

M104 Application Guide (metric) • Speed & Feed

ISO Classification	Work Material	Type of Cut	Axial DOC	Radial DOC	Number of Flutes	Speed (M/Min)	Feed (MM Per Tooth)					
							6,0	8,0	10,0	12,0	16,0	20,0
P	Low Carbon Steel 1018, 12L14, 8620	Slotting	1 x D	1 x D	4	107	0.0301	0.0403	0.0499	0.0601	0.0800	0.1004
		Peripheral - Rough	1.25 x D	.4 x D	4	130	0.0376	0.0504	0.0624	0.0752	0.1000	0.1255
	Medium Carbon Steels < 38 HRC 4140, 4340	Slotting	.75 x D	1 x D	4	84	0.0290	0.0389	0.0482	0.0581	0.0772	0.0970
		Peripheral - Rough	1.25 x D	.4 x D	4	107	0.0363	0.0486	0.0602	0.0726	0.0965	0.1212
M	Martensitic Stainless Steel 416, 410, 440C	Slotting	.5 X D	1 x D	4	76	0.0266	0.0357	0.0442	0.0532	0.0708	0.0889
		Peripheral - Rough	1.25 x D	.3 x D	4	91	0.0333	0.0446	0.0552	0.065	0.0885	0.1111

D = Tool diameter

Common Machining Formulas

$$\text{RPM} = \frac{\text{M/MIN} \times 318.057}{D}$$

$$\text{M/MIN} = \text{RPM} \times D \times .00314$$

$$\text{MM/MIN} = \text{RPM} \times \text{MMPT} \times Z$$

$$\text{MRR} = \text{RDOC} \times \text{ADOC} \times \text{MM/MIN}$$

D Tool Cutting Diameter

R Tool Radius

Z Number of Flutes

RPM Revolutions per Minute

M/MIN Meters per Minute

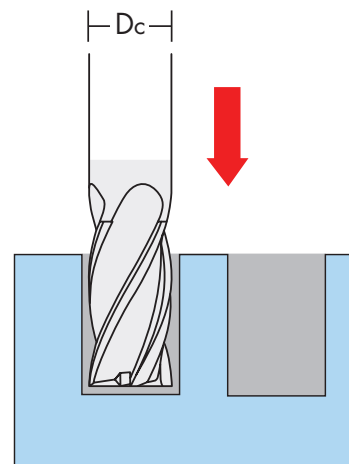
MM/Min Millimeters per Minute

MRR Metal Removal Rate

RDOC Radial Depth of Cut

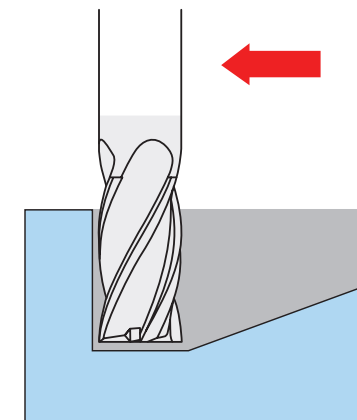
ADOC Axial Depth of Cut

Adjustments – Apply these adjustments when programming the following applications.



1. Plunge entry into work piece

- Reduce chip load by 80% of recommended slotting rate
- Peck mill if axial DOC (ap) exceeds 50% of Dc



2. Ramp entry into work piece

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