

Speeds and Feeds Explanation

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 RPMs.
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.

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

$$\text{RPM} = \text{SFM} \times 3.82 / \text{Tool Diameter}$$

$$\text{RPM} = 80 \times 3.82 / .500$$

$$\text{RPM} = 611$$

$$\text{IPM} = \text{RPM} \times \text{CPT} \times \# \text{ of Flutes}$$

$$\text{IPM} = 611 \times .004 \times 5$$

$$\text{IPM} = 12.22$$

MH Series, 5 Flute

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

Diameter	Materials Description	Carbon Steels	Alloy Steel	Stainless Steel 300 Series	Stainless Steel 400 Series	Precipitation Stainless Steels	Gray Cast Iron	Ductile Cast Iron	High Temp Alloys	Titanium Pure	Titanium Cast/Wrought
		10XX, 11XX, 12XX, 13XX	40XX, 41XX, 42XX, 43XX, 44XX, 46XX, 86XX, Series	304, 304L, 316, 316L, 312	420, 420F, 416, 440C	15-5PH, 16-6PH, 17-4PH, AM-XX Series	Gray	Ductile	Inconel 625/718, A286, Haynes	Pure	Cast/Wrought 6AL4V, ASTM 1,2,3, Alpha - Beta
1/2"	SFM < 32Rc	200 - 450	150 - 300	150 - 350	200 - 450	80 - 250	250 - 450	120 - 350	70 - 120	140 - 220	140 - 200
	SFM > 32Rc	100 - 250	80 - 200	80 - 200	100 - 250	90 - 125	130 - 300	80 - 140	40 - 90	90 - 160	90 - 160
	HP	0.0035	0.0030	0.0030	0.0030	0.0030	0.0030	0.0030	0.0020	0.0030	0.0030
	LP	0.0045	0.0040	0.0040	0.0040	0.0040	0.0040	0.0040	0.0030	0.0040	0.0040
	F	0.0055	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0040	0.0050	0.0050

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