



Speeds and Feeds for **1021, 1023 and 1024** style end mills.

Solid carbide 3 flute finisher 38 deg. high helix uncoated. End Mills are made in the USA.

| Material | Hardness | | Feed Per Tooth | | | | | |
|-----------------------------------|----------|------------|----------------|-------|-------|-------|------|-------|
| | Bhn | SFM | 1/8" dia | 1/4" | 3/8" | 1/2" | 3/4" | 1" |
| Aluminum 2011,2024,6061,7075 | -- | 800 | .0016 | .0026 | .004 | .0055 | .007 | .009 |
| Free Machining 12L14, 1215,11L17 | 80-160 | 150 | .0006 | .0015 | .0022 | .004 | .005 | .0055 |
| Low Carbon Steel 1008, 1018, 1020 | * | * | | | | | | |
| Medium Carbon Steel 4140, 8620 | * | * | | | | | | |
| Tool Steel, H.S.S A2,D2,M2,M42 | * | * | | | | | | |
| Cast Iron | 120-175 | 200 | .0005 | .0014 | .002 | .0035 | .005 | .0052 |
| Stainless Steel 300 Series | -- | 130 | .0005 | .0013 | .0019 | .0033 | .004 | .0044 |
| Stainless Steel 400 Series | * | * | | | | | | |
| Stainless Steel 15-5, 17-4 | * | * | | | | | | |
| Titanium 6AL-4V | * | * | | | | | | |
| Inconel 625, 718 | * | * | | | | | | |
| Copper, Bronze | 120-160 | 450 | .0009 | .0018 | .0026 | .0045 | .006 | .0065 |
| Brass (360 half hard) | -- | 700 | .0013 | .0022 | .0038 | .005 | .007 | .009 |

Feed Per Tooth is based on.....

slotting depth of 1.0 x Cutting Diameter, for deeper slotting reduce feed and speed

profiling with Axial depth up to 2x Cutting Diameter and Radial Depth of .25 x Cutting Diameter, when profiling less than .25 cutting diameter increase feed and speed

1023 series have reduced shank, thus feed per tooth and SFM must be reduced. Reduction amount depends on how far you extend the tool past the collet.

6 guidelines for best cutting results

| | | |
|---------------------------------|-----------------------------|---------------------------------|
| keep overall gage length short | keep tool concentricity low | climb milling is generally best |
| workpiece rigidity is important | avoid double cutting chips | avoid thermal shock |

Note: Cutting speeds, feeds, and lubrication data are given as starting values only. Parameters should be varied to suite your particular conditions. MariTool is constantly improving products, tolerances, and reliability. As such, these speeds and feeds are subject to change without prior notice. Cutting tools may shatter and or produce dangerous fumes when being used. Appropriate protection is advised.

Rev B