



Speeds & Feeds

**Product Table:** Chamfer Cutters - Pointed & Flat End - Double-Ended  
**Characteristics:** 4 Flutes, Type III  
**Products:** 7880xx, 7900xx, 7942xx

**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.

When tip diameter is engaged, reduce Chip Loads to 80%-90% depending on contact length and finish

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

For slotting, reduce Chip Loads to 70%-90% depending on contact length and finish

For radial slotting, 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	SFM	Hardness: ≤ 28 Rc (≤ 271 HBn)											Depth of Cut Passes		
		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	.00018	.00037	.00056	.00074	.00094	.00112	.00150	.00224	.00300	.00374	.00450	.00600	1
Castings (2xx, 5xx, 7xx, 8xx)	750	Full Chamfer (≥ 25°)	.00015	.00031	.00047	.00062	.00078	.00093	.00125	.00187	.00250	.00312	.00375	.00500	2
Wrought (1xxx, 2xxx, 3xxx, 5xxx, 6xxx, 7xxx, 8xxx)	1000	Full Chamfer (< 25°)	.00011	.00023	.00035	.00047	.00059	.00070	.00094	.00140	.00188	.00234	.00281	.00375	3
Castings - 3%-5% Si (3xx, A3xx, C3xx, 4xx, A4xx, B4xx)	750	Edge Break	.00016	.00033	.00051	.00067	.00084	.00100	.00135	.00202	.00270	.00337	.00405	.00540	1
Castings - 5%-8% Si (3xx, A3xx, C3xx, 4xx, A4xx, B4xx)	700														
Castings - 8%-12% Si (3xx, A3xx, C3xx, 4xx, A4xx, B4xx)	650	Full Chamfer (≥ 25°)	.00014	.00028	.00042	.00056	.00070	.00084	.00113	.00168	.00225	.00281	.00338	.00450	2
Castings - 12%-16% Si (3xx, A3xx, C3xx, 4xx, A4xx, B4xx)	475														
Wrought - 5%-8% Si (4xxx)	1000	Full Chamfer (< 25°)	.00010	.00021	.00032	.00042	.00053	.00063	.00084	.00126	.00169	.00211	.00253	.00338	3
Wrought - 8%-12% Si (4xxx)	800														
<b>MAGNESIUM ALLOYS</b>	1500	Edge Break	.00018	.00037	.00056	.00074	.00094	.00112	.00150	.00224	.00300	.00374	.00450	.00600	1
		Full Chamfer (≥ 25°)	.00015	.00031	.00047	.00062	.00078	.00093	.00125	.00187	.00250	.00312	.00375	.00500	2
<b>ZINC ALLOYS</b>	800	Full Chamfer (< 25°)	.00011	.00023	.00035	.00047	.00059	.00070	.00094	.00140	.00188	.00234	.00281	.00375	3
<b>COPPER ALLOYS</b>															
High Coppers - 90%+ (C1xxx)	225														
Brass (Copper Zinc alloys, C2xxx, C3xxx, C4xxx, C6400-C69800)	500	Edge Break	.00014	.00030	.00045	.00060	.00075	.00089	.00120	.00180	.00240	.00300	.00360	.00480	1
Phosphor Bronzes (Copper Tin alloys, C5xxx)	225														
Aluminum Bronzes (Copper Aluminum alloys, C60600-C64200)	500	Full Chamfer (≥ 25°)	.00012	.00025	.00038	.00050	.00062	.00074	.00100	.00150	.00200	.00250	.00300	.00400	2
Silicon Bronzes (Copper Silicon alloys, C64700-C66100)	500														
Copper Nickels, Nickel Silvers (Copper Nickel alloys, C7xxx)	225														
Cast Copper Alloys (C83300-C86200, C86400-C87900, C92200-C95800, C97300-C97800, C99400-C99700)	550	Full Chamfer (< 25°)	.00009	.00019	.00028	.00037	.00047	.00056	.00075	.00112	.00150	.00187	.00225	.00300	3

MATERIAL	SFM	Hardness: 29-37 Rc (279-344 HBn)											Depth of Cut Passes		
		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	.00007	.00014	.00021	.00028	.00035	.00042	.00057	.00085	.00113	.00142	.00170	.00227	1
Free-Machining/Low Carbon steels, 10xx - 1029 & all 10Lxx, 11xx - 1139 & all 11Lxx, 12xx - 1215 & all 12Lxx	600	Full Chamfer (≥ 25°)	.00006	.00012	.00018	.00023	.00029	.00035	.00047	.00071	.00095	.00118	.00142	.00189	3
		Full Chamfer (< 25°)	.00004	.00009	.00013	.00018	.00022	.00026	.00035	.00053	.00071	.00088	.00106	.00142	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	.00006	.00013	.00019	.00026	.00032	.00039	.00052	.00078	.00104	.00129	.00156	.00207	1
		Full Chamfer (≥ 25°)	.00005	.00011	.00016	.00021	.00027	.00032	.00043	.00065	.00086	.00108	.00130	.00173	3
		Full Chamfer (< 25°)	.00004	.00008	.00012	.00016	.00020	.00024	.00032	.00048	.00065	.00081	.00097	.00130	4
<b>STAINLESS STEELS</b>															
203 EZ, 303 (all types), 416, 416Se, 416 Plus X, 420F, 420FSe, 430F, 430FSe, 440F, 440FSe	450	Edge Break	.00007	.00014	.00021	.00028	.00035	.00042	.00057	.00085	.00113	.00142	.00170	.00227	1
		Full Chamfer (≥ 25°)	.00006	.00012	.00018	.00023	.00029	.00035	.00047	.00071	.00095	.00118	.00142	.00189	3
		Full Chamfer (< 25°)	.00004	.00009	.00013	.00018	.00022	.00026	.00035	.00053	.00071	.00088	.00106	.00142	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	.00006	.00013	.00019	.00026	.00032	.00039	.00052	.00078	.00104	.00129	.00156	.00207	1
		Full Chamfer (≥ 25°)	.00005	.00011	.00016	.00021	.00027	.00032	.00043	.00065	.00086	.00108	.00130	.00173	3
		Full Chamfer (< 25°)	.00004	.00008	.00012	.00016	.00020	.00024	.00032	.00048	.00065	.00081	.00097	.00130	4
414, 431, 440A, 440B, 440C, 13-8, 15-8, 15-7, 17-4, 17-7	150	Edge Break	.00004	.00008	.00012	.00016	.00020	.00024	.00032	.00048	.00065	.00081	.00097	.00130	1
		Full Chamfer (≥ 25°)	.00003	.00007	.00010	.00013	.00017	.00020	.00027	.00040	.00054	.00067	.00081	.00108	3
		Full Chamfer (< 25°)	.00002	.00005	.00008	.00010	.00013	.00015	.00020	.00030	.00041	.00051	.00061	.00081	4
<b>TOOL STEELS</b>															
A, L, O, P, W series	200	Edge Break	.00006	.00013	.00019	.00026	.00032	.00039	.00052	.00078	.00104	.00129	.00156	.00207	1
		Full Chamfer (≥ 25°)	.00005	.00011	.00016	.00021	.00027	.00032	.00043	.00065	.00086	.00108	.00130	.00173	3
		Full Chamfer (< 25°)	.00004	.00008	.00012	.00016	.00020	.00024	.00032	.00048	.00065	.00081	.00097	.00130	4
D, H, M, T, S series	150	Edge Break	.00004	.00008	.00012	.00016	.00020	.00024	.00032	.00048	.00065	.00081	.00097	.00130	1
		Full Chamfer (≥ 25°)	.00003	.00007	.00010	.00013	.00017	.00020	.00027	.00040	.00054	.00067	.00081	.00108	3
		Full Chamfer (< 25°)	.00002	.00005	.00008	.00010	.00013	.00015	.00020	.00030	.00041	.00051	.00061	.00081	4
<b>TITANIUM ALLOYS</b>															
	150	Edge Break	.00004	.00008	.00012	.00016	.00020	.00024	.00032	.00048	.00065	.00081	.00097	.00130	1
		Full Chamfer (≥ 25°)	.00003	.00007	.00010	.00013	.00017	.00020	.00027	.00040	.00054	.00067	.00081	.00108	3
		Full Chamfer (< 25°)	.00002	.00005	.00008	.00010	.00013	.00015	.00020	.00030	.00041	.00051	.00061	.00081	4
<b>HIGH TEMP ALLOYS</b>															
Inconel, Hastelloy, Waspalloy, Monel, Nimonic, Haynes, Discoloy, Incoloy	70	Edge Break	.00004	.00008	.00012	.00016	.00020	.00024	.00032	.00048	.00065	.00081	.00097	.00130	1
		Full Chamfer (≥ 25°)	.00003	.00007	.00010	.00013	.00017	.00020	.00027	.00040	.00054	.00067	.00081	.00108	3
		Full Chamfer (< 25°)	.00002	.00005	.00008	.00010	.00013	.00015	.00020	.00030	.00041	.00051	.00061	.00081	4

MATERIAL	SFM	Hardness: 38-45 Rc (353-421 HBn)											Depth of Cut Passes		
		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	.00006	.00013	.00019	.00026	.00032	.00039	.00052	.00078	.00104	.00129	.00156	.00207	1
	100	Full Chamfer (≥ 25°)	.00005	.00011	.00016	.00021	.00027	.00032	.00043	.00065	.00086	.00108	.00130	.00173	4
		Full Chamfer (< 25°)	.00004	.00008	.00012	.00016	.00020	.00024	.00032	.00048	.00065	.00081	.00097	.00130	5
		Edge Break	.00004	.00008	.00012	.00016	.00020	.00024	.00032	.00048	.00065	.00081	.00097	.00130	1
	90	Full Chamfer (≥ 25°)	.00003	.00007	.00010	.00013	.00017	.00020	.00027	.00040	.00054	.00067	.00081	.00108	4
		Full Chamfer (< 25°)	.00002	.00005	.00008	.00010	.00013	.00015	.00020	.00030	.00041	.00051	.00061	.00081	5
		Edge Break	.00006	.00013	.00019	.00026	.00032	.00039	.00052	.00078	.00104	.00129	.00156	.00207	1
	100	Full Chamfer (≥ 25°)	.00005	.00011	.00016	.00021	.00027	.00032	.00043	.00065	.00086	.00108	.00130	.00173	4
		Full Chamfer (< 25°)	.00004	.00008	.00012	.00016	.00020	.00024	.00032	.00048	.00065	.00081	.00097	.00130	5
		Edge Break	.00004	.00008	.										