

# THREAD MAKING



# THREAD MAKING



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|                                           |     |
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|                                           |     |

## Guide to Icons



➤ TS-THREAD  
Holder Page



➤ Insert Page



➤ Cutting Condition Page

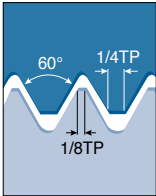
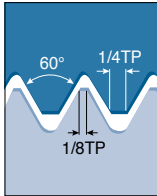
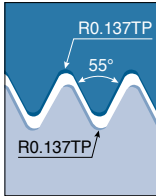


### T-TAP (Tapping)

[illegible]

# Tool Selection Guide

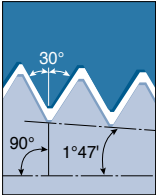
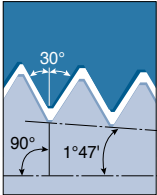
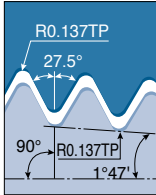
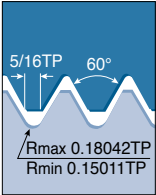
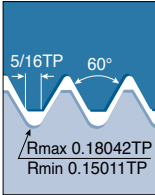
Solid carbide threading end mills

| Thread                                                                                                                                | TS-THREAD                                                                         |                                                                                   |                                                                                    |
|---------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
|                                                                                                                                       | Metric ISO                                                                        | American UN                                                                       | Whitworth                                                                          |
|                                                                                                                                       |  |  |  |
| Application                                                                                                                           | General usage for all industries                                                  | General usage for all industries                                                  | General industries. Pipe fittings and couplings                                    |
| MTEC <br>General type                                | ●<br>C15                                                                          | ●<br>C23                                                                          | ●<br>C27                                                                           |
| MTECB <br>Internal coolant hole                      | ●<br>C13                                                                          | ●<br>C22                                                                          | ●<br>C27                                                                           |
| MTECZ <br>Internal coolant in the flutes             | ●<br>C14                                                                          | ●<br>C24                                                                          | ●<br>C27                                                                           |
| MTECS <br>Short head                                 | ●<br>C18-C19                                                                      | ●<br>C25                                                                          |                                                                                    |
| MTECSH <br>Short head for hard materials             | ●<br>C21                                                                          | ●<br>C26                                                                          |                                                                                    |
| MTECD <br>Short head with internal coolant hole    | ●<br>C20                                                                          |                                                                                   |                                                                                    |
| MTECQ <br>Reduced neck diameter for deep threading | ●<br>C16                                                                          |                                                                                   |                                                                                    |
| MTECI <br>Partial profile                          | ●<br>C31                                                                          | ●<br>C31                                                                          |                                                                                    |
| MTEC E <br>External threading                      | ●<br>C17                                                                          | ●<br>C24                                                                          |                                                                                    |

► For correct tool choice and CNC programming, use the 'TS-thread guide' software (Available at [www.taegutec.com](http://www.taegutec.com))

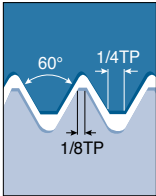
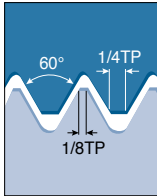
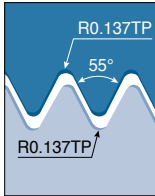
# Tool Selection Guide

## Solid carbide threading end mills

| TS-THREAD                                                                        |                                                                                   |                                                                                   |                                                                                   |                                                                                    |
|----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
| NPT                                                                              | NPTF                                                                              | BSPT                                                                              | UNJ                                                                               | MJ                                                                                 |
|  |  |  |  |  |
| Steam, gas and water pipes                                                       | Steam, gas and water pipes. Dry seal                                              | 55° form for steam, gas and water pipes                                           | Aviation and aerospace industry                                                   | Aviation and aerospace industry                                                    |
| ●<br>C28                                                                         | ●<br>C28                                                                          | ●<br>C29                                                                          |                                                                                   |                                                                                    |
| ●<br>C28                                                                         |                                                                                   | ●<br>C29                                                                          |                                                                                   |                                                                                    |
|                                                                                  | ●<br>C28                                                                          | ●<br>C29                                                                          |                                                                                   |                                                                                    |
|                                                                                  |                                                                                   |                                                                                   | ●<br>C30                                                                          | ●<br>C30                                                                           |
|                                                                                  |                                                                                   |                                                                                   |                                                                                   |                                                                                    |
|                                                                                  |                                                                                   |                                                                                   |                                                                                   |                                                                                    |
|                                                                                  |                                                                                   |                                                                                   |                                                                                   |                                                                                    |
|                                                                                  |                                                                                   |                                                                                   |                                                                                   |                                                                                    |
|                                                                                  |                                                                                   |                                                                                   |                                                                                   |                                                                                    |
|                                                                                  |                                                                                   |                                                                                   |                                                                                   |                                                                                    |

# Tool Selection Guide

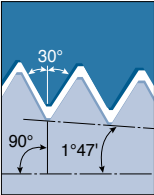
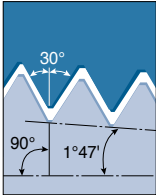
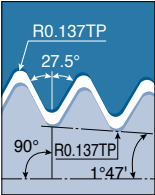
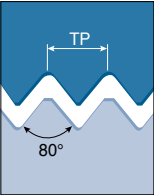
Indexable insert type

| Thread                                               | TS-THREAD                                                                         |                                                                                   |                                                                                    |
|------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
|                                                      | Metric ISO                                                                        | American UN                                                                       | Whitworth                                                                          |
|                                                      |  |  |  |
| Insert page                                          | C41, C49                                                                          | C42, C43, C50                                                                     | C44, C51                                                                           |
| Application                                          | General usage for all industries                                                  | General usage for all industries                                                  | General industries. Pipe fittings and couplings                                    |
| MTE D<br>C33<br><br>Single insert                    | •                                                                                 | •                                                                                 | •                                                                                  |
| MTE D-C<br>C34<br><br>Solid carbide shank            | •                                                                                 | •                                                                                 | •                                                                                  |
| MTE D-W<br>C35<br><br>Twin insert                    | •                                                                                 | •                                                                                 | •                                                                                  |
| TMTSRH<br>C36<br><br>Helical end mill                | •                                                                                 | •                                                                                 | •                                                                                  |
| MTF D<br>C37<br><br>Large diameter thread            | •                                                                                 | •                                                                                 | •                                                                                  |
| MTFLE D<br>C38<br><br>Multi tooth-external threading | •                                                                                 | •                                                                                 | •                                                                                  |
| TMTSRH<br>C39<br><br>Helical shell mill              | •                                                                                 | •                                                                                 | •                                                                                  |

► For correct tool choice and CNC programming, use the 'TS-thread guide' software (Available at [www.taegutec.com](http://www.taegutec.com))

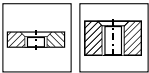
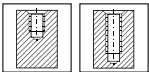
# Tool Selection Guide

Indexable insert type

| TS-THREAD                                                                         |                                                                                   |                                                                                   |                                                                                   |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| NPT                                                                               | NPTF                                                                              | BSPT                                                                              | PG                                                                                |
|  |  |  |  |
| C45, C51                                                                          | C46                                                                               | C47, C52                                                                          | C48                                                                               |
| Steam, gas and water pipes                                                        | Steam, gas and water pipes.<br>Dry seal                                           | 55° form for steam, gas and water pipes                                           | Electrical connector                                                              |
| •                                                                                 | •                                                                                 | •                                                                                 | •                                                                                 |
| •                                                                                 | •                                                                                 | •                                                                                 | •                                                                                 |
| •                                                                                 | •                                                                                 | •                                                                                 | •                                                                                 |
| •                                                                                 | •                                                                                 | •                                                                                 | •                                                                                 |
| •                                                                                 | •                                                                                 | •                                                                                 | •                                                                                 |
| •                                                                                 | •                                                                                 | •                                                                                 | •                                                                                 |
| •                                                                                 | •                                                                                 | •                                                                                 | •                                                                                 |

# Tool Selection Guide

Straight flute with spiral point tap

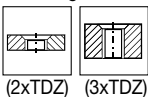
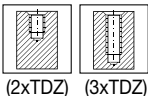
| Series                |                                                                                                                        |            |                                                                                               |                                                                                               |
|-----------------------|------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|
|                       |                                                                                                                        | Straight flute with spiral point tap                                                        |                                                                                               |                                                                                               |
|                       |                                                                                                                        | TPH...52B  | TPH...52B05  | TPH...52B10  |
| Pages                 |                                                                                                                        | C59                                                                                         | C60                                                                                           | C61                                                                                           |
| Coating type          |                                                                                                                        | Uncoated                                                                                    | Steam tempered                                                                                | TiN coated                                                                                    |
| Chamfer form          |                                                                                                                        | Form B<br>4-5 threads chamfer                                                               | Form B<br>4-5 threads chamfer                                                                 | Form B<br>4-5 threads chamfer                                                                 |
| Range<br>(ISO metric) | Coarse threads                                                                                                         | M2 - M20                                                                                    | M2 - M20                                                                                      | M2 - M20                                                                                      |
|                       | Fine threads                                                                                                           | M8 - M16                                                                                    | M8 - M16                                                                                      | M8 - M16                                                                                      |
| Tolerance             |                                                                                                                        | ISO 2-6H                                                                                    | ISO 2-6H                                                                                      | ISO 2-6H                                                                                      |
| Material              | P                                                                                                                      | ○                                                                                           | ●                                                                                             | ●                                                                                             |
|                       | M                                                                                                                      |                                                                                             | ●                                                                                             | ●                                                                                             |
|                       | K                                                                                                                      | ○                                                                                           | ○                                                                                             | ○                                                                                             |
|                       | N                                                                                                                      | ●                                                                                           | ○                                                                                             | ○                                                                                             |
|                       | S                                                                                                                      |                                                                                             |                                                                                               | ○                                                                                             |
| Application           | Through hole<br><br>(2xTDZ) (3xTDZ) | ●                                                                                           | ●                                                                                             | ●                                                                                             |
|                       | Blind hole<br><br>(2xTDZ) (3xTDZ)   |                                                                                             |                                                                                               |                                                                                               |

● Recommended, ○ Suitable



# Tool Selection Guide

40° right hand spiral flute tap

| Series                |                                                                                                                        | <div>T-TAP</div> <div>40° right hand spiral flute tap</div>                       |                                                                                   |                                                                                   |
|-----------------------|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|                       |                                                                                                                        | TPH...54C                                                                         | TPH...54C05                                                                       | TPH...54C10                                                                       |
|                       |                                                                                                                        |  |  |  |
| Pages                 |                                                                                                                        | C62                                                                               | C63                                                                               | C64                                                                               |
| Coating type          |                                                                                                                        | Uncoated                                                                          | Steam tempered                                                                    | TiN coated                                                                        |
| Chamfer form          |                                                                                                                        | Form C<br>2-3 threads chamfer                                                     | Form C<br>2-3 threads chamfer                                                     | Form C<br>2-3 threads chamfer                                                     |
| Range<br>(ISO metric) | Coarse threads                                                                                                         | M2 - M20                                                                          | M2 - M20                                                                          | M2 - M20                                                                          |
|                       | Fine threads                                                                                                           | M8 - M16                                                                          | M8 - M16                                                                          | M8 - M16                                                                          |
| Tolerance             |                                                                                                                        | ISO 2-6H                                                                          | ISO 2-6H                                                                          | ISO 2-6H                                                                          |
| Material              | P                                                                                                                      | ○                                                                                 | ●                                                                                 | ●                                                                                 |
|                       | M                                                                                                                      |                                                                                   | ●                                                                                 | ●                                                                                 |
|                       | K                                                                                                                      | ○                                                                                 | ○                                                                                 | ○                                                                                 |
|                       | N                                                                                                                      | ●                                                                                 | ○                                                                                 | ○                                                                                 |
|                       | S                                                                                                                      |                                                                                   |                                                                                   | ○                                                                                 |
| Application           | Through hole<br><br>(2xTDZ) (3xTDZ) |                                                                                   |                                                                                   |                                                                                   |
|                       | Blind hole<br><br>(2xTDZ) (3xTDZ)   | ●                                                                                 | ●                                                                                 | ●                                                                                 |

● Recommended, ○ Suitable

## Thread making grades

| Grades                      | ISO                                 | Characteristics & applications                                                                                                                                                  |
|-----------------------------|-------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>TT9030</b><br>PVD coated | P20 – P40<br>M20 – M40<br>S20 – S40 | <ul style="list-style-type: none"><li>• General machining of steel</li><li>• General machining of stainless steel</li><li>• General machining of heat-resistant alloy</li></ul> |
|                             |                                     |                                                                                                                                                                                 |
|                             |                                     |                                                                                                                                                                                 |
|                             |                                     |                                                                                                                                                                                 |
|                             |                                     |                                                                                                                                                                                 |
|                             |                                     |                                                                                                                                                                                 |

***TS-THREAD***

**Thread Milling**



# Designation System

**TS-THREAD**

Solid carbide end mill

**MTEC**  **06 04 C 14 1.0 ISO TT9030**

**1 2 3 4 5 6 7 8 9**

## 1 TaeguTec mill thread

**MT** - Mill thread  
**E** - End mill  
**C** - Carbide

## 2 End mill type

**B** - Axial coolant bore  
**Z** - Coolant hole in the flutes  
**S** - Short head  
**SH** - Short head for threading hard materials  
**Q** - Reduced diameter neck  
**I** - Partial profile

## 3 Shank diameter

**06** 6.0 mm  
**10** 10.0 mm

## 4 Cutting diameter

**031** 3.1 mm  
**04** 4.0 mm

## 5 No. of flutes

**C** - 3 flutes  
**D** - 4 flutes  
**E** - 5 flutes  
**F** - 6 flutes

## 6 Length of thread (APMX)

**10** 10.0 mm

## 7 Thread pitch

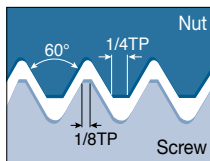
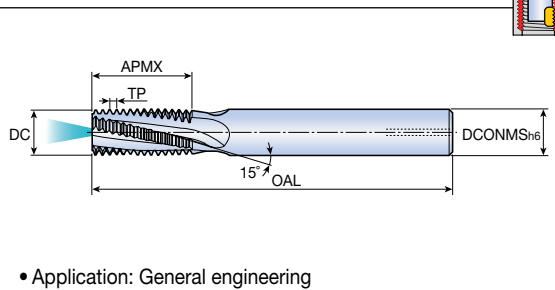
**0.25-4.0 mm** (Thread pitch)  
**72-7 TPI** (Threads per inch)

## 8 Thread standard

**ISO**  
**UN**  
**W**  
**NPT**  
**NPTF**  
**BSPT**  
**UNJ**  
**MJ**

## 9 Grades

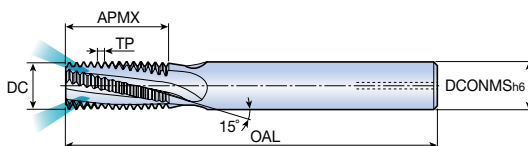
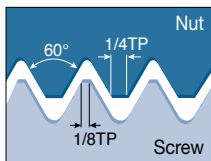
**Coated**  
**TT9030**  
**TT1040**

[illegible]

► NOF: Number of flutes

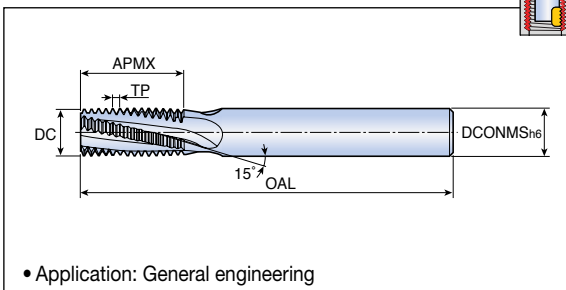
●: Standard items



[illegible]

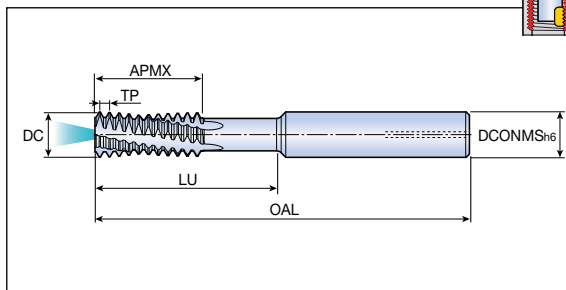
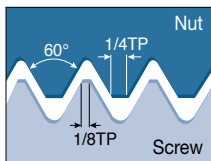
●: Standard items

A schematic diagram of a piston and crank mechanism. A blue piston is shown in a cylinder, connected to a yellow crankshaft. The piston is at the top of its stroke, and the crankshaft is in a horizontal position. The cylinder walls are shown with red hatching.



●: Standard items

## TS-THREAD

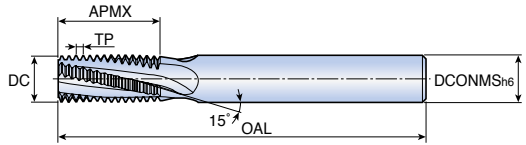
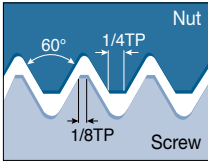


- : Standard items

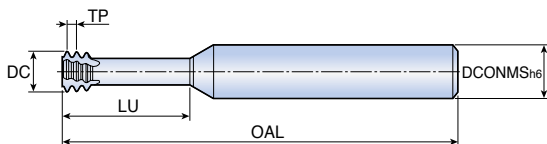
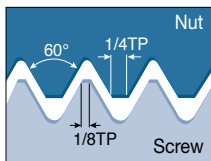


## TS-THREAD

A schematic diagram of a transformer. It consists of a rectangular magnetic core. A primary coil with 5 turns is wound on the left vertical leg and is connected to an AC power source. A secondary coil with 10 turns is wound on the right vertical leg and is connected to a load resistor.

[illegible]

●: Standard items

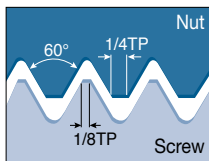
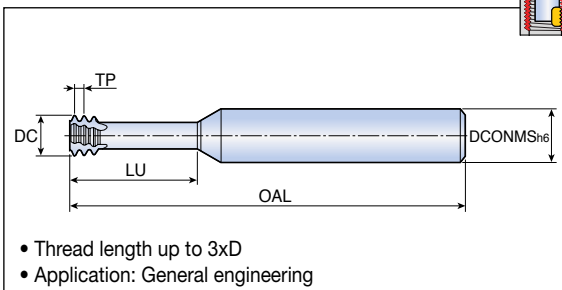


- [illegible]



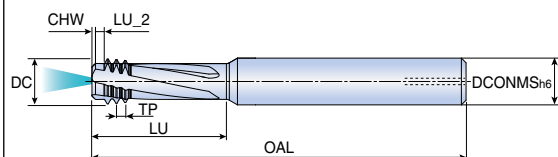
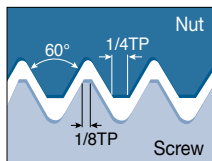
- : Standard items

A diagram showing a cross-section of a piston and crank mechanism. A blue piston is connected to a yellow crankshaft by a yellow piston pin. The piston is shown in a compressed state, with red wavy lines representing the combustion pressure pushing it down. The crankshaft is shown in a horizontal position, with the piston pin attached to its end.

[illegible]

- ▶ TDZ: Thread diameter size
- ▶ NOF: Number of flutes
- ▶ <sup>(1)</sup> Specially designed for the production of dental implants

●: Standard items

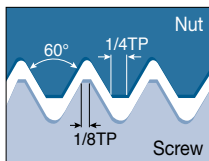
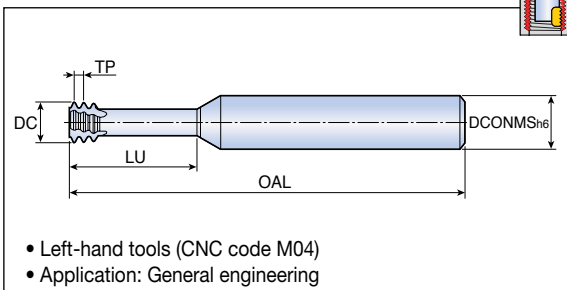


- [illegible]



- ▶ Thread hole, thread and chamfer by circular interpolation
- ▶ TDZ: Thread diameter size
- ▶ NOF: Number of flutes

●: Standard items

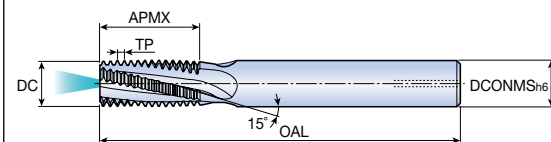
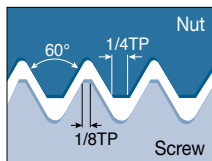


- Left-hand tools (CNC code M04)
- Application: General engineering

[illegible]

- ▶ TDZ: Thread diameter size
- ▶ NOF: Number of flutes

●: Standard items

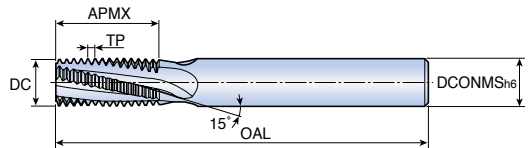
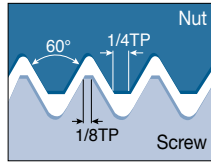


- [illegible]



●: Standard items

A schematic diagram of a piston and crank mechanism. A blue piston is shown at the top, connected to a yellow crankshaft. The piston is surrounded by red wavy lines representing the combustion chamber. The crankshaft is shown in a cross-section view, with the piston rod passing through it.

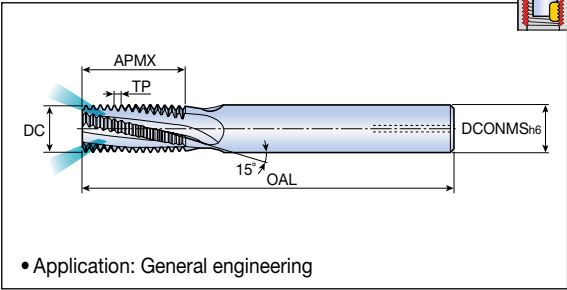
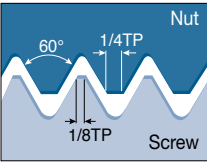
[illegible]

●: Standard items

# MTECZ-UN



Solid carbide with internal coolant in the flutes for internal threading



| Designation                | TPI | UNC | UNF      | UNEF      | Dimension (mm) |      |      |     | NOF | Grade<br>TT9030 |
|----------------------------|-----|-----|----------|-----------|----------------|------|------|-----|-----|-----------------|
|                            |     |     |          |           | DCONMS         | DC   | APMX | OAL |     |                 |
| <b>MTECZ 1010D22 20 UN</b> | 20  | -   | 1/2      | -         | 10             | 10.0 | 22.3 | 73  | 4   | ●               |
| <b>12113D26 18 UN</b>      | 18  | -   | 9/16-5/8 | 11/8-15/8 | 12             | 11.3 | 26.1 | 84  | 4   | ●               |
| <b>08067C16 16 UN</b>      | 16  | 3/8 | -        | -         | 8              | 6.7  | 16.7 | 64  | 3   | ●               |
| <b>10092C22 13 UN</b>      | 13  | 1/2 | -        | -         | 10             | 9.2  | 22.5 | 73  | 3   | ●               |
|                            |     |     |          |           |                |      |      |     |     |                 |
|                            |     |     |          |           |                |      |      |     |     |                 |



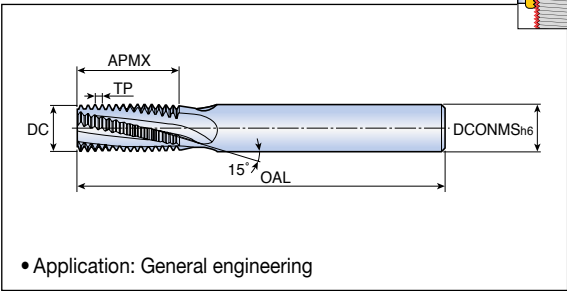
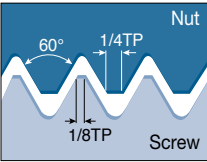
► NOF: Number of flutes

●: Standard items

# MTEC E-UN



Solid carbide end mills for external threading



| Designation                 | TPI | Dimension (mm) |      |      |     | NOF | Grade<br>TT9030 |
|-----------------------------|-----|----------------|------|------|-----|-----|-----------------|
|                             |     | DCONMS         | DC   | APMX | OAL |     |                 |
| <b>MTEC E 1010D16 24 UN</b> | 24  | 10             | 10.0 | 16.4 | 73  | 4   | ●               |
|                             |     |                |      |      |     |     |                 |
|                             |     |                |      |      |     |     |                 |
|                             |     |                |      |      |     |     |                 |
|                             |     |                |      |      |     |     |                 |
|                             |     |                |      |      |     |     |                 |

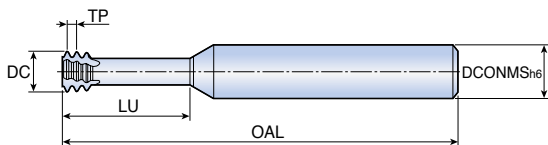
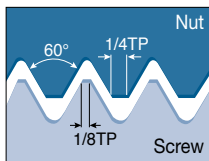


► NOF: Number of flutes

●: Standard items



A diagram showing a cross-section of a piston and crank mechanism. A yellow piston pin is shown connecting the piston to the crankshaft. The piston is blue, and the crankshaft is grey. The mechanism is shown in a simplified, schematic style.

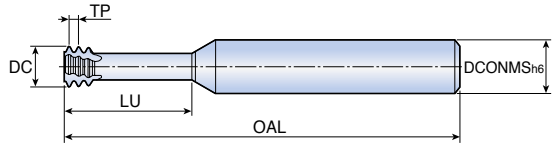
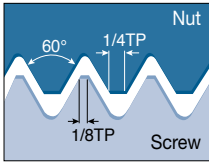


- Application: General engineering

[illegible]

► NOF: Number of flutes

●: Standard items

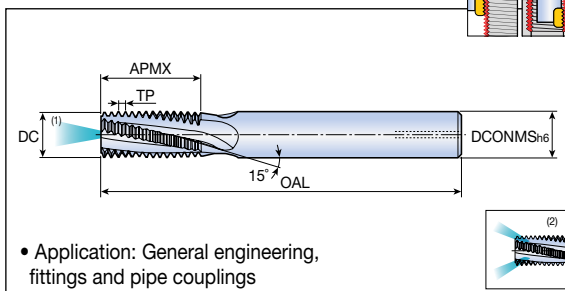
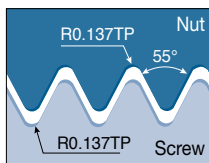


- [illegible]



●: Standard items

## TS-THREAD



**Cutting Condition**

 **C54-C55**

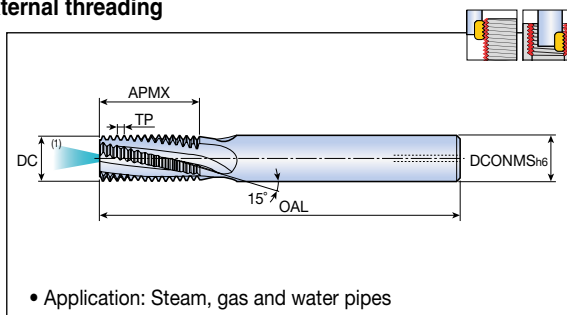
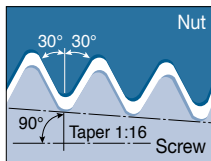
- ▶ TDZ: Thread diameter size
- ▶ NOF: Number of flutes
- ▶ <sup>(1)</sup> B type <sup>(2)</sup> Z type

●: Standard items

# MTECB-NPT / MTEC-NPT

TS-THREAD

Solid carbide end mills for internal or external threading



| Designation                  | TPI  | TDZ     | Dimension (mm) |      |      |     | NOF | Grade<br>TT9030 |
|------------------------------|------|---------|----------------|------|------|-----|-----|-----------------|
|                              |      |         | DCONMS         | DC   | APMX | OAL |     |                 |
| <b>MTECB 08076C10 27 NPT</b> | 27   | 1/8     | 8              | 7.6  | 10.8 | 64  | 3   | ●               |
| <b>1010D16 18 NPT</b>        | 18   | 1/4-3/8 | 10             | 10.0 | 16.2 | 73  | 4   | ●               |
| <b>16155D22 14 NPT</b>       | 14   | 1/2-3/4 | 16             | 15.5 | 22.7 | 105 | 4   | ●               |
| <b>MTEC 0606C9 27 NPT</b>    | 27   | 1/8     | 6              | 6.0  | 9.9  | 58  | 3   | ●               |
| <b>0808C14 18 NPT</b>        | 18   | 1/4-3/8 | 8              | 8.0  | 14.8 | 64  | 3   | ●               |
| <b>1212D20 14 NPT</b>        | 14   | 1/2-3/4 | 12             | 12.0 | 20.9 | 84  | 4   | ●               |
| <b>1616D27 11.5 NPT</b>      | 11.5 | 1-2     | 16             | 16.0 | 27.6 | 105 | 4   | ●               |



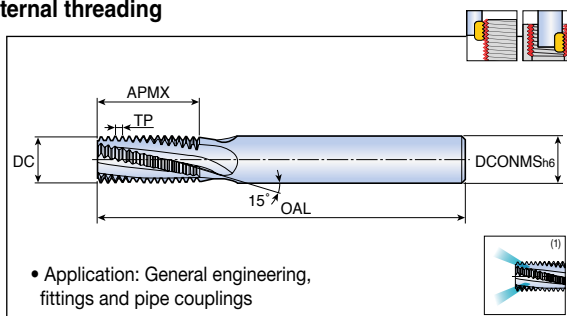
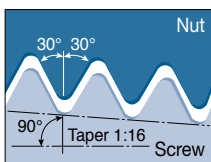
- ▶ TDZ: Thread diameter size
- ▶ NOF: Number of flutes
- ▶ <sup>(1)</sup> B type

●: Standard items

# MTECZ-NPTF / MTEC-NPTF

TS-THREAD

Solid carbide end mills for internal or external threading



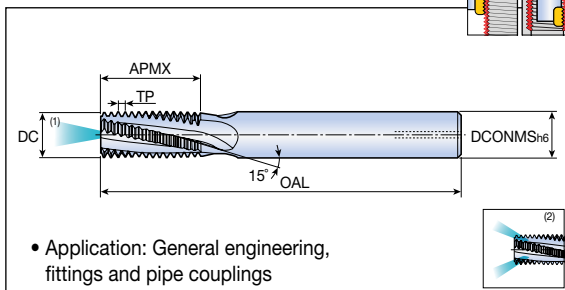
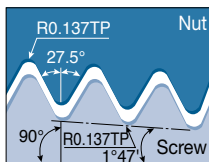
| Designation                  | TPI | TDZ     | Dimension (mm) |      |      |     | NOF | Grade<br>TT9030 |
|------------------------------|-----|---------|----------------|------|------|-----|-----|-----------------|
|                              |     |         | DCONMS         | DC   | APMX | OAL |     |                 |
| <b>MTECZ 1010D16 18 NPTF</b> | 18  | 1/4-3/8 | 10             | 10.0 | 16.2 | 73  | 4   | ●               |
| <b>MTEC 0606C9 27 NPTF</b>   | 27  | 1/8     | 6              | 6.0  | 9.9  | 58  | 3   | ●               |
| <b>0808C14 18 NPTF</b>       | 18  | 1/4-3/8 | 8              | 8.0  | 14.8 | 64  | 3   | ●               |
| <b>1212D20 14 NPTF</b>       | 14  | 1/2-3/4 | 12             | 12.0 | 20.9 | 84  | 4   | ●               |
|                              |     |         |                |      |      |     |     |                 |
|                              |     |         |                |      |      |     |     |                 |



- ▶ TDZ: Thread diameter size
- ▶ NOF: Number of flutes
- ▶ <sup>(1)</sup> Z type

●: Standard items

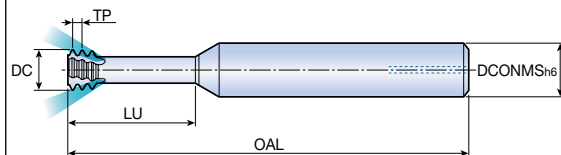
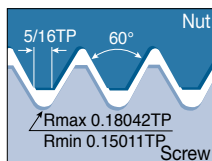
## TS-THREAD

[illegible]

- ▶ TDZ: Thread diameter size
- ▶ NOF: Number of flutes
- ▶ <sup>(1)</sup> B type <sup>(2)</sup> Z type

●: Standard items

## TS-THREAD



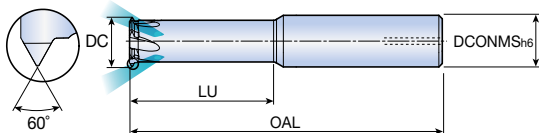
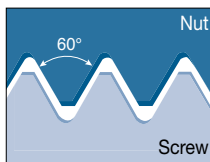
- [illegible]



- ▶ NOF: Number of flutes
- ▶ <sup>(1)</sup> Without coolant holes

●: Standard items

## TS-THREAD



- Application: General engineering

●: Standard items



- ▶ TDZ: Thread diameter size
- ▶ NOF: Number of flutes

# Tool Designation System



## End mills

**MT** **E** **D25** - **1** - **W** **20** **(C)** - **21**

**1** **2** **3** **4** **5** **6** **7** **8**

|                           |                                                                    |                           |
|---------------------------|--------------------------------------------------------------------|---------------------------|
| <b>1 Mill thread</b>      | <b>2 Tool type</b>                                                 | <b>3 Cutting diameter</b> |
| M - Mill<br>T - Thread    | E - End mills type                                                 | D25 - 25.0mm              |
| <b>4 Number of insert</b> | <b>5 Shank type</b>                                                | <b>6 Shank diameter</b>   |
| 1 1 insert<br>2 2 inserts | W - Weldon shank<br>C - Cylindrical type                           | 20 - 20.0mm               |
| <b>7 Shank material</b>   | <b>8 Insert size (APMX)</b>                                        |                           |
| C Carbide shank           | 12 12.0 mm<br>14 14.0 mm<br>21 21.0 mm<br>30 30.0 mm<br>40 40.0 mm |                           |

## Cutters

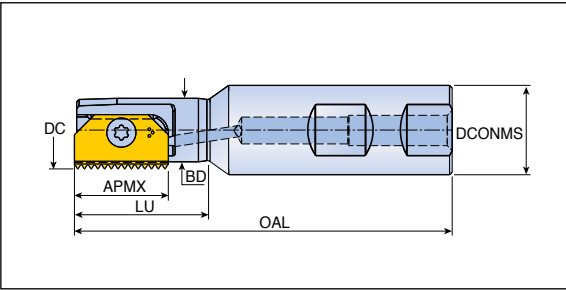
**MT** **F** **D063** - **5** - **22** - **21**

**1** **2** **3** **4** **5** **6**

|                            |                                        |                                        |
|----------------------------|----------------------------------------|----------------------------------------|
| <b>1 Mill thread</b>       | <b>2 Tool type</b>                     | <b>3 Cutting diameter</b>              |
| M - Mill<br>T - Thread     | F - Facemill type                      | D063 - 63.0mm                          |
| <b>4 Number of insert</b>  | <b>5 Bore diameter</b>                 | <b>6 Insert size (APMX)</b>            |
| 4 4 inserts<br>5 5 inserts | 22 22.0 mm<br>27 27.0 mm<br>32 32.0 mm | 21 21.0 mm<br>30 30.0 mm<br>40 40.0 mm |



Indexable threading end mills - Weldon shank

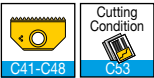


| Designation                       |  | Dimension (mm) |      |        |      |       |     | Shank | Coolant hole |  Kg | Insert |
|-----------------------------------|-----------------------------------------------------------------------------------|----------------|------|--------|------|-------|-----|-------|--------------|--------------------------------------------------------------------------------------|--------|
|                                   |                                                                                   | APMX           | DC   | DCONMS | BD   | LU    | OAL |       |              |                                                                                      |        |
| MTE D09.5-1-W20-12 <sup>(1)</sup> | 1                                                                                 | 12             | 9.5  | 20     | 7.5  | 15.5  | 85  | W     | ●            | 0.16                                                                                 | TTMT12 |
| D09.9-1-W20-12                    | 1                                                                                 | 12             | 9.9  | 20     | 7.5  | 16.0  | 85  | W     | ●            | 0.16                                                                                 | TTMT12 |
| D12.2-1-W20-14                    | 1                                                                                 | 14             | 12.2 | 20     | 8.8  | 20.0  | 75  | W     | ●            | 0.15                                                                                 | TTMT14 |
| D14.5-1-W20-14                    | 1                                                                                 | 14             | 14.5 | 20     | 10.8 | 27.1  | 85  | W     | ●            | 0.16                                                                                 | TTMT14 |
| D17.0-1-W20-14                    | 1                                                                                 | 14             | 17.0 | 20     | 12.8 | 30.0  | 85  | W     | ●            | 0.23                                                                                 | TTMT14 |
| D18-1-W20-21 <sup>(2)</sup>       | 1                                                                                 | 21             | 18.5 | 20     | 14.2 | 30.0  | 85  | W     | ●            | 0.20                                                                                 | TTMT21 |
| D21-1-W20-21                      | 1                                                                                 | 21             | 21.0 | 20     | 15.9 | 40.0  | 94  | W     | ●            | 0.23                                                                                 | TTMT21 |
| D25-1-W20-21                      | 1                                                                                 | 21             | 25.0 | 20     | 20.0 | 61.0  | 115 | W     | ●            | 0.24                                                                                 | TTMT21 |
| D29-1-W25-30                      | 1                                                                                 | 30             | 29.0 | 25     | 22.2 | 50.0  | 110 | W     | ●            | 0.32                                                                                 | TTMT30 |
| D31-1-W25-30                      | 1                                                                                 | 30             | 31.0 | 25     | 25.0 | 90.0  | 150 | W     | ●            | 0.60                                                                                 | TTMT30 |
| D38-1-W32-30                      | 1                                                                                 | 30             | 38.0 | 32     | 32.0 | 86.0  | 150 | W     | ●            | 0.90                                                                                 | TTMT30 |
| D48-1-W40-40                      | 1                                                                                 | 40             | 48.0 | 40     | 35.0 | 78.0  | 153 | W     | ●            | 1.30                                                                                 | TTMT40 |
| D48-1-W40-40-B                    | 1                                                                                 | 40             | 48.0 | 40     | 36.5 | 138.0 | 210 | W     | ●            | 1.50                                                                                 | TTMT40 |
|                                   |                                                                                   |                |      |        |      |       |     |       |              |                                                                                      |        |
|                                   |                                                                                   |                |      |        |      |       |     |       |              |                                                                                      |        |
|                                   |                                                                                   |                |      |        |      |       |     |       |              |                                                                                      |        |
|                                   |                                                                                   |                |      |        |      |       |     |       |              |                                                                                      |        |
|                                   |                                                                                   |                |      |        |      |       |     |       |              |                                                                                      |        |
|                                   |                                                                                   |                |      |        |      |       |     |       |              |                                                                                      |        |
|                                   |                                                                                   |                |      |        |      |       |     |       |              |                                                                                      |        |

- ▶ Minimum bore should be one-third larger than DC (diameter)
- ▶ All end mills are equipped with a bore for internal coolant
- ▶ <sup>(1)</sup> Not suitable for inserts: TTMT12 18 NPT, TTMT12 18 NPTF, TTMT12 19 BSPT
- ▶ <sup>(2)</sup> Not suitable for inserts: TTMT21 1 3.50 ISO, TTMT21 1 7 UN, TTMT21 11.5 NPT, TTMT21 11.5 NPTF

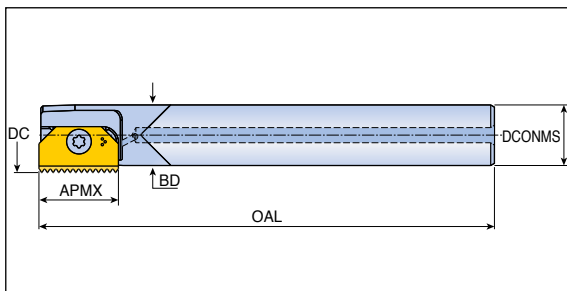
Spare parts

| Designation       | Screw                                                                               | Wrench                                                                              | Wrench handle                                                                       |                                                                                     |
|-------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|                   |  |  |  |  |
| MTE D...12        | SR M2.5-T8-MT                                                                       | BLD T08/M7                                                                          | SW4-SD                                                                              | -                                                                                   |
| MTE D...14        | S11                                                                                 | BLD T08/M7                                                                          | SW4-SD                                                                              | -                                                                                   |
| MTE D...21        | SR M4-IP15-MT                                                                       | BLD IP15/S7                                                                         | SW6-SD                                                                              | -                                                                                   |
| MTE D...30/40(-B) | SR M5-IP25-MT                                                                       | BLD IP25/S7                                                                         | -                                                                                   | SW6-T                                                                               |
|                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |



## TS-THREAD

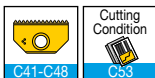
## **Indexable threading end mills - Cylindrical carbide shank**

[illegible]

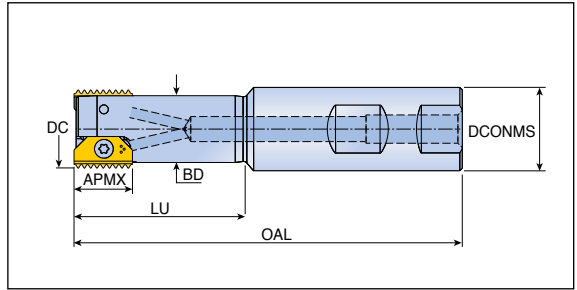
- For holders with long overhang, reduce the cutting speed and feed rate, between 20 to 40% (depending on workpiece, material, pitch and overhang)

## Spare parts

| Designation               | Screw                                                                               | Wrench                                                                              | Wrench handle                                                                       |                                                                                     |
|---------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|                           |  |  |  |  |
| <b>MTE D...C...12</b>     | SR M2.5-T8-MT                                                                       | BLD T08/M7                                                                          | SW4-SD                                                                              | -                                                                                   |
| <b>MTE D...C...14(-B)</b> | S11                                                                                 | BLD T08/M7                                                                          | SW4-SD                                                                              | -                                                                                   |
| <b>MTE D...C...21(-B)</b> | SR M4-IP15-MT                                                                       | BLD IP15/S7                                                                         | SW6-SD                                                                              | -                                                                                   |
| <b>MTE D...C...30</b>     | SR M5-IP25-MT-S                                                                     | BLD IP25/S7                                                                         | -                                                                                   | SW6-T                                                                               |

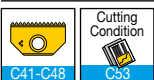


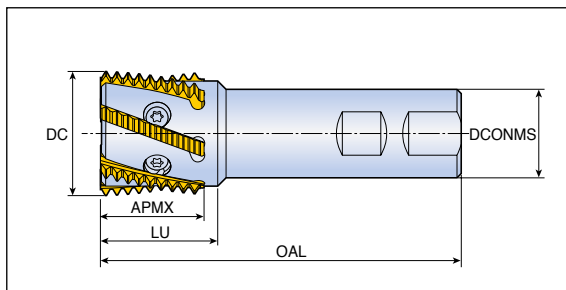
## TS-THREAD



- ▶ Minimum bore should be one-third larger than DC (diameter)
- ▶ All end mills are equipped with a bore for internal coolant

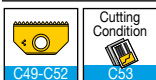
| Designation              | Screw                                                                               | Wrench                                                                              | Wrench handle                                                                       |                                                                                     |
|--------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|                          |  |  |  |  |
| <b>MTE D...W...14</b>    | S11                                                                                 | BLD T08/M7                                                                          | SW4-SD                                                                              | -                                                                                   |
| <b>MTE D...W...21</b>    | SR M4-IP15-MT                                                                       | BLD IP15/S7                                                                         | SW6-SD                                                                              | -                                                                                   |
| <b>MTE D...W...30/40</b> | SR M5-IP25-MT                                                                       | BLD IP25/S7                                                                         | -                                                                                   | SW6-T                                                                               |
|                          |                                                                                     |                                                                                     |                                                                                     |                                                                                     |



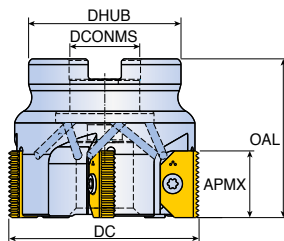
[illegible]

## Spare parts

| Designation      | Screw                                                                               | Wrench                                                                              |  |  |
|------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--|--|
|                  |  |  |  |  |
| <b>TMTSRH 23</b> | TS23                                                                                | TK21                                                                                |  |  |
| <b>TMTSRH 32</b> | TS32                                                                                | TK22                                                                                |  |  |
| <b>TMTSRH 45</b> | TS45                                                                                | TK40                                                                                |  |  |
|                  |                                                                                     |                                                                                     |  |  |
|                  |                                                                                     |                                                                                     |  |  |

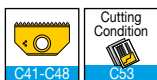


## TS-THREAD

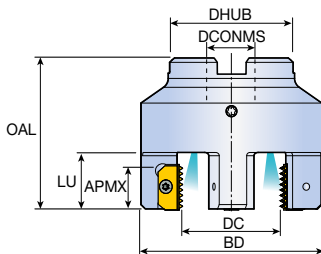


► All shell mills are equipped with a bore for internal coolant

| Designation             | Screw                                                                               | Wrench                                                                              | Wrench handle                                                                       |                                                                                     |  |
|-------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--|
|                         |  |  |  |  |  |
| <b>MTF D063...21</b>    | SR M4-IP15-MT                                                                       | BLD IP15/S7                                                                         | SW6-SD                                                                              | -                                                                                   |  |
| <b>MTF D063...30</b>    | SR M5-IP25-MT                                                                       | BLD IP25/S7                                                                         | -                                                                                   | SW6-T                                                                               |  |
| <b>MTF D080...30/40</b> | SR M5-IP25-MT                                                                       | BLD IP25/S7                                                                         | -                                                                                   | SW6-T                                                                               |  |
| <b>MTF D100...30/40</b> | SR M5-IP25-MT                                                                       | BLD IP25/S7                                                                         | -                                                                                   | SW6-T                                                                               |  |
|                         |                                                                                     |                                                                                     |                                                                                     |                                                                                     |  |

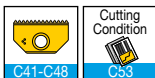


## TS-THREAD

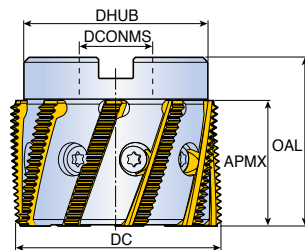


► All shell mills are equipped with a bore for internal coolant

| Designation         | Screw         | Wrench                                                                              | Wrench handle                                                                       |                                                                                     |
|---------------------|---------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|                     |               |  |  |  |
| <b>MTFLE D...21</b> | SR M4-IP15-MT | BLD IP15/S7                                                                         | SW6-SD                                                                              |                                                                                     |
|                     |               |                                                                                     |                                                                                     |                                                                                     |
|                     |               |                                                                                     |                                                                                     |                                                                                     |
|                     |               |                                                                                     |                                                                                     |                                                                                     |

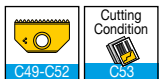


## TS-THREAD



► All shell mills are equipped with a bore for internal coolant

| Designation      | Screw                                                                               | Wrench                                                                              |  |  |
|------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--|--|
|                  |  |  |  |  |
| <b>TMTSRH 32</b> | TS32S                                                                               | TK22                                                                                |  |  |
| <b>TMTSRH 45</b> | SR M5X0.8-MTH45                                                                     | TK40                                                                                |  |  |
| <b>TMTSRH 63</b> | SR M5X0.8-MTH63                                                                     | TK40                                                                                |  |  |
|                  |                                                                                     |                                                                                     |  |  |



Thread milling inserts

|         |    |   |     |     |        |
|---------|----|---|-----|-----|--------|
| TTMT(H) | 30 | E | 1.5 | ISO | TT9030 |
| 1       | 2  | 3 | 4   | 5   | 6      |

1 TaeguTec mill thread

TT - TaeguTec  
M - Mill  
T - Thread  
H - Helical insert

2 Insert size (INSL)

12 12.0 mm  
14 14.0 mm  
21 21.0 mm  
30 30.0 mm  
40 40.0 mm



3 Application

E - External  
I - Internal  
□ - External + internal

4 Thread pitch

0.5 - 6.0 mm (Thread pitch)  
32 - 4 TPI (Threads per inch)

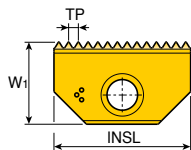
5 Thread standard

ISO  
UN  
WHIT  
NPT  
NPTF  
BSPT

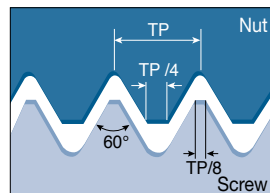
6 Grades

Coated  
TT9030





TTMT12 I <sup>(1)</sup>



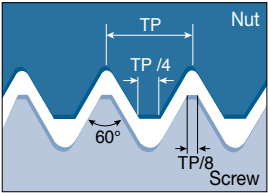
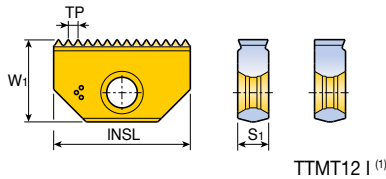
| Insert | Designation                            | TP<br>(mm) | Dimension (mm) |      |     | Grade |
|--------|----------------------------------------|------------|----------------|------|-----|-------|
|        |                                        |            | INSL           | W1   | S1  |       |
|        | <b>TTMT12 I 0.5 ISO<sup>(1)</sup></b>  | 0.50       | 12             | 6.5  | 2.9 | ●     |
|        | <b>TTMT12 I 0.75 ISO<sup>(1)</sup></b> | 0.75       | 12             | 6.5  | 2.9 | ●     |
|        | <b>TTMT12 I 1.0 ISO<sup>(1)</sup></b>  | 1.00       | 12             | 6.5  | 2.9 | ●     |
|        | <b>TTMT12 I 1.25 ISO<sup>(1)</sup></b> | 1.25       | 12             | 6.5  | 2.9 | ●     |
|        | <b>TTMT12 I 1.5 ISO<sup>(1)</sup></b>  | 1.50       | 12             | 6.5  | 2.9 | ●     |
|        | <b>TTMT14 I 0.5 ISO</b>                | 0.50       | 14             | 7.9  | 3.2 | ●     |
|        | <b>TTMT14 E/I 0.75 ISO</b>             | 0.75       | 14             | 7.9  | 3.2 | ●     |
|        | <b>TTMT14 E/I 1.0 ISO</b>              | 1.00       | 14             | 7.9  | 3.2 | ●     |
|        | <b>TTMT14 E/I 1.25 ISO</b>             | 1.25       | 14             | 7.9  | 3.2 | ●     |
|        | <b>TTMT14 E/I 1.5 ISO</b>              | 1.50       | 14             | 7.9  | 3.2 | ●     |
|        | <b>TTMT14 E/I 1.75 ISO</b>             | 1.75       | 14             | 7.9  | 3.2 | ●     |
|        | <b>TTMT14 E/I 2.0 ISO</b>              | 2.00       | 14             | 7.9  | 3.2 | ●     |
|        | <b>TTMT14 E/I 2.5 ISO</b>              | 2.50       | 14             | 7.9  | 3.2 | ●     |
|        | <b>TTMT21 E/I 1.0 ISO</b>              | 1.00       | 21             | 12.6 | 4.8 | ●     |
|        | <b>TTMT21 E/I 1.5 ISO</b>              | 1.50       | 21             | 12.6 | 4.8 | ●     |
|        | <b>TTMT21 I 1.75 ISO</b>               | 1.75       | 21             | 12.6 | 4.8 | ●     |
|        | <b>TTMT21 E/I 2.0 ISO</b>              | 2.00       | 21             | 12.6 | 4.8 | ●     |
|        | <b>TTMT21 E/I 2.5 ISO</b>              | 2.50       | 21             | 12.6 | 4.8 | ●     |
|        | <b>TTMT21 E/I 3.0 ISO</b>              | 3.00       | 21             | 12.6 | 4.8 | ●     |
|        | <b>TTMT21 I 3.5 ISO</b>                | 3.50       | 21             | 12.6 | 4.8 | ●     |
|        | <b>TTMT30 E/I 1.5 ISO</b>              | 1.50       | 30             | 16.7 | 5.6 | ●     |
|        | <b>TTMT30 E/I 2.0 ISO</b>              | 2.00       | 30             | 16.7 | 5.6 | ●     |
|        | <b>TTMT30 E/I 3.0 ISO</b>              | 3.00       | 30             | 16.7 | 5.6 | ●     |
|        | <b>TTMT30 E/I 3.5 ISO</b>              | 3.50       | 30             | 16.7 | 5.6 | ●     |
|        | <b>TTMT30 E/I 4.0 ISO</b>              | 4.00       | 30             | 16.7 | 5.6 | ●     |
|        | <b>TTMT30 I 4.5 ISO</b>                | 4.50       | 30             | 16.7 | 5.6 | ●     |
|        | <b>TTMT30 I 5.0 ISO</b>                | 5.00       | 30             | 16.7 | 5.6 | ●     |
|        | <b>TTMT40 E/I 1.5 ISO</b>              | 1.50       | 40             | 20.8 | 6.4 | ●     |
|        | <b>TTMT40 E/I 2.0 ISO</b>              | 2.00       | 40             | 20.8 | 6.4 | ●     |
|        | <b>TTMT40 E/I 3.0 ISO</b>              | 3.00       | 40             | 20.8 | 6.4 | ●     |
|        | <b>TTMT40 I 3.5 ISO</b>                | 3.50       | 40             | 20.8 | 6.4 | ●     |
|        | <b>TTMT40 E/I 4.0 ISO</b>              | 4.00       | 40             | 20.8 | 6.4 | ●     |
|        | <b>TTMT40 I 4.5 ISO</b>                | 4.50       | 40             | 20.8 | 6.4 | ●     |
|        | <b>TTMT40 E/I 5.0 ISO</b>              | 5.00       | 40             | 20.8 | 6.4 | ●     |
|        | <b>TTMT40 I 5.5 ISO</b>                | 5.50       | 40             | 20.8 | 6.4 | ●     |
|        | <b>TTMT40 E/I 6.0 ISO</b>              | 6.00       | 40             | 20.8 | 6.4 | ●     |
|        |                                        |            |                |      |     |       |
|        |                                        |            |                |      |     |       |



► <sup>(1)</sup> TTMT12 insert is only available with a single cutting edge

●: Standard items

UN, UNC, UNF, UNEF, UNS



| Insert                                                                            | Designation                   | TPI | Dimension (mm) |      |     | Grade |
|-----------------------------------------------------------------------------------|-------------------------------|-----|----------------|------|-----|-------|
|                                                                                   |                               |     | INSL           | W1   | S1  |       |
|  | TTMT12 I 32 UN <sup>(1)</sup> | 32  | 12             | 6.5  | 2.9 | ●     |
|                                                                                   | TTMT12 I 28 UN <sup>(1)</sup> | 28  | 12             | 6.5  | 2.9 | ●     |
|                                                                                   | TTMT12 I 24 UN <sup>(1)</sup> | 24  | 12             | 6.5  | 2.9 | ●     |
|                                                                                   | TTMT12 I 20 UN <sup>(1)</sup> | 20  | 12             | 6.5  | 2.9 | ●     |
|                                                                                   | TTMT12 I 18 UN <sup>(1)</sup> | 18  | 12             | 6.5  | 2.9 | ●     |
|                                                                                   | TTMT12 I 16 UN <sup>(1)</sup> | 16  | 12             | 6.5  | 2.9 | ●     |
|                                                                                   | TTMT14 E/I 32 UN              | 32  | 14             | 7.9  | 3.2 | ●     |
|                                                                                   | TTMT14 E/I 28 UN              | 28  | 14             | 7.9  | 3.2 | ●     |
|                                                                                   | TTMT14 I 27 UN                | 27  | 14             | 7.9  | 3.2 | ●     |
|                                                                                   | TTMT14 E/I 24 UN              | 24  | 14             | 7.9  | 3.2 | ●     |
|                                                                                   | TTMT14 E/I 20 UN              | 20  | 14             | 7.9  | 3.2 | ●     |
|                                                                                   | TTMT14 E/I 18 UN              | 18  | 14             | 7.9  | 3.2 | ●     |
|                                                                                   | TTMT14 E/I 16 UN              | 16  | 14             | 7.9  | 3.2 | ●     |
|                                                                                   | TTMT14 E/I 14 UN              | 14  | 14             | 7.9  | 3.2 | ●     |
|                                                                                   | TTMT14 E/I 12 UN              | 12  | 14             | 7.9  | 3.2 | ●     |
|                                                                                   | TTMT14 I 11 UN                | 11  | 14             | 7.9  | 3.2 | ●     |
|                                                                                   | TTMT14 I 10 UN                | 10  | 14             | 7.9  | 3.2 | ●     |
|                                                                                   | TTMT21 E/I 24 UN              | 24  | 21             | 12.6 | 4.8 | ●     |
|                                                                                   | TTMT21 E/I 20 UN              | 20  | 21             | 12.6 | 4.8 | ●     |
|                                                                                   | TTMT21 E/I 18 UN              | 18  | 21             | 12.6 | 4.8 | ●     |
|                                                                                   | TTMT21 E/I 16 UN              | 16  | 21             | 12.6 | 4.8 | ●     |
|                                                                                   | TTMT21 E/I 14 UN              | 14  | 21             | 12.6 | 4.8 | ●     |
|                                                                                   | TTMT21 E/I 12 UN              | 12  | 21             | 12.6 | 4.8 | ●     |
|                                                                                   | TTMT21 E/I 10 UN              | 10  | 21             | 12.6 | 4.8 | ●     |
|                                                                                   | TTMT21 I 8 UN                 | 8   | 21             | 12.6 | 4.8 | ●     |
|                                                                                   | TTMT21 I 7 UN                 | 7   | 21             | 12.6 | 4.8 | ●     |
|                                                                                   | TTMT30 E/I 20 UN              | 20  | 30             | 16.7 | 5.6 | ●     |
|                                                                                   | TTMT30 E/I 18 UN              | 18  | 30             | 16.7 | 5.6 | ●     |
|                                                                                   | TTMT30 E/I 16 UN              | 16  | 30             | 16.7 | 5.6 | ●     |
|                                                                                   | TTMT30 E/I 14 UN              | 14  | 30             | 16.7 | 5.6 | ●     |
|                                                                                   | TTMT30 E/I 12 UN              | 12  | 30             | 16.7 | 5.6 | ●     |
|                                                                                   | TTMT30 E/I 10 UN              | 10  | 30             | 16.7 | 5.6 | ●     |
|                                                                                   | TTMT30 E/I 8 UN               | 8   | 30             | 16.7 | 5.6 | ●     |
|                                                                                   | TTMT30 E/I 6 UN               | 6   | 30             | 16.7 | 5.6 | ●     |
|                                                                                   | TTMT30 I 5 UN                 | 5   | 30             | 16.7 | 5.6 | ●     |
|                                                                                   |                               |     |                |      |     |       |
|                                                                                   |                               |     |                |      |     |       |
|                                                                                   |                               |     |                |      |     |       |

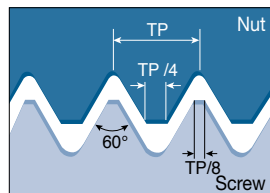
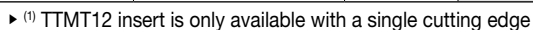


► <sup>(1)</sup> TTMT12 insert is only available with a single cutting edge

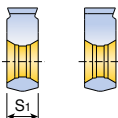
●: Standard items

## UN, UNC, UNF, UNEF, UNS

## UN, UNC, UNF, UNEF, UNS

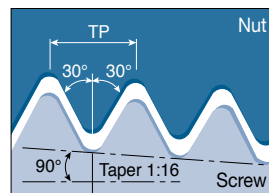
TTMT12 I <sup>(1)</sup>[illegible]

●: Standard items



A black, L-shaped mechanical component, likely a part of a mechanical assembly. It features a circular hole on the upper horizontal section and a series of teeth or a comb-like structure along the vertical section.

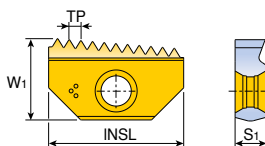
## TS-THREAD



- ▶ The same insert for external and internal threading
- ▶ Conical pipe thread inserts are single-sided

●: Standard items

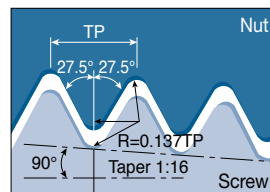
**NPTF - National pipe thread tapered (Dryseal)**

[illegible]

- ▶ The same insert for external and internal threading
- ▶ Conical pipe thread Inserts are single-sided

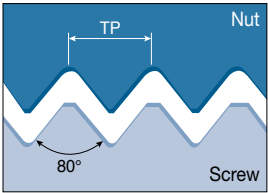
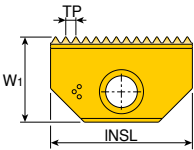
●: Standard items

## TS-THREAD

[illegible]

- ▶ The same insert for external and internal threading
- ▶ Conical pipe thread inserts are single-sided

●: Standard items



| Insert | Designation         | TPI | Thread size          | Dimension (mm) |      |     | Grade |
|--------|---------------------|-----|----------------------|----------------|------|-----|-------|
|        |                     |     |                      | INSL           | W1   | S1  |       |
|        | <b>TTMT14 18 PG</b> | 18  | PG9, 11, 13.5, 16    | 14             | 7.9  | 3.2 | ●     |
|        | <b>TTMT21 18 PG</b> | 18  | PG16                 | 21             | 12.6 | 4.8 | ●     |
|        | <b>TTMT21 16 PG</b> | 16  | PG21, 29, 36, 42, 48 | 21             | 12.6 | 4.8 | ●     |
|        | <b>TTMT30 16 PG</b> | 16  | PG36, 42, 48         | 30             | 16.7 | 5.6 | ●     |
|        |                     |     |                      |                |      |     |       |
|        |                     |     |                      |                |      |     |       |
|        |                     |     |                      |                |      |     |       |
|        |                     |     |                      |                |      |     |       |
|        |                     |     |                      |                |      |     |       |
|        |                     |     |                      |                |      |     |       |
|        |                     |     |                      |                |      |     |       |
|        |                     |     |                      |                |      |     |       |
|        |                     |     |                      |                |      |     |       |
|        |                     |     |                      |                |      |     |       |
|        |                     |     |                      |                |      |     |       |
|        |                     |     |                      |                |      |     |       |
|        |                     |     |                      |                |      |     |       |
|        |                     |     |                      |                |      |     |       |
|        |                     |     |                      |                |      |     |       |
|        |                     |     |                      |                |      |     |       |
|        |                     |     |                      |                |      |     |       |
|        |                     |     |                      |                |      |     |       |
|        |                     |     |                      |                |      |     |       |
|        |                     |     |                      |                |      |     |       |
|        |                     |     |                      |                |      |     |       |
|        |                     |     |                      |                |      |     |       |
|        |                     |     |                      |                |      |     |       |
|        |                     |     |                      |                |      |     |       |
|        |                     |     |                      |                |      |     |       |
|        |                     |     |                      |                |      |     |       |
|        |                     |     |                      |                |      |     |       |
|        |                     |     |                      |                |      |     |       |
|        |                     |     |                      |                |      |     |       |
|        |                     |     |                      |                |      |     |       |

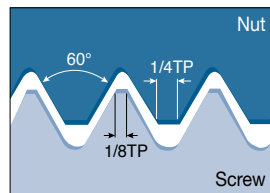
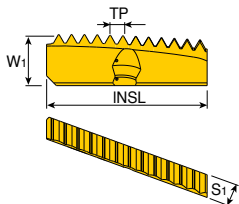
► The same insert for external and internal threading

●: Standard items



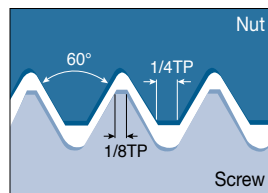


## Helical inserts for ISO metric threads (Internal)



- ▶ THID: Thread designation inside

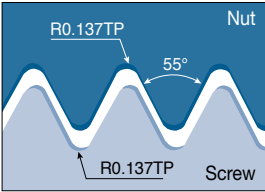
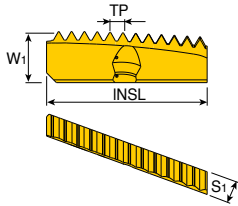
●: Standard items



# TMTH-W



Helical inserts for whitworth threads, BSW, BSF, BSP (Internal and external)



| Insert | Designation         | TPI | THID      | THOD  | Dimension (mm) |      |     | Tool        | Grade |
|--------|---------------------|-----|-----------|-------|----------------|------|-----|-------------|-------|
|        |                     |     |           |       | INSL           | W1   | S1  |             |       |
|        | <b>TMTH 23 11 W</b> | 11  | ≥G 1"     | ≥G 1" | 27             | 8.0  | 3.5 | TMTSRH 23-2 | ●     |
|        | <b>TMTH 32 11 W</b> | 11  | ≥G 1 1/8" | ≥G 1" | 32             | 9.0  | 4.0 | TMTSRH 32-5 | ●     |
|        | <b>TMTH 45 11 W</b> | 11  | ≥G 1 3/4" | ≥G 1" | 37             | 11.9 | 5.0 | TMTSRH 45-6 | ●     |
|        | <b>TMTH 63 11 W</b> | 11  | ≥G 2 1/2" | ≥G 1" | 38             | 11.9 | 5.0 | TMTSRH 63-9 | ●     |
|        |                     |     |           |       |                |      |     |             |       |
|        |                     |     |           |       |                |      |     |             |       |
|        |                     |     |           |       |                |      |     |             |       |



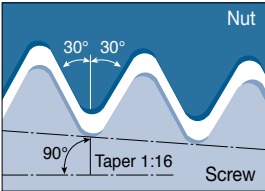
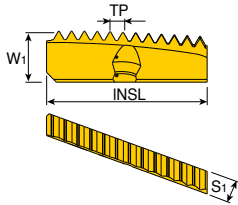
- ▶ THID: Thread designation inside
- ▶ THOD: Thread designation outside

●: Standard item

# TMTH-NPT



Helical inserts for NPT threads (Internal and external)



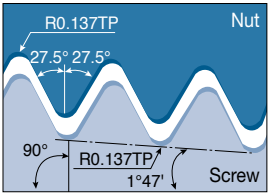
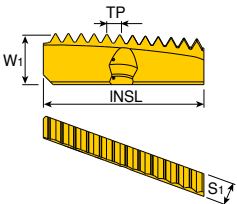
| Insert | Designation             | TPI  | THID          | THOD      | Dimension (mm) |      |     | Tool        | Grade |
|--------|-------------------------|------|---------------|-----------|----------------|------|-----|-------------|-------|
|        |                         |      |               |           | INSL           | W1   | S1  |             |       |
|        | <b>TMTH 23 11.5 NPT</b> | 11.5 | 1"-2" NPT     | 1"-2" NPT | 27             | 8.0  | 3.5 | TMTSRH 23-2 | ●     |
|        | <b>TMTH 32 11.5 NPT</b> | 11.5 | 1 1/4"-2" NPT | 1"-2" NPT | 32             | 9.0  | 4.0 | TMTSRH 32-5 | ●     |
|        | <b>TMTH 45 11.5 NPT</b> | 11.5 | 2" NPT        | 1"-2" NPT | 37             | 11.9 | 5.0 | TMTSRH 45-6 | ●     |
|        | <b>TMTH 63 11.5 NPT</b> | 11.5 | -             | ≥1" NPT   | 38             | 11.9 | 5.0 | TMTSRH 63-9 | ●     |
|        |                         |      |               |           |                |      |     |             |       |
|        |                         |      |               |           |                |      |     |             |       |
|        |                         |      |               |           |                |      |     |             |       |



- ▶ THID: Thread designation inside
- ▶ THOD: Thread designation outside

●: Standard items

## Helical inserts for BSPT threads (Internal and external)



| Insert                                                                           | Designation            | TPI | THID         | THOD     | Dimension (mm) |      |     | Tool        | Grade |
|----------------------------------------------------------------------------------|------------------------|-----|--------------|----------|----------------|------|-----|-------------|-------|
|                                                                                  |                        |     |              |          | INSL           | W1   | S1  |             |       |
|  | <b>TMTH 23 11 BSPT</b> | 11  | ≥1" BSPT     | ≥1" BSPT | 27             | 8.0  | 3.5 | TMTSRH 23-2 | ●     |
|                                                                                  | <b>TMTH 32 11 BSPT</b> | 11  | ≥1 1/8" BSPT | ≥1" BSPT | 32             | 9.0  | 4.0 | TMTSRH 32-5 | ●     |
|                                                                                  | <b>TMTH 45 11 BSPT</b> | 11  | ≥1 3/4" BSPT | ≥1" BSPT | 37             | 11.9 | 5.0 | TMTSRH 45-6 | ●     |
|                                                                                  | <b>TMTH 63 11 BSPT</b> | 11  | ≥2 1/2" BSPT | ≥1" BSPT | 38             | 11.9 | 5.0 | TMTSRH 63-9 | ●     |
|                                                                                  |                        |     |              |          |                |      |     |             |       |
|                                                                                  |                        |     |              |          |                |      |     |             |       |
|                                                                                  |                        |     |              |          |                |      |     |             |       |

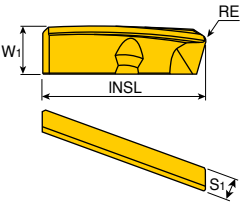


► THID: Thread designation inside  
► THOD: Thread designation outside

●: Standard Item

# TMTH-F

## Helical long edge finishing inserts



| Insert                                                                              | Designation          | Dimension (mm) |      |     |     | Tool        | Grade |
|-------------------------------------------------------------------------------------|----------------------|----------------|------|-----|-----|-------------|-------|
|                                                                                     |                      | INSL           | W1   | S1  | RE  |             |       |
|  | <b>TMTH 23F R0.2</b> | 27             | 8.0  | 3.5 | 0.2 | TMTSRH 23-2 | ●     |
|                                                                                     | <b>TMTH 23F R0.5</b> | 27             | 8.0  | 3.5 | 0.5 | TMTSRH 23-2 | ●     |
|                                                                                     | <b>TMTH 23F R1.0</b> | 27             | 8.0  | 3.5 | 1.0 | TMTSRH 23-2 | ●     |
|                                                                                     | <b>TMTH 32F R0.2</b> | 32             | 9.0  | 4.0 | 0.2 | TMTSRH 32-5 | ●     |
|                                                                                     | <b>TMTH 32F R0.5</b> | 32             | 9.0  | 4.0 | 0.5 | TMTSRH 32-5 | ●     |
|                                                                                     | <b>TMTH 32F R1.0</b> | 32             | 9.0  | 4.0 | 1.0 | TMTSRH 32-5 | ●     |
|                                                                                     | <b>TMTH 45F R0.2</b> | 37             | 11.9 | 5.0 | 0.2 | TMTSRH 45-6 | ●     |



●: Standard items

# Recommended Cutting Conditions



## Machining data for indexable insert of threading cutters

| ISO | Material                                                                    | Condition                        | Tensile strength<br>(N/mm <sup>2</sup> ) | Hardness<br>HB | Material<br>No. | Cutting speed<br>Vc(m/min) |
|-----|-----------------------------------------------------------------------------|----------------------------------|------------------------------------------|----------------|-----------------|----------------------------|
|     |                                                                             |                                  |                                          |                |                 | TT9030                     |
| P   | Non-alloy steel,<br>cast steel, free<br>cutting steel                       | <0.25%C<br>Annealed              | 420                                      | 125            | 1               | 100-200                    |
|     |                                                                             | >=0.25%C<br>Annealed             | 650                                      | 190            | 2               | 95-190                     |
|     |                                                                             | <0.55%C<br>Quenched and tempered | 850                                      | 250            | 3               | 90-180                     |
|     |                                                                             | >=0.55%C<br>Annealed             | 750                                      | 220            | 4               | 90-170                     |
|     |                                                                             | Quenched and tempered            | 1000                                     | 300            | 5               | 80-150                     |
|     | Low alloy steel<br>and cast steel<br>(Less than 5% of<br>alloying elements) | Annealed                         | 600                                      | 200            | 6               | 120-170                    |
|     |                                                                             | Quenched and tempered            | 930                                      | 275            | 7               | 115-160                    |
|     |                                                                             |                                  | 1000                                     | 300            | 8               | 105-150                    |
|     |                                                                             |                                  | 1200                                     | 350            | 9               | 140                        |
|     | High alloy steel, cast steel<br>and tool steel                              | Annealed                         | 680                                      | 200            | 10              | 90-170                     |
|     |                                                                             | Quenched and tempered            | 1100                                     | 325            | 11              | 75-145                     |
| M   | Stainless steel<br>and cast steel                                           | Ferritic / martensitic           | 680                                      | 200            | 12              | 110-170                    |
|     |                                                                             | Martensitic                      | 820                                      | 240            | 13              | 100-160                    |
|     |                                                                             | Austenitic                       | 600                                      | 180            | 14              | 90-145                     |
| K   | Gray cast iron<br>(GG)                                                      | Ferritic                         |                                          | 160            | 15              | 65-135                     |
|     |                                                                             | Pearlitic                        |                                          | 250            | 16              | 65-110                     |
|     | Cast iron nodular<br>(GGG)                                                  | Ferritic                         |                                          | 180            | 17              | 65-135                     |
|     |                                                                             | Pearlitic                        |                                          | 260            | 18              | 60-100                     |
|     | Malleable cast iron                                                         | Ferritic                         |                                          | 130            | 19              | 65-135                     |
|     |                                                                             | Pearlitic                        |                                          | 230            | 20              | 60-120                     |
| N   | Aluminum - Wrought alloy                                                    | Not cureable                     |                                          | 60             | 21              | 110-260                    |
|     |                                                                             | Cured                            |                                          | 100            | 22              | 110-200                    |
|     | Aluminum-<br>cast, alloyed                                                  | <=12% Si<br>Not cureable         |                                          | 75             | 23              | 145-350                    |
|     |                                                                             | Cured                            |                                          | 90             | 24              | 145-275                    |
|     |                                                                             | >12% Si<br>High temp.            |                                          | 130            | 25              | 95-225                     |
|     | Copper alloys                                                               | >1% Pb<br>Free cutting           |                                          | 110            | 26              | 145-350                    |
|     |                                                                             | Brass                            |                                          | 90             | 27              | 145-350                    |
|     |                                                                             | Electrolitic copper              |                                          | 100            | 28              | 145-350                    |
|     | Non-metallic                                                                | Duroplastics, fiber plastics     |                                          |                | 29              | 90-370                     |
|     |                                                                             | Hard rubber                      |                                          |                | 30              | 80-330                     |
| S   | High temp.<br>alloys                                                        | Fe based<br>Annealed             |                                          | 200            | 31              | 20-60                      |
|     |                                                                             |                                  |                                          | 280            | 32              | 20-50                      |
|     |                                                                             | Ni or<br>Co based<br>Annealed    |                                          | 250            | 33              | 20-30                      |
|     |                                                                             |                                  |                                          | 350            | 34              | 10-20                      |
|     |                                                                             |                                  |                                          | 320            | 35              | 15-25                      |
|     | Titanium, Ti alloys                                                         | Pure                             | Rm 400                                   | 190            | 36              | 30-90                      |
|     |                                                                             | Alpha-beta alloys cured          | Rm 1050                                  | 310            | 37              | 20-70                      |
| H   | Hardened steel                                                              | Hardened                         |                                          | 55HRC          | 38              | 25-60                      |
|     |                                                                             | Hardened                         |                                          | 60HRC          | 39              | 20-40                      |
|     | Chilled cast iron                                                           | Cast                             |                                          | 400            | 40              | 25-60                      |
|     | Cast iron nodular                                                           | Hardened                         |                                          | 55HRC          | 41              | 20-50                      |

▶ For more information of material groups, see the materials & grades "material conversion table"

■ Steel 
 ■ Stainless steel 
 ■ Cast iron 
 ■ Nonferrous 
 ■ High temp. alloys 
 ■ Hardened steel

▶ Feed rate: 0.05 - 0.15 mm/tooth

# Recommended Cutting Conditions



## Machining data for solid carbide threading end mills

| ISO | Material                                                           | Condition                     | Tensile strength (N/mm²) | Hardness HB | Material No. | Cutting speed Vc(m/min) |
|-----|--------------------------------------------------------------------|-------------------------------|--------------------------|-------------|--------------|-------------------------|
|     |                                                                    |                               |                          |             |              | TT9030                  |
| P   | Non-alloy steel, cast steel, free cutting steel                    | <0.25%C Annealed              | 420                      | 125         | 1            | 100-250                 |
|     |                                                                    | >=0.25%C Annealed             | 650                      | 190         | 2            | 80-210                  |
|     |                                                                    | <0.55%C Quenched and tempered | 850                      | 250         | 3            | 65-170                  |
|     |                                                                    | >=0.55%C Annealed             | 750                      | 220         | 4            | 110-180                 |
|     |                                                                    | Quenched and tempered         | 1000                     | 300         | 5            | 95-160                  |
|     | Low alloy steel and cast steel (Less than 5% of alloying elements) | Annealed                      | 600                      | 200         | 6            | 90-160                  |
|     |                                                                    |                               | 930                      | 275         | 7            | 65-200                  |
|     |                                                                    | Quenched and tempered         | 1000                     | 300         | 8            | 70-210                  |
|     |                                                                    |                               | 1200                     | 350         | 9            | 95-160                  |
|     | High alloy steel, cast steel and tool steel                        | Annealed                      | 680                      | 200         | 10           | 130-170                 |
|     |                                                                    | Quenched and tempered         | 1100                     | 325         | 11           | 75-100                  |
| M   | Stainless steel and cast steel                                     | Ferritic / martensitic        | 680                      | 200         | 12           | 110-170                 |
|     |                                                                    | Martensitic                   | 820                      | 240         | 13           | 70-155                  |
|     |                                                                    | Austenitic                    | 600                      | 180         | 14           | 85-100                  |
| K   | Gray cast iron (GG)                                                | Ferritic                      |                          | 160         | 15           | 70-150                  |
|     |                                                                    | Pearlitic                     |                          | 250         | 16           | 110-140                 |
|     | Cast iron nodular (GGG)                                            | Ferritic                      |                          | 180         | 17           | 120-160                 |
|     |                                                                    | Pearlitic                     |                          | 260         | 18           | 75-160                  |
|     | Malleable cast iron                                                | Ferritic                      |                          | 130         | 19           | 120-160                 |
|     |                                                                    | Pearlitic                     |                          | 230         | 20           | 110-140                 |
| N   | Aluminum - Wrought alloy                                           | Not cureable                  |                          | 60          | 21           | 160-300                 |
|     |                                                                    | Cured                         |                          | 100         | 22           |                         |
|     | Aluminum-cast, alloyed                                             | <=12% Si Not cureable         |                          | 75          | 23           |                         |
|     |                                                                    | Cured                         |                          | 90          | 24           |                         |
|     |                                                                    | >12% Si High temp.            |                          | 130         | 25           |                         |
|     | Copper alloys                                                      | >1% Pb Free cutting           |                          | 110         | 26           |                         |
|     |                                                                    | Brass                         |                          | 90          | 27           |                         |
|     |                                                                    | Electrolitic copper           |                          | 100         | 28           |                         |
|     | Non-metallic                                                       | Duroplastics, fiber plastics  |                          |             | 29           | 100-400                 |
|     |                                                                    | Hard rubber                   |                          |             | 30           |                         |
| S   | High temp. alloys                                                  | Fe based Annealed             |                          | 200         | 31           |                         |
|     |                                                                    |                               |                          | 280         | 32           |                         |
|     |                                                                    | Ni or Co based Annealed       |                          | 250         | 33           | 20-80                   |
|     |                                                                    |                               |                          | 350         | 34           |                         |
|     |                                                                    |                               |                          | 320         | 35           |                         |
|     |                                                                    |                               |                          |             |              |                         |
|     | Titanium, Ti alloys                                                | Pure                          | Rm 400                   | 190         | 36           |                         |
|     |                                                                    | Alpha+beta alloys cured       | Rm 1050                  | 310         | 37           | 20-80                   |
| H   | Hardened steel                                                     | Hardened                      |                          | 55HRC       | 38           | 55-65                   |
|     |                                                                    | Hardened                      |                          | 60HRC       | 39           | 45-55                   |
|     | Chilled cast iron                                                  | Cast                          |                          | 400         | 40           | 90-105                  |
|     | Cast iron nodular                                                  | Hardened                      |                          | 55HRC       | 41           | 55-65                   |

► For more information of material groups, see the materials & grades "material conversion table"

■ Steel 
 ■ Stainless steel 
 ■ Cast iron 
 ■ Nonferrous 
 ■ High temp. alloys 
 ■ Hardened steel

# Recommended Cutting Conditions



## Machining data for solid carbide threading end mills

| Feed (mm/tooth) for diameter (mm) |      |      |      |      |      |      |      |      |      |      |      |
|-----------------------------------|------|------|------|------|------|------|------|------|------|------|------|
| Ø2                                | Ø3   | Ø4   | Ø6   | Ø8   | Ø10  | Ø12  | Ø14  | Ø16  | Ø20  | Ø25  | Ø30  |
| 0.03                              | 0.04 | 0.04 | 0.06 | 0.07 | 0.08 | 0.09 | 0.11 | 0.12 | 0.15 | 0.18 | 0.21 |
| 0.03                              | 0.04 | 0.04 | 0.06 | 0.07 | 0.08 | 0.09 | 0.11 | 0.12 | 0.15 | 0.18 | 0.21 |
|                                   |      |      |      |      |      |      |      |      |      |      |      |
| 0.02                              | 0.03 | 0.03 | 0.05 | 0.06 | 0.07 | 0.08 | 0.09 | 0.1  | 0.12 | 0.15 | 0.18 |
| 0.02                              | 0.03 | 0.03 | 0.05 | 0.06 | 0.07 | 0.08 | 0.09 | 0.1  | 0.12 | 0.15 | 0.18 |
| 0.02                              | 0.02 | 0.02 | 0.03 | 0.04 | 0.05 | 0.05 | 0.06 | 0.07 | 0.08 | 0.1  | 0.11 |
| 0.02                              | 0.02 | 0.02 | 0.03 | 0.04 | 0.05 | 0.05 | 0.06 | 0.07 | 0.08 | 0.1  | 0.11 |
| 0.02                              | 0.02 | 0.02 | 0.03 | 0.04 | 0.05 | 0.05 | 0.06 | 0.07 | 0.08 | 0.1  | 0.11 |
| 0.02                              | 0.02 | 0.02 | 0.03 | 0.04 | 0.05 | 0.05 | 0.06 | 0.07 | 0.08 | 0.1  | 0.11 |
| 0.02                              | 0.02 | 0.02 | 0.03 | 0.04 | 0.05 | 0.05 | 0.06 | 0.07 | 0.08 | 0.1  | 0.11 |
| 0.02                              | 0.02 | 0.02 | 0.03 | 0.04 | 0.05 | 0.05 | 0.06 | 0.07 | 0.08 | 0.1  | 0.11 |
| 0.02                              | 0.02 | 0.02 | 0.03 | 0.04 | 0.05 | 0.05 | 0.06 | 0.07 | 0.08 | 0.1  | 0.11 |
| 0.02                              | 0.02 | 0.02 | 0.03 | 0.04 | 0.05 | 0.05 | 0.06 | 0.07 | 0.08 | 0.1  | 0.11 |
| 0.03                              | 0.04 | 0.04 | 0.06 | 0.07 | 0.08 | 0.09 | 0.11 | 0.12 | 0.15 | 0.18 | 0.21 |
| 0.03                              | 0.04 | 0.04 | 0.06 | 0.07 | 0.08 | 0.09 | 0.11 | 0.12 | 0.15 | 0.18 | 0.21 |
| 0.03                              | 0.04 | 0.04 | 0.06 | 0.07 | 0.08 | 0.09 | 0.11 | 0.12 | 0.15 | 0.18 | 0.21 |
| 0.03                              | 0.04 | 0.04 | 0.06 | 0.07 | 0.08 | 0.09 | 0.11 | 0.12 | 0.15 | 0.18 | 0.21 |
| 0.03                              | 0.04 | 0.04 | 0.06 | 0.07 | 0.08 | 0.09 | 0.11 | 0.12 | 0.15 | 0.18 | 0.21 |
| 0.03                              | 0.04 | 0.04 | 0.06 | 0.07 | 0.08 | 0.09 | 0.11 | 0.12 | 0.15 | 0.18 | 0.21 |
| 0.03                              | 0.04 | 0.04 | 0.06 | 0.07 | 0.08 | 0.09 | 0.11 | 0.12 | 0.15 | 0.18 | 0.21 |
|                                   |      |      |      |      |      |      |      |      |      |      |      |
|                                   |      |      |      |      |      |      |      |      |      |      |      |
|                                   |      |      |      |      |      |      |      |      |      |      |      |
|                                   |      |      |      |      |      |      |      |      |      |      |      |
|                                   |      |      |      |      |      |      |      |      |      |      |      |
|                                   |      |      |      |      |      |      |      |      |      |      |      |
|                                   |      |      |      |      |      |      |      |      |      |      |      |
| 0.05                              | 0.06 | 0.07 | 0.09 | 0.1  | 0.11 | 0.12 | 0.13 | 0.15 | 0.18 | 0.22 | 0.25 |
|                                   |      |      |      |      |      |      |      |      |      |      |      |
|                                   |      |      |      |      |      |      |      |      |      |      |      |
|                                   |      |      |      |      |      |      |      |      |      |      |      |
| 0.02                              | 0.02 | 0.02 | 0.03 | 0.03 | 0.03 | 0.03 | 0.04 | 0.04 | 0.04 | 0.05 | 0.05 |
|                                   |      |      |      |      |      |      |      |      |      |      |      |
|                                   |      |      |      |      |      |      |      |      |      |      |      |
|                                   |      |      |      |      |      |      |      |      |      |      |      |
| 0.02                              | 0.02 | 0.02 | 0.03 | 0.03 | 0.03 | 0.03 | 0.04 | 0.04 | 0.04 | 0.05 | 0.05 |
|                                   |      |      |      |      |      |      |      |      |      |      |      |
|                                   |      |      |      |      |      |      |      |      |      |      |      |
|                                   |      |      |      |      |      |      |      |      |      |      |      |

► For cutters with long cutting flute, reduce feed rate by 40%

# Recommended Cutting Conditions



## Machining data for short solid carbide thread mills

| ISO | Material                                 | Hardness<br>(HRC) | Cutting<br>speed<br>Vc<br>(m/min) | Feed (mm/tooth) for diameter (mm) |      |      |      |      |      |      |      |      |      |      |      |      |  |
|-----|------------------------------------------|-------------------|-----------------------------------|-----------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|--|
|     |                                          |                   |                                   | Ø1.5                              | Ø2   | Ø3   | Ø4   | Ø5   | Ø6   | Ø7   | Ø8   | Ø9   | Ø10  | Ø12  | Ø14  | Ø15  |  |
| P   | Low & medium carbon steels               |                   | 60-120                            | 0.05                              | 0.05 | 0.07 | 0.09 | 0.11 | 0.13 | 0.14 | 0.15 | 0.16 | 0.16 | 0.17 | 0.18 | 0.18 |  |
|     | High carbon steels                       |                   | 60-90                             | 0.04                              | 0.05 | 0.06 | 0.08 | 0.09 | 0.10 | 0.12 | 0.13 | 0.14 | 0.14 | 0.16 | 0.17 | 0.18 |  |
|     | Alloy steels, treated steels             |                   | 50-80                             | 0.04                              | 0.04 | 0.05 | 0.05 | 0.06 | 0.07 | 0.07 | 0.08 | 0.09 | 0.1  | 0.12 | 0.13 | 0.14 |  |
|     | Cast steels                              |                   | 70-90                             | 0.04                              | 0.04 | 0.05 | 0.05 | 0.06 | 0.07 | 0.07 | 0.08 | 0.09 | 0.1  | 0.12 | 0.13 | 0.14 |  |
| M   | Stainless steels                         |                   | 60-90                             | 0.03                              | 0.03 | 0.04 | 0.05 | 0.06 | 0.06 | 0.07 | 0.08 | 0.09 | 0.1  | 0.11 | 0.12 | 0.13 |  |
| K   | Cast Iron                                |                   | 40-80                             | 0.05                              | 0.05 | 0.07 | 0.09 | 0.11 | 0.13 | 0.14 | 0.15 | 0.16 | 0.16 | 0.17 | 0.18 | 0.18 |  |
| N   | Aluminum                                 |                   | 80-150                            | 0.05                              | 0.05 | 0.07 | 0.09 | 0.11 | 0.13 | 0.14 | 0.15 | 0.16 | 0.16 | 0.17 | 0.18 | 0.18 |  |
|     | Synthetics, duroplastics, thermoplastics |                   | 50-200                            | 0.10                              | 0.11 | 0.12 | 0.14 | 0.16 | 0.18 | 0.19 | 0.19 | 0.19 | 0.19 | 0.19 | 0.20 | 0.20 |  |
| S   | Nickel alloys, titanium alloys.          |                   | 20-40                             | 0.03                              | 0.03 | 0.04 | 0.04 | 0.05 | 0.06 | 0.06 | 0.06 | 0.07 | 0.07 | 0.07 | 0.08 | 0.08 |  |
| H   | Hardened steel                           | 45-50             | 60-70                             | 0.04                              | 0.04 | 0.05 | 0.05 | 0.06 | 0.06 | 0.07 | 0.07 | 0.08 |      |      |      |      |  |
|     |                                          | 51-55             | 50-60                             | 0.03                              | 0.03 | 0.04 | 0.04 | 0.05 | 0.05 | 0.06 | 0.06 | 0.07 |      |      |      |      |  |
|     |                                          | 56-62             | 40-50                             | 0.02                              | 0.02 | 0.03 | 0.03 | 0.04 | 0.04 | 0.05 | 0.05 | 0.06 |      |      |      |      |  |

► For more information of material groups, see the materials & grades "material conversion table"

Steel   Stainless steel   Cast iron   Nonferrous   High temp. alloys   Hardened steel



**T-TAP**

Tapping





1 TaeguTec T-Tap

|   |          |
|---|----------|
| T | TaeguTec |
| P | PM       |
| H | HSSE     |

2 Standard

|   |        |
|---|--------|
| 4 | DIN371 |
| 5 | DIN374 |
| 6 | DIN376 |

3 ISO grade

|   |       |
|---|-------|
| 5 | Multi |
|---|-------|

4 Flute

|   |                             |
|---|-----------------------------|
| 2 | Straight flute-spiral point |
| 4 | Right hand spiral 40°       |

5 Chamfer

|   |             |
|---|-------------|
| B | 4-5 threads |
| C | 2-3 threads |

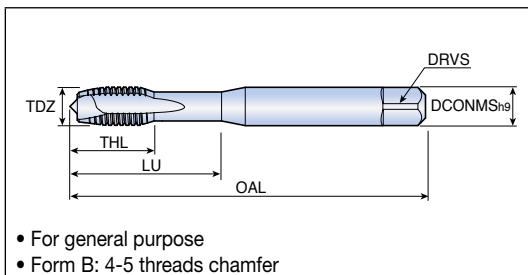
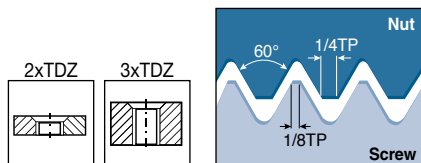
6 Coating

|      |          |
|------|----------|
| None | Uncoated |
| 05   | S.T.     |
| 10   | TiN      |

7 Tap X Pitch

|          |           |
|----------|-----------|
| M2 X 0.4 | M2 size   |
|          | 0.4 pitch |

## Straight flute with spiral point - Uncoated



Metric ISO standard thread DIN 13 standard

| Designation              | TDZ  | TP (mm) | Standard (DIN) | Tolerance | Dimension (mm) |     |    |        |      |           |
|--------------------------|------|---------|----------------|-----------|----------------|-----|----|--------|------|-----------|
|                          |      |         |                |           | OAL            | THL | LU | DCONMS | DRVS | Core hole |
| <b>TPH452B M2x0.4</b>    | M2   | 0.4     | DIN371         | ISO 2-6H  | 45             | 8   | -  | 2.8    | 2.1  | 1.6       |
| <b>TPH452B M2.5x0.45</b> | M2.5 | 0.45    |                |           | 50             | 9   | -  | 2.8    | 2.1  | 2.05      |
| <b>TPH452B M3x0.5</b>    | M3   | 0.5     |                |           | 56             | 10  | 18 | 3.5    | 2.7  | 2.5       |
| <b>TPH452B M4x0.7</b>    | M4   | 0.7     |                |           | 63             | 12  | 21 | 4.5    | 3.4  | 3.3       |
| <b>TPH452B M5x0.8</b>    | M5   | 0.8     |                |           | 70             | 14  | 25 | 6      | 4.9  | 4.2       |
| <b>TPH452B M6x1.0</b>    | M6   | 1       |                |           | 80             | 16  | 30 | 6      | 4.9  | 5         |
| <b>TPH452B M8x1.25</b>   | M8   | 1.25    |                |           | 90             | 18  | 35 | 8      | 6.2  | 6.8       |
| <b>TPH452B M10x1.5</b>   | M10  | 1.5     |                |           | 100            | 20  | 39 | 10     | 8    | 8.5       |
| <b>TPH652B M12x1.75</b>  | M12  | 1.75    | DIN376         | ISO 2-6H  | 110            | 22  | -  | 9      | 7    | 10.2      |
| <b>TPH652B M14x2.0</b>   | M14  | 2       |                |           | 110            | 24  | -  | 11     | 9    | 12        |
| <b>TPH652B M16x2.0</b>   | M16  | 2       |                |           | 110            | 26  | -  | 12     | 9    | 14        |
| <b>TPH652B M20x2.5</b>   | M20  | 2.5     |                |           | 140            | 30  | -  | 16     | 12   | 17.5      |
|                          |      |         |                |           |                |     |    |        |      |           |
|                          |      |         |                |           |                |     |    |        |      |           |
|                          |      |         |                |           |                |     |    |        |      |           |
|                          |      |         |                |           |                |     |    |        |      |           |
|                          |      |         |                |           |                |     |    |        |      |           |
|                          |      |         |                |           |                |     |    |        |      |           |

Metric ISO fine thread DIN 13 standard

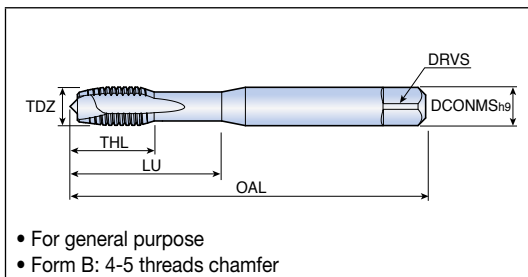
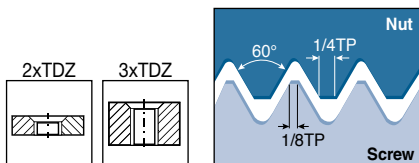
| Designation              | TDZ | TP (mm) | Standard (DIN) | Tolerance | Dimension (mm) |     |    |        |      |           |
|--------------------------|-----|---------|----------------|-----------|----------------|-----|----|--------|------|-----------|
|                          |     |         |                |           | OAL            | THL | LU | DCONMS | DRVS | Core hole |
| <b>TPH552B MF8x1.0</b>   | M8  | 1       | DIN374         | ISO 2-6H  | 90             | 15  | -  | 6      | 4.9  | 7         |
| <b>TPH552B MF10x1.25</b> | M10 | 1.25    |                |           | 100            | 18  | -  | 7      | 5.5  | 8.8       |
| <b>TPH552B MF12x1.5</b>  | M12 | 1.5     |                |           | 100            | 18  | -  | 9      | 7    | 10.5      |
| <b>TPH552B MF14x1.5</b>  | M14 | 1.5     |                |           | 100            | 18  | -  | 11     | 9    | 12.5      |
| <b>TPH552B MF16x1.5</b>  | M16 | 1.5     |                |           | 100            | 18  | -  | 12     | 9    | 14.5      |
|                          |     |         |                |           |                |     |    |        |      |           |
|                          |     |         |                |           |                |     |    |        |      |           |
|                          |     |         |                |           |                |     |    |        |      |           |
|                          |     |         |                |           |                |     |    |        |      |           |
|                          |     |         |                |           |                |     |    |        |      |           |



# TPH...52B05



Straight flute with spiral point - Steam tempered



Metric ISO standard thread DIN 13 standard

| Designation                | TDZ  | TP (mm) | Standard (DIN) | Tolerance | Dimension (mm) |     |    |        |      |           |
|----------------------------|------|---------|----------------|-----------|----------------|-----|----|--------|------|-----------|
|                            |      |         |                |           | OAL            | THL | LU | DCONMS | DRVS | Core hole |
| <b>TPH452B05 M2x0.4</b>    | M2   | 0.4     | DIN371         | ISO 2-6H  | 45             | 8   | -  | 2.8    | 2.1  | 1.6       |
| <b>TPH452B05 M2.5x0.45</b> | M2.5 | 0.45    |                |           | 50             | 9   | -  | 2.8    | 2.1  | 2.05      |
| <b>TPH452B05 M3x0.5</b>    | M3   | 0.5     |                |           | 56             | 10  | 18 | 3.5    | 2.7  | 2.5       |
| <b>TPH452B05 M4x0.7</b>    | M4   | 0.7     |                |           | 63             | 12  | 21 | 4.5    | 3.4  | 3.3       |
| <b>TPH452B05 M5x0.8</b>    | M5   | 0.8     |                |           | 70             | 14  | 25 | 6      | 4.9  | 4.2       |
| <b>TPH452B05 M6x1.0</b>    | M6   | 1       |                |           | 80             | 16  | 30 | 6      | 4.9  | 5         |
| <b>TPH452B05 M8x1.25</b>   | M8   | 1.25    |                |           | 90             | 18  | 35 | 8      | 6.2  | 6.8       |
| <b>TPH452B05 M10x1.5</b>   | M10  | 1.5     |                |           | 100            | 20  | 39 | 10     | 8    | 8.5       |
| <b>TPH652B05 M12x1.75</b>  | M12  | 1.75    | DIN376         | ISO 2-6H  | 110            | 22  | -  | 9      | 7    | 10.2      |
| <b>TPH652B05 M14x2.0</b>   | M14  | 2       |                |           | 110            | 24  | -  | 11     | 9    | 12        |
| <b>TPH652B05 M16x2.0</b>   | M16  | 2       |                |           | 110            | 26  | -  | 12     | 9    | 14        |
| <b>TPH652B05 M20x2.5</b>   | M20  | 2.5     |                |           | 140            | 30  | -  | 16     | 12   | 17.5      |
|                            |      |         |                |           |                |     |    |        |      |           |
|                            |      |         |                |           |                |     |    |        |      |           |
|                            |      |         |                |           |                |     |    |        |      |           |
|                            |      |         |                |           |                |     |    |        |      |           |
|                            |      |         |                |           |                |     |    |        |      |           |
|                            |      |         |                |           |                |     |    |        |      |           |

Metric ISO fine thread DIN 13 standard

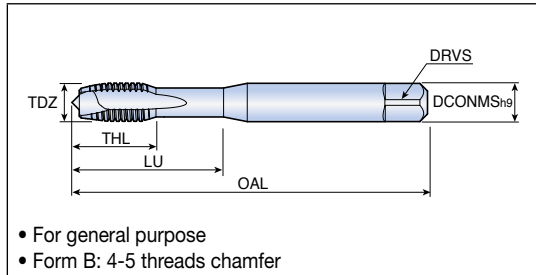
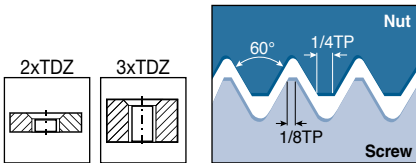
| Designation                | TDZ | TP (mm) | Standard (DIN) | Tolerance | Dimension (mm) |     |    |        |      |           |
|----------------------------|-----|---------|----------------|-----------|----------------|-----|----|--------|------|-----------|
|                            |     |         |                |           | OAL            | THL | LU | DCONMS | DRVS | Core hole |
| <b>TPH552B05 MF8x1.0</b>   | M8  | 1       | DIN374         | ISO 2-6H  | 90             | 15  | -  | 6      | 4.9  | 7         |
| <b>TPH552B05 MF10x1.25</b> | M10 | 1.25    |                |           | 100            | 18  | -  | 7      | 5.5  | 8.8       |
| <b>TPH552B05 MF12x1.5</b>  | M12 | 1.5     |                |           | 100            | 18  | -  | 9      | 7    | 10.5      |
| <b>TPH552B05 MF14x1.5</b>  | M14 | 1.5     |                |           | 100            | 18  | -  | 11     | 9    | 12.5      |
| <b>TPH552B05 MF16x1.5</b>  | M16 | 1.5     |                |           | 100            | 18  | -  | 12     | 9    | 14.5      |
|                            |     |         |                |           |                |     |    |        |      |           |
|                            |     |         |                |           |                |     |    |        |      |           |
|                            |     |         |                |           |                |     |    |        |      |           |
|                            |     |         |                |           |                |     |    |        |      |           |
|                            |     |         |                |           |                |     |    |        |      |           |



# TPH...52B10



Straight flute with spiral point - TiN coated



Metric ISO standard thread DIN 13 standard

| Designation                | TDZ  | TP (mm) | Standard (DIN) | Tolerance | Dimension (mm) |     |    |        |      |           |
|----------------------------|------|---------|----------------|-----------|----------------|-----|----|--------|------|-----------|
|                            |      |         |                |           | OAL            | THL | LU | DCONMS | DRVS | Core hole |
| <b>TPH452B10 M2x0.4</b>    | M2   | 0.4     | DIN371         | ISO 2-6H  | 45             | 8   | -  | 2.8    | 2.1  | 1.6       |
| <b>TPH452B10 M2.5x0.45</b> | M2.5 | 0.45    |                |           | 50             | 9   | -  | 2.8    | 2.1  | 2.05      |
| <b>TPH452B10 M3x0.5</b>    | M3   | 0.5     |                |           | 56             | 10  | 18 | 3.5    | 2.7  | 2.5       |
| <b>TPH452B10 M4x0.7</b>    | M4   | 0.7     |                |           | 63             | 12  | 21 | 4.5    | 3.4  | 3.3       |
| <b>TPH452B10 M5x0.8</b>    | M5   | 0.8     |                |           | 70             | 14  | 25 | 6      | 4.9  | 4.2       |
| <b>TPH452B10 M6x1.0</b>    | M6   | 1       |                |           | 80             | 16  | 30 | 6      | 4.9  | 5         |
| <b>TPH452B10 M8x1.25</b>   | M8   | 1.25    |                |           | 90             | 18  | 35 | 8      | 6.2  | 6.8       |
| <b>TPH452B10 M10x1.5</b>   | M10  | 1.5     |                |           | 100            | 20  | 39 | 10     | 8    | 8.5       |
| <b>TPH652B10 M12x1.75</b>  | M12  | 1.75    | DIN376         | ISO 2-6H  | 110            | 22  | -  | 9      | 7    | 10.2      |
| <b>TPH652B10 M14x2.0</b>   | M14  | 2       |                |           | 110            | 24  | -  | 11     | 9    | 12        |
| <b>TPH652B10 M16x2.0</b>   | M16  | 2       |                |           | 110            | 26  | -  | 12     | 9    | 14        |
| <b>TPH652B10 M20x2.5</b>   | M20  | 2.5     |                |           | 140            | 30  | -  | 16     | 12   | 17.5      |
|                            |      |         |                |           |                |     |    |        |      |           |
|                            |      |         |                |           |                |     |    |        |      |           |
|                            |      |         |                |           |                |     |    |        |      |           |
|                            |      |         |                |           |                |     |    |        |      |           |
|                            |      |         |                |           |                |     |    |        |      |           |
|                            |      |         |                |           |                |     |    |        |      |           |

Metric ISO fine thread DIN 13 standard

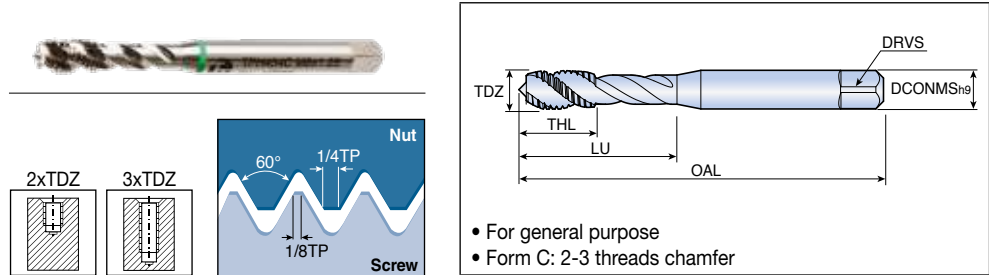
| Designation                | TDZ | TP (mm) | Standard (DIN) | Tolerance | Dimension (mm) |     |    |        |      |           |
|----------------------------|-----|---------|----------------|-----------|----------------|-----|----|--------|------|-----------|
|                            |     |         |                |           | OAL            | THL | LU | DCONMS | DRVS | Core hole |
| <b>TPH552B10 MF8x1.0</b>   | M8  | 1       | DIN374         | ISO 2-6H  | 90             | 15  | -  | 6      | 4.9  | 7         |
| <b>TPH552B10 MF10x1.25</b> | M10 | 1.25    |                |           | 100            | 18  | -  | 7      | 5.5  | 8.8       |
| <b>TPH552B10 MF12x1.5</b>  | M12 | 1.5     |                |           | 100            | 18  | -  | 9      | 7    | 10.5      |
| <b>TPH552B10 MF14x1.5</b>  | M14 | 1.5     |                |           | 100            | 18  | -  | 11     | 9    | 12.5      |
| <b>TPH552B10 MF16x1.5</b>  | M16 | 1.5     |                |           | 100            | 18  | -  | 12     | 9    | 14.5      |
|                            |     |         |                |           |                |     |    |        |      |           |
|                            |     |         |                |           |                |     |    |        |      |           |
|                            |     |         |                |           |                |     |    |        |      |           |
|                            |     |         |                |           |                |     |    |        |      |           |
|                            |     |         |                |           |                |     |    |        |      |           |



# TPH...54C



Right hand spiral flute (40°) - Uncoated



Metric ISO standard thread DIN 13 standard

| Designation       | TDZ  | TP (mm) | Standard (DIN) | Tolerance | Dimension (mm) |     |    |        |      |           |
|-------------------|------|---------|----------------|-----------|----------------|-----|----|--------|------|-----------|
|                   |      |         |                |           | OAL            | THL | LU | DCONMS | DRVS | Core hole |
| TPH454C M2x0.4    | M2   | 0.4     | DIN371         | ISO 2-6H  | 45             | 6   | 10 | 2.8    | 2.1  | 1.6       |
| TPH454C M2.5x0.45 | M2.5 | 0.45    |                |           | 50             | 6   | 12 | 2.8    | 2.1  | 2.05      |
| TPH454C M3x0.5    | M3   | 0.5     |                |           | 56             | 7   | 18 | 3.5    | 2.7  | 2.5       |
| TPH454C M4x0.7    | M4   | 0.7     |                |           | 63             | 8   | 21 | 4.5    | 3.4  | 3.3       |
| TPH454C M5x0.8    | M5   | 0.8     |                |           | 70             | 10  | 25 | 6      | 4.9  | 4.2       |
| TPH454C M6x1.0    | M6   | 1       |                |           | 80             | 12  | 30 | 6      | 4.9  | 5         |
| TPH454C M8x1.25   | M8   | 1.25    |                |           | 90             | 15  | 35 | 8      | 6.2  | 6.8       |
| TPH454C M10x1.5   | M10  | 1.5     |                |           | 100            | 18  | 39 | 10     | 8    | 8.5       |
| TPH654C M12x1.75  | M12  | 1.75    | DIN376         | ISO 2-6H  | 110            | 18  | -  | 9      | 7    | 10.2      |
| TPH654C M14x2.0   | M14  | 2       |                |           | 110            | 20  | -  | 11     | 9    | 12        |
| TPH654C M16x2.0   | M16  | 2       |                |           | 110            | 20  | -  | 12     | 9    | 14        |
| TPH654C M20x2.5   | M20  | 2.5     |                |           | 140            | 25  | -  | 16     | 12   | 17.5      |
|                   |      |         |                |           |                |     |    |        |      |           |
|                   |      |         |                |           |                |     |    |        |      |           |
|                   |      |         |                |           |                |     |    |        |      |           |
|                   |      |         |                |           |                |     |    |        |      |           |
|                   |      |         |                |           |                |     |    |        |      |           |
|                   |      |         |                |           |                |     |    |        |      |           |

Metric ISO fine thread DIN 13 standard

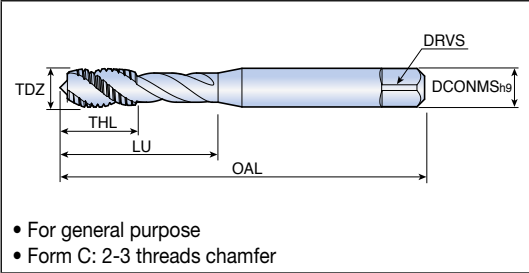
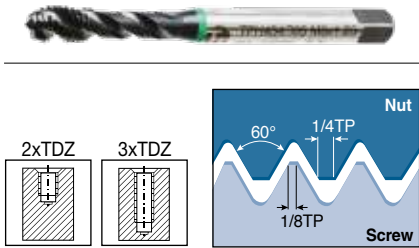
| Designation       | TDZ | TP (mm) | Standard (DIN) | Tolerance | Dimension (mm) |     |    |        |      |           |
|-------------------|-----|---------|----------------|-----------|----------------|-----|----|--------|------|-----------|
|                   |     |         |                |           | OAL            | THL | LU | DCONMS | DRVS | Core hole |
| TPH554C MF8x1.0   | M8  | 1       | DIN374         | ISO 2-6H  | 90             | 15  | -  | 6      | 4.9  | 7         |
| TPH554C MF10x1.25 | M10 | 1.25    |                |           | 100            | 18  | -  | 7      | 5.5  | 8.8       |
| TPH554C MF12x1.5  | M12 | 1.5     |                |           | 100            | 18  | -  | 9      | 7    | 10.5      |
| TPH554C MF14x1.5  | M14 | 1.5     |                |           | 100            | 18  | -  | 11     | 9    | 12.5      |
| TPH554C MF16x1.5  | M16 | 1.5     |                |           | 100            | 18  | -  | 12     | 9    | 14.5      |
|                   |     |         |                |           |                |     |    |        |      |           |
|                   |     |         |                |           |                |     |    |        |      |           |
|                   |     |         |                |           |                |     |    |        |      |           |
|                   |     |         |                |           |                |     |    |        |      |           |
|                   |     |         |                |           |                |     |    |        |      |           |
|                   |     |         |                |           |                |     |    |        |      |           |



# TPH...54C05



Right hand spiral flute (40°) - Steam tempered



Metric ISO standard thread DIN 13 standard

| Designation         | TDZ  | TP (mm) | Standard (DIN) | Tolerance | Dimension (mm) |     |    |        |      |           |
|---------------------|------|---------|----------------|-----------|----------------|-----|----|--------|------|-----------|
|                     |      |         |                |           | OAL            | THL | LU | DCONMS | DRVS | Core hole |
| TPH454C05 M2x0.4    | M2   | 0.4     | DIN371         | ISO 2-6H  | 45             | 6   | 10 | 2.8    | 2.1  | 1.6       |
| TPH454C05 M2.5x0.45 | M2.5 | 0.45    |                |           | 50             | 6   | 12 | 2.8    | 2.1  | 2.05      |
| TPH454C05 M3x0.5    | M3   | 0.5     |                |           | 56             | 7   | 18 | 3.5    | 2.7  | 2.5       |
| TPH454C05 M4x0.7    | M4   | 0.7     |                |           | 63             | 8   | 21 | 4.5    | 3.4  | 3.3       |
| TPH454C05 M5x0.8    | M5   | 0.8     |                |           | 70             | 10  | 25 | 6      | 4.9  | 4.2       |
| TPH454C05 M6x1.0    | M6   | 1       |                |           | 80             | 12  | 30 | 6      | 4.9  | 5         |
| TPH454C05 M8x1.25   | M8   | 1.25    |                |           | 90             | 15  | 35 | 8      | 6.2  | 6.8       |
| TPH454C05 M10x1.5   | M10  | 1.5     |                |           | 100            | 18  | 39 | 10     | 8    | 8.5       |
| TPH654C05 M12x1.75  | M12  | 1.75    | DIN376         | ISO 2-6H  | 110            | 18  | -  | 9      | 7    | 10.2      |
| TPH654C05 M14x2.0   | M14  | 2       |                |           | 110            | 20  | -  | 11     | 9    | 12        |
| TPH654C05 M16x2.0   | M16  | 2       |                |           | 110            | 20  | -  | 12     | 9    | 14        |
| TPH654C05 M20x2.5   | M20  | 2.5     |                |           | 140            | 25  | -  | 16     | 12   | 17.5      |
|                     |      |         |                |           |                |     |    |        |      |           |
|                     |      |         |                |           |                |     |    |        |      |           |
|                     |      |         |                |           |                |     |    |        |      |           |
|                     |      |         |                |           |                |     |    |        |      |           |
|                     |      |         |                |           |                |     |    |        |      |           |
|                     |      |         |                |           |                |     |    |        |      |           |

Metric ISO fine thread DIN 13 standard

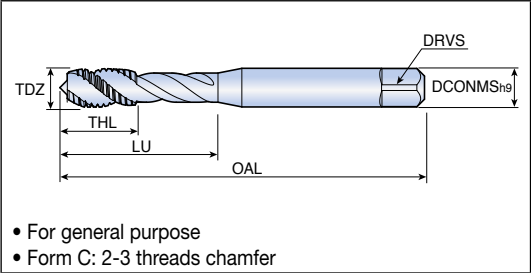
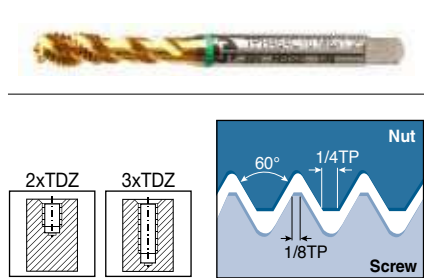
| Designation         | TDZ | TP (mm) | Standard (DIN) | Tolerance | Dimension (mm) |     |    |        |      |           |
|---------------------|-----|---------|----------------|-----------|----------------|-----|----|--------|------|-----------|
|                     |     |         |                |           | OAL            | THL | LU | DCONMS | DRVS | Core hole |
| TPH554C05 MF8x1.0   | M8  | 1       | DIN374         | ISO 2-6H  | 90             | 15  | -  | 6      | 4.9  | 7         |
| TPH554C05 MF10x1.25 | M10 | 1.25    |                |           | 100            | 18  | -  | 7      | 5.5  | 8.8       |
| TPH554C05 MF12x1.5  | M12 | 1.5     |                |           | 100            | 18  | -  | 9      | 7    | 10.5      |
| TPH554C05 MF14x1.5  | M14 | 1.5     |                |           | 100            | 18  | -  | 11     | 9    | 12.5      |
| TPH554C05 MF16x1.5  | M16 | 1.5     |                |           | 100            | 18  | -  | 12     | 9    | 14.5      |
|                     |     |         |                |           |                |     |    |        |      |           |
|                     |     |         |                |           |                |     |    |        |      |           |
|                     |     |         |                |           |                |     |    |        |      |           |
|                     |     |         |                |           |                |     |    |        |      |           |
|                     |     |         |                |           |                |     |    |        |      |           |



# TPH...54C10



Right hand spiral flute (40°) - TiN coated



Metric ISO standard thread DIN 13 standard

| Designation         | TDZ  | TP (mm) | Standard (DIN) | Tolerance | Dimension (mm) |     |    |        |      |           |
|---------------------|------|---------|----------------|-----------|----------------|-----|----|--------|------|-----------|
|                     |      |         |                |           | OAL            | THL | LU | DCONMS | DRVS | Core hole |
| TPH454C10 M2x0.4    | M2   | 0.4     | DIN371         | ISO 2-6H  | 45             | 6   | 10 | 2.8    | 2.1  | 1.6       |
| TPH454C10 M2.5x0.45 | M2.5 | 0.45    |                |           | 50             | 6   | 12 | 2.8    | 2.1  | 2.05      |
| TPH454C10 M3x0.5    | M3   | 0.5     |                |           | 56             | 7   | 18 | 3.5    | 2.7  | 2.5       |
| TPH454C10 M4x0.7    | M4   | 0.7     |                |           | 63             | 8   | 21 | 4.5    | 3.4  | 3.3       |
| TPH454C10 M5x0.8    | M5   | 0.8     |                |           | 70             | 10  | 25 | 6      | 4.9  | 4.2       |
| TPH454C10 M6x1.0    | M6   | 1       |                |           | 80             | 12  | 30 | 6      | 4.9  | 5         |
| TPH454C10 M8x1.25   | M8   | 1.25    |                |           | 90             | 15  | 35 | 8      | 6.2  | 6.8       |
| TPH454C10 M10x1.5   | M10  | 1.5     |                |           | 100            | 18  | 39 | 10     | 8    | 8.5       |
| TPH654C10 M12x1.75  | M12  | 1.75    | DIN376         | ISO 2-6H  | 110            | 18  | -  | 9      | 7    | 10.2      |
| TPH654C10 M14x2.0   | M14  | 2       |                |           | 110            | 20  | -  | 11     | 9    | 12        |
| TPH654C10 M16x2.0   | M16  | 2       |                |           | 110            | 20  | -  | 12     | 9    | 14        |
| TPH654C10 M20x2.5   | M20  | 2.5     |                |           | 140            | 25  | -  | 16     | 12   | 17.5      |
|                     |      |         |                |           |                |     |    |        |      |           |
|                     |      |         |                |           |                |     |    |        |      |           |
|                     |      |         |                |           |                |     |    |        |      |           |
|                     |      |         |                |           |                |     |    |        |      |           |
|                     |      |         |                |           |                |     |    |        |      |           |
|                     |      |         |                |           |                |     |    |        |      |           |
|                     |      |         |                |           |                |     |    |        |      |           |

Metric ISO fine thread DIN 13 standard

| Designation         | TDZ | TP (mm) | Standard (DIN) | Tolerance | Dimension (mm) |     |    |        |      |           |
|---------------------|-----|---------|----------------|-----------|----------------|-----|----|--------|------|-----------|
|                     |     |         |                |           | OAL            | THL | LU | DCONMS | DRVS | Core hole |
| TPH554C10 MF8x1.0   | M8  | 1       | DIN374         | ISO 2-6H  | 90             | 15  | -  | 6      | 4.9  | 7         |
| TPH554C10 MF10x1.25 | M10 | 1.25    |                |           | 100            | 18  | -  | 7      | 5.5  | 8.8       |
| TPH554C10 MF12x1.5  | M12 | 1.5     |                |           | 100            | 18  | -  | 9      | 7    | 10.5      |
| TPH554C10 MF14x1.5  | M14 | 1.5     |                |           | 100            | 18  | -  | 11     | 9    | 12.5      |
| TPH554C10 MF16x1.5  | M16 | 1.5     |                |           | 100            | 18  | -  | 12     | 9    | 14.5      |
|                     |     |         |                |           |                |     |    |        |      |           |
|                     |     |         |                |           |                |     |    |        |      |           |
|                     |     |         |                |           |                |     |    |        |      |           |
|                     |     |         |                |           |                |     |    |        |      |           |
|                     |     |         |                |           |                |     |    |        |      |           |
|                     |     |         |                |           |                |     |    |        |      |           |
|                     |     |         |                |           |                |     |    |        |      |           |





# Recommended Cutting Conditions



## Machining data for straight flute with spiral point tap

Cutting speed Vc(m/min)

| ISO                                         | Material                                                           |                              | Condition               | Straight flute with spiral point tap |                |            | Lubrication |
|---------------------------------------------|--------------------------------------------------------------------|------------------------------|-------------------------|--------------------------------------|----------------|------------|-------------|
|                                             |                                                                    |                              |                         | Uncoated                             | Steam tempered | TiN coated |             |
| P                                           | Non-alloy steel, cast steel, free cutting steel                    | <0.25%C                      | Annealed                | 5-25                                 | 5-25 *         | 15-45 *    | E/O         |
|                                             |                                                                    | >=0.25%C                     | Annealed                | 5-20                                 | 5-20 *         | 10-40 *    | E/O         |
|                                             |                                                                    | <0.55%C                      | Quenched and tempered   | -                                    | 2-15 *         | 5-25 *     | E/O         |
|                                             |                                                                    | >=0.55%C                     | Annealed                | 5-20                                 | 5-20 *         | 10-40 *    | E/O         |
|                                             | Low alloy steel and cast steel (Less than 5% of alloying elements) |                              | Quenched and tempered   | -                                    | 2-15 *         | 5-25 *     | E/O         |
|                                             |                                                                    |                              | Annealed                | 5-25                                 | 5-25 *         | 15-45 *    | E/O         |
|                                             |                                                                    |                              | Quenched and tempered   | -                                    | 2-15 *         | 5-20 *     | E/O         |
|                                             |                                                                    |                              | Annealed                | 5-20                                 | 5-20           | 10-40 *    | E/O         |
| High alloy steel, cast steel and tool steel |                                                                    | Quenched and tempered        | -                       | -                                    | 5-20           | O/S        |             |
|                                             |                                                                    |                              |                         |                                      |                |            |             |
| M                                           | Stainless steel and cast steel                                     | Ferritic / martensitic       | -                       | 2-10 *                               | 5-20 *         | E/O        |             |
|                                             |                                                                    | Martensitic                  | -                       | 2-10 *                               | 5-20 *         | E/O        |             |
|                                             |                                                                    | Austenitic                   | -                       | 2-10 *                               | 5-20 *         | E/O        |             |
| K                                           | Gray cast iron (GG)                                                | Ferritic                     | 10-15                   | 10-25                                | 15-45          | E/D        |             |
|                                             |                                                                    | Pearlitic                    | 10-15                   | 10-25                                | 10-40          | E/D        |             |
|                                             | Cast iron nodular (GGG)                                            | Ferritic                     | 8-12                    | 5-20                                 | 10-30          | E/D        |             |
|                                             |                                                                    | Pearlitic                    | 8-12                    | 5-15                                 | 10-25          | E/D        |             |
|                                             | Malleable cast iron                                                | Ferritic                     | 10-15                   | 10-25                                | 15-45          | E/D        |             |
|                                             |                                                                    | Pearlitic                    | 10-15                   | 10-20                                | 10-40          | E/D        |             |
| N                                           | Aluminum - wrought alloy                                           | Not cureable                 | 15-25 *                 | 15-25                                | 15-25          | E/O        |             |
|                                             |                                                                    | Cured                        | 15-25 *                 | 15-25                                | 15-25          | E/O        |             |
|                                             | Aluminum-cast, alloyed                                             | <=12% Si                     | Not cureable            | 15-20 *                              | 10-20          | 15-40 *    | E/O         |
|                                             |                                                                    |                              | Cured                   | 15-20 *                              | 10-20          | 15-40 *    | E/O         |
|                                             | >12% Si                                                            | High temp.                   | 15-20 *                 | 15-20                                | 10-30          | E/O        |             |
|                                             |                                                                    |                              |                         |                                      |                |            |             |
|                                             | Copper alloys                                                      | >1% Pb                       | Free cutting            | 15-25 *                              | 15-25          | 10-30      | E/O         |
|                                             |                                                                    |                              | Brass                   | 10-40                                | 10-40          | 20-60      | E/O         |
|                                             |                                                                    |                              | Electrolitic copper     | 10-15 *                              | 2-10           | 5-25       | E/O         |
|                                             |                                                                    |                              |                         |                                      |                |            |             |
| Non-metallic                                |                                                                    | Duroplastics, fiber plastics | -                       | 10-20                                | 10-20          | D          |             |
|                                             |                                                                    | Hard rubber                  | -                       | 10-20                                | 10-20          | D          |             |
| S                                           | High temp. alloys                                                  | Fe based                     | Annealed                | -                                    | -              | 3-5        | S           |
|                                             |                                                                    |                              | Cured                   | -                                    | -              | 3-5        | S           |
|                                             |                                                                    | Ni or Co based               | Annealed                | -                                    | -              | 2-4        | S           |
|                                             |                                                                    |                              | Cured                   | -                                    | -              | 2-4        | S           |
|                                             |                                                                    |                              | Cast                    | -                                    | -              | 2-4        | S           |
|                                             | Titanium, Ti alloys                                                |                              | Pure                    | -                                    | -              | 4-6        | S           |
|                                             |                                                                    |                              | Alpha+beta alloys cured | -                                    | -              | 4-6        | S           |

\* : Recommended

► For more information of material groups, see the materials & grades "material conversion table"

Steel Stainless steel Cast iron Nonferrous High temp. alloys Hardened steel

► **Lubrication** E: Emulsion O: Cutting oil S: Special cutting oil D: Dry/air

# Recommended Cutting Conditions



## Machining data for 40° right hand spiral flute tap

Cutting speed Vc(m/min)

| ISO | Material                                                           |                              | Condition             | 40° right hand spiral flute tap |                |            | Lubrication |
|-----|--------------------------------------------------------------------|------------------------------|-----------------------|---------------------------------|----------------|------------|-------------|
|     |                                                                    |                              |                       | Uncoated                        | Steam tempered | TiN coated |             |
| P   | Non-alloy steel, cast steel, free cutting steel                    | <0.25%C                      | Annealed              | 5-25                            | 5-25 *         | 15-45 *    | E/O         |
|     |                                                                    | >=0.25%C                     | Annealed              | 5-20                            | 5-20 *         | 10-40 *    | E/O         |
|     |                                                                    | <0.55%C                      | Quenched and tempered | -                               | 2-15 *         | 5-25 *     | E/O         |
|     |                                                                    | >=0.55%C                     | Annealed              | 5-20                            | 5-20 *         | 10-40 *    | E/O         |
|     |                                                                    |                              | Quenched and tempered | -                               | 2-15 *         | 5-25 *     | E/O         |
|     | Low alloy steel and cast steel (Less than 5% of alloying elements) | Annealed                     | 5-25                  | 5-25 *                          | 15-45 *        | E/O        |             |
|     |                                                                    | Quenched and tempered        | -                     | 2-15 *                          | 5-20 *         | E/O        |             |
|     | High alloy steel, cast steel and tool steel                        | Annealed                     | 5-20                  | 5-20                            | 10-40 *        | E/O        |             |
|     |                                                                    | Quenched and tempered        | -                     | -                               | 5-20           | O/S        |             |
| M   | Stainless steel and cast steel                                     | Ferritic / martensitic       | -                     | 2-10 *                          | 5-20 *         | E/O        |             |
|     |                                                                    | Martensitic                  | -                     | 2-10 *                          | 5-20 *         | E/O        |             |
|     |                                                                    | Austenitic                   | -                     | 2-10 *                          | 5-20 *         | E/O        |             |
| K   | Gray cast iron (GG)                                                | Ferritic                     | 10-15                 | 10-25                           | 15-45          | E/D        |             |
|     |                                                                    | Pearlitic                    | 10-15                 | 10-20                           | 10-40          | E/D        |             |
|     | Cast iron nodular (GGG)                                            | Ferritic                     | 8-12                  | 5-20                            | 10-30          | E/D        |             |
|     |                                                                    | Pearlitic                    | 8-12                  | 5-15                            | 10-25          | E/D        |             |
|     | Malleable cast iron                                                | Ferritic                     | 10-15                 | 10-25                           | 15-45          | E/D        |             |
|     |                                                                    | Pearlitic                    | 10-15                 | 10-20                           | 10-40          | E/D        |             |
| N   | Aluminum - wrought alloy                                           | Not cureable                 | 15-25 *               | 15-25                           | 15-25          | E/O        |             |
|     |                                                                    | Cured                        | 15-25 *               | 15-25                           | 15-25          | E/O        |             |
|     | Aluminum-cast, alloyed                                             | <=12% Si                     | Not cureable          | 15-20 *                         | 10-20          | 15-40 *    | E/O         |
|     |                                                                    |                              | Cured                 | 15-20 *                         | 10-20          | 15-40 *    | E/O         |
|     | >12% Si                                                            | High temp.                   | 15-20 *               | 15-20                           | 10-30          | E/O        |             |
|     | Copper alloys                                                      | >1% Pb                       | Free cutting          | 15-25 *                         | 15-25          | 10-30      | E/O         |
|     |                                                                    |                              | Brass                 | 10-40                           | 10-40          | 50-60      | E/O         |
|     |                                                                    | Electrolitic copper          | 10-15 *               | 2-10                            | 5-25           | E/O        |             |
|     | Non-metallic                                                       | Duroplastics, fiber plastics | -                     | 10-20                           | 10-20          | D          |             |
|     |                                                                    | Hard rubber                  | -                     | 10-20                           | 10-20          | D          |             |
| S   | High temp. alloys                                                  | Fe based                     | Annealed              | -                               | -              | 3-5        | S           |
|     |                                                                    |                              | Cured                 | -                               | -              | 3-5        | S           |
|     |                                                                    | Ni or Co based               | Annealed              | -                               | -              | 2-4        | S           |
|     |                                                                    |                              | Cured                 | -                               | -              | 2-4        | S           |
|     |                                                                    |                              | Cast                  | -                               | -              | 2-4        | S           |
|     | Titanium, Ti alloys                                                | Pure                         | -                     | -                               | 4-6            | S          |             |
|     |                                                                    | Alpha+beta alloys cured      | -                     | -                               | 4-6            | S          |             |

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