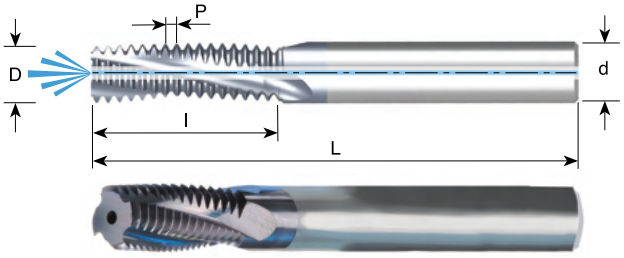
For thread mills with coolant bore see following pages

For small thread mills see pages B09-5, 6, 12, 15, 17 and B11-4, 6

UN With internal coolant bore

Tools for Internal Thread





Grade	P	M	K	N	S	H
MT7	●	●	●	○	●	≤47 HRc

Pitch TPI	UNC	UNF	UNEF	Ordering Code	d	D	No. of Flutes	l	L
32	8	10	12	MTB 0250 C02 32 UN	1/4	.126	3	.27	2.5
32			5/16	MTB 0250 C05 32 UN	1/4	.250	3	.58	2.5
32			3/8	MTB 0312 D07 32 UN	5/16	.312	4	.74	2.5
28		1/4		MTB 0250 C04 28 UN	1/4	.197	3	.44	2.5
28		1/4		MTB 0250 C06 28 UN	1/4	.205	3	.59	2.5
28			7/16-1/2	MTB 0250 C05 28 UN	1/4	.250	3	.56	2.5
24		5/16		MTB 0312 C05 24 UN	5/16	.260	3	.56	2.5
24		3/8	9/16-5/8	MTB 0312 D08 24 UN	5/16	.312	4	.81	2.5
20	1/4			MTB 0250 C04 20 UN	1/4	.185	3	.48	2.5
20		7/16-1/2		MTB 0312 C08 20 UN	5/16	.312	3	.83	2.5
20		1/2		MTB 0375 D08 20 UN	3/8	.375	4	.88	3.0
20			3/4-1	MTB 0500 E10 20 UN	1/2	.500	5	1.07	4.0
18	5/16			MTB 0250 C05 18 UN	1/4	.220	3	.58	2.5
18	5/16			MTB 0250 C08 18 UN	1/4	.236	3	.81	2.5
18		9/16-5/8	1 1/8-1 5/8	MTB 0500 D10 18 UN	1/2	.445	4	1.03	4.0
16	3/8			MTB 0312 C06 16 UN	5/16	.264	3	.66	2.5
16	3/8			MTB 0312 C09 16 UN	5/16	.291	3	.97	2.5
16		3/4		MTB 0500 D12 16 UN	1/2	.500	4	1.22	4.0
14	7/16			MTB 0312 C08 14 UN	5/16	.303	3	.82	2.5
14	7/16			MTB 0375 C11 14 UN	3/8	.335	3	1.11	3.0
14		7/8		MTB 0625 E14 14 UN	5/8	.625	5	1.46	4.0
13	1/2			MTB 0375 C08 13 UN	3/8	.362	3	.89	3.0
13	1/2			MTB 0375 D12 13 UN	3/8	.375	4	1.27	3.0
12	9/16			MTB 0500 C10 12 UN	1/2	.413	3	1.04	4.0
12	9/16			MTB 0500 D14 12 UN	1/2	.457	4	1.46	4.0
12		1-1 1/2		MTB 0625 E16 12 UN	5/8	.625	5	1.63	4.0
11	5/8			MTB 0500 C11 11 UN	1/2	.449	3	1.14	4.0
11	5/8			MTB 0500 D15 11 UN	1/2	.472	4	1.50	4.0
10	3/4			MTB 0625 D13 10 UN	5/8	.567	4	1.35	4.0
10	3/4			MTB 0625 E19 10 UN	5/8	.579	5	1.95	4.0
9	7/8			MTB 0625 C15 9 UN	5/8	.625	3	1.50	4.0
8	1			MTB 0750 D16 8 UN	3/4	.750	4	1.69	4.0
7	1 1/8 - 1 1/4			MTB 0750 D17 7 UN	3/4	.750	4	1.78	4.0

Order example: MTB 1212 D31 16 UN MT7

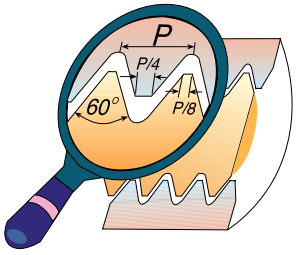
● First choice ○ Alternative

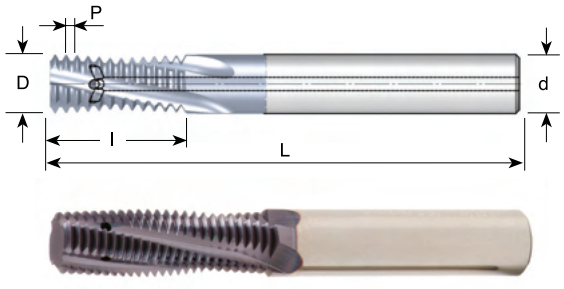
For thread mills with coolant through the flutes see next page

For small thread mills see pages B09-5, 6, 12, 15, 17 and B11-4, 6

UN With internal coolant through the flutes

Tools for Internal Thread





Grade	P	M	K	N	S	H
MT7	●	●	●	○	●	≤47 HRc

Pitch TPI	UNC	UNF	UNEF	Ordering Code	d mm	D	No. of Flutes	l	L
28		1/4		MTZ 0605 C11 28 UN	6	.197	3	.44	2.3
28			7/16-1/2	MTZ 0606 C14 28 UN	6	.236	3	.56	2.3
24		5/16		MTZ 08066 C14 24 UN	8	.260	3	.56	2.5
24		3/8	9/16-5/8	MTZ 0808 D21 24 UN	8	.315	4	.81	2.5
20		7/16		MTZ 0808 C21 20 UN	8	.315	3	.83	2.5
20		1/2		MTZ 1010 D22 20 UN	10	.394	4	.88	2.9
20			3/4-1	MTZ 1212 E27 20 UN	12	.472	5	1.07	3.3
18	5/16			MTZ 06056 C14 18 UN	6	.220	3	.58	2.3
18	5/16			MTZ 0606 C20 18 UN	6	.236	3	.81	2.3
18		9/16-5/8	1 1/8-1 5/8	MTZ 12113 D26 18 UN	12	.445	4	1.03	3.3
16	3/8			MTZ 08067 C16 16 UN	8	.264	3	.66	2.5
16	3/8			MTZ 08074 C24 16 UN	8	.291	3	.97	2.5
16		3/4		MTZ 1212 D31 16 UN	12	.472	4	1.22	3.3
14	7/16			MTZ 08077 C20 14 UN	8	.303	3	.82	2.5
14	7/16			MTZ 10085 C28 14 UN	10	.335	3	1.11	2.9
14		7/8		MTZ 1616 E37 14 UN	16	.630	5	1.46	4.0
13	1/2			MTZ 10092 C22 13 UN	10	.362	3	.89	2.9
13	1/2			MTZ 10098 D32 13 UN	10	.386	4	1.27	2.9
12	9/16			MTZ 12105 C26 12 UN	12	.413	3	1.04	3.3
12	9/16			MTZ 12116 D37 12 UN	12	.457	4	1.46	3.3
12		1-1 1/2		MTZ 1616 E41 12 UN	16	.630	5	1.63	4.0
11	5/8			MTZ 12114 C28 11 UN	12	.449	3	1.14	3.3
10	3/4			MTZ 16144 D34 10 UN	16	.567	4	1.35	4.0

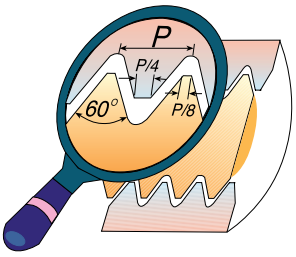
Order example: MTZ 0808 D21 24 UN MT7

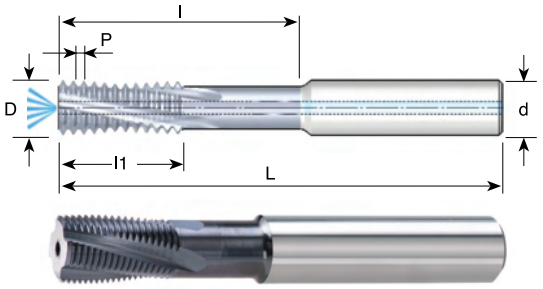
● First choice ○ Alternative

For small thread mills see pages B09-5, 6, 12, 15, 17 and B11-4, 6

UN With relieved neck and internal coolant bore

Tools for Internal Thread





Grade	P	M	K	N	S	H
MT7	●	●	●	○	●	≤47 HRc

Pitch TPI	Thread size	Ordering Code	d mm	D	No. of Flutes	l1	l	L
20	Ø ≥ .47	MTQ 1010 D30 20 UN	10	.394	4	.70	1.20	2.9
20	Ø ≥ .55	MTQ 1212 E35 20 UN	12	.472	5	.80	1.40	3.3
20	Ø ≥ .71	MTQ 1616 E43 20 UN	16	.630	6	1.00	1.70	4.1
18	Ø ≥ .59	MTQ 1212 D35 18 UN	12	.472	4	.78	1.39	3.3
16	Ø ≥ .59	MTQ 1212 D35 16 UN	12	.472	4	.81	1.38	3.3
16	Ø ≥ .75	MTQ 1616 E42 16 UN	16	.630	5	1.00	1.69	4.1
16	Ø ≥ .91	MTQ 2020 E58 16 UN	20	.787	6	1.44	2.31	4.1
14	Ø ≥ .79	MTQ 1616 E45 14 UN	16	.630	5	1.00	1.78	4.1
12	Ø ≥ .63	MTQ 1212 D42 12 UN	12	.472	4	1.00	1.67	3.3
12	Ø ≥ .95	MTQ 2020 E55 12 UN	20	.787	5	1.33	2.17	4.1

Order example: MTQ 1212 D35 16 UN MT7

● First choice ○ Alternative

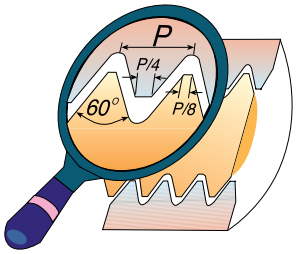
For small thread mills see pages B09-5, 6, 12, 15, 17 and B11-4, 6

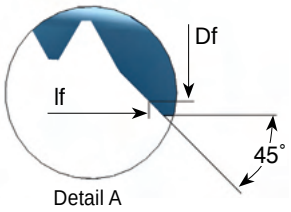
Mill-Thread Solid Carbide

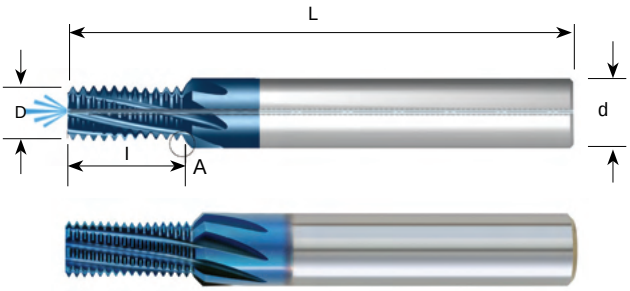
Carmex Precision Tools Ltd.

UN Fast MT with internal coolant bore

Tools for Internal Thread







Grade	P	M	K	N	S	H
MT8	●	●	●	○	●	≤52 HRc

Pitch TPI	UNC	UNF	UNEF	Ordering Code	d mm	D	Df	No. of Flutes	l	lf	L
28		1/4		FMT 08052 F11 28 UN	8	.205	.283	6	.44	.48	2.5
28			7/16-1/2	FMT 12098 H19 28 UN	12	.386	.465	8	.77	.81	3.3
24		5/16		FMT 10066 G14 24 UN	10	.260	.378	7	.56	.62	2.9
24		3/8	9/16, 5/8, 11/16	FMT 12082 G17 24 UN	12	.323	.417	7	.69	.74	3.3
20	1/4			* FMT 08048 E12 20 UN	8	.189	.268	5	.48	.52	2.5
20		7/16		FMT 12092 H21 20 UN	12	.362	.449	8	.83	.87	3.3
20		1/2	3/4, 7/8, 1	FMT 14111 H22 20 UN	14	.437	.531	8	.87	.92	3.3
18	5/16			FMT 1006 F14 18 UN	10	.236	.331	6	.58	.63	2.9
18		9/16, 5/8	1 1/16, 1 1/8	FMT 16125 H26 18 UN	16	.492	.591	8	1.03	1.08	4.1
16	3/8			FMT 10074 F16 16 UN	10	.291	.378	6	.66	.70	2.9
16		3/4		FMT 20167 H34 16 UN	20	.657	.760	8	1.34	1.39	4.1
14	7/16	7/8		FMT 12085 F20 14 UN	12	.335	.421	6	.82	.87	3.3
13	1/2			FMT 12098 F24 13 UN	12	.386	.465	6	.96	1.00	3.3
12	9/16	1		FMT 16116 F26 12 UN	16	.457	.598	6	1.04	1.11	4.1
11	5/8			FMT 1612 F33 11 UN	16	.472	.606	6	1.31	1.38	4.1

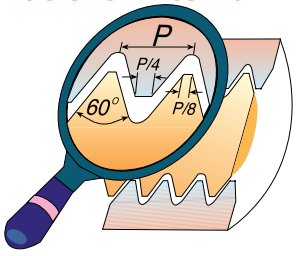
Order example: FMT 08048 E12 20 UN MT8

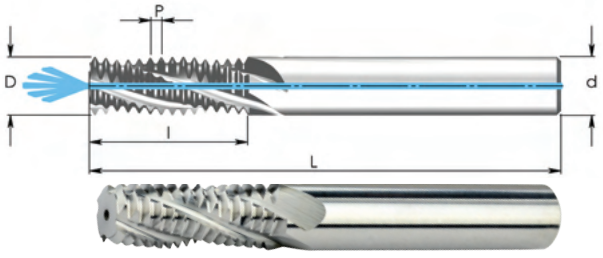
* without internal coolant

For small thread mills see page B09-17

UN With internal coolant bore

Tools for Internal Thread





Thread length: 2xD

Grade	P	M	K	N	S	H
K20	○	○	●	●	●	

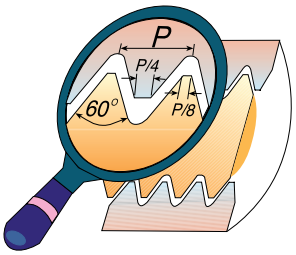
Pitch TPI	UNC	UNF	UNEF	Ordering Code	d mm	D	No. of Flutes	l	L
32	8	10	12	AMT 06032 C9 32 UN	6	.126	3	.36	2.3
28		1/4		AMT 06052 C14 28 UN	6	.205	3	.55	2.3
24		3/8	9/16-5/8	AMT 0808 D20 24 UN	8	.315	4	.81	2.5
20	1/4			AMT 06048 C14 20 UN	6	.189	3	.57	2.3
20		7/16		AMT 10092 C23 20 UN	10	.362	3	.92	2.9
18	5/16			AMT 0606 C17 18 UN	6	.236	3	.69	2.3
18		9/16-5/8	1 1/8 - 1 5/8	AMT 1212 D30 18 UN	12	.472	4	1.19	3.3
16	3/8			AMT 08074 C21 16 UN	8	.291	3	.84	2.5
16		3/4		AMT 1616 E38 16 UN	16	.630	5	1.53	4.1

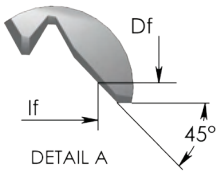
For information about AMT Thread Mills and cutting data see page B12-16

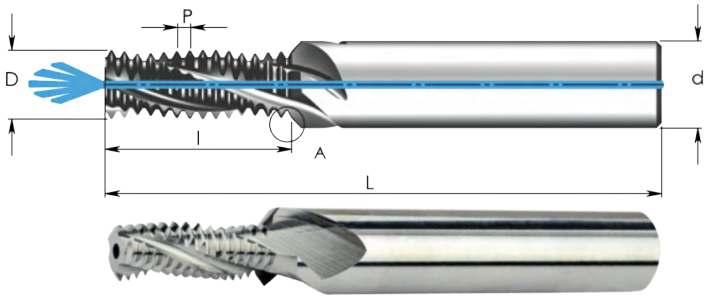
● First choice ○ Alternative

UN With internal coolant bore and cutting chamfer

Tools for Internal Thread







Thread length: 2xD

Grade	P	M	K	N	S	H
K20	○	○	●	●	●	

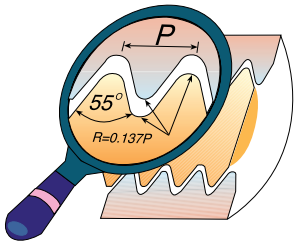
Pitch TPI	UNC	UNF	UNEF	Ordering Code	d mm	D	Df	No. of Flutes	l	lf	L
20	1/4			AMT 08048 C14 20UN-C	8	.189	.27	3	.57	.61	2.5
18	5/16			AMT 1006 C17 18UN-C	10	.236	.33	3	.69	.74	2.9
16	3/8			AMT 12074 C21 16UN-C	12	.291	.39	3	.84	.89	3.3

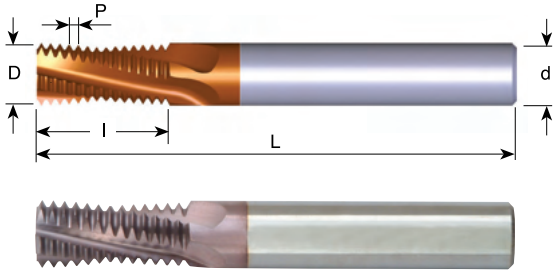
Order example: AMT 12074 C21 16UN-C K20

For information about AMT Thread Mills and cutting data see page B12-16

G (55°) BSF, BSP

Same Tool for Internal and External Thread





Grade	P	M	K	N	S	H
MT7	●	○	●	○	○	

Pitch TPI	Standard	Ordering Code	d mm	D	No. of Flutes	l	L
28	G1/16-G1/8	MT 0606 C9 28 W	6	.236	3	.38	2.3
19	G1/4-3/8	MT 0808 C14 19 W	8	.315	3	.55	2.5
14	G1/2-7/8	MT 1212 D19 14 W	12	.472	4	.75	3.3
14	G1/2-7/8	MT 1212 D26 14 W	12	.472	4	1.04	3.3
11	G≥1	MT 1212 C24 11 W	12	.472	3	.95	3.3
11	G≥1	MT 1616 D38 11 W	16	.630	4	1.50	4.1
11	G≥1	MT 2020 E47 11 W	20	.787	5	1.86	4.1

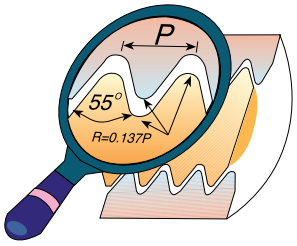
Order example: MT 1212 D19 14 W MT7

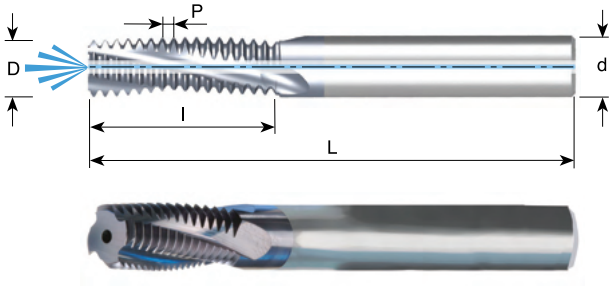
For small thread mills see pages B09-7, B09-14 and B11-5
For thread mills with coolant see next page

● First choice ○ Alternative

G (55°) BSF, BSP With internal coolant bore

Same Tool for Internal and External Thread





Grade	P	M	K	N	S	H
MT7	●	●	●	○	●	≤47 HRc

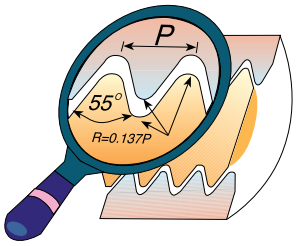
Pitch TPI	Standard	Ordering Code	d mm	D	No. of Flutes	l	L
28	G1/8	MTB 08078 C14 28 W	8	.307	3	.56	2.5
28	G1/8	MTB 0808 C20 28 W	8	.315	3	.80	2.5
19	G1/4	MTB 1010 D16 19 W	10	.394	4	.66	2.9
19	G1/4	MTB 1211 D27 19 W	12	.433	4	1.08	3.3
19	G3/8	MTB 1414 D26 19 W	14	.551	4	1.03	3.3
19	G3/8	MTB 1414 D34 19 W	14	.551	4	1.34	3.3
14	G1/2-7/8	MTB 1616 E26 14 W	16	.630	5	1.04	4.1
11	G≥1	MTB 1616 D38 11 W	16	.630	4	1.50	4.1
11	G≥1	MTB 2020 E47 11 W	20	.787	5	1.86	4.1

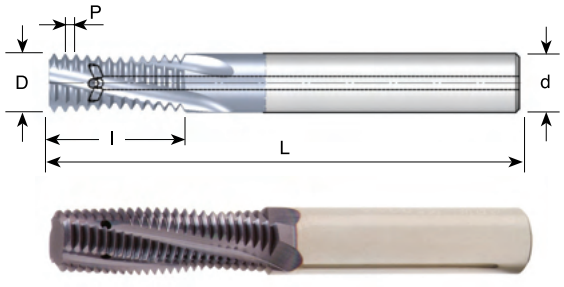
Order example: MTB 1010 D16 19 W MT7

For small thread mills see pages B09-7, B09-14 and B11-5

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

Same Tool for Internal and External Thread





Grade	P	M	K	N	S	H
MT7	●	●	●	○	●	≤47 HRc

Pitch TPI	Standard	Ordering Code	d mm	D	No. of Flutes	l	L
28	G1/8	MTZ 08078 C14 28 W	8	.307	3	.56	2.5
19	G1/4-3/8	MTZ 1010 D16 19 W	10	.394	4	.66	2.9
14	G1/2-7/8	MTZ 1616 E26 14 W	16	.630	5	1.04	4.0
11	G≥1	MTZ 1616 D38 11 W	16	.630	4	1.50	4.0

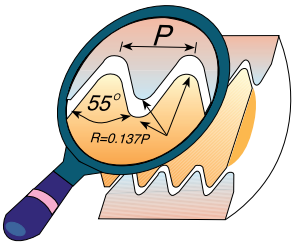
Order example: MTZ 08078 C14 28 W MT7

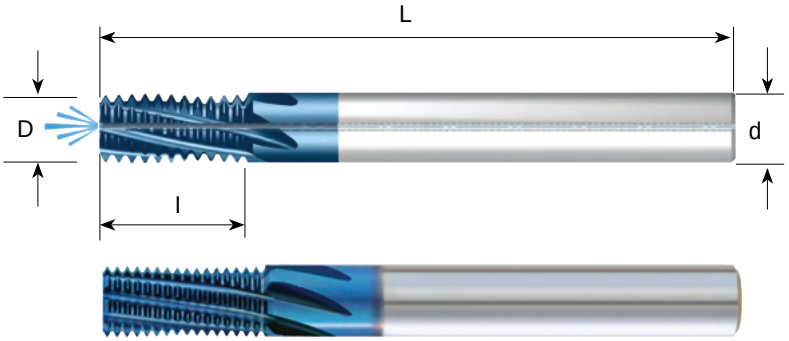
For small thread mills see pages B09-7, B09-14 and B11-5

● First choice ○ Alternative

G (55°) Fast MT With internal coolant bore

Same Tool for Internal and External Thread





Grade	P	M	K	N	S	H
MT8	●	●	●	○	●	≤52 HRc

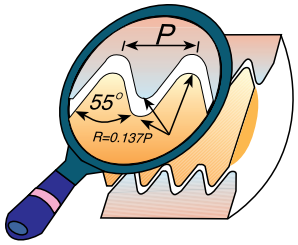
Pitch TPI	Standard	Ordering Code	d mm	D	No. of Flutes	l	L
28	G1/8	FMT 08078 H14 28 W	8	.307	8	.56	2.5
19	G1/4-3/8	FMT 1010 G16 19 W	10	.394	7	.66	2.9
14	G1/2-7/8	FMT 1414 H26 14 W	14	.551	8	1.04	3.3
11	G≥1	FMT 1616 H38 11 W	16	.630	8	1.50	4.1

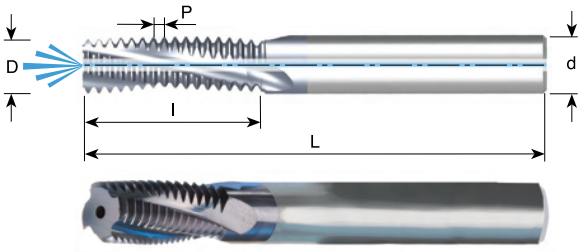
Order example: FMT 1616 H38 11W MT8

● First choice ○ Alternative

Whitworth With internal coolant bore

Same Tool for Internal and External Thread





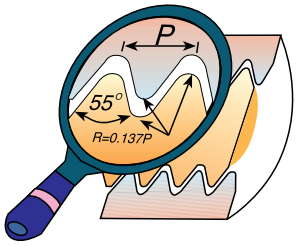
Grade	P	M	K	N	S	H
MT7	●	●	●	○	●	≤47 HRc

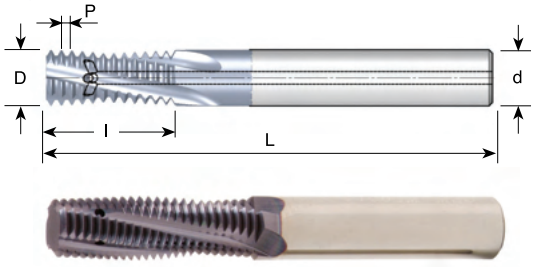
Pitch TPI	BSW	BSF	Ordering Code	d mm	D	No. of Flutes	l	L
20	1/4		MTB 06046 C13 20 W	6	.181	3	.52	2.3
20		3/8	MTB 08076 D19 20 W	8	.299	4	.78	2.5
18	5/16		MTB 06056 C16 18 W	6	.220	3	.64	2.3
18		7/16	MTB 10088 D23 18 W	10	.346	4	.92	2.9
16	3/8		MTB 0807 D19 16 W	8	.276	4	.78	2.5
16		1/2-9/16	MTB 1010 E26 16 W	10	.394	5	1.03	2.9
14	7/16		MTB 0808 D22 14 W	8	.315	4	.89	2.5
14		5/8-11/16	MTB 14128 E31 14 W	14	.504	5	1.25	3.3
12	1/2-9/16	3/4-13/16	MTB 1009 D26 12 W	10	.354	4	1.04	2.9
11	5/8	7/8	MTB 12118 E33 11 W	12	.465	5	1.32	3.3
10	3/4	1	MTB 1414 E39 10 W	14	.551	5	1.55	4.1
9	7/8	1 1/8	MTB 1616 E43 9 W	16	.630	5	1.72	4.1

Order example: MTB 06046 C13 20 W MT7

Whitworth With internal coolant through the flutes

Same Tool for Internal and External Thread





Grade	P	M	K	N	S	H
MT7	●	●	●	○	●	≤47 HRc

Pitch TPI	BSW	BSF	Ordering Code	d mm	D	No. of Flutes	l	L
20	1/4	3/8	* MTZ 06046 C12 20 W	6	.181	3	.48	2.3
18	5/16	7/16	MTZ 06053 C14 18 W	6	.209	3	.58	2.3
16	3/8		MTZ 08068 C16 16 W	8	.268	3	.66	2.5
16		1/2-9/16	MTZ 10092 D24 16 W	10	.362	4	.97	2.9
14	7/16	5/8-11/16	MTZ 08078 D20 14 W	8	.307	4	.82	2.5
12	1/2	3/4-13/16	MTZ 10086 D24 12 W	10	.339	4	.96	2.9
11	5/8	7/8	MTZ 12109 D28 11 W	12	.429	4	1.14	3.3

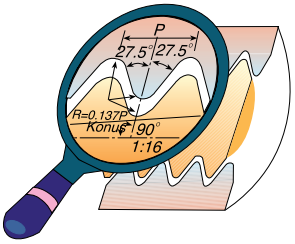
Order example: MTZ 08068 C16 16 W MT7

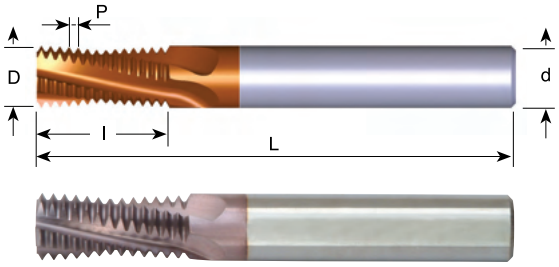
* Cutter without coolant

● First choice ○ Alternative

BSPT

Same Tool for Internal and External Thread





Grade	P	M	K	N	S	H
MT7	●	○	●	○	○	

Pitch TPI	Standard	Ordering Code	d mm	D	No. of Flutes	l	L
28	RC1/16-1/8	MT 0606 C9 28 BSPT	6	.236	3	.37	2.3
19	RC1/4-3/8	MT 0808 C14 19 BSPT	8	.315	3	.55	2.5
14	RC1/2-7/8	MT 1212 D19 14 BSPT	12	.472	4	.75	3.3
11	RC1-2	MT 1616 D28 11 BSPT	16	.630	4	1.14	4.1

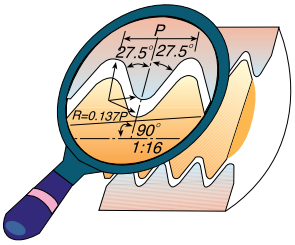
Order example: MT 1616 D28 11 BSPT MT7

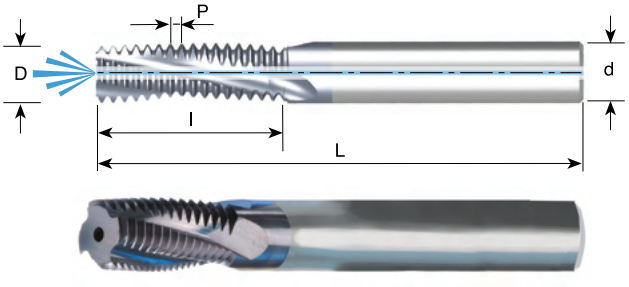
For thread mills with coolant through the flutes see next page

For conical preparation end mills see page B08-23

BSPT With internal coolant bore

Same Tool for Internal and External Thread





Grade	P	M	K	N	S	H
MT7	●	●	●	○	●	≤47 HRc

Pitch TPI	Standard	Ordering Code	d mm	D	No. of Flutes	l	L
28	RC1/8	MTB 08078 C14 28 BSPT	8	.307	3	.56	2.5
19	RC1/4-3/8	MTB 1010 D16 19 BSPT	10	.394	4	.66	2.9
14	RC1/2-7/8	MTB 1616 E26 14 BSPT	16	.630	5	1.04	4.1
11	RC1-2	MTB 1616 D28 11 BSPT	16	.630	4	1.14	4.1

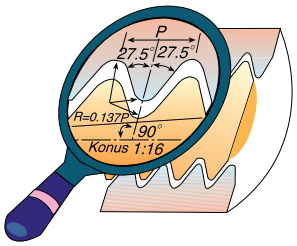
Order example: MTB 08078 C14 28 BSPT MT7

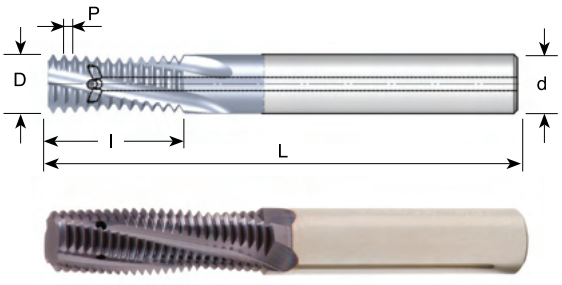
● First choice ○ Alternative

Carmex Precision Tools Ltd.

BSPT With internal coolant through the flutes

Same Tool for Internal and External Thread





Grade	P	M	K	N	S	H
MT7	●	●	●	○	●	≤47 HRc

Pitch TPI	Standard	Ordering Code	d mm	D	No. of Flutes	l	L
28	RC1/8	MTZ 08078 C14 28 BSPT	8	.307	3	.56	2.5
19	RC1/4-3/8	MTZ 1010 D16 19 BSPT	10	.394	4	.66	2.9
14	RC1/2-7/8	MTZ 1616 E26 14 BSPT	16	.630	5	1.04	4.0
11	RC1-2	MTZ 1616 D28 11 BSPT	16	.630	4	1.14	4.0

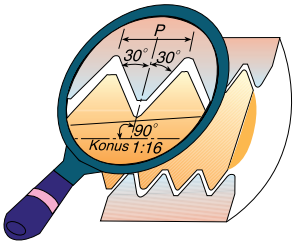
Order example: MTZ 1010 D16 19 BSPT MT7

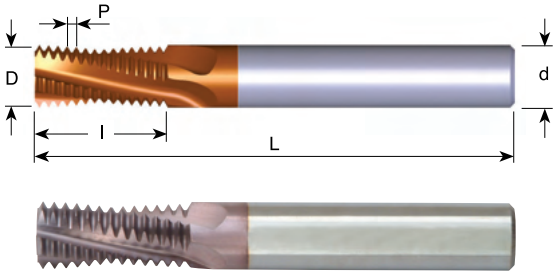
● First choice ○ Alternative

For conical preparation end mills see page B08-23

NPT

Same Tool for Internal and External Thread





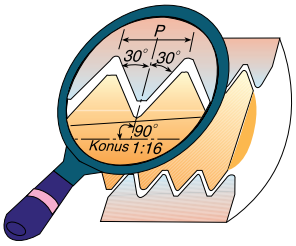
Grade	P	M	K	N	S	H
MT7	●	○	●	○	○	

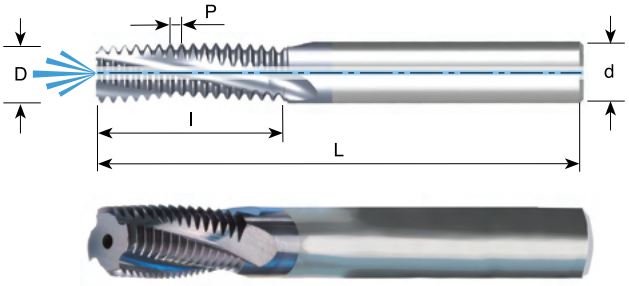
Pitch TPI	Standard	Ordering Code	d	D	No. of Flutes	l	L
27	1/16	MT 0250 C03 27 NPT	1/4	.230	3	.39	2.5
27	1/8	MT 0250 C04 27 NPT	1/4	.250	3	.39	2.5
18	1/4-3/8	MT 0312 C06 18 NPT	5/16	.312	3	.58	2.5
14	1/2-3/4	MT 0500 D08 14 NPT	1/2	.500	4	.82	3.5
11.5	1-2	MT 0625 D11 11.5 NPT	5/8	.625	4	1.09	4.0
8	≥ 2 1/2	MT 0750 D16 8 NPT	3/4	.750	4	1.56	4.0

Order example: MT 0808 C14 18 NPT MT7

NPT With internal coolant bore

Same Tool for Internal and External Thread





Grade	P	M	K	N	S	H
MT7	●	●	●	○	●	≤47 HRc

Pitch TPI	Standard	Ordering Code	d	D	No. of Flutes	l	L
27	1/8	MTB 0312 C04 27 NPT	5/16	.299	3	.43	2.5
18	1/4-3/8	MTB 0375 D06 18 NPT	3/8	.375	4	.64	3.0
14	1/2-3/4	MTB 0625 D08 14 NPT	5/8	.610	4	.89	4.0
11.5	1-2	MTB 0750 D11 11.5 NPT	3/4	.750	4	1.17	4.0
8	≥ 2 1/2	MTB 0750 D15 8 NPT	3/4	.750	4	1.56	4.0

Order example: MTB 1010 D16 18 NPT MT7

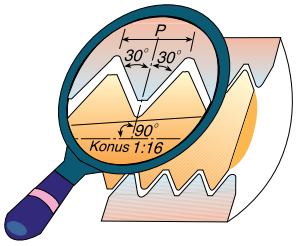
For thread mills with coolant through the flutes see next page
For conical preparation end mills see page B08-23

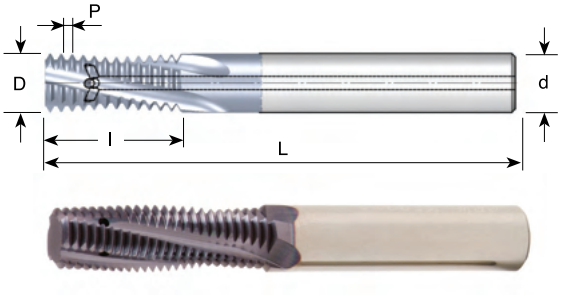
● First choice ○ Alternative

Carmex Precision Tools Ltd.

NPT With internal coolant through the flutes

Same Tool for Internal and External Thread





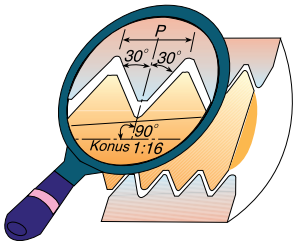
Grade	P	M	K	N	S	H
MT7	●	●	●	○	●	≤47 HRc

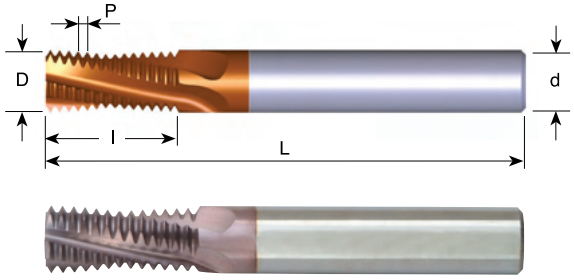
Pitch TPI	Standard	Ordering Code	d mm	D	No. of Flutes	l	L
27	1/8	MTZ 08076 C10 27 NPT	8	.299	3	.43	2.5
18	1/4-3/8	MTZ 1010 D16 18 NPT	10	.394	4	.64	2.9
14	1/2-3/4	MTZ 16155 D22 14 NPT	16	.610	4	.89	4.0

Order example: MTZ 08076 C10 27 NPT MT7

NPTF

Same Tool for Internal and External Thread





Grade	P	M	K	N	S	H
MT7	●	○	●	○	○	

Pitch TPI	Standard	Ordering Code	d	D	No. of Flutes	l	L
27	1/16	MT 0250 C03 27 NPTF	1/4	.230	3	.39	2.5
27	1/8	MT 0250 C04 27 NPTF	1/4	.250	3	.39	2.5
18	1/4-3/8	MT 0312 C06 18 NPTF	5/16	.312	3	.58	2.5
14	1/2-3/4	MT 0500 D08 14 NPTF	1/2	.500	4	.82	3.5
11.5	1-2	MT 0625 D11 11.5 NPTF	5/8	.625	4	1.09	4.0
8	≥ 2 1/2	MT 0750 D16 8 NPTF	3/4	.750	4	1.56	4.0

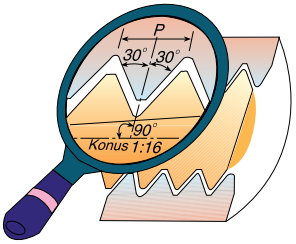
Order example: MT 1212 D20 14 NPTF MT7

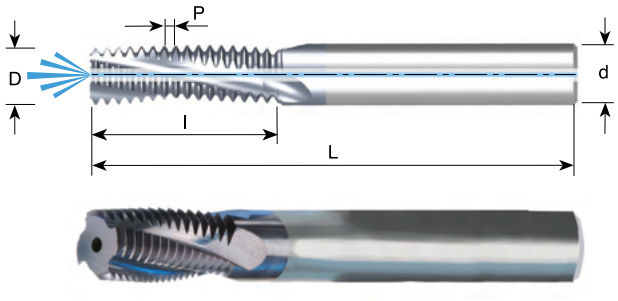
For thread mills with coolant bore see next page
For conical preparation end mills see page B08-23

● First choice ○ Alternative

NPTF With internal coolant bore

Same Tool for Internal and External Thread





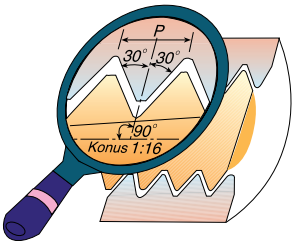
Grade	P	M	K	N	S	H
MT7	●	●	●	○	●	≤47 HRc

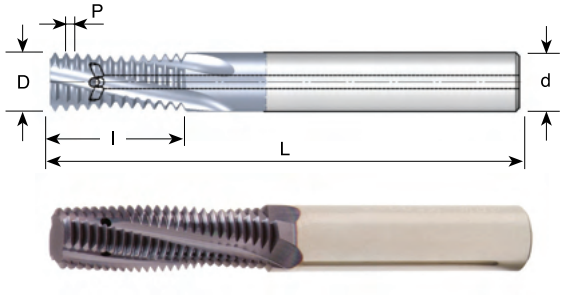
Pitch TPI	Standard	Ordering Code	d	D	No. of Flutes	l	L
27	1/8	MTB 0312 C04 27 NPTF	5/16	.299	3	.43	2.5
18	1/4-3/8	MTB 0375 D06 18 NPTF	3/8	.375	4	.64	3.0
14	1/2-3/4	MTB 0625 D08 14 NPTF	5/8	.610	4	.89	4.0
11.5	1-2	MTB 0750 D11 11.5 NPTF	3/4	.750	4	1.17	4.0
8	≥ 2 1/2	MTB 0750 D15 8 NPTF	3/4	.750	4	1.56	4.0

Order example: MTB 16155 D22 14 NPTF MT7

NPTF With internal coolant through the flutes

Same Tool for Internal and External Thread





Grade	P	M	K	N	S	H
MT7	●	●	●	○	●	≤47 HRc

Pitch TPI	Standard	Ordering Code	d mm	D	No. of Flutes	l	L
27	1/8	MTZ 08076 C10 27 NPTF	8	.299	3	.43	2.5
18	1/4-3/8	MTZ 1010 D16 18 NPTF	10	.394	4	.64	2.9
14	1/2-3/4	MTZ 16155 D22 14 NPTF	16	.610	4	.89	4.0

Order example: MTZ 1010 D16 18 NPTF MT7

For conical preparation end mills see page B08-23

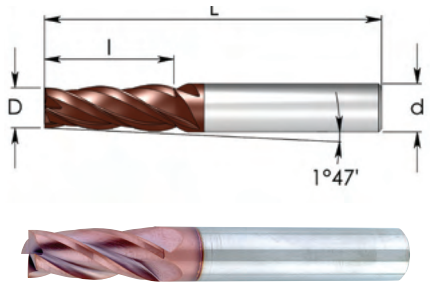
● First choice ○ Alternative

Solid Carbide Tapered End Mills

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

Advantages:

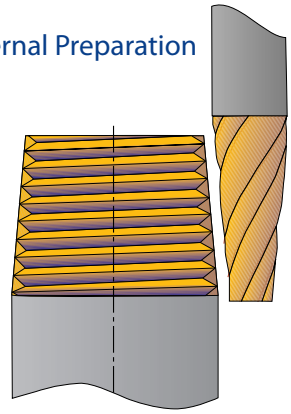
* Increases the tool life of mill thread cutters and indexable inserts.
* Equal and uniform load along the cutting edge of the mill thread cutter.
* Shorter machining time during the mill thread operation, due to the tapered preparation.
* Same tool for internal and external preparation.



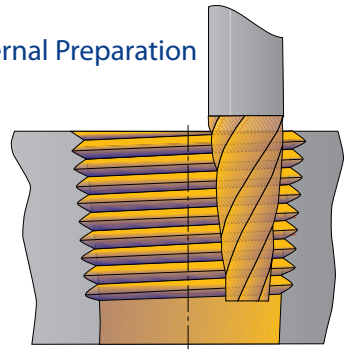
Ordering Code	d	D	l	L	No. of Flutes	Size
SC0652D12	6 mm	.20	.47	2.3	4	NPT 1/16 - 1/8 NPTF 1/16 - 1/8 BSPT 1/16 - 1/8
SC0375D09	3/8	.32	.95	3.0	4	NPT 1/8 - 1 NPTF 1/8 - 1 BSPT 1/8 - 1
SC0500D12	1/2	.42	1.26	3.5	4	NPT 1/4 - 3 NPTF 1/4 - 3 BSPT 1/4 - 3

Order example: SC 0500D12 MT7

External Preparation

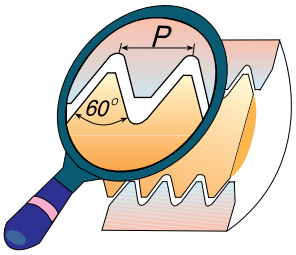


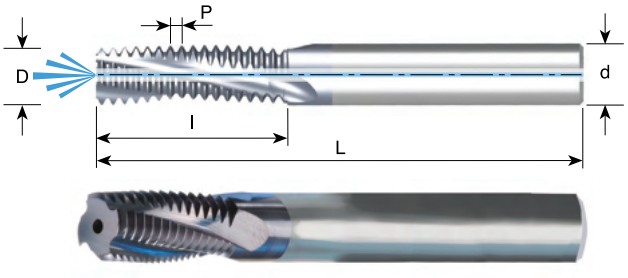
Internal Preparation



NPS With internal coolant bore

Same Tool for Internal and External Thread - Inch Shank





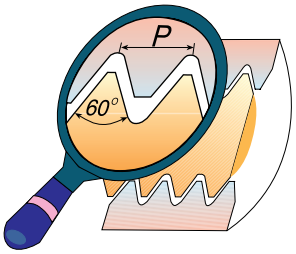
Grade	P	M	K	N	S	H
MT7	●	●	●	○	●	≤47 HRc

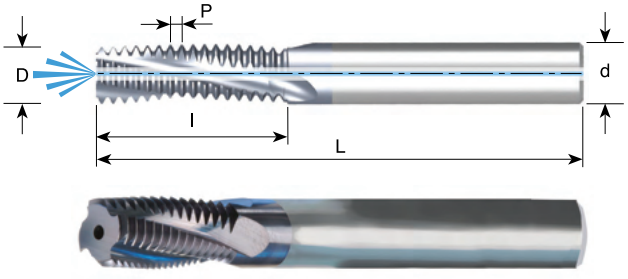
Pitch TPI	Standard	Ordering Code	d	D	No. of Flutes	l	L
27	1/8	MTB0312C04 27 NPS	5/16	.299	3	.43	2.5
18	1/4-3/8	MTB0375D06 18 NPS	3/8	.375	4	.64	3.0
14	1/2-3/4	MTB0625D08 14 NPS	5/8	.610	4	.89	4.0
11.5	1-2	MTB0750D11 11.5 NPS	3/4	.750	4	1.17	4.0

Order example: MTB 0375 D06 18 NPS MT7

NPSF With internal coolant bore

Same Tool for Internal and External Thread - Inch Shank





Grade	P	M	K	N	S	H
MT7	●	●	●	○	●	≤47 HRc

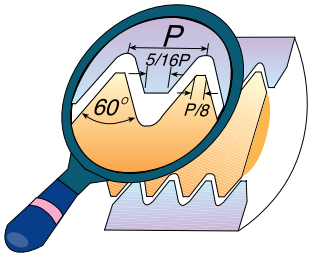
Pitch TPI	Standard	Ordering Code	d	D	No. of Flutes	l	L
27	1/8	MTB0312C04 27 NPSF	5/16	.299	3	.43	2.5
18	1/4-3/8	MTB0375D06 18 NPSF	3/8	.375	4	.64	3.0
14	1/2-3/4	MTB0625D08 14 NPSF	5/8	.610	4	.89	4.0
11.5	1-2	MTB0750D11 11.5 NPSF	3/4	.750	4	1.17	4.0

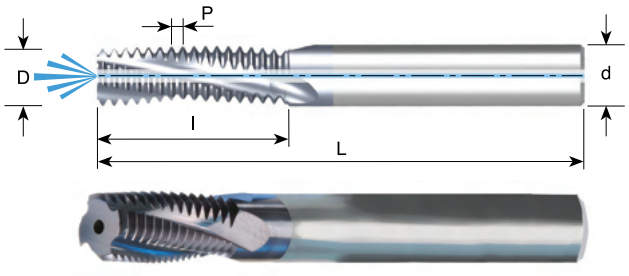
Order example: MTB 0312 C04 27 NPSF MT7

● First choice ○ Alternative

MJ With internal coolant bore

Tools for internal thread





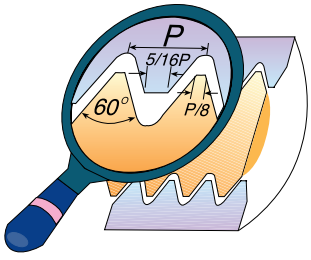
Grade	P	M	K	N	S	H
MT7	●	●	●	○	●	≤47 HRc

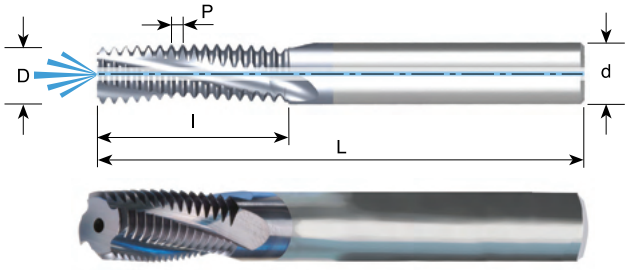
Pitch mm	Thread	Ordering Code	d mm	D	No. of Flutes	l	L
0.7	MJ4	MTB 06032 C8 0.7 MJ	6	.126	3	.32	2.3
0.8	MJ5	MTB 0604 C10 0.8 MJ	6	.157	3	.39	2.3
1.0	MJ6	MTB 06048 D12 1.0 MJ	6	.189	4	.49	2.3
1.25	MJ8	MTB 08064 D15 1.25 MJ	8	.252	4	.61	2.5
1.5	MJ10	MTB 0808 D20 1.5 MJ	8	.315	4	.80	2.5
1.75	MJ12	MTB 10095 D23 1.75 MJ	10	.374	4	.93	2.9

Order example: MTB 06048 D12 1.0 MJ MT7

UNJ With internal coolant bore

Tools for internal thread





Grade	P	M	K	N	S	H
MT7	●	●	●	○	●	≤47 HRc

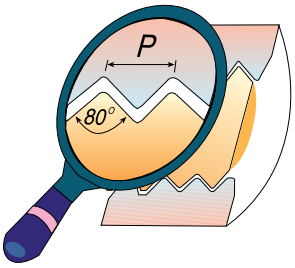
Pitch TPI	UNJC	UNJF	Ordering Code	d mm	D	No. of Flutes	l	L
28		1/4	MTB 06052 D13 28 UNJ	6	.205	4	.52	2.3
24		5/16	MTB 08066 D16 24 UNJ	8	.260	4	.65	2.5
24		3/8	MTB 10082 D19 24 UNJ	10	.323	4	.77	2.9
20	1/4		MTB 06048 C13 20 UNJ	6	.189	3	.52	2.3
20		7/16-1/2	MTB 10092 D22 20 UNJ	10	.362	4	.87	2.9
18	5/16		MTB 0606 C16 18 UNJ	6	.236	3	.64	2.3
16	3/8		MTB 08074 D19 16 UNJ	8	.291	4	.78	2.5
14	7/16		MTB 10085 D22 14 UNJ	10	.335	4	.89	2.9
13	1/2		MTB 10098 D26 13 UNJ	10	.386	4	1.04	2.9
12	9/16		MTB 12116 D28 12 UNJ	12	.457	4	1.13	3.3

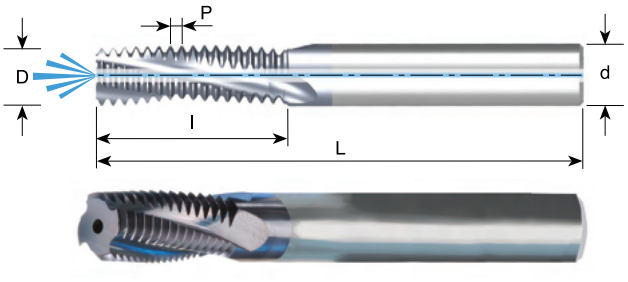
Order example: MTB 0606 C16 18 UNJ MT7

● First choice ○ Alternative

PG DIN 40430 - With internal coolant bore

Same Tool for Internal and External Thread





Grade	P	M	K	N	S	H
MT7	●	●	●	○	●	≤47 HRc

Pitch TPI	Standard	Ordering Code	d mm	D	No. of Flutes	l	L
20	Pg 7	MTB 1010 D19 20 PG	10	.394	4	.78	2.9
18	Pg 9, 11, 13.5, 16	MTB 1212 D20 18 PG	12	.472	4	.81	3.3
16	Pg 21, 29, 36, 42, 48	MTB 1212 D23 16 PG	12	.472	4	.91	3.3

Order example: MTB 1212 D20 18 PG MT7

● First choice ○ Alternative

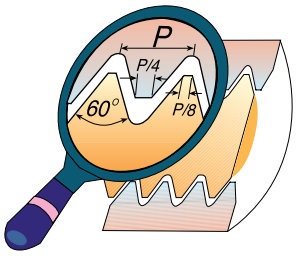
Carmex Precision Tools Ltd.

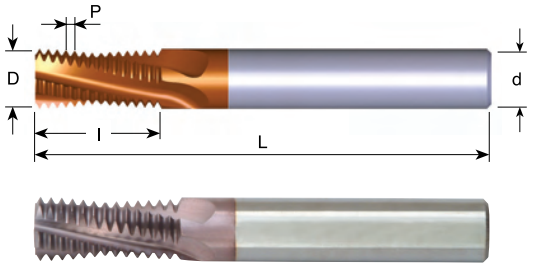
Mill - Thread Solid Carbide for External Threads

Advantages:

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

ISO



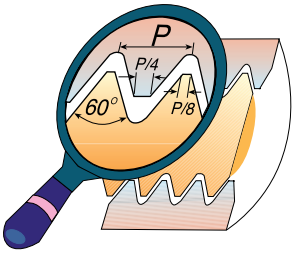


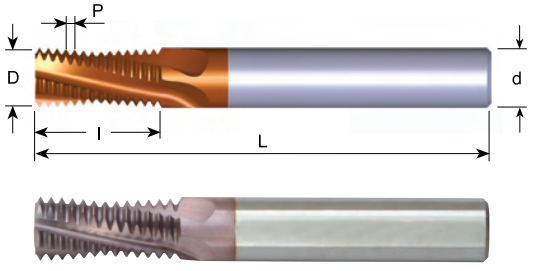
Grade	P	M	K	N	S	H
MT7	●	●	●	○	●	≤47 HRc

Pitch mm	Ordering Code	d mm	D	No. of Flutes	l	L
1.0	EMT 1010 D16 1.0 ISO	10	.394	4	.65	2.9
1.0	EMT 1212 E20 1.0 ISO	12	.472	5	.81	3.3
1.25	EMT 1010 D16 1.25 ISO	10	.394	4	.67	2.9
1.5	EMT 1010 D15 1.5 ISO	10	.394	4	.62	2.9
1.5	EMT 1212D20 1.5 ISO	12	.472	4	.80	3.3
1.75	EMT 1212 D20 1.75 ISO	12	.472	4	.79	3.3
2.0	EMT 1010 C17 2.0 ISO	10	.394	3	.67	2.9
2.0	EMT 1212 D21 2.0 ISO	12	.472	4	.83	3.3

Order example: EMT 1010 D15 1.5 ISO MT7

UN





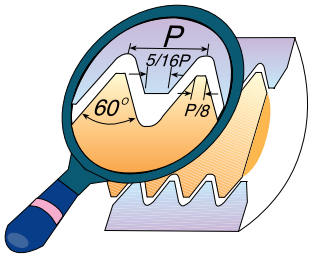
Grade	P	M	K	N	S	H
MT7	●	●	●	○	●	≤47 HRc

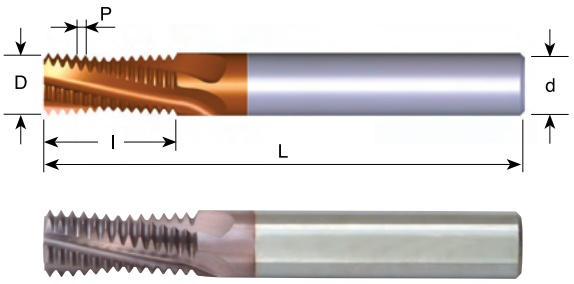
Pitch TPI	Ordering Code	d mm	D	No. of Flutes	l	L
24	EMT 1010 D16 24 UN	10	.394	4	.65	2.9
20	EMT 1212 E21 20 UN	12	.472	5	.83	3.3
18	EMT 1212 D20 18 UN	12	.472	4	.81	3.3
16	EMT 1212 D21 16 UN	12	.472	4	.84	3.3
14	EMT 1212 D20 14 UN	12	.472	4	.82	3.3
12	EMT 1212 D20 12 UN	12	.472	4	.79	3.3

Order example: EMT 1212 D20 18 UN MT7

● First choice ○ Alternative

MJ



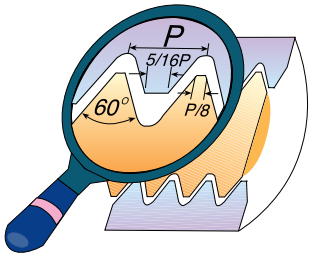


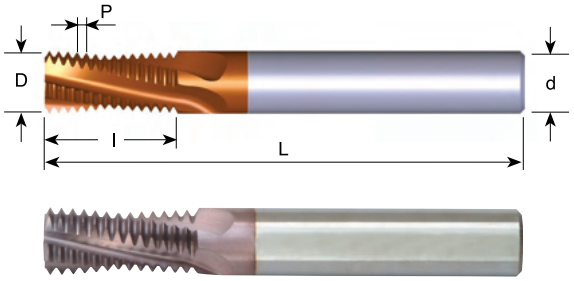
Grade	P	M	K	N	S	H
MT7	●	●	●	○	●	≤47 HRc

Pitch mm	Ordering Code	d mm	D	No. of Flutes	l	L
1.0	EMT 1010 D20 1.0 MJ	10	.394	4	.81	2.8
1.0	EMT 1212 E24 1.0 MJ	12	.472	5	.96	3.3
1.25	EMT 1010 D19 1.25 MJ	10	.394	4	.76	2.8
1.5	EMT 1010 D21 1.5 MJ	10	.394	4	.86	2.8
1.5	EMT 1212 D26 1.5 MJ	12	.472	4	1.04	3.3
1.75	EMT 1212 D27 1.75 MJ	12	.472	4	1.07	3.3
2.0	EMT 1010 C21 2.0 MJ	10	.394	3	.83	2.8
2.0	EMT 1212 D27 2.0 MJ	12	.472	4	1.06	3.3

Order example: EMT 1010 C21 2.0 MJ MT7

UNJ UNJC, UNJF, UNJEF, UNJS





Grade	P	M	K	N	S	H
MT7	●	●	●	○	●	≤47 HRc

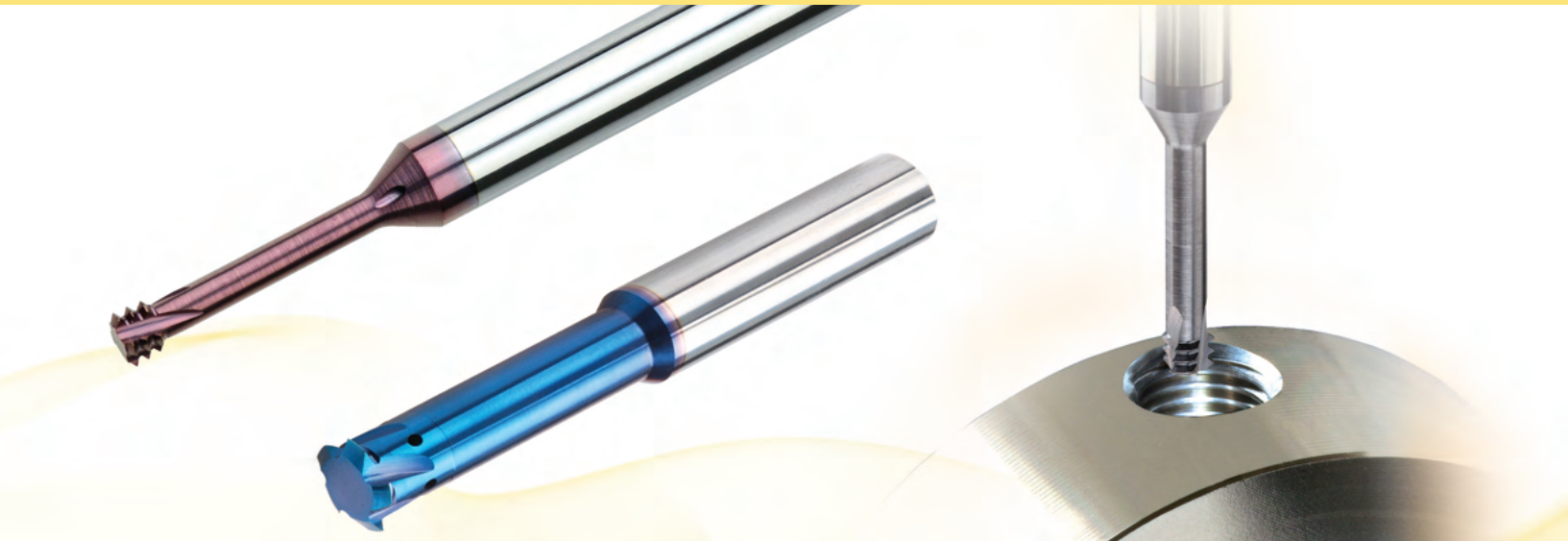
TPI	Ordering Code	d mm	D	No. of Flutes	l	L
32	EMT 0606 C13 32 UNJ	6	.236	3	.55	2.2
28	EMT 0808 D17 28 UNJ	8	.315	4	.70	2.5
24	EMT 1010 D20 24 UNJ	10	.394	4	.81	2.8
20	EMT 1212 E27 20 UNJ	12	.472	5	1.07	3.3
18	EMT 1212 D26 18 UNJ	12	.472	4	1.03	3.3
16	EMT 1212 D26 16 UNJ	12	.472	4	1.03	3.3
14	EMT 1212 D26 14 UNJ	12	.472	4	1.04	3.3
12	EMT 1212 D26 12 UNJ	12	.472	4	1.04	3.3

Order example: EMT 0808 D17 28 UNJ MT7

For cutting data information see page B12-12

● First choice ○ Alternative

Mini Mill-Thread | B09



MTS

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

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.

MTSB

Solid carbide thread mills with internal coolant bore and increased number of flutes for high performance, shorter cycle time and improved tool life.

MTI - For threading deep parts

FMTI

Thread mills with a large number of flutes that enables to achieve significant shorter machining time, increased productivity and high performance.

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UNJ	8
MTS Dental	9
ISO	9
UN	9
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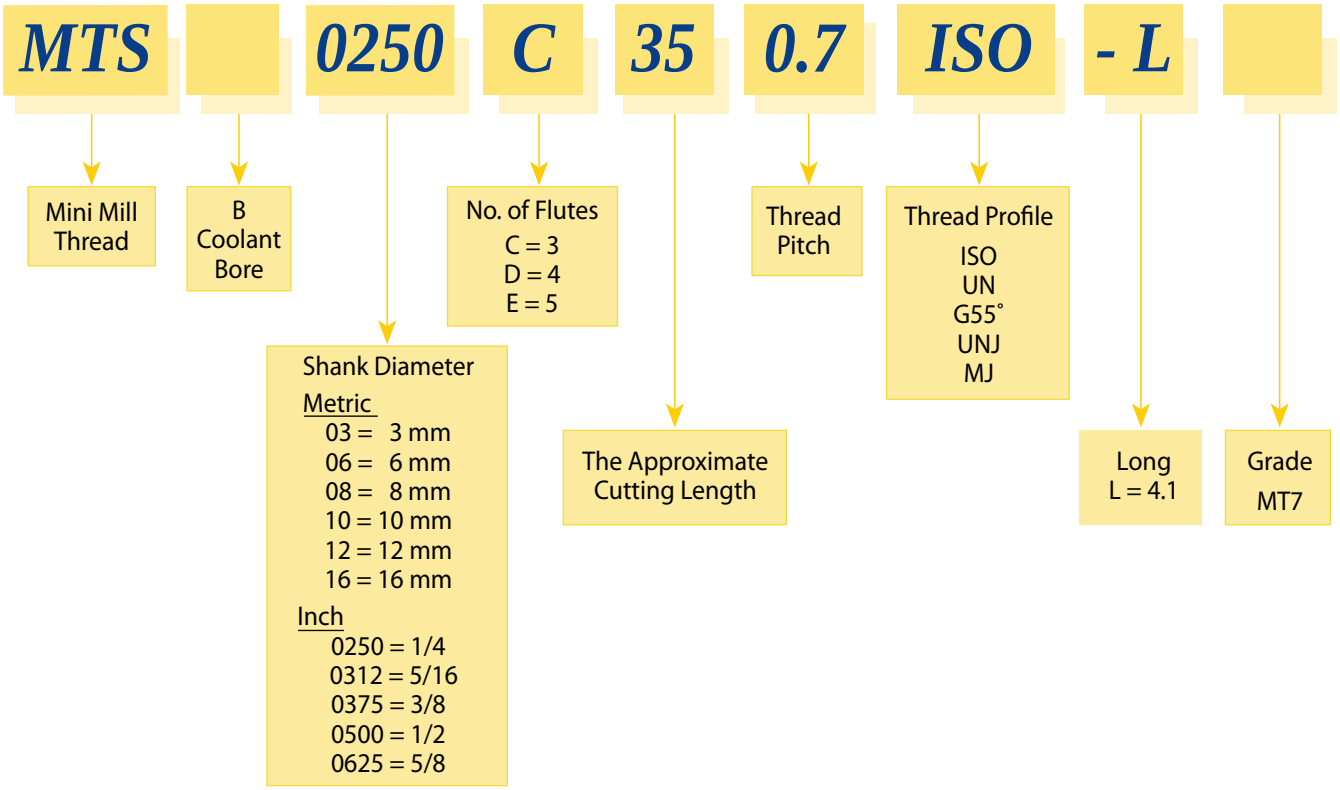
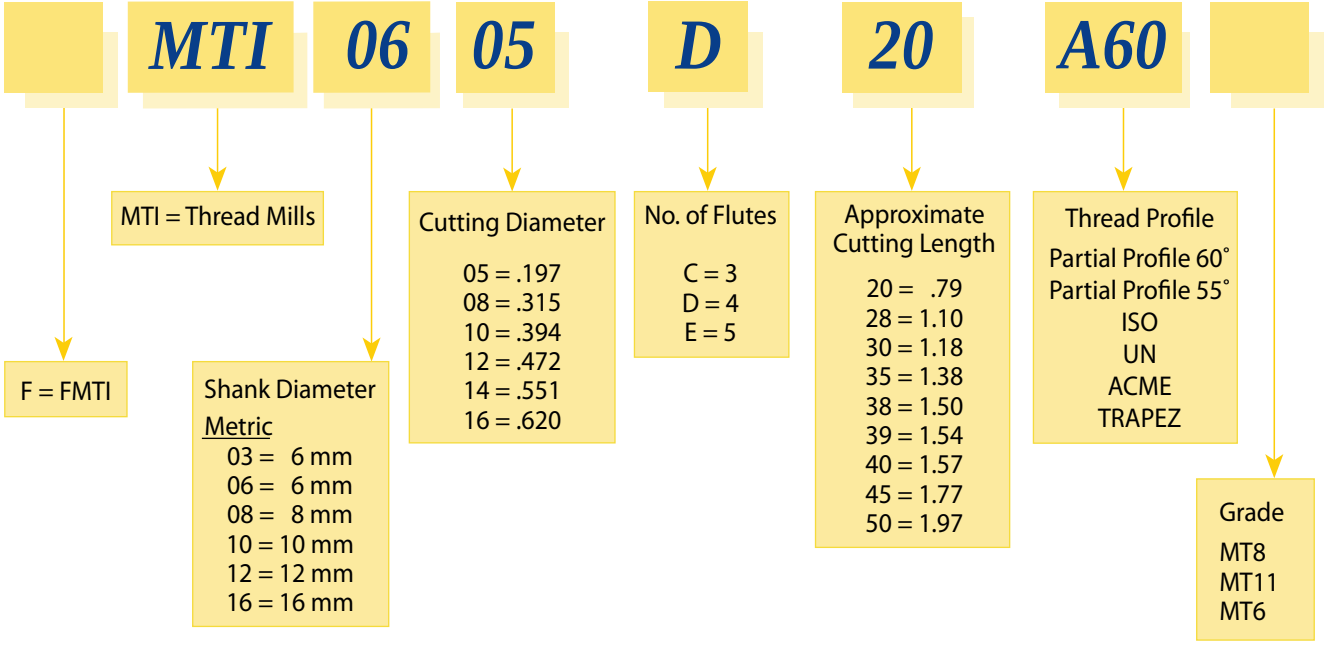
Product Identification

Mini Mill-Thread MTS Ordering Codes



Mini Mill-Thread MTI Ordering Codes



Mini Mill-Thread

Carmex Precision Tools Ltd.

MTS

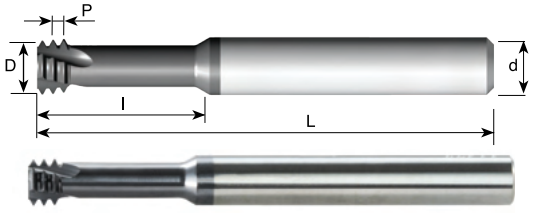
Carbide grade: MT7

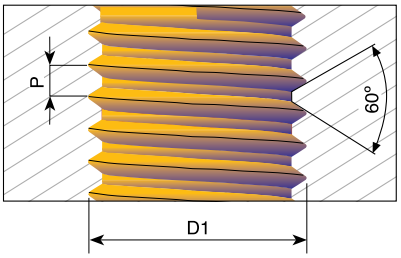
Sub-Micron grade with Titanium Aluminum Nitride multi-layer coating (ISO K10 - K20).
To be run at medium to high cutting speeds. General purpose for all materials.

Demonstration

ISO

Tools for Internal Thread





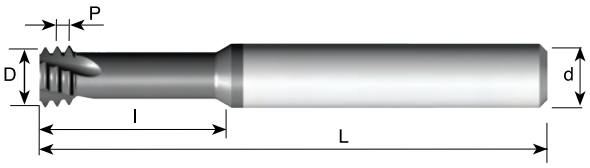
Grade	P	M	K	N	S	H
MT7	●	○	●	●	●	≤45 HRc

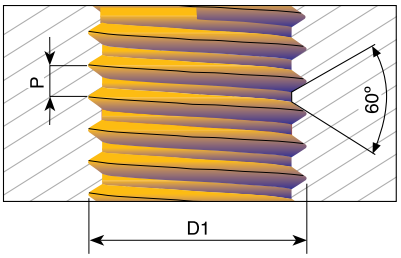
Pitch mm	M Coarse	M Fine	Ordering Code	d	D	No. of Flutes	l	L	Thread depth
0.25	M1, M1.1		MTS 03007 C2 0.25 ISO	3 mm	.028	3	.10	1.5	2.5xD1
0.25	M1.2	M1.4	MTS 03009 C3 0.25 ISO	3 mm	.035	3	.12	1.5	2xD1
0.3	M1.4		MTS 03011 C4 0.3 ISO	3 mm	.041	3	.16	1.5	3xD1
0.35	M1.6,M1.8	M2, M2.5	MTS 03012 C5 0.35 ISO	3 mm	.047	3	.19	1.5	3xD1
0.35	M1.6,M1.8	M2, M2.5	MTS 06012 C5 0.35 ISO-L	6 mm	.047	3	.19	4.1	3xD1
0.35		M5, M6	MTS 06045 D14 0.35 ISO	6 mm	.177	4	.57	2.3	3xD1
0.4	M2		MTS 0250 C18 0.4 ISO	1/4	.060	3	.18	2.5	2xD1
0.4	M2		MTS 06016 C4 0.4 ISO-L	6 mm	.060	3	.18	4.1	2xD1
0.4	M2		MTS 03016 C6 0.4 ISO	3 mm	.060	3	.24	1.5	3xD1
0.4	M2		MTS 03016 C10 0.4 ISO	3 mm	.060	3	.41	1.5	5xD1
0.45	M2.2		MTS 0250 C20 0.45 ISO	1/4	.065	3	.20	2.5	2xD1
0.45	M2.2		MTS 03017 C7 0.45 ISO	3 mm	.065	3	.28	1.5	3xD1
0.45	M2.5		MTS 0250 C22 0.45 ISO	1/4	.077	3	.22	2.5	2xD1
0.45	M2.5		MTS 0602 C5 0.45 ISO-L	6 mm	.077	3	.22	4.1	2xD1
0.45	M2.5		MTS 0250 C30 0.45 ISO	1/4	.077	3	.30	2.5	3xD1
0.45	M2.5		MTS 0602 C8 0.45 ISO-L	6 mm	.077	3	.31	4.1	3xD1
0.45	M2.5		MTS 0302 C10 0.45 ISO	3 mm	.077	3	.41	1.5	4xD1
0.5	M3		MTS 0250 C26 0.5 ISO	1/4	.093	3	.26	2.5	2xD1
0.5	M3		MTS 06024 C6 0.5 ISO-L	6 mm	.093	3	.26	4.1	2xD1
0.5	M3		MTS 0250 C37 0.5 ISO	1/4	.093	3	.37	2.5	3xD1
0.5	M3		MTS 06024 C9 0.5 ISO-L	6 mm	.093	3	.37	4.1	3xD1
0.5	M3		MTS 03024 C12 0.5 ISO	3 mm	.094	3	.49	1.5	4xD1
0.5	M3		MTS 03024 C15 0.5 ISO	3 mm	.094	3	.61	1.5	5xD1
0.5		M4, M5	MTS 06034 D8 0.5 ISO	6 mm	.134	4	.33	2.3	2xD1
0.5		M4, M5	MTS 06034 D12 0.5 ISO	6 mm	.134	4	.49	2.3	3xD1
0.5		M6, M7	MTS 06054 D20 0.5 ISO	6 mm	.211	4	.79	2.3	3xD1
0.6	M3.5		MTS 0250 C30 0.6 ISO	1/4	.108	3	.30	2.5	2xD1
0.6	M3.5		MTS 06028 C10 0.6 ISO	6 mm	.108	3	.41	2.3	3xD1
0.7	M4		MTS 0250 C35 0.7 ISO	1/4	.122	3	.35	2.5	2xD1
0.7	M4		MTS 0250 C49 0.7 ISO	1/4	.122	3	.49	2.5	3xD1
0.7	M4		MTS 06031 C12 0.7 ISO-L	6 mm	.122	3	.49	4.1	3xD1
0.7	M4		MTS 06031 C16 0.7 ISO	6 mm	.122	3	.66	2.3	4xD1

● First choice ○ Alternative

ISO

Tools for Internal Thread





Grade	P	M	K	N	S	H
MT7	●	○	●	●	●	≤45 HRc

Pitch mm	M Coarse	M Fine	Ordering Code	d	D	No. of Flutes	l	L	Thread depth
0.75	M4.5	M5	MTS 06034 C9 0.75 ISO	6 mm	.134	3	.39	2.3	2xD1
0.75		M6	MTS 06049 D12 0.75 ISO	6 mm	.193	4	.50	2.3	2xD1
0.75		M10, M12	MTS 0808 D25 0.75 ISO	8 mm	.315	4	.98	2.5	2.5xD1
0.8	M5		MTS 0250 C49 0.8 ISO	1/4	.150	3	.49	2.5	2xD1
0.8	M5		MTS 0250 C63 0.8 ISO	1/4	.150	3	.63	2.5	3xD1
0.8	M5		MTS 06038 C16 0.8 ISO-L	6 mm	.150	3	.63	4.1	3xD1
0.8	M5		MTS 0604 C20 0.8 ISO	6 mm	.157	3	.82	2.3	4xD1
1.0	M6	M8	MTS 0250 C55 1.0 ISO	1/4	.183	3	.55	2.5	2xD1
1.0	M6	M8	MTS 0250 C79 1.0 ISO	1/4	.183	3	.79	2.5	3xD1
1.0	M6	M8	MTS 06047 C20 1.0 ISO-L	6 mm	.183	3	.79	4.1	3xD1
1.0	M6	M8	MTS 06048 C25 1.0 ISO	6 mm	.189	3	.98	2.3	4xD1
1.0		M10, M12	MTS 0808 D31 1.0 ISO	8 mm	.315	4	1.22	2.5	3xD1
1.25	M8	M10, M12	MTS 0250 C71 1.25 ISO	1/4	.236	3	.71	2.5	2xD1
1.25	M8	M10, M12	MTS 0250 C94 1.25 ISO	1/4	.236	3	.94	2.5	3xD1
1.25	M8	M10, M12	MTS 0606 C24 1.25 ISO-L	6 mm	.236	3	.94	4.1	3xD1
1.25	M8	M10, M12	MTS 08064 C33 1.25 ISO	8 mm	.252	3	1.32	2.5	4xD1
1.5	M10	M14,M16	MTS 0312 C91 1.5 ISO	5/16	.307	3	.91	2.5	2xD1
1.5	M10	M14,M16	MTS 08078 C31 1.5 ISO	8 mm	.307	3	1.24	2.5	3xD1
1.5	M10	M14,M16	MTS 08078 C31 1.5 ISO-L	8 mm	.307	3	1.24	4.1	3xD1
1.5	M10	M14,M16	MTS 0808 C41 1.5 ISO	8 mm	.315	3	1.63	3.1	4xD1
1.75	M12		MTS 0375 C10 1.75 ISO	3/8	.354	3	1.02	3.0	2xD1
1.75	M12		MTS 1009 C37 1.75 ISO	10 mm	.354	3	1.49	2.9	3xD1
2.0	M14	M17	MTS 1010 D30 2.0 ISO	10 mm	.394	4	1.18	2.9	2xD1
2.0	M16	M18, M20	MTS 0500 D13 2.0 ISO	1/2	.465	4	1.38	3.5	2xD1
2.0	M16	M18, M20	MTS 12118 D50 2.0 ISO	12 mm	.465	4	1.97	4.1	3xD1
2.5	M20		MTS 0625 E16 2.5 ISO	5/8	.591	5	1.69	4.0	2xD1

Order example: MTS 06047 C14 1.0 ISO MT7

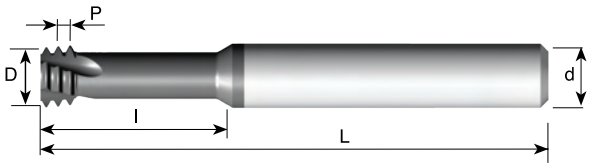
● First choice ○ Alternative

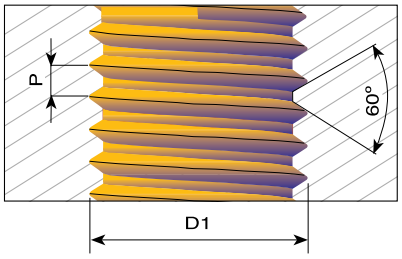
Mini Mill-Thread

Carmex Precision Tools Ltd.

UN

Tools for Internal Thread





Grade	P	M	K	N	S	H
MT7	●	○	●	●	●	≤45 HRc

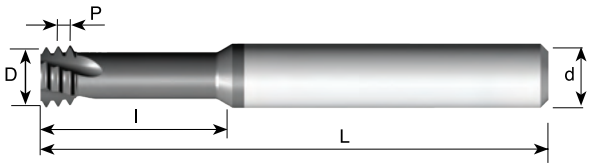
Pitch TPI	UNC	UNF	Ordering Code	d	D	No. of Flutes	l	L	Thread depth
80		0	MTS 0250 C16 80UN	1/4	.045	3	.16	2.5	3xD1
80		0	MTS 03012 C8 80UN	3 mm	.045	3	.31	1.5	5xD1
72		1	MTS 0250 C15 72UN	1/4	.057	3	.15	2.5	2xD1
72		1	MTS 03015 C6 72UN	3 mm	.057	3	.24	1.5	3xD1
64	1	2	MTS 0250 C15 64UN	1/4	.055	3	.15	2.5	2xD1
56	2	3	MTS 03016 C4 56UN	3 mm	.065	3	.17	1.5	2xD1
56	2	3	MTS 0250 C17 56UN	1/4	.065	3	.17	2.5	2xD1
56	2	3	MTS 03016 C6 56UN	3 mm	.065	3	.26	1.5	3xD1
56	2	3	MTS 0250 C26 56UN	1/4	.065	3	.26	2.5	3xD1
56	2	3	MTS 06016 C6 56UN-L	6 mm	.065	3	.26	4.1	3xD1
56	2	3	MTS 03016 C9 56UN	3 mm	.065	3	.36	1.5	4xD1
56	2	3	MTS 03016 C11 56UN	3 mm	.065	3	.45	1.5	5xD1
48	3	4	MTS 0250 C20 48UN	1/4	.075	3	.20	2.5	2xD1
40	4		MTS 0250 C25 40UN	1/4	.083	3	.25	2.5	2xD1
40	4		MTS 06021 C6 40UN-L	6 mm	.083	3	.25	4.1	2xD1
40	4		MTS 03021 C8 40UN	3 mm	.083	3	.31	1.5	3xD1
40	4		MTS 0250 C31 40UN	1/4	.083	3	.31	2.5	3xD1
40	4		MTS 06021 C8 40UN-L	6 mm	.083	3	.31	4.1	3xD1
40	4		MTS 03021 C12 40UN	3 mm	.083	3	.47	1.5	4xD1
40	5	6	MTS 0250 C28 40UN	1/4	.096	3	.28	2.5	2xD1
40	5	6	MTS 0250 C38 40UN	1/4	.096	3	.38	2.5	3xD1
36		8	MTS 0250 C35 36UN	1/4	.130	3	.35	2.5	2xD1
32	6		MTS 0250 C28 32UN	1/4	.100	3	.28	2.5	2xD1
32	6		MTS 06025 C7 32UN-L	6 mm	.100	3	.28	4.1	2xD1
32	6		MTS 03025 C10 32UN	3 mm	.100	3	.41	1.5	3xD1
32	6		MTS 0250 C40 32UN	1/4	.100	3	.41	2.5	3xD1
32	6		MTS 06025 C10 32UN-L	6 mm	.100	3	.41	4.1	3xD1
32	6		MTS 03025 C14 32UN	3 mm	.100	3	.58	1.5	4xD1
32	8		MTS 0250 C37 32UN	1/4	.126	3	.37	2.5	2xD1
32	8		MTS 06032 C9 32UN-L	6 mm	.126	3	.37	4.1	2xD1
32	8		MTS 0250 C49 32UN	1/4	.126	3	.49	2.5	3xD1
32	8		MTS 06032 C12 32UN-L	6 mm	.126	3	.49	4.1	3xD1
32	8		MTS 06032 C17 32UN	6 mm	.126	3	.69	2.3	4xD1

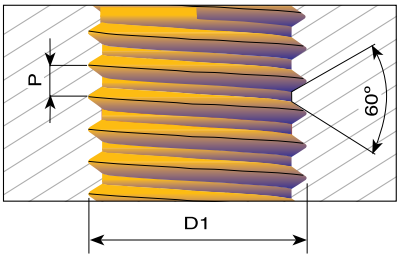
Order example: MTS 06021C6 40 UN MT7

● First choice ○ Alternative

UN

Tools for Internal Thread





Grade	P	M	K	N	S	H
MT7	●	○	●	●	●	≤45 HRc

Pitch TPI	UNC	UNF	Ordering Code	d	D	No. of Flutes	l	L	Thread depth
32		10	MTS 0250 C41 32UN	1/4	.146	3	.41	2.5	2xD1
32		10	MTS 0250 C59 32UN	1/4	.146	3	.59	2.5	3xD1
32		10	MTS 06037 C15 32UN-L	6 mm	.146	3	.59	4.1	3xD1
32		10	MTS 06037 C20 32UN	6 mm	.146	3	.79	2.3	4xD1
28		12	MTS 0250 C43 28UN	1/4	.165	3	.43	2.5	2xD1
28		1/4	MTS 0250 C57 28UN	1/4	.197	3	.57	2.5	2xD1
28		1/4	MTS 0250 C75 28UN	1/4	.197	3	.75	2.5	3xD1
28		1/4	MTS 0605 C19 28UN-L	6 mm	.197	3	.75	4.1	3xD1
24	10,12		MTS 0250 C42 24UN	1/4	.138	3	.42	2.5	2xD1
24	10,12		MTS 06035 C15 24UN	6 mm	.138	3	.61	2.3	3xD1
24	10,12		MTS 06035 C15 24UN-L	6 mm	.138	3	.61	4.1	3xD1
24		5/16, 3/8	MTS 0312 C67 24UN	5/16	.260	3	.67	2.5	2xD1
24		5/16, 3/8	MTS 0312 C94 24UN	5/16	.260	3	.94	2.5	3xD1
20	1/4		MTS 0250 C55 20UN	1/4	.187	3	.55	2.5	2xD1
20	1/4		MTS 06047 C14 20UN-L	6 mm	.187	3	.55	4.1	2xD1
20	1/4		MTS 0250 C75 20UN	1/4	.187	3	.75	2.5	3xD1
20	1/4		MTS 06047 C19 20UN-L	6 mm	.187	3	.75	4.1	3xD1
20		7/16	MTS 0312 C98 20UN	5/16	.312	3	.98	2.5	2xD1
20		7/16	MTS 0808 C34 20UN	8 mm	.315	3	1.36	2.5	3xD1
18	5/16		MTS 0250 C67 18UN	1/4	.236	3	.67	2.5	2xD1
18	5/16		MTS 0250 C91 18UN	1/4	.236	3	.91	2.5	3xD1
18		5/8	MTS 0500 D14 18UN	1/2	.500	4	1.38	3.5	2xD1
18		5/8	MTS 1212 D49 18UN	12 mm	.472	4	1.93	4.1	3xD1
16	3/8		MTS 0312 C87 16UN	5/16	.264	3	.87	2.5	2xD1
16	3/8		MTS 08067 C30 16UN	8 mm	.264	3	1.19	2.5	3xD1
14	7/16		MTS 0312 C98 14UN	5/16	.303	3	.98	2.5	2xD1
14	7/16		MTS 08077 C35 14UN	8 mm	.303	3	1.39	2.5	3xD1
13	1/2		MTS 0375 C10 13UN	3/8	.362	3	1.08	3.0	2xD1
13	1/2		MTS 10092 C40 13UN	10 mm	.362	3	1.58	2.9	3xD1
12	9/16		MTS 0500 C12 12UN	1/2	.413	3	1.24	3.5	2xD1
12	9/16		MTS 12105 C45 12UN	12 mm	.413	3	1.77	4.1	3xD1
11	5/8		MTS 0500 C13 11UN	1/2	.449	3	1.36	3.5	2xD1
11	5/8		MTS 12114 C50 11UN	12 mm	.449	3	1.97	4.1	3xD1
10	3/4		MTS 0625 D16 10UN	5/8	.567	4	1.63	4.0	2xD1
10	3/4		MTS 16144 D59 10UN	16 mm	.567	4	2.35	4.1	3xD1

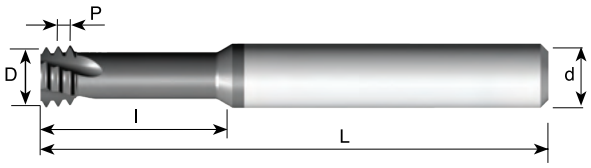
Order example: MTS 06035 C15 24 UN MT7

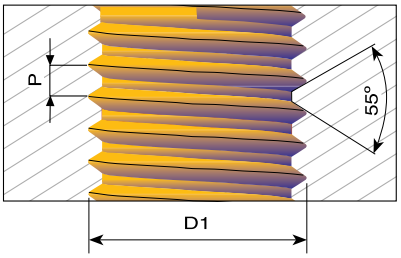
● First choice ○ Alternative

Carmex Precision Tools Ltd.

G (55°) BSW, BSP

Same Tool for Internal and External Thread





Grade	P	M	K	N	S	H
MT7	●	○	●	●	●	≤45 HRc

Pitch TPI	Standard	Ordering Code	d mm	D	No. of Flutes	l	L
28	G 1/8	MTS 08078 C19 28 W	8	.307	3	.77	2.5
19	G 1/4 - 3/8	MTS 1010 D30 19 W	10	.393	4	1.18	2.9
14	G 1/2 - 7/8	MTS 1212 D37 14 W	12	.472	4	1.46	3.3
11	G ≥ 1	MTS 1616 D44 11 W	16	.630	4	1.73	4.1

Order example: MTS 1212 D37 14 W MT7

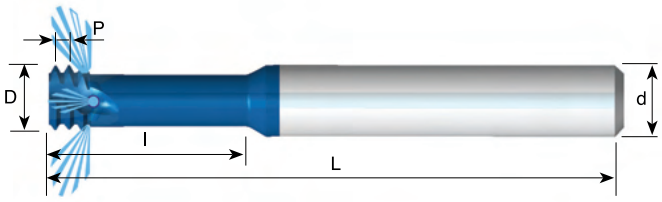
● First choice ○ Alternative

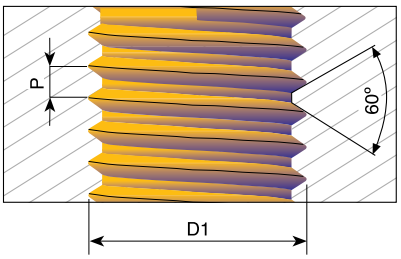
Carbide grade: MT8

Sub Micron grade with advanced PVD triple coating (ISO K10-K20).
Extremely high heat resistance and smooth cutting operation for high performance in normal and general machining conditions on all materials.

MJ With internal coolant through the flutes

Tools for Internal Thread





Grade	P	M	K	N	S	H
MT8	●	●	●	○	●	≤62 HRc

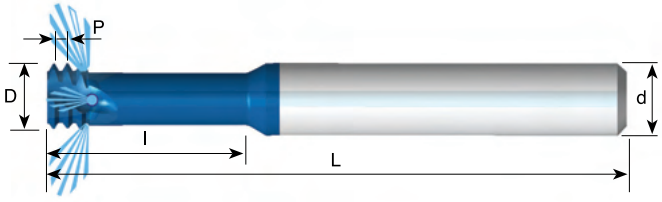
Pitch mm	D1	Ordering Code	d mm	D	No. of Flutes	l	L	Thread depth
* 0.5	MJ3	MTS 03024 C7 0.5 MJ	3	.094	3	.30	1.5	2.5xD1
* 0.7	MJ4	MTS 06032 C10 0.7 MJ	6	.126	3	.39	2.3	2.5xD1
* 0.8	MJ5	MTS 06039 C12 0.8 MJ	6	.154	3	.49	2.3	2.5xD1
* 1.0	MJ6	MTS 06048 C15 1.0 MJ	6	.189	3	.59	2.3	2.5xD1
1.25	MJ8	MTS 08061 C20 1.25 MJ	8	.240	3	.79	2.5	2.5xD1
1.5	MJ10	MTS 0808 C25 1.5 MJ	8	.315	3	.98	2.5	2.5xD1
1.75	MJ12	MTS 10092 C30 1.75 MJ	10	.362	3	1.18	2.9	2.5xD1
2.0	MJ14, MJ16	MTS 1010 C35 2.0 MJ	10	.394	3	1.38	2.9	2.5xD1

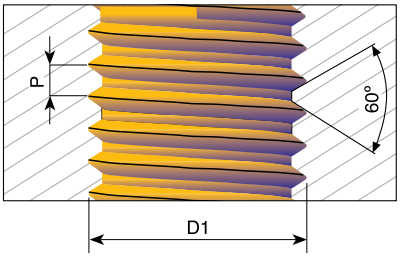
* Cutters without coolant

Order example: MTS 06048 C15 1.0 MJ MT8

UNJ With internal coolant through the flutes

Tools for Internal Thread





Grade	P	M	K	N	S	H
MT8	●	●	●	○	●	≤52 HRc

Pitch TPI	UNJC	UNJF	Ordering Code	d mm	D	No. of Flutes	l	L	Thread depth
* 32	6		MTS 06025 C7 32 UNJ	6	.100	3	.28	2.3	2.5xD1
* 32	8	10	MTS 06033 C10 32 UNJ	6	.130	3	.41	2.3	2.5xD1
28		1/4	MTS 08051 C16 28 UNJ	8	.201	3	.63	2.5	2.5xD1
24		5/16, 3/8	MTS 08067 C20 24 UNJ	8	.264	3	.79	2.5	2.5xD1
* 20	1/4		MTS 06049 C16 20 UNJ	6	.193	3	.63	2.3	2.5xD1
20		7/16	MTS 0808 C28 20 UNJ	8	.315	3	1.10	2.5	2.5xD1
18	5/16		MTS 08061 C20 18 UNJ	8	.242	3	.79	2.5	2.5xD1
16	3/8		MTS 08069 C24 16 UNJ	8	.272	3	.94	2.5	2.5xD1
14	7/16		MTS 08079 C25 14 UNJ	8	.311	3	.98	2.5	2.5xD1
13	1/2		MTS 10094 C27 13 UNJ	10	.370	3	1.08	2.9	2.5xD1

* Cutters without coolant

Order example: MTS 06049 C16 20 UNJ MT8

● First choice ○ Alternative

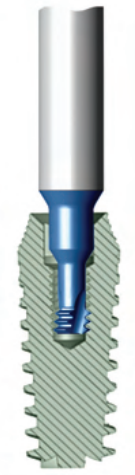
Carmex Precision Tools Ltd.

MTS Dental

Thread Mills for the Dental Implants Industry

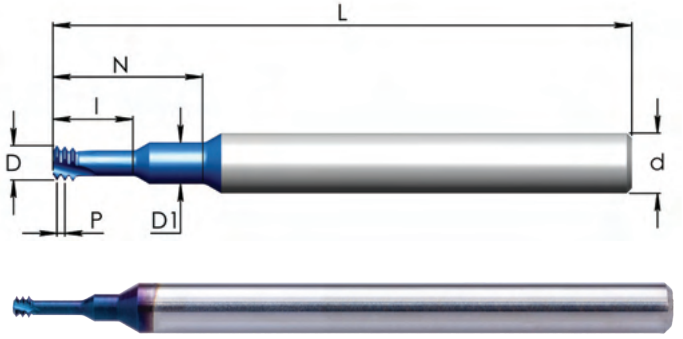
Specially designed geometry with long overhang providing improved machining and very high thread accuracy along with extended tool life.

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



ISO

Tools for Internal Thread



Grade	P	M	K	N	S	H
MT11	●	●	●	○	●	≤62 HRc

Pitch mm	M Coarse	Ordering Code	d mm	D	D1	No. of Flutes	l	N	L
0.25	M1.2	**MTS 03009 C3 0.25 ISO-N4**	3	.035	.049	3	.12	.19	1.5
0.3	M1.4	**MTS 03011 C4 0.3 ISO-N7**	3	.041	.055	3	.16	.28	1.5
0.35	M1.6,M1.8	**MTS 03012 C5 0.35 ISO-N8**	3	.047	.055	3	.19	.34	1.5
0.4	M2	**MTS 03016 C4 0.4 ISO-N8**	3	.060	.075	3	.18	.34	1.5

Order example: MTS 03011 C4 0.3 ISO-N7 MT11

UN

Tools for Internal Thread

Grade	P	M	K	N	S	H
MT11	●	●	●	○	●	≤62 HRc

Pitch TPI	UNF	Ordering Code	d mm	D	D1	No. of Flutes	l	N	L
80	0	**MTS 03012 C3 80 UN-N5**	3	.045	.053	3	.12	.22	1.5
72	1	**MTS 03015 C4 72 UN-N5**	3	.057	.065	3	.15	.23	1.5
72	1	**MTS 03015 C4 72 UN-N10**	3	.057	.065	3	.15	.39	1.5
72	1	**MTS 03015 C4 72 UN-N15**	3	.057	.065	3	.15	.59	1.5

Order example: MTS 03012 C3 80 UN-N5 MT11

● First choice ○ Alternative

MTSB type

An innovative solid carbide thread mills with internal coolant bore and increased number of flutes.
The coolant bore provides high coolant pressure through the tool into the application pre-hole and washes the chips away during the threading cycle.
The coolant liquid also cools the tool cutting edge very efficiently.

Demonstration

Excellent solution for:

- Small and deep threads.
- Thread milling operations on horizontal machining centers, where chips are concentrated at the bottom of the thread and external coolant can't wash the chips away.
- Complicated applications where external coolant is inefficient or can't reach the machined area.
- Case where the tool collet is close to the application pre-hole and blocks the external coolant.

Can also be used in any other thread milling operation (blind or through hole) that requires improved performance with high thread quality.

Features:

- Increased number of flutes for high performance, shorter cycle time and improved tool life.
- Working at high machining parameters (increasing productivity).
- Advanced PVD triple coating.
- Threads size: M1.2 up to M16
  0-80 up to 7/16-20UNF

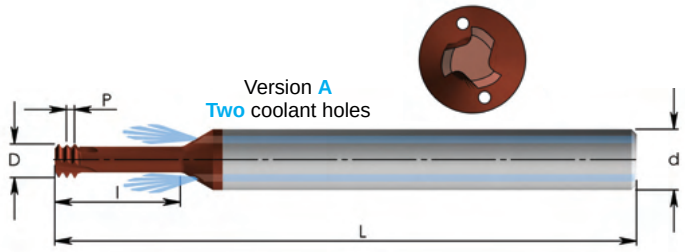
Carbide grade: MT7

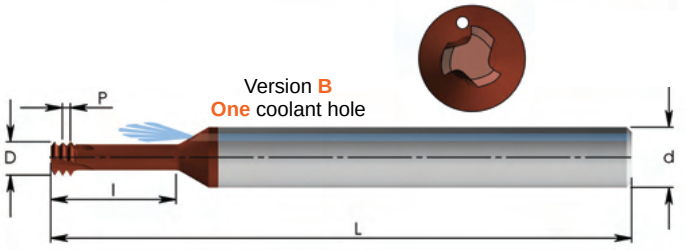
Our MT7 sub-micron grade with it's advanced PVD triple coating provides extremely high heat resistance along with smooth cutting action, delivering high performance under normal machining conditions.

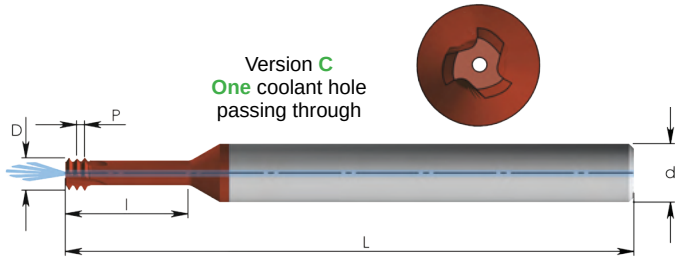
Carmex Precision Tools Ltd.

MTSB

With Internal Coolant and Multi Flute

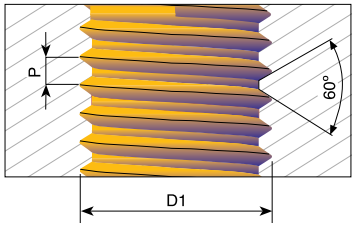






ISO

Tools for Internal Thread



Grade	P	M	K	N	S	H
MT7	●	●	●	●	●	≤45 HRc

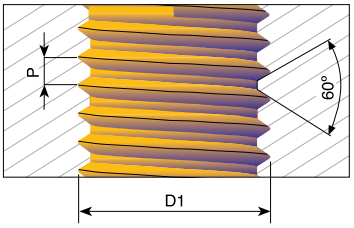
Pitch mm	M Coarse	M Fine	Ordering Code	d mm	D	No. of Flutes	l	L	Thread Depth	Version
0.25	M1.2	M1.4	MTSB 06009 C2 0.25 ISO	6	.035	3	.11	2.3	2xD1	A
0.3	M1.4		MTSB 06011 C4 0.3 ISO	6	.041	3	.18	2.3	3xD1	A
0.35	M1.6	M2	MTSB 06012 C5 0.35 ISO	6	.047	3	.20	2.3	3xD1	A
0.4	M2		MTSB 06016 C4 0.4 ISO	6	.061	3	.17	2.3	2xD1	A
0.4	M2		MTSB 06016 C6 0.4 ISO	6	.061	3	.25	2.3	3xD1	A
0.45	M2.5		MTSB 0602 D5 0.45 ISO	6	.077	4	.22	2.3	2xD1	A
0.45	M2.5		MTSB 0602 D7 0.45 ISO	6	.077	4	.31	2.3	3xD1	A
0.5	M3		MTSB 06024 D6 0.5 ISO	6	.094	4	.26	2.3	2xD1	A
0.5	M3		MTSB 06024 D9 0.5 ISO	6	.094	4	.37	2.3	3xD1	A
0.6	M3.5		MTSB 06028 D7 0.6 ISO	6	.110	4	.30	2.3	2xD1	A
0.7	M4		MTSB 06032 D8 0.7 ISO	6	.126	4	.34	2.3	2xD1	B
0.7	M4		MTSB 06032 D12 0.7 ISO	6	.126	4	.50	2.3	3xD1	B
0.8	M5		MTSB 06038 D10 0.8 ISO	6	.150	4	.43	2.3	2xD1	B
0.8	M5		MTSB 06038 D15 0.8 ISO	6	.150	4	.62	2.3	3xD1	B
1.0	M6	M8	MTSB 08048 D13 1.0 ISO	8	.189	4	.51	2.5	2xD1	B
1.0	M6	M8	MTSB 08048 D19 1.0 ISO	8	.189	4	.75	2.5	3xD1	B
1.25	M8	M10	MTSB 0606 D25 1.25 ISO	6	.236	4	1.00	2.3	3xD1	C
1.5	M10		MTSB 0808 E31 1.5 ISO	8	.315	5	1.24	2.5	3xD1	C
1.75	M12		MTSB 10095 E37 1.75 ISO	10	.374	5	1.49	2.9	3xD1	C
2.0	M16	M17	MTSB 1212 E50 2.0 ISO	12	.472	5	1.97	4.1	3xD1	C

Order example: MTSB 1212 E50 2.0 ISO MT7

● First choice ○ Alternative

UN

Tools for Internal Thread



Grade	P	M	K	N	S	H
MT7	●	●	●	●	●	≤45 HRc

Pitch TPI	UNC	UNF	Ordering Code	d mm	D	No. of Flutes	I	L	Thread Depth	Version
80		0	MTSB 06012 C4 80UN	6	.045	3	.19	2.3	3xD1	A
72		1	MTSB 06014 C5 72UN	6	.057	3	.23	2.3	3xD1	A
56	2	3	MTSB 06016 C4 56UN	6	.065	3	.19	2.3	2xD1	A
56	2	3	MTSB 06016 C7 56UN	6	.065	3	.28	2.3	3xD1	A
48	3	4	MTSB 06019 D5 48UN	6	.075	4	.22	2.3	2xD1	A
40	4		MTSB 06021 D6 40UN	6	.083	4	.25	2.3	2xD1	A
40	4		MTSB 06021 D9 40UN	6	.083	4	.36	2.3	3xD1	A
40	4		MTSB 06021 D12 40UN	6	.083	4	.47	2.3	4xD1	A
40	5	6	MTSB 06024 D7 40UN	6	.096	4	.28	2.3	2xD1	A
32	6		MTSB 06025 D7 32UN	6	.100	4	.31	2.3	2xD1	A
32	6		MTSB 06025 D11 32UN	6	.100	4	.44	2.3	3xD1	A
32	8		MTSB 06032 D9 32UN	6	.126	4	.36	2.3	2xD1	B
32	8		MTSB 06032 D13 32UN	6	.126	4	.52	2.3	3xD1	B
32		10	MTSB 06037 D10 32UN	6	.146	4	.41	2.3	2xD1	B
32		10	MTSB 06037 D15 32UN	6	.146	4	.60	2.3	3xD1	B
28		1/4	MTSB 06052 D20 28UN	6	.205	4	.79	2.3	3xD1	C
24	10,12		MTSB 06035 D10 24UN	6	.138	4	.42	2.3	2xD1	B
24	10,12		MTSB 06035 D15 24UN	6	.138	4	.61	2.3	3xD1	B
24		5/16,3/8	MTSB 08066 D24 24UN	8	.260	4	.98	2.5	3xD1	C
20		7/16, 1/2	MTSB 10092 E34 20UN	10	.362	5	1.36	2.9	3xD1	C

Order example: MTSB 06032 D13 32 UN MT7

G 55° BSP

Tools for Internal and External Thread

Grade	P	M	K	N	S	H
MT7	●	●	●	●	●	≤45 HRc

Pitch TPI	Standard	Ordering Code	d mm	D	No. of Flutes	I	L	Thread depth	Version
28	G1/8	MTSB 0808 E20 28W	8	.315	5	.80	2.5	2xD1	C
19	G1/4-3/8	MTSB 1010 E27 19W	10	.394	5	1.09	2.9	2xD1	C
14	G1/2-7/8	MTSB 1212 E43 14W	12	.472	5	1.72	3.3	2xD1	C

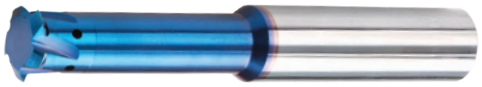
● First choice ○ Alternative

Mini Mill-Thread

Carmex Precision Tools Ltd.

MTI

For Threading Deep Parts



Demonstration

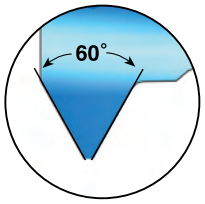
Low cutting forces thanks to the short profile

Carbide grade: MT11 Ultra-fine Sub-Micron grade with advanced PVD triple blue coating.
MT8 Sub-Micron grade with advanced PVD triple coating (ISO K10-K20).
Extremely high heat resistance and smooth cutting operation for high performance in normal and general machining conditions on all materials.

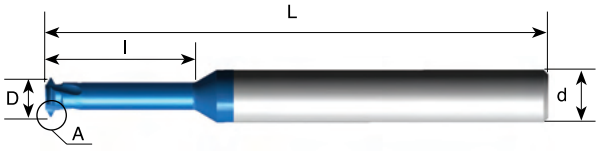
Partial Profile 60°

Same Tool for Internal and External Thread

Metric Shanks



Detail A



Grade	P	M	K	N	S	H
MT11	●	●	●	○	●	≤62 HRc

Pitch mm	Pitch TPI	M Coarse	M Fine	UN, UNC, UNS UNF, UNEF	Ordering Code	d mm	D	No. of Flutes	l	L
0.25-0.35	100-72	M1.6 x 0.35	M1.6 x 0.25 M1.8 x 0.25 M2.0 x 0.25	0-80 UNF	MTI 03012 C3 A60	3	.045	3	.12	1.5
0.35-0.45	72-56	M2 x 0.4 M2.2 x 0.45	M2 x 0.35 M2.2 x 0.35	1-64 UNC, 1-72 UNF, 2-56 UNC, 2-64 UNF	MTI 03014 C4 A60	3	.055	3	.15	1.5
0.35-0.5	72-48		M4.5 x 0.35 M5 x 0.35 M5.5 x 0.35 M6.0 x 0.35 M5 x 0.5 M6 x 0.5	10-56 UNS, 10-48 UNS, 12-56 UNS, 12-48 UNS	MTI 0604 C15 A60	6	.157	3	.59	2.3
0.35-0.6	72-40	M2.5 x 0.45	M2.5 x 0.35 M3 x 0.35	3-48 UNC, 3-56 UNF, 4-40 UNC, 4-48 UNF	MTI 03019 C5 A60	3	.075	3	.20	1.5
0.5-0.8	48-32	M3 x 0.5 M3.5 x 0.6	M3.5 x 0.5	5-40 UNC, 5-44 UNF, 6-32 UNC, 6-40 UNF	MTI 03024 C7 A60	3	.096	3	.28	1.5
0.5-1.0	48-24	M4 x 0.7 M4.5 x 0.75	M4 x 0.5	8-32 UNC, 8-36 UNF, 10-24 UNC, 10-28 UNS, 10-32 UNF	MTI 06032 C9 A60	6	.126	3	.37	2.3
0.5-1.0	48-24	M5 x 0.8 M6 x 1.0	M5 x 0.5 M5.5 x 0.5 M5 x 0.75	10-36 UNS, 10-40 UNS, 10-48 UNS, 12-24 UNC, 12-28 UNF	MTI 0604C 12 A60	6	.157	3	.49	2.3

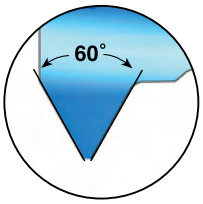
Order example: MTI 03024C7 A60 MT11
Carbide grade: MT11 Ultra-fine Sub-micron grade with PVD triple Blue coating

Partial Profile 60°

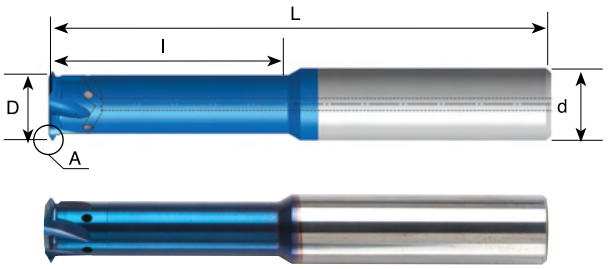
With internal coolant through the flutes

Same Tool for Internal and External Thread

Metric Shanks



Detail A



Grade	P	M	K	N	S	H
MT8	●	●	●	○	●	≤52 HRc

For threading deep parts

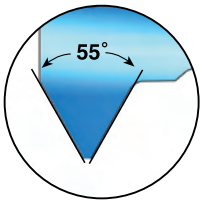
Pitch mm	Pitch TPI	Thread Dia.	Ordering Code	d mm	D	No. of Flutes	l	L
Int. 0.5-0.8 Ex. 0.4-0.8	56-28 64-32	ø≥ .24	MTI 0605 D20 A60	6	.197	4	.79	2.3
		ø≥ .35	MTI 0808 D28 A60	8	.315	4	1.10	2.5
		ø≥ .51	MTI 1212 E38 A60	12	.472	5	1.50	3.3
Int. 1.0-1.75 Ex. 0.8-1.5	28-14 32-16	ø≥ .39	MTI 0808 D30 A60	8	.315	4	1.18	2.5
		ø≥ .47	MTI 1010 D35 A60	10	.394	4	1.38	2.9
		ø≥ .55	MTI 1212 E39 A60	12	.472	5	1.54	3.3
Int. 2.0 -3.0 Ex. 1.75-2.5	13- 8 15-10	ø≥ .63	MTI 1212 E40 A60	12	.472	5	1.57	3.3
		ø≥ .71	MTI 1614 E45 A60	16	.551	5	1.77	4.0
		ø≥ .79	MTI 1616 E50 A60	16	.630	5	1.97	4.0

Order example: MTI 0808D28 A60 MT8

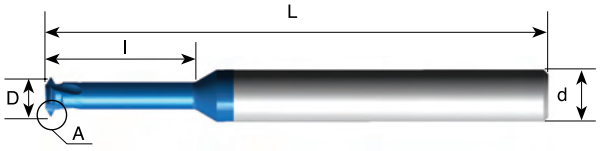
Carbide grade: MT8 With triple Blue coating

Partial Profile 55°

Same Tool for Internal and External Thread - Metric Shanks



Detail A



Grade	P	M	K	N	S	H
MT11	●	●	●	○	●	≤62 HRc

Pitch TPI	Ordering Code	d mm	D	No. of Flutes	l	L
40-32	MTI 03023 C7 A55	3	.089	3	.28	1.5
28-20	MTI 06044 C14 A55	6	.171	3	.55	2.3
28-18	MTI 06059 C20 A55	6	.230	3	.81	2.3
20-14	MTI 0807 C23 A55	8	.276	3	.91	2.5

Order example: MTI 03023 C7 A55 MT11

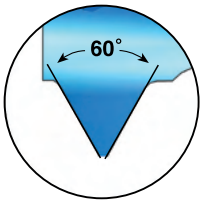
Carbide grade: MT11 Ultra-fine Sub-micron grade with PVD triple Blue coating

● First choice ○ Alternative

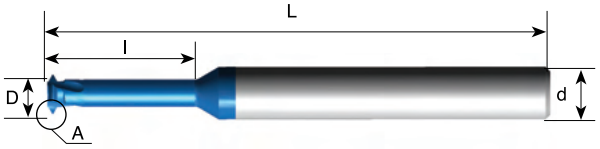
Carmex Precision Tools Ltd.

ISO

Tools for Internal Thread



Detail A



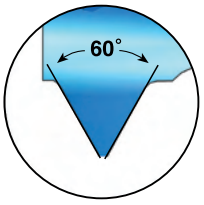
Grade	P	M	K	N	S	H
MT11	●	●	●	○	●	≤62 HRc

Pitch mm	M Coarse	M Fine	Ordering Code	d mm	D	No. of Flutes	l	L	Thread depth
0.25	M1		MTI 03007 C3 0.25 ISO	3	.028	3	.14	1.5	3.5xD1
0.25	M1.2	M1.4 M1.6	MTI 03009 C4 0.25 ISO	3	.035	3	.17	1.5	3.5xD1
0.3	M1.4		MTI 03011 C5 0.3 ISO	3	.041	3	.20	1.5	3.5xD1
0.35	M1.6	M2 M2.2	MTI 03012 C6 0.35 ISO	3	.047	3	.22	1.5	3.5xD1
0.4	M2		MTI 03016 C7 0.4 ISO	3	.061	3	.28	1.5	3.5xD1
0.45	M2.5		MTI 0302 C8 0.45 ISO	3	.077	3	.35	1.5	3.5xD1
0.5	M3	M3.5 M4	MTI 03024 C10 0.5 ISO	3	.093	3	.42	1.5	3.5xD1
0.7	M4		MTI 04032 D14 0.7 ISO	4	.126	4	.55	2.0	3.5xD1

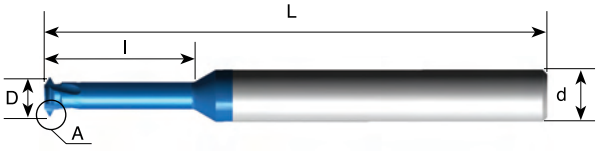
Order example: MTI 03012 C6 0.35 ISO MT11

UN

Tools for Internal Thread
Metric Shanks



Detail A



Grade	P	M	K	N	S	H
MT11	●	●	●	○	●	≤62 HRc

Pitch TPI	UNC	UNF	Ordering Code	d mm	D	No. of Flutes	l	L	Thread depth
80		0	MTI 03012 C5 80 UN	3	.045	3	.22	1.5	3.5xD1
72		1	MTI 03015 C7 72 UN	3	.057	3	.26	1.5	3.5xD1
56	2	3	MTI 03016 C9 56 UN	3	.065	3	.35	1.5	3.5xD1
40	4		MTI 03021 C10 40 UN	3	.083	3	.40	1.5	3.5xD1

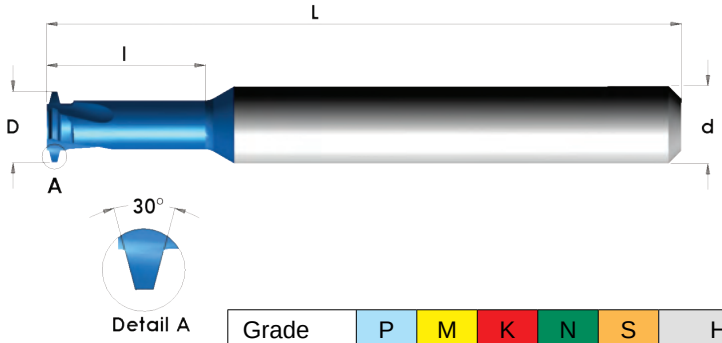
Order example: MTI 03016C9 56 UN MT11

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

● First choice ○ Alternative

Trapez-DIN 103

Tools for Internal Thread



Grade	P	M	K	N	S	H
MT8	●	●	●	○	●	≤52 HRc

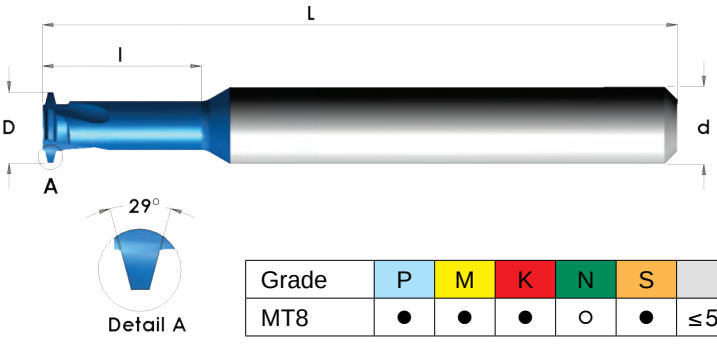
For thread depth up to 2 x D1

Pitch mm	Thread size	Ordering Code	d mm	D	No. of Flutes	l	L
1.5	Tr8x1.5 Tr9x1.5	MTI 06055 C13 1.5 TR	6	.217	3	.53	2.3
2	Tr10x2 Tr11x2	MTI 08066 C21 2 TR	8	.260	3	.83	2.5
2	Tr12x2 Tr14x2	MTI 10086 D25 2 TR	10	.339	4	.98	2.9
3	Tr12x3	MTI 0807 C25 3 TR	8	.276	3	.98	2.5
3	Tr14x3 Tr22x3	MTI 10089 D29 3 TR	10	.350	4	1.14	2.9
4	Tr16x4 Tr18x4 Tr20x4	MTI 10092 C33 4 TR	10	.362	3	1.30	2.9
5	Tr22x5 Tr24x5 Tr26x5	MTI 14135 D45 5 TR	14	.531	4	1.77	4.1

Order example: MTI 08066C21 2TR MT8

Acme

Tools for Internal Thread



Grade	P	M	K	N	S	H
MT8	●	●	●	○	●	≤52 HRc

Pitch TPI	Thread size	Ordering Code	d	D	No. of Flutes	l	L
16	1/4-16	MTI 0250 C04 16 ACME	1/4	.170	3	.38	2.5
14	5/16-14	MTI 0250 C06 14 ACME	1/4	.205	3	.60	2.5
12	3/8-12 7/16-12	MTI 0250 C08 12 ACME	1/4	.240	3	.75	2.5
10	1/2-10	MTI 0375 D10 10 ACME	3/8	.327	4	1.00	3.0
8	5/8-8	MTI 0500 D11 8 ACME	1/2	.410	4	1.10	3.5
6	3/4-6 7/8-6	MTI 0500 D12 6 ACME	1/2	.472	4	1.20	3.5
5	1-5 1 1/8-5 1 1/4-5	MTI 0625 E15 5 ACME	5/8	.625	5	1.50	4.0

Order example: MTI 0375D10 10ACME MT8

Carmex Precision Tools Ltd.

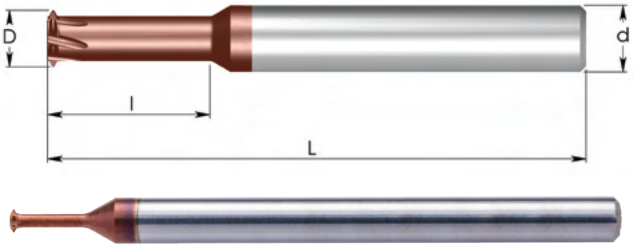
FMTI Multi Flute

Carmex has designed a unique line of solid carbide thread milling tools FMTI for increased productivity and high performance.

Large number of flutes enables to achieve significant shorter machining time.

Carbide grade: MT6

Ultra-Fine carbide grade with high hardness and toughness provides an excellent solution for machining steels, stainless steels, and super alloys Ni or Ti base.
With a universal PVD multi-layer coating, provides high heat and wear resistance.



ISO

Tools for Internal Thread

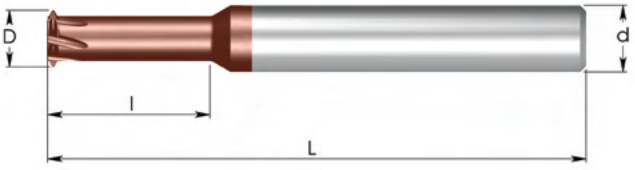
Grade	P	M	K	N	S	H
MT6	●	●	○	○	●	≤58 HRc

Pitch mm	M Coarse	M Fine	Ordering Code	d mm	D	No. of Flutes	l	L	Thread Depth
0.35	M1.6	M1.8, M2	FMTI 03012 F3 0.35 ISO	3	.047	5	.14	1.5	2xD1
0.4	M2		FMTI 03016 F4 0.4 ISO	3	.061	6	.17	1.5	2xD1
0.45	M2.5		FMTI 0302 F5 0.45 ISO	3	.077	6	.22	1.5	2xD1
0.5	M3	M4, M5	FMTI 03024 F6 0.5 ISO	3	.094	6	.26	1.5	2xD1
0.7	M4		FMTI 04032 F8 0.7 ISO	4	.126	6	.34	2.0	2xD1
0.8	M5		FMTI 0404 G10 0.8 ISO	4	.157	7	.43	2.0	2xD1
1.0	M6	M8	FMTI 06048 G13 1.0 ISO	6	.189	7	.51	2.2	2xD1

Order example: FMTI 03024 F6 0.5 ISO MT6

UN

Tools for Internal Thread



Grade	P	M	K	N	S	H
MT6	●	●	○	○	●	≤58 HRc

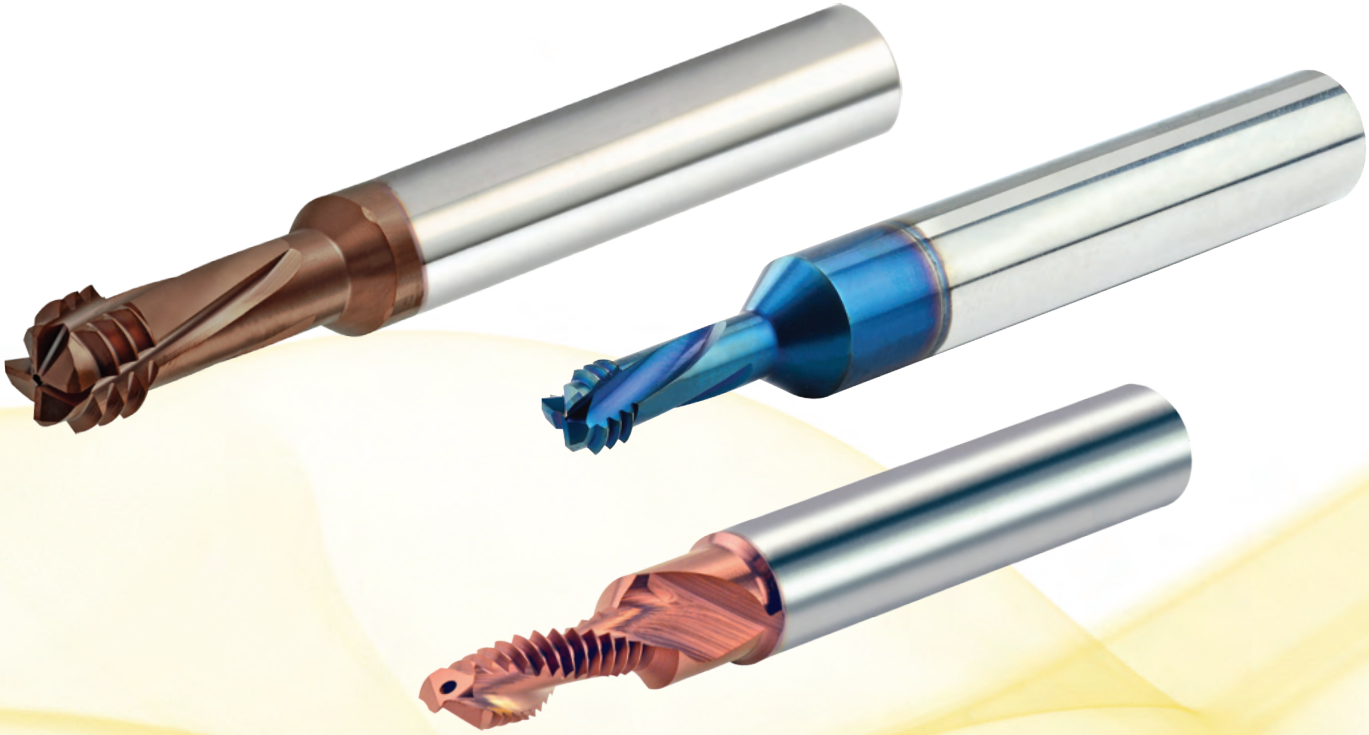
Pitch TPI	UNC	UNF	Ordering Code	d mm	D	No. of Flutes	l	L	Thread Depth
72		1	FMTI 03015 F4 72 UN	3	.057	5	.16	1.5	2xD1
56	2	3	FMTI 03017 F4 56 UN	3	.065	6	.19	1.5	2xD1
40	4		FMTI 03021 F6 40 UN	3	.083	6	.25	1.5	2xD1
32		10	FMTI 04038 F10 32 UN	4	.150	6	.41	2.0	2xD1
28		1/4	FMTI 06052 G13 28 UN	6	.205	7	.54	2.2	2xD1

Order example: FMTI 03017 F4 56 UN MT6

● First choice ○ Alternative

Multi - Function Thread Mills
3 in 1 Operations

B10



High Performance tools with internal coolant supply for the production of internal threads.

Produces the thread hole, the thread and a chamfer in one work process.

Contents:	Page:	Contents:	Page:
DMT, DMTH Introduction	2	**DMTH**	6-7
Advantages	2	ISO	6
Product Identification	2	UN	6
DMT	3-5	**MT Drill - MTD**	7-8
ISO	3	Advantages	7
UN	4	Product Identification	7
G (BSP)	5	ISO	8
NPT	5	UNC	8
		UNF	8

DMT and DMTH

DMT

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

Carbide grade: MT7 Sub-micron grade with Titanium Aluminum Nitride multi-layer coating (ISO K10-K20).

DMTH

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

- Advance Carbide grade dedicated for hardened materials
- Triple blue coating for high wear and heat resistance

Carbide grade: MT11 Ultra-fine Sub-micron grade with advanced PVD triple Blue coating (for DMTH).

Advantages

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

Product Identification

DMT 3 in 1 - *Drill, Thread, Chamfer Ordering Codes

D	MT	H	08	078	D	23	1.5	ISO		MT11

- **D** — Drill
- **MT** — Mill-Thread
- **H** — Steels, Hardened Materials, Stainless Steels, Super Alloys
- **08** — Shank Diameter: 06 = 6 mm; 08 = 8 mm; 10 = 10 mm; 12 = 12 mm
- **078** — Cutting Diameter: 04 = 4 mm
- **D** — No. of Flutes: C = 3; D = 4; E = 5
- **23** — The Approximate Cutting Length
- **1.5** — Thread Pitch
- **ISO** — Thread Profile: ISO, UN, W, NPT
- **(blank)** — - D = Coolant Version D
- **MT11** — Grade: MT7, MT11

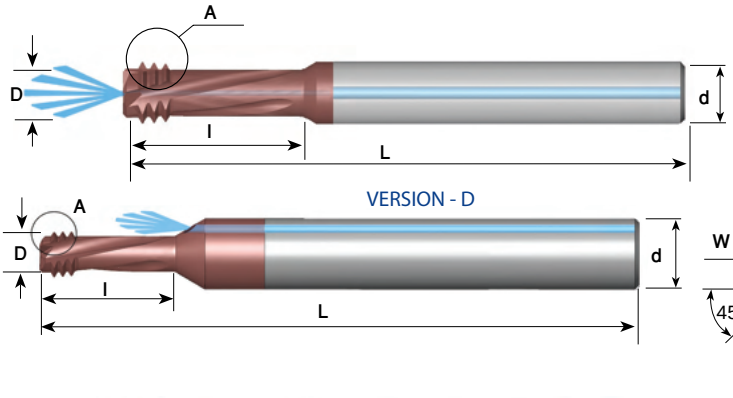
* Circular movement

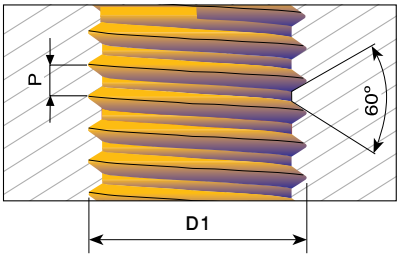
DMT

Demonstration

ISO With internal coolant bore

Tools for Internal Thread





Left hand cutting
For CNC code use M04

Grade	P	M	K	N	S	H
MT7	○	●	●	●	○	

Pitch mm	M Coarse	M Fine	Ordering Code	d mm	D	No. of Flutes	l	W	V	L	Thread depth
0.5	M3	M3.5,M4	*DMT 06024 C7 0.5 ISO-D	6	.094	3	.28	.008	.020	2.3	2xD1
0.7	M4		*DMT 06032 C11 0.7 ISO-D	6	.124	3	.46	.008	.028	2.3	2.5xD1
0.8	M5		*DMT 0604 C14 0.8 ISO-D	6	.157	3	.57	.012	.031	2.3	2.5xD1
1.0	M6, M7	M8,M9	DMT 08047 C14 1.0 ISO	8	.185	3	.55	.016	.039	2.5	2xD1
1.0	M6, M7	M8,M9	DMT 08047 C20 1.0 ISO	8	.185	3	.80	.016	.039	2.5	3xD1
1.25	M8,M9	M10,M12	DMT 08061 D18 1.25 ISO	8	.240	4	.71	.020	.049	2.5	2xD1
1.25	M8,M9	M10,M12	DMT 08061 D27 1.25 ISO	8	.240	4	1.06	.020	.049	2.5	3xD1
1.5	M10	M13-M15	DMT 08078 D23 1.5 ISO	8	.307	4	.91	.024	.059	2.5	2xD1
1.75	M12		DMT 1009 D26 1.75 ISO	10	.354	4	1.02	.024	.069	2.9	2xD1
2.0	M16	M17-M23	DMT 12118 D35 2.0 ISO	12	.465	4	1.38	.024	.079	3.3	2xD1

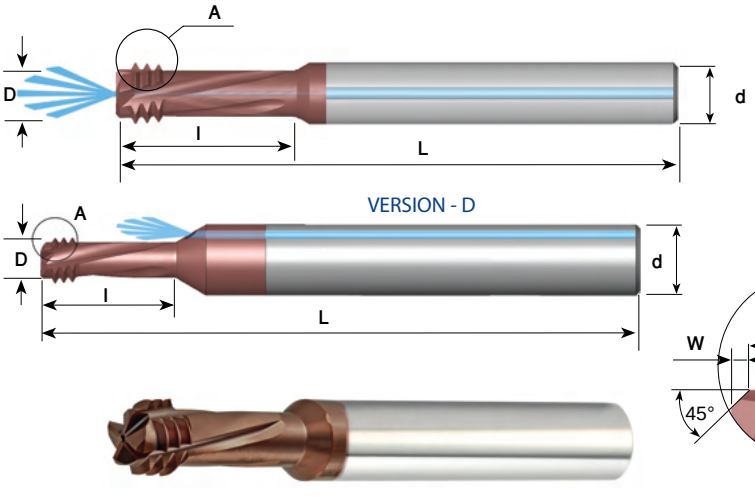
* Tools version-D

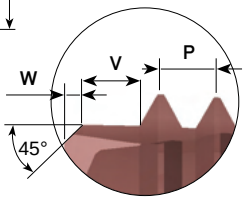
● First choice ○ Alternative

Order example: DMT 08047 C14 1.0 ISO MT7

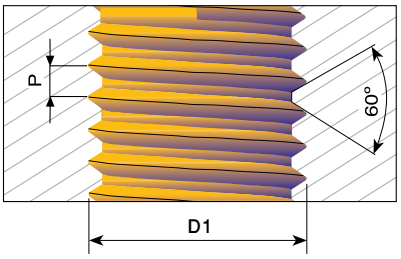
UN With internal coolant bore

Tools for Internal Thread





Detail A



Left hand cutting
For CNC code use M04

Grade	P	M	K	N	S	H
MT7	○	●	●	●	○	

Pitch TPI	UN, UNEF, UNF UNC, UNS	Ordering Code	d mm	D	No. of Flutes	l	W	V	L	Thread length
40	4, 5, 6	*DMT 06021 C7 40 UN-D	6	.083	3	.28	.004	.024	2.3	2xD1
36	8	*DMT 06033 C12 36 UN-D	6	.130	3	.47	.008	.028	2.3	2.5xD1
32	6	*DMT 06026 C8 32 UN-D	6	.102	3	.34	.008	.031	2.3	2xD1
32	8	*DMT 06032 C12 32 UN-D	6	.126	3	.48	.012	.031	2.3	2.5xD1
32	10	*DMT 06038 C14 32 UN-D	6	.150	3	.55	.012	.031	2.3	2.5xD1
28	1/4-3/8	DMT 0805 C14 28 UN	8	.197	3	.57	.016	.035	2.5	2xD1
24	10,12	*DMT 06035 C12 24 UN-D	6	.138	3	.48	.012	.041	2.3	2xD1
24	5/16-1/2	DMT 08065 D17 24 UN	8	.256	4	.67	.020	.041	2.5	2xD1
20	1/4-3/8	DMT 08048 C14 20 UN	8	.189	3	.55	.016	.049	2.5	2xD1
18	5/16-7/16	DMT 0806 D17 18 UN	8	.236	4	.67	.020	.055	2.5	2xD1
16	3/8-1/2	DMT 08067 C22 16 UN	8	.264	3	.87	.020	.063	2.5	2xD1
14	7/16	DMT 0808 D26 14 UN	8	.315	4	1.04	.024	.071	2.5	2xD1
13	1/2	DMT 1010 D29 13 UN	10	.394	4	1.17	.024	.079	2.9	2xD1

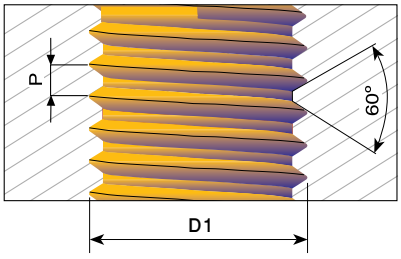
* Tools version-D

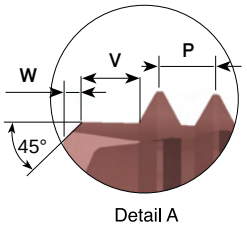
● First choice ○ Alternative

Order example: DMT 08067 C22 16 UN MT7

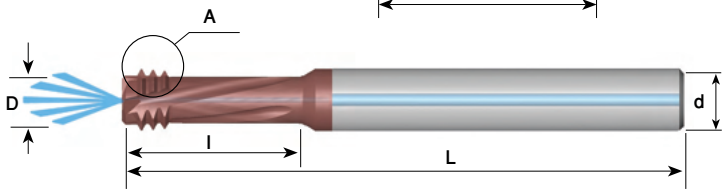
G (BSP) With internal coolant bore

Tools for Internal Thread





Detail A



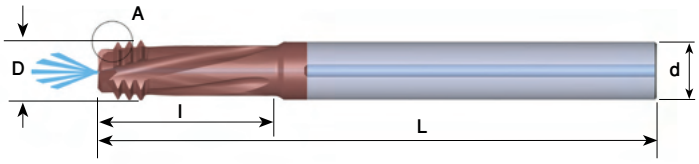
Grade	P	M	K	N	S	H
MT7	○	●	●	●	○	

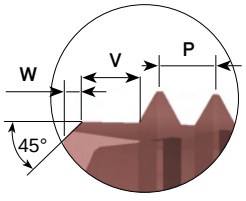
Pitch TPI	Standard	Ordering Code	d mm	D	No. of Flutes	l	W	V	L	Thread length
28	G1/16	DMT 0806 D17 28 W	8	.236	4	.70	.024	.035	2.5	2xD1
28	G1/8	DMT 08078 D21 28 W	8	.307	4	.86	.024	.035	2.5	2xD1
19	G1/4	DMT 12104 D29 19 W	12	.409	4	1.17	.028	.051	3.3	2xD1
19	G3/8	DMT 1414 D36 19 W	14	.551	4	1.44	.031	.051	3.3	2xD1

Order example: DMT 08078 D21 28 W MT7

NPT With internal coolant bore

Tools for Internal Thread





Detail A

Grade	P	M	K	N	S	H
MT7	○	●	●	●	○	

Pitch TPI	Standard	Ordering Code	d mm	D	No. of Flutes	l	W	V	L
27	1/16	DMT 08057 D11 27 NPT	8	.224	4	.44	.016	.035	2.5
27	1/8	DMT 08076 D12 27 NPT	8	.299	4	.48	.016	.035	2.5
18	1/4	DMT 1010 D18 18 NPT	10	.394	4	.72	.024	.055	2.9
18	3/8	DMT 1212 D19 18 NPT	12	.472	4	.77	.024	.055	3.3
14	1/2	DMT 1616 E26 14 NPT	16	.630	5	1.06	.024	.071	3.6

Order example: DMT 1010 D18 18 NPT MT7

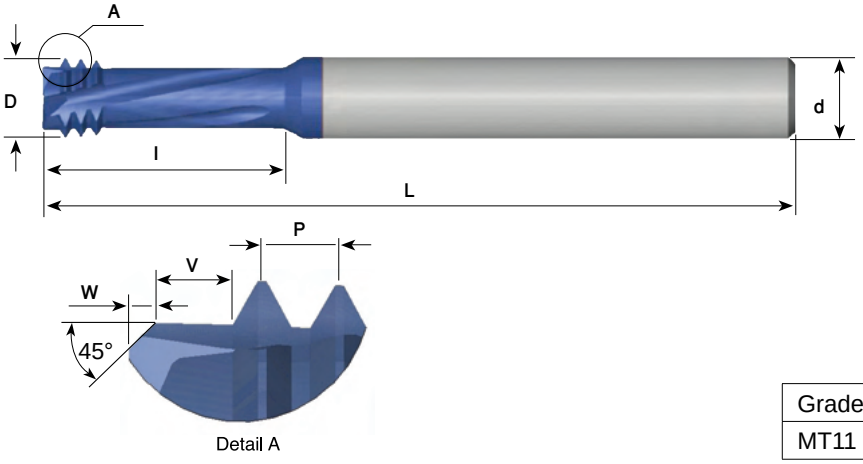
● First choice ○ Alternative

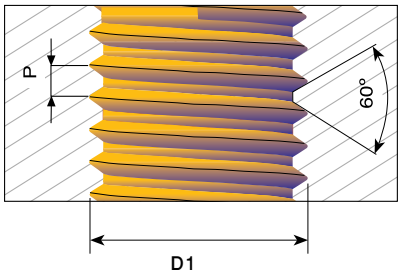
DMTH

For information see page B10-2

ISO

Tools for Internal Thread





Left hand cutting
For CNC code use M04

Grade	P	M	K	N	S	H
MT11	●	●	○	○	●	≤55 HRc

Pitch mm	M Coarse	M Fine	Ordering Code	d mm	D	No. of Flutes	l	W	V	L	Thread depth
0.7	M4		DMTH 06032 C11 0.7 ISO	6	.124	3	.46	.008	.028	2.3	2.5xD1
0.8	M5		DMTH 0604 C14 0.8 ISO	6	.157	3	.57	.012	.031	2.3	2.5xD1
1.0	M6,M7	M8,M9	DMTH 08047 C14 1.0 ISO	8	.185	3	.57	.016	.039	2.5	2xD1
1.25	M8,M9	M10,M12	DMTH 08061 D19 1.25 ISO	8	.240	4	.75	.020	.049	2.5	2xD1
1.5	M10	M13-M15	DMTH 08078 D23 1.5 ISO	8	.307	4	.93	.024	.059	2.5	2xD1
1.75	M12		DMTH 1009 D28 1.75 ISO	10	.354	4	1.11	.024	.069	2.9	2xD1
2.0	M16	M17-M23	DMTH 12118 D36 2.0 ISO	12	.465	4	1.44	.024	.079	3.3	2xD1

Order example: DMTH 1009 D28 1.75 ISO MT11

UN

Tools for Internal Thread

Grade	P	M	K	N	S	H
MT11	●	●	○	○	●	≤55 HRc

Pitch TPI	UN, UNEF, UNF UNC, UNS	Ordering Code	d mm	D	No. of Flutes	l	W	V	L	Thread depth
40	4, 5, 6	DMTH 06021 C7 40 UN	6	.083	3	.28	.004	.024	2.3	2xD1
32	6	DMTH 06026 C8 32 UN	6	.102	3	.34	.004	.031	2.3	2xD1
28	1/4-3/8	DMTH 0805 C14 28 UN	8	.197	3	.59	.016	.035	2.5	2xD1
24	5/16-1/2	DMTH 08065 D18 24 UN	8	.256	4	.73	.020	.041	2.5	2xD1
20	1/4-3/8	DMTH 08048 C15 20 UN	8	.189	3	.61	.016	.049	2.5	2xD1
18	5/16-7/16	DMTH 0806 D19 18 UN	8	.236	4	.76	.020	.055	2.5	2xD1
16	3/8-1/2	DMTH 08067 C22 16 UN	8	.264	3	.90	.020	.063	2.5	2xD1
13	1/2	DMTH 10092 C30 13 UN	10	.362	3	1.18	.024	.079	2.9	2xD1
11	5/8	DMTH 12114 C37 11 UN	12	.449	3	1.46	.024	.091	3.3	2xD1

Order example: DMTH 08048 C15 20 UN MT11

● First choice ○ Alternative

MT Drill - MTD

Designed to drill, chamfer and thread mill the hole in one operation.

Carbide grade: **MT7:** Sub-Micron carbide grade combines high hardness and toughness, with PVD triple coating for smooth cutting and high performance.

K20: Uncoated Sub-Micron carbide grade dedicated for machining Aluminum and Cast Iron.

Advantages

- Two fluted drill/thread milling cutter, with 45˚ chamfering. Ideal for mass production applications.
- Reduces cycle times by combining operations and eliminating tool changes.
- For both right and left hand internal threads.
- Same tool for blind or through hole.
- High thread surface quality.
- Internal coolant.
- Optimized carbide grade for Aluminum and Cast Iron.

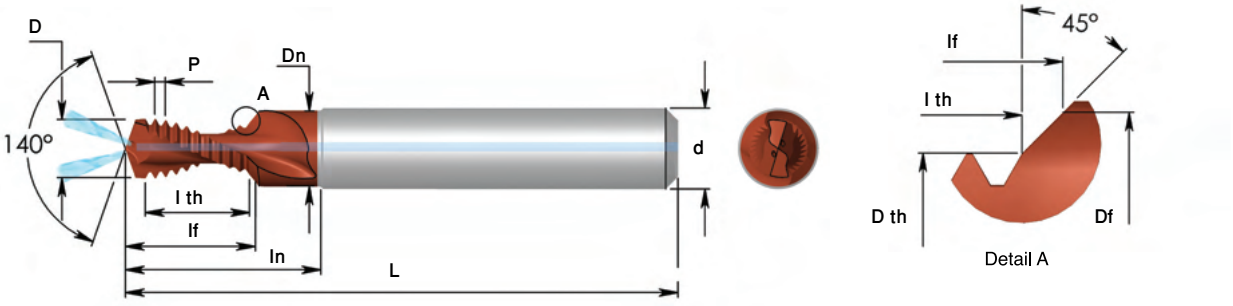
Product Identification

Mill-Thread Drill Ordering Codes

MTD	08	048	B	12	1.0	ISO	MT7
MT Drill	Shank Diameter 06 = 6 mm 08 = 8 mm 10 = 10 mm 12 = 12 mm	Cutting Diameter	No. of Flutes B = 2	Approximate Cutting Length 12 = 12.0 mm	Thread Pitch	Thread Profile ISO UN	Carbide Grade K20 MT7

MT Drill - MTD

Tools for Internal thread



Thread length: 2xD

Grade	P	M	K	N	S	H
K20			●	●		
MT7			●	●		

ISO

Pitch mm	M Coarse	Ordering Code	d mm	D	Dth	Df	Dn	In	l th	lf	L
0.7	M4	MTD 06032 B7 0.7 ISO	6	.130	.126	.19	.19	.59	.30	.39	2.1
0.8	M5	MTD 0604 B9 0.8 ISO	6	.165	.157	.22	.22	.71	.38	.47	2.1
1.0	M6	MTD 08048 B12 1.0 ISO	8	.197	.189	.26	.27	1.02	.47	.58	2.4
1.25	M8	MTD 10064 B15 1.25 ISO	10	.266	.252	.34	.35	1.34	.59	.74	2.9
1.5	M10	MTD 1208 B19 1.5 ISO	12	.335	.315	.41	.43	1.38	.77	.94	3.1

UNC

Pitch TPI	UNC	Ordering Code	d mm	D	Dth	Df	Dn	In	lth	lf	L
20	1/4	MTD 08048 B12 20 UN	8	.205	.189	.26	.27	1.02	.50	.63	2.4
18	5/16	MTD 10061 B15 18 UN	10	.260	.240	.33	.34	1.34	.61	.76	2.9
16	3/8	MTD 12075 B19 16 UN	12	.315	.295	.39	.41	1.38	.75	.92	3.1
14	7/16	MTD 12088 B21 14 UN	12	.370	.346	.45	.46	1.38	.86	1.05	3.1

UNF

Pitch TPI	UNF	Ordering Code	d mm	D	Dth	Df	Dn	In	lth	lf	L
32	10	MTD 06038 B9 32 UN	6	.161	.150	.21	.22	.71	.37	.47	2.1
28	1/4	MTD 08052 B13 28 UN	8	.217	.205	.26	.27	1.02	.51	.62	2.4
24	5/16	MTD 10066 B15 24 UN	10	.272	.260	.33	.34	1.34	.63	.75	2.9
24	3/8	MTD 12082 B19 24 UN	12	.335	.323	.39	.41	1.38	.75	.89	3.1

- Tools without coolant available upon request.
- Cylindrical shank DIN6535-HA (Weldon shank, available upon request).

Order example: MTD 08048 B12 20 UN MT7

● First choice ○ Alternative

MTSH
Demonstration

MTH Type

Carmex provide innovative mill thread solid carbide tools for machining:

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

Advantages

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

MTSH Type

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

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

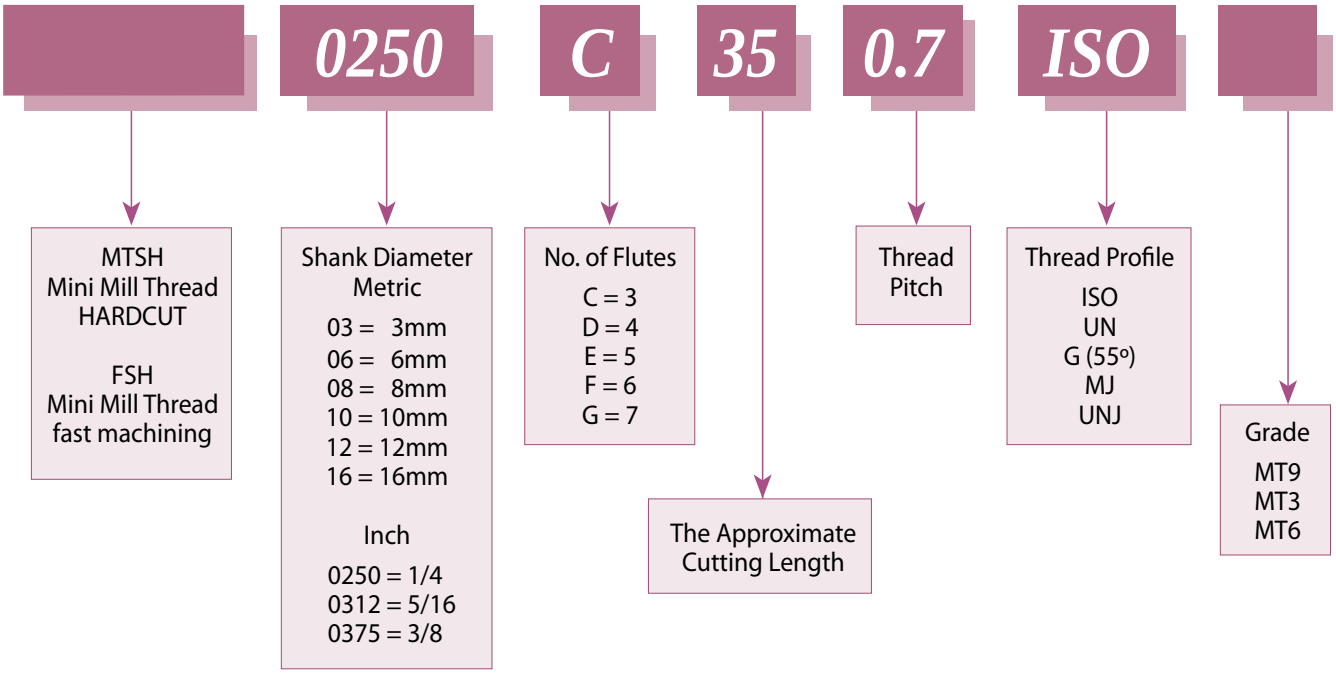
FSH Type

High productive Solid Carbide Thread-Mills with a large number of flutes for machining hard materials up to 65 HRC

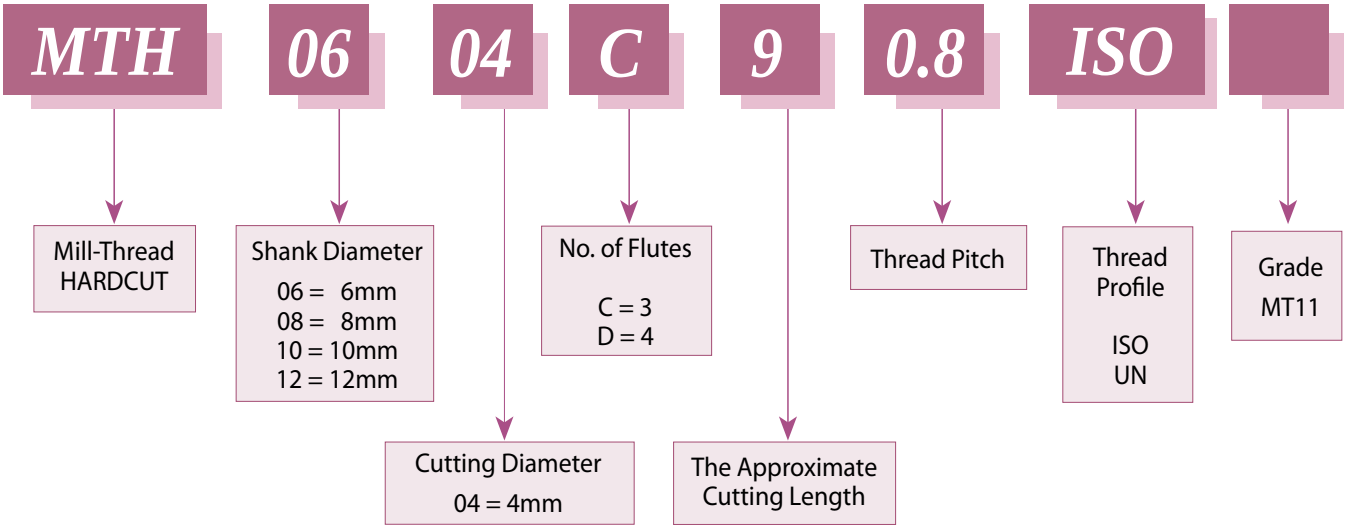
Contents:	Page:	Contents:	Page:
Product Identification	2	**FSH**	6
ISO	3	ISO	6
UN	4	UN	6
G55° - BSW, BSP	5	**MTH**	7
MJ	5	ISO	7
UNJ	5	UN	7

Product Identification

Mini Mill-Thread MTSH Type Ordering Codes

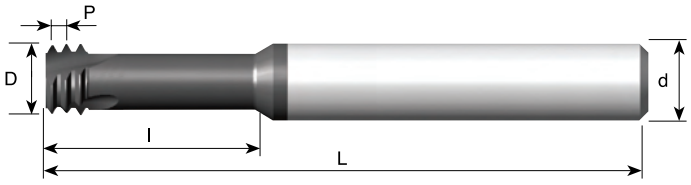


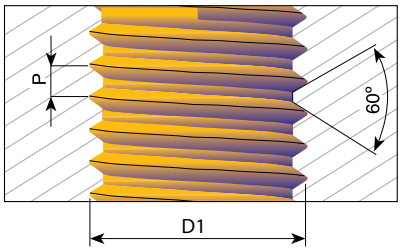
MTH Type Ordering Codes



ISO

Tools for Internal Thread





Left hand cutting
For CNC code use M04

Grade	P	M	K	N	S	H
MT9	●	●	○	○	●	≤62 HRc

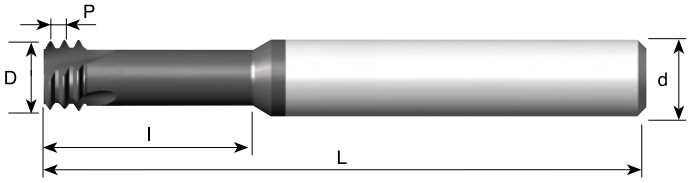
Pitch mm	M coarse	M fine	Ordering Code	d	D	No. of Flutes	l	L	Thread depth
0.3	M1.4		MTSH 03011 C4 0.3 ISO	3 mm	.041	3	.16	1.5	3xD1
0.35	M1.6, M1.8	M2, M2.5	MTSH 03012 C5 0.35 ISO	3 mm	.047	3	.19	1.5	3xD1
0.4	M2		MTSH 0250 C18 0.4 ISO	1/4	.060	3	.18	2.5	2xD1
0.4	M2		MTSH 03016 C6 0.4 ISO	3 mm	.060	3	.24	1.5	3xD1
0.45	M2.2		MTSH 0250 C20 0.45 ISO	1/4	.065	3	.20	2.5	2xD1
0.45	M2.2		MTSH 06017 C7 0.45 ISO	6 mm	.065	3	.28	2.3	3xD1
0.45	M2.5		MTSH 0250 C22 0.45 ISO	1/4	.077	3	.22	2.5	2xD1
0.45	M2.5		MTSH 0250 C30 0.45 ISO	1/4	.077	3	.30	2.5	3xD1
0.5	M3	M4, M5	MTSH 0250 C26 0.5 ISO	1/4	.093	3	.26	2.5	2xD1
0.5	M3	M4, M5	MTSH 0250 C37 0.5 ISO	1/4	.093	3	.37	2.5	3xD1
0.6	M3.5		MTSH 0250 C30 0.6 ISO	1/4	.108	3	.30	2.5	2xD1
0.6	M3.5		MTSH 06028 C10 0.6 ISO	6 mm	.108	3	.41	2.3	3xD1
0.7	M4		MTSH 0250 C35 0.7 ISO	1/4	.122	3	.35	2.5	2xD1
0.7	M4		MTSH 0250 C49 0.7 ISO	1/4	.122	3	.49	2.5	3xD1
0.7	M4		MTSH 06032 C12 0.7 ISO-L	6 mm	.126	3	.49	4.1	3xD1
0.8	M5		MTSH 0250 C49 0.8 ISO	1/4	.150	3	.49	2.5	2xD1
0.8	M5		MTSH 0250 C63 0.8 ISO	1/4	.150	3	.63	2.5	3xD1
0.8	M5		MTSH 0604 C16 0.8 ISO-L	6 mm	.157	3	.63	4.1	3xD1
1.0	M6	M8	MTSH 0250 C55 1.0 ISO	1/4	.183	3	.55	2.5	2xD1
1.0	M6	M8	MTSH 0250 C79 1.0 ISO	1/4	.183	3	.79	2.5	3xD1
1.0	M6	M8	MTSH 06048 C20 1.0 ISO-L	6 mm	.189	3	.79	4.1	3xD1
1.0		M10, M12	MTSH 0808 D31 1.0 ISO	8 mm	.315	4	1.22	2.5	3xD1
1.25	M8	M10, M12	MTSH 0250 C71 1.25 ISO	1/4	.236	3	.71	2.5	2xD1
1.25	M8	M10, M12	MTSH 0250 C94 1.25 ISO	1/4	.236	3	.94	2.5	3xD1
1.5	M10	M14, M16	MTSH 0312 C91 1.5 ISO	5/16	.307	3	.91	2.5	2xD1
1.5	M10	M14, M16	MTSH 08078 D31 1.5 ISO	8 mm	.307	4	1.24	2.5	3xD1
1.75	M12		MTSH 0375 C10 1.75 ISO	3/8	.354	3	1.02	3.0	2xD1
2.0	M14	M17	MTSH 1010 D30 2.0 ISO	10 mm	.394	4	1.18	2.9	2xD1
2.0	M16	M18, M20	MTSH 12118 D35 2.0 SIO	12 mm	.465	4	1.38	3.3	2xD1

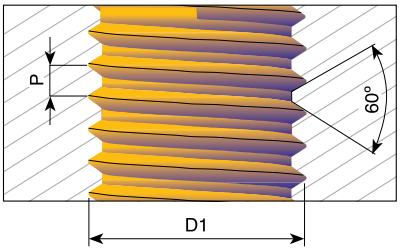
Order example: MTSH 0250C35 0.7 ISO MT9

● First choice ○ Alternative

UN

Tools for Internal Thread





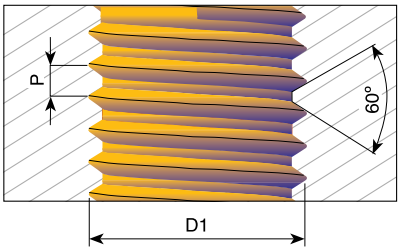
Left hand cutting
For CNC code use M04

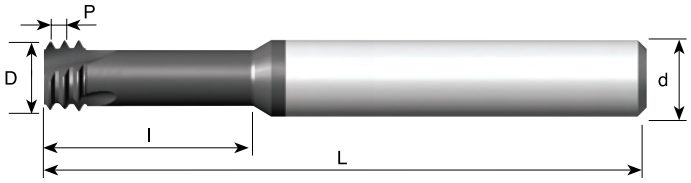
Pitch TPI	UNC	UNF	Ordering Code	d	D	No. of Flutes	l	L	Thread depth
80		0	MTSH 0250 C16 80 UN	1/4	.045	3	.16	2.5	3xD1
72		1	MTSH 0250 C15 72 UN	1/4	.057	3	.15	2.5	2xD1
72		1	MTSH 03015 C6 72 UN	3 mm	.057	3	.24	1.5	3xD1
64	1	2	MTSH 0250 C15 64 UN	1/4	.055	3	.15	2.5	2xD1
56	2	3	MTSH 0250 C17 56 UN	1/4	.065	3	.17	2.5	2xD1
56	2	3	MTSH 06016 C6 56 UN	6 mm	.065	3	.26	2.3	3xD1
48	3	4	MTSH 0250 C20 48 UN	1/4	.075	3	.20	2.5	2xD1
40	4		MTSH 0250 C25 40 UN	1/4	.083	3	.25	2.5	2xD1
40	4		MTSH 06021 C8 40 UN	6 mm	.083	3	.31	2.3	3xD1
40	5	6	MTSH 0250 C28 40 UN	1/4	.096	3	.28	2.5	2xD1
40	5	6	MTSH 0250 C38 40 UN	1/4	.096	3	.38	2.5	3xD1
36		8	MTSH 0250 C35 36 UN	1/4	.130	3	.35	2.5	2xD1
32	6		MTSH 0250 C28 32 UN	1/4	.100	3	.28	2.5	2xD1
32	6		MTSH 06025 C10 32 UN	6 mm	.100	3	.41	2.5	3xD1
32	8		MTSH 0250 C37 32 UN	1/4	.126	3	.37	2.5	2xD1
32	8		MTSH 0250 C49 32 UN	1/4	.126	3	.49	2.5	3xD1
32		10	MTSH 0250 C41 32 UN	1/4	.146	3	.41	2.5	2xD1
32		10	MTSH 0250 C59 32 UN	1/4	.146	3	.59	2.5	3xD1
28		12	MTSH 0250 C43 28 UN	1/4	.165	3	.43	2.3	2xD1
28		1/4	MTSH 0250 C57 28 UN	1/4	.197	3	.57	2.5	2xD1
28		1/4	MTSH 0250 C75 28 UN	1/4	.197	3	.75	2.5	3xD1
24	10, 12		MTSH 0250 C42 24 UN	1/4	.138	3	.42	2.5	2xD1
24		5/16, 3/8	MTSH 0312 C67 24 UN	5/16	.260	3	.67	2.5	2xD1
24		5/16, 3/8	MTSH 0312 C94 24 UN	5/16	.260	3	.94	2.5	3xD1
20	1/4		MTSH 0250 C55 20 UN	1/4	.187	3	.55	2.5	2xD1
20	1/4		MTSH 0250 C75 20 UN	1/4	.187	3	.75	2.5	3xD1
20		7/16	MTSH 0808 C25 20 UN	8 mm	.315	3	.98	2.5	2xD1
18	5/16		MTSH 0250 C67 18 UN	1/4	.236	3	.67	2.5	2xD1
18	5/16		MTSH 0250 C91 18 UN	1/4	.236	3	.91	2.5	3xD1
18		5/8	MTSH 1212 D35 18 UN	12 mm	.472	4	1.38	3.3	2xD1
16	3/8		MTSH 0312 C87 16 UN	5/16	.264	3	.87	2.5	2xD1
16	3/8		MTSH 08074 D30 16UN	8 mm	.291	4	1.19	2.5	3xD1
14	7/16		MTSH 0312 C98 14 UN	5/16	.303	3	.98	2.5	2xD1
13	1/2		MTSH 0375 C10 13 UN	3/8	.362	3	1.08	3.0	2xD1
12	9/16		MTSH 12105 C31 12 UN	12 mm	.413	3	1.24	3.3	2xD1
11	5/8		MTSH 12114 C34 11 UN	12 mm	.449	3	1.36	3.3	2xD1
10	3/4		MTSH 16144 D41 10 UN	16 mm	.567	4	1.63	4.1	2xD1

Order example: MTSH 0250C28 40 UN MT9

G (55°) BSW, BSP

Same Tool for Internal and External Thread



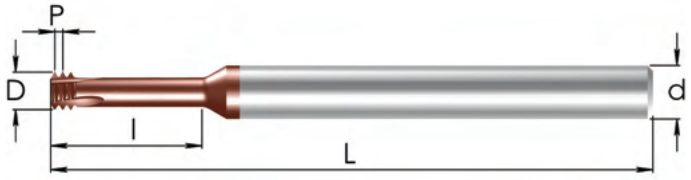


Left hand cutting
For CNC code use M04

Grade	P	M	K	N	S	H
MT9	●	●	○	○	●	≤62 HRc

Pitch TPI	Standard	Ordering Code	d mm	D	No. of Flutes	l	L	Thread depth
28	G1/8	MTSH 08078 C19 28 W	8	.307	3	.77	2.5	2xD1
19	G1/4-3/8	MTSH 1010 D30 19 W	10	.394	4	1.18	2.9	2xD1
14	G1/2-7/8	MTSH 1212 D37 14 W	12	.472	4	1.46	3.3	2xD1
11	G≥1	MTSH 1616 D44 11 W	16	.630	4	1.73	4.1	2xD1

MJ Tools for Internal Thread



Grade	P	M	K	N	S	H
MT6	●	●	○	○	●	≤58 HRc

Pitch mm	D1	Ordering Code	d mm	D	No. of Flutes	l	L	Thread depth
0.5	MJ3	MTSH 06024 C9 0.5 MJ	6	.094	3	.37	2.3	3xD1
0.7	MJ4	MTSH 06032 C12 0.7 MJ	6	.126	3	.50	2.3	3xD1
0.8	MJ5	MTSH 0604 D15 0.8 MJ	6	.157	4	.62	2.3	3xD1
1.0	MJ6-MJ8	MTSH 06048 D19 1.0 MJ	6	.189	4	.75	2.3	3xD1
1.25	MJ8-MJ10	MTSH 08064 D25 1.25 MJ	8	.252	4	1.00	2.5	3xD1
1.5	MJ10-MJ12	MTSH 0808 D31 1.5 MJ	8	.315	4	1.24	2.5	3xD1
1.75	MJ12	MTSH 10095 D25 1.75 MJ	10	.374	4	1.02	2.9	2xD1
2.0	MJ14-MJ20	MTSH 1211 D30 2.0 MJ	12	.433	4	1.18	3.3	2xD1

UNJ Tools for Internal Thread

Grade	P	M	K	N	S	H
MT6	●	●	○	○	●	≤58 HRc

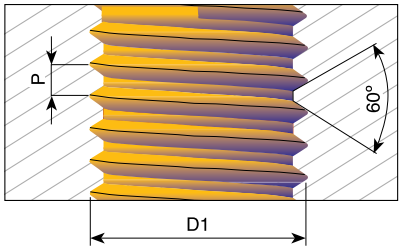
Pitch TPI	UNJC	UNJF	Ordering Code	d mm	D	No. of Flutes	l	L	Thread depth
56	2		MTSH 06016 C7 56 UNJ	6	.065	3	.28	2.3	3xD1
32	6		MTSH 06025 C11 32 UNJ	6	.100	3	.44	2.3	3xD1
32	8	10	MTSH 06033 C13 32 UNJ	6	.130	3	.52	2.3	3xD1
28		1/4	MTSH 06052 D20 28 UNJ	6	.205	4	.79	2.3	3xD1
24		5/16, 3/8	MTSH 08067 D24 24 UNJ	8	.264	4	.98	2.5	3xD1
20	1/4		MTSH 06049 D20 20 UNJ	6	.193	4	.80	2.3	3xD1
20		7/16	MTSH 10092 D23 20 UNJ	10	.362	4	.93	2.9	2xD1
18	5/16		MTSH 0606 D17 18 UNJ	6	.236	4	.68	2.3	2xD1
16	3/8		MTSH 08074 D20 16 UNJ	8	.291	4	.81	2.5	2xD1
14	7/16		MTSH 10085 D24 14 UNJ	10	.335	4	.94	2.9	2xD1
13	1/2		MTSH 10098 D27 13 UNJ	10	.386	4	1.08	2.9	2xD1

Order example: MTSH 10095 D25 1.75 MJ MT6

● First choice ○ Alternative

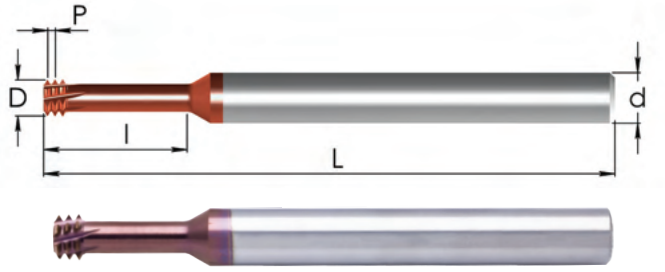
FSH

Solid Carbide Thread Mills with large number of flutes for machining hard materials



Left hand cutting
For CNC code use M04

ISO Tools for Internal Thread



Grade	P	M	K	N	S	H
MT3	●	○	○	○	●	≤65 HRc

Pitch mm	M Coarse	M Fine	Ordering Code	d mm	D	No. of Flutes	l	L	Thread depth
0.45	M2.5		FSH 0602 E5 0.45 ISO	6	.077	5	.22	2.3	2xD1
0.45	M2.5		FSH 0602 E8 0.45 ISO	6	.077	5	.31	2.3	3xD1
0.5	M3	M4,M5	FSH 06024 E6 0.5 ISO	6	.094	5	.26	2.3	2xD1
0.5	M3	M4,M5	FSH 06024 E9 0.5 ISO	6	.094	5	.37	2.3	3xD1
0.7	M4		FSH 06032 E8 0.7 ISO	6	.126	5	.34	2.3	2xD1
0.7	M4		FSH 06032 E12 0.7 ISO	6	.126	5	.50	2.3	3xD1
0.8	M5		FSH 0604 E10 0.8 ISO	6	.157	5	.43	2.3	2xD1
0.8	M5		FSH 0604 E15 0.8 ISO	6	.157	5	.62	2.3	3xD1
1.0	M6	M8	FSH 06048 E13 1.0 ISO	6	.189	6	.51	2.3	2xD1
1.0	M6	M8	FSH 06048 E19 1.0 ISO	6	.189	6	.75	2.3	3xD1
1.25	M8	M10,M12	FSH 08064 G17 1.25 ISO	8	.252	7	.68	2.5	2xD1
1.25	M8	M10,M12	FSH 08064 G25 1.25 ISO	8	.252	7	1.00	2.5	3xD1

Order example: FSH 0604 E10 0.8 ISO MT3

UN Tools for Internal Thread

Grade	P	M	K	N	S	H
MT3	●	○	○	○	●	≤65 HRc

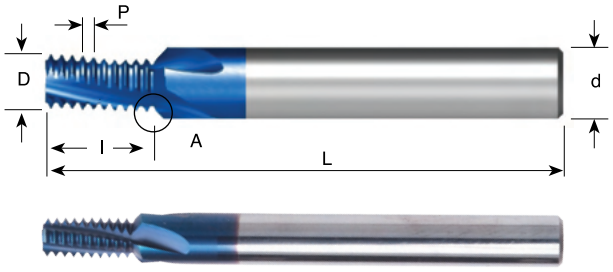
Pitch TPI	UNC	UNF	Ordering Code	d mm	D	No. of Flutes	l	L	Thread depth
40	4		FSH 06021 D6 40 UN	6	.083	4	.25	2.3	2xD1
40	4		FSH 06021 D9 40 UN	6	.083	4	.36	2.3	3xD1
40	5	6	FSH 06024 D7 40 UN	6	.096	4	.28	2.3	2xD1
40	5	6	FSH 06024 D10 40 UN	6	.096	4	.40	2.3	3xD1
32	6		FSH 06025 D7 32 UN	6	.100	4	.31	2.3	2xD1
32	6		FSH 06025 D11 32 UN	6	.100	4	.44	2.3	3xD1
32	8		FSH 06032 D9 32 UN	6	.126	4	.36	2.3	2xD1
32	8		FSH 06032 D13 32 UN	6	.126	4	.52	2.3	3xD1
32		10	FSH 06038 E10 32 UN	6	.150	5	.41	2.3	2xD1
32		10	FSH 06038 E15 32 UN	6	.150	5	.60	2.3	3xD1
28		1/4	FSH 06052 E13 28 UN	6	.205	6	.54	2.3	2xD1
28		1/4	FSH 06052 E20 28 UN	6	.205	6	.79	2.3	3xD1
24		5/16, 3/8	FSH 08066 E16 24 UN	8	.260	6	.67	2.5	2xD1
24		5/16, 3/8	FSH 08066 E24 24 UN	8	.260	6	.98	2.5	3xD1
20	1/4		FSH 06048 E14 20 UN	6	.189	5	.55	2.3	2xD1
20	1/4		FSH 06048 E20 20 UN	6	.189	5	.80	2.3	3xD1

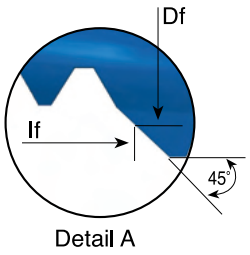
Order example: FSH 08066 F24 24 UN MT3

● First choice ○ Alternative

MTH

ISO Tools for Internal Thread





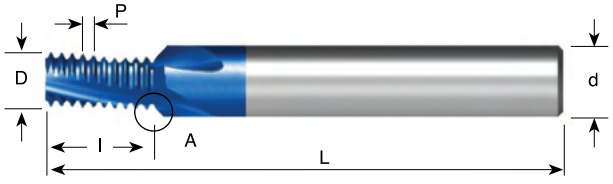
Grade	P	M	K	N	S	H
MT11	●	○	●	○	●	≤62 HRc

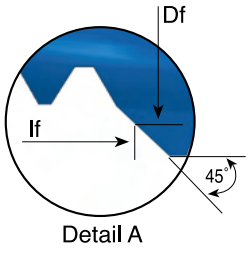
Pitch mm	M Coarse	M Fine	Ordering Code	d mm	D	Df	No. of Flutes	l	lf	L
0.5	M3	Ø ≥ 4	MTH 06024 C5 0.5 ISO	6	.094	.142	3	.209	.232	2.3
0.7	M4	Ø ≥ 5	MTH 06031 C7 0.7 ISO	6	.122	.169	3	.291	.315	2.3
0.8	M5	Ø ≥ 6	MTH 0604 C9 0.8 ISO	6	.157	.205	3	.362	.386	2.3
1.0	M6	Ø ≥ 7	MTH 08048 D10 1.0 ISO	8	.189	.252	4	.413	.445	2.5
1.0		Ø ≥ 9	MTH 0806 D13 1.0 ISO	8	.236	.299	4	.531	.563	2.5
1.0		Ø ≥ 10	MTH 1008 D16 1.0 ISO	10	.315	.378	4	.650	.681	2.9
1.25	M8	Ø ≥ 10	MTH 0806 D14 1.25 ISO	8	.236	.299	4	.567	.598	2.5
1.5	M10	Ø ≥ 12	MTH 1008 D17 1.5 ISO	10	.315	.386	4	.681	.717	2.9
1.5		Ø ≥ 14	MTH 1210 D21 1.5 ISO	12	.394	.465	4	.858	.894	3.3
1.75	M12	Ø ≥ 12	MTH 12095 D20 1.75 ISO	12	.374	.453	4	.791	.831	3.3

Order example: MTH08048D10 1.0 ISO MT11

UN

Tools for Internal Thread





Grade	P	M	K	N	S	H
MT11	●	○	●	○	●	≤62 HRc

Pitch TPI	UNC	UNF	UNEF	Ordering Code	d mm	D	Df	No. of Flutes	l	lf	L
40	5	6		MTH 06025 C6 40 UN	6	.098	.146	3	.236	.260	2.3
32	6			MTH 06026 C5 32 UN	6	.102	.150	3	.232	.256	2.3
32	8			MTH 06032 C7 32 UN	6	.126	.173	3	.295	.319	2.3
32		10	12	MTH 06038 C9 32 UN	6	.150	.197	3	.358	.382	2.3
28		1/4		MTH 08052 D11 28 UN	8	.205	.268	4	.445	.476	2.5
28			7/16, 1/2	MTH 12096 D20 28 UN	12	.378	.441	4	.803	.835	3.3
24		5/16, 3/8	9/16, 5/8, 11/16	MTH 08066 D14 24 UN	8	.260	.315	4	.563	.591	2.5
20	1/4			MTH 06048 C12 20 UN	6	.189	.236	3	.476	.500	2.3
20		7/16, 1/2	3/4, 1	MTH 12092 D21 20 UN	12	.362	.425	4	.827	.858	3.3
18	5/16	9/16, 5/8	11/16	MTH 08057 C14 18 UN	8	.224	.295	3	.583	.618	2.5
16	3/8	3/4		MTH 10074 C16 16 UN	10	.291	.362	3	.657	.693	2.9
14	7/16	7/8		MTH 10085 D20 14 UN	10	.335	.390	4	.823	.850	2.9
13	1/2			MTH 12094 D22 13 UN	12	.370	.449	4	.886	.925	3.3

Order example: MTH 06048 C12 20 UN MT11

● First choice ○ Alternative

Mill-Thread Technical Section | B12

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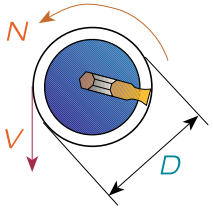
Conversion of Cutting Speed to Rotational Speed

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

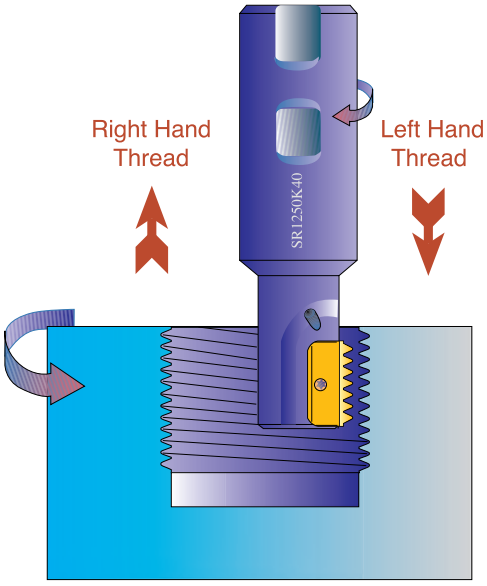
$$N = \frac{V \times 12}{\pi \times D} = \frac{400 \times 12}{3.14 \times 1.25} = 1222 \text{ RPM}$$



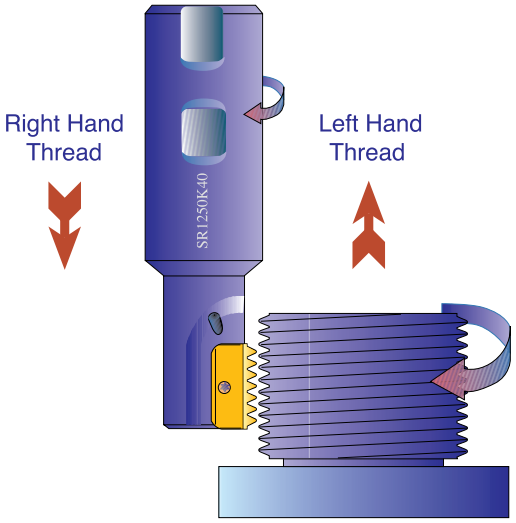
Example: *V=400 ft/min*
D=1.25

D=Cutting diameter

Internal Thread



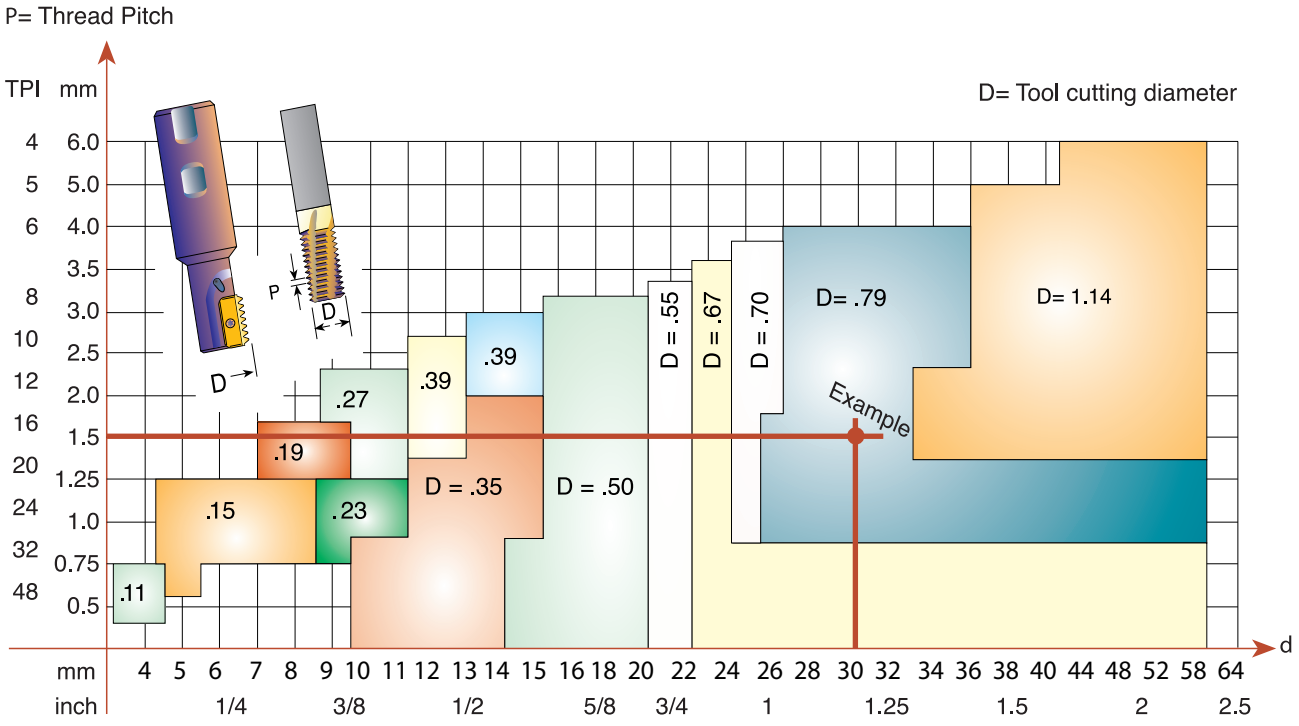
External Thread



Tool Selection

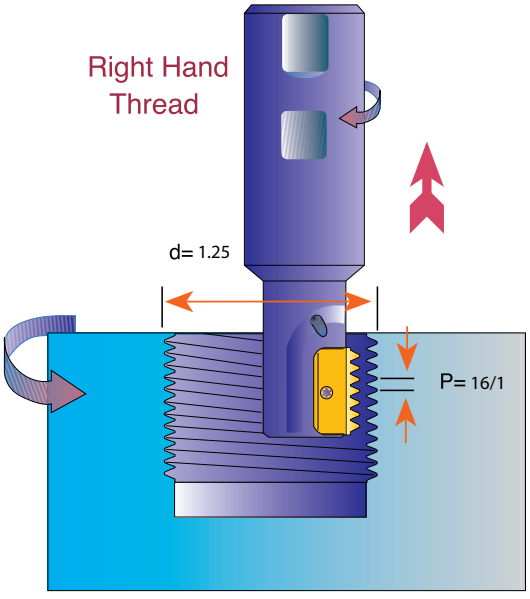
For indexable and solid carbide Mill Threads

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



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

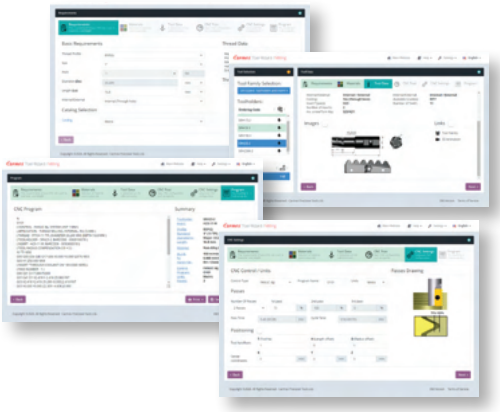
Chosen toolholder: SR0790 H21
Insert: 21 I 16 UN MT7



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

Carmex Mill-Thread catalog and CNC Tool Wizard

This software is provided by Carmex 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 website:

carmex.com

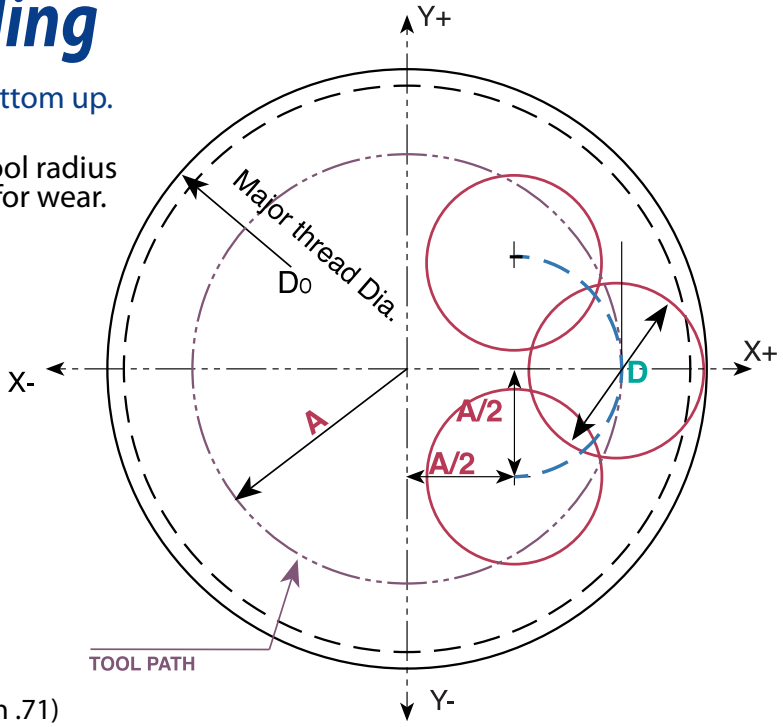
Example of Thread Milling CNC Program for Internal Threading

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
D_o = Major thread dia.
D = Cutting dia.



General Program

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

Internal Thread

EXAMPLE : 1 1/4 - 12UNF (Thread depth .71)
TOOLHOLDER : SR0790 H21 (Cutting Dia. .79)
INSERT: 21 I 12 UN
A = (1.25 - .79)/2 = .23

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

Mill-Thread Inserts Speed and Feed Selection

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

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

Recommended FEED RATE: .002 - .006

Cutting Data

Slim MT type

MT17 Advanced NEW submicron carbide grade with multi-layer PVD coating, provides high performance in all machining conditions. The new grade ensures high abrasive wear resistance, machining wide range of materials including steels, tough and difficult materials and high alloyed steels.

ISO	Material	Conditions	Cutting Conditions	
			Cutting Speed (ft/min)	Feed Rate (inch/tooth)
P	Non-Alloy Steel and Cast Steel, Free Cutting Steel	Annealed < 0.25% C Annealed ≥ 0.25% C Annealed ≥ 0.55% C Quenched & Tempered < 0.55% C Quenched & Tempered ≥ 0.55% C	360-720 330-690 295-490 230-460 180-230	(.0022 * D) /.87
	Low Alloy Steel and Cast Steel (less than 5% alloying elements	Annealed Quenched & Tempered	200-360 200-295	(.0022 * D) /.87
	High Alloy Steel, Cast Steel, and Tool Steel	Annealed	180-295	
		Quenched & Tempered	150-260	
M	Stainless Steel and Cast Steel	Ferritic Martensitic Austenitic	295-655 260-520 200-360	(.0022 * D) /.87
		High alloy Austenitic & Duplex	130-230	(.0018 * D) /.87
K	Cast Iron Nodular (GGG)	Ferritic	295-410	(.0022 * D) /.87
		Pearlitic	295-360	
	Grey Cast Iron (GG)	Ferritic	360-475	
		Pearlitic	260-410	
	Malleable Cast Iron	Ferritic	360-410	
		Pearlitic	260-390	
N	Aluminum-Wrought Alloy	Not Cureable	440-1150	(.0020 * D) /.87
		Cured	330-885	
	Aluminum-Cast, Alloyed	Not Cureable ≤ 12% Si Cured High Temperature > 12% Si	295-885 295-740 295-590	
	Copper Alloys	Free Cutting > 1% Pb Brass Electrolytic Copper	230-740 230-590 230-885	
	Non Metalic	Duroplastics, Fiber Plastics Hard Rubber	230-885 230-885	
S	High Temperature/Super Alloys (Fe based)	Annealed Cured	100-160	(.0015 * D) /.87
	High Temperature/Super Alloys (Ni or Co based)	Annealed	80-150	
		Cured Cast		
	Titanium Alloys	Alpha + Beta Alloys Cured	100-130	

D= Cutting diameter.

Spiral Mill-Thread Inserts Speed and Feed Selection

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

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

Recommended FEED RATE: .002 - .006

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

For hard metals reduce cutting speed.

Spiral Finish Speed Selection

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

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

Cutting Data

D-Thread type

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

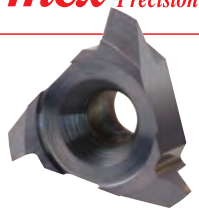
ISO	Materials	Cutting Speed ft/min
P	Low and Medium Carbon Steels <0.55%C	330 - 670
	High Carbon Steels ≥0.55%C	330 - 590
	Alloy Steels, Treated Steels	330 - 460
M	Stainless Steels - Free Cutting	280 - 410
	Stainless Steels - Austenitic	260 - 380
	Cast Steels	380 - 510
K	Cast Iron	250 - 480
N	Aluminum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

Recommended FEED RATE: .003 - .006

Carmex Precision Tools Ltd.

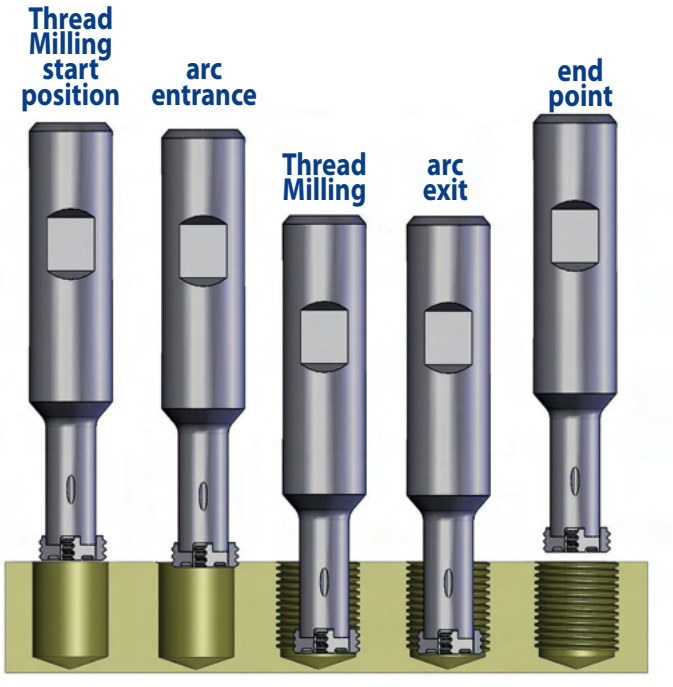
Cutting Data

CMT type



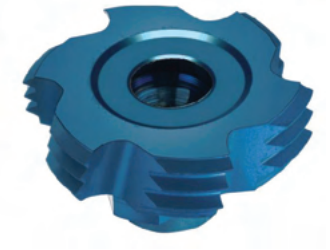
MT7 Sub-Micron Grade with Titanium Aluminum Nitride multi-layer coating (ISO K10 - K20). This is a general purpose grade, which can be used with all materials; it should be run at medium to high cutting speeds.

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



Cutting Data

CMT Spiral Multi Flute Inserts



Carbide grade - MT8:

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

ISO Standard	Material	Cutting Speed ft/min	Feed inch/tooth Cutting Diameter = D
			Ø.63-Ø1.38
P	Low and Medium Carbon Steels <0.55%C	197 - 394	.0055 - .0094
	High Carbon Steels ≥0.55%C	197 - 295	.0047 - .0094
	Alloy Steels,Treated Steels	164 - 262	.0031 - .0079
M	Stainless Steel-Free Cutting	230 - 328	.0031 - .0075
	Stainless Steel-Austenitic	197 - 295	.0031 - .0075
	Cast Steels	230 - 295	.0031 - .0079
K	Cast Iron	131 - 262	.0055 - .0094
N	Aluminum ≤12%Si, Copper	328 - 656	.0055 - .0102
	Aluminum >12%Si	197 - 459	.0031 - .0087
	Synthetics, Duroplastics, Thermoplastics	164 - 656	.0067 - .0110
S	Nickel Alloys, Titanium Alloys.	66 - 131	.0020 - .0055
H	Hardened Steel, 45-50HRc	197 - 230	.0028 - .0067
	Hardened Steel, 51-55HRc	164 - 197	.0024 - .0063

Cutting Data

CMT Milling cutter

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 ft/min	Feed inch/tooth
P	Low and Medium Carbon Steels <0.55%C	197 - 394	.0020-.0059
	High Carbon Steels ≥0.55%C	197 - 295	.0020-.0039
	Alloy Steels, Treated Steels	164 - 262	.0020-.0039
M	Stainless Steel-Free Cutting	230 - 328	.0016-.0051
	Stainless Steel-Austenitic	197 - 295	.0016-.0039
	Cast Steels	230 - 295	.0016-.0051
K	Cast Iron	131 - 262	.0020-.0059
N	Aluminum ≤12%Si, Copper	328 - 656	.0020-.0098
	Aluminum >12%Si	197 - 459	.0012-.0039
	Synthetics, Duroplastics, Thermoplastics	164 - 656	.0020-.0098
S	Nickel alloys, Titanium Alloys.	66 - 131	.0012-.0039
H	Hardened Steel, ≤ 45 HRc	197 - 230	.0012-.0039

Mill-Thread Solid Carbide Grades, Speed and Feed Selection

MT type

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

ISO	Materials	Cutting Speed ft/min	Feed inch/tooth Cutting Diameter=D										
			Ø.08	Ø.12	Ø.16	Ø.24	Ø.31	Ø.39	Ø.47	Ø.55	Ø.63	Ø.79	Ø.98
P	Low and Medium Carbon Steels <0.55%C	300 - 660	.0012	.0016	.0016	.0024	.0028	.0032	.0037	.0042	.0047	.0057	.0070
	High Carbon Steels ≥0.55%C	330 - 480	.0009	.0011	.0013	.0018	.0022	.0026	.0031	.0035	.0039	.0048	.0059
	Alloy Steels, Treated Steels												
M	Stainless Steels - Free Cutting	180 - 430	.0008	.0012	.0010	.0016	.0020	.0024	.0024	.0028	.0031	.0035	.0043
	Stainless Steels - Austenitic												
	Cast Steels	390 - 440	.0008	.0009	.0010	.0013	.0016	.0018	.0021	.0023	.0026	.0031	.0038
K	Cast Iron	210 - 390	.0011	.0014	.0017	.0022	.0027	.0032	.0037	.0042	.0047	.0057	.0070
N	Aluminum ≤12%Si, Copper	440 - 920	.0011	.0014	.0017	.0022	.0027	.0032	.0037	.0042	.0047	.0057	.0070
	Aluminum >12% Si	300 - 660	.0008	.0009	.0010	.0013	.0016	.0018	.0021	.0023	.0026	.0031	.0038
	Synthetics, Duroplastics, Thermoplastics	300 - 1050	.0021	.0024	.0027	.0032	.0038	.0043	.0049	.0054	.0060	.0071	.0085
S	Nickel Alloys, Titanium Alloys												

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

MTB, MTZ, EMT types

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

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

Cutting Data

Solid Carbide Tapered End Mills

ISO	Materials	Cutting Speed ft/min	Feed inch/tooth		
			SC0652D12	SC0375D09	SC0500D12
P	Low and Medium Carbon Steels <0.55%C	360 - 660	.0008 - .0014	.0016 - .0035	.0020 - .0039
	High Carbon Steels ≥0.55%C	390 - 460	.0007 - .0014	.0012 - .0030	.0016 - .0039
	Alloy Steels, Treated Steels	330 - 390	.0006 - .0014	.0008 - .0177	.0010 - .0020
M	Stainless Steels - Free Cutting	330 - 390	.0006 - .0014	.0012 - .0031	.0012 - .0039
	Stainless Steels - Austenitic	260 - 330	.0004 - .0010	.0008 - .0024	.0008 - .0039
	Cast Steels	390 - 490	.0006 - .0014	.0012 - .0031	.0012 - .0039
K	Cast Iron	330 - 430	.0008 - .0014	.0012 - .0035	.0016 - .0039
N	Aluminum ≤12%Si, Copper	590 - 820	.0010 - .0018	.0012 - .0035	.0016 - .0039
	Aluminum >12% Si	390 - 660	.0006 - .0014	.0010 - .0035	.0012 - .0039
	Synthetics, Duroplastics, Thermoplastics	590 - 2620	.0010 - .0018	.0012 - .0035	.0016 - .0039
S	Nickel Alloys, Titanium Alloys	160 - 230	.0006 - .0014	.0008 - .0028	.0012 - .0039
H	Hardened Steel, 45-50HRc	160 - 230	.0004 - .0010	.0008 - .0020	.0012 - .0028
	Hardened Steel, 51-55HRc	130 - 200	.0004 - .0010	.0006 - .0014	.0008 - .0026

MTQ type

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

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

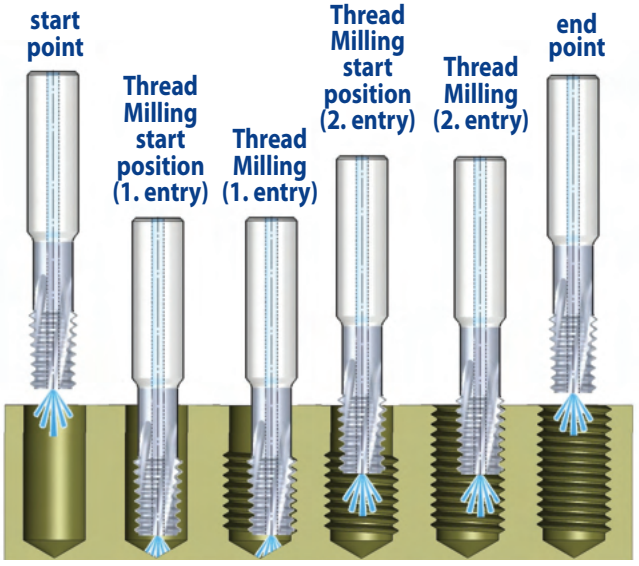
Advantages

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

Cutting Data

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

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



FMT - Fast MT type

- **Carmex has designed a unique line of solid carbide thread milling tools FMT for increased productivity and high performance.**
- **Large number of flutes enables to achieve significant shorter machining time.**

FMT vs. Taps

Features	FMT	Taps
Thread up to bottom at blind hole	Possible	Not possible
Machining load	Very low	High
Thread surface quality	High	Medium
Process reliability	Very reliable, especially for expensive work pieces	Medium
Thread geometry	Very accurate	Medium
Cycle time	Same or faster than tap	Fast

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.

Case Study

Application
Internal right hand thread: M6x1.0
Thread length: .39, Blind hole
Bore size: Ø.197
Chamfer: .035

Work piece material
Steel SAE 4340

Cutter description
FMT08048F10 1.0 ISO- with internal coolant
Shank diameter: Ø8 mm
Cutting diameter: Ø.189
Number of flutes: 6
Cutting length: .41
Total length: 2.5

Cutting conditions
Cutting speed: 426 ft/min Feed: .0006 inch/tooth

Machine
Mori Seiki NV5000 Coolant: emulsion 5%

Results
Tool life : 2,170 threads
Cycle time: 1.5 sec

Cutting Data

FMT - Fast MT type

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.

ISO Standard	Materials	Cutting Speed ft/min	Feed inch/tooth Cutting Diameter = D				
			Ø.17	Ø.24	Ø.31	Ø.39	Ø.47
P	Low and Medium Carbon Steels < 0.55%C	330 - 820	.0012	.0024	.0028	.0031	.0035
	High Carbon Steels ≥ 0.55%C	360 - 590	.0012	.0020	.0024	.0028	.0031
	Alloy Steels, Treated Steels	300 - 520	.0008	.0012	.0016	.0020	.0020
M	Stainless Steel - Free Cutting	200 - 520	.0012	.0016	.0020	.0024	.0024
	Stainless Steel - Austenitic	200 - 390	.0004	.0012	.0016	.0020	.0020
	Cast Steels	430 - 560	.0008	.0012	.0016	.0020	.0020
K	Cast Iron	230 - 490	.0016	.0024	.0028	.0031	.0035
N	Aluminum ≤ 12%Si, Copper	490 - 1150	.0016	.0024	.0028	.0031	.0035
	Aluminum > 12%Si	330 - 820	.0012	.0012	.0016	.0020	.0020
	Synthetics, Duroplastics, Thermoplastics	330 - 1310	.0024	.0031	.0039	.0043	.0047
S	Nickel Alloys, Titanium Alloys.	70 - 260	.0008	.0012	.0012	.0012	.0012
H	Hardened Steel, 45-50HRc	195 - 230	.0008	.0012	.0012	.0012	.0012

Carmex Precision Tools Ltd.

AMT Solid Carbide Thread Mills for Aluminum Machining

Solid carbide thread mills for High-speed Aluminum machining.
High-speed aluminum machining requires tools that minimize the tendency of Aluminum to stick to the tool cutting edges, provides high surface finish, ensuring efficient chip evacuation and sufficient strength of the cutting edge to absorb the cutting forces.

Features

- Optimized carbide grade for Aluminum, cast iron and stainless steels
- Cylindrical shank (Weldon shank - upon request)
- With internal coolant bore
- Uncoated, smooth cutting edge
- High thread surface quality
- Same tool for right hand or left hand internal threads
- Additional items with cutting chamfer

Cutting Data

AMT

K20 Uncoated Sub- Micron carbide grade for Aluminum and non- ferrous materials, Stainless Steels and Titanium.

ISO Standard	Materials	Cutting Speed ft/min	Feed inch/tooth Cutting Diameter = D		
			D ≤ .16	.16 < D < .35	D ≥ .35
P	Low & Medium Carbon Steels < 0.55%C	160 - 460	.0002 - .0012	.0004 - .0020	.0008 - .0039
	High Carbon Steels ≥0.55%C	200 - 430	.0002 - .0008	.0004 - .0016	.0008 - .0035
	Alloy Steels, Treated Steels				
M	Stainless Steel-Free Cutting	130 - 390	.0002 - .0008	.0004 - .0016	.0008 - .0035
	Stainless Steel-Austenitic				
	Cast Steels	230 - 390	.0002 -.0012	.0004 - .0020	.0008 - .0039
K	Cast Iron	160 - 390	.0002 - .0012	.0004 - .0020	.0008 - .0039
N	Aluminum ≤12%Si, Copper	430 - 820	.0002 - .0016	.0004 - .0024	.0008 - .0051
	Aluminum >12%Si	260 - 590	.0002 - .0016	.0004 - .0024	.0008 - .0051
	Synthetics, Duroplastics, Thermoplastics	260 - 590	.0002 - .0016	.0004 - .0024	.0008 - .0051
S	Nickel alloys, Titanium alloys	65 - 260	.0002 - .0008	.0004 - .0016	.0008 - .0035

Cutting Data

Mini Mill-Thread MTS, MTI and FMTI types

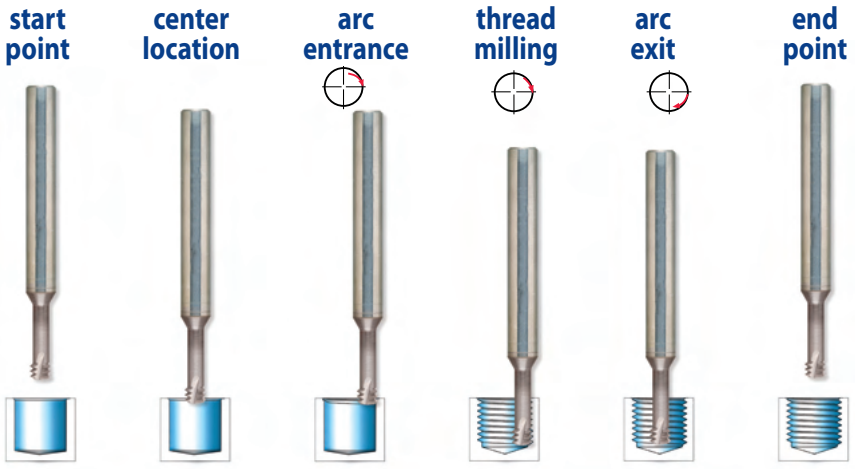
MT6 Ultra-Fine carbide grade with high hardness and toughness provides an excellent solution for machining steels, stainless steels, and super alloys Ni or Ti base. With a universal PVD multi-layer coating, provides high heat and wear resistance.

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

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

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

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



Mini Mill-Thread vs. Taps

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

Cutting Data

MTSB type

Carbide grade - 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	Materials	Cutting Speed ft/min	Feed inch/tooth					
			Cutting Diameter=D					
			Ø.04	Ø.06	Ø.08	Ø.12	Ø.16	Ø.20
P	Low and Medium Carbon Steels < 0.55%C	200 - 390	.0016	.0020	.0020	.0028	.0035	.0043
	High Carbon Steels ≥ 0.55%C	200 - 300	.0012	.0016	.0020	.0024	.0031	.0035
	Alloy Steels, Treated Steels	160 - 260	.0012	.0016	.0016	.0020	.0020	.0024
M	Stainless Steel - Free Cutting	230 - 330	.0008	.0012	.0012	.0016	.0020	.0024
	Stainless Steel - Austenitic	200 - 300	.0008	.0012	.0012	.0016	.0020	.0024
	Cast Steels	230 - 300	.0012	.0016	.0016	.0020	.0020	.0024
K	Cast Iron	130 - 260	.0016	.0020	.0020	.0028	.0035	.0043
N	Aluminum ≤ 12%Si, Copper	330 - 660	.0016	.0020	.0020	.0028	.0035	.0043
	Aluminum > 12%Si	200 - 460	.0012	.0012	.0012	.0016	.0020	.0024
	Synthetics, Duroplastics, Thermoplastics	160 - 660	.0035	.0039	.0043	.0047	.0055	.0063
S	Nickel Alloys, Titanium Alloys.	70 - 130	.0012	.0012	.0012	.0016	.0016	.0020
H	Hardened Steel, 45-50HRc	200 - 230	.0012	.0016	.0016	.0020	.0020	.0024

Cutting Data

DMT type

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

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

DMTH type

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

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

Case Studies

Case Study no. 1

Tool Description	DMTH 08047 C14 1.0 ISO MT11
Internal Thread	M6x1.0
Thread Length	.47
Material	Steel SAE 4340 12-15 HRc
Cutting Data	Vc= 295 ft/min Fz= .00118 inch/tooth
Cycle Time	28 seconds
Tool Life	776

Case Study no. 2

Tool Description	DMTH 08047 C14 1.0 ISO MT11
Internal Thread	M6x1.0
Thread Length	.47
Material	Steel SAE 4340 44-45 HRc
Cutting Data	Vc=232 ft/min Fz=.00079 inch/tooth
Cycle Time	53 seconds
Tool Life	196

Cutting Data

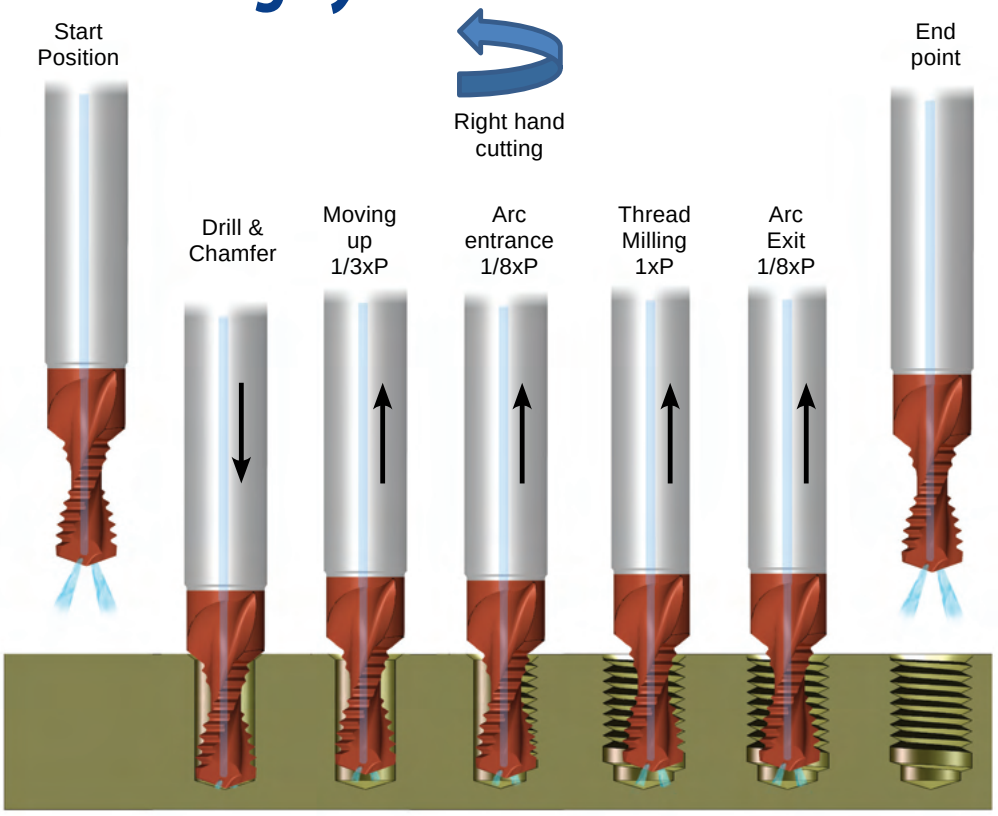
MT Drill - MTD

Carbide grade **K20:** Uncoated Sub-Micron carbide grade dedicated for machining Aluminum and Cast Iron.

MT7: Sub-Micron carbide grade combines high hardness and toughness, with PVD triple coating for smooth cutting and high performance.

Material Group	Materials	Cutting Speed ft/min		Feed inch/r Cutting Diameter = D			Feed inch/tooth Cutting Diameter = D		
				Drilling			Mill Thread		
		K20	MT7	D≤.16	.16<D<.24	D≥.24	D≤.16	.16<D<.24	D≥.24
K	Cast Iron	160 - 260	260 - 390	.0039 - .0059	.0059 - .0079	.0059 - .0118	.0002 - .0012	.0004 - .0020	.0008 - .0039
N	Aluminum ≤12%Si, Copper	330 - 820	330 - 1150	.0024 - .0039	.0039 - .0079	.0079 - .0118	.0002 - .0016	.0004 - .0024	.0008 - .0051
	Aluminum >12%Si	---	260 - 590	.0020 - .0028	.0039 - .0059	.0059 - .0098	.0002 - .0016	.0004 - .0024	.0008 - .0051
	Synthetics, Duroplastics, Thermoplastics	200 - 330	260 - 590	.0039 - .0079	.0079 - .0118	.0079 - .0118	.0002 - .0016	.0004 - .0024	.0008 - .0051

MT Drill working cycle



Carmex Precision Tools Ltd.

Cutting Data

Mini Mill-Thread MTSH and FSH

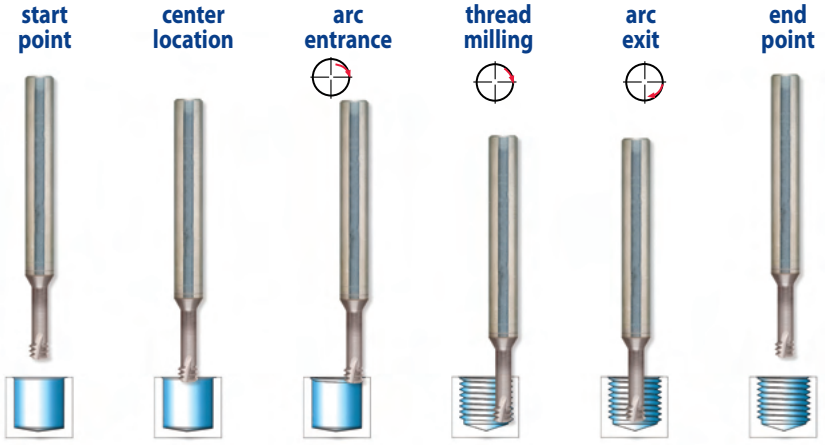
MT9 Sub-Micron Grade with advanced PVD triple coating.

MT6 Ultra-Fine carbide grade with high hardness and toughness provides an excellent solution for machining steels, stainless steels, and super alloys Ni or Ti base. With a universal PVD multi-layer coating, provides high heat and wear resistance.

MT3 Ultra-Fine carbide grade with PVD multi-layer coating for machining Super Alloys and Hard materials up to 65 HRc. Provides supreme edge stability with high heat and wear resistance. For increased productivity and high performance.

Left hand cutting for CNC code use M04

ISO	Materials	Hardness HRc	Cutting Speed ft/min	Feed inch/tooth Cutting Diameter = D													
				Ø.04	Ø.06	Ø.08	Ø.12	Ø.16	Ø.20	Ø.24	Ø.28	Ø.31	Ø.35	Ø.39	Ø.47	Ø.55	Ø.63
S	Nickel Alloys, Titanium Alloys and High Temp. Alloys		70-130	.0012	.0012	.0012	.0016	.0016	.0020	.0024	.0024	.0024	.0028	.0028	.0028	.0031	.0031
H	Hardened Steels	45-50	200-230	.0012	.0016	.0016	.0020	.0020	.0024	.0024	.0028	.0028	.0031	.0031	.0035	.0039	.0043
		51-55	160-200	.0008	.0012	.0012	.0016	.0016	.0020	.0020	.0024	.0024	.0028	.0028	.0031	.0035	.0039
		56-62	130-160	.0004	.0008	.0008	.0012	.0012	.0016	.0016	.0020	.0020	.0024	.0024	.0028	.0031	.0035



Case Study

Application	Internal Thread M4 X 0.7
Thread Depth	.315
Workpiece Material	Tool Steel: D2
Hardness	60-62 (HRc)
Cutter Description	MTSH0250C35 0.7 ISO
Machining Conditions	Cutting Speed: 144 ft / min Feed: .0012 Inch / tooth
Machine	Mori Seiki VN5000
Control	Fanuc
Cooling Lubricant	Emulsion
Tool Life (No. of Threads)	84

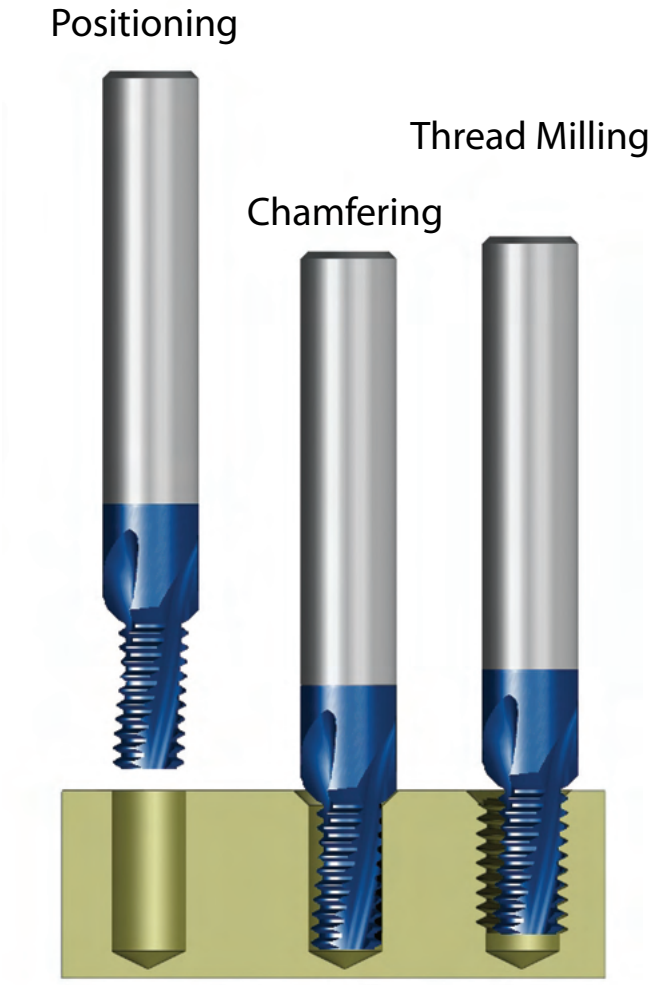
Cutting Data

MTH type

MT11 Sub-Micron Grade with advanced PVD triple coating.

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

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



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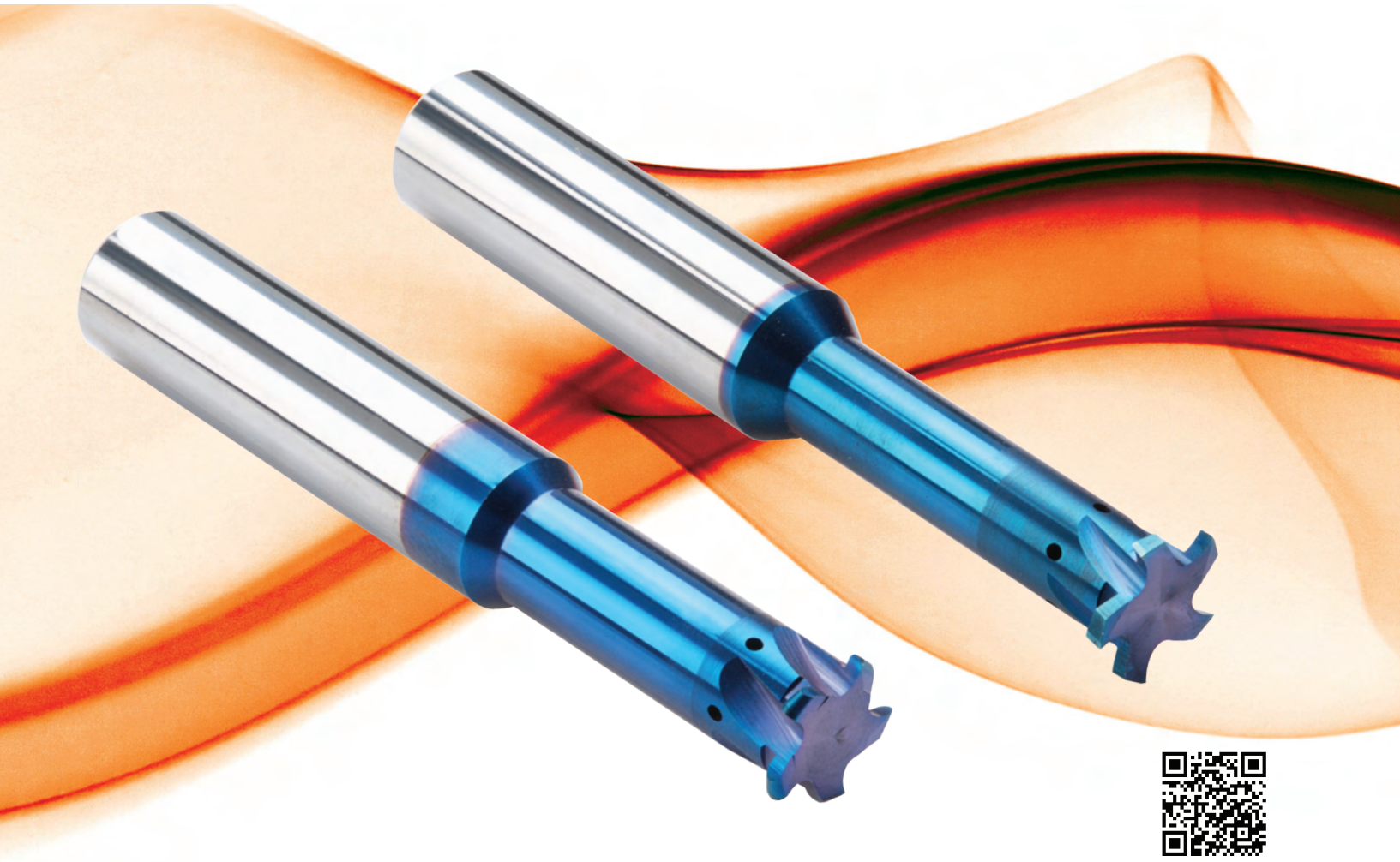

Demonstration

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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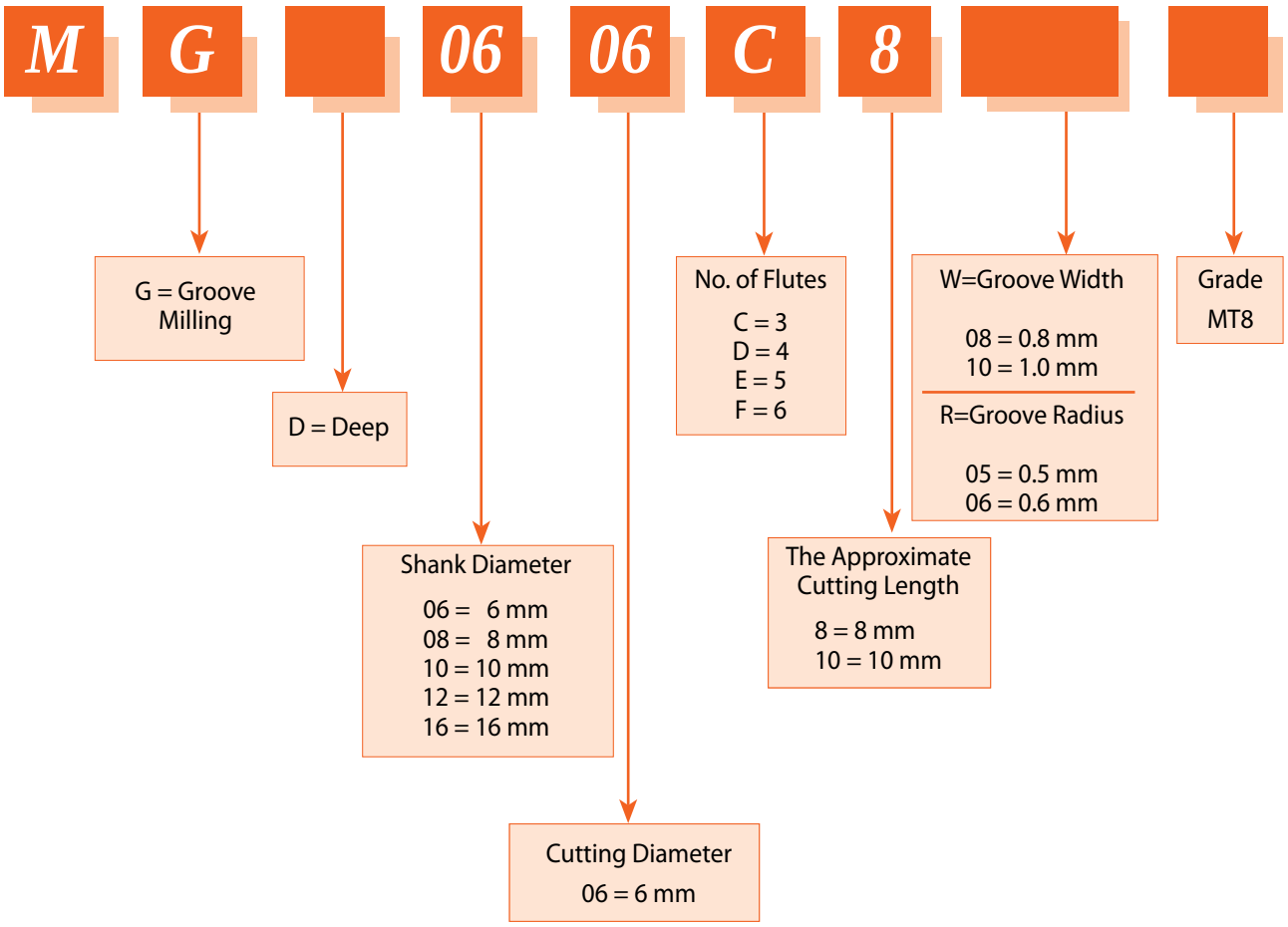
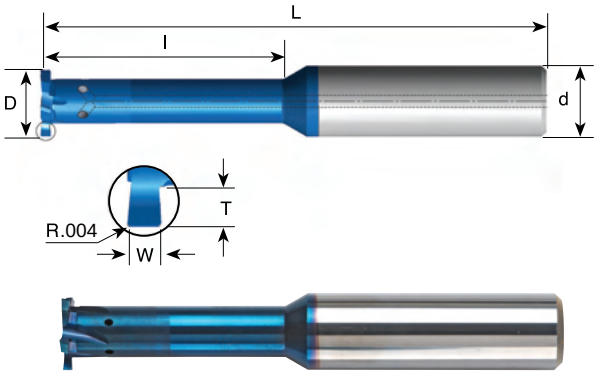
Product Identification

Groove Milling Ordering Codes



Groove Milling

with internal coolant through the flutes



For grooving deep parts

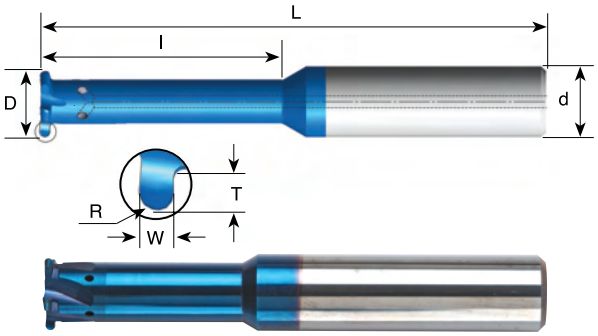
W ±.001	T Max.	Groove Dia. (min.)	Ordering Code	d mm	D	No. of Flutes	l	L	Internal Coolant
.020	.02	Ø>.12	MG 0603 C5 W05	6	.118	3	.20	2.0	
.039	.02	Ø>.12	MG 0603 C5 W10	6	.118	3	.20	2.0	
.020	.02	Ø>.16	MG 0604 C4 W05	6	.157	3	.17	2.0	
.039	.02	Ø>.16	MG 0604 C4 W10	6	.157	3	.17	2.0	
.020	.03	Ø>.24	MG 0606 C8 W05	6	.236	3	.31	2.0	
.028	.03	Ø>.24	MG 0606 C8 W07	6	.236	3	.31	2.0	
.031	.03	Ø>.24	MG 0606 C8 W08	6	.236	3	.31	2.3	C
.035	.04	Ø>.24	MG 0606 C11 W09	6	.236	3	.43	2.3	
.039	.04	Ø>.24	MG 0606 C7 W10	6	.236	3	.28	2.3	
.039	.04	Ø>.24	MG 0606 C14 W10	6	.236	3	.55	2.3	
.059	.04	Ø>.24	MG 0606 C7 W15	6	.236	3	.28	2.3	
.028	.05	Ø>.31	MG 08078 D24 W07	8	.307	4	.94	2.5	
.031	.05	Ø>.31	MG 08078 D24 W08	8	.307	4	.94	2.5	
.039	.05	Ø>.31	MG 08078 D10 W10	8	.307	4	.39	2.5	C
.039	.05	Ø>.31	MG 08078 D24 W10	8	.307	4	.94	2.5	
.059	.06	Ø>.31	MG 08078 D15 W15	8	.307	4	.59	2.5	C
.079	.06	Ø>.31	MG 08078 D15 W20	8	.307	4	.59	2.5	C
.039	.08	Ø>.39	MG 10098 D20 W10	10	.386	4	.79	2.9	
.047	.06	Ø>.39	MG 10098 D20 W12	10	.386	4	.79	2.9	C
.059	.08	Ø>.39	MG 10098 D20 W15	10	.386	4	.79	2.9	C
.079	.08	Ø>.39	MG 10098 D20 W20	10	.386	4	.79	2.9	C
.059	.09	Ø>.47	MG 1212 E30 W15	12	.472	5	1.18	3.3	C
.079	.09	Ø>.47	MG 1212 E30 W20	12	.472	5	1.18	3.3	C
.118	.09	Ø>.47	MG 1212 E30 W30	12	.472	5	1.18	3.3	C
.055	.07	Ø>.63	MG 1616 E30 W14	16	.630	5	1.18	4.0	C
.067	.08	Ø>.63	MG 1616 E40 W17	16	.630	5	1.57	4.0	C
.077	.10	Ø>.63	MG 1616 E45 W19	16	.630	5	1.77	4.0	C

Order example: MG 10098D20 W12 MT8

C = Internal coolant

Full Radius Groove Milling

with internal coolant through the flutes



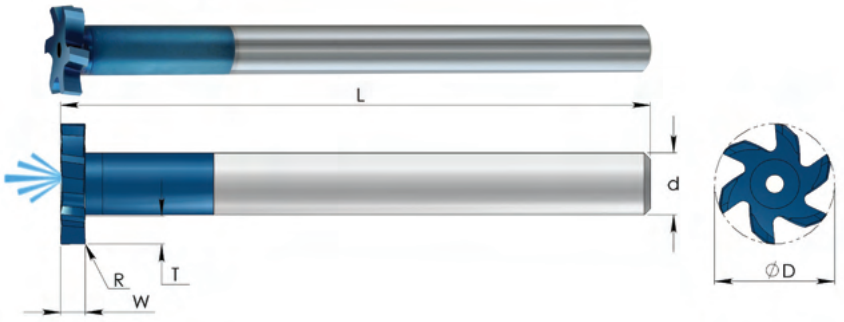
For grooving deep parts

R	W ± .001	T Max.	Groove Dia. (min.)	Ordering Code	d mm	D	No. of Flutes	l	L	
.020	.039	.02	Ø>.16	MG 0604 C4 R05	6	.157	3	.17	2.0	
.020	.039	.03	Ø>.24	MG 0606 C8 R05	6	.236	3	.31	2.3	C
.030	.059	.04	Ø>.24	MG 0606 C7 R075	6	.236	3	.28	2.3	
.020	.039	.04	Ø>.35	MG 10088 D16 R05	10	.346	4	.63	2.9	
.030	.059	.06	Ø>.35	MG 10088 D16 R075	10	.346	4	.63	2.9	
.039	.079	.06	Ø>.35	MG 10088 D16 R10	10	.346	4	.63	2.9	
.020	.039	.06	Ø>.39	MG 1010 D20 R05	10	.394	4	.79	2.9	
.024	.047	.04	Ø>.39	MG 1010 D20 R06	10	.394	4	.79	2.9	C
.030	.059	.08	Ø>.39	MG 1010 D20 R075	10	.394	4	.79	2.9	C
.039	.079	.08	Ø>.39	MG 1010 D20 R10	10	.394	4	.79	2.9	C
.035	.071	.06	Ø>.47	MG 1212 D30 R09	12	.472	4	1.18	3.3	C
.039	.079	.06	Ø>.63	MG 1616 E40 R10	16	.630	5	1.57	4.0	C
.059	.118	.09	Ø>.63	MG 1616 E40 R15	16	.630	5	1.57	4.0	C

Order example: MG 1010 D20 R06 MT8
C = Internal coolant

Deep Groove Milling

with internal coolant bore



W ± .001	R	T (max.)	Groove Dia. (min.)	Ordering Code	d mm	D	No. of Flutes	L
.059	.004	.18	Ø>.77	MGD 10195 F W15	10	.768	6	5.0
.079	.004	.18	Ø>.77	MGD 10195 F W20	10	.768	6	5.0
.098	.004	.18	Ø>.77	MGD 10195 F W25	10	.768	6	5.0
.118	.004	.18	Ø>.77	MGD 10195 F W30	10	.768	6	5.0
.138	.004	.18	Ø>.77	MGD 10195 F W35	10	.768	6	5.0
.157	.004	.18	Ø>.77	MGD 10195 F W40	10	.768	6	5.0
.197	.004	.18	Ø>.77	MGD 10195 F W50	10	.768	6	5.0

* Same tool for internal and external grooving

Technical Section

Cutting Data

ISO	Materials	Cutting Speed ft/min	Feed inch/tooth Cutting Diameter = D												
			Ø.06	Ø.08	Ø.12	Ø.16	Ø.20	Ø.24	Ø.28	Ø.31	Ø.35	Ø.39	Ø.47	Ø.55	Ø.63
P	Low and Medium Carbon Steels <0.55%C	200-390	.0011	0014	.0019	.0025	.0030	.0036	.0039	.0041	.0044	.0044	.0047	.0050	.0050
	High Carbon Steels ≥0.55%C	200 - 300	.0008	.0014	.0017	.0022	.0025	.0028	.0033	.0036	.0039	.0039	.0044	.0047	.0050
	Alloy Steels, Treated Steels	160 - 260	.0008	.0011	.0014	.0014	.0017	.0019	.0019	.0022	.0025	.0028	.0033	.0036	.0039
M	Stainless Steels - Free Cutting	230 - 330	.0006	.0008	.0014	.0014	.0017	.0017	.0019	.0022	.0025	.0028	.0030	.0033	.0036
	Stainless Steels - Austenitic	200 - 300	.0006	.0008	.0011	.0014	.0017	.0017	.0019	.0022	.0025	.0028	.0030	.0033	.0036
	Cast Steels	230 - 300	.0008	.0011	.0014	.0014	.0017	.0019	.0019	.0022	.0025	.0028	.0033	.0036	.0039
K	Cast Iron	130 - 260	.0011	.0014	.0019	.0025	.0030	.0036	.0039	.0041	.0044	.0044	.0047	.0050	.0050
N	Aluminum ≤12%Si, Copper	330 - 660	.0011	.0014	.0019	.0025	.0030	.0036	.0039	.0041	.0044	.0044	.0047	.0050	.0050
	Aluminum >12% Si	200 - 460	.0008	.0008	.0011	.0014	.0017	.0017	.0019	.0022	.0025	.0028	.0030	.0036	.0037
	Synthetics, Duroplastics, Thermoplastics	160 - 660	.0025	.0030	.0033	.0039	.0044	.0050	.0052	.0052	.0052	.0052	.0052	.0055	.0055
S	Nickel Alloys, Titanium Alloys	70 - 130	.0008	.0008	.0011	.0011	.0014	.0017	.0017	.0017	.0019	.0019	.0019	.0022	.0022
H	Hardened Steel, 45-50HRc	60 - 70	.0008	.0011	.0014	.0014	.0017	.0017	.0019	.0019	.0022	.0022	.0025	.0028	.0030

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End-Mills Features

Center cutting
For plunging and ramping operations

Optimized cutting edge geometry
For smooth cutting and mirror surface finish

Reinforced tool corner
Prevents chipping

Unequal helix design
For minimum vibration and high feed rates

Unequal flute indexing
Reduces harmonic vibration

Unique core design

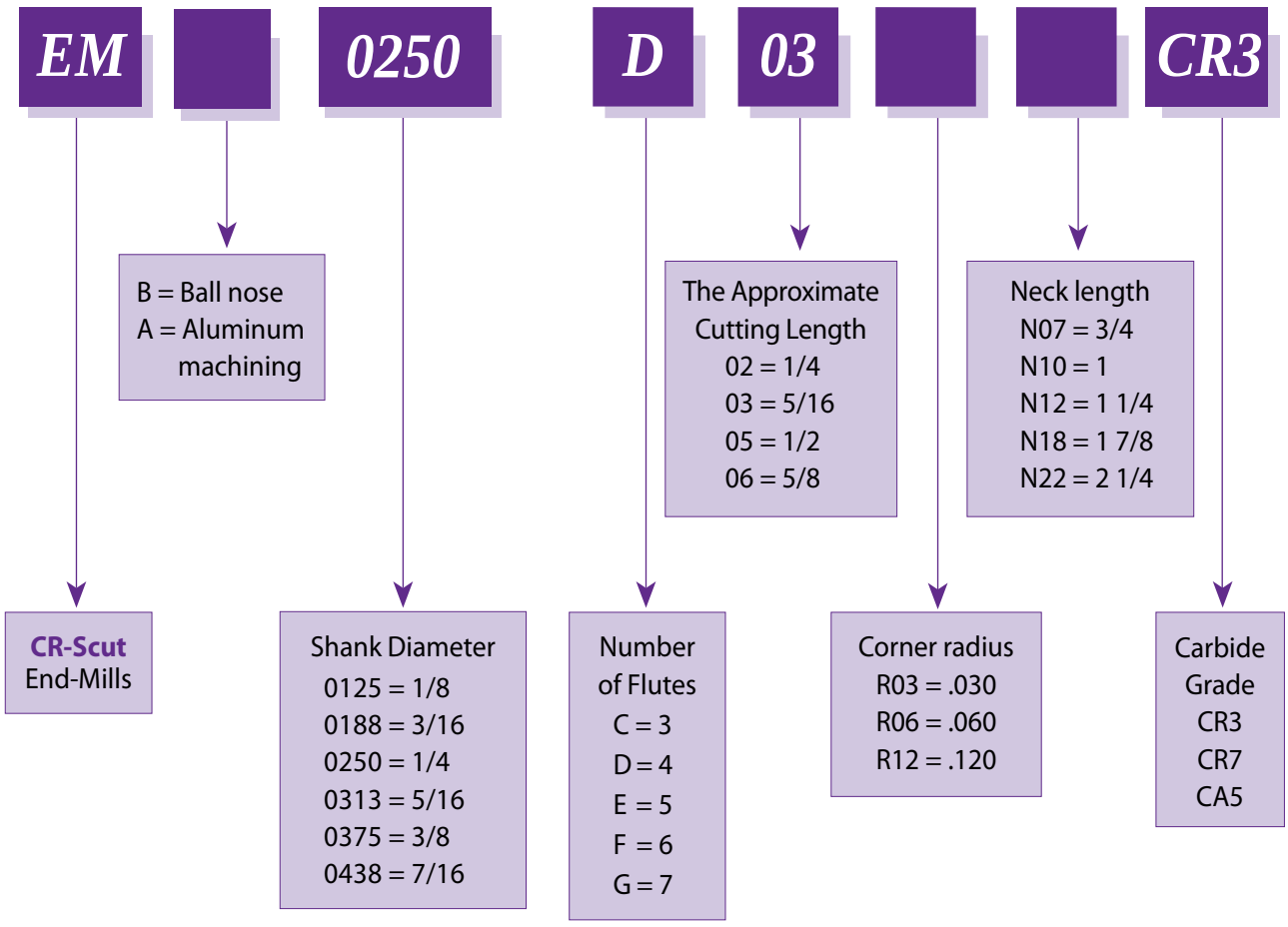
Polished surface
Provides an extra smooth workpiece surface finish

CR3 grade
Superior carbide grade combined with new generation of PVD coating

HPC – High Performance Cutting
High feed rate and maximum metal removal

Product Identification

Ordering Codes



CR-Supercut End-Mills

High Performance Solid Carbide End-Mills

High Performance CR-Supercut End-Mills, designed for high feed machining and high metal removal rate for a wide range of materials. Innovative tool geometry delivers high performance with low vibration machining in one pass. One tool for semi-finishing and fine-finishing operation with sharp corner or radii.

- High Performance Cutting (HPC)
- Center cutting
- Low vibration machining
- High metal removal rates in Slotting, Shouldering and Helical Plunging operations.
- 3-7 flutes

Carbide grade: CR3

Ultra-Fine carbide grade with high hardness and toughness provides high cutting edge stability and wear resistance.
A New Generation of PVD Coating for High-Performance Cutting Applications.

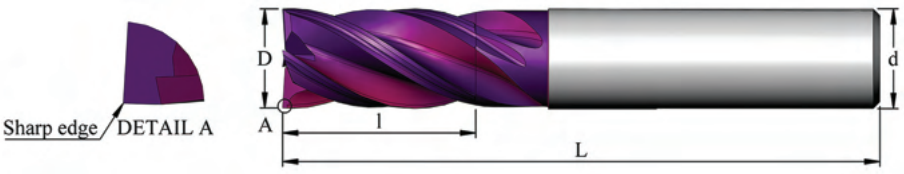
Carbide grade: CR7

Optimal combination of high hardness and excellent wear resistance grade, both in dry or wet machining.
Suitable for finishing and semi-finishing of steels, stainless steels and super alloys.
A New Generation of PVD Coating for High-Performance Cutting Applications.

Carmex Precision Tools Ltd.

High Performance Solid Carbide End-Mills

Solid Carbide End-Mills 4 flutes



Short Design

Grade	P	M	K	N	S	H
CR3	●	○	●		○	≤48 HRc
CR7	●	●			●	≤58 HRc

Ordering Code	d	D	No. of Flutes	l	L
EM 0125 D02	1/8	1/8	4	1/4	1 1/2
EM 0188 D03	3/16	3/16	4	5/16	2
EM 0250 D03	1/4	1/4	4	3/8	2
EM 0313 D05	5/16	5/16	4	1/2	2
EM 0375 D05	3/8	3/8	4	1/2	2
EM 0438 D06	7/16	7/16	4	5/8	2 1/2
EM 0500 D06	1/2	1/2	4	5/8	2 1/2
EM 0625 D07	5/8	5/8	4	3/4	3
EM 0750 D08	3/4	3/4	4	7/8	3 1/2
EM 1000 D15	1	1	4	1 1/2	4

Order example: EM 0250 D03 CR7

Long Design

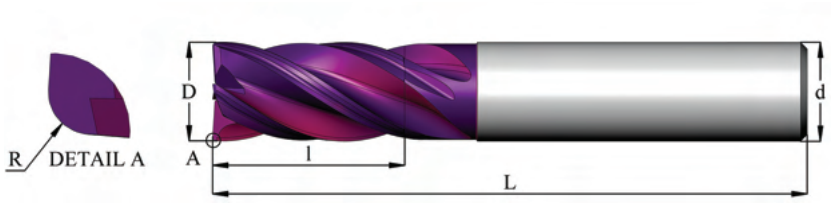
Grade	P	M	K	N	S	H
CR3	●	○	●		○	≤48 HRc
CR7	●	●			●	≤58 HRc

Ordering Code	d	D	No. of Flutes	l	L
EM 0125 D03	1/8	1/8	4	3/8	1 1/2
EM 0188 D05	3/16	3/16	4	1/2	2
EM 0250 D07	1/4	1/4	4	3/4	2
EM 0313 D07	5/16	5/16	4	3/4	2 1/2
EM 0375 D08	3/8	3/8	4	7/8	2 1/2
EM 0438 D08	7/16	7/16	4	7/8	2 1/2
EM 0500 D10	1/2	1/2	4	1	3
EM 0500 D12	1/2	1/2	4	1 1/4	3
EM 0625 D12	5/8	5/8	4	1 1/4	3 1/2
EM 0750 D15	3/4	3/4	4	1 1/2	4
EM 0750 D16	3/4	3/4	4	1 5/8	4
EM 1000 D20	1	1	4	2	5

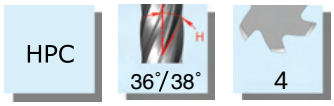
Order example: EM 0750 D15 CR3

● First choice ○ Alternative

Solid Carbide End-Mills 4 flutes with corner radius



Short Design



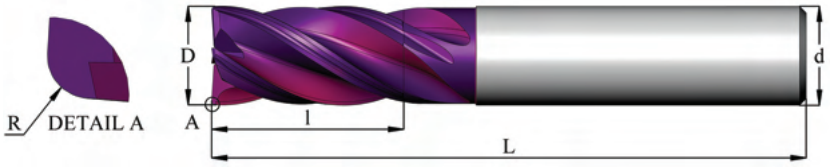
Grade	P	M	K	N	S	H
CR3	●	○	●		○	≤48 HRc
CR7	●	●			●	≤58 HRc

Ordering Code	d	D	No. of Flutes	R	l	L
EM 0250 D03 R03	1/4	1/4	4	.030	3/8	2
EM 0313 D05 R03	5/16	5/16	4	.030	1/2	2
EM 0375 D05 R03	3/8	3/8	4	.030	1/2	2
EM 0500 D06 R03	1/2	1/2	4	.030	5/8	2 1/2
EM 0500 D06 R06	1/2	1/2	4	.060	5/8	2 1/2
EM 0625 D07 R06	5/8	5/8	4	.060	3/4	3
EM 0625 D07 R12	5/8	5/8	4	.120	3/4	3
EM 0750 D08 R03	3/4	3/4	4	.030	7/8	3 1/2
EM 0750 D08 R06	3/4	3/4	4	.060	7/8	3 1/2
EM 0750 D08 R12	3/4	3/4	4	.120	7/8	3 1/2
EM 1000 D15 R03	1	1	4	.030	1 1/2	4
EM 1000 D15 R06	1	1	4	.060	1 1/2	4
EM 1000 D15 R12	1	1	4	.120	1 1/2	4

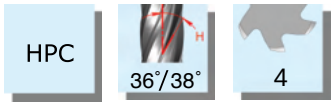
Order example: EM 0313 D05 R03 CR3

● First choice ○ Alternative

Solid Carbide End-Mills 4 flutes with corner radius



Long Design



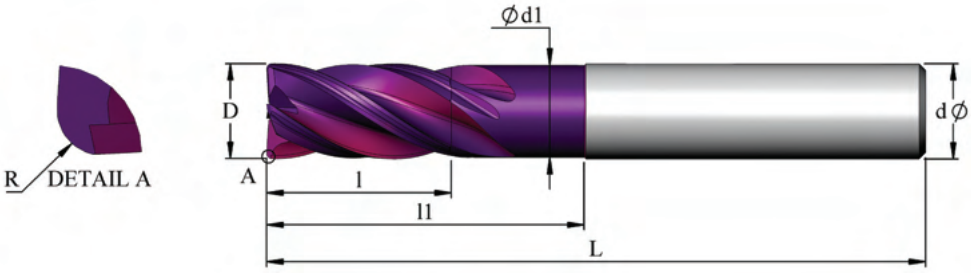
Grade	P	M	K	N	S	H
CR3	●	○	●		○	≤48 HRc
CR7	●	●			●	≤58 HRc

Ordering Code	d	D	No. of Flutes	R	l	L
EM 0125 D05 R01	1/8	1/8	4	.015	1/2	2
EM 0188 D06 R01	3/16	3/16	4	.015	5/8	2
EM 0188 D06 R03	3/16	3/16	4	.030	5/8	2
EM 0250 D07 R01	1/4	1/4	4	.015	3/4	2
EM 0250 D07 R03	1/4	1/4	4	.030	3/4	2
EM 0250 D07 R06	1/4	1/4	4	.060	3/4	2
EM 0313 D07 R01	5/16	5/16	4	.015	3/4	2 1/2
EM 0313 D07 R03	5/16	5/16	4	.030	3/4	2 1/2
EM 0313 D07 R06	5/16	5/16	4	.060	3/4	2 1/2
EM 0375 D08 R01	3/8	3/8	4	.015	7/8	2 1/2
EM 0375 D08 R03	3/8	3/8	4	.030	7/8	2 1/2
EM 0375 D08 R06	3/8	3/8	4	.060	7/8	2 1/2
EM 0375 D08 R09	3/8	3/8	4	.090	7/8	2 1/2
EM 0500 D12 R01	1/2	1/2	4	.015	1 1/4	3
EM 0500 D12 R03	1/2	1/2	4	.030	1 1/4	3
EM 0500 D12 R06	1/2	1/2	4	.060	1 1/4	3
EM 0500 D12 R09	1/2	1/2	4	.090	1 1/4	3
EM 0500 D12 R12	1/2	1/2	4	.120	1 1/4	3
EM 0625 D12 R03	5/8	5/8	4	.030	1 1/4	3 1/2
EM 0625 D12 R06	5/8	5/8	4	.060	1 1/4	3 1/2
EM 0625 D12 R09	5/8	5/8	4	.090	1 1/4	3 1/2
EM 0625 D12 R12	5/8	5/8	4	.120	1 1/4	3 1/2
EM 0750 D15 R03	3/4	3/4	4	.030	1 1/2	4
EM 0750 D15 R06	3/4	3/4	4	.060	1 1/2	4
EM 0750 D15 R09	3/4	3/4	4	.090	1 1/2	4
EM 0750 D15 R12	3/4	3/4	4	.120	1 1/2	4
EM 1000 D22 R03	1	1	4	.030	2 1/4	5
EM 1000 D22 R06	1	1	4	.060	2 1/4	5

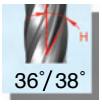
Order example: EM 0188 D06 R01 CR7

● First choice ○ Alternative

Solid Carbide End-Mills 4 flutes with corner radius and neck



HPC



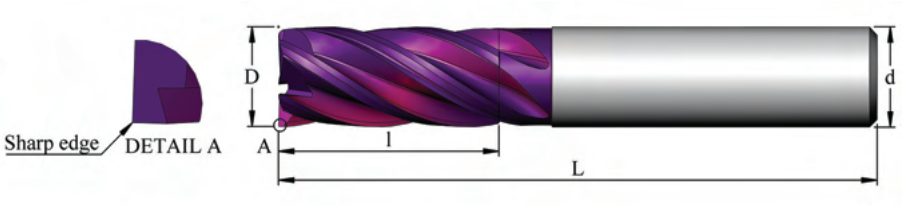
Grade	P	M	K	N	S	H
CR7	●	●			●	≤58 HRc

Ordering Code	d	D	l	l1	d1	R	No. of Flutes	L
EM 0188 D02 R01 N07	3/16	3/16	1/4	3/4	.18	.010	4	3
EM 0188 D02 R03 N07	3/16	3/16	1/4	3/4	.18	.030	4	3
EM 0250 D03 R01 N12	1/4	1/4	3/8	1 1/4	.24	.015	4	4
EM 0250 D03 R03 N12	1/4	1/4	3/8	1 1/4	.24	.030	4	4
EM 0375 D05 R03 N18	3/8	3/8	1/2	1 7/8	.35	.030	4	4
EM 0375 D05 R06 N18	3/8	3/8	1/2	1 7/8	.35	.060	4	4
EM 0500 D06 R03 N22	1/2	1/2	5/8	2 1/4	.47	.030	4	4
EM 0500 D06 R06 N22	1/2	1/2	5/8	2 1/4	.47	.060	4	4
EM 0500 D06 R12 N22	1/2	1/2	5/8	2 1/4	.47	.120	4	4
EM 0625 D07 R06 N22	5/8	5/8	3/4	2 1/4	.59	.060	4	5
EM 0625 D07 R12 N22	5/8	5/8	3/4	2 1/4	.59	.120	4	5

Order example: EM 0625 D07 R06 N22 CR7

● First choice ○ Alternative

Solid Carbide End-Mills 5 flutes



Long Design

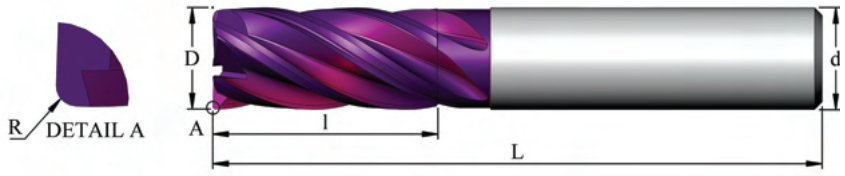
Grade	P	M	K	N	S	H
CR3	●	○	●		○	≤48 HRc
CR7	●	●			●	≤58 HRc

Ordering Code	d	D	No. of Flutes	l	L
EM 0188 E06	3/16	3/16	5	5/8	2
EM 0250 E07	1/4	1/4	5	3/4	2
EM 0313 E07	5/16	5/16	5	3/4	2 1/2
EM 0375 E08	3/8	3/8	5	7/8	2 1/2
EM 0500 E12	1/2	1/2	5	1 1/4	3 1/2
EM 0625 E12	5/8	5/8	5	1 1/4	3 1/2
EM 0750 E15	3/4	3/4	5	1 1/2	4

Order example: EM 0188 E06 CR3

● First choice ○ Alternative

Solid Carbide End-Mills 5 flutes with corner radius



Long Design

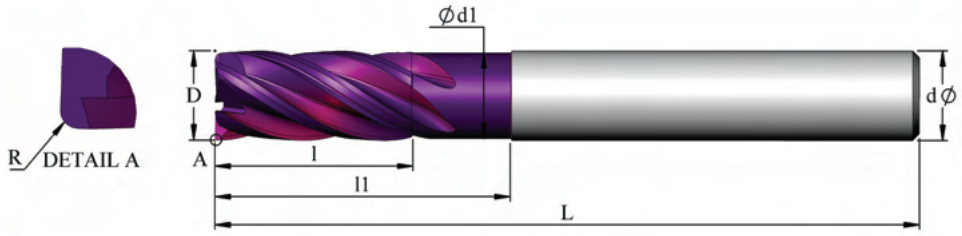
Grade	P	M	K	N	S	H
CR3	●	○	●		○	≤48 HRc
CR7	●	●			●	≤58 HRc

Ordering Code	d	D	No. of Flutes	R	l	L
EM 0188 E06 R01	3/16	3/16	5	.015	5/8	2
EM 0188 E06 R03	3/16	3/16	5	.030	5/8	2
EM 0250 E07 R01	1/4	1/4	5	.015	3/4	2
EM 0250 E07 R03	1/4	1/4	5	.030	3/4	2
EM 0250 E07 R06	1/4	1/4	5	.060	3/4	2
EM 0313 E07 R01	5/16	5/16	5	.015	3/4	2 1/2
EM 0313 E07 R03	5/16	5/16	5	.030	3/4	2 1/2
EM 0313 E07 R06	5/16	5/16	5	.060	3/4	2 1/2
EM 0375 E08 R01	3/8	3/8	5	.015	7/8	2 1/2
EM 0375 E08 R03	3/8	3/8	5	.030	7/8	2 1/2
EM 0375 E08 R06	3/8	3/8	5	.060	7/8	2 1/2
EM 0500 E12 R01	1/2	1/2	5	.015	1 1/4	3 1/2
EM 0500 E12 R03	1/2	1/2	5	.030	1 1/4	3 1/2
EM 0500 E12 R06	1/2	1/2	5	.060	1 1/4	3 1/2
EM 0500 E12 R09	1/2	1/2	5	.090	1 1/4	3 1/2
EM 0500 E12 R12	1/2	1/2	5	.120	1 1/4	3 1/2
EM 0625 E12 R03	5/8	5/8	5	.030	1 1/4	3 1/2
EM 0625 E12 R06	5/8	5/8	5	.060	1 1/4	3 1/2
EM 0625 E12 R09	5/8	5/8	5	.090	1 1/4	3 1/2
EM 0750 E15 R03	3/4	3/4	5	.030	1 1/2	4
EM 0750 E15 R06	3/4	3/4	5	.060	1 1/2	4
EM 0750 E15 R09	3/4	3/4	5	.090	1 1/2	4
EM 0750 E15 R12	3/4	3/4	5	.120	1 1/2	4
EM 0750 E16 R12	3/4	3/4	5	.120	1 5/8	4

Order example: EM 0500 E12 R01 CR7

● First choice ○ Alternative

Solid Carbide End-Mills 5 flutes with corner radius and neck



HPC

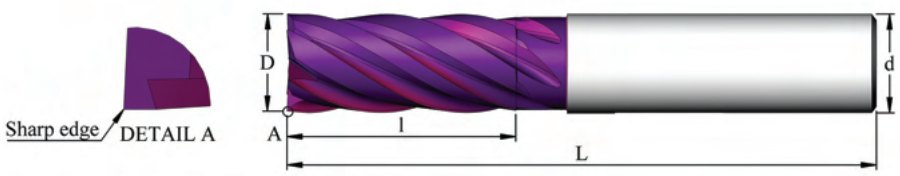
Grade	P	M	K	N	S	H
CR7	●	●			●	≤58 HRc

Ordering Code	d	D	l	l1	d1	R	No. of Flutes	L
EM 0250 E05 R01 N12	1/4	1/4	1/2	1 1/4	.24	.015	5	4
EM 0250 E05 R03 N12	1/4	1/4	1/2	1 1/4	.24	.030	5	4
EM 0375 E08 R01 N18	3/8	3/8	7/8	1 7/8	.35	.015	5	4
EM 0375 E08 R03 N18	3/8	3/8	7/8	1 7/8	.35	.030	5	4
EM 0500 E12 R03 N22	1/2	1/2	1 1/4	2 1/4	.47	.030	5	4
EM 0500 E12 R06 N22	1/2	1/2	1 1/4	2 1/4	.47	.060	5	4
EM 0625 E12 R03 N22	5/8	5/8	1 1/4	2 1/4	.59	.030	5	4
EM 0625 E12 R06 N22	5/8	5/8	1 1/4	2 1/4	.59	.060	5	4
EM 0750 E15 R03 N32	3/4	3/4	1 1/2	3 1/4	.71	.030	5	6
EM 0750 E15 R06 N32	3/4	3/4	1 1/2	3 1/4	.71	.060	5	6

Order example: EM 0250 E05 R01 N12 CR7

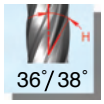
● First choice ○ Alternative

Solid Carbide End-Mills 6 flutes



Extra-long Design

HPC



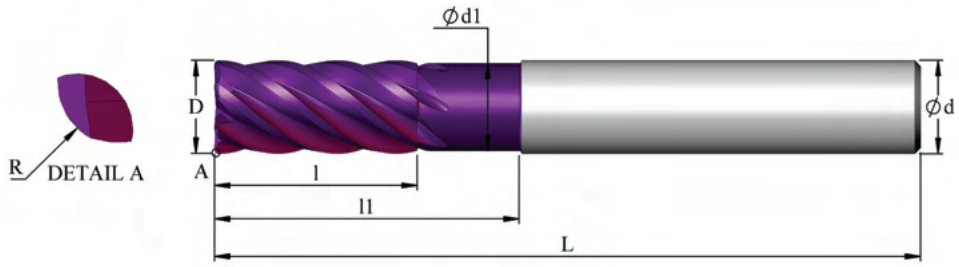
Grade	P	M	K	N	S	H
CR3	●	○	●		○	≤48 HRc
CR7	●	●			●	≤58 HRc

Ordering Code	d	D	No. of Flutes	l	L
EM 0250 F05	1/4	1/4	6	1/2	2
EM 0250 F07	1/4	1/4	6	3/4	2 1/2
EM 0313 F07	5/16	5/16	6	3/4	2 1/2
EM 0313 F10	5/16	5/16	6	1	2 1/2
EM 0375 F10	3/8	3/8	6	1	3
EM 0375 F12	3/8	3/8	6	1 1/4	3
EM 0500 F12	1/2	1/2	6	1 1/4	3 1/2
EM 0500 F16	1/2	1/2	6	1 5/8	4
EM 0625 F16	5/8	5/8	6	1 5/8	4
EM 0625 F20	5/8	5/8	6	2	5
EM 0750 F22	3/4	3/4	6	2 1/4	6

Order example: EM 0375 F10 CR3

● First choice ○ Alternative

Solid Carbide End-Mills 6 flutes with corner radius and neck



HPC

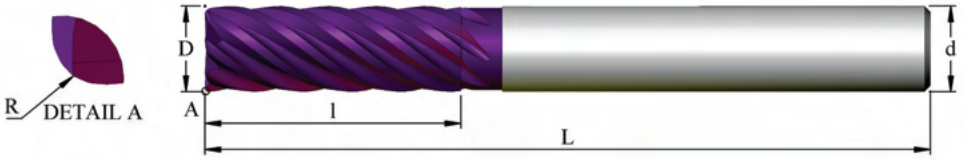
Grade	P	M	K	N	S	H
CR7	●	●			●	≤58 HRc

Ordering Code	d	D	l	l1	d1	R	No. of Flutes	L
EM 0375 F08 R01 N18	3/8	3/8	7/8	1 7/8	.35	.015	6	4
EM 0375 F08 R03 N18	3/8	3/8	7/8	1 7/8	.35	.030	6	4
EM 0500 F12 R03 N22	1/2	1/2	1 1/4	2 1/4	.47	.030	6	4
EM 0500 F12 R06 N22	1/2	1/2	1 1/4	2 1/4	.47	.060	6	4
EM 0625 F12 R03 N22	5/8	5/8	1 1/4	2 1/4	.59	.030	6	5
EM 0625 F12 R06 N22	5/8	5/8	1 1/4	2 1/4	.59	.060	6	5
EM 0750 F15 R03 N32	3/4	3/4	1 1/2	3 1/4	.71	.030	6	6
EM 0750 F15 R06 N32	3/4	3/4	1 1/2	3 1/4	.71	.060	6	6

Order example: EM 0625 F12 R06 N22 CR7

● First choice ○ Alternative

Solid Carbide End-Mills 7 flutes with corner radius



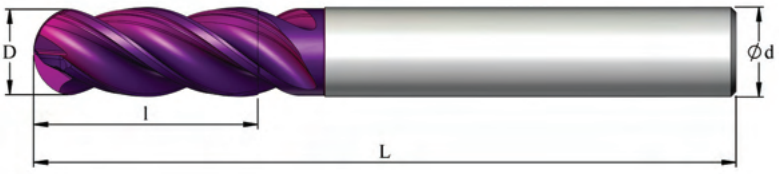
HPC | 36˚/38˚ | 7

Grade	P	M	K	N	S	H
CR7	●	●			●	≤58 HRc

Ordering Code	d	D	No. of Flutes	R	l	L
EM 0375 G11 R01	3/8	3/8	7	.015	1 1/8	3
EM 0375 G11 R03	3/8	3/8	7	.030	1 1/8	3
EM 0375 G18 R01	3/8	3/8	7	.015	1 7/8	4
EM 0375 G18 R03	3/8	3/8	7	.030	1 7/8	4
EM 0500 G15 R03	1/2	1/2	7	.030	1 1/2	3 1/2
EM 0500 G15 R06	1/2	1/2	7	.060	1 1/2	3 1/2
EM 0500 G15 R12	1/2	1/2	7	.120	1 1/2	3 1/2
EM 0625 G18 R03	5/8	5/8	7	.030	1 7/8	4
EM 0625 G18 R06	5/8	5/8	7	.060	1 7/8	4

Order example: EM 0375 G11 R01 CR7

Solid Carbide Ball nose End-Mills 4 flutes



HPC | 36˚/38˚ | 4

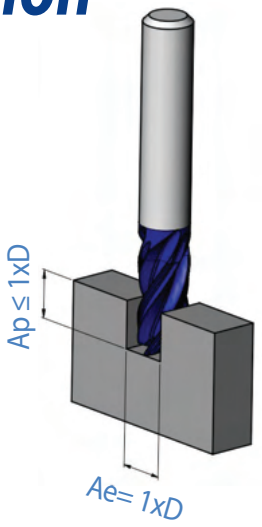
Grade	P	M	K	N	S	H
CR7	●	●			●	≤58 HRc

Ordering Code	d	D	l	No. of Flutes	L
EMB 0188 D06	3/16	3/16	5/8	4	2 1/2
EMB 0250 D07	1/4	1/4	3/4	4	2 1/2
EMB 0313 D07	5/16	5/16	3/4	4	2 1/2
EMB 0375 D08	3/8	3/8	7/8	4	2 1/2
EMB 0438 D08	7/16	7/16	7/8	4	2 1/2
EMB 0500 D10	1/2	1/2	1	4	3
EMB 0500 D12	1/2	1/2	1 1/4	4	3
EMB 0625 D12	5/8	5/8	1 1/4	4	3 1/2

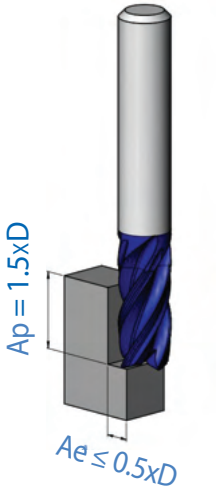
Order example: EMB 0188 D06 CR7

● First choice ○ Alternative

Technical Section



D = Cutting Dia



Cutting Data

4 fluted End-Mills and Ball nose

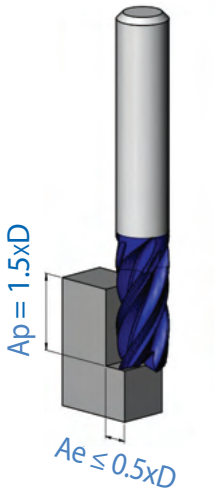
ISO	Materials Class	Cutting Speed Vc [SFM]	Fz [IPT] Cutting Diameter							
			Ø1/8	Ø3/16	Ø1/4	Ø5/16	Ø3/8-7/16	Ø1/2	Ø5/8	Ø3/4
P	Low & Medium Carbon Steels <0.55%C	390-525	.0003	.0008	.0010	.0016	.0019	.0022	.0025	.0031
	High Carbon Steels ≥0.55%C	390-525	.0003	.0008	.0010	.0016	.0019	.0022	.0025	.0031
	Alloy Steels, Treated Steels	330-460	.0002	.0005	.0008	.0010	.0015	.0019	.0021	.0026
M	Stainless Steel-Free Cutting	260-460	.0002	.0007	.0008	.0010	.0016	.0019	.0021	.0026
	Stainless Steel-Austenitic	230-430	.0002	.0005	.0008	.0009	.0013	.0016	.0018	.0022
	Cast Steels	230-430	.0002	.0005	.0008	.0009	.0013	.0016	.0018	.0022
K	Cast Iron	260-460	.0002	.0007	.0009	.0011	.0015	.0019	.0021	.0026
S	Heat-resistant alloys	65-130	.0002	.0004	.0007	.0012	.0019	.0022	.0025	.0030
	Titanium alloys	165-230	.0002	.0004	.0007	.0012	.0019	.0022	.0025	.0030
H	Hardened Steel <48 HRc	130-230	.0003	.0004	.0007	.0008	.0009	.0010	.0011	.0011
	Hardened Steel 48-58 HRc	115-200	.0002	.0003	.0005	.0006	.0007	.0007	.0008	.0008

* Fz values are recommended for side milling. For slotting, reduce Fz by 20%

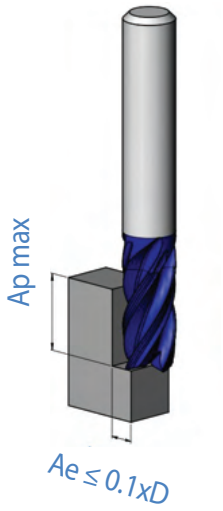
5 fluted End-Mills

ISO	Materials Class	Cutting Speed Vc [SFM]	Fz [IPT] Cutting Diameter						
			3/16	Ø1/4	Ø5/16	Ø3/8	Ø1/2	Ø5/8	Ø3/4
P	Low & Medium Carbon Steels <0.55%C	390-525	.0010	.0013	.0016	.0020	.0025	.0030	.0035
	High Carbon Steels ≥0.55%C	390-525	.0010	.0013	.0016	.0020	.0025	.0030	.0035
	Alloy Steels, Treated Steels	330-460	.0010	.0013	.0015	.0020	.0025	.0030	.0035
M	Stainless Steel-Free Cutting	260-460	.0009	.0012	.0013	.0018	.0025	.0027	.0030
	Stainless Steel-Austenitic	230-430	.0009	.0012	.0013	.0018	.0025	.0027	.0030
	Cast Steels	230-430	.0009	.0012	.0013	.0018	.0025	.0027	.0030
K	Cast Iron	260-460	.0011	.0014	.0015	.0019	.0027	.0029	.0031
S	Heat-resistant alloys	65-130	.0005	.0007	.0012	.0019	.0022	.0025	.0030
	Titanium alloys	165-230	.0005	.0007	.0012	.0019	.0022	.0025	.0030
H	Hardened Steel <48 HRc	130-230	.0007	.0008	.0008	.0010	.0011	.0014	.0016
	Hardened Steel 48-58 HRc	115-200	.0005	.0006	.0006	.0007	.0008	.0010	.0012

* Fz values are recommended for side milling. For slotting, reduce Fz by 20%



A

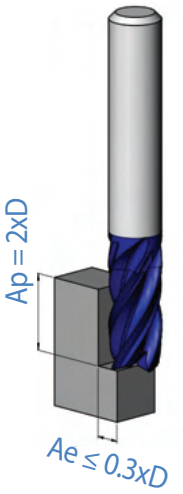


B

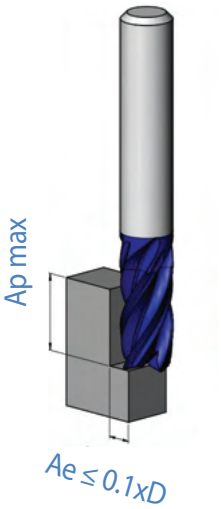
6 fluted End-Mills

ISO	Materials Class	Cutting Speed Vc [SFM]	Fz [IPT] Cutting Diameter Ø1/4	Ø5/16	Ø3/8	Ø1/2	Ø5/8	Ø3/4
P	Low & Medium Carbon Steels <0.55%C	A: 395-525 B: 790-1050	A: .0016 B: .0019	A: .0018 B: .0021	A: .0022 B: .0026	A: .0027 B: .0032	A: .0032 B: .0038	A: .0035 B: .0042
	High Carbon Steels ≥0.55%C	A: 395-525 B: 790-1050	A: .0016 B: .0019	A: .0018 B: .0021	A: .0022 B: .0026	A: .0027 B: .0032	A: .0032 B: .0038	A: .0035 B: .0042
	Alloy Steels, Treated Steels	A: 325-460 B: 650-920	A: .0016 B: .0019	A: .0018 B: .0021	A: .0022 B: .0026	A: .0027 B: .0032	A: .0032 B: .0038	A: .0035 B: .0042
M	Stainless Steel-Free Cutting	A: 265-460 B: 530-920	A: .0014 B: .0017	A: .0015 B: .0017	A: .0020 B: .0024	A: .0027 B: .0031	A: .0029 B: .0035	A: .0032 B: .0038
	Stainless Steel-Austenitic	A: 230-425 B: 460-850	A: .0014 B: .0017	A: .0015 B: .0017	A: .0020 B: .0024	A: .0027 B: .0031	A: .0029 B: .0035	A: .0032 B: .0038
	Cast Steels	A: 230-425 B: 460-850	A: .0014 B: .0017	A: .0015 B: .0017	A: .0020 B: .0024	A: .0027 B: .0031	A: .0029 B: .0035	A: .0032 B: .0038
K	Cast Iron	A: 260-460 B: 320-920	A: .0015 B: .0018	A: .0016 B: .0019	A: .0021 B: .0025	A: .0028 B: .0032	A: .0030 B: .0036	A: .0033 B: .0039
S	Heat-resistant alloys	A: 65-130 B: 130-260	A: .0007 B: .0009	A: .0012 B: .0015	A: .0019 B: .0023	A: .0022 B: .0026	A: .0025 B: .0030	A: .0030 B: .0039
	Titanium alloys	A:165-230 B: 230-330	A: .0007 B: .0009	A: .0012 B: .0015	A: .0019 B: .0023	A: .0022 B: .0026	A: .0025 B: .0030	A: .0030 B: .0039
H	Hardened Steel <48 HRc	A: 130-230 B: 260-460	A: .0009 B: .0011	A: .0010 B: .0012	A: .0012 B: .0014	A: .0013 B: .0016	A: .0016 B: .0019	A: .0018 B: .0021
	Hardened Steel 48-58 HRc	A: 115-200 B: 230-400	A: .0007 B: .0008	A: .0007 B: .0009	A: .0009 B: .0010	A: .0009 B: .0012	A: .0012 B: .0014	A: .0013 B: .0016

Supercut Solid Carbide Mills



A



B

7 fluted End-Mills

ISO	Materials Class	Cutting Speed Vc [SFM]	Fz [IPT] Cutting Diameter Ø3/8	Ø1/2	Ø5/8
P	Low & Medium Carbon Steels <0.55%C	A:395-525 B:790-1050	A: .0022 B: .0026	A: .0027 B: .0032	A: .0032 B: .0038
	High Carbon Steels ≥0.55%C	A:395-525 B:790-1050	A: .0022 B: .0026	A: .0027 B: .0032	A: .0032 B: .0038
	Alloy Steels, Treated Steels	A:330-460 B:660-920	A: .0022 B: .0026	A: .0027 B: .0032	A: .0032 B: .0038
M	Stainless Steel-Free Cutting	A:260-460 B:520-920	A: .0020 B: .0024	A: .0027 B: .0031	A: .0029 B: .0035
	Stainless Steel-Austenitic	A:230-425 B:460-850	A: .0020 B: .0024	A: .0027 B: .0031	A: .0029 B: .0035
	Cast Steels	A:230-425 B:460-850	A: .0020 B: .0024	A: .0027 B: .0031	A: .0029 B: .0035
S	Heat-resistant alloys	A:65-130 B:130-260	A: .0019 B: .0023	A: .0022 B: .0026	A: .0025 B: .0030
	Titanium alloys	A:165-230 B: 230-330	A: .0019 B: .0023	A: .0022 B: .0026	A: .0025 B: .0030
H	Hardened Steel <48 HRc	A:130-230 B:260-460	A: .0012 B: .0014	A: .0013 B: .0016	A: .0016 B: .0019
	Hardened Steel 48-58 HRc	A:115-200 B:230-400	A: .0009 B: .0010	A: .0010 B: .0012	A: .0012 B: .0014

CR-Supercut End-Mills

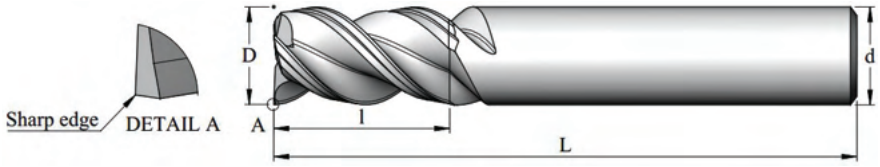
High Performance Solid Carbide End-Mills for Aluminum machining

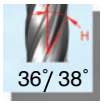
- High Performance Cutting (HPC)
- Center cutting
- Low vibration machining
- High metal removal rates in Slotting, Shouldering and Helical Plunging operations.
- Smooth polished flutes, more flute space and open flute design for better chip flow away from cutting area.
- 3 flutes

Carbide Grade: CA5

Ultra-Fine carbide grade with high hardness and toughness provides high cutting edge stability and wear resistance.

Solid Carbide End-Mills 3 flutes





Grade	P	M	K	N	S	H
CA5				●		

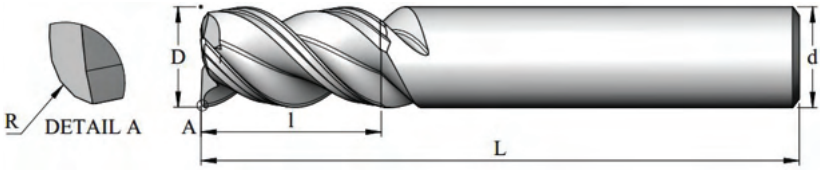
Ordering Code	d	D	No. of Flutes	l	L
EMA 0250 C03	1/4	1/4	3	3/8	2
EMA 0250 C07	1/4	1/4	3	3/4	2
EMA 0313 C04	5/16	5/16	3	7/16	2
EMA 0313 C08	5/16	5/16	3	13/16	2 1/2
EMA 0375 C05	3/8	3/8	3	1/2	2
EMA 0375 C08	3/8	3/8	3	7/8	2 1/2
EMA 0500 C06	1/2	1/2	3	5/8	2 1/2
EMA 0500 C10	1/2	1/2	3	1	3
EMA 0500 C12	1/2	1/2	3	1 1/4	3
EMA 0625 C07	5/8	5/8	3	3/4	3
EMA 0625 C12	5/8	5/8	3	1 1/4	3 1/2
EMA 0625 C16	5/8	5/8	3	1 5/8	4
EMA 0750 C15	3/4	3/4	3	1 1/2	4

Order example: EMA 0313 C08 CA5

● First choice ○ Alternative

Carmex Precision Tools Ltd.

Solid Carbide End-Mills 3 flutes with corner radius



HPC

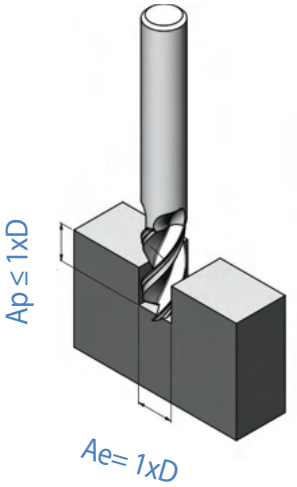
Grade	P	M	K	N	S	H
CA5				●		

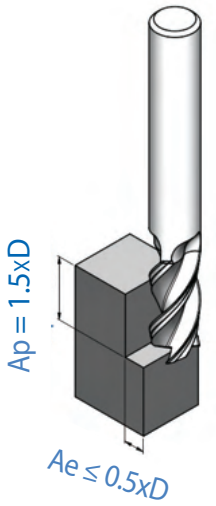
Ordering Code	d	D	No. of Flutes	R	l	L
EMA 0250 C03 R03	1/4	1/4	3	.030	3/8	2
EMA 0250 C07 R01	1/4	1/4	3	.015	3/4	2
EMA 0250 C07 R03	1/4	1/4	3	.030	3/4	2
EMA 0313 C04 R03	5/16	5/16	3	.030	7/16	2
EMA 0313 C08 R03	5/16	5/16	3	.030	13/16	2 1/2
EMA 0313 C08 R06	5/16	5/16	3	.060	13/16	2 1/2
EMA 0375 C05 R03	3/8	3/8	3	.030	1/2	2
EMA 0375 C08 R03	3/8	3/8	3	.030	7/8	2 1/2
EMA 0375 C08 R06	3/8	3/8	3	.060	7/8	2 1/2
EMA 0500 C06 R03	1/2	1/2	3	.030	5/8	2 1/2
EMA 0500 C06 R06	1/2	1/2	3	.060	5/8	2 1/2
EMA 0500 C12 R03	1/2	1/2	3	.030	1 1/4	3
EMA 0500 C12 R06	1/2	1/2	3	.060	1 1/4	3
EMA 0500 C12 R12	1/2	1/2	3	.120	1 1/4	3
EMA 0625 C07 R06	5/8	5/8	3	.060	3/4	3
EMA 0625 C07 R12	5/8	5/8	3	.120	3/4	3
EMA 0625 C12 R06	5/8	5/8	3	.060	1 1/4	3 1/2
EMA 0625 C16 R06	5/8	5/8	3	.060	1 5/8	4
EMA 0750 C15 R03	3/4	3/4	3	.030	1 1/2	4
EMA 0750 C15 R06	3/4	3/4	3	.060	1 1/2	4
EMA 0750 C15 R12	3/4	3/4	3	.120	1 1/2	4

Order example: EMA 0500 C12 R12 CA5

● First choice ○ Alternative

Technical Section





Cutting Data

Cutting conditions for side milling

ISO	Materials Class	Cutting Speed Vc [SFM]	Fz [IPT] Cutting Diameter Ø1/4	Ø5/16	Ø3/8	Ø1/2	Ø5/8	Ø3/4
N	Aluminum ≤12%Si, Copper	1650-3300	.0022	.0028	.0035	.0041	.0057	.0071
	Aluminum >12%Si	1650-3300	.0019	.0025	.0032	.0038	.0051	.0063
	Synthetics, duroplastics, thermoplastics	1650-3300	.0022	.0028	.0035	.0041	.0057	.0071

For slotting, reduce the Fz by 15%-25% depending on the application

Case Study

Application

Plunging, Slotting, Helical Profiling

Workpiece material

Die Steel 57HRc

Tool description

EM 0313 D07 R01 CR3

Shank diameter (d): Ø5/16

Cutting diameter (D): Ø5/16

Number of flutes: 4

Cutting length (l): 3/4

Total length (L): 2.5

Machine

VMC 15Kw

Control: Fanuc

Coolant: Emulsion 5%

Parameter	Competitor's tool	EM 0313 D07 R01 CR3
Cutting speed (SFM)	495	495
Rotational speed (RPM)	6000	6000
Feed per tooth (IPT)	.006	.006
Feed (IPM)	138	138
Depth of cut (Ae)	.002	.009
Tool life (minutes)	85	105
Surface Finish	Good	Good

Case Study

Application

Side milling

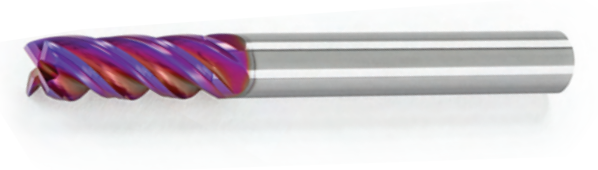
Ae = .08

Ap = .23

Workpiece material

Steel SAE 4340

Tool description



EM 0188 D03 CR3

Shank diameter (d): Ø3/16

Cutting diameter (D): Ø3/16

Number of flutes: 4

Cutting length (l): 5/16

Total length (L): 2

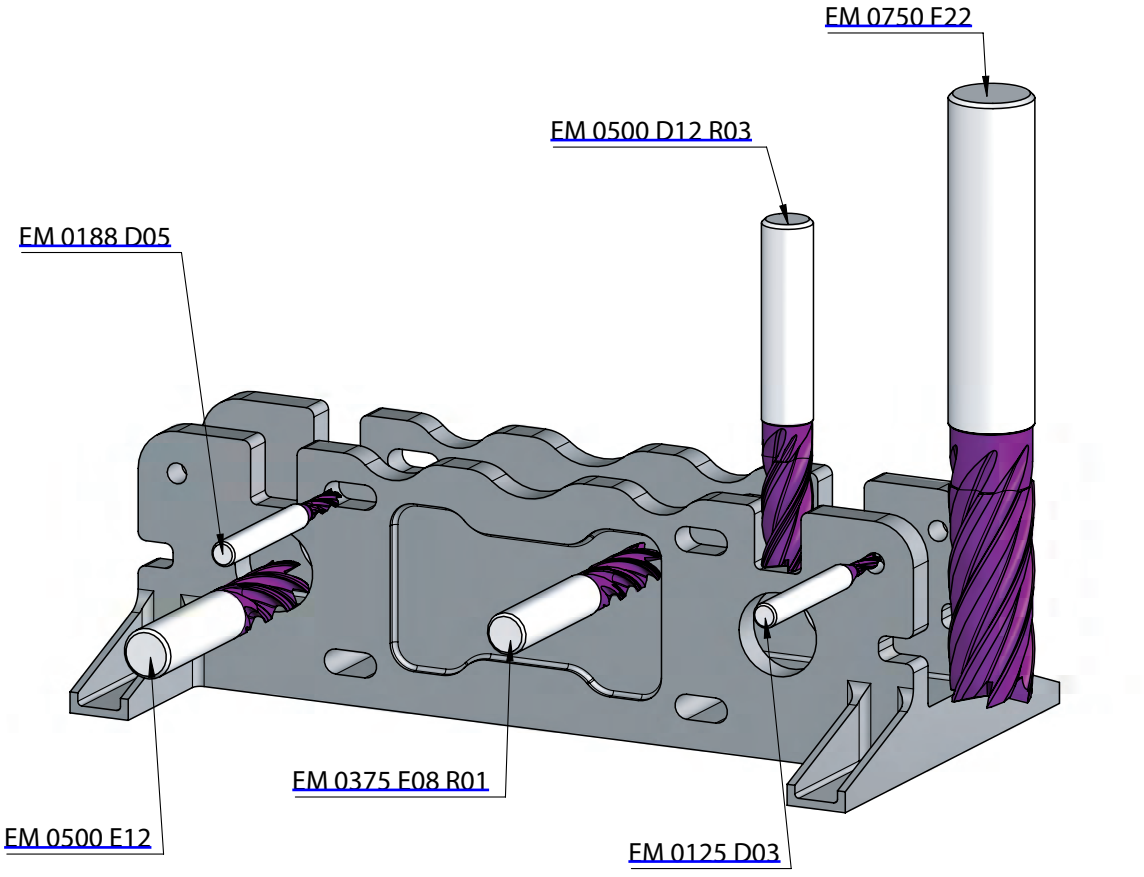
Machine

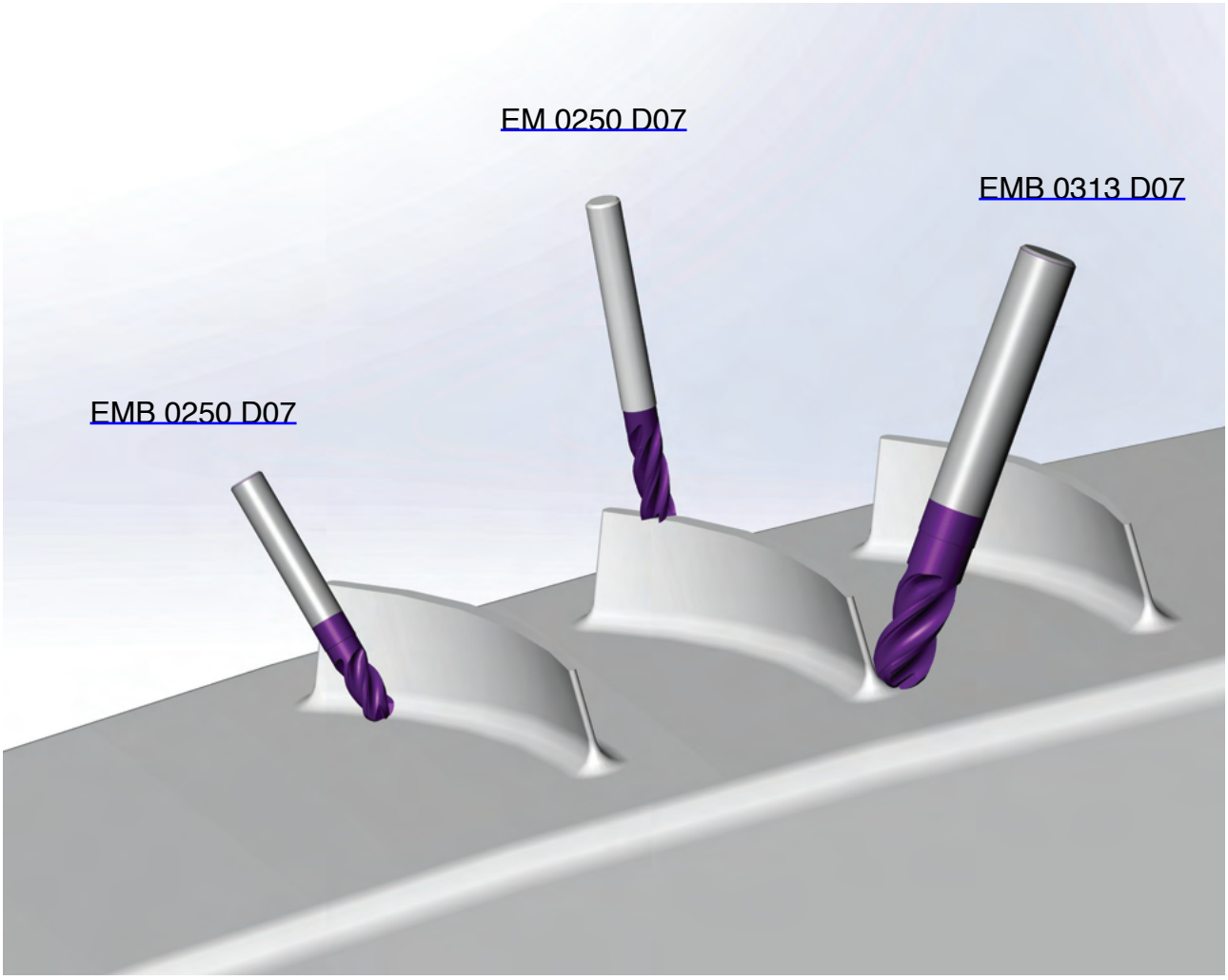
Mori Seiki NV5000

Coolant: Emulsion 5%

Parameter	EM 0188 D03 CR3
Cutting speed (SFM)	460
Feed per tooth (IPT)	.002
Ae	.08
Ap	.23
Total machining time (min)	67

Application Examples

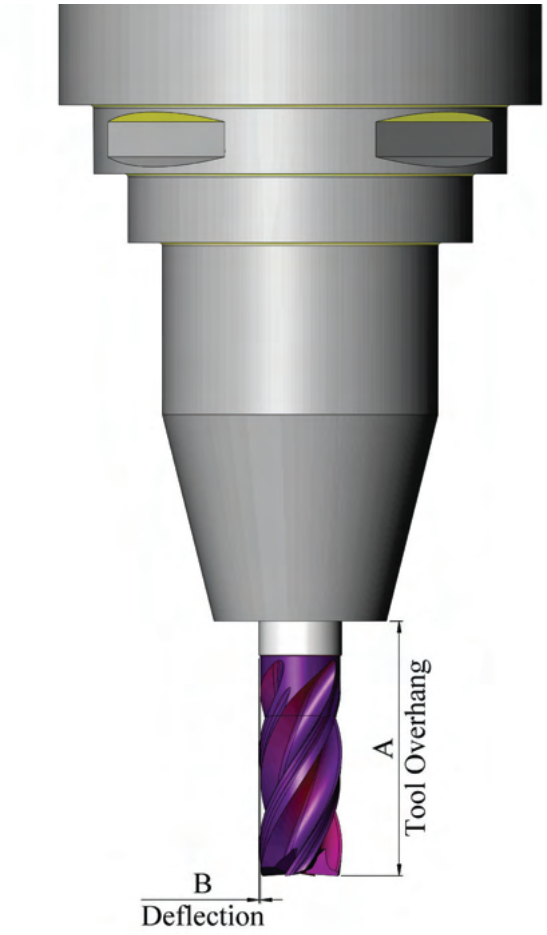



EM 0250 D07
EMB 0313 D07
EMB 0250 D07

Machining Tips

Tip #1: Overhang

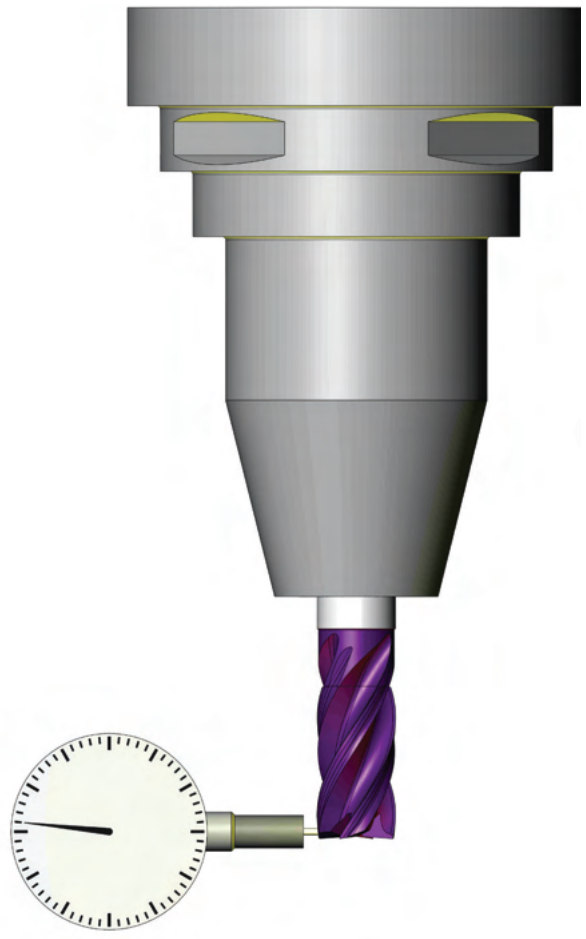
Tool should be used with the smallest possible overhang, to increase stability and reduce deflection, for better surface quality and tool life.



A reduction of only 20% in overhang (A) can reduce deflection (B) by as much as 50%

Tip #2: Tool run-out

- Run out should be as minimal as possible.
- Every .0004 run-out can lead to up to 50% decrease in tool life.
- As tool diameter is smaller, avoiding run-out becomes more critical.

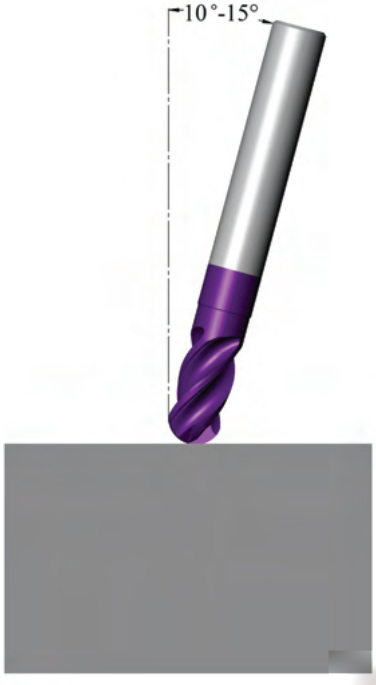


Tip #3: Ball nose

When using a Ball nose End-Mills, the most critical area of the cutting edge is the tool center. At that point the cutting speed is close to zero which is not recommended for the tool cutting.

Therefore, tilting the spindle or the workpiece by 10^0 to 15^0 is recommended, which moves the cutting zone away from the tool center.
This provides:

- Better chip evacuation
- Better surface finish
- Improved tool life



Tip #4: Coolant

- Coolant can dramatically affect the performance of cutting tools, and the cost of your operation.
- Cutting fluids perform two basic functions:
  1) To reduce heat generated during the cut
  2) Lubricate the tool and reduce friction between the chip and the tool
- Water-based coolant (emulsion) is the best option.
- Coolant improves the surface finish and helps force chips out of the flutes.

General milling tips

- Less flutes = more chip space, allows a deeper cuts (bigger Ae), suitable for roughing/semi-finishing, slotting.
- More flutes – stronger core, higher stability, less chip space, shallower cut must be used, suitable for super finishing especially for titanium, nickel and super-alloys.
- For best surface quality and tool life, run-out of the machine and the holder must be reduced as close to zero, minimum overhang should be used.
- Climb vs. conventional milling – rule of thumb is “thick to thin” (chip thickness), so most of the time climb milling would be the first choice.

Multi-Function Milling Tools (MF)

Advantages

- Performs multiple operations with one tool
- Eliminates tool changes
- Reduces programming and setup times
- Reduces tool inventories
- Ideal for machines with a limited number of tool stations

Applications

- Spotting and Drilling
- Side milling
- Chamfering
- Slotting
- Grooving
- Engraving

Demonstration

Carbide grades

CR3
Ultra-Fine carbide grade with high hardness and toughness provides high cutting edge stability and wear resistance.
A **New Generation** of PVD Coating for High-Performance Cutting Applications.

CR5
PVD coated **New** grade for machining hardened materials up to 56 HRc and Super alloys.

Product Identification

Ordering Codes

MF — Multi-Function Tool

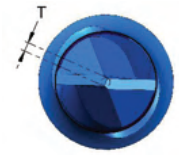
04 — Shank Diameter
04 = 4 mm
05 = 5 mm
06 = 6 mm
08 = 8 mm

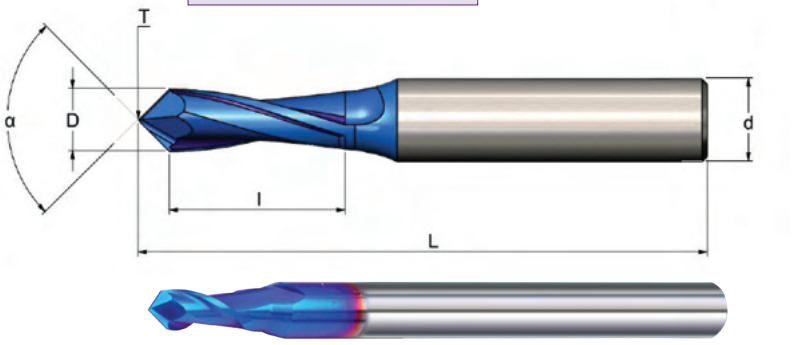
03 — Cutting Diameter
03 = .118
04 = .157
05 = .197
06 = .236

L6 — Approximate cutting length
L6 = .24
L8 = .31
L10 = .39

A90 — Point angle
60°
90°
120°

CR3 — Carbide Grade
CR3
CR5





Grade	P	M	K	N	S	H
CR3	●	●	●	●	●	○
CR5	○		○		●	≤ 56 HRc

Ordering Code	d mm	D	α	*T	l	L
ME 0403 L6 A90	4	.118	90°	.012	.24	2.0
ME 0504 L8 A90	5	.157	90°	.016	.31	2.0
ME 0605 L10 A90	6	.197	90°	.020	.39	2.3
ME 0806 L12 A90	8	.236	90°	.024	.47	2.5
ME 1008 L16 A90	10	.315	90°	.031	.63	2.9
ME 1210 L18 A90	12	.394	90°	.039	.71	3.3
ME 1212 L20 A90	12	.472	90°	.047	.79	3.3

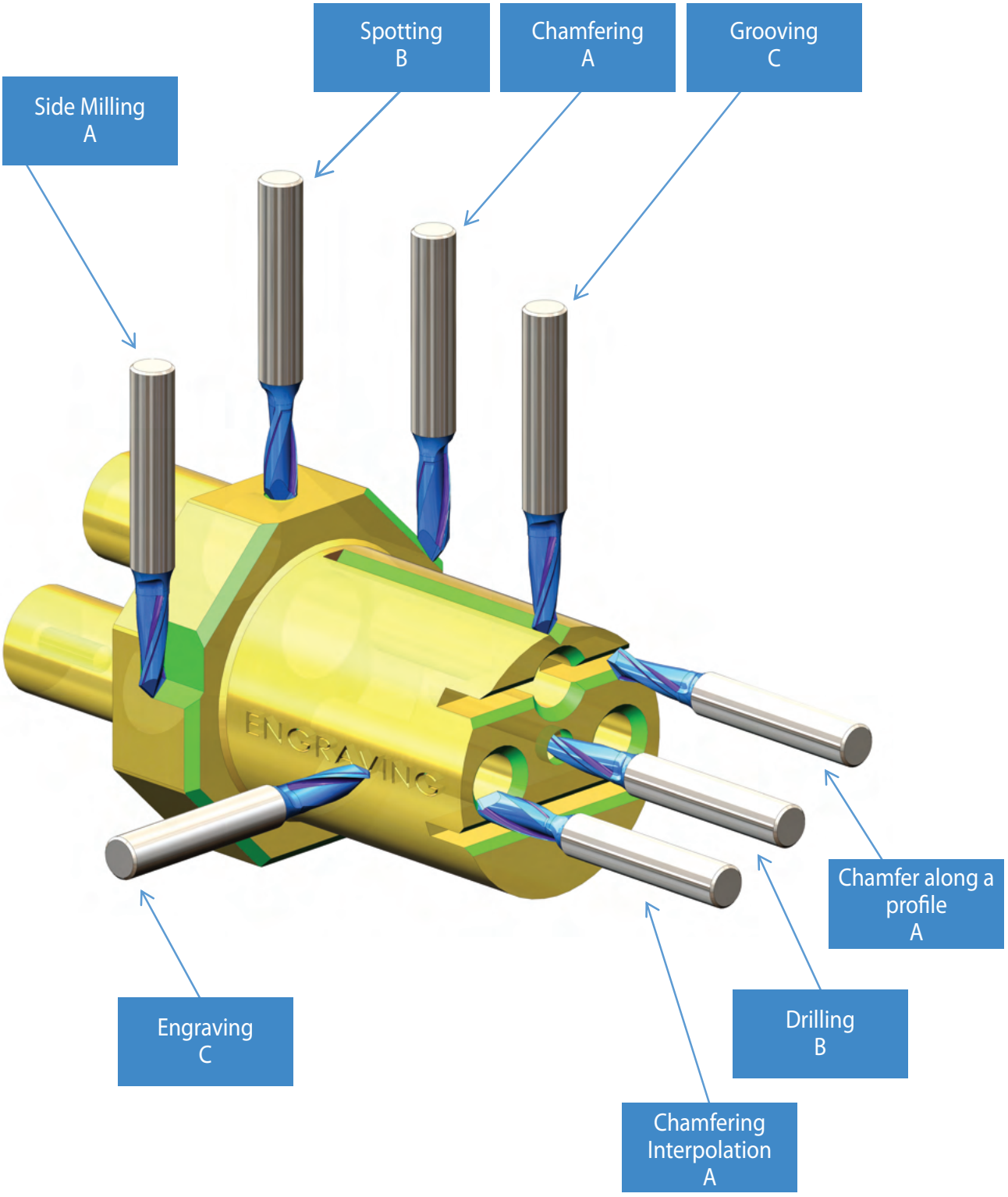
* T = Web thickness No. of Flutes: 2

● First choice ○ Alternative

For 60°, specify MF…A60 **For 120°, specify MF…A120**

Order example: MF 1210 L18 A90 CR3

Working Methods



*** A, B, C refers to cutting data on next page**

Technical Section

Cutting Data

A: Side milling, Chamfering
B: Spotting, Drilling
C: Grooving, Engraving

ISO Standard	Materials Class	Cutting Speed Vc [SFM]	Fz [IPT] Cutting Diameter		
			Ø.12- Ø.16	Ø.20- Ø.24	Ø.31- Ø.47
P	Low & Medium Carbon Steels <0.55%C	165-380	A: .0001-.0004 B: .0001-.0003 C: .0002-.0006	A: .0002-.0008 B: .0002-.0004 C: .0002-.0010	A: .0005-.0015 B: .0003-.0006 C: .0006-.0015
	High Carbon Steels ≥0.55%C	130-330	A: .0001-.0005 B: .0001-.0003 C: .0002-.0007	A: .0002-.0007 B: .0002-.0004 C: .0004-.0011	A: .0004-.0012 B: .0004-.0007 C: .0006-.0019
	Alloy Steels, Treated Steels	130-330	A: .0001-.0003 B: .0001-.0002 C: .0002-.0006	A: .0002-.0006 B: .0002-.0004 C: .0002-.0007	A: .0005-.0012 B: .0002-.0006 C: .0006-.0012
M	Stainless Steel-Free Cutting	100-280	A: .0002-.0005 B: .0001-.0003 C: .0002-.0007	A: .0003-.0007 B: .0002-.0006 C: .0002-.0007	A: .0001-.0019 B: .0001-.0009 C: .0006-.0019
	Stainless Steel-Austenitic	80-230	A: .0002-.0004 B: .0001-.0002 C: .0002-.0006	A: .0002-.0006 B: .0002-.0006 C: .0002-.0007	A: .0005-.0016 B: .0005-.0008 C: .0007-.0014
	Cast Steels	130-295	A: .0002-.0005 B: .0001-.0003 C: .0002-.0007	A: .0003-.0007 B: .0002-.0006 C: .0002-.0007	A: .0006-.0019 B: .0001-.0009 C: .0006-.0019
K	Cast Iron	100-390	A: .0001-.0004 B: .0001-.0003 C: .0002-.0006	A: .0002-.0008 B: .0002-.0004 C: .0002-.0010	A: .0005-.0015 B: .0003-.0006 C: .0006-.0015
N	Aluminum ≤12%Si, Copper	295-390	A: .0002-.0003 B: .0002-.0003 C: .0002-.0003	A: .0004-.0008 B: .0003-.0006 C: .0004-.0008	A: .0010-.0018 B: .0008-.0016 C: .0010-.0018
	Aluminum >12%Si	245-330	A: .0001-.0002 B: .0001-.0002 C: .0001-.0003	A: .0002-.0006 B: .0002-.0004 C: .0002-.0006	A: .0008-.0013 B: .0006-.0014 C: .0008-.0013
	Synthetics, Duroplastics, Thermoplastics	295-390	A: .0002-.0003 B: .0002-.0003 C: .0002-.0003	A: .0004-.0008 B: .0003-.0006 C: .0004-.0008	A: .0010-.0018 B: .0008-.0016 C: .0010-.0018
S	Nickel alloys, Titanium alloys	65-195	A: .0002-.0003 B: .0001-.0003 C: .0001-.0002	A: .0003-.0004 B: .0002-.0003 C: .0002-.0003	A: .0007-.0010 B: .0001-.0008 C: .0005-.0006
H	Hardened Steel 40-45 HRc	65-195	A: .0002-.0004 B: .0002-.0003 C: .0001-.0002	A: .0003-.0006 B: .0003-.0004 C: .0002-.0003	A: .0006-.0012 B: .0004-.0010 C: .0003-.0008
	Hardened Steel 45-56 HRc	35-165	A: .0002-.0004 B: .0001-.0003 C: .0001-.0002	A: .0003-.0006 B: .0002-.0004 C: .0002-.0003	A: .0006-.0012 B: .0003-.0010 C: .0003-.0008

CR - Supercut Roughers

Carmex solid carbide Roughers are innovative high performance mills, specifically designed for high volume machining applications.

Multi-flute, semi-finish profile and center cutting.

Provides high metal removal rates in Slotting, Shouldering and Helical Plunging operations.

Features

- High Performance Cutting (HPC)
- Innovative roughing geometry produces smaller chips
- Low cutting forces
- Extremely high material removal rate
- Reinforced corner chamfer, promotes additional strength for longer tool life
- Designed to machine difficult and abrasive materials

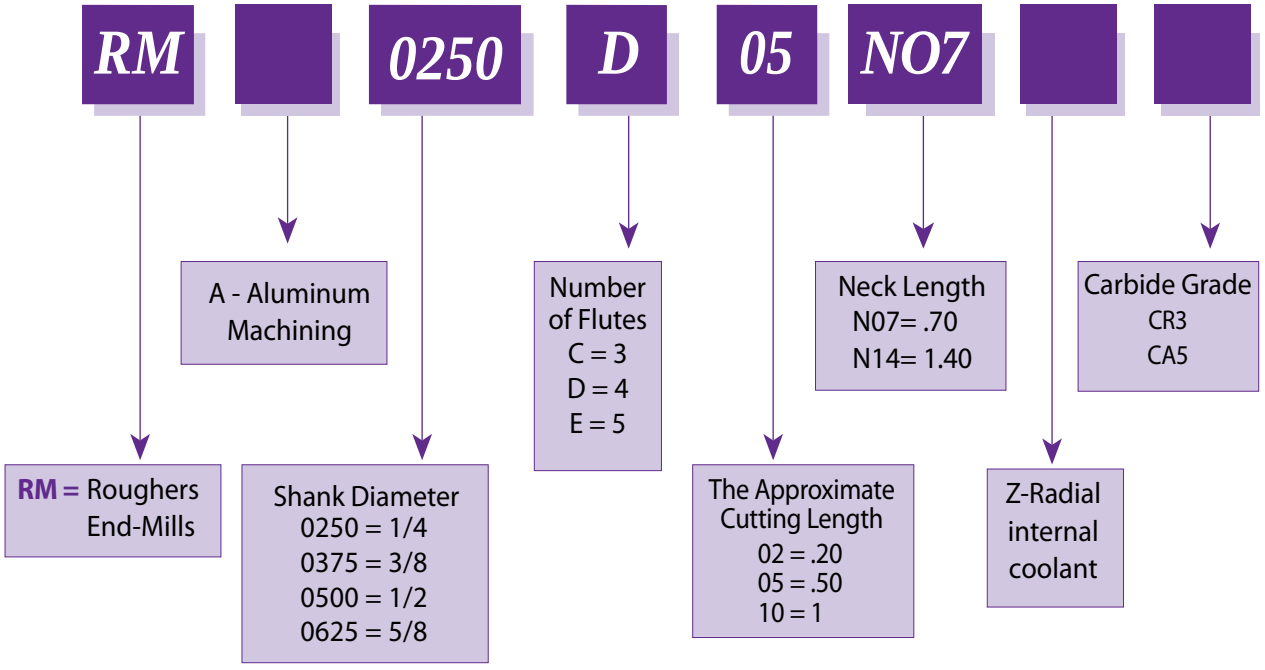
Carbide Grade: CR3

Ultra-Fine carbide grade with high hardness and toughness provides high cutting edge stability and wear resistance.

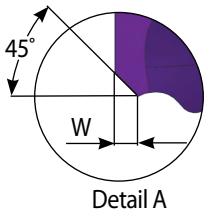
A **New Generation** of PVD Coating for High-Performance Cutting Applications.

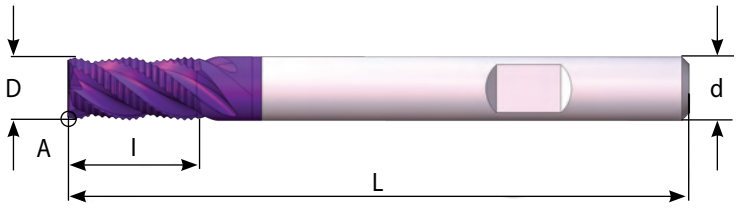
Product Identification

Ordering Codes

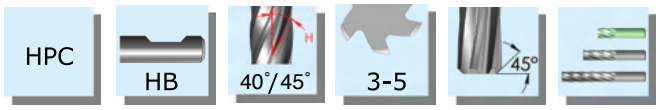


Solid Carbide Roughers





Short Design

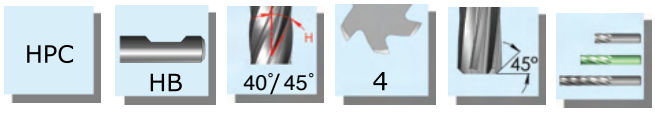


Grade	P	M	K	N	S	H
CR3	●	●	●	○	●	≤56 HRc

Ordering Code	d	D	W	No. of Flutes	l	L
RM 0250 C02	1/4	.118	.008	3	.20	2 1/2
RM 0250 C03	1/4	.157	.012	3	.35	2 1/2
RM 0250 D03	1/4	.197	.012	4	.39	2 1/2
RM 0250 D04	1/4	.250	.012	4	.39	2 1/2
RM 0312 D04	5/16	.312	.012	4	.47	2 1/2
RM 0375 D05	3/8	.375	.012	4	.55	3
RM 0500 D06	1/2	.500	.016	4	.63	3 1/2
RM 0625 E10	5/8	.625	.020	5	1.06	4

Order example: RM 0250 C02 CR3

Long Design



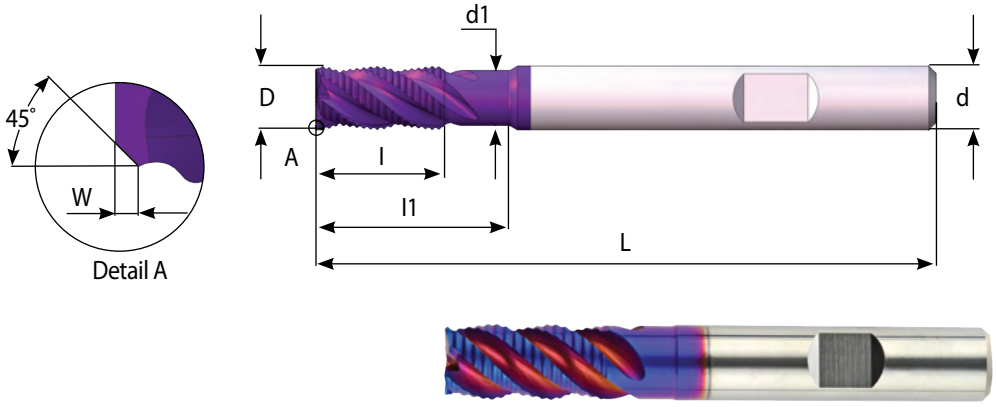
Grade	P	M	K	N	S	H
CR3	●	●	●	○	●	≤56 HRc

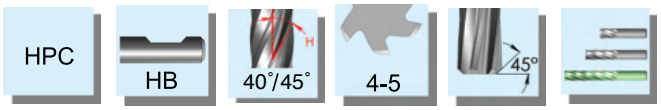
Ordering Code	d	D	W	No. of Flutes	l	L
RM 0250 D06	1/4	.250	.012	4	.63	2 1/2
RM 0312 D06	5/16	.276	.012	4	.63	2 1/2
RM 0312 D07	5/16	.312	.012	4	.71	2 1/2
RM 0375 D08	3/8	.375	.012	4	.87	3
RM 0500 D10	1/2	.500	.016	4	1.02	3 1/2

Order example: RM 0312 D07 CR3

● First choice ○ Alternative

Solid Carbide Roughers with Neck





Grade	P	M	K	N	S	H
CR3	●	●	●	○	●	≤56 HRc

Ordering Code	d	D	l	l1	d1	W	No. of Flutes	L
RM 0250 D05 N07	1/4	.250	.51	.71	.23	.012	4	2 1/2
RM 0312 D06 N09	5/16	.312	.67	.94	.30	.012	4	2 1/2
RM 0375 D08 N11	3/8	.375	.83	1.18	.38	.012	4	3
RM 0500 D09 N14	1/2	.500	.98	1.42	.46	.016	4	3 1/2
RM 0625 E13 N18	5/8	.625	1.30	1.89	.61	.020	5	4

Order example: RM 0625 E13 N18 CR3

● First choice ○ Alternative

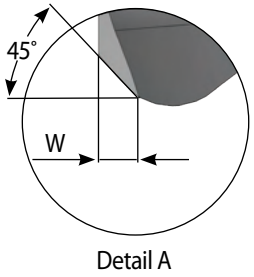
Solid Carbide Roughers - Aluminum Machining

Features

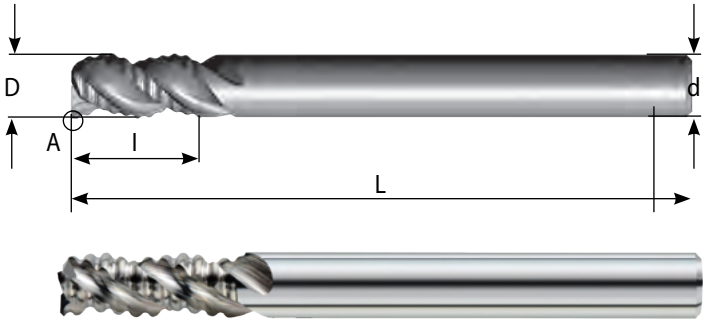
- High Performance Cutting (HPC)
- Optimal flute geometry delivers maximum metal removal rates and better chip evacuation
- Low cutting forces
- Reinforced corner chamfer, promotes additional strength for longer tool life
- Uncoated smooth polished surface finish

Carbide Grade: CA5

Ultra-Fine carbide grade with high hardness and toughness provides high cutting edge stability and wear resistance.



Detail A



Grade	P	M	K	N	S	H
CA5		○	○	●	○	

Ordering Code	d	D	W	No. of Flutes	I	L
RMA 0250 C03	1/4	.157	.012	3	.31	2 1/2
RMA 0250 C06	1/4	.250	.012	3	.63	2 1/2
RMA 0312 C07	5/16	.312	.012	3	.75	2 1/2
RMA 0375 C08	3/8	.375	.012	3	.87	3
RMA 0500 C10	1/2	.500	.016	3	1.02	3 1/2

Order example: RMA 0375 C08 CA5

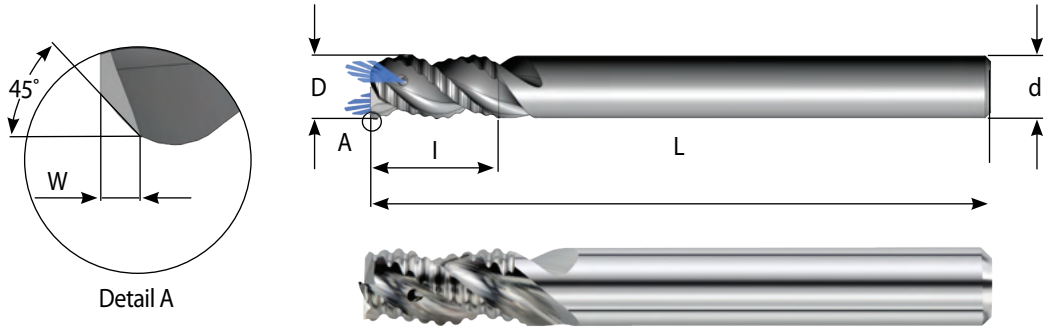
● First choice ○ Alternative

Solid Carbide Roughers - Aluminum Machining

with internal coolant through the flutes

The coolant bores provides high coolant pressure through the tool into the application pre-hole, and wash the chips away.

Carbide Grade: CA5



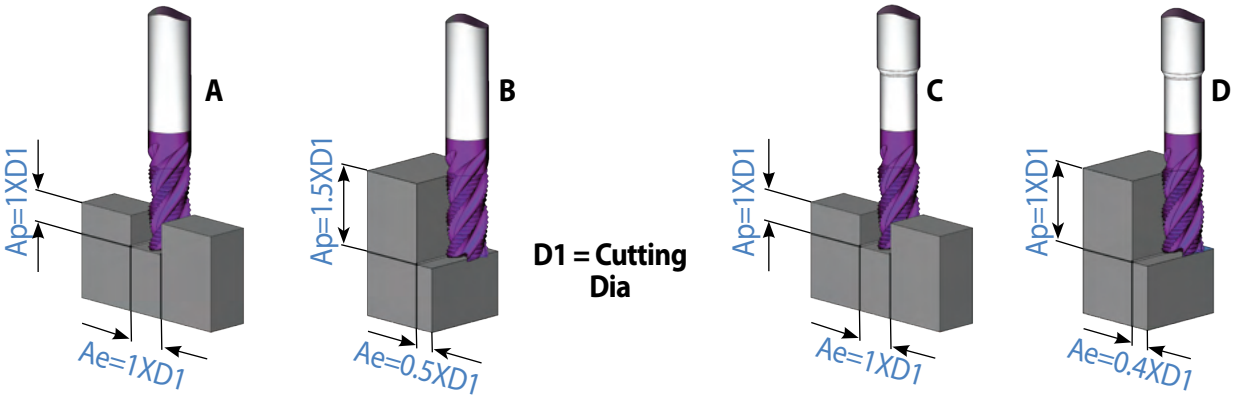
Grade	P	M	K	N	S	H
CA5		○	○	●	○	

Ordering Code	d mm	D	W	No. of Flutes	l	L
RMA 0606 C16 Z	6	.236	.012	3	.63	2.3
RMA 0808 C19 Z	8	.315	.012	3	.75	2.5
RMA 1010 C22 Z	10	.394	.012	3	.87	2.9
RMA 1212 C26 Z	12	.472	.016	3	1.02	3.3

Order example: RMA 1010 C22 Z CA5

● First choice ○ Alternative

Technical Section



Roughers

Roughers with Neck

Cutting Data

Roughers with neck (C, D) can be used with same feed and speed as below.

ISO	Materials	Cutting Speed Vc [SFM]	Fz [IPT]			
			Ø.12 - Ø.16	Ø.20 - Ø.25	Ø.28 - Ø.38	Ø.50 – Ø .79
P	Low & Medium Carbon Steels <0.55%C	A: 390-590 B: 460-660	A: .0005-.0008 B: .0007-.0009	A: .0010-.0012 B: .0012-.0014	A: .0014-.0020 B: .0019-.0024	A: .0022-.0031 B: .0028-.0038
	High Carbon Steels ≥0.55%C	A: 360-520 B: 460-590	A: .0004-.0006 B: .0006-.0008	A: .0006-.0008 B: .0010-.0012	A: .0012-.0016 B: .0014-.0018	A: .0016-.0022 B: .0024-.0031
	Alloy Steels, Treated Steels	A: 330-460 B: 430-530	A: .0004-.0005 B: .0004-.0005	A: .0006-.0007 B: .0006-.0007	A: .0009-.0012 B: .0009-.0012	A: .0014-.0019 B: .0014-.0019
M	Stainless Steel-Free Cutting	A: 330-460 B: 430-490	A: .0004-.0005 B: .0005-.0006	A: .0006-.0007 B: .0008-.0009	A: .0009-.0012 B: .0013-.0016	A: .0014-.0019 B: .0019-.0025
	Stainless Steel-Aus-tenitic	A: 230-330 B: 290-430	A: .0003-.0004 B: .0004-.0006	A: .0004-.0006 B: .0006-.0009	A: .0008-.0010 B: .0010-.0016	A: .0010-.0016 B: .0018-.0024
	Cast Steels	A: 390-530 B: 460-590	A: .0004-.0005 B: .0005-.0006	A: .0006-.0007 B: .0008-.0009	A: .0009-.0012 B: .0013-.0016	A: .0014-.0019 B: .0019-.0025
K	Cast Iron	A: 330-530 B: 460-590	A: .0005-.0008 B: .0007-.0009	A: .0010-.0012 B: .0012-.0014	A: .0014-.0020 B: .0019-.0024	A: .0022-.0031 B: .0028-.0038
N	Aluminum ≤12%Si, Copper	A: 590-820 B: 650-980	A: .0006-.0010 B: .0007-.0012	A: .0012-.0016 B: .0014-.0018	A: .0016-.0024 B: .0018-.0026	A: .0024-.0035 B: .0026-.0037
	Aluminum >12%Si	A: 330-650 B: 420-820	A: .0004-.0008 B: .0004-.0008	A: .0010-.0014 B: .0012-.0016	A: .0014-.0022 B: .0016-.0020	A: .0022-.0031 B: .0020-.0035
	Synthetics, Duroplastics, Thermoplastics	A: 590-820 B: 650-980	A: .0006-.0010 B: .0007-.0012	A: .0012-.0016 B: .0014-.0018	A: .0016-.0024 B: .0018-.0026	A: .0024-.0035 B: .0026-.0037
S	Nickel alloys, Titanium alloys	A: 160-230 B: 190-260	A: .0005-.0006 B: .0005-.0006	A: .0008-.0009 B: .0008-.0009	A: .0013-.0016 B: .0013-.0016	A: .0019-.0025 B: .0019-.0025
H	Hardened Steel 45-50 HRc	A: 160-230 B: 190-260	A: .0004-.0008 B: .0007-.0009	A: .0008-.0010 B: .0010-.0012	A: .0012-.0016 B: .0016-.0020	A: .0016-.0024 B: .0024-.0031
	Hardened Steel 51-56 HRc	A: 130-190 B: 160-230	A: .0004-.0006 B: .0006-.0008	A: .0006-.0010 B: .0008-.0012	A: .0008-.0014 B: .0010-.0016	A: .0012-.0022 B: .0014-.0026

Case Study

Application
Medical part- machining all around

Workpiece material
Titanium TA6V

Tool description

RM 0625 E10 CR3
Shank diameter (d): Ø5/8
Cutting diameter (D): Ø5/8
Chamfer width (W): .02
Number of flutes: 5
Cutting length (l): 1.06
Total length (L): 4

Machine
Milling machine-Mazak integrex I-2008
Coolant: Emulsion 7%

Competitors End-Mills
Leading European brands

Cutting Data
Vc= 164 SFM
Fz= .002 IPT
Ap= .83
Ae= .44

Carmex tool results
No tool vibrations or Noise
Machine load: 5%-7%
Total amount: 48 pcs

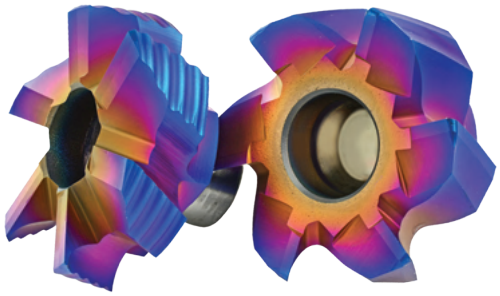
About 30% more than the competitors

Indexable CMT Roughers and Finishers

For excellent performance

- Solid and accurate clamping method enables full repeatability
- Working at high machining parameters
- Modular system using the standard CMT tool holders with various shank options
- Enables machining with large overhang

Carbide grade: CR3
Ultra-Fine carbide grade with high hardness and toughness provides high cutting edge stability and wear resistance.
A New Generation of PVD Coating for High-Performance Cutting Applications.



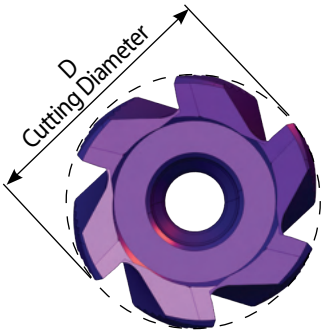
Product Identification

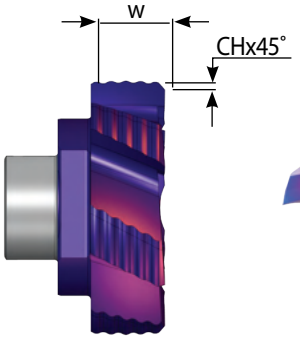
Ordering Codes

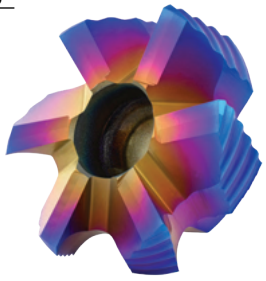
C	RM	160	F	W50	CR3
C = CMT Inserts	RM = Roughers End-Mills EM = Finish End-Mills	Cutting Diameter 160 = 16.0 mm 170 = 17.0 mm 200 = 20.0 mm	Number of Flutes F = 6	Width 50 = 5.0 mm	Carbide Grade

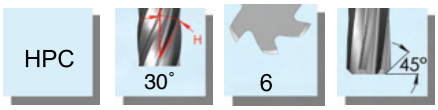
Supercut Solid Carbide Mills

Roughers







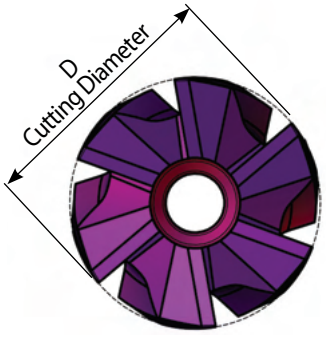


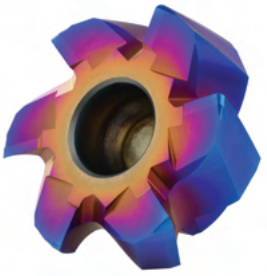
Grade	P	M	K	N	S	H
CR3	●	●	●	○	●	≤56 HRc

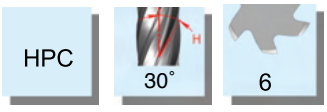
Insert Type	Ordering Code	D	No. of Flutes	W	CH
S20	CRM160 F W50	.63	6	.197	.016
S20	CRM170 F W50	.67	6	.197	.016
S20	CRM200 F W50	.79	6	.197	.016

Order example: CRM170 F W50 CR3

Finishers







Grade	P	M	K	N	S	H
CR3	●	●	●	○	●	≤56 HRc

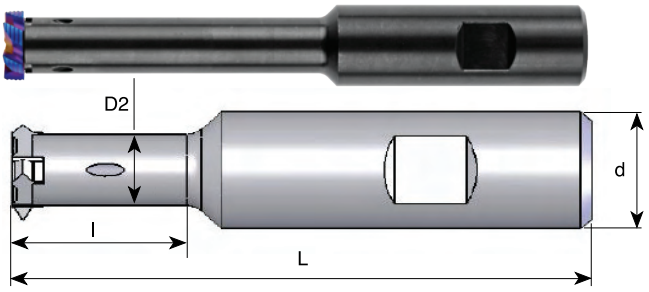
Insert Type	Ordering Code	D	No. of Flutes	W	R
S20	CEM160 F W50	.63	6	.197	.004
S20	CEM170 F W50	.67	6	.197	.004
S20	CEM200 F W50	.79	6	.197	.004

Order example: CEM200 F W50 CR3

The CMT Roughers/Finishers should be used with the toolholders shown on page A02-8

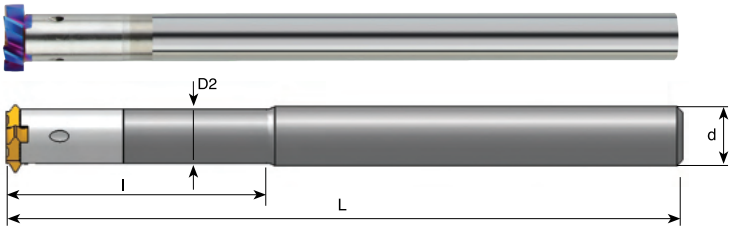
● First choice ○ Alternative

Steel Toolholders With internal coolant



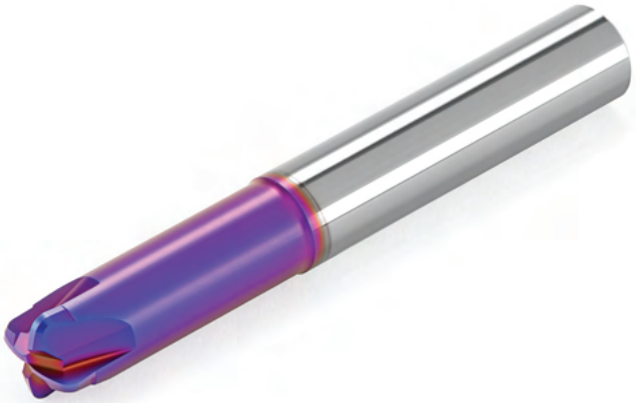
Ordering Code	Insert Type	d	D2	l	L	Insert Screw	Torx Key
SRC 0625 H18	S20	5/8	.54	1.90	4	S16	K16
SRC 0750 H18	S20	3/4	.54	1.27	4	S16	K16
SRC 0750 J18	S20	3/4	.54	1.90	4 1/2	S16	K16
SRC 0750 L18	S20	3/4	.54	2.92	5 1/5	S16	K16

Carbide Shank Toolholders With internal coolant



Ordering Code	Insert Type	d	D2	l	L	Insert Screw	Torx Key
CRC 0500 P18	S20	1/2	.50	---	7.0	S16	K16
CRC 0625 L18 R18	S20	5/8	.54	1.90	7.8	S16	K16
CRC 0625 L29 R18	S20	5/8	.54	2.91	7.8	S16	K16

CR-Supercut High Feed End-Mills



High Performance milling tools, designed for high feed rates with shallow cutting depths.
Innovative tool geometry enables extremely high **M**aterial **R**emoval **R**ate (MRR) and high machine productivity.
High feed machining is the first choice for applications with deep and shallow workpiece features, 3D profiling, mold & die applications and machining in unstable conditions.

- High Performance Cutting (HPC)
- Up to 3xD neck length allowing ramping or helical interpolation working techniques
- High rates of material removal, provides a reduced cycle time
- Same tool for roughing or semi-finishing operations
- For a wide range of materials up to 62 HRc

Carbide grade: CR3
Ultra-Fine carbide grade with high hardness and toughness provides high cutting edge stability and wear resistance.
A New Generation of PVD Coating for High-Performance Cutting Applications.

CR-Supercut High Feed End-Mills

Features

Optimized cutting-edge geometry

For maximum material removal rate

Multi-function operation

Ramping,
Helical interpolation
Face milling

Long neck

Allows extended reach to deep applications

Short flutes and large core

For high rigidity

HPC – High Performance Cutting

High feed rate for maximum material removal rate

CR3 grade

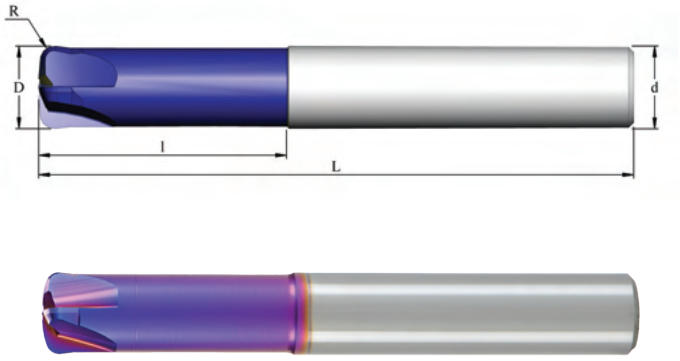
Superior carbide grade combined with new generation of PVD coating

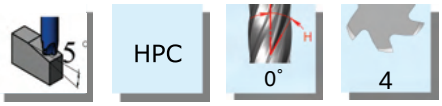
Product Identification

Ordering Codes

HFM	0250	N08	CR3
CR-Scut High Feed End-Mills	Shank Diameter 0250 = 1/4 0313 = 5/16 0375 = 3/8 0500 = 1/2	Neck Length N03 = 3/8 N06 = 5/8 N08 = 7/8 N1 2= 1 1/4 N1 5= 1 1/2 N16 = 1 5/8	Carbide Grade CR3

Solid Carbide High Feed End-Mills





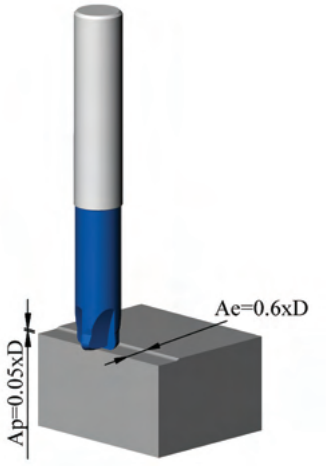
Grade	P	M	K	N	S	H
CR3	●	●	●		●	≤62 HRc

Ordering Code	d	D	No. of Flutes	R	I	L
HFM 0125 N03	1/8	1/8	4	.016	3/8	1 1/2
HFM 0188 N06	3/16	3/16	4	.031	5/8	2
HFM 0250 N08	1/4	1/4	4	.035	7/8	2 1/2
HFM 0313 N12	5/16	5/16	4	.051	1 1/4	3
HFM 0375 N12	3/8	3/8	4	.067	1 1/4	3 1/2
HFM 0500 N15	1/2	1/2	4	.083	1 1/2	4
HFM 0625 N16	5/8	5/8	4	.106	1 5/8	4 1/2

Order example: HFM 0188 N06 CR3

● First choice ○ Alternative

Technical Section

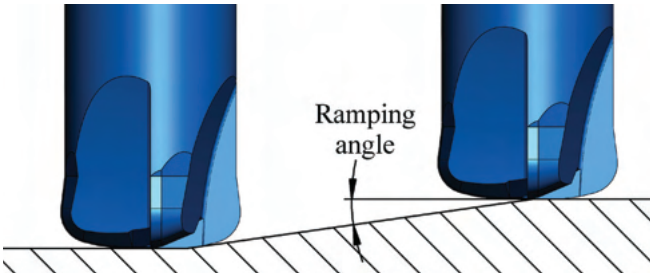


D = Cutting Dia

Cutting Data

ISO	Materials	Cutting Speed Vc [SFM]	Feed Fz [IPT] Cutting Diameter						
			Ø1/8	Ø3/16	Ø1/4	Ø5/16	Ø3/8	Ø1/2	Ø5/8
P	Low & Medium Carbon Steels <0.55%C	460-655	.010	.012	.014	.014	.018	.022	.024
	High Carbon Steels ≥0.55%C	460-655	.010	.012	.014	.014	.018	.022	.024
	Alloy Steels, Treated Steels	395-655	.008	.010	.012	.012	.016	.020	.022
M	Stainless Steel-Free Cutting	330-460	.004	.008	.008	.012	.012	.016	.020
	Stainless Steel-Austenitic	295-425	.004	.006	.006	.008	.008	.012	.016
	Cast Steels	295-425	.004	.006	.006	.008	.008	.012	.016
K	Cast Iron	330-460	.004	.008	.008	.012	.012	.016	.020
S	Heat-resistant alloys	230-295	.004	.004	.006	.006	.008	.008	.010
	Titanium alloys	260-330	.004	.004	.006	.006	.008	.008	.010
H	Hardened Steel 45-50 HRc	260-625	.006	.008	.010	.010	.014	.018	.020
	Hardened Steel 51-55 HRc	260-590	.004	.004	.008	.008	.012	.016	.016
	Hardened Steel 56-62 HRc	130-260	.004	.004	.006	.006	.008	.010	.012

Ramping

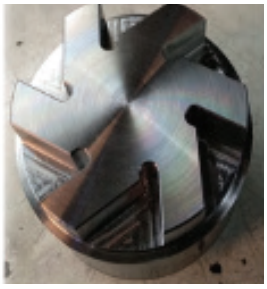


Ramping angle	Feed
1°	100%
2°	80%
3°	70%
4°	60%
5°	50%

Case Study

Application

Pocket machining by helical interpolation

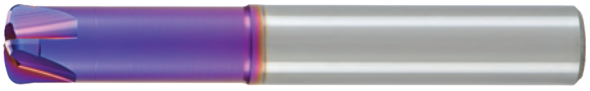


Workpiece material

Tempered steel SAE 4340

Hardness: 45 HRc

End-Mill description



HFM 0188 N06 CR3

Shank diameter (d): Ø3/16

Cutting diameter (D): Ø3/16

Number of flutes: 4

Neck length (l): 5/8

Machine

Mazak Integrex

Coolant: emulsion 6%

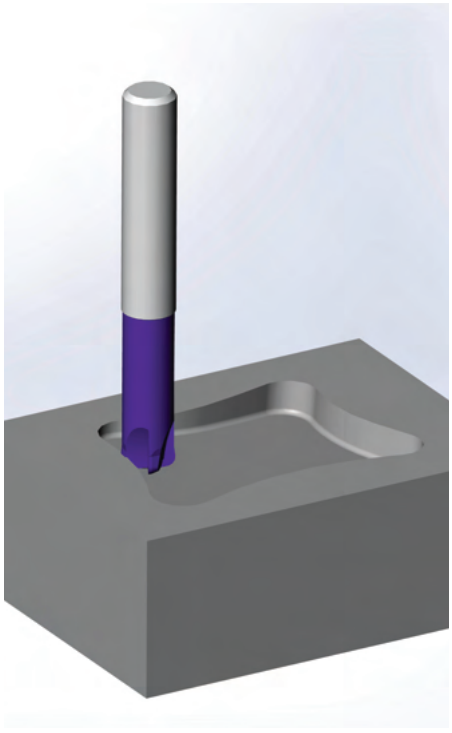
Parameter	HFM 0188 N06 CR3
Cutting speed (SFM)	557
Feed per tooth (IPT)	.006
Ae	.094
Ap	.008
Total Time in material (min)	124

Results

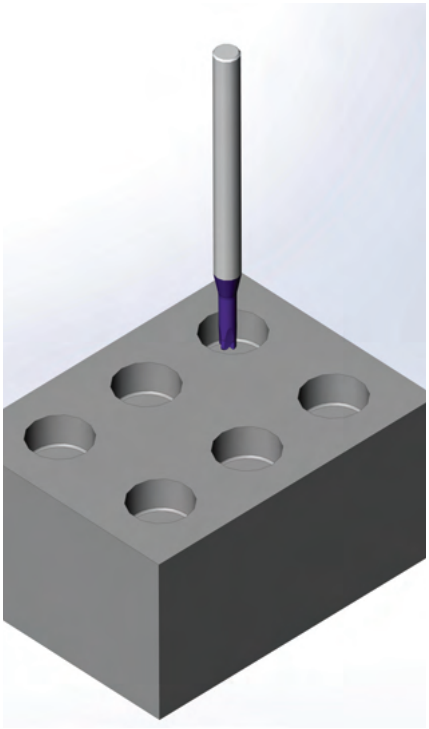
Tool life: The tool worked 124 minutes.

Application example

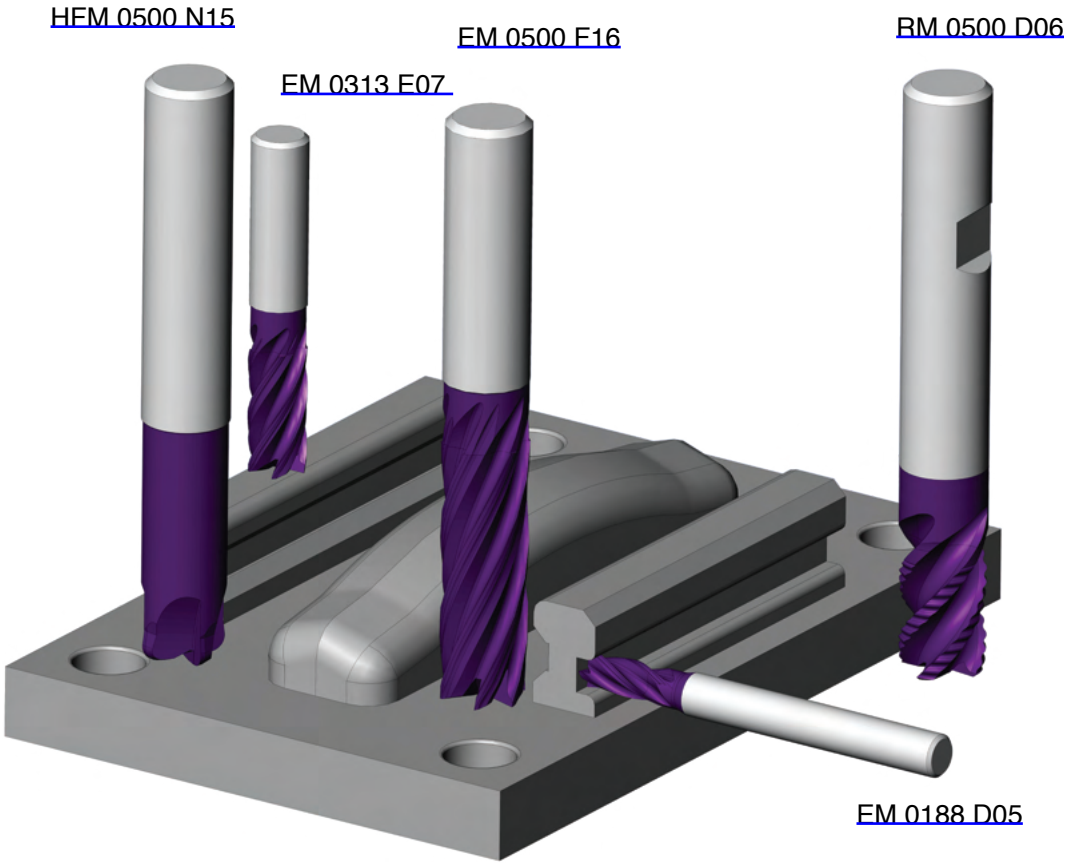
HFM 0375 N12



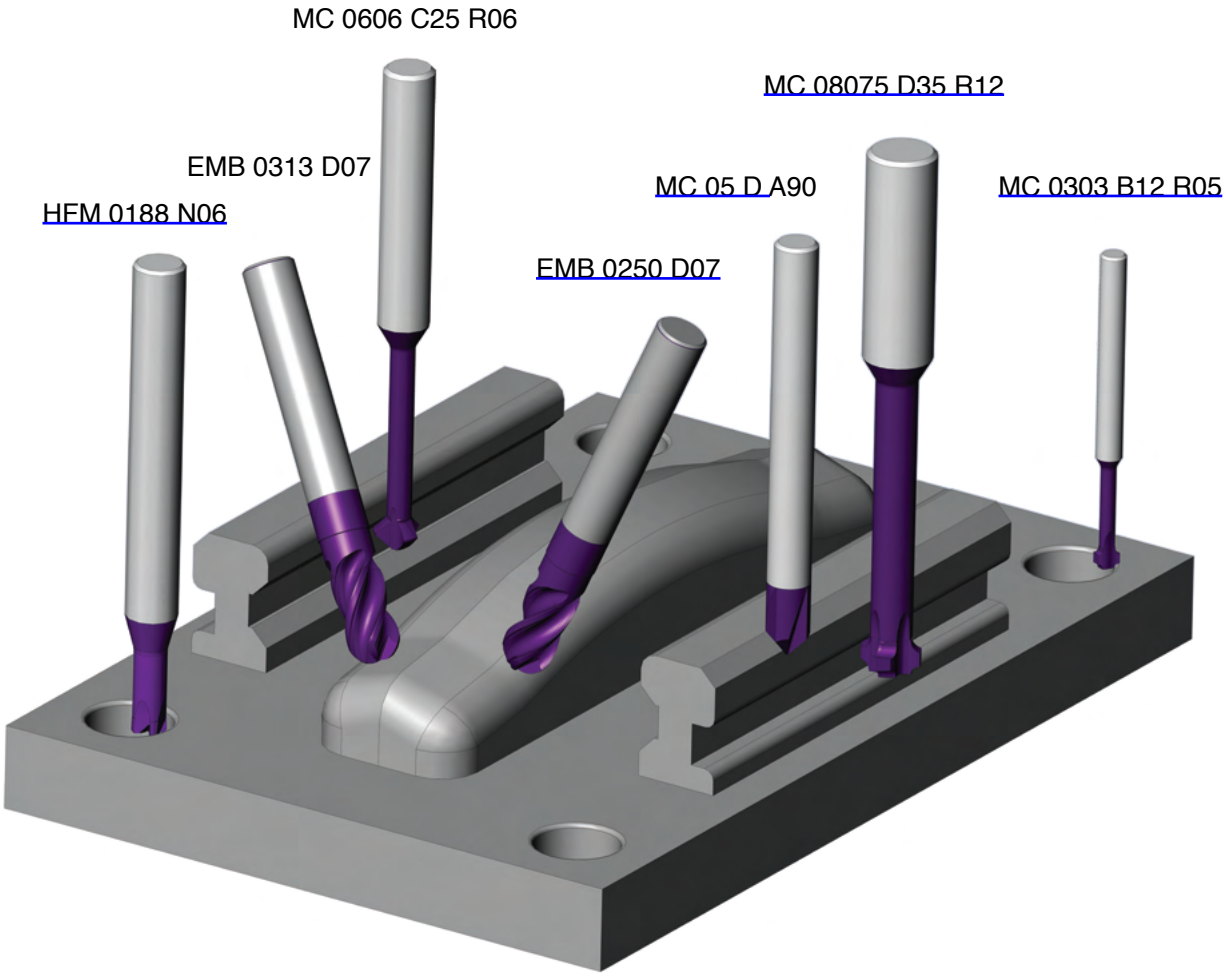
HFM 0188 N06



Application example



Application example



Diamond End-Mills

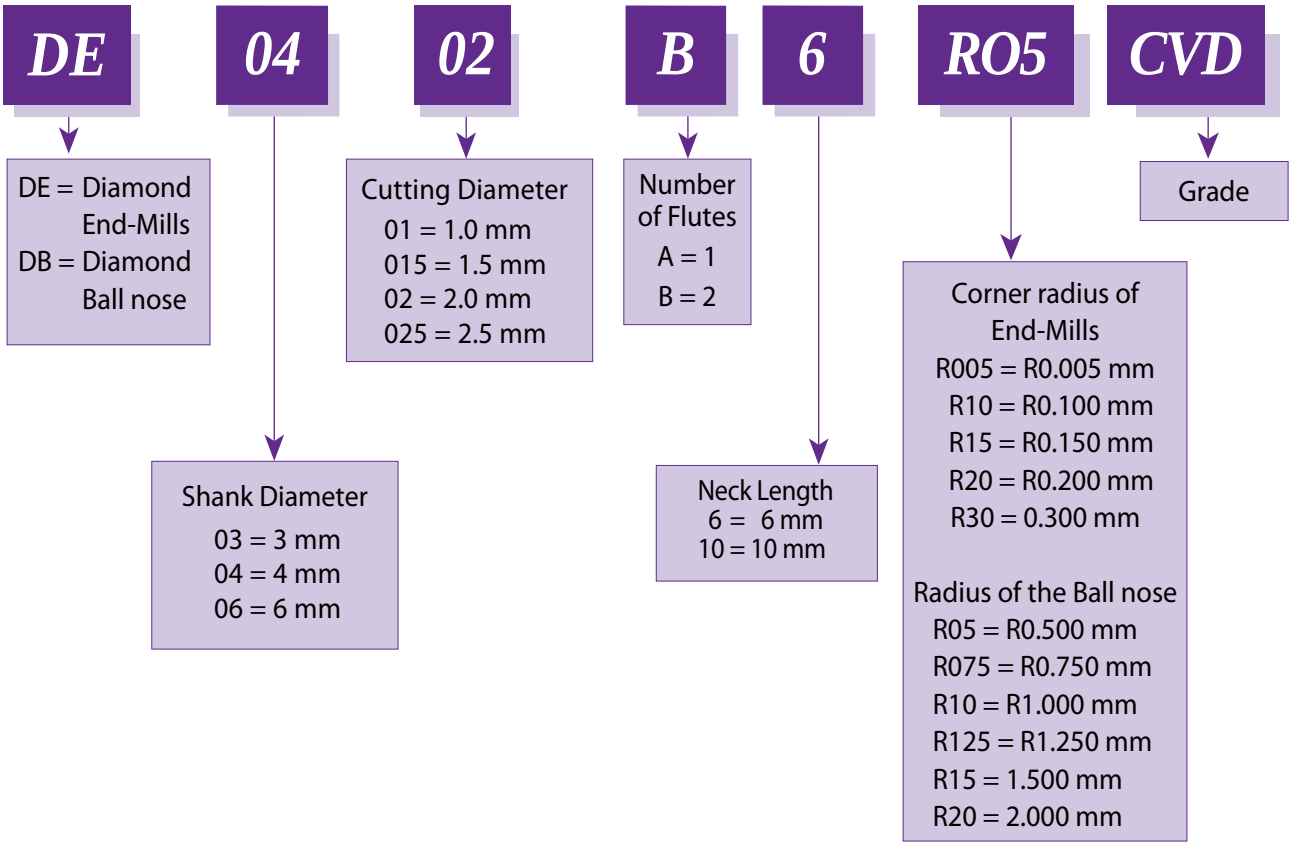
Carmex CVD End-Mills are designed for high productivity and provide longer tool life when machining materials ranging from plastics (peek) to glass fiber and carbon fiber composites, ceramics, zirconium and aluminum casting alloys. The End-Mills provide faster machining times as compared to grinding, and outperform ceramics, reducing production costs.

CVD

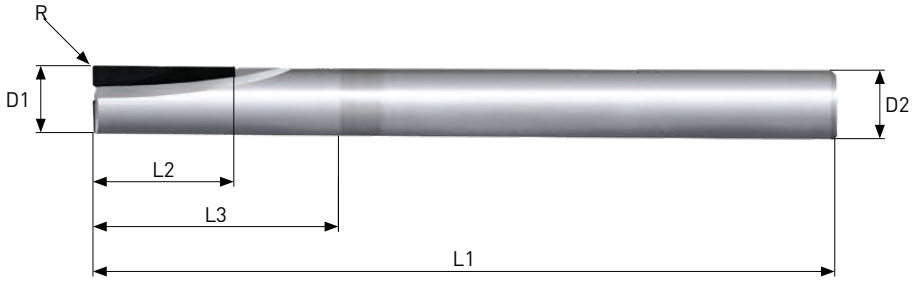
CVD delivers various benefits when machining long-chipping aluminum and magnesium alloys, high-silica aluminum as well as of precious metal alloys, plastics with abrasive fillers, tungsten carbide and ceramic green compacts.
Laser equipment is used to cut out the segments from the CVD-thick film; these are then attached to an End-Mills by brazing under vacuum. The cutting edges are also laser formed.

Product Identification:

End-Mills/Ball nose



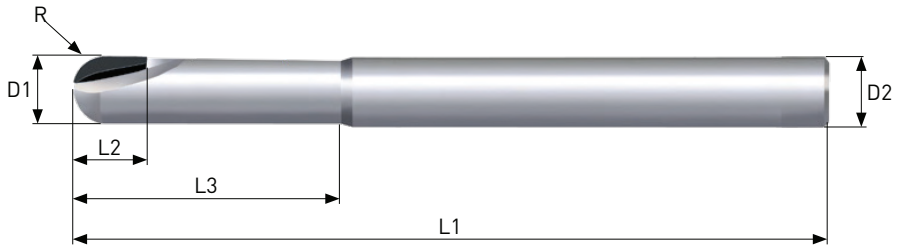
End-Mills - CVD



D1	Ordering Code	D2 (h5) mm	No. of Flutes	L2	L3	L1	R
.039	DE0401 A4 R05	4	1	.118	.157	1.97	.0020
	DE0601 A5 R10	6	1	.079	.197	1.97	.0039
	DE0601 A10 R10	6	1	.079	.394	1.97	.0039
	DE0601 A20 R10	6	1	.079	.787	1.97	.0039
.059	DE04015 B3 R005	4	2	.079	.118	1.97	.0002
	DE04015 B4 R05	4	2	.118	.157	1.97	.0020
	DE06015 B5 R15	6	2	.079	.197	1.97	.0059
	DE06015 B10 R15	6	2	.079	.394	1.97	.0059
	DE06015 B20 R15	6	2	.079	.787	1.97	.0059
.079	DE0402 B3 R005	4	2	.079	.118	1.50	.0002
	DE0402 B6 R005	4	2	.157	.236	1.50	.0002
	DE0402 B6 R05	4	2	.118	.236	1.50	.0020
	DE0402 B5 R10	4	2	.118	.197	1.97	.0039
	DE0402 B8 R10	4	2	.118	.315	1.97	.0039
	DE0602 B5 R15	6	2	.118	.197	1.97	.0059
	DE0602 B10 R15	6	2	.118	.394	1.97	.0059
	DE0602 B20 R15	6	2	.118	.787	1.97	.0059
.098	DE04025 B7 R005	4	2	.197	.276	1.50	.0002
	DE04025 B6 R10	4	2	.157	.236	1.97	.0039
	DE04025 B10 R10	4	2	.157	.394	1.97	.0039
.118	DE0403 B5 R005	4	2	.118	.197	1.50	.0002
	DE0403 B9 R005	4	2	.236	.354	1.50	.0002
	DE0603 B8 R20	6	2	.197	.315	1.97	.0079
	DE0603 B8 R50	6	2	.197	.315	1.97	.0197
	DE0603 B12 R10	6	2	.197	.472	2.36	.0039
	DE0603 B10 R30	6	2	.157	.394	2.95	.0118
	DE0603 B15 R30	6	2	.157	.591	2.95	.0118
	DE0603 B20 R30	6	2	.157	.787	2.95	.0118
.157	DE0404 B10 R01	4	2	.236	.394	1.50	.0004
	DE0604 B10 R10	6	2	.197	.394	2.36	.0039
	DE0604 B10 R30	6	2	.197	.394	2.36	.0118
	DE0604 B10 R50	6	2	.197	.394	2.36	.0197
	DE0604 B16 R10	6	2	.197	.630	2.56	.0039
	DE0604 B20 R30	6	2	.197	.787	2.95	.0118
	DE0604 B30 R30	6	2	.197	1.181	2.95	.0118

Center cutting

Ball nose - CVD



D1	Ordering Code	D2 (h5) mm	No. of Flutes	L2	L3	L1	R
.039	DB0301 A4 R05	3	1	.039	.157	1.26	.0197
	DB0401 A4 R05	4	1	.118	.157	1.97	.0197
	DB0601 A5 R05	6	1	.079	.197	1.97	.0197
	DB0601 A10 R05	6	1	.079	.394	1.97	.0197
	DB0601 A20 R05	6	1	.079	.787	1.97	.0197
.059	DB03015 B5 R075	3	2	.079	.197	1.26	.0295
	DB04015 B5 R075	4	2	.118	.197	1.97	.0295
	DB06015 B5 R075	6	2	.079	.197	1.97	.0295
	DB06015 B15 R075	6	2	.079	.591	1.97	.0295
	DB06015 B20 R075	6	2	.079	.787	1.97	.0295
.079	DB0302 B5 R10	3	2	.118	.197	1.26	.0394
	DB0302 B8 R10	3	2	.118	.315	1.26	.0394
	DB0402 B5 R10	4	2	.118	.197	1.97	.0394
	DB0402 B8 R10	4	2	.118	.315	1.97	.0394
	DB0602 B5 R10	6	2	.118	.197	1.97	.0394
	DB0602 B15 R10	6	2	.118	.591	1.97	.0394
	DB0602 B20 R10	6	2	.118	.787	1.97	.0394
.098	DB03025 B6 R125	3	2	.118	.236	1.26	.0492
	DB03025 B10 R125	3	2	.118	.394	1.26	.0492
	DB04025 B6 R125	4	2	.118	.236	1.97	.0492
	DB04025 B10 R125	4	2	.118	.394	1.97	.0492
.118	DB0303 B6 R15	3	2	.157	.236	1.26	.0590
	DB0303 B9 R15	3	2	.157	.354	1.26	.0590
	DB0603 B8 R15	6	2	.197	.315	1.97	.0590
	DB0603 B12 R15	6	2	.197	.492	2.36	.0590
	DB0603 B10 R15	6	2	.157	.394	1.97	.0590
	DB0603 B15 R15	6	2	.157	.591	1.97	.0590
	DB0603 B20 R15	6	2	.157	.787	1.97	.0590
.157	DB0404 B7 R20	4	2	.197	.276	1.50	.0787
	DB0404 B10 R20	4	2	.197	.394	1.50	.0787
	DB0604 B16 R20	6	2	.197	.630	2.56	.0787
	DB0604 B10 R20	6	2	.197	.394	2.95	.0787
	DB0604 B20 R20	6	2	.197	.787	2.95	.0787
	DB0604 B30 R20	6	2	.197	1.181	2.95	.0787

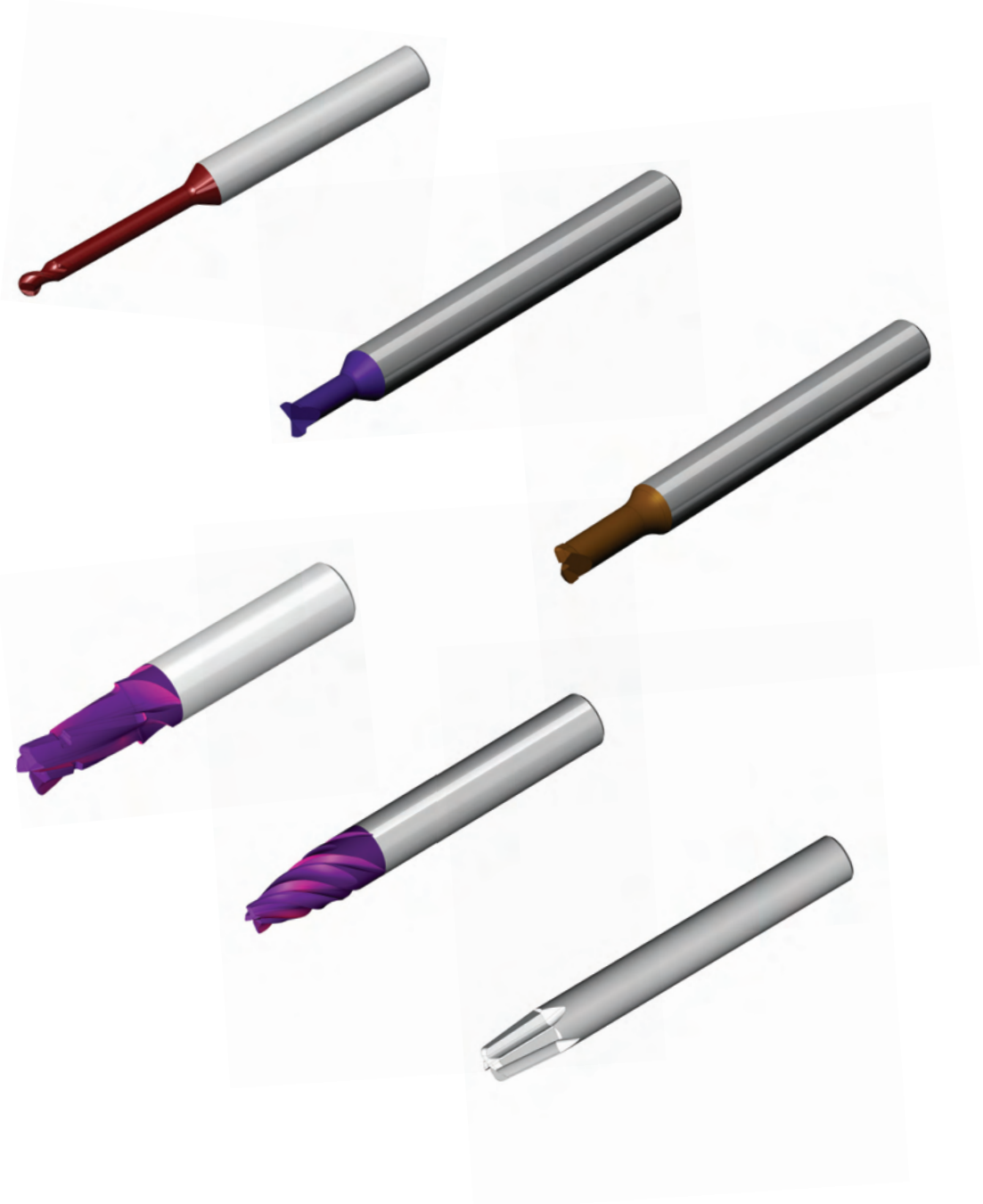
Cutting Data

ISO	Materials	Cutting Speed Vc [SFM]	Fz [IPT] Cutting Diameter	
			Ø1-3 mm	Ø4 mm
N	Aluminum alloys Si < 1%	490-13120	.0003-.0020	.0008-.0059
	Aluminum Casting Alloys Si > 12%	490-6560	.0003-.0020	.0008-.0059
	Magnesium/Copper/ Brass	490-13120	.0003-.0020	.0008-.0059
	Ti alloys	165-13120	.0003-.0020	.0008-.0059
	Graphite	490-9840	.0003-.0020	.0008-.0059
	Glass fiber/Carbon fiber composites	490-9840	.0003-.0020	.0008-.0059
	Peek	490-6560	.0003-.0020	.0008-.0059
	Thermoplastics, Duroplastics	490-13120	.0003-.0020	.0008-.0059
	Ceramic/Zirconium	245-985	.0003-.0020	.0008-.0059
	Glass, Carbon fiber reinforced, Graphite	490-9840	.0003-.0020	.0008-.0059

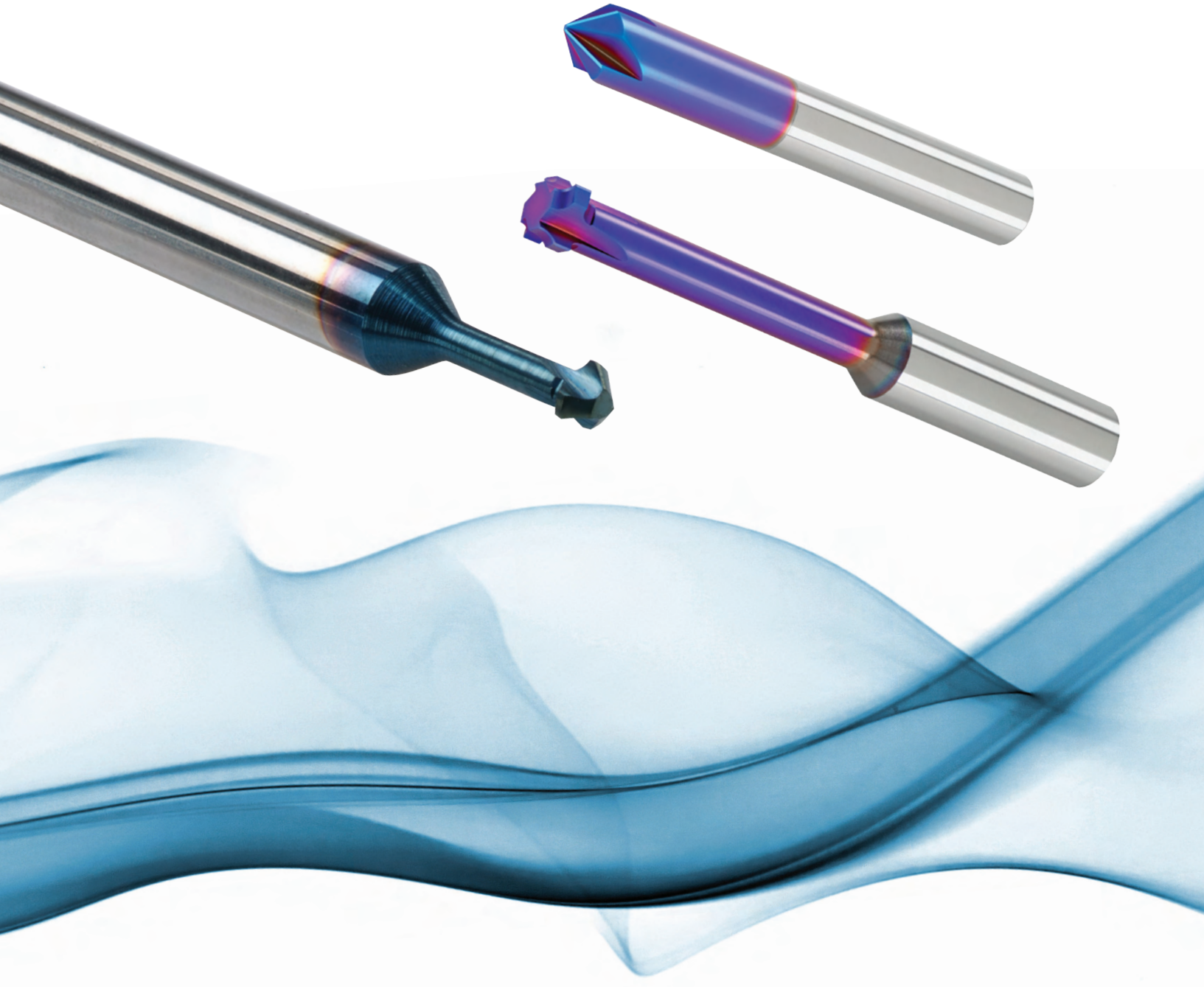
Special tools

In addition to standard products, Carmex manufactures special tools according to customers' Application.

Special tools are supplied in short delivery times.



Mini Chamfer and Countersink | B15



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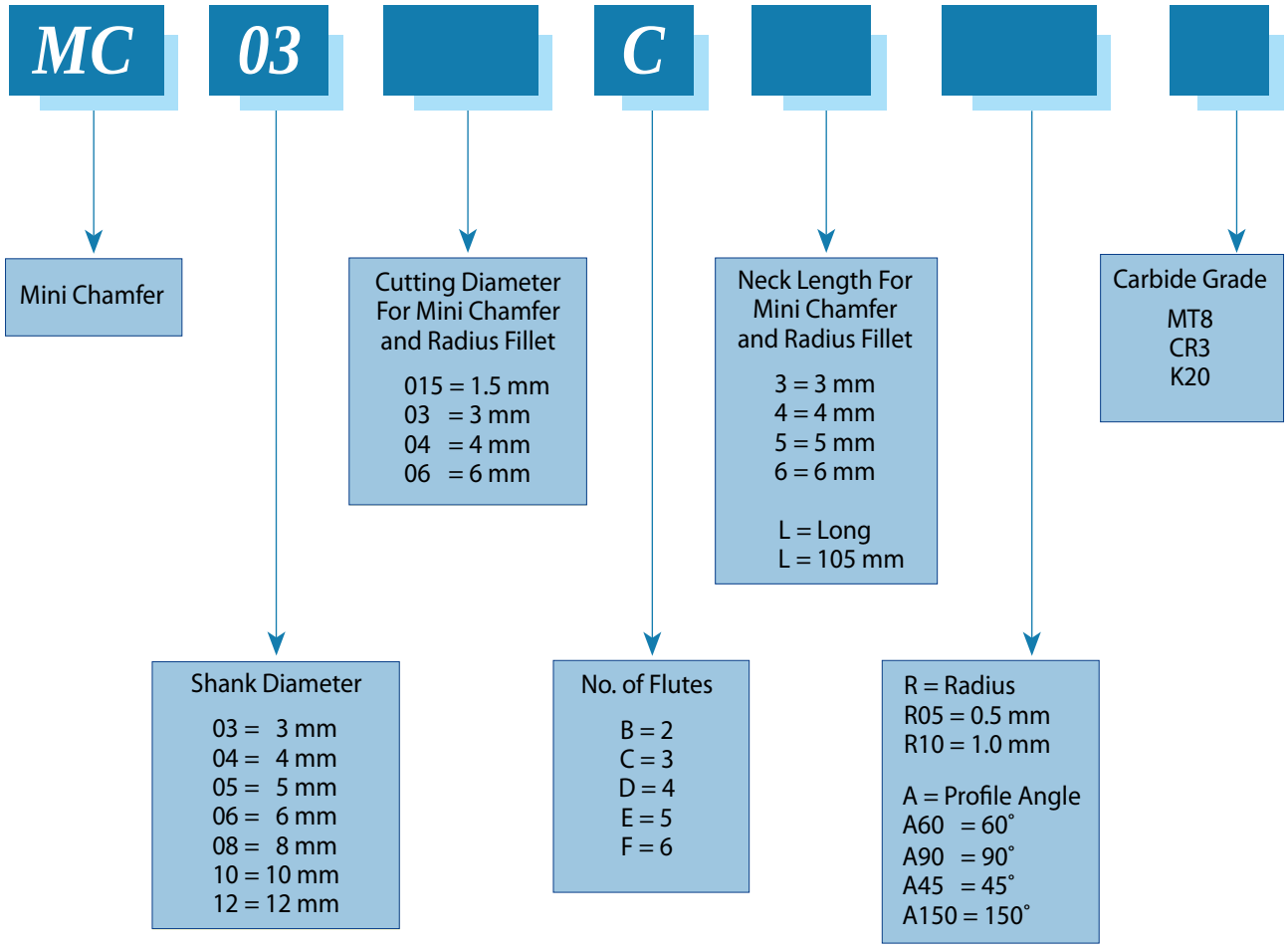
Mini Chamfer Dovetail 45˚	5	Mini Chamfer Kit	12
Mini Chamfer 150˚	5	Special Solid Carbide Tools	12
Solid Carbide radius fillet End-Mills	6-7		

Product Identification

Mini Chamfer, Solid Carbide Radius Fillet End-Mills and Countersink

Ordering Codes



Mini Chamfer

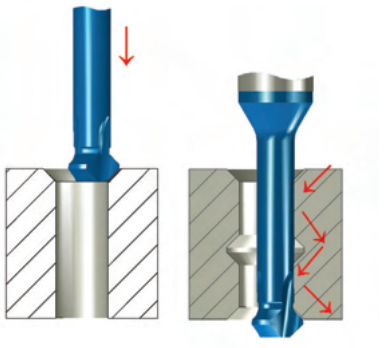
- Optimal for deburring, back chamfering and grooving.
- Double side cutting.
- Spiral flute allows smooth cutting action.

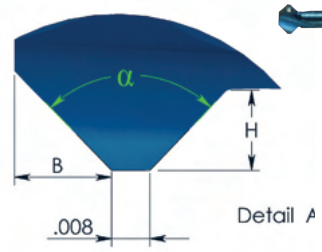
Carbide grade: MT8

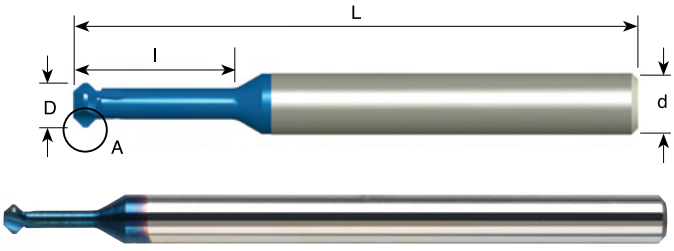
Sub-micron grade with advanced PVD triple coating (ISO K10-K20). Extremely high heat resistant and smooth cutting operation, for high performance and normal machining condition.
General purpose for all materials.

Mini Chamfer

Metric Shanks







90°

Ordering Code	d mm	D	l	H	B	α	No. of Flutes	L
MC 03015 C3 A90	3	.059	.15	.012	.016	90˚	3	1.5
MC 0302 C5 A90	3	.079	.20	.016	.020	90˚	3	1.5
MC 03025 C6 A90	3	.098	.25	.020	.024	90˚	3	1.5
MC 0303 C7 A90	3	.118	.30	.024	.028	90˚	3	1.5
MC 04035 C9 A90	4	.138	.35	.028	.031	90˚	3	2.0
MC 0404 C10 A90	4	.157	.39	.031	.035	90˚	3	2.0
MC 05045 C11 A90	5	.177	.44	.039	.043	90˚	3	2.0
MC 0505 C12 A90	5	.197	.49	.043	.047	90˚	3	2.0
MC 06055 C13 A90	6	.217	.54	.047	.051	90˚	3	2.0
MC 0606 C15 A90	6	.236	.59	.059	.063	90˚	3	2.0

Order example: MC 0302 C5 A90 MT8

Long Reach 90°

Ordering Code	d mm	D	l	H	B	α	No. of Flutes	L
MC 0303 C12 A90	3	.118	.47	.024	.028	90˚	3	1.5
MC 04035 C14 A90	4	.138	.55	.028	.031	90˚	3	2.0
MC 0404 C16 A90	4	.157	.63	.031	.035	90˚	3	2.0
MC 0404 C16L A90	4	.157	.63	.031	.035	90˚	3	4.1
MC 05045 C18 A90	5	.177	.71	.039	.043	90˚	3	2.0
MC 0505 C20 A90	5	.197	.79	.043	.047	90˚	3	2.0
MC 0505 C20L A90	5	.197	.79	.043	.047	90˚	3	4.1
MC 06055 C22 A90	6	.217	.87	.047	.051	90˚	3	2.3
MC 0606 C24 A90	6	.236	.94	.059	.063	90˚	3	2.3
MC 0606 C24L A90	6	.236	.94	.059	.063	90˚	3	4.1
MC 0808 D28 A90	8	.315	1.10	.063	.067	90˚	4	2.5
MC 0808 D28L A90	8	.315	1.10	.063	.067	90˚	4	4.1
MC 1010 E35 A90	10	.394	1.38	.071	.075	90˚	5	2.9
MC 1212 F42 A90	12	.472	1.65	.083	.087	90˚	6	3.3

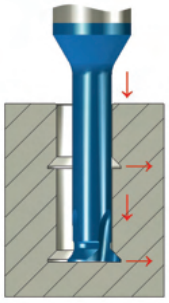
60°

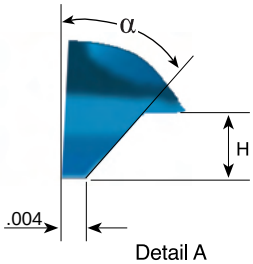
Ordering Code	d mm	D	l	H	B	α	No. of Flutes	L
MC 0302 C5 A60	3	.079	.20	.016	.012	60˚	3	1.5
MC 0303 C7 A60	3	.118	.30	.024	.012	60˚	3	1.5
MC 04035 C9 A60	4	.138	.35	.028	.020	60˚	3	2.0
MC 0404 C10 A60	4	.157	.39	.031	.020	60˚	3	2.0
MC 05045 C11 A60	5	.177	.44	.039	.024	60˚	3	2.0
MC 0505 C12 A60	5	.197	.49	.043	.028	60˚	3	2.0

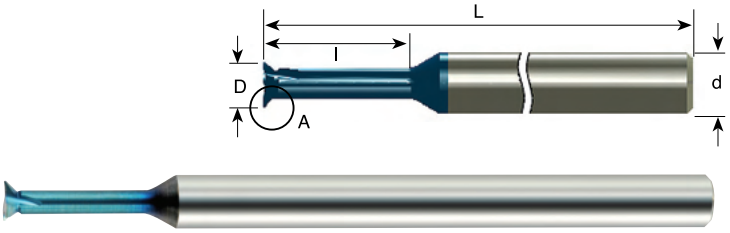
Order example: MC 04035 C9 A60 MT8

Mini Chamfer

Metric Shanks



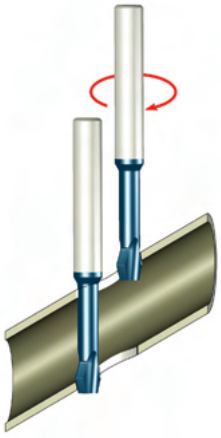


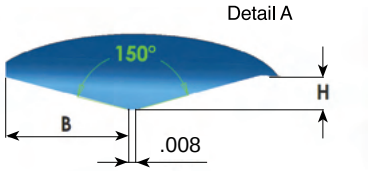


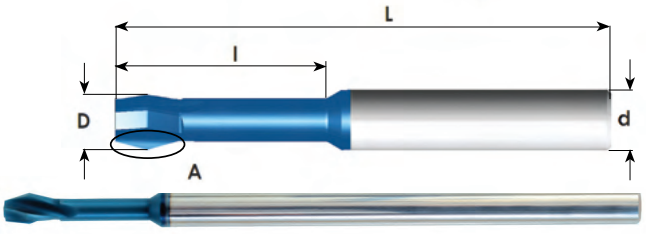
Dovetail 45° *

Ordering Code	d mm	D	l	H	α	No. of Flutes	L
MC 03015 C4 A45	3	.059	.18	.012	45°	3	1.5
MC 0302 C6 A45	3	.079	.24	.016	45°	3	1.5
MC 03025 C7 A45	3	.098	.30	.020	45°	3	1.5
MC 0303 C12 A45	3	.118	.47	.024	45°	3	1.5
MC 04035 C14 A45	4	.138	.55	.028	45°	3	2.0
MC 0404 C16 A45	4	.157	.63	.031	45°	3	2.0
MC 05045 C18 A45	5	.177	.71	.039	45°	3	2.0
MC 0505 C20 A45	5	.197	.79	.043	45°	3	2.0
MC 06055 C22 A45	6	.217	.87	.047	45°	3	2.3
MC 0606 C24 A45	6	.236	.94	.059	45°	3	2.3

* One side cutting







150°

Ordering Code	d mm	D	l	H	B	No. of Flutes	L
MC 0303 C12 A150	3	.118	.47	.024	.087	3	1.5
MC 0404 C16 A150	4	.157	.63	.031	.118	3	2.0
MC 0404 C16L A150	4	.157	.63	.031	.118	3	4.1
MC 0505 C20 A150	5	.197	.79	.039	.150	3	2.0
MC 0505 C20L A150	5	.197	.79	.039	.150	3	4.1
MC 0606 C24 A150	6	.236	.94	.039	.150	3	2.3
MC 0606 C24L A150	6	.236	.94	.039	.150	3	4.1
MC 0808 C28 A150	8	.315	1.10	.039	.150	3	2.5
MC 0808 C28L A150	8	.315	1.10	.039	.150	3	4.1

Order example: MC 0303 C12 A150 MT8

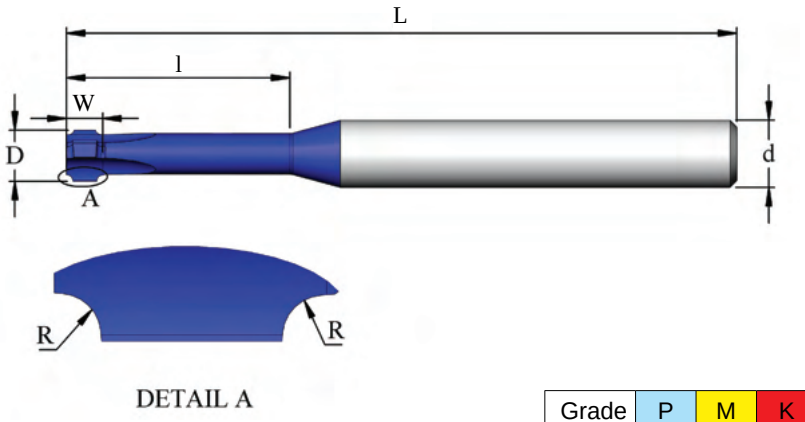
Solid Carbide radius fillet End-Mills

Features

- Tools for different radius filleting
- Two, three and four flutes
- Cylindrical shank DIN6535-HA

Carbide grade: CR3
Ultra-Fine carbide grade with high hardness and toughness provides high cutting edge stability and wear resistance.
A New Generation of PVD Coating for High-Performance Cutting Applications.

Solid Carbide radius fillet End-Mills



Grade	P	M	K	N	S	H
CR3	●	●	●	○	●	≤ 50 HRc

Ordering Code	d mm	D	l	R	W	No. of Flutes	L
MC 0302 B8 R02	3	.079	.31	.008	.06	2	1.5
MC 03025 B9 R03	3	.098	.35	.012	.06	2	1.5
MC 03025 B10 R04	3	.098	.39	.016	.08	2	1.5
MC 0303 B12 R05	3	.118	.47	.020	.09	2	1.5
MC 0605 C20 R05	6	.197	.79	.020	.10	3	2.2
MC 0605 C25 R06	6	.197	.98	.024	.11	3	2.2
MC 0606 C30 R08	6	.236	1.18	.031	.13	3	2.2
MC 08065 C35 R10	8	.256	1.38	.039	.15	3	2.5
MC 08075 D35 R12	8	.295	1.38	.047	.16	4	2.5
MC 10085 D35 R15	10	.335	1.38	.059	.19	4	2.8
MC 1009 D35 R18	10	.354	1.38	.071	.22	4	2.8
MC 1010 D35 R20	10	.394	1.38	.079	.24	4	2.8
MC 1211 D35 R25	12	.433	1.38	.098	.30	4	3.3
MC 1212 D35 R30	12	.472	1.38	.118	.33	4	3.3

Order example: MC 0303 B12 R05 CR3

● First choice ○ Alternative

Countersink Solid Carbide chamfering End-Mills

Features

- Tools for 45˚ and 30˚ chamfering and deburring
- Four flutes
- Cylindrical shank DIN6535-HA (Weldon shank available upon request)

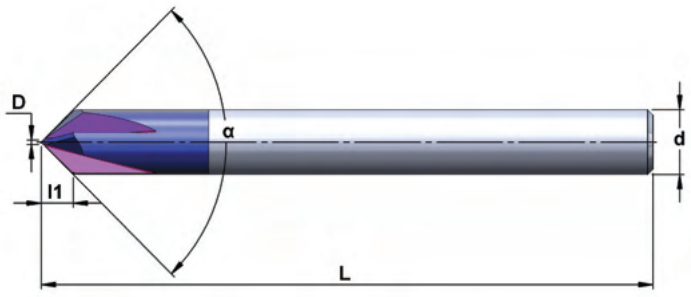
Carbide grades

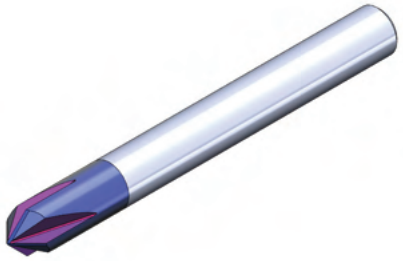
CR3

Ultra-Fine carbide grade with high hardness and toughness provides high cutting edge stability and wear resistance.
A **New Generation** of PVD Coating for High-Performance Cutting Applications

K20

Uncoated Sub-Micron carbide grade for Aluminum and non-ferrous materials, Stainless Steels and Titanium.





Grade	P	M	K	N	S	H
CR3	●	●	●	○	●	≤58 HRc
K20			●	●	○	

Ordering Code	d mm	D	l1	L	No. of Flutes	α
MC03 D A60	3	.008	.09	1.5	4	60˚
MC04 D A60	4	.012	.12	2.0		
MC05 D A60	5	.016	.15	2.0		
MC06 D A60	6	.020	.19	2.2		
MC08 D A60	8	.023	.25	2.5		
MC10 D A60	10	.031	.31	2.8		
MC12 D A60	12	.039	.37	3.3		
MC03 D A90	3	.008	.05	1.5	4	90˚
MC04 D A90	4	.012	.07	2.0		
MC05 D A90	5	.016	.09	2.0		
MC06 D A90	6	.020	.10	2.2		
MC08 D A90	8	.023	.14	2.5		
MC10 D A90	10	.031	.18	2.8		
MC12 D A90	12	.039	.21	3.3		

Order example: MC04 D A90 K20

● First choice ○ Alternative

Carmex Precision Tools Ltd.

Technical Section

Mini Chamfer
Cutting Data

ISO Standard	Materials	Cutting Speed ft/min	Feed inch/tooth Cutting Diameter = D												
			Ø.06	Ø0.8	Ø.12	Ø.16	Ø.20	Ø.24	Ø.28	Ø.31	Ø.35	Ø.39	Ø.47	Ø.55	Ø.63
P	Low & Medium Carbon Steels < 0.55%C	200 - 390	.0011	.0014	.0019	.0025	.0030	.0036	.0039	.0041	.0044	.0044	.0047	.0050	.0050
	High Carbon Steels ≥0.55%C	200 - 390	.0008	.0014	.0017	.0022	.0025	.0028	.0033	.0036	.0039	.0039	.0044	.0047	.0050
	Alloy Steels, Treated Steels	160 - 260	.0008	.0011	.0014	.0014	.0017	.0019	.0019	.0022	.0025	.0028	.0033	.0036	.0039
M	Stainless Steel-Free Cutting	230 - 330	.0006	.0008	.0011	.0014	.0017	.0017	.0019	.0022	.0025	.0028	.0030	.0033	.0036
	Stainless Steel-Austenitic	200 - 300	.0006	.0008	.0011	.0014	.0017	.0017	.0019	.0022	.0025	.0028	.0030	.0033	.0036
	Cast Steels	230 - 300	.0008	.0011	.0014	.0014	.0017	.0019	.0019	.0022	.0025	.0028	.0033	.0036	.0039
K	Cast Iron	130 - 260	.0011	.0014	.0019	.0025	.0030	.0036	.0039	.0041	.0044	.0044	.0047	.0050	.0050
N	Aluminum ≤12%Si, Copper	330 - 660	.0011	.0014	.0019	.0025	.0030	.0036	.0039	.0041	.0044	.0044	.0047	.0050	.0050
	Aluminum >12%Si	200 - 460	.0008	.0008	.0011	.0014	.0017	.0017	.0019	.0022	.0025	.0028	.0030	.0036	.0037
	Synthetics, Duroplastics, Thermoplastics	160 - 660	.0025	.0030	.0033	.0039	.0044	.0050	.0052	.0052	.0052	.0052	.0052	.0055	.0055
S	Nickel Alloys, Titanium Alloys	70 - 130	.0008	.0008	.0011	.0011	.0014	.0017	.0017	.0017	.0019	.0019	.0019	.0022	.0022
H	Hardened Steel, 45-50 HRc	60-70	.0008	.0011	.0014	.0014	.0017	.0017	.0019	.0019	.0022	.0022	.0025	.0028	.0030

Solid Carbide radius fillet End-Mills

Application example

Cutting Data

ISO	Materials	Cutting speed Vc [SFM]	Fz [IPT] cutting diameter				
			Ø.004-Ø.008	Ø.012-Ø.016	Ø.24-Ø.31	Ø.39-Ø.47	Ø.63
P	Low & Medium Carbon Steels <0.55%C	200-230	.0004	.0005	.0006	.0008	.0012
	High Carbon Steels ≥0.55%C	130-200	.0004	.0005	.0006	.0008	.0012
	Alloy Steels, Treated Steels	100-130	.0004	.0005	.0005	.0007	.0010
M	Stainless Steel-Free Cutting	65-100	.0003	.0004	.0004	.0006	.0008
	Stainless Steel-Austenitic	65-100	.0003	.0004	.0004	.0006	.0008
	Cast Steels	65-100	.0003	.0004	.0004	.0006	.0008
K	Cast Iron	100-130	.0004	.0005	.0005	.0007	.0010
N	Aluminum ≤6%Si, Copper	230-330	.0005	.0005	.0006	.0008	.0012
	Aluminum >6%Si	300-490	.0005	.0005	.0006	.0008	.0012
	Synthetics, duroplastics, thermoplastics	330-490	.0006	.0010	.0012	.0016	.0020
S	Nickel alloys, Titanium alloys.	50-100	.0003	.0004	.0004	.0006	.0008
H	Hardened Steel, ≤50 HRc	65-130	.0003	.0004	.0005	.0007	.0010

Countersink

Cutting Data

ISO	Materials Class	Cutting Speed Vc [SFM]
P	Low & Medium Carbon Steels <0.55%C	390-790
	High Carbon Steels ≥0.55%C	260-590
	Alloy Steels, Treated Steels	160-390
M	Stainless Steel-Free Cutting	230-330
	Stainless Steel-Austenitic	200-460
	Cast Steels	230-330
K	Cast Iron	260-520
N	Aluminum ≤6%Si, Copper	490-1640
	Aluminum >6%Si	330-820
	Synthetics, duroplastics, thermoplastics	260-660
S	Nickel alloys, Titanium alloys.	100-30
H	Hardened Steel, ≤50 HRc	200-230
	Hardened Steel, 51≤58 HRc	160-200

d mm	Feed fz [IPT]
Ø3-Ø4	.0016-.0024
Ø5-Ø6	.0020-.0028
Ø8	.0024-.0031
Ø10	.0028-.0039
Ø12	.0031-.0059

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

Special Solid Carbide Tools

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

Gear Milling

B16

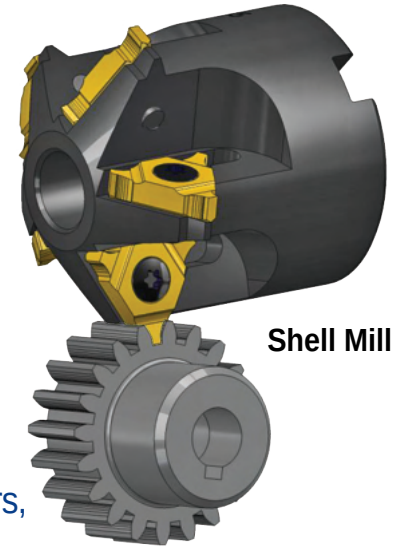
Contents:	Page:	Contents:	Page:
Introduction	2	CMT- Multi Spiral Flute	3
Indexable inserts and holder - U Type	2	Indexable inserts and holder - V type	4
Mini Mill Thread - MTI	3	Applying a Gear Milling request	4
CMT- Vertical Milling	3		

Gear Milling

Innovative tools for producing Gears, Spline and Rack offering versatile solutions according to customer's application.
Wide range of inserts geometries and grades.

Profiles according to DIN 5480, DIN 867, ANSI B92.1 standards.

Carmex Gear Milling line is based on standard or special toolholders and custom made inserts according to customer's application, for maximum flexibility and short delivery time. All tools profile are fully ground and highly accurate.



Shell Mill

High Flexibility

- Same tool can be used for different gear sizes and profiles
- Variety of production options on advanced machining centers, multi task machines and 5 axis machines
- In most cases the components can be machined with just one setup

Indexable inserts and holder - U Type

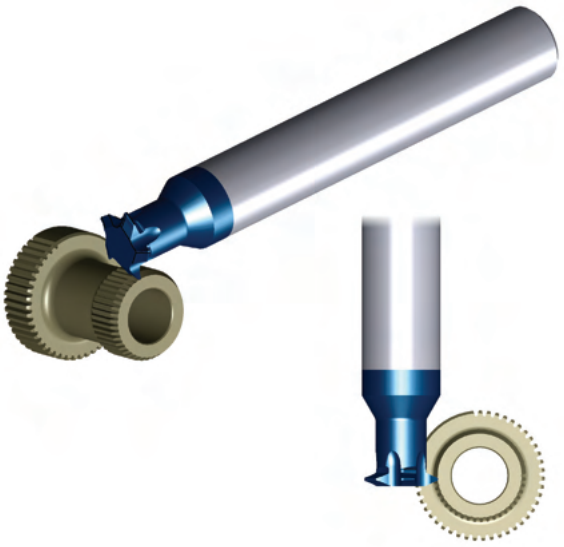
- Inserts with up to three cutting edges
- Multi flute
- For relatively large profiles, and high-powered cuts
- High precision insert's pockets and insert's tips to ensure small run-outs

Weldon shank

Gear Milling

Mini Mill Thread - MTI

- Solid carbide tool for high rigidity and stability
- For small and medium profiles
- 3 to 6 cutting edges
- Large range of carbide grades

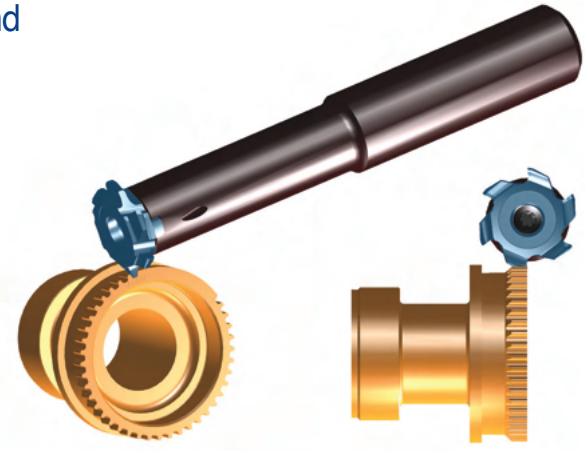


CMT - Vertical Milling

- Vertical gear milling cutters with indexable inserts
- 3 to 4 cutting edges
- Standard steel or carbide CMT toolholders
- With internal coolant

CMT - Multi Spiral Flute

- Multi spiral flute (6 to 8) for high performance and smooth cutting
- Standard steel or carbide CMT toolholders
- With internal coolant



Indexable inserts and holder - V type

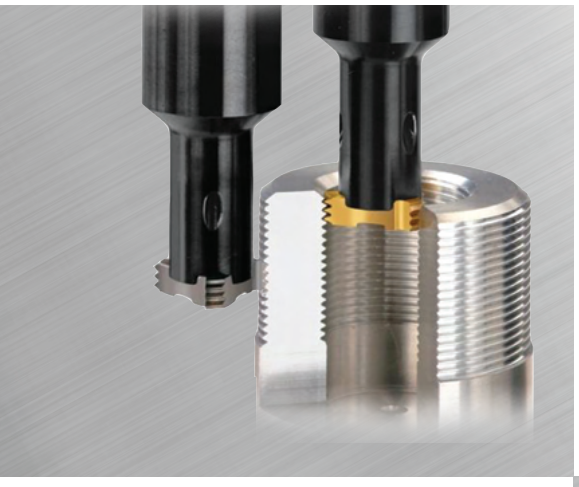
- Inserts with up to three cutting edges
- High precision inserts pocket and inserts tip to ensure small run-outs

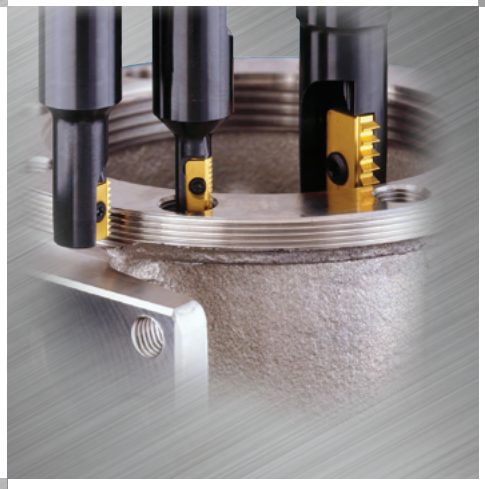
Disc Mill

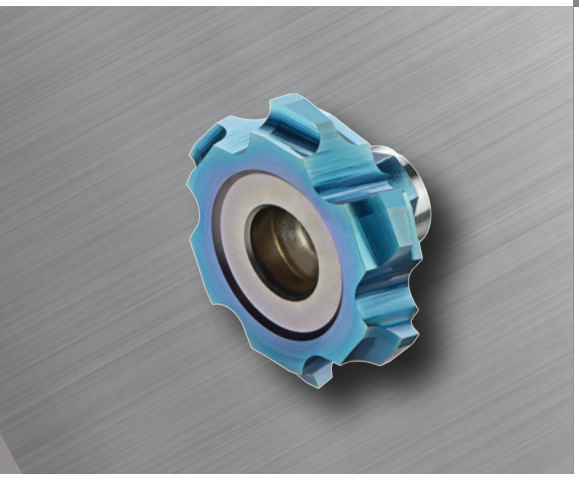
Appling a Gear Milling request

Every Gear / Spline request has its own geometry and specifications, in order to provide the best solution the following data is needed:

- Gear / Spline standard
- Complete drawing of the required Gear / Spline standard, according the following specifications:
  - Shape of tooth
  - Number of teeth
  - Major pitch and minor diameter
  - Quality requirements
  - Gear / Spline material
- Preferred solution: Solid carbide or holder with inserts







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