



Speeds & Feeds

**Product Table:** Chamfer Cutters - Pointed & Flat End

**Characteristics:** 3 Flutes

**Series:** 184xx, 185xx, 485xx, 7902xx, 7909xx, 8377xx, 8638xx, 8688xx, 8718xx, 8995xx, 9686xx, 9770xx, 9781xx, 9812xx

**Product notes:**

Due to a varying diameter, an Effective Cutter Diameter is needed for Chip Load selection and RPM calculation:  
 Effective Cutter Diameter = (Major Diameter + Minor Diameter)/2.  
 Or consider the actual diameter along the angle that is engaged with the workpiece.

Depth of Cut is shown as number of Passes with each pass resulting in a descending stepover

Chip Loads are given 3 ways:

Traditional Edge Break of .010"-.015"

Full Chamfer engagement for cutters with angles GREATER than or equal to 25° per side (50° included)

Full Chamfer engagement for cutters with angles LESS than 25° per side (50° included)

Chip Loads within table pertain to machining on one side of workpiece.

For machining on two sides, reduce Chip Loads to 60%-80% depending on contact length and finish

For vertical plunging, reduce Chip Loads to 40%-50% depending on finish

**General notes:**

All posted speed and feed parameters are suggested starting values that may be increased given optimal setup conditions. Chip loads reflect uncoated cutters and may be increased 10%-20% if coated. For ferrous materials with hardness ≤ 28 Rc, chip loads can be increased 10%-20%.

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.

MATERIAL	Hardness: ≤ 28 Rc (≤ 271 HBn)											Depth of Cut Passes			
	SFM	Chip Load (IPT) By Effective Cutter Diameter													
		0.015	0.031	0.047	0.062	0.078	0.093	0.125	0.187	0.250	0.312		0.375	0.500	
<b>ALUMINUM ALLOYS</b>	Edge Break	.00020	.00042	.00063	.00084	.00105	.00126	.00169	.00252	.00338	.00421	.00506	.00675	1	
Castings (2xx, 5xx, 7xx, 8xx)	750	Full Chamfer (≥ 25°)	.00017	.00035	.00053	.00070	.00088	.00105	.00141	.00210	.00281	.00351	.00422	.00563	2
Wrought (1xxx, 2xxx, 3xxx, 5xxx, 6xxx, 7xxx, 8xxx)	1000	Full Chamfer (< 25°)	.00013	.00026	.00040	.00052	.00066	.00078	.00105	.00158	.00211	.00263	.00316	.00422	3
Castings - 3%-5% Si (3xx, A3xx, C3xx, 4xx, A4xx, B4xx)	750	Edge Break	.00018	.00038	.00057	.00075	.00095	.00113	.00152	.00227	.00304	.00379	.00456	.00608	1
Castings - 5%-8% Si (3xx, A3xx, C3xx, 4xx, A4xx, B4xx)	700	Full Chamfer (≥ 25°)	.00015	.00031	.00048	.00063	.00079	.00094	.00127	.00189	.00253	.00316	.00380	.00506	2
Castings - 8%-12% Si (3xx, A3xx, C3xx, 4xx, A4xx, B4xx)	650	Full Chamfer (< 25°)	.00011	.00024	.00036	.00047	.00059	.00071	.00095	.00142	.00190	.00237	.00285	.00380	3
Wrought - 5%-8% Si (4xxx)	1000	Full Chamfer (< 25°)	.00011	.00024	.00036	.00047	.00059	.00071	.00095	.00142	.00190	.00237	.00285	.00380	3
Wrought - 8%-12% Si (4xxx)	800	Full Chamfer (< 25°)	.00011	.00024	.00036	.00047	.00059	.00071	.00095	.00142	.00190	.00237	.00285	.00380	3
<b>MAGNESIUM ALLOYS</b>	1500	Edge Break	.00020	.00042	.00063	.00084	.00105	.00126	.00169	.00252	.00338	.00421	.00506	.00675	1
		Full Chamfer (≥ 25°)	.00017	.00035	.00053	.00070	.00088	.00105	.00141	.00210	.00281	.00351	.00422	.00563	2
<b>ZINC ALLOYS</b>	800	Full Chamfer (< 25°)	.00013	.00026	.00040	.00052	.00066	.00078	.00105	.00158	.00211	.00263	.00316	.00422	3
<b>COPPER ALLOYS</b>															
High Coppers - 90%+ (C1xxxx)	225	Edge Break	.00016	.00033	.00051	.00067	.00084	.00100	.00135	.00202	.00270	.00337	.00405	.00540	1
Brass (Copper Zinc alloys, C2xxxx, C3xxxx, C4xxxx, C66400-C69800)	500	Edge Break	.00016	.00033	.00051	.00067	.00084	.00100	.00135	.00202	.00270	.00337	.00405	.00540	1
Phosphor Bronzes (Copper Tin alloys, C5xxxx)	225	Edge Break	.00016	.00033	.00051	.00067	.00084	.00100	.00135	.00202	.00270	.00337	.00405	.00540	1
Aluminum Bronzes (Copper Aluminum alloys, C60600-C64200)	500	Full Chamfer (≥ 25°)	.00014	.00028	.00042	.00056	.00070	.00084	.00113	.00168	.00225	.00281	.00338	.00450	2
Silicon Bronzes (Copper Silicon alloys, C64700-C66100)	500	Full Chamfer (≥ 25°)	.00014	.00028	.00042	.00056	.00070	.00084	.00113	.00168	.00225	.00281	.00338	.00450	2
Copper Nickels, Nickel Silvers (Copper Nickel alloys, C7xxxx)	225	Full Chamfer (< 25°)	.00010	.00021	.00032	.00042	.00053	.00063	.00084	.00126	.00169	.00211	.00253	.00338	3
Cast Copper Alloys (C83300-C86200, C86400-C87900, C92200-C95800, C97300-C97800, C98400-C99700)	550	Full Chamfer (< 25°)	.00010	.00021	.00032	.00042	.00053	.00063	.00084	.00126	.00169	.00211	.00253	.00338	3

MATERIAL	Hardness: 29-37 Rc (279-344 HBn)											Depth of Cut Passes			
	SFM	Chip Load (IPT) By Effective Cutter Diameter													
		0.015	0.031	0.047	0.062	0.078	0.093	0.125	0.187	0.250	0.312		0.375	0.500	
<b>CARBON STEELS</b>	Edge Break	.00008	.00016	.00024	.00032	.00040	.00047	.00064	.00095	.00128	.00159	.00191	.00255	1	
Free-Machining/Low Carbon steels, 10xx - 1029 & all 10Lxx, 11xx - 1139 & all 11Lxx, 12xx - 1215 & all 12Lxx	600	Full Chamfer (≥ 25°)	.00006	.00013	.00020	.00026	.00033	.00040	.00053	.00080	.00106	.00133	.00159	.00213	3
		Full Chamfer (< 25°)	.00005	.00010	.00015	.00020	.00025	.00030	.00040	.00060	.00080	.00100	.00120	.00159	4
1030 - 1095, 1140 - 1151, 13xx, 15xx, 2xxx, 3xxx, 4xxx & 4xLxx, 5xxx & 5xLxx, 50xxx & 50Lxx, 51xxx & 51Lxx, 52xxx & 52Lxx, 6xxx, 8xxx, 9xxx	200	Edge Break	.00007	.00014	.00022	.00029	.00036	.00043	.00058	.00087	.00117	.00146	.00175	.00233	1
		Full Chamfer (≥ 25°)	.00006	.00012	.00018	.00024	.00030	.00036	.00049	.00073	.00097	.00121	.00146	.00194	3
		Full Chamfer (< 25°)	.00004	.00009	.00014	.00018	.00023	.00027	.00036	.00055	.00073	.00091	.00109	.00146	4
<b>STAINLESS STEELS</b>	Edge Break	.00008	.00016	.00024	.00032	.00040	.00047	.00064	.00095	.00128	.00159	.00191	.00255	1	
203 EZ, 303 (all types), 416, 416Se, 416 Plus X, 420F, 420FSe, 430F, 430FSe, 440F, 440FSe	450	Full Chamfer (≥ 25°)	.00006	.00013	.00020	.00026	.00033	.00040	.00053	.00080	.00106	.00133	.00159	.00213	3
		Full Chamfer (< 25°)	.00005	.00010	.00015	.00020	.00025	.00030	.00040	.00060	.00080	.00100	.00120	.00159	4
201, 202, 203, 205, 301, 302, 304, 304L, 308, 309, 310, 314, 316, 316L, 317, 321, 329, 330, 347, 348, 385, 403, 405, 409, 410, 413, 420, 429, 430, 434, 436, 442, 446, 501, 502	200	Edge Break	.00007	.00014	.00022	.00029	.00036	.00043	.00058	.00087	.00117	.00146	.00175	.00233	1
		Full Chamfer (≥ 25°)	.00006	.00012	.00018	.00024	.00030	.00036	.00049	.00073	.00097	.00121	.00146	.00194	3
		Full Chamfer (< 25°)	.00004	.00009	.00014	.00018	.00023	.00027	.00036	.00055	.00073	.00091	.00109	.00146	4
414, 431, 440A, 440B, 440C, 13-8, 15-5, 15-7, 17-4, 17-7	150	Edge Break	.00004	.00009	.00014	.00018	.00023	.00027	.00036	.00055	.00073	.00091	.00109	.00146	1
		Full Chamfer (≥ 25°)	.00004	.00008	.00011	.00015	.00019	.00023	.00030	.00045	.00061	.00076	.00091	.00122	3
		Full Chamfer (< 25°)	.00003	.00006	.00009	.00011	.00014	.00017	.00023	.00034	.00046	.00057	.00068	.00091	4
<b>TOOL STEELS</b>	Edge Break	.00007	.00014	.00022	.00029	.00036	.00043	.00058	.00087	.00117	.00146	.00175	.00233	1	
A, L, O, P, W series	200	Full Chamfer (≥ 25°)	.00006	.00012	.00018	.00024	.00030	.00036	.00049	.00073	.00097	.00121	.00146	.00194	3
		Full Chamfer (< 25°)	.00004	.00009	.00014	.00018	.00023	.00027	.00036	.00055	.00073	.00091	.00109	.00146	4
D, H, M, T, S series	150	Edge Break	.00004	.00009	.00014	.00018	.00023	.00027	.00036	.00055	.00073	.00091	.00109	.00146	1
		Full Chamfer (≥ 25°)	.00004	.00008	.00011	.00015	.00019	.00023	.00030	.00045	.00061	.00076	.00091	.00122	3
		Full Chamfer (< 25°)	.00003	.00006	.00009	.00011	.00014	.00017	.00023	.00034	.00046	.00057	.00068	.00091	4
<b>TITANIUM ALLOYS</b>	Edge Break	.00004	.00009	.00014	.00018	.00023	.00027	.00036	.00055	.00073	.00091	.00109	.00146	1	
	150	Full Chamfer (≥ 25°)	.00004	.00008	.00011	.00015	.00019	.00023	.00030	.00045	.00061	.00076	.00091	.00122	3
		Full Chamfer (< 25°)	.00003	.00006	.00009	.00011	.00014	.00017	.00023	.00034	.00046	.00057	.00068	.00091	4
<b>HIGH TEMP ALLOYS</b>	Edge Break	.00004	.00009	.00014	.00018	.00023	.00027	.00036	.00055	.00073	.00091	.00109	.00146	1	
Inconel, Hastelloy, Waspalloy, Monel, Nimonic, Haynes, Discoloy, Incoloy	70	Full Chamfer (≥ 25°)	.00004	.00008	.00011	.00015	.00019	.00023	.00030	.00045	.00061	.00076	.00091	.00122	3
		Full Chamfer (< 25°)	.00003	.00006	.00009	.00011	.00014	.00017	.00023	.00034	.00046	.00057	.00068	.00091	4

MATERIAL	Hardness: 38-45 Rc (353-421 HBn)											Depth of Cut Passes			
	SFM	Chip Load (IPT) By Effective Cutter Diameter													
		0.015	0.031	0.047	0.062	0.078	0.093	0.125	0.187	0.250	0.312		0.375	0.500	
	Edge Break	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Full Chamfer (≥ 25°)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Full Chamfer (< 25°)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Edge Break	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Full Chamfer (≥ 25°)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Full Chamfer (< 25°)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Edge Break	.00007	.00014	.00022	.00029	.00036	.00043	.00058	.00087	.00117	.00146	.00175	.00233	1	
	Full Chamfer (≥ 25°)	.00006	.00012	.00018	.00024	.00030	.00036	.00049	.00073	.00097	.00121	.00146	.00194	4	
	Full Chamfer (< 25°)	.00004	.00009	.00014	.00018	.00023	.00027	.00036	.00055	.00073	.00091	.00109	.00146	5	
	Edge Break	.00004	.00009	.00014	.00018	.00023	.00027	.00036	.00055	.00073	.00091	.00109	.00146	1	
	Full Chamfer (≥ 25°)	.00004	.00008	.00011	.00015	.00019	.00023	.00030	.00045	.00061	.00076	.00091	.00122	4	
	Full Chamfer (< 25°)	.00003	.00006	.00009	.000										