



Speeds & Feeds

**Product Table:** Variable Helix End Mills for Aluminum Alloys - Square - Long Reach, Stub Flute  
**Characteristics:** 6x Reach Multiple  
**Series:** 8141xx, 8141xx, 8141xx-C8, 8142xx-C8

Cutter Series	MATERIAL	SFM	Chip Load (IPT) By Cutter Diameter											Depth of Cut			
			0.015	0.031	0.047	0.062	0.078	0.093	0.125	0.187	0.250	0.312	0.375	0.500	Radial	Axial	
Uncoated	<b>ALUMINUM ALLOYS</b>																
	Casting (2xx, 5xx, 7xx, 8xx)	750	Slotting	.00019	.00038	.00058	.00077	.00097	.00115	.00155	.00232	.00310	.00406	.00489	.00651	1x Dia	.4x Dia
	Wrought (1xxx, 2xxx, 3xxx, 5xxx, 6xxx, 7xxx, 8xxx)	1000	Roughing	.00022	.00045	.00068	.00090	.00113	.00135	.00181	.00271	.00362	.00474	.00570	.00760	4x Dia	.5x - 1x Dia
	<b>MAGNESIUM ALLOYS</b>	1500	Finishing	.00023	.00048	.00073	.00096	.00121	.00144	.00194	.00290	.00388	.00508	.00611	.00814	.1x Dia	.5x - 1x Dia
	<b>ZINC ALLOYS</b>	800	Max	.00025	.00051	.00078	.00103	.00129	.00154	.00207	.00309	.00414	.00542	.00651	.00869	-	-
	<b>COPPER ALLOYS</b>																
	High Coppers - 90%+ (C1xxxx)	225	Slotting	.00015	.00031	.00047	.00062	.00077	.00092	.00124	.00186	.00248	.00325	.00391	.00521	1x Dia	.4x Dia
	Brass (Copper Zinc alloys, C2xxxx, C3xxxx, C4xxxx, C66400-C69800)	500	Roughing	.00017	.00036	.00054	.00072	.00090	.00108	.00145	.00217	.00290	.00379	.00456	.00608	4x Dia	.5x - 1x Dia
	Phosphor Bronzes (Copper Tin alloys, C5xxxx)	225		.00019	.00038	.00058	.00077	.00097	.00115	.00155	.00232	.00310	.00406	.00489	.00651	.1x Dia	.5x - 1x Dia
	Aluminum Bronzes (Copper Aluminum alloys, C60600-C64200)	500		.00020	.00041	.00062	.00082	.00103	.00123	.00165	.00247	.00331	.00434	.00521	.00695	-	-
Silicon Bronzes (Copper Silicon alloys, C64700-C66100)	500	Finishing															
Copper Nickels, Nickel Silvers (Copper Nickel alloys, C7xxxx)	225	Max															
Cast Copper Alloys (C83300-C86200, C86400-C87900, C92200-C95800, C97300-C97800, C99400-C99700)	550																
TiB2	<b>ALUMINUM ALLOYS</b>																
	Casting (2xx, 5xx, 7xx, 8xx)	1000	Slotting	.00024	.00050	.00076	.00100	.00126	.00150	.00202	.00302	.00403	.00528	.00635	.00847	1x Dia	.4x Dia
	Wrought (1xxx, 2xxx, 3xxx, 5xxx, 6xxx, 7xxx, 8xxx)	1400	Roughing	.00028	.00058	.00088	.00117	.00147	.00175	.00235	.00352	.00470	.00617	.00741	.00988	4x Dia	.5x - 1x Dia
	<b>MAGNESIUM ALLOYS</b>	2000	Finishing	.00030	.00063	.00095	.00125	.00157	.00188	.00252	.00377	.00504	.00661	.00794	.01059	.1x Dia	.5x - 1x Dia
<b>ZINC ALLOYS</b>	1100	Max	.00032	.00067	.00101	.00133	.00168	.00200	.00269	.00402	.00538	.00705	.00847	.01129			
Amorphous Diamond	<b>ALUMINUM (High Silicon)</b>																
	Casting - 3%-5% Si (3xx, A3xx, C3xx, 4xx, A4xx, B4xx)	2500	Slotting	.00020	.00042	.00064	.00085	.00106	.00127	.00171	.00255	.00341	.00447	.00537	.00717	1x Dia	.3x Dia
	Casting - 5%-8% Si (3xx, A3xx, C3xx, 4xx, A4xx, B4xx)	2000	Roughing	.00024	.00049	.00075	.00099	.00124	.00148	.00199	.00298	.00398	.00522	.00627	.00836	.3x Dia	.3x - .8x Dia
	Casting - 8%-12% Si (3xx, A3xx, C3xx, 4xx, A4xx, B4xx)	1500		.00026	.00053	.00080	.00106	.00133	.00159	.00213	.00319	.00427	.00559	.00672	.00896	.1x Dia	.5x - 1x Dia
	Casting - 12%-16% Si (3xx, A3xx, C3xx, 4xx, A4xx, B4xx)	1000	Finishing														
	Wrought - 5%-8% Si (4xxx)	2200	Max	.00027	.00056	.00086	.00113	.00142	.00169	.00227	.00340	.00455	.00596	.00717	.00955	-	-
	Wrought - 8%-12% Si (4xxx)	1700															
	<b>COPPER ALLOYS</b>																
	High Coppers - 90%+ (C1xxxx)	800	Slotting	.00016	.00034	.00051	.00068	.00085	.00102	.00136	.00204	.00273	.00358	.00430	.00573	1x Dia	.3x Dia
	Brass (Copper Zinc alloys, C2xxxx, C3xxxx, C4xxxx, C66400-C69800)	1500		.00019	.00039	.00060	.00079	.00099	.00118	.00159	.00238	.00318	.00417	.00502	.00669	.3x Dia	.3x - .8x Dia
Phosphor Bronzes (Copper Tin alloys, C5xxxx)	800	Roughing	.00020	.00042	.00064	.00085	.00106	.00127	.00171	.00255	.00341	.00447	.00537	.00717	.1x Dia	.5x - 1x Dia	
Aluminum Bronzes (Copper Aluminum alloys, C60600-C64200)	1000																
Silicon Bronzes (Copper Silicon alloys, C64700-C66100)	1000		Finishing														
Copper Nickels, Nickel Silvers (Copper Nickel alloys, C7xxxx)	800	Max															
Cast Copper Alloys (C80100-C82800, C86300, C90200-C91700, C96200-C96600, C99300)	150		.00022	.00045	.00068	.00090	.00114	.00135	.00182	.00272	.00364	.00477	.00573	.00764	-	-	
Cast Copper Alloys (C83300-C86200, C86400-C87900, C92200-C95800, C97300-C97800, C99400-C99700)	750																

**Please note:**

All posted speed and feed parameters are suggested starting values that may be increased given optimal setup conditions. If less than minimum Axial or Radial DOC values are used, increased feed rates are possible. If greater than maximum Axial or Radial DOC values are used, decreased feed rates may be needed.

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](mailto: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.