MARITOOL

Speeds and Feeds for **1004** series end mills. Solid carbide 2 flute finisher 30 deg helix uncoated. Center cutting. End Mills are made in the USA.

Material	Hardness Bhn	SFM	1/8"dia	¼"	Feed Per Tooth 3/8"	½"	¾"	1"	
Aluminum 2011,2024,6061,7075	*	**430**	.0008	.0015	.0022	.0040	.0050	.0055	
Free Machining 12L14, 1215,11L17	80-150	**230**	.0006	.0015	.0022	.0040	.0050	.0055	
Low Carbon Steel 1008, 1018, 1020	125-175	**200**	.0006	.0014	.0020	.0030	.0040	.0045	
Medium Carbon Steel 4140, 8620	200-280	**160**	.0005	.0012	.0018	.0025	.0035	.0040	
Tool Steel, H.S.S A2,D2,M2,M42	300-400	**140**	.0004	.0010	.0016	.0022	.0032	.0035	
Cast Iron	120-175	**160**	.0005	.0014	.0020	.0035	.0050	.0052	
Stainless Steel 300 Series	160-200	**140**	.0005	.0014	.0020	.0035	.0050	.0052	
Stainless Steel 400 Series	180-260	**120**	.0004	.0013	.0018	.0032	.0045	.0046	
Stainless Steel 15-5, 17-4	160-200	**120**	.0005	.0015	.0020	.0035	.0050	.0052	
Titanium 6AL-4V	320-380	**110**	.0005	.0010	.0016	.0022	.0035	.0040	
Inconel 625, 718	280-320	**50**	.0002	.0006	.0014	.0018	.0028	.0032	
Copper, Bronze	120-160	**400**	.0006	.0015	.0022	.0040	.0050	.0055	
Brass (360 half hard)	*	**350**	.0008	.0015	.0022	.0040	.0050	.0055	

For 1/16 diameter tooling divide feed per tooth from 1/8 diameter column by 2.
For 1/32 diameter tooling divide feed per tooth from 1/8 diameter column by 4.

Feed Per Tooth is based on.....

S**lotting** depth of .4 x Cutting Diameter, for deeper slotting reduce feed and speed

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

When using long flute length finishers reduce SFM and Feed Per Tooth accordingly. Normally SFM only 10-20%, but Feed Per Tooth should be reduced 30-60%.

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.