



Carmex
Precision Tools Ltd.
The optimal tools for your industry™



Inch 2018-19

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 18001:2007 and CE. Most of our customers' requirements are supplied immediately from our readily available wide range of inventory as well as from our agents and distributor's stocks around the world. In August 2008 Carmex completed its transfer to the new, state-of-the-art modern building. In addition to the construction we invested in advanced machinery and equipment as part of our strategy to keep our position in the first line of high technology.

Carmex Branches

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

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

2004 - Carmex Precision Tools, LLC, a sales branch in 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.



THE STANDARDS INSTITUTION OF ISRAEL

ISO 9001-2015
Quality Management
Systems



THE STANDARDS INSTITUTION OF ISRAEL

ISO 13485:2016
Medical Devices
Quality Management
Systems



THE STANDARDS INSTITUTION OF ISRAEL

ISO 14001:2015
Environmental
Management
Systems



THE STANDARDS INSTITUTION OF ISRAEL

OHSAS 18001:2007
Occupational
Health and Safety
Management Systems

CE 0470
European Conformity

EU consumer safety,
health and
environmental
requirements

Thread - Turning

New HBA Grade

A new 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). Available for inserts sizes: 11, 16, 22, 27.

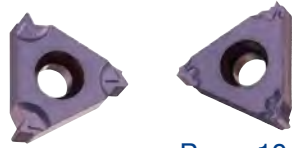


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Type B

Ground Profile with Sintered Chip breaker

- Size 11 mm inserts



Page: 10

New Profiles

- Inserts for PAC & Hughes threads.
- API 5B V-0.055 Macaroni Tubing.

Pages: 36 and 38

External Thread Turning Toolholder

with Internal Coolant

A top clamp directing the coolant flow to the cutting edge.



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Quick Change

Polygon Threading Toolholders



Page: 50

Tiny Tools

MZL Bars - Face Grooving



Page: 102

CMR -

Carmex Multi-Task Tiny Tools



Page: 103

CBR - Boring

and Profiling With advanced Chip Breaker



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HK -

Broaching Tools for Hexagon Keys



Page: 105

Square Shank Holders

For Swiss Type machines



Page: 111

New Products for most of the existing applications & new holders.

Page: 81-111

Mini Tools

- Carmex presents Mini Tools, a new generation of vertical inserts and toolholders for threading, chamfering, grooving and turning, from 8 mm min. diameter.

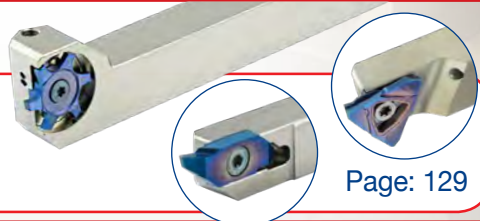
- Steel holders are also available.



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Swiss Line

- Carmex is introducing a new line of inserts and toolholders, developed for automatic lathes and Swiss Type machines.
- Designed for economic parting, grooving, profiling and chamfering mass production.



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Milling

Mini Spiral Mill - Thread

- Spiral fluted toolholders hold 1 to 3 inserts.
- Comparatively small cutting diameters.
- Reduced machining time.



Pages: 193-204

Deep Reach Mill - Thread

- Carmex modular holders are ideal for deep reach applications.
- Cost saving - Same shank can hold different heads.
- Screw connection allows long overhang.



Pages: 205-208

CMT - Vertical Milling

- Spiral multi flute inserts
- CMT multi inserts milling cutters



Pages: 209-234

FMT - Fast Mill - Thread

Carmex has designed a unique line of solid carbide thread milling tools for increased productivity and high performance.



Page: 248

EMT

Mill - Thread Solid Carbide for External Threads.



Page: 256-257

AMT

Solid carbide thread mills for High-speed Aluminum machining.



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MTSB

New innovative solid carbide thread milling cutters with internal coolant Bore.

- High coolant pressure washes the chips away to help prevent recutting.
- High pressure coolant extends tool life.



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MGD - Groove Milling

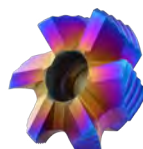
- With internal coolant through the flutes
- Same tool for Internal and External Grooving



Page: 312

CR - Supercut Roughers

- High Performance Cutting (HPC).
- Extremely high material removal rate.
- Indexable CMT roughers for excellent performance.



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Main Content

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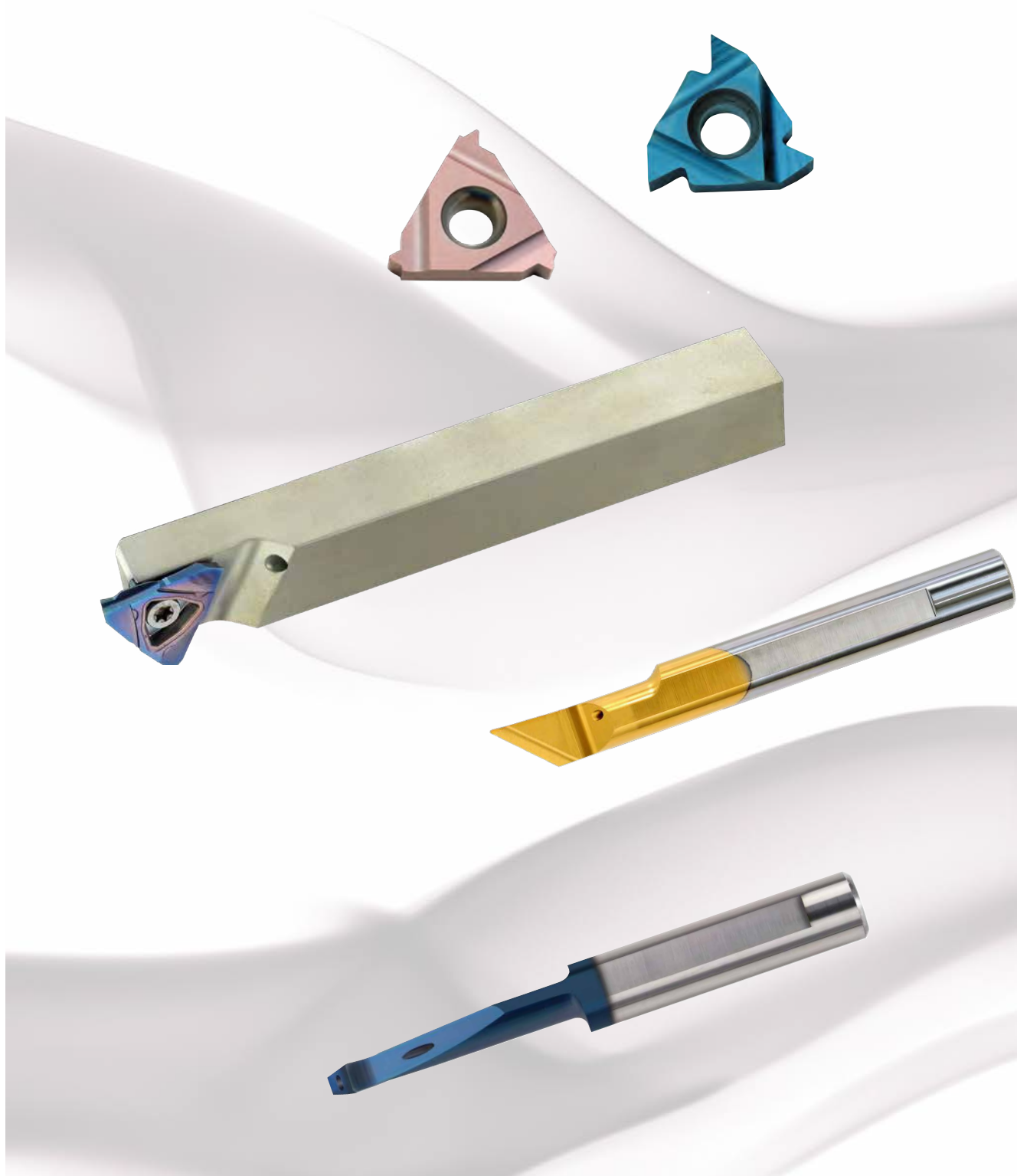
Turning Tools

1-168

Milling Tools

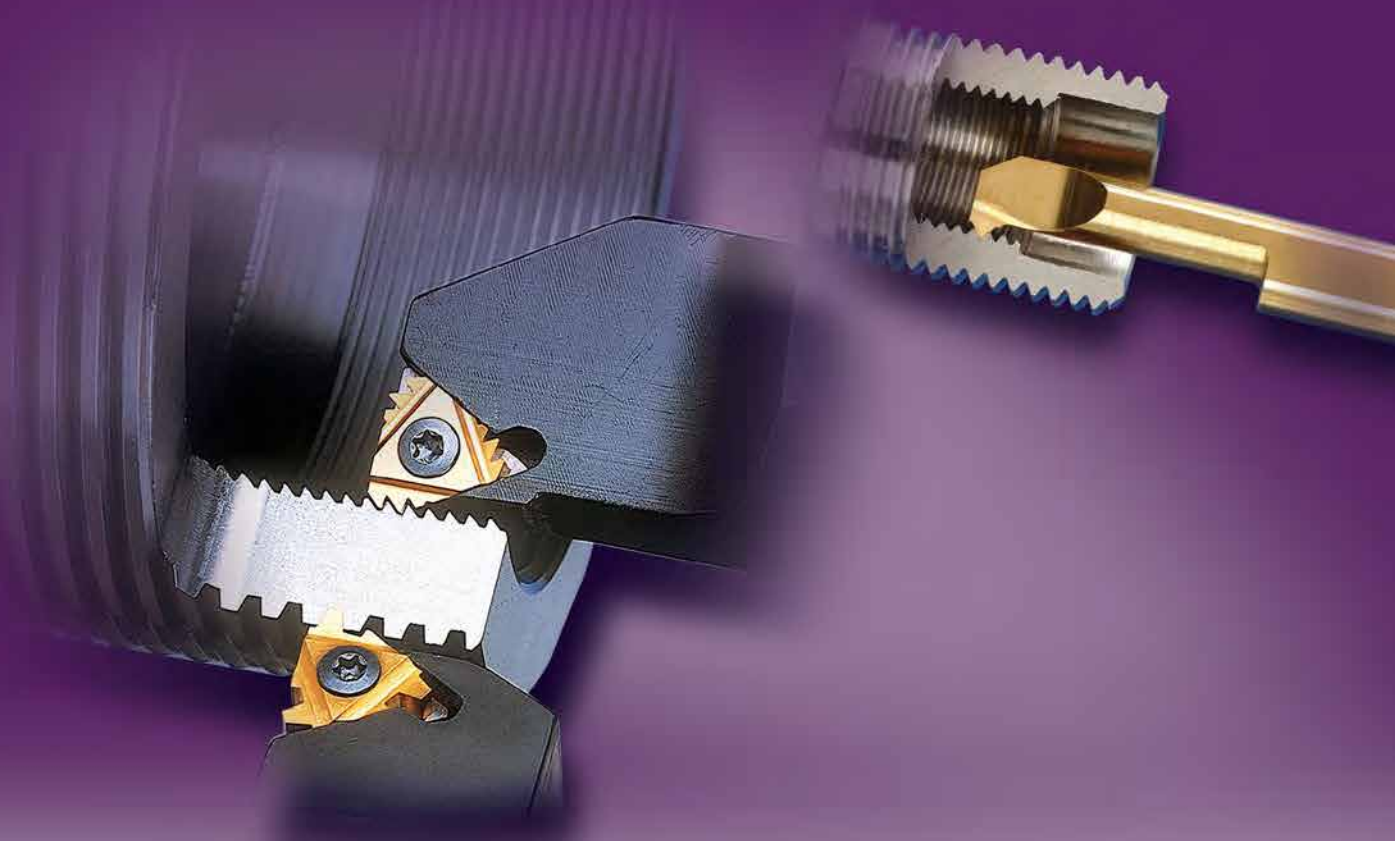
169-328

Turning Tools



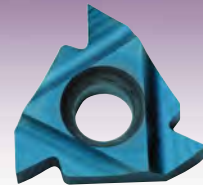
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Thread Turning Inserts



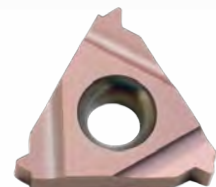
BLU Grade

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



HBA Grade

An 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 (Hastelloy, Inconel, and Nickel based alloys).



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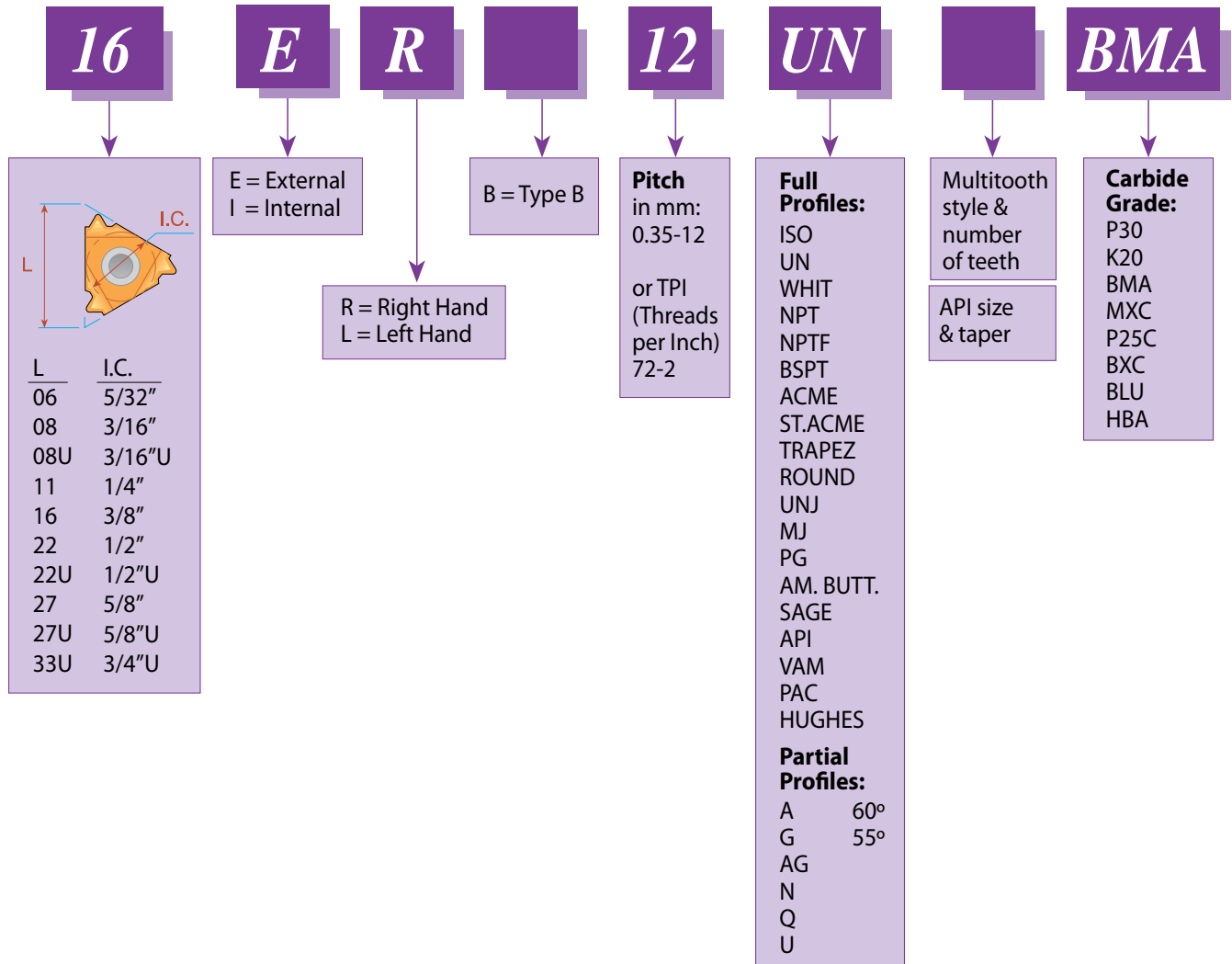
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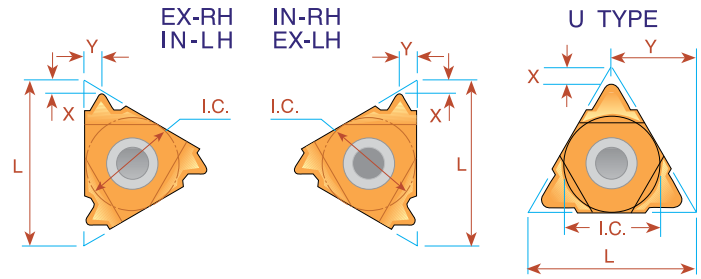
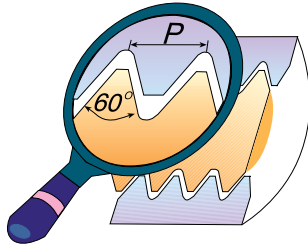
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Product Identification

Thread Turning Inserts Ordering Codes



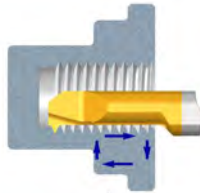
Partial Profile 60°



| L mm | I.C. | Pitch Range | | EXTERNAL Ordering Code | | INTERNAL Ordering Code | | X | Y |
|---------|-------|-------------|-----------|----------------------------------|------------|----------------------------------|------------|-----|-----|
| | | mm | TPI | Right Hand | Left Hand | Right Hand | Left Hand | | |
| 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 88
 * Available only in BXC and BMA grade



Type B Ground Profile with Sintered Chip-breaker

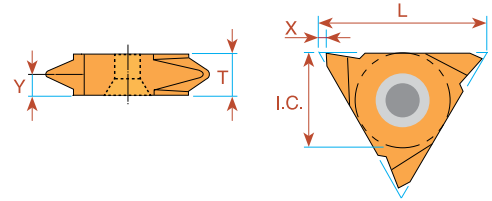


| L mm | I.C. | Pitch Range | | EXTERNAL Ordering Code | INTERNAL Ordering Code | X | Y |
|---------|------|-------------|-------|----------------------------------|----------------------------------|-----|-----|
| | | mm | TPI | Right Hand | Right Hand | | |
| 16 | 3/8 | 0.5 -1.5 | 48-16 | 16 ER B A60 | 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 66-67

Partial Profile 60° Vertical

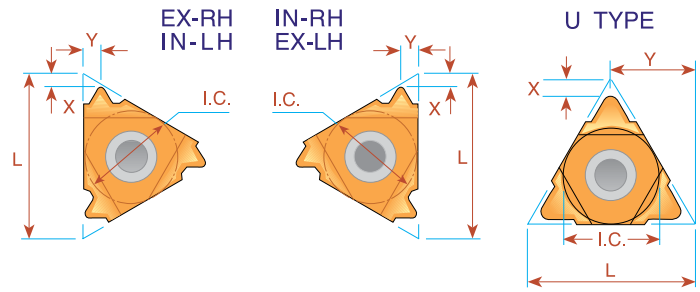
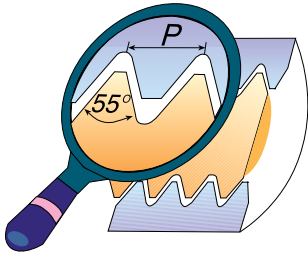


| L mm | I.C. | Pitch Range | | EXTERNAL Ordering Code | | INTERNAL Ordering Code | | X | Y | T |
|---------|------|-------------|--------|----------------------------------|--------------------|----------------------------------|-------------------|-----|-----|-----|
| | | mm | TPI | Right Hand | Left Hand | Right Hand | Left Hand | | | |
| 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 66-67

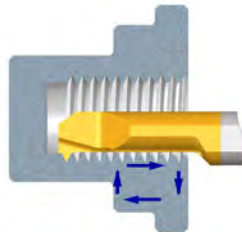
Partial Profile 55°



| L mm | I.C. | Pitch Range | | EXTERNAL | | INTERNAL | | X | Y |
|---------|-------|-------------|-----------|-----------------------------|----------------------------|-----------------------------|----------------------------|-----|-----|
| | | mm | TPI | Ordering Code Right Hand | Ordering Code Left Hand | Ordering Code Right Hand | Ordering Code Left Hand | | |
| 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 88
* Available only in BXC and BMA grades



Type B

Ground Profile with Sintered Chip-breaker

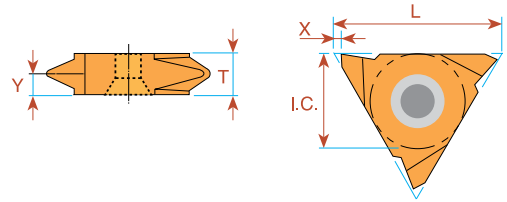


| L mm | I.C. | Pitch Range | | EXTERNAL | INTERNAL | X | Y |
|---------|------|-------------|------|-----------------------------|-----------------------------|-----|-----|
| | | mm | TPI | Ordering Code Right Hand | Ordering Code Right Hand | | |
| 16 | 3/8 | 1.75-3.0 | 14-8 | 16 ER B G55 | 16 IR B 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 66-67

Partial Profile 55° Vertical

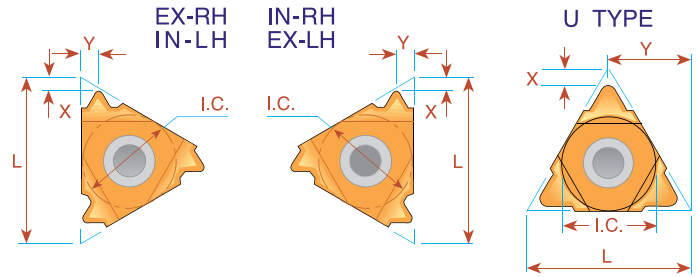
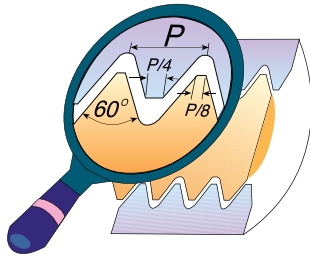


| L mm | I.C. | Pitch Range | | EXTERNAL Ordering Code | | INTERNAL Ordering Code | | X | Y | T |
|---------|------|-------------|--------|----------------------------------|--------------------|----------------------------------|-------------------|-----|-----|-----|
| | | mm | TPI | Right Hand | Left Hand | Right Hand | Left Hand | | | |
| 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 66-67

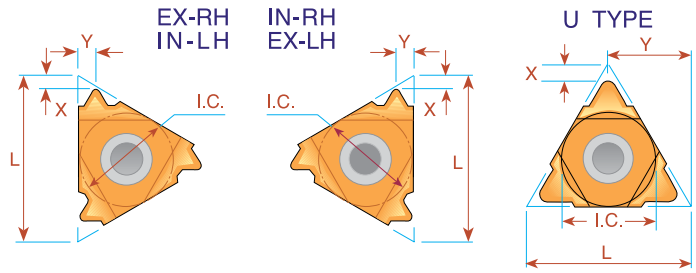
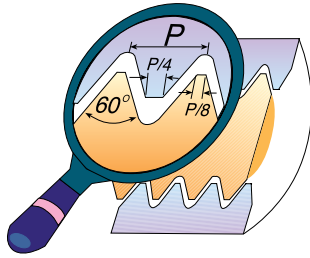
ISO - metric



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

* Available only in BXC and BMA grades

ISO - metric

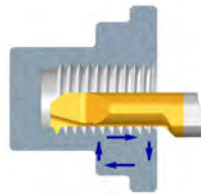


| Pitch mm | L mm | I.C. | EXTERNAL | | | | INTERNAL | | | |
|------------|-----------|------------|--------------------------|-----------------------|-----|-----|--------------------------|----------------------|-----|-----|
| | | | Ordering Code | | X | Y | Ordering Code | | X | Y |
| Right Hand |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

Order example: 22 IR 3.5 ISO BMA

* Special holder required

For small bore threading see page 89



Type B

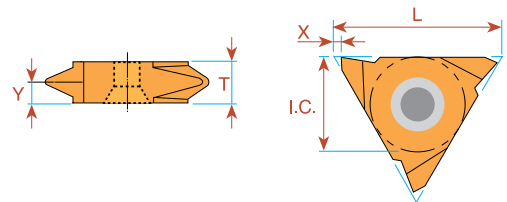
Ground Profile with Sintered Chip-breaker

| Pitch mm | L | I.C. in | EXTERNAL | | | INTERNAL | | |
|----------|----|---------|--------------------------|-----|-----|--------------------------|-----|-----|
| | | | Ordering Code Right Hand | X | Y | 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 66-67

ISO - metric Vertical



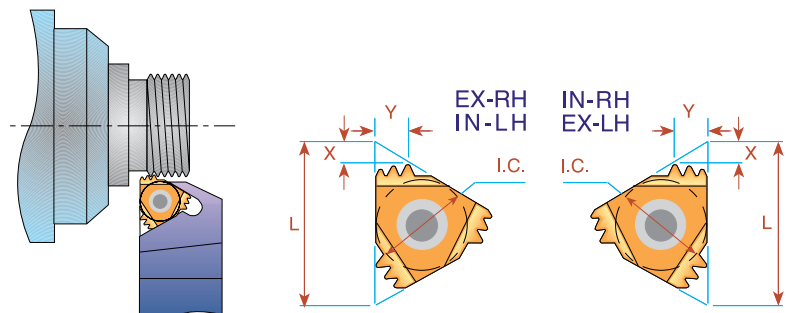
| Pitch mm | L mm | I.C. | EXTERNAL | | INTERNAL | | X | Y | T |
|-------------|---------|------|------------------------|------------------------|------------------------|-----------------------|-----|-----|-----|
| | | | Right Hand | Left Hand | Right Hand | Left Hand | | | |
| 0.5 | 16 | 3/8 | 16V 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



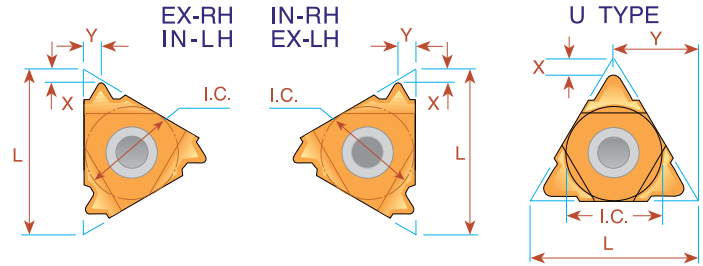
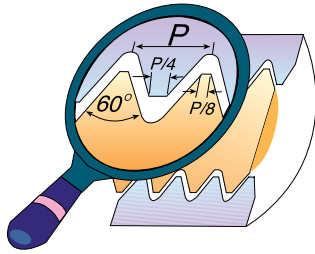
| Pitch mm | L mm | I.C. | Number of Teeth | EXTERNAL | Anvil | INTERNAL | Anvil | X | Y |
|-------------|---------|------|--------------------|-------------------------|-------|-------------------------|-------|-----|-----|
| | | | | Ordering Code | | Ordering Code | | | |
| 1.0 | 16 | 3/8 | 3 | 16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

Order example: 22 IR B 2.0 ISO 2M BMA

For recommended number of passes see page 68

For Carbide Grade and Cutting Speed see page 66-67

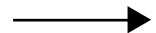
UN - Unified UNC, UNF, UNEF, UNS



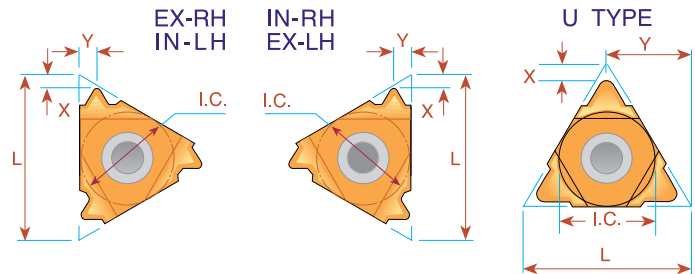
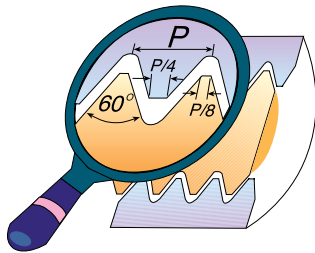
| Pitch TPI | L mm | I.C. | EXTERNAL | | | | INTERNAL | | | |
|--------------|-----------|------------|-----------------|-------------|---------------|-----------------|---------------|-------------|-----|-----|
| | | | Ordering Code | | X | Y | Ordering Code | | X | Y |
| Right Hand | Left Hand | Right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

* Available only in BXC and BMA grades

** To be used with Holder SIR 0354 K08 on page 52



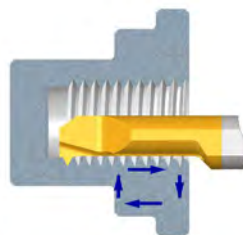
UN - Unified **UNC, UNF, UNEF, UNS**



| Pitch TPI | L mm | I.C. | EXTERNAL | | | | INTERNAL | | | |
|--------------|---------|------|------------------------|----------------------|-----|-----|------------------------|----------------------|-----|-----|
| | | | Ordering Code | | X | Y | Ordering Code | | X | Y |
| | | | Right Hand | Left Hand | | | Right Hand | Left Hand | | |
| 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 |

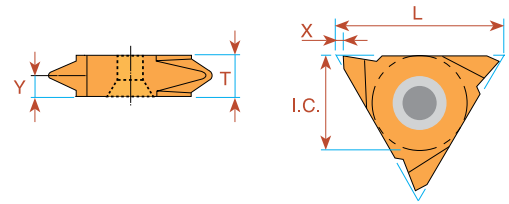
Order example: 22ER 7 UN BMA

For small bore threading see page 89



For Carbide Grade and Cutting Speed see page 66-67

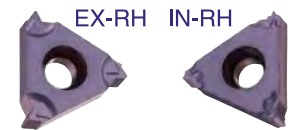
UN - Unified Vertical



| Pitch TPI | L mm | I.C. | EXTERNAL | | INTERNAL | | X | Y | T |
|--------------|---------|------|-----------------------------|----------------------------|-----------------------------|----------------------------|-----|-----|-----|
| | | | Ordering Code Right Hand | Ordering Code Left Hand | Ordering Code Right Hand | Ordering Code Left Hand | | | |
| 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 Type B UNC, UNF, UNEF, UNS

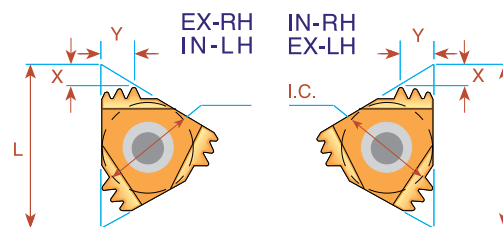
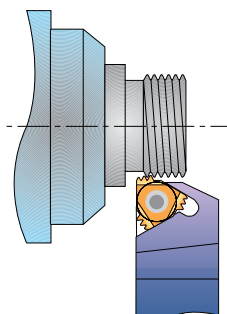


Ground Profile with Sintered Chip-breaker

| Pitch TPI | L | I.C. in | EXTERNAL | X | Y | INTERNAL | X | Y |
|--------------|----|------------|-----------------------------|-----|-----|-----------------------------|-----|-----|
| | | | Ordering Code Right Hand | | | Ordering Code Right Hand | | |
| 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



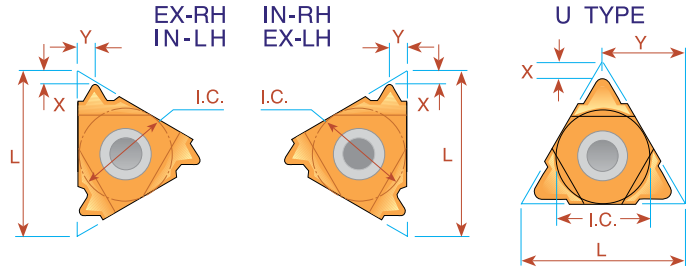
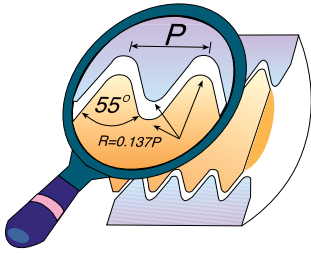
| Pitch TPI | L | I.C. in | Number of Teeth | EXTERNAL | | INTERNAL | | X | Y |
|--------------|----|------------|--------------------|-----------------------|-------|-----------------------|-------|-----|-----|
| | | | | Ordering Code | Anvil | Ordering Code | Anvil | | |
| 24 | 16 | 3/8 | 2 | 16 ER 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 | - | AI22M | .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 68

For Carbide Grade and Cutting Speed see page 66-67

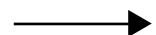
Whitworth - 55° BSW, BSF, BSP, BSB



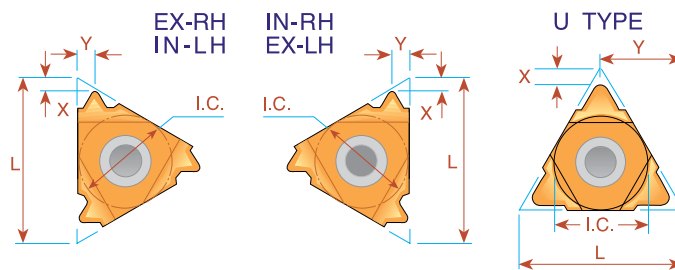
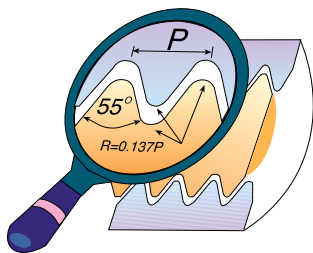
| Pitch TPI | L mm | I.C. | EXTERNAL | | INTERNAL | | X | Y |
|--------------|---------|-------|-----------------------------|----------------------------|-----------------------------|----------------------------|-----|-----|
| | | | Ordering Code Right Hand | Ordering Code Left Hand | Ordering Code Right Hand | Ordering Code Left Hand | | |
| 26 | 6 | 5/32 | <i>ULTRA MINIATURE</i> → | | *06 IR 26 W | *06 IL 26 W | .03 | .02 |
| 22 | 6 | 5/32 | | | *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 | <i>MINIATURE</i> → | | *08 IR 28 W | *08 IL 28 W | .02 | .02 |
| 24 | 8 | 3/16 | | | *08 IR 24 W | *08 IL 24 W | .02 | .02 |
| 20 | 8 | 3/16 | | | *08 IR 20 W | *08 IL 20 W | .02 | .03 |
| 19 | 8 | 3/16 | | | *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 | <i>"U" MINIATURE</i> → | | *08U IR/L 14 W | | .04 | .16 |
| 12 | 8U | 3/16U | | | *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 |

* Available only in BXC and BMA grades

(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 | | INTERNAL | | X | Y |
|--------------|---------|------|------------------|-------------|-----------------|-------------|-----|-----|
| | | | Ordering Code | | Ordering Code | | | |
| | | | Right Hand | Left Hand | Right Hand | Left Hand | | |
| 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/R/L 4.5 W | | | | .09 | .43 |
| 4 | 22U | 1/2U | 22U E/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/R/L 3.5 W | | | | .08 | .54 |
| 3.25 | 27U | 5/8U | 27U E/R/L 3.25 W | | | | .08 | .54 |
| 3 | 27U | 5/8U | 27U E/R/L 3 W | | | | .09 | .54 |
| 2.75 | 27U | 5/8U | 27U E/R/L 2.75 W | | | | .09 | .54 |

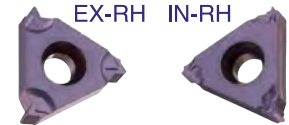
Order example: 16 IR 18 W BMA

For Carbide Grade and Cutting Speed see page 66-67

Whitworth - 55° BSW, BSF, BSP, BSB

Type B

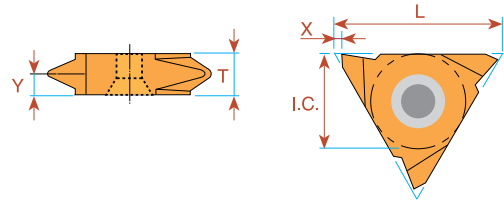
Ground Profile with Sintered Chip-breaker



| Pitch TPI | L | I.C. in | EXTERNAL | INTERNAL | X | Y |
|--------------|----|------------|-----------------------------|-----------------------------|-----|-----|
| | | | Ordering Code Right Hand | Ordering Code Right Hand | | |
| 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

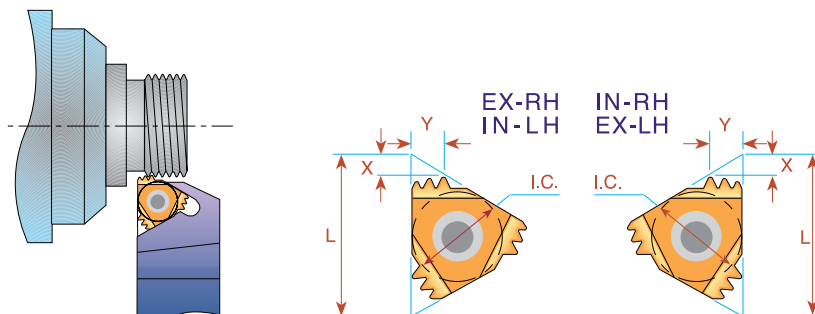
Vertical



| Pitch TPI | L mm | I.C. | EXTERNAL | EXTERNAL | X | Y | T |
|--------------|---------|------|-----------------------------|----------------------------|-----|-----|-----|
| | | | Ordering Code Right Hand | Ordering Code Left Hand | | | |
| 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



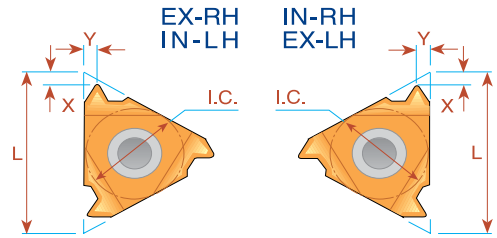
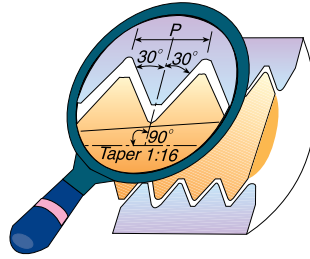
| Pitch TPI | L mm | I.C. | Number of Teeth | EXTERNAL Ordering Code | Anvil | INTERNAL Ordering Code | Anvil | X | Y |
|--------------|---------|------|--------------------|----------------------------------|-------|----------------------------------|-------|-----|-----|
| 14 | 16 | 3/8 | 2 | 16 ER 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 68

For Carbide Grade and Cutting Speed see page 66-67

NPT



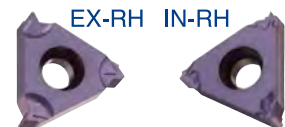
| Pitch TPI | L mm | I.C. | EXTERNAL | | INTERNAL | | X | Y |
|--------------|---------|------|-----------------------------|----------------------------|-----------------------------|----------------------------|-----|-----|
| | | | Ordering Code Right Hand | Ordering Code Left Hand | Ordering Code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

Order example: 16 ER 14 NPT MXC

* Available only in BXC and BMA grades

Type B

Ground Profile with Sintered Chip-breaker

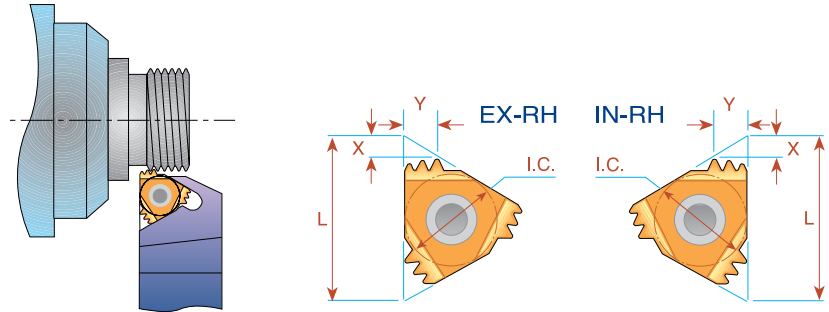


| Pitch TPI | L | I.C. in | EXTERNAL | | INTERNAL | | X | Y |
|--------------|----|------------|-----------------------------|--|-----------------------------|--|-----|-----|
| | | | Ordering Code Right Hand | | Ordering Code Right Hand | | | |
| 18 | 11 | 1/4 | | | 11 IR B 18 NPT | | .03 | .04 |
| 18 | 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 66-67

NPT Multitooth

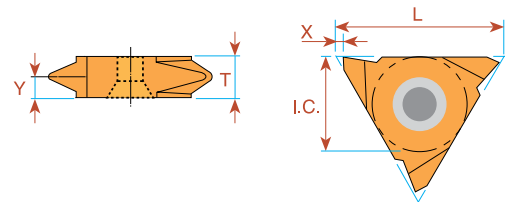


| Pitch TPI | L mm | I.C. | Number of Teeth | EXTERNAL Ordering Code | Anvil | INTERNAL Ordering Code | Anvil | X | Y |
|--------------|---------|------|--------------------|----------------------------------|-------|----------------------------------|-------|-----|-----|
| 14 | 16 | 3/8 | 2 | 16 ER 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 68

NPT Vertical

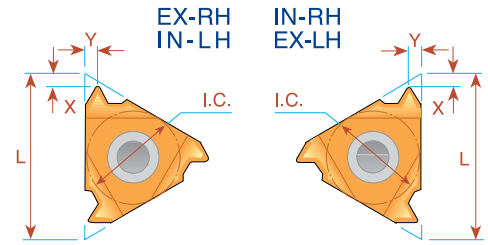
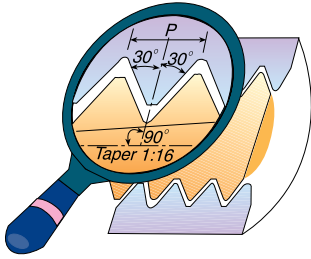


| Pitch TPI | L mm | I.C. | EXTERNAL Ordering Code Right Hand | EXTERNAL Ordering Code Left Hand | X | Y | T |
|--------------|---------|------|--|---|-----|-----|-----|
| 27 | 16 | 3/8 | 16V ER 27 NPT | 16V EL 27 NPT | .04 | .03 | .14 |
| 18 | 16 | 3/8 | 16V ER 18 NPT | 16V EL 18 NPT | .04 | .04 | .14 |
| 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 66-67

NPTF - Dryseal



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

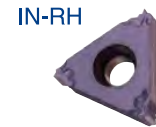
Order example: 11 ER 27 NPTF MXC

* Available only in BXC and BMA grades

Type B

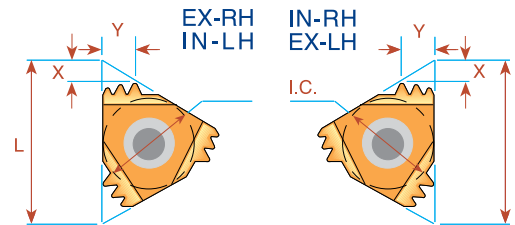
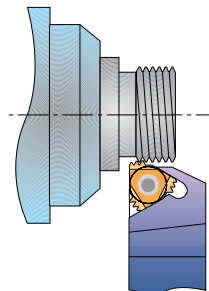
Ground Profile with Sintered Chip-breaker

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



For Carbide Grade and Cutting Speed see page 66-67

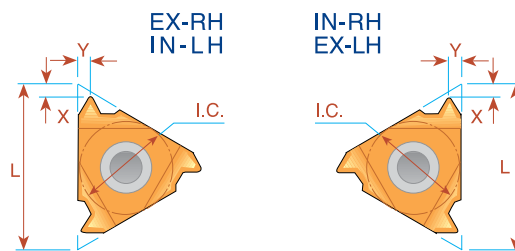
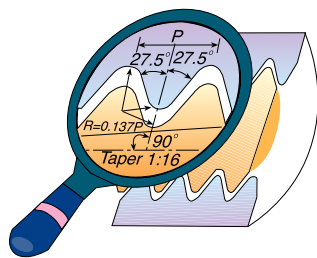
Multitooth



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

For Carbide Grade and Cutting Speed see page 66-67

BSPT



| Pitch TPI | L mm | I.C. | EXTERNAL | | INTERNAL | | X | Y |
|--------------|---------|------|-----------------------------|----------------------------|------------------------------|------------------------------|-----|-----|
| | | | Ordering Code Right Hand | Ordering Code Left Hand | Ordering Code Right Hand | Ordering Code Left Hand | | |
| 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 |

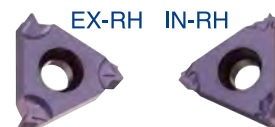
Order example: 11 IR 14 BSPT BMA

* Available only in BXC and BMA grades

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

Type B

Ground Profile with Sintered Chip-breaker

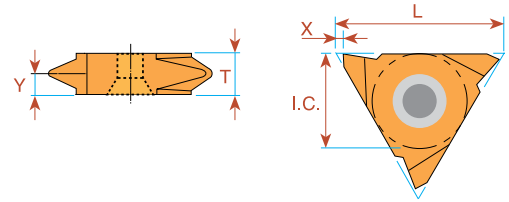


| Pitch TPI | L mm | I.C. | EXTERNAL | | INTERNAL | | X | Y |
|--------------|---------|------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----|-----|
| | | | Ordering Code Right Hand | Ordering Code Right Hand | Ordering Code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

Order example: 16 ER B 11BSPT BMA

For Carbide Grade and Cutting Speed see page 66-67

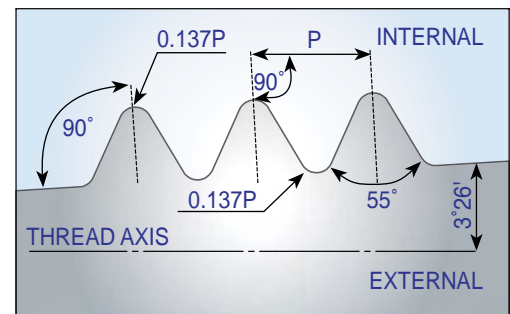
BSPT Vertical



| Pitch TPI | L mm | I.C. | EXTERNAL | EXTERNAL | X | Y | T |
|--------------|---------|------|-----------------------------|----------------------------|-----|-----|-----|
| | | | Ordering Code Right Hand | Ordering Code Left Hand | | | |
| 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 | I.C. in | Taper Ratio | EXTERNAL | INTERNAL | X | Y | Thread Designation |
|--------------|----|------------|----------------|-----------------------------|-----------------------------|-----|-----|-----------------------|
| | | | | Ordering Code Right Hand | Ordering Code Right Hand | | | |
| 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 |

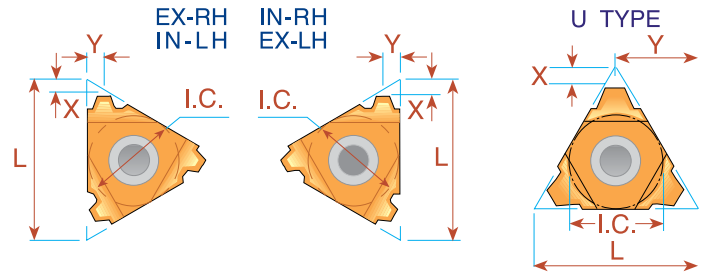
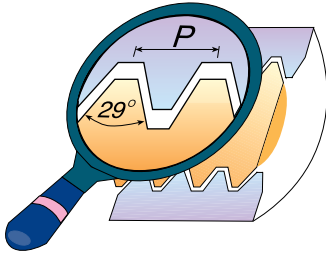
* Holder to use: SIR0375H11/SIR0375K11

** Holder to use: SIR0625H16

*** Holder to use: SIR0750P16

For Carbide Grade and Cutting Speed see page 66-67

Acme



| Pitch TPI | L mm | I.C. | EXTERNAL | | INTERNAL | | X | Y |
|--------------|---------|-------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|-----|-----|
| | | | Ordering Code | | Ordering Code | | | |
| | | | Right Hand | Left Hand | Right Hand | Left Hand | | |
| 16 | 8 | 3/16 | <i>MINIATURE</i> → | | **08 IR 16 ACME | **08 IL 16 ACME | .02 | .02 |
| 14 | 8U | 3/16U | <i>"U" MINIATURE</i> → | | *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 |

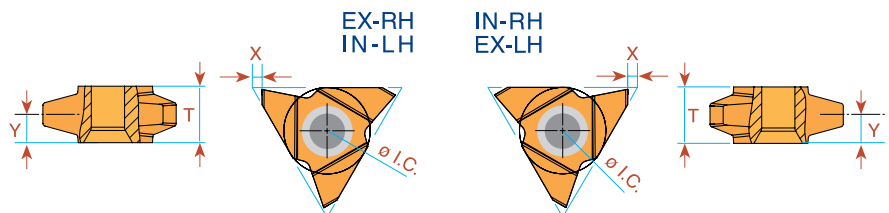
Order example: 16 ER 16 ACME MXC

* Available only in BXC and BMA grades

** One cutting edge

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

Acme Vertical



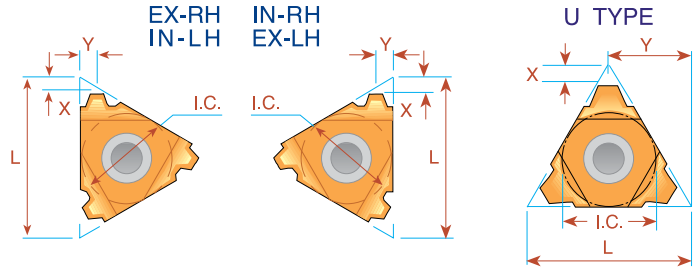
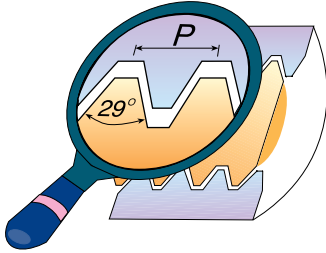
| Pitch TPI | L mm | I.C. | EXTERNAL | | X | Y | T | INTERNAL | | X | Y | T |
|--------------|---------|------|------------------------|----------------------|-----|-----|-----|------------------------|----------------------|-----|-----|-----|
| | | | Ordering Code | | | | | Ordering Code | | | | |
|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

Order example: 27V ER 2 ACME BMA

* Minimum bore: Ø2.17" ** Minimum bore: Ø2.17" *** Minimum bore: Ø3"

For Carbide Grade and Cutting Speed see page 66-67

Stub Acme



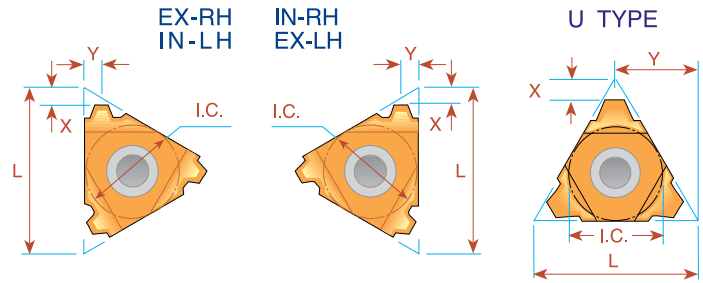
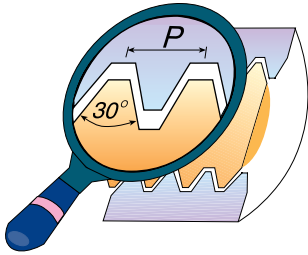
| Pitch TPI | L mm | I.C. | EXTERNAL | | INTERNAL | | X | Y |
|--------------|---------|-------|--------------------------|------------------------|----------------------------|--------------------------|-----|-----|
| | | | Right Hand | Left Hand | Right Hand | Left Hand | | |
| 16 | 8 | 3/16 | <i>MINIATURE</i> → | | **08 IR 16 STACME | **08 IL 16 STACME | .02 | .02 |
| 14 | 8U | 3/16U | <i>"U" MINIATURE</i> → | | *08U IR/L 14 STACME | | .03 | .16 |
| 12 | 8U | 3/16U | | | *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 |

Order example: 22 IR 5 STACME MXC

* Available only in BXC and BMA grades

** One cutting edge

Trapez - DIN 103



| Pitch mm | L mm | I.C. | EXTERNAL Ordering Code | | INTERNAL Ordering Code | | X | Y |
|----------|------|-------|---------------------------|---------------|---------------------------|----------------|-----|-----|
| | | | Right Hand | Left Hand | Right Hand | Left Hand | | |
| 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 |

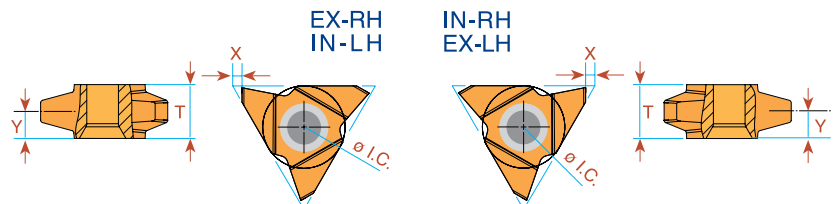
Order example: 22 IR 5 TR MXC

* Available only in BXC and BMA grades

** One cutting edge

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

Trapez - DIN 103 Vertical



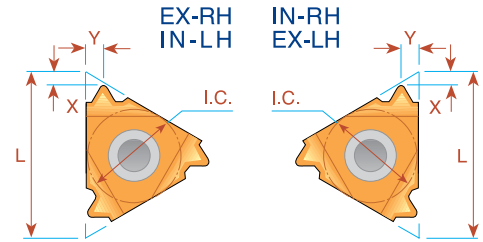
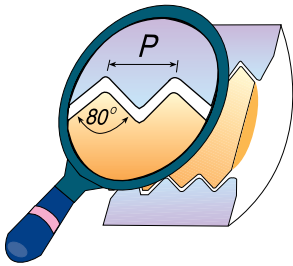
| Pitch mm | L mm | I.C. | EXTERNAL Ordering Code | | INTERNAL Ordering Code | | X | Y | T |
|----------|------|------|---------------------------|--------------|---------------------------|--------------|-----|-----|-----|
| | | | Right Hand | Left Hand | Right Hand | Left Hand | | | |
| * 9 | 27 | 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 66-67

PG - DIN 40430

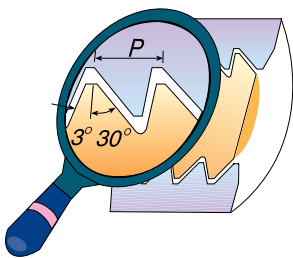


| Pitch TPI | L mm | I.C. | EXTERNAL | | INTERNAL | | X | Y |
|--------------|---------|------|-------------|-------------------------|--------------|-------------------------|-----|-----|
| | | | Right Hand | Standard | Right Hand | Standard | | |
| 20 | 8 | 3/16 | MINIATURE → | | *08 IR 20 PG | (PG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

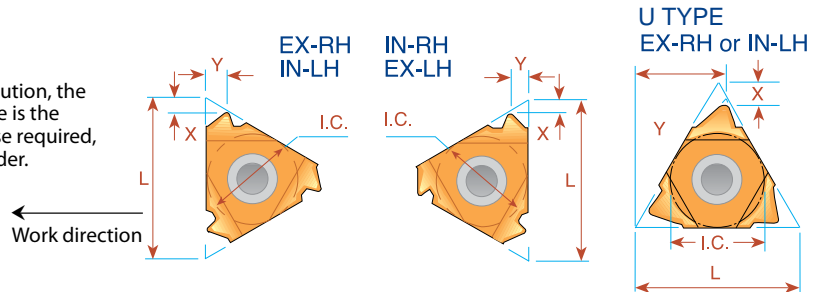
Order example: 16 ER 16 PG BMA

* Available only in BXC and BMA grades

Sagengewinde- DIN 513



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



| Pitch mm | L mm | I.C. | EXTERNAL | | X | Y | INTERNAL | | X | Y |
|-------------|---------|------|---------------|---------------|-----|-----|---------------|---------------|-----|-----|
| | | | Right Hand | Left Hand | | | Right Hand | Left Hand | | |
| 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 |
| (1) 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 |
| (1) 4.0 | 22 | 1/2 | 22 ER 4 SAGE | 22 EL 4 SAGE | .07 | .12 | 22 IR 4 SAGE | 22 IL 4 SAGE | .09 | .14 |
| *5.0 | 22U | 1/2U | 22U ER 5 SAGE | 22U EL 5 SAGE | .05 | .46 | 22U IR 5 SAGE | 22U IL 5 SAGE | .07 | .46 |
| *6.0 | 22U | 1/2U | 22U ER 6 SAGE | 22U EL 6 SAGE | .05 | .46 | 22U IR 6 SAGE | 22U IL 6 SAGE | .08 | .47 |

Order example: 22 IR 4 SAGE BMA

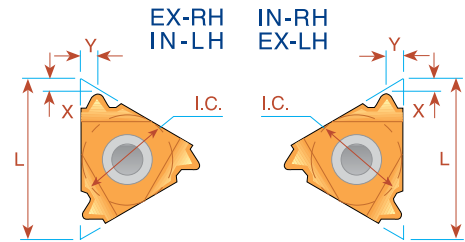
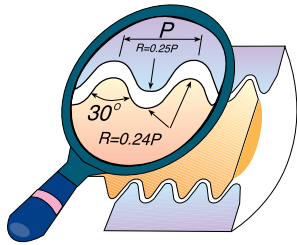
* Requires a special anvil AER 22U-1.5 SAGE 5/6, AEL 22U-1.5 SAGE 5/6, AIR 22U-1.5 SAGE 5/6, AIL 22U-1.5 SAGE 5/6.

(1) 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

For Carbide Grade and Cutting Speed see page 66-67

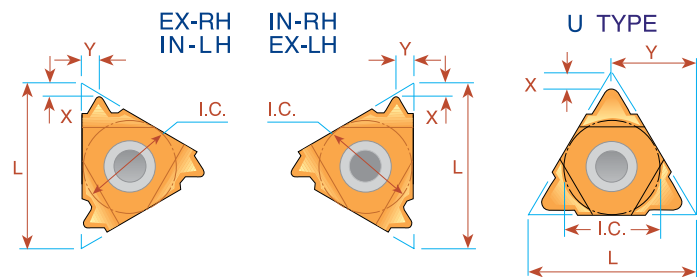
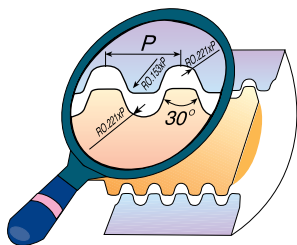
Round - DIN 405



| Pitch TPI | L mm | I.C. | EXTERNAL | | X | Y | INTERNAL | | X | Y |
|--------------|---------|------|--------------------|--------------------|-----|-----|--------------------|--------------------|-----|-----|
| | | | Ordering Code | | | | Ordering Code | | | |
| | | | Right Hand | Left Hand | | | Right Hand | Left Hand | | |
| 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



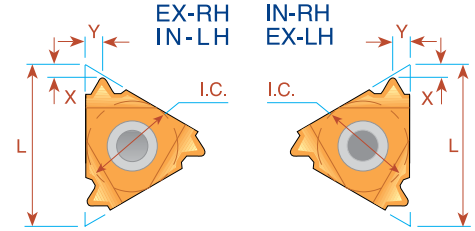
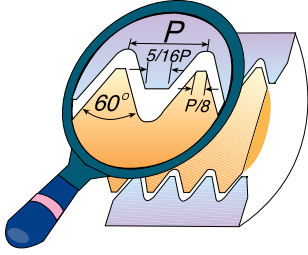
| Pitch mm | L mm | I.C. | EXTERNAL | INTERNAL | X | Y |
|-------------|---------|------|-----------------------------|-----------------------------|-----|-----|
| | | | Ordering Code Right Hand | Ordering Code Right Hand | | |
| 4.0 | 22 | 1/2 | 22 ER 4.0 RD 20400 | 22 IR 4.0 RD 20400 | .06 | .06 |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

Order example: 22 ER 4.0 RD 20400 MXC

* Same insert for Internal and External Right Hand Thread

For Carbide Grade and Cutting Speed see page 66-67

UNJ UNJC, UNJF, UNJEF, UNJS



| Pitch TPI | L mm | I.C. | EXTERNAL | | INTERNAL | | X | Y |
|--------------|---------|------|-----------------|--------------|-----------------|--------------|-----|-----|
| | | | Ordering Code | | Ordering Code | | | |
| | | | Right Hand | Left Hand | Right Hand | Left Hand | | |
| 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

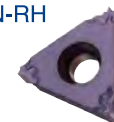
UNJ UNJC, UNJF, UNJEF, UNJS

Type B

Ground Profile with Sintered Chip-breaker

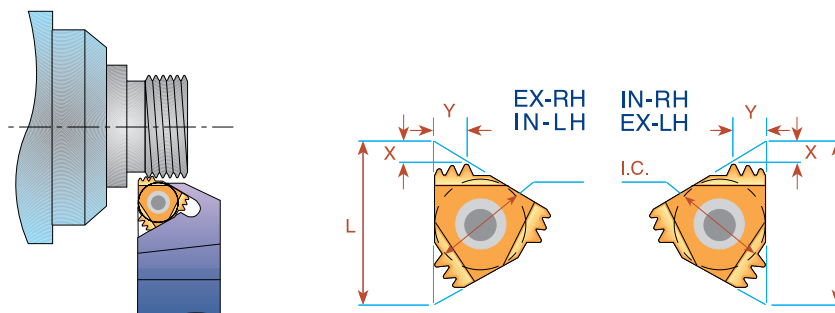
| Pitch TPI | L | I.C. in | INTERNAL Ordering Code Right Hand | X | Y |
|--------------|----|------------|--|-----|-----|
| 32 | 11 | 1/4 | 11 IR B 32 UNJ | .02 | .02 |
| 28 | 11 | 1/4 | 11 IR B 28 UNJ | .02 | .02 |
| 24 | 11 | 1/4 | 11 IR B 24 UNJ | .02 | .02 |
| 20 | 11 | 1/4 | 11 IR B 20 UNJ | .03 | .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 |

IN-RH



Order example: 11 IR B 20 UNJ BMA

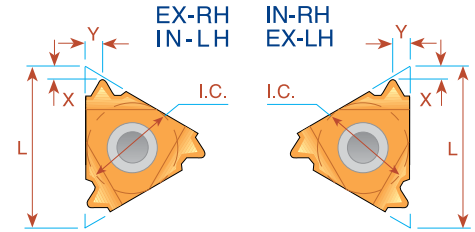
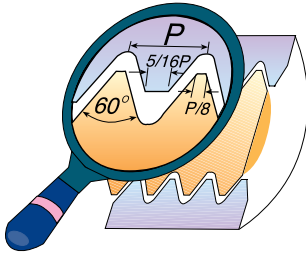
Multitooth



| Pitch TPI | L | I.C. in | Number of Teeth | EXTERNAL Ordering Code | Anvil | INTERNAL Ordering Code | Anvil | X | Y |
|--------------|----|------------|--------------------|----------------------------------|-------|----------------------------------|-------|-----|-----|
| 16 | 16 | 3/8 | 2 | 16 ER 16 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

MJ - ISO 5855



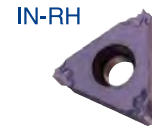
| Pitch mm | L mm | I.C. | EXTERNAL | INTERNAL | X | Y |
|-------------|---------|------|-----------------------------|-----------------------------|-----|-----|
| | | | Ordering Code Right Hand | Ordering Code Right Hand | | |
| 1.0 | 11 | 1/4 | | 11 IR 1.0 MJ | .03 | .03 |
| 1.25 | 11 | 1/4 | | 11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

Order example: 16 ER 1.5 MJ BMA

Type B

Ground Profile with Sintered Chip-breaker

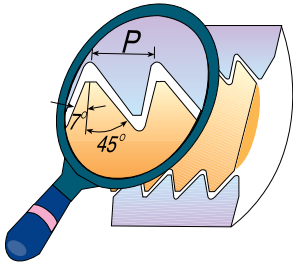
| Pitch mm | L | I.C. in | INTERNAL | X | Y |
|-------------|----|------------|-----------------------------|-----|-----|
| | | | Ordering Code Right Hand | | |
| 1.0 | 11 | 1/4 | 11 IR B 1.0 MJ | .02 | .02 |
| 1.5 | | | 11 IR B 1.5 MJ | .03 | .04 |



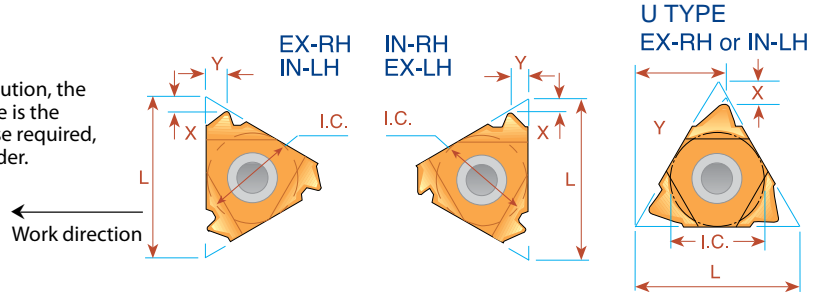
Order example: 11 IR B 1.5 MJ BMA

For Carbide Grade and Cutting Speed see page 66-67

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 | | INTERNAL | | X | Y |
|--------------|---------|------|----------------------|----------------------|----------------------|----------------------|-----|-----|
| | | | Right Hand | Left Hand | Right Hand | Left Hand | | |
| 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 |
| (2) 3 | 27U | 5/8U | 27U ER 3 ABUT | 27U EL 3 ABUT | 27U IR 3 ABUT | 27U IL 3 ABUT | .12 | .46 |

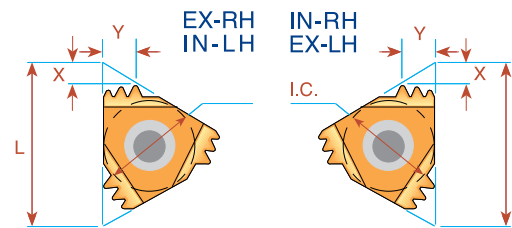
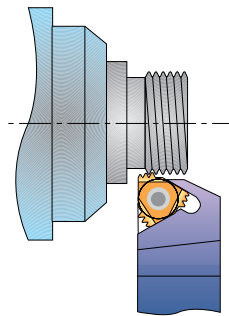
Order example: 16 IL 12 ABUT MXC

Most applications requires anvil change in toolholder see page 71

(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

Multitooth

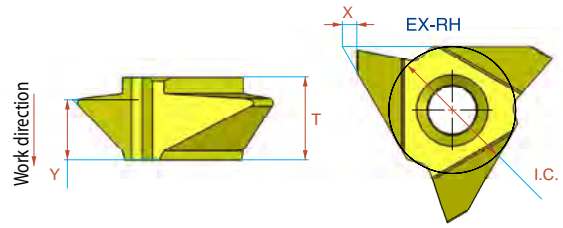


| Pitch TPI | L | I.C. in | Number of Teeth | EXTERNAL | Anvil | INTERNAL | Anvil | X | Y |
|--------------|----|------------|--------------------|-------------------------|-------|-------------------------|-------|-----|-----|
| | | | | Ordering Code | | Ordering Code | | | |
| 12 | 22 | 1/2 | 2 | 22 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 66-67

American Buttress Vertical

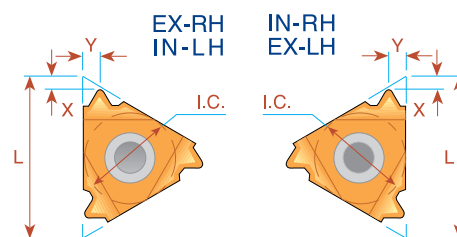
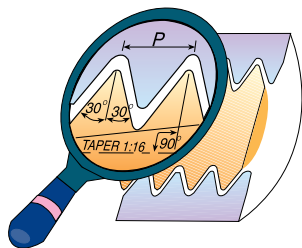


| Pitch TPI | L mm | I.C. | EXTERNAL | | | INTERNAL | | | | |
|--------------|---------|------|-----------------------------|------|------|-----------------|-----------------------------|------|------|------|
| | | | Ordering Code Right Hand | X | Y | T | Ordering Code Right Hand | X | Y | T |
| * 4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

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

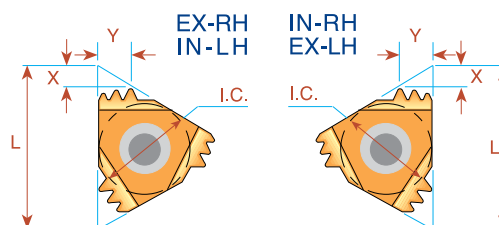
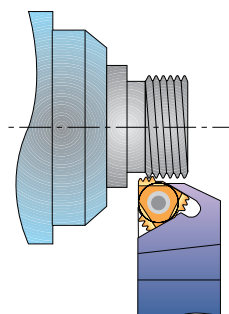
* Minimum bore: Ø2.17" ** Minimum bore: Ø2.76"

OIL Threads API Round



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

Multitooth

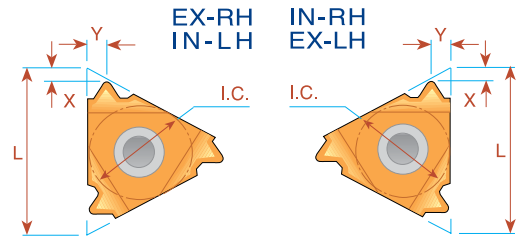
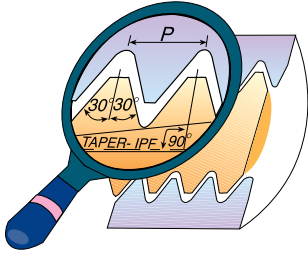


| Pitch TPI | L mm | I.C. | Number of Teeth | EXTERNAL Ordering Code | Anvil | INTERNAL Ordering Code | Anvil | X | Y |
|--------------|---------|------|--------------------|----------------------------------|-------|----------------------------------|-------|-----|-----|
| 10 | 22 | 1/2 | 2 | 22 ER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

Order example: 27 IR 10 API RD 3M MXC
For recommended number of passes see page 68

For Carbide Grade and Cutting Speed see page 66-67

OIL Threads



V-0.040

| Pitch TPI | L mm | I.C. | Taper IPF | EXTERNAL | INTERNAL | X | Y | Connection No. or Size |
|--------------|---------|------|--------------|-----------------------------|-----------------------------|-----|-----|---------------------------|
| | | | | Ordering Code Right Hand | Ordering Code Right Hand | | | |
| 5 | 22 | 1/2 | 3 | 22 ER 5 API 403 | 22 IR 5 API 403 | .07 | .10 | 23/8-4 1/2 REG |

V-0.038R

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

V-0.050

| Pitch TPI | L mm | I.C. | Taper IPF | EXTERNAL | INTERNAL | X | Y | Connection No. or Size |
|--------------|---------|------|--------------|-----------------------------|-----------------------------|-----|-----|---------------------------|
| | | | | Ordering Code Right Hand | Ordering Code Right Hand | | | |
| 4 | 27 | 5/8 | 2 | 27 ER 4 API 502 | 27 IR 4 API 502 | .08 | .12 | 65/8 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 |

V-0.055

Macaroni Tubing (MT)

American Macaroni Tubing (AMT)

American Mining Macaroni Tubing (AMMT)

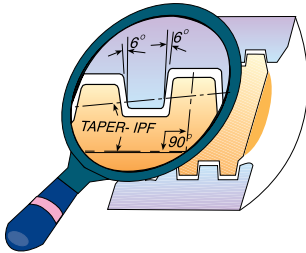
| Pitch TPI | L | I.C. in | Taper IPF | EXTERNAL | INTERNAL | X | Y | Connection No. or Size |
|--------------|----|------------|--------------|-----------------------------|-----------------------------|-----|-----|---------------------------|
| | | | | Ordering Code Right Hand | Ordering Code Right Hand | | | |
| 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

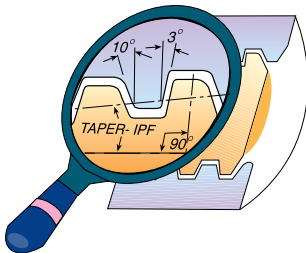
For Carbide Grade and Cutting Speed see page 66-67

OIL Threads Extreme - Line Casing



| Pitch TPI | L mm | I.C. | Taper IPF | EXTERNAL | INTERNAL | X | Y | Connection No. or Size |
|--------------|---------|------|--------------|-----------------------------|-----------------------------|-----|-----|---|
| | | | | Ordering Code Right Hand | Ordering Code Right Hand | | | |
| 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 |

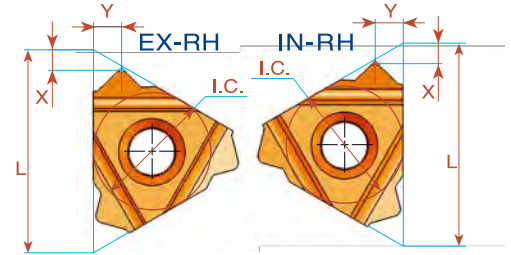
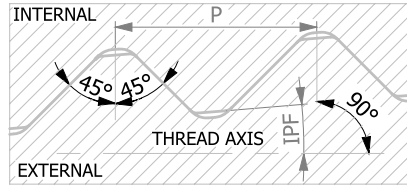
Buttress Casing



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

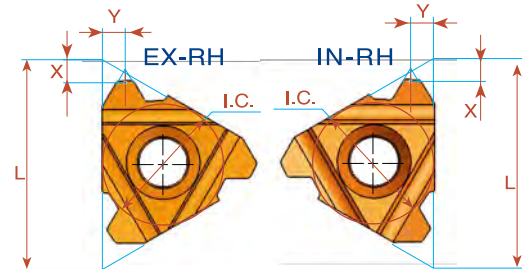
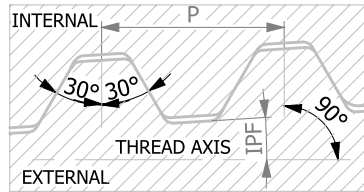
Order example: 22 ER 5 BUT 0.75 MXC

HUGHES



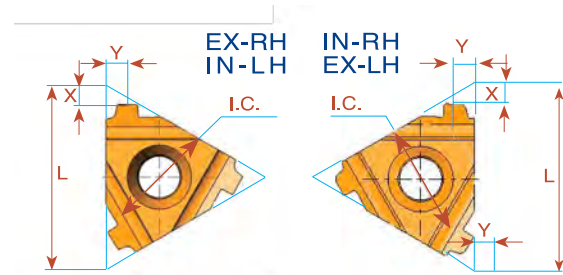
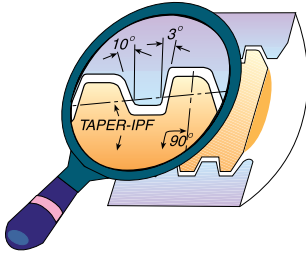
| Pitch TPI | L mm | I.C. | Taper IPF | EXTERNAL | INTERNAL | X | Y | Connection No. or Size |
|--------------|---------|------|--------------|-----------------------------|-----------------------------|-----|-----|---------------------------|
| | | | | Ordering Code Right Hand | Ordering Code Right Hand | | | |
| 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 |

PAC



| Pitch TPI | L mm | I.C. | Taper IPF | EXTERNAL | INTERNAL | X | Y | Connection No. or Size |
|--------------|---------|------|--------------|-----------------------------|-----------------------------|-----|-----|---------------------------|
| | | | | Ordering Code Right Hand | Ordering Code Right Hand | | | |
| 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 |

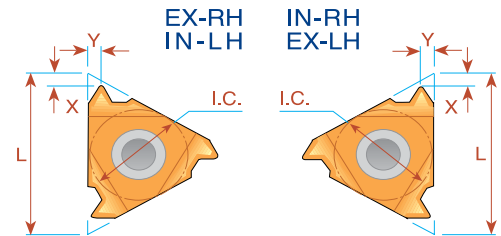
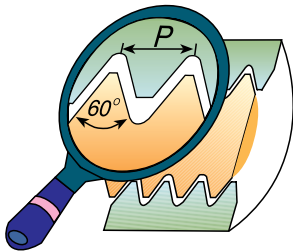
VAM



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

Order example: 16 ER 8 VAM BMA

NPS



| Pitch TPI | L mm | I.C. | EXTERNAL | | INTERNAL | | X | Y |
|--------------|---------|------|-----------------------------|----------------------------|-----------------------------|----------------------------|-----|-----|
| | | | Ordering Code Right Hand | Ordering Code Left Hand | Ordering Code Right Hand | Ordering Code Left Hand | | |
| 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: 30-11.5 NPS MT7

* One cutting edge

For Carbide Grade and Cutting Speed see page 66-67


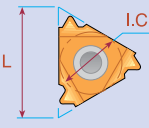

Thread Turning Toolholders and Kits



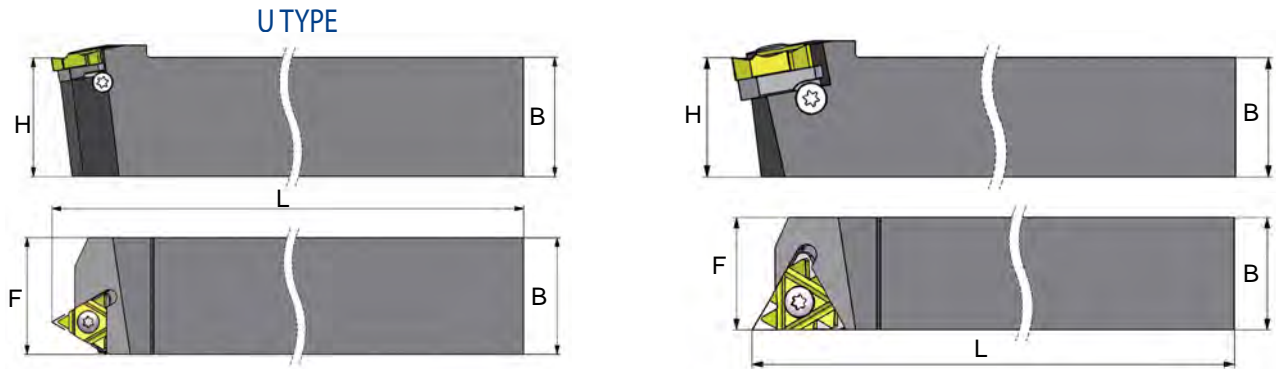
| Contents: | Page: | Contents: | Page: |
|--|-------|------------------------------------|-------|
| Product Identification | 42 | Gang Toolholders | 49 |
| External Toolholders | 43 | Quick Change | |
| External Toolholders with Top Clamp | 44 | External Toolholders | 50 |
| Vertical Toolholders | 44 | Internal Toolholders | 51 |
| Slim Throat Toolholders | 44 | Special Thread Turning Application | 52 |
| External Thread Turning Toolholder | 45 | Large Profile Range | 52 |
| Internal Toolholders | 46 | Thread Helix Angle | 53 |
| Internal Toolholders with Coolant Bore | 47 | Standard and Slanted Anvils | 53 |
| Internal Toolholders with Top Clamp | 47 | Anvil Kits | 54 |
| Toolholders with 3.5° Helix Angle | 47 | Standard Kits | 55 |
| Carbide Shank Boring Bars | 48 | Miniature & Ultra-miniature Kits | 55 |
| Drophead Toolholders | 48 | Inserts' Kits | 56 |
| Vertical Toolholders | 49 | Threading & Boring Combination Kit | 57 |


Product Identification

Threading Toolholders Ordering Codes

| | | | | | | |
|---|------------------------------|---------------------------------|---|--|--|---|
| S | E | R | 0750 | 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  | 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 mm I.C. 06 5/32" 08 3/16" 08U 3/16"U 11 1/4" 16 3/8" 22 1/2" 22U 1/2"U 27 5/8" 27U 5/8"U 33U 3/4"U | B - With coolant bore CB - Carbide shank V - Vertical (on edge) O - Offset style D - Drop head G - Gang tool U - U type |
| | | | Internal toolholders & boring bars round shank 0750 = Diam. of 3/4  | | | |

External Toolholders



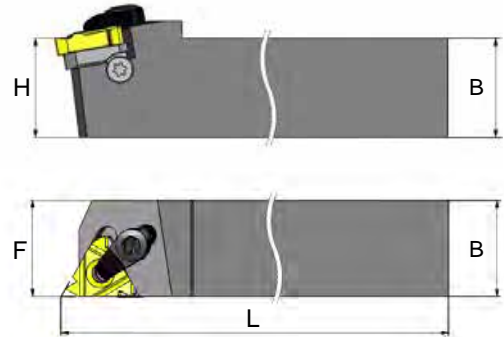
| Ordering Code Right Hand |  L mm | B=H | L | F | Insert Screw | Anvil Screw | Torx Key | RH Anvil | LH Anvil |
|-----------------------------|---|------|------|------|-----------------|----------------|-------------|-------------|-------------|
| *SER 0310 H11 | 11 | .31 | 4.00 | .43 | S11 | - | K11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

*Toolholders with no anvil

For **LEFT HAND** toolholders specify **SEL** instead of **SER**

Toolholders are made with a **1.5° Helix Angle**. For other Helix Angles please consult helix angle chart (page 71) in the technical section of this catalog.

External toolholders with top clamp



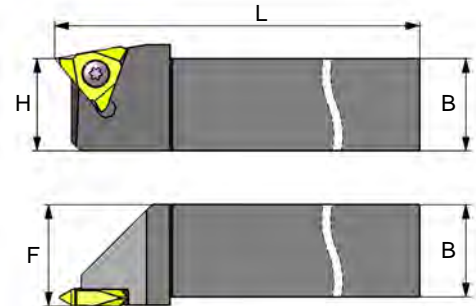
| Ordering Code Right Hand | L mm | B=H | L | F | Insert Screw | Clamp | Anvil Screw | Torx Key | RH Anvil | LH Anvil |
|-----------------------------|---------|------|-----|------|-----------------|-------|----------------|-------------|-------------|-------------|
| DER 0750 K16 | 16 | .75 | 5.0 |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

For **LEFT HAND** toolholders specify **DEL** instead of **DER**

Toolholders are made with a **1.5° Helix Angle**. For other Helix Angles please consult helix angle chart in the technical section of this catalog. Two clamping methods can be used: screw or top clamp.

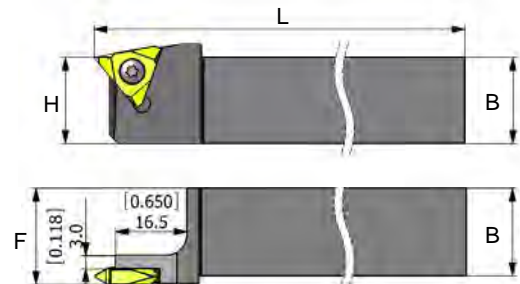
*Use K21 torx key for C22 clamp

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 |

Slim Throat toolholders



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

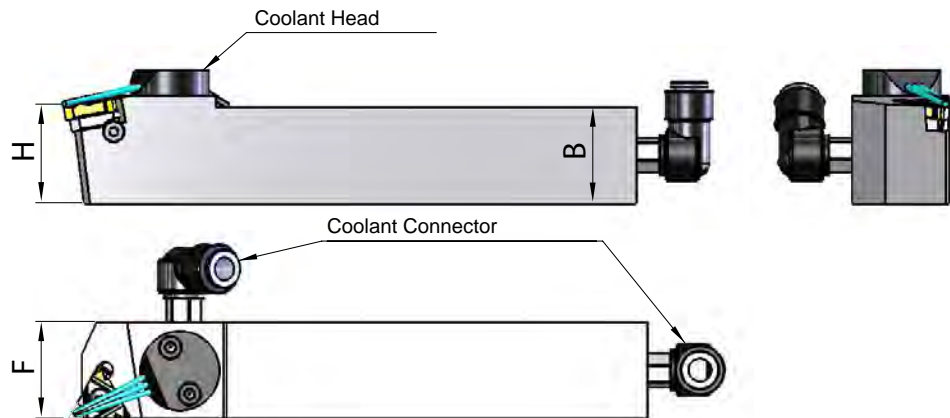
External Thread Turning Toolholder with Internal Coolant


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 0750 K16B | 16 | .75 | 5.00 | .75 | S16P | A16P | K16P | AE16 | AI16 | Ø4 / Ø6 |
| SER 1000 M16B | 16 | 1.00 | 6.00 | 1.00 | S16P | A16P | K16P | AE16 | AI16 | Ø4 / Ø6 |
| SER 1000 M22B | 22 | 1.00 | 6.00 | 1.00 | S22P | A22P | K22P | AE22 | AI16 | Ø4 / Ø6 |
| SER 1000 M27B | 27 | 1.00 | 6.00 | 1.25 | S27P | A27P | K27P | AE27 | AI27 | Ø4 / Ø6 |
| SER 1250 P16B | 16 | 1.25 | 7.00 | 1.25 | S16P | A16P | K16P | AE16 | AI16 | Ø4 / Ø6 |
| SER 1250 P22B | 22 | 1.25 | 7.00 | 1.25 | S22P | A22P | K22P | AE22 | AI22 | Ø4 / Ø6 |
| SER 1250 P27B | 27 | 1.25 | 7.00 | 1.25 | S27P | A27P | K27P | AE27 | AI27 | Ø4 / Ø6 |

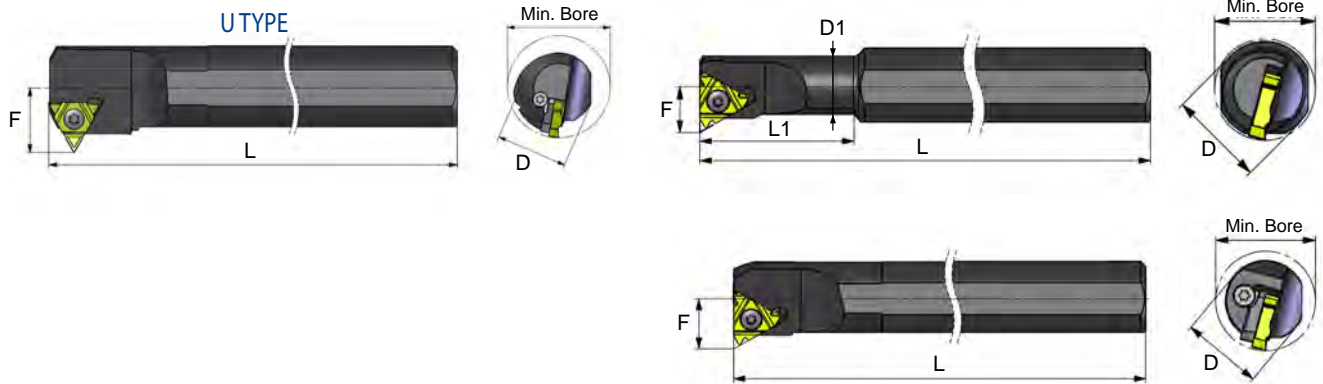
For **LEFT HAND** toolholders specify **SEL** instead of **SER**


Toolholders made with 1.5° helix angle

Please consult the helix angle chart page 71 in the technical section of this catalog

* Standard packing with Ø6 mm

Internal Toolholders



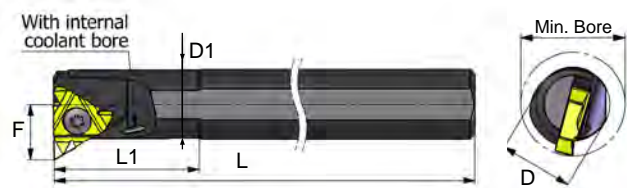
| Ordering Code Right Hand |  L mm | D | D1 | Min Bore Diam. | L | L1 | F | Insert Screw | Anvil Screw | Torx Key | RH Anvil | LH Anvil |
|-----------------------------|---|------|------|----------------------|------|------|------|-----------------|----------------|-------------|-------------|-------------|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


*Toolholders with no anvil

For **LEFT HAND** toolholders specify **SIL** instead of **SIR**

Toolholders are made with a **1.5° Helix Angle**. For other Helix Angles please consult helix angle chart (page 71) in the technical section of this catalog.

Internal toolholders with coolant bore



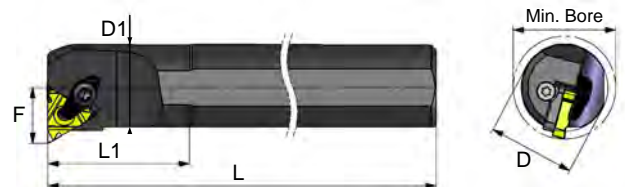
| Ordering Code Right Hand |  L mm | D | D1 | Min Bore Diam. | L | L1 | F | Insert Screw | Anvil Screw | Torx Key | RH Anvil | LH Anvil |
|-----------------------------|---|------|------|----------------------|-----|------|-----|-----------------|----------------|-------------|-------------|-------------|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


*Toolholders with no anvil

For **LEFT HAND** toolholders specify **SIL** instead of **SIR**

Toolholders are made with a **1.5° Helix Angle**. For other Helix Angles please consult helix angle chart (page 71) 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 **DIL** instead of **DIR**

Two clamping methods can be used: screw or top clamp.

*Use K21 torx key for C22 clamp

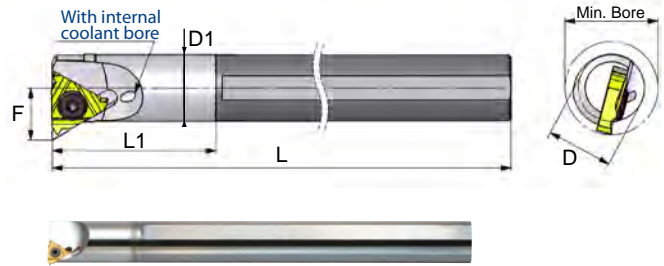
Toolholders with 3.5° Helix Angle


| Ordering Code Right Hand |  L mm | D mm | D1 mm | Min Bore Diam. mm | L mm | L1 mm | F mm | Insert Screw | Torx Key |
|-----------------------------|---|---------|----------|----------------------------|---------|----------|---------|-----------------|-------------|
| SIR 0016 P16B-3.5 | 16 | 0.787 | 0.630 | 0.748 | 0.149 | 0.635 | 0.540 | S16S | K16 |
| SIR 0020 P22B-3.5 | 22 | 0.787 | 0.787 | 0.945 | 0.149 | - | 0.614 | S22S | K22 |

For **LEFT HAND** toolholders specify **SIL** instead of **SIR**

Carbide Shank Threading Bars With coolant bore

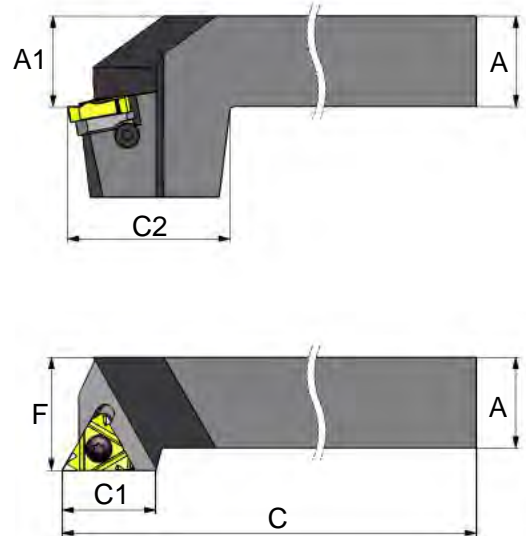
Carbide Shank Threading Bars are used when Chatter and deflection are expected due to long overhang in deep small bores.




| 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 0310K08UCB | 8U | .31 | .29 | .35 | 5.0 | 1.38 | .26 | S08 | - | K08 | - | - |
| SIR 0375 M11CB | 11 | .38 | .38 | .47 | 6.0 | - | .28 | S11 | - | K11 | - | - |
| SIR 0500 P11CB | 11 | .50 | .50 | .58 | 7.0 | - | .34 | S11 | - | K11 | - | - |
| SIR 0500 P16CB | 16 | .50 | .50 | .64 | 7.0 | - | .40 | S16S | - | K16 | - | - |
| SIR 0625 R16CB | 16 | .62 | .62 | .75 | 8.0 | - | .46 | S16S | - | K16 | - | - |
| *SIR 0750 S16CB | 16 | .75 | .75 | .90 | 10.0 | - | .54 | S16 | A16 | K16 | AI16 | AE16 |
| *SIR 1000 S16CB | 16 | 1.00 | 1.00 | 1.10 | 10.0 | - | .64 | S16 | A16 | K16 | AI16 | AE16 |

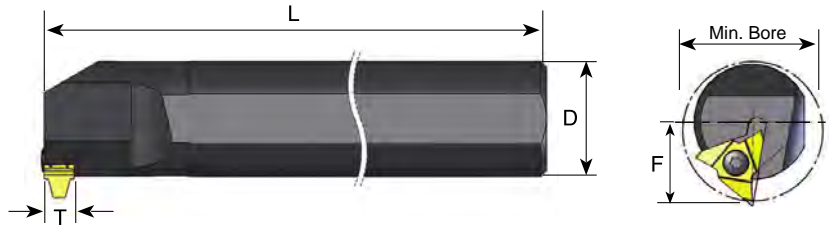
*Carbide shank Threading bars with anvil
For **LEFT HAND** toolholders specify **SIL** instead of **SIR**

Drophead Toolholders



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

Vertical Toolholders

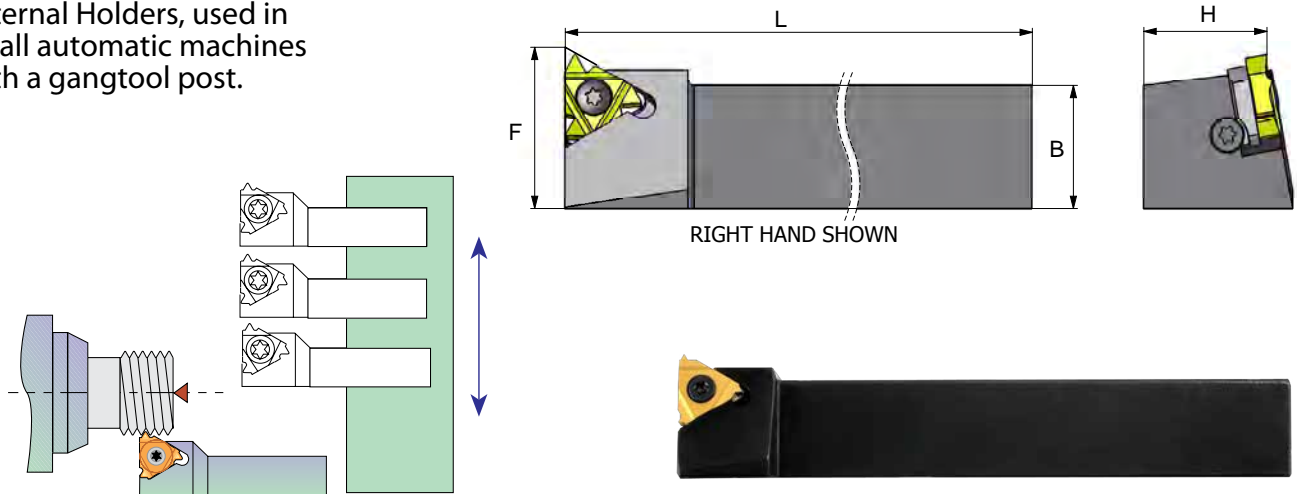


| Ordering Code Right Hand | L | D | * Min Bore Diam. | L | F | T | Insert Screw | Torx Key |
|-----------------------------|----|------|------------------------|----|------|------|-----------------|-------------|
| SIR 1250 S27V-T10 | 27 | 1.25 | 1.65 | 10 | 0.94 | 0.41 | S27 | K27 |
| SIR 1500 T27V-T10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

For **LEFT HAND** toolholders specify **SIL** instead of **SIR**
 * To be compared with given minimum bore profile.

Gang Toolholders

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



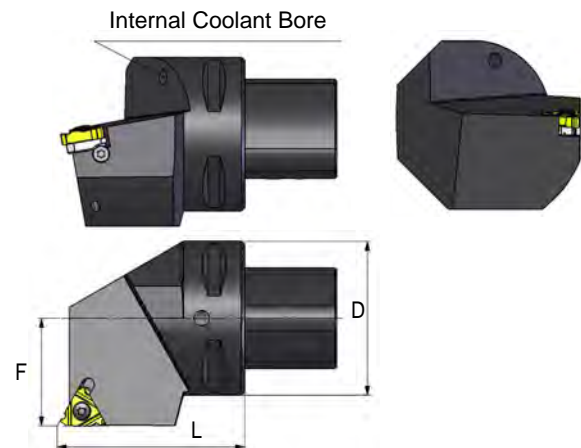
| Ordering Code Right Hand | L mm | B=H mm | L mm | F mm | Insert Screw | Anvil Screw | Torx Key | RH Anvil | LH Anvil |
|-----------------------------|---------|-----------|---------|---------|-----------------|----------------|-------------|-------------|-------------|
| *SER 8 8 H11G | 11 | 0.315 | 12.5 | 0.472 | S11 | - | K11 | - | - |
| *SER 10 10 H11G | 11 | 0.394 | 12.5 | 0.551 | S11 | - | K11 | - | - |
| SER 16 16 K16G | 16 | 0.630 | 4.92 | 0.854 | S16 | A16 | K16 | AE16 | AI16 |
| SER 20 20 K16G | 16 | 0.787 | 4.92 | 1.031 | S16 | A16 | K16 | AE16 | AI16 |


*Toolholders with no anvil
 For **LEFT HAND** toolholders specify **SEL** instead of **SER**

Quick Change Polygon Threading 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

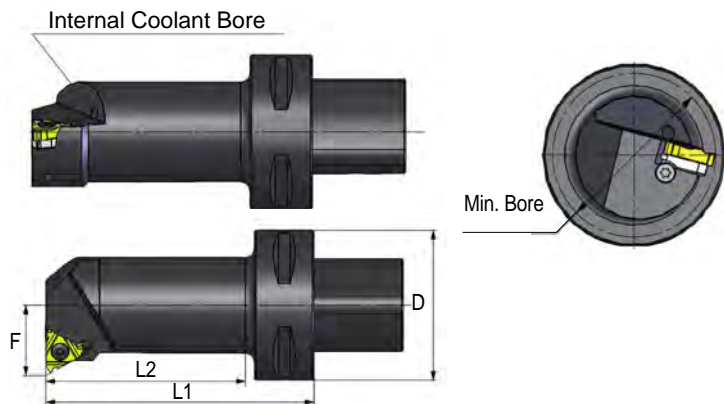
External Toolholders




| Equivalent to... | Ordering Code |  | D | F | L | Insert Screw | Anvil Screw | Torx key | RH Anvil | LH Anvil |
|------------------|-------------------------|---|-------|-------|-------|--------------|-------------|----------|----------|----------|
| C4 | P40-SER 27050-16 | 16 | 1.575 | 1.063 | 1.969 | S16 | A16 | K16 | AE16 | AI16 |
| C5 | P50-SER 35060-16 | 16 | 1.969 | 1.378 | 2.362 | S16 | A16 | K16 | AE16 | AI16 |
| C6 | P63-SER 45065-16 | 16 | 2.480 | 1.772 | 2.559 | S16 | A16 | K16 | AE16 | AI16 |
| C4 | P40-SER 27050-22 | 22 | 1.575 | 1.063 | 1.969 | S22 | A22 | K22 | AE22 | AI22 |
| C5 | P50-SER 35060-22 | 22 | 1.969 | 1.378 | 2.362 | S22 | A22 | K22 | AE22 | AI22 |
| C6 | P63-SER 45065-22 | 22 | 2.480 | 1.772 | 2.559 | S22 | A22 | K22 | AE22 | AI22 |
| C8 | P80-SER 55080-22 | 22 | 3.150 | 2.165 | 3.150 | S22 | A22 | K22 | AE22 | AI22 |

For **LEFT HAND** toolholders specify **SEL** instead of **SER**

Internal Toolholders

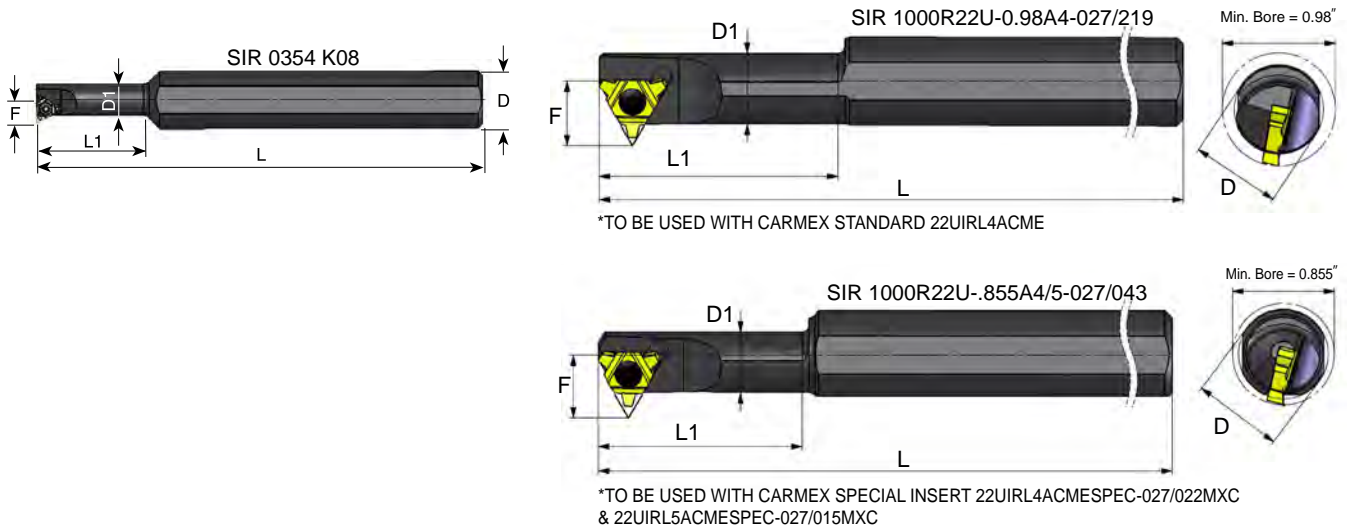



| Equivalent to... | Ordering Code |  | D | F | Min. Bore Dia. | L1 | L2 | Insert Screw | Anvil Screw | Torx key | RH Anvil | LH Anvil |
|------------------|--------------------|---|-------|-------|----------------|-------|-------|--------------|-------------|----------|----------|----------|
| C4 | * P40-SIR 12060-16 | 16 | 1.575 | 0.461 | 0.787 | 2.362 | 1.457 | S16 | - | K16 | - | - |
| | P40-SIR 14060-16 | 16 | 1.575 | 0.531 | 0.984 | 2.362 | 1.496 | S16 | A16 | K16 | AI16 | AE16 |
| | P40-SIR 17070-16 | 16 | 1.575 | 0.630 | 1.142 | 2.756 | 1.890 | S16 | A16 | K16 | AI16 | AE16 |
| | P40-SIR 22090-16 | 16 | 1.575 | 0.768 | 1.417 | 3.543 | 2.717 | S16 | A16 | K16 | AI16 | AE16 |
| | P40-SIR 27080-16 | 16 | 1.575 | 0.925 | 1.732 | 3.150 | 2.362 | S16 | A16 | K16 | AI16 | AE16 |
| C5 | * P50-SIR 12060-16 | 16 | 1.969 | 0.461 | 0.787 | 2.362 | 1.378 | S16 | - | K16 | - | - |
| | P50-SIR 14060-16 | 16 | 1.969 | 0.531 | 0.984 | 2.362 | 1.417 | S16 | A16 | K16 | AI16 | AE16 |
| | P50-SIR 17070-16 | 16 | 1.969 | 0.630 | 1.142 | 2.756 | 1.850 | S16 | A16 | K16 | AI16 | AE16 |
| | P50-SIR 22090-16 | 16 | 1.969 | 0.768 | 1.417 | 3.543 | 2.677 | S16 | A16 | K16 | AI16 | AE16 |
| | P50-SIR 27105-16 | 16 | 1.969 | 0.925 | 1.732 | 4.134 | 3.307 | S16 | A16 | K16 | AI16 | AE16 |
| C6 | P63-SIR 14070-16 | 16 | 2.480 | 0.531 | 0.984 | 2.756 | 1.654 | S16 | A16 | K16 | AI16 | AE16 |
| | P63-SIR 17075-16 | 16 | 2.480 | 0.630 | 1.142 | 2.953 | 1.890 | S16 | A16 | K16 | AI16 | AE16 |
| | P63-SIR 22090-16 | 16 | 2.480 | 0.768 | 1.417 | 3.543 | 2.520 | S16 | A16 | K16 | AI16 | AE16 |
| | P63-SIR 27105-16 | 16 | 2.480 | 0.925 | 1.732 | 4.134 | 3.150 | S16 | A16 | K16 | AI16 | AE16 |
| C4 | * P40-SIR 15065-22 | 22 | 1.575 | 0.606 | 0.984 | 2.559 | 1.654 | S22 | - | K22 | - | - |
| | P40-SIR 19070-22 | 22 | 1.575 | 0.705 | 1.142 | 2.756 | 1.890 | S22 | A22 | K22 | AI22 | AE22 |
| | P40-SIR 22090-22 | 22 | 1.575 | 0.843 | 1.496 | 3.543 | 2.717 | S22 | A22 | K22 | AI22 | AE22 |
| | P40-SIR 27080-22 | 22 | 1.575 | 1.000 | 1.811 | 3.150 | 2.362 | S22 | A22 | K22 | AI22 | AE22 |
| C5 | * P50-SIR 15065-22 | 22 | 1.969 | 0.606 | 0.984 | 2.559 | 1.614 | S22 | - | K22 | - | - |
| | P50-SIR 19070-22 | 22 | 1.969 | 0.705 | 1.142 | 2.756 | 1.850 | S22 | A22 | K22 | AI22 | AE22 |
| | P50-SIR 22090-22 | 22 | 1.969 | 0.843 | 1.496 | 3.543 | 2.677 | S22 | A22 | K22 | AI22 | AE22 |
| | P50-SIR 27105-22 | 22 | 1.969 | 1.000 | 1.811 | 4.134 | 3.307 | S22 | A22 | K22 | AI22 | AE22 |
| C6 | P63-SIR 19075-22 | 22 | 2.480 | 0.705 | 1.142 | 2.953 | 1.890 | S22 | A22 | K22 | AI22 | AE22 |
| | P63-SIR 22090-22 | 22 | 2.480 | 0.843 | 1.496 | 3.543 | 2.520 | S22 | A22 | K22 | AI22 | AE22 |
| | P63-SIR 27105-22 | 22 | 2.480 | 1.000 | 1.811 | 4.134 | 3.150 | S22 | A22 | K22 | AI22 | AE22 |

For **LEFT HAND** toolholders specify **SIL** instead of **SIR**

* Holders without anvil

Special Thread Turning Applications

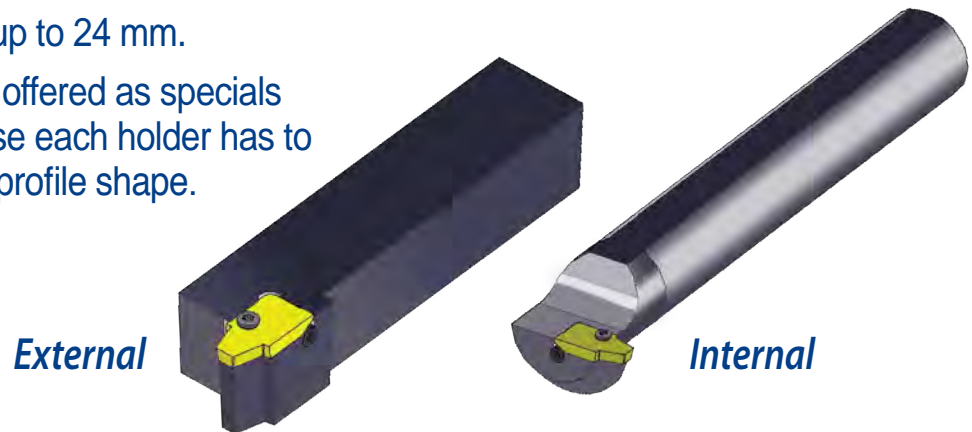


| Ordering Code Right Hand |  | D | D1 | L | L1 | F | Thread | Insert Screw | Torx Key |
|--------------------------------------|---|------|------|---|------|------|--------------------|-----------------|-------------|
| *SIR 0354 K08 | 8 | 0.63 | 0.34 | 5 | 1.18 | 0.25 | 1/2 - 13UNC | S08 | K08 |
|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

For LH holders call Carmex
* Only right hand available

Large Profile Range

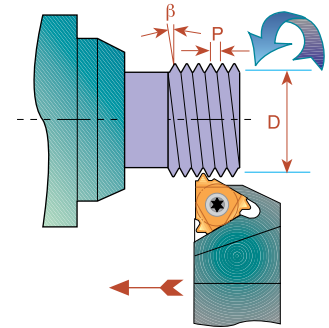
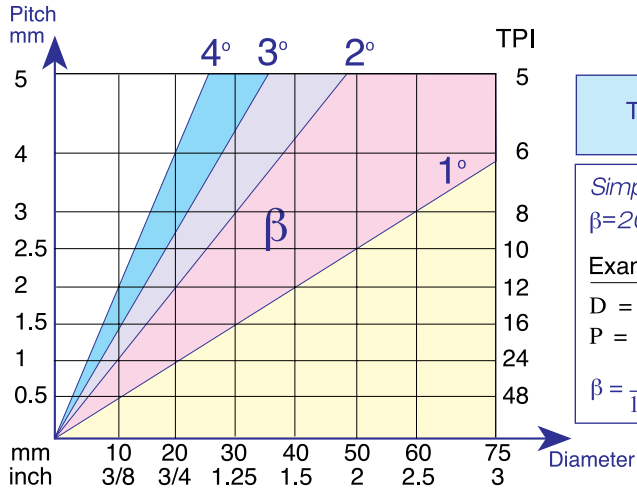
- Pitch Range: 14mm up to 24 mm.
- Tools and inserts are offered as specials (non catalog), because each holder has to be modified to fit the profile shape.
- Rigid Clamping.



- Tailor made profiles according to customer's request

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

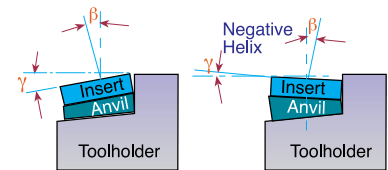
Thread Helix Angle



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

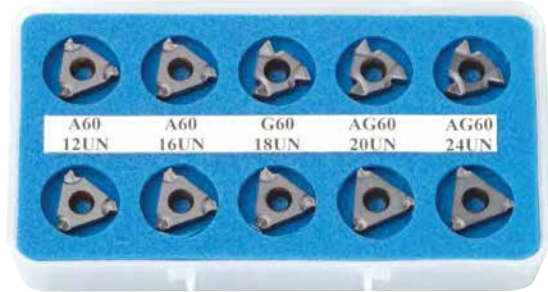


| Ordering Code | Type | No. of Inserts | Inserts | Contents Boring Bar | Key |
|--------------------|-------|----------------|---------------|---------------------|-----|
| KU60I - BXC | ULTRA | 10 | 06 IR A60 BXC | SIR 0205 H06 | K6 |
| KM60I - BXC | MINI | 10 | 08 IR A60 BXC | SIR 0265 K08 | K8 |

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

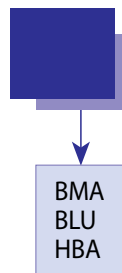
EXTERNAL ISO KIT

- 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

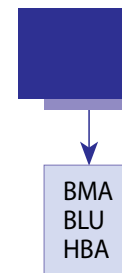
INTERNAL ISO KIT

- 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 **1/4" diameter** with just one deep reaching CARBIDE shank ultra mini Boring Bar.



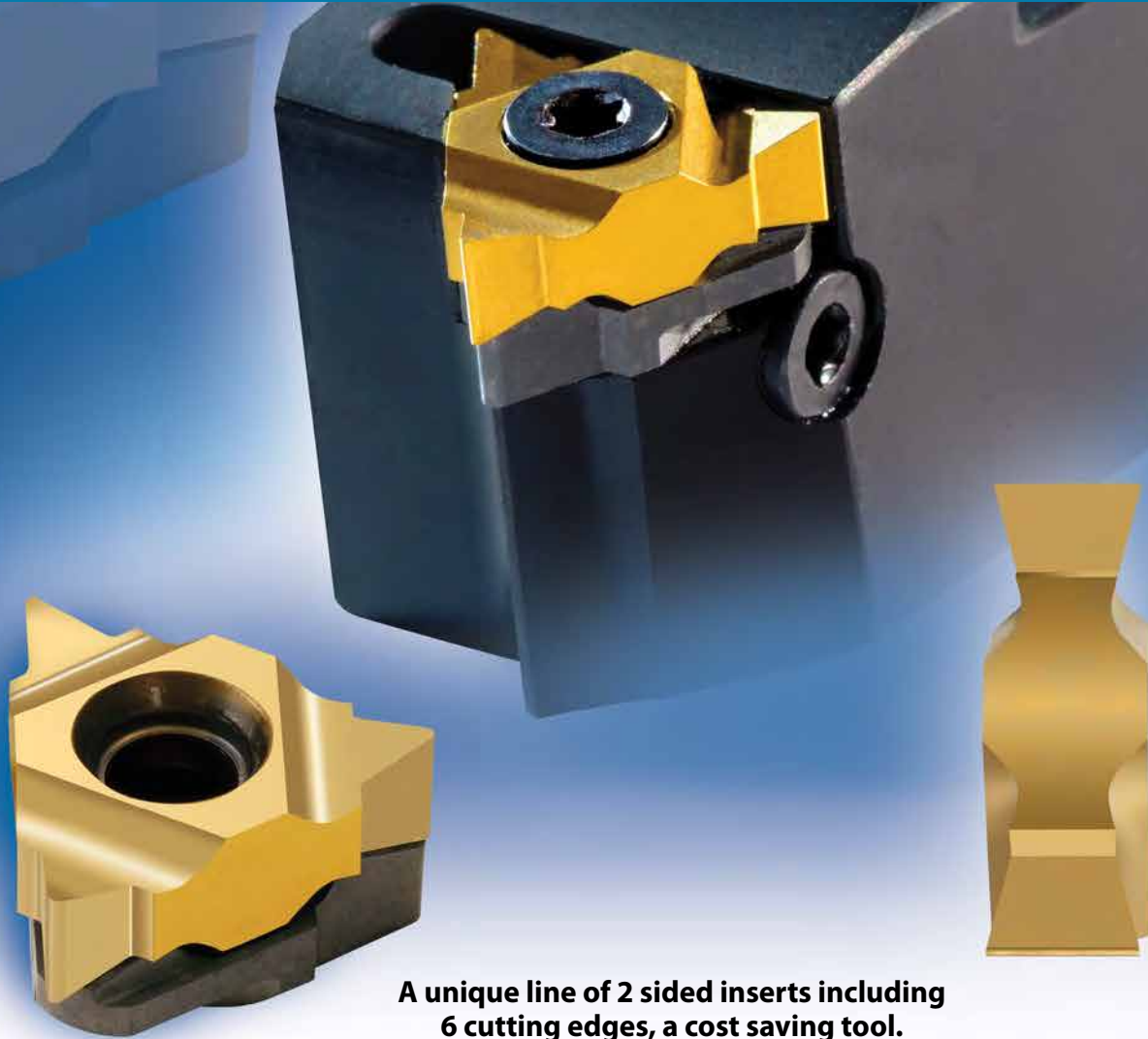
| Ordering Code | Contents | | | Key |
|---------------|------------------------|-------------------------|----------------|-----|
| | Threading Insert | Turning Inserts | Boring Bar | |
| KC6TI | 06 IR A60 BXC 10Pcs | 06 IR TURN BMA 10Pcs | SIR 0205 H06CB | K6 |

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



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 design for clamping the insert and supporting the cutting edge.
- Simple insert's mounting and cutting edge indexing.
- Heavy duty toolholders designed specially for this line.

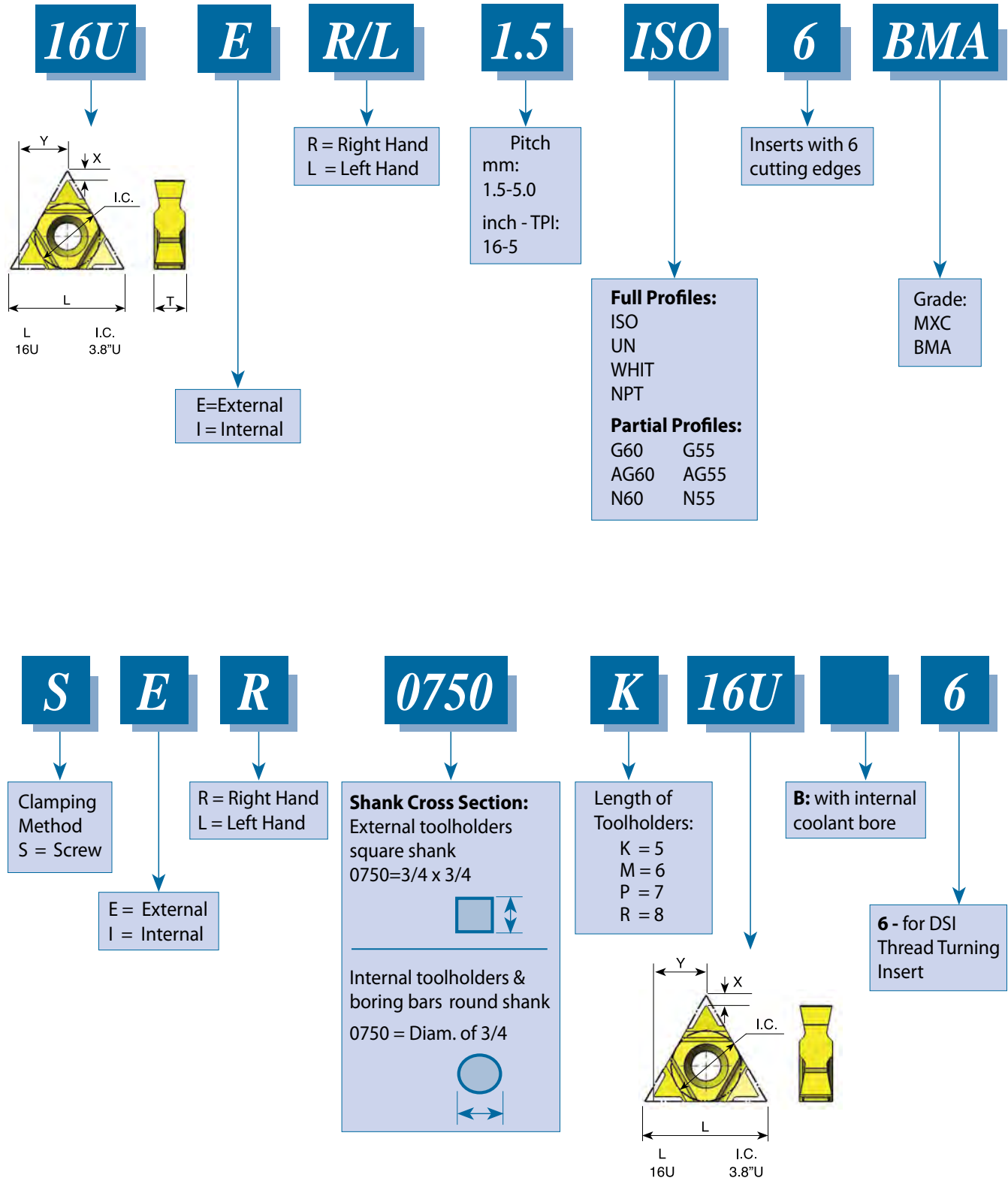
Contents:

Page:

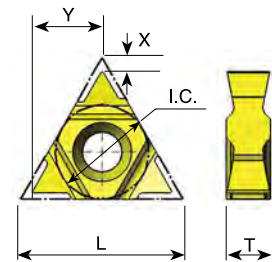
| | |
|--------------------------------------|----|
| Product Identification | 60 |
| Partial Profile 60° | 61 |
| Partial Profile 55° | 61 |
| ISO | 62 |
| UN | 62 |
| WHITWORTH 55° | 63 |
| NPT | 63 |
| Thread Turning Toolholder - External | 64 |
| Thread Turning Toolholder - Internal | 64 |

Product Identification

DSI Ordering Code



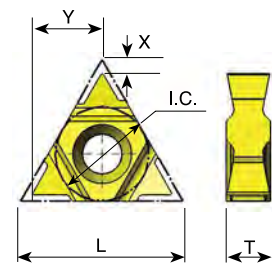
Partial Profile 60°



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

Available coating grades: BMA or MXC

Partial Profile 55°

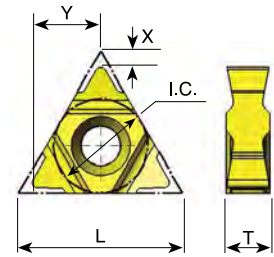


| Pitch Range mm | Pitch Range TPI | L mm | I.C. | EXTERNAL Ordering Code | INTERNAL Ordering Code | X | Y | T |
|----------------|-----------------|------|------|----------------------------------|----------------------------------|-----|-----|-----|
| 1.75 - 3.0 | 14-8 | 16U | 3/8U | 16U ER/L G55-6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

Available coating grades: BMA or MXC

For Carbide Grade and Cutting Speed see page 66-67

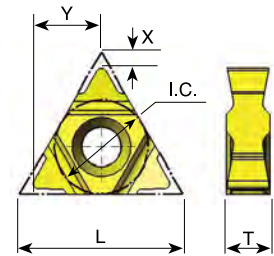
ISO



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

Available coating grades: BMA or MXC

UN - Unified **UNC, UNF, UNEF, UNS**

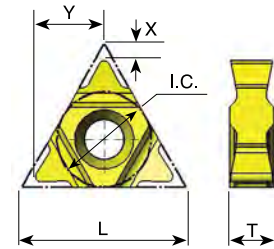


| Pitch TPI | L mm | I.C. | EXTERNAL Ordering Code | INTERNAL Ordering Code | X | Y | T |
|-----------|------|------|----------------------------------|----------------------------------|-----|-----|-----|
| 16 | 16U | 3/8U | 16U ER/L 16 UN-6 | 16U IR/L 16 UN-6 | .06 | .27 | .18 |
| 14 | 16U | 3/8U |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

Available coating grades: BMA or MXC

For Carbide Grade and Cutting Speed see page 66-67

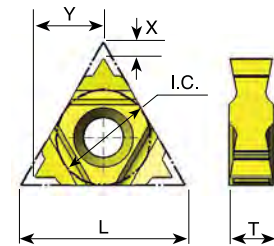
Whitworth 55° BSW, BSF, BSP, BSB



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

Available coating grades: BMA or MXC

NPT

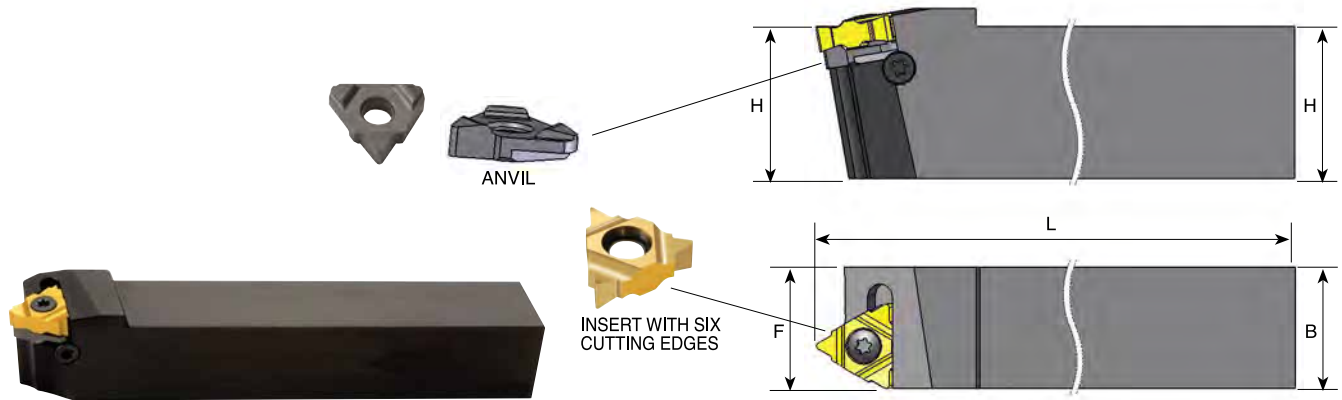


| Pitch TPI | L mm | I.C. | EXTERNAL Ordering Code | INTERNAL Ordering Code | X | Y | T |
|--------------|---------|------|----------------------------------|----------------------------------|-----|-----|-----|
| 14 | 16U | 3/8U | 16U ER/L 14 NPT-6 | 16U IR/L 14 NPT-6 | .06 | .27 | .18 |
| 11.5 | 16U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

Available coating grades: BMA or MXC
For Carbide Grade and Cutting Speed see page 66-67

Heavy Duty Thread Turning Toolholders

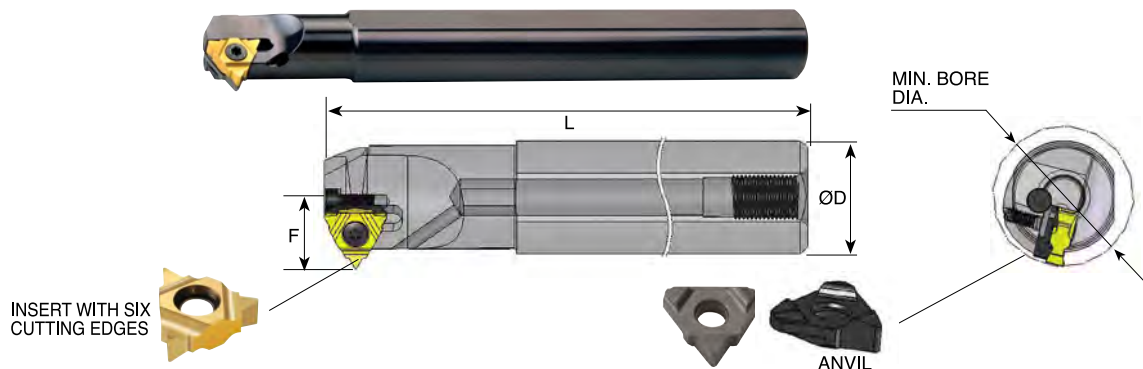
External



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

For **LEFT HAND** toolholders specify **SEL** instead of **SER**

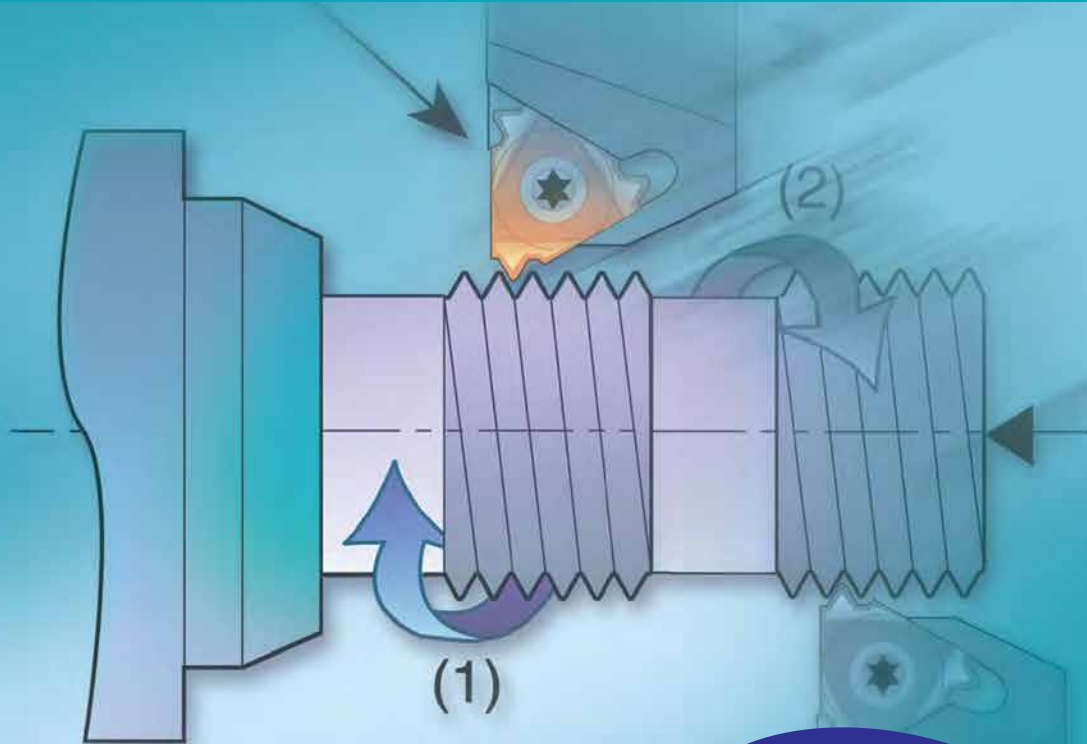
Internal with Coolant Bore



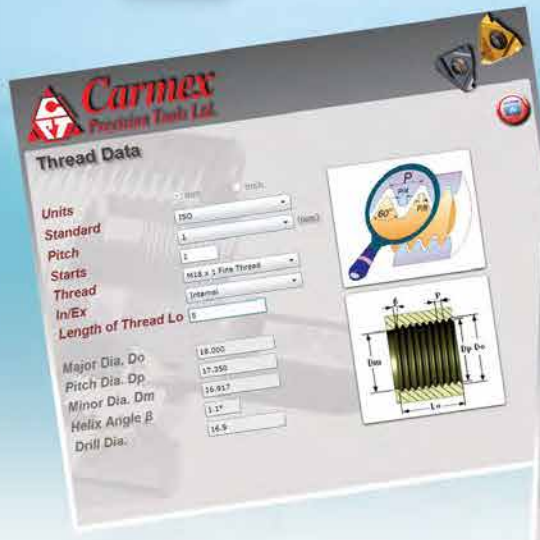
| Ordering Code Right Hand | ØD | Min. bore dia. | L | F | Insert Screw | Anvil Screw | Torx Key | RH Anvil | LH Anvil |
|-----------------------------|------|-------------------|---|------|-----------------|----------------|-------------|-------------|-------------|
| SIR 0750 P16UB-6 | 0.75 | 0.94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

For **LEFT HAND** toolholders specify **SIL** instead of **SIR**

Thread Turning Technical Section



Thread Turning Catalog and CNC Programming Software



| Contents: | Page: | Contents: | Page: |
|---|-------|-----------------------------|-------|
| Carbide Grade Selection | 66 | Anvil Change Recommendation | 71 |
| Type B inserts | 66 | Thread Turning Step by Step | 72 |
| Recommended Cutting Speed | 67 | Troubleshooting | 73 |
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| Important Points about Carmex Threading Inserts | 70 | | |
| Flank Clearance Angle | 70 | | |

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

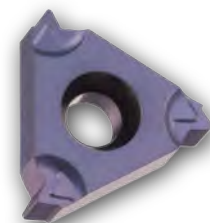
Note: Due to our unique and specialized production techniques, Carmex coated inserts provide superior cutting performance and exceptionally long tool life.

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, Type-B 11, 16 | 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 - 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 BMA Sub-Micrograin grade.

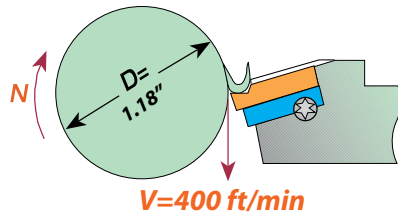


Recommended cutting speed (ft/min) for thread turning inserts

| ISO Standard | Material | | Condition | | | | | | | | |
|-----------------|---|------------------------------|---------------------|-----------|-----------|-----------|-----------|-----------|---------|-----|-----|
| | | | | 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 | | | |
| | | >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 | | |
| 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 | | |
| UN External | 3.00 | 27 | 5/8 | 2 | 27 ER 3.0 ISO 2M | 4 | .023 | .020 | .017 | .013 |
| | 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 | | |
| UN Internal | 8 | 27 | 5/8 | 2 | 27 ER 8 UN 2M | 4 | .024 | .021 | .018 | .014 |
| | 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 | | |
| Whitworth 55° External | 8 | 27 | 5/8 | 2 | 27 IR 8 UN 2M | 4 | .025 | .020 | .016 | .012 |
| | 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 | | |
| Whitworth 55° Internal | 11 | 22 | 1/2 | 2 | 22 ER 11 W 2M | 3 | .026 | .019 | .013 | |
| | 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 | | |
| NPT External | 11 | 22 | 1/2 | 2 | 22 IR 11 W 2M | 2 | .026 | .019 | .013 | |
| | 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 |
| NPT Internal | 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 |
| | 14 | 16 | 3/8 | 2 | 16 IR 14 NPT 2M | 3 | .021 | .018 | .017 | |
| API Round External | 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 Internal | 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 | |

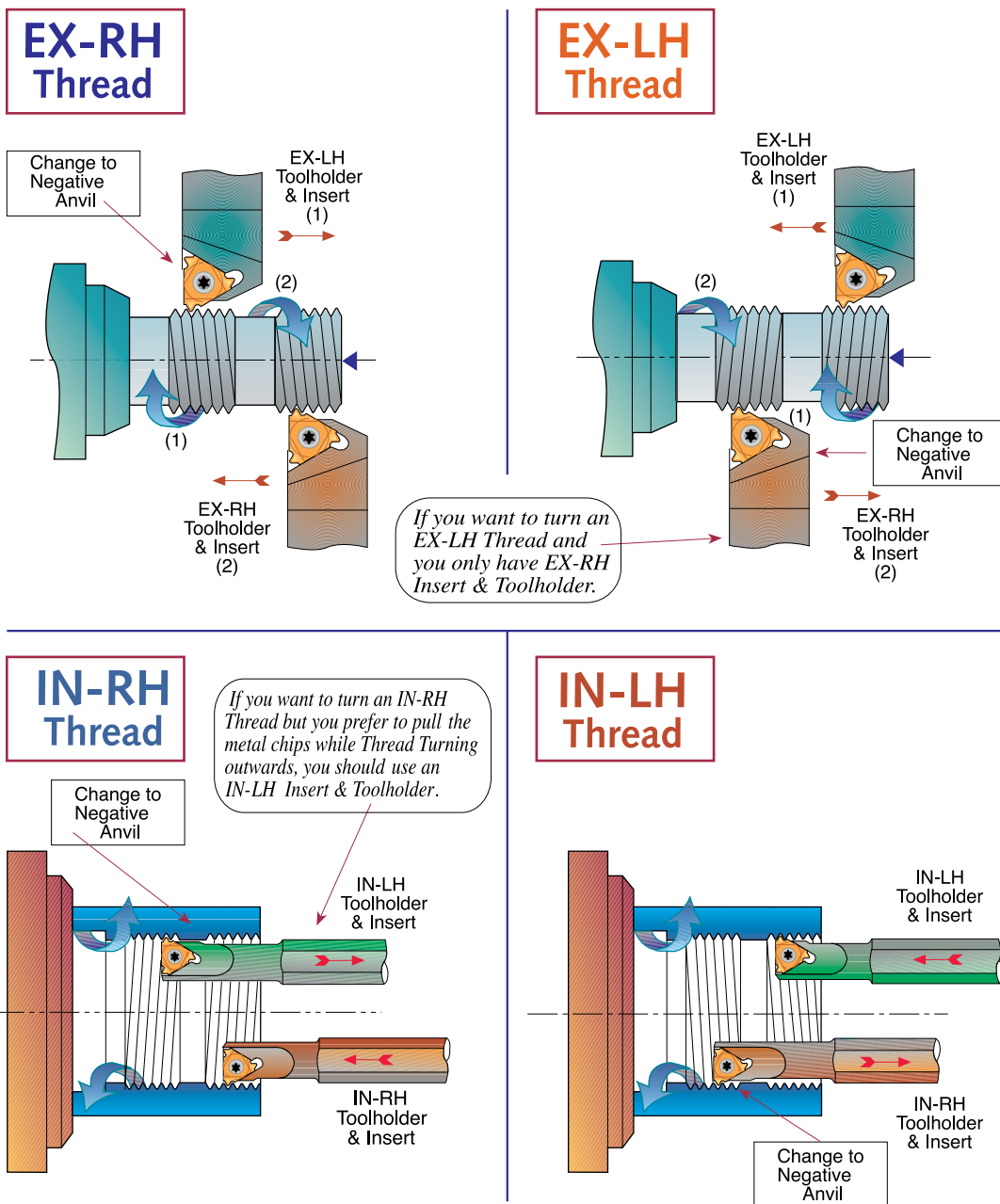
Number of threading passes selection for single point inserts

| 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:

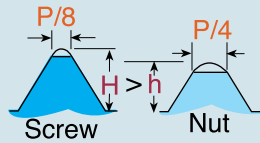
1. For most standard applications the middle of the range is a good starting point.
2. For most materials, the tougher the material, the higher the number of cutting passes you should select.
3. As a general rule of thumb, Fewer passes are better than more speed.

Thread Turning Methods

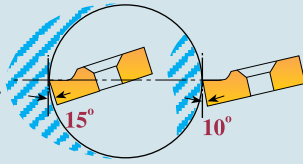


Important Points about Carmex Threading Inserts

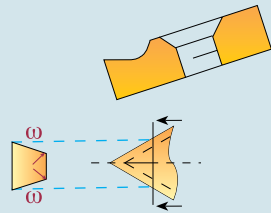
1. In most thread forms internal and external threads have different depth and radii, thus tools are not interchangeable



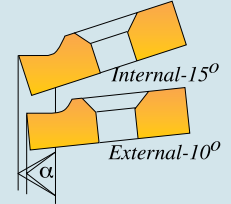
2. The Insert relief angle of a standard Carmex external toolholder is 10°; for an internal toolholder it is 15°. This 5° difference is to provide additional necessary radial clearance.



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

$$\omega = \text{ArcTan}(\tan \alpha \times \tan \phi)$$

| | | | | |
|--------------------------|--------------------------|--------------------------|--------------------------|--|
| $\omega = 5.8^\circ$ | $\omega = 2.6^\circ$ | $\omega = 10^\circ$ | $\omega = 5.8^\circ$ | $\phi = 10^\circ$ for External toolholders |
| $\omega = 8.8^\circ$ | | | | $\phi = 15^\circ$ for Internal toolholders |
| $\omega = 4^\circ$ | $\omega = 1.9^\circ$ | $\omega = 8.8^\circ$ | | |

ISO, UN
PARTIAL 60
NPT

$2\alpha = 60^\circ$

TRAPEZ
ACME
STACME

$2\alpha = 30^\circ$
 $2\alpha = 29^\circ$

AMERICAN
BUTTRESS

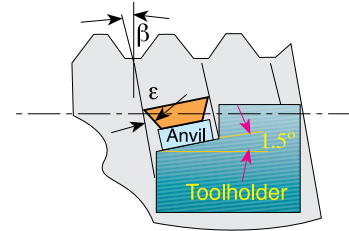
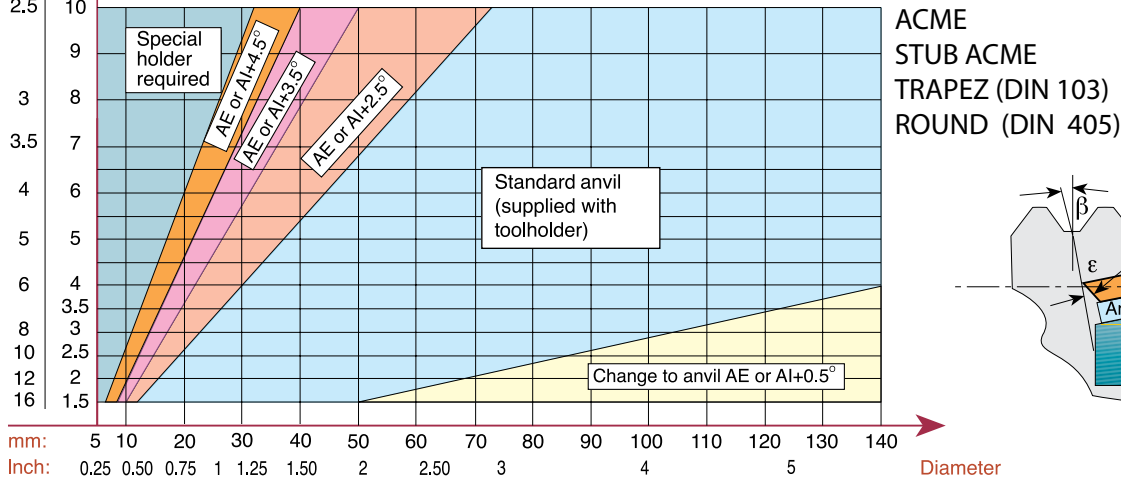
$\alpha = 45^\circ$ $\alpha = 7^\circ$

SAGE
(DIN 513)

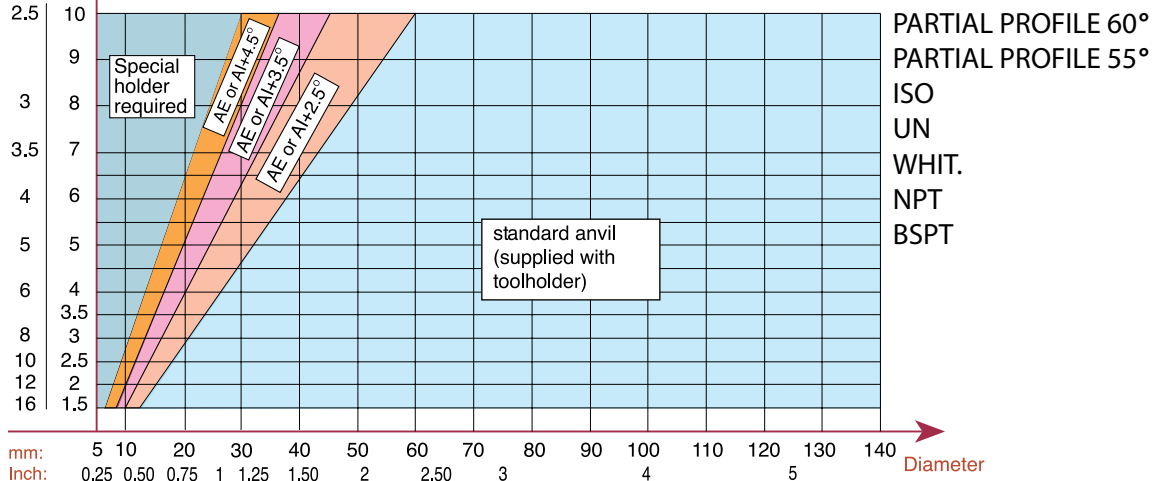
$\alpha = 30^\circ$ $\alpha = 3^\circ$

Anvil Change Recommendation

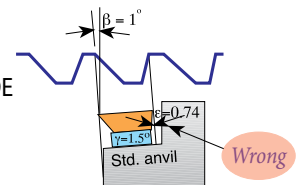
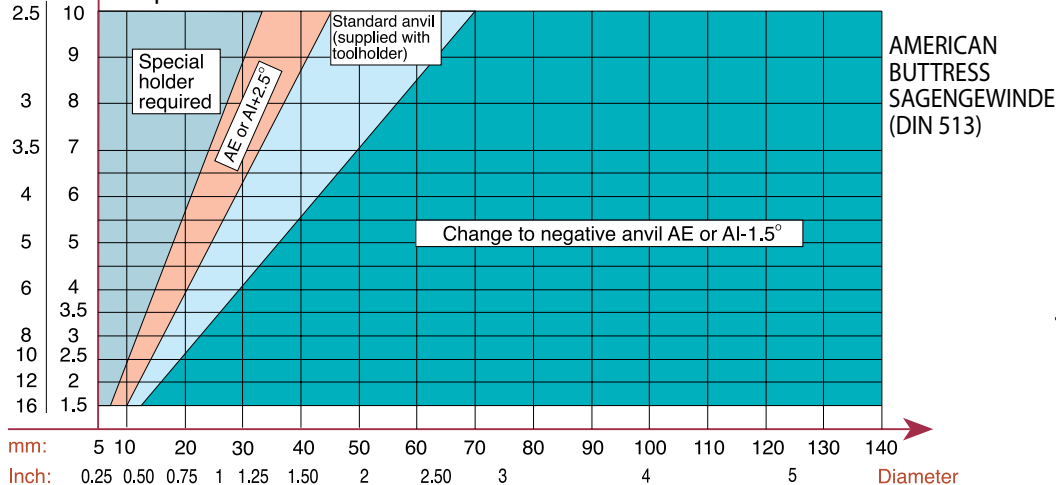
As can be seen from the chart, some Pitch to Diameter combinations require an anvil change. If change is required, use AE anvils for EX-RH and IN-LH toolholders and AI anvils for IN-RH and EX-LH toolholders.



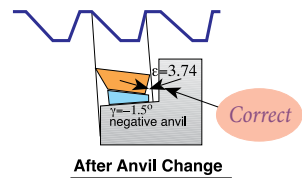
As can be seen from the chart, most applications do not require an anvil change. If change is required, use AE anvils for EX-RH and IN-LH toolholders and AI anvils for IN-RH and EX-LH toolholders.



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.



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



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 69, we chose **EX - RH Insert & Toolholder**

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

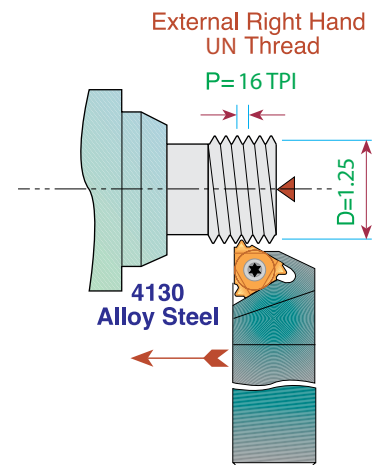
Step 3: Choose Toolholder from page 43: **SER 0750 K16**

Step 4: Choose Insert Grade from selection on page 66
Our choice for Alloy Steel is Grade **P25C**

Step 5: Choose Thread Turning Speed from chart on page 67,
we chose **330 ft/min**

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

Step 6: Choose Number of Threading passes
from table on page 69, we chose **8 passes**



Example No. 2:

Step 1: Choose Thread Turning Method from page 69
Usually, an IN-RH Toolholder and Insert will be chosen,
however, in this particular case we prefer to pull the metal
chips while thread turning outward, thus we chose to work
with **IN-LH Insert & Toolholder**

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

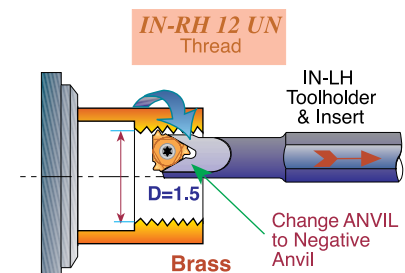
Step 3: Choose Toolholder from page 46: **SIL 1000 R16**
Note: since we thread cut IN-RH thread outward with an
IN-LH tool, do not forget to replace the standard anvil
(supplied with the holder) with a negative anvil **AE16-1.5**

Step 4: Choose Insert Grade from selection on page 66
Our choice for Brass is Grade **K20**

Step 5: Choose Thread Turning Speed from chart on page 67,
we chose **450 ft/min**

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

Step 6: Choose Number of Threading passes from table
on page 69, we chose **9 passes**

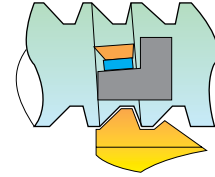


Example No. 3:

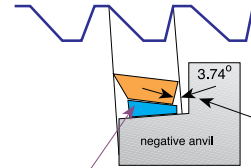
- Step 1: Choose Thread Turning Method from page 69
We chose EX-RH Insert & Toolholder.
- Step 2: Choose Insert from page 33: **16 ER 12 ABUT**
- Step 3: Choose Toolholder from page 43: **SER 1000 M16**
- Step 4: Choose Insert Grade from selection on page 66
Our choice for Stainless Steel is Grade **BMA**
- Step 5: Choose Thread Turning Speed from chart on page 68
We chose 360 ft/min.
Rotational Speed calculation:
$$N = \frac{360 \times 12}{\pi \times 1.5} = 917 \text{ RPM}$$
- Step 6: Choose Number of Threading passes from table on page 69. We chose **13 passes**
- Step 7: Find Thread Helix Angle: on page 53 for Pitch of 12 TPI and 40 Diameter
Helix Angle as shown in the chart is 1°
- Step 8: Choose correct Anvil: As can be seen from the chart on page 71, for AMERICAN BUTTRESS Thread, for 12 TPI and 40 Diameter a negative anvil **AE16-1.5** should replace the standard anvil supplied with the toolholder

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

Stainless Steel 304



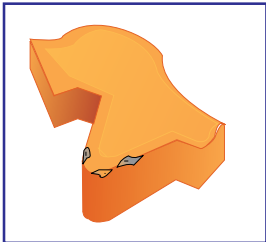
Replacing the standard anvil with an anvil with negative angle, will eliminate side rubbing



Anvil chosen:
AE16-1.5

Troubleshooting

Chipping



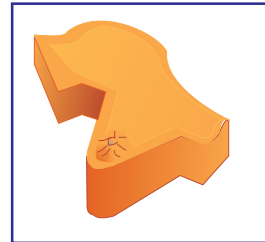
1. Use a tougher carbide grade
2. Eliminate tool overhang
3. Check if insert is correctly clamped
4. Eliminate vibration

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 | - |
| BSPT | B.S. 21: 1957 | - |
| DIN 477 | DIN 477 | - |
| ACME | ANSI B1.5-1988 | 3G |
| STUB ACME | ANSI B1.5-1988 | 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 | - |

DIN: **Deutsches Institut für Normung**
 ANSI: **American National Standards Institute**
 API: **American Petroleum Institute**
 B.S.: **British Standards**
 ISO: **International Organization for Standardization**
 MIL-S: **Military Specification**
 P.A.C: **Pacific Asia Connection**

Grooving Tools



A combination of ground profile and sintered chip - breaker

Advantages:

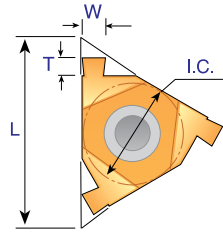
- Same Toolholder for Grooving and Threading
- Minimum Investment in Tooling
 - Three cutting edges
 - Precision Ground

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Grooving Inserts



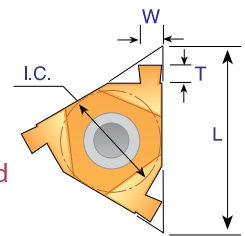
External & Internal

ER / IL

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

IR / EL

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



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

Order example: 16 ER/IL .047 BXC

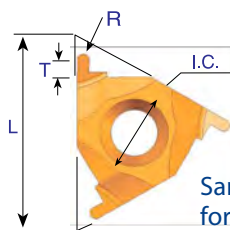
* The inserts should be used with our standard threading toolholders

* The anvil must be changed to AE 16-0 or AI 16-0 before using size 16mm (3/8") inserts

* Other available blank sizes: I.C. 5/8", 1/2", 3/16" & 5/32"

Grooving Inserts for Snap Ring

Carbide Grade: BXC



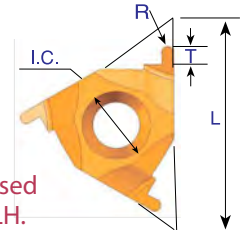
External & Internal

ER / IL

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

IR / EL

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



| R ±.001 | T | I.C. | L mm | Ordering Code | | Ordering Code | |
|------------|------|------|---------|-----------------------|-----------|-----------------------|-----------|
| | | | | ER/IL Inserts | Anvil | 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 16mm (3/8") inserts

* Other available blank sizes: I.C. 5/8", 1/2", 1/4", 3/16" & 5/32"

Grooving Kits



**ER / IL INSERT
KGROI - EXTERNAL**

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

**IR / EL INSERT
KGROI - INTERNAL**

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

Technical Section

Cutting Speeds for Grooving Tools

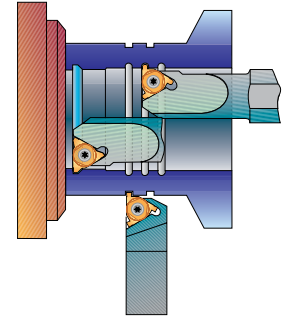
Carbide Grades:

BXC (P30 - P50, K25 - K40)

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

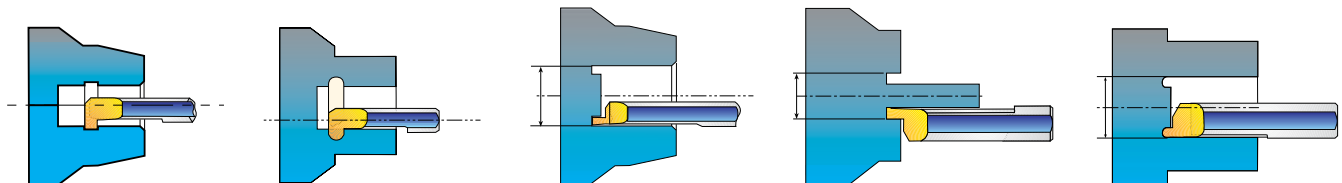
BMA (P20 - P40, K20 - K30)

PVD TiAlN coated sub-micrograin grade for stainless steels and exotic materials at medium to high cutting speeds.

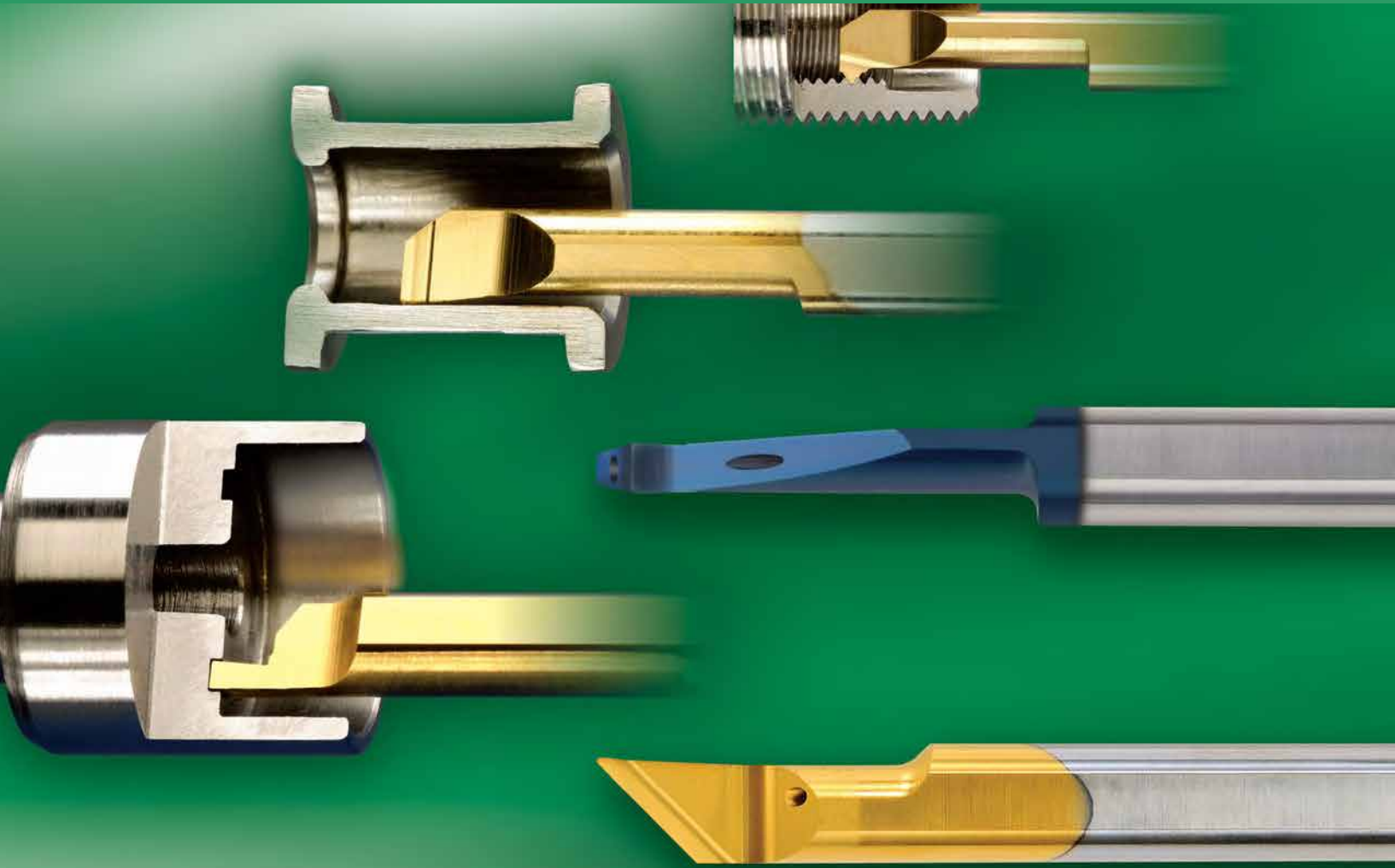


| ISO Standard | Materials | Cutting Speed ft/min |
|--------------|---------------------------------|----------------------|
| P | Low & Medium Carbon Steel | 65-330 |
| | High Carbon Steel | 100-260 |
| | Alloy Steels and Treated Steels | 130-300 |
| M | Stainless Steels | 100-260 |
| | Cast Steels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

For grooving small bores see pages 96-102



Tiny Tools



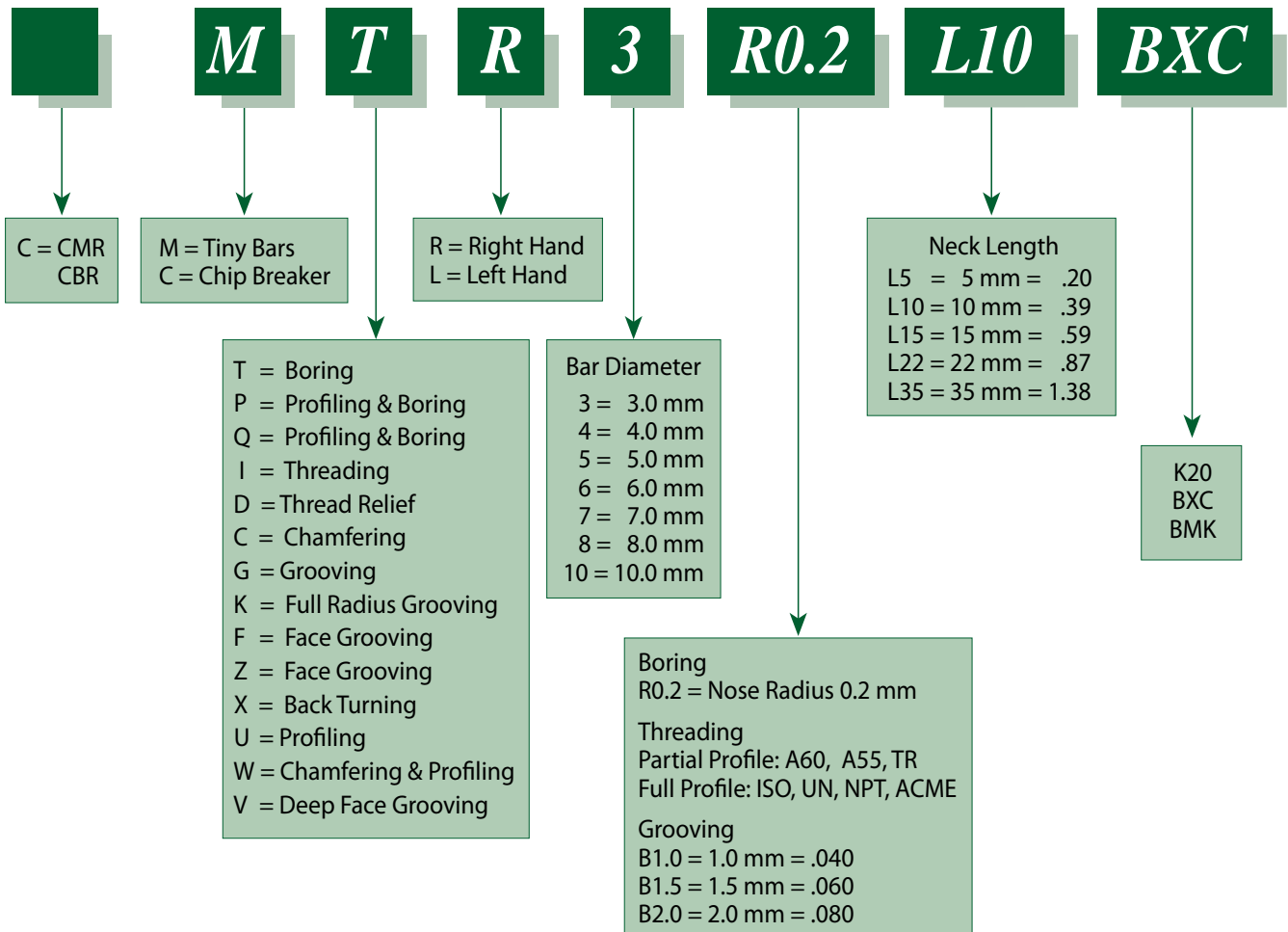
Solid Carbide tools for working in small bores

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

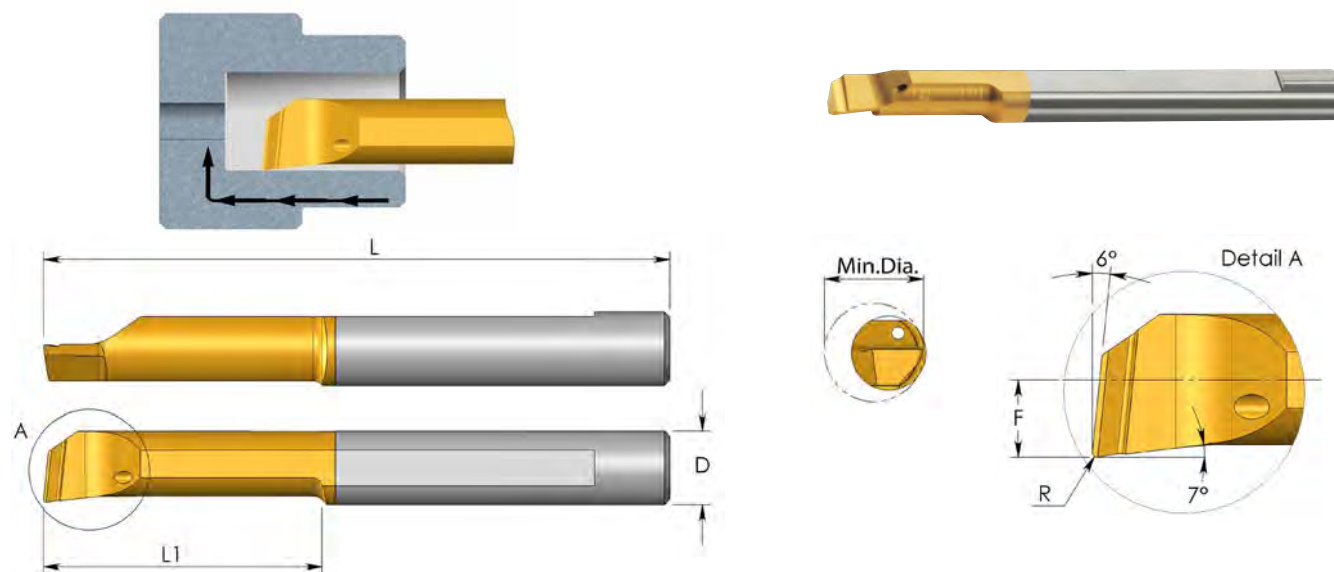
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Product Identification

Tiny Bars Ordering Codes



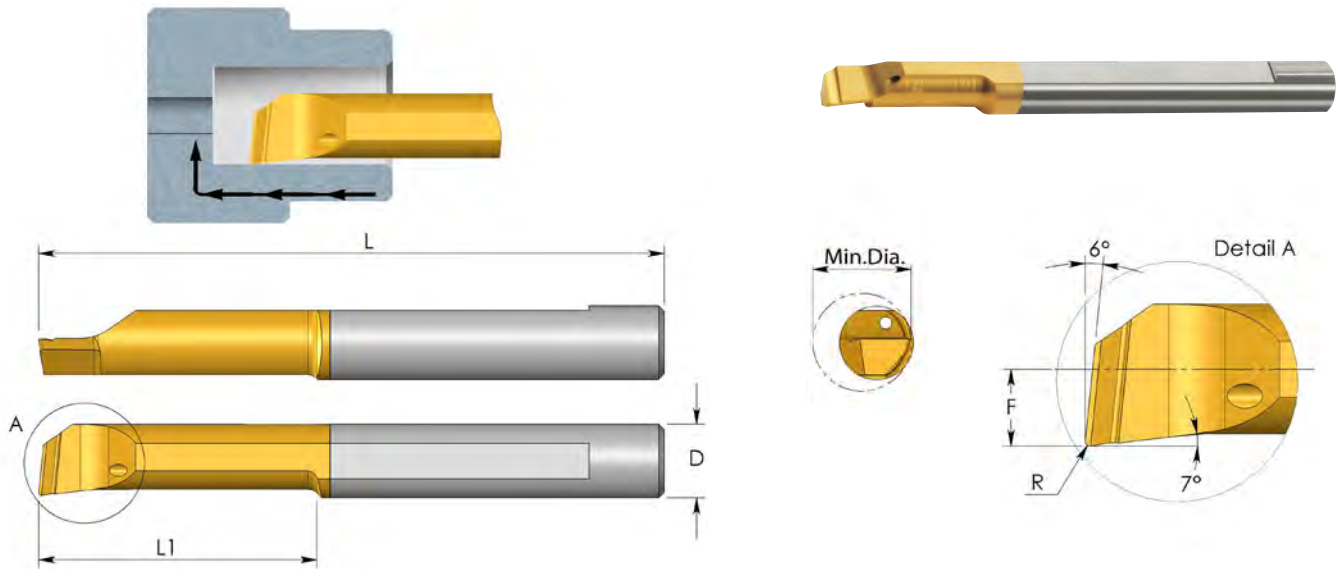
MTR Bars Boring



| D mm | Ordering Code | L | L1 | R | F | Min. Dia. | Holder** |
|------|------------------------|-----|------|------|-----|-----------|------------|
| 3.0 | MTR 1 R0.05 L4 | 1.5 | .16 | .002 | .02 | .04 | SIM ... H3 |
| | MTR 1 R0.05 L6 | 1.5 | .24 | .002 | .02 | .04 | |
| 3.0 | MTR 1.5 R0.1 L6 | 1.5 | .24 | .004 | .03 | .06 | SIM ... H3 |
| 3.0 | MTR 2 R0.05 L10 | 1.5 | .39 | .002 | .03 | .08 | SIM ... H3 |
| | MTR 2 R0.15 L5 | 1.5 | .20 | .006 | .03 | .08 | |
| | MTR 2 R0.15 L10 | 1.5 | .39 | .006 | .03 | .08 | |
| 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 R0.1 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 | 2.3 | 1.18 | .008 | .07 | .16 | |

** For additional holders see pages 106-111

MTR Bars Boring



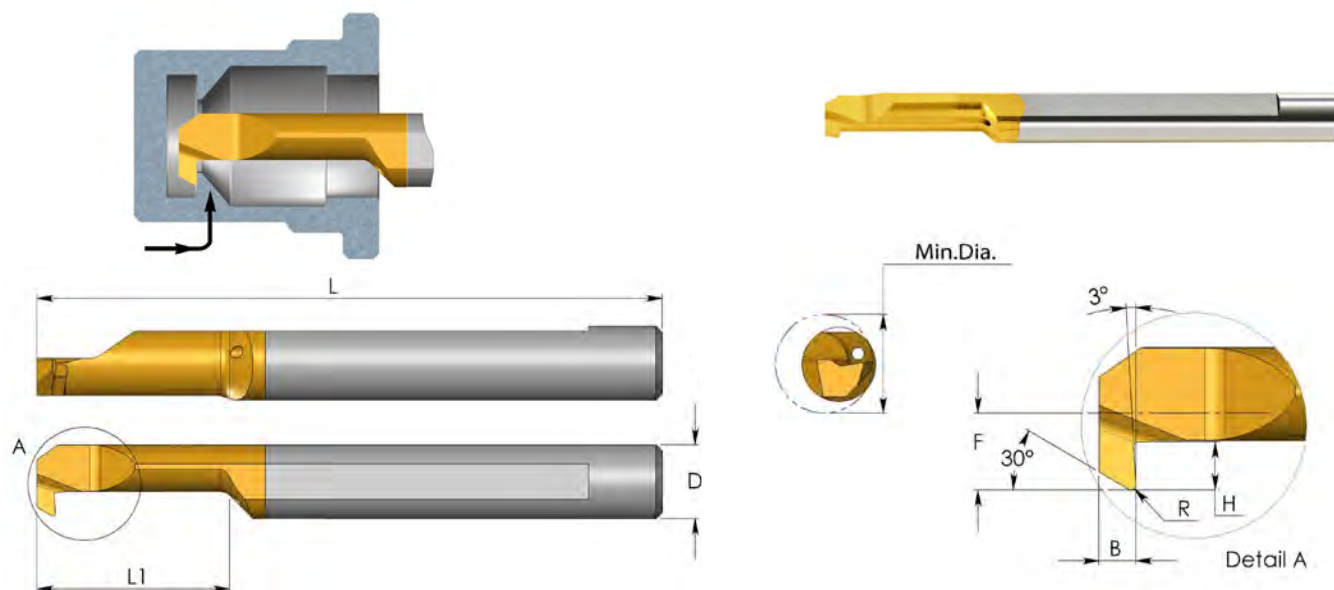
| D mm | Ordering Code | L | L1 | R | F | Min. Dia. | Holder** |
|------|-----------------|-----|------|------|-----|-----------|-------------|
| 5.0 | MTR 5 R0.05 L15 | 2.0 | .59 | .002 | .08 | .20 | SIM ... H5 |
| | MTR 5 R0.1 L15 | 2.0 | .59 | .004 | .08 | .20 | |
| | MTR 5 R0.1 L22 | 2.0 | .87 | .004 | .08 | .20 | |
| | MTR 5 R0.1 L30 | 3.0 | 1.18 | .004 | .08 | .20 | |
| | MTR 5 R0.2 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 | |
| 6.0 | MTR 6 R0.05 L15 | 2.0 | .59 | .002 | .11 | .24 | SIM ... H6 |
| | MTR 6 R0.1 L15 | 2.0 | .59 | .004 | .11 | .24 | |
| | MTR 6 R0.2 L15 | 2.0 | .59 | .008 | .11 | .24 | |
| | MTR 6 R0.05 L22 | 2.0 | .87 | .002 | .11 | .24 | |
| | MTR 6 R0.1 L22 | 2.0 | .87 | .004 | .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 | |
| 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 | MTR10R0.2 L35 | 2.9 | 1.38 | .008 | .19 | .40 | SIM ... H10 |

Order example: MTR 4 R0.2 L15 BXC

For L.H. bars specify MTL instead of MTR

** For additional holders see pages 106-111

MXR Bars Back Turning

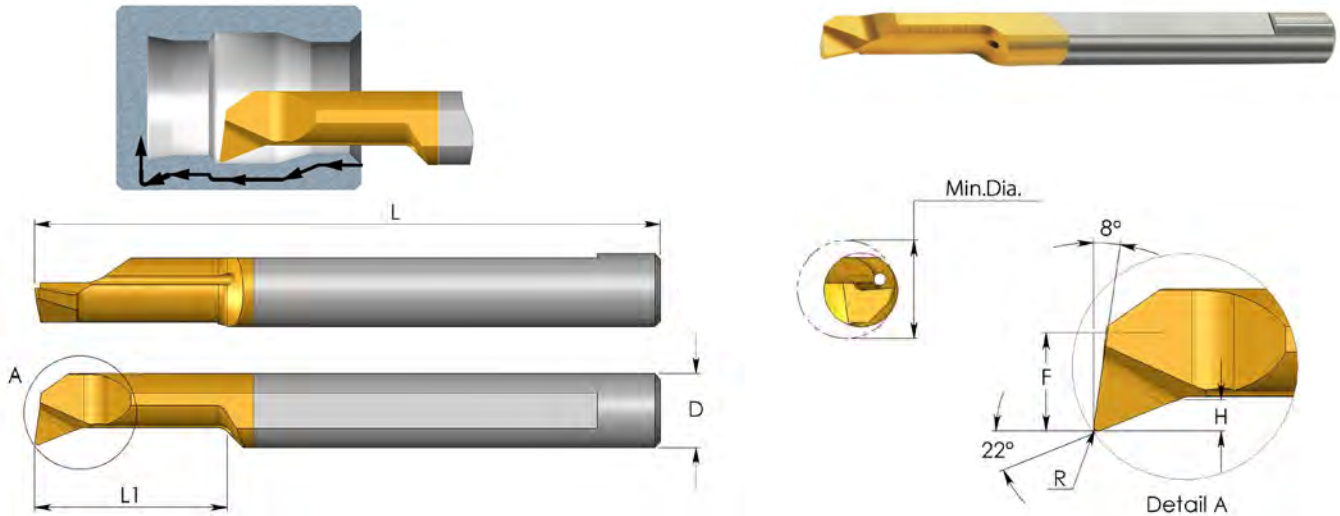


| D mm | Ordering Code | L | L1 | R | B | H | F | Min. Dia. | Holder* |
|---------|------------------------|-----|-----|------|-----|-----|-----|--------------|------------|
| 4.0 | MXR 4 R0.1 L10 | 2.0 | .39 | .004 | .05 | .02 | .05 | .12 | SIM ... H4 |
| 4.0 | MXR 4 R0.15 L10 | 2.0 | .39 | .006 | .05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

Order example: MXR 4 R0.15 L15 BXC

* For additional holders see pages 106-111

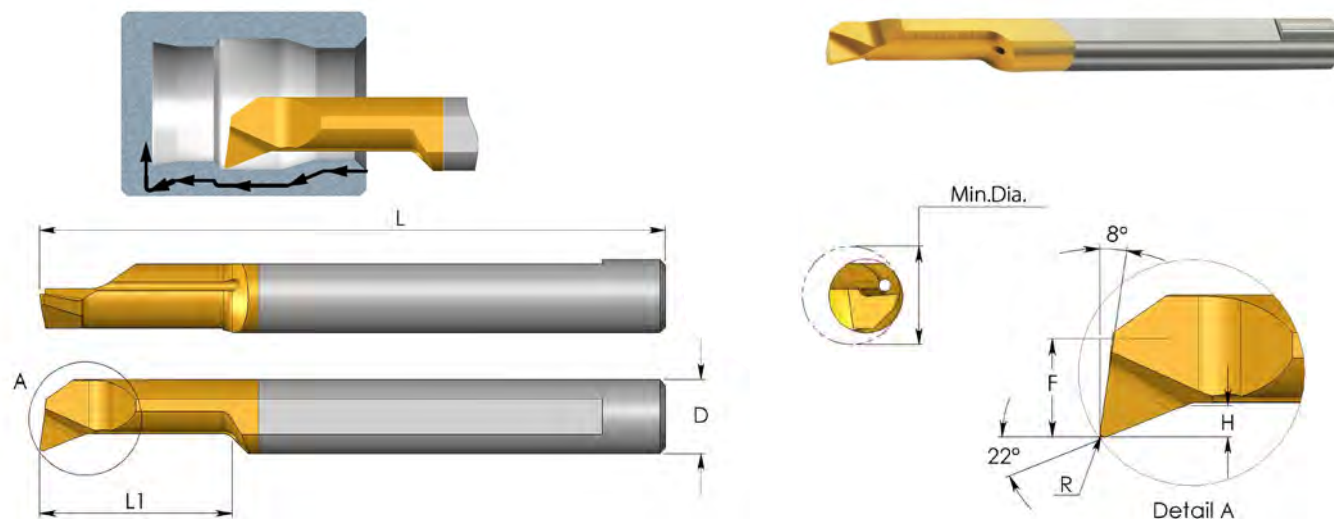
MPR Bars Profiling and Boring



| 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 1.5 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 | |
| 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 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 | |

** For additional holders see pages 106-111

MPR Bars Profiling and Boring



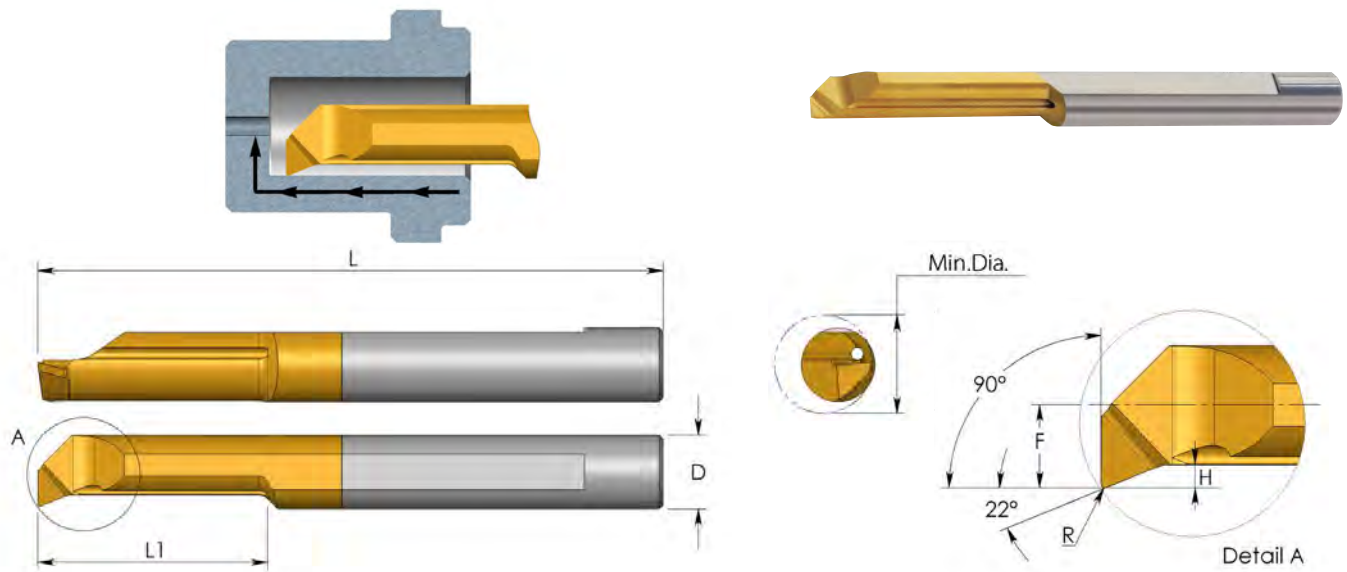
| D mm | Ordering Code | L | L1 | R | H | F | Min. Dia. | Holder* |
|------|------------------------|-----|------|------|-----|-----|-----------|-------------|
| 5.0 | MPR 5 R0.1 L22 | 2.0 | .87 | .004 | .05 | .08 | .20 | SIM ... H5 |
| | MPR 5 R0.1 L30 | 3.0 | 1.18 | .004 | .05 | .08 | .20 | |
| | MPR 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 | |
| 6.0 | MPR 6 R0.2 L15 | 2.0 | .59 | .008 | .06 | .11 | .24 | SIM ... H6 |
| | MPR 6 R0.2 L22 | 2.0 | .87 | .008 | .06 | .11 | .24 | |
| | MPR 6 R0.2 L30 | 3.0 | 1.18 | .008 | .06 | .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 5 R0.2 L15 BXC

* For additional holders see pages 106-111

For L.H. Bars specify MPL instead of MPR

MUR Bars Profiling, 90° Face Cutting

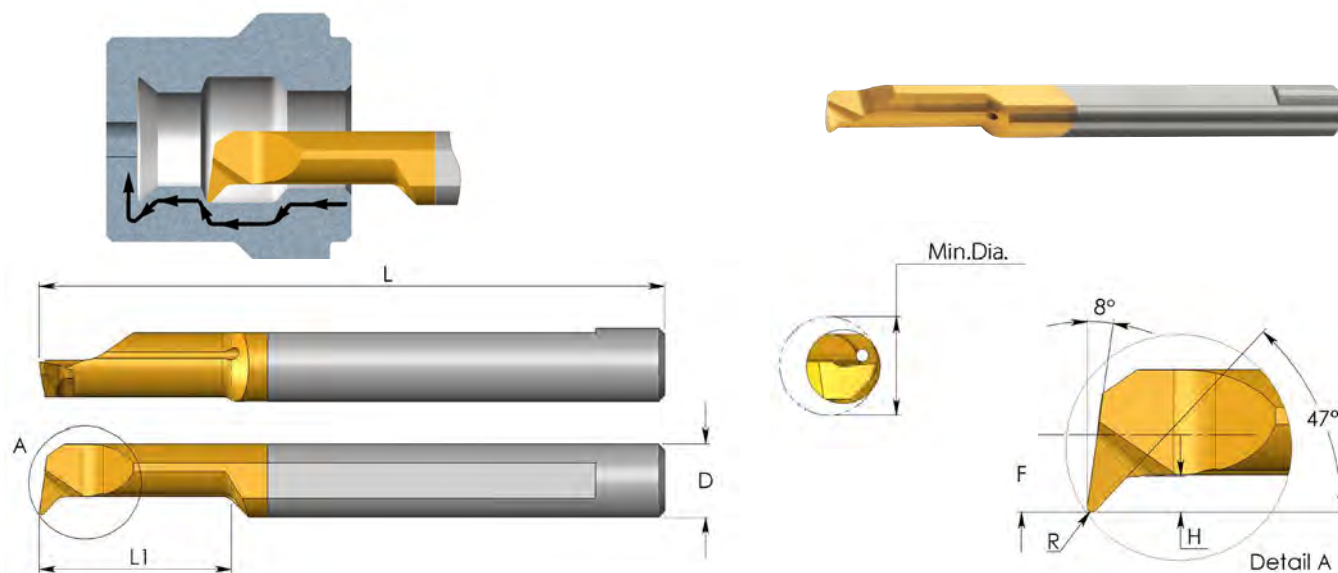


| D mm | Ordering Code | L | L1 | R | H | F | Min. Dia. | Holder* |
|------|------------------------|-----|-----|------|-----|-----|-----------|------------|
| 3.0 | MUR 3 R0.05 L10 | 1.5 | .39 | .002 | .01 | .05 | .12 | SIM ... H3 |
| | MUR 3 R0.05 L15 | 1.5 | .59 | .002 | .01 | .05 | .12 | |
| 4.0 | MUR 4 R0.1 L10 | 2.0 | .39 | .004 | .02 | .07 | .16 | SIM ... H4 |
| | MUR 4 R0.1 L15 | 2.0 | .59 | .004 | .02 | .07 | .16 | |
| 5.0 | MUR 5 R0.15 L15 | 2.0 | .59 | .006 | .03 | .08 | .20 | SIM ... H5 |
| | MUR 5 R0.15 L22 | 2.0 | .87 | .006 | .03 | .08 | .20 | |
| 6.0 | MUR 6 R0.15 L15 | 2.0 | .59 | .006 | .04 | .11 | .24 | SIM ... H6 |
| | MUR 6 R0.15 L22 | 2.0 | .87 | .006 | .04 | .11 | .24 | |
| 8.0 | MUR 8 R0.2 L22 | 2.5 | .87 | .008 | .04 | .15 | .32 | SIM ... H8 |

Order example: MUR 5 R0.15 L15 BXC

* For additional holders see pages 106-111

MQR Bars Profiling and Boring



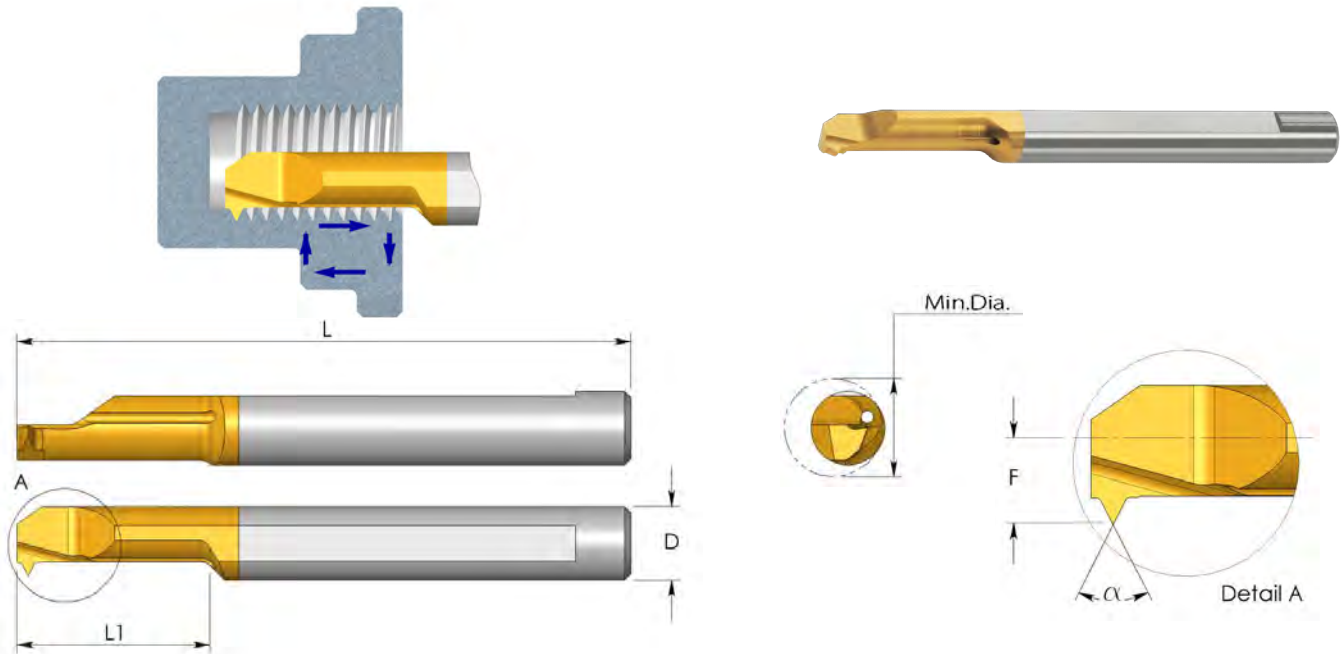
| D mm | Ordering Code | L | L1 | R | H | F | Min. Dia. | Holder* |
|---------|-----------------------|-----|------|------|-----|-----|--------------|------------|
| 4.0 | MQR 4 R0.1 L22 | 2.0 | .87 | .004 | .03 | .07 | .16 | SIM ... H4 |
| 4.0 | MQR 4 R0.2 L10 | 2.0 | .39 | .008 | .03 | .07 | .16 | SIM ... H4 |
| | MQR 4 R0.2 L15 | 2.0 | .59 | .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

For L.H. bars specify **MQL** instead of **MQR**

* For additional holders see pages 106-111

MIR Bars Threading



Partial Profile 55°

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

Order example: MIR 5 L15 A55 BXC

Partial Profile 60°

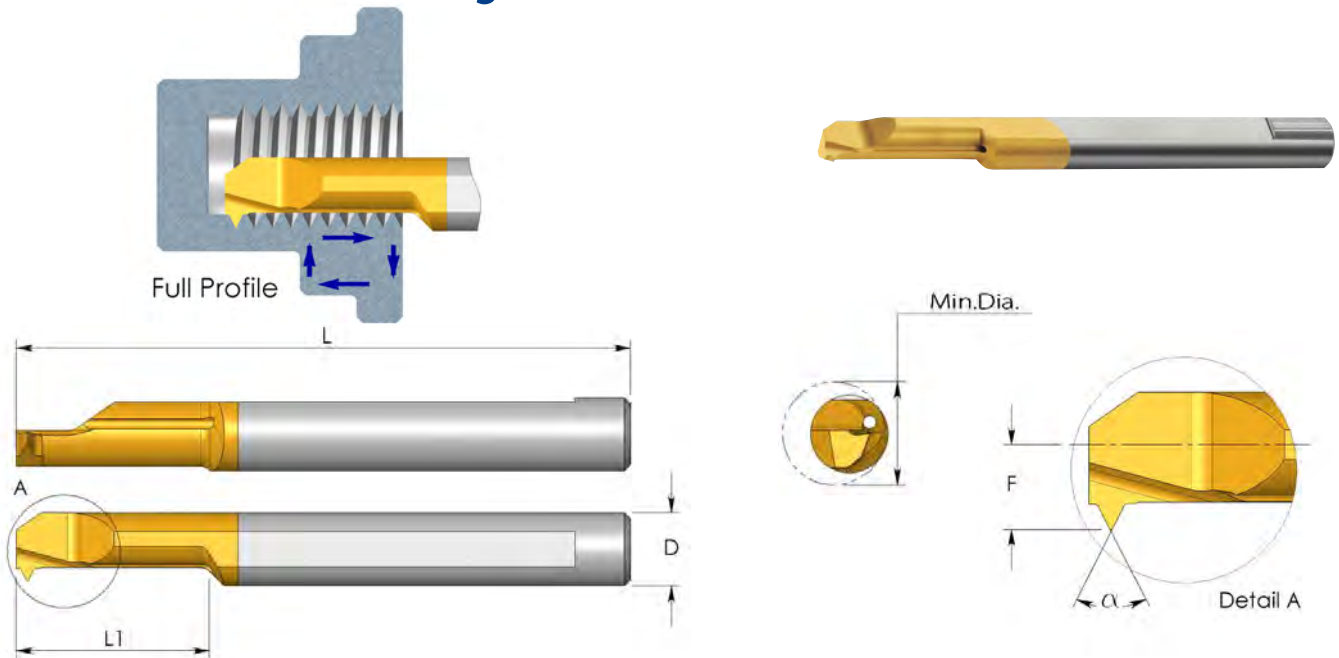
| D mm | Ordering Code | L | L1 | α | Pitch Range | | F | Min. Dia. | Holder* |
|---------|-----------------------|-----|-----|----------|-------------|----------|-----|--------------|------------|
| | | | | | mm | TPI | | | |
| 3.0 | MIR 1 L5 A60 | 1.5 | .19 | 60 | 0.25 - 0.35 | 100 - 72 | .02 | .05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

Order example: MIR 5 L15 A60 BXC

For L.H. bars specify MIL instead of MIR

* For additional holders see pages 106-111

MIR Bars Threading



Full Profile - ISO 60°

| D mm | Ordering Code | Thread | L | L1 | α | F | Min. Dia. | Holder* |
|------|---------------------------|-------------|-----|-----|----------|-----|-----------|------------|
| 3.0 | MIR 3 L10 0.5 ISO | M3 x 0.5 | 1.5 | .39 | 60 | .04 | .09 | SIM ... H3 |
| | MIR 3 L15 0.5 ISO | M4 x 0.5 | 1.5 | .59 | 60 | .06 | .13 | SIM ... H3 |
| 3.0 | MIR 3 L15 0.7 ISO | M4 x 0.7 | 1.5 | .59 | 60 | .06 | .13 | |
| | MIR 3 L15 0.75 ISO | M4.5 x 0.75 | 1.5 | .59 | 60 | .06 | .13 | |
| 4.0 | MIR 4 L15 0.5 ISO | M5 x 0.5 | 2.0 | .59 | 60 | .07 | .16 | SIM ... H4 |
| | MIR 4 L15 0.75 ISO | M5 x 0.75 | 2.0 | .59 | 60 | .07 | .16 | |
| | MIR 4 L15 0.8 ISO | M5 x 0.8 | 2.0 | .59 | 60 | .07 | .16 | |
| 5.0 | MIR 5 L15 1.0 ISO | M6 x 1.0 | 2.0 | .59 | 60 | .09 | .19 | SIM ... H5 |
| 6.0 | MIR 6 L22 1.25 ISO | M8 x 1.25 | 2.0 | .87 | 60 | .11 | .24 | SIM ... H6 |
| | MIR 6 L22 1.50 ISO | M10 x 1.5 | 2.0 | .87 | 60 | .11 | .24 | |

Order example: MIR 5 L15 1.0 ISO BXC

Full Profile - UN 60°

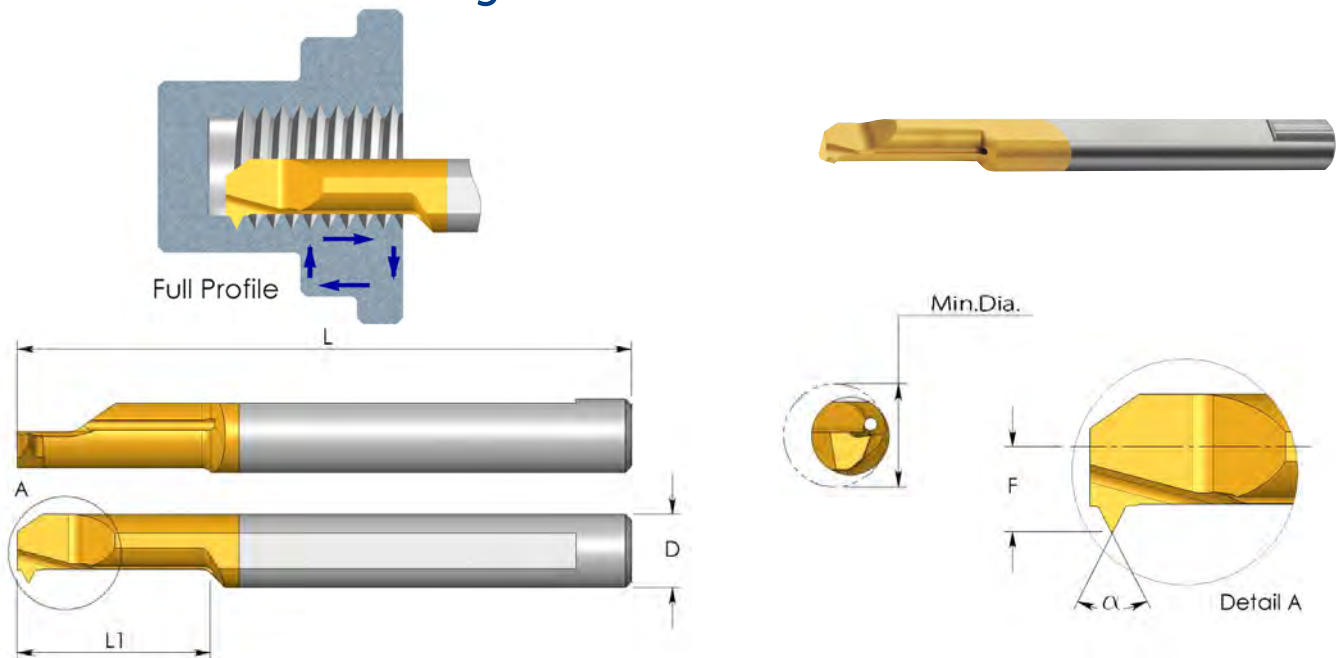
| D mm | Ordering Code | Thread | L | L1 | α | F | Min. Dia. | Holder* |
|------|------------------------|------------|-----|-----|----------|-----|-----------|------------|
| 3.0 | MIR 3 L10 32 UN | 6-32 UNC | 1.5 | .39 | 60 | .04 | .11 | SIM ... H3 |
| 3.0 | MIR 3 L15 36 UN | 8-36 UNF | 1.5 | .59 | 60 | .06 | .13 | SIM ... H3 |
| | MIR 3 L15 32 UN | 8-32 UNC | 1.5 | .59 | 60 | .06 | .13 | |
| 4.0 | MIR 4 L15 36 UN | 12-36 UNS | 2.0 | .59 | 60 | .07 | .16 | SIM ... H4 |
| | MIR 4 L15 32 UN | 12-32 UNEF | 2.0 | .59 | 60 | .07 | .16 | |
| 5.0 | MIR 5 L15 28 UN | 1/4-28 UNF | 2.0 | .59 | 60 | .09 | .19 | SIM ... H5 |
| | MIR 5 L18 20 UN | 1/4-20 UNC | 2.0 | .71 | 60 | .09 | .20 | |
| 6.0 | MIR 6 L18 24 UN | 5/16-24UNF | 2.0 | .71 | 60 | .11 | .26 | SIM ... H6 |
| | MIR 6 L18 18 UN | 5/16-18UNC | 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 pages 106-111

MIR Bars Threading



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 |

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 |

Full Profile - G 55° BSP

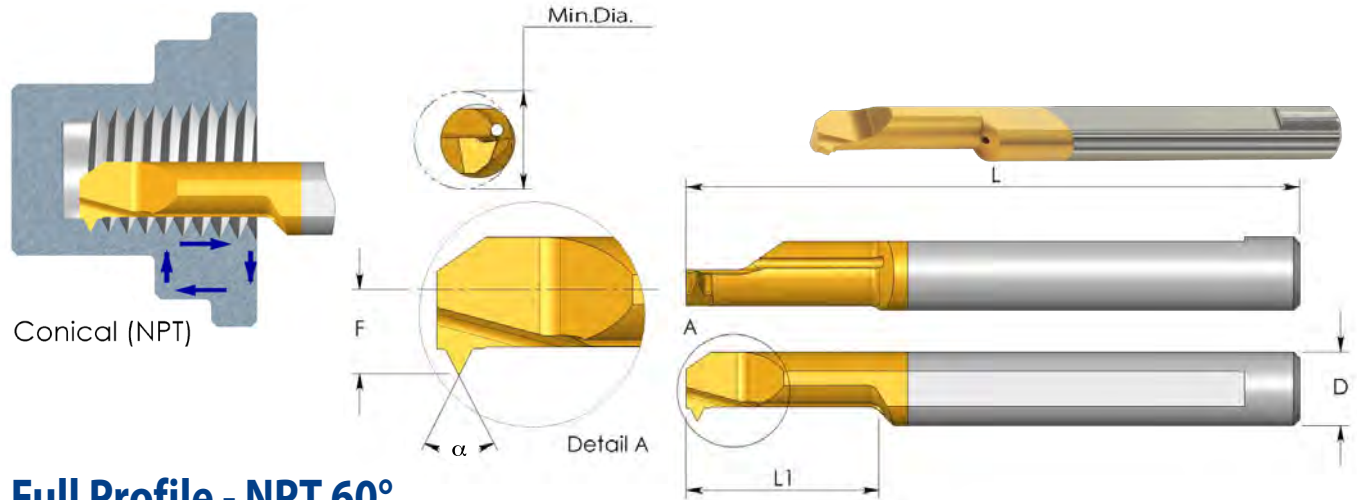
| D mm | Ordering Code | Thread Size | L | L1 | α | F | Min. Dia. | Holder* |
|------|-----------------------|-------------|-----|-----|----|-----|-----------|------------|
| 6.0 | MIR 6 L17 28 W | 1/16-28 BSP | 2.0 | .67 | 55 | .11 | .26 | SIM ... H6 |
| | MIR 6 L17 19 W | 1/4-19 BSP | 2.0 | .67 | 55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

* For additional holders see pages 106-111

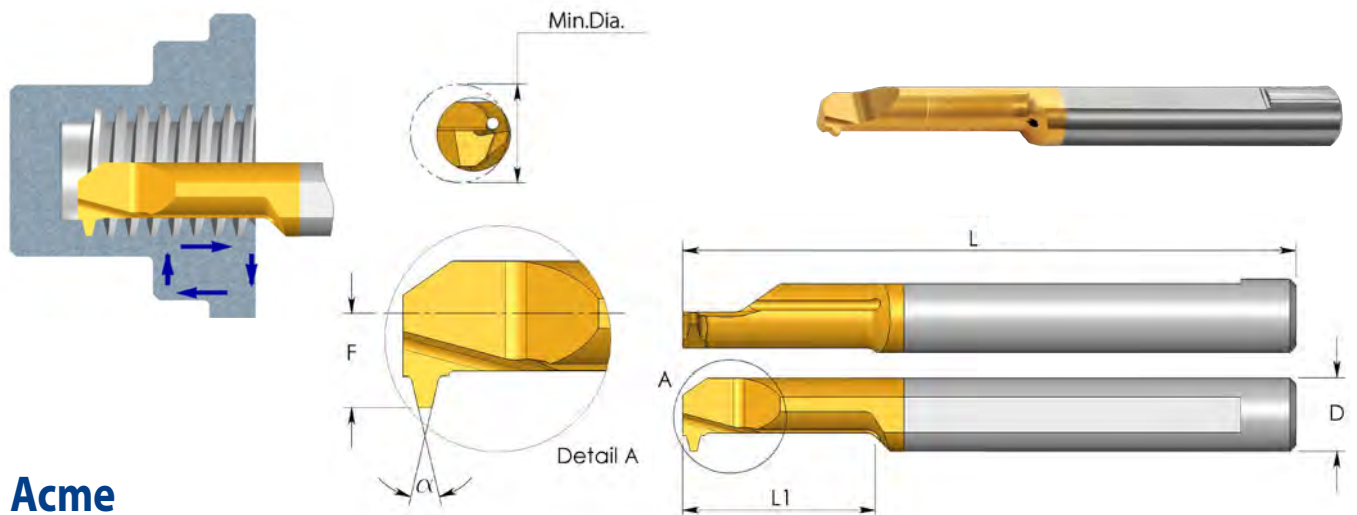
MIR Bars Threading



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 | .10 | .23 | SIM ... H6 |

Order example: MIR 6 L15 27 NPT BXC



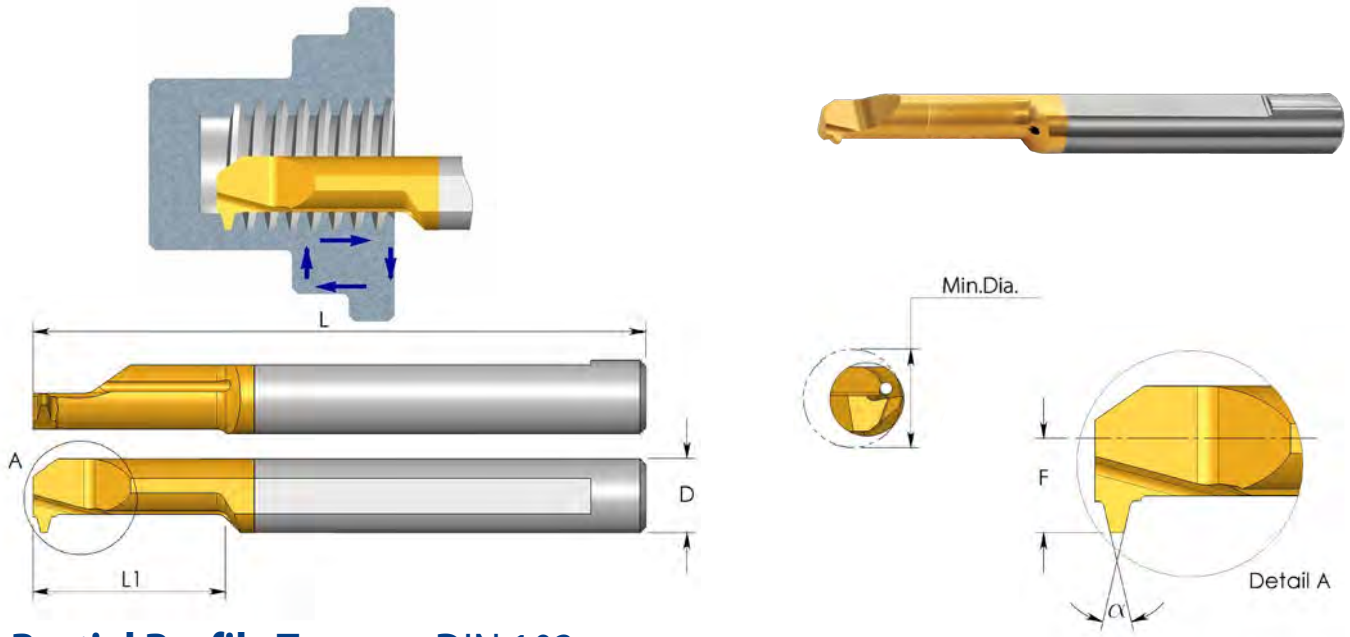
Acme

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

Order example: MIR 6 L 20 14 ACME BXC

* For additional holders see pages 106-111

MIR Bars Threading



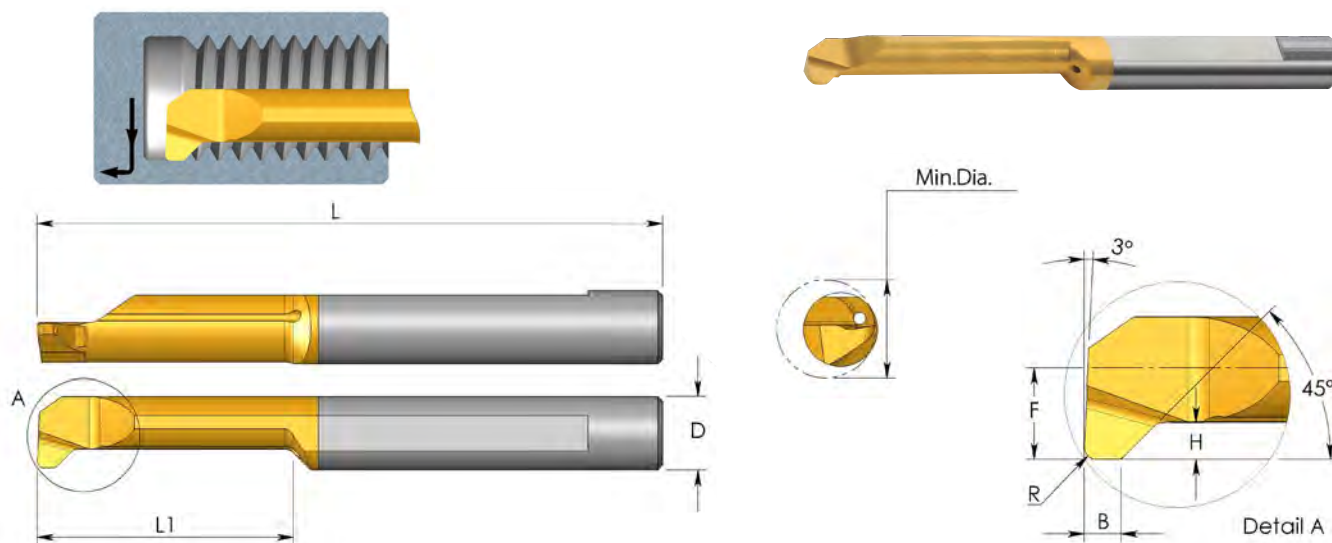
Partial Profile Trapez - DIN 103

| D mm | Ordering Code | Pitch mm | Thread Size | L | L1 | F | α | 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 | .11 | 30 | .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 | .13 | 30 | .27 | SIM ... H7 |
| 10.0 | MIR 10 L35 2 TR | 2 | TR14 x 2 TR16 x 2 TR18 x 2 TR20 x 2 | 2.9 | 1.38 | .19 | 30 | .43 | SIM ... H10 |
| 7.0 | MIR 7 L35 3 TR | 3 | TR11 x 3 TR12 x 3 | 2.4 | 1.38 | .13 | 30 | .30 | SIM ... H7 |
| 10.0 | MIR 10 L35 3 TR | 3 | TR14 x 3 TR22 x 3 TR24 x 3 TR26 x 3 TR28 x 3 | 2.9 | 1.38 | .19 | 30 | .41 | SIM ... H10 |
| 10.0 | MIR 10 L45 4 TR | 4 | TR16 x 4 TR18 x 4 TR20 x 4 | 4.1 | 1.77 | .19 | 30 | .45 | SIM ... H10 |
| 10.0 | MIR 10 L55 5 TR | 5 | TR22 x 5 TR24 x 5 TR28 x 5 | 4.1 | 2.17 | .19 | 30 | .43 | SIM ... H10 |

Order example: MIR 10 L35 3 TR BXC

* For additional holders see pages 106-111

MDR Bars Thread Relief, Chamfering and Grooving



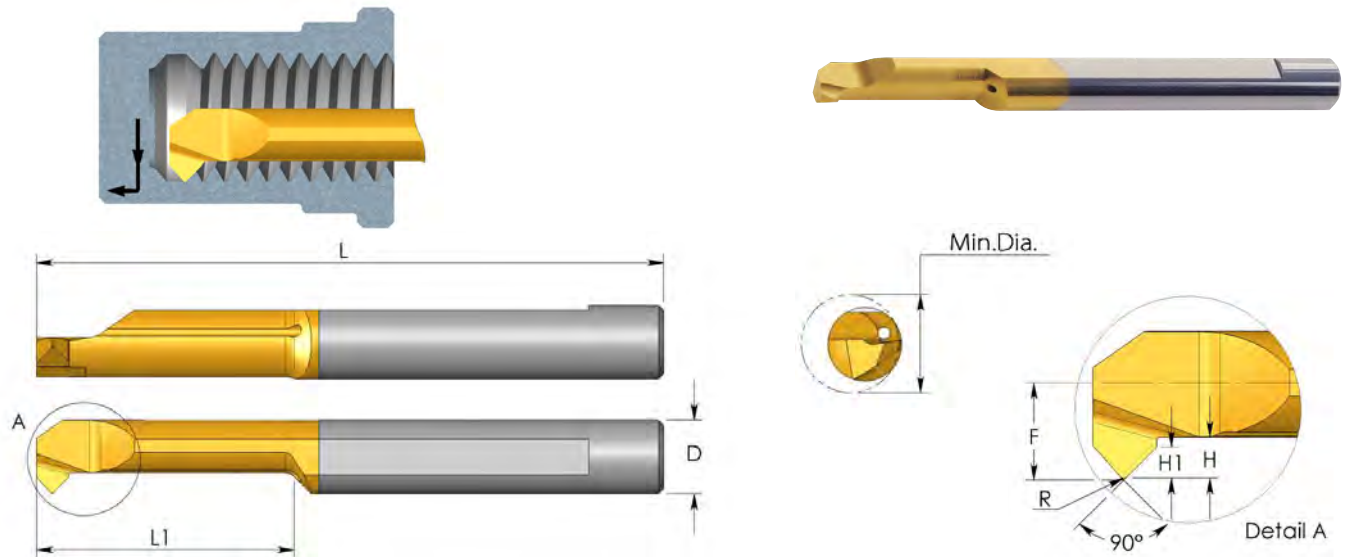
| D mm | Ordering Code | L | L1 | B | R | H | F | Min. Dia. | Holder* |
|------|-----------------------|-----|------|-----|-----|-----|-----|-----------|------------|
| 4.0 | MDR 4 R0.5 L18 | 2.0 | .71 | .06 | .02 | .03 | .07 | .16 | SIM ... H4 |
| 5.0 | MDR 5 R0.5 L24 | 2.0 | .94 | .06 | .02 | .05 | .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

For L.H. bars specify MDL instead of MDR

* For additional holders see pages 106-111

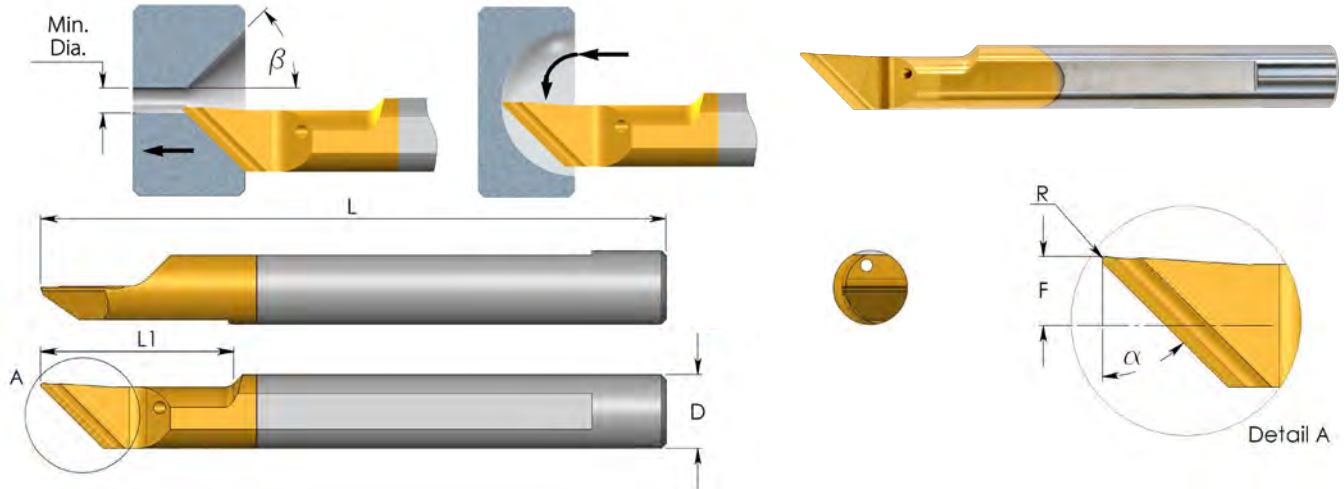
MCR Bars Chamfering and Boring



| 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
 For L.H. bars specify MCL instead of MCR
 * For additional holders see pages 106-111

MWR Bars Chamfering and Profiling



| 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 | |
| 6.0 | * MWR 6 R0.4 A60 | 2.0 | .87 | .016 | 45° | 45° | .09 | .24 | |
| | * MWR 6 R0.4 A90 | 2.0 | .87 | .016 | 60° | 30° | .09 | .24 | |

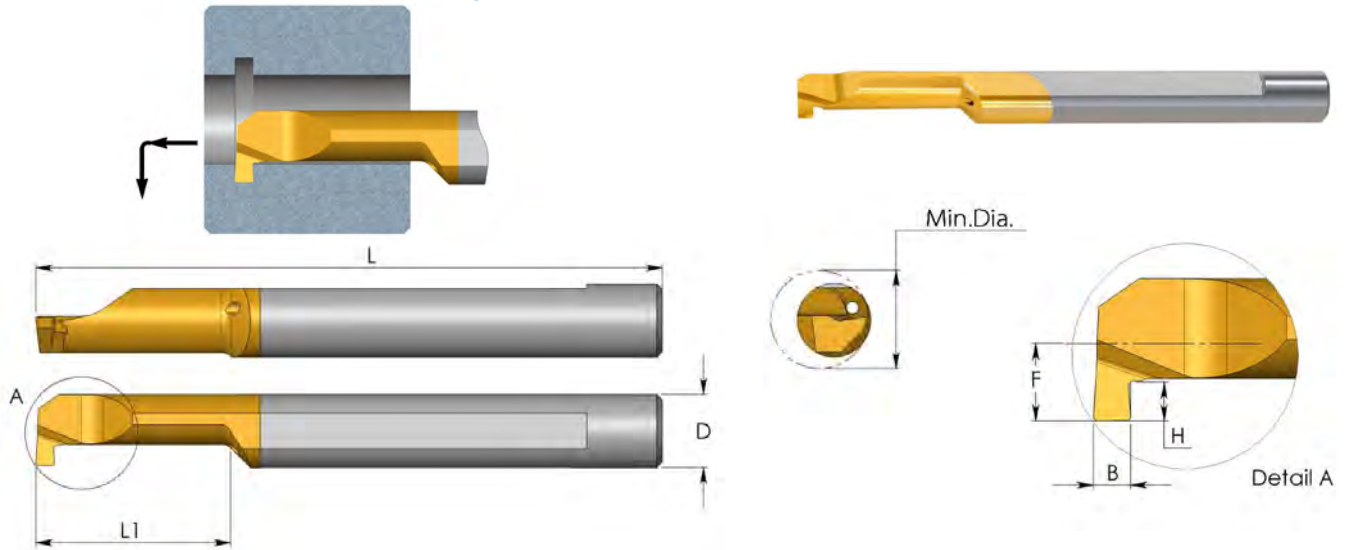
Order example: MWR 6 R0.2 A90 BXC

For L.H. bars specify MWL instead of MWR

* Can be used also for boring

** For additional holders see pages 106-111

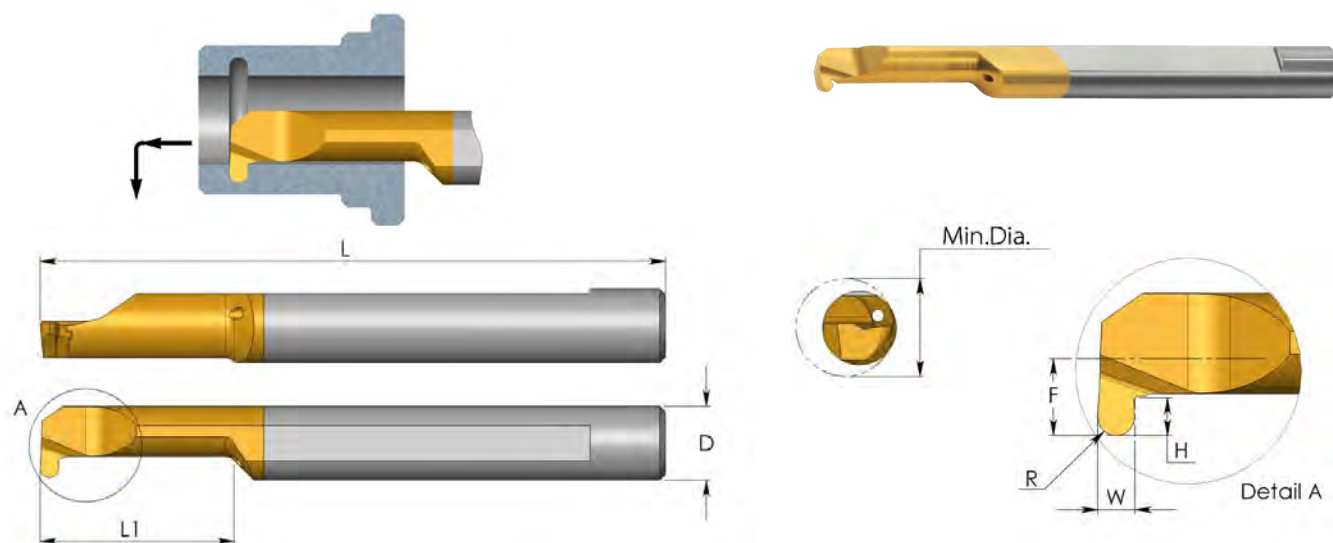
MGR Bars Grooving



| D mm | Ordering Code | L | L1 | B | H | F | Min. Dia. | Holder* |
|------|-----------------------|-----|------|-----|-----|-----|-----------|------------|
| 3.0 | MGR 3 B0.7 L10 | 1.5 | .39 | .03 | .02 | .05 | .12 | SIM ... H3 |
| 4.0 | MGR 4 B0.5 L10 | 2.0 | .39 | .02 | .02 | .07 | .16 | SIM ... H4 |
| | MGR 4 B0.7 L10 | 2.0 | .39 | .03 | .02 | .07 | .16 | |
| | MGR 4 B1.0 L10 | 2.0 | .39 | .04 | .04 | .07 | .16 | |
| | MGR 4 B1.0 L15 | 2.0 | .59 | .04 | .04 | .07 | .16 | |
| | MGR 4 B1.0 L22 | 2.0 | .87 | .04 | .04 | .07 | .16 | |
| 5.0 | MGR 4 B1.5 L10 | 2.0 | .39 | .06 | .04 | .07 | .16 | SIM ... H5 |
| | MGR 5 B1.0 L15 | 2.0 | .59 | .04 | .05 | .09 | .20 | |
| | MGR 5 B1.0 L22 | 2.0 | .87 | .04 | .05 | .09 | .20 | |
| | MGR 5 B1.5 L15 | 2.0 | .59 | .06 | .05 | .09 | .20 | |
| | MGR 5 B1.5 L22 | 2.0 | .87 | .06 | .05 | .09 | .20 | |
| 6.0 | MGR 5 B2.0 L15 | 2.0 | .59 | .08 | .05 | .09 | .20 | SIM ... H6 |
| | MGR 5 B2.0 L22 | 2.0 | .87 | .08 | .05 | .09 | .20 | |
| | MGR 6 B1.0 L15 | 2.0 | .59 | .04 | .06 | .11 | .24 | |
| | MGR 6 B1.0 L17 | 2.0 | .67 | .04 | .07 | .11 | .24 | |
| | MGR 6 B1.0 L22 | 2.0 | .87 | .04 | .06 | .11 | .24 | |
| | MGR 6 B1.5 L15 | 2.0 | .59 | .06 | .06 | .11 | .24 | |
| | MGR 6 B1.5 L17 | 2.0 | .67 | .06 | .07 | .11 | .24 | |
| | MGR 6 B1.5 L22 | 2.0 | .87 | .06 | .06 | .11 | .24 | |
| | MGR 6 B1.5 L23 | 2.0 | .91 | .06 | .07 | .11 | .24 | |
| | MGR 6 B2.0 L15 | 2.0 | .59 | .08 | .06 | .11 | .24 | |
| 7.0 | MGR 6 B2.0 L17 | 2.0 | .67 | .08 | .07 | .11 | .24 | SIM ... H7 |
| | MGR 6 B2.0 L22 | 2.0 | .87 | .08 | .06 | .11 | .24 | |
| | MGR 6 B2.0 L23 | 2.0 | .91 | .08 | .07 | .11 | .24 | |
| | MGR 7 B1.0 L15 | 2.4 | .59 | .04 | .10 | .13 | .28 | |
| | MGR 7 B1.0 L22 | 2.4 | .87 | .04 | .10 | .13 | .28 | |
| | MGR 7 B1.0 L30 | 2.4 | 1.18 | .04 | .10 | .13 | .28 | |
| | MGR 7 B1.5 L15 | 2.4 | .59 | .06 | .10 | .13 | .28 | |
| | MGR 7 B1.5 L22 | 2.4 | .87 | .06 | .10 | .13 | .28 | |
| 8.0 | MGR 7 B1.5 L30 | 2.4 | 1.18 | .06 | .10 | .13 | .28 | SIM ... H8 |
| | MGR 7 B2.0 L15 | 2.4 | .59 | .08 | .10 | .13 | .28 | |
| | MGR 7 B2.0 L22 | 2.4 | .87 | .08 | .10 | .13 | .28 | |
| | MGR 7 B2.0 L30 | 2.4 | 1.18 | .08 | .10 | .13 | .28 | |
| | MGR 8 B1.0 L22 | 2.5 | .87 | .04 | .07 | .15 | .32 | |
| | MGR 8 B1.5 L22 | 2.5 | .87 | .06 | .07 | .15 | .32 | |
| | MGR 8 B2.0 L22 | 2.5 | .87 | .08 | .10 | .15 | .32 | |

Order example: MGR 5 B1.5 L15 BXC
 For L.H. bars specify MGL instead of MGR
 * For additional holders see pages 106-111

MKR Bars Full Radius Grooving



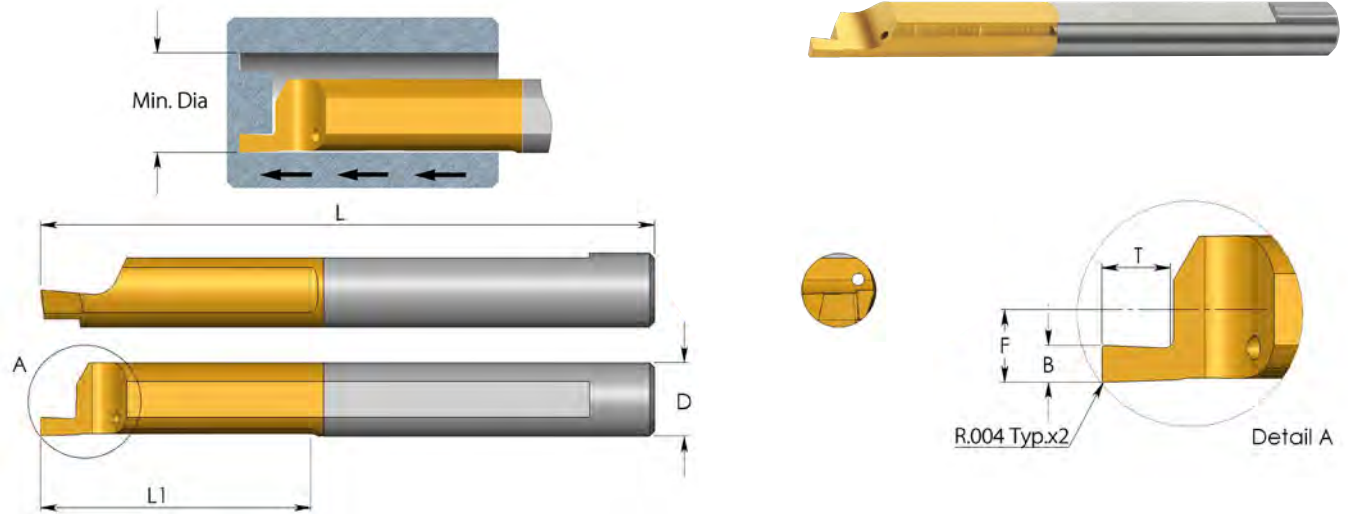
| D mm | Ordering Code | L | L1 | R | W | H | F | Min. Dia. | Holder* |
|------|------------------------|-----|-----|------|-----|-----|-----|-----------|------------|
| 4.0 | MKR 4 R0.5 L10 | 2.0 | .39 | .020 | .04 | .04 | .07 | .16 | SIM ... H4 |
| | MKR 4 R0.5 L15 | 2.0 | .59 | .020 | .04 | .04 | .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 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 | |

Order example: MKR 5 R1.0 L15 BXC

For L.H. bars specify MKL instead of MKR

* For additional holders see pages 106-111

MFR Bars Face Grooving

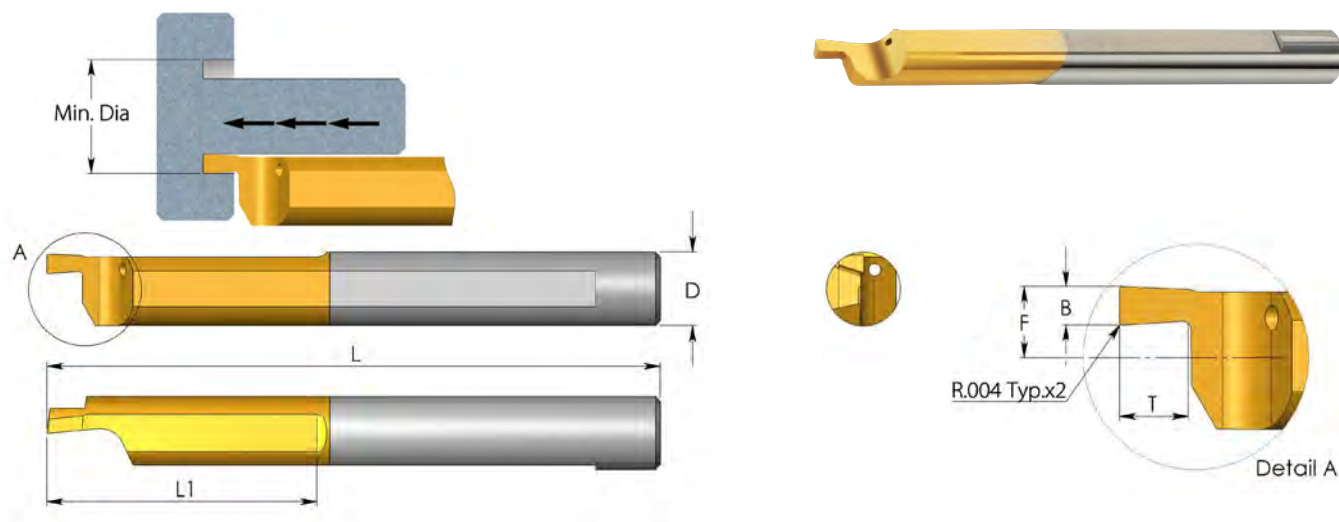


| D mm | Ordering Code | L | L1 | B | T | F | Min. Dia. | Holder* |
|------|-----------------|-----|------|-----|-----|-----|-----------|------------|
| 4.0 | MFR 4 B0.75 L15 | 2.0 | .59 | .03 | .05 | .08 | .20 | SIM ... H4 |
| | MFR 4 B1.0 L15 | 2.0 | .59 | .04 | .06 | .08 | .20 | |
| | MFR 4 B1.5 L15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

Order example: MFR 5 B1.0 L22 BXC

* For additional holders see pages 106-111

MFL Bars Face Grooving

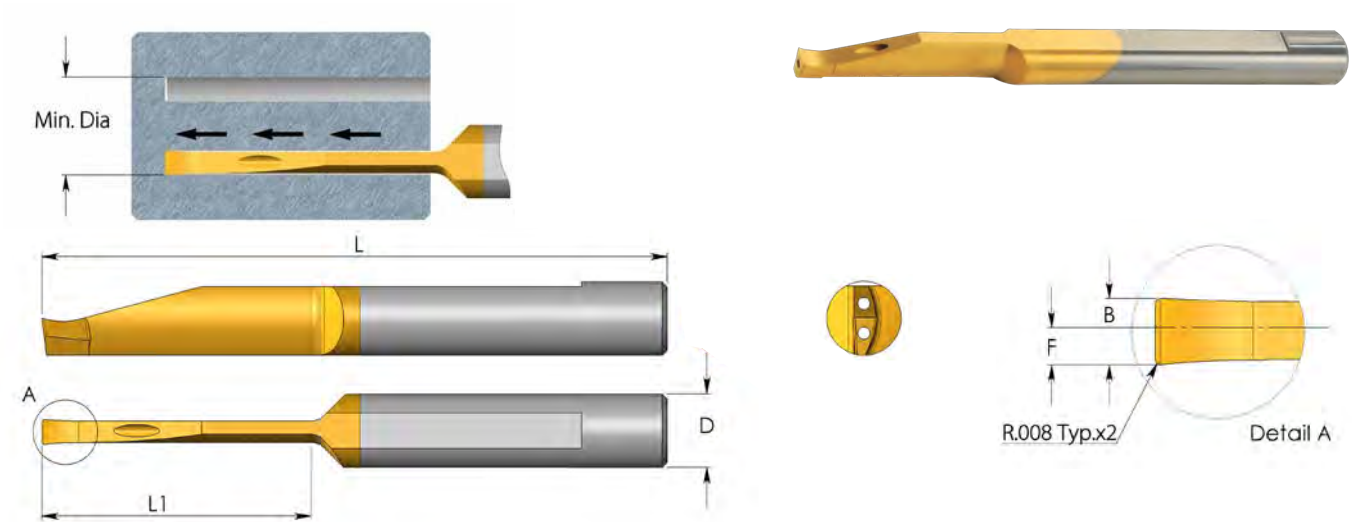


| D mm | Ordering Code | L | L1 | B | T | F | Min. Dia. | Holder* |
|------|------------------------|-----|-----|-----|-----|-----|-----------|------------|
| 4.0 | MFL 4 B0.75 L15 | 2.0 | .59 | .03 | .05 | .07 | .20 | SIM ... H4 |
| | MFL 4 B1.0 L15 | 2.0 | .59 | .04 | .06 | .07 | .20 | |
| | MFL 4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

Order example: MFL 6 B1.0 L22 BXC

* For additional holders see pages 106-111

MVR Bars Deep Face Grooving - with 2 Coolant Bores



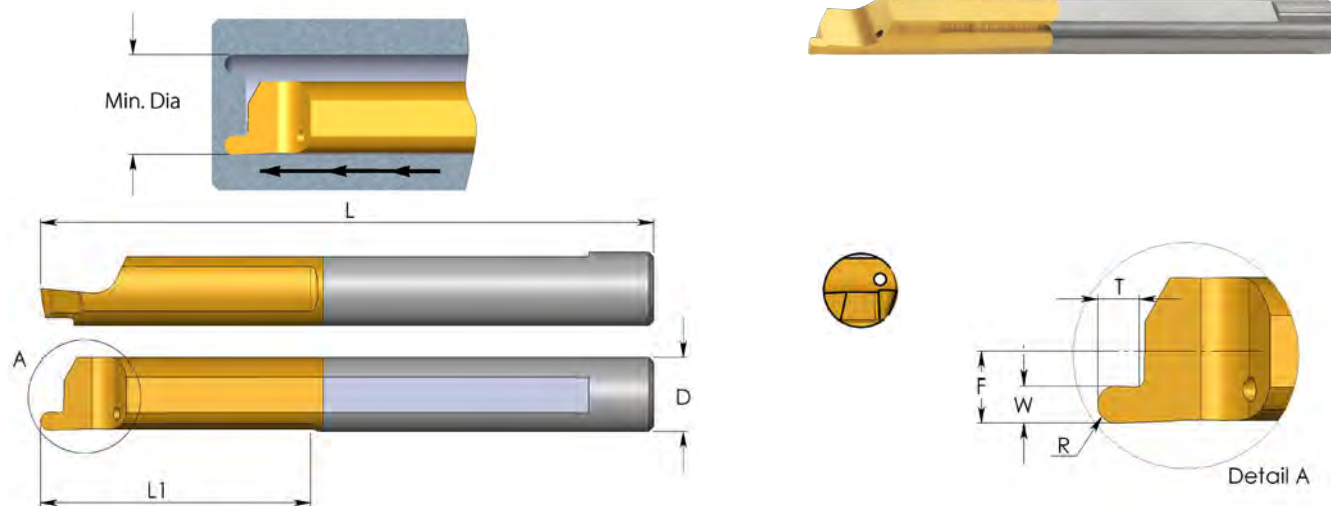
| D mm | Ordering Code | L | L1 | B | F | Min. Dia. | Holder* |
|------|----------------|-----|------|-----|-----|-----------|------------|
| 6.0 | MVR 6 B2.0 L10 | 2.5 | .39 | .08 | .04 | .39 | SIM ... H6 |
| | MVR 6 B2.0 L15 | 2.5 | .59 | .08 | .04 | .47 | |
| | MVR 6 B2.0 L22 | 2.5 | .87 | .08 | .04 | .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 L20 | 2.5 | .79 | .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

* For additional holders see pages 106-111

For L.H. bars specify MVL instead of MVR

MZR Bars Face Grooving

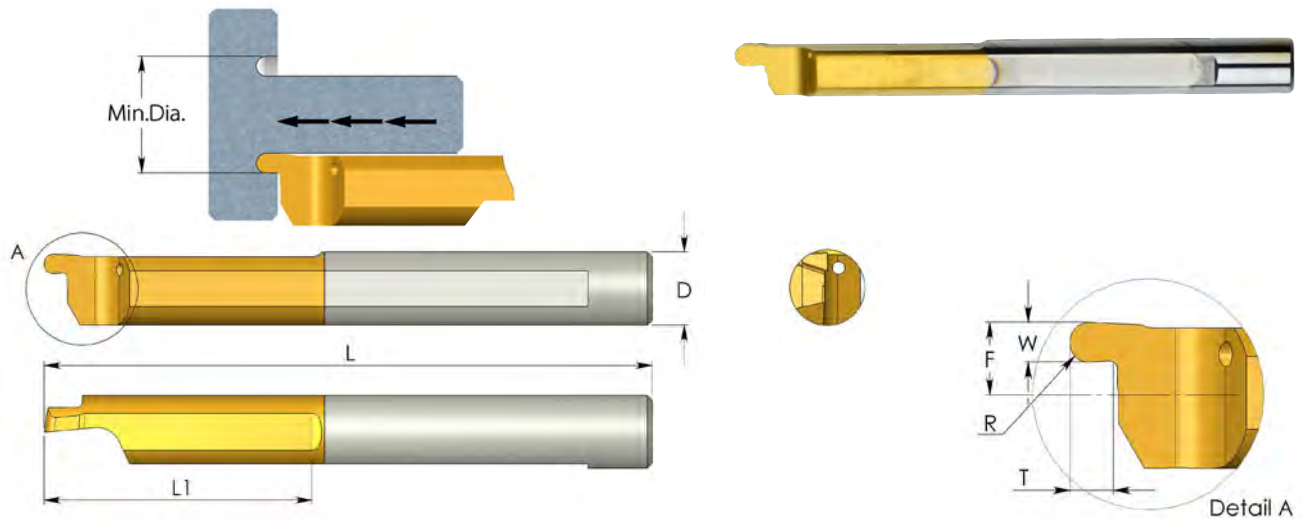


| D mm | Ordering Code | L | L1 | R | W | T | F | Min. Dia. | Holder* |
|---------|------------------------|-----|-----|------|-----|-----|-----|--------------|------------|
| 4.0 | MZR 4 R0.5 L15 | 2.0 | .59 | .020 | .04 | .05 | .08 | .20 | SIM ... H4 |
| | MZR 4 R0.75 L15 | 2.0 | .59 | .030 | .06 | .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

* For additional holders see pages 106-111

MZL Bars Face Grooving



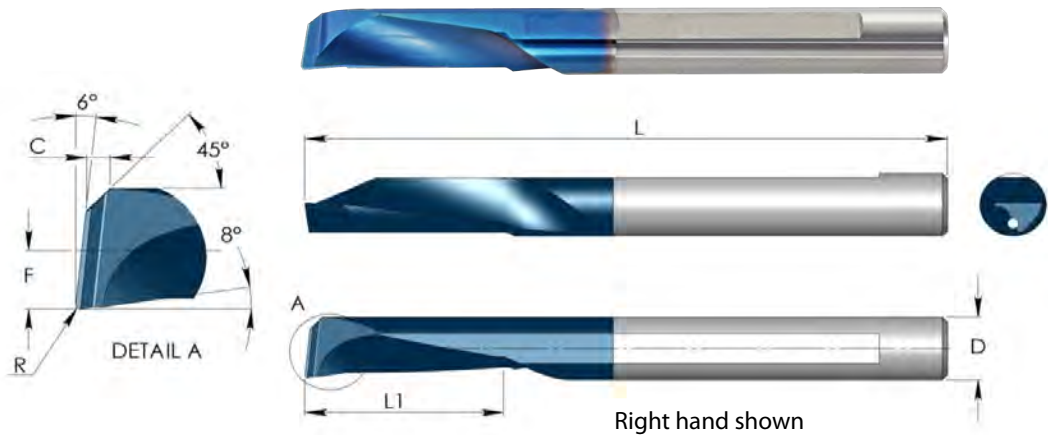
| D mm | Ordering Code | L | L1 | R | W | T | F | Min. Dia. | Holder* |
|------|------------------------|-----|-----|------|-----|-----|-----|-----------|------------|
| 4.0 | MZL 4 R0.5 L15 | 2.0 | .59 | .020 | .04 | .05 | .07 | .20 | SIM ... H4 |
| | MZL 4 R0.75 L15 | 2.0 | .59 | .030 | .06 | .06 | .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

* For additional holders see page 106-111

CMR Carmex Multi-Task Tiny Tools

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



Right hand

| D mm | Ordering Code | L | L1 | R | F | C | Hole Dia.* | Holder ** | P | M | K | N | S | H |
|------|----------------|-----|-----|------|-----|-----|------------|-----------|-----|---|---|---|---|---|
| 4.0 | CMR 4 R0.1 L10 | 2.0 | .39 | .004 | .07 | .04 | .16 | SIM...H4 | BMK | * | * | * | * | * |
| | 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 | | | | | | | |

Left hand

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

* The minimum diameter the tool can produce from full material

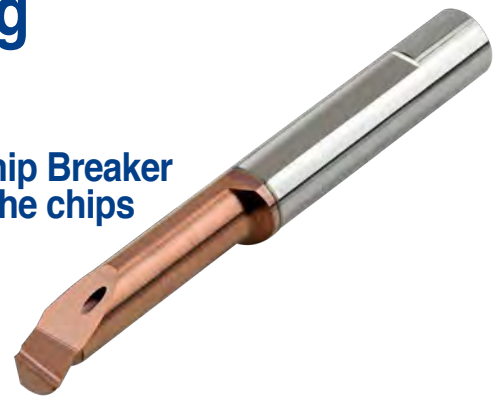
** For additional holders see page 106-111

CBR Bars Profiling and Boring

With advanced Chip Breaker

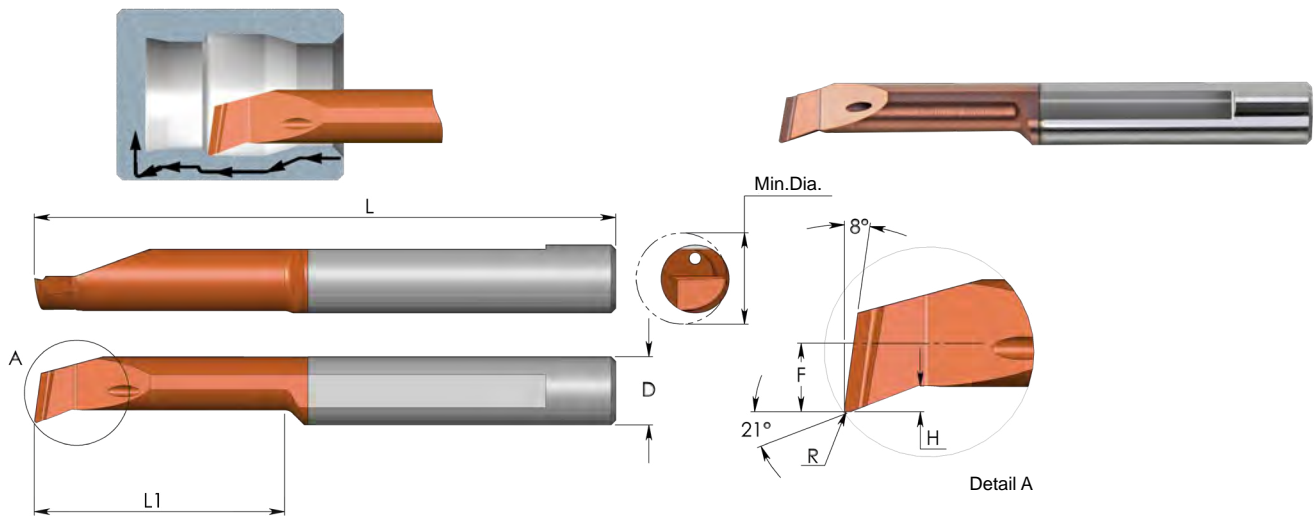
Chip evacuation is obtained thanks to advanced Chip Breaker and the internal coolant through the tool, pushing the chips out of the hole.

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.



Carbide grade:

New advanced carbide grade **TNX** 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.

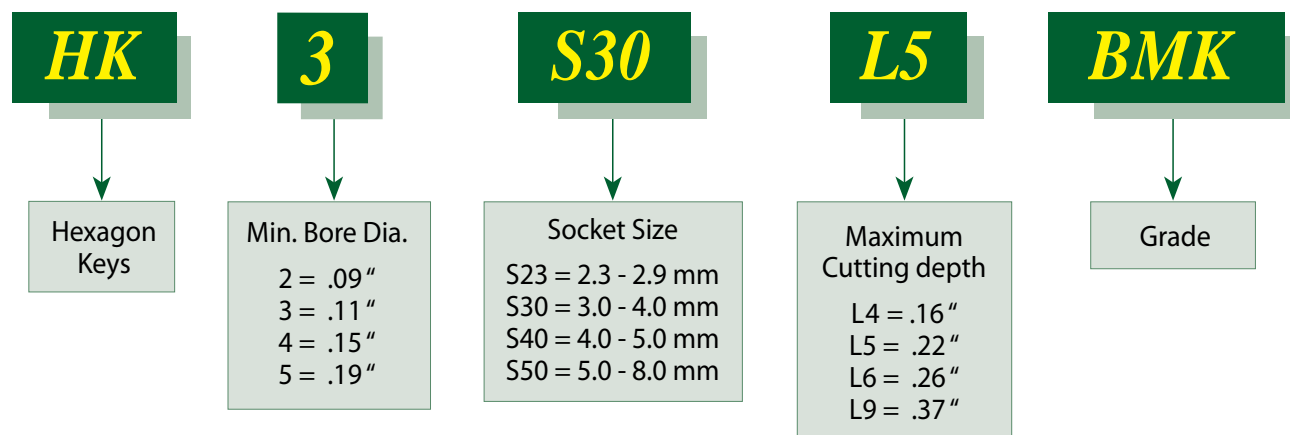


| D mm | Ordering Code | L | L1 | R | H | F | Min. Dia. | Holder |
|------|----------------|---|-----|------|-----|-----|-----------|------------|
| 4.0 | CBR 4 R0.2 L10 | 2 | .39 | .008 | .02 | .07 | .16 | SIM ... H4 |
| | CBR 4 R0.2 L15 | 2 | .59 | .008 | .02 | .07 | .16 | |
| 5.0 | CBR 5 R0.2 L15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

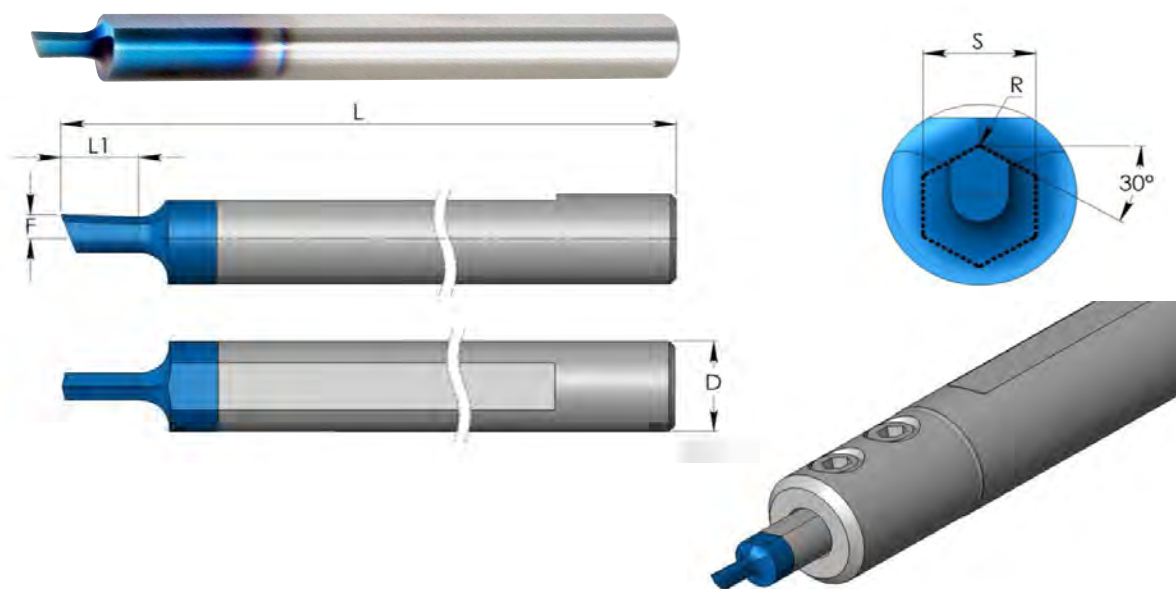
| | | |
|---|-----|---|
| P | TNX | * |
| M | | * |
| K | | * |
| N | | * |
| S | | * |
| H | | * |

For L.H. bars specify CBL instead of CBR

Product Identification



HK Broaching Tools for Hexagon Keys



| D mm | S mm | Ordering Code | L | L1 | R | F | Min. Dia. | Holder |
|------|---------|---------------|-----|-----|------|-----|-----------|----------|
| 5.0 | 2.3-2.9 | HK 2 S23 L4 | 2.0 | .16 | .002 | .05 | .09 | SIM...H5 |
| | 3.0-4.0 | HK 3 S30 L5 | 2.0 | .22 | .002 | .05 | .11 | |
| | 4.0-5.0 | HK 4 S40 L6 | 2.0 | .26 | .004 | .05 | .15 | |
| 7.0 | 5.0-8.0 | HK 5 S50 L9 | 2.4 | .37 | .004 | .05 | .19 | SIM...H7 |

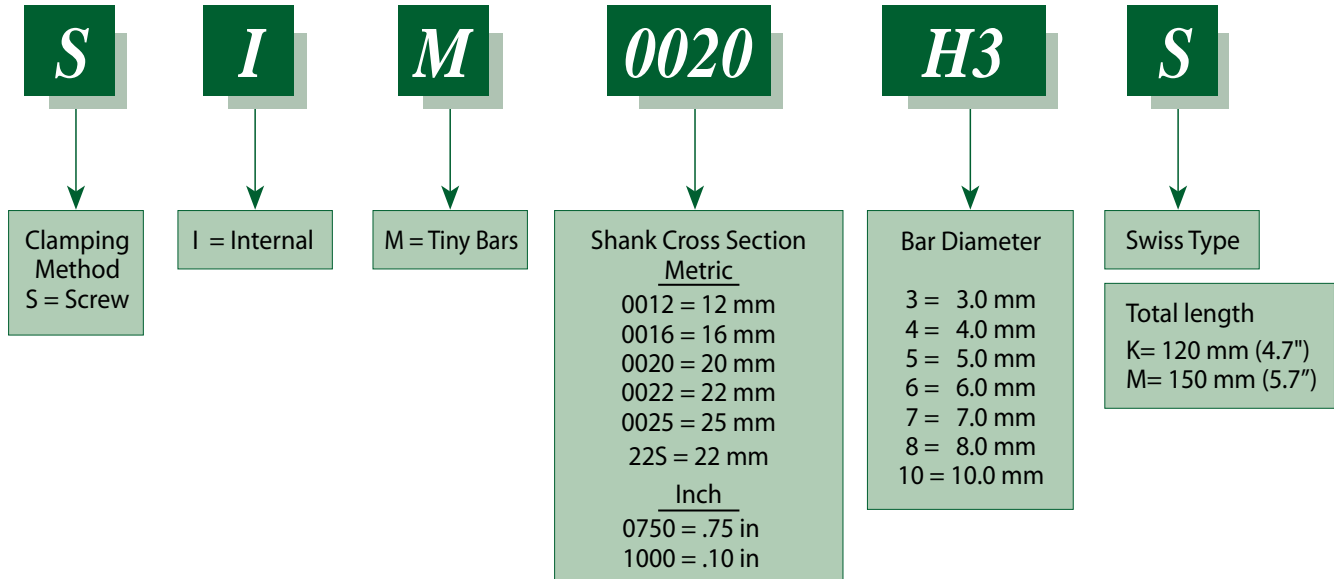
| | | |
|---|-----|---|
| P | BMK | * |
| M | | * |
| K | | * |
| N | | * |
| S | | * |
| H | | |

S = Socket Size

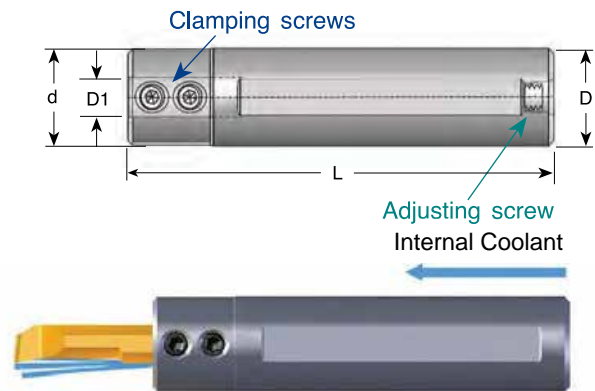
* For additional holders see page 106-111

Product Identification

Tiny Bar Holders Ordering Codes



Tiny Tools Bar Holders



Metric Shank Version

| D1 mm | Ordering Code | D mm | d mm/in | L mm/in | Key | Clamping Screw | Adjusting Screw |
|-------|---------------------|------|----------|-----------|-----|----------------|-----------------|
| 3.0 | SIM 0012 H3 | 12 | 12 / .47 | 88 / 3.5 | K25 | S24 | S35 |
| | SIM 0016 H3S | 16 | 20 / .79 | 75 / 3.0 | 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 |
| | SIM0022 H3K | 22 | 22 / .87 | 120 / 4.7 | K25 | S25 | S55 |
| | SIM0025 H3M | 25 | 25 / .98 | 150 / 5.9 | K25 | S25 | - |

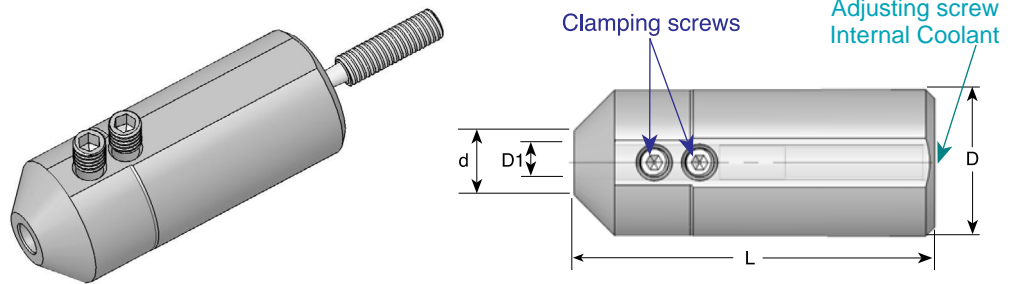
Tiny Tools Bar Holders

| D1 mm | Ordering Code | D mm | d mm/in | L mm/in | Key | Clamping Screw | Adjusting Screw |
|-------|---------------------|------|----------|-----------|-----|----------------|-----------------|
| 4.0 | SIM 0012 H4 | 12 | 12 / .47 | 88 / 3.5 | 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 |
| | SIM0022 H4K | 22 | 22 / .87 | 120 / 4.7 | K25 | S25 | S55 |
| | SIM0025 H4M | 25 | 25 / .98 | 150 / 5.9 | K25 | S25 | - |
| 5.0 | SIM 0012 H5 | 12 | 12 / .47 | 88 / 3.5 | 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 / 3.0 | K25 | S25 | S35 |
| | SIM0022 H5K | 22 | 22 / .87 | 120 / 4.7 | K25 | S25 | S55 |
| | SIM0025 H5M | 25 | 25 / .98 | 150 / 5.9 | K25 | S25 | - |
| 6.0 | 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 |
| | SIM0022 H6K | 22 | 22 / .87 | 120 / 4.7 | K25 | S25 | S55 |
| | SIM0025 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 |
| | SIM0022 H7 | 22 | 22 / .87 | 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 |
| | SIM0022 H8 | 22 | 22 / .87 | 88 / 3.5 | K25 | S25 | S35 |
| 10.0 | SIM0016 H10 | 16 | 20 / .79 | 88 / 3.5 | K25 | S25S | S35 |
| | SIM 0020 H10 | 20 | 20 / .79 | 88 / 3.5 | K25 | S25S | S35 |
| | SIM0022 H10 | 22 | 22 / .87 | 88 / 3.5 | K25 | S25 | S35 |

Inch Shank Version

| D1 mm | Ordering Code | D in | d mm/in | L mm/in | Key | Clamping Screw | Adjusting Screw |
|-------|--------------------|------|-------------|----------|-----|----------------|-----------------|
| 3.0 | SIM 0750 H3 | 3/4 | 19.05 / .75 | 88 / 3.5 | K25 | S25 | S35 |
| | SIM 1000 H3 | 1 | 25.4 / 1.0 | 88 / 3.5 | K25 | S25 | S35 |
| 4.0 | SIM 0750 H4 | 3/4 | 19.05 / .75 | 88 / 3.5 | K25 | S25 | S35 |
| | SIM 1000 H4 | 1 | 25.4 / 1.0 | 88 / 3.5 | K25 | S25 | S35 |
| 5.0 | SIM 0750 H5 | 3/4 | 19.05 / .75 | 88 / 3.5 | K25 | S25 | S35 |
| | SIM 1000 H5 | 1 | 25.4 / 1.0 | 88 / 3.5 | K25 | S25 | S35 |
| 6.0 | SIM 0750 H6 | 3/4 | 19.05 / .75 | 88 / 3.5 | K25 | S25 | S35 |
| | SIM 1000 H6 | 1 | 25.4 / 1.0 | 88 / 3.5 | K25 | S25 | S35 |
| 7.0 | SIM 0750 H7 | 3/4 | 19.05 / .75 | 88 / 3.5 | K25 | S25 | S35 |
| | SIM 1000 H7 | 1 | 25.4 / 1.0 | 88 / 3.5 | K25 | S25 | S35 |
| 8.0 | SIM 0750 H8 | 3/4 | 19.05 / .75 | 88 / 3.5 | K25 | S25 | S35 |
| | SIM0750 H10 | 3/4 | 19.05 / .75 | 88 / 3.5 | K25 | S25S | S35 |
| 10.0 | SIM1000 H10 | 1 | 25.4 / 1.0 | 88 / 3.5 | K25 | S25 | S35 |

Tiny Tools Bar Holders

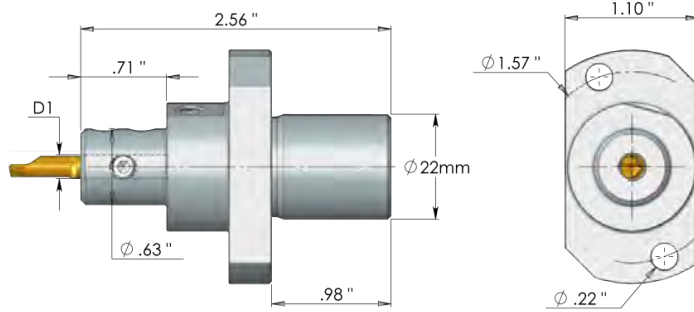


Metric shank version

| D1 mm | Ordering Code | D mm | d mm/in | L mm/in | Key | Clamping Screw | Adjusting Screw |
|-------|--------------------|------|------------|----------|-----|----------------|-----------------|
| 3.0 | SIM 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 Toolholder for Swiss machines

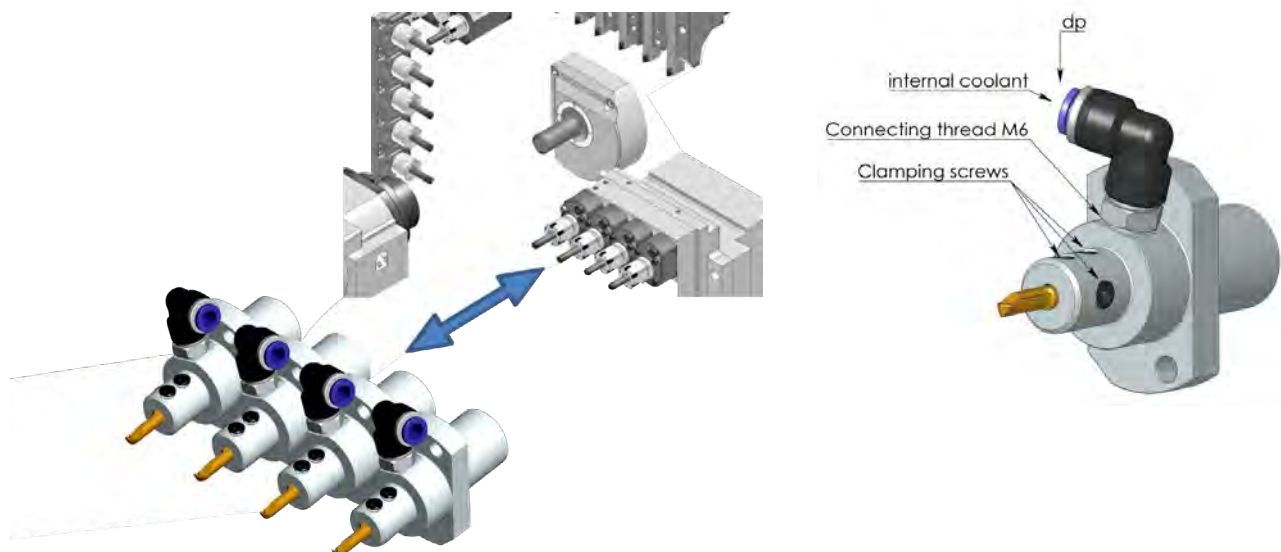
Carmex has developed a unique external turning holder for the sub-spindle on CNC Swiss type lathes.



Tiny Toolholder

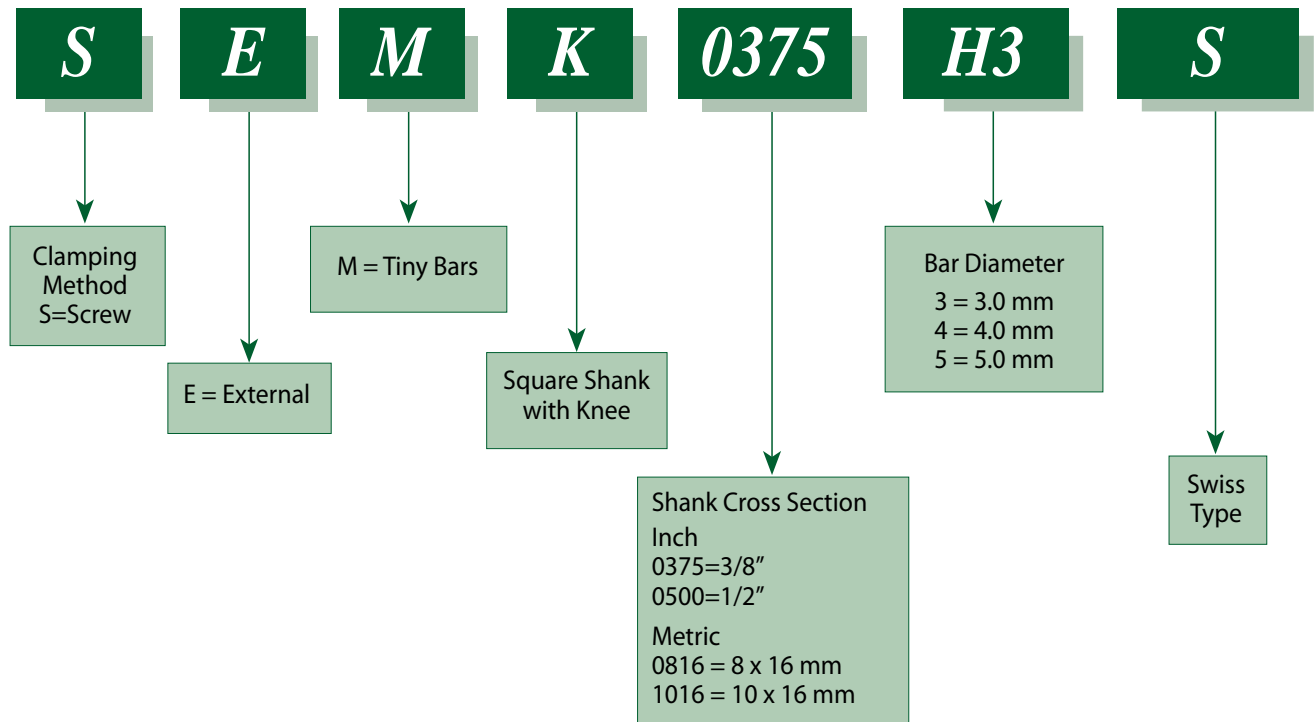
| D1 mm | Ordering Code | dp mm | Key | Clamping Screw |
|-------|-------------------|-------|-----|----------------|
| 3.0 | SIM 22S H3 | 4 / 6 | K16 | S24P |
| 4.0 | SIM 22S H4 | 4 / 6 | K16 | S24P |
| 5.0 | SIM 22S H5 | 4 / 6 | K16 | S24M |
| 6.0 | SIM 22S H6 | 4 / 6 | K16 | S24M |

For use on Star machines

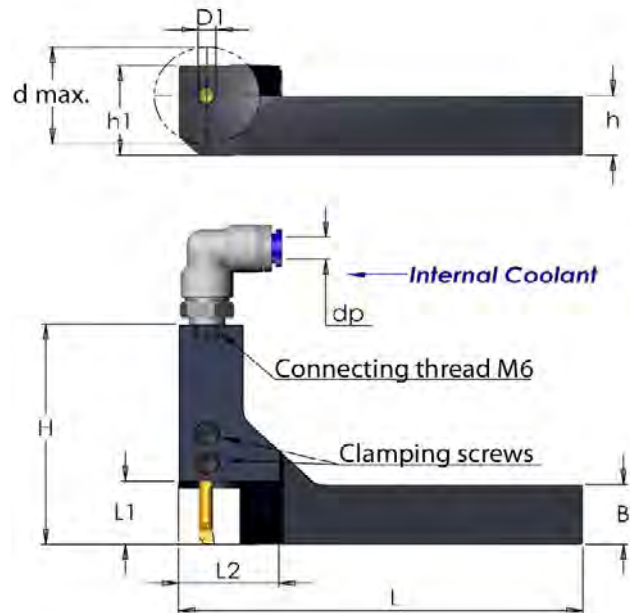


Product Identification

Tiny Bar Square Shank Holders Ordering Codes



Square Shank Holders



Inch Holders

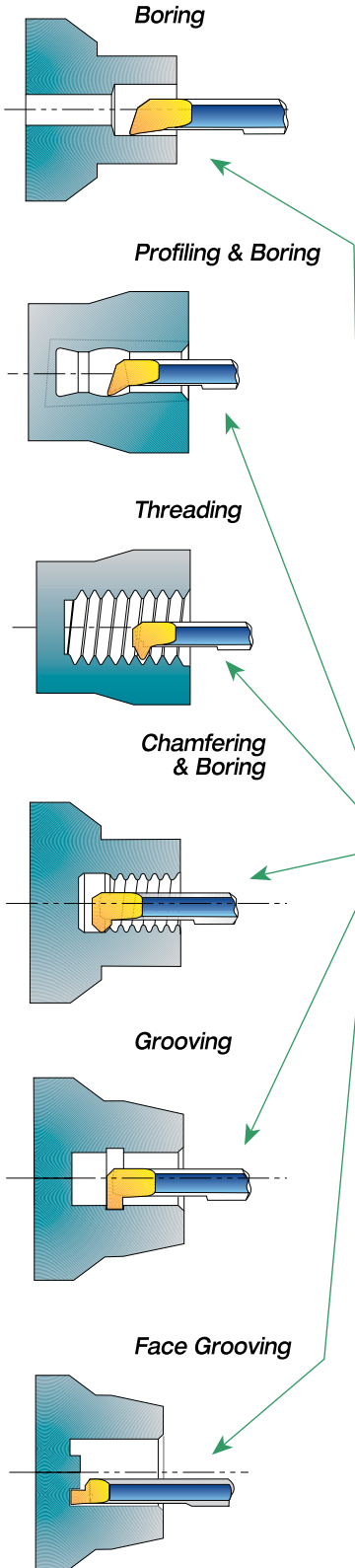
| D1 mm | Ordering Code | B | L | L1 | L2 | H | h | h1 | d max. | *dp mm | Key | Clamping Screw |
|-------|-------------------------------|------|-----|-----|-----|------|------|-----|--------|--------|-----|----------------|
| 3.0 | SEMK 0375 H3S | .375 | 3.9 | .67 | .98 | 1.81 | .375 | .69 | 1.02 | 4/6 | K25 | S25 |
| | SEMK 0500 H3S | .500 | 3.9 | .67 | .98 | 1.81 | .500 | .81 | 1.02 | 4/6 | K25 | |
| 4.0 | SEMK 0375 H4S | .375 | 3.9 | .67 | .98 | 2.28 | .375 | .68 | 1.02 | 4/6 | K25 | S25 |
| | SEMK 0500 H4S | .500 | 3.9 | .67 | .98 | 2.28 | .500 | .81 | 1.02 | 4/6 | K25 | |
| 5.0 | SEMK 0375 H5S | .375 | 3.9 | .67 | .98 | 2.28 | .375 | .68 | 1.02 | 4/6 | K25 | S25 |
| | SEMK 0500 H5S | .500 | 3.9 | .67 | .98 | 2.28 | .500 | .81 | 1.02 | 4/6 | K25 | |
| 6.0 | SEMK 0375 H6S | .375 | 3.9 | .67 | .98 | 2.28 | .375 | .68 | 1.02 | 4/6 | K25 | S25 |
| | SEMK 0500 H6S | .500 | 3.9 | .67 | .98 | 2.28 | .500 | .81 | 1.02 | 4/6 | K25 | |

Metric Holders

| D1 mm | Ordering Code | B mm | L mm/in | L1 mm/in | L2 mm/in | H mm/in | h mm/in | h1 mm/in | d max. mm/in | *dp mm | Key | Clamping Screw |
|-------|-------------------------------|------|----------|----------|----------|---------|---------|----------|--------------|--------|-----|----------------|
| 3.0 | SEMK 0816 H3S | 16 | 100/ 3.9 | 17/67 | 25/98 | 46/1.81 | 8 | 16/63 | 26/1.02 | 4/6 | K25 | S25 |
| | SEMK 1016 H3S | 16 | 100/ 3.9 | 17/67 | 25/98 | 46/1.81 | 10 | 18/71 | 26/1.02 | 4/6 | K25 | |
| | SEMK 1216 H3S | 16 | 100/ 3.9 | 17/67 | 25/98 | 46/1.81 | 12 | 20/79 | 26/1.02 | 4/6 | K25 | |
| 4.0 | SEMK 0816 H4S | 16 | 100/ 3.9 | 17/67 | 25/98 | 58/2.28 | 8 | 16/63 | 26/1.02 | 4/6 | K25 | S25 |
| | SEMK 1016 H4S | 16 | 100/ 3.9 | 17/67 | 25/98 | 58/2.28 | 10 | 18/71 | 26/1.02 | 4/6 | K25 | |
| | SEMK 1216 H4S | 16 | 100/ 3.9 | 17/67 | 25/98 | 58/2.28 | 12 | 20/79 | 26/1.02 | 4/6 | K25 | |
| 5.0 | SEMK 0816 H5S | 16 | 100/ 3.9 | 17/67 | 25/98 | 58/2.28 | 8 | 16/63 | 26/1.02 | 4/6 | K25 | S25 |
| | SEMK 1016 H5S | 16 | 100/ 3.9 | 17/67 | 25/98 | 58/2.28 | 10 | 18/71 | 26/1.02 | 4/6 | K25 | |
| | SEMK 1216 H5S | 16 | 100/ 3.9 | 17/67 | 25/98 | 58/2.28 | 12 | 20/79 | 26/1.02 | 4/6 | K25 | |
| 6.0 | SEMK 0816 H6S | 16 | 100/ 3.9 | 17/67 | 25/98 | 58/2.28 | 8 | 16/63 | 26/1.02 | 4/6 | K25 | S25 |
| | SEMK 1016 H6S | 16 | 100/ 3.9 | 17/67 | 25/98 | 58/2.28 | 10 | 18/71 | 26/1.02 | 4/6 | K25 | |
| | SEMK 1216 H6S | 16 | 100/ 3.9 | 17/67 | 25/98 | 58/2.28 | 12 | 20/79 | 26/1.02 | 4/6 | K25 | |

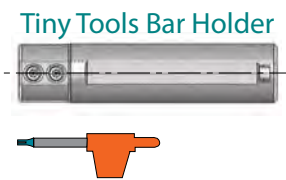
* Optional

Tiny Tools Kits



| KT4-0750 | KT5-0750 |
|----------------|----------------|
| MTR 4 R0.2 L10 | MTR 5 R0.2 L15 |
| MPR 4 R0.2 L10 | MPR 5 R0.2 L15 |
| MIR 4 L15 A60 | MIR 5 L15 A60 |
| MCR4 R0.2 L15 | MCR 5 R0.2 L15 |
| MGR4 B1.5 L10 | MGR 5 B1.5 L15 |
| MFR 4 B1.0 L15 | MFR 5 B1.0 L22 |
| SIM 0750 H4 | SIM 0750 H5 |
| K25 | K25 |

-  Boring
-  Profiling
-  Threading
-  Chamfering
-  Grooving
-  Face Grooving



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 **TNX** 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 | TNX | |
| 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 | | | | | |
| | 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 metallic | | | 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 | | | | | |
| | Titanium alloys | | | Alpha+beta alloys cured | 33-98 | 33-98 | | 39-98 |
| H | Hardened steel | | | 33-98 | 49-131 | | 59-131 | |
| | | | | | | | | Hardened 45-50 HRC |
| | | | | | | | | Hardened 51-55 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

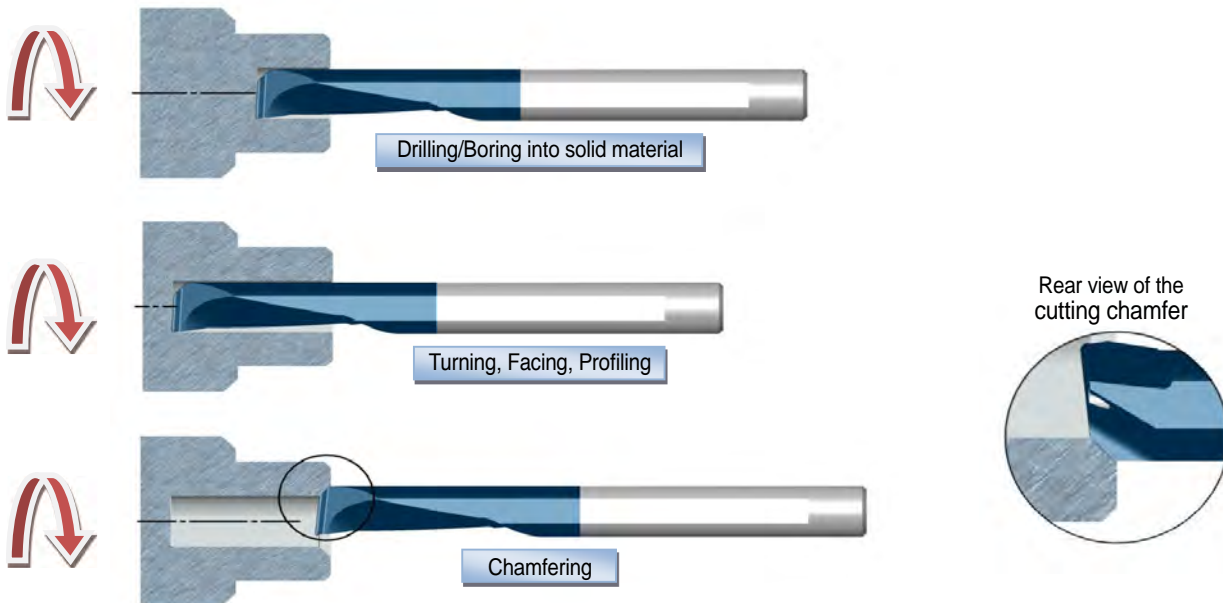
| | | | | | | | | |
|------------------|-----------|-----------|-----------|-----------|-----------|------------|-----------|-------------|
| Pitch: | mm TPI | 0.5 48 | 0.7 36 | 0.8 32 | 1.0 24 | 1.25 20 | 1.5 16 | 2-5 14-5 |
| Number of Passes | | 6-12 | 7-14 | 7-16 | 8-18 | 8-20 | 10-22 | 20-38 |

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 without interruptions.
- Unique chip breaker and flute design.
- For 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 a 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 Cutting Data and 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 chips away from the tool quickly, thereby reducing wear of the edge.
3. Helping to break the chips into smaller pieces and evacuating them from the cutting area.

| ISO Standard | Materials | 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 | 65-165 |
| | 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 | - |

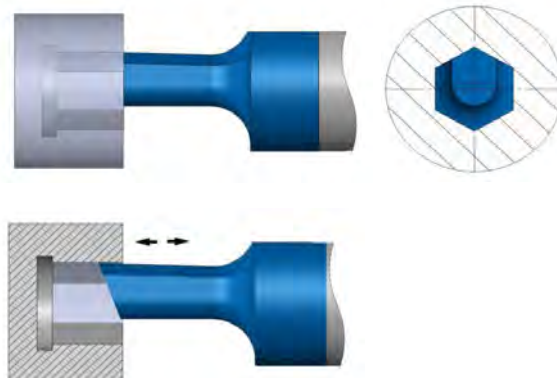
Recommended Feed Rate: .0005 - .001 inch/rev

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.

- For 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



HK Cutting Data

| Material Tensile Strength (lbs/in ²) | Feed rate (inch/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 observing the tool and the application to make sure no collision occurs.

Mini Tools



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:

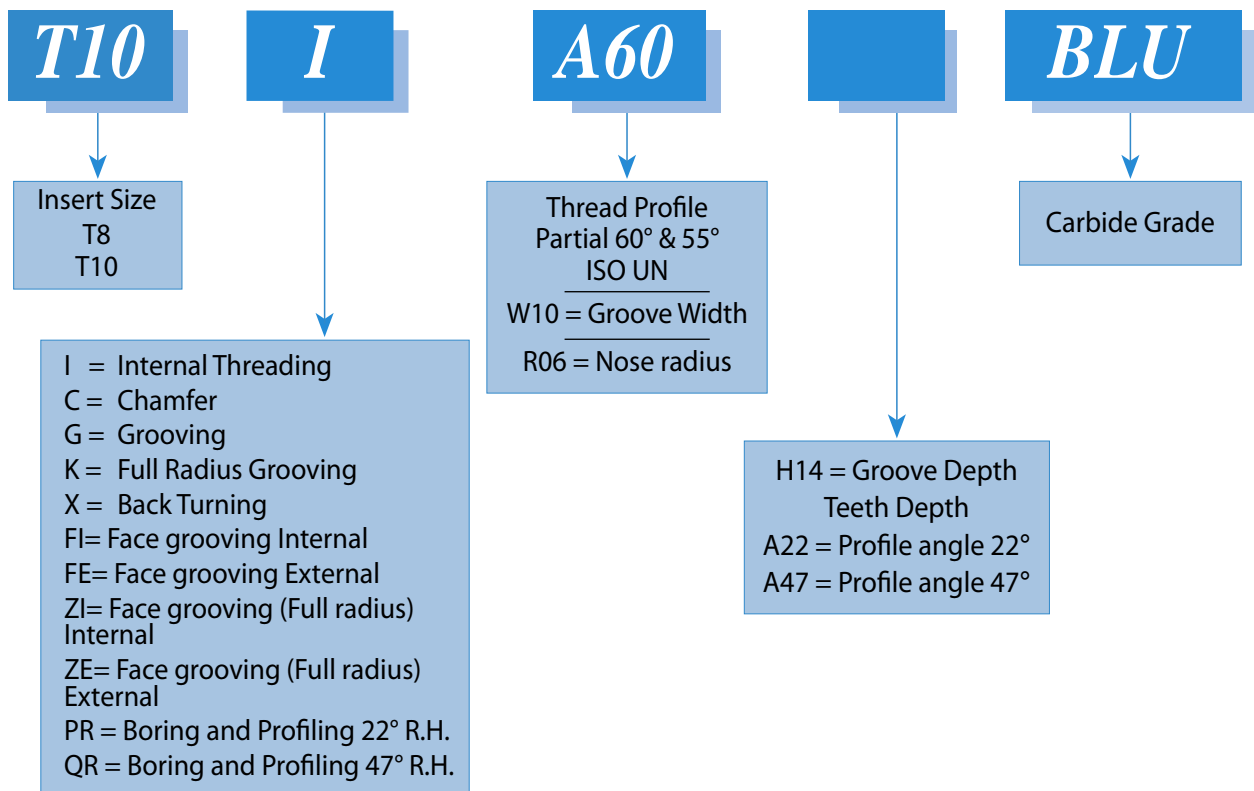
- Long threads or applications requiring over-hang.
- Enables production of threads with large pitch/profile.
- Threading, grooving, boring, profiling and chamfering - It's possible to offer most of the Tiny Tools profiles on the insert.

| Contents: | Page: | Contents: | Page: |
|------------------------|-------|------------------------------|-------|
| Product Identification | 118 | Back Turning | 122 |
| Partial Profile 60° | 119 | Boring and Profiling | 123 |
| Partial Profile 55° | 119 | Boring, Profiling and Facing | 123 |
| ISO | 120 | Face Grooving | 124 |
| UN | 120 | Face Grooving Full Radius | 125 |
| Chamfering | 121 | Carbide Shank Toolholder | 126 |
| Grooving | 121 | Steel Toolholders | 127 |
| Full Radius Grooving | 122 | Technical Section | 128 |

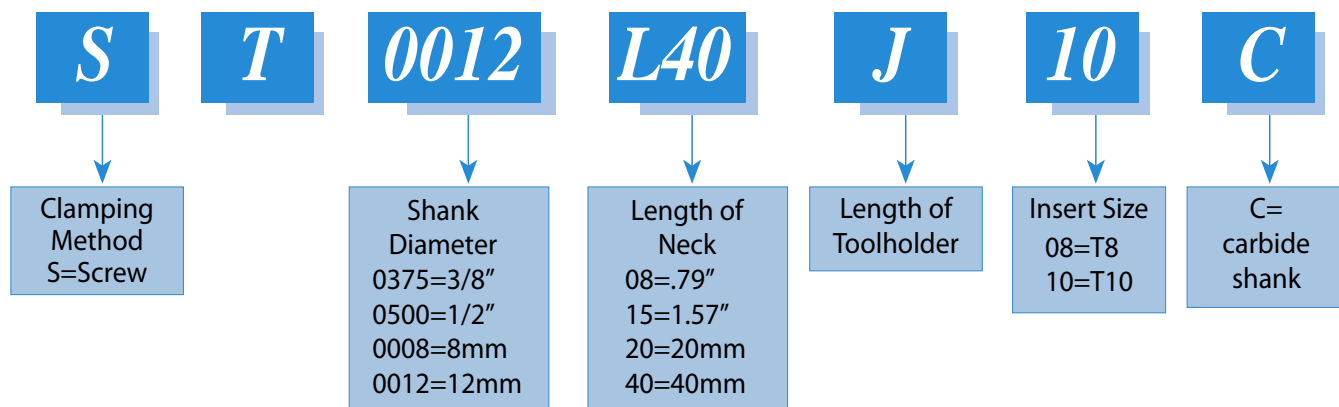
Product Identification

Mini Tools Ordering Code

Inserts

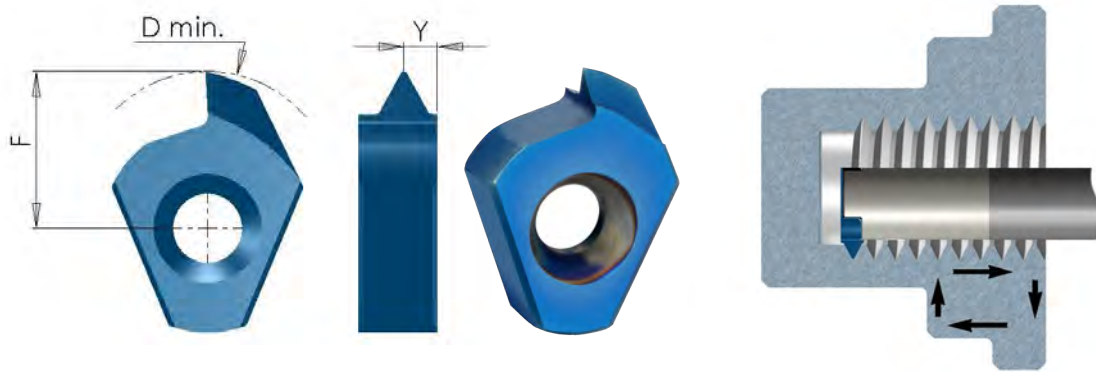


Toolholders



Partial Profile 60°

Same insert for internal and external thread



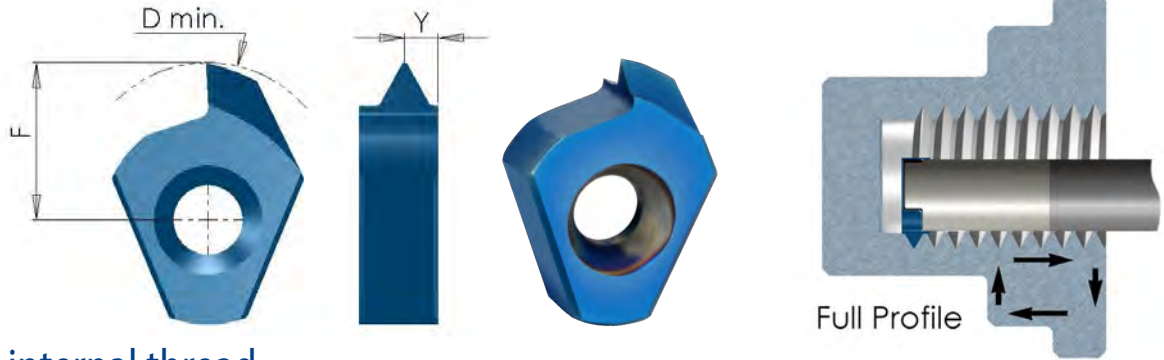
| Insert Type | Ordering Code | Pitch Range mm | Pitch Range TPI | D min | F | Y |
|-------------|----------------|------------------------------|-----------------|-------|-----|-----|
| T8 | T8 A60 | Int 0.5-0.75 Ex 0.4- 0.75 | 56-32 64-32 | .31 | .15 | .02 |
| | T8 G60 | Int 1.0-1.25 Ex 0.8- 1.0 | 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 |

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

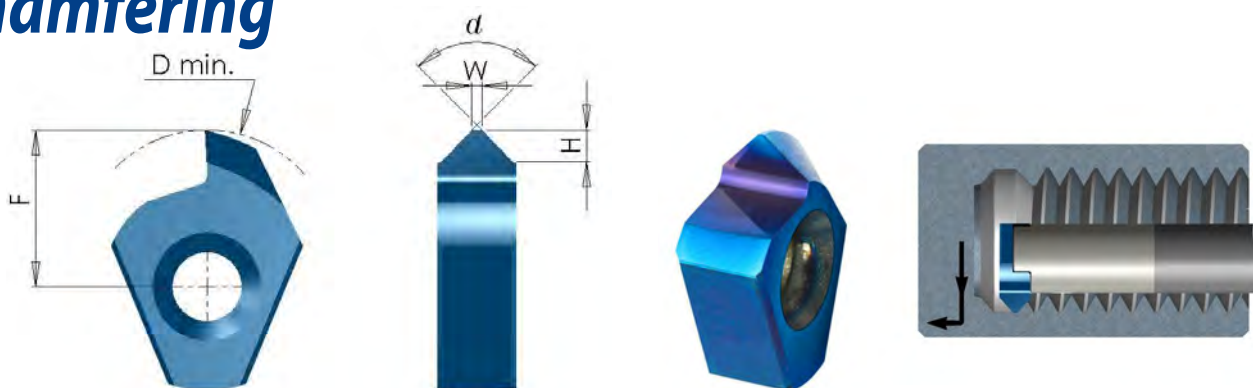
| Insert Type | Ordering Code | Pitch mm | M coarse | M fine | D min | F | Y |
|-------------|----------------|----------|----------|--------|-------|-----|-----|
| T8 | T8 I 0.5 ISO | 0.5 | | M8.5 | .31 | .14 | .02 |
| | T8 I 0.75 ISO | 0.75 | | M9 | .32 | .15 | .02 |
| | T8 I 1.0 ISO | 1.0 | | M9 | .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 |

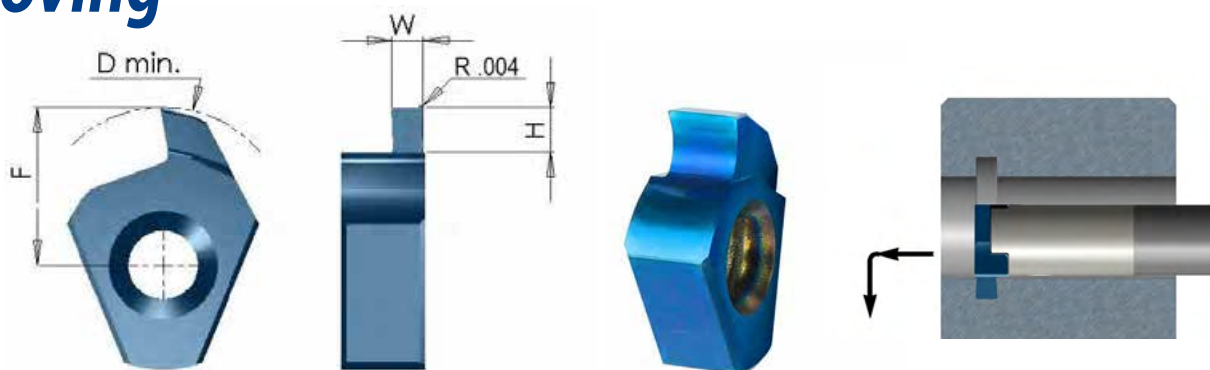
Chamfering



| Insert Type | Ordering Code | W | H max | α | D min | F |
|-------------|----------------|-----|-------|----------|-------|-----|
| T8 | T8 C90 | .01 | .06 | 90° | .35 | .18 |
| T10 | T10 C90 | .01 | .07 | 90° | .50 | .30 |

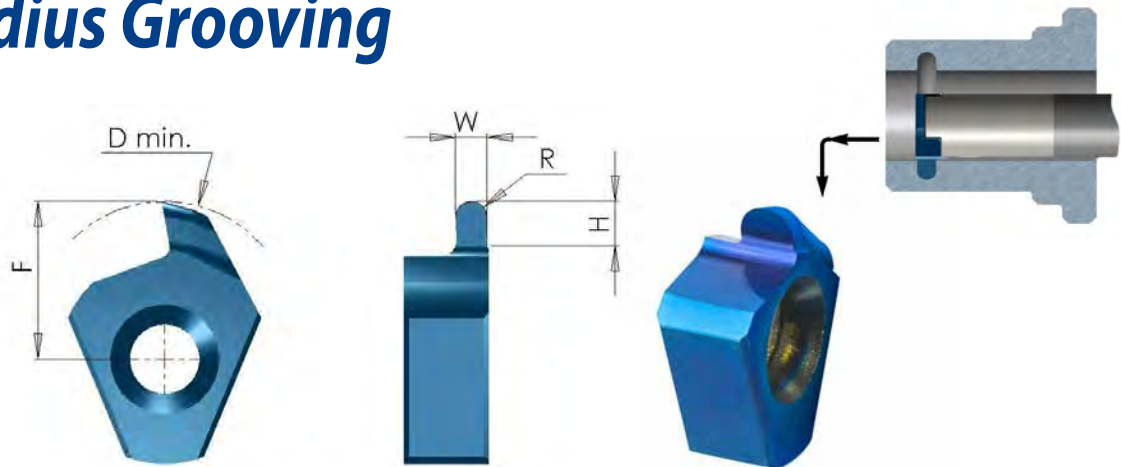
Same insert for right and left hand chamfers

Grooving



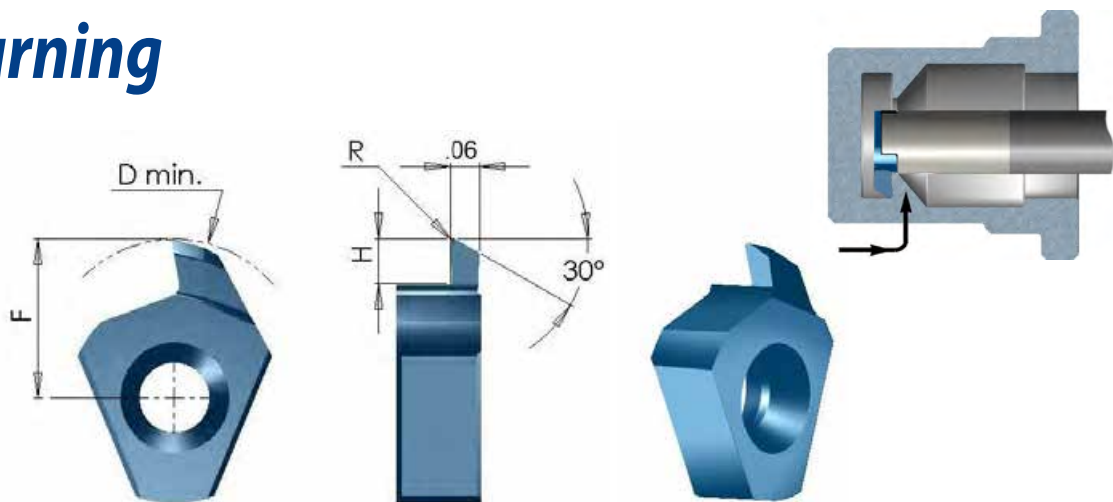
| Insert Type | Ordering Code | W $\pm .001$ | H max | D min | F |
|-------------|----------------------|-----------------|-------|-------|-----|
| T8 | T8 G W10 H20 | .039 | .08 | .37 | .20 |
| | T8 G W15 H20 | .059 | | | |
| | T8 G W20 H20 | .079 | | | |
| | T8 G W25 H20 | .098 | | | |
| | T8 G W30 H20 | .118 | | | |
| T10 | T10 G W10 H14 | .039 | .06 | .48 | .28 |
| | T10 G W15 H14 | .059 | | | |
| | T10 G W20 H14 | .079 | | | |
| T10 | T10 G W10 H23 | .039 | .09 | .52 | .31 |
| | T10 G W15 H23 | .059 | | | |
| | T10 G W20 H23 | .079 | | | |
| | T10 G W25 H23 | .098 | | | |
| | T10 G W30 H23 | .118 | | | |

Full Radius Grooving



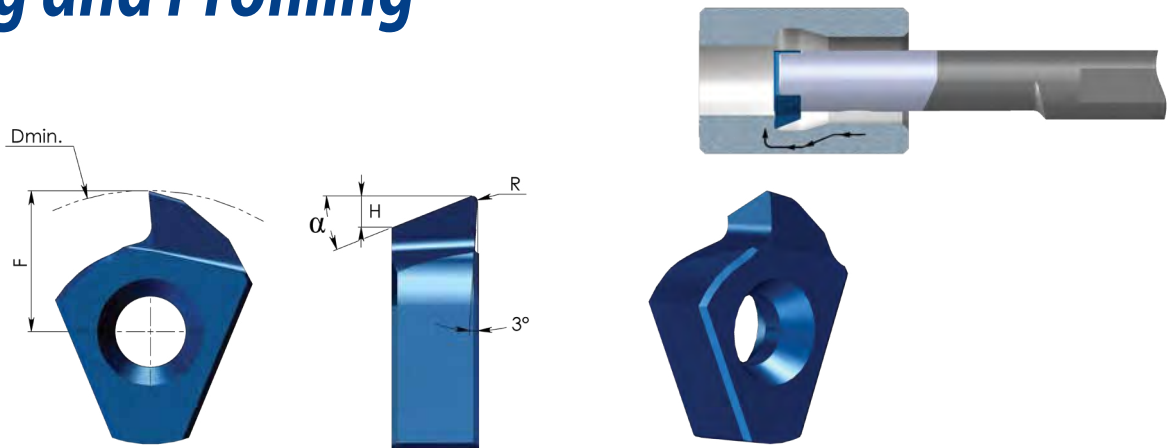
| Insert Type | Ordering Code | W ± .001 | R | H max | D min | F |
|-------------|----------------------|-------------|------|----------|----------|-----|
| T8 | T8 K R04 H10 | .031 | .016 | .04 | .33 | .16 |
| | T8 K R06 H10 | .047 | .024 | | | |
| | T8 K R09 H10 | .071 | .035 | | | |
| T10 | T10 K R04 H22 | .031 | .016 | .09 | .52 | .31 |
| | T10 K R06 H22 | .047 | .024 | | | |
| | T10 K R09 H22 | .071 | .035 | | | |
| | T10 K R10 H22 | .079 | .039 | | | |

Back Turning



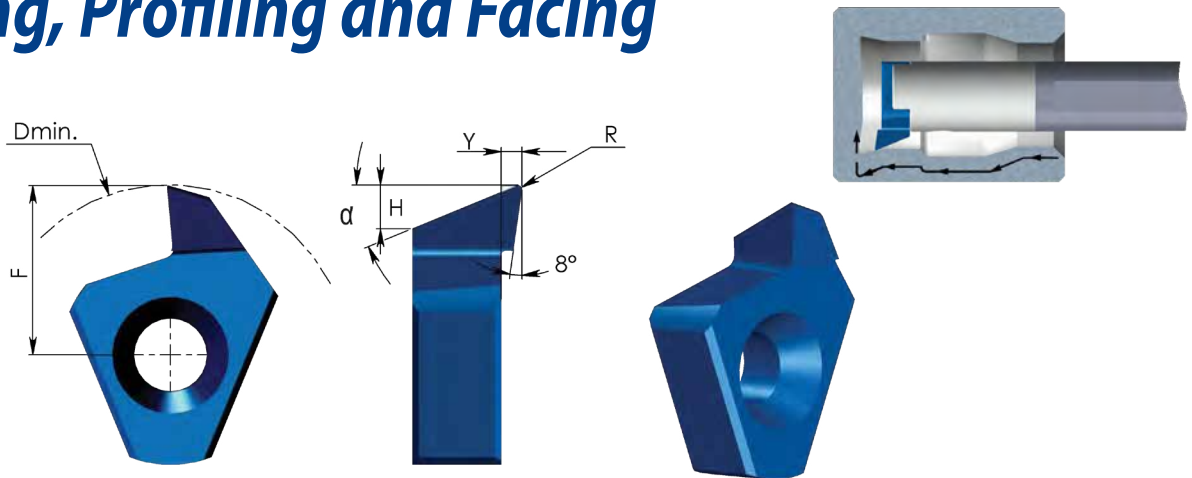
| Insert Type | Ordering Code | R | H max | D min | F |
|-------------|----------------------|------|----------|----------|-----|
| T8 | T8 X R02 H20 | .008 | .08 | .37 | .20 |
| T10 | T10 X R02 H23 | .008 | .09 | .52 | .31 |
| | T10 X R04 H23 | .016 | | | |

Boring and Profiling



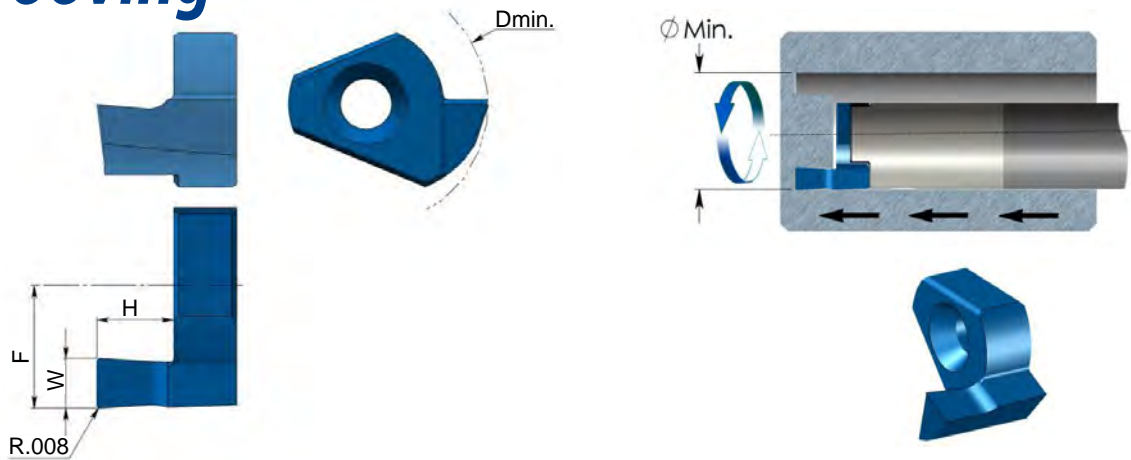
| Insert Type | Ordering Code | α | R | H | D min | F |
|-------------|----------------------|----------|------|------|-------|-----|
| T8 | T8 PR R01 A22 | 22° | .004 | .039 | .36 | .20 |
| | T8 PR R02 A22 | 22° | .008 | .039 | .36 | .20 |
| | T8 QR R01 A47 | 47° | .004 | .075 | .36 | .20 |
| | T8 QR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

Boring, Profiling and Facing



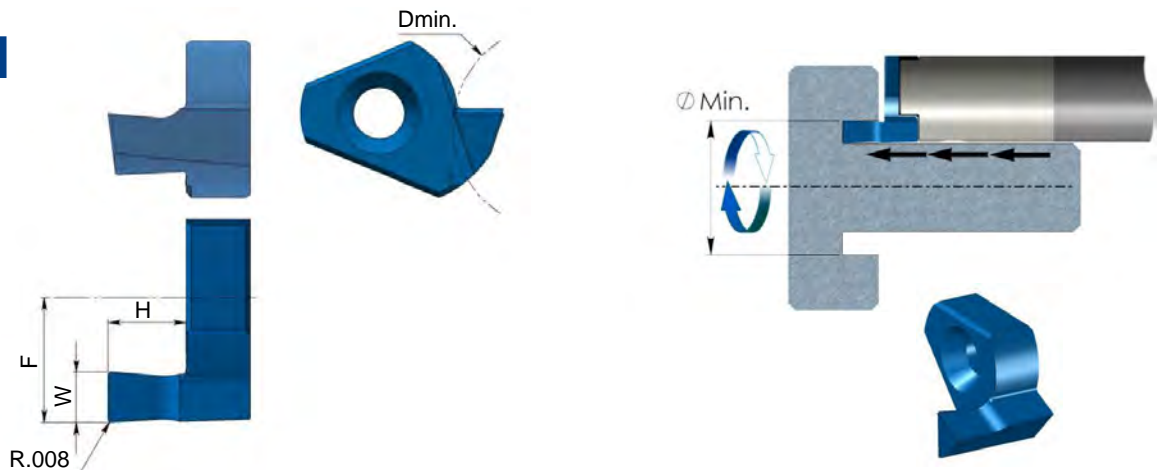
| Insert Type | Ordering Code | α | β | R | H | Y | D min | F |
|-------------|-----------------------|----------|---------|------|------|-----|-------|-----|
| T10 | T10 PR R01 A22 | 22° | 8° | .004 | .075 | .04 | .51 | .30 |
| | T10 PR R02 A22 | 22° | 8° | .008 | .075 | .04 | .51 | .30 |
| | T10 QR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

Face Grooving Internal



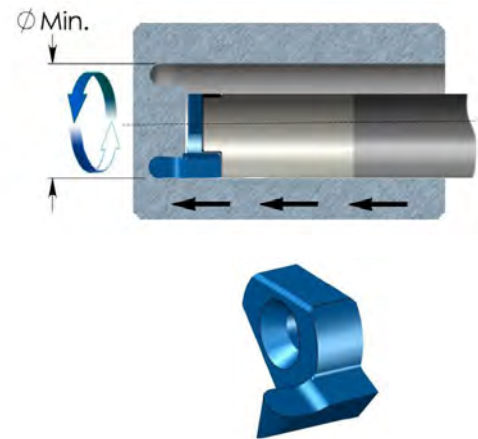
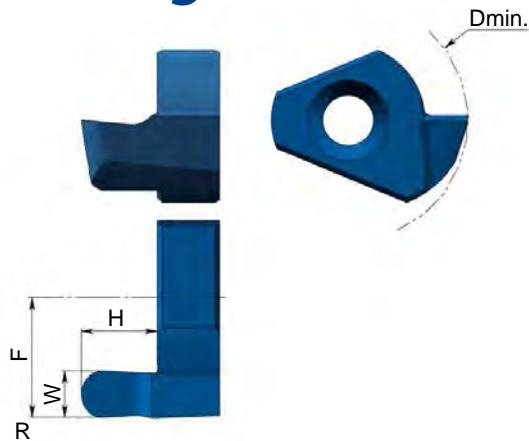
| Insert Type | Ordering Code | W ± .001 | H max | D min | F |
|-------------|----------------|-------------|----------|----------|-----|
| T10 | T10 FI W10 H15 | .039 | .06 | .55 | .31 |
| | T10 FI W15 H25 | .059 | .10 | | |
| | T10 FI W20 H30 | .079 | .12 | | |
| | T10 FI W20 H50 | .079 | .20 | | |
| | 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



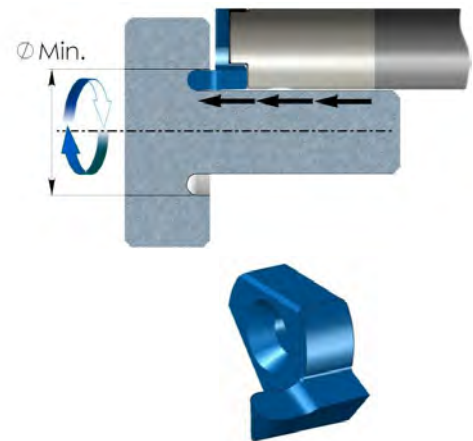
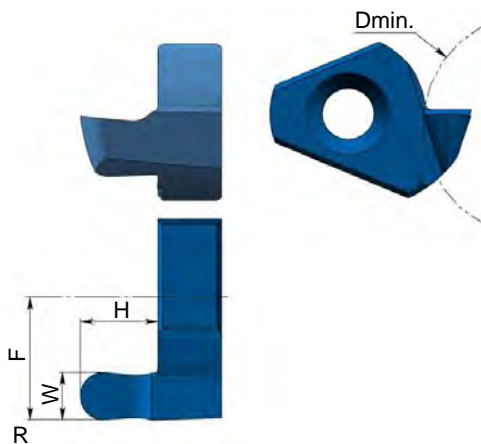
| Insert Type | Ordering Code | W ± .001 | H max | D min | F |
|-------------|----------------|-------------|----------|----------|-----|
| T10 | T10 FE W10 H15 | .039 | .06 | .47 | .31 |
| | T10 FE W15 H25 | .059 | .10 | | |
| | T10 FE W20 H30 | .079 | .12 | | |
| | T10 FE W20 H50 | .079 | .20 | | |
| | T10 FE W25 H30 | .098 | .12 | | |
| | T10 FE W25 H50 | .098 | .20 | | |
| | T10 FE W30 H30 | .118 | .12 | | |
| | T10 FE W30 H50 | .118 | .20 | | |

Face Grooving, Full Radius Internal



| Insert Type | Ordering Code | W ± .001 | 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 | | |

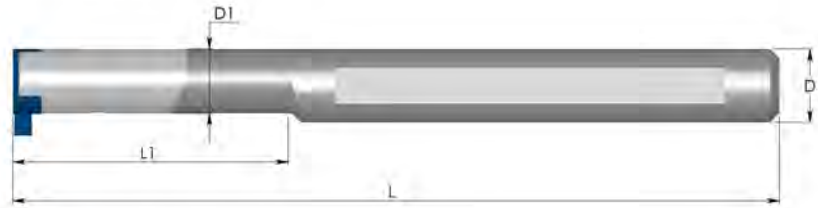
External



| Insert Type | Ordering Code | W ± .001 | 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 | | |

Carbide Shank Toolholders

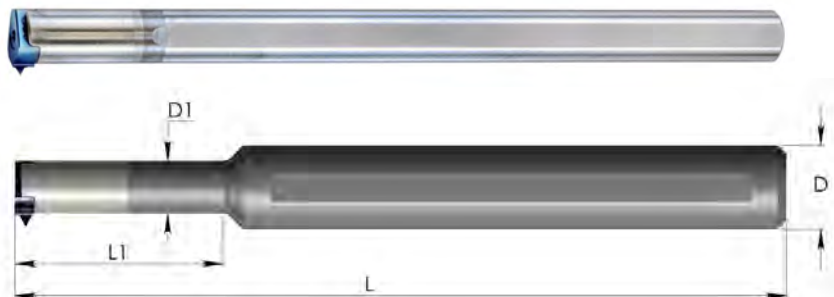
With through coolant



| 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 Shank

| 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 |



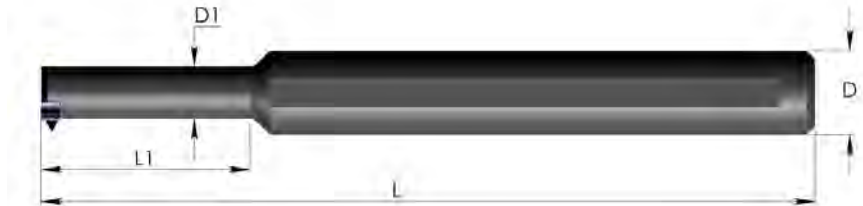
| Insert Type | Ordering Code | D | D1 | L1 | L | Insert Screw | Torx Key |
|-------------|-------------------------|-----|-----|-----|-----|--------------|----------|
| T10 | ST 0375 M10C | 3/8 | .38 | - | 5.9 | S11 | K11 |
| | ST 0500 L16 J10C | 1/2 | .40 | 1.6 | 4.3 | S11 | K11 |
| | ST 0500 L22 K10C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

Metric Shank

| Insert Type | Ordering Code | D mm | D1 | L1 | L | Insert Screw | Torx Key |
|-------------|-------------------------|------|-----|-----|-----|--------------|----------|
| T10 | ST 0010 M10C | 10 | .40 | - | 5.9 | S11 | K11 |
| | ST 0012 L40 J10C | 12 | .40 | 1.6 | 4.3 | S11 | K11 |
| | ST 0012 L55 K10C | 12 | .40 | 2.2 | 4.9 | S11 | K11 |

Steel Toolholders

With through coolant



| 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 Shank

| 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 |

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

Swiss-Line



| Contents: | Page: | Contents: | Page: |
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| Front Turning | 143 | Carbide Grades - Cutting Data | 161 |

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.

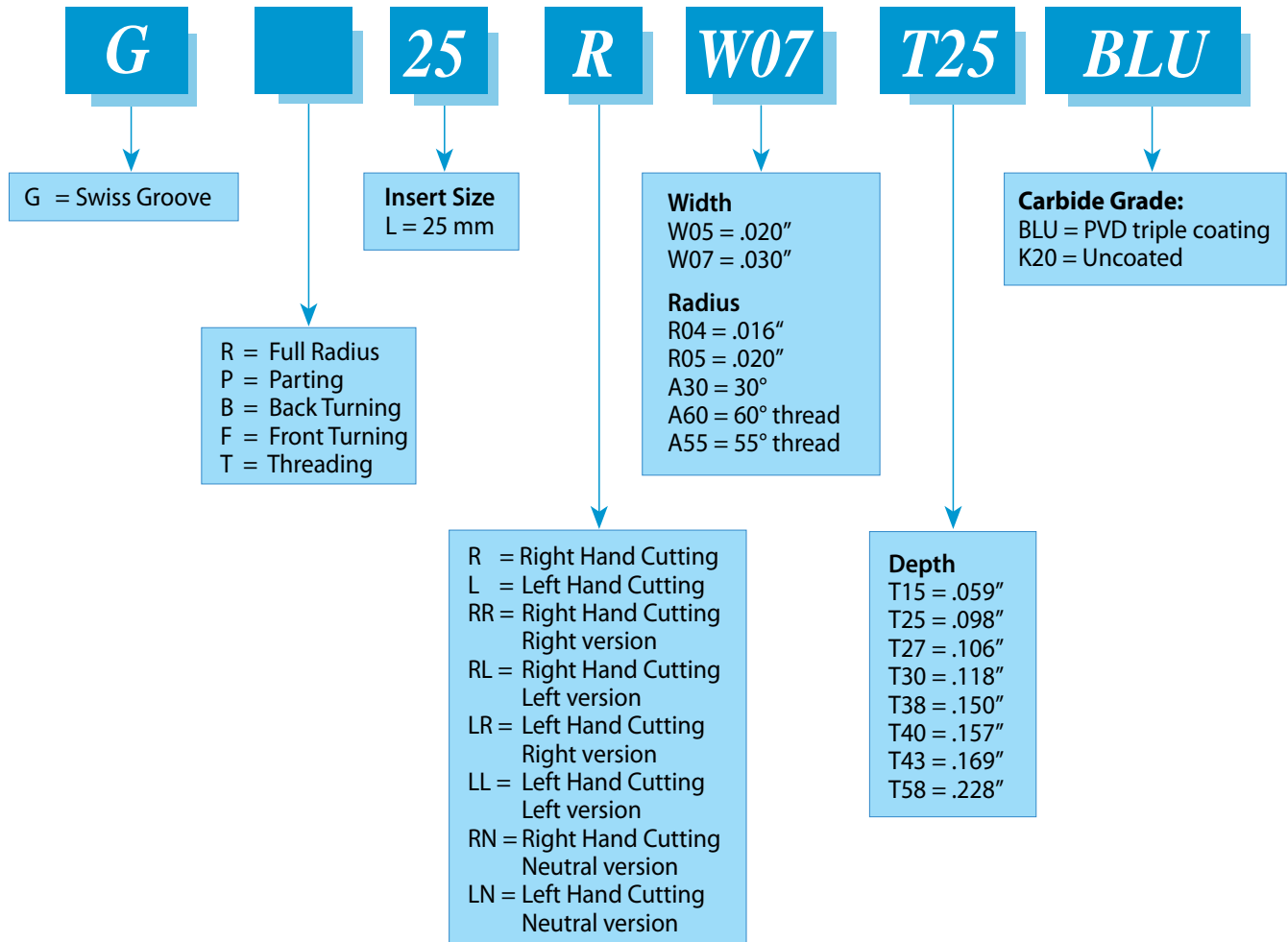


Features

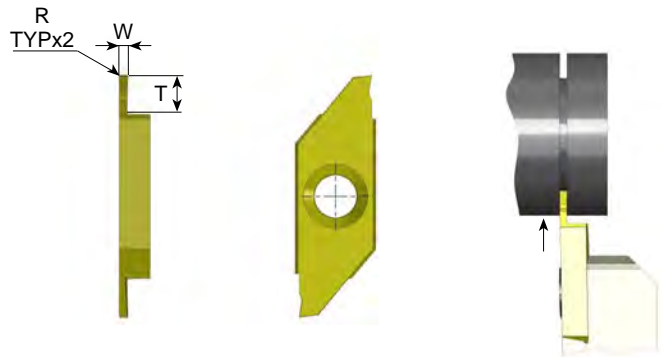
- High precision ground inserts.
- All inserts can be used with same tool holders.
- A combination of the latest carbide and coating technologies guarantees maximum tool life and improved productivity.
- Compatible with a wide range of materials.
- Coated holders provide abrasive resistance.

Carbide grades: BLU, K20

Product Identification Polygon Inserts



Grooving



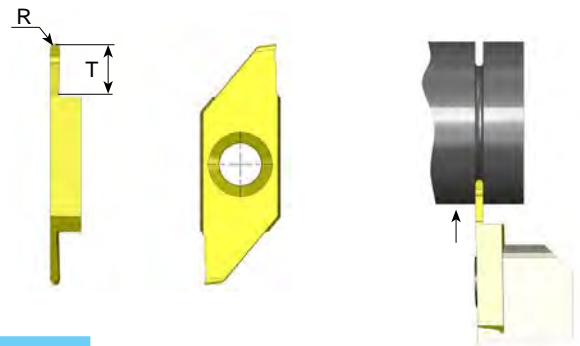
Right hand cutting

| Ordering Code | W ±.001 | T max | R | Feed Inch/rev |
|---------------|---------|-------|------|---------------|
| 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 |

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

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

Grooving and Profiling (full radius)



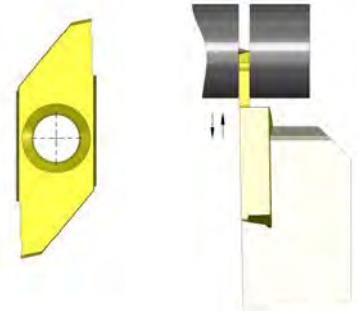
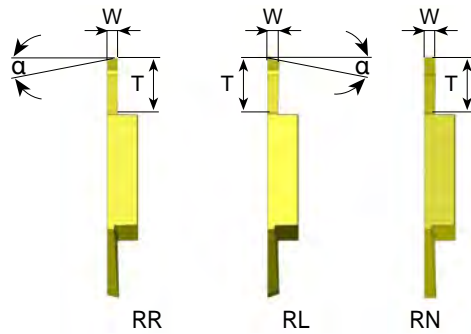
Right hand cutting

| Ordering Code | R±.001 | T max | Feed Inch/rev |
|----------------|--------|-------|---------------|
| GR25 R R02 T15 | .010 | .059 | .0004-.002 |
| GR25 R R04 T25 | .016 | .098 | .0004-.003 |
| GR25 R R05 T27 | .020 | .106 | .0004-.004 |

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

- First choice
- Alternative

Parting Off



Right hand cutting

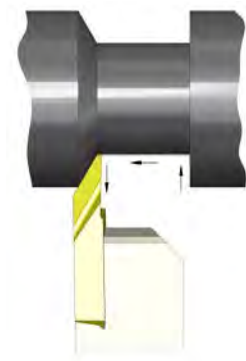
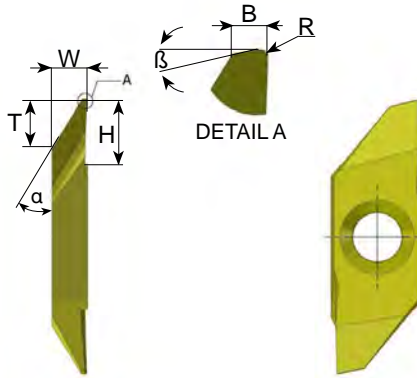
| Ordering Code | W | α° | T max | Feed Inch/rev |
|-----------------|------|----------------|-------|---------------|
| GP25 RR W07 T43 | .028 | 15 | .169 | .0008-.003 |
| GP25 RL W07 T43 | .028 | 15 | .169 | .0008-.003 |
| GP25 RN W07 T43 | .028 | 0 | .169 | .0008-.003 |
| GP25 RR W10 T58 | .039 | 15 | .228 | .0008-.005 |
| GP25 RL W10 T58 | .039 | 15 | .228 | .0008-.005 |
| GP25 RN W10 T58 | .039 | 0 | .228 | .0008-.005 |
| GP25 RR 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 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 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 |
|----------|-----|---------|
| P | | ● |
| M | ● | ● |
| K | ● | ○ |
| N | ● | |
| S | ● | ● |
| H | | ≤45 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

Back Turning



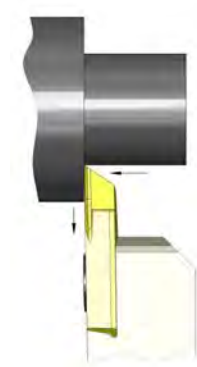
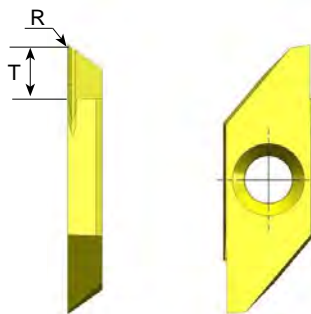
Right hand cutting

| Ordering Code | α° | β° | R | W | T _{max} | B | H | Feed Inch/rev |
|-----------------------|----------------|---------------|------|------|------------------|------|------|---------------|
| 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 |

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

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

Front Turning



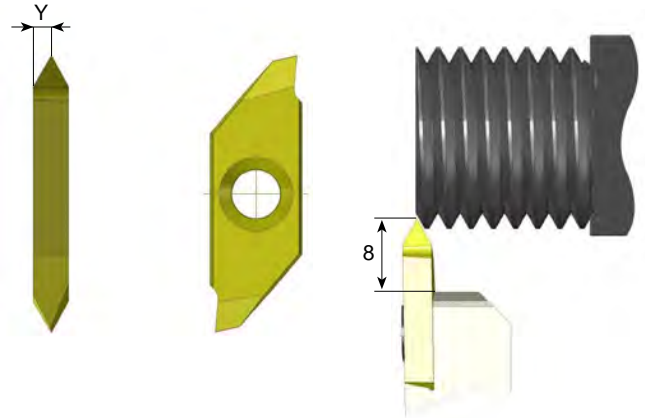
Right hand cutting

| Ordering Code | T _{max} | R | Feed Inch/rev |
|-------------------|------------------|------|---------------|
| GF25 R T40 | .157 | .002 | .002-.005 |

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

- First choice
- Alternative

Threading - Partial Profile 60°



Right hand cutting

| Ordering Code | Pitch Range | | Y |
|---------------|-------------|--------|------|
| | mm | TPI | |
| 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

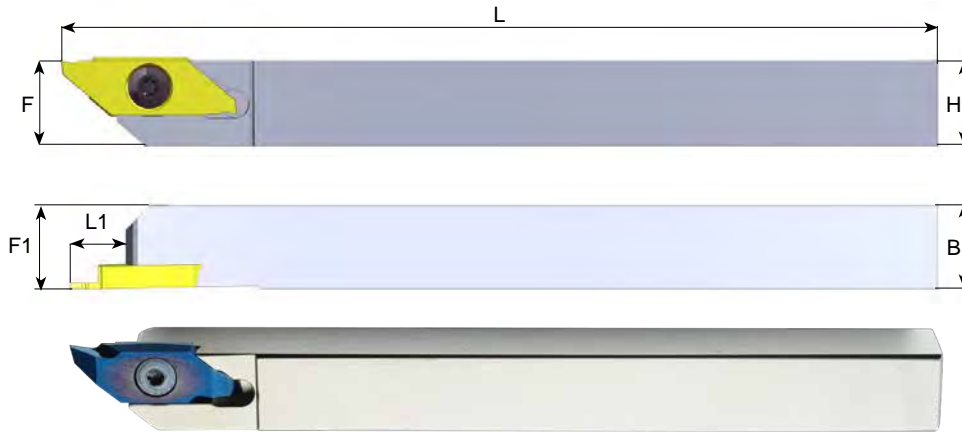
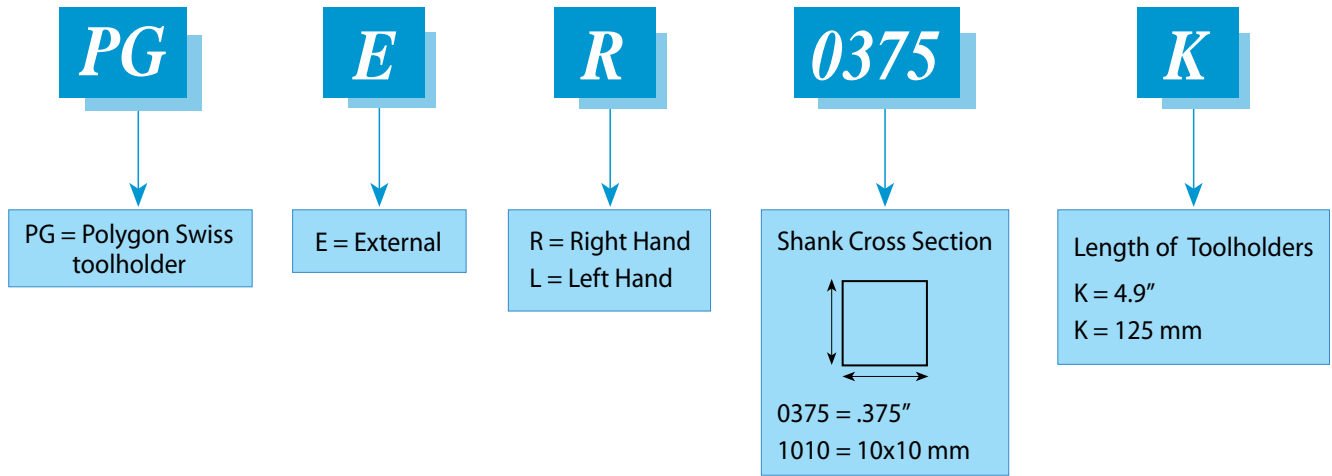
| Ordering Code | Pitch Range | | Y |
|---------------|-------------|-------|------|
| | mm | TPI | |
| GT25 R A55 | 0.5-1.5 | 48-16 | .039 |
| GT25 R G55 | 1.75-3.0 | 14-8 | .063 |

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

● First choice ○ Alternative

External Toolholders - Polygon

Product Identification



Right hand - Inch Holders

| Ordering Code | B | H | L1 | L | F | F1 | Insert Screw Torx + | Key Torx + |
|--------------------|------|------|-----|-----|-----|-----|------------------------|---------------|
| PGER 0375 K | .375 | .375 | .31 | 4.9 | .38 | .38 | S26P | K11P |
| PGER 0500 K | .500 | .500 | .31 | 4.9 | .50 | .50 | S26P | K11P |
| PGER 0625 K | .625 | .625 | .31 | 4.9 | .63 | .63 | S26P | K11P |

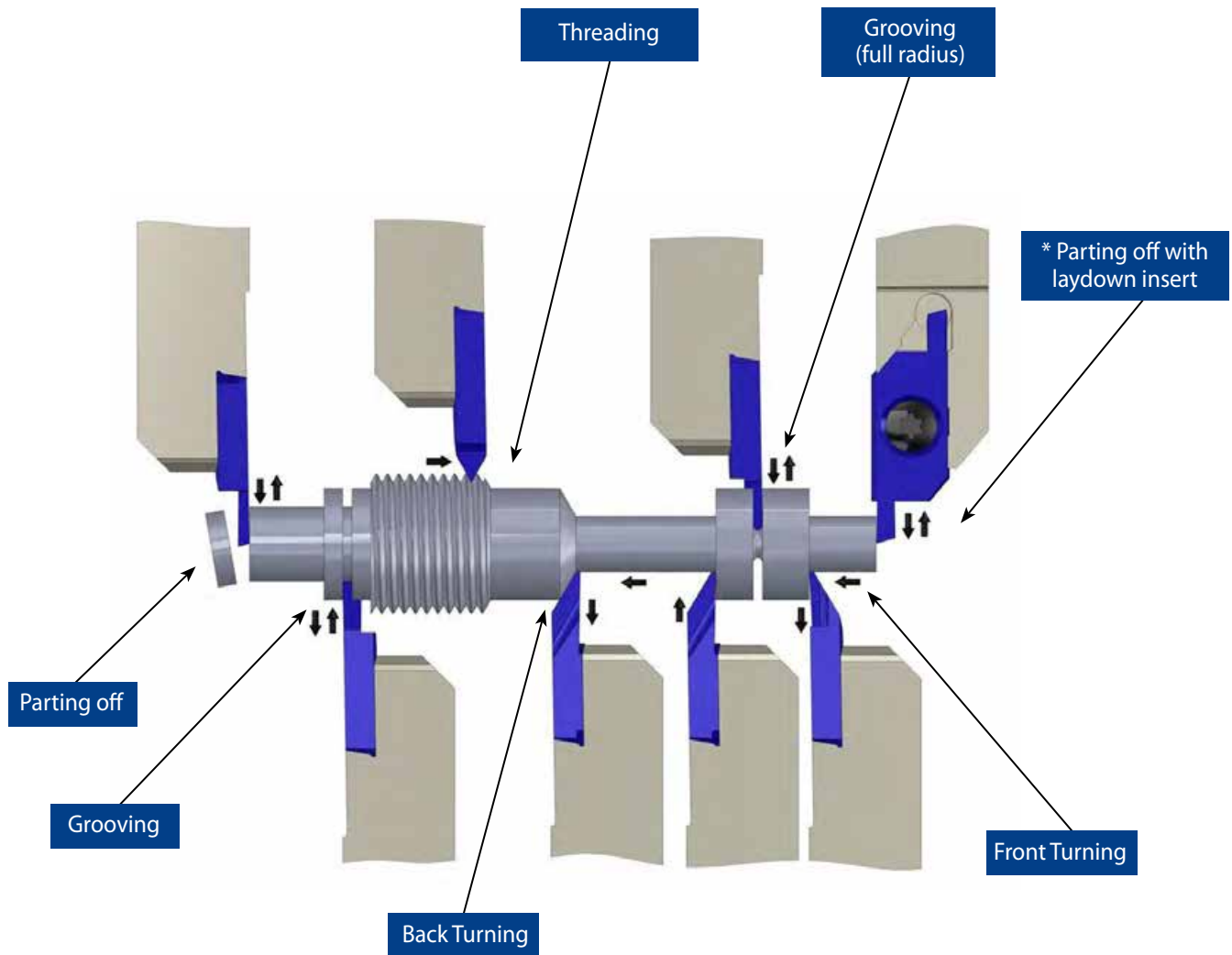
Right hand - Metric Holders

| Ordering Code | B | H | L1 | L | F | F1 | Insert Screw Torx + | Key Torx + |
|--------------------|----|----|----|-----|----|----|------------------------|---------------|
| PGER 1010 K | 10 | 10 | 8 | 125 | 10 | 10 | S26P | K11P |
| PGER 1212 K | 12 | 12 | 8 | 125 | 12 | 12 | S26P | K11P |
| PGER 1616 K | 16 | 16 | 8 | 125 | 16 | 16 | S26P | K11P |

* For L.H, specify **PGEL** instead of **PGER**

Coated holders provide high abrasive resistance

Working method



* Available upon request (grooving, parting, threading).

Cutting Data

Polygon Swiss Line

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.

| 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 |

6 Cutting Edges Turning Insert - G6

Grooving, parting-off and threading

Benefits

- High productivity and cost efficiency due to six cutting edges
- One holder for all insert types - Maximum versatility
- High precision thanks to the fully ground profile.



Features

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

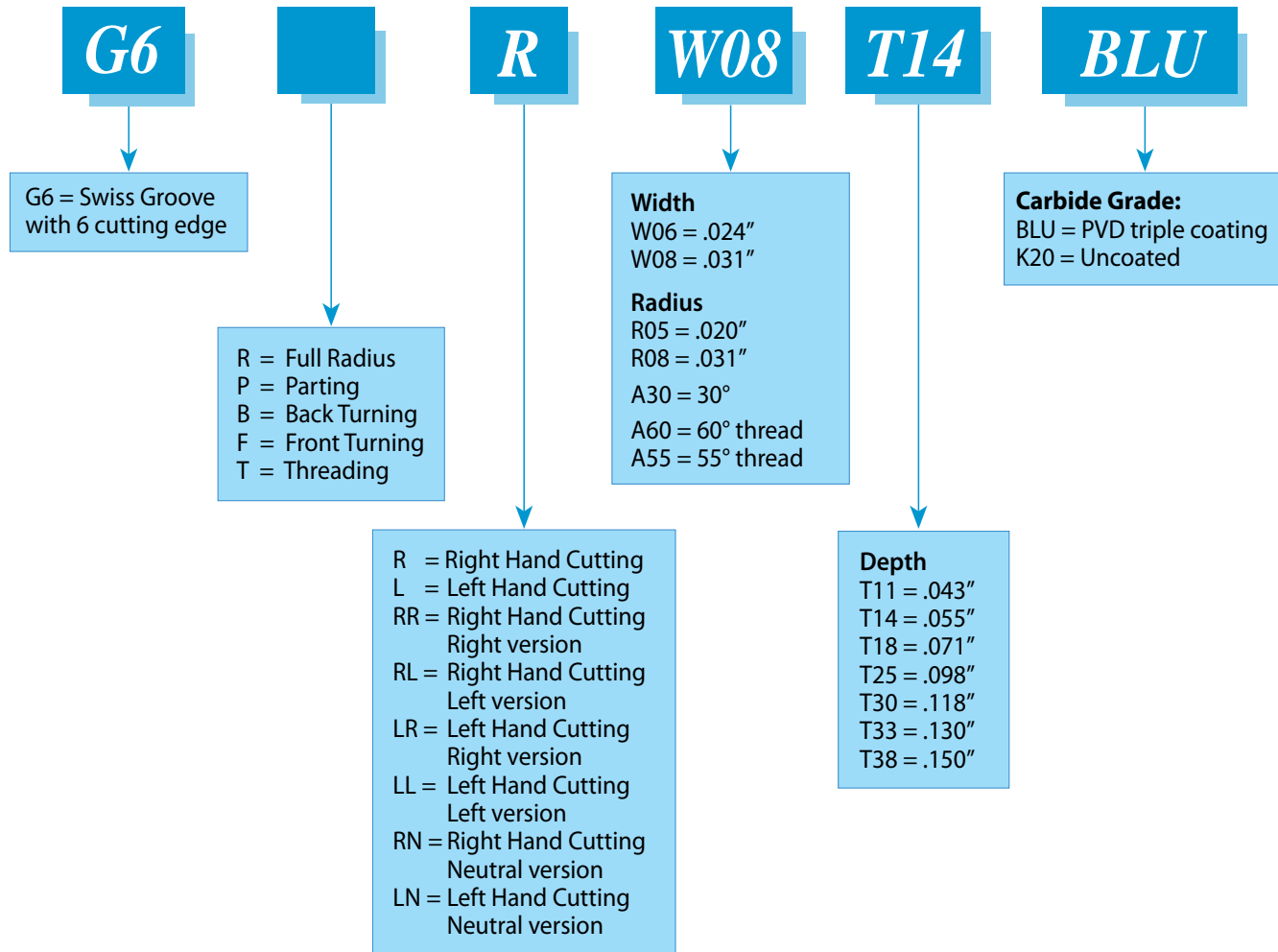
Application

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

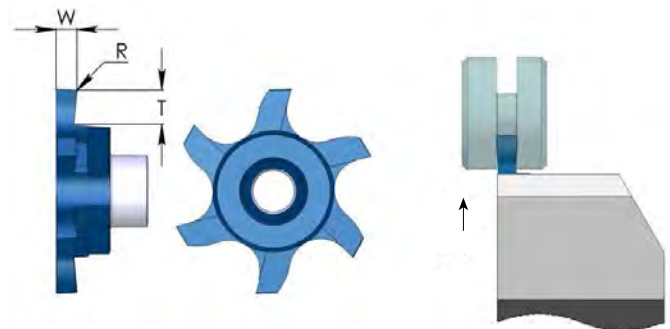
Carbide grades: BLU, K20.

Product Identification

G6 Inserts



Grooving



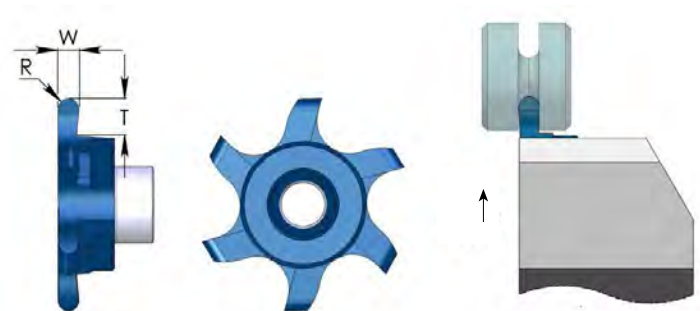
Right hand cutting

| Ordering Code | W ±.001 | T max | R | Feed Inch/rev |
|---------------|---------|-------|------|---------------|
| 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 |

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

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

Grooving and Profiling (full radius)



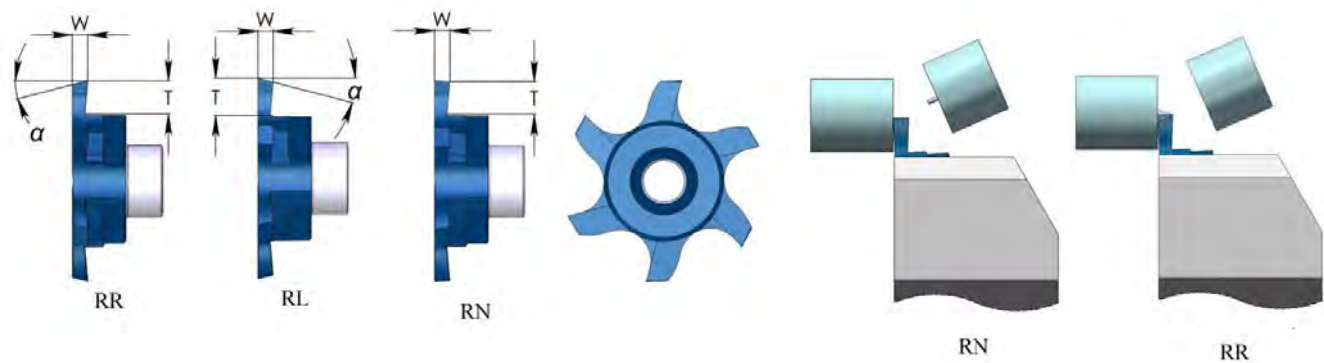
Right hand cutting

| Ordering Code | R±.001 | W | T max | Feed Inch/rev |
|---------------|--------|------|-------|---------------|
| 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 |

* For L.H, specify G6R L instead of G6R R

● First choice ○ Alternative

Parting Off



Right hand cutting

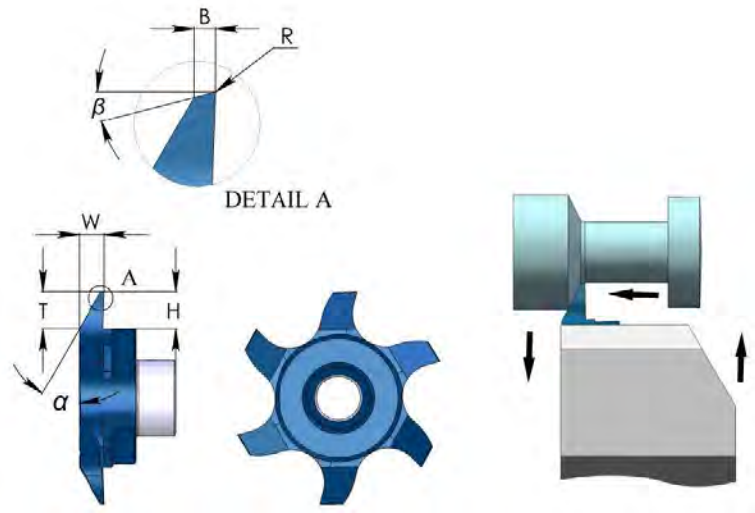
| Ordering Code | W | α° | T max | Feed Inch/rev |
|----------------|------|----------------|-------|---------------|
| G6P RR W10 T38 | .039 | 15 | .150 | .0008-.004 |
| G6P RL W10 T38 | .039 | 15 | .150 | .0008-.004 |
| G6P RN W10 T38 | .039 | 0 | .150 | .0008-.004 |
| G6P RR W15 T38 | .059 | 15 |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



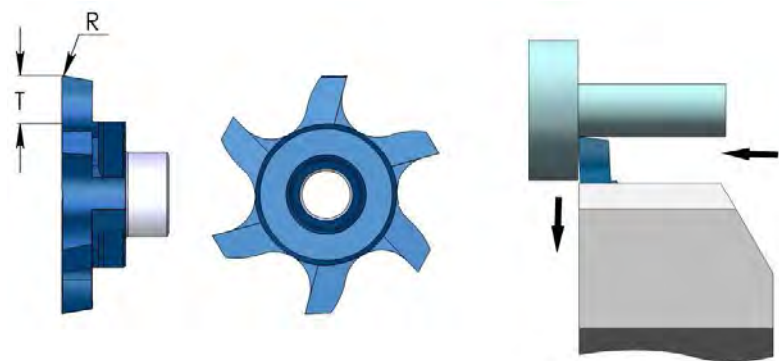
Right hand cutting

| Ordering Code | α° | β° | R | W | T _{max} | B | H | Feed Inch/rev |
|---------------|----------------|---------------|------|------|------------------|-----|------|---------------|
| G6B R A30 | 30 | 12 | .004 | .106 | .150 | .02 | .150 | .002-.005 |

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

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

Front Turning



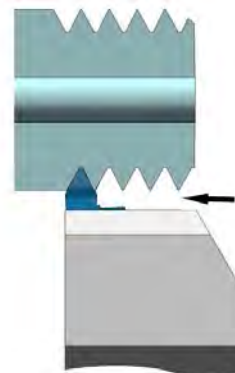
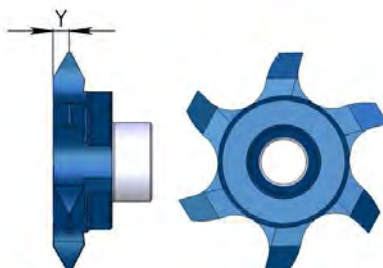
Right hand cutting

| Ordering Code | T _{max} | R | Feed Inch/rev |
|---------------|------------------|------|---------------|
| G6F R T38 | .150 | .004 | .002-.005 |

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

- First choice
- Alternative

Threading - Partial Profile 60°



Right hand cutting

| Ordering Code | Pitch Range | | Y |
|-------------------|-------------|-------|------|
| | mm | TPI | |
| 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 hand cutting

| Ordering Code | Pitch Range | | Y |
|-------------------|-------------|-------|------|
| | mm | TPI | |
| 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

- First choice
- Alternative

External Toolholders - G6

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

G6

E

R

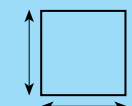
0500

K

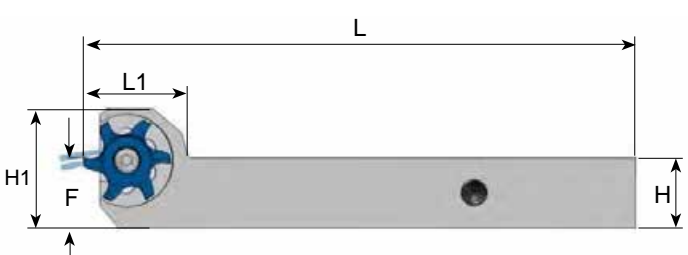
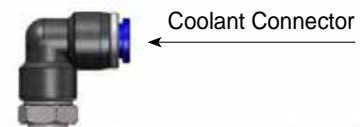

G6 = Swiss toolholder

E = External

R = Right Hand
L = Left Hand

Shank Cross Section

0500 = .500"
1212 = 12x12 mm

Length of Toolholders
K = 4.9"
M = 5.9"
K = 125 mm
M = 150 mm

Right hand - Inch Holders

| Ordering Code | B | H | L1 | L | H1 | F | B1 | Insert Screw Torx + | Torx + Key | **Coolant connector (mm) |
|---------------|-------|-------|----|-----|-----|-------|-------|------------------------|---------------|-----------------------------|
| *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 | 1.000 | 1.000 | .8 | 5.9 | 1.4 | 1.000 | 1.000 | S16LP | K16P | Ø4 / Ø6 |

* Without internal coolant

** Coolant pipe diameter

For L.H, specify G6EL instead of G6ER

Coated holders provide high abrasive resistance

Right hand – Metric Holders

| Ordering Code | B | H | L1 | L | H1 | F | B1 | Insert Screw Torx + | Torx + Key | **Coolant connector (mm) |
|----------------------|----|----|----|-----|----|----|----|---------------------|------------|--------------------------|
| * G6ER 1212 K | 12 | 12 | 20 | 125 | 23 | 12 | 16 | S16LP | K16P | Ø4 / Ø6 |
| G6ER 1616 K | 16 | 16 | 20 | 125 | 27 | 16 | 16 | S16LP | K16P | Ø4 / Ø6 |
| G6ER 2020 K | 20 | 20 | 20 | 125 | 31 | 20 | 20 | S16LP | K16P | Ø4 / Ø6 |
| G6ER 2525 M | 25 | 25 | 20 | 150 | 36 | 25 | 25 | S16LP | K16P | Ø4 / Ø6 |

* Without internal coolant

** Coolant pipe diameter

For L.H, specify G6EL instead of G6ER

Coated holders provide high abrasive resistance

Cutting Data

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.

| 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 |

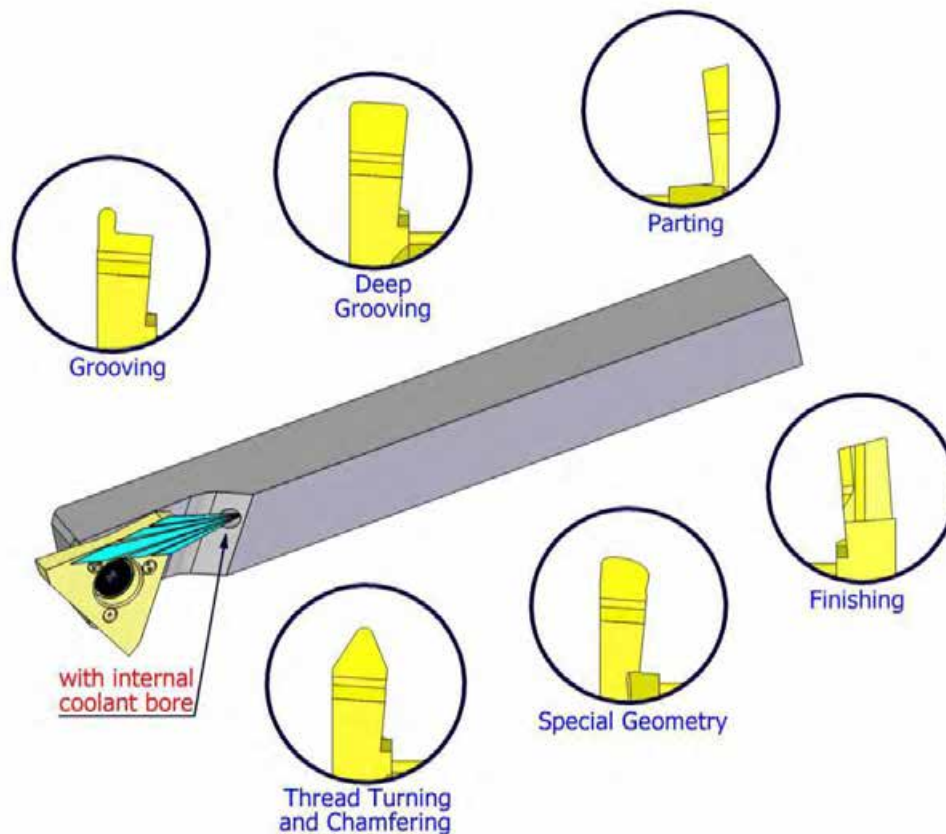
Three cutting edges Swiss-Line

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

Advantages

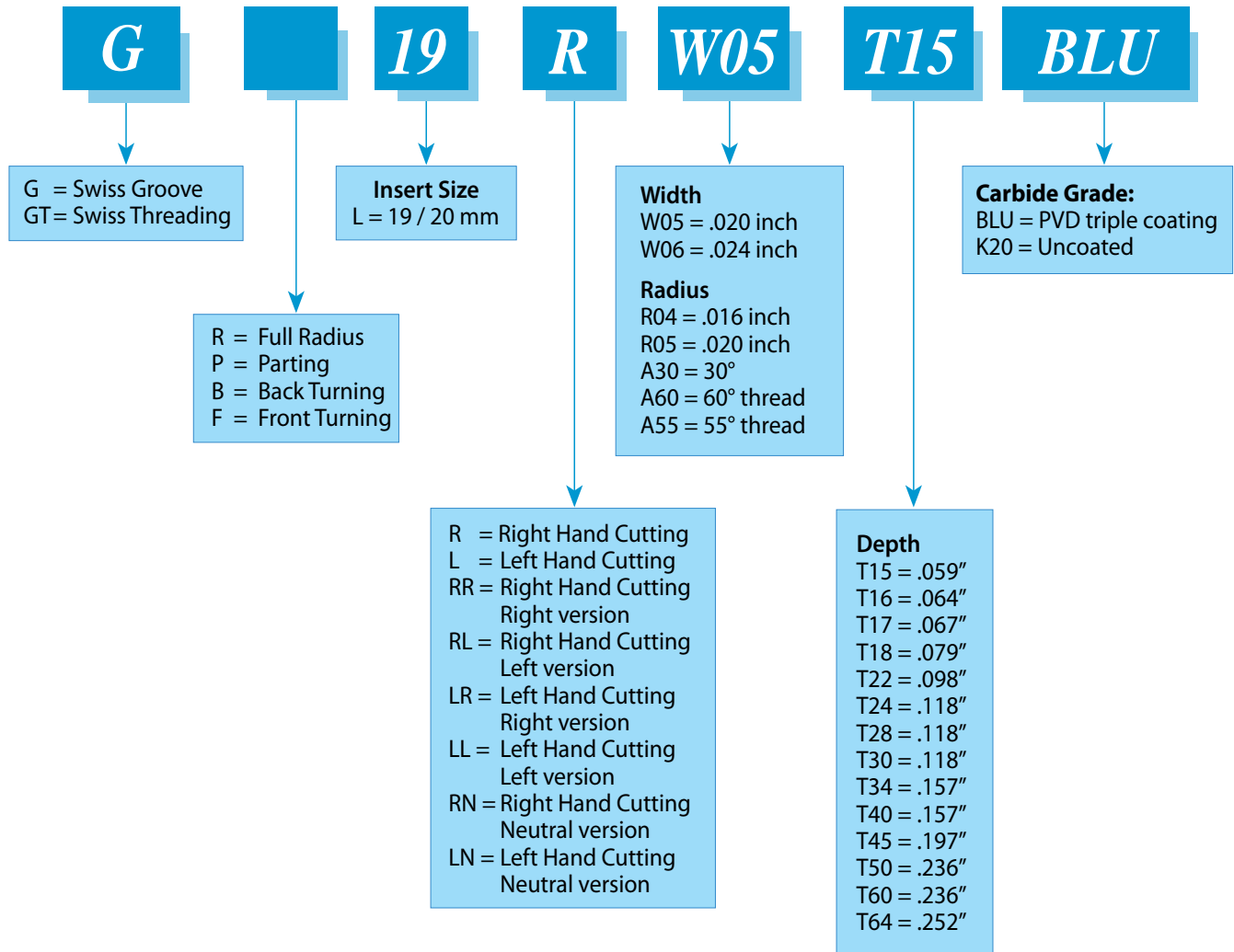
Advanced sub-micron grade (K10-K30) - a combination of strength, toughness, wear resistance and edge sharpness.

- 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.

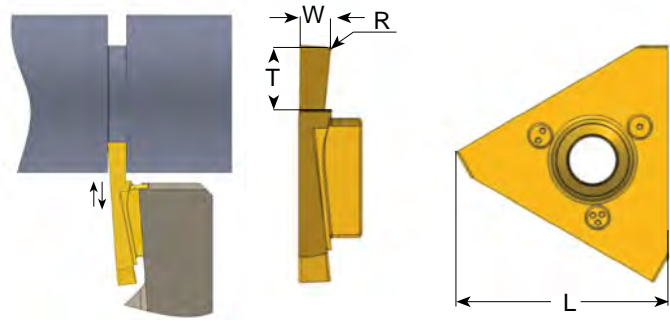


Product Identification

Inserts



Grooving



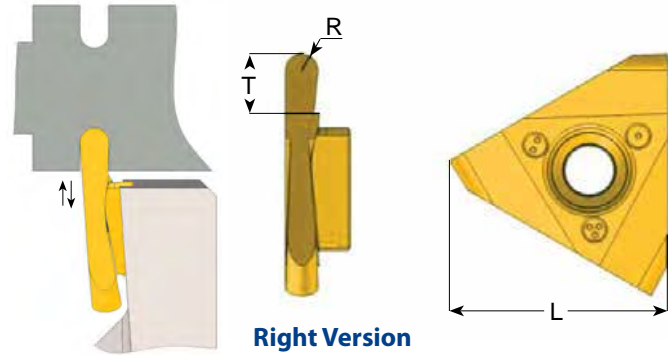
Right hand cutting

| L | 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 |
| 20 | G19 R W17 T34 | .067 | .157 | .002 | .0016-.0035 | .001-.008 |
| | 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 |

Left hand cutting

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

Grooving and Profiling (full radius)



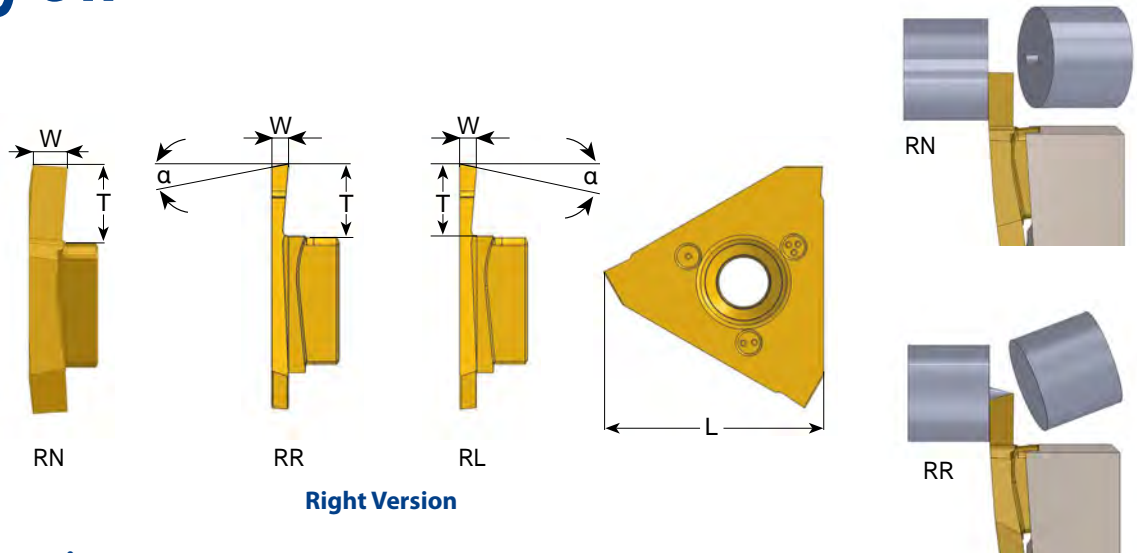
Right hand cutting

| L | Ordering Code | R ±.0012 | T max | Feed Inch/rev | |
|----|----------------|----------|-------|---------------|-----------|
| | | | | Radial | Axial |
| 19 | GR19 R R02 T15 | .010 | .059 | .0004-.003 | .001-.004 |
| | GR19 R R04 T18 | .016 | .079 | .0004-.003 | .001-.004 |
| | GR19 R R05 T22 | .020 | .098 | .001-.003 | .001-.004 |
| | GR19 R R06 T26 | .024 | .118 | .001-.003 | .001-.004 |
| | GR19 R R08 T33 | .031 | .138 | .0016-.0035 | .001-.008 |
| | GR19 R R10 T40 | .040 | .158 | .002-.004 | .001-.008 |
| 20 | GR20 R R12 T50 | .050 | .236 | .002-.004 | .001-.008 |
| | GR20 R R15 T60 | .059 | .236 | .002-.004 | .001-.008 |

Left hand cutting

| L | Ordering Code | R ±.0012 | T max | Feed Inch/rev | |
|----|----------------|----------|-------|---------------|-----------|
| | | | | Radial | Axial |
| 19 | GR19 L R02 T15 | .010 | .059 | .0004-.003 | .001-.004 |
| | GR19 L R04 T18 | .016 | .079 | .0004-.003 | .001-.004 |
| | GR19 L R05 T22 | .020 | .098 | .001-.003 | .001-.004 |
| | GR19 L R06 T26 | .024 | .118 | .001-.003 | .001-.004 |
| | GR19 L R08 T33 | .031 | .138 | .0016-.0035 | .001-.008 |
| | GR19 L R10 T40 | .040 | .158 | .002-.004 | .001-.008 |
| 20 | GR20 L R12 T50 | .050 | .236 | .002-.004 | .001-.008 |
| | GR20 L R15 T60 | .059 | .236 | .002-.004 | .001-.008 |

Parting Off

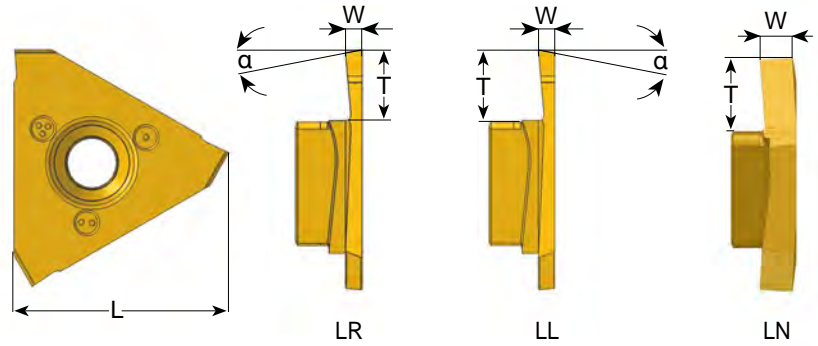


Right Version

Right hand cutting

| L | Ordering Code | W | α° | T max | Feed Inch/rev Radial |
|-----------------|-----------------|------|----------------|------------|-------------------------|
| 19 | GP19 RR W10 T54 | .039 | 15 | .213 | .001-.0035 |
| | GP19 RL W10 T54 | .039 | 15 | .213 | .001-.0035 |
| | GP19 RN W10 T54 | .039 | 0 | .213 | .001-.0035 |
| | GP19 RR W12 T54 | .047 | 15 | .213 | .001-.0035 |
| | GP19 RL W12 T54 | .047 | 15 | .213 | .001-.0035 |
| | GP19 RN W12 T54 | .047 | 0 | .213 | .001-.0035 |
| 20 | GP20 RR W15 T64 | .059 | 15 | .252 | .0016-.004 |
| | GP20 RL W15 T64 | .059 | 15 | .252 | .0016-.004 |
| | GP20 RN W15 T64 | .059 | 0 | .252 | .0016-.004 |
| | GP20 RR W18 T64 | .071 | 15 | .252 | .0016-.004 |
| | GP20 RL W18 T64 | .071 | 15 | .252 | .0016-.004 |
| | GP20 RN W18 T64 | .071 | 0 | .252 | .0016-.004 |
| | GP20 RR W20 T64 | .079 | 15 | .252 | .002-.0047 |
| | GP20 RL W20 T64 | .079 | 15 | .252 | .002-.0047 |
| | GP20 RN W20 T64 | .079 | 0 | .252 | .002-.0047 |
| | GP20 RR W25 T64 | .098 | 15 | .252 | .002-.0047 |
| | GP20 RL W25 T64 | .098 | 15 | .252 | .002-.0047 |
| | GP20 RN W25 T64 | .098 | 0 | .252 | .002-.0047 |
| | GP20 RR W30 T64 | .118 | 15 | .252 | .002-.0047 |
| | GP20 RL W30 T64 | .118 | 15 | .252 | .002-.0047 |
| GP20 RN W30 T64 | .118 | 0 | .252 | .002-.0047 | |

Parting Off

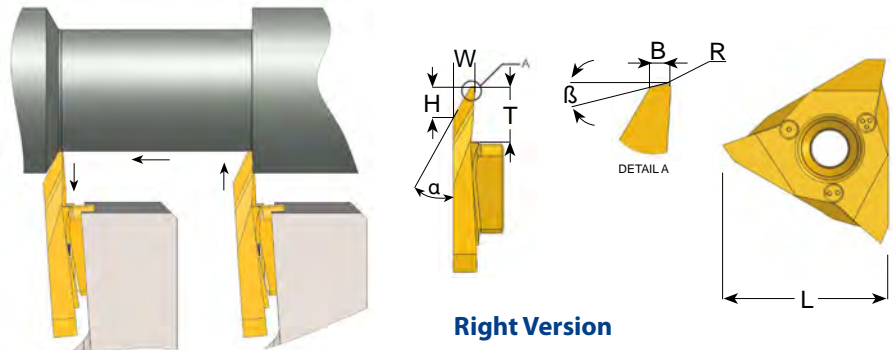


Left Version

Left hand cutting

| L | Ordering Code | W | α° | T max | Feed Inch/rev Radial |
|-----------------|-----------------|------|----------------|------------|-------------------------|
| 19 | GP19 LR W10 T54 | .039 | 15 | .213 | .001-.0035 |
| | GP19 LL W10 T54 | .039 | 15 | .213 | .001-.0035 |
| | GP19 LN W10 T54 | .039 | 0 | .213 | .001-.0035 |
| | GP19 LR W12 T54 | .047 | 15 | .213 | .001-.0035 |
| | GP19 LL W12 T54 | .047 | 15 | .213 | .001-.0035 |
| | GP19 LN W12 T54 | .047 | 0 | .213 | .001-.0035 |
| 20 | GP20 LR W15 T64 | .059 | 15 | .252 | .0016-.004 |
| | GP20 LL W15 T64 | .059 | 15 | .252 | .0016-.004 |
| | GP20 LN W15 T64 | .059 | 0 | .252 | .0016-.004 |
| | GP20 LR W18 T64 | .071 | 15 | .252 | .0016-.004 |
| | GP20 LL W18 T64 | .071 | 15 | .252 | .0016-.004 |
| | GP20 LN W18 T64 | .071 | 0 | .252 | .0016-.004 |
| | GP20 LR W20 T64 | .079 | 15 | .252 | .002-.0047 |
| | GP20 LL W20 T64 | .079 | 15 | .252 | .002-.0047 |
| | GP20 LN W20 T64 | .079 | 0 | .252 | .002-.0047 |
| | GP20 LR W25 T64 | .098 | 15 | .252 | .002-.0047 |
| | GP20 LL W25 T64 | .098 | 15 | .252 | .002-.0047 |
| | GP20 LN W25 T64 | .098 | 0 | .252 | .002-.0047 |
| | GP20 LR W30 T64 | .118 | 15 | .252 | .002-.0047 |
| | GP20 LL W30 T64 | .118 | 15 | .252 | .002-.0047 |
| GP20 LN W30 T64 | .118 | 0 | .252 | .002-.0047 | |

Back Turning



Right Version

Right hand cutting

| L | Ordering Code | α° | β° | R | W | H | B | T | Feed Inch/rev |
|----|-------------------|----------------|---------------|------|------|------|-----|------|---------------|
| 19 | GB19 R A30 | 30 | 12 | .004 | .134 | .169 | .02 | .213 | .002-.006 |
| 20 | GB20 R A30 | 30 | 12 | .004 | .134 | .169 | .02 | .252 | .002-.006 |

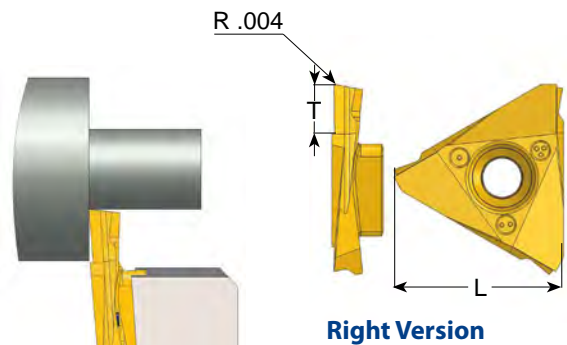
Left hand cutting

| L | Ordering Code | α° | β° | R | W | H | B | T | Feed Inch/rev |
|----|-------------------|----------------|---------------|------|------|------|-----|------|---------------|
| 19 | GB19 L A30 | 30 | 12 | .004 | .134 | .169 | .02 | .213 | .002-.006 |
| 20 | GB20 L A30 | 30 | 12 | .004 | .134 | .169 | .02 | .252 | .002-.006 |

Front Turning

Right hand cutting

| L | Ordering Code | T | Feed Inch/rev |
|----|-------------------|------|---------------|
| 19 | GF19 R T54 | .213 | .002-.006 |
| 20 | GF20 R T64 | .252 | .002-.006 |



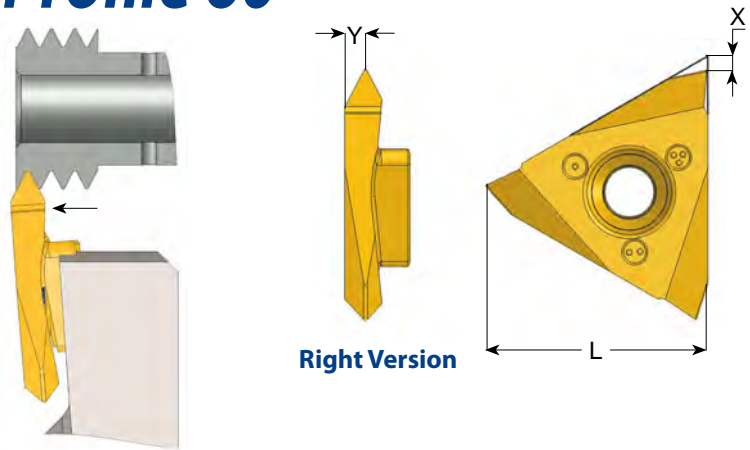
Right Version

Left hand cutting

| L | Ordering Code | T | Feed Inch/rev |
|----|-------------------|------|---------------|
| 19 | GF19 L T54 | .213 | .002-.006 |
| 20 | GF20 L T64 | .252 | .002-.006 |

Threading - Partial Profile 60°

External Thread



Right hand cutting

| L | mm | TPI | Ordering Code | X | Y |
|----|----------|-------|--------------------|-----|------|
| 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 |

Left hand cutting

| L | mm | TPI | Ordering Code | X | Y |
|----|----------|-------|--------------------|-----|------|
| 19 | 0.5-1.5 | 48-16 | GT19 L A60 | .11 | .043 |
| | 1.75-3.0 | 14-8 | GT19 L G60 | .11 | .067 |
| | 0.5-3.0 | 48-8 | GT19 L AG60 | .11 | .067 |

Threading - Partial Profile 55°

External Thread

Right hand cutting

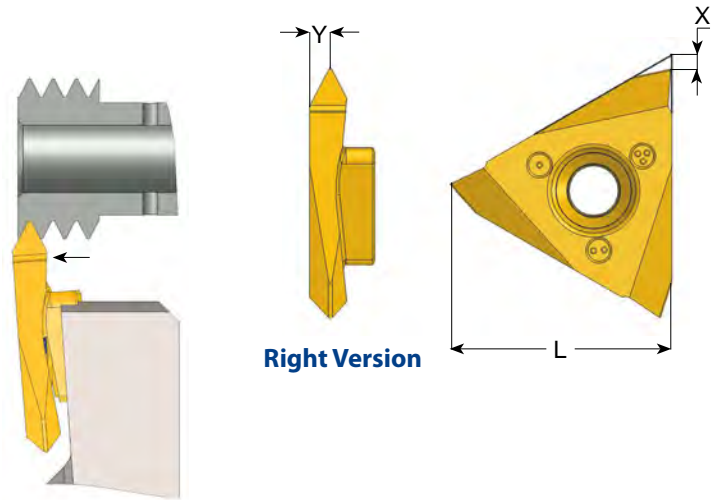
| L | mm | TPI | Ordering Code | X | Y |
|----|----------|-------|--------------------|-----|------|
| 19 | 0.5-1.5 | 48-16 | GT19 R A55 | .11 | .039 |
| | 1.75-3.0 | 14-8 | GT19 R G55 | .11 | .067 |
| | 0.5-3.0 | 48-8 | GT19 R AG55 | .11 | .067 |

Left hand cutting

| L | mm | TPI | Ordering Code | X | Y |
|----|----------|-------|--------------------|-----|------|
| 19 | 0.5-1.5 | 48-16 | GT19 L A55 | .11 | .039 |
| | 1.75-3.0 | 14-8 | GT19 L G55 | .11 | .067 |
| | 0.5-3.0 | 48-8 | GT19 L AG55 | .11 | .067 |

Threading - ISO metric 60°

External Thread



Right hand cutting

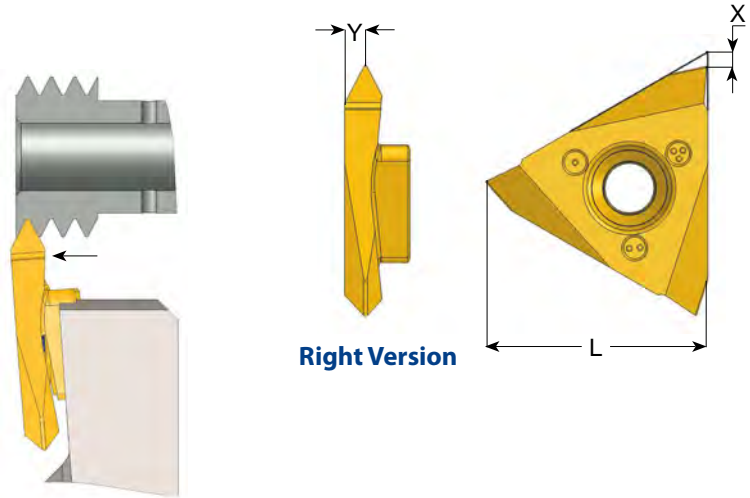
| L | mm | Ordering Code | X | Y |
|----|------|------------------------|-----|------|
| 19 | 0.5 | GT19 R 0.5 ISO | .11 | .024 |
| | 0.7 | GT19 R 0.7 ISO | .11 | .028 |
| | 0.75 | GT19 R 0.75 ISO | .11 | .028 |
| | 0.8 | GT19 R 0.8 ISO | .11 | .028 |
| | 1.0 | GT19 R 1.0 ISO | .11 | .032 |
| | 1.25 | 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 |

Left hand cutting

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

Threading - UN unified 60°

External Thread



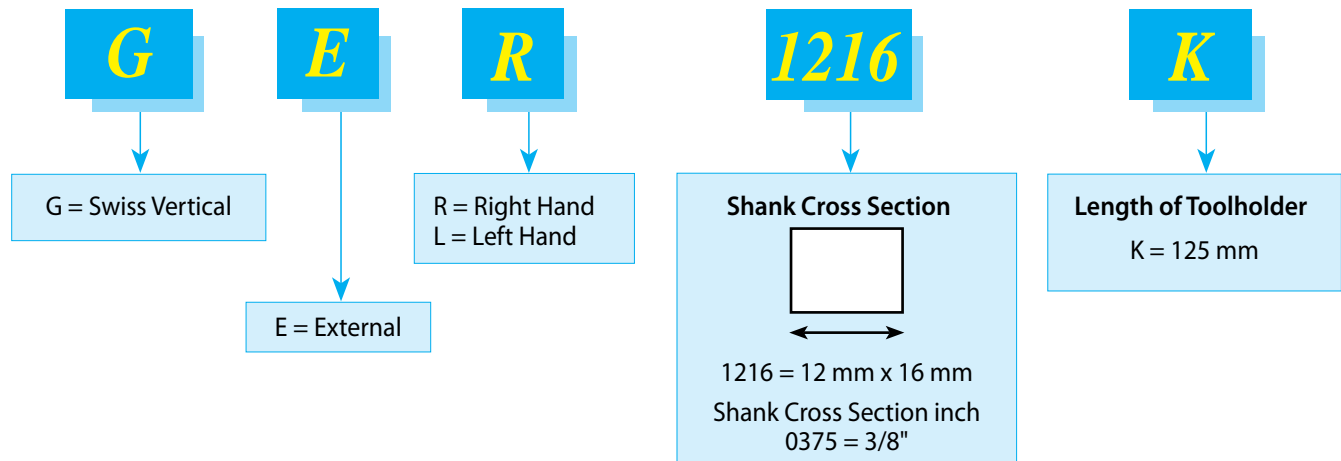
Right hand cutting

| L | 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 |
| | 20 | GT19 R 20UN | .11 | .039 |

Left hand cutting

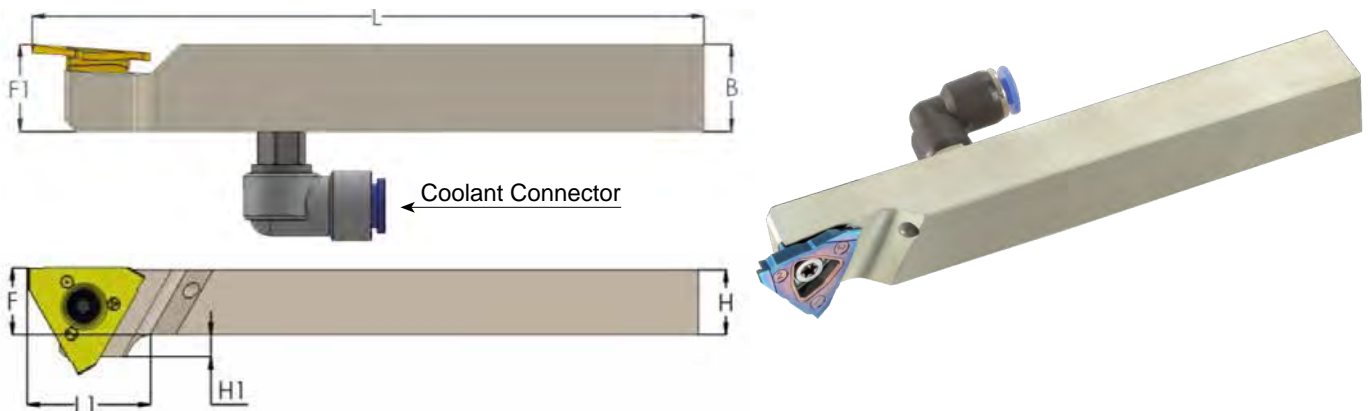
| L | TPI | Ordering Code | X | Y |
|----|-----|--------------------|-----|------|
| 19 | 72 | GT19 L 72UN | .11 | .016 |
| | 56 | GT19 L 56UN | .11 | .024 |
| | 40 | GT19 L 40UN | .11 | .028 |
| | 32 | GT19 L 32UN | .11 | .028 |
| | 24 | GT19 L 24UN | .11 | .032 |
| | 20 | GT19 L 20UN | .11 | .039 |

Product Identification - Toolholders



External Toolholders

- Coolant through toolholders, for external turning in Swiss style lathes.
- 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 a quick setup on the machine.



Right hand - 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 | .32 | .63 | .32 | S21 | K21 | - |
| GER 1016 K | 16 | 10 | .67 | 4.9 | .39 | .63 | .24 | S21 | K21 | Ø4 / Ø6 |
| GER 1216 K | 16 | 12 | .67 | 4.9 | .47 | .63 | .16 | S21 | K21 | Ø4 / Ø6 |
| GER 1616 K | 16 | 16 | - | 4.9 | .63 | .63 | 0 | S21 | K21 | Ø4 / Ø6 |
| GER 2020 K | 20 | 20 | - | 4.9 | .79 | .79 | 0 | S21 | K21 | Ø4 / Ø6 |
| GER 2525 M | 25 | 25 | - | 5.9 | .98 | .98 | 0 | S21 | K21 | Ø4 / Ø6 |

* Diameter of coolant pipe

** Without coolant

External Toolholders

Right hand - Inch holders

| Ordering Code | B | H | L1 | L | F | F1 | H1 | Insert Screw | Torx Key | *Coolant connector (mm) |
|---------------|-------|-------|-----|-----|------|------|-----|--------------|----------|-------------------------|
| GER 0375 K | .625 | .375 | .67 | 4.9 | .38 | .63 | .25 | S21 | K21 | Ø4 / Ø6 |
| GER 0500 K | .625 | .500 | .67 | 4.9 | .50 | .63 | .13 | S21 | K21 | Ø4 / Ø6 |
| GER 0625 K | .625 | .625 | - | 4.9 | .63 | .63 | 0 | S21 | K21 | Ø4 / Ø6 |
| GER 0750 K | .750 | .750 | - | 4.9 | .75 | .75 | 0 | S21 | K21 | Ø4 / Ø6 |
| GER 1000 M | 1.000 | 1.000 | - | 5.9 | 1.00 | 1.00 | 0 | S21 | K21 | Ø4 / Ø6 |

* Diameter of coolant pipe

Left hand - Metric holders

| Ordering Code | B (mm) | H (mm) | L1 | L | F | F1 | H1 | Insert Screw | Torx Key | *Coolant connector (mm) |
|---------------|--------|--------|-----|-----|-----|-----|-----|--------------|----------|-------------------------|
| **GEL 0816 K | 16 | 8 | .67 | 4.9 | .32 | .63 | .32 | S21 | K21 | - |
| GEL 1016 K | 16 | 10 | .67 | 4.9 | .39 | .63 | .24 | S21 | K21 | Ø4 / Ø6 |
| GEL 1216 K | 16 | 12 | .67 | 4.9 | .47 | .63 | .16 | S21 | K21 | Ø4 / Ø6 |
| GEL 1616 K | 16 | 16 | - | 4.9 | .63 | .63 | 0 | S21 | K21 | Ø4 / Ø6 |
| GEL 2020 K | 20 | 20 | - | 4.9 | .79 | .79 | 0 | S21 | K21 | Ø4 / Ø6 |
| GEL 2525 M | 25 | 25 | - | 5.9 | .98 | .98 | 0 | S21 | K21 | Ø4 / Ø6 |

* Diameter of coolant pipe

** Without coolant

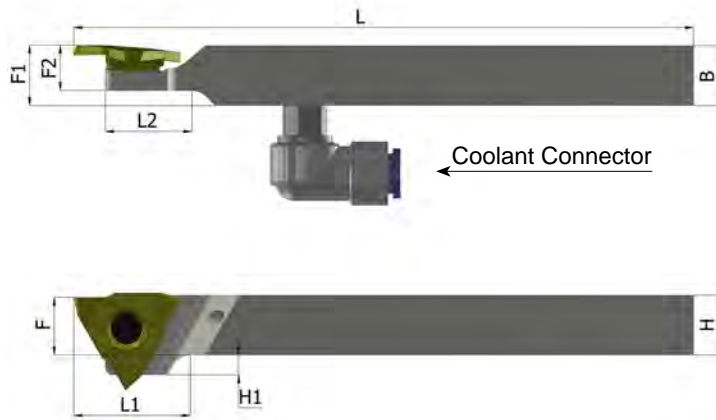
Left hand - Inch holders

| Ordering Code | B | H | L1 | L | F | F1 | H1 | Insert Screw | Torx Key | *Coolant connector (mm) |
|---------------|-------|-------|-----|-----|------|------|-----|--------------|----------|-------------------------|
| GEL 0375 K | .625 | .375 | .67 | 4.9 | .38 | .63 | .25 | S21 | K21 | Ø4 / Ø6 |
| GEL 0500 K | .625 | .500 | .67 | 4.9 | .50 | .63 | .13 | S21 | K21 | Ø4 / Ø6 |
| GEL 0625 K | .625 | .625 | - | 4.9 | .63 | .63 | 0 | S21 | K21 | Ø4 / Ø6 |
| GEL 0750 K | .750 | .750 | - | 4.9 | .75 | .75 | 0 | S21 | K21 | Ø4 / Ø6 |
| GEL 1000 M | 1.000 | 1.000 | - | 5.9 | 1.00 | 1.00 | 0 | S21 | K21 | Ø4 / Ø6 |

* Diameter of coolant pipe

Swiss Line Slim Holders

For cut-off when using sub-spindle



Right hand - Metric Shank

| Ordering Code | B=H | L1 | L2 | L | F | F1 | F2 | H1 | Insert Screw | Torx Key | *Coolant connector |
|--------------------|-----|----|----|-----|----|----|------|----|--------------|----------|--------------------|
| GERS 1010 K | 10 | 17 | 11 | 125 | 10 | 10 | 10.0 | 6 | S21XS | K21 | Ø4 / Ø6 |
| GERS 1212 K | 12 | 17 | 11 | 125 | 12 | 12 | 9.5 | 4 | S21XS | K21 | Ø4 / Ø6 |
| GERS 1616 K | 16 | - | 11 | 125 | 16 | 16 | 9.5 | 0 | S21XS | K21 | Ø4 / Ø6 |
| GERS 2020 K | 20 | - | 11 | 125 | 20 | 20 | 9.5 | 0 | S21XS | K21 | Ø4 / Ø6 |

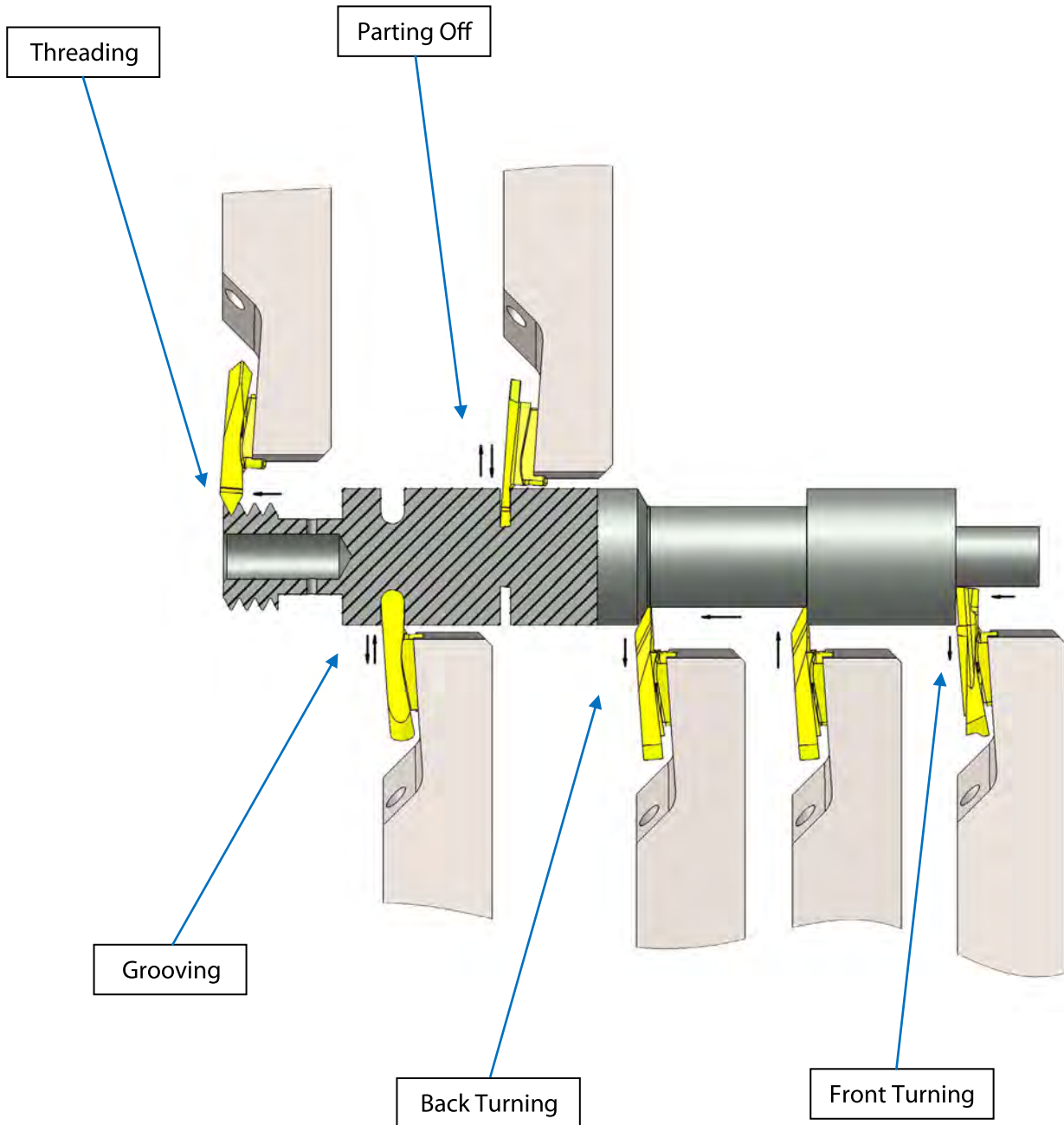
* Diameter of coolant pipe

Right hand - Inch holders

| Ordering Code | B=H | L1 | L2 | L | F | F1 | F2 | H1 | Insert Screw | Torx Key | *Coolant connector |
|--------------------|------|-----|-----|-----|------|------|------|------|--------------|----------|--------------------|
| GERS 0375 K | .375 | .67 | .43 | 4.9 | .375 | .375 | .375 | .250 | S21XS | K21 | Ø4 / Ø6 |
| GERS 0500 K | .500 | .67 | .43 | 4.9 | .500 | .500 | .375 | .125 | S21XS | K21 | Ø4 / Ø6 |
| GERS 0625 K | .625 | - | .43 | 4.9 | .625 | .625 | .375 | 0 | S21XS | K21 | Ø4 / Ø6 |
| GERS 0750 K | .750 | - | .43 | 4.9 | .750 | .750 | .375 | 0 | S21XS | K21 | Ø4 / Ø6 |

* Diameter of coolant pipe

Grooving - Parting Off - Turning - Profiling - Threading Working Method



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 | - | 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 | Aluminium ≤12%Si, Copper | 395-820 | - |
| | Aluminium >12%Si | 295-656 | - |
| | Synthetics, Duroplastics, Thermoplastics | 230-490 | - |
| S | Nickel Alloys, Titanium Alloys | 65-165 | 100-230 |
| H | Hardened Steel, 45-50HRc | - | 65-165 |

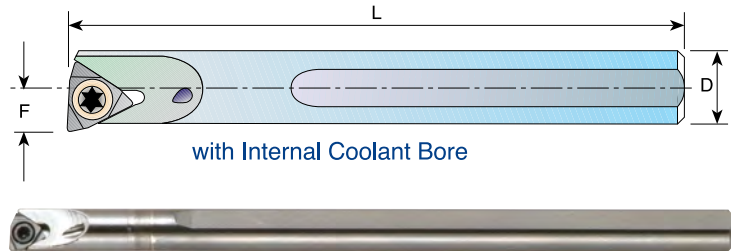


Carbide Shank Turning Tool Holders and Insert



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Carbide Shank Boring Bars and Inserts

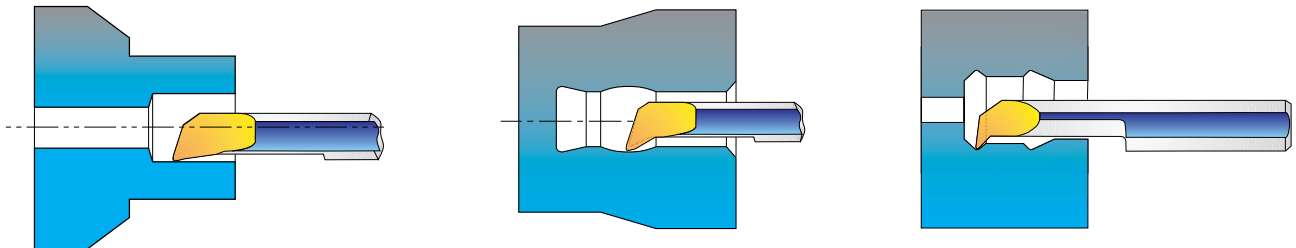


| D | Ordering Code | L | F | Min. Bore Dia. | Screw | Key |
|------|----------------|---|-----|----------------|-------|-----|
| 1/4 | SIR 0250 H06CT | 4 | .14 | .27 | S6 | K6 |
| 5/16 | SIR 0310 K06CT | 5 | .17 | .34 | S6 | K6 |

Insert Ordering Code: 06 IR TURN BMA

Nose radius R= 0.2mm

For turning small bores see pages 81-87



Thread Whirling Tools



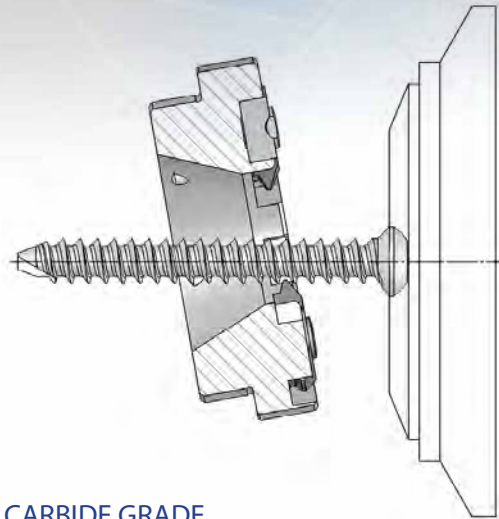
For Perfect Long Threads on Swiss Type Machines

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

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

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

Turning direction of the whirling unit



Turning direction of the bar



CARBIDE GRADE

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

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| Thread Whirling Advantages | 166 |
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| Ordering according to Machine Type or Model | 167 |

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Thread Whirling Advantages

Thread Whirling offers several advantages over single point threading:

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

Increased Productivity:

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

Very high surface quality and accurate geometry:

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

Long tool life:

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

Faster Setup:

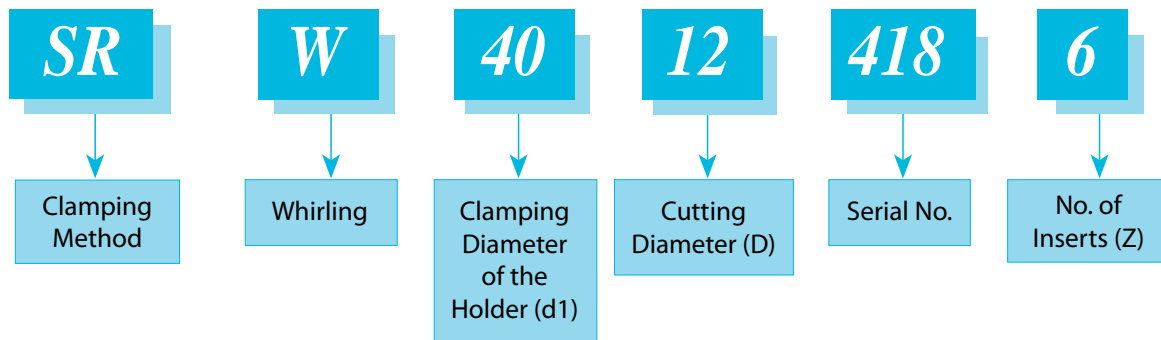
Thread whirling eliminates special support devices and expensive startup development costs.

Compensation of large helix angles:

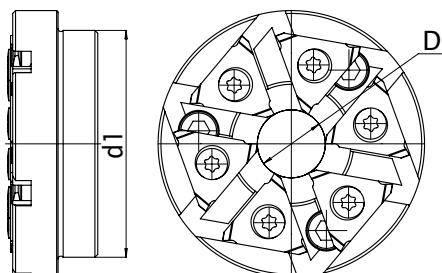
Large helix angles can be compensated by adjusting the whirling unit.

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

Product Identification



Toolholders



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



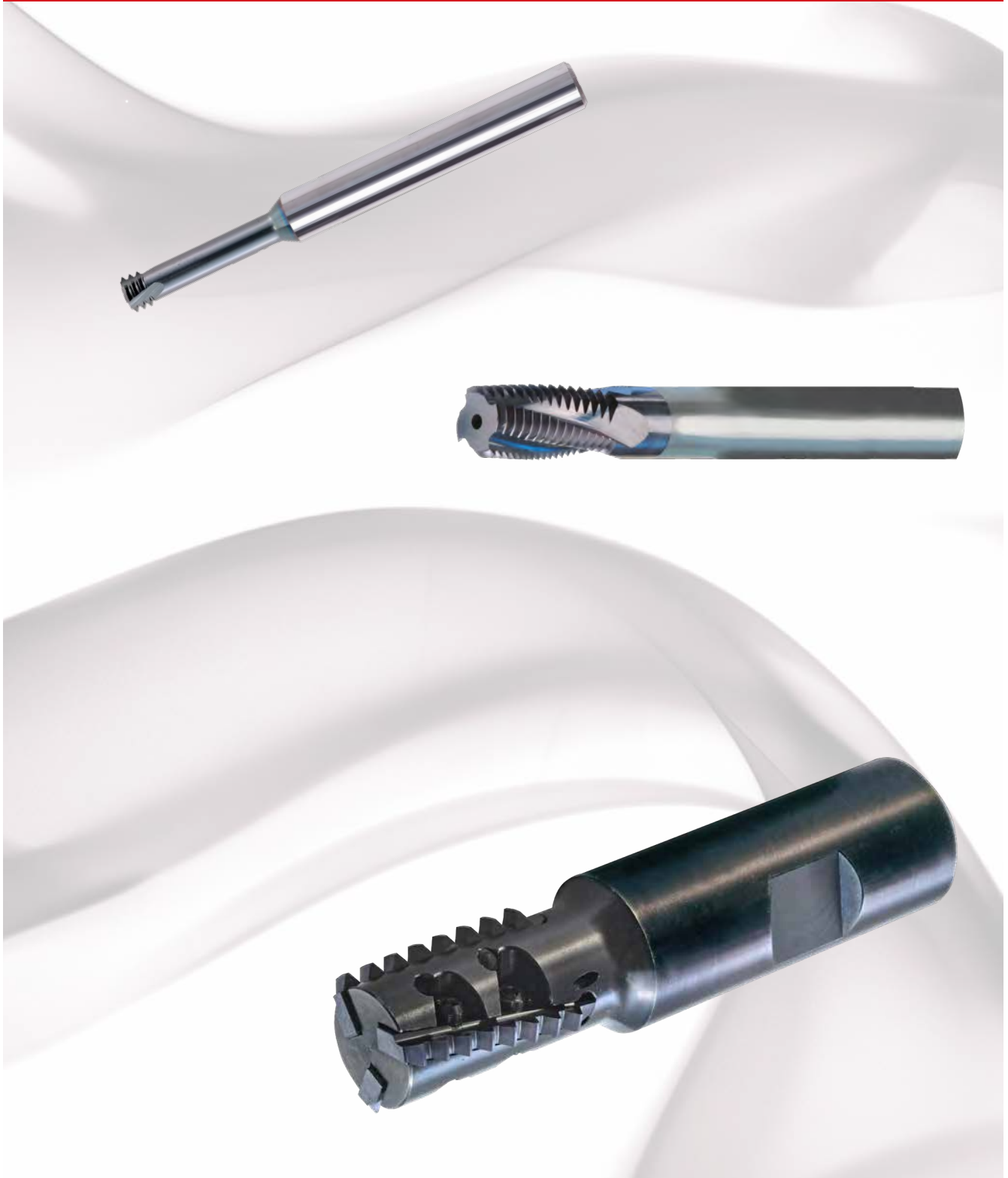
Case Study

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

SPECIALS
ARE OUR SPECIALTY



Milling Tools

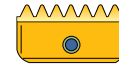


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Deep Reach Mill-Thread

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CMT

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Mill-Thread Solid Carbide

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Mini Mill-Thread

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DMT - 3 in 1 - Drill, Thread, Chamfer

277-282



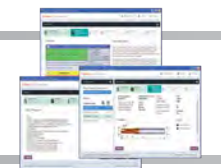
HARD 

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Mill-Thread Technical Section

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Solid Carbide Grooving Tools

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Supercut Roughers

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Mini Chamfer

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Mill - Thread Inserts and Kits



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

Advantages of Mill-Thread Tools

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

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NPS
NPSF

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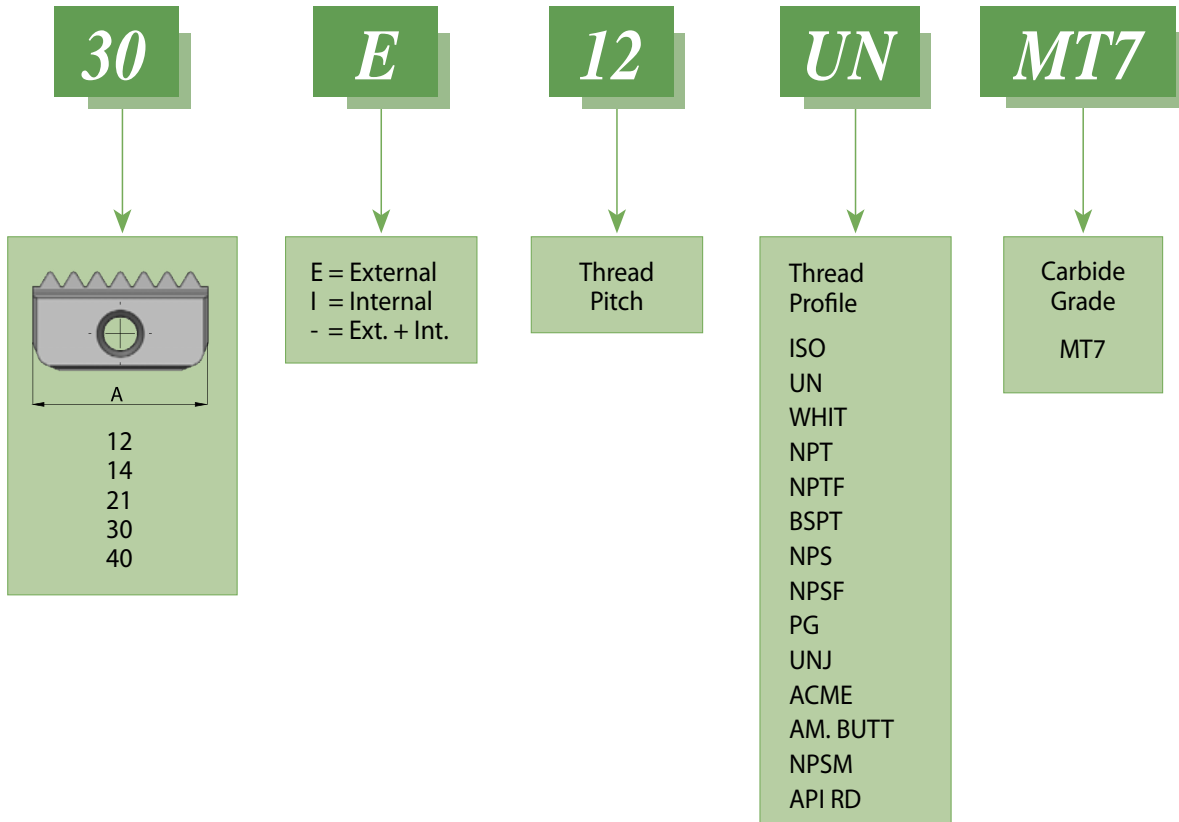
NPSM
PG - DIN 40430
UNJ
American Buttress
Acme
API RD
Internal ISO Kits
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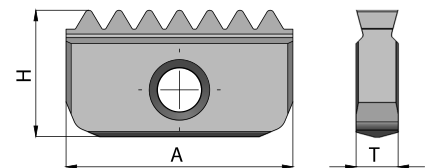
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Product Identification

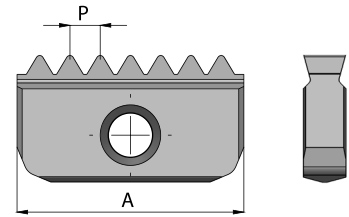
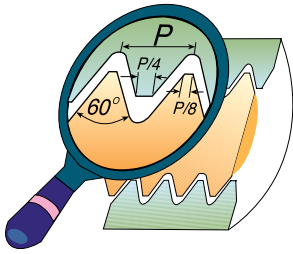
Mill-Thread Inserts Ordering Codes



| | 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

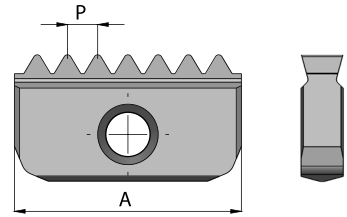
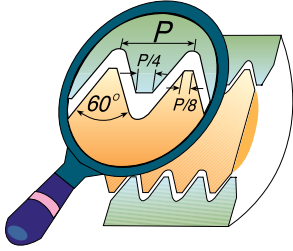


| Pitch mm | | Insert Size = A | | | | |
|-------------|------|-----------------|---------------|---------------|----------------|----------------|
| | | 12 mm .472 | 14 mm .551 | 21 mm .827 | 30 mm 1.181 | 40 mm 1.575 |
| 0.5 | Ext. | | | | | |
| 0.5 | Int. | * 12 I 0.5 ISO | 14 I 0.5 ISO | | | |
| 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 | | | |
| 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 | | | |
| 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



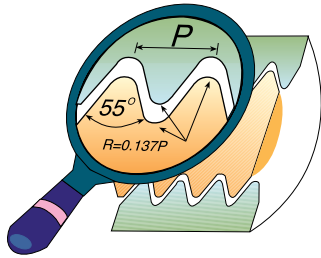
| Pitch TPI | | Insert Size = A | | | | |
|--------------|------|-----------------|---------------|---------------|----------------|----------------|
| | | 12 mm .472 | 14 mm .551 | 21 mm .827 | 30 mm 1.181 | 40 mm 1.575 |
| 32 | Ext. | | 14 E 32 UN | | | |
| 32 | Int. | * 12 I 32 UN | 14 I 32 UN | | | |
| 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 4.5UN |
| 4 | Ext. | | | | | |
| 4 | Int. | | | | | 40 I 4 UN |

* One cutting edge

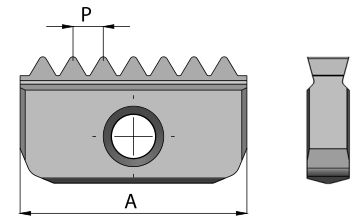
** Cannot be used with carbide shank Toolholders.

Order example: 21 I 18 UN MT7

WHIT BSW, BSF, BSP



Same Insert for External and Internal thread.

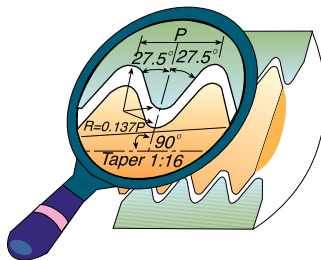


| Pitch TPI | Insert Size = A | | | | |
|--------------|-----------------|---------------|---------------|----------------|----------------|
| | 12 mm .472 | 14 mm .551 | 21 mm .827 | 30 mm 1.181 | 40 mm 1.575 |
| 24 | | 14-24 W | | | |
| 20 | | 14-20 W | 21-20 W | | |
| 19 | * 12 - 19 W | 14-19 W |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

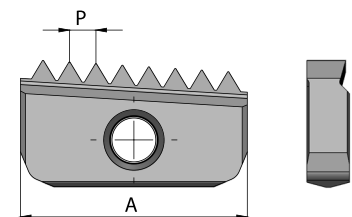
* One cutting edge

Order example: 21-11 W MT7

BSPT



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

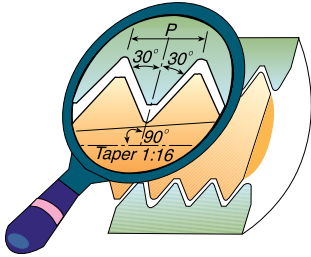


| Pitch TPI | Insert Size = A | | | | |
|--------------|-----------------|---------------|---------------|----------------|----------------|
| | 12 mm .472 | 14 mm .551 | 21 mm .827 | 30 mm 1.181 | 40 mm 1.575 |
| 19 | 12-19 BSPT | 14-19 BSPT | | | |
| 14 | | 14-14 BSPT | 21-14 BSPT | | |
| 11 | | |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

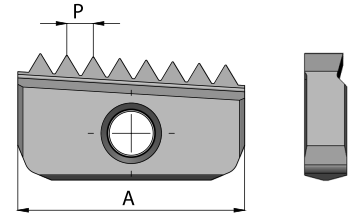
Order example: 14-19 BSPT MT7

For conical preparation end mills see page 253

NPT



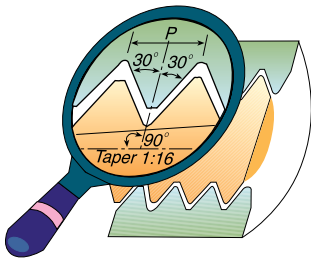
Conical pipe thread inserts are one-sided and may be used for both External and Internal threading.



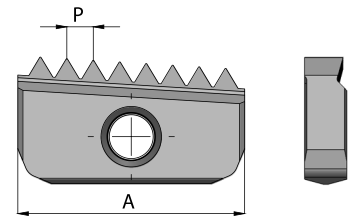
| Pitch TPI | Insert Size = A | | | | |
|--------------|-----------------|---------------|---------------|----------------|----------------|
| | 12 mm .472 | 14 mm .551 | 21 mm .827 | 30 mm 1.181 | 40 mm 1.575 |
| 18 | 12-18 NPT | 14-18 NPT | | | |
| 14 | | 14-14 NPT | 21-14 NPT | | |
| 11.5 | | | 21-11.5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

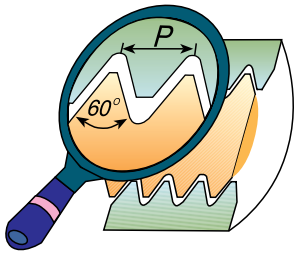


| Pitch TPI | Insert Size = A | | | | |
|--------------|-----------------|---------------|---------------|----------------|----------------|
| | 12 mm .472 | 14 mm .551 | 21 mm .827 | 30 mm 1.181 | 40 mm 1.575 |
| 18 | 12-18 NPTF | 14-18 NPTF | | | |
| 14 | | 14-14 NPTF | 21-14 NPTF | | |
| 11.5 | |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

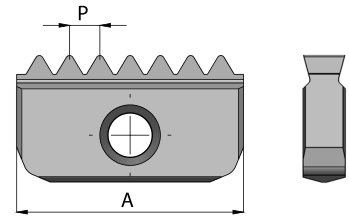
Order example: 21-14 NPTF MT7

For conical preparation end mills see page 253

NPS



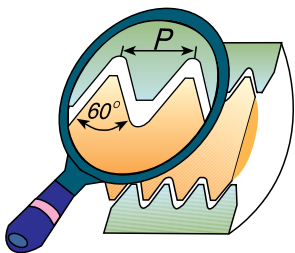
Same Insert for External and Internal thread



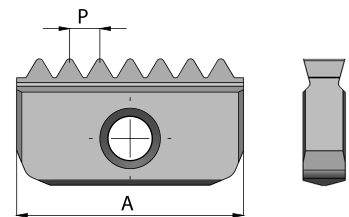
| Pitch TPI | Insert Size = A | | | | |
|--------------|-----------------|---------------|---------------|----------------|----------------|
| | 12 mm .472 | 14 mm .551 | 21 mm .827 | 30 mm 1.181 | 40 mm 1.575 |
| 18 | * 12-18 NPS | 14-18 NPS | | | |
| 14 | | 14-14 NPS | 21-14 NPS | | |
| 11.5 | | |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

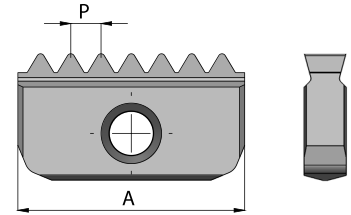
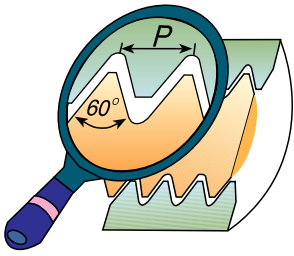


| Pitch TPI | Insert Size = A | | | | |
|--------------|-----------------|---------------|---------------|----------------|----------------|
| | 12 mm .472 | 14 mm .551 | 21 mm .827 | 30 mm 1.181 | 40 mm 1.575 |
| 18 | * 12-18 NPSF | 14-18 NPSF | | | |
| 14 | | 14-14 NPSF | 21-14 NPSF | | |
| 11.5 |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

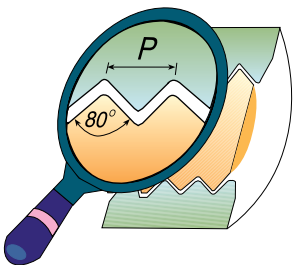
NPSM



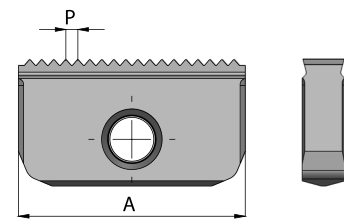
| Pitch TPI | | Insert Size = A | | | | |
|--------------|------|-----------------|---------------|----------------|----------------|----------------|
| | | 12 mm .472 | 14 mm .551 | 21 mm .827 | 30 mm 1.181 | 40 mm 1.575 |
| 18 | Ext. | | 14 E 18 NPSM | | | |
| 18 | Int. | 12 I 18 NPSM | 14 I 18 NPSM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



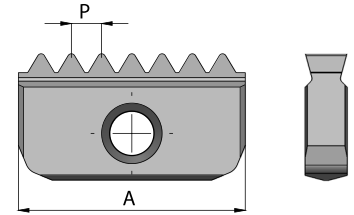
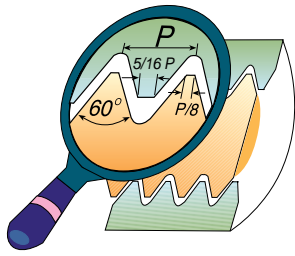
Same Insert for External and Internal thread



| 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

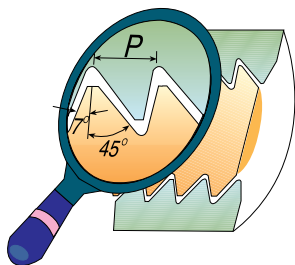
UNJ



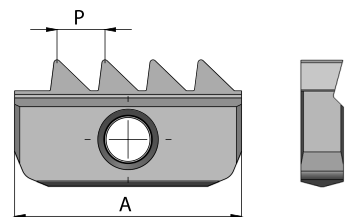
| Pitch TPI | | Insert Size = A | |
|--------------|------|-----------------|---------------|
| | | 14 mm .551 | 21 mm .827 |
| 24 | Ext. | 14 E 24 UNJ | 21 E 24 UNJ |
| 24 | Int. | 14 I 24 UNJ | 21 I 24 UNJ |
| 20 | Ext. | 14 E 20 UNJ | 21 E 20 UNJ |
| 20 | Int. | 14 I 20 UNJ | 21 I 20 UNJ |
| 18 |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

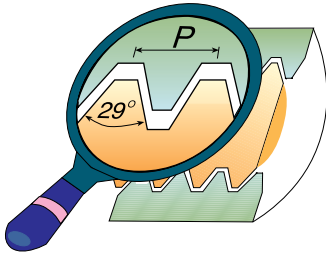


| Pitch TPI | Insert Size = A | | |
|--------------|-----------------|----------------|----------------|
| | 21 mm .827 | 30 mm 1.181 | 40 mm 1.575 |
| 16 | 21 - 16 ABUT | 30 - 16 ABUT | |
| 12 | 21 - 12 ABUT | 30 - 12 ABUT | |
| 10 | 21 - 10 ABUT | 30 - 10 ABUT | |
| 8 | 21 - 8 ABUT | 30 - 8 ABUT |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

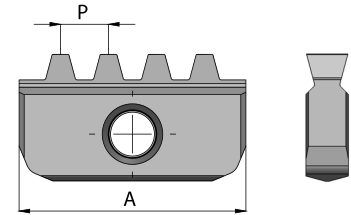
Order example: 30 - 6 ABUT MT7

* Inserts to be used only on Multi-Insert toolholders see page 187

ACME



Inserts for Internal threads



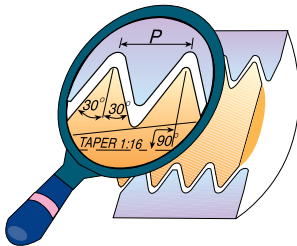
| Pitch TPI | | Insert Size = A | | |
|--------------|------|-----------------|----------------|----------------|
| | | 21 mm .827 | 30 mm 1.181 | 40 mm 1.575 |
| 12 | Int. | 21 12 ACME | 30 12 ACME | |
| 10 | Int. | 21 10 ACME | 30 10 ACME | |
| 8 | Int. | 21 8 ACME | 30 8 ACME | |
| 6 | Int. | | 30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

Order example: 21 | 8 ACME MT7

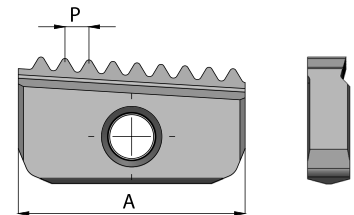
* Inserts to be used only on Multi-Insert toolholders see page 187

** 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



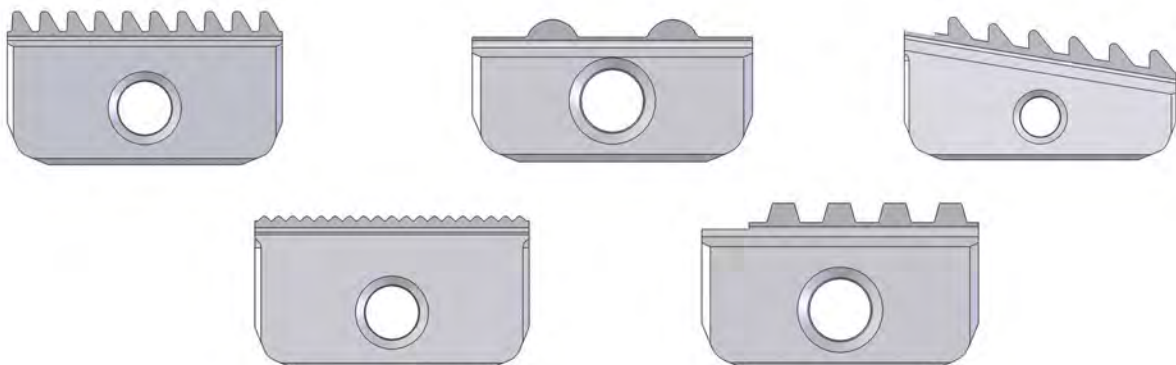
| MTK 12 I UN | MTK 14 I UN |
|--|--|
| <u>INSERTS</u> 12 32 UN 12 24 UN 12 20 UN 12 20 UN 12 16 UN 12 16 UN | <u>INSERTS</u> 14 24 UN 14 24 UN 14 20 UN 14 20 UN 14 16 UN 14 16 UN |
| <u>TOOLHOLDER</u> SR 0375 H12 | <u>TOOLHOLDER</u> SR 0670 H14 |
| <u>KEY</u> K12 | <u>KEY</u> K14 |
| <u>SCREW</u> S12 | <u>SCREW</u> S14 |

Order example : MTK 14 I UN

Special Tools



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



Mill-Thread Toolholders



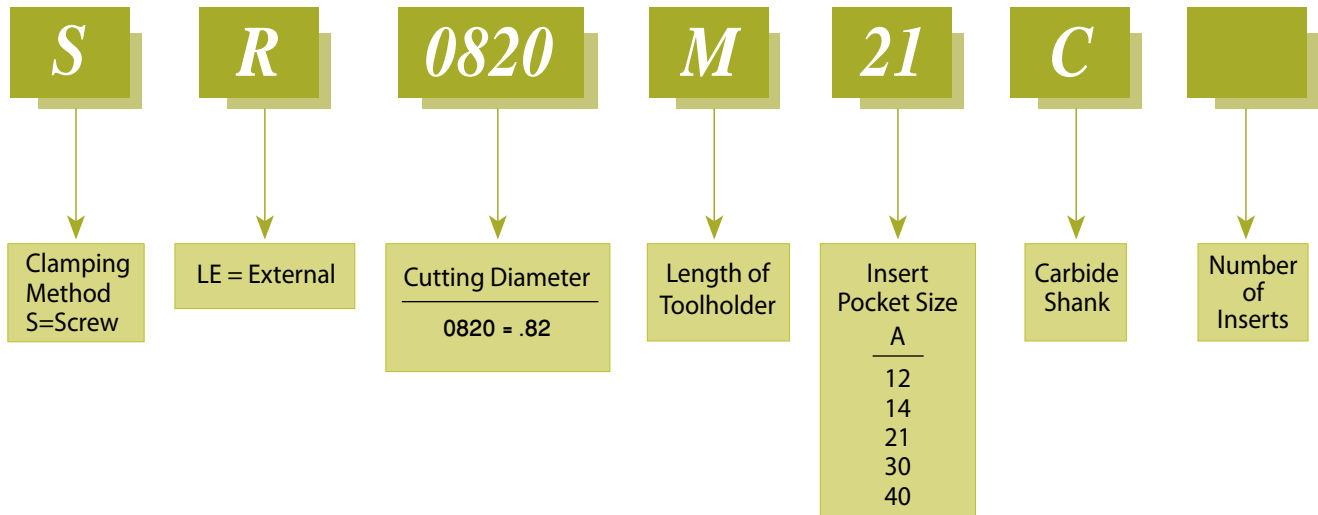
Contents:

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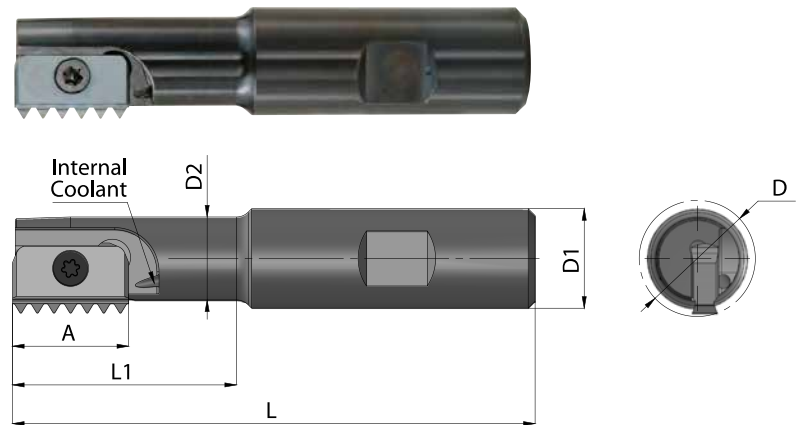
| | |
|--|-----|
| Product Identification | 184 |
| Single Insert Toolholders | 185 |
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| Carbide Shank Toolholders for Single Point Threading | 188 |

Product Identification

Mill-Thread Toolholders Ordering Codes



Single Insert Toolholders

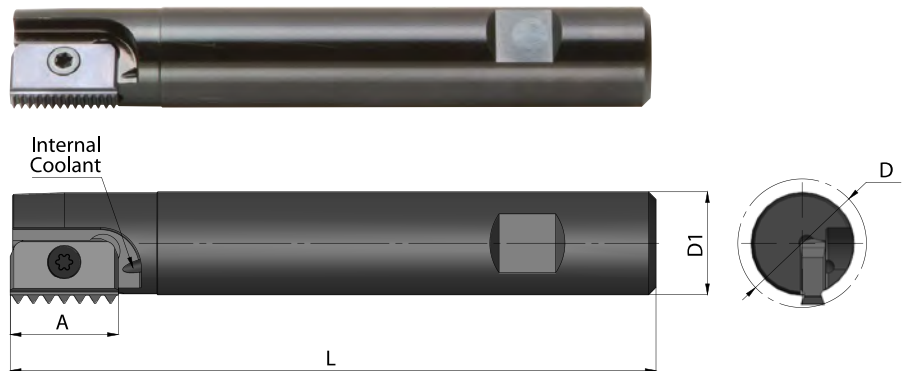


| Ordering Code | A mm | D | D1 | D2 | L | L1 | Insert Screw | Torx Key |
|---------------|------|------|------|------|------|------|--------------|----------|
| SR0375H12 | 12 | .37 | .75 | .30 | 3.35 | .51 | S12 | K12 |
| * SR0390H12 | 12 | .39 | .75 | .30 | 3.35 | .51 | S12 | K12 |
| SR0500F14 | 14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

Order example: SR0790H21

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

Long Shank Toolholders

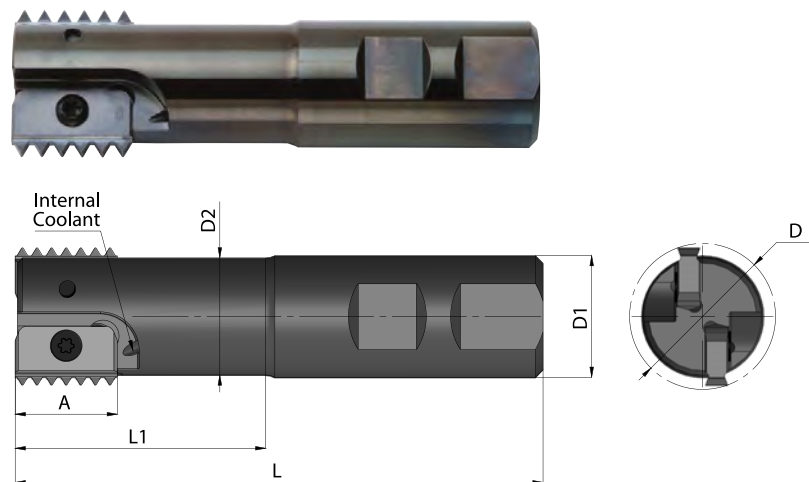


| Ordering Code | A mm | D | D1 | L | Insert Screw | Torx Key |
|------------------|------|------|------|------|--------------|----------|
| SR0940K21 | 21 | .94 | .75 | 5.00 | S21 | K21 |
| SR1240M30 | 30 | 1.24 | 1.00 | 6.00 | S30 | K30 |
| SR1500M30 | 30 | 1.50 | 1.25 | 6.00 | S30 | K30 |

Order example: SR1240M30

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

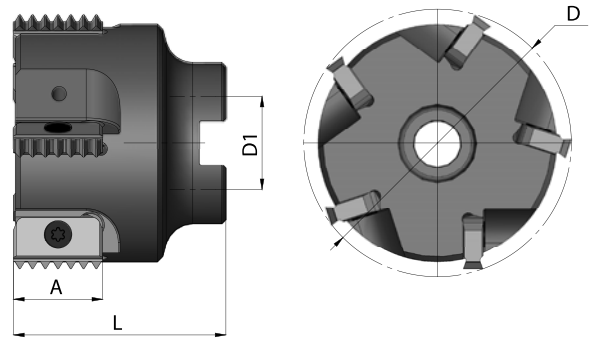
Twin Insert Toolholders



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

Order example: SR1580L30-2

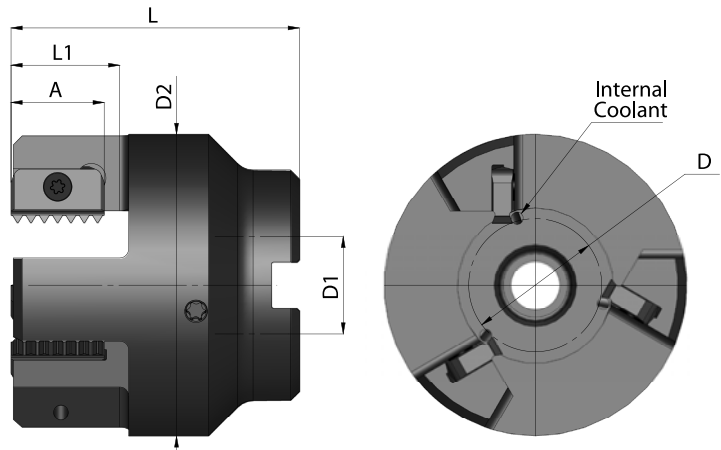
Multi Insert Toolholders



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

Order example: SR3940D30-4

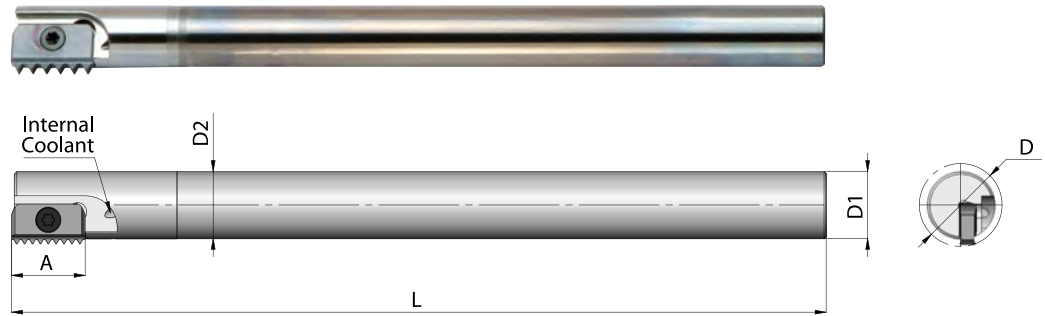
External Multi Insert Toolholder



| 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

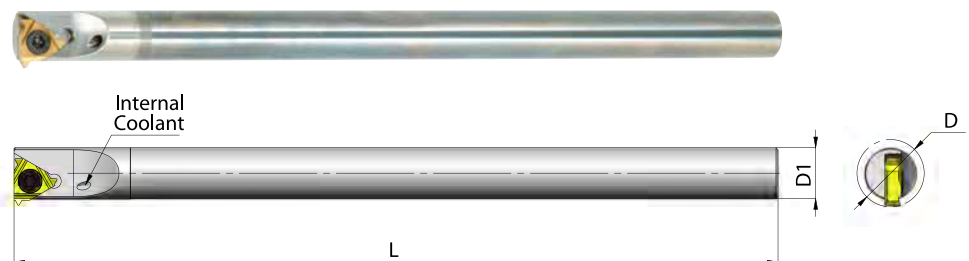


| Ordering Code | A mm | D | D1 | D2 | L | Insert Screw | Torx Key |
|-------------------|---------|------|------|------|------|-----------------|-------------|
| SR0390K12C | 12 | .39 | .312 | .312 | 5.0 | S12 | K12 |
| SR0500J14C | 14 | .50 | .375 | .375 | 6.0 | S14 | K14 |
| SR0620K14C | 14 | .62 | .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 | | D | D1 | L | Insert Screw | Torx Key |
|----------------------|---------|-------------|-------|-----|-----|-----|-----------------|-------------|
| | | mm | TPI | | | | | |
| * 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.

* Without coolant bore

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

D-Thread



Mill-Thread Inserts & Toolholders for machining deep parts

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

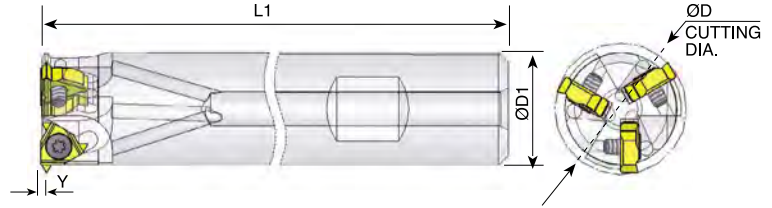
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Standard Toolholders and Inserts
U-Type Toolholders and Inserts

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



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

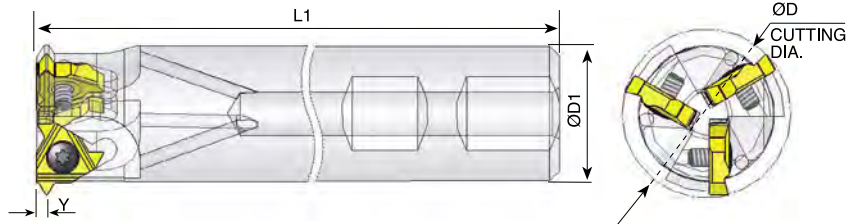
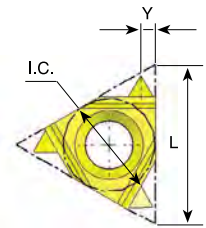
Partial 60° Size 11

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

Coated Grade: BMA

Partial 55° Size 11

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



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

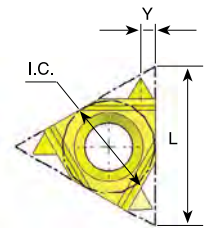
Partial 60° Size 16

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

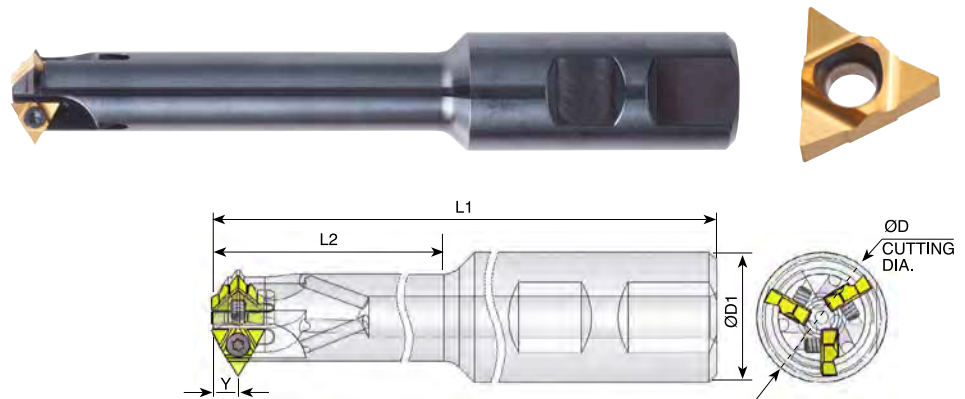
Coated Grade: BMA

Partial 55° Size 16

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



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



| Ordering Code | Insert Size | | Y | D | D1 | L1 | L2 | No. of Inserts | Insert Screw | Torx Key |
|---------------|-------------|------|-----|------|------|-----|------|----------------|--------------|----------|
| | L mm | I.C | | | | | | | | |
| * 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

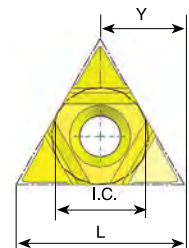
** Pitch limitations: for partial 60° - INT. - 10-8 TPI, EX. -12 - 9 TPI; for partial 55° - 12 - 9 TPI

Partial 60° Size 11U

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

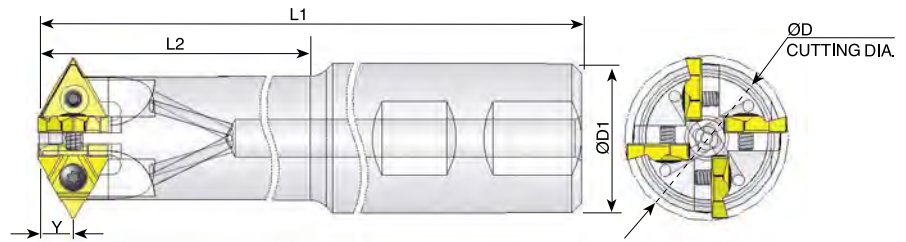
Partial 55° Size 11U

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

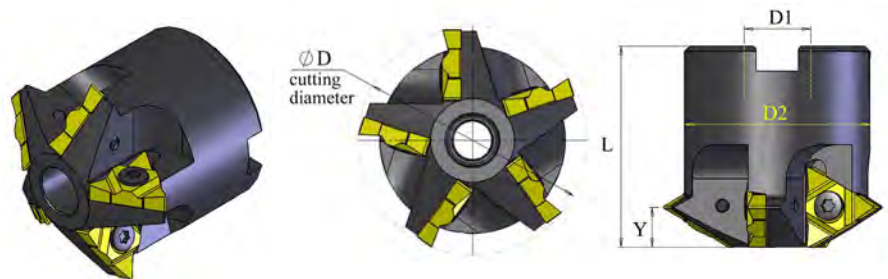


Coated Grade: BMA

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



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



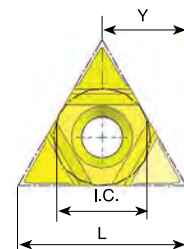
| Ordering Code | Insert Size | | Y | D | D1 | D2 | L | No. of Inserts | Insert Screw | Torx Key |
|-----------------------|-------------|------|-----|------|-----|------|-----|----------------|--------------|----------|
| | L mm | I.C | | | | | | | | |
| SR1710B16U - 5 | 16U | 3/8U | .30 | 1.71 | 0.5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

Partial 60° Size 16U

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

Partial 55° Size 16U

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



Coated Grade: BMA

Spiral Mill-Thread



Advantages of Spiral Mill-Thread Tools

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

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| NPT | 198 |

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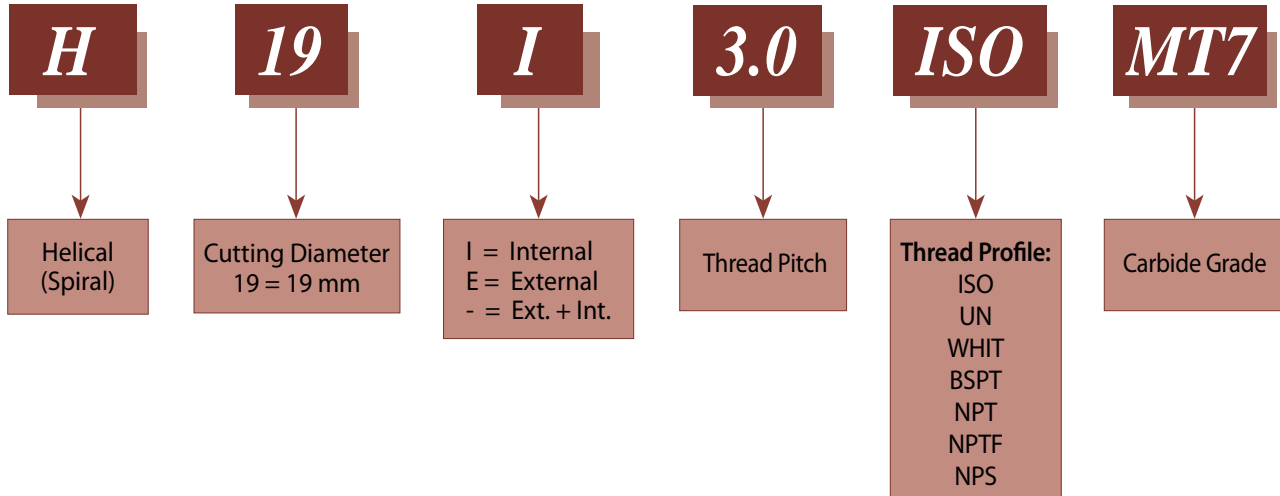
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| NPTF | 199 |
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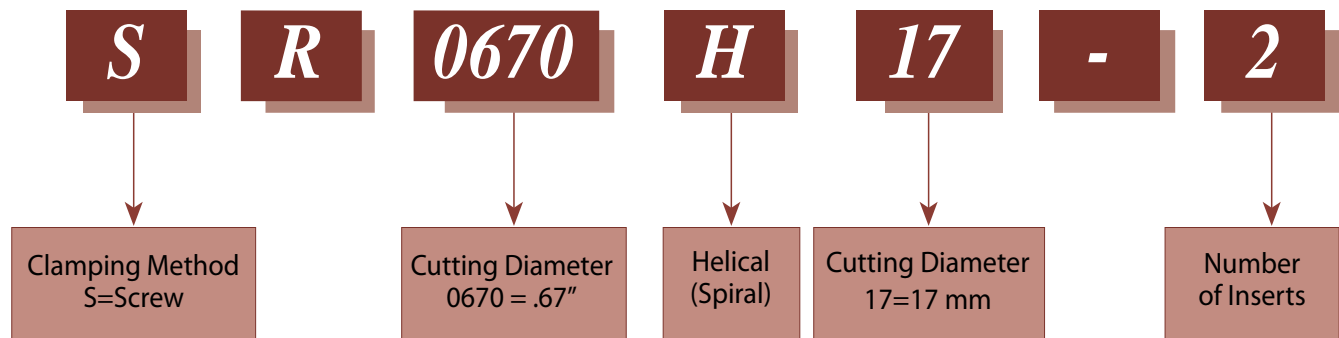
Product Identification - Ordering Codes

Spiral Mill - Thread Inserts

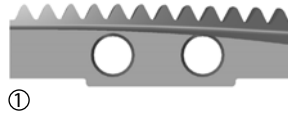
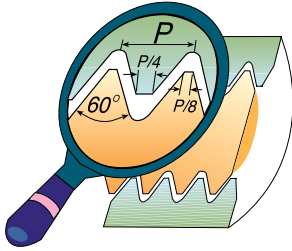
Inserts



Toolholders

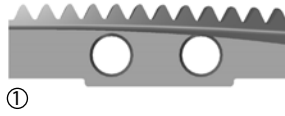
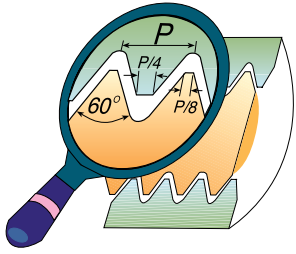


ISO



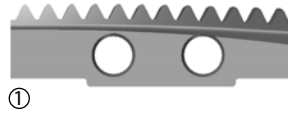
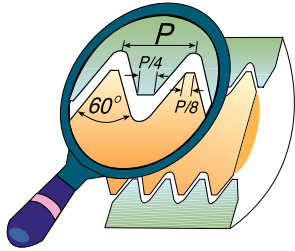
| Insert Size | Fig. | Pitch mm | Ext./ Int. | M coarse | M fine | Ordering code | Toolholder |
|-------------|------|----------|------------|----------------------|--------|----------------------|--------------|
| H13 | 1 | 1.0 | Int. | | ≥ 15 | H13 I 1.0 ISO | SR0510H13... |
| | | 1.5 | Int. | | ≥ 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 | |
| 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 | | | |
| 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 | |

UN



| 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 | | |
| 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 | | |
| 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. | | | | | $\geq 1/8$ | | 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. | | | | | $\geq 1/8$ | | 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 | | | |
| 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 3/8 - 1 9/16 | 1 1/2 | | | H28 I 6 UN | | |
| H32 | 2 | 24 | Ext. | | | | $\geq 3/8$ | H32 E 24 UN | SR126H32... | |
| | | 20 | Ext. | | | | | H32 E 20 UN | | |
| | | 20 | Int. | $\geq 3/8$ | | | | H32 I 20 UN | | |
| | | 18 | Ext. | | | | | H32 E 18 UN | | |
| | | 18 | Int. | | | | $\geq 3/4$ | 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 | | |

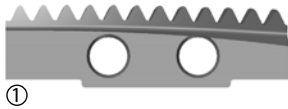
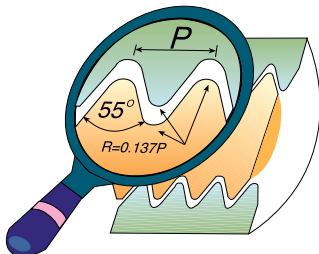
UN



| 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

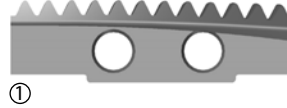
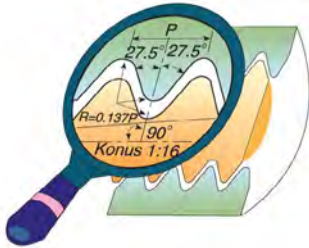
Same insert for internal and external thread



| 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" | |
| 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... |

BSPT

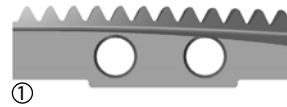
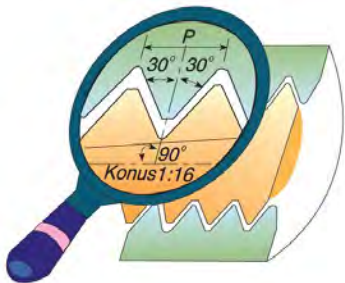
Same insert for internal and external thread



| 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

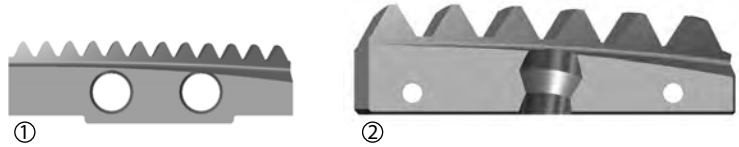
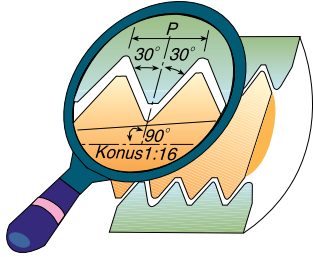
Same insert for internal and external thread



| 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... |
| 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. ≥ 1 5/8" 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

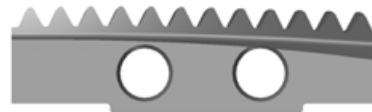
Same insert for internal and external thread



| 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



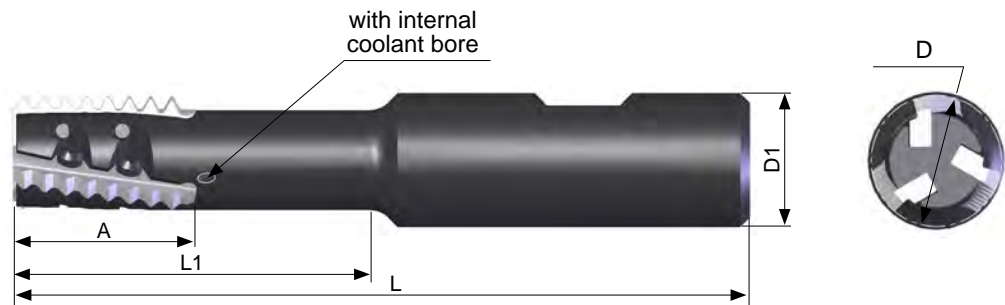
| Insert Size | Pitch TPI | Thread | Ordering code | Toolholder |
|-------------|-----------|-----------|-------------------|--------------|
| H13 | 18 | 3/8 | H13-18 NPS | SR0510H13... |
| H15 | 14 | 1/2 - 3/4 | H15-14 NPS | SR0590H15... |
| H17 | 14 | 1/2 - 3/4 | H17-14 NPS | SR0670H17... |

Spiral Finishing Inserts



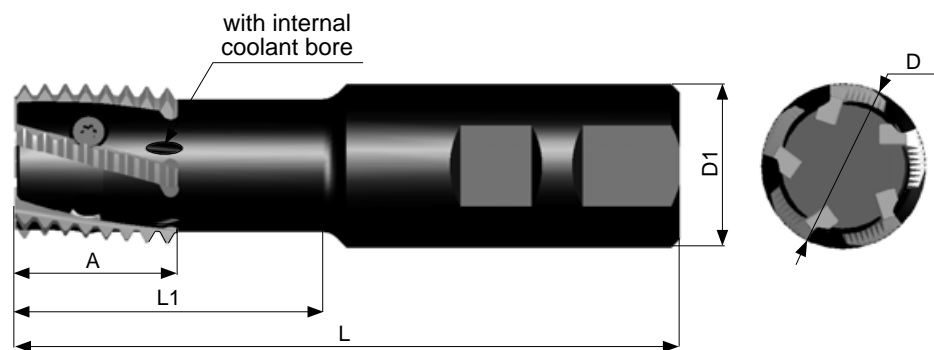
| Insert Size | R | Ordering code | Toolholder |
|-------------|-----|--------------------|-------------|
| H23 | 0.2 | H23 F R 0.2 | SR091H23... |
| | 0.5 | H23 F R 0.5 | |
| | 1.0 | H23 F R 1.0 | |
| H32 | 0.2 | H32 F R 0.2 | SR126H32... |
| | 0.5 | H32 F R 0.5 | |
| | 1.0 | H32 F R 1.0 | |
| H45 | 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

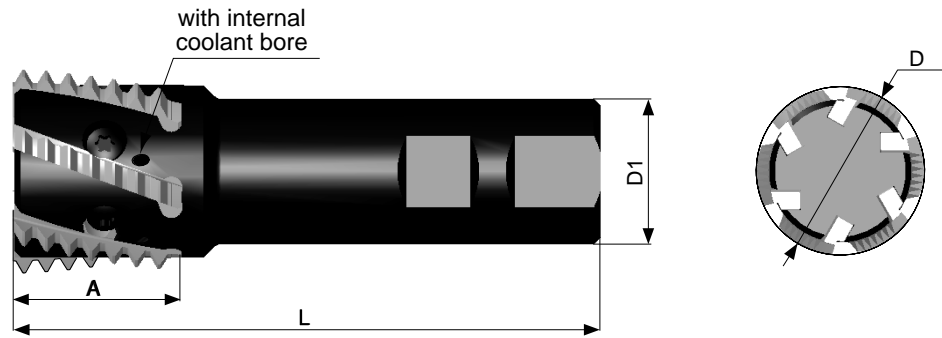


| Ordering Code | Insert Type | Insert size A | D | D1 | L | L1 | No. of Inserts | Screw | Key |
|----------------------|-------------|---------------|-----|-----|------|------|----------------|-------|-----|
| SR0510H13S-1 | H13 | 1.06 | .51 | .75 | 3.15 | 1.04 | 1 | S13 | K16 |
| SR0510H13 -1 | H13 | 1.06 | .51 | .75 | 3.15 | 1.06 | 1 | S13 | K16 |
| SR0590H15 -1 | H15 | 1.06 | .59 | .75 | 3.15 | 1.06 | 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 |
| 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 |

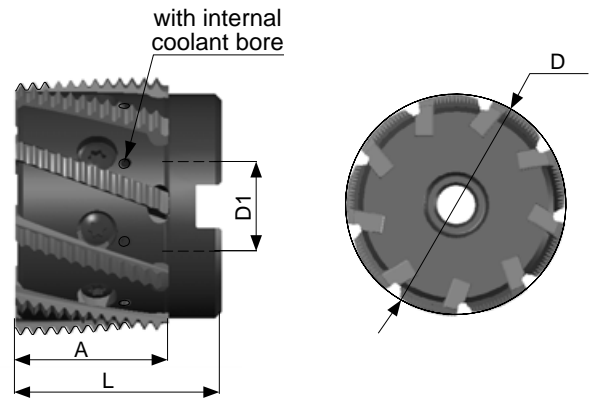
* When using NPT, NPTF, BSPT inserts the cutting diameter D = .71"



| 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 |
| 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 |



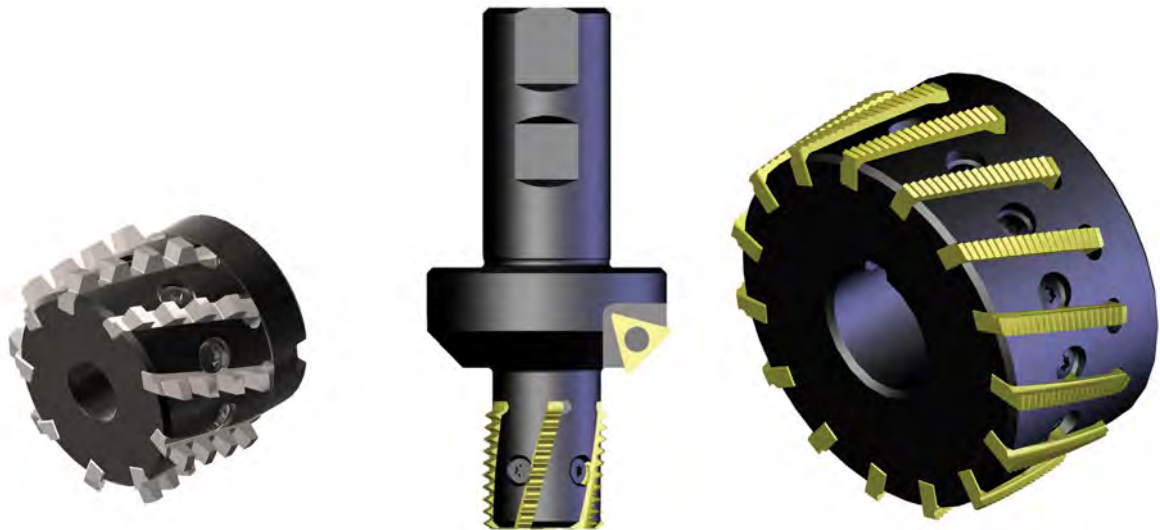
| Ordering Code | Insert Type | Insert size A | D | D1 | L | No. of Inserts | Screw | Key |
|-------------------|-------------|---------------|------|------|-----|----------------|-------|-----|
| SR157H40-4 | H40 | 1.46 | 1.57 | 1.25 | 7.5 | 4 | S45S | K40 |
| SR177H45-6 | H45 | 1.46 | 1.77 | 1.25 |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



Deep Reach Mill-Thread



Contents:

Toolholders
Extensions

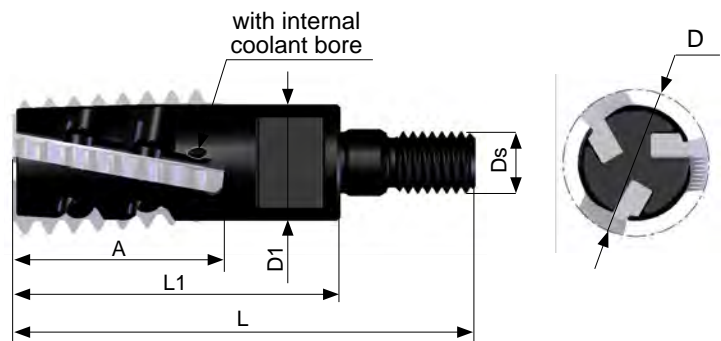
Page:

206-208
208

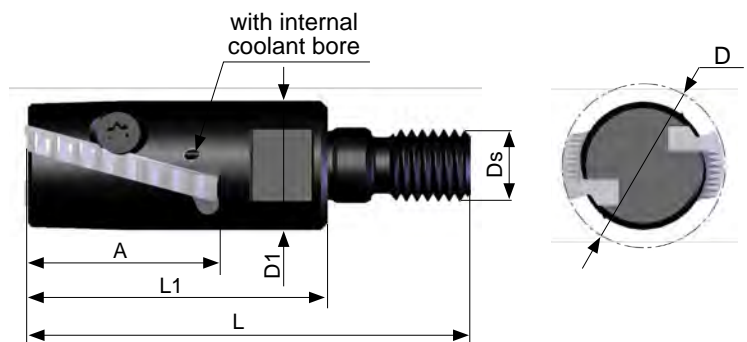
Carmex presents a modular line of Mill-Thread toolholders

- 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

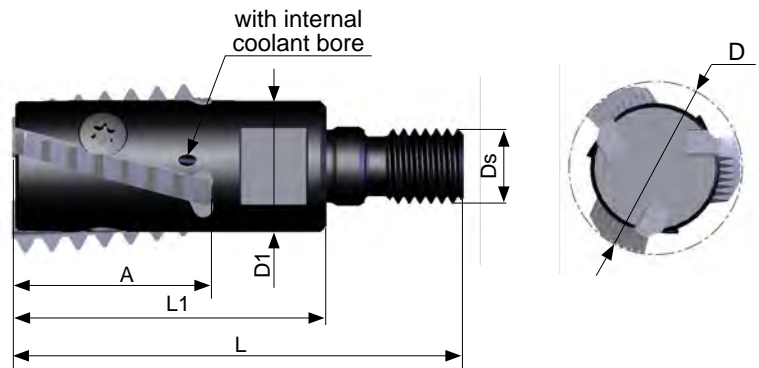


| Ordering Code | Insert size A | D | D1 | Ds | L1 | L | No. of Inserts | Screw | Key |
|-----------------------|---------------|-----|-----|----|------|------|----------------|-------|-----|
| SR075H19 - 3 S | 1.06 | .75 | .59 | M8 | 1.67 | 2.36 | 3 | S19 | K16 |

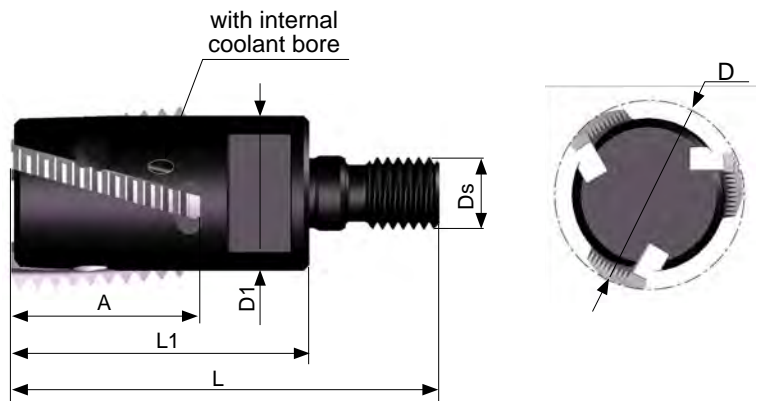


| Ordering Code | Insert size A | D | D1 | Ds | L1 | L | No. of Inserts | Screw | Key |
|-----------------------|---------------|-----|-----|-----|------|------|----------------|-------|-----|
| SR091H23 - 2 S | 1.06 | .91 | .71 | M10 | 1.67 | 2.46 | 2 | S23 | K16 |

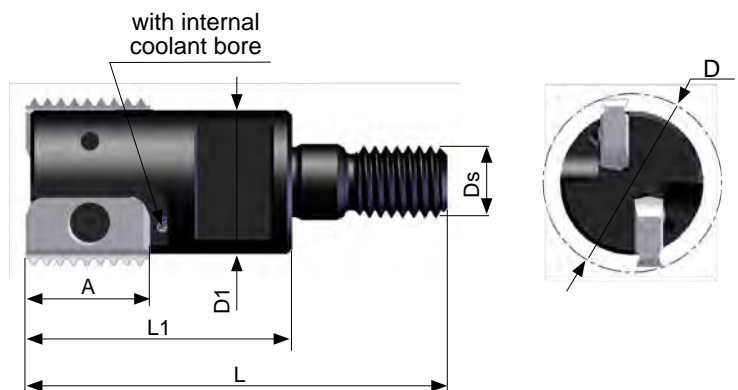
Deep Reach Mill-Thread



| Ordering Code | Insert size A | D | D1 | Ds | L1 | L | No. of Inserts | Screw | Key |
|-----------------------|---------------|------|-----|-----|------|------|----------------|-------|-----|
| SR110H28 - 3 S | 1.26 | 1.10 | .83 | M12 | 1.97 | 2.83 | 3 | S28 | K16 |

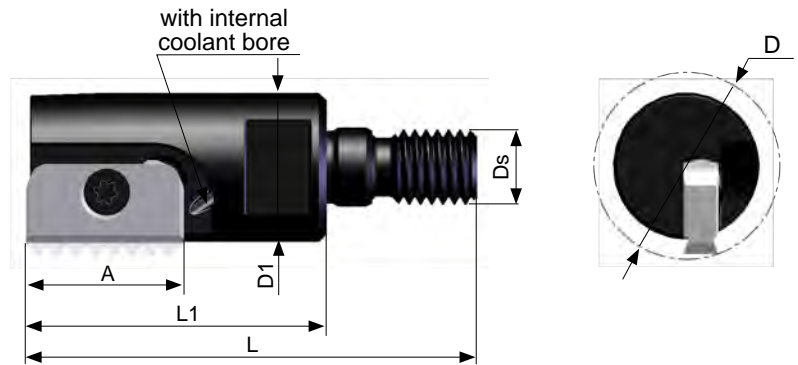


| Ordering Code | Insert size A | D | D1 | Ds | L1 | L | No. of Inserts | Screw | Key |
|-----------------------|---------------|------|------|-----|------|------|----------------|-------|-----|
| SR126H32 - 3 S | 1.26 | 1.26 | 1.02 | M12 | 1.97 | 2.83 | 3 | S32S | K16 |

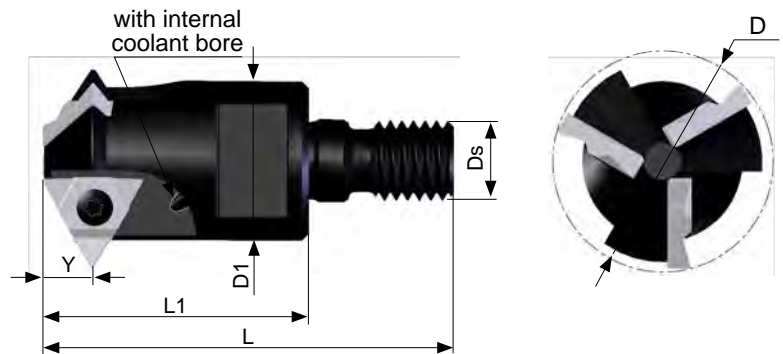


| Ordering Code | Insert size A | D | D1 | Ds | L1 | L | No. of Inserts | Screw | Key |
|------------------------|---------------|-----|-----|----|------|------|----------------|-------|-----|
| SR0790C14 - 2 S | .55 | .79 | .63 | M8 | 1.20 | 1.89 | 2 | S14 | K14 |

Toolholders

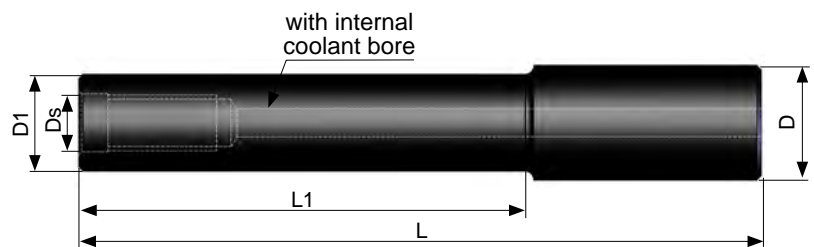


| Ordering Code | Insert size A | D | D1 | Ds | L1 | L | No. of Inserts | Screw | Key |
|------------------------|---------------|-----|-----|-----|------|------|----------------|-------|-----|
| SR0980D21 - 1 S | .826 | .98 | .78 | M10 | 1.57 | 2.36 | 1 | S21 | K21 |



| Ordering Code | Insert size | | Y | D | D1 | Ds | L1 | L | No. of Inserts | Screw | Key |
|-------------------------|-------------|------|-----|------|-----|-----|------|------|----------------|-------|-----|
| | L | I.C. | | | | | | | | | |
| SR1300D16U - 3 S | 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



Vertical milling indexable inserts and toolholders to perform a wide variety of threads, grooves, chamfers and more.

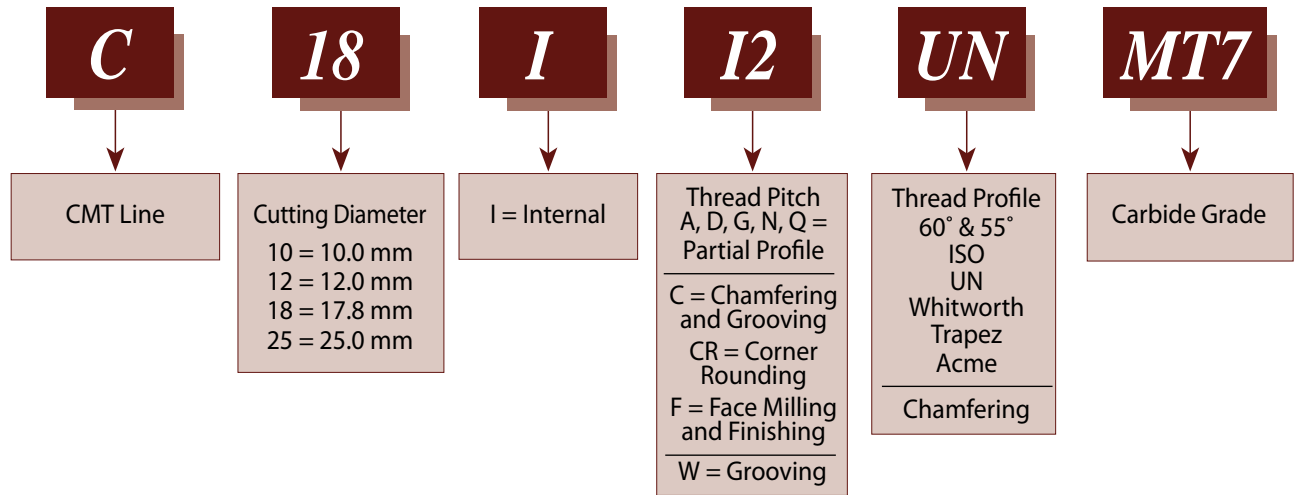
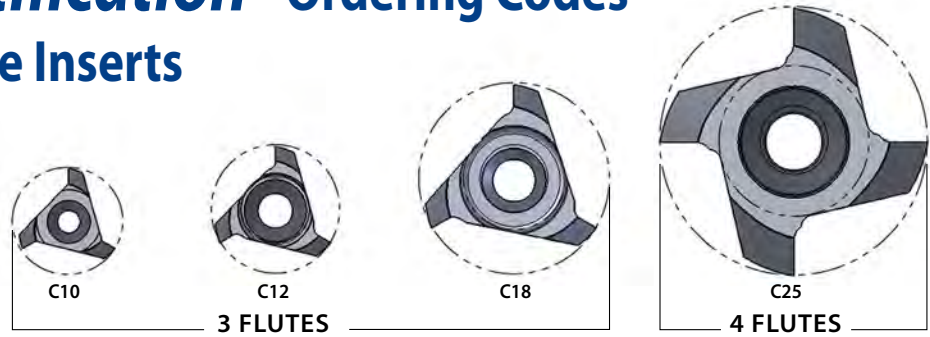
Advantages of CMT - Vertical Milling

- 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.

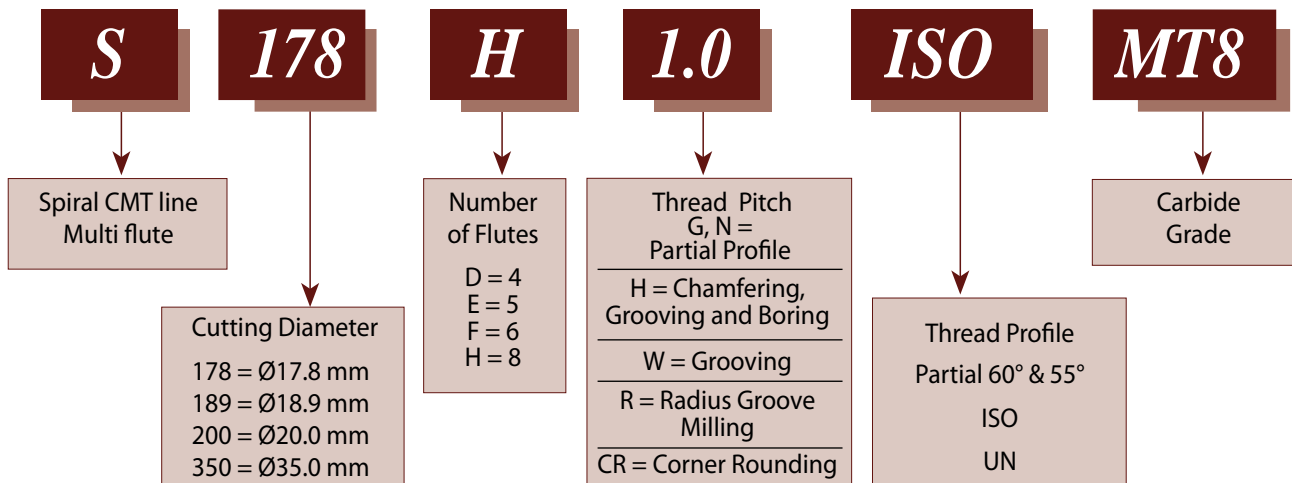
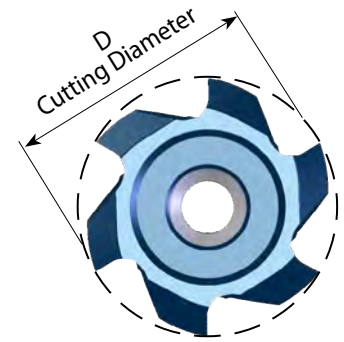
| Contents: | Page: | Contents: | Page: |
|---|---------|---------------------------------------|-------|
| Product Identification | 210-211 | Full Radius Groove Milling | 223 |
| Partial Profile 60° - UN, ISO | 212-213 | Face Milling and Finishing | 223 |
| Partial Profile 60° - NPT | 213 | Corner Rounding | 224 |
| Partial Profile 55° - BSW, BSF, BSP (G) | 214 | Steel Toolholders - with Coolant Bore | 225 |
| Full Profile - ISO | 215-216 | Carbide Shank Toolholders | 226 |
| Full Profile - UN | 217-218 | CMT Multi insert Milling Cutters | 227 |
| G 55° - BSW, BSF, BSP (G) | 218 | Product Identification | 228 |
| Trapez - DIN 103 | 219 | Groove Milling | 229 |
| Acme | 219 | Groove Milling with Chamfer | 230 |
| Round - DIN 405 | 219 | Partial Profile 60° - ISO, UN | 231 |
| Chamfering and Grooving | 220 | Toolholders | 232 |
| Chamfering, Grooving and Boring | 220 | Mill Cutter - Disc Milling | 233 |
| Groove Milling | 221-222 | | |

Product Identification - Ordering Codes

CMT Straight Flute Inserts

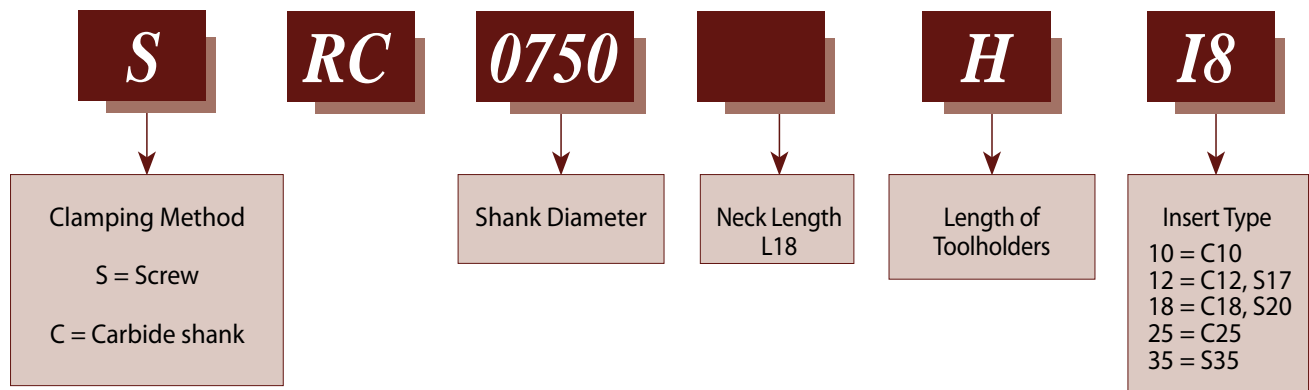


CMT Spiral Multi Flute Inserts



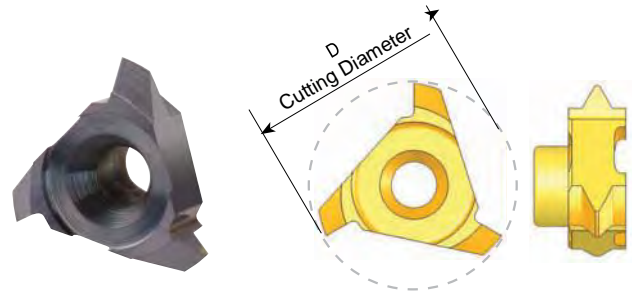
Product Identification - Ordering Codes

CMT Toolholders



Partial Profile 60° - ISO, UN

Same insert for internal and external thread



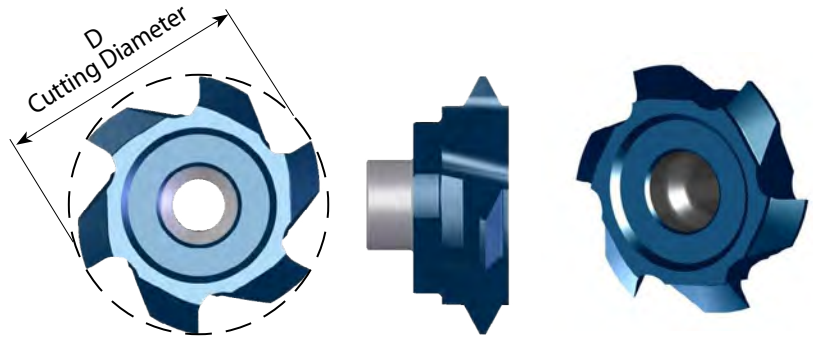
| Insert Type | Pitch Range mm | Pitch Range TPI | Ordering Code | D | Thread Diameter (min) | | Holder Code* |
|-------------|-----------------|-----------------|----------------|-----|-----------------------|------------------|-------------------------|
| | | | | | Pitch Low Range | Pitch High Range | |
| C10 | Int. 0.5 - 0.8 | 56 - 28 | C10 A60 | .39 | $\phi \geq .43$ | $\phi \geq .47$ | H1, 2, 15, 16, 17 |
| | Ex. 0.4 - 0.8 | 64 - 32 | | .39 | | | |
| | Int. 1.0 - 2.0 | 28 - 13 | C10 G60 | .39 | $\phi \geq .47$ | $\phi \geq .55$ | |
| | Ex. 0.8 - 1.75 | 32 - 15 | | .39 | | | |
| C12 | Int. 0.5 - 0.8 | 56 - 28 | C12 A60 | .47 | $\phi \geq .51$ | $\phi \geq .55$ | H3, 4, 5, 18, 19, 20 |
| | Ex. 0.4 - 0.8 | 64 - 32 | | .47 | | | |
| | Int. 1.0 - 2.0 | 28 - 13 | C12 G60 | .49 | $\phi \geq .55$ | $\phi \geq .63$ | |
| | Ex. 0.8 - 1.75 | 32 - 15 | | .49 | | | |
| C18 | Int. 0.5 - 0.8 | 56 - 28 | C18 A60 | .70 | $\phi \geq .75$ | | H6, 7, 8, 9, 21, 22, 23 |
| | Ex. 0.4 - 0.8 | 64 - 32 | | .70 | | | |
| | Int. 1.0 - 1.75 | 28 - 14 | C18 G60 | .70 | $\phi \geq .79$ | $\phi \geq .83$ | |
| | Ex. 0.8 - 1.5 | 32 - 16 | | .70 | | | |
| | Int. 2.0 - 3.0 | 13 - 8 | C18 D60 | .70 | $\phi \geq .83$ | $\phi \geq .91$ | |
| | Ex. 1.75 - 2.5 | 15 - 10 | | .70 | | | |
| C25 | Int. 1.5 - 2.5 | 16 - 10 | C25 G60 | .98 | $\phi \geq 1.10$ | $\phi \geq 1.18$ | H10, 11, 24, 25 |
| | Ex. 1.0 - 2.0 | 28 - 13 | | .98 | | | |
| | Int. 3.0 - 5.0 | 8 - 5 | C25 N60 | .98 | $\phi \geq 1.18$ | $\phi \geq 1.34$ | |
| | Ex. 2.5 - 4.5 | 10 - 6 | | .98 | | | |
| | Int. 5.0 - 6.0 | 5 - 4 | C25 Q60 | .98 | $\phi \geq 1.34$ | $\phi \geq 1.38$ | |
| | Ex. 4.5 - 5.0 | 6 - 5 | | .98 | | | |

* For complete toolholder description see pages 225-226.

Partial Profile 60° - ISO, UN

Same insert for internal and external thread

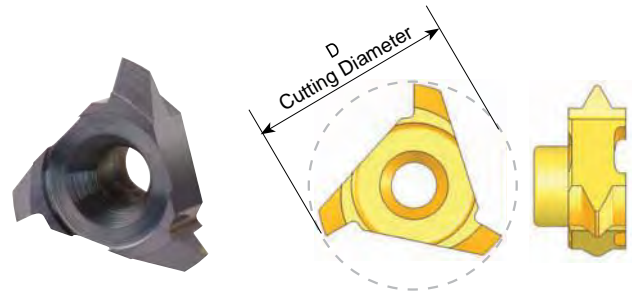
Multi Flute



| Insert Type | Ordering Code | Pitch Range mm | Pitch Range TPI | D | No. of Flutes | Thread Dia (min) | | Holder Code* |
|-------------|-------------------|----------------|-----------------|-----|---------------|------------------|------------------|-------------------------|
| | | | | | | Pitch Low range | Pitch High range | |
| S20 | S200 F G60 | Int. 1.5-2.5 | 16-10 | .79 | 6 | Ø ≥ .91 | Ø ≥ .98 | H6, 7, 8, 9, 21, 22, 23 |
| | | Ex. 1.0-2.0 | 28-13 | .79 | 6 | | | |
| | S200 D N60 | Int. 3.0-5.0 | 8-5 | .79 | 4 | Ø ≥ .98 | Ø ≥ 1.14 | |
| | | Ex. 2.5-4.5 | 10-6 | .79 | 4 | | | |

Partial Profile 60° - NPT

Same insert for internal and external thread

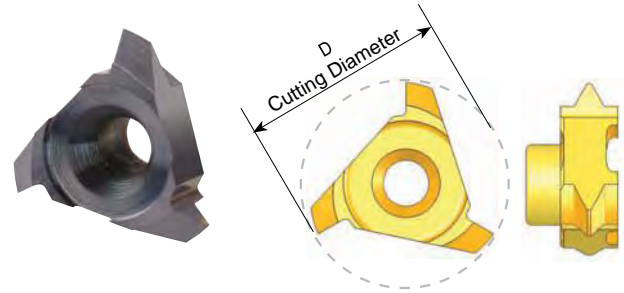


| Insert Type | Pitch TPI | Standard | Ordering Code | D | Holder Code* |
|-------------|-----------|-----------|--------------------|-----|-----------------|
| C10 | 18 | 1/4 - 3/8 | C10 18 NPT | .39 | H1, 2, 15, 17 |
| C18 | 14 | 1/2 - 3/4 | C18 14 NPT | .62 | H21 |
| C25 | 11.5 | 1-2 | C25 11.5NPT | .98 | H10, 11, 24, 25 |
| | 8 | ≥ 2 1/2 | C25 8 NPT | .98 | |

* For complete toolholder description see pages 225-226.

Partial Profile 55° - BSP(G), BSF, BSW

Same insert for internal and external thread

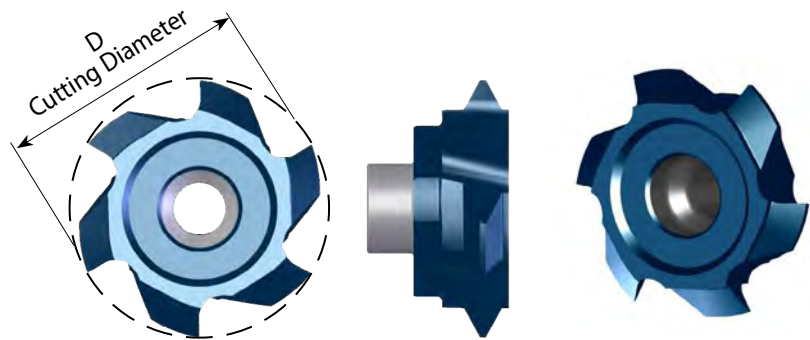


| Insert Type | Pitch Range TPI | Ordering Code | D | Thread Dia. (min) | Holder Code* |
|-------------|-----------------|----------------|-----|-------------------|-------------------------|
| C10 | 19-14 | C10 G55 | .39 | $\phi \geq .51$ | H1, 2, 15, 17 |
| C12 | 28-19 | C12 G55 | .47 | $\phi \geq .55$ | H3, 4, 5, 18, 19, 20 |
| | 14- 11 | C12 N55 | .48 | $\phi \geq .63$ | H3, 4, 5, 18, 20 |
| C18 | 14- 8 | C18 G55 | .71 | $\phi \geq .91$ | H6, 7, 8, 9, 21, 22, 23 |
| C25 | 7- 5 | C25 N55 | .98 | $\phi \geq 1.22$ | H10, 11, 24, 25 |

Partial Profile 55° - BSP(G), BSF, BSW

Same insert for internal and external thread

Multi Flute

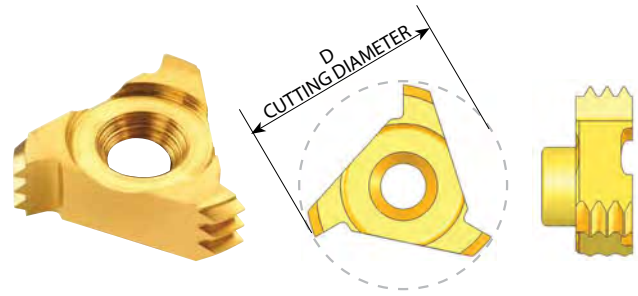


| Insert Type | Ordering Code | Pitch Range TPI | D | No. of Flutes | Thread Dia (min) | Holder Code* |
|-------------|-------------------|-----------------|-----|---------------|------------------|-------------------------|
| S17 | S170 F G55 | 11-8 | .67 | 6 | $\phi \geq .73$ | H3, 4, 5, 18, 19, 20 |
| S20 | S195 F G55 | 14 | .77 | 6 | $\phi \geq .91$ | H6, 7, 8, 9, 21, 22, 23 |
| | S200 D N55 | 8-6 | .79 | 4 | $\phi \geq .98$ | H21 |

* For complete toolholder description see pages 225-226.

Full Profile - ISO

Inserts for internal thread



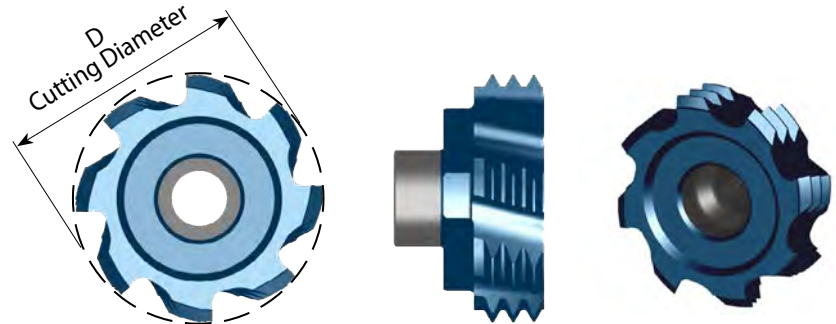
| Insert Type | Pitch mm | M coarse | M fine | Ordering Code | Number of Teeth | D | Holder Code* |
|-------------|----------|----------|----------------------|----------------------|-----------------|-----|-------------------------|
| C10 | 0.5 | | M10, M12 | C10 I 0.5 ISO | 6 | .35 | H1,2,15,16, 17 |
| | 1.0 | | M12, M13 | C10 I 1.0 ISO | 3 | .39 | |
| | 1.5 | | M13, M14 | C10 I 1.5 ISO | 2 | .39 | |
| | 1.75 | M12 | | C10 I 1.75ISO | 1 | .38 | H1, 2, 15, 17 |
| | 2.0 | M14 | M18 | C10 I 2.0 ISO | 1 | .39 | |
| C12 | 0.5 | | M13-M18 | C12 I 0.5 ISO | 6 | .47 | H3,4,5,18,19,20 |
| | 0.75 | | M13-M18 | C12 I 0.75ISO | 4 | .47 | |
| | 1.0 | | M14-M19 | C12 I 1.0 ISO | 3 | .47 | |
| | 1.5 | | M15-M19 | C12 I 1.5 ISO | 2 | .47 | |
| | 2.0 | M16 | M18, M20 | C12 I 2.0 ISO | 1 | .49 | |
| | 2.5 | M18, M20 | | C12 I 2.5 ISO | 1 | .47 | H3, 4, 5,18, 20 |
| 3.0 | M24 | | C12 I 3.0 ISO | 1 | .49 | | |
| C18 | 0.5 | | M19-M60 | C18 I 0.5 ISO | 9 | .70 | H6, 7, 8, 9, 21, 22, 23 |
| | 0.75 | | M19-M60 | C18 I 0.75ISO | 6 | .70 | |
| | 1.0 | | M20-M60 | C18 I 1.0 ISO | 5 | .70 | |
| | 1.5 | | M20-M60 | C18 I 1.5 ISO | 3 | .70 | |
| | 2.0 | | M21-M60 | C18 I 2.0 ISO | 2 | .70 | |
| | 2.5 | M22 | | C18 I 2.5 ISO | 2 | .70 | |
| | 3.0 | M24, M27 | M28-M60 | C18 I 3.0 ISO | 1 | .70 | |
| 3.5 | M30, M33 | | C18 I 3.5 ISO | 1 | .70 | | |
| C25 | 3.0 | M32, M33 | M30-M80 | C25 I 3.0 ISO | 2 | .98 | H10, 11, 24, 25 |
| | 4.0 | M36, M39 | M40-M80 | C25 I 4.0 ISO | 1 | .98 | |
| | 4.5 | M45 | | C25 I 4.5 ISO | 1 | .98 | |
| | 5.0 | M48, M52 | | C25 I 5.0 ISO | 1 | .98 | |
| | 5.5 | M60 | | C25 I 5.5 ISO | 1 | .98 | |
| 6.0 | M64, M68 | M70-M80 | C25 I 6.0 ISO | 1 | .98 | | |

* For complete toolholder description see pages 225-226.

Full Profile - ISO

Inserts for internal thread

Multi Flute

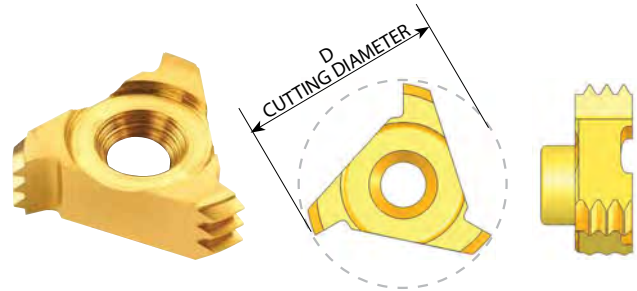


| Insert Type | Ordering Code | Pitch mm | M coarse | M fine | Number of Teeth | D | No. of Flutes | Holder Code* |
|-------------|-----------------------|----------|----------|-----------|-----------------|------|---------------|-------------------------|
| S17 | S160 F 2.5 ISO | 2.5 | M20 | | 1 | .63 | 6 | H3, 4, 5, 18, 19, 20 |
| S20 | S163 H 1.0 ISO | 1.0 | | M18-M60 | 5 | .64 | 8 | H6, 7, 8, 9, 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 E 4.5 ISO | 4.5 | M42, M45 | | 1 | .79 | 5 | |
| | S200 D 5.0 ISO | 5.0 | M48, M52 | | 1 | .79 | 4 | H21 |
| S35 | S350 F 6.0 ISO | 6.0 | M64, M68 | | 1 | 1.38 | 6 | H12, 13, 14, 26 |
| | S350 F 8.0 ISO | 8.0 | | M130-M200 | 1 | 1.38 | 6 | |

* For complete toolholder description see pages 225-226.

Full Profile - UN

Inserts for internal thread



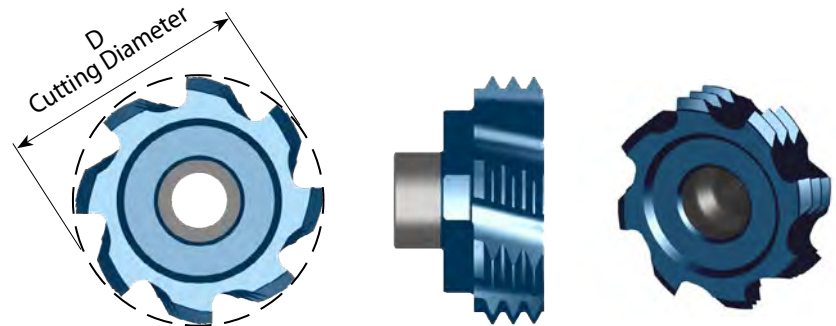
| Insert Type | Pitch TPI | Nominal Size | UNC | UNF | UNEF | Ordering Code | Number of Teeth | D | Holder* Code |
|-------------|-----------|--------------------|--------------|---------|-------------------|--------------------|-----------------|-----|-------------------------|
| C10 | 20 | | | 1/2 | | C10 I 20 UN | 2 | .39 | H1, 2, 15, 16, 17 |
| | 18 | | | 9/16 | | C10 I 18 UN | 2 | .39 | |
| | 13 | | 1/2 | | | C10 I 13 UN | 1 | .39 | H1, 2, 15, 17 |
| | 12 | 5/8, 11/16, 3/4 | 9/16 | | | C10 I 12 UN | 1 | .39 | |
| C12 | 32 | 9/16, 5/8 | | | | C12 I 32 UN | 3 | .47 | H3, 4, 5, 18, 19, 20 |
| | 28 | 9/16, 5/8, 11/16 | | | | C12 I 28 UN | 3 | .47 | |
| | 24 | | | | 9/16, 5/8, 11/16 | C12 I 24 UN | 2 | .47 | |
| | 20 | 9/16, 5/8, 11/16 | | | 3/4 | C12 I 20 UN | 2 | .47 | |
| | 18 | | | 5/8 | | C12 I 18 UN | 2 | .47 | |
| | 16 | 5/8, 11/16 | | 3/4 | | C12 I 16 UN | 1 | .47 | |
| | 11 | | 5/8 | | | C12 I 11 UN | 1 | .47 | H3, 4, 5, 18, 20 |
| | 10 | | 3/4 | | | C12 I 10 UN | 1 | .47 | |
| C18 | 32 | 3/4, 13/16, 7/8 | | | | C18 I 32 UN | 6 | .70 | H6, 7, 8, 9, 21, 22, 23 |
| | 28 | 3/4, 13/16, 7/8 | | | | C18 I 28 UN | 5 | .70 | |
| | 24 | | | | | C18 I 24 UN | 4 | .70 | |
| | 20 | 11/16, 11/8 | | | 13/16, 7/8, 15/16 | C18 I 20 UN | 3 | .70 | |
| | 18 | | | | | C18 I 18 UN | 3 | .70 | |
| | 16 | 7/8, 1 | | | | C18 I 16 UN | 3 | .70 | |
| | 14 | | | 7/8 | | C18 I 14 UN | 2 | .70 | |
| | 12 | 7/8 | | 1, 11/8 | | C18 I 12 UN | 2 | .70 | |
| | 11 | | | | | C18 I 11 UN | 2 | .70 | |
| | 9 | | 7/8 | | | C18 I 9 UN | 1 | .70 | |
| | 8 | | 1 | | | C18 I 8 UN | 1 | .70 | |
| C25 | 8 | 13/16, 11/4, 15/16 | | | | C25 I 8 UN | 2 | .98 | H10, 11, 24, 25 |
| | 7 | | 11/4 | | | C25 I 7 UN | 1 | .98 | |
| | 6 | 17/16, 19/16 | 13/8, 11/2 | | | C25 I 6 UN | 1 | .98 | |
| | 5 | | 1 3/4 | | | C25 I 5 UN | 1 | .98 | |
| | 4 | | 2 1/2, 2 3/4 | | | C25 I 4 UN | 1 | .98 | |

* For complete toolholder description see pages 225-226.

Full Profile - UN

Inserts for internal thread

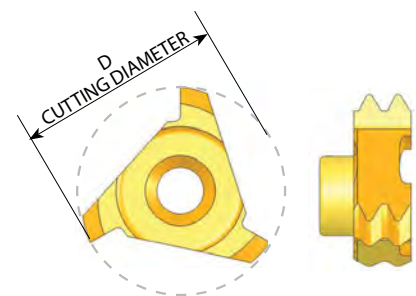
Multi Flute



| 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, 4, 5, 18, 19, 20 |
| S20 | S160 H 24 UN | 24 | | | | 11/16 | 4 | .63 | 8 | H6, 7, 8, 9, 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 | H21 |
| S35 | S350 F 4 UN | 4 | | 2 1/2, 2 3/4, 3 | | | 1 | 1.38 | 6 | H12, 13, 14, 26 |

G 55° BSW, BSF, BSP

Same Insert for internal and external thread

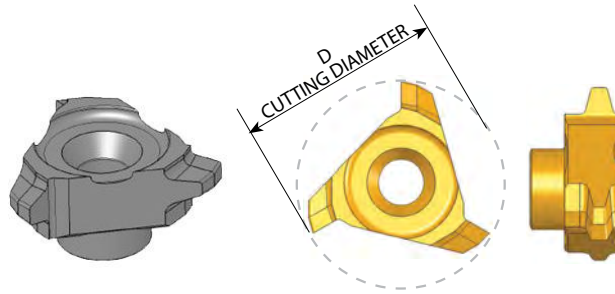


| Insert Type | Pitch TPI | Standard | Ordering Code | Number of Teeth | D | Holder Code* |
|-------------|-----------|----------|-----------------|-----------------|-----|-------------------------|
| C10 | 19 | G 1/4 | C10 19 W | 2 | .39 | H1, 2, 15, 16, 17 |
| C12 | 19 | G 3/8 | C12 19 W | 2 | .47 | H3, 4, 5, 18, 19, 20 |
| C18 | 14 | G 7/8 | C18 14 W | 2 | .70 | H6, 7, 8, 9, 21, 22, 23 |
| | 11 | G ≥ 1 | C18 11 W | 2 | .70 | |

* For complete toolholder description see pages 225-226.

Trapez - DIN 103

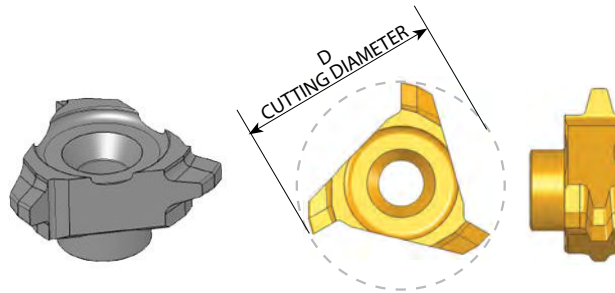
Inserts for internal thread



| Insert Type | Pitch mm | Standard | Ordering Code | D | Holder Code* |
|-------------|----------|-------------------------|-------------------|-----|-------------------------|
| C10 | 2.0 | $\varnothing \geq .63$ | C10 I 2 TR | .39 | H1, 2, 15, 17 |
| C18 | 3.0 | $\varnothing \geq .94$ | C18 I 3 TR | .70 | H6, 7, 8, 9, 21, 22, 23 |
| | 4.0 | $\varnothing \geq 1.02$ | C18 I 4 TR | .70 | H21 |
| | 5.0 | $\varnothing \geq 1.10$ | C18 I 5 TR | .70 | |
| C25 | 6.0 | $\varnothing \geq 1.42$ | C25 I 6 TR | .98 | H10, 11, 24, 25 |

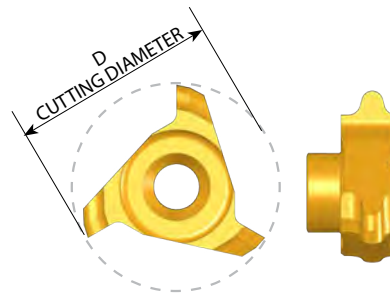
Acme

Inserts for internal thread



| Insert Type | Pitch TPI | Standard | Ordering Code | D | Holder Code* |
|-------------|-----------|-----------------|---------------------|-----|----------------------|
| C18 | 5 | 1 1/8, 1 1/4 | C18 I 5 ACME | .71 | Metric CRC 1218 P |
| C25 | 4 | 1 1/2, 1 3/4, 2 | C25 I 4 ACME | .98 | H10, 11, 24, 25 |

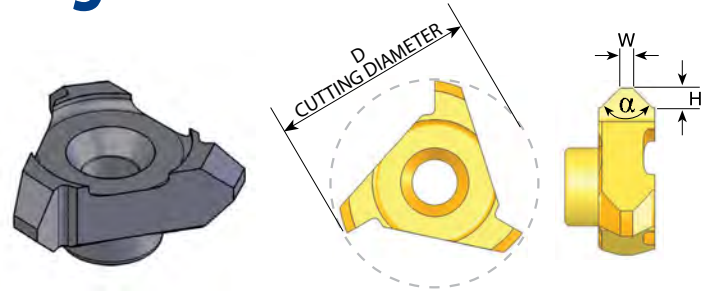
Round - DIN 405



| Insert Type | Pitch TPI | Standard | Ordering Code | D | Holder Code* |
|-------------|-----------|----------|------------------|-----|-------------------------|
| C18 | 8 | 1/8RD | C18 1/8RD | .70 | H6, 7, 8, 9, 21, 22, 23 |
| | 6 | 1/6RD | C18 1/6RD | .70 | H21 |
| C25 | 4 | 1/4RD | C25 1/4RD | .98 | H10, 11, 24, 25 |

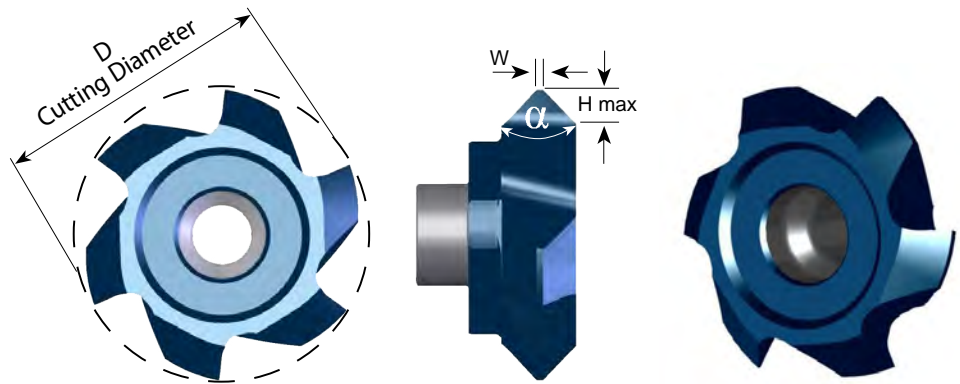
* For complete toolholder description see pages 225-226.

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° | H6, 7, 8, 9, 21, 22, 23 |
| C25 | C25 C90 | .98 | .098 | .039 | 90° | H10, 11, 24, 25 |

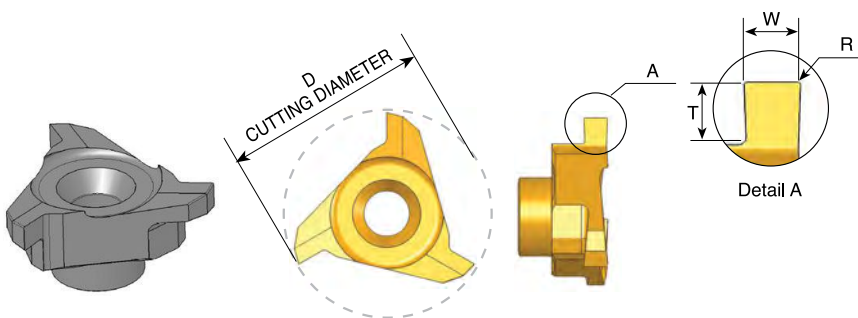
Chamfering, Grooving and Boring Multi Flute



| Insert Type | Ordering Code | D | H max | W | α | No. of Flutes | Holder Code |
|-------------|--------------------|------|-------|------|----------|---------------|-------------------------|
| S17 | SC160 E H14 | .63 | .053 | .008 | 90° | 5 | H3, 4, 5, 18, 19, 20 |
| S20 | SC170 E H14 | .67 | .053 | .008 | 90° | 5 | H6, 7, 8, 9, 21, 22, 23 |
| | SC200 F H14 | .79 | .053 | .008 | 90° | 6 | H6, 7, 8, 9, 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 |
| S20 | SC200 F H20 | .79 | .077 | .039 | 90° | 6 | H6, 7, 8, 9, 21, 22, 23 |
| | SC200 F H17 | .79 | .067 | .059 | 90° | 6 | |
| | SC200 F H15 | .79 | .059 | .079 | 90° | 6 | |
| | SC200 F H12 | .79 | .047 | .079 | 90° | 6 | |

* For complete toolholder description see pages 225-226.

Groove Milling

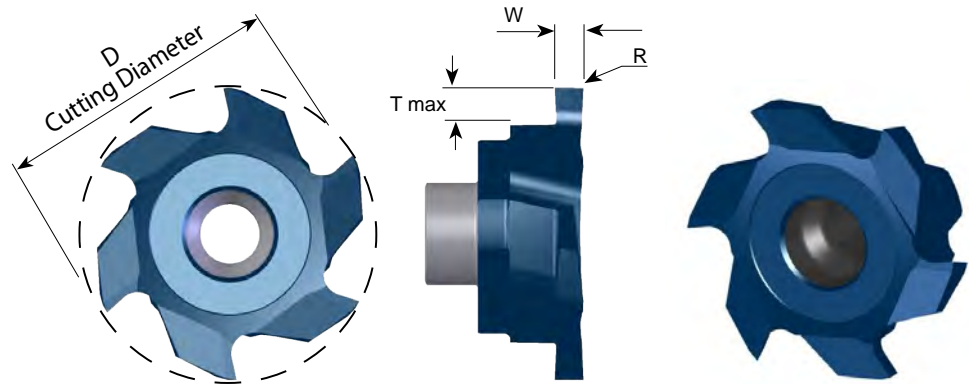


| Insert Type | Ordering Code | D | W ±.001 | T max. | R | Groove Dia. (min.) | Holder Code* |
|-------------|----------------|-----|------------|-----------|------|-----------------------|----------------------------|
| C10 | C10 W08 | .39 | .031 | .03 | .004 | $\phi > .39$ | H1, 2, 15, 17 |
| | C10 W09 | .39 | .035 | .04 | .004 | $\phi > .39$ | |
| | C10 W10 | .39 | .039 | .04 | .004 | $\phi > .39$ | |
| | C10 W15 | .39 | .059 | .05 | .004 | $\phi > .39$ | |
| | C10 W20 | .39 | .079 | .05 | .004 | $\phi > .39$ | |
| C12 | C12 W08 | .47 | .031 | .03 | .004 | $\phi > .47$ | H3, 4, 5,18,19,20 |
| | C12 W10 | .47 | .039 | .04 | .004 | $\phi > .47$ | |
| | C12 W15 | .49 | .059 | .06 | .004 | $\phi > .49$ | 3, 4, 5, 18, 20 |
| | C12 W20 | .49 | .079 | .06 | .004 | $\phi > .49$ | |
| | C12 W25 | .49 | .098 | .06 | .004 | $\phi > .49$ | |
| C18 | C18 W10 | .70 | .039 | .06 | .004 | $\phi > .70$ | H6, 7, 8, 9, 21, 22, 23 |
| | C18 W12 | .70 | .047 | .06 | .004 | $\phi > .70$ | |
| | C18 W15 | .70 | .059 | .08 | .004 | $\phi > .70$ | |
| | C18 W20 | .70 | .079 | .11 | .004 | $\phi > .70$ | H21 |
| C25 | C25 W20 | .98 | .079 | .12 | .008 | $\phi > .98$ | H10, 11, 24, 25 |
| | C25 W25 | .98 | .098 | .12 | .008 | $\phi > .98$ | |
| | C25 W30 | .98 | .118 | .12 | .008 | $\phi > .98$ | |
| | C25 W35 | .98 | .138 | .14 | .008 | $\phi > .98$ | |
| | C25 W40 | .98 | .157 | .14 | .008 | $\phi > .98$ | |
| | C25 W50 | .98 | .197 | .14 | .008 | $\phi > .98$ | |

* For complete toolholder description see pages 225-226.

Groove Milling

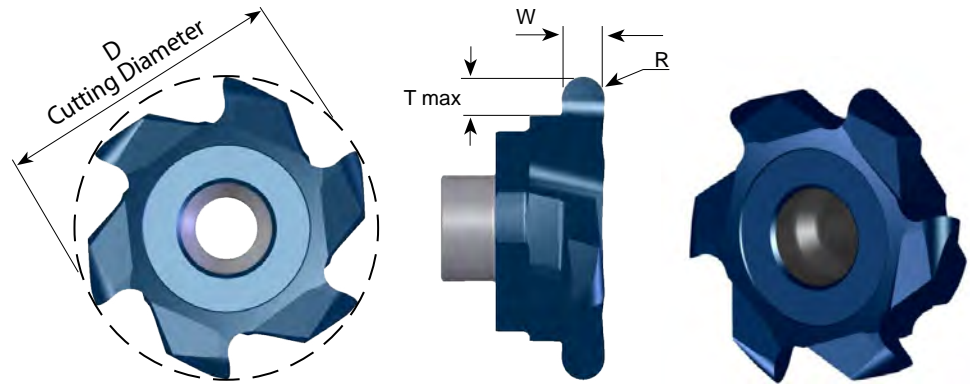
Multi Flute



| Insert Type | Ordering Code | D | W ±.001 | T Max. | R | Groove Dia. (min) | No. of Flutes | Holder Code* |
|-------------|---------------------|------|------------|-----------|------|----------------------|------------------|-------------------------|
| S17 | SG170 F W15 | .67 | .059 | .11 | .008 | Ø > .67 | 6 | H3, 4, 5, 18, 19, 20 |
| | SG170 F W20 | .67 | .079 | .11 | .008 | Ø > .67 | 6 | |
| | SG170 F W25 | .67 | .098 | .11 | .008 | Ø > .67 | 6 | |
| S20 | SG200 F W15 | .79 | .059 | .11 | .008 | Ø > .79 | 6 | H6, 7, 8, 9, 21, 22, 23 |
| | SG200 F W20 | .79 | .079 | .11 | .008 | Ø > .79 | 6 | |
| | SG200 F W25 | .79 | .098 | .11 | .008 | Ø > .79 | 6 | |
| | SG200 F W30 | .79 | .118 | .11 | .008 | Ø > .79 | 6 | |
| | SG200 F W40 | .79 | .157 | .11 | .008 | Ø > .79 | 6 | |
| | SG200 F W49 | .79 | .193 | .11 | .008 | Ø > .79 | 6 | |
| S20 | SG200 E W20T | .79 | .079 | .15 | .008 | Ø > .79 | 5 | H21 |
| | SG200 E W25T | .79 | .098 | .15 | .008 | Ø > .79 | 5 | |
| | SG200 E W30T | .79 | .118 | .15 | .008 | Ø > .79 | 5 | |
| S35 | SG350 F W30T | 1.38 | .118 | .25 | .008 | Ø > 1.38 | 6 | H12, 13, 14, 26 |
| | SG350 F W40T | 1.38 | .157 | .25 | .008 | Ø > 1.38 | 6 | |
| | SG350 F W50T | 1.38 | .197 | .25 | .008 | Ø > 1.38 | 6 | |
| | SG350 F W60T | 1.38 | .236 | .25 | .008 | Ø > 1.38 | 6 | |
| | SG350 F W80T | 1.38 | .315 | .25 | .008 | Ø > 1.38 | 6 | |

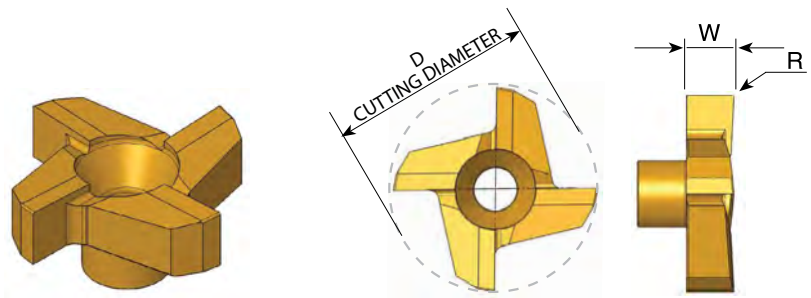
* For complete toolholder description see pages 225-226.

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 | H6, 7, 8, 9, 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 | |

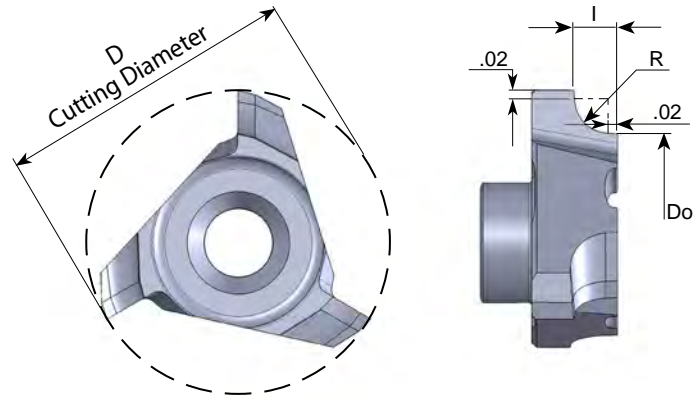
Face Milling and Finishing



| Insert Type | Ordering Code | D | W +.008 | R | Holder Code* |
|-------------|-------------------|-----|------------|------|-------------------------|
| C10 | C10 F R0.1 | .39 | .12 | .004 | H1, 2, 15, 16, 17 |
| C12 | C12 F R0.1 | .47 | .12 | .004 | H3, 4, 5, 18, 19, 20 |
| C18 | C18 F R0.1 | .70 | .20 | .004 | H6, 7, 8, 9, 21, 22, 23 |
| C25 | C25 F R0.2 | .98 | .24 | .008 | H10, 11, 24, 25 |

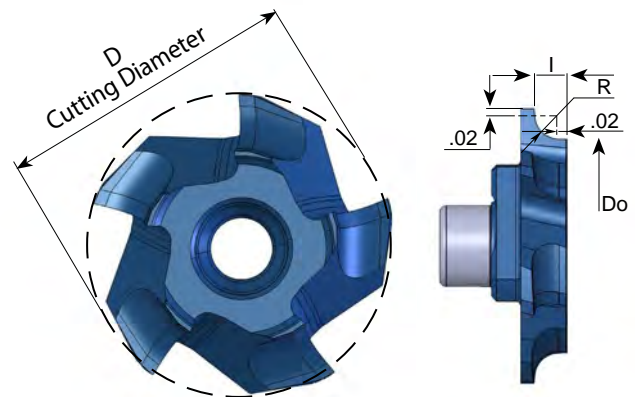
* For complete toolholder description see pages 225-226.

Corner Rounding



| Insert Type | Ordering Code | D | Do | R | I | Holder Code* |
|-------------|-----------------|-----|-----|------|-----|----------------------------|
| C10 | C10 CR05 | .39 | .31 | .020 | .04 | H1, 2, 15, 16, 17 |
| | C10 CR10 | .39 | .27 | .039 | .06 | |
| C18 | C18 CR13 | .70 | .56 | .049 | .07 | H6, 7, 8, 9, 21, 22, 23 |
| | C18 CR15 | .70 | .54 | .059 | .08 | |
| | C18 CR20 | .70 | .50 | .079 | .10 | |

Corner Rounding Multi Flute

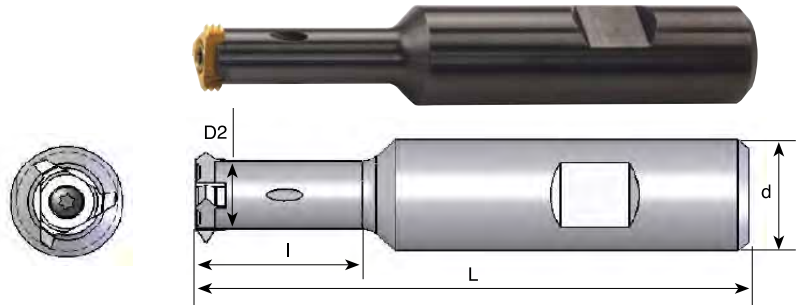


| Insert Type | Ordering Code | D | Do | R | I | No. of Flutes | Holder Code* |
|-------------|--------------------|-----|-----|------|-----|---------------|-------------------------|
| S17 | S170 F CR10 | .67 | .55 | .039 | .06 | 5 | H3, 4, 5, 18, 19, 20 |
| | S170 F CR13 | .67 | .53 | .049 | .07 | 5 | |
| | S170 F CR15 | .67 | .51 | .059 | .08 | 5 | |

* For complete toolholder description see pages 225-226.

Steel Toolholders

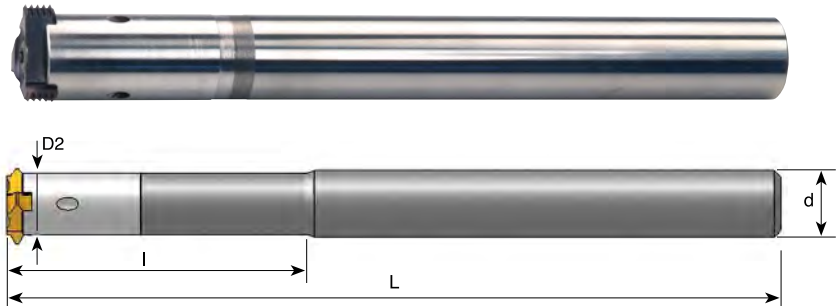
With internal coolant



| Tool No. | Ordering Code | Insert Type | d | D2 | l | L | Insert Screw | Torx Key |
|----------|------------------------------|-------------|------|-----|------|-----|--------------|----------|
| H1 | SRC 0500 E10 | C10 | .500 | .29 | .75 | 2.8 | S5 | K5 |
| H2 | SRC 0625 G10 | | .625 | .29 | .75 | 3.5 | | |
| H3 | SRC 0500 E12 | C12, S17 | .500 | .35 | .98 | 2.8 | S10 | K10 |
| H4 | SRC 0625 G12 | | .625 | .35 | .98 | 3.5 | | |
| H5 | SRC 0625 H12 | | .625 | .35 | 1.38 | 4.0 | | |
| H6 | SRC 0625 H18 | C18, S20 | .625 | .54 | 1.89 | 4.0 | S16 | K16 |
| H7 | SRC 0750 H18 | | .750 | .54 | 1.26 | 4.0 | | |
| H8 | SRC 0750 J18 | | .750 | .54 | 1.89 | 4.5 | | |
| H9 | SRC 0750 L18 | | .750 | .54 | 2.91 | 5.5 | | |
| H10 | SRC 1000 J25 | C25 | 1.00 | .69 | 1.77 | 4.5 | S27 | K27 |
| H11 | SRC 1000 M25 | | 1.00 | .69 | 3.15 | 5.9 | | |
| H12 | SRC 0750 P35 | S35 | .750 | .87 | - | 6.7 | S33 | K33 |
| H13 | SRC 1000 H35 | | 1.00 | .87 | 1.57 | 3.9 | | |
| H14 | SRC 1000 K35 | | 1.00 | .87 | 2.36 | 5.1 | | |

Carbide Shank Toolholders

With internal coolant



| Tool No. | Ordering Code | Insert Type | d | D2 | l | L | Insert Screw | Torx Key |
|----------|----------------------------------|-------------|------|------|------|------|--------------|----------|
| H15 | CRC 0312 L13 K10 | C10 | .312 | .29 | 1.38 | 5.0 | S5 | K5 |
| H16 | CRC 0312 K10 | | .312 | .312 | - | 5.0 | S5 | K5 |
| H17 | CRC 0375 L17 M10 | | .375 | .29 | 1.77 | 5.9 | S5 | K5 |
| H18 | CRC 0375 L15 M12 | C12, S17 | .375 | .35 | 1.58 | 6.0 | S10 | K10 |
| H19 | CRC 0375 M12 | | .375 | .375 | - | 6.0 | S10 | K10 |
| H20 | CRC 0500 L22 P12 | | .500 | .35 | 2.24 | 6.7 | S10 | K10 |
| H21 | CRC 0500 P18 | C18, S20 | .500 | .500 | - | 7.0 | S16 | K16 |
| H22 | CRC 0625 L18 R18 | | .625 | .54 | 1.89 | 7.8 | S16 | K16 |
| H23 | CRC 0625 L29 R18 | | .625 | .54 | 2.91 | 7.8 | S16 | K16 |
| H24 | CRC 0625 R25 | C25 | .625 | .69 | 1.20 | 8.2 | S27 | K27 |
| H25 | CRC 0750 L33 S25 | | .750 | .69 | 3.35 | 10.0 | S27 | K27 |
| H26 | CRC 0750 S35 | | S35 | .750 | .87 | 1.59 | 10.2 | S33 |

Tools without Weldon

CMT Multi Insert Milling Cutters

Carmex presents a new generation of 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

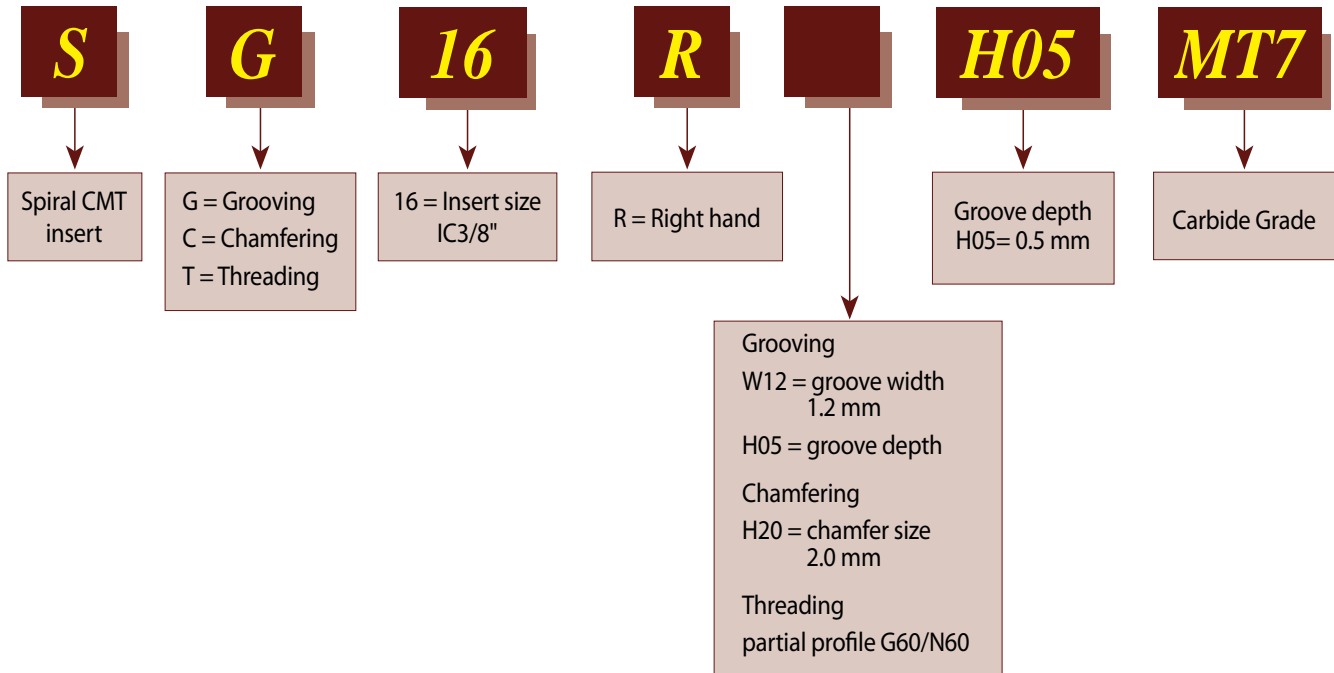


Milling cutters / Disc milling cutter

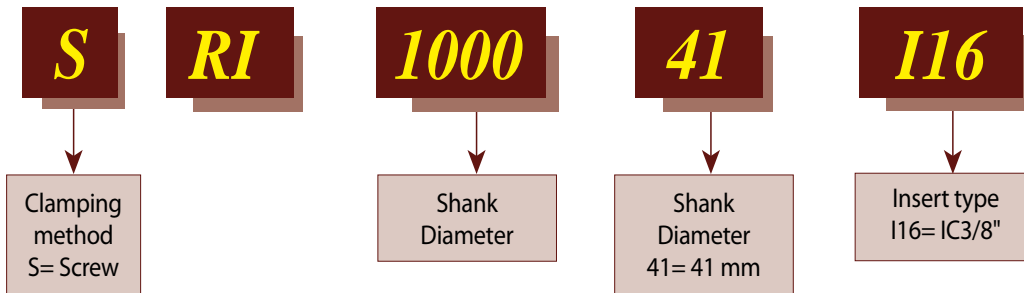
- 4 - 8 inserts per holder, for high productivity
- For use with Carmex standard CMT - S35 toolholders
- The milling cutters are coated with a special layer (silver color) for high anti-corrosive resistance and extra protection against cutting burrs

Product Identification - Ordering Codes

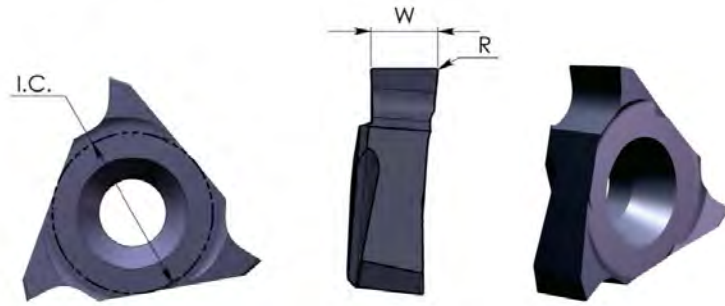
Inserts



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, H28 |
| | | 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, H28, H29 |

Right hand cutting

| Insert Type | I.C. | Ordering Code | W | R | Holder Code |
|-------------|------|--------------------|------|------|-------------|
| SI16 | 3/8" | SG 16 L W43 | .171 | .008 | H29 |

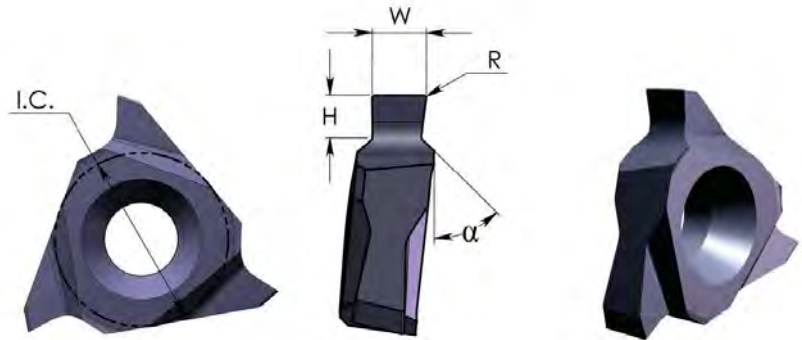
Left hand cutting

* T max = .08

When using holders SRI41-I16 and SRI2541-I16

** Maximum groove depth (T max) according to the toolholder.

Groove Milling with Chamfer

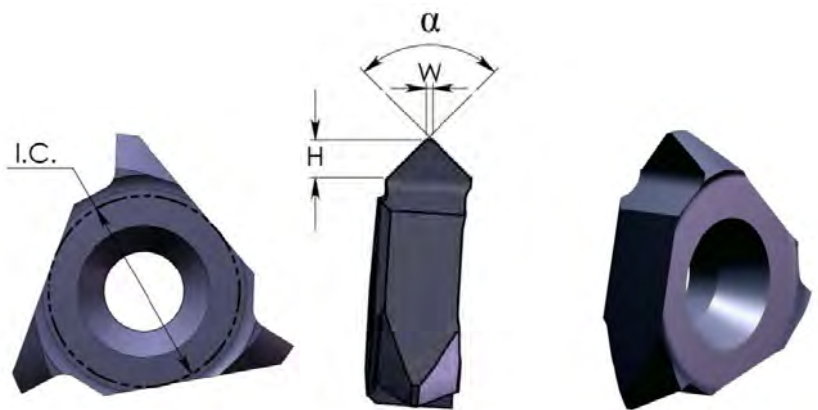


DIN 471 / 472

| 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, H28 |
| | | SG 16 R W14 H07 | .055 | .028 | .004 | | |
| | | SG 16 R W14 H08 | .055 | .033 | .004 | | |
| | | SG 16 R W17 H08 | .067 | .033 | .004 | | |
| | | SG 16 R W17 H10 | .067 | .039 | .004 | | |
| | | SG 16 R W19 H12 | .077 | .049 | .006 | | |
| | | SG 16 R W22 H15 | .089 | .059 | .006 | | |
| | | SG 16 R W27 H15 | .108 | .059 | .006 | | |
| | | SG 16 R W27 H17 | .108 | .069 | .006 | | |
| | | SG 16 R W32 H17 | .128 | .069 | .006 | | |
| | | SG 16 R W42 H20 | .167 | .079 | .006 | | |
| | | SG 16 R W42 H25 | .167 | .098 | .006 | | |

Right hand cutting

Chamfering

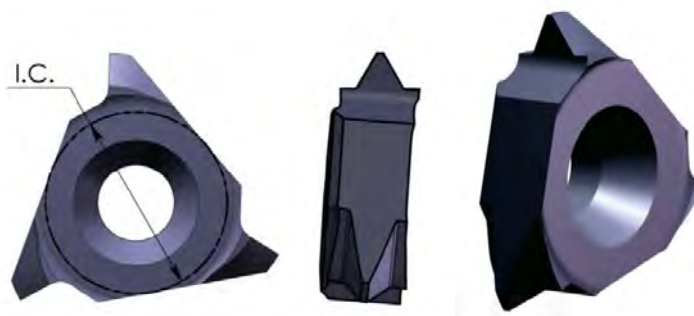


| Insert Type | I.C. | Ordering Code | H max | W | α | Holder Code |
|-------------|------|--------------------|-------|------|----------|-------------|
| SI16 | 3/8" | SC 16 R H20 | .079 | .008 | 90° | H27, H28 |
| | | SC 16 R H19 | .075 | .020 | | |

Maximum groove depth (T max) according to the toolholder.

Partial Profile 60° - ISO, UN

Same Insert for internal and external thread

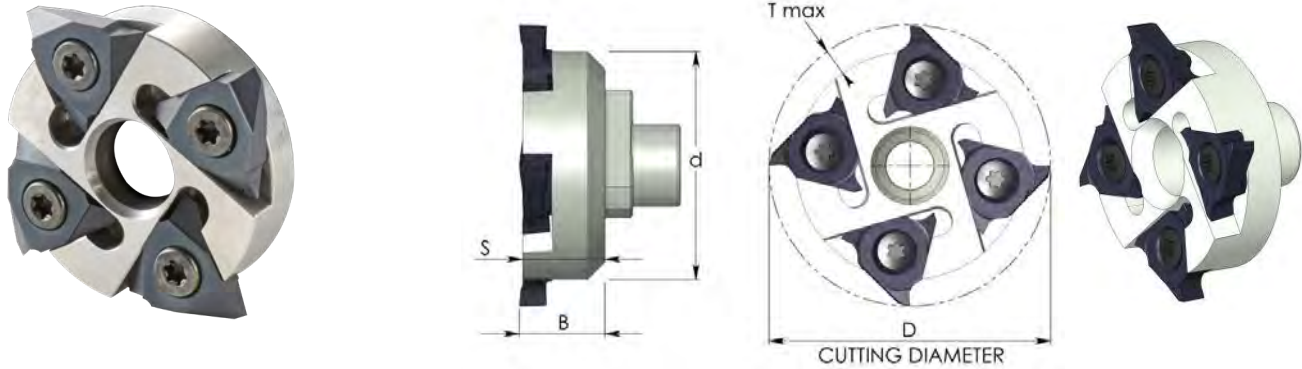


| Insert Type | I.C. | Ordering Code | Pitch Range mm | Pitch Range TPI | Holder Code |
|-------------|------|--------------------|----------------|-----------------|-------------|
| SI16 | 3/8" | ST 16 R G60 | 1.5-3.0 | 16-8 | H27, H28 |
| | | ST 16 R N60 | 3.5-5.0 | 7-5 | |

Right hand cutting

Toolholders

Milling Cutter- Arbor

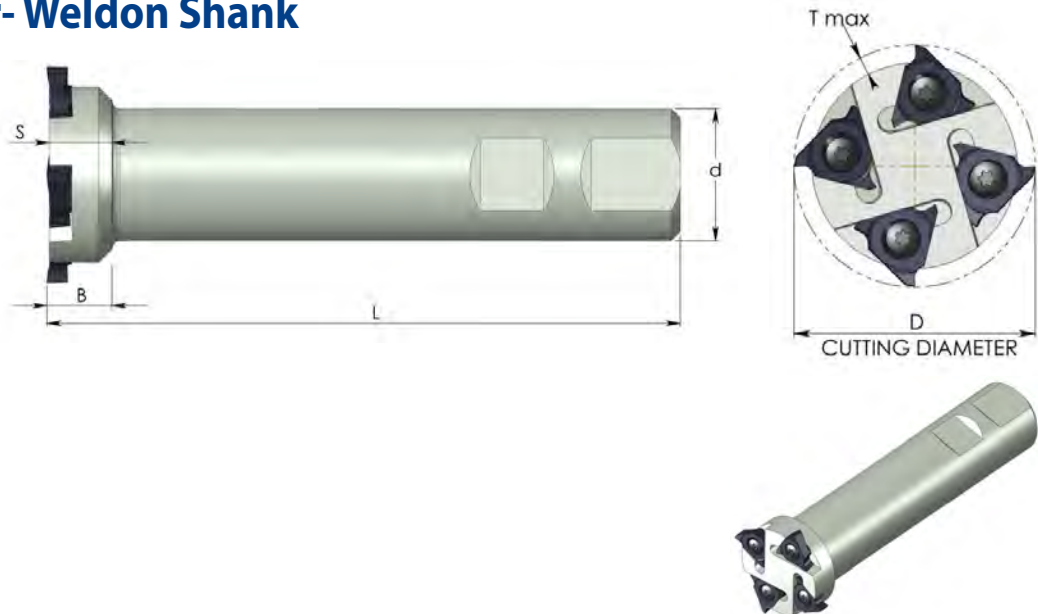


| Tool No. | Ordering Code | Insert type | D | d | T max | B | S | Insert Screw | Torx Key |
|----------|-------------------|-------------|-------|-------|-------|------|------|--------------|----------|
| H27 | SRI 41-116 | SI16 | 1.614 | 1.307 | .142 | .492 | .472 | S16S | K16 |

Right hand cutting

To connect to the standard CMT toolholders S35: SRC 0750 P35, SRC 1000 H35, SRC 1000 K35, CRC 0750 S35.

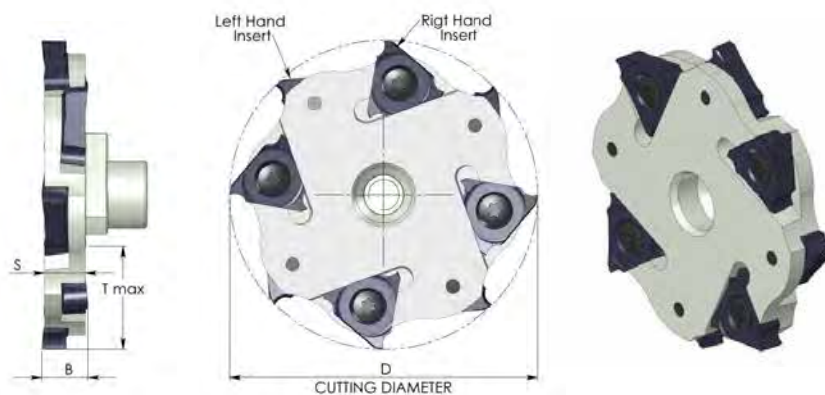
Milling Cutter- Weldon Shank



| Tool No. | Ordering Code | Insert type | D | d | T max | B | S | L | Insert Screw | Torx Key |
|----------|---------------------|-------------|-------|-------|-------|------|------|-----|--------------|----------|
| H28 | SRI 1000-116 | SI16 | 1.614 | 1.000 | .142 | .492 | .472 | 4.9 | S16S | K16 |

Right hand cutting

Mill Cutter - Disc Milling



| Tool No. | Ordering Code | Insert type | D | T max | B | S | Insert Screw | Torx Key |
|----------|-------------------|-------------|-------|-------|------|------|--------------|----------|
| H29 | SRI 55-I16 | SI16 | 2.165 | .610 | .323 | .283 | S16M | K16 |

Right hand cutting

To use only with inserts SG 16 RW43, and SG 16 LW43

To connect to the standard CMT toolholders S35: SRC 0750 P35, SRC 1000 H35, SRC 1000 K35, CRC 0750 S35.

Mill-Thread Solid Carbide



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.

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

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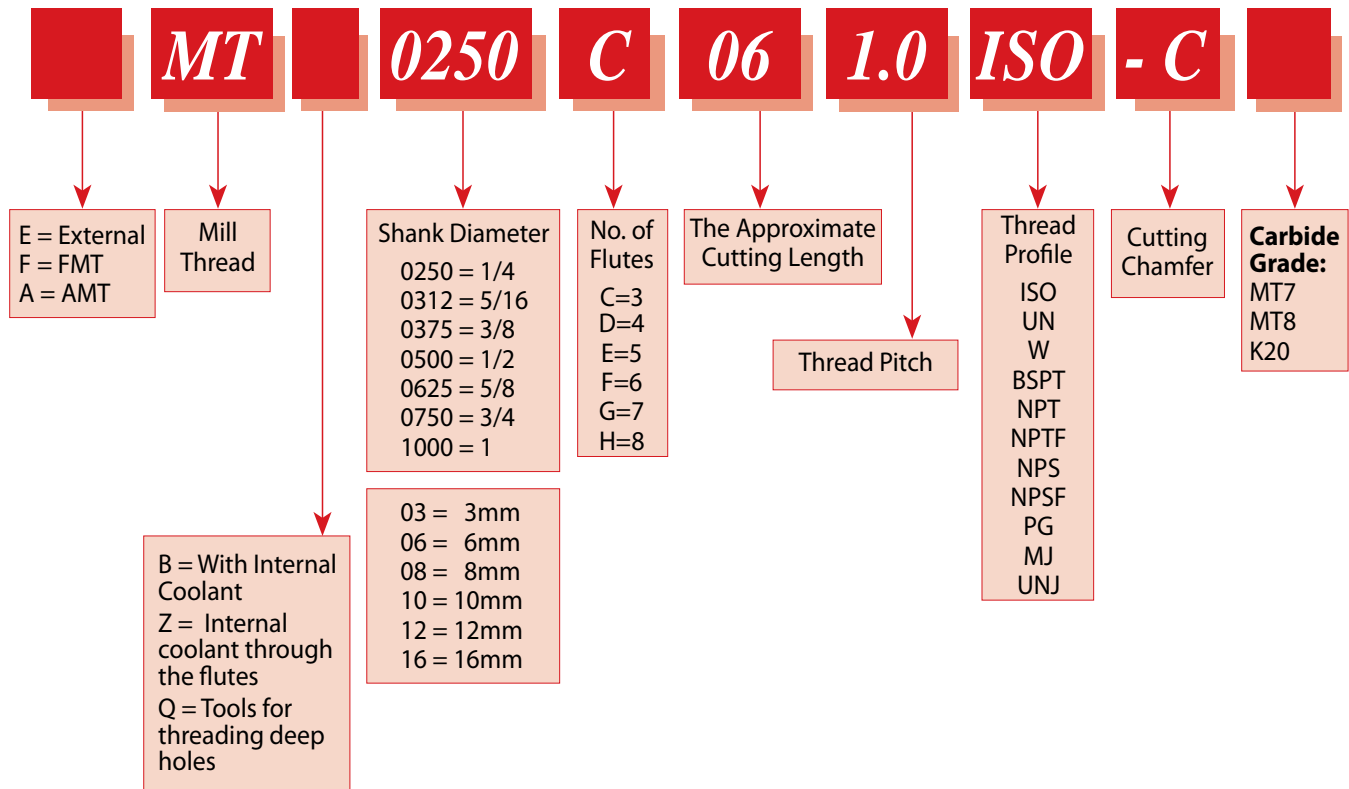
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| ISO | 237 | NPT - with internal Coolant through the Flutes - MTZ | 251 |
| ISO - with internal Coolant Bore - MTB | 238 | NPTF | 251 |
| ISO - with internal Coolant through the Flutes - MTZ | 239 | NPTF - with internal Coolant Bore - MTB | 252 |
| ISO - with internal Coolant Bore - MTQ | 240 | NPTF - with internal Coolant through the Flutes - MTZ | 252 |
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| BSPT - with internal Coolant through the Flutes - MTZ | 249 | UN - With internal coolant bore and cutting Chamfer | 260 |
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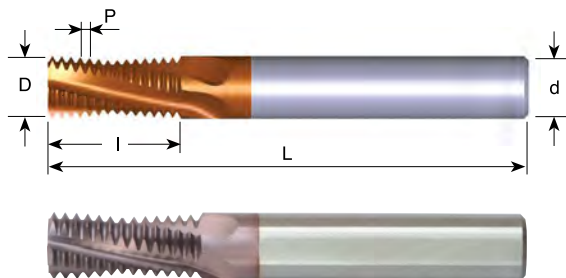
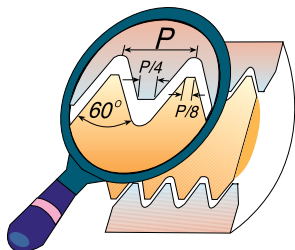
Product Identification

Mill-Thread Solid Carbide Ordering Codes



ISO

Tools for Internal thread



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

Order example: MT 0500D11 2.0 ISO MT7

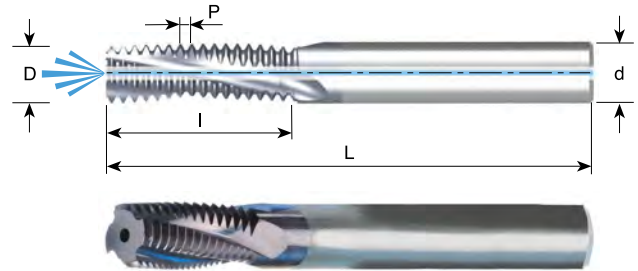
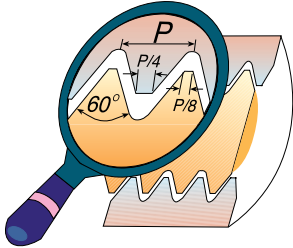
For thread mills with coolant bore see following pages

For small thread mills see pages 263-264, 270, 274 & 285.



ISO With internal coolant bore

Tools for Internal thread



| Pitch mm | M coarse | M fine mm | Ordering Code | d | D | No. of Flutes | I | L |
|----------|----------|-----------------------|----------------------------|------|------|---------------|------|-----|
| 0.5 | | $\varnothing \geq 5$ | MTB0250C04 0.5 ISO | 1/4 | .150 | 3 | .41 | 2.5 |
| 0.7 | M4 | $\varnothing \geq 5$ | MTB0250C02 0.7 ISO | 1/4 | .122 | 3 | .29 | 2.5 |
| 0.75 | | $\varnothing \geq 6$ | MTB0250C04 0.75 ISO | 1/4 | .177 | 3 | .40 | 2.5 |
| 0.8 | M5 | $\varnothing \geq 6$ | MTB0250C03 0.8 ISO | 1/4 | .150 | 3 | .36 | 2.5 |
| 1.0 | M6 | $\varnothing \geq 7$ | MTB0250C04 1.0 ISO | 1/4 | .181 | 3 | .41 | 2.5 |
| 1.0 | M6 | $\varnothing \geq 7$ | MTB0250C06 1.0 ISO | 1/4 | .181 | 3 | .57 | 2.5 |
| 1.0 | | $\varnothing \geq 9$ | MTB0250C05 1.0 ISO | 1/4 | .250 | 3 | .50 | 2.5 |
| 1.0 | | $\varnothing \geq 10$ | MTB0312D06 1.0 ISO | 5/16 | .312 | 4 | .65 | 2.5 |
| 1.0 | | $\varnothing \geq 12$ | MTB0375D09 1.0 ISO | 3/8 | .375 | 4 | .96 | 3.0 |
| 1.25 | M8 | $\varnothing \geq 10$ | MTB0250C05 1.25 ISO | 1/4 | .249 | 3 | .57 | 2.5 |
| 1.25 | M8 | $\varnothing \geq 10$ | MTB0250C07 1.25 ISO | 1/4 | .249 | 3 | .76 | 2.5 |
| 1.5 | M10 | $\varnothing \geq 12$ | MTB0312C06 1.5 ISO | 5/16 | .306 | 3 | .67 | 2.5 |
| 1.5 | M10 | $\varnothing \geq 12$ | MTB0312C09 1.5 ISO | 5/16 | .306 | 3 | .98 | 2.5 |
| 1.5 | | $\varnothing \geq 14$ | MTB0375D08 1.5 ISO | 3/8 | .375 | 4 | .86 | 3.0 |
| 1.5 | | $\varnothing \geq 16$ | MTB0500D10 1.5 ISO | 1/2 | .500 | 4 | 1.04 | 4.0 |
| 1.5 | | $\varnothing \geq 20$ | MTB0625F13 1.5 ISO | 5/8 | .625 | 6 | 1.33 | 4.0 |
| 1.75 | M12 | $\varnothing \geq 12$ | MTB0375C07 1.75 ISO | 3/8 | .354 | 3 | .79 | 3.0 |
| 1.75 | M12 | $\varnothing \geq 12$ | MTB0375C11 1.75 ISO | 3/8 | .354 | 3 | 1.14 | 3.0 |
| 2.0 | M14 | $\varnothing \geq 15$ | MTB0375C10 2.0 ISO | 3/8 | .375 | 3 | 1.06 | 3.0 |
| 2.0 | M16 | $\varnothing \geq 17$ | MTB0500D10 2.0 ISO | 1/2 | .465 | 4 | 1.06 | 4.0 |
| 2.0 | M16 | $\varnothing \geq 17$ | MTB0500D15 2.0 ISO | 1/2 | .465 | 4 | 1.54 | 4.0 |
| 2.0 | | $\varnothing \geq 26$ | MTB0750F16 2.0 ISO | 3/4 | .750 | 6 | 1.61 | 4.0 |
| 2.5 | M20 | $\varnothing \geq 22$ | MTB0625E13 2.5 ISO | 5/8 | .591 | 5 | 1.33 | 4.0 |
| 2.5 | M20 | $\varnothing \geq 22$ | MTB0625E19 2.5 ISO | 5/8 | .591 | 5 | 1.92 | 4.0 |
| 3.0 | M24 | $\varnothing \geq 25$ | MTB0750D15 3.0 ISO | 3/4 | .709 | 4 | 1.59 | 4.0 |
| 3.0 | M27 | $\varnothing \geq 27$ | MTB0750D17 3.0 ISO | 3/4 | .750 | 4 | 1.71 | 4.0 |

Order example: MTB 0312C06 1.5 ISO MT7

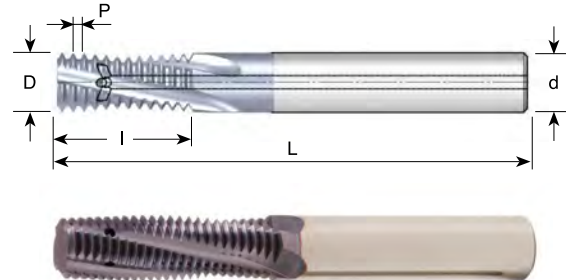
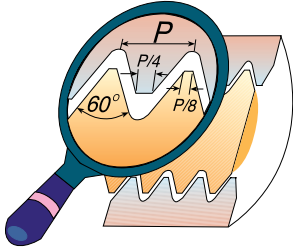
For thread mills with coolant through the flutes see next page

For small thread mills see pages 263-264, 270, 274 & 285.



ISO With internal coolant through the flutes

Tools for Internal Thread - Metric Shanks



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

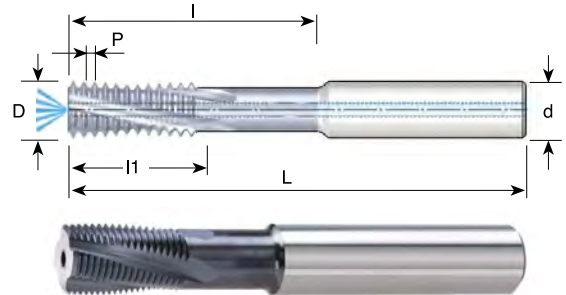
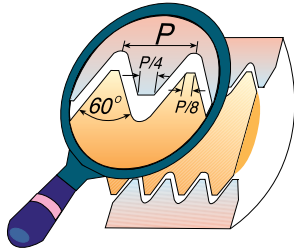
Order example: MTZ 08078C17 1.5 ISO MT7

For small thread mills see pages 263-264, 270, 274 & 285.



ISO With relieved neck and internal coolant bore

Tools for Internal Thread - Metric Shank



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

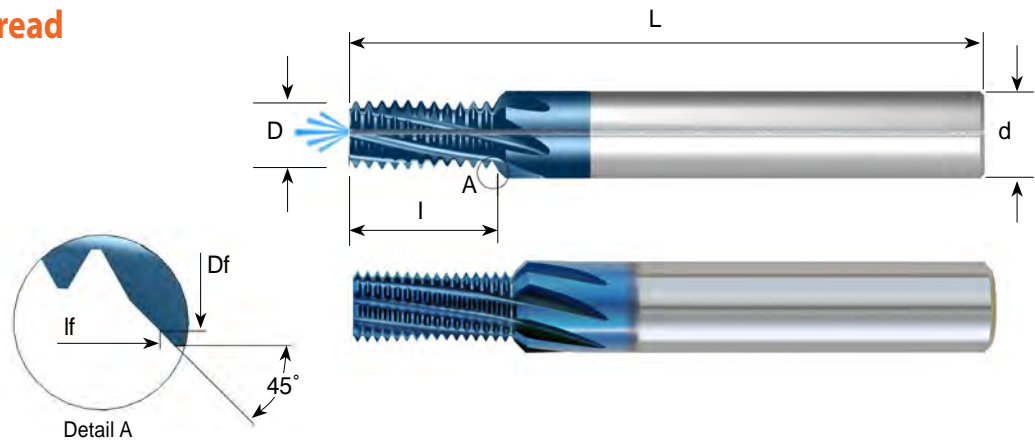
Order example: MTQ 1010D30 1.5 ISO MT7

For small thread mills see pages 263-264, 270, 274 & 285.



ISO Fast MT With internal coolant bore

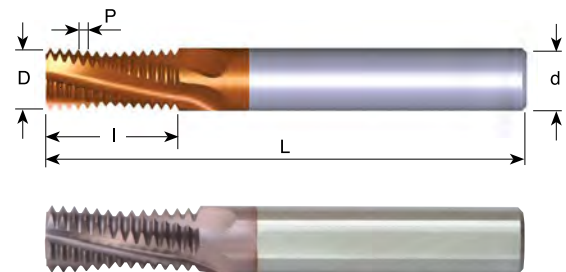
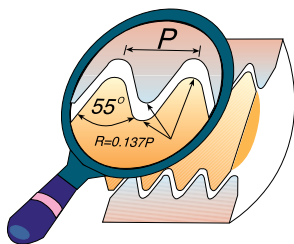
Tools for Internal thread



| Pitch mm | M coarse | M fine | Ordering Code | d mm | D | Df | Flutes | I | lf | L |
|----------|----------|--------|-------------------------------|------|------|------|--------|-----|-----|-----|
| 0.7 | M4 | | FMT 06032 E7 0.7 ISO | 6 | .126 | .189 | 5 | .29 | .32 | 2.3 |
| 0.8 | M5 | | FMT 0604 E9 0.8 ISO | 7 | .157 | .224 | 5 | .36 | .40 | 2.3 |
| 1.0 | M6 | M8 | FMT 08048 F10 1.0 ISO | 8 | .189 | .268 | 6 | .41 | .45 | 2.5 |
| 1.25 | M8 | M10 | FMT 10064 G14 1.25 ISO | 10 | .252 | .378 | 7 | .57 | .63 | 2.9 |
| 1.5 | M10 | M14 | FMT 1008 G17 1.5 ISO | 10 | .315 | .386 | 7 | .68 | .72 | 2.9 |
| 1.75 | M12 | | FMT 12095 G20 1.75 ISO | 12 | .374 | .461 | 7 | .79 | .83 | 3.3 |

G (55°) BSF, BSP

Same Tool for Internal and External Thread - Metric shanks

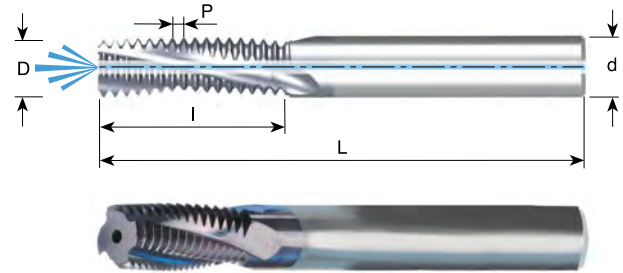


| Pitch TPI | Standard | Ordering Code | d mm | D | No. of Flutes | I | L |
|-----------|---------------------|-----------------------|------|------|---------------|------|-----|
| 28 | G1/16-G1/8 | MT0606C9 28 W | 6 | .236 | 3 | .38 | 2.3 |
| 19 | G1/4-3/8 | MT0808C14 19 W | 8 | .315 | 3 | .55 | 2.5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

Order example: MT 1212D19 14 W MT7

G 55° BSF, BSP With internal coolant bore

Same Tool for Internal and External Thread - Metric shanks



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

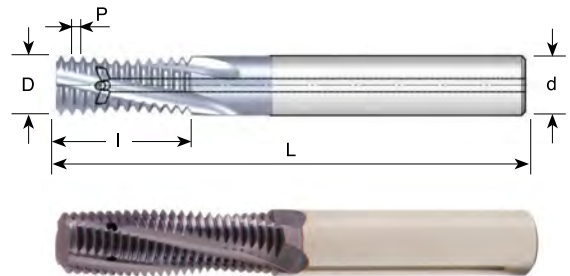
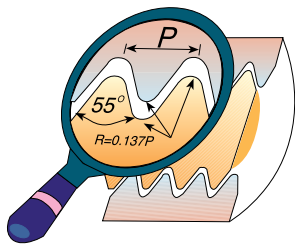
Order example: MTB 1010D16 19 W MT7

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

For small thread mills see page 267 & 287

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

Same Tool for Internal and External Thread - Metric shanks



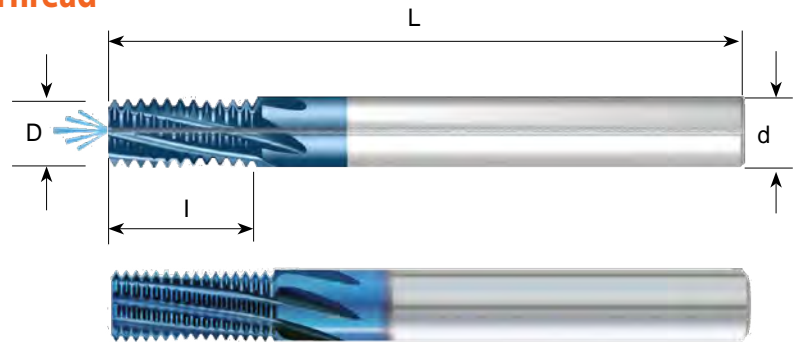
| Pitch TPI | Standard | Ordering Code | d mm | D | No. of Flutes | I | L |
|-----------|----------|------------------------|------|------|---------------|------|-----|
| 28 | G1/8 | MTZ08078C14 28W | 8 | .307 | 3 | .56 | 2.5 |
| 19 | G1/4-3/8 | MTZ1010D16 19W | 10 | .394 | 4 | .66 | 2.9 |
| 14 | G1/2-7/8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

Order example: MTZ 08078C14 28 W MT7

For small thread mills see page 267 & 287

G 55° Fast MT With internal coolant bore

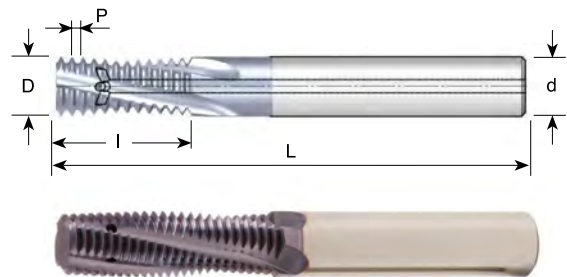
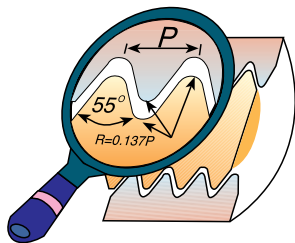
Same Tool for Internal and External Thread



| Pitch TPI | Standard | Ordering Code | d mm | D | Flutes | I | L |
|-----------|----------|--------------------------|------|------|--------|------|-----|
| 28 | G1/8 | FMT 08078 H14 28W | 8 | .307 | 8 | .56 | 2.5 |
| 19 | G1/4-3/8 | FMT 1010 G16 19W | 10 | .394 | 7 | .66 | 2.9 |
| 14 | G1/2-7/8 | FMT 1414 H26 14W | 14 | .551 | 8 | 1.04 | 3.3 |
| 11 | G ≥ 1 | FMT 1616 H38 11W | 16 | .630 | 8 | 1.50 | 4.1 |

Whitworth BSW With internal coolant through the flutes

Same Tool for Internal and External Thread - Metric Shanks



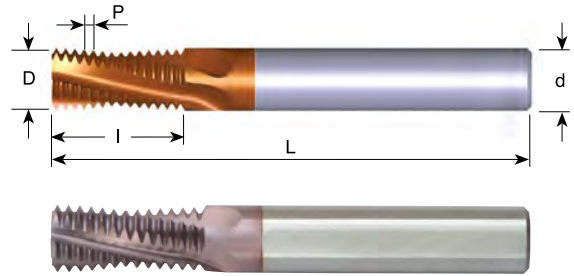
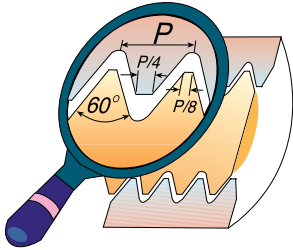
| Pitch TPI | Standard | Ordering Code | d mm | D | No. of Flutes | I | L |
|-----------|----------|------------------------|------|------|---------------|------|-----|
| * 20 | 1/4 | MTZ06046C12 20W | 6 | .181 | 3 | .48 | 2.3 |
| 18 | 5/16 | MTZ06053C14 18W | 6 | .209 | 3 | .58 | 2.3 |
| 16 | 3/8 | MTZ08068C16 16W | 8 | .268 | 3 | .66 | 2.5 |
| 16 | 1/2 | MTZ10092D24 16W | 10 | .362 | 4 | .97 | 2.9 |
| 14 | 7/16 | MTZ08078D20 14W | 8 | .307 | 4 | .82 | 2.5 |
| 12 | 1/2 | MTZ10086D24 12W | 10 | .339 | 4 | .96 | 2.9 |
| 11 | 5/8 | MTZ12109D28 11W | 12 | .429 | 4 | 1.14 | 3.3 |

Order example: MTZ 08064C16 16 W MT7

* Cutter without coolant

UN

Tools for Internal Thread



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

Order example: MT 0625E15 14 UN MT7

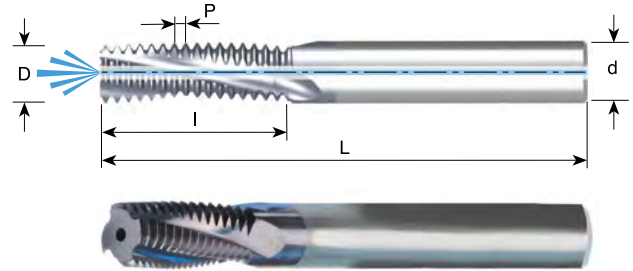
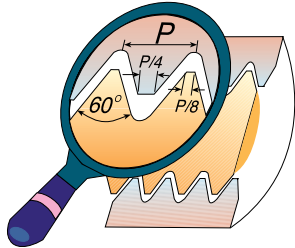
For thread mills with coolant bore see following pages

For small thread mills see pages 265-266, 271, 274 & 286.



UN With internal coolant bore

Tools for Internal Thread



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

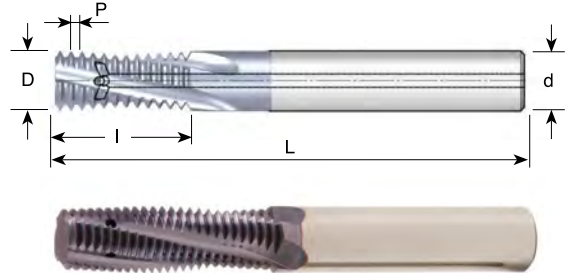
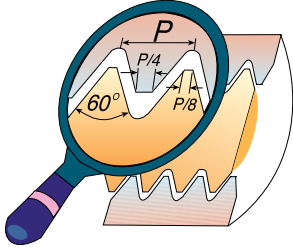
Order example: MTB 0625E14 14 UN MT7

For thread mills with coolant through the flutes see next page

For small thread mills see pages 265-266, 271, 274 & 286. 

UN With internal coolant through the flutes

Tools for Internal Thread - Metric Shank



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

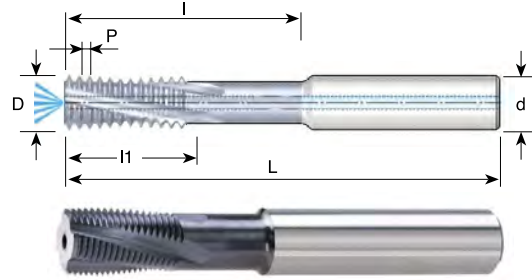
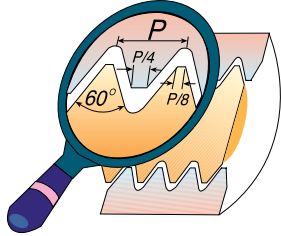
Order example: MTZ 0808D21 24 UN MT7

For small thread mills see pages 265-266, 271, 274 & 286.



UN With relieved neck and internal coolant bore

Tools for Internal Thread - Metric Shank



| Pitch TPI | Thread size | Ordering Code | d mm | D | No. of Flutes | l1 | l | L |
|--------------|------------------------|-------------------------|---------|------|------------------|------|------|-----|
| 20 | $\varnothing \geq .47$ | MTQ1010D30 20 UN | 10 | .394 | 4 | .70 | 1.20 | 2.9 |
| 20 | $\varnothing \geq .55$ | MTQ1212E35 20 UN | 12 | .472 | 5 | .80 | 1.40 | 3.3 |
| 20 | $\varnothing \geq .71$ | MTQ1616F43 20 UN | 16 | .630 | 6 | 1.00 | 1.70 | 4.1 |
| 18 | $\varnothing \geq .59$ | MTQ1212D35 18 UN | 12 | .472 | 4 | .78 | 1.39 | 3.3 |
| 16 | $\varnothing \geq .59$ | MTQ1212D35 16 UN | 12 | .472 | 4 | .81 | 1.38 | 3.3 |
| 16 | $\varnothing \geq .75$ | MTQ1616E42 16 UN | 16 | .630 | 5 | 1.00 | 1.69 | 4.1 |
| 16 | $\varnothing \geq .91$ | MTQ2020F58 16 UN | 20 | .787 | 6 | 1.44 | 2.31 | 4.1 |
| 14 | $\varnothing \geq .79$ | MTQ1616E45 14 UN | 16 | .630 | 5 | 1.00 | 1.78 | 4.1 |
| 12 | $\varnothing \geq .63$ | MTQ1212D42 12 UN | 12 | .472 | 4 | 1.00 | 1.67 | 3.3 |
| 12 | $\varnothing \geq .95$ | MTQ2020E55 12 UN | 20 | .787 | 5 | 1.33 | 2.17 | 4.1 |

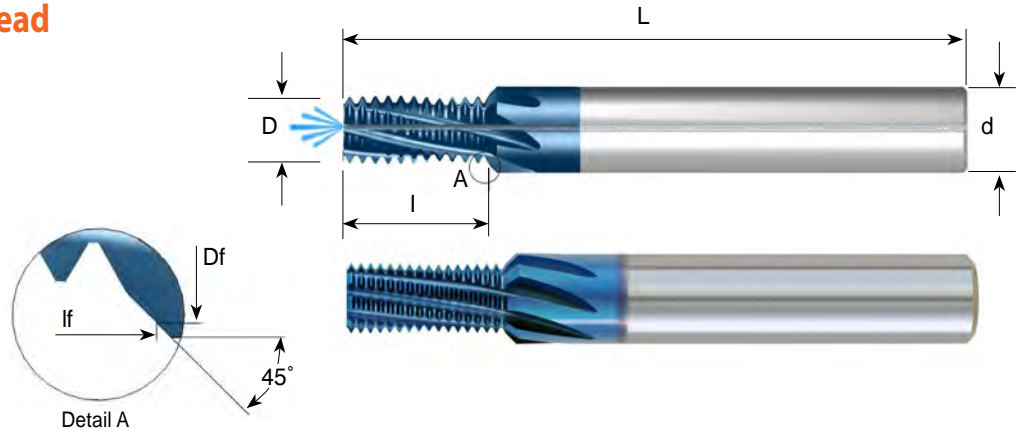
Order example: MTQ 1212D35 16 UN MT7

For small thread mills see pages 265-266, 271, 274 & 286.



UN Fast MT with internal coolant bore

Tools for Internal Thread

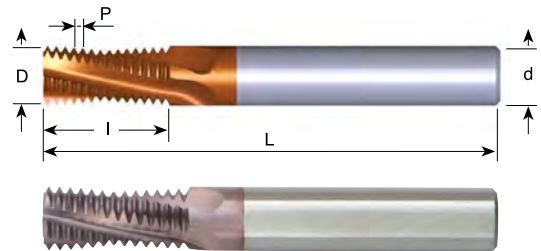
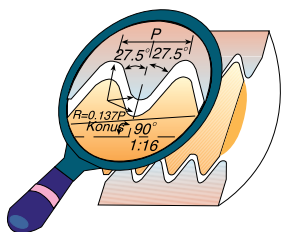


| Pitch TPI | UNC | UNF | UNEF | Ordering Code | d mm | D | Df | Flutes | I | If | L |
|-----------|------|-----------|------------------|------------------------------|------|------|------|--------|------|------|-----|
| 28 | | 1/4 | | FMT 08052 F11 28 UN | 8 | .205 | .283 | 6 | .44 | .48 | 2.5 |
| 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 | 3/8 | | | 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 |

* Without internal coolant

BSPT

Same Tool for Internal and External Thread
Metric Shank

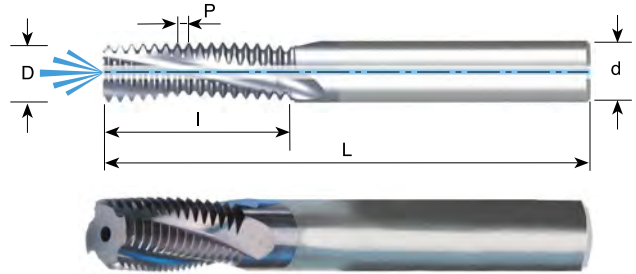
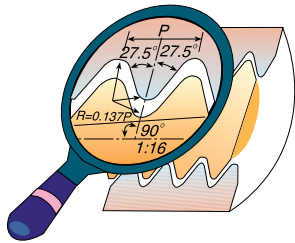


| Pitch TPI | Standard | Ordering Code | d mm | D | No. of Flutes | I | L |
|-----------|-----------|--------------------------|------|------|---------------|------|-----|
| 28 | RC1/8 | MT0606C9 28 BSPT | 6 | .236 | 3 | .38 | 2.3 |
| 19 | RC1/4-3/8 | MT0808C14 19 BSPT | 8 | .315 | 3 | .55 | 2.5 |
|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

Order example: MT 1616D28 11 BSPT MT7
For thread mills with coolant through the flutes see next page

BSPT With internal coolant bore

Same Tool for Internal and External Thread - Metric Shank

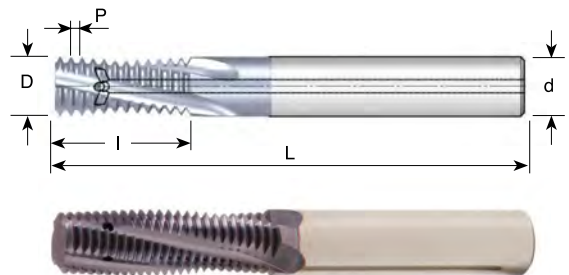
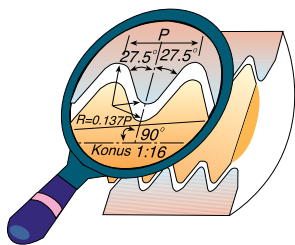


| Pitch TPI | Standard | Ordering Code | d mm | D | No. of Flutes | l | L |
|-----------|-----------|----------------------------|------|------|---------------|------|-----|
| 28 | RC1/8 | MTB08078C14 28 BSPT | 8 | .307 | 3 | .56 | 2.5 |
| 19 | RC1/4-3/8 | MTB1010D16 19 BSPT | 10 | .394 | 4 | .66 | 2.9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

Order example: MTB 08078C14 28 BSPT MT7

BSPT With internal coolant through the flutes

Same Tool for Internal and External Thread - Metric Shank



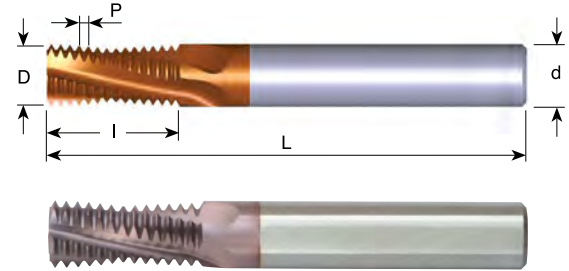
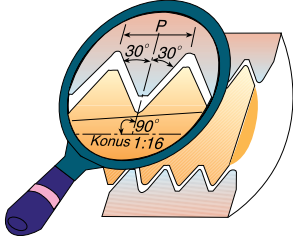
| Pitch TPI | Standard | Ordering Code | d mm | D | No. of Flutes | l | L |
|-----------|-----------|----------------------------|------|------|---------------|------|-----|
| 28 | RC1/8 | MTZ08078C14 28 BSPT | 8 | .307 | 3 | .56 | 2.5 |
| 19 | RC1/4-3/8 | MTZ1010D16 19 BSPT | 10 | .394 | 4 | .66 | 2.9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

Order example: MTZ 1010D16 19 BSPT MT7

For conical preparation end mills see page 253

NPT

Same Tool for Internal and External Thread

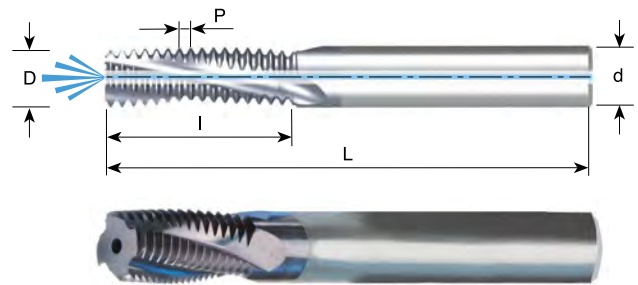


| Pitch TPI | Standard | Ordering Code | d | D | No. of Flutes | I | L |
|-----------|----------|---------------------------|------|------|---------------|------|-----|
| 27 | 1/16 | MT0250C03 27 NPT | 1/4 | .230 | 3 | .39 | 2.5 |
| 27 | 1/8 | MT0250C04 27 NPT | 1/4 | .250 | 3 | .39 | 2.5 |
| 18 | 1/4-3/8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

Order example: MT 0312C06 18 NPT MT7

NPT With internal coolant

Same Tool for Internal and External Thread



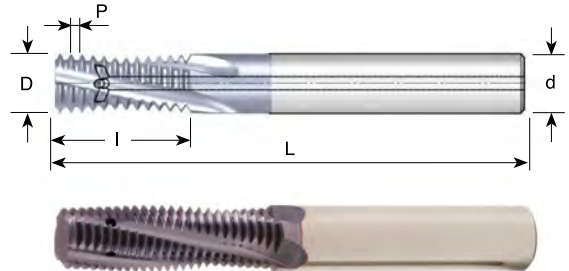
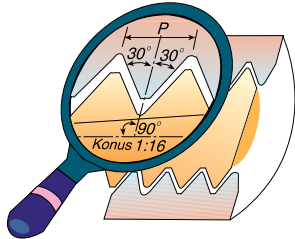
| Pitch TPI | Standard | Ordering Code | d | D | No. of Flutes | I | L |
|-----------|----------|----------------------------|------|------|---------------|------|-----|
| 27 | 1/8 | MTB0312C04 27 NPT | 5/16 | .299 | 3 | .43 | 2.5 |
| 18 | 1/4-3/8 | MTB0375D06 18 NPT | 3/8 | .375 | 4 | .64 | 3.0 |
|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

Order example: MTB 0312C04 27 NPT MT7

For thread mills with coolant through the flutes see next page
 For conical preparation end mills see page 253

NPT With internal coolant through the flutes

Same Tool for Internal and External Thread - Metric Shank

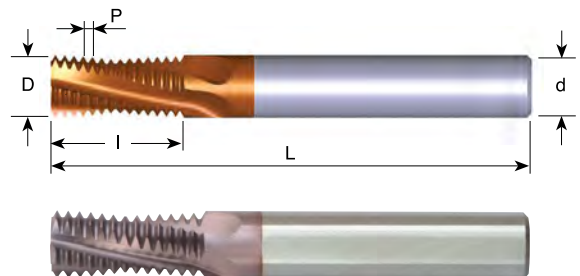
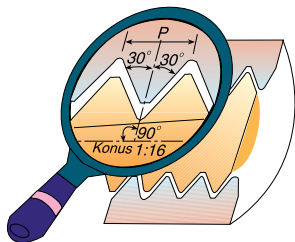


| Pitch TPI | Standard | Ordering Code | d mm | D | No. of Flutes | I | L |
|-----------|----------|---------------------------|------|------|---------------|-----|-----|
| 27 | 1/8 | MTZ08076C10 27 NPT | 8 | .299 | 3 | .43 | 2.5 |
| 18 | 1/4-3/8 | MTZ1010D16 18 NPT | 10 | .394 | 4 | .64 | 2.9 |
| 14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

Order example: MTZ 08076C10 27 NPT MT7

NPTF

Same Tool for Internal and External Thread



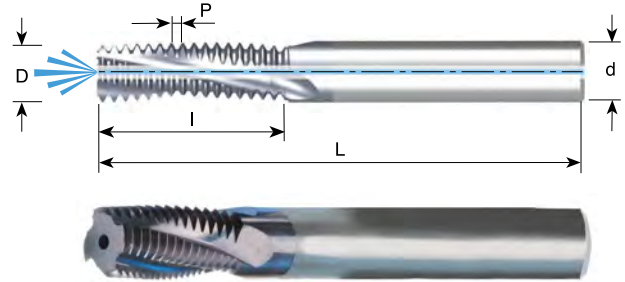
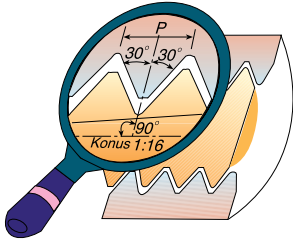
| Pitch TPI | Standard | Ordering Code | d | D | No. of Flutes | I | L |
|-----------|----------|----------------------------|------|------|---------------|------|-----|
| 27 | 1/16 | MT0250C03 27 NPTF | 1/4 | .230 | 3 | .39 | 2.5 |
| 27 | 1/8 | MT0250C04 27 NPTF | 1/4 | .250 | 3 | .39 | 2.5 |
| 18 |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

Order example: MT 0500D08 14 NPTF MT7

For thread mills with coolant bore see next page
 For conical preparation end mills see page 253

NPTF With internal coolant bore

Same Tool for Internal and External Thread

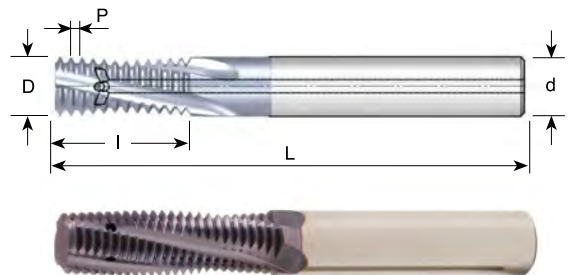
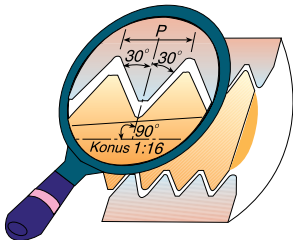


| Pitch TPI | Standard | Ordering Code | d | D | No. of Flutes | I | L |
|-----------|----------|-----------------------------|------|------|---------------|------|-----|
| 27 | 1/8 | MTB0312C04 27 NPTF | 5/16 | .299 | 3 | .43 | 2.5 |
| 18 | 1/4-3/8 | MTB0375D06 18 NPTF | 3/8 | .375 | 4 | .64 | 3.0 |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

Order example: MTB 0312C04 27 NPTF MT7

NPTF With internal coolant through the flutes

Same Tool for Internal and External Thread - Metric Shank



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

Order example: MTZ 1010D16 18 NPTF MT7

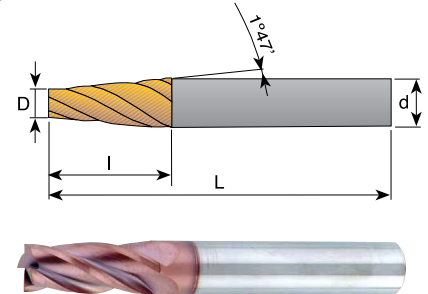
For conical preparation end mills see page 253

Solid Carbide Tapered End Mills

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

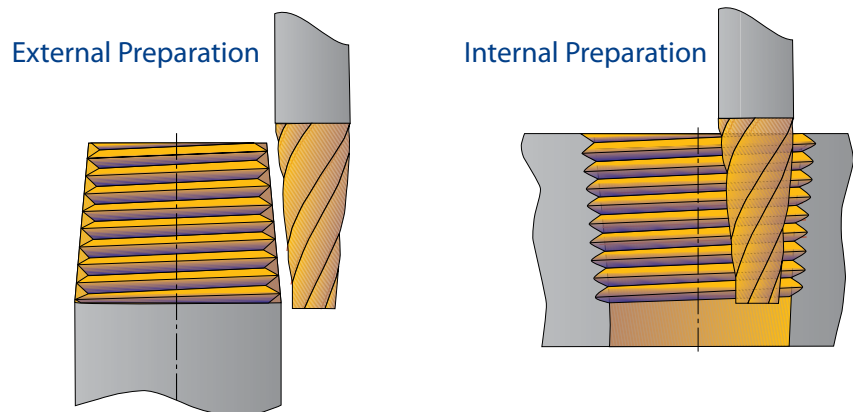
Advantages:

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



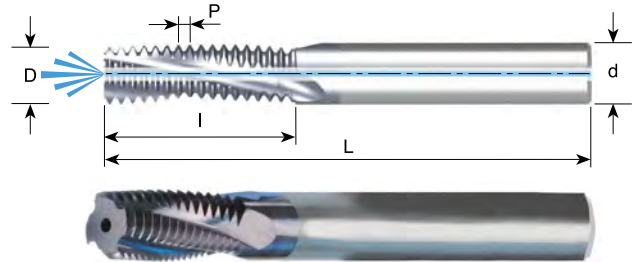
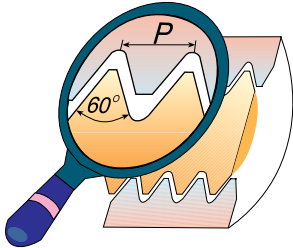
| Ordering Code | d | D | l | L | No. of Flutes | Size |
|------------------|------|-----|------|-----|---------------|--|
| SC0652D12 | 6 mm | .20 | .47 | 2.3 | 4 | NPT 1/16" - 1/8" NPTF 1/16" - 1/8" BSPT 1/16" - 1/8" |
| SC0375D09 | 3/8 | .32 | .95 | 3 | 4 | NPT 1/8" - 1" NPTF 1/8" - 1" BSPT 1/8" - 1" |
| SC0500D12 | 1/2 | .42 | 1.26 | 3.5 | 4 | NPT 1/4" - 3" NPTF 1/4" - 3" BSPT 1/4" - 3" |

Order example: SC 0500D12 MT7
Carbide grade: MT7



NPS With internal coolant bore

Same Tool for Internal and External Thread

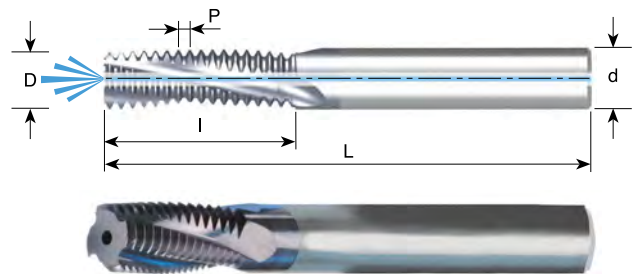
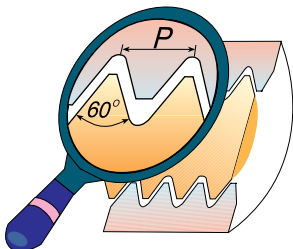


| Pitch TPI | Standard | Ordering Code | d | D | No. of Flutes | I | L |
|-----------|----------|----------------------------|------|------|---------------|------|-----|
| 27 | 1/8 | MTB0312C04 27 NPS | 5/16 | .299 | 3 | .43 | 2.5 |
| 18 | 1/4-3/8 | MTB0375D06 18 NPS | 3/8 | .375 | 4 | .64 | 3.0 |
|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

Order example: MTB 0375D06 18 NPS MT7

NPSF With internal coolant bore

Same Tool for Internal and External Thread

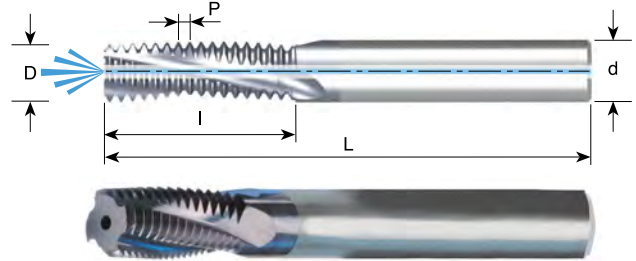
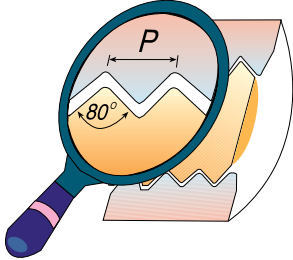


| Pitch TPI | Standard | Ordering Code | d | D | No. of Flutes | I | L |
|-----------|----------|-----------------------------|------|------|---------------|------|-----|
| 27 | 1/8 | MTB0312C04 27 NPSF | 5/16 | .299 | 3 | .43 | 2.5 |
| 18 | 1/4-3/8 | MTB0375D06 18 NPSF | 3/8 | .375 | 4 | .64 | 3.0 |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

Order example: MTB 0312C04 27 NPSF MT7

PG DIN 40430 - With internal coolant bore

Same Tool for Internal and External Thread - Metric Shank



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

Order example: MTB 1212 D20 18 PG MT7

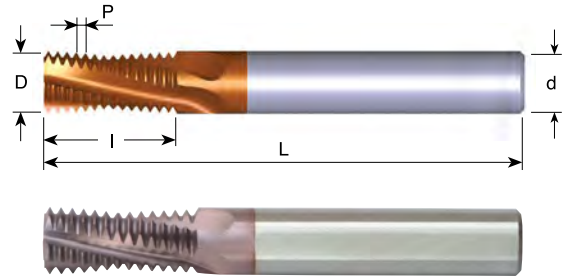
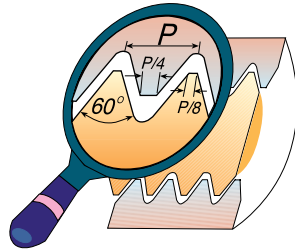
Mill - Thread Solid Carbide for External Threads

Advantages:

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

ISO

Metric Shank

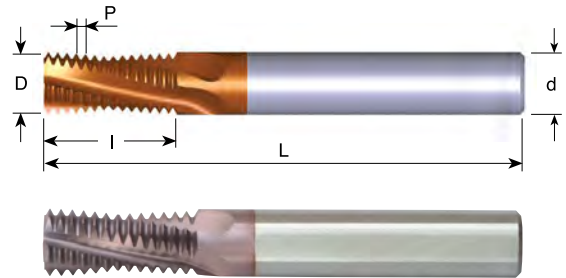
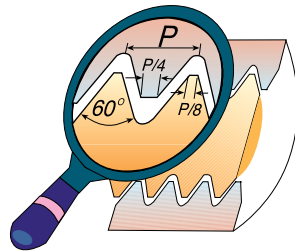


| Pitch mm | Ordering Code | d mm | D | No. of Flutes | I | L |
|----------|-------------------------------------|------|------|---------------|-----|-----|
| 1.0 | EMT1010D16 1.0 ISO | 10 | .394 | 4 | .65 | 2.9 |
| 1.0 | EMT1212E20 1.0 ISO | 12 | .472 | 5 | .81 | 3.3 |
| 1.25 | EMT1010D16 1.25 ISO |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

Order example: EMT 1010D15 1.5 ISO MT7

UN

Metric Shank

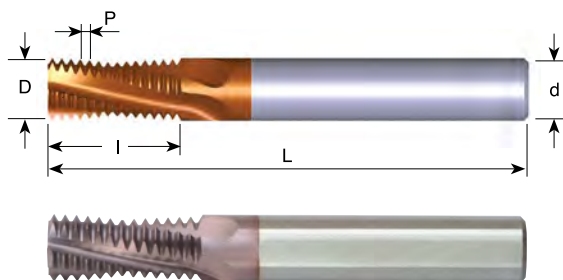
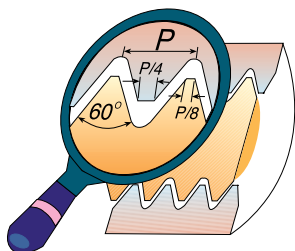


| Pitch TPI | Ordering Code | d mm | D | No. of Flutes | I | L |
|-----------|----------------------------------|------|------|---------------|-----|-----|
| 24 | EMT1010D16 24 UN | 10 | .394 | 4 | .65 | 2.9 |
| 20 | EMT1212E21 20 UN | 12 | .472 | 5 | .83 | 3.3 |
| 18 | EMT1212D20 18 UN | 12 | .472 |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

Order example: EMT 1212D20 18 UN MT7

MJ - ISO 5855

Metric Shank



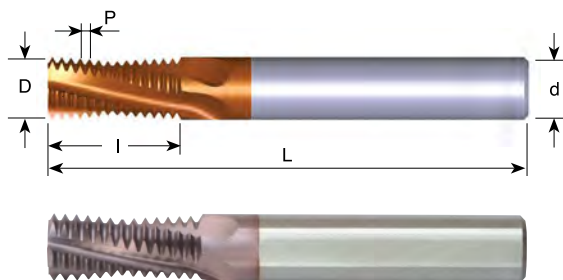
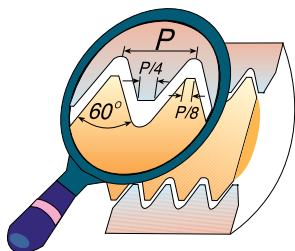
| Grade | P | M | K | N | S | H |
|-------|---|---|---|---|---|----------|
| MT7 | ● | ● | ● | ○ | ● | ≤ 50 HRc |

| Pitch mm | Ordering Code | d mm | D | No. of Flutes | I | L |
|----------|-------------------|------|------|---------------|------|-----|
| 1.0 | EMT1010D20 1.0 MJ | 10 | .394 | 4 | .81 | 2.8 |
| 1.0 | EMT1212E24 1.0 MJ | 12 | .472 | 5 | .96 | 3.3 |
| 1.5 | EMT1010D21 1.5 MJ | 10 | .394 | 4 | .86 | 2.8 |
| 1.5 | EMT1212D26 1.5 MJ | 12 | .472 | 4 | 1.04 | 3.3 |
| 2.0 | EMT1010C21 2.0 MJ | 10 | .394 | 3 | .83 | 2.8 |
| 2.0 | EMT1212D27 2.0 MJ | 12 | .472 | 4 | 1.06 | 3.3 |

Order example: EMT 1010D15 1.5 ISO MT7

UNJ UNJC, UNJF, UNJEF, UNJS

Metric Shank



| Grade | P | M | K | N | S | H |
|-------|---|---|---|---|---|----------|
| MT7 | ● | ● | ● | ○ | ● | ≤ 50 HRc |

| Pitch mm | Ordering Code | d mm | D | No. of Flutes | I | L |
|----------|-------------------|------|------|---------------|------|-----|
| 32 | EMT0606C13 32 UNJ | 6 | .236 | 3 | .55 | 2.2 |
| 28 | EMT0808D17 28 UNJ | 8 | .315 | 4 | .70 | 2.5 |
| 24 | EMT1010D20 24 UNJ | 10 | .394 | 4 | .81 | 2.8 |
| 20 | EMT1212E27 20 UNJ | 12 | .472 | 5 | 1.07 | 3.3 |
| 18 | EMT1212D26 18 UNJ | 12 | .472 | 4 | 1.03 | 3.3 |
| 16 | EMT1212D26 16 UNJ | 12 | .472 | 4 | 1.03 | 3.3 |
| 14 | EMT1212D26 14 UNJ | 12 | .472 | 4 | 1.04 | 3.3 |
| 12 | EMT1212D26 12 UNJ | 12 | .472 | 4 | 1.04 | 3.3 |

Order example: EMT 1010D15 1.5 ISO MT7

● First choice ○ Alternative

AMT Solid Carbide Thread Mills for Aluminum Machining

Carmex introduces a new line of 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, ensure efficient chip evacuation and sufficient strength of the cutting edge to absorb the cutting forces.

Features

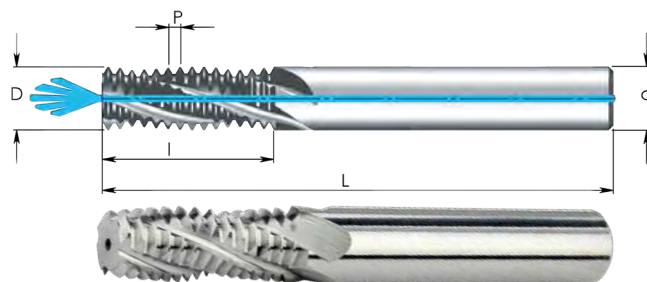
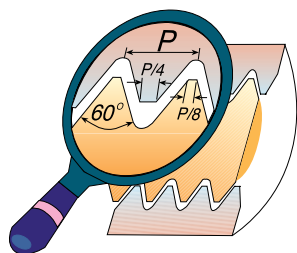
- Optimized carbide grade for Aluminum, cast iron and stainless steels
- Cylindrical shank (Weldon shank available - upon request)
- With internal coolant bore
- Uncoated, smooth cutting edge
- High thread surface quality
- Same tool for right hand or left hand internal threads
- Additional items with cutting chamfer

Carbide grade: K20 (K10 - K30)

Uncoated carbide grade for non ferrous metals, aluminum and cast iron.

ISO With internal coolant bore

Tools for Internal thread - Metric Shanks



Thread length: 2xD

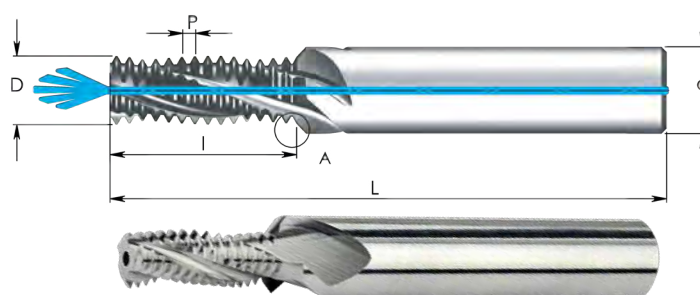
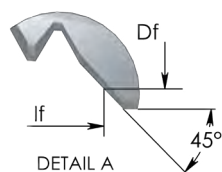
| Grade | P | M | K | N | S | H |
|-------|---|---|---|---|---|---|
| K20 | ○ | ○ | ● | ● | ● | |

| Pitch mm | M coarse | M fine | Ordering Code | d mm | D | No. of Flutes | I | L |
|----------|----------|--------|-----------------------|------|------|---------------|-------|-----|
| 0.5 | M3 | M4 | * AMT 03024C6 0.5 ISO | 3 | .094 | 3 | .268 | 1.5 |
| 0.5 | | M5 | AMT 06043C10 0.5 ISO | 6 | .169 | 3 | .425 | 2.3 |
| 0.7 | M4 | | AMT 06031C8 0.7 ISO | 6 | .122 | 3 | .346 | 2.3 |
| 0.75 | | M6 | AMT 0605C13 0.75 ISO | 6 | .197 | 3 | .516 | 2.3 |
| 0.8 | M5 | | AMT 0604C10 0.8 ISO | 6 | .157 | 3 | .425 | 2.3 |
| 1.0 | M6 | | AMT 06048C13 1.0 ISO | 6 | .189 | 3 | .531 | 2.3 |
| 1.0 | | M10 | AMT 0808D21 1.0 ISO | 8 | .315 | 4 | .846 | 2.5 |
| 1.25 | M8 | M10 | AMT 08064C16 1.25 ISO | 8 | .252 | 3 | .665 | 2.5 |
| 1.5 | M10 | | AMT 0808C21 1.5 ISO | 8 | .315 | 3 | .858 | 2.5 |
| 1.5 | | M14 | AMT 12112D29 1.5 ISO | 12 | .441 | 4 | 1.154 | 3.3 |
| 1.75 | M12 | | AMT 10095D25 1.75 ISO | 10 | .374 | 4 | 1.000 | 2.9 |
| 2.0 | M16 | M17 | AMT14126D35 2.0 ISO | 14 | .496 | 4 | 1.378 | 3.3 |

* Without internal coolant

ISO With internal coolant bore and cutting Chamfer

Tools for Internal thread - Metric Shanks



Thread length: 2xD

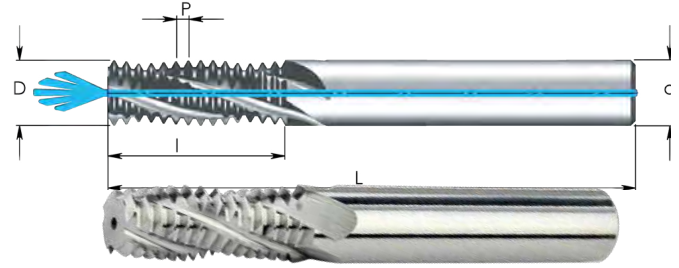
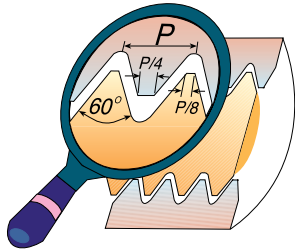
| Grade | P | M | K | N | S | H |
|-------|---|---|---|---|---|---|
| K20 | ○ | ○ | ● | ● | ● | |

| Pitch mm | M coarse | M fine | Ordering Code | d mm | D | Df | No. of Flutes | I | If | L |
|----------|----------|--------|------------------------|------|------|------|---------------|------|------|-----|
| 0.8 | M5 | | AMT 0604C10 0.8 ISO-C | 6 | .157 | .209 | 3 | .425 | .453 | 2.3 |
| 1.0 | M6 | | AMT 08048C13 1.0 ISO-C | 8 | .189 | .252 | 3 | .531 | .563 | 2.5 |
| 1.25 | M8 | M10 | AMT 10064C16 1.25ISO-C | 10 | .252 | .327 | 3 | .665 | .705 | 2.9 |
| 1.5 | M10 | | AMT 1208C21 1.5 ISO-C | 12 | .315 | .409 | 3 | .858 | .906 | 3.3 |

● First choice ○ Alternative

UN With internal coolant bore

Tools for Internal thread - Metric Shanks



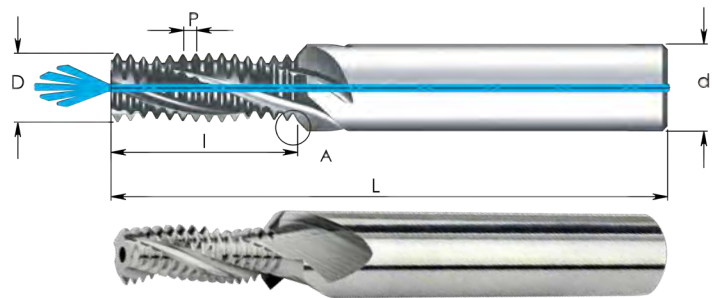
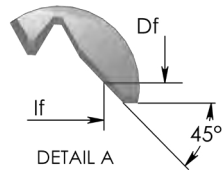
Thread length: 2xD

| Grade | P | M | K | N | S | H |
|-------|---|---|---|---|---|---|
| K20 | ○ | ○ | ● | ● | ● | |

| Pitch TPI | UNC | UNF | UNEF | Ordering Code | d mm | D | No. of Flutes | I | L |
|-----------|------|----------|---------------|---------------------------|------|------|---------------|-------|-----|
| 32 | 8 | 10 | 12 | AMT 06032C9 32 UN | 6 | .126 | 3 | .358 | 2.3 |
| 28 | | 1/4 | | AMT 06052C14 28 UN | 6 | .205 | 3 | .551 | 2.3 |
| 24 | | 3/8 | 9/16-5/8 | AMT 0808D20 24 UN | 8 | .315 | 4 | .811 | 2.5 |
| 20 | 1/4 | | | AMT 06048C14 20 UN | 6 | .189 | 3 | .575 | 2.3 |
| 20 | | 7/16 | | AMT 10092C23 20 UN | 10 | .362 | 3 | .925 | 2.9 |
| 18 | 5/16 | | | AMT 0606C17 18 UN | 6 | .236 | 3 | .693 | 2.3 |
| 18 | | 9/16-5/8 | 1 1/8 - 1 5/8 | AMT 1212D30 18 UN | 12 | .472 | 4 | 1.193 | 3.3 |
| 16 | 3/8 | | | AMT 08074C21 16 UN | 8 | .291 | 3 | .843 | 2.5 |
| 16 | | 3/4 | | AMT 1616E38 16 UN | 16 | .630 | 5 | 1.531 | 4.1 |

UN With internal coolant bore and cutting Chamfer

Tools for Internal thread



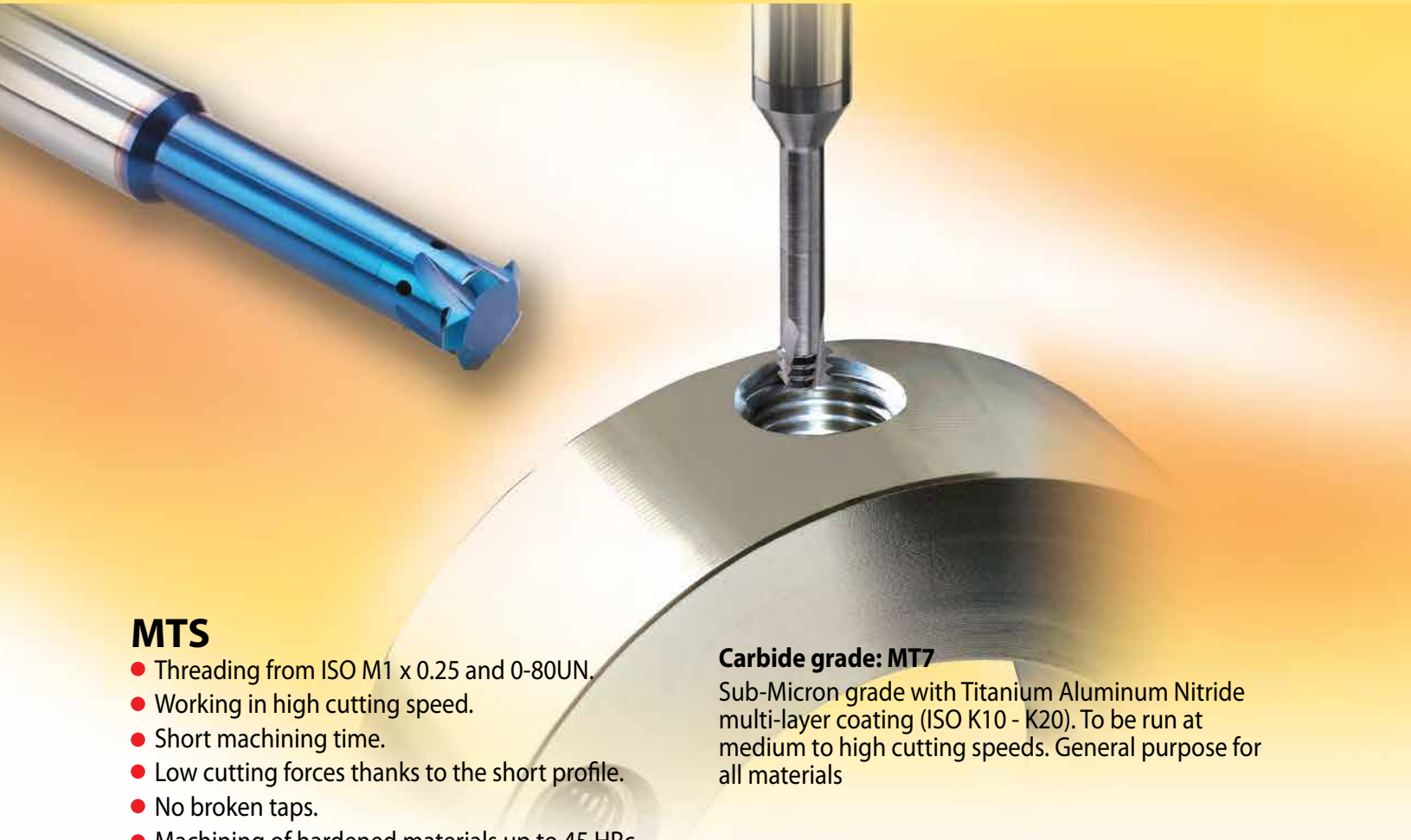
Thread length: 2xD

| Grade | P | M | K | N | S | H |
|-------|---|---|---|---|---|---|
| K20 | ○ | ○ | ● | ● | ● | |

| Pitch TPI | UNC | UNF | UNEF | Ordering Code | d mm | D | Df | No. of Flutes | I | If | L |
|-----------|------|-----|------|-----------------------------|------|------|------|---------------|------|------|-----|
| 20 | 1/4 | | | AMT 08048C14 20 UN-C | 8 | .189 | .268 | 3 | .575 | .614 | 2.5 |
| 18 | 5/16 | | | AMT 1006C17 18 UN-C | 10 | .236 | .331 | 3 | .693 | .740 | 2.9 |
| 16 | 3/8 | | | AMT 12074C21 16 UN-C | 12 | .291 | .394 | 3 | .843 | .894 | 3.3 |

● First choice ○ Alternative

Mini Mill-Thread



MTS

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

Carbide grade: MT7

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

MTI - For threading deep parts

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

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

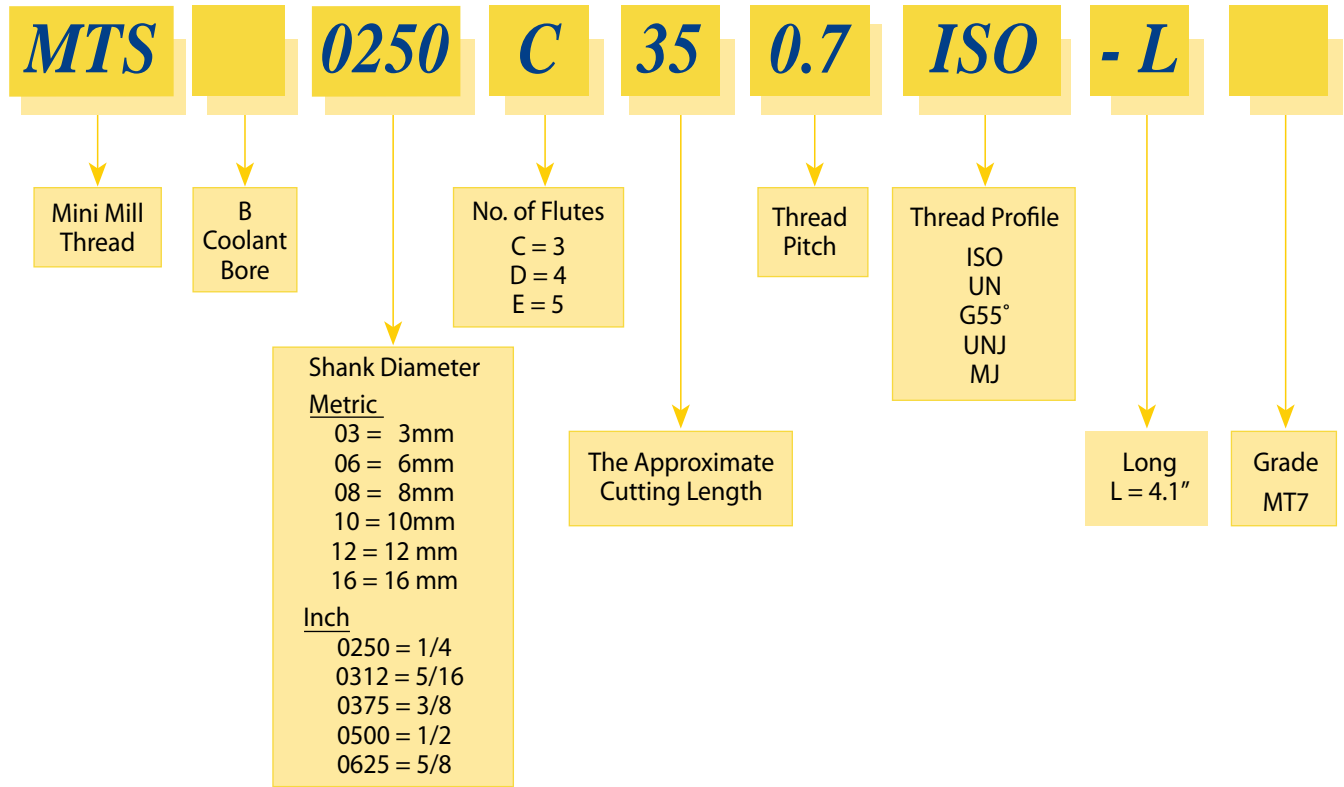
Advantages

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

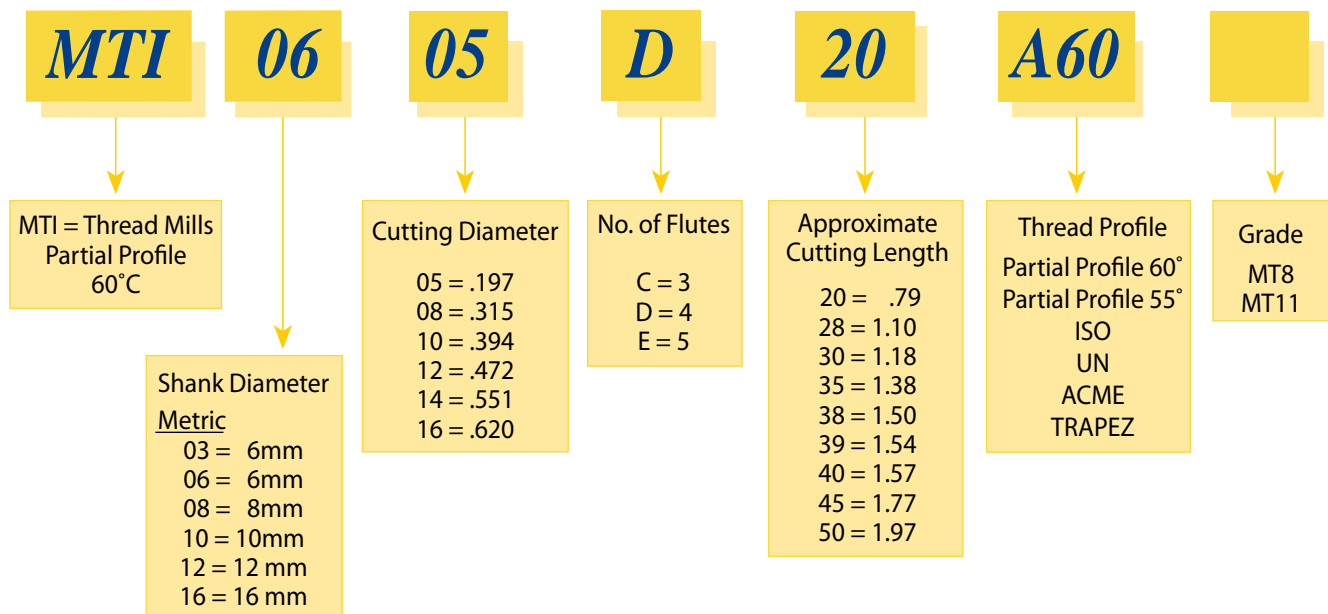
| Contents: | Page: | Contents: | Page: |
|--|---------|--|-------|
| Product Identification | 262 | UN | 271 |
| MTS | | MTI | |
| ISO | 263-264 | Partial Profile 60° | 272 |
| UN | 265-266 | Partial Profile 60° - with Internal Coolant through the flutes | 272 |
| G55° | 267 | Partial Profile 55° | 273 |
| UNJ - with Internal Coolant through the flutes | 268 | ISO | 274 |
| MJ - with Internal Coolant through the flutes | 268 | UN | 274 |
| MTSB | | Trapez | 275 |
| ISO | 270 | Acme | 276 |

Product Identification

Mini Mill-Thread MTS Ordering Codes

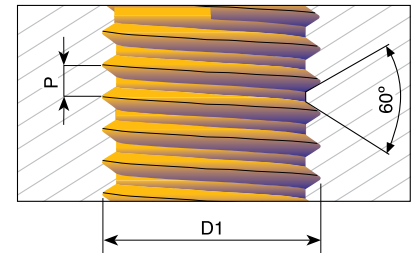
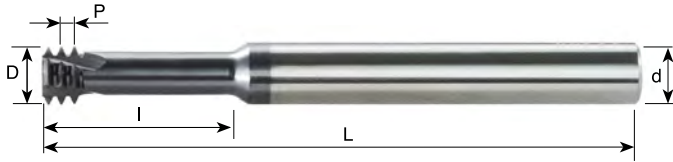


Mini Mill-Thread MTI Ordering Codes



ISO

Tools for Internal Thread

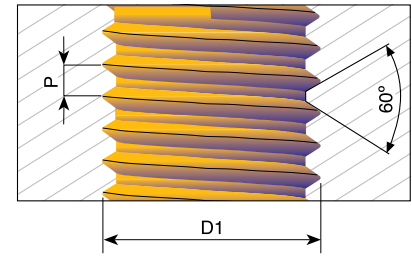


| Pitch mm | M coarse | M fine | Ordering Code | d | D | No. of Flutes | I | L | Thread depth |
|----------|----------|----------|------------------------------|---------------------------|------|---------------|-----|-----|--------------|
| 0.25 | M1 | | MTS03007C2 0.25 ISO | 3 mm | .028 | 3 | .10 | 1.5 | 2.5xD1 |
| 0.25 | M1.2 | M1.4 | MTS03009C3 0.25 ISO | 3 mm | .035 | 3 | .12 | 1.5 | 2xD1 |
| 0.3 | M1.4 | | MTS03011C4 0.3 ISO | 3 mm | .041 | 3 | .16 | 1.5 | 3xD1 |
| 0.35 | M1.6 | M2 | MTS03012C5 0.35 ISO | 3 mm | .047 | 3 | .19 | 1.5 | 3xD1 |
| | M1.6 | M2 | MTS06012C5 0.35 ISO-L | 6 mm | .047 | 3 | .19 | 4.1 | 3xD1 |
| 0.35 | | M5, M6 | MTS06045D14 0.35 ISO | 6 mm | .177 | 4 | .57 | 2.3 | 3xD1 |
| 0.4 | M2 | | MTS0250C18 0.4 ISO | 1/4 | .060 | 3 | .18 | 2.5 | 2xD1 |
| | M2 | | MTS06016C4 0.4 ISO-L | 6 mm | .060 | 3 | .18 | 4.1 | 2xD1 |
| | M2 | | MTS03016C6 0.4 ISO | 3 mm | .060 | 3 | .24 | 1.5 | 3xD1 |
| | M2 | | MTS03016C10 0.4 ISO | 3 mm | .060 | 3 | .41 | 1.5 | 5xD1 |
| 0.45 | M2.2 | | MTS0250C20 0.45 ISO | 1/4 | .065 | 3 | .20 | 2.5 | 2xD1 |
| | M2.2 | | MTS03017C7 0.45 ISO | 3 mm | .065 | 3 | .28 | 1.5 | 3xD1 |
| 0.45 | M2.5 | | MTS0250C22 0.45 ISO | 1/4 | .077 | 3 | .22 | 2.5 | 2xD1 |
| | M2.5 | | MTS0602C5 0.45 ISO-L | 6 mm | .077 | 3 | .22 | 4.1 | 2xD1 |
| | M2.5 | | MTS0250C30 0.45 ISO | 1/4 | .077 | 3 | .30 | 2.5 | 3xD1 |
| | M2.5 | | MTS0602C8 0.45 ISO-L | 6 mm | .077 | 3 | .31 | 4.1 | 3xD1 |
| | M2.5 | | MTS0302C10 0.45 ISO | 3 mm | .077 | 3 | .41 | 1.5 | 4xD1 |
| 0.5 | M3 | | MTS0250C26 0.5 ISO | 1/4 | .093 | 3 | .26 | 2.5 | 2xD1 |
| | M3 | | MTS06024C6 0.5 ISO-L | 6 mm | .093 | 3 | .26 | 4.1 | 2xD1 |
| | M3 | | MTS0250C37 0.5 ISO | 1/4 | .093 | 3 | .37 | 2.5 | 3xD1 |
| | M3 | | MTS06024C9 0.5 ISO-L | 6 mm | .093 | 3 | .37 | 4.1 | 3xD1 |
| | M3 | | MTS03024C12 0.5 ISO | 3 mm | .094 | 3 | .49 | 1.5 | 4xD1 |
| | M3 | | MTS03024C15 0.5 ISO | 3 mm | .094 | 3 | .61 | 1.5 | 5xD1 |
| | | M4, M5 | | MTS06034D8 0.5 ISO | 6 mm | .134 | 4 | .33 | 2.3 |
| | M4, M5 | | MTS06034D12 0.5 ISO | 6 mm | .134 | 4 | .49 | 2.3 | 3xD1 |
| 0.5 | | M6, M7 | MTS06054D20 0.5 ISO | 6 mm | .211 | 4 | .79 | 2.3 | 3xD1 |
| 0.6 | M3.5 | | MTS0250C30 0.6 ISO | 1/4 | .108 | 3 | .30 | 2.5 | 2xD1 |
| | M3.5 | | MTS06028C10 0.6 ISO | 6 mm | .108 | 3 | .41 | 2.3 | 3xD1 |
| 0.7 | M4 | | MTS0250C35 0.7 ISO | 1/4 | .122 | 3 | .35 | 2.5 | 2xD1 |
| | M4 | | MTS0250C49 0.7 ISO | 1/4 | .122 | 3 | .49 | 2.5 | 3xD1 |
| | M4 | | MTS06031C12 0.7 ISO-L | 6 mm | .122 | 3 | .49 | 4.1 | 3xD1 |
| | M4 | | MTS06031C16 0.7 ISO | 6 mm | .122 | 3 | .66 | 2.3 | 4xD1 |
| 0.75 | M4.5 | M5 | MTS06034C9 0.75 ISO | 6 mm | .134 | 3 | .39 | 2.3 | 2xD1 |
| | | M6 | MTS06049D12 0.75 ISO | 6 mm | .193 | 4 | .50 | 2.3 | 2xD1 |
| | | M10, M12 | MTS0808D25 0.75 ISO | 8 mm | .315 | 4 | .98 | 2.5 | 2.5xD1 |
| 0.8 | M5 | | MTS0250C49 0.8 ISO | 1/4 | .150 | 3 | .49 | 2.5 | 2xD1 |
| | M5 | | MTS0250C63 0.8 ISO | 1/4 | .150 | 3 | .63 | 2.5 | 3xD1 |
| | M5 | | MTS06038C16 0.8 ISO-L | 6 mm | .150 | 3 | .63 | 4.1 | 3xD1 |
| | M5 | | MTS0604C20 0.8 ISO | 6 mm | .157 | 3 | .82 | 2.3 | 4xD1 |

Order example: MTS 0250 C26 0.5 ISO MT7

ISO

Tools for Internal Thread



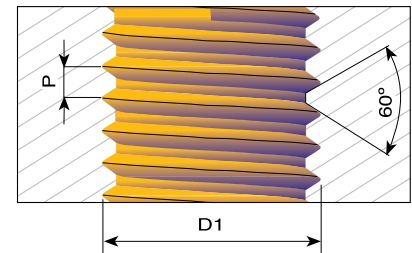
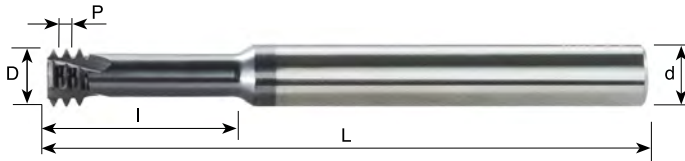
| Pitch mm | M coarse | M fine | Ordering Code | d | D | No. of Flutes | I | L | Thread depth |
|----------|----------|----------|---------------------------------------|------|------|---------------|------|-----|--------------|
| 1.0 | M6 | M8 | MTS0250C55 1.0 ISO | 1/4 | .183 | 3 | .55 | 2.5 | 2xD1 |
| | M6 | M8 | MTS0250C79 1.0 ISO | 1/4 | .183 | 3 | .79 | 2.5 | 3xD1 |
| | M6 | M8 | MTS06047C20 1.0 ISO-L | 6 mm | .183 | 3 | .79 | 4.1 | 3xD1 |
| | M6 | M8 | MTS06048C25 1.0 ISO | 6 mm | .189 | 3 | .98 | 2.3 | 4xD1 |
| 1.0 | | M10, M12 | MTS0808D31 1.0 ISO | 8 mm | .315 | 4 | 1.22 | 2.5 | 3xD1 |
| 1.25 | M8 | M10, M12 | MTS0250C71 1.25 ISO | 1/4 | .236 | 3 | .71 | 2.5 | 2xD1 |
| | M8 | M10, M12 | MTS0250C94 1.25 ISO | 1/4 | .236 | 3 | .94 | 2.5 | 3xD1 |
| | M8 | M10, M12 | MTS0606C24 1.25 ISO-L | 6 mm | .236 | 3 | .94 | 4.1 | 3xD1 |
| | M8 | M10, M12 | MTS08064C33 1.25 ISO | 8 mm | .252 | 3 | 1.32 | 2.5 | 4xD1 |
| 1.5 | M10 | M14, M16 | MTS0312C91 1.5 ISO | 5/16 | .307 | 3 | .91 | 2.5 | 2xD1 |
| | M10 | M14, M16 | MTS08078C31 1.5 ISO | 8 mm | .307 | 3 | 1.24 | 2.5 | 3xD1 |
| | M10 | M14, M16 | MTS08078C31 1.5 ISO-L | 8 mm | .307 | 3 | 1.24 | 4.1 | 3xD1 |
| | M10 | M14, M16 | MTS0808C41 1.5 ISO | 8 mm | .315 | 3 | 1.63 | 3.1 | 4xD1 |

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

Order example: [MTS 03024C12](#) 0.5 ISO MT7

UN

Tools for Internal Thread

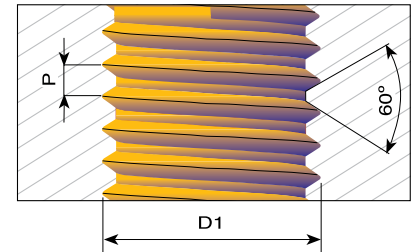


| Pitch TPI | UNC | UNF | Ordering Code | d | D | No. of Flutes | l | L | Thread depth |
|--------------|-----|-----|----------------------------|------|------|------------------|-----|-----|-----------------|
| 80 | | 0 | MTS0250C16 80 UN | 1/4 | .045 | 3 | .16 | 2.5 | 3xD1 |
| | | 0 | MTS03012C8 80 UN | 3 mm | .045 | 3 | .31 | 1.5 | 5xD1 |
| 72 | | 1 | MTS0250C15 72 UN | 1/4 | .057 | 3 | .15 | 2.5 | 2xD1 |
| | | 1 | MTS03015C6 72 UN | 3 mm | .057 | 3 | .24 | 1.5 | 3xD1 |
| 64 | 1 | 2 | MTS0250C15 64 UN | 1/4 | .055 | 3 | .15 | 2.5 | 2xD1 |
| 56 | 2 | 3 | MTS03016C4 56 UN | 3 mm | .065 | 3 | .17 | 1.5 | 2xD1 |
| | 2 | 3 | MTS0250C17 56 UN | 1/4 | .065 | 3 | .17 | 2.5 | 2xD1 |
| | 2 | 3 | MTS03016C6 56 UN | 3 mm | .065 | 3 | .26 | 1.5 | 3xD1 |
| | 2 | 3 | MTS0250C26 56 UN | 1/4 | .065 | 3 | .26 | 2.5 | 3xD1 |
| | 2 | 3 | MTS06016C6 56 UN-L | 6 mm | .065 | 3 | .26 | 4.1 | 3xD1 |
| | 2 | 3 | MTS03016C9 56 UN | 3 mm | .065 | 3 | .36 | 1.5 | 4xD1 |
| | 2 | 3 | MTS03016C11 56 UN | 3 mm | .065 | 3 | .45 | 1.5 | 5xD1 |
| 48 | 3 | 4 | MTS0250C20 48 UN | 1/4 | .075 | 3 | .20 | 2.5 | 2xD1 |
| 40 | 4 | | MTS0250C25 40 UN | 1/4 | .083 | 3 | .25 | 2.5 | 2xD1 |
| | 4 | | MTS06021C6 40 UN-L | 6 mm | .083 | 3 | .25 | 4.1 | 2xD1 |
| | 4 | | MTS03021C8 40 UN | 3 mm | .083 | 3 | .31 | 1.5 | 3xD1 |
| | 4 | | MTS0250C31 40 UN | 1/4 | .083 | 3 | .31 | 2.5 | 3xD1 |
| | 4 | | MTS06021C8 40 UN-L | 6 mm | .083 | 3 | .31 | 4.1 | 3xD1 |
| | 4 | | MTS03021C12 40 UN | 3 mm | .083 | 3 | .47 | 1.5 | 4xD1 |
| 40 | 5 | 6 | MTS0250C28 40 UN | 1/4 | .096 | 3 | .28 | 2.5 | 2xD1 |
| | 5 | 6 | MTS0250C38 40 UN | 1/4 | .096 | 3 | .38 | 2.5 | 3xD1 |
| 36 | | 8 | MTS0250C35 36 UN | 1/4 | .130 | 3 | .35 | 2.5 | 2xD1 |
| 32 | 6 | | MTS0250C28 32 UN | 1/4 | .100 | 3 | .28 | 2.5 | 2xD1 |
| | 6 | | MTS06025C7 32 UN-L | 6 mm | .100 | 3 | .28 | 4.1 | 2xD1 |
| | 6 | | MTS03025C10 32 UN | 3 mm | .100 | 3 | .41 | 1.5 | 3xD1 |
| | 6 | | MTS0250C40 32 UN | 1/4 | .100 | 3 | .41 | 2.5 | 3xD1 |
| | 6 | | MTS06025C10 32 UN-L | 6 mm | .100 | 3 | .41 | 4.1 | 3xD1 |
| | 6 | | MTS03025C14 32 UN | 3 mm | .100 | 3 | .58 | 1.5 | 4xD1 |
| 32 | 8 | | MTS0250C37 32 UN | 1/4 | .126 | 3 | .37 | 2.5 | 2xD1 |
| | 8 | | MTS06032C9 32 UN-L | 6 mm | .126 | 3 | .37 | 4.1 | 2xD1 |
| | 8 | | MTS0250C49 32 UN | 1/4 | .126 | 3 | .49 | 2.5 | 3xD1 |
| | 8 | | MTS06032C12 32 UN-L | 6 mm | .126 | 3 | .49 | 4.1 | 3xD1 |
| | 8 | | MTS06032C17 32 UN | 6 mm | .126 | 3 | .69 | 2.3 | 4xD1 |
| 32 | | 10 | MTS0250C41 32 UN | 1/4 | .146 | 3 | .41 | 2.5 | 2xD1 |
| | | 10 | MTS0250C59 32 UN | 1/4 | .146 | 3 | .59 | 2.5 | 3xD1 |
| | | 10 | MTS06037C15 32 UN-L | 6 | .146 | 3 | .59 | 4.1 | 3xD1 |
| | | 10 | MTS06037C20 32 UN | 6 | .146 | 3 | .79 | 2.3 | 4xD1 |

Order example: MTS 0250C28 40 UN MT7

UN

Tools for Internal Thread



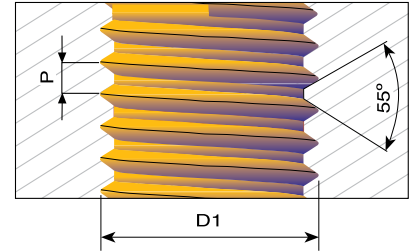
| Pitch TPI | UNC | UNF | Ordering Code | d | D | No. of Flutes | l | L | Thread depth |
|--------------|--------|-----------|----------------------------|-------|------|------------------|------|-----|-----------------|
| 28 | | 12 | MTS0250C43 28 UN | 1/4 | .165 | 3 | .43 | 2.5 | 2xD1 |
| 28 | | 1/4 | MTS0250C57 28 UN | 1/4 | .197 | 3 | .57 | 2.5 | 2xD1 |
| | | 1/4 | MTS0250C75 28 UN | 1/4 | .197 | 3 | .75 | 2.5 | 3xD1 |
| | | 1/4 | MTS0605C19 28 UN-L | 6 mm | .197 | 3 | .75 | 4.1 | 3xD1 |
| | | 1/4 | | | | | | | |
| 24 | 10, 12 | | MTS0250C42 24 UN | 1/4 | .138 | 3 | .42 | 2.5 | 2xD1 |
| | 10, 12 | | MTS06035C15 24 UN | 6 mm | .138 | 3 | .61 | 2.3 | 3xD1 |
| 24 | | 5/16, 3/8 | MTS0312C67 24 UN | 5/16 | .260 | 3 | .67 | 2.5 | 2xD1 |
| | | 5/16, 3/8 | MTS0312C94 24 UN | 5/16 | .260 | 3 | .94 | 2.5 | 3xD1 |
| 20 | 1/4 | | MTS0250C55 20 UN | 1/4 | .187 | 3 | .55 | 2.5 | 2xD1 |
| | 1/4 | | MTS06047C14 20 UN-L | 6 mm | .187 | 3 | .55 | 4.1 | 2xD1 |
| | 1/4 | | MTS0250C75 20 UN | 1/4 | .187 | 3 | .75 | 2.5 | 3xD1 |
| | 1/4 | | MTS06047C19 20 UN-L | 6 mm | .187 | 3 | .75 | 4.1 | 3xD1 |
| 20 | | 7/16 | MTS0312C98 20 UN | 5/16 | .312 | 3 | .98 | 2.5 | 2xD1 |
| | | 7/16 | MTS0808C34 20 UN | 8 mm | .315 | 3 | 1.36 | 2.5 | 3xD1 |
| 18 | 5/16 | | MTS0250C67 18 UN | 1/4 | .236 | 3 | .67 | 2.5 | 2xD1 |
| | 5/16 | | MTS0250C91 18 UN | 1/4 | .236 | 3 | .91 | 2.5 | 3xD1 |
| 18 | | 5/8 | MTS0500D14 18 UN | 1/2 | .500 | 4 | 1.38 | 3.5 | 2xD1 |
| | | 5/8 | MTS1212D49 18 UN | 12 mm | .472 | 4 | 1.93 | 4.1 | 3xD1 |
| 16 | 3/8 | | MTS0312C87 16 UN | 5/16 | .264 | 3 | .87 | 2.5 | 2xD1 |
| | 3/8 | | MTS08067C30 16 UN | 8 mm | .264 | 3 | 1.19 | 2.5 | 3xD1 |
| 14 | 7/16 | | MTS0312C98 14 UN | 5/16 | .303 | 3 | .98 | 2.5 | 2xD1 |
| | 7/16 | | MTS08077C35 14 UN | 8 mm | .303 | 3 | 1.39 | 2.5 | 3xD1 |
| 13 | 1/2 | | MTS0375C10 13 UN | 3/8 | .362 | 3 | 1.08 | 3.0 | 2xD1 |
| | 1/2 | | MTS10092C40 13 UN | 10 mm | .362 | 3 | 1.58 | 2.9 | 3xD1 |
| 12 | 9/16 | | MTS0500C12 12 UN | 1/2 | .413 | 3 | 1.24 | 3.5 | 2xD1 |
| | 9/16 | | MTS12105C45 12 UN | 12 mm | .413 | 3 | 1.77 | 4.1 | 3xD1 |
| 11 | 5/8 | | MTS0500C13 11 UN | 1/2 | .449 | 3 | 1.36 | 3.5 | 2xD1 |
| | 5/8 | | MTS12114C50 11 UN | 12 mm | .449 | 3 | 1.97 | 4.1 | 3xD1 |
| 10 | 3/4 | | MTS16144D41 10 UN | 5/8 | .567 | 4 | 1.63 | 4.0 | 2xD1 |
| | 3/4 | | MTS16144D59 10 UN | 16 mm | .567 | 4 | 2.35 | 4.1 | 3xD1 |

Order example: MTS 0250C26 56UN MT7

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

G 55° BSW, BSP

Same Tool for Internal and External Thread - Metric Shanks



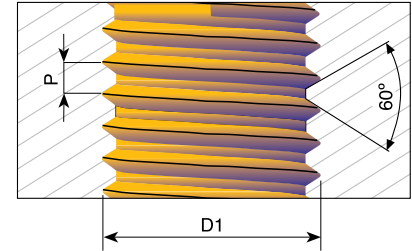
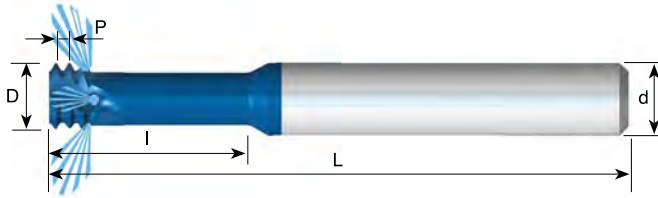
For thread depth up to 2 x D1

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

Order example: MTS 1212D37 14 W MT7

UNJ With internal coolant through the flutes

Tools for Internal Thread - Metric Shanks



For thread depth up to 2.5 x D1

| Pitch TPI | UNJC | UNJF | Ordering Code | d mm | D | No. of Flutes | l | L |
|-----------|------|-----------|---------------------------|------|------|---------------|------|-----|
| * 32 | 6 | | MTS06025C7 32 UNJ | 6 | .100 | 3 | .28 | 2.3 |
| * 32 | 8 | 10 | MTS06033C10 32 UNJ | 6 | .130 | 3 | .41 | 2.3 |
| 28 | | 1/4 | MTS08051C16 28 UNJ | 8 | .201 | 3 | .63 | 2.5 |
| 24 | | 5/16, 3/8 | MTS08067C20 24 UNJ | 8 | .264 | 3 | .79 | 2.5 |
| * 20 | 1/4 | | MTS06049C16 20 UNJ | 6 | .193 | 3 | .63 | 2.3 |
| 20 | | 7/16 | MTS0808C28 20 UNJ | 8 | .315 | 3 | 1.10 | 2.5 |
| 18 | 5/16 | | MTS08061C20 18 UNJ | 8 | .242 | 3 | .79 | 2.5 |
| 16 | 3/8 | | MTS08069C24 16 UNJ | 8 | .272 | 3 | .94 | 2.5 |
| 14 | 7/16 | | MTS08079C25 14 UNJ | 8 | .311 | 3 | .98 | 2.5 |
| 13 | 1/2 | | MTS10094C27 13 UNJ | 10 | .370 | 3 | 1.08 | 2.9 |

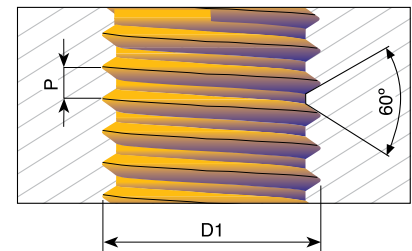
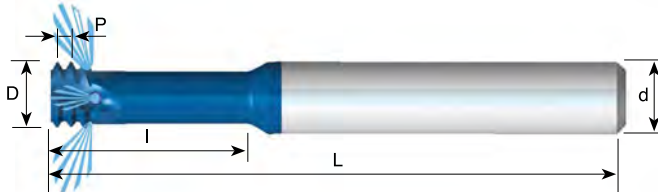
* Cutters without coolant

Order example: MTS 06049C16 20 UNJ MT8

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

MJ With internal coolant through the flutes

Tools for Internal Thread - Metric Shanks



For thread depth up to 2.5 x D1

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

* Cutters without coolant

Order example: MTS 06048C15 1.0 MJ MT8

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

MTSB

Carmex has developed new innovative solid carbide thread milling cutters **MTSB** with internal coolant **Bore**.

The coolant bores provides high coolant pressure through the tool into the application pre-hole, and wash the chips away.

High pressure coolant extends tool life.

The coolant liquid cools the tool cutting edge efficiently.

Excellent solution for:



- Small and deep threads.
- Thread milling operation 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, when external coolant is inefficient, or can't reach the machined area.
- In cases where the tool collet is close to the application pre-hole, and blocks the external coolant.

Can be also used on any other thread milling operation (blind or through hole) requiring improved performance with highest thread quality.

Features:

- Increased number of flutes for high performance, shorter cycle time and improved tool life.
- Works at high machining parameters (increased productivity).
- Advanced PVD triple coating.
- Threads size: M1.2 up to M8
0-80 up to 12-24UNC

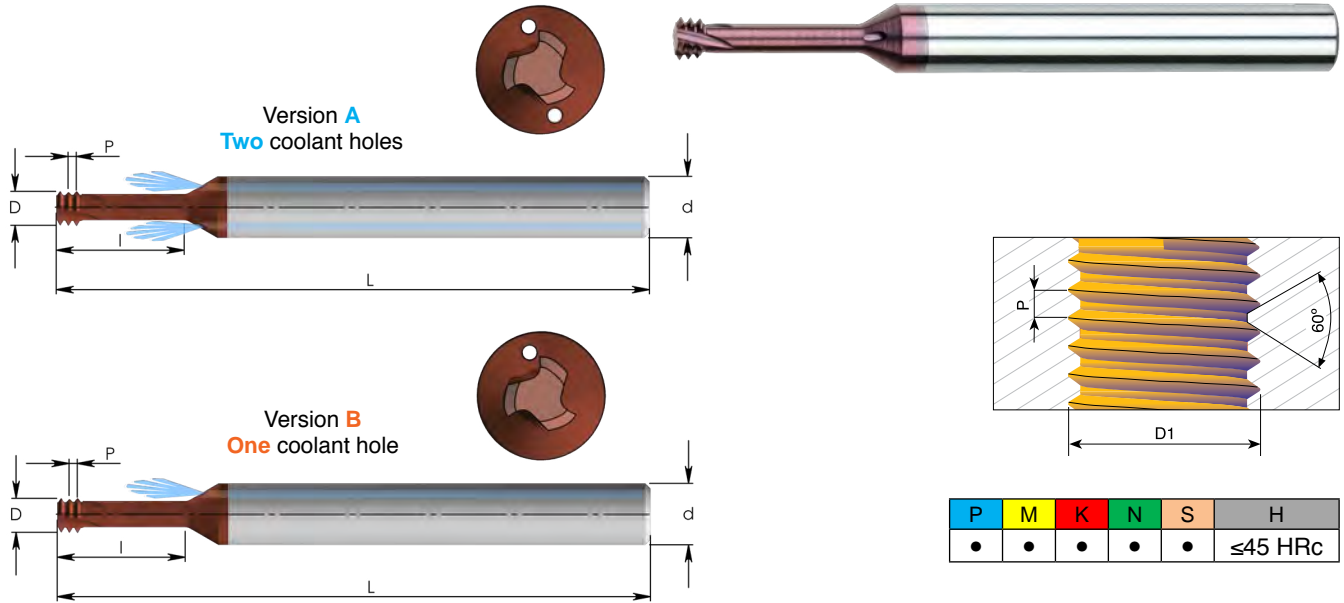
Carbide grade: MT7

Sub-Micron grade with advance PVD triple coating.

Extremely high heat resistance and smooth cutting operation, for high performance and normal machining conditions.

ISO

Tools for Internal Thread

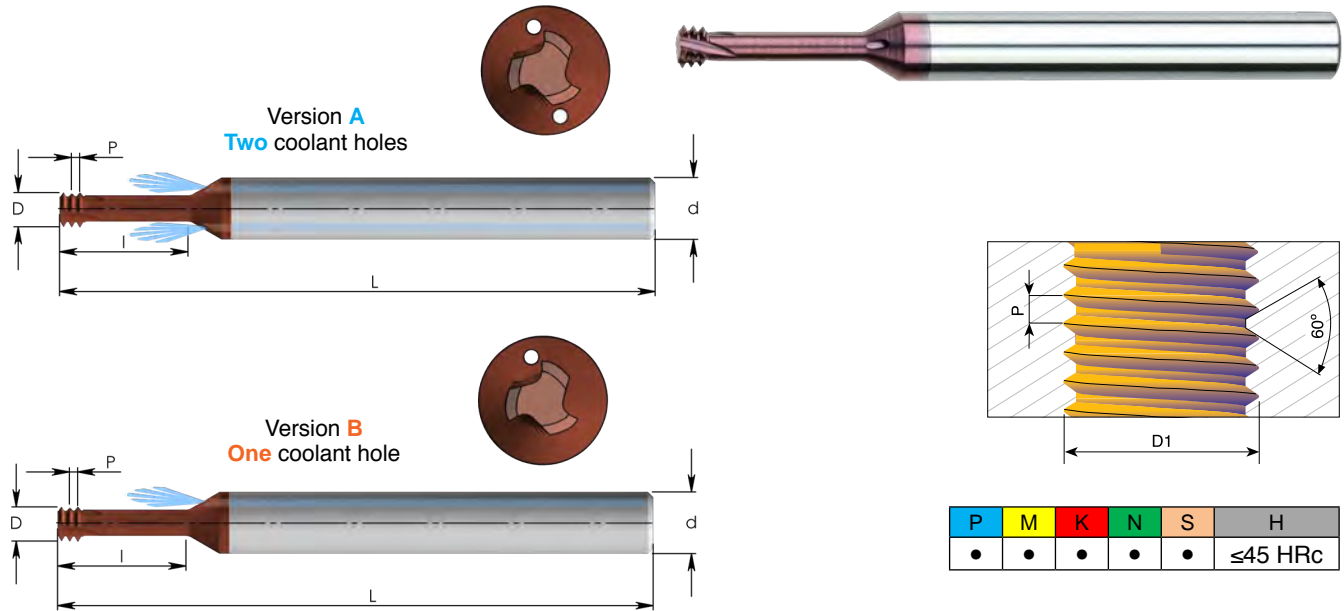


| Pitch mm | M coarse | M Fine | Ordering Code | d mm | D | No. of Flutes | I | L | Thread depth | Version |
|----------|----------|--------|-------------------------------|------|------|---------------|-----|-----|--------------|---------|
| 0.25 | M1.2 | M1.4 | MTSB 06009 C2 0.25 ISO | 6 | .035 | 3 | .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 |

Order example: MTSB 06012 C5 0.35 ISO MT7

UN

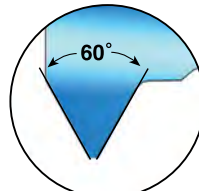
Tools for Internal Thread



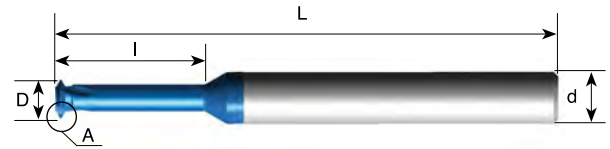
| Pitch TPI | UNC | UNF | Ordering Code | d mm | D | No. of Flutes | I | L | Thread depth | Version |
|--------------|--------|-----|-----------------------------|---------|------|------------------|-----|-----|-----------------|---------|
| 80 | | 0 | MTSB 06012 C4 80 UN | 6 | .045 | 3 | .19 | 2.3 | 3xD1 | A |
| 72 | | 1 | MTSB 06014 C5 72 UN | 6 | .057 | 3 | .23 | 2.3 | 3xD1 | A |
| 56 | 2 | 3 | MTSB 06016 C4 56 UN | 6 | .065 | 3 | .19 | 2.3 | 2xD1 | A |
| 56 | 2 | 3 | MTSB 06016 C7 56 UN | 6 | .065 | 3 | .28 | 2.3 | 3xD1 | A |
| 48 | 3 | 4 | MTSB 06019 D5 48 UN | 6 | .075 | 4 | .22 | 2.3 | 2xD1 | A |
| 40 | 4 | | MTSB 06021 D6 40 UN | 6 | .083 | 4 | .25 | 2.3 | 2xD1 | A |
| 40 | 4 | | MTSB 06021 D9 40 UN | 6 | .083 | 4 | .36 | 2.3 | 3xD1 | A |
| 40 | 4 | | MTSB 06021 D12 40 UN | 6 | .083 | 4 | .47 | 2.3 | 4xD1 | A |
| 40 | 5 | 6 | MTSB 06024 D7 40 UN | 6 | .096 | 4 | .28 | 2.3 | 2xD1 | A |
| 32 | 6 | | MTSB 06025 D7 32 UN | 6 | .100 | 4 | .31 | 2.3 | 2xD1 | A |
| 32 | 6 | | MTSB 06025 D11 32 UN | 6 | .100 | 4 | .44 | 2.3 | 3xD1 | A |
| 32 | 8 | | MTSB 06032 D9 32 UN | 6 | .126 | 4 | .36 | 2.3 | 2xD1 | B |
| 32 | 8 | | MTSB 06032 D13 32 UN | 6 | .126 | 4 | .52 | 2.3 | 3xD1 | B |
| 32 | | 10 | MTSB 06037 D10 32 UN | 6 | .146 | 4 | .41 | 2.3 | 2xD1 | B |
| 32 | | 10 | MTSB 06037 D15 32 UN | 6 | .146 | 4 | .60 | 2.3 | 3xD1 | B |
| 24 | 10, 12 | | MTSB 06035 D10 24 UN | 6 | .138 | 4 | .42 | 2.3 | 2xD1 | B |
| 24 | 10, 12 | | MTSB 06035 D15 24 UN | 6 | .138 | 4 | .61 | 2.3 | 3xD1 | B |

Order example: MTSB 06016 C4 56 UN MT7

Partial Profile 60° Same Tool for Internal and External Thread Metric Shanks



Detail A

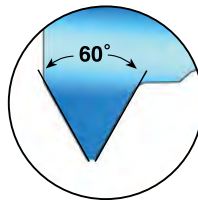


| Pitch mm | Pitch TPI | Ordering Code | M Coarse | M Fine | UN, UNC, UNS UNF, UNEF | d mm | D | No. of Flutes | I | L |
|-----------|-----------|-----------------------|-------------------------|---|---|------|------|---------------|-----|-----|
| 0.25-0.35 | 100-72 | MTI03012C3 A60 | M1.6 x 0.35 |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

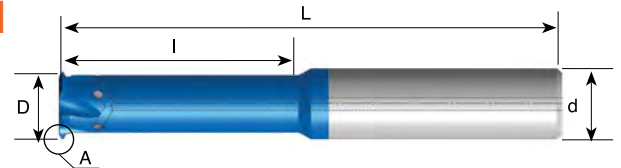
Order example: MTI 03024C7 A60 MT11

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

Partial Profile 60° With internal coolant through the flutes Same Tool for Internal and External Thread Metric Shanks



Detail A



For threading deep parts

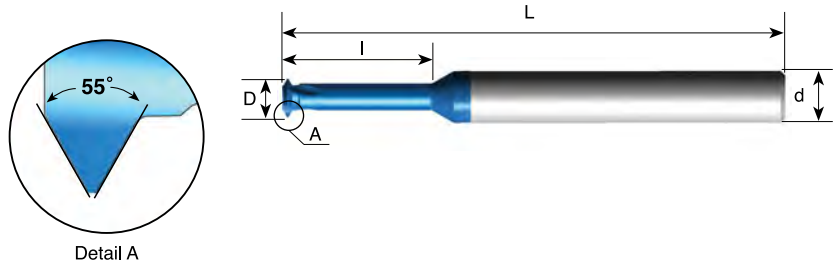
| Pitch mm | Pitch TPI | Thread Dia. (mm) | Ordering Code | d mm | D | No. of Flutes | I | L |
|----------------------------------|----------------|------------------|-----------------------|------|------|---------------|------|-----|
| Int. 0.5 - 0.8 Ex. 0.4 - 0.8 | 56-28 64-32 | ø ≥ 6 | MTI0605D20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

Order example: MTI 0808D28 A60 MT8

Carbide grade: **MT8** With triple Blue coating

Partial Profile 55°

Same Tool for Internal and External Thread - Metric Shanks



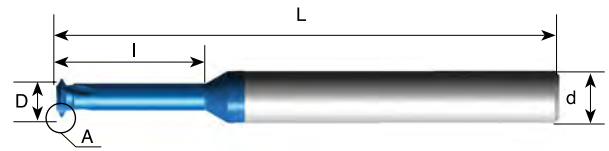
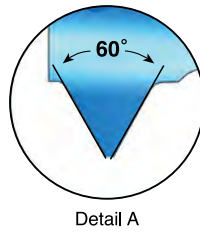
| Pitch TPI | Ordering Code | d mm | D | No. of Flutes | l | L |
|--------------|------------------------|---------|------|------------------|-----|-----|
| 40-32 | MTI03023C7 A55 | 3 | .089 | 3 | .28 | 1.5 |
| 28-20 | MTI06044C14 A55 | 6 | .171 | 3 | .55 | 2.3 |
| 28-18 | MTI06059C20 A55 | 6 | .230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

Order example: MTI 06044C14A55 MT11

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

ISO

Tools for Internal Thread Metric Shanks



For thread depth up to 3.5 x D1

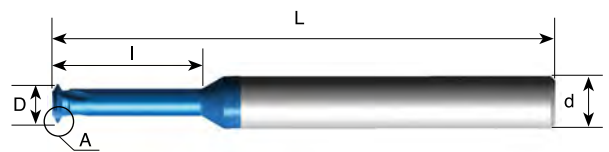
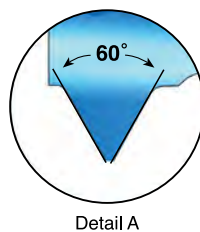
| Pitch mm | M Coarse | M Fine | Ordering Code | d mm | D | No. of Flutes | l | L |
|----------|-------------|----------------------------|----------------------------|------|------|---------------|-----|-----|
| 0.25 | M1 x 0.25 | | MTI03007C3 0.25 ISO | 3 | .028 | 3 | .14 | 1.5 |
| 0.25 | M1.2 x 0.25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

Order example: MTI 03012C6 0.35 ISO MT11

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

UN

Tools for Internal Thread Metric Shanks



For thread depth up to 3.5 x D1

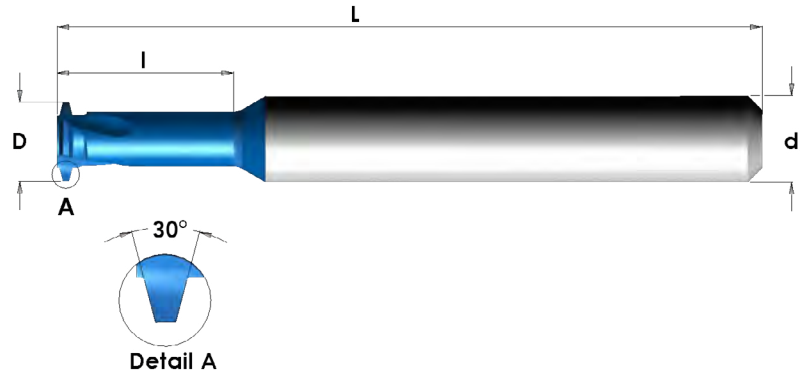
| Pitch TPI | UNC | UNF | Ordering Code | d mm | D | No. of Flutes | l | L |
|-----------|-----|-----|--------------------------|------|------|---------------|-----|-----|
| 80 | | 0 | MTI03012C5 80 UN | 3 | .045 | 3 | .22 | 1.5 |
| 72 | | 1 | MTI03015C7 72 UN | 3 | .057 | 3 | .26 | 1.5 |
| 56 | 2 |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

Order example: MTI 03016C9 56 UN MT11

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

Trapez-DIN 103

Tools for Internal Thread



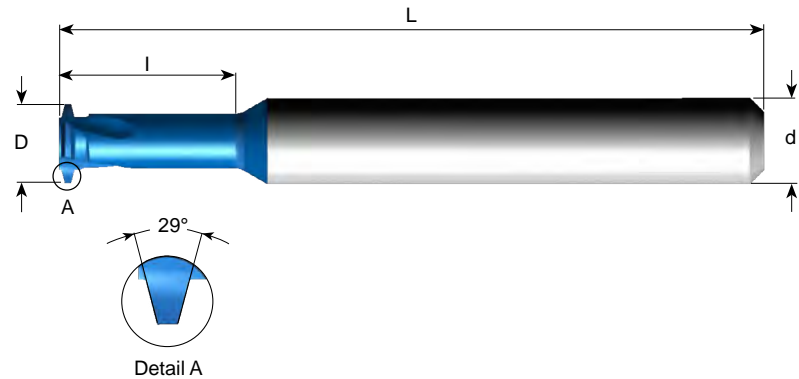
For thread depth up to 2 x D1

| Pitch mm | Thread size | Ordering Code | d mm | D | No. of Flutes | I | L |
|----------|----------------------------|---------------------------|------|------|---------------|------|-----|
| 1.5 | Tr8x1.5 Tr9x1.5 | MTI06055C13 1.5 TR | 6 | .217 | 3 | .53 | 2.3 |
| 2 | Tr10x2 Tr11x2 | MTI08066C21 2 TR | 8 | .260 | 3 | .83 | 2.5 |
| 2 | Tr12x2 Tr14x2 | MTI10086D25 2 TR | 10 | .339 | 4 | .98 | 2.9 |
| 3 | Tr12x3 | MTI0807C25 3 TR | 8 | .276 | 3 | .98 | 2.5 |
| 3 | Tr14x3 Tr22x3 | MTI10089D29 3 TR | 10 | .350 | 4 | 1.14 | 2.9 |
| 4 | Tr16x4 Tr18x4 Tr20x4 | MTI10092C33 4 TR | 10 | .362 | 3 | 1.30 | 2.9 |
| 5 | Tr22x5 Tr24x5 Tr26x5 | MTI14135D45 5 TR | 14 | .531 | 4 | 1.77 | 4.1 |

Order example: MTI 08066C21 2TR MT8

Acme

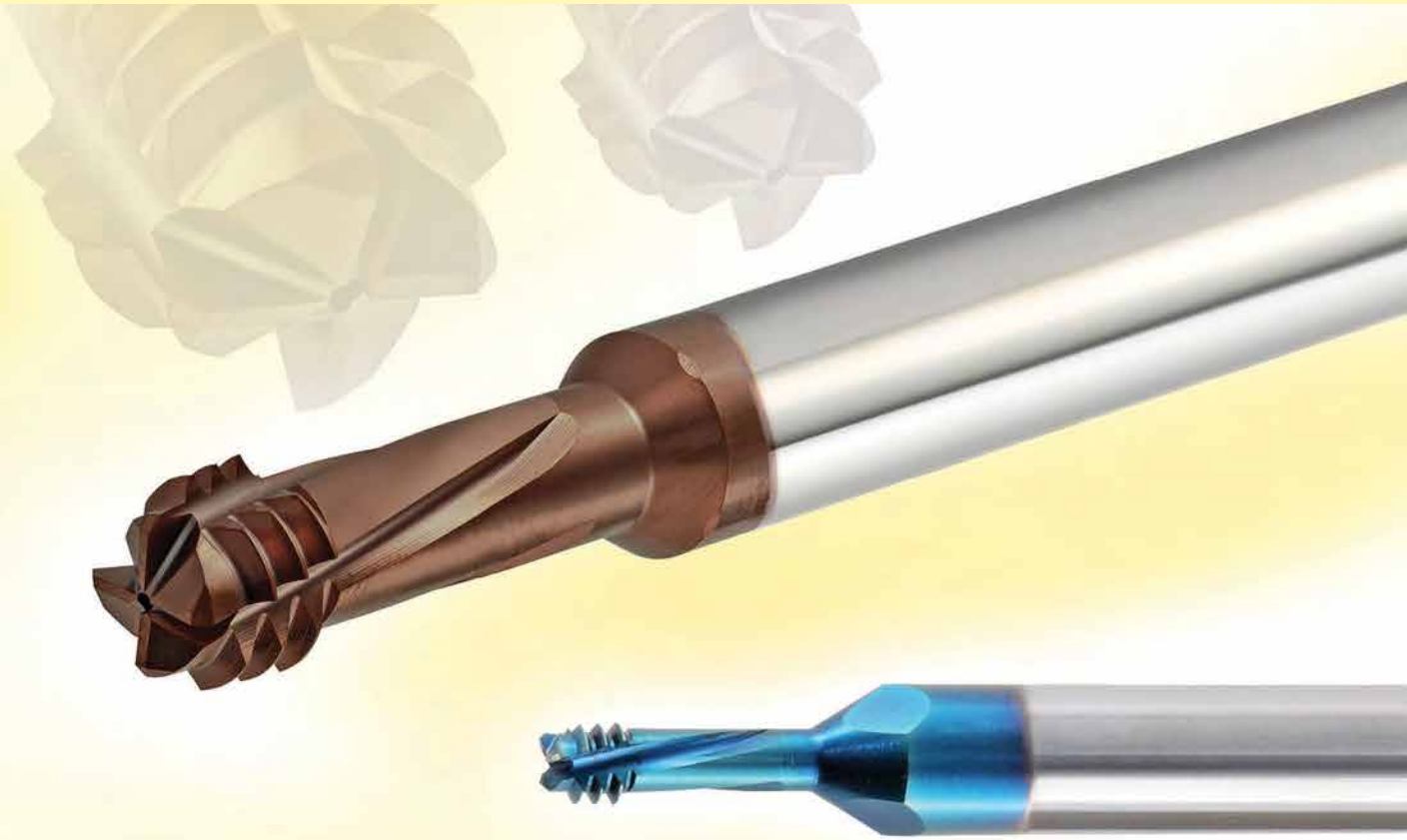
Tools for Internal Thread



| Pitch TPI | Thread size | Ordering Code | d | D | No. of Flutes | I | L |
|-----------|---------------------------|---------------------------|-----|------|---------------|------|-----|
| 16 | 1/4-16 | MTI0250C04 16 ACME | 1/4 | .170 | 3 | .38 | 2.5 |
| 14 | 5/16-14 | MTI0250C06 14 ACME | 1/4 | .205 | 3 | .60 | 2.5 |
| 12 | 3/8-12 7/16-12 | MTI0250C08 12 ACME | 1/4 | .240 | 3 | .75 | 2.5 |
| 10 | 1/2-10 | MTI0375D10 10 ACME | 3/8 | .327 | 4 | 1.00 | 3.0 |
| 8 | 5/8-8 | MTI0500D11 8 ACME | 1/2 | .410 | 4 | 1.10 | 3.5 |
| 6 | 3/4-6 7/8-6 | MTI0500D12 6 ACME | 1/2 | .472 | 4 | 1.20 | 3.5 |
| 5 | 1-5 1 1/8-5 1 1/4-5 | MTI 0625E15 5 ACME | 5/8 | .625 | 5 | 1.50 | 4.0 |

Order example: MTI 0375D10 10ACME MT8

DMT 3 in 1 - *Drill, Thread, Chamfer



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

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

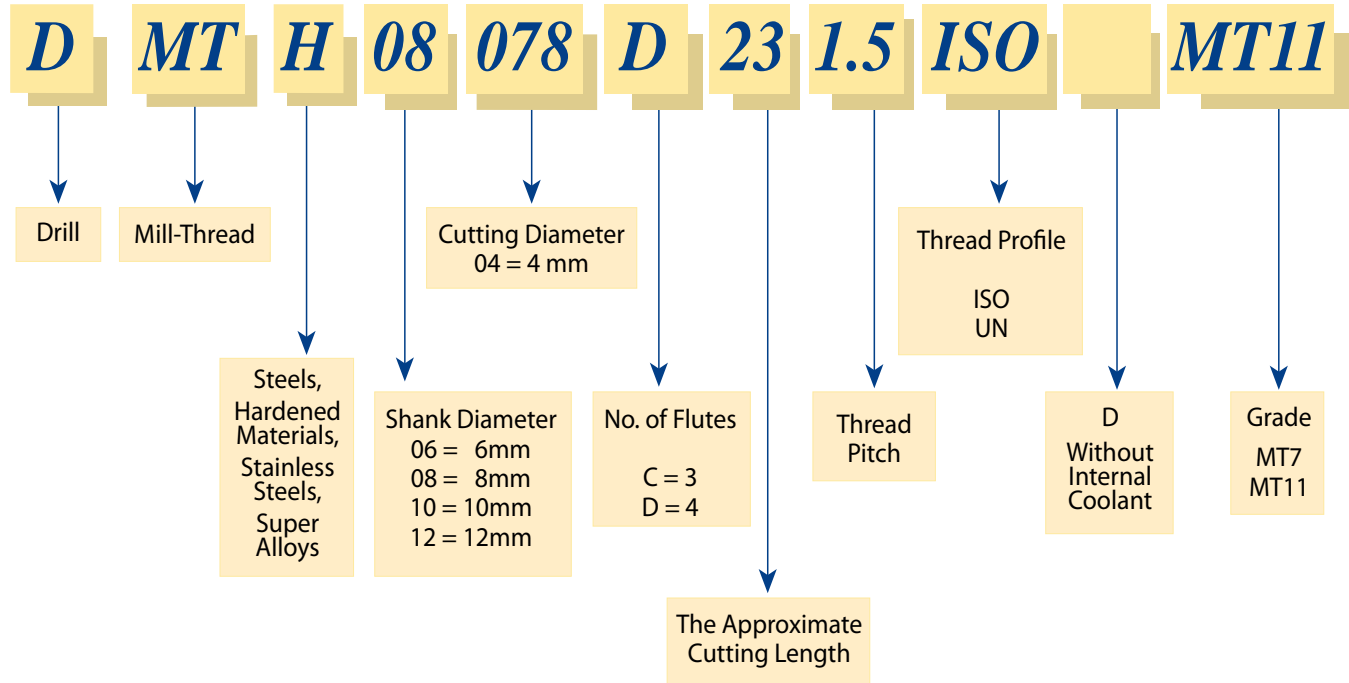
Advantages of DMT

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

| Contents: | Page: | Contents: | Page: |
|------------------------|-------|-------------|-------|
| Product Identification | 278 | DMTH | |
| ISO | 279 | ISO | 281 |
| UN | 280 | UN | 282 |

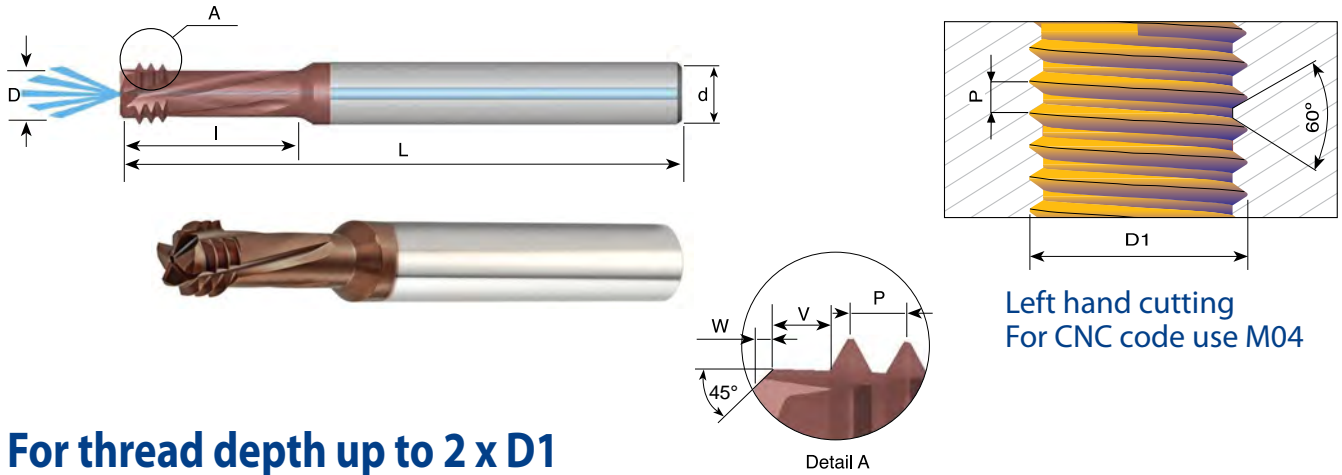
Product Identification

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



ISO internal coolant bore

Tools for Internal Thread - Metric Shanks



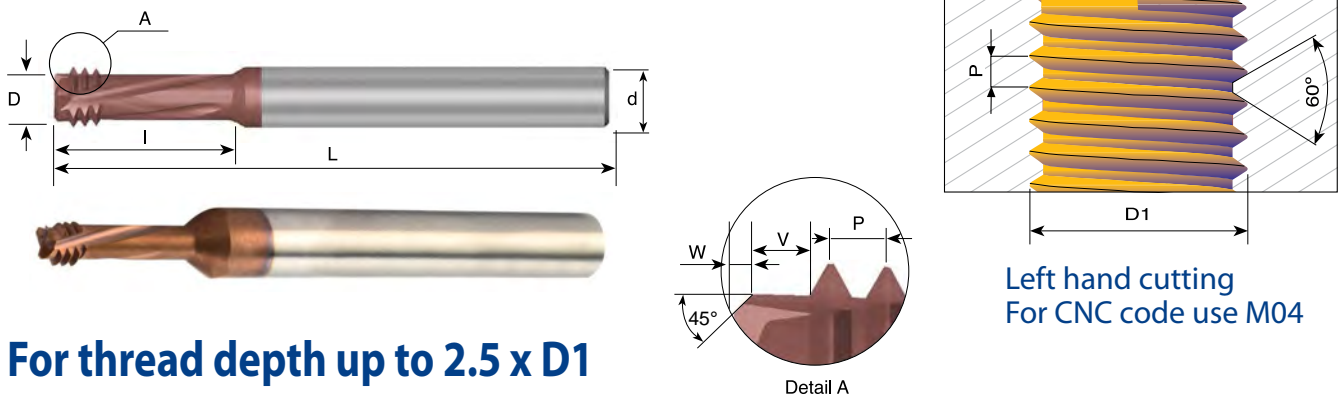
For thread depth up to 2 x D1

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

Order example: DMT 08047C14 1.0 ISO MT7

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

ISO without internal coolant Metric Shanks



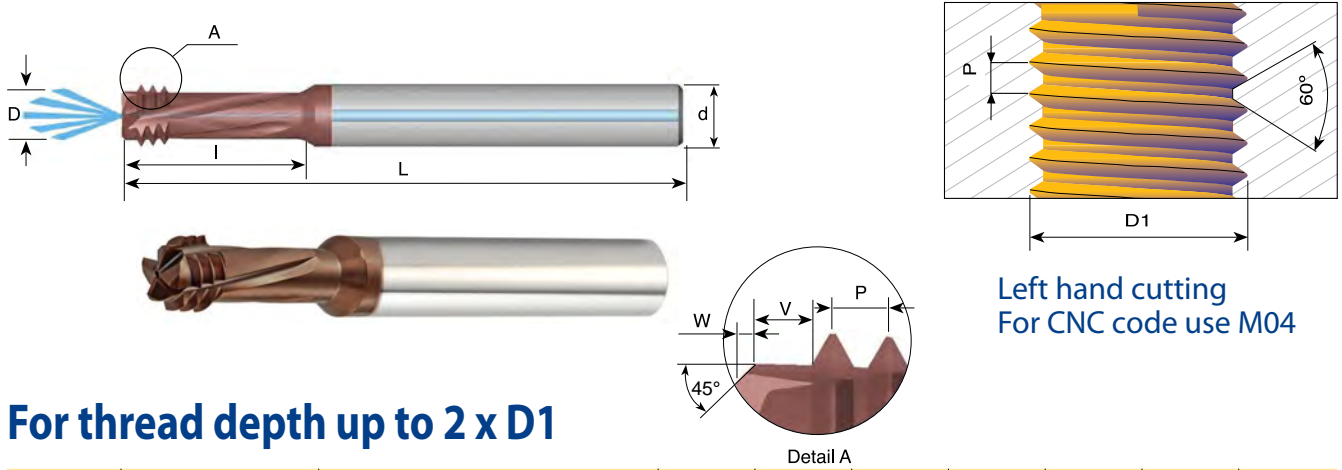
For thread depth up to 2.5 x D1

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

Order example: DMT 06032C11 0.7 ISO-D MT7

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

UN internal coolant bore Tools for Internal Thread - Metric Shanks



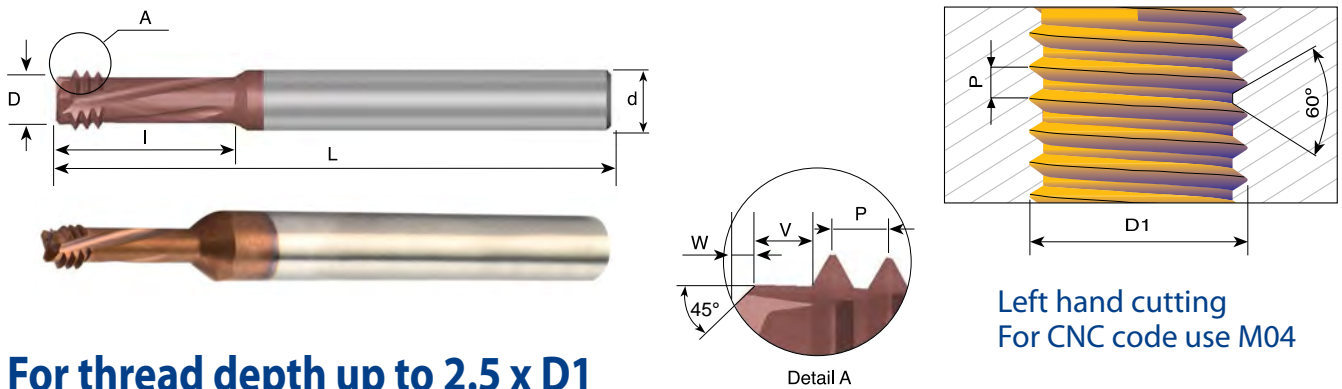
Left hand cutting
For CNC code use M04

For thread depth up to 2 x D1

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

Order example: DMT 08067C 22 16 UN MT7

UN without internal coolant Metric Shanks



Left hand cutting
For CNC code use M04

For thread depth up to 2.5 x D1

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

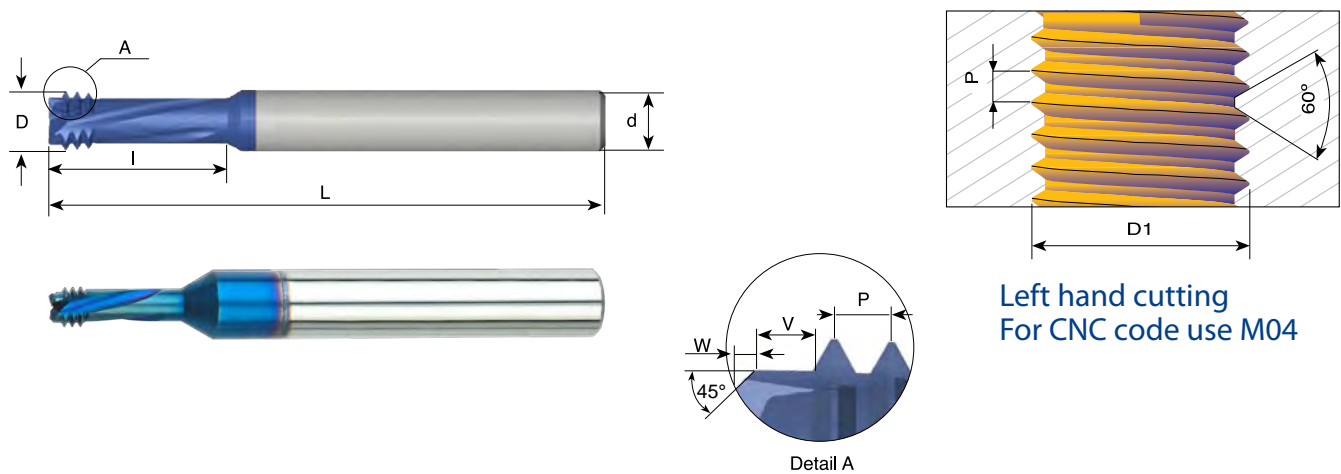
Order example: DMT 06032C12 32UN-D MT7

DMTH

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

ISO

Tools for Internal Thread - Metric Shanks



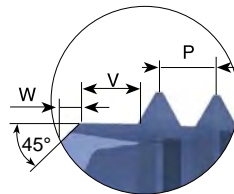
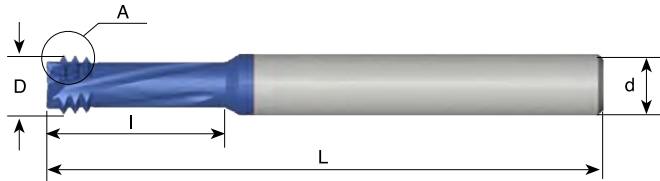
For thread depth up to 2 x D1

| Pitch mm | D1 | Ordering Code | d mm | D | No. of Flutes | I | W | V | L |
|----------|----------|--------------------------------|------|------|---------------|------|------|------|-----|
| 0.7 | M4 | DMTH 06032 C11 0.7 ISO | 6 | .124 | 3 | .46 | .008 | .028 | 2.3 |
| 0.8 | M5 | DMTH 0604 C14 0.8 ISO | 6 | .157 | 3 | .57 | .012 | .031 | 2.3 |
| 1.0 | M6 - M9 | DMTH 08047 C14 1.0 ISO | 8 | .185 | 3 | .57 | .016 | .039 | 2.5 |
| 1.25 | M8 - M12 | DMTH 08061 D19 1.25 ISO | 8 | .240 | 4 | .75 | .020 | .049 | 2.5 |
| 1.5 | M10- M15 | DMTH 08078 D23 1.5 ISO | 8 | .307 | 4 | .93 | .024 | .059 | 2.5 |
| 1.75 | M12 | DMTH 1009 D28 1.75 ISO | 10 | .354 | 4 | 1.11 | .024 | .069 | 2.9 |
| 2.0 | M16- M23 | DMTH 12118 D36 2.0 ISO | 12 | .465 | 4 | 1.44 | .024 | .079 | 3.3 |

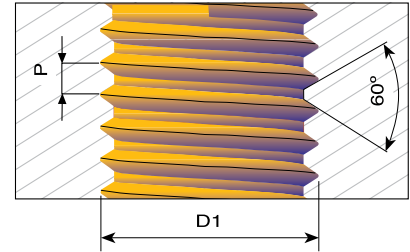
Order example: DMTH 1009D28 1.75 ISO MT11

UN

Tools for Internal Thread - Metric Shanks



Detail A

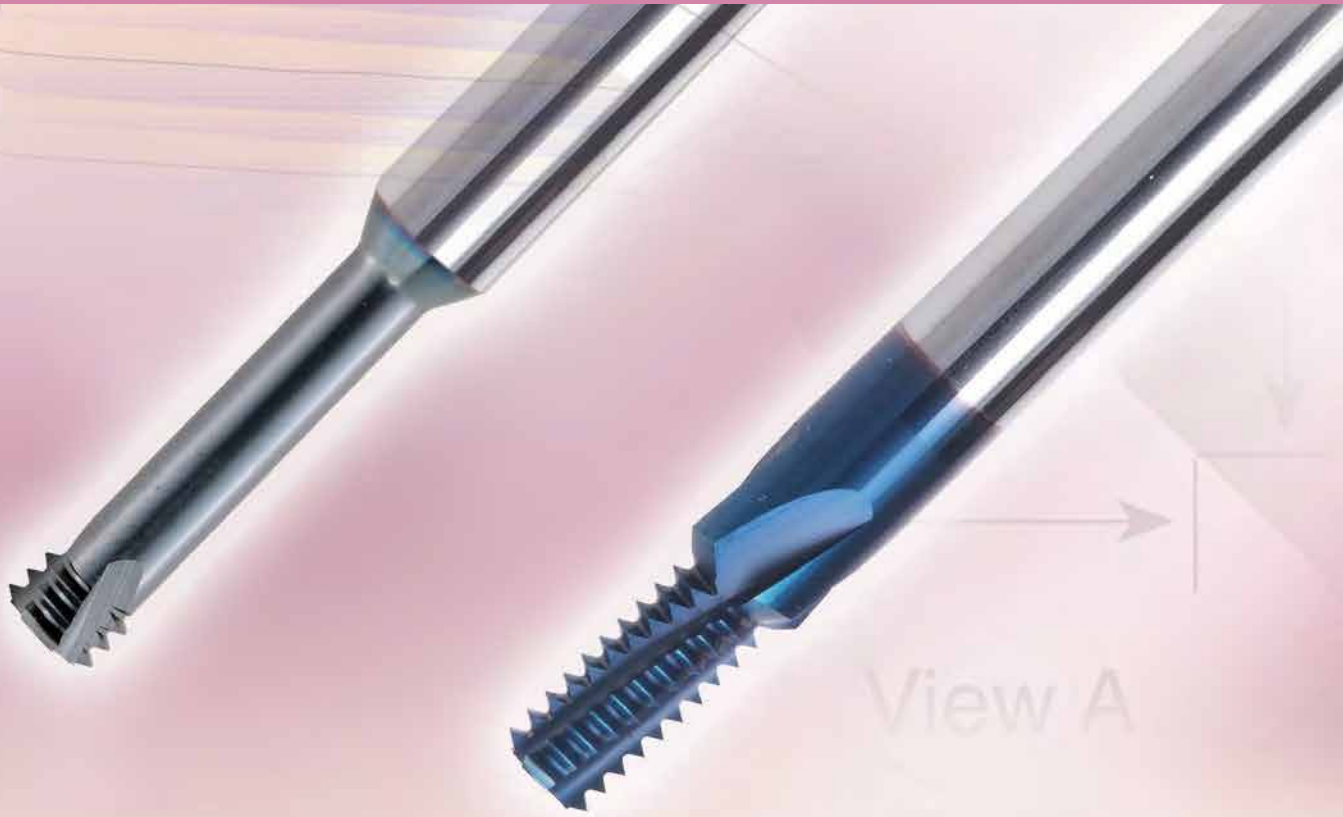


Left hand cutting
For CNC code use M04

For thread depth up to 2 x D1

| Pitch TPI | UN, UNEF, UNF UNC, UNS | Ordering Code | d mm | D | No. of Flutes | I | W | V | L |
|--------------|---------------------------|----------------------------|---------|------|------------------|------|------|------|-----|
| 40 | 4 | DMTH06021 C7 40 UN | 6 | .083 | 3 | .28 | .004 | .024 | 2.3 |
| 32 | 6 | DMTH06026 C8 32 UN | 6 | .102 | 3 | .34 | .004 | .031 | 2.3 |
| 28 | 1/4-3/8 | DMTH0805 C14 28 UN | 8 | .197 | 3 | .59 | .016 | .035 | 2.5 |
| 24 | 5/16-1/2 | DMTH08065 D18 24 UN | 8 | .256 | 4 | .73 | .020 | .041 | 2.5 |
| 20 | 1/4-3/8 | DMTH08048 C15 20 UN | 8 | .189 | 3 | .61 | .016 | .049 | 2.5 |
| 18 | 5/16-7/16 | DMTH0806 D19 18 UN | 8 | .236 | 4 | .76 | .020 | .055 | 2.5 |
| 16 | 3/8-1/2 | DMTH08067 C22 16 UN | 8 | .264 | 3 | .90 | .020 | .063 | 2.5 |
| 13 | 1/2 | DMTH10092 C30 13 UN | 10 | .362 | 3 | 1.18 | .024 | .079 | 2.9 |
| 11 | 5/8 | DMTH12114 C37 11 UN | 12 | .449 | 3 | 1.46 | .024 | .091 | 3.3 |

Order example: DMTH 08048 C15 20UN MT11



MTSH Type

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

HARDCUT MTSH & MTH Types

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

MTH Type

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

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

- 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

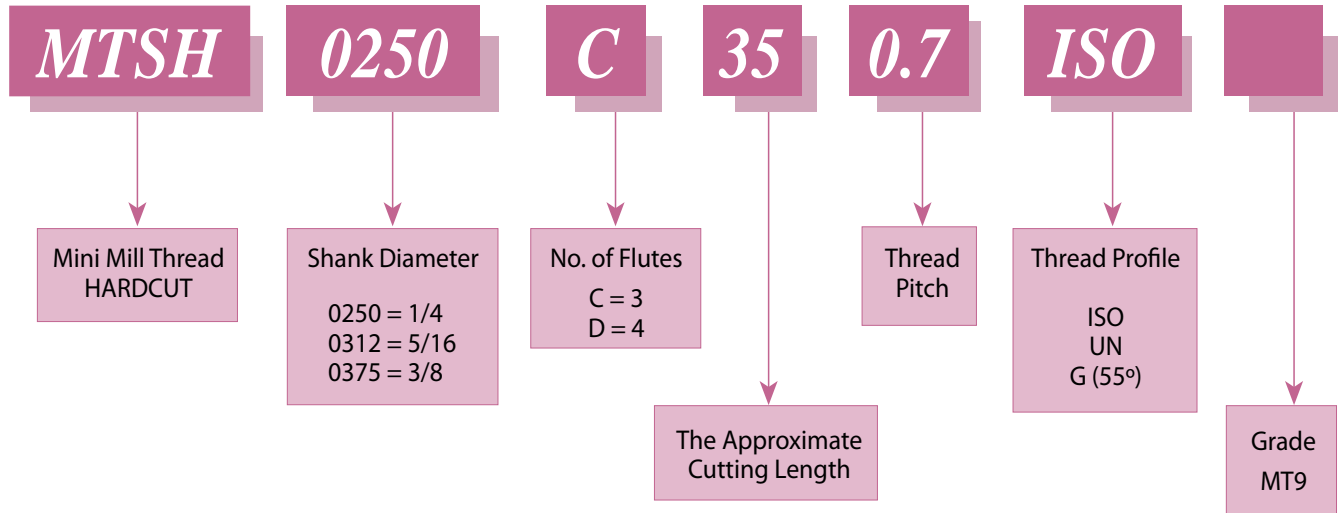
Advantages

- 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 - designed for hardened materials. Short chips are produced, ensuring high process security.
- Short cycle time - increases productivity.
- Thread length up to 2xD.

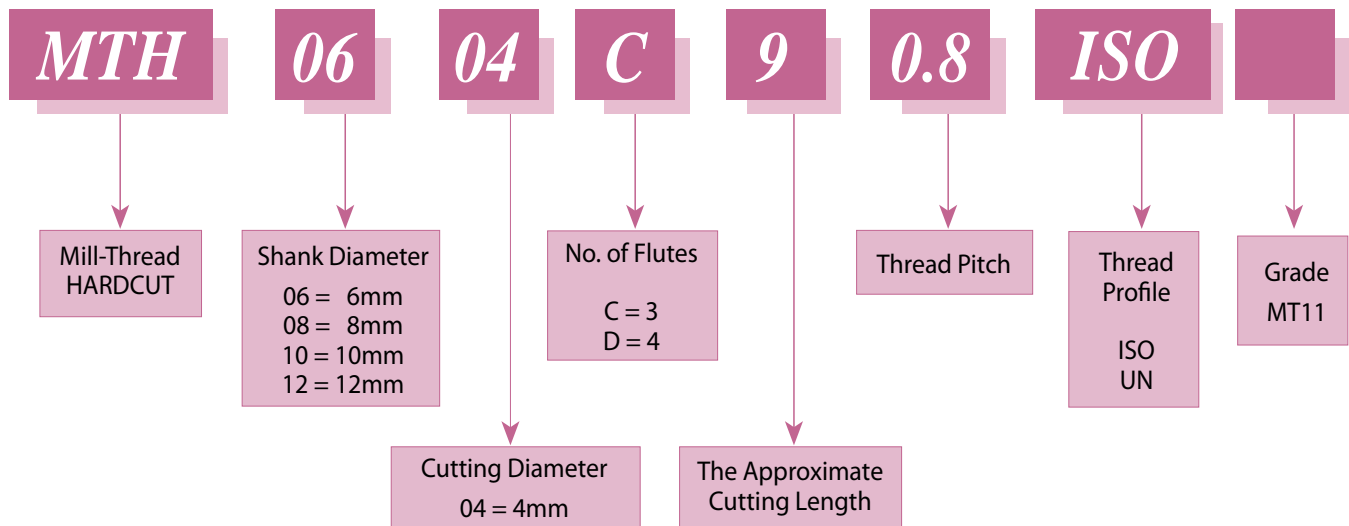
| Contents: | Page: | Contents: | Page: |
|------------------------|-------|-----------------|-------|
| Product Identification | 284 | MTH Type | |
| MTSH Type | | ISO | 288 |
| ISO | 285 | UN | 288 |
| UN | 286 | | |
| G55° - BSP | 287 | | |

Product Identification

Mini Mill-Thread MTSH Type Ordering Codes

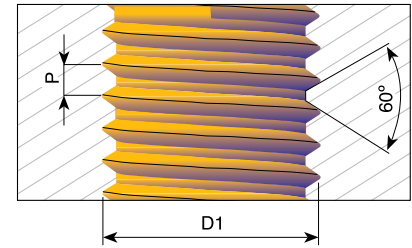
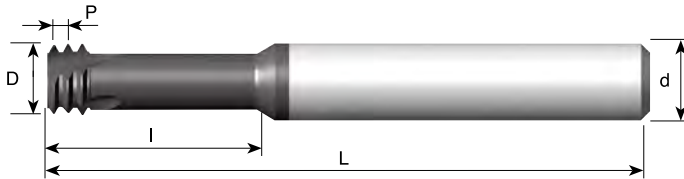


MTH Type Ordering Codes



ISO

Tools for Internal Thread



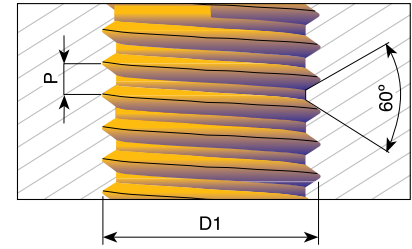
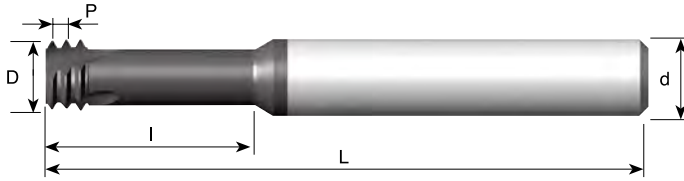
Left hand cutting
For CNC code use M04

| Pitch mm | M coarse | M fine | Ordering Code | d | D | No. of Flutes | I | L | Thread depth |
|----------|----------|----------|-----------------------------|-------|------|---------------|------|-----|--------------|
| 0.3 | M1.4 | | MTSH03011C4 0.3 ISO | 3 mm | .041 | 3 | .16 | 1.5 | 3xD |
| 0.35 | M1.6 | M2 | MTSH03012C5 0.35 ISO | 3 mm | .047 | 3 | .19 | 1.5 | 3xD |
| 0.4 | M2 | | MTSH0250C18 0.4 ISO | 1/4 | .060 | 3 | .18 | 2.5 | 2xD |
| 0.4 | M2 | | MTSH03016C6 0.4 ISO | 3 mm | .060 | 3 | .24 | 1.5 | 3xD |
| 0.45 | M2.2 | | MTSH0250C20 0.45 ISO | 1/4 | .065 | 3 | .20 | 2.5 | 2xD |
| 0.45 | M2.2 | | MTSH06017C7 0.45 ISO | 6 mm | .065 | 3 | .28 | 2.3 | 3xD |
| 0.45 | M2.5 | | MTSH0250C22 0.45 ISO | 1/4 | .077 | 3 | .22 | 2.5 | 2xD |
| 0.45 | M2.5 | | MTSH0250C30 0.45 ISO | 1/4 | .077 | 3 | .30 | 2.5 | 3xD |
| 0.5 | M3 | M4, M5 | MTSH0250C26 0.5 ISO | 1/4 | .093 | 3 | .26 | 2.5 | 2xD |
| 0.5 | M3 | M4, M5 | MTSH0250C37 0.5 ISO | 1/4 | .093 | 3 | .37 | 2.5 | 3xD |
| 0.6 | M3.5 | | MTSH0250C30 0.6 ISO | 1/4 | .108 | 3 | .30 | 2.5 | 2xD |
| 0.6 | M3.5 | | MTSH06028C10 0.6 ISO | 6 mm | .108 | 3 | .41 | 2.3 | 3xD |
| 0.7 | M4 | | MTSH0250C35 0.7 ISO | 1/4 | .122 | 3 | .35 | 2.5 | 2xD |
| 0.7 | M4 | | MTSH0250C49 0.7 ISO | 1/4 | .122 | 3 | .49 | 2.5 | 3xD |
| 0.8 | M5 | | MTSH0250C49 0.8 ISO | 1/4 | .150 | 3 | .49 | 2.5 | 2xD |
| 0.8 | M5 | | MTSH0250C63 0.8 ISO | 1/4 | .150 | 3 | .63 | 2.5 | 3xD |
| 1.0 | M6 | M8 | MTSH0250C55 1.0 ISO | 1/4 | .183 | 3 | .55 | 2.5 | 2xD |
| 1.0 | M6 | M8 | MTSH0250C79 1.0 ISO | 1/4 | .183 | 3 | .79 | 2.5 | 3xD |
| 1.25 | M8 | M10, M12 | MTSH0250C71 1.25 ISO | 1/4 | .236 | 3 | .71 | 2.5 | 2xD |
| 1.25 | M8 | M10, M12 | MTSH0250C94 1.25 ISO | 1/4 | .236 | 3 | .94 | 2.5 | 3xD |
| 1.5 | M10 | M14, M16 | MTSH0312C91 1.5 ISO | 5/16 | .307 | 3 | .91 | 2.5 | 2xD |
| 1.75 | M12 | | MTSH0375C10 1.75 ISO | 3/8 | .354 | 3 | 1.02 | 3.0 | 2xD |
| 2.0 | M16 | M18, M20 | MTSH12118D35 2.0 ISO | 12 mm | .465 | 4 | 1.38 | 3.3 | 2xD |

Order example: MTSH 0250C35 0.7 ISO MT9

UN

Tools for Internal Thread



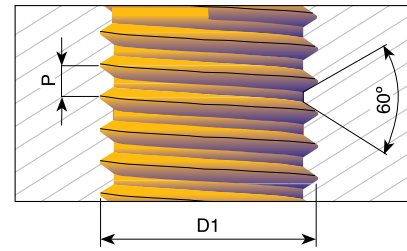
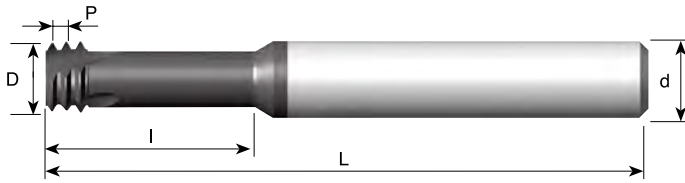
Left hand cutting
For CNC code use M04

| Pitch TPI | UNC | UNF | Ordering Code | d | D | No. of Flutes | I | L | Thread depth |
|--------------|--------|-----------|---------------------------|-------|------|------------------|------|-----|-----------------|
| 80 | | 0 | MTSH0250C16 80 UN | 1/4 | .045 | 3 | .16 | 2.5 | 3xD1 |
| 72 | | 1 | MTSH0250C15 72 UN | 1/4 | .057 | 3 | .15 | 2.5 | 2xD1 |
| 72 | | 1 | MTSH03015C6 72 UN | 3 mm | .057 | 3 | .24 | 1.5 | 3xD1 |
| 64 | 1 | 2 | MTSH0250C15 64 UN | 1/4 | .055 | 3 | .15 | 2.5 | 2xD1 |
| 56 | 2 | 3 | MTSH0250C17 56 UN | 1/4 | .065 | 3 | .17 | 2.5 | 2xD1 |
| 56 | 2 | 3 | MTSH06016C6 56 UN | 6 mm | .065 | 3 | .26 | 2.3 | 3xD1 |
| 48 | 3 | 4 | MTSH0250C20 48 UN | 1/4 | .075 | 3 | .20 | 2.5 | 2xD1 |
| 40 | 4 | | MTSH0250C25 40 UN | 1/4 | .083 | 3 | .25 | 2.5 | 2xD1 |
| 40 | 4 | | MTSH06021C8 40 UN | 6 mm | .083 | 3 | .31 | 2.3 | 3xD1 |
| 40 | 5 | 6 | MTSH0250C28 40 UN | 1/4 | .096 | 3 | .28 | 2.5 | 2xD1 |
| 40 | 5 | 6 | MTSH0250C38 40 UN | 1/4 | .096 | 3 | .38 | 2.5 | 3xD1 |
| 36 | | 8 | MTSH0250C35 36 UN | 1/4 | .130 | 3 | .35 | 2.5 | 2xD1 |
| 32 | 6 | | MTSH0250C28 32 UN | 1/4 | .100 | 3 | .28 | 2.5 | 2xD1 |
| 32 | 6 | | MTSH06025C10 32 UN | 6 mm | .100 | 3 | .41 | 2.5 | 3xD1 |
| 32 | 8 | | MTSH0250C37 32 UN | 1/4 | .126 | 3 | .37 | 2.5 | 2xD1 |
| 32 | 8 | | MTSH0250C49 32 UN | 1/4 | .126 | 3 | .49 | 2.5 | 3xD1 |
| 32 | | 10 | MTSH0250C41 32 UN | 1/4 | .146 | 3 | .41 | 2.5 | 2xD1 |
| 32 | | 10 | MTSH0250C59 32 UN | 1/4 | .146 | 3 | .59 | 2.5 | 3xD1 |
| 28 | | 12 | MTSH0250C43 28 UN | 1/4 | .165 | 3 | .43 | 2.3 | 2xD1 |
| 28 | | 1/4 | MTSH0250C57 28 UN | 1/4 | .197 | 3 | .57 | 2.5 | 2xD1 |
| 28 | | 1/4 | MTSH0250C75 28 UN | 1/4 | .197 | 3 | .75 | 2.5 | 3xD1 |
| 24 | 10, 12 | | MTSH0250C42 24 UN | 1/4 | .138 | 3 | .42 | 2.5 | 2xD1 |
| 24 | | 5/16, 3/8 | MTSH0312C67 24 UN | 5/16 | .260 | 3 | .67 | 2.5 | 2xD1 |
| 24 | | 5/16, 3/8 | MTSH0312C94 24 UN | 5/16 | .260 | 3 | .94 | 2.5 | 3xD1 |
| 20 | 1/4 | | MTSH0250C55 20 UN | 1/4 | .187 | 3 | .55 | 2.5 | 2xD1 |
| 20 | 1/4 | | MTSH0250C75 20 UN | 1/4 | .187 | 3 | .75 | 2.5 | 3xD1 |
| 20 | | 7/16 | MTSH0808C25 20 UN | 8 mm | .315 | 3 | .98 | 2.5 | 2xD1 |
| 18 | 5/16 | | MTSH0250C67 18 UN | 1/4 | .236 | 3 | .67 | 2.5 | 2xD1 |
| 18 | 5/16 | | MTSH0250C91 18 UN | 1/4 | .236 | 3 | .91 | 2.5 | 3xD1 |
| 18 | | 5/8 | MTSH1212D35 18 UN | 12 mm | .472 | 4 | 1.38 | 3.3 | 2xD1 |
| 16 | 3/8 | | MTSH0312C87 16 UN | 5/16 | .264 | 3 | .87 | 2.5 | 2xD1 |
| 14 | 7/16 | | MTSH0312C98 14 UN | 5/16 | .303 | 3 | .98 | 2.5 | 2xD1 |
| 13 | 1/2 | | MTSH0375C10 13 UN | 3/8 | .362 | 3 | 1.08 | 3.0 | 2xD1 |
| 12 | 9/16 | | MTSH12105C31 12 UN | 12 mm | .413 | 3 | 1.24 | 3.3 | 2xD1 |
| 11 | 5/8 | | MTSH12114C34 11 UN | 12 mm | .449 | 3 | 1.36 | 3.3 | 2xD1 |
| 10 | 3/4 | | MTSH16144D41 10 UN | 16 mm | .567 | 4 | 1.63 | 4.1 | 2xD1 |

Order example: MTSH 0250C28 40 UN MT9

G 55° BSP

Same Tool for Internal and External Thread



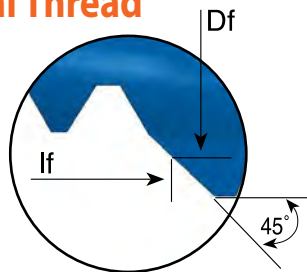
Left hand cutting
For CNC code use M04

| Pitch TPI | Standard | Ordering Code | d | D | No. of Flutes | I | L | Thread depth |
|--------------|----------|--------------------------|----|------|------------------|------|-----|-----------------|
| 28 | G1/8 | MTSH08078 C19 28W | 8 | .307 | 3 | .77 | 2.5 | 2xD1 |
| 19 | G1/4-3/8 | MTSH1010 D30 19W | 10 | .394 | 4 | 1.18 | 2.9 | 2xD1 |
| 14 | G1/2-7/8 | MTSH1212 D37 14W | 12 | .472 | 4 | 1.46 | 3.3 | 2xD1 |
| 11 | G≥1 | MTSH1616 D44 11W | 16 | .630 | 4 | 1.73 | 4.1 | 2xD1 |

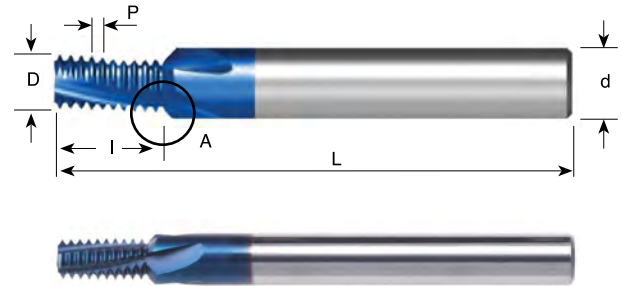
Order example: MTSH 1010D30 19 W MT9

ISO

Tools for Internal Thread Metric Shanks



Detail A

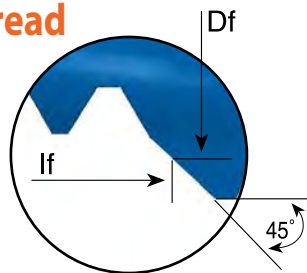


| Pitch mm | M coarse | M fine | Ordering Code | d mm | D | Df | No. of Flutes | I | lf | L |
|----------|----------|-----------------------|-----------------------------|------|------|------|---------------|------|------|-----|
| 0.5 | M3 | $\varnothing \geq 4$ | MTH06024C5 0.5 ISO | 6 | .094 | .142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

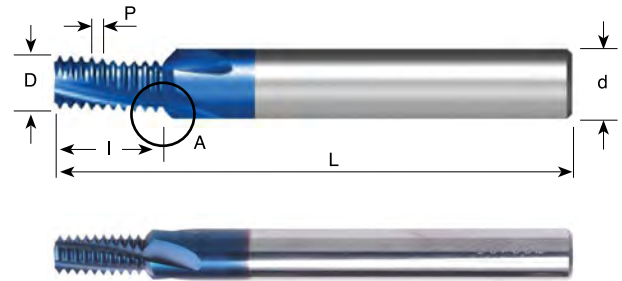
Order example: MTH08048D10 1.0 ISO MT11

UN

Tools for Internal Thread Metric Shanks



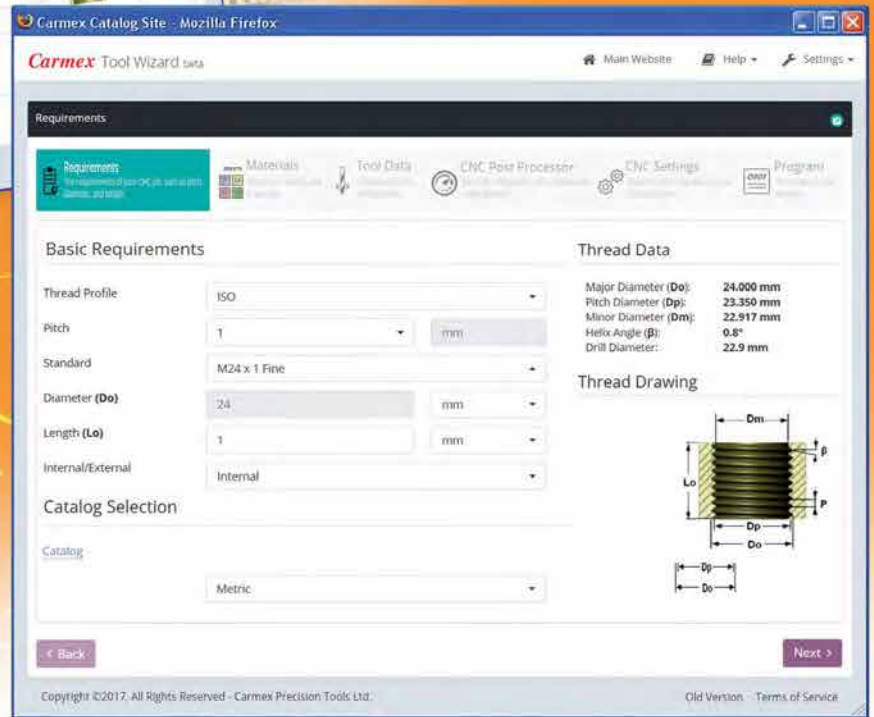
Detail A



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

Order example: MTH06048C12 20 UN MT11

Mill-Thread Technical Section



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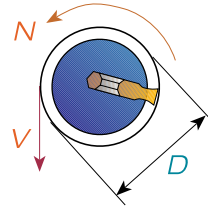
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Conversion of Cutting Speed to Rotational Speed

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

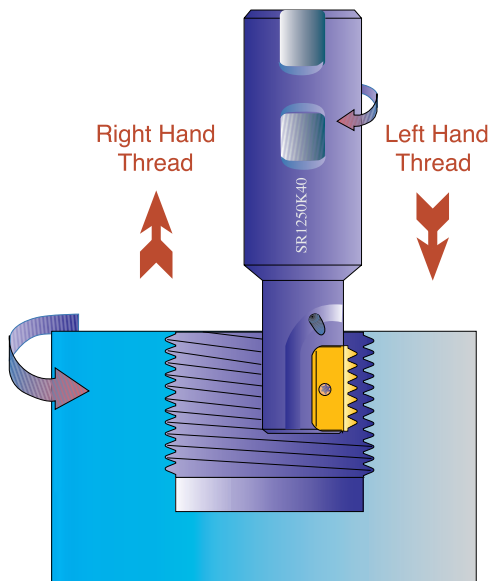
$$N = \frac{V \times 12}{\pi \times D} = \frac{400 \times 12}{3.14 \times 1.25} = 1222 \text{ RPM}$$



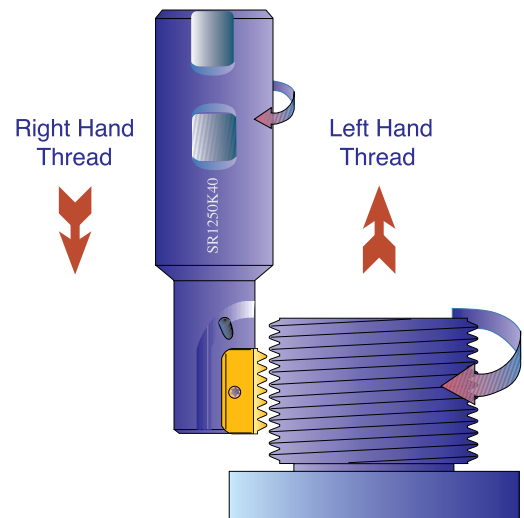
Example: $V=400 \text{ ft/min}$
 $D=1.25$

D=Cutting diameter

Internal Thread



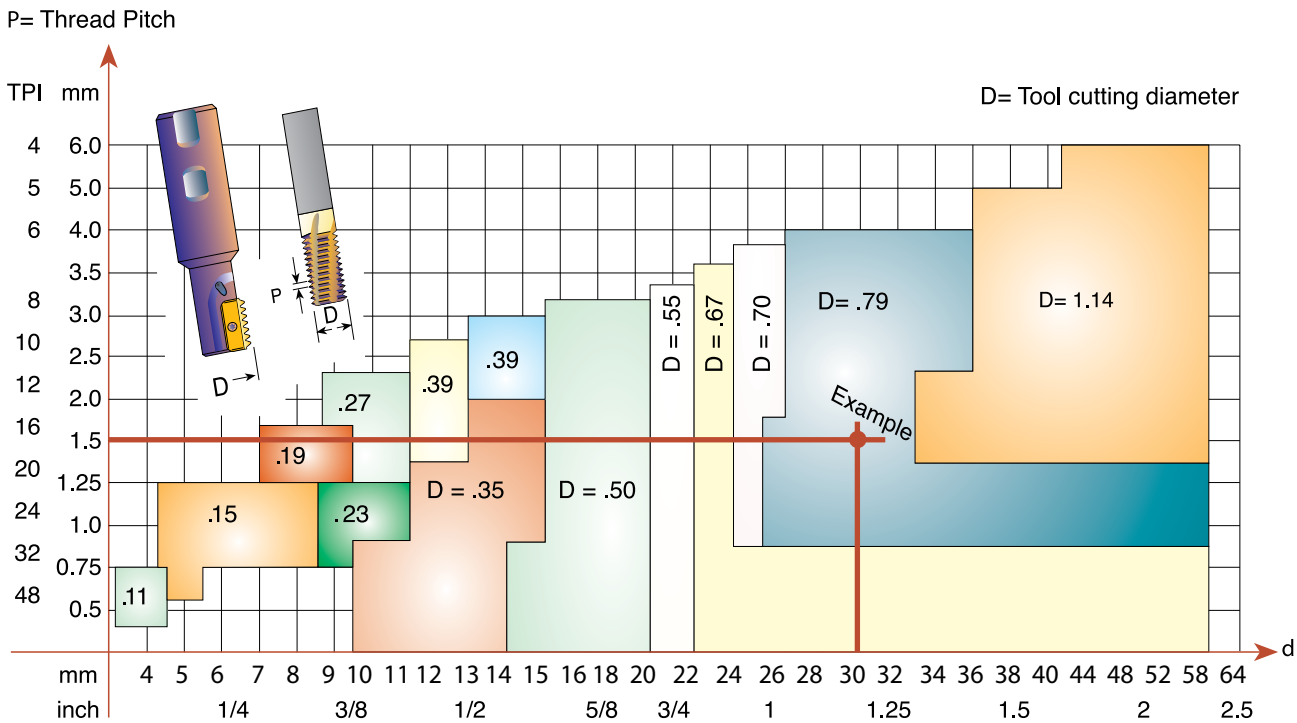
External Thread



Tool Selection

For indexable and solid carbide Mill Threads

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



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

Example: Internal thread 1 1/4 x 16UN:

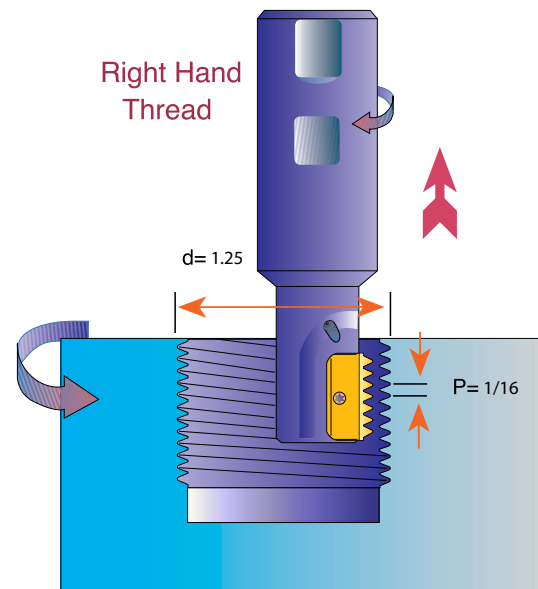
Find a Milling Tool to produce d=1.25 Internal

right hand UN thread with a thread pitch P=1/16 inch

As can be seen from the chart above, the two red lines intersect at a selected tool with a cutting diameter of D=.79 inch

Chosen toolholder: SR0790 H21

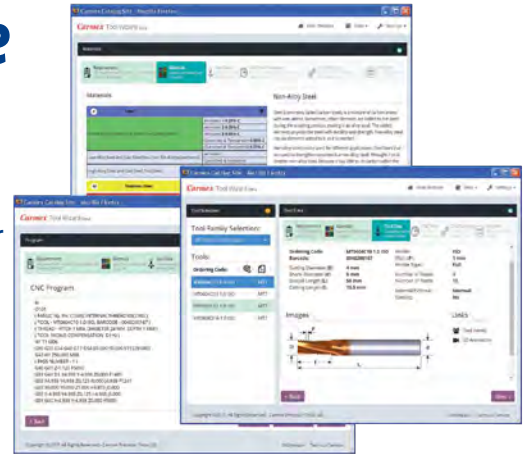
Insert: 21 I 16 UN MT7



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

Carmex Mill-Thread catalog and CNC programming Software

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



The software is available at our web site.

Example of Thread Milling CNC Program for Internal Threading

Right hand thread (climb milling) from bottom up.
 Program is based on tool center.
 This method of programming needs no tool radius compensation value other than an offset for wear.

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

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

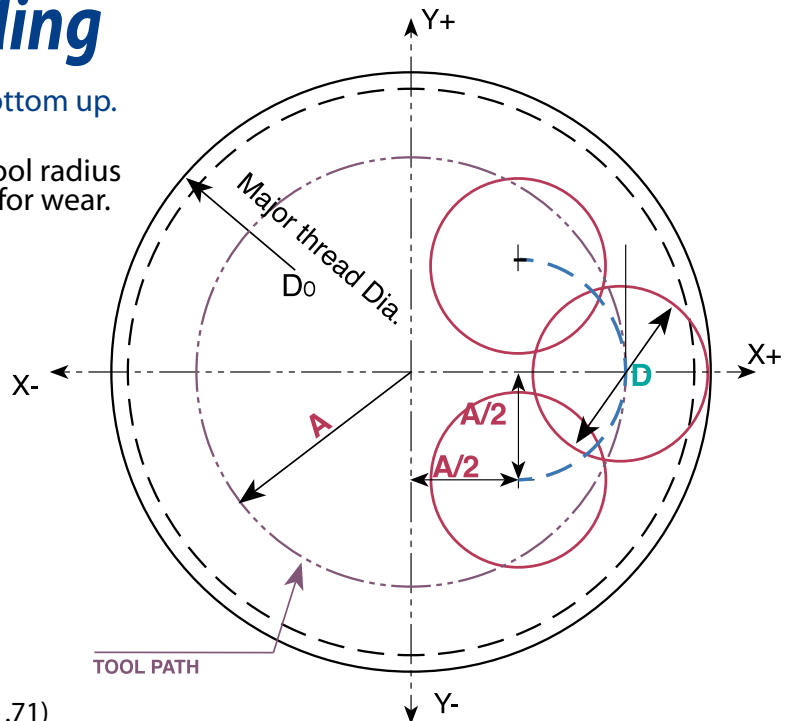
General Program

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

Internal Thread

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

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



Mill-Thread Inserts Speed and Feed Selection

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

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

Recommended Feed Rate: .002 - .006

Spiral Mill-Thread Inserts Speed and Feed Selection

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

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

Recommended Feed Rate: .002 - .006

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

For hard metals reduce cutting speed.

Spiral Finish Speed and Feed Selection

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

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

Cutting Data

D-Thread type

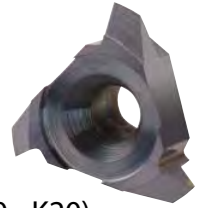
MT7 Sub-Micron Grade with Titanium Aluminum Nitride multi-layer coating (ISO K10 - K20). This is a general purpose grade, which can be used with all materials; it should be run at medium to high cutting speeds.

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

Recommended Feed Rate: .003 - .006

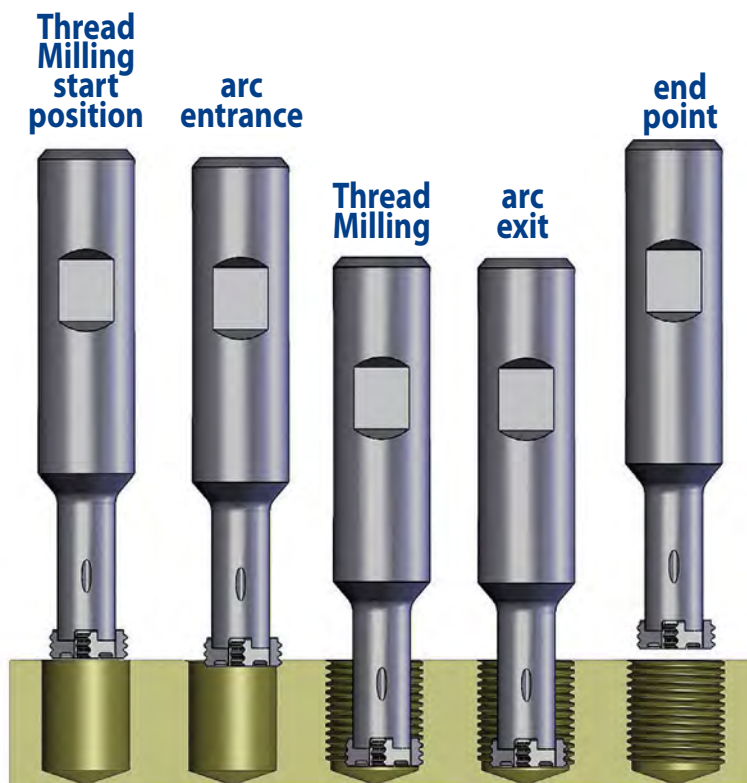
Cutting Data

CMT type



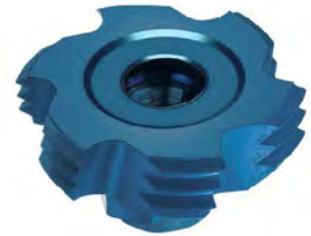
MT7 Sub-Micron Grade with Titanium Aluminum Nitride multi-layer coating (ISO K10 - K20). This is a general purpose grade, which can be used with all materials; it should be run at medium to high cutting speeds.

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



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



| 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 | | | | | | | | | | | | |

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%

MTQ type

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

Carbide grade: MT7

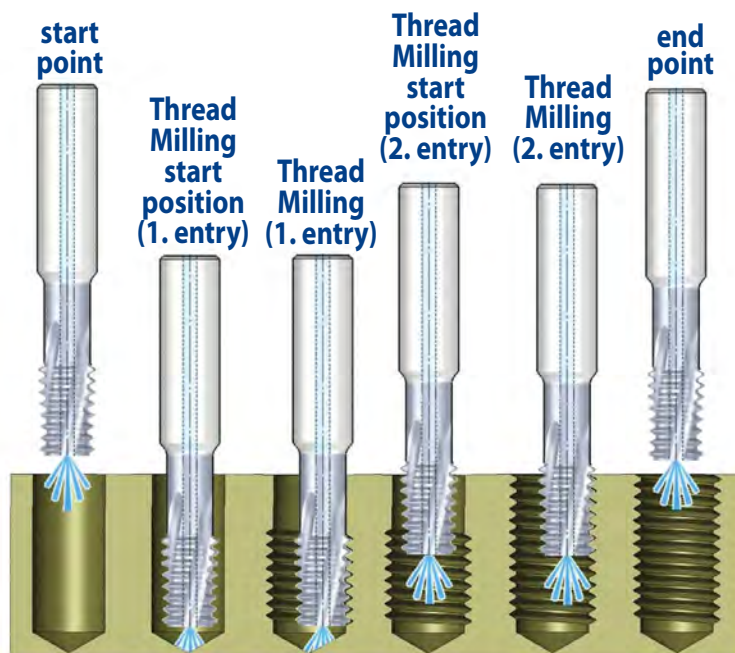
- To produce medium and large threads on relatively deep work pieces.
- To use overhang according to the application.
- To perform deep threads at the bottom of the application.

Advantages

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

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

- 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: 0.00063 inch/tooth

Machine

Mori Seiki NV5000 Coolant: emulsion 5%

Results

Tool life : 2,170 threads
 Cycle time: 1.5 sec

FMT

| 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 |

AMT

Carbide grade 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 |

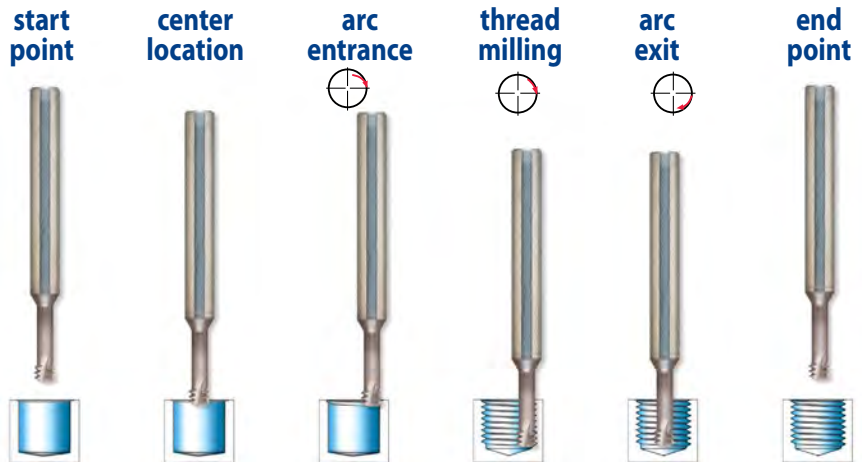
Mini Mill-Thread MTS and MTI types

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

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

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

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



Mini Mill-Thread vs. Taps

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

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 |

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

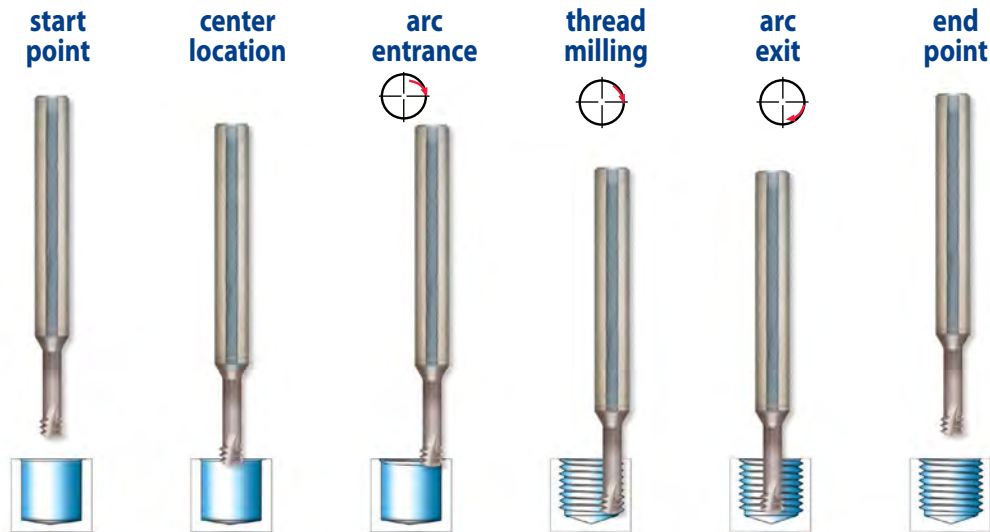
| ISO | Materials | Cutting Speed ft/min | Feed inch/tooth Cutting Diameter=D | | | | | | | | |
|----------|--|----------------------|---------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| | | | Ø.08 | Ø.12 | Ø.16 | Ø.20 | Ø.24 | Ø.31 | Ø.35 | Ø.39 | 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 |

Mini Mill-Thread MTSH type

MT9 Sub-Micron Grade with advanced PVD triple coating.

Left hand cutting for CNC code use M04

| ISO | Materials | Hardness HRc | Cutting Speed ft/min | Feed inch/tooth Cutting Diameter = D | | | | | | | | | | | | | |
|----------|--|--------------|----------------------|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | | | | Ø.04 | Ø.06 | 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 | 8.0 mm |
| Workpiece Material | Tool Steel: D2 |
| Hardness | 60-62 (HRc) |
| Cutter Description | MTSH0250C35 0.7 ISO |
| Machining Conditions | Cutting Speed: 144 ft / min Feed: .0012 Inch / tooth |
| Machine | Mori Seiki VN5000 |
| Control | Fanuc |
| Cooling Lubricant | Emulsion |
| Tool Life (No. of Threads) | 84 |

MTH type

MT11 Sub-Micron Grade with advanced PVD triple coating.

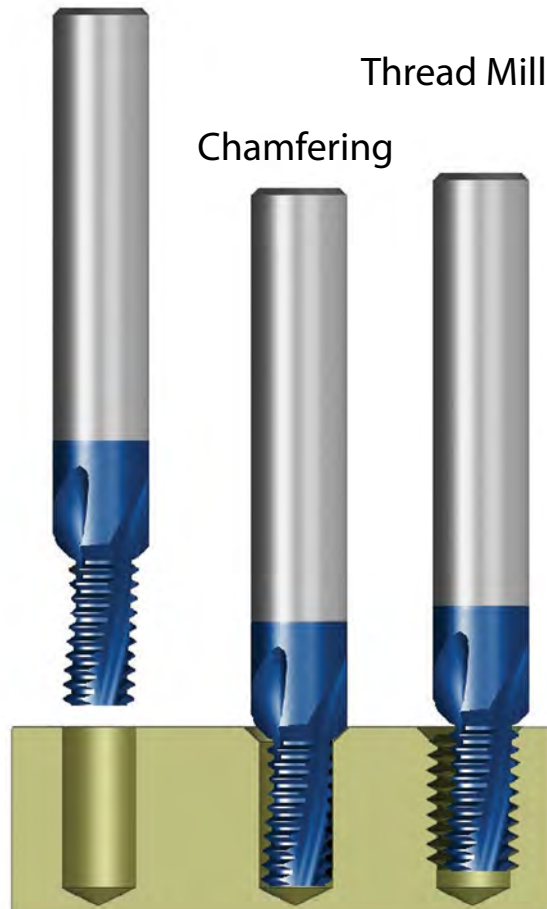
| ISO | Materials | Hardness HRc | Cutting Speed ft/min | Feed inch/tooth Cutting Diameter = D | | | | | | | | |
|----------|--|--------------|----------------------|---|-------|-------|-------|-------|-------|-------|-------|-------|
| | | | | Ø.10 | Ø.12 | Ø.16 | Ø.20 | Ø.24 | Ø.28 | Ø.31 | Ø.35 |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

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

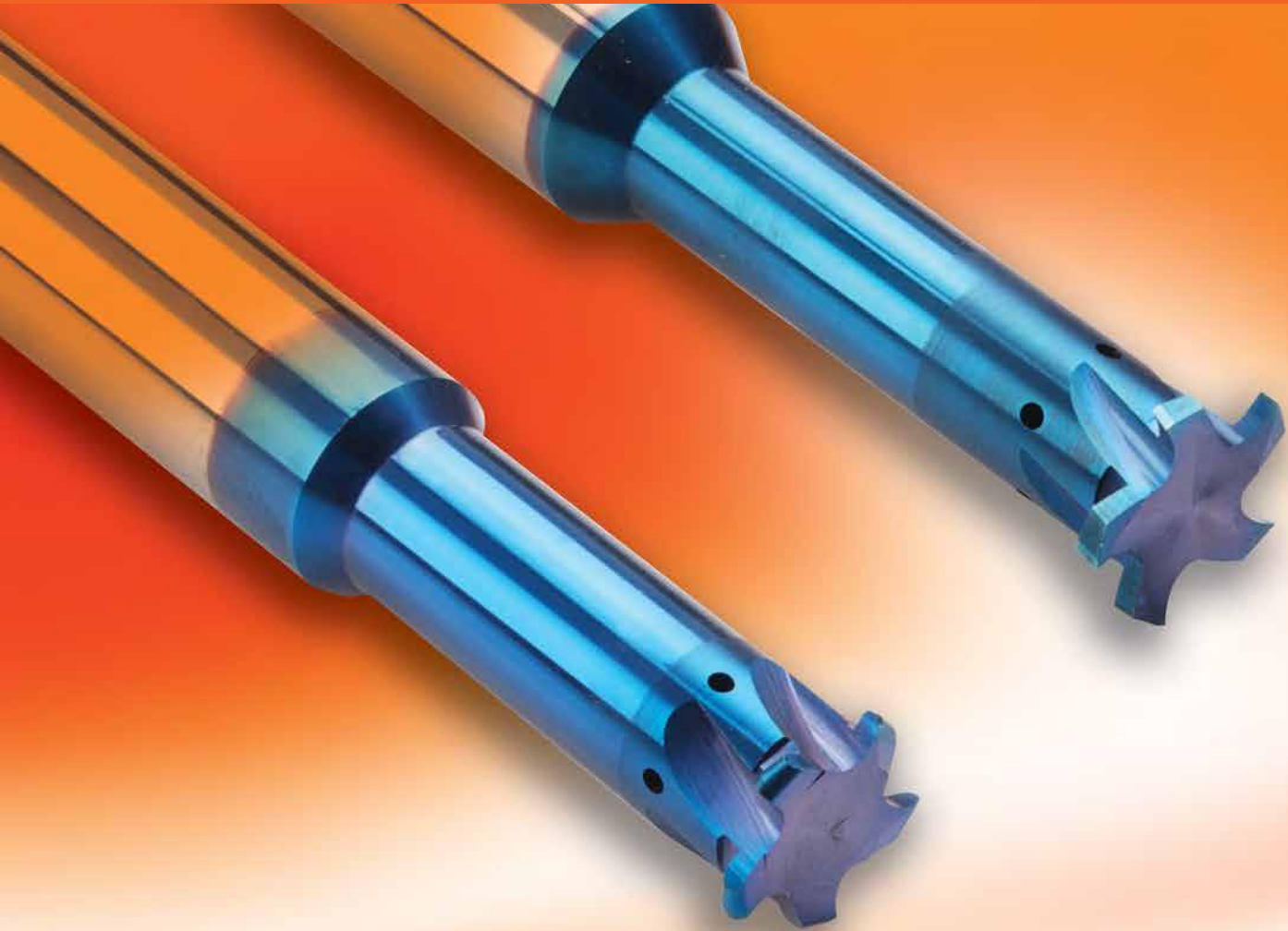
Positioning

Thread Milling

Chamfering



Solid Carbide Grooving Tools



For Grooving Deep Parts

Advantages

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

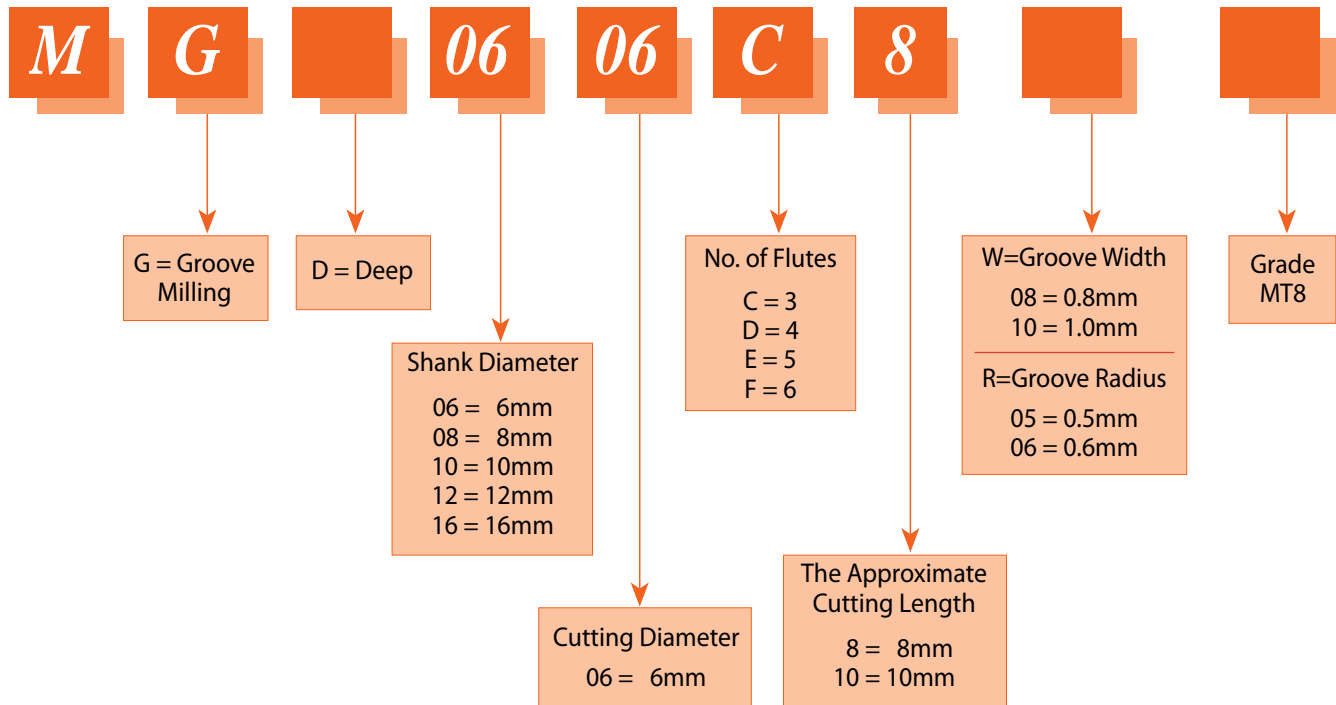
- Enables machining in deep holes
- Coolant through the flutes is very effective for deep holes.
- Spiral flutes allow smooth cutting action.
- Longer tool life due to special multi-layer coating.
- Shorter machining time due to multi (3 to 5) flutes.

Contents:

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| Product Identification | 310 |
| Groove Milling with internal coolant through the flutes | 311 |
| Full Radius Groove Milling with internal coolant through the flutes | 312 |
| Deep Groove Milling | 312 |

Product Identification Groove Milling Ordering Codes

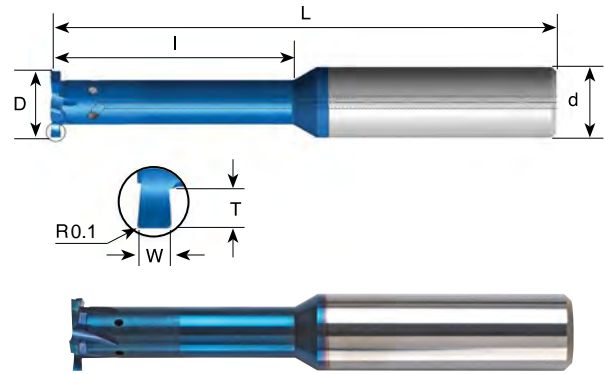


Groove Milling

with internal coolant through the flutes

Tool for Internal Grooving

Metric Shanks



For grooving deep parts

| W ±.001 | T Max. | Groove Dia. (min.) mm | Ordering Code | d mm | D | No. of Flutes | I | L |
|------------|-----------|-----------------------------|----------------|---------|------|------------------|------|-----|
| .020 | .02 | $\varnothing > 4$ | *MG0604C4 W05 | 6 | .157 | 3 | .17 | 2.0 |
| .039 | .02 | $\varnothing > 4$ | *MG0604C4 W10 | 6 | .157 | 3 | .17 | 2.0 |
| .031 | .03 | $\varnothing > 6$ | MG0606C8 W08 | 6 | .236 | 3 | .31 | 2.3 |
| .039 | .04 | $\varnothing > 6$ | *MG0606C7 W10 | 6 | .236 | 3 | .28 | 2.3 |
| .059 | .04 | $\varnothing > 6$ | *MG0606C7 W15 | 6 | .236 | 3 | .28 | 2.3 |
| .039 | .05 | $\varnothing \geq 7.8$ | MG08078D10 W10 | 8 | .307 | 4 | .39 | 2.5 |
| .059 | .06 | $\varnothing \geq 7.8$ | MG08078D15 W15 | 8 | .307 | 4 | .59 | 2.5 |
| .079 | .06 | $\varnothing \geq 7.8$ | MG08078D15 W20 | 8 | .307 | 4 | .59 | 2.5 |
| .047 | .06 | $\varnothing \geq 9.8$ | MG10098D20 W12 | 10 | .386 | 4 | .79 | 2.9 |
| .059 | .08 | $\varnothing \geq 9.8$ | MG10098D20 W15 | 10 | .386 | 4 | .79 | 2.9 |
| .079 | .08 | $\varnothing \geq 9.8$ | MG10098D20 W20 | 10 | .386 | 4 | .79 | 2.9 |
| .059 | .09 | $\varnothing \geq 12$ | MG1212E30 W15 | 12 | .472 | 5 | 1.18 | 3.3 |
| .079 | .09 | $\varnothing \geq 12$ | MG1212E30 W20 | 12 | .472 | 5 | 1.18 | 3.3 |
| .118 | .09 | $\varnothing \geq 12$ | MG1212E30 W30 | 12 | .472 | 5 | 1.18 | 3.3 |
| .055 | .07 | $\varnothing \geq 16$ | MG1616E30 W14 | 16 | .630 | 5 | 1.18 | 4.0 |
| .067 | .08 | $\varnothing \geq 16$ | MG1616E40 W17 | 16 | .630 | 5 | 1.57 | 4.0 |
| .077 | .09 | $\varnothing \geq 16$ | MG1616E45 W19 | 16 | .630 | 5 | 1.77 | 4.0 |

Order example: MG 10098D20 W12 MT8

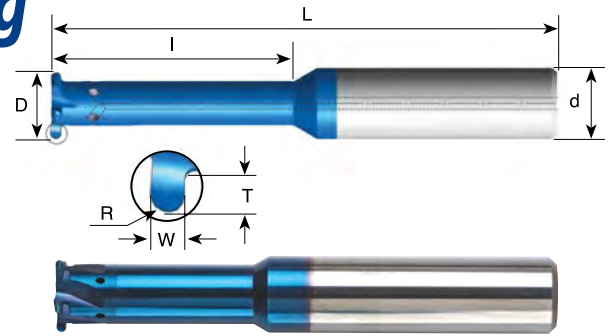
* Tools without coolant

Full Radius Groove Milling

with internal coolant through the flutes

Tool for Internal Grooving

Metric Shanks



For grooving deep parts

| R | W ± .001 | T Max. | Groove Dia. (min.) mm | Ordering Code | d mm | D | No. of Flutes | I | L |
|------|-------------|-----------|-----------------------------|-----------------------|---------|------|------------------|------|-----|
| .020 | .039 | .02 | ∅ > 4 | *MG0604C4 R05 | 6 | .157 | 3 | .17 | 2.0 |
| .020 | .039 | .03 | ∅ > 6 | MG0606C8 R05 | 6 | .236 | 3 | .31 | 2.3 |
| .030 | .059 | .04 | ∅ > 6 | *MG0606C7 R075 | 6 | .236 | 3 | .28 | 2.3 |
| .020 | .039 | .04 | ∅ ≥ 8.8 | MG10088D16 R05 | 10 | .346 | 4 | .63 | 2.9 |
| .024 | .047 | .04 | ∅ ≥ 10 | MG1010D20 R06 | 10 | .394 | 4 | .79 | 2.9 |
| .030 | .059 | .08 | ∅ ≥ 10 | MG1010D20 R075 | 10 | .394 | 4 | .79 | 2.9 |
| .020 | .079 | .08 | ∅ ≥ 10 | MG1010D20 R10 | 10 | .394 | 4 | .79 | 2.9 |
| .035 | .071 | .06 | ∅ ≥ 12 | MG1212D30 R09 | 12 | .472 | 4 | 1.18 | 3.3 |
| .039 | .079 | .06 | ∅ ≥ 16 | MG1616E40 R10 | 16 | .630 | 5 | 1.57 | 4.0 |
| .059 | .118 | .09 | ∅ ≥ 16 | MG1616E40 R15 | 16 | .630 | 5 | 1.57 | 4.0 |

Order example: MG 1010D20 R06 MT8

* Tools without coolant

Deep Groove Milling

with internal coolant bore

Metric Shanks



| Ordering Code | W ±0.001 | R | T (max.) | Groove Dia. (min.) mm | d mm | D | No. of Flutes | L |
|------------------------|-------------|------|-------------|-----------------------------|---------|------|------------------|-----|
| MGD 10195 F W15 | .059 | .004 | .18 | ∅ > 19.5 | 10 | .768 | 6 | 5.0 |
| MGD 10195 F W20 | .079 | .004 | .18 | ∅ > 19.5 | 10 | .768 | 6 | 5.0 |
| MGD 10195 F W30 | .118 | .004 | .18 | ∅ > 19.5 | 10 | .768 | 6 | 5.0 |
| MGD 10195 F W35 | .138 | .004 | .18 | ∅ > 19.5 | 10 | .768 | 6 | 5.0 |
| MGD 10195 F W40 | .157 | .004 | .18 | ∅ > 19.5 | 10 | .768 | 6 | 5.0 |
| MGD 10195 F W50 | .197 | .004 | .18 | ∅ > 19.5 | 10 | .768 | 6 | 5.0 |

Supercut Roughers



New Innovative High Performance Roughing end-mills specifically designed for high volume machining applications.
Multi-Flute, semi-finish profile and center cutting.
Provide high metal removal rates in Slotting, Shouldering and Helical Plunging operations.

Features

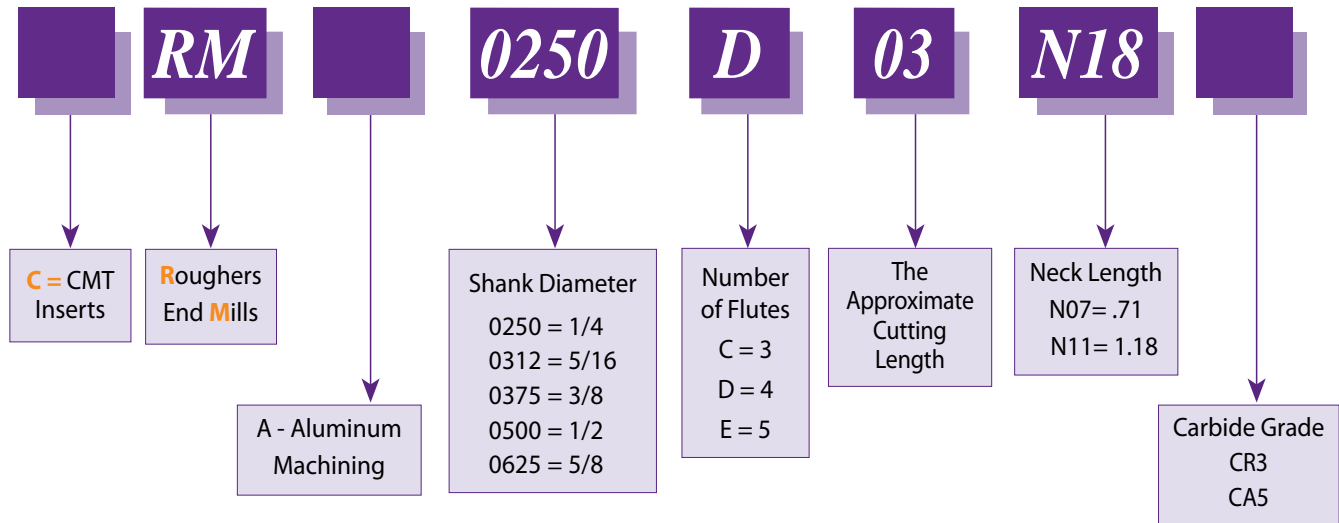
- High Performance Cutting (HPC)
 - Innovative roughing geometry produces smaller chips
 - Low cutting forces
 - Extremely high material removal rate
 - Reinforced corner chamfer, promotes additional strength for longer tool life
- Designed to machine difficult and abrasive materials

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.

| Contents: | Page: | Contents: | Page: |
|--------------------------------------|-------|--|-------|
| Product Identification | 314 | Steel Toolholders | 319 |
| CR-Supercut Roughers | 315 | Carbide Shank Toolholder | 319 |
| Coated Solid Carbide Roughers | | Solid Carbide Roughers for Aluminum Machining | |
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| With Neck | 317 | Cutting Data | 322 |
| CMT Roughers | | | |
| Inserts | 318 | | |

Product Identification Ordering Codes



CR-Supercut Roughers

Carmex solid carbide Roughers are new innovative high performance end mills. Specifically designed for high volume machining applications. Multi-flute, semi-finish profile and center cutting. Provide 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



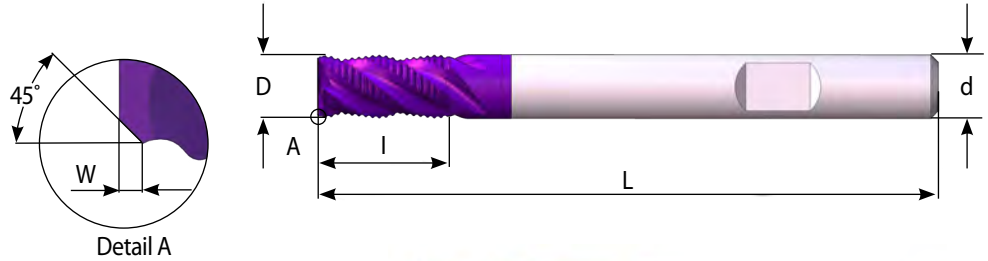
Carbide Grade: CR3

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.

Solid Carbide Roughers

Short Design

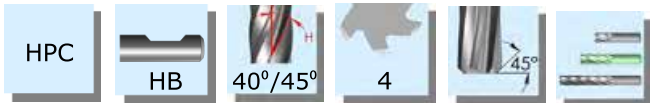


| | | | | | |
|---|---|---|---|---|---------|
| P | M | K | N | S | H |
| ● | ● | ● | ○ | ● | ≤56 HRc |

| Ordering Code | d | D | W | No. of Flutes | I | L |
|--------------------|------|------|------|---------------|------|-----|
| RM 0250 C02 | 1/4 | .118 | .008 | 3 | .20 | 2.5 |
| RM 0250 C03 | 1/4 | .157 | .012 | 3 | .35 | 2.5 |
| RM 0250 D03 | 1/4 | .197 | .012 | 4 | .39 | 2.5 |
| RM 0250 D04 | 1/4 | .250 | .012 | 4 | .39 | 2.5 |
| RM 0312 D04 | 5/16 | .312 | .012 | 4 | .47 | 2.5 |
| RM 0375 D05 | 3/8 | .375 | .012 | 4 | .55 | 3.0 |
| RM 0500 D06 | 1/2 | .500 | .016 | 4 | .63 | 3.5 |
| RM 0625 E10 | 5/8 | .625 | .020 | 5 | 1.06 | 4.0 |

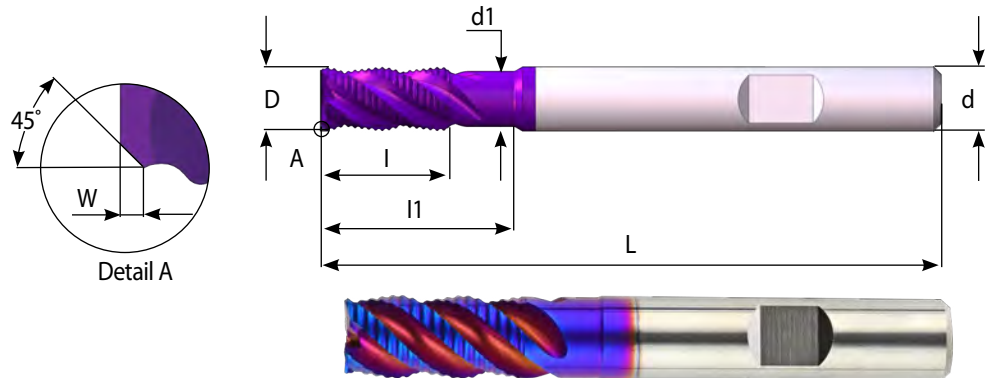
● First choice ○ Alternative

Long Design



| Ordering Code | d | D | W | No. of Flutes | I | L |
|--------------------|------|------|------|---------------|------|-----|
| RM 0250 D06 | 1/4 | .250 | .012 | 4 | .63 | 2.5 |
| RM 0312 D06 | 5/16 | .276 | .012 | 4 | .63 | 2.5 |
| RM 0312 D07 | 5/16 | .312 | .012 | 4 | .71 | 2.5 |
| RM 0375 D08 | 3/8 | .375 | .012 | 4 | .87 | 3.0 |
| RM 0500 D10 | 1/2 | .500 | .016 | 4 | 1.02 | 3.5 |

Solid Carbide Roughers with Neck



| | | | | | |
|---|---|---|---|---|---------|
| P | M | K | N | S | H |
| ● | ● | ● | ○ | ● | ≤56 HRc |

| Ordering Code | d | D | l | l1 | d1 | W | No. of Flutes | L |
|------------------------|------|------|------|------|-----|------|---------------|-----|
| RM 0250 D05 N07 | 1/4 | .250 | .51 | .71 | .23 | 0.12 | 4 | 2.5 |
| RM 0312 D06 N09 | 5/16 | .312 | .67 | .94 | .30 | 0.12 | 4 | 2.5 |
| RM 0375 D08 N11 | 3/8 | .375 | .83 | 1.18 | .38 | 0.12 | 4 | 3.0 |
| RM 0500 D09 N14 | 1/2 | .500 | .98 | 1.42 | .46 | 0.16 | 4 | 3.5 |
| RM 0625 E13 N18 | 5/8 | .625 | 1.30 | 1.89 | .61 | 0.20 | 5 | 4.0 |

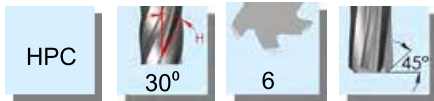
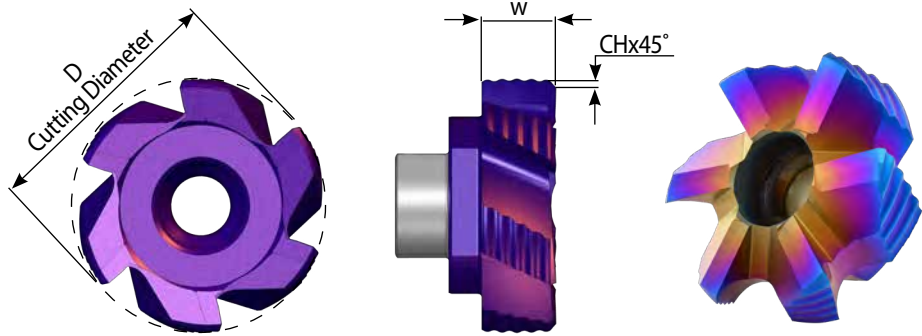
● First choice ○ Alternative

CMT Roughers

Indexable CMT roughers 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



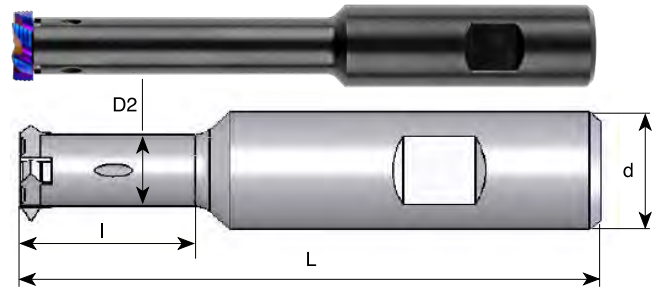
| | | | | | |
|---|---|---|---|---|---------|
| P | M | K | N | S | H |
| ● | ● | ● | ○ | ● | ≤56 HRc |

| 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 |

● First choice ○ Alternative

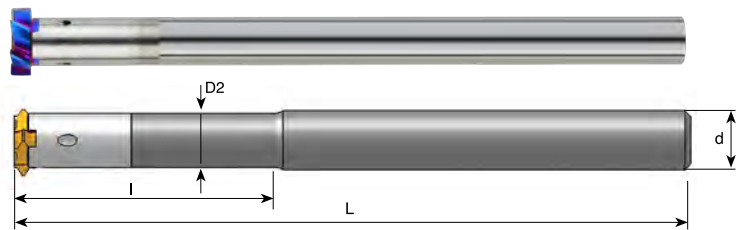
The CMT Roughers should be used with all the toolholders shown on page 318.

Steel Toolholders With internal coolant



| Ordering Code | Insert Type | d | D2 | I | L | Insert Screw | Torx Key |
|---------------------|-------------|------|-----|------|-----|--------------|----------|
| SRC 0625 H18 | S20 | .625 | .54 | 1.89 | 4.0 | S16 | K16 |
| SRC 0750 H18 | S20 | .750 | .54 | 1.26 | 4.0 | S16 | K16 |
| SRC 0750 J18 | S20 | .750 | .54 | 1.89 | 4.5 | S16 | K16 |
| SRC 0750 L18 | S20 | .750 | .54 | 2.91 | 5.5 | S16 | K16 |

Carbide Shank Toolholder With internal coolant



| Ordering Code | Insert type | d | D2 | I | L | Insert Screw | Torx Key |
|-------------------------|-------------|------|------|------|-----|--------------|----------|
| CRC 0500 P18 | S20 | .500 | .500 | --- | 7.0 | S16 | K16 |
| CRC 0625 L18 R18 | S20 | .625 | .54 | 1.89 | 7.8 | S16 | K16 |
| CRC 0625 L29 R18 | S20 | .625 | .54 | 2.91 | 7.8 | S16 | K16 |

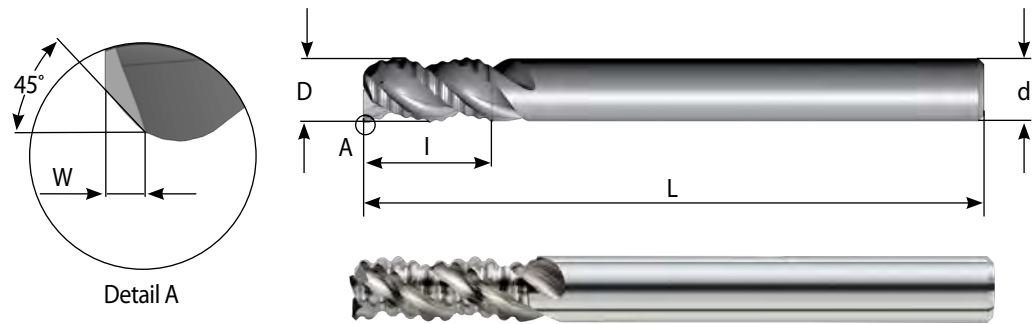
Solid Carbide Roughers - *Aluminum Machining*

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.



| | | | | | |
|---|---|---|---|---|---|
| P | M | K | N | S | H |
| | ○ | ○ | ● | ○ | |

| Ordering Code | d | D | W | No. of Flutes | I | L |
|---------------------|------|------|------|---------------|------|-----|
| RMA 0250 C03 | 1/4 | .157 | .012 | 3 | .31 | 2.5 |
| RMA 0250 C06 | 1/4 | .250 | .012 | 3 | .63 | 2.5 |
| RMA 0312 C07 | 5/16 | .312 | .012 | 3 | .75 | 2.5 |
| RMA 0375 C08 | 3/8 | .375 | .012 | 3 | .87 | 3.0 |
| RMA 0500 C10 | 1/2 | .500 | .016 | 3 | 1.02 | 3.5 |

● First choice ○ Alternative

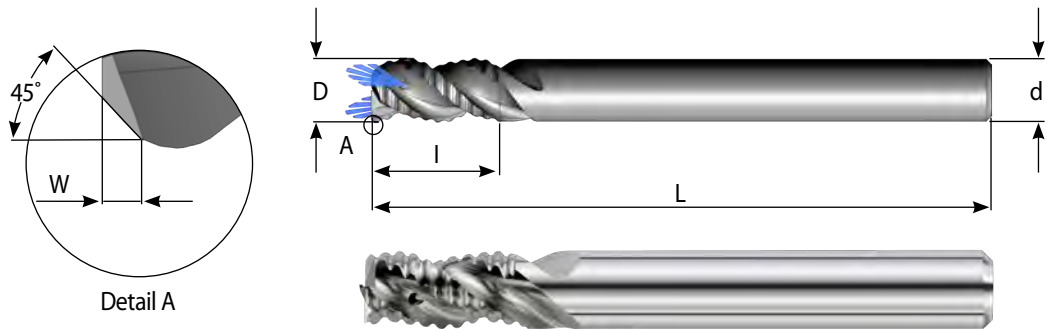
Solid Carbide Roughers - *Aluminum Machining*

with internal coolant through the flutes

Features

- High Performance Cutting (HPC)
- The coolant washes the chip out

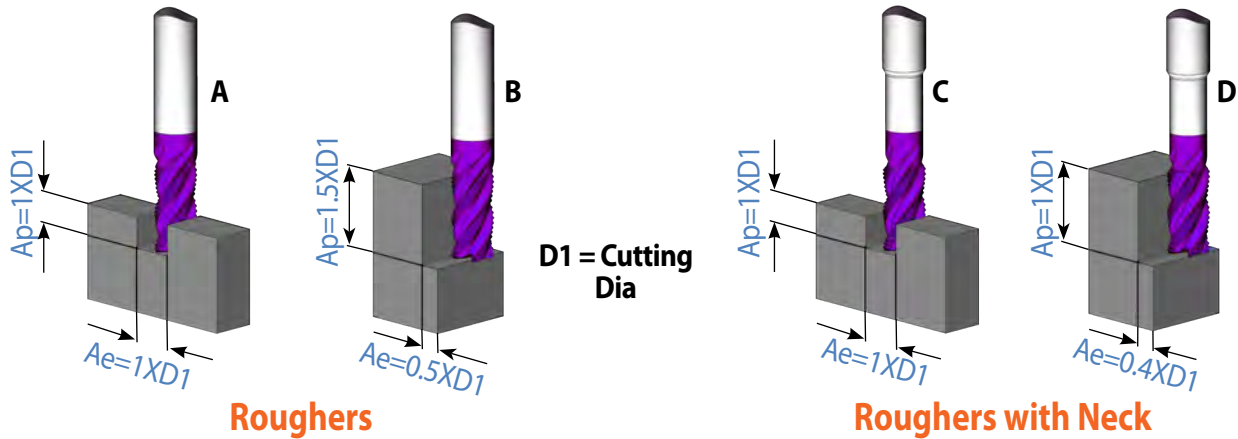
Carbide Grade: CA5



| | | | | | |
|---|---|---|---|---|---|
| P | M | K | N | S | H |
| | ○ | ○ | ● | ○ | |

| Ordering Code | d mm | D | W | No. of Flutes | I | 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 |

Cutting Conditions (solid end-mills and CMT)



Roughers

Roughers with Neck

Cutting Data

For hard or tough materials reduce the A_p by 20%-30%.

Roughers with neck (C, D) can be used with same feed and speed as below.

| ISO Standard | Materials Class | Vc ft/min | Fz inch/tooth Cutting Diameter | | | |
|--------------|--|--------------------------|-----------------------------------|----------------------------------|----------------------------------|----------------------------------|
| | | | 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-Austenitic | 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 |

Mini Chamfer



Advantages

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

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

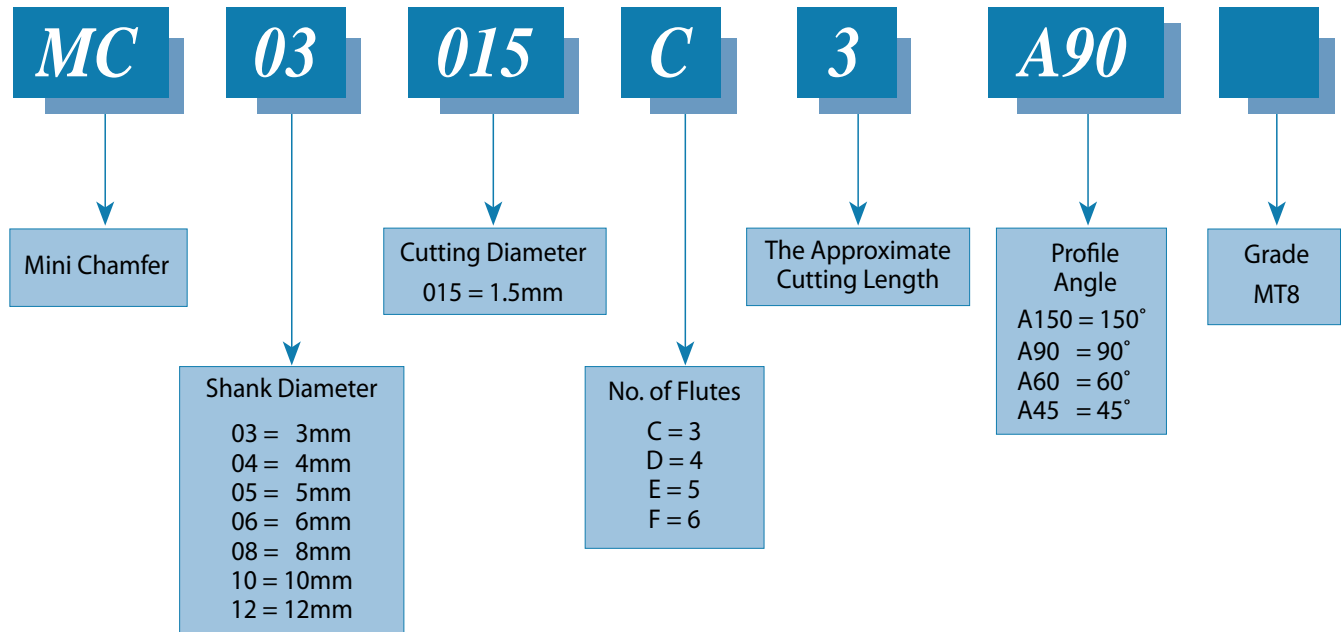
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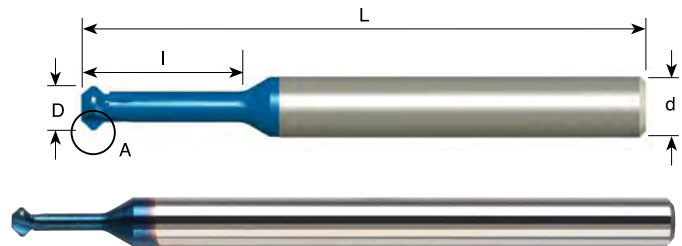
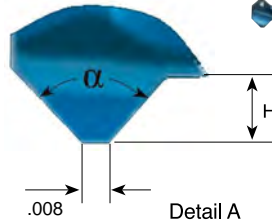
Product Identification

Mini Chamfer Ordering Codes



Mini Chamfer

Metric Shanks



90°

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

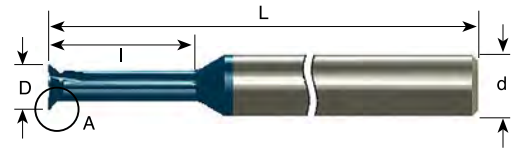
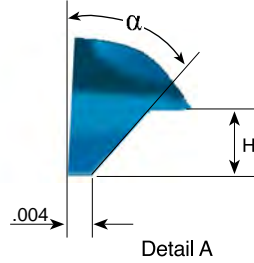
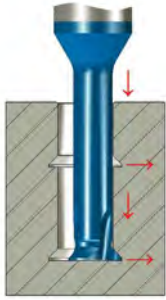
Long Reach 90°

| Ordering Code | d mm | D | I | H | B | α | No. of Flutes | L |
|----------------|------|------|------|------|------|----------|---------------|-----|
| MC0303C12 A90 | 3 | .118 | .47 | .024 | .028 | 90° | 3 | 1.5 |
| MC04035C14 A90 | 4 | .138 | .55 | .028 | .031 | 90° | 3 | 2.0 |
| MC0404C16 A90 | 4 | .157 | .63 | .031 | .035 | 90° | 3 | 2.0 |
| MC0404C16L A90 | 4 | .157 | .63 | .031 | .035 | 90° | 3 | 4.1 |
| MC05045C18 A90 | 5 | .177 | .71 | .039 | .043 | 90° | 3 | 2.0 |
| MC0505C20 A90 | 5 | .197 | .79 | .043 | .047 | 90° | 3 | 2.0 |
| MC0505C20L A90 | 5 | .197 | .79 | .043 | .047 | 90° | 3 | 4.1 |
| MC06055C22 A90 | 6 | .217 | .87 | .047 | .051 | 90° | 3 | 2.3 |
| MC0606C24 A90 | 6 | .236 | .94 | .059 | .063 | 90° | 3 | 2.3 |
| MC0606C24L A90 | 6 | .236 | .94 | .059 | .063 | 90° | 3 | 4.1 |
| MC0808D28 A90 | 8 | .315 | 1.10 | .063 | .067 | 90° | 4 | 2.5 |
| MC0808D28L A90 | 8 | .315 | 1.10 | .063 | .067 | 90° | 4 | 4.1 |
| MC1010E35 A90 | 10 | .394 | 1.38 | .071 | .075 | 90° | 5 | 2.9 |
| MC1212F42 A90 | 12 | .472 | 1.65 | .083 | .087 | 90° | 6 | 3.3 |

60°

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

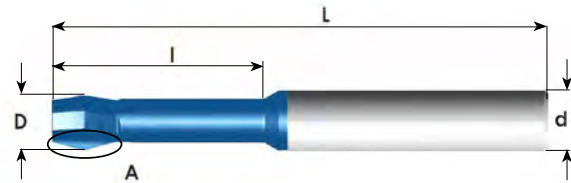
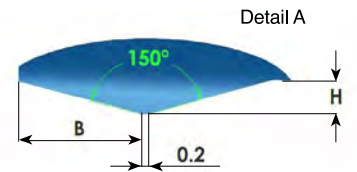
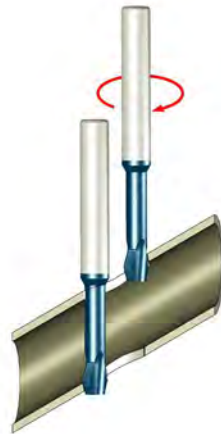
Mini Chamfer Metric Shanks



Dovetail 45°*

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

* One side cutting



150°

| Ordering Code | d mm | D | I | H | B | No. of Flutes | L |
|-----------------|------|------|------|------|------|---------------|-----|
| MC0303C12 A150 | 3 | .118 | .47 | .024 | .087 | 3 | 1.5 |
| MC0404C16 A150 | 4 | .157 | .63 | .031 | .118 | 3 | 2.0 |
| MC0404C16L A150 | 4 | .157 | .63 | .031 | .118 | 3 | 4.1 |
| MC0505C20 A150 | 5 | .197 | .79 | .039 | .150 | 3 | 2.0 |
| MC0505C20L A150 | 5 | .197 | .79 | .039 | .150 | 3 | 4.1 |
| MC0606C24 A150 | 6 | .236 | .94 | .039 | .150 | 3 | 2.3 |
| MC0606C24L A150 | 6 | .236 | .94 | .039 | .150 | 3 | 4.1 |
| MC0808C28 A150 | 8 | .315 | 1.10 | .039 | .150 | 3 | 2.5 |
| MC0808C28L A150 | 8 | .315 | 1.10 | .039 | .150 | 3 | 4.1 |

Order example: MC 0303 C12 A150 MT8

Cutting Data for tools MG, MC family

| ISO Standard | 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 & 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 |

Mini Chamfer Kit

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



Special Solid Carbide Tools



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





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