



Speeds & Feeds

**Product Table:** Chamfer Cutters - Pointed & Flat End - Helical Flutes  
**Characteristics:** 5 Flutes, Type III  
**Series:** 7139xx, 7140xx, 7736xx

**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 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

MATERIAL	Hardness: ≤ 28 Rc (≤ 271 HBn)												Depth of Cut Passes	
	SFM	Chip Load (IPT) By Effective Cutter Diameter												
		0.062	0.078	0.093	0.125	0.187	0.250	0.312	0.375	0.500	0.625	0.750		1.000
<b>ALUMINUM ALLOYS</b>														
Edge Break	.00075	.00094	.00112	.00151	.00226	.00302	.00377	.00453	.00604	.00755	.00906	.01208	1	
750 Full Chamfer (≥ 25°)	.00062	.00078	.00094	.00126	.00188	.00252	.00314	.00377	.00503	.00629	.00755	.01006	2	
1000 Full Chamfer (< 25°)	.00047	.00059	.00070	.00094	.00141	.00189	.00235	.00283	.00377	.00472	.00566	.00755	3	
Wrought (1xxx, 2xxx, 3xxx, 5xxx, 6xxx, 7xxx, 8xxx)														
750 Edge Break	.00067	.00085	.00101	.00136	.00203	.00272	.00339	.00408	.00543	.00679	.00815	.01087	1	
700 Casting - 3%-5% Si (3xx, A3xx, C3xx, 4xx, A4xx, B4xx)														
700 Casting - 5%-8% Si (3xx, A3xx, C3xx, 4xx, A4xx, B4xx)														
650 Casting - 8%-12% Si (3xx, A3xx, C3xx, 4xx, A4xx, B4xx)	.00056	.00071	.00084	.00113	.00169	.00226	.00283	.00340	.00453	.00566	.00679	.00906	2	
475 Casting - 12%-16% Si (3xx, A3xx, C3xx, 4xx, A4xx, B4xx)														
1000 Wrought - 5%-8% Si (4xxx)	.00042	.00053	.00063	.00085	.00127	.00170	.00212	.00255	.00340	.00425	.00509	.00679	3	
800 Wrought - 8%-12% Si (4xxx)														
<b>MAGNESIUM ALLOYS</b>	1500 Edge Break	.00075	.00094	.00112	.00151	.00226	.00302	.00377	.00453	.00604	.00755	.00906	.01208	1
800 Full Chamfer (≥ 25°)	.00062	.00078	.00094	.00126	.00188	.00252	.00314	.00377	.00503	.00629	.00755	.01006	2	
<b>ZINC ALLOYS</b>	800 Full Chamfer (< 25°)	.00047	.00059	.00070	.00094	.00141	.00189	.00235	.00283	.00377	.00472	.00566	.00755	3
<b>COPPER ALLOYS</b>														
225 High Coppers - 90%+ (C1xxx)	Edge Break	.00060	.00075	.00090	.00121	.00181	.00242	.00301	.00362	.00483	.00604	.00725	.00966	1
500 Brass (Copper Zinc alloys, C2xxx, C3xxx, C4xxx, C6400-C69800)														
225 Phosphor Bronzes (Copper Tin alloys, C5xxx)														
500 Aluminum Bronzes (Copper Aluminum alloys, C60600-C64200)	Full Chamfer (≥ 25°)	.00050	.00063	.00075	.00101	.00151	.00201	.00251	.00302	.00403	.00503	.00604	.00805	2
500 Silicon Bronzes (Copper Silicon alloys, C64700-C66100)														
225 Copper Nickels, Nickel Silvers (Copper Nickel alloys, C7xxx)														
550 Cast Copper Alloys (C83300-C86200, C86400-C87900, C92200-C95800, C97300-C97800, C99400-C99700)	Full Chamfer (< 25°)	.00037	.00047	.00056	.00075	.00113	.00151	.00188	.00226	.00302	.00377	.00453	.00604	3

MATERIAL	Hardness: 29-37 Rc (279-344 HBn)												Depth of Cut Passes	
	SFM	Chip Load (IPT) By Effective Cutter Diameter												
		0.062	0.078	0.093	0.125	0.187	0.250	0.312	0.375	0.500	0.625	0.750		1.000
<b>CARBON STEELS</b>														
Edge Break	.00028	.00036	.00042	.00057	.00085	.00114	.00142	.00171	.00228	.00285	.00342	.00456	1	
600 Free-Machining/Low Carbon steels, 10xx - 1029 & all 10Lxx, 11xx - 1139 & all 11Lxx, 12xx - 1215 & all 12Lxx	Full Chamfer (≥ 25°)	.00024	.00030	.00035	.00048	.00071	.00095	.00119	.00143	.00190	.00238	.00285	.00380	3
Full Chamfer (< 25°)	.00018	.00022	.00027	.00036	.00053	.00071	.00089	.00107	.00143	.00178	.00214	.00285	4	
200 1030 - 1095, 1140 - 1151, 13xx, 15xx, 20xx, 30xx, 40xx & 4xLxx, 50xx & 5xLxx, 50xxx & 50Lxxx, 51xxx & 51Lxxx, 52xxx & 52Lxxx, 60xx, 80xx, 90xx	Edge Break	.00026	.00033	.00039	.00052	.00078	.00104	.00130	.00156	.00209	.00261	.00313	.00417	1
Full Chamfer (≥ 25°)	.00022	.00027	.00032	.00043	.00065	.00087	.00109	.00130	.00174	.00217	.00261	.00348	3	
Full Chamfer (< 25°)	.00016	.00020	.00024	.00033	.00049	.00065	.00081	.00098	.00130	.00163	.00196	.00261	4	
<b>STAINLESS STEELS</b>														
450 203 EZ, 303 (all types), 416, 416Se, 416 Plus X, 420F, 420FSe, 430F, 430FSe, 440F, 440FSe	Edge Break	.00028	.00036	.00042	.00057	.00085	.00114	.00142	.00171	.00228	.00285	.00342	.00456	1
Full Chamfer (≥ 25°)	.00024	.00030	.00035	.00048	.00071	.00095	.00119	.00143	.00190	.00238	.00285	.00380	3	
Full Chamfer (< 25°)	.00018	.00022	.00027	.00036	.00053	.00071	.00089	.00107	.00143	.00178	.00214	.00285	4	
200 201, 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	Edge Break	.00026	.00033	.00039	.00052	.00078	.00104	.00130	.00156	.00209	.00261	.00313	.00417	1
Full Chamfer (≥ 25°)	.00022	.00027	.00032	.00043	.00065	.00087	.00109	.00130	.00174	.00217	.00261	.00348	3	
Full Chamfer (< 25°)	.00016	.00020	.00024	.00033	.00049	.00065	.00081	.00098	.00130	.00163	.00196	.00261	4	
150 414, 431, 440A, 440B, 440C, 13-8, 15-5, 15-7, 17-4, 17-7	Edge Break	.00016	.00020	.00024	.00033	.00049	.00065	.00081	.00098	.00130	.00163	.00196	.00261	1
Full Chamfer (≥ 25°)	.00013	.00017	.00020	.00027	.00041	.00054	.00068	.00082	.00109	.00136	.00163	.00217	3	
Full Chamfer (< 25°)	.00010	.00013	.00015	.00020	.00030	.00041	.00051	.00061	.00082	.00102	.00122	.00163	4	
<b>TOOL STEELS</b>														
200 A, L, O, P, W series	Edge Break	.00026	.00033	.00039	.00052	.00078	.00104	.00130	.00156	.00209	.00261	.00313	.00417	1
Full Chamfer (≥ 25°)	.00022	.00027	.00032	.00043	.00065	.00087	.00109	.00130	.00174	.00217	.00261	.00348	3	
Full Chamfer (< 25°)	.00016	.00020	.00024	.00033	.00049	.00065	.00081	.00098	.00130	.00163	.00196	.00261	4	
150 D, H, M, T, S series	Edge Break	.00016	.00020	.00024	.00033	.00049	.00065	.00081	.00098	.00130	.00163	.00196	.00261	1
Full Chamfer (≥ 25°)	.00013	.00017	.00020	.00027	.00041	.00054	.00068	.00082	.00109	.00136	.00163	.00217	3	
Full Chamfer (< 25°)	.00010	.00013	.00015	.00020	.00030	.00041	.00051	.00061	.00082	.00102	.00122	.00163	4	
<b>TITANIUM ALLOYS</b>														
150 Edge Break	.00016	.00020	.00024	.00033	.00049	.00065	.00081	.00098	.00130	.00163	.00196	.00261	1	
Full Chamfer (≥ 25°)	.00013	.00017	.00020	.00027	.00041	.00054	.00068	.00082	.00109	.00136	.00163	.00217	3	
Full Chamfer (< 25°)	.00010	.00013	.00015	.00020	.00030	.00041	.00051	.00061	.00082	.00102	.00122	.00163	4	
<b>HIGH TEMP ALLOYS</b>														
70 Edge Break	.00016	.00020	.00024	.00033	.00049	.00065	.00081	.00098	.00130	.00163	.00196	.00261	1	
Full Chamfer (≥ 25°)	.00013	.00017	.00020	.00027	.00041	.00054	.00068	.00082	.00109	.00136	.00163	.00217	3	
Full Chamfer (< 25°)	.00010	.00013	.00015	.00020	.00030	.00041	.00051	.00061	.00082	.00102	.00122	.00163	4	

MATERIAL	Hardness: 38-45 Rc (353-421 HBn)												Depth of Cut Passes	
	SFM	Chip Load (IPT) By Effective Cutter Diameter												
		0.062	0.078	0.093	0.125	0.187	0.250	0.312	0.375	0.500	0.625	0.750		1.000
-	Edge Break	-	-	-	-	-	-	-	-	-	-	-	-	
-	Full Chamfer (≥ 25°)	-	-	-	-	-	-	-	-	-	-	-	-	
-	Full Chamfer (< 25°)	-	-	-	-	-	-	-	-	-	-	-	-	
-	Edge Break	-	-	-	-	-	-	-	-	-	-	-	-	
-	Full Chamfer (≥ 25°)	-	-	-	-	-	-	-	-	-	-	-	-	
-	Full Chamfer (< 25°)	-	-	-	-	-	-	-	-	-	-	-	-	
100	Edge Break	.00026	.00033	.00039	.00052	.00078	.00104	.00130	.00156	.00209	.00261	.00313	.00417	1
Full Chamfer (≥ 25°)	.00022	.00027	.00032	.00043	.00065	.00087	.00109	.00130	.00174	.00217	.00261	.00348	4	
Full Chamfer (< 25°)	.00016	.00020	.00024	.00033	.00049	.00065	.00081	.00098	.00130	.00163	.00196	.00261	5	
90	Edge Break	.00016	.00020	.00024	.00033	.00049	.00065	.00081	.00098	.00130	.00163	.00196	.00261	1
Full Chamfer (≥ 25°)	.00013	.00017	.00020	.00027	.00041	.00054	.00068	.00082	.00109	.00136	.00163	.00217	4	
Full Chamfer (< 25°)	.00010	.00013	.00015	.00020	.00030	.00041	.00051	.00061	.00082	.00102	.00122	.00163	5	
100	Edge Break	.00026	.00033	.00039	.00052	.00078	.00104	.00130	.00156	.00209	.00261	.00313	.00417	1
Full Chamfer (≥ 25°)	.00022	.00027	.00032	.00043	.00065	.00087	.00109							