FEEDS
&
SPEEDS
(REVIEW)
# Cutting Speed Guidelines

<table>
<thead>
<tr>
<th>Material</th>
<th>High-Speed Steel</th>
<th>Carbide</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plastics</td>
<td>500</td>
<td>800</td>
</tr>
<tr>
<td>Aluminum</td>
<td>300</td>
<td>600</td>
</tr>
<tr>
<td>Brass</td>
<td>200</td>
<td>400</td>
</tr>
<tr>
<td>Mild Steel</td>
<td>75</td>
<td>250</td>
</tr>
<tr>
<td>Stainless</td>
<td>50</td>
<td>100</td>
</tr>
</tbody>
</table>

**Speeds in Surface Feet per Minute (SFPM)**

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MILL/DRILL SPINDLE SPEED

\[
\text{Spindle Speed} = \frac{4 \times \text{Cutting Speed}}{\text{Tool Diameter}}
\]

GIVES SPINDLE SPEED IN RPM
FOR
CUTTING SPEED IN FEET PER MINUTE (FPM)
AND
TOOL DIAMETER IN INCHES

FOR NOW, DIVIDE BY ~2
FEED RATE

FEED RATE = CHIP LOAD X TEETH X SPINDLE SPEED

GIVES FEED RATE IN INCHES PER MINUTE FOR
CHIP LOAD IN INCHES PER TOOTH AND
SPINDLE SPEED IN RPM

TYPICAL CHIP LOADS:
ROUGHING 0.005"
FINISHING 0.001-0.002"
USING A VISE
SQUARING UP YOUR STOCK
CUT ALL SIX SIDES

FRONT/BACK - CARBIDE-INSERT FACE MILL

TOP/BOTTOM - FACE CUT W/ END MILL

SIDES - SIDE CUT W/ END MILL
INSERT FACE MILL

FACE CUT
END MILL - FACE CUT
END MILL - SIDE CUT
END MILL - FACE CUT