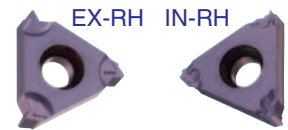


## Whitworth - 55° BSW, BSF, BSP, BSB Type B

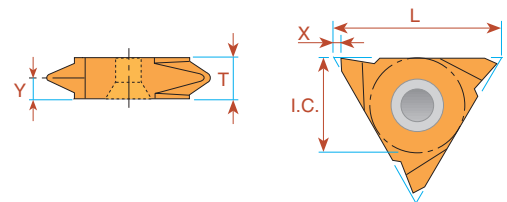
Ground Profile with Sintered Chip-breaker



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

Order example: 16 IR B 10 W BMA

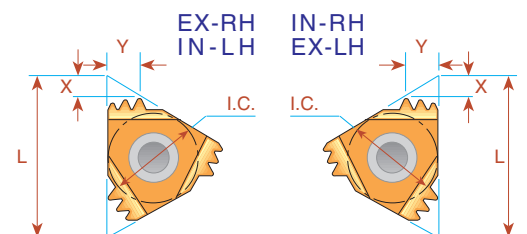
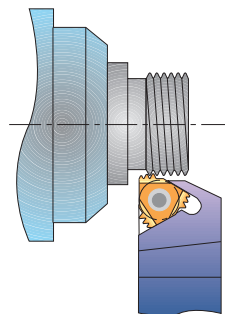
## Vertical



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

Order example: 16V ER 14 W MXC

## Multitooth



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

Order example: 22 IR 14 W 3M BMA

For recommended number of passes see page 45

For Carbide Grade and Cutting Speed see page 44

## Carbide Grade Selection

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

### Uncoated Grades

**P30\***  
(P20-P30) Carbide grade for carbon and cast steels, works well at medium to low cutting speeds.

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

### Coated Grades

**P25C**  
(P15-P35) PVD TiN coated grade for treated and hard alloy steels (25 HRC & up) at medium to low cutting speeds.

**MXC**  
(K10-K20)  
(P10-P25) PVD TiN coated micrograin for free cutting untreated alloy steels (below 30 HRC), for stainless steels and cast iron.

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

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

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

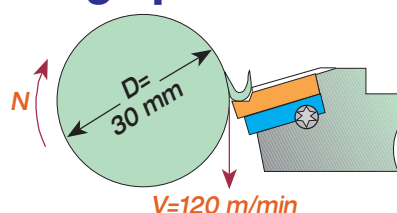
## Recommended cutting speed (m/min) for thread turning inserts

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

- Upon request
- For miniature and ultra miniature insert

## Conversion of Cutting Speed to Rotational Speed

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

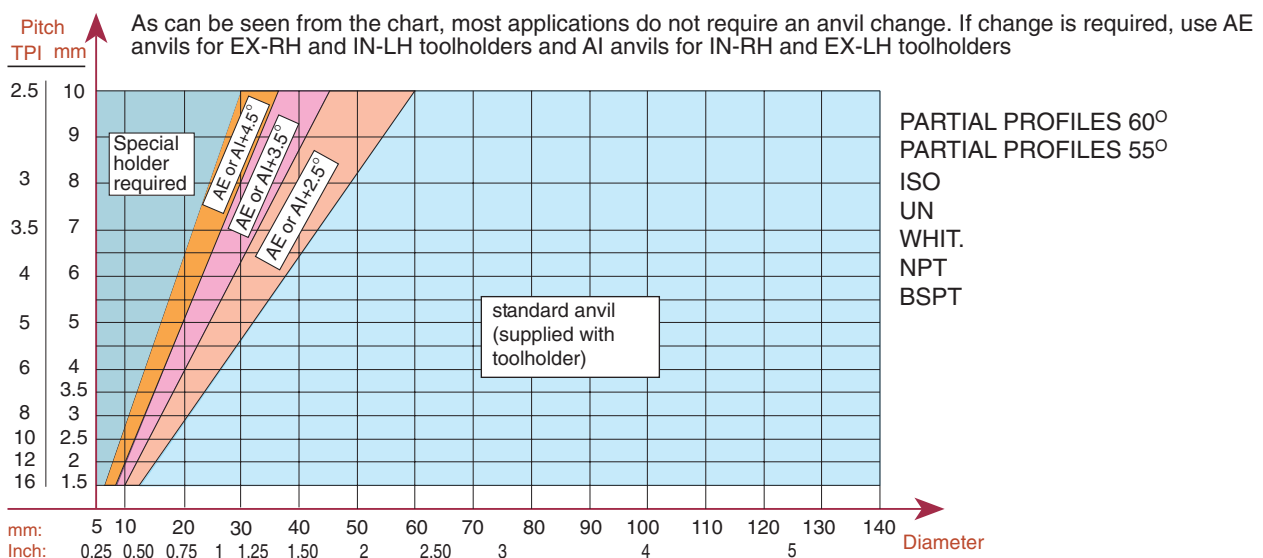
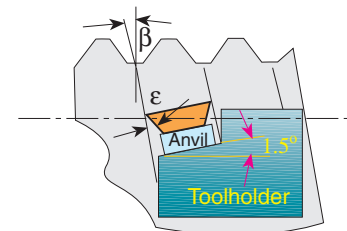
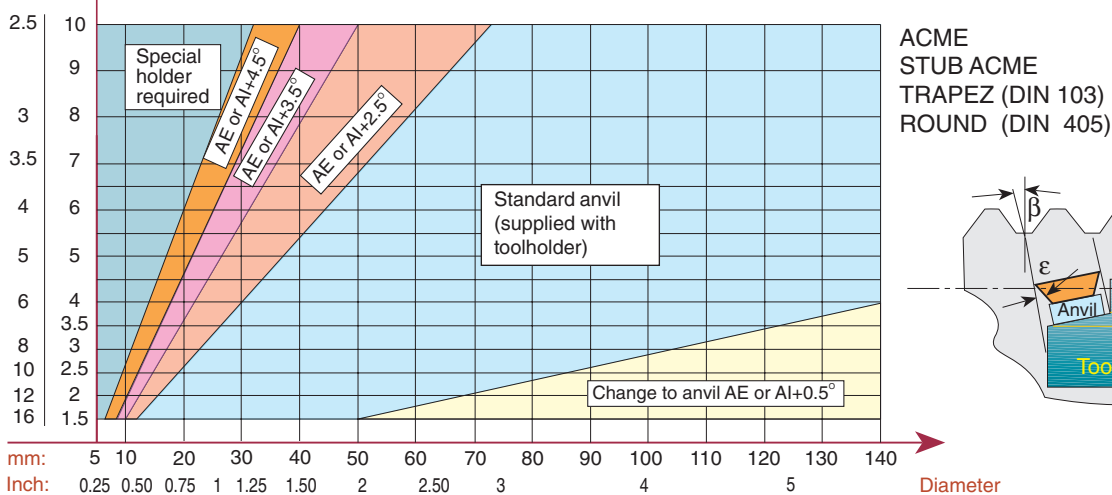


### Example

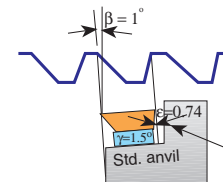
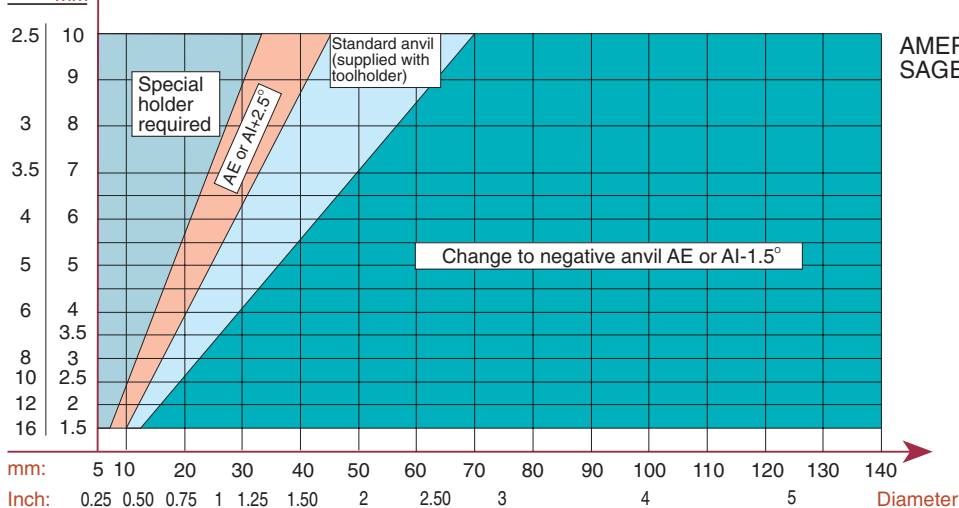
$$N = \frac{V \times 1000}{\pi \times D} = \frac{120 \times 1000}{3.14 \times 30} = 1274 \text{ RPM}$$

## Anvil Change Recommendation

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

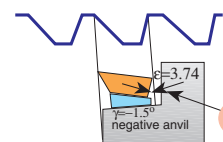


As can be seen from the chart, most applications require an anvil change. In most cases a negative anvil is required. use AE anvils for EX-RH



**Before Anvil change**

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



**After Anvil Change**