

M2 Series Application Guide – Speed & Feed (inch)

| ISO Code | Work Material | Type of Cut | Axial DOC | Radial DOC | Number of Flutes | Speed (SFM) | Feed (Inch per Tooth) | | | | | | | | |
|--|--|---------------------|-----------|------------|------------------|-------------|-----------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| | | | | | | | 1/8 | 3/16 | 1/4 | 5/16 | 3/8 | 1/2 | 5/8 | 3/4 | 1 |
| N | Aluminum Alloys 2024, 6061, 7075 | Slotting | 1 x D | 1 x D | 2 | 800 | .0015 | .0023 | .0030 | .0038 | .0045 | .0060 | .0075 | .0090 | .0120 |
| | | Peripheral - Rough | 1 x D | .75 x D | 2 | 1000 | .0019 | .0028 | .0038 | .0047 | .0056 | .0075 | .0094 | .0113 | .0150 |
| | | Peripheral - Finish | 1.5 x D | .01 x D | 2 | 1200 | .0024 | .0035 | .0047 | .0059 | .0071 | .0094 | .0118 | .0141 | .0188 |
| | High Silicon Aluminum A380, A390 | Slotting | .75 x D | 1 x D | 2 | 500 | .0013 | .0020 | .0026 | .0033 | .0039 | .0052 | .0065 | .0078 | .0104 |
| | | Peripheral - Rough | 1 x D | .5 x D | 2 | 700 | .0016 | .0024 | .0033 | .0041 | .0049 | .0065 | .0081 | .0098 | .0130 |
| | | Peripheral - Finish | 1.5 x D | .01 x D | 2 | 900 | .0020 | .0031 | .0041 | .0051 | .0061 | .0082 | .0102 | .0122 | .0163 |
| | Magnesium Alloys | Slotting | 1 x D | 1 x D | 2 | 800 | .0015 | .0023 | .0030 | .0038 | .0045 | .0060 | .0075 | .0090 | .0120 |
| | | Peripheral - Rough | 1 x D | .75 x D | 2 | 1000 | .0019 | .0028 | .0038 | .0047 | .0056 | .0075 | .0094 | .0113 | .0150 |
| | | Peripheral - Finish | 1.5 x D | .01 x D | 2 | 1200 | .0024 | .0035 | .0047 | .0059 | .0071 | .0094 | .0118 | .0141 | .0188 |
| | Copper Alloys Brass, Bronze | Slotting | .75 x D | 1 x D | 2 | 500 | .0013 | .0020 | .0026 | .0033 | .0039 | .0052 | .0065 | .0078 | .0104 |
| | | Peripheral - Rough | 1 x D | .75 x D | 2 | 575 | .0016 | .0024 | .0033 | .0041 | .0049 | .0065 | .0081 | .0098 | .0130 |
| | | Peripheral - Finish | 1.5 x D | .01 x D | 2 | 650 | .0020 | .0031 | .0041 | .0051 | .0061 | .0082 | .0102 | .0122 | .0163 |
| | Composites Plastics, Fiberglass | Slotting | 1 x D | 1 x D | 2 | 500 | .0013 | .0020 | .0026 | .0033 | .0039 | .0052 | .0065 | .0078 | .0104 |
| | | Peripheral - Rough | 1 x D | .75 x D | 2 | 700 | .0016 | .0024 | .0033 | .0041 | .0049 | .0065 | .0081 | .0098 | .0130 |
| | | Peripheral - Finish | 1.5 x D | .01 x D | 2 | 900 | .0020 | .0031 | .0041 | .0051 | .0061 | .0082 | .0102 | .0122 | .0163 |
| | Aluminum Alloys 2024, 6061, 7075 | Slotting | .75 x D | 1 x D | 3 | 800 | .0013 | .0020 | .0026 | .0033 | .0039 | .0052 | .0065 | .0078 | .0104 |
| | | Peripheral - Rough | 1 x D | .75 x D | 3 | 1000 | .0016 | .0024 | .0033 | .0041 | .0049 | .0065 | .0081 | .0098 | .0130 |
| | | Peripheral - Finish | 1.5 x D | .01 x D | 3 | 1200 | .0020 | .0031 | .0041 | .0051 | .0061 | .0082 | .0102 | .0122 | .0163 |
| High Silicon Aluminum A380, A390 | Slotting | .5 x D | 1 x D | 3 | 500 | .0011 | .0017 | .0022 | .0028 | .0033 | .0044 | .0055 | .0066 | .0088 | |
| | Peripheral - Rough | 1 x D | .5 x D | 3 | 700 | .0014 | .0021 | .0028 | .0034 | .0041 | .0055 | .0069 | .0083 | .0110 | |
| | Peripheral - Finish | 1.5 x D | .01 x D | 3 | 900 | .0017 | .0026 | .0035 | .0043 | .0052 | .0069 | .0086 | .0104 | .0138 | |
| Magnesium Alloys | Slotting | .75 x D | 1 x D | 3 | 800 | .0013 | .0020 | .0026 | .0033 | .0039 | .0052 | .0065 | .0078 | .0104 | |
| | Peripheral - Rough | 1 x D | .75 x D | 3 | 1000 | .0016 | .0024 | .0033 | .0041 | .0049 | .0065 | .0081 | .0098 | .0130 | |
| | Peripheral - Finish | 1.5 x D | .01 x D | 3 | 1200 | .0020 | .0031 | .0041 | .0051 | .0061 | .0082 | .0102 | .0122 | .0163 | |
| Copper Alloys Brass, Bronze | Slotting | .75 x D | 1 x D | 3 | 500 | .0011 | .0017 | .0022 | .0028 | .0033 | .0044 | .0055 | .0066 | .0088 | |
| | Peripheral - Rough | 1 x D | .75 x D | 3 | 575 | .0014 | .0021 | .0028 | .0034 | .0041 | .0055 | .0069 | .0083 | .0110 | |
| | Peripheral - Finish | 1.5 x D | .01 x D | 3 | 650 | .0017 | .0026 | .0035 | .0043 | .0052 | .0069 | .0086 | .0104 | .0138 | |
| Composites Plastics, Fiberglass | Slotting | 1 x D | 1 x D | 3 | 500 | .0011 | .0017 | .0022 | .0028 | .0033 | .0044 | .0055 | .0066 | .0088 | |
| | Peripheral - Rough | 1 x D | .75 x D | 3 | 700 | .0014 | .0021 | .0028 | .0034 | .0041 | .0055 | .0069 | .0083 | .0110 | |
| | Peripheral - Finish | 1.5 x D | .01 x D | 3 | 900 | .0017 | .0026 | .0035 | .0043 | .0052 | .0069 | .0086 | .0104 | .0138 | |

D = Tool Diameter

≈ Approximately Equals < Less Than
 ≤ Less Than or Equal To > Greater Than
 ≥ Greater Than or Equal To = Equals
 x Multiply

Common Machining Formulas

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

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

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

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

$$RPM = \frac{M/min \times 318.3}{D}$$

$$M/min = RPM \times D \times .00314$$

$$MMPM = RPM \times MMPT \times Z$$

$$MRR = RDOC \times ADOC \times MMPM$$

