

Product Table: Diamond End Mills for Non-Ferrous Materials - CVD Diamond - Ball - Long Reach, Long Flute
Characteristics: 12x Reach Multiple, 5x Length of Cut, 4 Flutes
Series: 7178xx

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	.00008	.00016	.00025	.20 x Dia	.20 x Dia	.00028	.00036	.00043	.00057	.00085	.00114	.00143	.00171	.00229	.00286	.00343	.00457	.30 x Dia	.20 x Dia	
		Finishing	.00007	.00014	.00022	.03 x Dia	5 x Dia	.00025	.00032	.00038	.00051	.00076	.00102	.00127	.00152	.00203	.00254	.00305	.00406	.06 x Dia	5 x Dia	
5%-8% Silicon (3xx, A3xx, C3xx, 4xx, A4xx, B4xx, 4xxx)	1500 - 3000	Roughing	.00007	.00015	.00022	.20 x Dia	.20 x Dia	.00026	.00032	.00038	.00051	.00077	.00103	.00128	.00154	.00206	.00257	.00309	.00411	.30 x Dia	.20 x Dia	
		Finishing	.00006	.00013	.00020	.03 x Dia	5 x Dia	.00023	.00029	.00034	.00046	.00068	.00091	.00114	.00137	.00183	.00229	.00274	.00366	.06 x Dia	5 x Dia	
8%-12% Silicon (3xx, A3xx, C3xx, 4xx, A4xx, B4xx, 4xxx)	1100 - 2200	Roughing	.00006	.00012	.00019	.20 x Dia	.20 x Dia	.00021	.00027	.00032	.00043	.00064	.00086	.00107	.00129	.00171	.00214	.00257	.00343	.30 x Dia	.20 x Dia	
		Finishing	.00005	.00011	.00016	.03 x Dia	5 x Dia	.00019	.00024	.00028	.00038	.00057	.00076	.00095	.00114	.00152	.00191	.00229	.00305	.06 x Dia	5 x Dia	
12%-16% Silicon (3xx, A3xx, C3xx, 4xx, A4xx, B4xx)	750 - 1500	Roughing	.00005	.00010	.00015	.20 x Dia	.20 x Dia	.00017	.00021	.00026	.00034	.00051	.00069	.00086	.00103	.00137	.00171	.00206	.00274	.30 x Dia	.20 x Dia	
		Finishing	.00004	.00009	.00013	.03 x Dia	5 x Dia	.00015	.00019	.00023	.00030	.00046	.00061	.00076	.00091	.00122	.00152	.00183	.00244	.06 x Dia	5 x Dia	
MAGNESIUM ALLOYS	1500 - 3000	Roughing	.00008	.00016	.00025	.20 x Dia	.20 x Dia	.00028	.00036	.00043	.00057	.00085	.00114	.00143	.00171	.00229	.00286	.00343	.00457	.30 x Dia	.20 x Dia	
		Finishing	.00007	.00014	.00022	.03 x Dia	5 x Dia	.00025	.00032	.00038	.00051	.00076	.00102	.00127	.00152	.00203	.00254	.00305	.00406	.06 x Dia	5 x Dia	
ZINC ALLOYS																						
COPPER ALLOYS																						
High Coppers - 90%+ (C1xxxx) Phosphor Bronzes (Copper Tin alloys, C5xxxx) Copper Nickels, Nickel Silvers (Copper Nickel alloys, C7xxxx)	500 - 1000	Roughing	.00006	.00013	.00020	.20 x Dia	.20 x Dia	.00023	.00029	.00034	.00046	.00068	.00091	.00114	.00137	.00183	.00229	.00274	.00366	.30 x Dia	.20 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	.00006	.00012	.00018	.03 x Dia	5 x Dia	.00020	.00025	.00030	.00041	.00061	.00081	.00101	.00122	.00163	.00203	.00244	.00325	.06 x Dia	5 x Dia	
PLASTICS																						
21% - 40% Filled or Fiber Reinforced	400 - 750	Roughing	.00007	.00014	.00021	.20 x Dia	.20 x Dia	.00024	.00030	.00036	.00049	.00073	.00097	.00121	.00146	.00194	.00243	.00291	.00389	.30 x Dia	.20 x Dia	
		Finishing	.00006	.00012	.00019	.03 x Dia	5 x Dia	.00021	.00027	.00032	.00043	.00065	.00086	.00108	.00130	.00173	.00216	.00259	.00345	.06 x Dia	5 x Dia	
GRAPHITE																						
POCO 3	600 - 1200	Roughing	.00009	.00019	.00028	.25 x Dia	.20 x Dia	.00033	.00041	.00049	.00066	.00098	.00131	.00164	.00197	.00263	.00329	.00394	.00526	.45 x Dia	.25 x Dia	
		Finishing	.00008	.00017	.00025	.04 x Dia	5 x Dia	.00029	.00036	.00043	.00058	.00087	.00117	.00146	.00175	.00234	.00292	.00351	.00467	.08 x Dia	5 x Dia	
GREEN CARBIDE & GREEN CERAMICS																						
	100 - 750	Roughing	.00008	.00017	.00026	.25 x Dia	.20 x Dia	.00030	.00037	.00045	.00060	.00090	.00120	.00150	.00180	.00240	.00300	.00360	.00480	.45 x Dia	.25 x Dia	
		Finishing	.00007	.00015	.00023	.04 x Dia	5 x Dia	.00026	.00033	.00040	.00053	.00080	.00107	.00133	.00160	.00213	.00267	.00320	.00427	.08 x Dia	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.

WARNING: Cutting tools may shatter under improper use. Government regulations require use of safety glasses and other appropriate safety equipment in the vicinity of use.