HARVEY TOOL

Speeds & Feeds

Product Table: Diamond End Mills for Non-Ferrous Materials - CVD Diamond - Ball
Characteristics: 3x Length of Cut, 4 Flutes
Series: 7995xx, 7996xx, 9993xx, 9994xx

MATERIAL	SFM	Chip Load (IPT) By Cutter Diameter				Depth of Cut		Chip Load (IPT) By Cutter Diameter												Depth of Cut	
			.015	.031	.047	Radial	Axial	.062	.078	.093	.125	.187	.250	.312	.375	.500	.625	.750	1.000	Radial	Axial
ALUMINUM ALLOYS 0% - 5% Silicon (2xx, 3xx, 4xx, 5xx, 7xx, 8xx, A3xx, A4xx, B4xx, C3xx, 1xxx, 2xxx, 3xxx, 5xxx, 6xxx, 7xxx, 8xxx)	1500 - 3000	Roughing	.00018	.00036	.00055	.25 x Dia	1 x Dia	.00063	.00079	.00094	.00127	.00190	.00254	.00317	.00381	.00508	.00635	.00762	.01016	.50 x Dia	1 x Dia
		Finishing	.00014	.00029	.00044	.08 x Dia	3 x Dia	.00050	.00063	.00076	.00102	.00152	.00203	.00254	.00305	.00406	.00508	.00610	.00813	.15 x Dia	3 x Dia
5%-8% Silicon (3xx, A3xx, C3xx, 4xx, A4xx, B4xx, 4xxx)	1500 - 3000	Roughing	.00016	.00033	.00049	.25 x Dia	1 x Dia	.00057	.00071	.00085	.00114	.00171	.00229	.00285	.00343	.00457	.00572	.00686	.00914	.50 x Dia	1 x Dia
		Finishing	.00013	.00026	.00040	.08 x Dia	3 x Dia	.00045	.00057	.00068	.00091	.00137	.00183	.00228	.00274	.00366	.00457	.00549	.00732	.15 x Dia	3 x Dia
8%-12% Silicon (3xx, A3xx, C3xx, 4xx, A4xx, B4xx, 4xxx)	1100 - 2200	Roughing	.00013	.00027	.00041	.25 x Dia	1 x Dia	.00047	.00059	.00071	.00095	.00142	.00191	.00238	.00286	.00381	.00476	.00572	.00762	.50 x Dia	1 x Dia
		Finishing	.00011	.00022	.00033	.08 x Dia	3 x Dia	.00038	.00048	.00057	.00076	.00114	.00152	.00190	.00229	.00305	.00381	.00457	.00610	.15 x Dia	3 x Dia
12%-16% Silicon (3xx, A3xx, C3xx, 4xx, A4xx, B4xx)	750 - 1500	Roughing	.00011	.00022	.00033	.25 x Dia	1 x Dia	.00038	.00048	.00057	.00076	.00114	.00152	.00190	.00229	.00305	.00381	.00457	.00610	.50 x Dia	1 x Dia
		Finishing	.00008	.00017	.00026	.08 x Dia	3 x Dia	.00030	.00038	.00045	.00061	.00091	.00122	.00152	.00183	.00244	.00305	.00366	.00488	.15 x Dia	3 x Dia
MAGNESIUM ALLOYS	1500 - 3000	Roughing	.00018	.00036	.00055	.25 x Dia	1 x Dia	.00063	.00079	.00094	.00127	.00190	.00254	.00317	.00381	.00508	.00635	.00762	.01016	.50 x Dia	1 x Dia
ZINC ALLOYS		Finishing	.00014	.00029	.00044	.08 x Dia	3 x Dia	.00050	.00063	.00076	.00102	.00152	.00203	.00254	.00305	.00406	.00508	.00610	.00813	.15 x Dia	3 x Dia
COPPER ALLOYS High Coppers - 90%+ (C1xxxx) Phosphor Bronzes (Copper Tin alloys, C5xxxx) Copper Nickels, Nickel Silvers (Copper Nickel alloys, C7xxxx)	500 - 1000	Roughing	.00014	.00029	.00044	.25 x Dia	1 x Dia	.00050	.00063	.00076	.00102	.00152	.00203	.00254	.00305	.00406	.00508	.00610	.00813	.50 x Dia	1 x Dia
Brass (Copper Zinc alloys, C2xxxx, C3xxxx, C4xxxx, C66400-C69800) Aluminum Bronzes (Copper Aluminum alloys, C60600-C64200) Silicon Bronzes (Copper Silicon alloys, C64700-C66100) Cast Copper Alloys (C83300-C86200, C86400-C87900, C92200-C95800, C97300-C97800, C99400-C99700)	1100 - 2200	Finishing	.00011	.00023	.00035	.08 x Dia	3 x Dia	.00040	.00051	.00060	.00081	.00122	.00163	.00203	.00244	.00325	.00406	.00488	.00650	.15 x Dia	3 x Dia
PLASTICS 21% - 40% Filled or Fiber Reinforced	400 - 750	Roughing	.00015	.00031	.00047	.25 x Dia	1 x Dia	.00054	.00067	.00080	.00108	.00161	.00216	.00269	.00324	.00432	.00540	.00648	.00864	.50 x Dia	1 x Dia
		Finishing	.00012	.00025	.00037	.08 x Dia	3 x Dia	.00043	.00054	.00064	.00086	.00129	.00173	.00216	.00259	.00345	.00432	.00518	.00691	.15 x Dia	3 x Dia
GRAPHITE POCO 3	600 - 1200	Roughing	.00020	.00042	.00063	.30 x Dia	1.3 x Dia	.00072	.00091	.00109	.00146	.00218	.00292	.00365	.00438	.00584	.00730	.00876	.01168	.65 x Dia	1.3 x Dia
		Finishing	.00016	.00033	.00051	.10 x Dia	3 x Dia	.00058	.00073	.00087	.00117	.00175	.00234	.00292	.00351	.00467	.00584	.00701	.00935	.20 x Dia	3 x Dia
GREEN CARBIDE & GREEN CERAMICS	100 - 750	Roughing	.00018	.00038	.00058	.30 x Dia	1.3 x Dia	.00066	.00083	.00099	.00133	.00199	.00267	.00333	.00400	.00533	.00667	.00800	.01067	.65 x Dia	1.3 x Dia
		Finishing	.00015	.00030	.00046	.10 x Dia	3 x Dia	.00053	.00067	.00079	.00107	.00160	.00213	.00266	.00320	.00427	.00533	.00640	.00853	.20 x Dia	3 x Dia

Product Notes:

Due to Edge Rounding and Surface Texture inherent in CVD diamond, plastic materials and non-ferrous alloys should be closely supervised for galling and/or flute packing.

General Notes:

All posted speed and feed parameters are suggested starting values that may be increased given optimal setup conditions. In cases where starting parameters are not given, traditional carbide speeds & feeds may be substituted (diamond is not suited for ferrous materials or materials with low machinability).

If you require additional information, Harvey Tool has a team of technical experts available to assist you through even the most challenging applications.
Please contact us at **800-645-5609** or **Harveytech@harveyperformance.com**.