M8 Application Guide (inch) • Speed & Feed

ISO Classification	EM Dia.	Type of Cut	Axial DOC	Radial DOC	Speed (SFM)	RMP	IPT	IPM
S	1/4	Rough	1.25 x D	.2 x D	80	1222	0.00080	5.87
		Slot	0.165		80	1222	0.00050	3.67
	5/16	Rough	1.25 x D	.2 x D	80	978	0.00100	5.87
		Slot	0.205		80	978	0.00063	3.67
	3/8	Rough	1.25 x D	.2 x D	80	815	0.00120	5.87
		Slot	0.250		80	815	0.00075	3.67
	1/2	Rough	1.25 x D	.2 x D	80	611	0.00160	5.87
		Slot	0.330		80	611	0.00100	3.67
	5/8	Rough	1.25 x D	.2 x D	80	489	0.00200	5.87
		Slot	0.415		80	489	0.00125	3.67
	3/4	Rough	1.25 x D	.2 x D	80	407	0.00240	5.87
		Slot	0.500		80	407	0.00150	3.67
	1	Rough	1.25 x D	.2 x D	80	306	0.00320	5.87
		Slot	0.665		80	306	0.00200	3.67

D = Tool diameter

For applications in Titanium Alloys, please see our M5 series.

Common Machining Formulas

$$RPM = \frac{SFM \times 3.82}{D}$$

$$SFM = RPM \times D \times .262$$

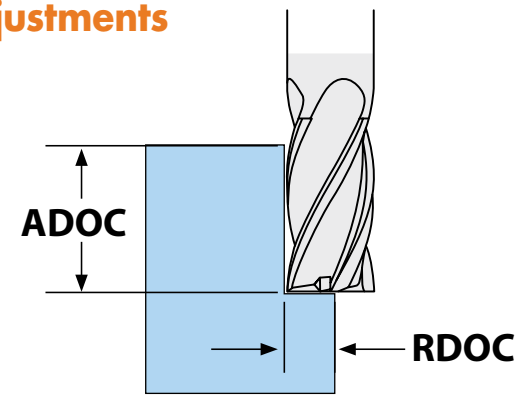
$$IPM = RPM \times IPT \times Z$$

$$MRR = RDOC \times ADOC \times IPM$$

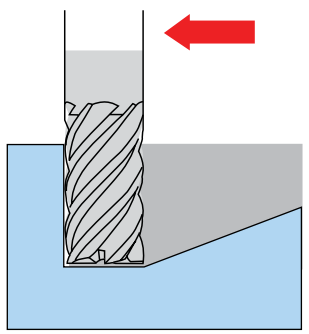
D	Tool Cutting Diameter
R	Tool Radius
Z	Number of Flutes
RPM	Revolutions per Minute
SFM	Surface Feet per Minute
IPM	Inches per Minute
MRR	Metal Removal Rate
RDOC	Radial Depth of Cut
ADOC	Axial Depth of Cut

Radial Chip Thinning Adjustment $IPT_{adj} = \frac{IPT \times (D/2)}{\sqrt{(D \times RDOC) - RDOC^2}}$

Adjustments



1. Apply chip thinning adjustment when RDOC < D



2. Ramp entry into work piece

- Ramp at 1.5°–2.5° angle
- Reduce chipload by 20% of recommended slotting rate