The Feeds and Speeds Chart below provides an exercise on how to use the charts found with each series after Type and Diameter of tool is determined.

1. RPM and IPM are dependent upon material being machined.
2. Locate material that will be machined (Precipitation Stainless Steel in example below).
3. Determine starting SFM (80 in example below).
4. Determine RPM based upon material and SFM. Multiply SFM by 3.82 divided by Tool Diameter = Starting RPM.
5. Determine IPM based upon RPM and application (HP, LP or Finishing in example below). Multiply RPM by Chip Load per Tooth by No. of Flutes = Starting IPM.
6. Based upon material and SFM selected, the application below would have a starting RPM of 611 with a starting feedrate of 12.22 IPM.

As always, should you have any questions, or if you are unsure of starting parameters for your application, call us toll free at 800-447-1476 and ask to speak to our Technical Support Department.

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**Speed (SFM) and Feed (Chip-Load per/tooth (cpt))**

\[
\text{RPM} = \text{SFM} \times \frac{3.82}{\text{Tool Diameter}} \quad \text{IPM} = \text{RPM} \times \text{CPT} \times \# \text{ of Flutes}
\]

\[
\text{RPM} = 80 \times \frac{3.82}{0.500} \quad \text{IPM} = 611 \times 0.004 \times 5 \quad \text{IPM} = 12.22
\]

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### Initial Speeds (SFM) and Feeds (Chip-Load per/tooth)

<table>
<thead>
<tr>
<th>Materials</th>
<th>Carbon Steels</th>
<th>Alloy Steel</th>
<th>Stainless Steel 300 Series</th>
<th>Stainless Steel 400 Series</th>
<th>Precipitation Stainless Steels</th>
<th>Gray Cast Iron</th>
<th>Ductile Cast Iron</th>
<th>High Temp Alloys</th>
<th>Titanium Pure</th>
<th>Titanium Cast/Wrought</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diameter</td>
<td>Description</td>
<td>40XX, 41XX, 42XX, 43XX, 10XX, 11XX, 12XX, 13XX, 44XX, 46XX, 86XX, Series 312</td>
<td>304, 304L, 316, 316L, 416, 440C</td>
<td>15-5PH, 16-5PH, 17-4PH, AM-XX Series</td>
<td>Gray Cast Iron</td>
<td>Ductile Cast Iron</td>
<td>High Temp Alloys</td>
<td>Titanium Pure</td>
<td>Titanium Cast/Wrought</td>
<td></td>
</tr>
<tr>
<td></td>
<td>SFM &lt; 32Rc</td>
<td>200 - 450</td>
<td>150 - 300</td>
<td>150 - 350</td>
<td>200 - 450</td>
<td>80 - 250</td>
<td>250 - 450</td>
<td>120 - 350</td>
<td>70 - 120</td>
<td>140 - 220</td>
</tr>
<tr>
<td></td>
<td>SFM &gt; 32Rc</td>
<td>100 - 250</td>
<td>80 - 200</td>
<td>80 - 200</td>
<td>100 - 250</td>
<td>80 - 250</td>
<td>130 - 300</td>
<td>80 - 140</td>
<td>40 - 90</td>
<td>90 - 160</td>
</tr>
</tbody>
</table>

**MH Series, 5 Flute**

**HP = HEAVY PERIPHERAL**

Axial Depth up to 1.0 x Diameter
Radial width .2 x Diameter

**LP = LIGHT PERIPHERAL**

Axial Depth up to Effective Length of Cut
Radial width .05 x Diameter

**F = FINISH**

Axial Depth up to Effective Length Of Cut
Radial width .02 x Diameter