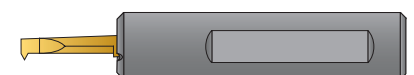
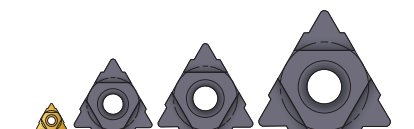
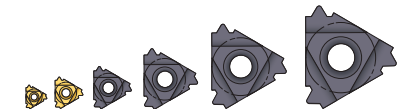
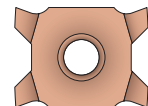
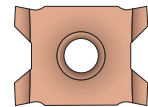
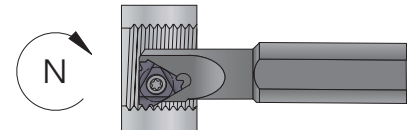


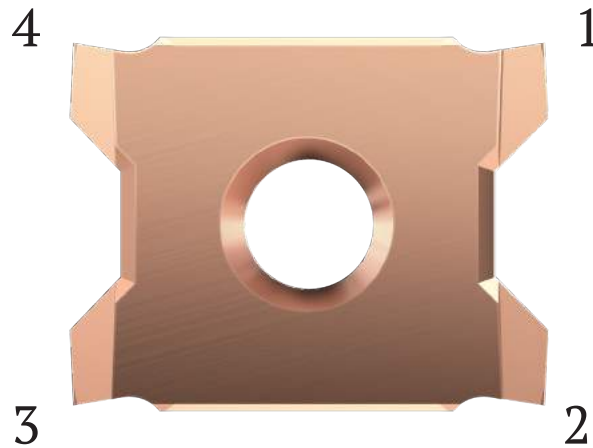
# THREAD TURNING

## CONTENTS

|                                                                                                                      |    |
|----------------------------------------------------------------------------------------------------------------------|----|
| Technical Information                                                                                                | 32 |
|  FourCut Thread Turning Inserts     | 40 |
| External Toolholders                                                                                                 | 44 |
|  FourCut Grooving Inserts           | 46 |
|  Triangular Thread Turning Inserts | 48 |
| External Toolholders                                                                                                 | 58 |
| Internal Toolholders                                                                                                 | 59 |
|  U-type Thread Turning Inserts    | 60 |
| External Toolholders                                                                                                 | 62 |
| Internal Toolholders                                                                                                 | 63 |
|  Micro Thread Turning Inserts     | 64 |
| Toolholders                                                                                                          | 65 |

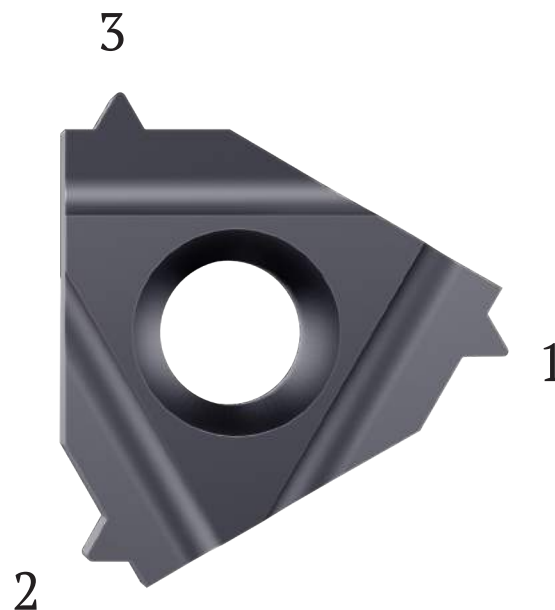


# Cost-effective

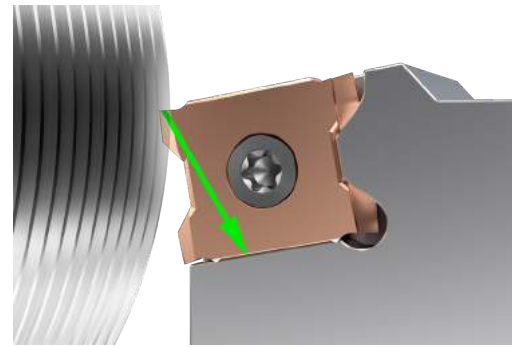
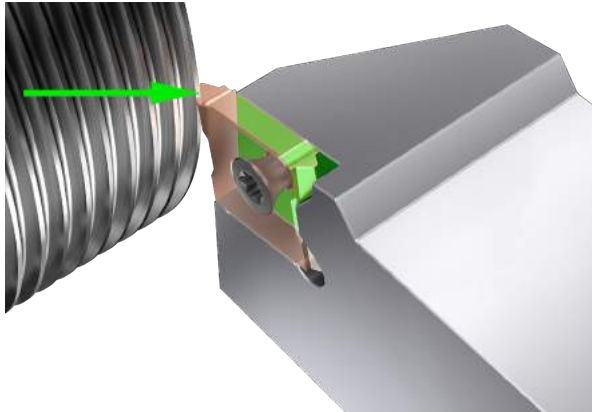


## Four Cutting Edges - for the Price of Three

As the price for the inserts are the same, the FourCut threading insert is 25% cheaper as it has four cutting edges instead of three.



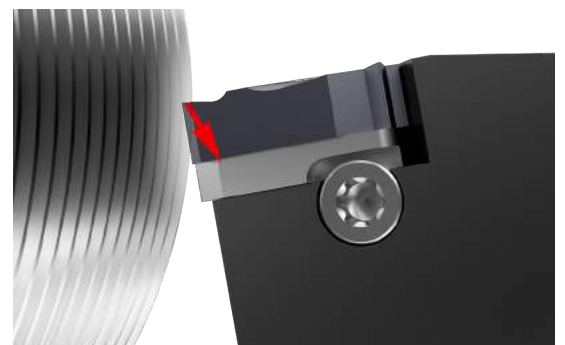
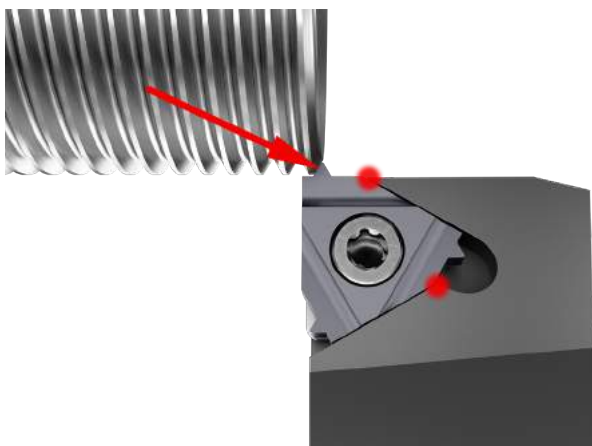
# Strength



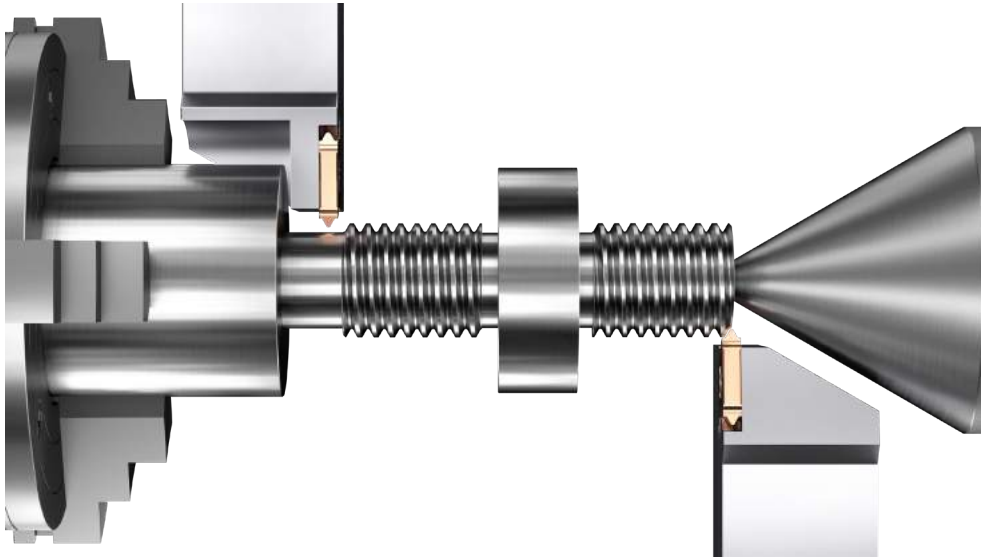
## Strong and Stable Machining

FourCut is a vertical insert. This gives a very strong insert. The cutting forces go in to the insert and you don't need any anvil as the carbide insert take up the forces.

No problem with the side forces as the flat surface of the insert take up these forces. No weak point on the toolholder.



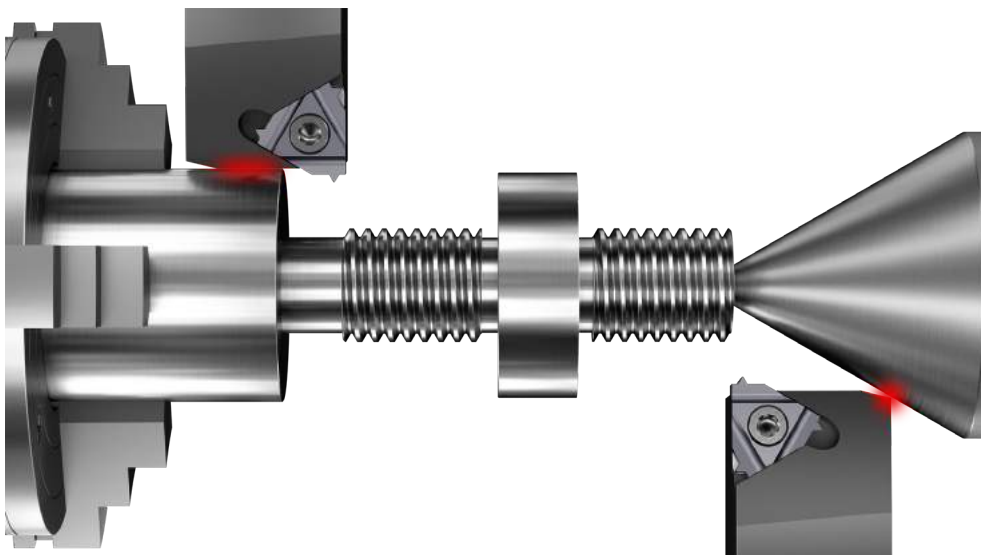
# Accessibility



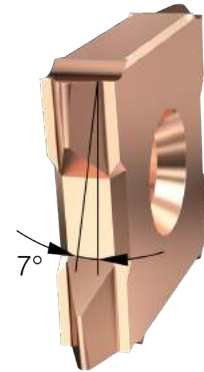
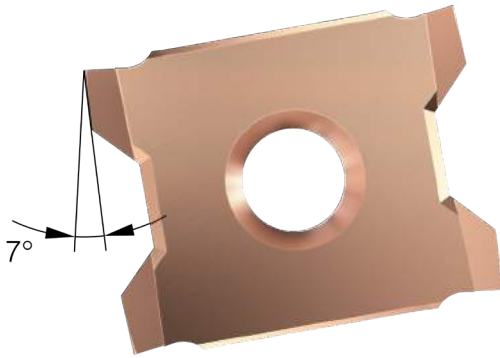
## Minimum Waste of Material

With a vertical insert the accessibility gives you two main advantages.

- 1) Less waste of material as you don't need to turn away material to be able to make the thread.
- 2) As you have more space you can use a live center when you are turning small diameters. This will give you a stable machining and a better quality of the thread.



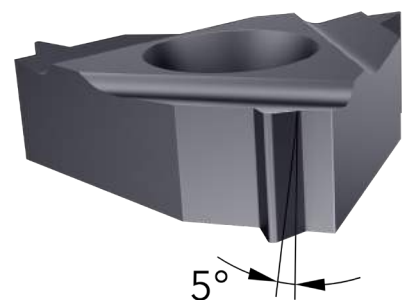
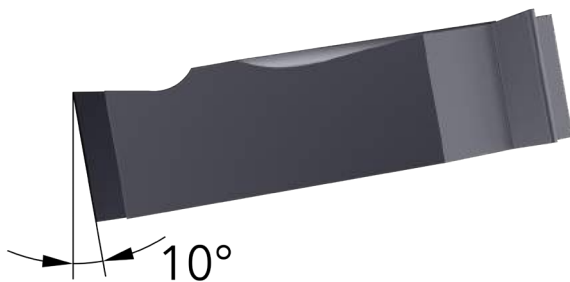
# Optimal Clearance



## Perfect Cutting Conditions

The inserts are ground on all sides with a complex grinding technology on 6-axis grinding machines to get a 7° clearance angle all around the thread profile which gives the following advantages:

- 1) Extra clearance on the flanks gives better cutting conditions.
- 2) Same toolholder for different helix angles as the extra clearance allow you to have bigger difference in helix angle.
- 3) Less clearance on the radius gives stronger cutting edge and longer tool life.

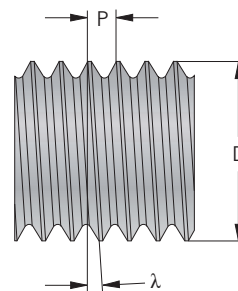


# THREAD TURNING INSERTS

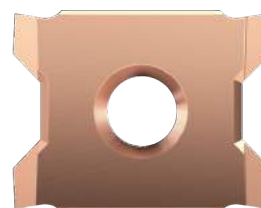
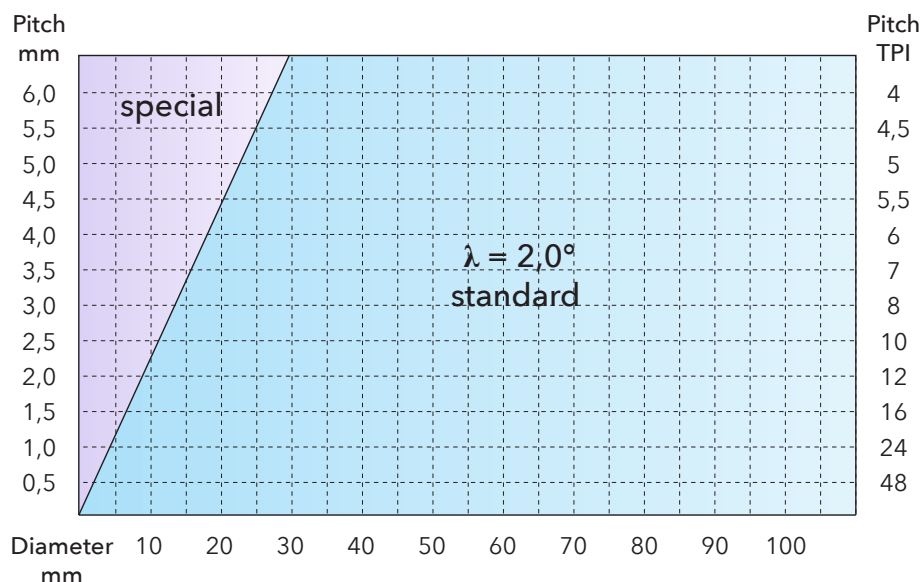
## Helix Angle

To get good cutting conditions the threading insert has to be inclined into the toolholder at approximately the same angle as the helix angle of the thread.

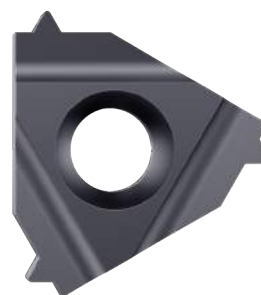
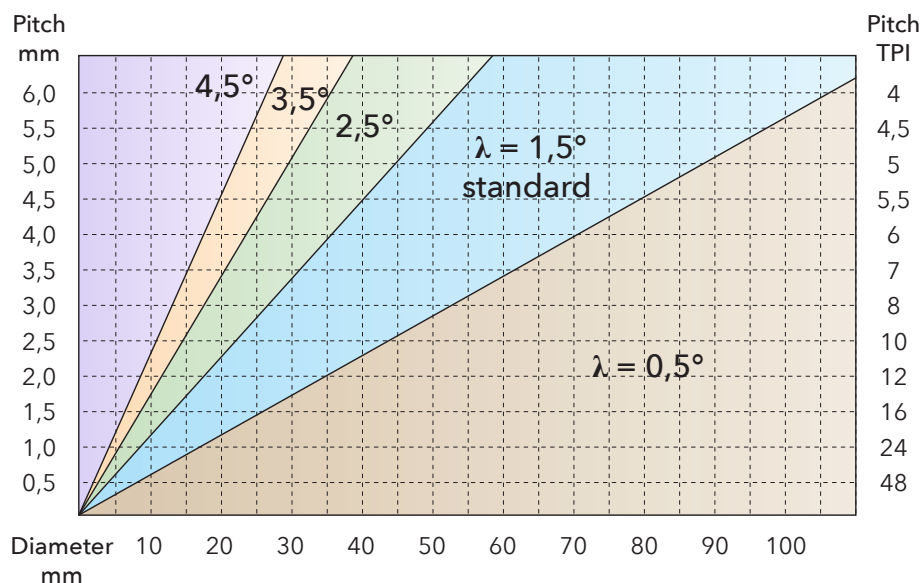
$$\tan \lambda = \frac{P}{\pi \times D}$$



The FourCut inserts has extra clearance on the flanks and therefore it is not so important to have correct helix angle. The standard toolholder has 2° helix angle and it is possible to make almost all threads with the same holder.

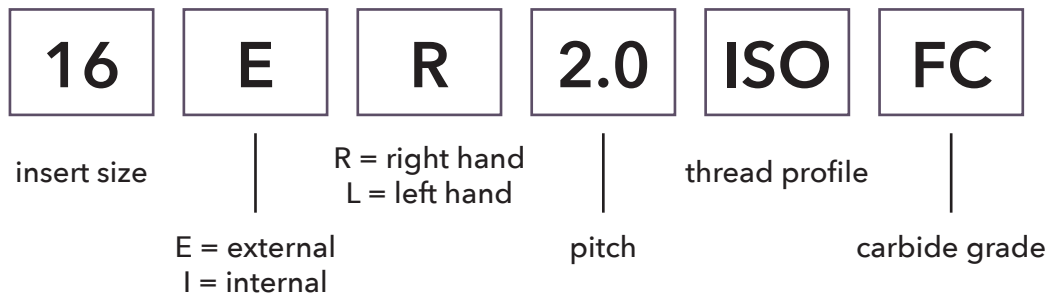


On the triangular inserts it is more important to have a similar helix angle on the toolholder as the thread. The standard toolholder has an anvil which gives 1,5° helix angle. If you need bigger or smaller, you just change the anvil.

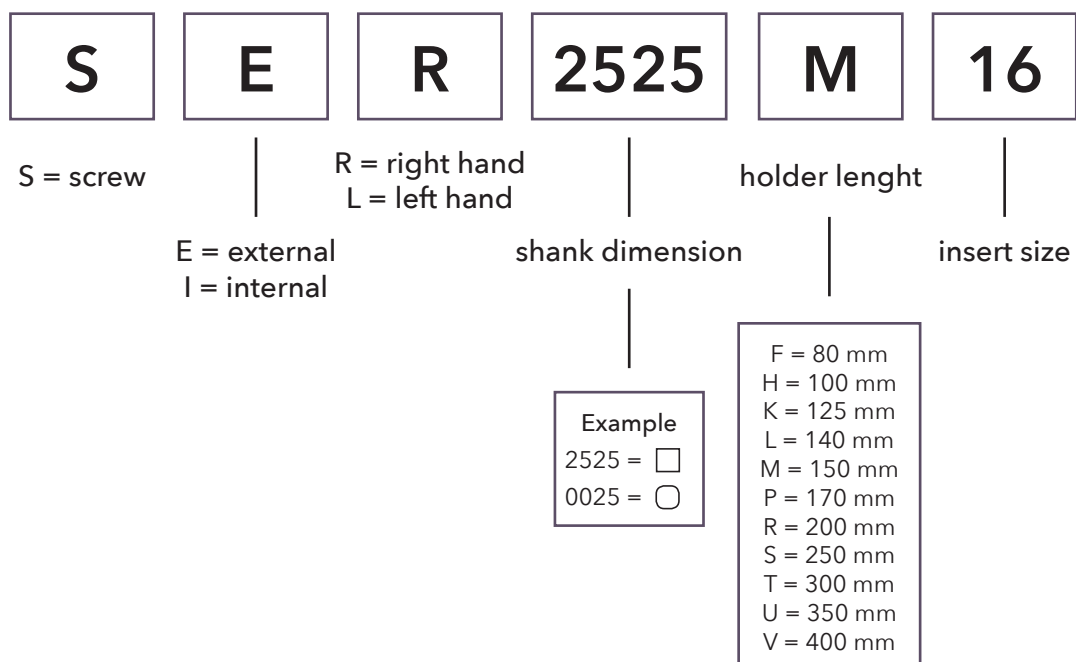


# CODE KEY

## Inserts



## Toolholders



## Cutting Speed ( $V_c$ ) and Material Factor ( $F_m$ )

| MATERIAL        |                             | Hardness<br>HB | Tensile Strength<br>N/mm <sup>2</sup> | Cutting Speed<br>( $V_c$ ) m/min | Material Factor<br>( $F_m$ ) |
|-----------------|-----------------------------|----------------|---------------------------------------|----------------------------------|------------------------------|
| Steel           | Low carbon, C < 0,25%       | < 120          | < 400                                 | 150 - 200                        | 1,2                          |
|                 | Medium carbon, C < 0,55%    | < 200          | < 700                                 | 120 - 170                        | 1,1                          |
|                 | High carbon, C < 0,85%      | < 250          | < 850                                 | 110 - 150                        | 1,0                          |
|                 | Low alloy                   | < 250          | < 850                                 | 100 - 140                        | 1,0                          |
|                 | High alloy                  | < 350          | < 1200                                | 70 - 110                         | 0,9                          |
|                 | Hardened, HRC < 45          |                |                                       | 60 - 100                         | 0,8                          |
|                 | Hardened, HRC < 55          |                |                                       | 30 - 60                          | 0,7                          |
|                 | Hardened, HRC < 65          |                |                                       | 20 - 40                          | 0,6                          |
| Cast iron       | Lamellar graphite           | < 150          | < 500                                 | 130 - 180                        | 1,2                          |
|                 | Lamellar graphite           | < 300          | < 1000                                | 100 - 150                        | 1,1                          |
|                 | Nodular graphite, malleable | < 200          | < 700                                 | 100 - 150                        | 1,0                          |
|                 | Nodular graphite, malleable | < 300          | < 1000                                | 80 - 120                         | 0,9                          |
| Stainless steel | Free machining              | < 250          | < 850                                 | 130 - 180                        | 1,0                          |
|                 | Austenitic                  | < 250          | < 850                                 | 90 - 140                         | 0,9                          |
|                 | Ferritic and austenitic     | < 300          | < 1000                                | 80 - 120                         | 0,8                          |
| Titanium        | Unalloyed                   | < 200          | < 700                                 | 60 - 80                          | 0,8                          |
|                 | Alloyed                     | < 270          | < 900                                 | 50 - 70                          | 0,7                          |
|                 | Alloyed                     | < 350          | < 1250                                | 30 - 50                          | 0,6                          |
| Nickel          | Unalloyed                   | < 150          | < 500                                 | 80 - 120                         | 0,8                          |
|                 | Alloyed                     | < 270          | < 900                                 | 60 - 80                          | 0,7                          |
|                 | Alloyed                     | < 350          | < 1250                                | 50 - 70                          | 0,6                          |
| Copper          | Unalloyed                   | < 100          | < 350                                 | 150 - 250                        | 1,0                          |
|                 | Brass, bronze               | < 200          | < 700                                 | 130 - 180                        | 1,0                          |
|                 | High strength bronze        | < 470          | < 1500                                | 60 - 80                          | 0,8                          |
| Aluminium       | Unalloyed                   | < 100          | < 350                                 | 500 - 900                        | 1,4                          |
|                 | Alloyed, Si < 0.5%          | < 150          | < 500                                 | 400 - 800                        | 1,3                          |
|                 | Alloyed, Si < 10%           | < 120          | < 400                                 | 300 - 500                        | 1,2                          |
|                 | Alloyed, Si > 10%           | < 120          | < 400                                 | 200 - 400                        | 1,1                          |
| Inconel         | 718                         | < 370          |                                       | 50 - 70                          | 0,6                          |
| Graphite        |                             |                |                                       | 300 - 500                        | 1,0                          |

## Threading Methods

| RIGHT HAND THREAD |       |                                                                                     |                                                                                     | LEFT HAND THREAD |       |                                                                                       |                                                                                       |
|-------------------|-------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|------------------|-------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| Tool              | Anvil | Rotation                                                                            | Direction                                                                           | Tool             | Anvil | Rotation                                                                              | Direction                                                                             |
| SER               | AE +  |  |  | SEL              | AI +  |  |  |
| SEL               | AI -  |  |  | SER              | AE -  |  |  |
| SIR               | AI +  |  |  | SIL              | AE +  |  |  |
| SIL               | AE -  |  |  | SIR              | AI -  |  |  |

## Number of Passes

| ISO  | Pitch |    |      | Material Factor (F <sub>m</sub> ) |     |     |     |     |     |     |     |     |
|------|-------|----|------|-----------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|
|      | UN    | W  | NPT  | 0,6                               | 0,7 | 0,8 | 0,9 | 1,0 | 1,1 | 1,2 | 1,3 | 1,4 |
| 0,5  |       |    |      | 7                                 | 6   | 5   | 4   | 4   | 4   | 4   | 4   | 4   |
| 0,75 | 32    | 28 |      | 8                                 | 6   | 6   | 5   | 4   | 4   | 4   | 4   | 4   |
| 1,0  | 28-24 | 19 |      | 8                                 | 7   | 6   | 6   | 5   | 5   | 4   | 4   | 4   |
| 1,25 | 20    |    |      | 9                                 | 8   | 7   | 6   | 6   | 5   | 5   | 4   | 4   |
| 1,5  | 18-16 | 14 |      | 10                                | 9   | 8   | 7   | 6   | 5   | 5   | 5   | 4   |
| 1,75 | 14    |    |      | 12                                | 10  | 9   | 8   | 7   | 6   | 6   | 5   | 5   |
| 2,0  | 13-12 |    | 27   | 14                                | 12  | 11  | 9   | 8   | 8   | 7   | 7   | 6   |
| 2,5  | 11-10 | 11 | 18   | 16                                | 14  | 13  | 11  | 10  | 9   | 8   | 8   | 7   |
| 3,0  | 9-8   |    | 14   | 18                                | 16  | 14  | 12  | 11  | 10  | 9   | 8   | 8   |
| 3,5  | 7     |    |      | 20                                | 17  | 15  | 13  | 12  | 11  | 10  | 9   | 9   |
| 4,0  | 6     |    | 11,5 | 22                                | 19  | 16  | 14  | 13  | 12  | 11  | 10  | 9   |
| 4,5  |       |    |      | 23                                | 20  | 17  | 15  | 14  | 12  | 11  | 10  | 10  |
| 5,0  | 5     |    |      | 24                                | 20  | 18  | 16  | 14  | 13  | 12  | 11  | 10  |
| 5,5  | 4,5   |    | 8    | 25                                | 21  | 19  | 17  | 15  | 14  | 13  | 12  | 11  |
| 6,0  | 4     |    |      | 27                                | 23  | 20  | 18  | 16  | 15  | 13  | 12  | 11  |

## Radial Infeed Each Pass

| PASS | Percentage of the total infeed |    |    |    |    |    |    |    |    |    |    |    |    |    |    |     |     |
|------|--------------------------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----|-----|
|      | 4                              | 5  | 6  | 7  | 8  | 9  | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19  | 20  |
| 1    | 33                             | 28 | 25 | 22 | 20 | 19 | 18 | 16 | 14 | 12 | 11 | 11 | 11 | 11 | 10 | 10  | 9   |
| 2    | 27                             | 24 | 20 | 18 | 17 | 16 | 15 | 14 | 13 | 11 | 10 | 10 | 10 | 10 | 10 | 9   | 9   |
| 3    | 22                             | 19 | 17 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9  | 9  | 9  | 9  | 9  | 8   | 8   |
| 4    | 18                             | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9  | 9  | 8  | 8  | 8  | 8  | 8  | 8   | 8   |
| 5    |                                | 13 | 13 | 12 | 11 | 10 | 9  | 8  | 8  | 8  | 8  | 8  | 8  | 8  | 8  | 7   | 7   |
| 6    |                                |    | 10 | 10 | 10 | 9  | 8  | 8  | 8  | 8  | 8  | 7  | 7  | 7  | 7  | 6   | 6   |
| 7    |                                |    |    | 8  | 8  | 8  | 7  | 8  | 8  | 7  | 7  | 7  | 7  | 6  | 6  | 6   | 6   |
| 8    |                                |    |    |    | 6  | 7  | 7  | 7  | 7  | 7  | 7  | 7  | 6  | 6  | 6  | 6   | 6   |
| 9    |                                |    |    |    |    | 5  | 7  | 7  | 7  | 7  | 7  | 6  | 6  | 5  | 6  | 5   | 5   |
| 10   |                                |    |    |    |    |    | 5  | 6  | 6  | 6  | 6  | 6  | 5  | 5  | 5  | 5   | 5   |
| 11   |                                |    |    |    |    |    |    | 4  | 5  | 6  | 6  | 5  | 5  | 5  | 5  | 5   | 5   |
| 12   |                                |    |    |    |    |    |    |    | 4  | 5  | 5  | 5  | 5  | 4  | 4  | 5   | 5   |
| 13   |                                |    |    |    |    |    |    |    |    | 4  | 4  | 4  | 4  | 4  | 4  | 4   | 4   |
| 14   |                                |    |    |    |    |    |    |    |    |    | 3  | 4  | 4  | 4  | 3  | 4   | 4   |
| 15   |                                |    |    |    |    |    |    |    |    |    |    | 3  | 3  | 3  | 3  | 4   | 3   |
| 16   |                                |    |    |    |    |    |    |    |    |    |    |    | 2  | 2  | 2  | 3   | 3   |
| 17   |                                |    |    |    |    |    |    |    |    |    |    |    |    | 2  | 2  | 2   | 2   |
| 18   |                                |    |    |    |    |    |    |    |    |    |    |    |    |    | 2  | 1,5 | 2   |
| 19   |                                |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1,5 | 1,5 |
| 20   |                                |    |    |    |    |    |    |    |    |    |    |    |    |    |    |     | 1,5 |

## Carbide Grades

FC

Micrograin Carbide with TiAlN coating.  
Allround Grade with high heat resistance.  
Use cutting data according to the tables.

BC

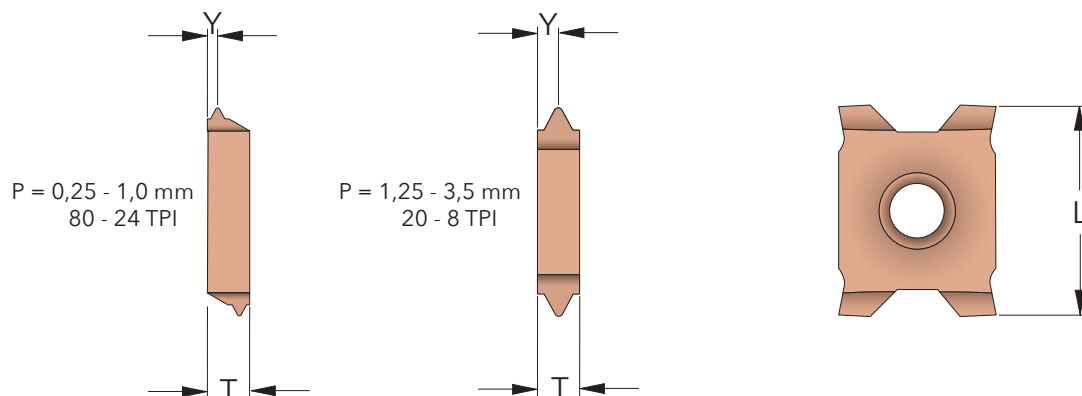
Micrograin Carbide with TiN coating.  
Suitable for internal thread turning of small dimensions. Cutting speed 40% less than FC.

HC

Micrograin Carbide with AlTiSiN coating.  
Allround Grade with high hardness and heat resistance.  
Use cutting data according to the tables.

# THREAD TURNING INSERTS

## FourCut



## M

### METRIC

| Pitch<br>mm | Part Number<br>EXTERNAL | L<br>mm | T<br>mm | Y<br>mm |
|-------------|-------------------------|---------|---------|---------|
| 0,25        | 12E_0.25ISO_HC          | 12      | 2,4     | 0,2     |
| 0,3         | 12E_0.3ISO_HC           | 12      | 2,4     | 0,2     |
| 0,35        | 12E_0.35ISO_HC          | 12      | 2,4     | 0,25    |
| 0,4         | 12E_0.4ISO_HC           | 12      | 2,4     | 0,3     |
| 0,45        | 12E_0.45ISO_HC          | 12      | 2,4     | 0,4     |
| 0,5         | 12E_0.5ISO_HC           | 12      | 2,4     | 0,4     |
| 0,6         | 12E_0.6ISO_HC           | 12      | 2,4     | 0,4     |
| 0,7         | 12E_0.7ISO_HC           | 12      | 2,4     | 0,4     |
| 0,75        | 12E_0.75ISO_HC          | 12      | 2,4     | 0,4     |
| 0,8         | 12E_0.8ISO_HC           | 12      | 2,4     | 0,5     |
| 1,0         | 12E_1.0ISO_HC           | 12      | 2,4     | 0,6     |
| 1,25        | 12E_1.25ISO_HC          | 12      | 2,4     | 1,2     |
| 1,5         | 12E_1.5ISO_HC           | 12      | 2,4     | 1,2     |
| 1,75        | 12E_1.75ISO_HC          | 12      | 2,4     | 1,2     |
| 2,0         | 12E_2.0ISO_HC           | 12      | 2,4     | 1,2     |
| 2,5         | 12E_2.5ISO_HC           | 12      | 3,6     | 1,8     |
| 3,0         | 12E_3.0ISO_HC           | 12      | 3,6     | 1,8     |
| 3,5         | 12E_3.5ISO_HC           | 12      | 3,6     | 1,8     |

## UN

### UNIFIED

| Pitch<br>TPI | Part Number<br>EXTERNAL | L<br>mm | T<br>mm | Y<br>mm |
|--------------|-------------------------|---------|---------|---------|
| 80           | 12E_80UN_HC             | 12      | 2,4     | 0,2     |
| 72           | 12E_72UN_HC             | 12      | 2,4     | 0,25    |
| 64           | 12E_64UN_HC             | 12      | 2,4     | 0,3     |
| 56           | 12E_56UN_HC             | 12      | 2,4     | 0,4     |
| 48           | 12E_48UN_HC             | 12      | 2,4     | 0,4     |
| 44           | 12E_44UN_HC             | 12      | 2,4     | 0,4     |
| 40           | 12E_40UN_HC             | 12      | 2,4     | 0,4     |
| 36           | 12E_36UN_HC             | 12      | 2,4     | 0,4     |
| 32           | 12E_32UN_HC             | 12      | 2,4     | 0,5     |
| 28           | 12E_28UN_HC             | 12      | 2,4     | 0,6     |
| 24           | 12E_24UN_HC             | 12      | 2,4     | 0,6     |
| 20           | 12E_20UN_HC             | 12      | 2,4     | 1,2     |
| 18           | 12E_18UN_HC             | 12      | 2,4     | 1,2     |
| 16           | 12E_16UN_HC             | 12      | 2,4     | 1,2     |
| 14           | 12E_14UN_HC             | 12      | 2,4     | 1,2     |
| 13           | 12E_13UN_HC             | 12      | 2,4     | 1,2     |
| 12           | 12E_12UN_HC             | 12      | 2,4     | 1,2     |
| 11           | 12E_11UN_HC             | 12      | 3,6     | 1,8     |
| 10           | 12E_10UN_HC             | 12      | 3,6     | 1,8     |
| 9            | 12E_9UN_HC              | 12      | 3,6     | 1,8     |
| 8            | 12E_8UN_HC              | 12      | 3,6     | 1,8     |

# THREAD TURNING INSERTS

## FourCut



60°

### PARTIAL PROFILE 60°

| Pitch<br>mm | TPI   | Part Number<br>EXTERNAL | L<br>mm | T<br>mm | Y<br>mm |
|-------------|-------|-------------------------|---------|---------|---------|
| 0,35 - 1,0  | 72-24 | 12E_AA60_HC             | 12      | 2,4     | 0,6     |
| 0,5 - 2,0   | 48-12 | 12E_A60_HC              | 12      | 2,4     | 1,2     |
| 0,5 - 3,0   | 48-8  | 12E_AG60_HC             | 12      | 3,6     | 1,8     |
| 1,75 - 3,0  | 14-8  | 12E_G60_HC              | 12      | 3,6     | 1,8     |

55°

### PARTIAL PROFILE 55°

| Pitch<br>mm | TPI   | Part Number<br>EXTERNAL | L<br>mm | T<br>mm | Y<br>mm |
|-------------|-------|-------------------------|---------|---------|---------|
| 0,35 - 1,0  | 72-24 | 12E_AA55_HC             | 12      | 2,4     | 0,6     |
| 0,5 - 2,0   | 48-12 | 12E_A55_HC              | 12      | 2,4     | 1,2     |
| 0,5 - 3,0   | 48-8  | 12E_AG55_HC             | 12      | 3,6     | 1,8     |
| 1,75 - 3,0  | 14-8  | 12E_G55_HC              | 12      | 3,6     | 1,8     |

BS/G/Rp

### WHITWORTH PIPE THREAD

| Pitch<br>TPI | Part Number<br>EXTERNAL | L<br>mm | T<br>mm | Y<br>mm |
|--------------|-------------------------|---------|---------|---------|
| 28           | 12E_28W_HC              | 12      | 2,4     | 0,6     |
| 24           | 12E_24W_HC              | 12      | 2,4     | 0,6     |
| 20           | 12E_20W_HC              | 12      | 2,4     | 1,2     |
| 19           | 12E_19W_HC              | 12      | 2,4     | 1,2     |
| 18           | 12E_18W_HC              | 12      | 2,4     | 1,2     |
| 16           | 12E_16W_HC              | 12      | 2,4     | 1,2     |
| 14           | 12E_14W_HC              | 12      | 2,4     | 1,2     |
| 12           | 12E_12W_HC              | 12      | 2,4     | 1,2     |
| 11           | 12E_11W_HC              | 12      | 3,6     | 1,8     |
| 10           | 12E_10W_HC              | 12      | 3,6     | 1,8     |
| 9            | 12E_9W_HC               | 12      | 3,6     | 1,8     |
| 8            | 12E_8W_HC               | 12      | 3,6     | 1,8     |

R/Rc

### BSPT PIPE THREAD

| Pitch<br>TPI | Part Number<br>EXTERNAL | L<br>mm | T<br>mm | Y<br>mm |
|--------------|-------------------------|---------|---------|---------|
| 28           | 12E_28BSPT_HC           | 12      | 2,4     | 1,2     |
| 19           | 12E_19BSPT_HC           | 12      | 2,4     | 1,2     |
| 14           | 12E_14BSPT_HC           | 12      | 3,6     | 1,8     |
| 11           | 12E_11BSPT_HC           | 12      | 3,6     | 1,8     |

NPT

### NPT PIPE THREAD

| Pitch<br>TPI | Part Number<br>EXTERNAL | L<br>mm | T<br>mm | Y<br>mm |
|--------------|-------------------------|---------|---------|---------|
| 27           | 12E_27NPT_HC            | 12      | 2,4     | 0,6     |
| 18           | 12E_18NPT_HC            | 12      | 2,4     | 1,2     |
| 14           | 12E_14NPT_HC            | 12      | 2,4     | 1,2     |
| 11,5         | 12E_11.5NPT_HC          | 12      | 3,6     | 1,8     |

NPTF

### NPTF DRYSEAL PIPE THREAD

| Pitch<br>TPI | Part Number<br>EXTERNAL | L<br>mm | T<br>mm | Y<br>mm |
|--------------|-------------------------|---------|---------|---------|
| 27           | 12E_27NPTF_HC           | 12      | 2,4     | 0,6     |
| 18           | 12E_18NPTF_HC           | 12      | 2,4     | 1,2     |
| 14           | 12E_14NPTF_HC           | 12      | 2,4     | 1,2     |
| 11,5         | 12E_11.5NPTF_HC         | 12      | 3,6     | 1,8     |

■ All inserts have ground profile and chipbreaker.

# THREAD TURNING INSERTS

## FourCut

### PG

#### STEEL CONDUIT THREAD DIN 40430

| Pitch<br>TPI | Part Number<br>EXTERNAL | L<br>mm | T<br>mm | Y<br>mm |
|--------------|-------------------------|---------|---------|---------|
| 20           | 12E_20PG_HC             | 12      | 2,4     | 1,2     |
| 18           | 12E_18PG_HC             | 12      | 2,4     | 1,2     |
| 16           | 12E_16PG_HC             | 12      | 2,4     | 1,2     |

### TR

#### TRAPEZ DIN 103

| Pitch<br>mm | Part Number<br>EXTERNAL | L<br>mm | T<br>mm | Y<br>mm |
|-------------|-------------------------|---------|---------|---------|
| 1,5         | 12E_1.5TR_HC            | 12      | 2,4     | 1,2     |
| 2,0         | 12E_2.0TR_HC            | 12      | 2,4     | 1,2     |
| 3,0         | 12E_3.0TR_HC            | 12      | 3,6     | 1,8     |

### ACME

#### ACME

| Pitch<br>TPI | Part Number<br>EXTERNAL | L<br>mm | T<br>mm | Y<br>mm |
|--------------|-------------------------|---------|---------|---------|
| 16           | 12E_16ACME_HC           | 12      | 2,4     | 1,2     |
| 14           | 12E_14ACME_HC           | 12      | 2,4     | 1,2     |
| 12           | 12E_12ACME_HC           | 12      | 2,4     | 1,2     |
| 10           | 12E_10ACME_HC           | 12      | 3,6     | 1,8     |
| 8            | 12E_8ACME_HC            | 12      | 3,6     | 1,8     |

### STACME

#### STUB ACME

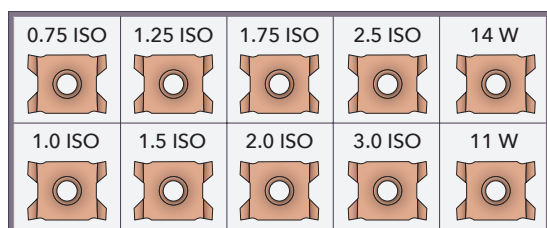
| Pitch<br>TPI | Part Number<br>EXTERNAL | L<br>mm | T<br>mm | Y<br>mm |
|--------------|-------------------------|---------|---------|---------|
| 16           | 12E_16STACME_HC         | 12      | 2,4     | 1,2     |
| 14           | 12E_14STACME_HC         | 12      | 2,4     | 1,2     |
| 12           | 12E_12STACME_HC         | 12      | 2,4     | 1,2     |
| 10           | 12E_10STACME_HC         | 12      | 3,6     | 1,8     |
| 8            | 12E_8STACME_HC          | 12      | 3,6     | 1,8     |

### MJ

#### METRIC

| Pitch<br>mm | Part Number<br>EXTERNAL | L<br>mm | T<br>mm | Y<br>mm |
|-------------|-------------------------|---------|---------|---------|
| 1,0         | 12E_1.0MJ_HC            | 12      | 2,4     | 0,6     |
| 1,5         | 12E_1.5MJ_HC            | 12      | 2,4     | 1,2     |
| 2,0         | 12E_2.0MJ_HC            | 12      | 3,6     | 1,8     |

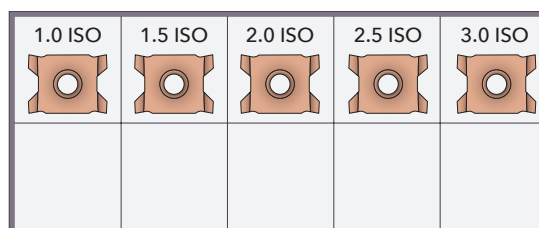
## Threading Inserts Kits



Part Number

10X12E\_HC

■ 10 different inserts in one box.



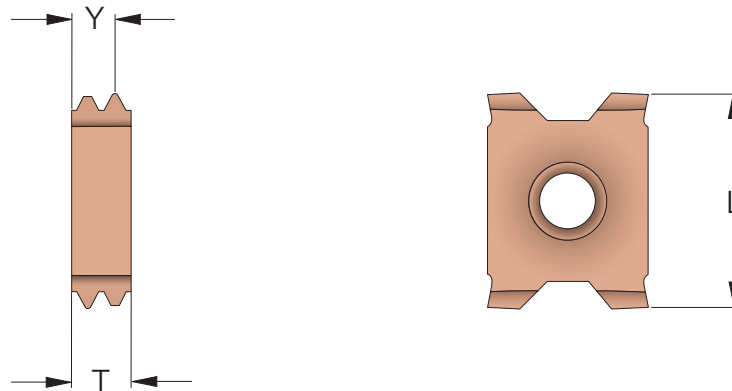
Part Number

5X12E\_HC

■ 5 different inserts in one box.

# THREAD TURNING INSERTS

## FourCut Multitooth



**M**

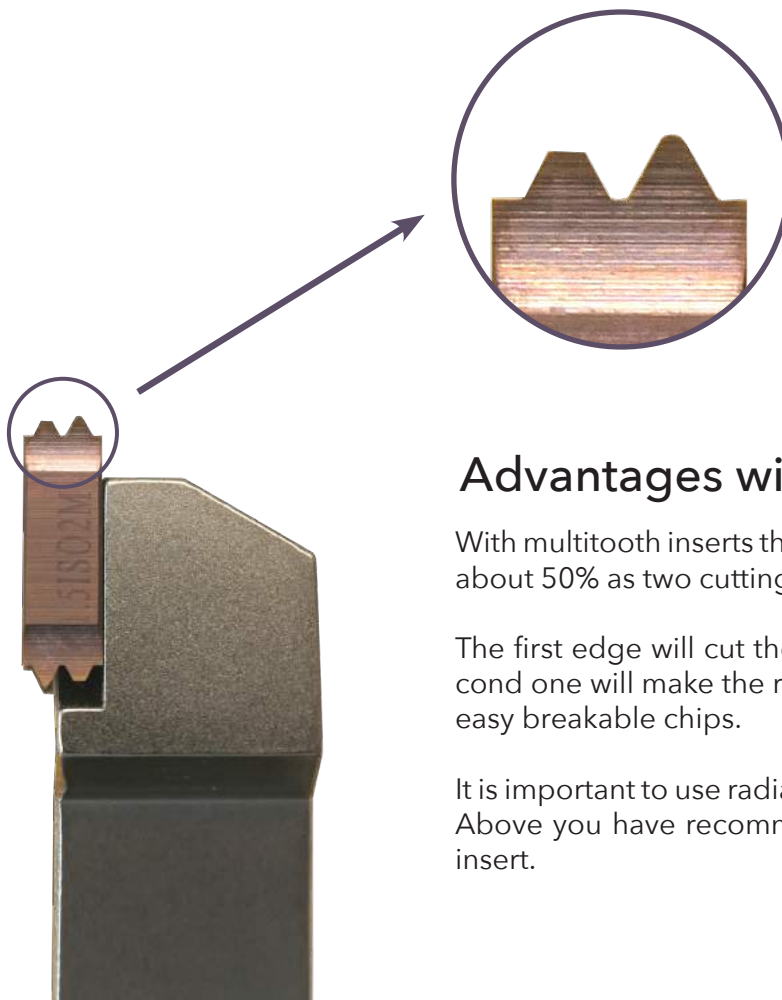
### METRIC

| Pitch<br>mm | Part Number<br>EXTERNAL | L<br>mm | T<br>mm | Y<br>mm | Radial infeed per pass |      |      |
|-------------|-------------------------|---------|---------|---------|------------------------|------|------|
|             |                         |         |         |         | 1                      | 2    | 3    |
| 1,0         | 12ER_1.0ISO2M_HC        | 12      | 2,4     | 1,7     | 0,24                   | 0,21 | 0,18 |
| 1,5         | 12ER_1.5ISO2M_HC        | 12      | 3,6     | 2,55    | 0,43                   | 0,30 | 0,21 |
| 2,0         | 12ER_2.0ISO2M_HC        | 12      | 3,6     | 2,8     | 0,57                   | 0,40 | 0,28 |

**G/Rp**

### WHITWORTH PIPE THREAD

| Pitch<br>TPI | Part Number<br>EXTERNAL | L<br>mm | T<br>mm | Y<br>mm | Radial infeed per pass |      |      |
|--------------|-------------------------|---------|---------|---------|------------------------|------|------|
|              |                         |         |         |         | 1                      | 2    | 3    |
| 14           | 12ER_14W2M_HC           | 12      | 3,6     | 2,7     | 0,55                   | 0,38 | 0,25 |



## Advantages with Multitooth Inserts

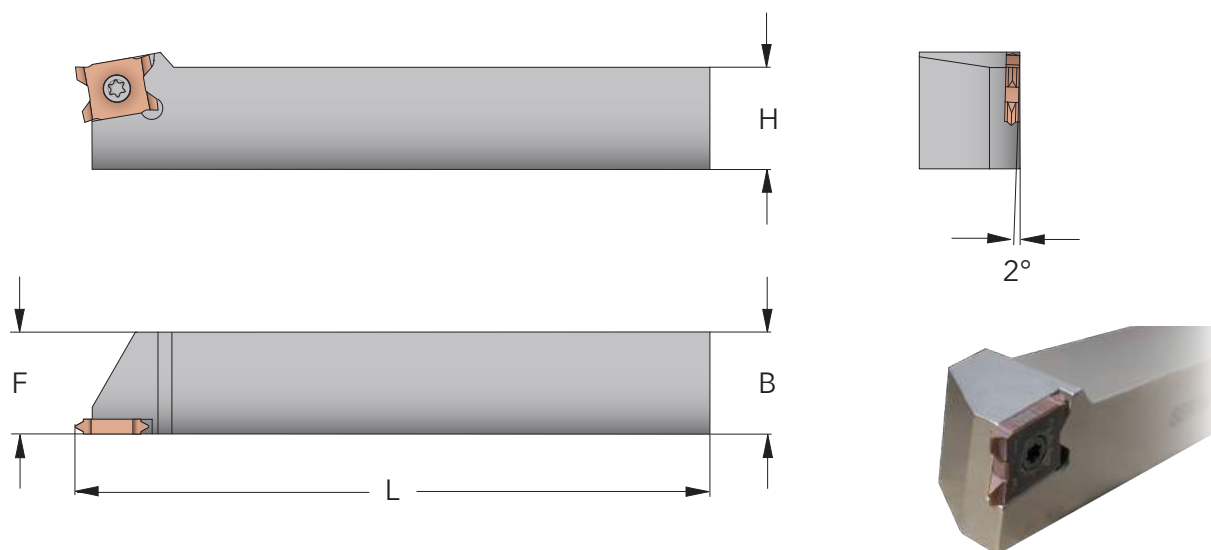
With multitooth inserts the machining time can be reduced about 50% as two cutting edges are working every pass.

The first edge will cut the flanks of the thread and the second one will make the root radius. This will result in three easy breakable chips.

It is important to use radial infeed to get best performance. Above you have recommended infeed per pass for each insert.

# THREAD TURNING TOOLHOLDERS

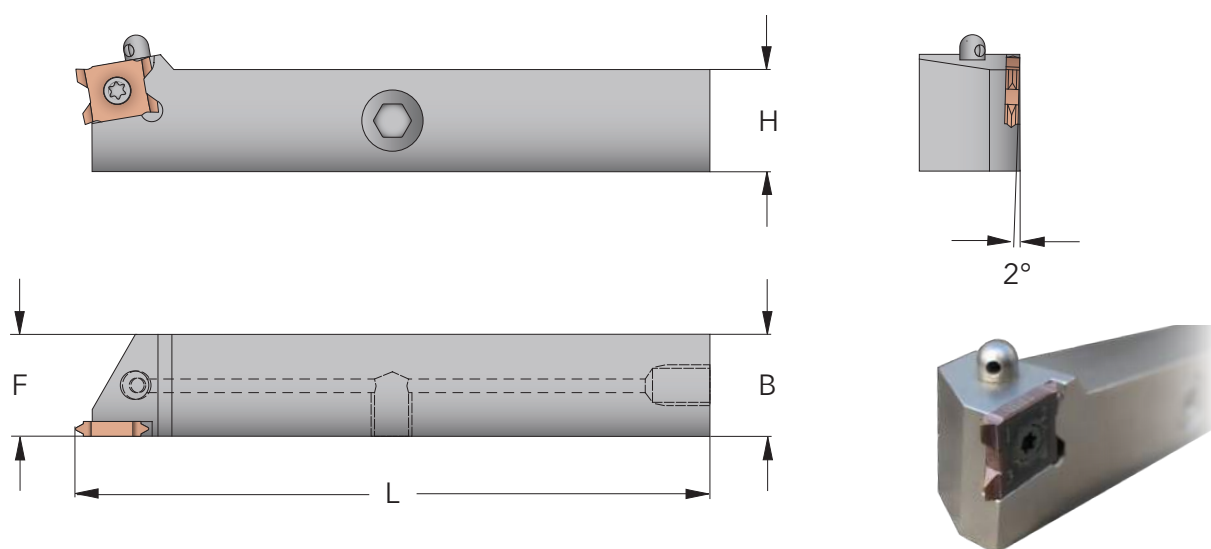
## FourCut External



| Insert mm | Part Number | B/H mm | L mm | F mm |
|-----------|-------------|--------|------|------|
| 12        | SER1010H12  | 10     | 100  | 10   |
| 12        | SER1212H12  | 12     | 100  | 12   |
| 12        | SER1616H12  | 16     | 100  | 16   |
| 12        | SER2020K12  | 20     | 125  | 20   |
| 12        | SER2525M12  | 25     | 150  | 25   |

■ The Part Numbers are for Right Hand Toolholders. For Left Hand specify L instead of R. The Price is 10% higher for L.

## with Internal Coolant

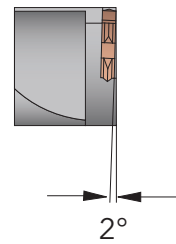
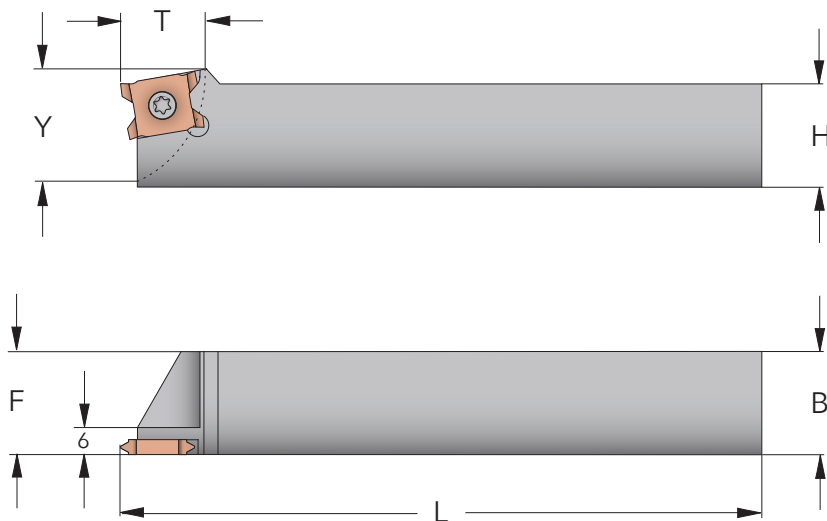


| Insert mm | Part Number   | B/H mm | L mm | F mm | PLUG |
|-----------|---------------|--------|------|------|------|
| 12        | SER1212H12-J* | 12     | 100  | 12   | M8x1 |
| 12        | SER1616H12-J  | 16     | 100  | 16   | G1/8 |
| 12        | SER2020K12-J  | 20     | 125  | 20   | G1/8 |
| 12        | SER2525M12-J  | 25     | 150  | 25   | G1/8 |

\* This toolholder also has a plug on the backside, totally three plugs.

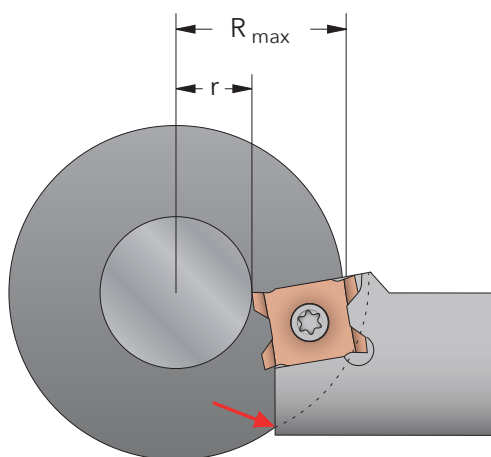
# THREAD TURNING TOOLHOLDERS

with Extra Accessibility



| Insert<br>mm | Part Number   | B/H<br>mm | L<br>mm | F<br>mm | T<br>mm | Y<br>mm |
|--------------|---------------|-----------|---------|---------|---------|---------|
| 12           | SER1212T09H12 | 12        | 100     | 12      | 9       | 11,0    |
| 12           | SER1616T11H12 | 16        | 100     | 16      | 11      | 14,7    |
| 12           | SER2020T14K12 | 20        | 125     | 20      | 14      | 18,7    |
| 12           | SER2525T18M12 | 25        | 150     | 25      | 18      | 23,8    |

## Maximum Allowable Access



When you are working between shoulders there is a limit of the accessibility which depends on the toolholder and the diameters of the workpiece.

$$R_{\max} = \sqrt{(r + 2,5)^2 + Y^2}$$

$$T = R - r$$

You should never exceed the calculated  $R_{\max}$  or the T dimension of the toolholder. If you need better accessibility you have to modify the holder.

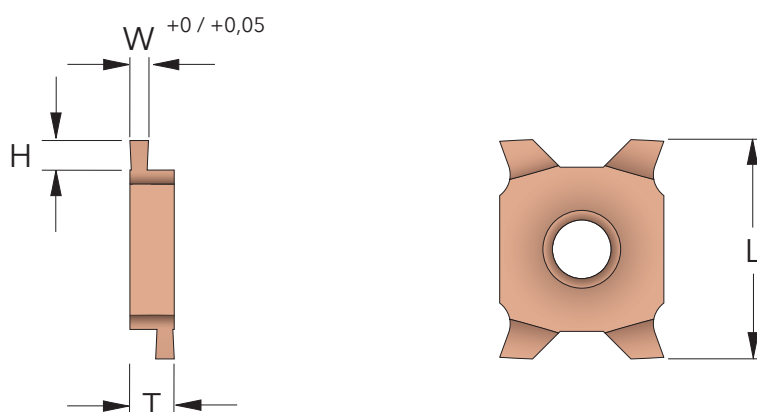
For diagram of accessibility go to [smicut.com/acc](http://smicut.com/acc)

## Spare Parts

| Insert<br>mm | Screw<br>to insert | Torx<br>key |
|--------------|--------------------|-------------|
| 12           | T9XM3              | TORX_T9     |

# GROOVING INSERTS

## FourCut



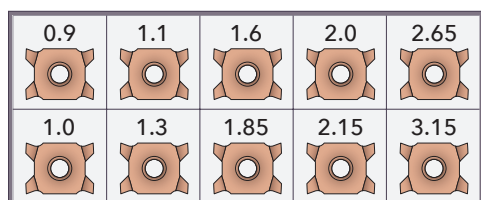
## SQ

## GROOVING

| W<br>+0 / +0,05 | EXTERNAL<br>Part Number | L<br>mm | T<br>mm | H<br>mm |
|-----------------|-------------------------|---------|---------|---------|
| 0,5             | 12ER_0.5SQ_HC           | 12      | 2,4     | 1,0     |
| 0,6             | 12ER_0.6SQ_HC           | 12      | 2,4     | 1,2     |
| 0,7             | 12ER_0.7SQ_HC           | 12      | 2,4     | 1,4     |
| 0,8             | 12ER_0.8SQ_HC           | 12      | 2,4     | 1,6     |
| 0,9             | 12ER_0.9SQ_HC           | 12      | 2,4     | 1,8     |
| 1,0             | 12ER_1.0SQ_HC           | 12      | 2,4     | 2,0     |
| 1,1             | 12ER_1.1SQ_HC           | 12      | 2,4     | 2,0     |
| 1,2             | 12ER_1.2SQ_HC           | 12      | 2,4     | 2,0     |
| 1,3             | 12ER_1.3SQ_HC           | 12      | 2,4     | 2,0     |
| 1,4             | 12ER_1.4SQ_HC           | 12      | 2,4     | 2,0     |
| 1,5             | 12ER_1.5SQ_HC           | 12      | 2,4     | 2,0     |
| 1,6             | 12ER_1.6SQ_HC           | 12      | 2,4     | 2,0     |
| 1,7             | 12ER_1.7SQ_HC           | 12      | 2,4     | 2,0     |
| 1,85            | 12ER_1.85SQ_HC          | 12      | 2,4     | 2,0     |
| 2,0             | 12ER_2.0SQ_HC           | 12      | 2,4     | 2,0     |
| 2,15            | 12ER_2.15SQ_HC          | 12      | 2,4     | 2,0     |
| 2,3             | 12ER_2.3SQ_HC           | 12      | 2,4     | 2,0     |
| 2,5             | 12ER_2.5SQ_HC           | 12      | 3,6     | 2,0     |
| 2,65            | 12ER_2.65SQ_HC          | 12      | 3,6     | 2,0     |
| 2,8             | 12ER_2.8SQ_HC           | 12      | 3,6     | 2,0     |
| 3               | 12ER_3.0SQ_HC           | 12      | 3,6     | 2,0     |
| 3,15            | 12ER_3.15SQ_HC          | 12      | 3,6     | 2,0     |
| 3,3             | 12ER_3.3SQ_HC           | 12      | 3,6     | 2,0     |
| 3,5             | 12ER_3.5SQ_HC           | 12      | 3,6     | 2,0     |

## Grooving Inserts Kit

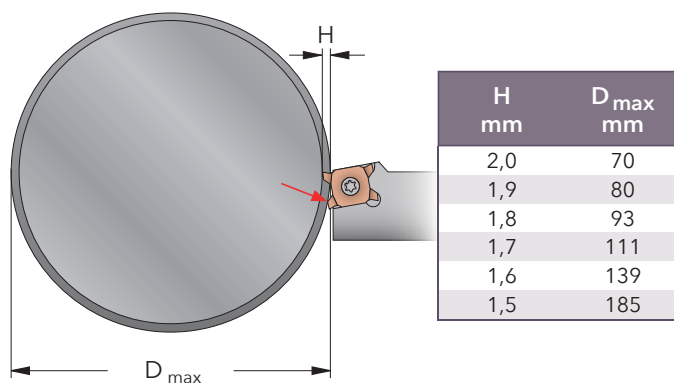
## Maximum Grooving Diameter



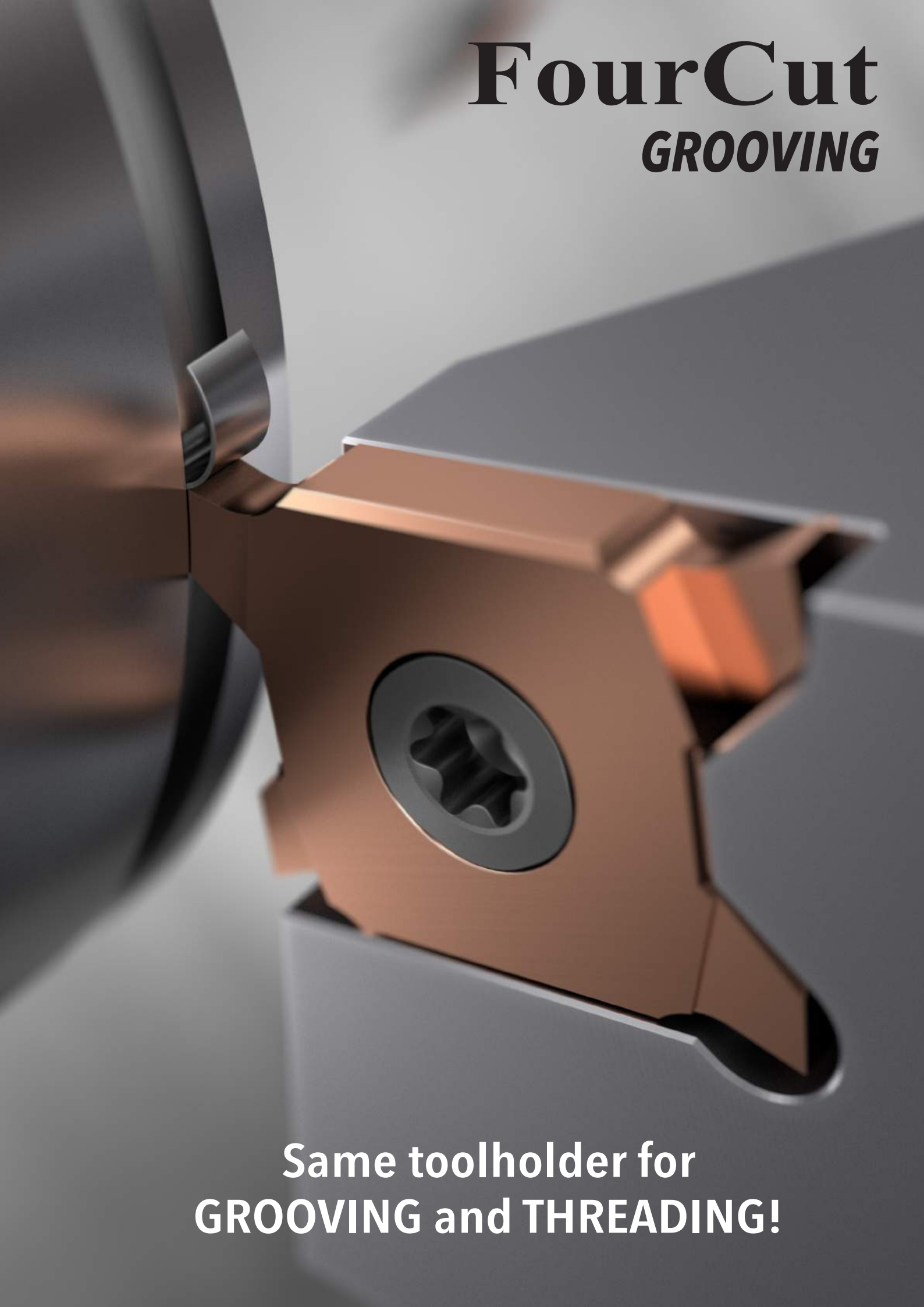
Part Number

10X12SQ\_HC

10 different inserts in one box



You are not able to use the maximum grooving depth when the diameter is bigger then  $D_{max}$  as the cutting edge below will touch the part.

A close-up photograph of a metal cutting operation. A rotating tool, which is a single-flute end mill, is shown in the process of cutting a groove into a copper-colored metal workpiece. The tool is positioned on the left, and the workpiece is on the right. The cutting action is captured mid-process, with a small chip of metal being removed. The background is a blurred industrial setting.

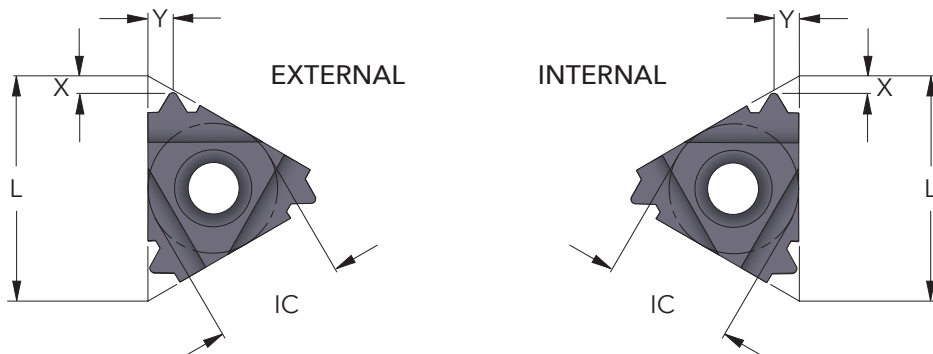
# **FourCut**

## ***GROOVING***

**Same toolholder for  
GROOVING and THREADING!**

# THREAD TURNING INSERTS

## Triangular



### M

### METRIC

| Pitch<br>mm               | L<br>mm | IC<br>inch | EXTERNAL<br>Part Number | X<br>mm | Y<br>mm | INTERNAL<br>Part Number | X<br>mm | Y<br>mm |
|---------------------------|---------|------------|-------------------------|---------|---------|-------------------------|---------|---------|
| 0,5                       | 6       | 5/32       |                         |         |         | 06IR_0.5ISO_BC          | 0,9     | 0,5     |
| 0,5                       | 16      | 3/8        | 16ER_0.5ISO_FC          | 0,6     | 0,6     |                         |         |         |
| 0,7                       | 16      | 3/8        | 16ER_0.7ISO_FC          | 0,6     | 0,6     |                         |         |         |
| 0,75                      | 6       | 5/32       |                         |         |         | 06IR_0.75ISO_BC         | 0,8     | 0,5     |
| 0,75                      | 8       | 3/16       |                         |         |         | 08IR_0.75ISO_BC         | 0,6     | 0,5     |
| 0,75                      | 16      | 3/8        | 16ER_0.75ISO_FC         | 0,6     | 0,6     |                         |         |         |
| 0,8                       | 16      | 3/8        | 16ER_0.8ISO_FC          | 0,6     | 0,6     |                         |         |         |
| 1,0                       | 6       | 5/32       |                         |         |         | 06IR_1.0ISO_BC          | 0,7     | 0,6     |
| 1,0                       | 8       | 3/16       |                         |         |         | 08IR_1.0ISO_BC          | 0,6     | 0,6     |
| 1,0                       | 11      | 1/4        |                         |         |         | 11IR_1.0ISO_FC          | 0,6     | 0,7     |
| 1,0                       | 16      | 3/8        | 16ER_1.0ISO_FC          | 0,7     | 0,7     | 16IR_1.0ISO_FC          | 0,6     | 0,7     |
| 1,25                      | 6       | 5/32       |                         |         |         | 06IR_1.25ISO_BC         | 0,6     | 0,6     |
| 1,25                      | 8       | 3/16       |                         |         |         | 08IR_1.25ISO_BC         | 0,6     | 0,7     |
| 1,25                      | 11      | 1/4        |                         |         |         | 11IR_1.25ISO_FC         | 0,8     | 0,8     |
| 1,25                      | 16      | 3/8        | 16ER_1.25ISO_FC         | 0,8     | 0,9     | 16IR_1.25ISO_FC         | 0,8     | 0,9     |
| 1,5                       | 8       | 3/16       |                         |         |         | 08IR_1.5ISO_BC          | 0,6     | 0,7     |
| 1,5                       | 11      | 1/4        |                         |         |         | 11IR_1.5ISO_FC          | 0,8     | 1,0     |
| 1,5                       | 16      | 3/8        | 16ER_1.5ISO_FC          | 0,8     | 1,0     | 16IR_1.5ISO_FC          | 0,8     | 1,0     |
| 1,75                      | 8       | 3/16       |                         |         |         | 08IR_1.75ISO_BC         | 1,0     | 0,8     |
| 1,75                      | 16      | 3/8        | 16ER_1.75ISO_FC         | 0,9     | 1,2     |                         |         |         |
| 2,0                       | 11      | 1/4        |                         |         |         | 11IR_2.0ISO_FC          | 0,8     | 0,9     |
| 2,0                       | 16      | 3/8        | 16ER_2.0ISO_FC          | 1,0     | 1,3     | 16IR_2.0ISO_FC          | 1,0     | 1,3     |
| 2,5                       | 16      | 3/8        | 16ER_2.5ISO_FC          | 1,1     | 1,5     | 16IR_2.5ISO_FC          | 1,1     | 1,5     |
| 3,0                       | 16      | 3/8        | 16ER_3.0ISO_FC          | 1,2     | 1,6     | 16IR_3.0ISO_FC          | 1,1     | 1,5     |
| 3,5                       | 16      | 3/8        | 16ER_3.5ISO_FC          | 1,2     | 1,7     | 16IR_3.5ISO_FC          | 1,2     | 1,7     |
| 3,5                       | 22      | 1/2        | 22ER_3.5ISO_FC          | 1,6     | 2,3     | 22IR_3.5ISO_FC          | 1,6     | 2,3     |
| 4,0                       | 22      | 1/2        | 22ER_4.0ISO_FC          | 1,6     | 2,3     | 22IR_4.0ISO_FC          | 1,6     | 2,3     |
| 4,5                       | 22      | 1/2        | 22ER_4.5ISO_FC          | 1,7     | 2,4     | 22IR_4.5ISO_FC          | 1,6     | 2,4     |
| 5,0                       | 22      | 1/2        | 22ER_5.0ISO_FC          | 1,7     | 2,5     | 22IR_5.0ISO_FC          | 1,6     | 2,3     |
| 5,5                       | 22      | 1/2        | 22ER_5.5ISO_FC          | 1,7     | 2,6     | 22IR_5.5ISO_FC          | 1,6     | 2,3     |
| 5,5                       | 27      | 5/8        | 27ER_5.5ISO_FC          | 1,9     | 2,7     | 27IR_5.5ISO_FC          | 1,6     | 2,3     |
| 6,0                       | 22      | 1/2        | 22ER_6.0ISO_FC          | 1,9     | 2,7     | 22IR_6.0ISO_FC          | 1,6     | 2,4     |
| 6,0                       | 27      | 5/8        | 27ER_6.0ISO_FC          | 2,0     | 2,9     | 27IR_6.0ISO_FC          | 1,8     | 2,5     |
| WITH SINTERED CHIPBREAKER |         |            |                         |         |         |                         |         |         |
| 1,0                       | 16      | 3/8        | 16ER_1.0ISO CB_FC       | 0,7     | 0,7     | 16IR_1.0ISO CB_FC       | 0,6     | 0,7     |
| 1,25                      | 16      | 3/8        | 16ER_1.25ISO CB_FC      | 0,8     | 0,9     |                         |         |         |
| 1,5                       | 16      | 3/8        | 16ER_1.5ISO CB_FC       | 0,8     | 1,0     | 16IR_1.5ISO CB_FC       | 0,8     | 1,0     |
| 1,75                      | 16      | 3/8        | 16ER_1.75ISO CB_FC      | 0,9     | 1,2     |                         |         |         |
| 2,0                       | 16      | 3/8        | 16ER_2.0ISO CB_FC       | 1,0     | 1,3     | 16IR_2.0ISO CB_FC       | 1,0     | 1,3     |
| 2,5                       | 16      | 3/8        | 16ER_2.5ISO CB_FC       | 1,1     | 1,5     | 16IR_2.5ISO CB_FC       | 1,1     | 1,5     |
| 3,0                       | 16      | 3/8        | 16ER_3.0ISO CB_FC       | 1,2     | 1,6     | 16IR_3.0ISO CB_FC       | 1,1     | 1,5     |

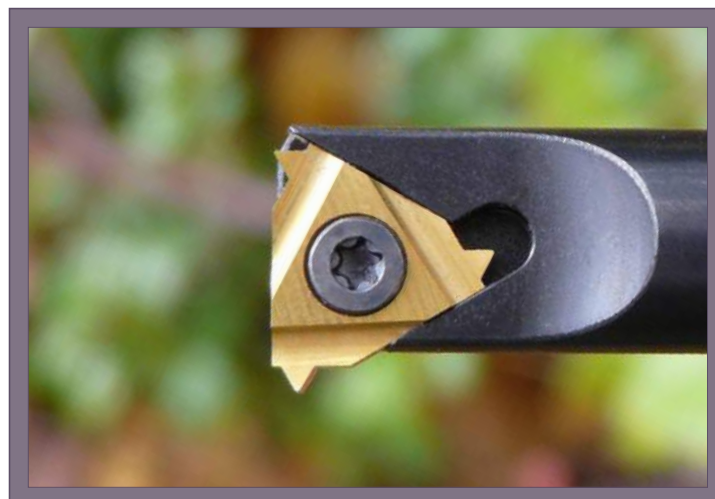
# THREAD TURNING INSERTS

UN

UNIFIED

| Pitch<br>TPI | L<br>mm | IC<br>inch | EXTERNAL<br>Part Number | X<br>mm | Y<br>mm | INTERNAL<br>Part Number | X<br>mm | Y<br>mm |
|--------------|---------|------------|-------------------------|---------|---------|-------------------------|---------|---------|
| 32           | 6       | 5/32       |                         |         |         | 06IR_32UN_BC            | 0,8     | 0,5     |
| 32           | 8       | 3/16       |                         |         |         | 08IR_32UN_BC            | 0,6     | 0,5     |
| 32           | 11      | 1/4        |                         |         |         | 11IR_32UN_FC            | 0,6     | 0,6     |
| 32           | 16      | 3/8        | 16ER_32UN_FC            | 0,6     | 0,6     | 16IR_32UN_FC            | 0,6     | 0,6     |
| 28           | 6       | 5/32       |                         |         |         | 06IR_28UN_BC            | 0,8     | 0,6     |
| 28           | 8       | 3/16       |                         |         |         | 08IR_28UN_BC            | 0,6     | 0,6     |
| 28           | 11      | 1/4        |                         |         |         | 11IR_28UN_FC            | 0,6     | 0,7     |
| 28           | 16      | 3/8        | 16ER_28UN_FC            | 0,6     | 0,7     | 16IR_28UN_FC            | 0,6     | 0,7     |
| 24           | 6       | 5/32       |                         |         |         | 06IR_24UN_BC            | 0,7     | 0,6     |
| 24           | 8       | 3/16       |                         |         |         | 08IR_24UN_BC            | 0,6     | 0,6     |
| 24           | 11      | 1/4        |                         |         |         | 11IR_24UN_FC            | 0,7     | 0,8     |
| 24           | 16      | 3/8        | 16ER_24UN_FC            | 0,7     | 0,8     |                         |         |         |
| 20           | 6       | 5/32       |                         |         |         | 06IR_20UN_BC            | 0,6     | 0,6     |
| 20           | 8       | 3/16       |                         |         |         | 08IR_20UN_BC            | 0,6     | 0,7     |
| 20           | 11      | 1/4        |                         |         |         | 11IR_20UN_FC            | 0,8     | 0,9     |
| 20           | 16      | 3/8        | 16ER_20UN_FC            | 0,8     | 0,9     | 16IR_20UN_FC            | 0,8     | 0,9     |
| 18           | 6       | 5/32       |                         |         |         | 06IR_18UN_BC            | 0,6     | 0,7     |
| 18           | 11      | 1/4        |                         |         |         | 11IR_18UN_FC            | 0,8     | 1,0     |
| 18           | 16      | 3/8        | 16ER_18UN_FC            | 0,8     | 1,0     |                         |         |         |
| 16           | 8       | 3/16       |                         |         |         | 08IR_16UN_BC            | 0,6     | 0,7     |
| 16           | 11      | 1/4        |                         |         |         | 11IR_16UN_FC            | 0,9     | 1,1     |
| 16           | 16      | 3/8        | 16ER_16UN_FC            | 0,9     | 1,1     | 16IR_16UN_FC            | 0,9     | 1,1     |
| 14           | 8       | 3/16       |                         |         |         | 08IR_14UN_BC            | 0,6     | 0,8     |
| 14           | 16      | 3/8        | 16ER_14UN_FC            | 1,0     | 1,2     | 16IR_14UN_FC            | 0,9     | 1,2     |
| 13           | 16      | 3/8        | 16ER_13UN_FC            | 1,0     | 1,3     |                         |         |         |
| 12           | 11      | 1/4        |                         |         |         | 11IR_12UN_FC            | 0,9     | 1,1     |
| 12           | 16      | 3/8        | 16ER_12UN_FC            | 1,1     | 1,4     | 16IR_12UN_FC            | 1,1     | 1,4     |
| 11           | 11      | 1/4        |                         |         |         | 11IR_11UN_FC            | 0,8     | 1,1     |
| 11           | 16      | 3/8        | 16ER_11UN_FC            | 1,1     | 1,5     |                         |         |         |
| 10           | 16      | 3/8        | 16ER_10UN_FC            | 1,1     | 1,5     | 16IR_10UN_FC            | 1,1     | 1,5     |
| 9            | 16      | 3/8        | 16ER_9UN_FC             | 1,2     | 1,7     | 16IR_9UN_FC             | 1,2     | 1,7     |
| 8            | 16      | 3/8        | 16ER_8UN_FC             | 1,2     | 1,6     | 16IR_8UN_FC             | 1,1     | 1,5     |
| 7            | 22      | 1/2        | 22ER_7UN_FC             | 1,6     | 2,3     | 22IR_7UN_FC             | 1,6     | 2,3     |
| 6            | 22      | 1/2        | 22ER_6UN_FC             | 1,6     | 2,3     | 22IR_6UN_FC             | 1,6     | 2,3     |
| 5            | 22      | 1/2        | 22ER_5UN_FC             | 1,7     | 2,5     | 22IR_5UN_FC             | 1,6     | 2,3     |
| 4,5          | 27      | 5/8        | 27ER_4.5UN_FC           | 1,9     | 2,7     | 27IR_4.5UN_FC           | 1,7     | 2,4     |
| 4            | 27      | 5/8        | 27ER_4UN_FC             | 2,1     | 3,0     | 27IR_4UN_FC             | 1,8     | 2,7     |

- The Part Numbers are for Right Hand Inserts. For Left Hand specify L instead of R. The Price is 10% higher for L.
- All inserts have ground profile and chipbreaker if nothing else is indicated.



# THREAD TURNING INSERTS

## 60°

### PARTIAL PROFILE 60°

| Pitch<br>mm | TPI   | L<br>mm | IC<br>inch | EXTERNAL<br>Part Number | INTERNAL<br>Part Number | X<br>mm | Y<br>mm |
|-------------|-------|---------|------------|-------------------------|-------------------------|---------|---------|
| 0,5-1,25    | 48-20 | 6       | 5/32       |                         | 06IR_A60_BC             | 0,6     | 0,6     |
| 0,5-1,5     | 48-16 | 8       | 3/16       |                         | 08IR_A60_BC             | 0,6     | 0,7     |
| 0,5-1,5     | 48-16 | 11      | 1/4        |                         | 11IR_A60_FC             | 0,8     | 0,9     |
| 0,5-1,5     | 48-16 | 16      | 3/8        | 16ER_A60_FC             | 16IR_A60_FC             | 0,8     | 0,9     |
| 1,75-3,0    | 14-8  | 16      | 3/8        | 16ER_G60_FC             | 16IR_G60_FC             | 1,2     | 1,7     |
| 0,5-3,0     | 48-8  | 16      | 3/8        | 16ER_AG60_FC            | 16IR_AG60_FC            | 1,2     | 1,7     |
| 3,5-5,0     | 7-5   | 22      | 1/2        | 22ER_N60_FC             | 22IR_N60_FC             | 1,7     | 2,5     |
| 5,5-6,0     | 4,5-4 | 27      | 5/8        | 27ER_Q60_FC             | 27IR_Q60_FC             | 2,1     | 3,1     |

## 55°

### PARTIAL PROFILE 55°

| Pitch<br>mm | TPI   | L<br>mm | IC<br>inch | EXTERNAL<br>Part Number | INTERNAL<br>Part Number | X<br>mm | Y<br>mm |
|-------------|-------|---------|------------|-------------------------|-------------------------|---------|---------|
| 0,5-1,25    | 48-20 | 6       | 5/32       |                         | 06IR_A55_BC             | 0,5     | 0,6     |
| 0,5-1,5     | 48-16 | 8       | 3/16       |                         | 08IR_A55_BC             | 0,6     | 0,7     |
| 0,5-1,5     | 48-16 | 11      | 1/4        |                         | 11IR_A55_FC             | 0,8     | 0,9     |
| 0,5-1,5     | 48-16 | 16      | 3/8        | 16ER_A55_FC             | 16IR_A55_FC             | 0,8     | 0,9     |
| 1,75-3,0    | 14-8  | 16      | 3/8        | 16ER_G55_FC             | 16IR_G55_FC             | 1,2     | 1,7     |
| 0,5-3,0     | 48-8  | 16      | 3/8        | 16ER_AG55_FC            | 16IR_AG55_FC            | 1,2     | 1,7     |
| 3,5-5,0     | 7-5   | 22      | 1/2        | 22ER_N55_FC             | 22IR_N55_FC             | 1,7     | 2,5     |
| 5,5-6,0     | 4,5-4 | 27      | 5/8        | 27ER_Q55_FC             | 27IR_Q55_FC             | 2,0     | 2,9     |

## MJ

### METRIC

| Pitch<br>mm | L<br>mm | IC<br>inch | EXTERNAL<br>Part Number | X<br>mm | Y<br>mm | INTERNAL<br>Part Number | X<br>mm | Y<br>mm |
|-------------|---------|------------|-------------------------|---------|---------|-------------------------|---------|---------|
| 1,0         | 11      | 1/4        |                         |         |         | 11IR_1.0MJ_FC           | 0,6     | 0,7     |
| 1,0         | 16      | 3/8        | 16ER_1.0MJ_FC           | 0,7     | 0,7     | 16IR_1.0MJ_FC           | 0,6     | 0,7     |
| 1,25        | 11      | 1/4        |                         |         |         | 11IR_1.25MJ_FC          | 0,8     | 0,8     |
| 1,25        | 16      | 3/8        | 16ER_1.25MJ_FC          | 0,8     | 0,9     | 16IR_1.25MJ_FC          | 0,8     | 0,9     |
| 1,5         | 11      | 1/4        |                         |         |         | 11IR_1.5MJ_FC           | 0,8     | 1,0     |
| 1,5         | 16      | 3/8        | 16ER_1.5MJ_FC           | 0,8     | 1,0     | 16IR_1.5MJ_FC           | 0,8     | 1,0     |
| 2,0         | 11      | 1/4        |                         |         |         | 11IR_2.0MJ_FC           | 0,8     | 0,9     |
| 2,0         | 16      | 3/8        | 16ER_2.0MJ_FC           | 1,0     | 1,3     | 16IR_2.0MJ_FC           | 1,0     | 1,3     |

## UNJ

### UNIFIED

| Pitch<br>TPI | L<br>mm | IC<br>inch | EXTERNAL<br>Part Number | X<br>mm | Y<br>mm | INTERNAL<br>Part Number | X<br>mm | Y<br>mm |
|--------------|---------|------------|-------------------------|---------|---------|-------------------------|---------|---------|
| 32           | 11      | 1/4        |                         |         |         | 11IR_32UNJ_FC           | 0,6     | 0,6     |
| 32           | 16      | 3/8        | 16ER_32UNJ_FC           | 0,6     | 0,6     | 16IR_32UNJ_FC           | 0,6     | 0,6     |
| 28           | 11      | 1/4        |                         |         |         | 11IR_28UNJ_FC           | 0,6     | 0,7     |
| 28           | 16      | 3/8        | 16ER_28UNJ_FC           | 0,6     | 0,7     | 16IR_28UNJ_FC           | 0,6     | 0,7     |
| 24           | 11      | 1/4        |                         |         |         | 11IR_24UNJ_FC           | 0,7     | 0,8     |
| 24           | 16      | 3/8        | 16ER_24UNJ_FC           | 0,7     | 0,8     |                         |         |         |
| 20           | 11      | 1/4        |                         |         |         | 11IR_20UNJ_FC           | 0,8     | 0,9     |
| 20           | 16      | 3/8        | 16ER_20UNJ_FC           | 0,8     | 0,9     | 16IR_20UNJ_FC           | 0,8     | 0,9     |
| 18           | 11      | 1/4        |                         |         |         | 11IR_18UNJ_FC           | 0,8     | 1,0     |
| 18           | 16      | 3/8        | 16ER_18UNJ_FC           | 0,8     | 1,0     |                         |         |         |
| 16           | 11      | 1/4        |                         |         |         | 11IR_16UNJ_FC           | 0,9     | 1,1     |
| 16           | 16      | 3/8        | 16ER_16UNJ_FC           | 0,9     | 1,1     | 16IR_16UNJ_FC           | 0,9     | 1,1     |
| 14           | 16      | 3/8        | 16ER_14UNJ_FC           | 1,0     | 1,2     | 16IR_14UNJ_FC           | 0,9     | 1,2     |
| 13           | 16      | 3/8        | 16ER_13UNJ_FC           | 1,0     | 1,3     |                         |         |         |
| 12           | 16      | 3/8        | 16ER_12UNJ_FC           | 1,1     | 1,4     | 16IR_12UNJ_FC           | 1,1     | 1,4     |
| 11           | 16      | 3/8        | 16ER_11UNJ_FC           | 1,1     | 1,5     |                         |         |         |
| 10           | 16      | 3/8        | 16ER_10UNJ_FC           | 1,1     | 1,5     | 16IR_10UNJ_FC           | 1,1     | 1,5     |
| 9            | 16      | 3/8        | 16ER_9UNJ_FC            | 1,2     | 1,7     | 16IR_9UNJ_FC            | 1,2     | 1,7     |
| 8            | 16      | 3/8        | 16ER_8UNJ_FC            | 1,2     | 1,6     | 16IR_8UNJ_FC            | 1,1     | 1,5     |

# THREAD TURNING INSERTS



## BS/G/Rp

## WHITWORTH

| Pitch<br>TPI              | L<br>mm | IC<br>inch | EXTERNAL<br>Part Number | X<br>mm | Y<br>mm | INTERNAL<br>Part Number | X<br>mm | Y<br>mm |
|---------------------------|---------|------------|-------------------------|---------|---------|-------------------------|---------|---------|
| 32                        | 16      | 3/8        | 16ER_32W_FC             | 0,6     | 0,6     |                         |         |         |
| 28                        | 6       | 5/32       |                         |         |         | 06IR_28W_BC             | 0,6     | 0,6     |
| 28                        | 8       | 3/16       |                         |         |         | 08IR_28W_BC             | 0,6     | 0,6     |
| 28                        | 16      | 3/8        | 16ER_28W_FC             | 0,6     | 0,7     |                         |         |         |
| 26                        | 6       | 5/32       |                         |         |         | 06IR_26W_BC             | 0,7     | 0,6     |
| 26                        | 16      | 3/8        | 16ER_26W_FC             | 0,7     | 0,7     |                         |         |         |
| 24                        | 16      | 3/8        | 16ER_24W_FC             | 0,7     | 0,8     |                         |         |         |
| 22                        | 06      | 5/32       |                         |         |         | 06IR_22W_BC             | 0,6     | 0,6     |
| 22                        | 16      | 3/8        | 16ER_22W_FC             | 0,8     | 0,9     |                         |         |         |
| 20                        | 08      | 3/16       |                         |         |         | 08IR_20W_BC             | 0,6     | 0,7     |
| 20                        | 16      | 3/8        | 16ER_20W_FC             | 0,8     | 0,9     | 16IR_20W_FC             | 0,8     | 0,9     |
| 19                        | 8       | 3/16       |                         |         |         | 08IR_19W_BC             | 0,6     | 0,7     |
| 19                        | 11      | 1/4        |                         |         |         | 11IR_19W_FC             | 0,8     | 1,0     |
| 19                        | 16      | 3/8        | 16ER_19W_FC             | 0,8     | 1,0     | 16IR_19W_FC             | 0,8     | 1,0     |
| 18                        | 08      | 3/16       |                         |         |         | 08IR_18W_BC             | 0,6     | 0,7     |
| 18                        | 16      | 3/8        | 16ER_18W_FC             | 0,8     | 1,0     | 16IR_18W_FC             | 0,8     | 1,0     |
| 16                        | 08      | 3/16       |                         |         |         | 08IR_16W_BC             | 0,6     | 0,7     |
| 16                        | 16      | 3/8        | 16ER_16W_FC             | 0,9     | 1,1     | 16IR_16W_FC             | 0,9     | 1,1     |
| 14                        | 11      | 1/4        |                         |         |         | 11IR_14W_FC             | 0,9     | 1,1     |
| 14                        | 16      | 3/8        | 16ER_14W_FC             | 1,0     | 1,2     | 16IR_14W_FC             | 1,0     | 1,2     |
| 12                        | 11      | 1/4        |                         |         |         | 11IR_12W_FC             | 0,1     | 1,1     |
| 12                        | 16      | 3/8        | 16ER_12W_FC             | 1,1     | 1,4     | 16IR_12W_FC             | 1,1     | 1,4     |
| 11                        | 16      | 3/8        | 16ER_11W_FC             | 1,1     | 1,5     | 16IR_11W_FC             | 1,1     | 1,5     |
| 10                        | 16      | 3/8        | 16ER_10W_FC             | 1,1     | 1,5     | 16IR_10W_FC             | 1,1     | 1,5     |
| 9                         | 16      | 3/8        | 16ER_9W_FC              | 1,2     | 1,7     | 16IR_9W_FC              | 1,2     | 1,7     |
| 8                         | 16      | 3/8        | 16ER_8W_FC              | 1,2     | 1,5     | 16IR_8W_FC              | 1,2     | 1,5     |
| 7                         | 22      | 1/2        | 22ER_7W_FC              | 1,6     | 2,3     | 22IR_7W_FC              | 1,6     | 2,3     |
| 6                         | 22      | 1/2        | 22ER_6W_FC              | 1,6     | 2,3     | 22IR_6W_FC              | 1,6     | 2,3     |
| 5                         | 22      | 1/2        | 22ER_5W_FC              | 1,7     | 2,4     | 22IR_5W_FC              | 1,7     | 2,4     |
| 4,5                       | 27      | 5/8        | 27ER_4.5W_FC            | 1,8     | 2,6     | 27IR_4.5W_FC            | 1,8     | 2,6     |
| 4                         | 27      | 5/8        | 27ER_4W_FC              | 2,0     | 2,9     | 27IR_4W_FC              | 2,0     | 2,9     |
| WITH SINTERED CHIPBREAKER |         |            |                         |         |         |                         |         |         |
| 19                        | 16      | 3/8        | 16ER_19WCB_FC           | 0,8     | 1,0     |                         |         |         |
| 14                        | 16      | 3/8        | 16ER_14WCB_FC           | 1,0     | 1,2     | 16IR_14WCB_FC           | 1,0     | 1,2     |
| 11                        | 16      | 3/8        | 16ER_11WCB_FC           | 1,1     | 1,5     | 16IR_11WCB_FC           | 1,1     | 1,5     |

## R/Rc

## BSPT PIPE THREAD

| Pitch<br>TPI | L<br>mm | IC<br>inch | EXTERNAL<br>Part Number | X<br>mm | Y<br>mm | INTERNAL<br>Part Number | X<br>mm | Y<br>mm |
|--------------|---------|------------|-------------------------|---------|---------|-------------------------|---------|---------|
| 28           | 6       | 5/32       |                         |         |         | 06IR_28BSPT_BC          | 0,7     | 0,6     |
| 28           | 16      | 3/8        | 16ER_28BSPT_FC          | 0,6     | 0,6     |                         |         |         |
| 19           | 8       | 3/16       |                         |         |         | 08IR_19BSPT_BC          | 0,6     | 0,6     |
| 19           | 16      | 3/8        | 16ER_19BSPT_FC          | 0,8     | 0,9     |                         |         |         |
| 14           | 16      | 3/8        | 16ER_14BSPT_FC          | 1,0     | 1,2     | 16IR_14BSPT_FC          | 1,0     | 1,2     |
| 11           | 16      | 3/8        | 16ER_11BSPT_FC          | 1,1     | 1,5     | 16IR_11BSPT_FC          | 1,1     | 1,5     |

- The Part Numbers are for Right Hand Inserts. For Left Hand specify L instead of R. The Price is 10% higher for L.
- All inserts have ground profile and chipbreaker if nothing else is indicated.

# THREAD TURNING INSERTS

## NPT

### NPT PIPE THREAD

| Pitch<br>TPI | L<br>mm | IC<br>inch | EXTERNAL<br>Part Number | X<br>mm | Y<br>mm | INTERNAL<br>Part Number | X<br>mm | Y<br>mm |
|--------------|---------|------------|-------------------------|---------|---------|-------------------------|---------|---------|
| 27           | 6       | 5/32       |                         |         |         | 06IR_27NPT_BC           | 0,6     | 0,6     |
| 27           | 8       | 3/16       |                         |         |         | 08IR_27NPT_BC           | 0,6     | 0,6     |
| 27           | 16      | 3/8        | 16ER_27NPT_FC           | 0,7     | 0,8     |                         |         |         |
| 18           | 8       | 3/16       |                         |         |         | 08IR_18NPT_BC           | 0,6     | 0,6     |
| 18           | 11      | 1/4        |                         |         |         | 11IR_18NPT_FC           | 0,8     | 1,0     |
| 18           | 16      | 3/8        | 16ER_18NPT_FC           | 0,8     | 1,0     |                         |         |         |
| 14           | 16      | 3/8        | 16ER_14NPT_FC           | 0,9     | 1,2     | 16IR_14NPT_FC           | 0,9     | 1,2     |
| 11,5         | 16      | 3/8        | 16ER_11.5NPT_FC         | 1,1     | 1,5     | 16IR_11.5NPT_FC         | 1,1     | 1,5     |
| 8            | 16      | 3/8        | 16ER_8NPT_FC            | 1,3     | 1,8     | 16IR_8NPT_FC            | 1,3     | 1,8     |

## NPTF

### NPTF DRYSEAL PIPE THREAD

| Pitch<br>TPI | L<br>mm | IC<br>inch | EXTERNAL<br>Part Number | X<br>mm | Y<br>mm | INTERNAL<br>Part Number | X<br>mm | Y<br>mm |
|--------------|---------|------------|-------------------------|---------|---------|-------------------------|---------|---------|
| 27           | 6       | 5/32       |                         |         |         | 06IR_27NPTF_BC          | 0,7     | 0,6     |
| 27           | 8       | 3/16       |                         |         |         | 08IR_27NPTF_BC          | 0,6     | 0,6     |
| 27           | 16      | 3/8        | 16ER_27NPTF_FC          | 0,7     | 0,7     |                         |         |         |
| 18           | 8       | 3/16       |                         |         |         | 08IR_18NPTF_BC          | 0,6     | 0,6     |
| 18           | 11      | 1/4        |                         |         |         | 11IR_18NPTF_FC          | 0,8     | 1,0     |
| 18           | 16      | 3/8        | 16ER_18NPTF_FC          | 0,8     | 1,0     |                         |         |         |
| 14           | 16      | 3/8        | 16ER_14NPTF_FC          | 0,9     | 1,2     | 16IR_14NPTF_FC          | 0,9     | 1,2     |
| 11,5         | 16      | 3/8        | 16ER_11.5NPTF_FC        | 1,1     | 1,5     | 16IR_11.5NPTF_FC        | 1,1     | 1,5     |
| 8            | 16      | 3/8        | 16ER_8NPTF_FC           | 1,3     | 1,8     | 16IR_8NPTF_FC           | 1,3     | 1,8     |

## ABUT

### AMERICAN BUTTRESS

| Pitch<br>TPI | L<br>mm | IC<br>inch | EXTERNAL<br>Part Number | X<br>mm | Y<br>mm | INTERNAL<br>Part Number | X<br>mm | Y<br>mm |
|--------------|---------|------------|-------------------------|---------|---------|-------------------------|---------|---------|
| 20           | 11      | 1/4        |                         |         |         | 11IR_20ABUT_FC          | 1,0     | 1,3     |
| 16           | 11      | 1/4        |                         |         |         | 11IR_16ABUT_FC          | 1,0     | 1,5     |
| 20           | 16      | 3/8        | 16ER_20ABUT_FC          | 1,0     | 1,3     | 16IR_20ABUT_FC          | 1,0     | 1,3     |
| 16           | 16      | 3/8        | 16ER_16ABUT_FC          | 1,0     | 1,5     | 16IR_16ABUT_FC          | 1,0     | 1,5     |
| 12           | 16      | 3/8        | 16ER_12ABUT_FC          | 1,4     | 2,0     | 16IR_12ABUT_FC          | 1,4     | 2,0     |
| 10           | 16      | 3/8        | 16ER_10ABUT_FC          | 1,5     | 2,3     | 16IR_10ABUT_FC          | 1,5     | 2,3     |
| 8            | 22      | 1/2        | 22ER_8ABUT_FC           | 2,1     | 3,3     | 22IR_8ABUT_FC           | 2,1     | 3,3     |
| 6            | 22      | 1/2        | 22ER_6ABUT_FC           | 2,1     | 3,4     | 22IR_6ABUT_FC           | 2,1     | 3,4     |

## SG

### BUTTRESS (SÄGENGEWINDE) DIN 513/514

| Pitch<br>mm | L<br>mm | IC<br>inch | EXTERNAL<br>Part Number | X<br>mm | Y<br>mm | INTERNAL<br>Part Number | X<br>mm | Y<br>mm |
|-------------|---------|------------|-------------------------|---------|---------|-------------------------|---------|---------|
| 2,0         | 16      | 3/8        | 16ER_2.0SG_FC           | 1,1     | 1,6     | 16IR_2.0SG_FC           | 1,2     | 1,7     |
| 3,0         | 22      | 3/8        | 22ER_3.0SG_FC           | 1,5     | 2,4     | 22IR_3.0SG_FC           | 1,9     | 2,9     |
| 4,0         | 22      | 1/2        | 22ER_4.0SG_FC           | 1,9     | 3,1     | 22IR_4.0SG_FC           | 2,3     | 3,5     |

## PG

### STEEL CONDUIT THREAD DIN 40430

| Pitch<br>TPI | L<br>mm | IC<br>inch | EXTERNAL<br>Part Number | X<br>mm | Y<br>mm | INTERNAL<br>Part Number | X<br>mm | Y<br>mm |
|--------------|---------|------------|-------------------------|---------|---------|-------------------------|---------|---------|
| 20           | 8       | 3/16       |                         |         |         | 08IR_20PG_BC            | 0,6     | 0,7     |
| 18           | 11      | 1/4        |                         |         |         | 11IR_18PG_FC            | 0,8     | 0,9     |
| 20           | 16      | 3/8        | 16ER_20PG_FC            | 0,7     | 0,8     |                         |         |         |
| 18           | 16      | 3/8        | 16ER_18PG_FC            | 0,8     | 0,9     | 16IR_18PG_FC            | 0,8     | 0,9     |
| 16           | 16      | 3/8        | 16ER_16PG_FC            | 0,8     | 1,0     | 16IR_16PG_FC            | 0,8     | 1,0     |

# THREAD TURNING INSERTS



## TR

### TRAPEZ DIN 103

| Pitch<br>mm | L<br>mm | IC<br>inch | EXTERNAL<br>Part Number | X<br>mm | Y<br>mm | INTERNAL<br>Part Number | X<br>mm | Y<br>mm |
|-------------|---------|------------|-------------------------|---------|---------|-------------------------|---------|---------|
| 1,5         | 16      | 3/8        | 16ER_1.5TR_FC           | 1,0     | 1,1     |                         |         |         |
| 2,0         | 16      | 3/8        | 16ER_2.0TR_FC           | 1,0     | 1,3     | 16IR_2.0TR_FC           | 1,0     | 1,3     |
| 3,0         | 16      | 3/8        | 16ER_3.0TR_FC           | 1,3     | 1,5     | 16IR_3.0TR_FC           | 1,3     | 1,5     |
| 4,0         | 22      | 1/2        | 22ER_4.0TR_FC           | 1,8     | 1,9     | 22IR_4.0TR_FC           | 1,8     | 1,9     |
| 5,0         | 22      | 1/2        | 22ER_5.0TR_FC           | 2,0     | 2,4     | 22IR_5.0TR_FC           | 2,0     | 2,4     |
| 6,0         | 22      | 1/2        | 22ER_6.0TR_FC           | 2,0     | 2,4     | 22IR_6.0TR_FC           | 2,0     | 2,4     |
| 6,0         | 27      | 5/8        | 27ER_6.0TR_FC           | 2,3     | 2,7     | 27IR_6.0TR_FC           | 2,3     | 2,7     |
| 7,0         | 27      | 5/8        | 27ER_7.0TR_FC           | 2,2     | 2,6     | 27IR_7.0TR_FC           | 2,2     | 2,6     |

## RD

### RUND DIN 405

| Pitch<br>TPI | L<br>mm | IC<br>inch | EXTERNAL<br>Part Number | X<br>mm | Y<br>mm | INTERNAL<br>Part Number | X<br>mm | Y<br>mm |
|--------------|---------|------------|-------------------------|---------|---------|-------------------------|---------|---------|
| 10           | 16      | 3/8        | 16ER_10RD_FC            | 1,1     | 1,2     | 16IR_10RD_FC            | 1,1     | 1,2     |
| 8            | 16      | 3/8        | 16ER_8RD_FC             | 1,4     | 1,3     | 16IR_8RD_FC             | 1,4     | 1,4     |
| 6            | 16      | 3/8        | 16ER_6RD_FC             | 1,5     | 1,7     | 16IR_6RD_FC             | 1,4     | 1,5     |
| 6            | 22      | 1/2        | 22ER_6RD_FC             | 1,5     | 1,7     | 22IR_6RD_FC             | 1,5     | 1,7     |
| 4            | 22      | 1/2        | 22ER_4RD_FC             | 2,2     | 2,3     | 22IR_4RD_FC             | 2,2     | 2,3     |
| 4            | 27      | 5/8        | 27ER_4RD_FC             | 2,2     | 2,3     | 27IR_4RD_FC             | 2,2     | 2,3     |

## ACME

### ACME

| Pitch<br>TPI | L<br>mm | IC<br>inch | EXTERNAL<br>Part Number | X<br>mm | Y<br>mm | INTERNAL<br>Part Number | X<br>mm | Y<br>mm |
|--------------|---------|------------|-------------------------|---------|---------|-------------------------|---------|---------|
| 16           | 11      | 1/4        |                         |         |         | 11IR_16ACME_FC          | 0,9     | 1,0     |
| 16           | 16      | 3/8        | 16ER_16ACME_FC          | 0,9     | 1,0     | 16IR_16ACME_FC          | 0,9     | 1,0     |
| 14           | 16      | 3/8        | 16ER_14ACME_FC          | 1,0     | 1,2     | 16IR_14ACME_FC          | 1,0     | 1,2     |
| 12           | 16      | 3/8        | 16ER_12ACME_FC          | 1,1     | 1,2     | 16IR_12ACME_FC          | 1,1     | 1,2     |
| 10           | 16      | 3/8        | 16ER_10ACME_FC          | 1,3     | 1,3     | 16IR_10ACME_FC          | 1,3     | 1,3     |
| 8            | 16      | 3/8        | 16ER_8ACME_FC           | 1,5     | 1,5     | 16IR_8ACME_FC           | 1,5     | 1,5     |
| 6            | 16      | 3/8        | 16ER_6ACME_FC           | 1,7     | 1,8     | 16IR_6ACME_FC           | 1,7     | 1,8     |
| 6            | 22      | 1/2        | 22ER_6ACME_FC           | 1,8     | 2,1     | 22IR_6ACME_FC           | 1,8     | 2,1     |
| 5            | 22      | 1/2        | 22ER_5ACME_FC           | 2,0     | 2,3     | 22IR_5ACME_FC           | 2,0     | 2,3     |
| 4            | 27      | 5/8        | 27ER_4ACME_FC           | 2,3     | 2,7     | 27IR_4ACME_FC           | 2,3     | 2,7     |

## STACME

### STUB ACME

| Pitch<br>TPI | L<br>mm | IC<br>inch | EXTERNAL<br>Part Number | X<br>mm | Y<br>mm | INTERNAL<br>Part Number | X<br>mm | Y<br>mm |
|--------------|---------|------------|-------------------------|---------|---------|-------------------------|---------|---------|
| 16           | 16      | 3/8        | 16ER_16STACME_FC        | 1,0     | 1,0     | 16IR_16STACME_FC        | 1,0     | 1,0     |
| 14           | 16      | 3/8        | 16ER_14STACME_FC        | 1,1     | 1,1     | 16IR_14STACME_FC        | 1,1     | 1,1     |
| 12           | 16      | 3/8        | 16ER_12STACME_FC        | 1,2     | 1,2     | 16IR_12STACME_FC        | 1,2     | 1,2     |
| 10           | 16      | 3/8        | 16ER_10STACME_FC        | 1,3     | 1,3     | 16IR_10STACME_FC        | 1,3     | 1,3     |
| 8            | 16      | 3/8        | 16ER_8STACME_FC         | 1,5     | 1,5     | 16IR_8STACME_FC         | 1,5     | 1,5     |
| 6            | 16      | 1/2        | 16ER_6STACME_FC         | 1,8     | 1,8     | 16IR_6STACME_FC         | 1,8     | 1,8     |
| 5            | 22      | 1/2        | 22ER_5STACME_FC         | 2,0     | 2,3     | 22IR_5STACME_FC         | 2,0     | 2,3     |
| 4            | 27      | 5/8        | 27ER_4STACME_FC         | 2,3     | 2,4     | 27IR_4STACME_FC         | 2,3     | 2,4     |
| 3            | 27      | 5/8        | 27ER_3STACME_FC         | 2,8     | 2,9     | 27IR_3STACME_FC         | 2,8     | 2,9     |

- The Part Numbers are for Right Hand Inserts. For Left Hand specify L instead of R. The Price is 10% higher for L.
- All inserts have ground profile and chipbreaker if nothing else is indicated.

# THREAD TURNING INSERTS

## API RD

### API ROUND OIL THREAD

| Pitch<br>TPI | L<br>mm | IC<br>inch | Taper<br>IPF | EXTERNAL<br>Part Number | INTERNAL<br>Part Number | X<br>mm | Y<br>mm |
|--------------|---------|------------|--------------|-------------------------|-------------------------|---------|---------|
| 10           | 16      | 3/8        | 0,75         | 16ER_10APIRD_FC         | 16IR_10APIRD_FC         | 1,5     | 1,4     |
| 8            | 16      | 3/8        | 0,75         | 16ER_8APIRD_FC          | 16IR_8APIRD_FC          | 1,3     | 1,6     |

## V-0.040

### V-0.040 OIL THREAD

| Pitch<br>TPI | L<br>mm | IC<br>inch | Taper<br>IPF | EXTERNAL<br>Part Number | INTERNAL<br>Part Number | X<br>mm | Y<br>mm | Connection<br>or Size |
|--------------|---------|------------|--------------|-------------------------|-------------------------|---------|---------|-----------------------|
| 5            | 22      | 1/2        | 3            | 22ER_5API403_FC         | 22IR_5API403_FC         | 1,8     | 2,5     | 2 3/8 - 4 1/2 REG     |

## V-0.038R

### V-0.038R OIL THREAD

| Pitch<br>TPI | L<br>mm | IC<br>inch | Taper<br>IPF | EXTERNAL<br>Part Number | INTERNAL<br>Part Number | X<br>mm | Y<br>mm | Connection<br>or Size |
|--------------|---------|------------|--------------|-------------------------|-------------------------|---------|---------|-----------------------|
| 4            | 27      | 5/8        | 2            | 27ER_4API382_FC         | 27IR_4API382_FC         | 2,1     | 2,8     | NC23-NC50             |
| 4            | 27      | 5/8        | 3            | 27ER_4API383_FC         | 27IR_4API383_FC         | 2,1     | 2,8     | NC56-NC77             |

## V-0.050

### V-0.050 OIL THREAD

| Pitch<br>TPI | L<br>mm | IC<br>inch | Taper<br>IPF | EXTERNAL<br>Part Number | INTERNAL<br>Part Number | X<br>mm | Y<br>mm | Connection<br>or Size   |
|--------------|---------|------------|--------------|-------------------------|-------------------------|---------|---------|-------------------------|
| 4            | 27      | 5/8        | 2            | 27ER_4API502_FC         | 27IR_4API502_FC         | 2,0     | 3,0     | 6 5/8 REG               |
| 4            | 27      | 5/8        | 3            | 27ER_4API503_FC         | 27IR_4API503_FC         | 2,0     | 3,0     | 5 1/2, 7 5/8, 8 5/8 REG |

## EL

### EXTREME - LINE CASING OIL THREAD

| Pitch<br>TPI | L<br>mm | IC<br>inch | Taper<br>IPF | EXTERNAL<br>Part Number | INTERNAL<br>Part Number | X<br>mm | Y<br>mm | Connection<br>or Size |
|--------------|---------|------------|--------------|-------------------------|-------------------------|---------|---------|-----------------------|
| 6            | 22      | 1/2        | 1,50         | 22ER_6EL1.5_FC          | 22IR_6EL1.5_FC          | 1,9     | 1,9     | 5 - 7 5/8             |
| 5            | 22      | 1/2        | 1,25         | 22ER_5EL1.25_FC         | 22IR_5EL1.25_FC         | 2,4     | 2,3     | 8 5/8 - 10 3/4        |

## BUT

### BUTTRESS CASING OIL THREAD

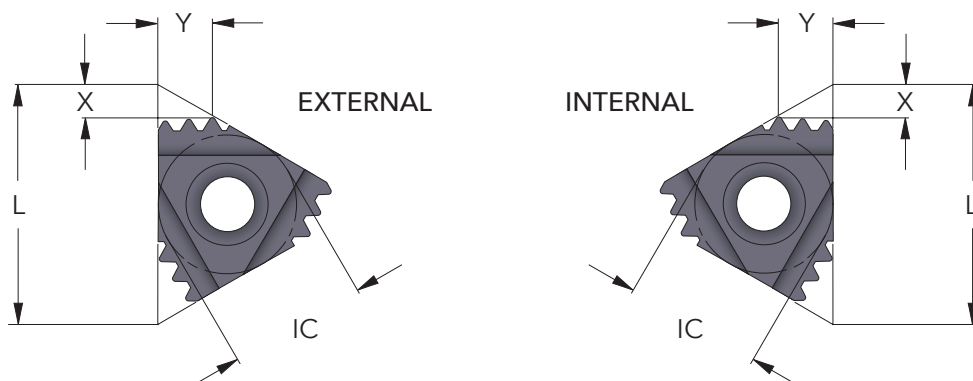
| Pitch<br>TPI | L<br>mm | IC<br>inch | Taper<br>IPF | EXTERNAL<br>Part Number | INTERNAL<br>Part Number | X<br>mm | Y<br>mm | Connection<br>or Size |
|--------------|---------|------------|--------------|-------------------------|-------------------------|---------|---------|-----------------------|
| 5            | 22      | 1/2        | 0,75         | 22ER_5BUT0.75_FC        | 22IR_5BUT0.75_FC        | 2,2     | 2,4     | 4 1/2 - 13 3/8        |
| 5            | 22      | 1/2        | 1,00         | 22ER_5BUT1.0_FC         | 22IR_5BUT1.0_FC         | 2,3     | 2,4     | 16 - 20               |

■ The Part Numbers are for Right Hand Inserts. For Left Hand specify L instead of R. The Price is 10% higher for L.

■ All inserts have ground profile and chipbreaker if nothing else is indicated.

# THREAD TURNING INSERTS

## Triangular Multitooth



### M

#### METRIC

| Pitch<br>mm | L<br>mm | IC<br>inch | EXTERNAL<br>Part Number | X<br>mm | Y<br>mm | INTERNAL<br>Part Number | X<br>mm | Y<br>mm |
|-------------|---------|------------|-------------------------|---------|---------|-------------------------|---------|---------|
| 1,0         | 16      | 3/8        | 16ER_1.0ISO3M_FC        | 1,7     | 2,5     | 16IR_1.0ISO3M_FC        | 1,7     | 2,5     |
| 1,5         | 16      | 3/8        | 16ER_1.5ISO2M_FC        | 1,5     | 2,3     | 16IR_1.5ISO2M_FC        | 1,5     | 2,3     |
| 1,5         | 22      | 1/2        | 22ER_1.5ISO3M_FC        | 2,3     | 3,7     | 22IR_1.5ISO3M_FC        | 2,3     | 3,7     |
| 2,0         | 22      | 1/2        | 22ER_2.0ISO2M_FC        | 2,0     | 3,0     | 22IR_2.0ISO2M_FC        | 2,0     | 3,0     |
| 2,0         | 22      | 1/2        | 22ER_2.0ISO3M_FC        | 3,1     | 5,0     | 22IR_2.0ISO3M_FC        | 3,1     | 5,0     |
| 3,0         | 27      | 5/8        | 27ER_3.0ISO2M_FC        | 2,9     | 4,5     | 27IR_3.0ISO2M_FC        | 2,9     | 4,5     |

### UN

#### UNIFIED

| Pitch<br>TPI | L<br>mm | IC<br>inch | EXTERNAL<br>Part Number | X<br>mm | Y<br>mm | INTERNAL<br>Part Number | X<br>mm | Y<br>mm |
|--------------|---------|------------|-------------------------|---------|---------|-------------------------|---------|---------|
| 16           | 16      | 3/8        | 16ER_16UN2M_FC          | 1,5     | 2,3     | 16IR_16UN2M_FC          | 1,5     | 2,3     |
| 16           | 16      | 3/8        | 22ER_16UN3M_FC          | 2,5     | 4,0     | 22IR_16UN3M_FC          | 2,5     | 4,0     |
| 12           | 22      | 1/2        | 22ER_12UN2M_FC          | 2,2     | 3,4     | 22IR_12UN2M_FC          | 2,2     | 3,4     |
| 12           | 22      | 1/2        | 22ER_12UN3M_FC          | 3,3     | 5,3     | 22IR_12UN3M_FC          | 3,3     | 5,3     |
| 8            | 27      | 5/8        | 27ER_8UN2M_FC           | 3,1     | 4,9     | 27IR_8UN2M_FC           | 3,1     | 4,9     |

### G/Rp

#### WHITWORTH PIPE THREAD

| Pitch<br>TPI | L<br>mm | IC<br>inch | EXTERNAL<br>Part Number | X<br>mm | Y<br>mm | INTERNAL<br>Part Number | X<br>mm | Y<br>mm |
|--------------|---------|------------|-------------------------|---------|---------|-------------------------|---------|---------|
| 14           | 16      | 3/8        | 16ER_14W2M_FC           | 1,7     | 2,7     | 16IR_14W2M_FC           | 1,7     | 2,7     |
| 14           | 22      | 1/2        | 22ER_14W3M_FC           | 2,8     | 4,5     | 22IR_14W3M_FC           | 2,8     | 4,5     |
| 11           | 22      | 1/2        | 22ER_11W2M_FC           | 2,3     | 3,4     | 22IR_11W2M_FC           | 2,3     | 3,4     |

### NPT

#### NPT PIPE THREAD

| Pitch<br>TPI | L<br>mm | IC<br>inch | EXTERNAL<br>Part Number | X<br>mm | Y<br>mm | INTERNAL<br>Part Number | X<br>mm | Y<br>mm |
|--------------|---------|------------|-------------------------|---------|---------|-------------------------|---------|---------|
| 11,5         | 22      | 1/2        | 22ER_11.5NPT2M_FC       | 2,3     | 3,5     | 22IR_11.5NPT2M_FC       | 2,3     | 3,5     |
| 11,5         | 27      | 5/8        | 27ER_11.5NPT3M_FC       | 3,3     | 5,5     | 27IR_11.5NPT3M_FC       | 3,3     | 5,5     |
| 8            | 27      | 5/8        | 27ER_8NPT2M_FC          | 3,1     | 5,0     | 27IR_8NPT2M_FC          | 3,1     | 5,0     |

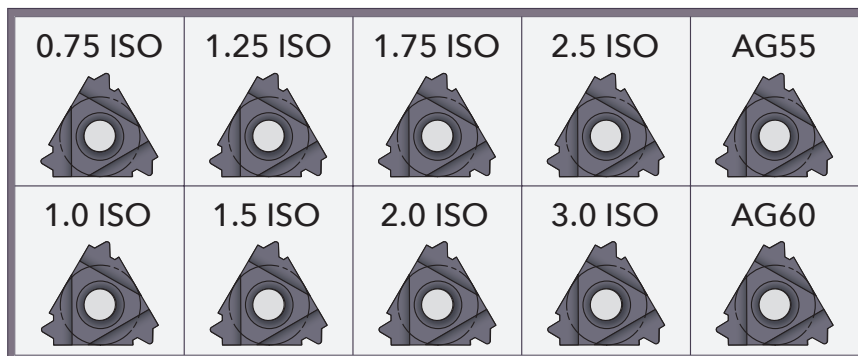
### API RD

#### API ROUND OIL THREAD

| Pitch<br>TPI | L<br>mm | IC<br>inch | Taper<br>IPF | EXTERNAL<br>Part Number | INTERNAL<br>Part Number | X<br>mm | Y<br>mm |
|--------------|---------|------------|--------------|-------------------------|-------------------------|---------|---------|
| 10           | 22      | 1/2        | 0,75         | 22ER_10APIRD2M_FC       | 22IR_10APIRD2M_FC       | 2,4     | 3,7     |
| 10           | 27      | 5/8        | 0,75         | 27ER_10APIRD3M_FC       | 27IR_10APIRD3M_FC       | 3,8     | 6,2     |
| 8            | 27      | 5/8        | 0,75         | 27ER_8APIRD2M_FC        | 27IR_8APIRD2M_FC        | 3,0     | 4,5     |

# THREAD TURNING INSERTS

## Kit with Different Inserts



## External Thread Turning Inserts

| Part Number<br>10X16ER_FC |        |         |                      |          |          |
|---------------------------|--------|---------|----------------------|----------|----------|
| 1 pc. 16ER_0.75ISO_FC     | M4,5   | MF6-12  | 1 pc. 16ER_2.0ISO_FC | M14-16   | MF18-100 |
| 1 pc. 16ER_1.0ISO_FC      | M6-7   | MF8-30  | 1 pc. 16ER_2.5ISO_FC | M18-22   |          |
| 1 pc. 16ER_1.25ISO_FC     | M8-9   | MF10-12 | 1 pc. 16ER_3.0ISO_FC | M24-27   | MF30-100 |
| 1 pc. 16ER_1.5ISO_FC      | M10-11 | MF12-60 | 1 pc. 16ER_AG55_FC   | P0,5-3,0 |          |
| 1 pc. 16ER_1.75ISO_FC     | M12    |         | 1 pc. 16ER_AG60_FC   | P0,5-3,0 |          |

| Part Number<br>10X22ER_FC |          |          |
|---------------------------|----------|----------|
| 2 pcs. 22ER_3.5ISO_FC     | M30-33   |          |
| 2 pcs. 22ER_4.0ISO_FC     | M36-39   | MF42-100 |
| 2 pcs. 22ER_4.5ISO_FC     | M42-45   |          |
| 2 pcs. 22ER_5.0ISO_FC     | M48-52   |          |
| 2 pcs. 22ER_N60_FC        | P3,5-5,0 |          |

## Internal Thread Turning Inserts

| Part Number<br>10X06IR_Ø5_BC |           |         |
|------------------------------|-----------|---------|
| 2 pcs. 06IR_0.5ISO_BC        |           | MF8     |
| 2 pcs. 06IR_0.75ISO_BC       |           | MF7-12  |
| 2 pcs. 06IR_1.0ISO_BC        | M7        | MF8-30  |
| 2 pcs. 06IR_1.25ISO_BC       | M8-9      | MF10-12 |
| 2 pcs. 06IR_A60_BC           | P0,5-1,25 |         |

Recommended holder: SIR\_0005\_H06

| Part Number<br>10X08IR_Ø7_BC |          |         |
|------------------------------|----------|---------|
| 2 pcs. 08IR_1.0ISO_BC        |          | MF10-30 |
| 2 pcs. 08IR_1.5ISO_BC        | M10-11   | MF12-60 |
| 2 pcs. 08IR_1.75ISO_BC       | M12      |         |
| 2 pcs. 08IR_28W_BC           | G1/8     |         |
| 2 pcs. 08IR_A60_BC           | P0,5-1,5 |         |

Recommended holder: SIR\_0007\_K08

| Part Number<br>10X11IR_Ø10_FC |          |          |
|-------------------------------|----------|----------|
| 2 pcs. 11IR_1.0ISO_FC         |          | MF14-30  |
| 2 pcs. 11IR_1.5ISO_FC         |          | MF14-60  |
| 2 pcs. 11IR_2.0ISO_FC         | M14-16   | MF18-100 |
| 2 pcs. 11IR_19W_FC            | G1/4-3/8 |          |
| 2 pcs. 11IR_A60_FC            | P0,5-1,5 |          |

Recommended holder: SIR\_0010\_K11

| Part Number<br>10X16IR_Ø13_FC |          |          |
|-------------------------------|----------|----------|
| 2 pcs. 16IR_1.5ISO_FC         |          | MF18-60  |
| 2 pcs. 16IR_2.0ISO_FC         |          | MF18-100 |
| 2 pcs. 16IR_2.5ISO_FC         | M18-22   |          |
| 2 pcs. 16IR_3.0ISO_FC         | M24-27   | MF30-100 |
| 2 pcs. 16IR_14W_FC            | G1/2-7/8 |          |

Recommended holder: SIR\_0013\_M16

| Part Number<br>10X16IR_Ø20_FC |          |          |
|-------------------------------|----------|----------|
| 2 pcs. 16IR_1.5ISO_FC         |          | MF27-60  |
| 2 pcs. 16IR_2.0ISO_FC         |          | MF27-100 |
| 2 pcs. 16IR_3.0ISO_FC         | M27      | MF30-100 |
| 2 pcs. 16IR_11W_FC            | G1-6     |          |
| 2 pcs. 16IR_AG60_FC           | P0,5-3,0 |          |

Recommended holder: SIR\_0020\_P16

| Part Number<br>10X22IR_Ø25_FC |          |          |
|-------------------------------|----------|----------|
| 2 pcs. 22IR_3.5ISO_FC         | M30-33   |          |
| 2 pcs. 22IR_4.0ISO_FC         | M36-39   | MF42-100 |
| 2 pcs. 22IR_4.5ISO_FC         | M42-45   |          |
| 2 pcs. 22IR_5.0ISO_FC         | M48-52   |          |
| 2 pcs. 22IR_N60_FC            | P3,5-5,0 |          |

Recommended holder: SIR\_0025\_R22

# THREAD TURNING INSERTS

---



# THREAD TURNING TOOLHOLDERS

## External



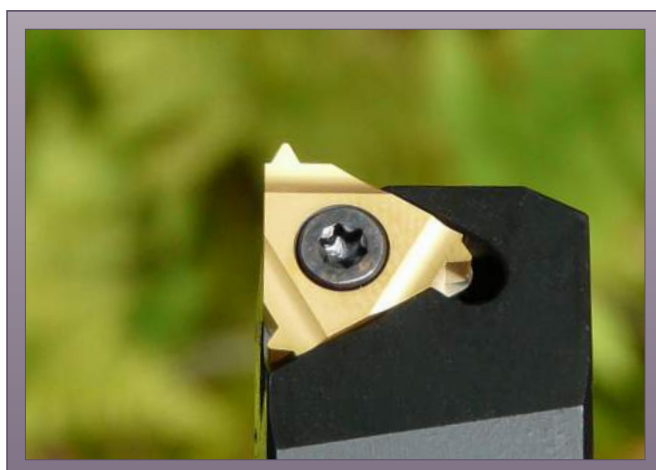
| Insert<br>mm | Part Number  | B/H<br>mm | L<br>mm | F<br>mm |
|--------------|--------------|-----------|---------|---------|
| 16           | SER_1212_F16 | 12        | 80      | 16      |
| 16           | SER_1616_H16 | 16        | 100     | 16      |
| 16           | SER_2020_K16 | 20        | 125     | 20      |
| 16           | SER_2525_M16 | 25        | 150     | 25      |
| 16           | SER_3232_P16 | 32        | 170     | 32      |
| 22           | SER_2525_M22 | 25        | 150     | 25      |
| 22           | SER_3232_P22 | 32        | 170     | 32      |
| 22           | SER_4040_R22 | 40        | 200     | 40      |
| 27           | SER_2525_M27 | 25        | 150     | 32      |
| 27           | SER_3232_P27 | 32        | 170     | 32      |
| 27           | SER_4040_R27 | 40        | 200     | 40      |

## Spare Parts

| Insert<br>mm | Screw<br>to insert | Torx<br>key | Screw<br>to anvil | Anvil   |
|--------------|--------------------|-------------|-------------------|---------|
| 16           | S16                | K16         | A16               | AE16... |
| 22           | S22                | K22         | A22               | AE22... |
| 27           | S27                | K27         | A27               | AE27... |

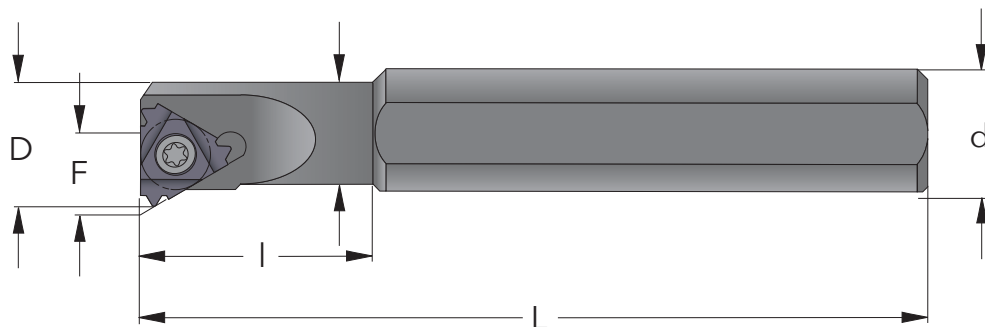
■ The Part Numbers are for Right Hand Toolholders. For Left Hand specify L instead of R. The Price is 10% higher for L.

■ Give Helix Angle for Anvil, ex. AE16+0.5



# THREAD TURNING TOOLHOLDERS

## Internal



| Insert mm | D mm | Part Number   | d mm | d1 mm | I mm | L mm | F mm |
|-----------|------|---------------|------|-------|------|------|------|
| 6         | 6,3  | SIR_0005_H06* | 12   | 5,1   | 12   | 100  | 4,3  |
| 8         | 8    | SIR_0007_K08* | 16   | 6,6   | 18   | 125  | 5,3  |
| 11        | 12   | SIR_0010_H11* | 10   | 10    |      | 100  | 7,4  |
| 11        | 12   | SIR_0010_K11* | 16   | 10    | 25   | 125  | 7,4  |
| 11        | 15   | SIR_0013_L11* | 16   | 13    | 32   | 140  | 8,9  |
| 16        | 16   | SIR_0013_M16* | 16   | 13    | 32   | 150  | 10,2 |
| 16        | 19   | SIR_0016_P16* | 20   | 16    | 40   | 170  | 11,7 |
| 16        | 23   | SIR_0020_P16  | 20   | 20    |      | 170  | 13,7 |
| 16        | 28   | SIR_0025_R16  | 25   | 25    |      | 200  | 16,2 |
| 16        | 35   | SIR_0032_S16  | 32   | 32    |      | 250  | 19,7 |
| 16        | 43   | SIR_0040_T16  | 40   | 40    |      | 300  | 23,7 |
| 22        | 24   | SIR_0020_P22* | 20   | 20    |      | 170  | 15,6 |
| 22        | 29   | SIR_0025_R22  | 25   | 25    |      | 200  | 18,1 |
| 22        | 36   | SIR_0032_S22  | 32   | 32    |      | 250  | 21,6 |
| 22        | 44   | SIR_0040_T22  | 40   | 40    |      | 300  | 25,6 |
| 27        | 39   | SIR_0032_S27  | 32   | 32    |      | 250  | 22,6 |
| 27        | 45   | SIR_0040_T27  | 40   | 40    |      | 300  | 26,6 |
| 27        | 55   | SIR_0050_U27  | 50   | 50    |      | 350  | 31,6 |
| 27        | 65   | SIR_0060_V27  | 60   | 60    |      | 400  | 36,6 |

## with Carbide Shank and Internal Coolant

| Insert mm | D mm | Part Number     | d mm | d1 mm | I mm | L mm | F mm |
|-----------|------|-----------------|------|-------|------|------|------|
| 6         | 6,3  | SIR_0005_H06CB* | 6    | 5,1   | 26   | 100  | 4,3  |
| 8         | 8    | SIR_0007_K08CB* | 8    | 6,6   | 31   | 125  | 5,3  |
| 11        | 12   | SIR_0010_M11CB* | 10   | 10    |      | 150  | 7,4  |
| 11        | 14   | SIR_0012_P11CB* | 12   | 12    |      | 170  | 8,4  |
| 16        | 19   | SIR_0016_R16CB* | 16   | 16    |      | 200  | 11,7 |
| 16        | 23   | SIR_0020_S16CB  | 20   | 20    |      | 250  | 13,7 |
| 16        | 28   | SIR_0025_S16CB  | 25   | 25    |      | 250  | 16,2 |
| 22        | 24   | SIR_0020_S22CB* | 20   | 20    |      | 250  | 15,6 |

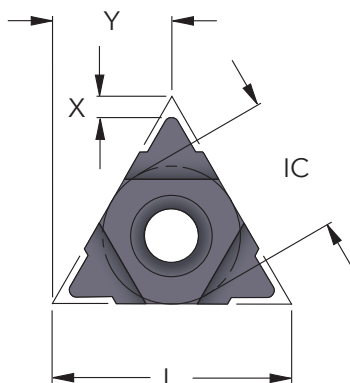
## Spare Parts

| Insert mm | Screw to insert | Torx key | Screw to anvil | Anvil   |
|-----------|-----------------|----------|----------------|---------|
| 06        | S6              | K6       |                |         |
| 08        | S8              | K8       |                |         |
| 11        | S11             | K11      |                |         |
| 16        | S16             | K16      | A16            | AI16... |
| 22        | S22             | K22      | A22            | AI22... |
| 27        | S27             | K27      | A27            | AI27... |

\* Toolholder without anvil

# THREAD TURNING INSERTS

## U-type



## M

### METRIC

| Pitch<br>mm | L<br>mm | IC<br>inch | EXTERNAL<br>Part Number | X<br>mm | Y<br>mm | INTERNAL<br>Part Number | X<br>mm | Y<br>mm |
|-------------|---------|------------|-------------------------|---------|---------|-------------------------|---------|---------|
| 2,0         | 8       | 3/16       |                         |         |         | 08UI_2.0ISO_BC          | 0,9     | 4,0     |
| 5,5         | 22      | 1/2        | 22UE_5.5ISO_FC          | 2,3     | 11,0    | 22UI_5.5ISO_FC          | 2,4     | 11,0    |
| 6,0         | 22      | 1/2        | 22UE_6.0ISO_FC          | 2,6     | 11,0    | 22UI_6.0ISO_FC          | 2,1     | 11,0    |
| 8,0         | 27      | 5/8        | 27UE_8.0ISO_FC          | 2,4     | 13,7    | 27UI_8.0ISO_FC          | 2,4     | 13,7    |
| 12,0        | 33      | 3/4        | 33UE_12.0ISO_FC         | 2,5     | 16,5    | 33UI_12.0ISO_FC         | 3,5     | 16,9    |

## UN

### UNIFIED

| Pitch<br>TPI | L<br>mm | IC<br>inch | EXTERNAL<br>Part Number | X<br>mm | Y<br>mm | INTERNAL<br>Part Number | X<br>mm | Y<br>mm |
|--------------|---------|------------|-------------------------|---------|---------|-------------------------|---------|---------|
| 13           | 8       | 3/16       |                         |         |         | 08UI_13UN_BC            | 1,0     | 4,0     |
| 12           | 8       | 3/16       |                         |         |         | 08UI_12UN_BC            | 0,9     | 4,0     |
| 11           | 8       | 3/16       |                         |         |         | 08UI_11UN_BC            | 0,9     | 4,0     |
| 4,5          | 22      | 1/2        | 22UE_4.5UN_FC           | 2,0     | 11,0    | 22UI_4.5UN_FC           | 2,4     | 11,0    |
| 4            | 22      | 1/2        | 22UE_4UN_FC             | 2,0     | 11,0    | 22UI_4UN_FC             | 2,4     | 11,0    |
| 3            | 27      | 5/8        | 27UE_3UN_FC             | 2,5     | 13,7    | 27UI_3UN_FC             | 2,7     | 13,7    |
| 2            | 33      | 3/4        | 33UE_2UN_FC             | 2,8     | 16,5    | 33UI_2UN_FC             | 3,6     | 16,9    |

## TR

### TRAPEZ DIN 103

| Pitch<br>mm | L<br>mm | IC<br>inch | EXTERNAL<br>Part Number | X<br>mm | Y<br>mm | INTERNAL<br>Part Number | X<br>mm | Y<br>mm |
|-------------|---------|------------|-------------------------|---------|---------|-------------------------|---------|---------|
| 2,0         | 8       |            |                         |         |         | 08UI_2.0TR_BC           | 0,9     | 4,0     |
| 6,0         | 22      | 1/2        | 22UE_6.0TR_FC           | 2,0     | 11,0    | 22UI_6.0TR_FC           | 2,0     | 11,0    |
| 7,0         | 22      | 1/2        | 22UE_7.0TR_FC           | 2,3     | 11,0    | 22UI_7.0TR_FC           | 2,3     | 11,0    |
| 8,0         | 22      | 1/2        | 22UE_8.0TR_FC           | 2,5     | 11,0    | 22UI_8.0TR_FC           | 2,5     | 11,0    |
| 8,0         | 27      | 5/8        | 27UE_8.0TR_FC           | 2,5     | 13,7    | 27UI_8.0TR_FC           | 2,5     | 13,7    |
| 9,0         | 27      | 5/8        | 27UE_9.0TR_FC           | 3,0     | 13,7    | 27UI_9.0TR_FC           | 3,0     | 13,7    |
| 10,0        | 27      | 5/8        | 27UE_10.0TR_FC*         | 3,2     | 13,7    | 27UI_10.0TR_FC*         | 3,2     | 13,7    |
| 12,0        | 33      | 3/4        | 33UE_12.0TR_FC          | 3,9     | 16,9    | 33UI_12.0TR_FC          | 3,9     | 16,9    |

■ All inserts have ground profile and chipbreaker.

★ Only one cutting edge

# THREAD TURNING INSERTS

## ACME

## ACME

| Pitch<br>TPI | L<br>mm | IC<br>inch | EXTERNAL<br>Part Number | X<br>mm | Y<br>mm | INTERNAL<br>Part Number | X<br>mm | Y<br>mm |
|--------------|---------|------------|-------------------------|---------|---------|-------------------------|---------|---------|
| 14           | 8       | 3/16       |                         |         |         | 08UI_14ACME_BC          | 0,8     | 4,0     |
| 12           | 8       | 3/16       |                         |         |         | 08UI_12ACME_BC          | 0,8     | 4,0     |
| 10           | 8       | 3/16       |                         |         |         | 08UI_10ACME_BC          | 0,8     | 4,0     |
| 4            | 22      | 1/2        | 22UE_4ACME_FC           | 2,3     | 11,0    | 22UI_4ACME_FC           | 2,3     | 11,0    |
| 3            | 27      | 5/8        | 27UE_3ACME_FC           | 2,8     | 13,7    | 27UI_3ACME_FC           | 2,8     | 13,7    |
| 2            | 33      | 3/4        | 33UE_2ACME_FC           | 4,3     | 16,9    | 33UI_2ACME_FC           | 4,3     | 16,9    |

## STACME

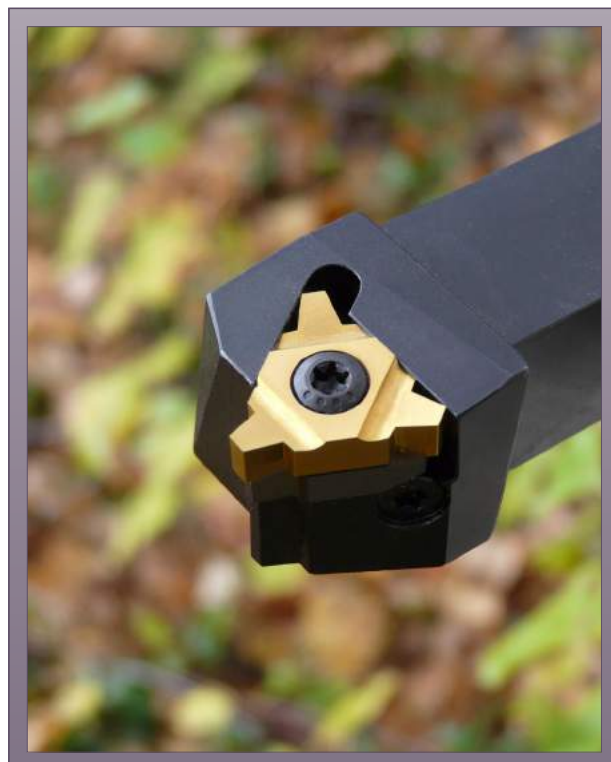
## STUB ACME

| Pitch<br>TPI | L<br>mm | IC<br>inch | EXTERNAL<br>Part Number | X<br>mm | Y<br>mm | INTERNAL<br>Part Number | X<br>mm | Y<br>mm |
|--------------|---------|------------|-------------------------|---------|---------|-------------------------|---------|---------|
| 14           | 8       | 3/16       |                         |         |         | 08UI_14STACME_BC        | 0,8     | 4,0     |
| 12           | 8       | 3/16       |                         |         |         | 08UI_12STACME_BC        | 0,9     | 4,0     |
| 10           | 8       | 3/16       |                         |         |         | 08UI_10STACME_BC        | 1,0     | 4,0     |
| 4            | 22      | 1/2        | 22UE_4STACME_FC         | 2,5     | 11,0    | 22UI_4STACME_FC         | 2,5     | 11,0    |
| 3            | 22      | 1/2        | 22UE_3STACME_FC         | 3,3     | 11,0    | 22UI_3STACME_FC         | 3,3     | 11,0    |
| 2            | 33      | 3/4        | 33UE_2STACME_FC         | 5,0     | 16,9    | 33UI_2STACME_FC         | 5,0     | 16,9    |

## BS/G/Rp

## WHITWORTH

| Pitch<br>TPI | L<br>mm | IC<br>inch | EXTERNAL<br>Part Number | X<br>mm | Y<br>mm | INTERNAL<br>Part Number | X<br>mm | Y<br>mm |
|--------------|---------|------------|-------------------------|---------|---------|-------------------------|---------|---------|
| 12           | 8       | 3/16       |                         |         |         | 08UI_12W_BC             | 0,9     | 4,0     |
| 4,5          | 22      | 1/2        | 22U_4.5W_FC             | 2,3     | 11,0    | 22U_4.5W_FC             | 2,3     | 11,0    |
| 4            | 22      | 1/2        | 22U_4W_FC               | 2,8     | 11,0    | 22U_4W_FC               | 2,8     | 11,0    |
| 3,5          | 27      | 5/8        | 27U_3.5W_FC             | 2,1     | 13,7    | 27U_3.5W_FC             | 2,1     | 13,7    |
| 3,25         | 27      | 5/8        | 27U_3.25W_FC            | 2,0     | 13,7    | 27U_3.25W_FC            | 2,0     | 13,7    |
| 3            | 27      | 5/8        | 27U_3W_FC               | 2,3     | 13,7    | 27U_3W_FC               | 2,3     | 13,7    |
| 2,75         | 27      | 5/8        | 27U_2.75W_FC            | 2,4     | 13,7    | 27U_2.75W_FC            | 2,4     | 13,7    |



# THREAD TURNING TOOLHOLDERS

## U-type External



| Insert mm | Part Number    | B/H mm | L mm | F mm |
|-----------|----------------|--------|------|------|
| 22        | SER_2525_M22U  | 25     | 150  | 28   |
| 22        | SER_3232_P22U  | 32     | 170  | 32   |
| 22        | SER_4040_R22U  | 40     | 200  | 40   |
| 27        | SER_2525_M27U  | 25     | 150  | 32   |
| 27        | SER_3232_P27U  | 32     | 170  | 32   |
| 27        | SER_4040_R27U  | 40     | 200  | 40   |
| 33        | SER_2525_M33U* | 25     | 150  | 32   |
| 33        | SER_3232_P33U* | 32     | 170  | 32   |

## Spare Parts

| Insert mm | Screw to insert | Torx key | Screw to anvil | Anvil    |
|-----------|-----------------|----------|----------------|----------|
| 22        | S22             | K22      | A22            | AE22U... |
| 27        | S27             | K27      | A27            | AE27U... |
| 33        | S33             | K33      |                |          |

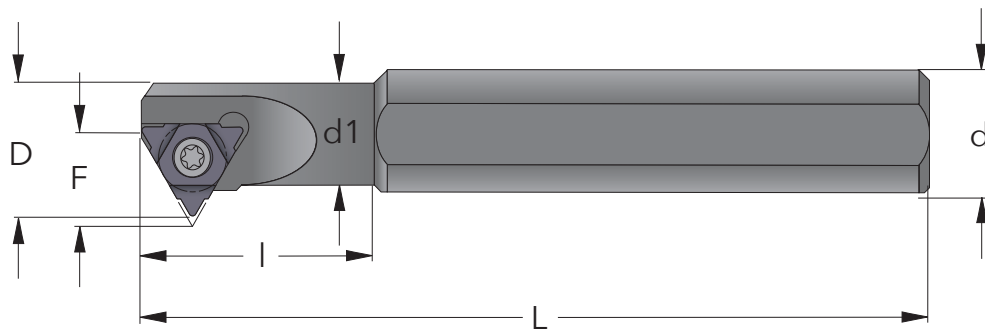
■ The Part Numbers are for Right Hand Toolholders. For Left Hand specify L instead of R. The Price is 10% higher for L.

■ Give Helix Angle for Anvil, ex. AE22U+0.5

★ Toolholder without anvil

# THREAD TURNING TOOLHOLDERS

## U-type Internal



| Insert mm | D mm | Part Number    | d mm | d1 mm | l mm | L mm | F mm |
|-----------|------|----------------|------|-------|------|------|------|
| 8         | 9,5  | SIR_0008_K08U* | 16   | 7,3   | 21   | 125  | 6,6  |
| 22        | 39   | SIR_0032_S22U  | 32   | 32    | -    | 250  | 24,4 |
| 22        | 46   | SIR_0040_T22U  | 40   | 40    | -    | 300  | 28,1 |
| 27        | 40   | SIR_0032_S27U  | 32   | 32    | -    | 250  | 25,8 |
| 27        | 47   | SIR_0040_T27U  | 40   | 40    | -    | 300  | 29,4 |
| 27        | 57   | SIR_0050_U27U  | 50   | 50    | -    | 350  | 34,3 |
| 27        | 68   | SIR_0060_V27U  | 60   | 60    | -    | 400  | 39,7 |
| 33        | 59   | SIR_0050_U33U* | 50   | 50    | -    | 350  | 37,5 |

## with Carbide Shank and Internal Coolant

| Insert mm | D mm | Part Number      | d mm | d1 mm | l mm | L mm | F mm |
|-----------|------|------------------|------|-------|------|------|------|
| 8         | 9,5  | SIR_0008_K08UCB* | 8    | 7,3   | 35   | 125  | 6,6  |

## Spare Parts

| Insert mm | Screw to insert | Torx key | Screw to anvil | Anvil    |
|-----------|-----------------|----------|----------------|----------|
| 08        | S8              | K8       |                |          |
| 22        | S22             | K22      | A22            | AI22U... |
| 27        | S27             | K27      | A27            | AI27U... |
| 33        | S33             | K33      |                |          |

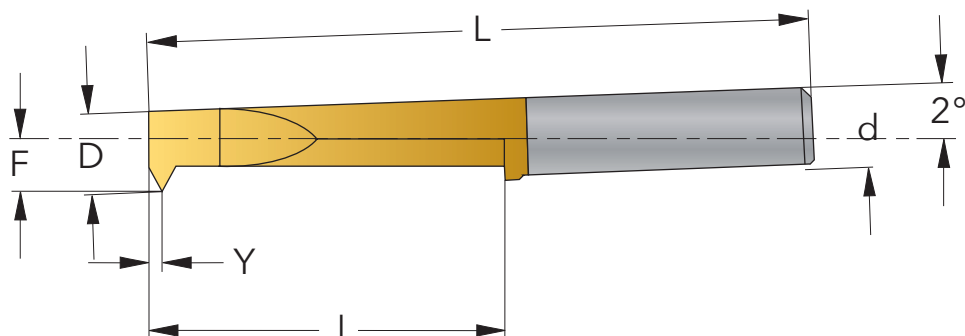
■ The Part Numbers are for Right Hand Toolholders. For Left Hand specify L instead of R. The Price is 10% higher for L.

■ Give Helix Angle for Anvil, ex. AI22U+0.5

★ Toolholder without anvil

# THREAD TURNING INSERTS

## Micro



## 60°

### PARTIAL PROFILE 60°

| Pitch<br>mm | TPI     | D<br>mm | INTERNAL<br>Part Number | d<br>mm | I<br>mm | L<br>mm | F<br>mm | Y<br>mm |
|-------------|---------|---------|-------------------------|---------|---------|---------|---------|---------|
| 0,2-0,4     | 80 - 64 | 0,8     | WR308_P60_BC            | 3       | 4       | 24      | 0,5     | 0,2     |
| 0,2-0,6     | 80 - 44 | 1,6     | WR316_P60_BC            | 3       | 7       | 24      | 0,75    | 0,3     |
| 0,2-0,8     | 80 - 32 | 2,2     | WR322_P60_BC            | 3       | 10      | 24      | 1,25    | 0,4     |
| 0,2-1,0     | 80 - 28 | 3,0     | WR330_P60_BC            | 3       | 12      | 24      | 1,5     | 0,5     |
| 0,25-1,25   | 80 - 20 | 4,0     | WR440_P60_BC            | 4       | 16,5    | 32      | 2       | 0,6     |
| 0,25-1,5    | 80 - 18 | 5,0     | WR550_P60_BC            | 5       | 21      | 40      | 2,5     | 0,7     |
| 0,25-1,75   | 80 - 14 | 6,0     | WR660_P60_BC            | 6       | 27      | 48      | 3       | 0,8     |
| 0,35-2,5    | 72 - 10 | 8,0     | WR880_P60_BC            | 8       | 45      | 72      | 4       | 1,2     |

## 55°

### PARTIAL PROFILE 55°

| Pitch<br>mm | TPI     | D<br>mm | INTERNAL<br>Part Number | d<br>mm | I<br>mm | L<br>mm | F<br>mm | Y<br>mm |
|-------------|---------|---------|-------------------------|---------|---------|---------|---------|---------|
| 0,25-1,25   | 80 - 20 | 4,0     | WR440_P55_BC            | 4       | 16,5    | 32      | 2       | 0,6     |
| 0,25-1,75   | 80 - 18 | 6,0     | WR660_P55_BC            | 6       | 27      | 48      | 3       | 0,8     |

Also available for Grooving and Turning

## Minimum Bore Diameter

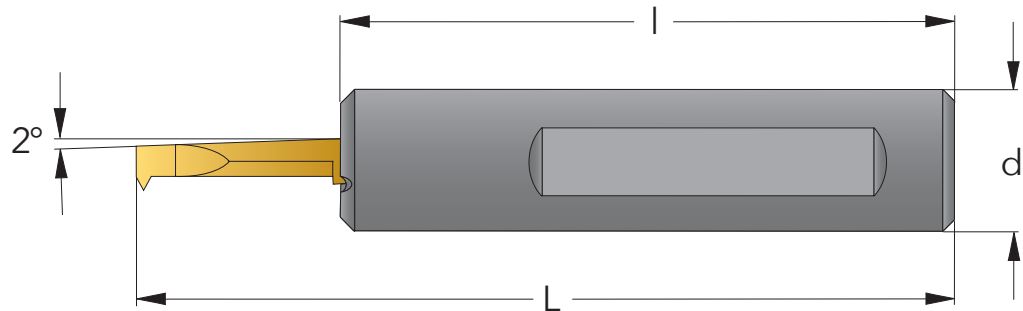
To obtain highest possible stability the threading inserts are ground in an angle of 2°. Therefore the minimum bore diameter is dependent on the thread length according to the table below.

| D<br>mm | Thread Lenght (mm) |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|---------|--------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
|         | 2                  | 4    | 6    | 8    | 10   | 12   | 14   | 16   | 18   | 21   | 24   | 27   | 30   | 35   | 40   | 45   |
| 0,8     | 0,87               | 0,94 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 1,6     | 1,67               | 1,74 | 1,81 |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 2,2     | 2,27               | 2,34 | 2,41 | 2,48 | 2,55 |      |      |      |      |      |      |      |      |      |      |      |
| 3,0     | 3,07               | 3,14 | 3,21 | 3,28 | 3,35 | 3,42 |      |      |      |      |      |      |      |      |      |      |
| 4,0     | 4,07               | 4,14 | 4,21 | 4,28 | 4,35 | 4,42 | 4,49 | 4,56 |      |      |      |      |      |      |      |      |
| 5,0     | 5,07               | 5,14 | 5,21 | 5,28 | 5,35 | 5,42 | 5,49 | 5,56 | 5,63 | 5,74 |      |      |      |      |      |      |
| 6,0     | 6,07               | 6,14 | 6,21 | 6,28 | 6,35 | 6,42 | 6,49 | 6,56 | 6,63 | 6,74 | 6,84 | 6,95 |      |      |      |      |
| 8,0     | 8,07               | 8,14 | 8,21 | 8,28 | 8,35 | 8,42 | 8,49 | 8,56 | 8,63 | 8,74 | 8,84 | 8,95 | 9,05 | 9,23 | 9,40 | 9,58 |

Minimum Bore Diameter = D + (thread length x 0,035)

# THREAD TURNING TOOLHOLDERS

## Micro

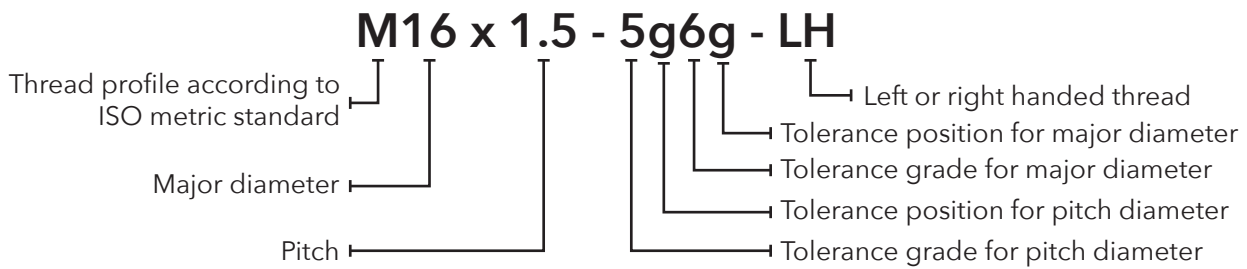


| Insert<br>mm | Part Number   | d<br>mm | l<br>mm | L<br>mm |
|--------------|---------------|---------|---------|---------|
| 3,0          | WRC3N_0012E-2 | 12      | 70      | 82      |
| 3,0          | WRC3N_0016F-2 | 16      | 80      | 92      |
| 3,0          | WRC3N_0020H-2 | 20      | 100     | 112     |
| 3,0          | WRC3N_0022J-2 | 22      | 110     | 122     |
| 3,0          | WRC3N_0025J-2 | 25      | 110     | 122     |
| 4,0          | WRC4N_0012E-2 | 12      | 75      | 91,5    |
| 4,0          | WRC4N_0016F-2 | 16      | 85      | 101,5   |
| 4,0          | WRC4N_0020H-2 | 20      | 105     | 121,5   |
| 4,0          | WRC4N_0022J-2 | 22      | 115     | 131,5   |
| 4,0          | WRC4N_0025J-2 | 25      | 115     | 131,5   |
| 5,0          | WRC5N_0016G-2 | 16      | 90      | 111     |
| 5,0          | WRC5N_0020J-2 | 20      | 110     | 131     |
| 5,0          | WRC5N_0022J-2 | 22      | 120     | 141     |
| 5,0          | WRC5N_0025J-2 | 25      | 120     | 141     |
| 6,0          | WRC6N_0016G-2 | 16      | 95      | 121     |
| 6,0          | WRC6N_0020J-2 | 20      | 115     | 141     |
| 6,0          | WRC6N_0022K-2 | 22      | 125     | 151     |
| 6,0          | WRC6N_0025K-2 | 25      | 125     | 151     |
| 8,0          | WRC8N_0020J-2 | 20      | 120     | 165     |
| 8,0          | WRC8N_0022K-2 | 22      | 130     | 175     |
| 8,0          | WRC8N_0025K-2 | 25      | 130     | 175     |

■ Also available in 3/4" och 1" (for Citizen).



## Metric



All types and tolerance classes can be produced with ISO metric thread turning and thread milling tools.

For coarse threads, the pitch is not written as it is determined of the diameter, for example M16 instead of M16 x 2.

If the tolerance grade and position is the same for pitch and major diameter, it is written only once, for example 6h instead of 6h6h. Small letter for external threads and capital letter for internal threads. If no tolerance class is written, it means that the tolerance is 6H/6g. Slash between tolerances provide information about the internal and external thread.

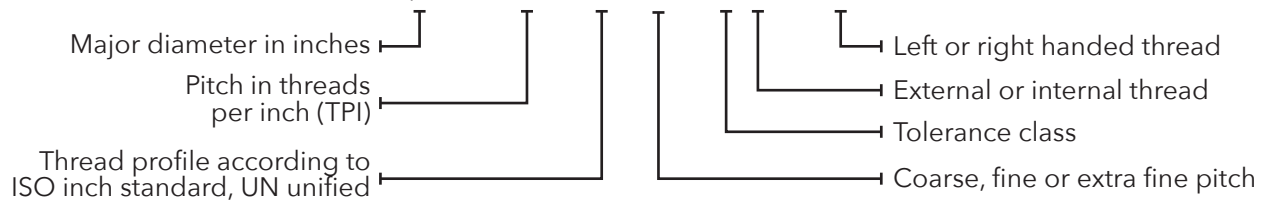
It is not necessary to write RH for right hand thread as almost all threads are right handed.

M16 is a simplified writing of M16 x 2 - 6H/6g - RH.

### Thread Profile Depth

|          |               |
|----------|---------------|
| external | 0,613 x pitch |
| internal | 0,541 x pitch |

| Major diameter mm |         |         | Pitch mm |
|-------------------|---------|---------|----------|
| Serie 1           | Serie 2 | Serie 3 |          |
| M1                |         |         | 0,25     |
|                   | M1,1    |         | 0,25     |
| M1,2              |         |         | 0,25     |
|                   | M1,4    |         | 0,3      |
| M1,6              |         |         | 0,35     |
|                   | M1,8    |         | 0,35     |
| M2                |         |         | 0,4      |
|                   | M2,2    |         | 0,45     |
| M2,5              |         |         | 0,45     |
| M3                |         |         | 0,5      |
|                   | M3,5    |         | 0,6      |
| M4                |         |         | 0,7      |
|                   | M4,5    |         | 0,75     |
| M5                |         |         | 0,8      |
| M6                |         |         | 1        |
|                   |         | M7      | 1        |
| M8                |         |         | 1,25     |
|                   |         | M9      | 1,25     |
| M10               |         |         | 1,5      |
|                   |         | M11     | 1,5      |
| M12               |         |         | 1,75     |
|                   | M14     |         | 2        |
| M16               |         |         | 2        |
|                   | M18     |         | 2,5      |
| M20               |         |         | 2,5      |
|                   | M22     |         | 2,5      |
| M24               |         |         | 3        |
|                   | M27     |         | 3        |
| M30               |         |         | 3,5      |
|                   | M33     |         | 3,5      |
| M36               |         |         | 4        |
|                   | M39     |         | 4        |
| M42               |         |         | 4,5      |
|                   | M45     |         | 4,5      |
| M48               |         |         | 5        |
|                   | M52     |         | 5        |
| M56               |         |         | 5,5      |
|                   | M60     |         | 5,5      |
| M64               |         |         | 6        |
|                   | M68     |         | 6        |

**1/4 - 20 UNC - 2A - LH**

All types and tolerance classes can be produced with UN unified thread turning and thread milling tools.

When the thread is smaller than 1/4", the diameter is given with a number from No. 0 to No. 12 (No. # x 0.013" + 0.060").

Mostly, the pitch is not written as it is determined of the diameter for UNC, UNF and UNEF threads.

If no tolerance class is written, it means that the tolerance is 2A for external threads and 2B for internal.

It is not necessary to write RH for right hand thread as almost all threads are right handed.

1/4 - UNC is a simplified writing of 1/4 - 20 UNC - 2A/2B - RH.

|      |                              |
|------|------------------------------|
| UNC  | thread with coarse pitch     |
| UNF  | thread with fine pitch       |
| UNEF | thread with extra fine pitch |
| UN   | thread with constant pitch   |

|                  | external | internal |
|------------------|----------|----------|
| Loose tolerance  | 1A       | 1B       |
| Medium tolerance | 2A       | 2B       |
| Tight tolerance  | 3A       | 3B       |

**Thread Profile Depth**

|          |              |
|----------|--------------|
| external | 15,581 / TPI |
| internal | 13,748 / TPI |

| Thread  | Diameter<br>mm | Pitch TPI |     |      |
|---------|----------------|-----------|-----|------|
|         |                | UNC       | UNF | UNEF |
| No. 0   | 1,524          | 80        | -   | -    |
| No. 1   | 1,854          | 64        | 72  | -    |
| No. 2   | 2,184          | 56        | 64  | -    |
| No. 3   | 2,515          | 48        | 56  | -    |
| No. 4   | 2,845          | 40        | 48  | -    |
| No. 5   | 3,175          | 40        | 44  | -    |
| No. 6   | 3,505          | 32        | 40  | -    |
| No. 8   | 4,166          | 32        | 36  | -    |
| No. 10  | 4,826          | 24        | 32  | -    |
| No. 12  | 5,486          | 24        | 28  | 32   |
| 1/4     | 6,350          | 20        | 28  | 32   |
| 5/16    | 7,937          | 18        | 24  | 32   |
| 3/8     | 9,525          | 16        | 24  | 32   |
| 7/16    | 11,112         | 14        | 20  | 28   |
| 1/2     | 12,700         | 13        | 20  | 28   |
| 9/16    | 14,287         | 12        | 18  | 24   |
| 5/8     | 15,875         | 11        | 18  | 24   |
| 3/4     | 19,050         | 10        | 16  | 20   |
| 7/8     | 22,225         | 9         | 14  | 20   |
| 1       | 25,400         | 8         | 12  | 20   |
| 1 1/16  | 26,988         | -         | -   | 18   |
| 1 1/8   | 28,575         | 7         | 12  | 18   |
| 1 3/16  | 30,162         | -         | -   | 18   |
| 1 1/4   | 31,750         | 7         | 12  | 18   |
| 1 5/16  | 33,338         | -         | -   | 18   |
| 1 3/8   | 34,925         | 6         | 12  | 18   |
| 1 7/16  | 36,512         | -         | -   | 18   |
| 1 1/2   | 38,100         | 6         | 12  | 18   |
| 1 9/16  | 39,688         | -         | -   | 18   |
| 1 5/8   | 41,275         | -         | -   | 18   |
| 1 11/16 | 42,862         | -         | -   | 18   |
| 1 3/4   | 44,450         | 5         | -   | -    |
| 2       | 50,800         | 4 1/2     | -   | -    |
| 2 1/4   | 57,150         | 4 1/2     | -   | -    |
| 2 1/2   | 63,500         | 4         | -   | -    |
| 2 3/4   | 69,850         | 4         | -   | -    |
| 3       | 76,200         | 4         | -   | -    |
| 3 1/4   | 82,550         | 4         | -   | -    |
| 3 1/2   | 88,900         | 4         | -   | -    |
| 3 3/4   | 95,250         | 4         | -   | -    |
| 4       | 101,600        | 4         | -   | -    |

# THREAD DESIGNATIONS

G/R

## British Standard Pipe Thread

### G 1/2 A - LH

G - Cylindrical pipe thread, ISO 228/1

R - Conical pipe thread, ISO 7/1

Left or right handed thread

Pipe diameter, not thread diameter

Tolerance class for external thread

### G - Whitworth / BSPP (P=parallel) Pipe Thread

All types and tolerance classes can be produced with W (Whitworth) thread turning and thread milling tools.

|                 | external | internal |
|-----------------|----------|----------|
| Loose tolerance | A        | only one |
| Tight tolerance | B        | class    |

To get a pressure tight-joint you need a seal ring between the shoulder of the external thread and the face of the internal thread.

### R - Whitworth / BSPT (T=tapered) Pipe Thread

All types and tolerance classes of conical threads can be produced with BSPT threading tools.

|    |                                  |
|----|----------------------------------|
| Rp | Internal cylindrical pipe thread |
| Rc | Internal conical pipe thread     |
| R  | External conical pipe thread     |

As the thread is conical it will be almost a pressure tight-joint, but to improve the sealing effect you need to use a thread seal tape.

Pitch is not written as it is determined of the diameter.

It is not necessary to write RH for right hand thread as almost all threads are right handed.

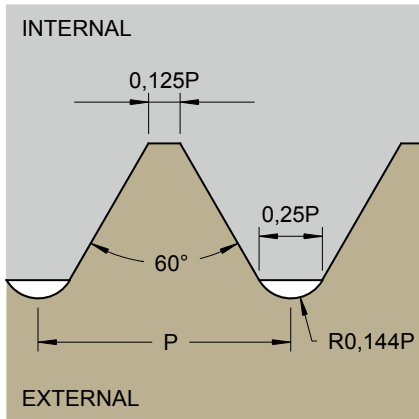
| Thread Profile Depth |              |
|----------------------|--------------|
| external             | 16,256 / TPI |
| internal             | 16,256 / TPI |

| Thread | Pipe diameter | Pitch TPI |
|--------|---------------|-----------|
| 1/16   | 7,723         | 28        |
| 1/8    | 9,728         | 28        |
| 1/4    | 13,157        | 19        |
| 3/8    | 16,662        | 19        |
| 1/2    | 20,955        | 14        |
| 5/8*   | 22,911        | 14        |
| 3/4    | 26,441        | 14        |
| 7/8*   | 30,201        | 14        |
| 1      | 33,249        | 11        |
| 1 1/8* | 37,897        | 11        |
| 1 1/4  | 41,910        | 11        |
| 1 1/2  | 47,803        | 11        |
| 1 3/4* | 53,746        | 11        |
| 2      | 59,614        | 11        |
| 2 1/4* | 65,710        | 11        |
| 2 1/2  | 75,184        | 11        |
| 2 3/4* | 81,534        | 11        |
| 3      | 87,884        | 11        |
| 3 1/2* | 100,330       | 11        |
| 4      | 113,030       | 11        |
| 4 1/2* | 125,730       | 11        |
| 5      | 138,430       | 11        |
| 5 1/2* | 151,130       | 11        |
| 6      | 163,830       | 11        |

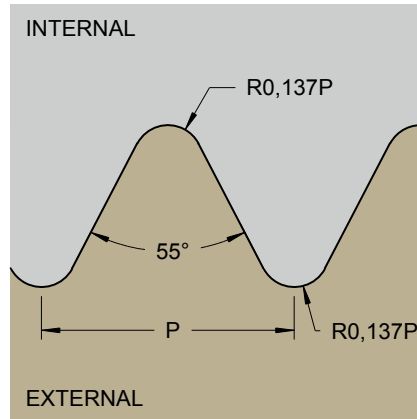
\*This dimension is only for G

# Common Thread Profiles

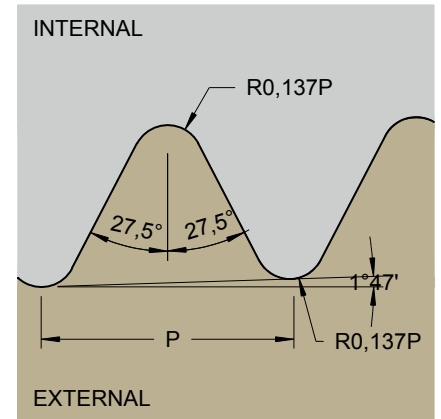
## ISO (M) and UN



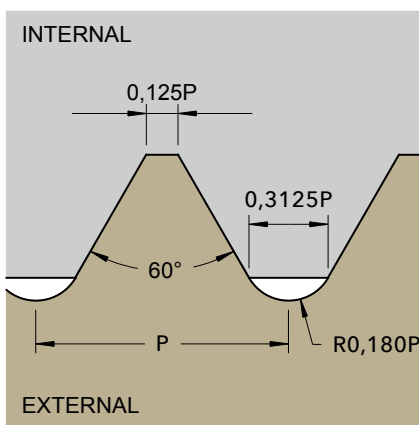
## Whitworth (W)



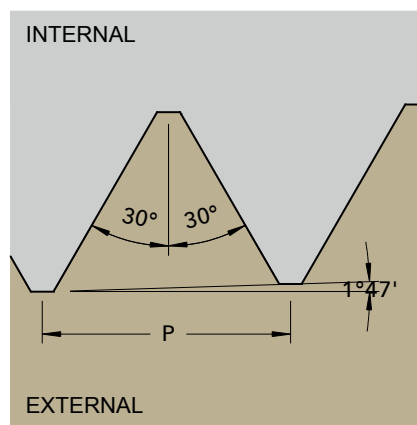
## BSPT



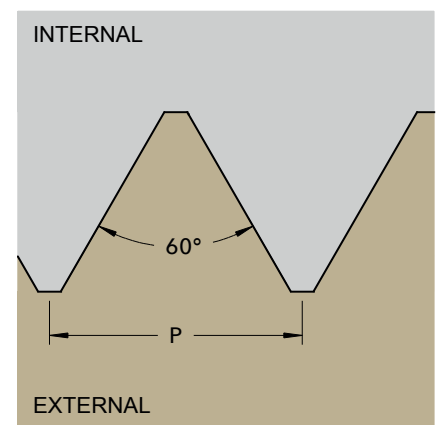
## MJ and UNJ



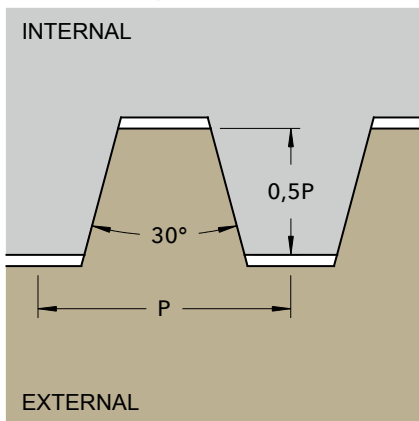
## NPT and NPTF



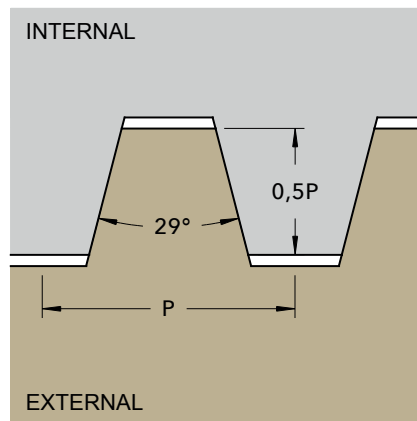
## NPSF



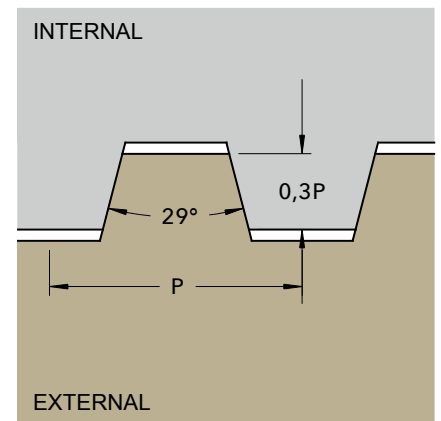
## Trapez DIN 103



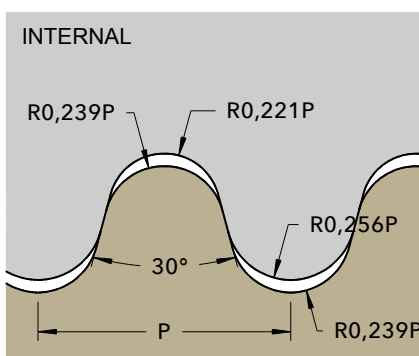
## ACME



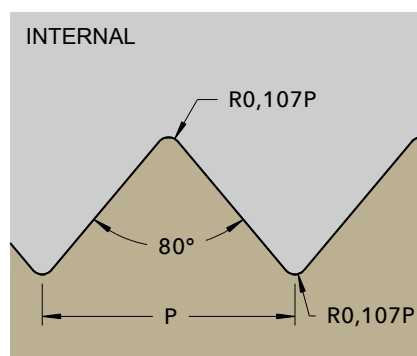
## STUB ACME



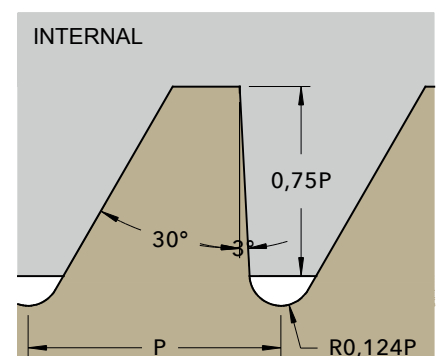
## Round DIN 405



## PG DIN 40430



## SG DIN 513





Schmidt Tool Systems - The Master of Threading



SmiCut AB  
Fläderstigen 12 - SE-771 43 Ludvika - Sweden  
tel. +46 240 182 30 - [info@smicut.se](mailto:info@smicut.se) - [www.smicut.se](http://www.smicut.se)