

MS PLUS END MILLS

MP2MB - Inch sizes

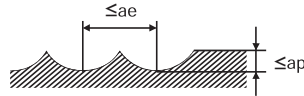
Ball nose, Medium cut length, 2 flute

CARBIDE

RECOMMENDED CUTTING CONDITIONS

| Work Material | | Mild Steel, Carbon Steel (180-280HB) Alloy Steel, Pre-hardened Steel, Precipitation Hardening Stainless Steel (<450HB) | | | | | | Austenitic Stainless Steel (≤200HB) Titanium Alloy | | | | | |
|---------------|--------------|--|---------------------|------------------------------------|---------------------|-------------------------------------|-------------------------------------|---|---------------------|------------------------------------|---------------------|-------------------------------------|-------------------------------------|
| DC (inch) | RE (inch) | $\alpha \leq 15^\circ$ | | $\alpha > 15^\circ$ | | Depth of cut ap (inch) | Depth of cut ae (inch) | $\alpha \leq 15^\circ$ | | $\alpha > 15^\circ$ | | Depth of cut ap (inch) | Depth of cut ae (inch) |
| | | Revolution (min ⁻¹) | Table feed (IPM) | Revolution (min ⁻¹) | Table feed (IPM) | | | Revolution (min ⁻¹) | Table feed (IPM) | Revolution (min ⁻¹) | Table feed (IPM) | | |
| 1/32 | 0.397 | 40000 | 189.0 | 40000 | 189.0 | .002 | .003 | 40000 | 157.5 | 40000 | 74.8 | .002 | .003 |
| 1/16 | 0.794 | 40000 | 255.9 | 40000 | 255.9 | .004 | .006 | 40000 | 255.9 | 32000 | 126.0 | .004 | .006 |
| 1/8 | 1.588 | 40000 | 295.3 | 40000 | 295.3 | .005 | .012 | 32000 | 236.2 | 22000 | 133.9 | .005 | .012 |
| 3/16 | 2.381 | 25000 | 236.2 | 25000 | 236.2 | .008 | .020 | 20000 | 212.6 | 13000 | 90.6 | .008 | .020 |
| 1/4 | 3.175 | 21000 | 228.3 | 21000 | 228.3 | .010 | .024 | 17000 | 185.0 | 10000 | 78.7 | .010 | .024 |
| 5/16 | 3.969 | 16000 | 177.2 | 16000 | 177.2 | .012 | .032 | 13000 | 141.7 | 8000 | 59.1 | .012 | .032 |
| 3/8 | 4.763 | 13000 | 141.7 | 13000 | 141.7 | .020 | .039 | 10000 | 114.2 | 6400 | 47.2 | .020 | .039 |
| 1/2 | 6.35 | 9000 | 98.4 | 9000 | 98.4 | .020 | .047 | 8500 | 90.6 | 5300 | 43.3 | .020 | .047 |

Depth of Cut

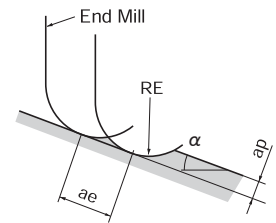


Note 1) α is the inclination angle of the machined surface.

Note 2) If the depth of cut is smaller, the revolution and the feed rate can be increased.

Note 3) If the rigidity of the work materials installation is very low, or chattering and noise are generated, reduce the revolution and the feed rate proportionately.

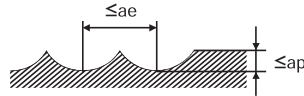
Note 4) Standard cutting conditions of austenitic stainless steel and titanium alloy, please reduce to 60% revolution and 45% feed rate. (Hardened steel (45–55HRC) table above)



SOLID END MILLS

| Work Material | | Hardened Steel (40-55HRC) | | | | | | Copper, Copper Alloy | | | | | |
|---------------|--------------|------------------------------------|---------------------|------------------------------------|---------------------|-------------------------------------|-------------------------------------|------------------------------------|---------------------|------------------------------------|---------------------|-------------------------------------|-------------------------------------|
| DC (inch) | RE (inch) | $\alpha \leq 15^\circ$ | | $\alpha > 15^\circ$ | | Depth of cut ap (inch) | Depth of cut ae (inch) | $\alpha \leq 15^\circ$ | | $\alpha > 15^\circ$ | | Depth of cut ap (inch) | Depth of cut ae (inch) |
| | | Revolution (min ⁻¹) | Table feed (IPM) | Revolution (min ⁻¹) | Table feed (IPM) | | | Revolution (min ⁻¹) | Table feed (IPM) | Revolution (min ⁻¹) | Table feed (IPM) | | |
| 1/32 | .397 | 40000 | 126.0 | 40000 | 59.8 | .002 | .003 | 40000 | 189.0 | 40000 | 189.0 | .002 | .003 |
| 1/16 | .794 | 40000 | 204.7 | 32000 | 100.8 | .004 | .006 | 40000 | 255.9 | 40000 | 255.9 | .004 | .006 |
| 1/8 | 1.588 | 32000 | 189.0 | 22000 | 107.1 | .005 | .012 | 40000 | 295.3 | 40000 | 295.3 | .005 | .012 |
| 3/16 | 2.381 | 20000 | 170.1 | 13000 | 72.5 | .008 | .020 | 25000 | 236.2 | 25000 | 236.2 | .008 | .020 |
| 1/4 | 3.175 | 17000 | 148.0 | 10000 | 63.0 | .010 | .024 | 21000 | 228.3 | 21000 | 228.3 | .010 | .024 |
| 5/16 | 3.969 | 13000 | 113.4 | 8000 | 47.3 | .012 | .032 | 16000 | 177.2 | 16000 | 177.2 | .012 | .032 |
| 3/8 | 4.763 | 10000 | 91.4 | 6400 | 37.8 | .020 | .039 | 13000 | 141.7 | 13000 | 141.7 | .020 | .039 |
| 1/2 | 6.35 | 8500 | 72.5 | 5300 | 34.6 | .020 | .047 | 9000 | 98.4 | 9000 | 98.4 | .020 | .047 |

Depth of Cut

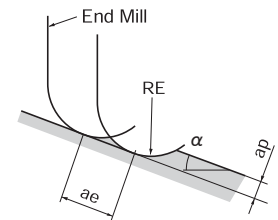


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Note 4) Standard cutting conditions of austenitic stainless steel and titanium alloy, please reduce to 60% revolution and 45% feed rate. (Hardened steel (45–55HRC) table above)



SQUARE

BALL

RADIUS

TAPER

BARREL

ROUGHING

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SOLID END MILLS