

# Speeds and Feeds



## Insert Speed selection

1. Select the Grade of insert.
2. Choose the material being machined.
3. Speed ranges can be adjusted within the range of the chart.
4. Recommended starting conditions are based on adequate workholding and toolholding conditions.

## Insert Feed and DOC selection

1. Select the Insert by Part Number, Description, or Insert IC Size
2. Feeds and DOC ranges can be adjusted due to cutting conditions

# Speeds and Feeds



## Insert Speed Selection

| grade | material group | material description                                                              | Speed - m/min (SFM) |             |             |              |              |              |              |              |               | Starting Conditions |     |
|-------|----------------|-----------------------------------------------------------------------------------|---------------------|-------------|-------------|--------------|--------------|--------------|--------------|--------------|---------------|---------------------|-----|
|       |                |                                                                                   | 30<br>(100)         | 60<br>(200) | 90<br>(300) | 120<br>(400) | 135<br>(450) | 180<br>(600) | 225<br>(800) | 275<br>(900) | 320<br>(1050) | m/min               | SFM |
| HU30  | P3             | Alloy and Tool Steels (<330HB) (<35 HRC)                                          | ◊                   |             |             |              |              |              |              |              |               | 175                 | 574 |
|       | P4             | Alloy Steels and Tool Steels (340–450 HB) (36–48 HRC)                             | ◊                   |             |             |              |              |              |              |              |               | 145                 | 476 |
|       | M2             | Stainless Steel                                                                   | ◊                   |             |             |              |              |              |              |              |               | 135                 | 443 |
|       | K2             | Ductile, Compacted Graphite, and Malleable Cast Irons (<600 MPa tensile strength) | ◊                   |             |             |              |              |              |              |              |               | 100                 | 344 |
|       | S2             | Cobalt-Based, Heat-Resistant Alloys (150–425 HB) (≤45 HRC)                        | ◊                   |             |             |              |              |              |              |              |               | 40                  | 131 |

| grade  | material group | material description                                                              | Speed - m/min (SFM) |             |             |              |              |              |              |              |               | Starting Conditions |     |
|--------|----------------|-----------------------------------------------------------------------------------|---------------------|-------------|-------------|--------------|--------------|--------------|--------------|--------------|---------------|---------------------|-----|
|        |                |                                                                                   | 30<br>(100)         | 60<br>(200) | 90<br>(300) | 120<br>(400) | 135<br>(450) | 180<br>(600) | 225<br>(800) | 275<br>(900) | 320<br>(1050) | m/min               | SFM |
| HMSH10 | M1             | Stainless Steel                                                                   | ◊                   |             |             |              |              |              |              |              |               | 160                 | 525 |
|        | K2             | Ductile, Compacted Graphite, and Malleable Cast Irons (<600 MPa tensile strength) | ◊                   |             |             |              |              |              |              |              |               | 135                 | 443 |
|        | S1             | Iron-Based, Heat-Resistant Alloys (135–320 HB) (≤34 HRC)                          | ◊                   |             |             |              |              |              |              |              |               | 50                  | 164 |
|        | H1             | Hardened Steel 48-55                                                              | ◊                   |             |             |              |              |              |              |              |               | 100                 | 328 |

| grade | material group | material description                                                              | Speed - m/min (SFM) |             |             |              |              |              |               |               |               | Starting Conditions |      |
|-------|----------------|-----------------------------------------------------------------------------------|---------------------|-------------|-------------|--------------|--------------|--------------|---------------|---------------|---------------|---------------------|------|
|       |                |                                                                                   | 30<br>(100)         | 60<br>(200) | 90<br>(300) | 120<br>(400) | 150<br>(500) | 250<br>(800) | 300<br>(1000) | 450<br>(1500) | 550<br>(1800) | m/min               | SFM  |
| HN30  | K2             | Ductile, Compacted Graphite, and Malleable Cast Irons (<600 MPa tensile strength) | ◊                   |             |             |              |              |              |               |               |               | 100                 | 344  |
|       | N3             | Copper, Brass, Zinc-Based on a Machinability Index Range of 70-100                | ◊                   |             |             |              |              |              |               |               |               | 425                 | 1394 |
|       | S4             | Titanium and Titanium Alloys (110–450 HB) (≤48 HRC)                               | ◊                   |             |             |              |              |              |               |               |               | 85                  | 282  |



# Speeds and Feeds



## Insert Feed and DOC Selection

| Insert Part Number | Insert Description | Insert IC Size | Recommended Feed & DOC |               |
|--------------------|--------------------|----------------|------------------------|---------------|
|                    |                    |                | fn<br>(ipr)            | ap<br>(inch)  |
| 02-0644            | CCET 1.211L        | 0.138          | 0.001 - 0.002          | 0.004 - 0.012 |
| 02-0645            | CCET 1.511L        | 0.169          | 0.001 - 0.004          | 0.004 - 0.020 |
| 02-0646            | CCET 1.211L        | 0.138          | 0.001 - 0.002          | 0.004 - 0.012 |
| 02-0647            | CCET 1.511L        | 0.169          | 0.001 - 0.004          | 0.004 - 0.020 |
| 02-0648            | CCET 1.211L        | 0.138          | 0.001 - 0.002          | 0.004 - 0.012 |
| 02-0649            | CCET 1.511L        | 0.169          | 0.001 - 0.004          | 0.004 - 0.020 |

