Speeds & Feeds

Product Table: Chamfer Cutters - Plate Chamfer Cutter
Series: 9552xx, 9659xx, 9711xx, 9808xx

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:
Double Chamfer - Engaged on either or both chamfer angles only (not minor diameter)
Minor Diameter - Milling on the minor diameter (D3) only
Full Form - Using the chamfer angles and minor diameter simultaneously
Use double chamfer chiploads for first pass to hog the chamfer profile before full engagement

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 max opening widths (L2) greater then .500", reduce chiploads by 5%

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

Hardness: ≤ 28 Rc (≤ 271 HBn)

MATERIAL	SFM	Chip Load (IPT) By Effective 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	Depth of Cut Passes
ALUMINUM ALLOYS															
Casting (2xx, 5xx, 7xx, 8xx)	750	Double Chamfer	.00013	.00027	.00041	.00055	.00069	.00082	.00110	.00165	.00220	.00275	.00330	.00440	2
		Minor Diameter	.00010	.00020	.00031	.00041	.00051	.00061	.00083	.00123	.00165	.00206	.00248	.00330	.10 x Dia Step Over
Wrought (1xxx, 2xxx, 3xxx, 5xxx, 6xxx, 7xxx, 8xxx)	1000	Full Form	.00009	.00019	.00029	.00038	.00048	.00057	.00077	.00115	.00154	.00192	.00231	.00308	2
Casting - 3%-5% Si (3xx, A3xx, C3xx, 4xx, A4xx, B4xx)	750	Double Chamfer	.00012	.00025	.00037	.00049	.00062	.00074	.00099	.00148	.00198	.00247	.00297	.00396	2
Casting - 5%-8% Si (3xx, A3xx, C3xx, 4xx, A4xx, B4xx)	700														
Casting - 8%-12% Si (3xx, A3xx, C3xx, 4xx, A4xx, B4xx)	650	Minor Diameter	.00009	.00018	.00028	.00037	.00046	.00055	.00074	.00111	.00149	.00185	.00223	.00297	.10 x Dia Step Over
Casting - 12%-16% Si (3xx, A3xx, C3xx, 4xx, A4xx, B4xx)	475														
Wrought - 5%-8% Si (4xxx)	1000	Full Form	.00008	.00017	.00026	.00034	.00043	.00052	.00069	.00104	.00139	.00173	.00208	.00277	2
Wrought - 8%-12% Si (4xxx)	800														
MAGNESIUM ALLOYS	1500	Double Chamfer	.00013	.00027	.00041	.00055	.00069	.00082	.00110	.00165	.00220	.00275	.00330	.00440	2
		Minor Diameter	.00010	.00020	.00031	.00041	.00051	.00061	.00083	.00123	.00165	.00206	.00248	.00330	.10 x Dia Step Over
ZINC ALLOYS	800	Full Form	.00009	.00019	.00029	.00038	.00048	.00057	.00077	.00115	.00154	.00192	.00231	.00308	2
COPPER ALLOYS															
High Coppers - 90%+ (C1xxxx)	225	Double Chamfer	.00011	.00022	.00033	.00044	.00055	.00065	.00088	.00132	.00176	.00220	.00264	.00352	2
Brass (Copper Zinc alloys, C2xxxx, C3xxxx, C4xxxx, C66400-C69800)	500														
Phosphor Bronzes (Copper Tin alloys, C5xxxx)	225														
Aluminum Bronzes (Copper Aluminum alloys, C60600-C64200)	500	Minor Diameter	.00008	.00016	.00025	.00033	.00041	.00049	.00066	.00099	.00132	.00165	.00198	.00264	.10 x Dia Step Over
Silicon Bronzes (Copper Silicon alloys, C64700-C66100)	500														
Copper Nickels, Nickel Silvers (Copper Nickel alloys, C7xxxx)	225														
Cast Copper Alloys (C83300-C86200, C86400-C87900, C92200-C95800, C97300-C97800, C99400-C99700)	550	Full Form	.00007	.00015	.00023	.00031	.00038	.00046	.00062	.00092	.00123	.00154	.00185	.00246	2

Hardness: 29-37 Rc (279-344 HBn)

MATERIAL	SFM	Chip Load (IPT) By Effective 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	Depth of Cut Passes
CARBON STEELS															
Free-Machining/Low Carbon steels, 10xx - 1029 & all 10Lxx, 11xx - 1139 & all 11Lxx, 12xx - 1215 & all 12Lxx	600	Double Chamfer	.00006	.00012	.00018	.00023	.00029	.00035	.00047	.00071	.00095	.00118	.00142	.00189	3
		Minor Diameter	.00004	.00009	.00013	.00018	.00022	.00026	.00035	.00053	.00071	.00088	.00106	.00142	.10 x Dia Step Over
		Full Form	.00004	.00008	.00012	.00016	.00021	.00025	.00033	.00049	.00066	.00083	.00099	.00132	3
1030 - 1095, 1140 - 1151, 13xx, 15xx, 2xxx, 3xxx, 4xxx & 4xLxx, 5xxx & 5xLxx, 50xxx & 50Lxxx, 51xxx & 51Lxxx, 52xxx & 52Lxxx, 6xxx, 8xxx, 9xxx	200	Double Chamfer	.00005	.00011	.00016	.00021	.00027	.00032	.00043	.00065	.00086	.00108	.00130	.00173	3
		Minor Diameter	.00004	.00008	.00012	.00016	.00020	.00024	.00032	.00048	.00065	.00081	.00097	.00130	.10 x Dia Step Over
		Full Form	.00004	.00007	.00011	.00015	.00019	.00022	.00030	.00045	.00060	.00075	.00091	.00121	3
STAINLESS STEELS															
203 EZ, 303 (all types), 416, 416Se, 416 Plus X, 420F, 420FSe, 430F, 430FSe, 440F, 440FSe	450	Double Chamfer	.00006	.00012	.00018	.00023	.00029	.00035	.00047	.00071	.00095	.00118	.00142	.00189	3
		Minor Diameter	.00004	.00009	.00013	.00018	.00022	.00026	.00035	.00053	.00071	.00088	.00106	.00142	.10 x Dia Step Over
		Full Form	.00004	.00008	.00012	.00016	.00021	.00025	.00033	.00049	.00066	.00083	.00099	.00132	3
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	Double Chamfer	.00005	.00011	.00016	.00021	.00027	.00032	.00043	.00065	.00086	.00108	.00130	.00173	3
		Minor Diameter	.00004	.00008	.00012	.00016	.00020	.00024	.00032	.00048	.00065	.00081	.00097	.00130	.10 x Dia Step Over
		Full Form	.00004	.00007	.00011	.00015	.00019	.00022	.00030	.00045	.00060	.00075	.00091	.00121	3
414, 431, 440A, 440B, 440C, 13-8, 15-5, 15-7, 17-4, 17-7	150	Double Chamfer	.00003	.00007	.00010	.00013	.00017	.00020	.00027	.00040	.00054	.00067	.00081	.00108	3
		Minor Diameter	.00002	.00005	.00008	.00010	.00013	.00015	.00020	.00030	.00041	.00051	.00061	.00081	.10 x Dia Step Over
		Full Form	.00002	.00005	.00007	.00009	.00012	.00014	.00019	.00028	.00038	.00047	.00057	.00076	3
TOOL STEELS															
A, L, O, P, W series	200	Double Chamfer	.00005	.00011	.00016	.00021	.00027	.00032	.00043	.00065	.00086	.00108	.00130	.00173	3
		Minor Diameter	.00004	.00008	.00012	.00016	.00020	.00024	.00032	.00048	.00065	.00081	.00097	.00130	.10 x Dia Step Over
		Full Form	.00004	.00007	.00011	.00015	.00019	.00022	.00030	.00045	.00060	.00075	.00091	.00121	3
D, H, M, T, S series	150	Double Chamfer	.00003	.00007	.00010	.00013	.00017	.00020	.00027	.00040	.00054	.00067	.00081	.00108	3
		Minor Diameter	.00002	.00005	.00008	.00010	.00013	.00015	.00020	.00030	.00041	.00051	.00061	.00081	.10 x Dia Step Over
		Full Form	.00002	.00005	.00007	.00009	.00012	.00014	.00019	.00028	.00038	.00047	.00057	.00076	3
TITANIUM ALLOYS	150	Double Chamfer	.00003	.00007	.00010	.00013	.00017	.00020	.00027	.00040	.00054	.00067	.00081	.00108	3
		Minor Diameter	.00002	.00005	.00008	.00010	.00013	.00015	.00020	.00030	.00041	.00051	.00061	.00081	.10 x Dia Step Over
		Full Form	.00002	.00005	.00007	.00009	.00012	.00014	.00019	.00028	.00038	.00047	.00057	.00076	3
HIGH TEMP ALLOYS															
Inconel, Hastelloy, Waspalloy, Monel, Nimonic, Haynes, Discoloy, Incoloy	70	Double Chamfer	.00003	.00007	.00010	.00013	.00017	.00020	.00027	.00040	.00054	.00067	.00081	.00108	3
		Minor Diameter	.00002	.00005	.00008	.00010	.00013	.00015	.00020	.00030	.00041	.00051	.00061	.00081	.10 x Dia Step Over
		Full Form	.00002	.00005	.00007	.00009	.00012	.00014	.00019	.00028	.00038	.00047	.00057	.00076	3

Hardness: 38-45 Rc (353-421 HBn)

SFM	Chip Load (IPT) By Effective 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	Depth of Cut Passes
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-	-
100	Double Chamfer	.00005	.00011	.00016	.00021	.00027	.00032	.00043	.00065	.00086	.00108	.00130	.00173	3
	Minor Diameter	.00004	.00008	.00012	.00016	.00020	.00024	.00032	.00048	.00065	.00081	.00097	.00130	.10 x Dia Step Over
	Full Form	.00004	.00007	.00011	.00015	.00019	.00022	.00030	.00045	.00060	.00075	.00091	.00121	3
90	Double Chamfer	.00003	.00007	.00010	.00013	.00017	.00020	.00027	.00040	.00054	.00067	.00081	.00108	3
	Minor Diameter	.00002	.00005	.00008	.00010	.00013	.00015	.00020	.00030	.00041	.00051	.00061	.00081	.10 x Dia Step Over
	Full Form	.00002	.00005	.00007	.00009	.00012	.00014	.00019	.00028	.00038	.00047	.00057	.00076	3
100	Double Chamfer	.00005	.00011	.00016	.00021	.00027	.00032	.00043	.00065	.00086	.00108	.00130	.00173	3
	Minor Diameter	.00004	.00008	.00012	.00016	.00020	.00024	.00032	.00048	.00065	.00081	.00097	.00130	.10 x Dia Step Over
	Full Form	.00004	.00007	.00011	.00015	.00019	.00022	.00030	.00045	.00060	.00075	.00091	.00121	3
90	Double Chamfer	.00003	.00007	.00010	.00013	.00017	.00020	.00027	.00040	.00054	.00067	.00081	.00108	3
	Minor Diameter	.00002	.00005	.00008	.00010	.00013	.00015	.00020	.00030	.00041	.00051	.00061	.00081	.10 x Dia Step Over
	Full Form	.00002	.00005	.00007	.00009	.00012	.00014	.00019	.00028	.00038	.00047	.00057	.00076	3
75	Double Chamfer	.00003	.00007	.00010	.00013	.00017	.00020	.00027	.00040	.00054	.00067	.00081	.00108	3
	Minor Diameter	.00002	.00005	.00008	.00010	.00013	.00015	.00020	.00030	.00041	.00051	.00061	.00081	.10 x Dia Step Over
	Full Form	.00002	.00005	.00007	.00009	.00012	.00014	.00019	.00028	.00038	.00047	.00057	.00076	3
50	Double Chamfer	.00003	.00007	.00010	.00013	.00017	.00020	.00027	.00040	.00054	.00067	.00081	.00108	3
	Minor Diameter	.00002	.00005	.00008	.00010	.00013	.00015	.00020	.00030	.00041	.00051	.00061	.00081	.10 x Dia Step Over
	Full Form	.00002	.00005	.00007	.00009	.00012	.00014	.00019	.00028	.00038	.00047	.00057	.00076	3