



Speeds & Feeds

**Product Table:** Diamond End Mills for Non-Ferrous Materials - CVD Diamond - Corner Radius - Long Reach, Stub Flute  
**Characteristics:** 12x Reach Multiple, 4 Flutes  
**Series:** 622xx, 641xx, 659xx, 664xx

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	
<b>ALUMINUM ALLOYS</b> 0% - 5% Silicon (2xx, 3xx, 4xx, 5xx, 7xx, 8xx, A3xx, A4xx, B4xx, C3xx, 1xxx, 2xxx, 3xxx, 5xxx, 6xxx, 7xxx, 8xxx)	1500 - 3000	Roughing	.00011	.00022	.00033	.25 x Dia	.25 x Dia	.00038	.00048	.00057	.00076	.00114	.00152	.00190	.00229	.00305	.00381	.00457	.00610	.45 x Dia	.25 x Dia
		Finishing	.00016	.00033	.00049	.05 x Dia	1.5 x Dia	.00057	.00071	.00085	.00114	.00171	.00229	.00285	.00343	.00457	.00572	.00686	.00914	.10 x Dia	1.5 x Dia
5%-8% Silicon (3xx, A3xx, C3xx, 4xx, A4xx, B4xx, 4xxx)	1500 - 3000	Roughing	.00009	.00020	.00030	.25 x Dia	.25 x Dia	.00034	.00043	.00051	.00069	.00103	.00137	.00171	.00206	.00274	.00343	.00411	.00549	.45 x Dia	.25 x Dia
		Finishing	.00014	.00029	.00044	.05 x Dia	1.5 x Dia	.00051	.00064	.00077	.00103	.00154	.00206	.00257	.00309	.00411	.00514	.00617	.00823	.10 x Dia	1.5 x Dia
8%-12% Silicon (3xx, A3xx, C3xx, 4xx, A4xx, B4xx, 4xxx)	1100 - 2200	Roughing	.00008	.00016	.00025	.25 x Dia	.25 x Dia	.00028	.00036	.00043	.00057	.00085	.00114	.00143	.00171	.00229	.00286	.00343	.00457	.45 x Dia	.25 x Dia
		Finishing	.00012	.00024	.00037	.05 x Dia	1.5 x Dia	.00043	.00053	.00064	.00086	.00128	.00171	.00214	.00257	.00343	.00429	.00514	.00686	.10 x Dia	1.5 x Dia
12%-16% Silicon (3xx, A3xx, C3xx, 4xx, A4xx, B4xx)	750 - 1500	Roughing	.00006	.00013	.00020	.25 x Dia	.25 x Dia	.00023	.00029	.00034	.00046	.00068	.00091	.00114	.00137	.00183	.00229	.00274	.00366	.45 x Dia	.25 x Dia
		Finishing	.00009	.00020	.00030	.05 x Dia	1.5 x Dia	.00034	.00043	.00051	.00069	.00103	.00137	.00171	.00206	.00274	.00343	.00411	.00549	.10 x Dia	1.5 x Dia
<b>MAGNESIUM ALLOYS</b>	1500 - 3000	Roughing	.00011	.00022	.00033	.25 x Dia	.25 x Dia	.00038	.00048	.00057	.00076	.00114	.00152	.00190	.00229	.00305	.00381	.00457	.00610	.45 x Dia	.25 x Dia
Finishing		.00016	.00033	.00049	.05 x Dia	1.5 x Dia	.00057	.00071	.00085	.00114	.00171	.00229	.00285	.00343	.00457	.00572	.00686	.00914	.10 x Dia	1.5 x Dia	
<b>ZINC ALLOYS</b>	500 - 1000	Roughing	.00008	.00017	.00026	.25 x Dia	.25 x Dia	.00030	.00038	.00045	.00061	.00091	.00122	.00152	.00183	.00244	.00305	.00366	.00488	.45 x Dia	.25 x Dia
Finishing		.00013	.00026	.00040	.05 x Dia	1.5 x Dia	.00045	.00057	.00068	.00091	.00137	.00183	.00228	.00274	.00366	.00457	.00549	.00732	.10 x Dia	1.5 x Dia	
<b>COPPER ALLOYS</b> High Coppers - 90%+ (C1xxx) Phosphor Bronzes (Copper Tin alloys, C5xxx) Copper Nickels, Nickel Silvers (Copper Nickel alloys, C7xxx)	1100 - 2200	Roughing	.00008	.00017	.00026	.25 x Dia	.25 x Dia	.00030	.00038	.00045	.00061	.00091	.00122	.00152	.00183	.00244	.00305	.00366	.00488	.45 x Dia	.25 x Dia
Finishing		.00013	.00026	.00040	.05 x Dia	1.5 x Dia	.00045	.00057	.00068	.00091	.00137	.00183	.00228	.00274	.00366	.00457	.00549	.00732	.10 x Dia	1.5 x Dia	
Brass (Copper Zinc alloys, C2xxx, C3xxx, C4xxx, C66400-C69800) Aluminum Bronzes (Copper Aluminum alloys, C80600-C84200) Silicon Bronzes (Copper Silicon alloys, C64700-C66100) Cast Copper Alloys (C83300-C86200, C86400-C87900, C92200-C95800, C97300-C97800, C99400-C99700)	400 - 750	Roughing	.00009	.00018	.00028	.25 x Dia	.25 x Dia	.00032	.00040	.00048	.00065	.00097	.00130	.00162	.00194	.00259	.00324	.00389	.00518	.45 x Dia	.25 x Dia
Finishing		.00013	.00028	.00042	.05 x Dia	1.5 x Dia	.00048	.00061	.00072	.00097	.00145	.00194	.00242	.00291	.00389	.00486	.00583	.00777	.10 x Dia	1.5 x Dia	
<b>PLASTICS</b> 21% - 40% Filled or Fiber Reinforced	600 - 1200	Roughing	.00012	.00025	.00038	.30 x Dia	.30 x Dia	.00043	.00055	.00065	.00088	.00131	.00175	.00219	.00263	.00351	.00438	.00526	.00701	.60 x Dia	.30 x Dia
Finishing		.00018	.00037	.00057	.06 x Dia	1.5 x Dia	.00065	.00082	.00098	.00131	.00197	.00263	.00328	.00394	.00526	.00657	.00789	.01052	.13 x Dia	1.5 x Dia	
<b>GRAPHITE</b> POCO 3	100 - 750	Roughing	.00011	.00023	.00035	.30 x Dia	.30 x Dia	.00040	.00050	.00060	.00080	.00120	.00160	.00200	.00240	.00320	.00400	.00480	.00640	.60 x Dia	.30 x Dia
Finishing		.00017	.00034	.00052	.06 x Dia	1.5 x Dia	.00060	.00075	.00089	.00120	.00180	.00240	.00300	.00360	.00480	.00600	.00720	.00960	.13 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**.

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.