



Speeds & Feeds

Product Table: Diamond End Mills for Non-Ferrous Materials - CVD Diamond - Ball - Long Reach, Stub Flute

Characteristics: 7x Reach Multiple, 4 Flutes

Series: 7949xx, 7950xx

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	.00015	.00030	.00046	.30 x Dia	.32 x Dia	.00052	.00066	.00078	.00105	.00158	.00211	.00263	.00316	.00422	.00527	.00632	.00843	.57 x Dia	.32 x Dia
		Finishing	.00019	.00039	.00059	.42 x Dia	.73 x Dia	.00067	.00085	.00101	.00136	.00203	.00272	.00339	.00408	.00544	.00679	.00815	.01087	.42 x Dia	1.07
5%-8% Silicon (3xx, A3xx, C3xx, 4xx, A4xx, B4xx, 4xxx)	1500 - 3000	Roughing	.00013	.00027	.00041	.30 x Dia	.32 x Dia	.00047	.00059	.00071	.00095	.00142	.00190	.00237	.00285	.00379	.00474	.00569	.00759	.57 x Dia	.32 x Dia
		Finishing	.00017	.00035	.00053	.42 x Dia	.73 x Dia	.00061	.00076	.00091	.00122	.00183	.00245	.00305	.00367	.00489	.00612	.00734	.00978	.42 x Dia	1.07
8%-12% Silicon (3xx, A3xx, C3xx, 4xx, A4xx, B4xx, 4xxx)	1100 - 2200	Roughing	.00011	.00023	.00034	.30 x Dia	.32 x Dia	.00039	.00049	.00059	.00079	.00118	.00158	.00197	.00237	.00316	.00395	.00474	.00632	.57 x Dia	.32 x Dia
		Finishing	.00014	.00029	.00044	.42 x Dia	.73 x Dia	.00051	.00064	.00076	.00102	.00152	.00204	.00254	.00306	.00408	.00510	.00612	.00815	.42 x Dia	1.07
12%-16% Silicon (3xx, A3xx, C3xx, 4xx, A4xx, B4xx)	750 - 1500	Roughing	.00009	.00018	.00027	.30 x Dia	.32 x Dia	.00031	.00039	.00047	.00063	.00095	.00126	.00158	.00190	.00253	.00316	.00379	.00506	.57 x Dia	.32 x Dia
		Finishing	.00011	.00023	.00035	.42 x Dia	.73 x Dia	.00040	.00051	.00061	.00082	.00122	.00163	.00204	.00245	.00326	.00408	.00489	.00652	.42 x Dia	1.07
MAGNESIUM ALLOYS	1500 - 3000	Roughing	.00015	.00030	.00046	.30 x Dia	.32 x Dia	.00052	.00066	.00078	.00105	.00158	.00211	.00263	.00316	.00422	.00527	.00632	.00843	.57 x Dia	.32 x Dia
ZINC ALLOYS		Finishing	.00019	.00039	.00059	.42 x Dia	.73 x Dia	.00067	.00085	.00101	.00136	.00203	.00272	.00339	.00408	.00544	.00679	.00815	.01087	.42 x Dia	1.07
COPPER ALLOYS High Coppers - 90%+ (C1xxxx) Phosphor Bronzes (Copper Tin alloys, C5xxxx) Copper Nickels, Nickel Silvers (Copper Nickel alloys, C7xxxx)	500 - 1000	Roughing	.00012	.00024	.00036	.30 x Dia	.32 x Dia	.00042	.00053	.00063	.00084	.00126	.00169	.00210	.00253	.00337	.00422	.00506	.00675	.57 x Dia	.32 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	.00015	.00031	.00047	.42 x Dia	.73 x Dia	.00054	.00068	.00081	.00109	.00163	.00217	.00271	.00326	.00435	.00544	.00652	.00870	.42 x Dia	1.07
PLASTICS 21% - 40% Filled or Fiber Reinforced	400 - 750	Roughing	.00012	.00026	.00039	.30 x Dia	.32 x Dia	.00044	.00056	.00067	.00090	.00134	.00179	.00224	.00269	.00358	.00448	.00538	.00717	.57 x Dia	.32 x Dia
		Finishing	.00016	.00033	.00050	.42 x Dia	.73 x Dia	.00057	.00072	.00086	.00116	.00173	.00231	.00288	.00347	.00462	.00578	.00693	.00924	.42 x Dia	1.07
GRAPHITE POCO 3	600 - 1200	Roughing	.00017	.00035	.00052	.37 x Dia	.42 x Dia	.00060	.00076	.00090	.00121	.00181	.00242	.00303	.00364	.00485	.00606	.00727	.00970	.73 x Dia	.42 x Dia
		Finishing	.00022	.00045	.00068	.08 x Dia	1.5 x Dia	.00078	.00098	.00116	.00156	.00234	.00313	.00390	.00469	.00625	.00781	.00938	.01250	.15 x Dia	1.5 x Dia
GREEN CARBIDE & GREEN CERAMICS Unfired Materials	600 - 1200	Roughing	.00015	.00031	.00047	.31 x Dia	.36 x Dia	.00054	.00068	.00081	.00109	.00163	.00218	.00272	.00327	.00436	.00545	.00655	.00873	.63 x Dia	.36 x Dia
		Finishing	.00019	.00040	.00061	.09 x Dia	1.5 x Dia	.00070	.00088	.00105	.00141	.00210	.00281	.00351	.00422	.00563	.00703	.00844	.01125	.18 x Dia	1.5 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.