



Product Table: Chamfer Cutters - Cobalt - Pointed
Characteristics: 4 Flutes
Series: 180xx, 181xx

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	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	
ALUMINUM ALLOYS	300	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
	400	Full Chamfer (< 25°)	.00011	.00023	.00035	.00047	.00059	.00070	.00094	.00140	.00188	.00234	.00281	.00375	3
		Edge Break	.00016	.00033	.00051	.00067	.00084	.00100	.00135	.00202	.00270	.00337	.00405	.00540	1
MAGNESIUM ALLOYS	300	Edge Break	.00016	.00033	.00051	.00067	.00084	.00100	.00135	.00202	.00270	.00337	.00405	.00540	1
		Full Chamfer (≥ 25°)	.00014	.00028	.00042	.00056	.00070	.00084	.00113	.00168	.00225	.00281	.00338	.00450	2
	190	Full Chamfer (< 25°)	.00010	.00021	.00032	.00042	.00053	.00063	.00084	.00126	.00169	.00211	.00253	.00338	3
		Edge Break	.00018	.00037	.00056	.00074	.00094	.00112	.00150	.00224	.00300	.00374	.00450	.00600	1
ZINC ALLOYS	320	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
	320	Full Chamfer (< 25°)	.00011	.00023	.00035	.00047	.00059	.00070	.00094	.00140	.00188	.00234	.00281	.00375	3
		Edge Break	.00018	.00037	.00056	.00074	.00094	.00112	.00150	.00224	.00300	.00374	.00450	.00600	1
COPPER ALLOYS	90	Edge Break	.00014	.00030	.00045	.00060	.00075	.00089	.00120	.00180	.00240	.00300	.00360	.00480	1
		Full Chamfer (≥ 25°)	.00012	.00025	.00038	.00050	.00062	.00074	.00100	.00150	.00200	.00250	.00300	.00400	2
	200	Full Chamfer (< 25°)	.00009	.00019	.00028	.00037	.00047	.00056	.00075	.00112	.00150	.00187	.00225	.00300	3
		Edge Break	.00014	.00030	.00045	.00060	.00075	.00089	.00120	.00180	.00240	.00300	.00360	.00480	1

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	
CARBON STEELS	240	Edge Break	.00007	.00014	.00021	.00028	.00035	.00042	.00057	.00085	.00113		.00170	.00227	1
		Full Chamfer (≥ 25°)	.00006	.00012	.00018	.00023	.00029	.00035	.00047	.00071	.00095	.00118	.00142	.00189	3
	80	Full Chamfer (< 25°)	.00004	.00009	.00013	.00018	.00022	.00026	.00035	.00053	.00071	.00088	.00106	.00142	4
		Edge Break	.00006	.00013	.00019	.00026	.00032	.00039	.00052	.00078	.00104	.00129	.00156	.00207	1
STAINLESS STEELS	180	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
	80	Edge Break	.00004	.00008	.00012	.00016	.00020	.00024	.00032	.00048	.00065	.00081	.00097	.00130	1
		Full Chamfer (≥ 25°)	.00005	.00011	.00016	.00021	.00027	.00032	.00043	.00065	.00086	.00108	.00130	.00173	3
TOOL STEELS	60	Full Chamfer (< 25°)	.00004	.00008	.00012	.00016	.00020	.00024	.00032	.00048	.00065	.00081	.00097	.00130	4
		Edge Break	.00004	.00008	.00012	.00016	.00020	.00024	.00032	.00048	.00065	.00081	.00097	.00130	1
	30	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
TITANIUM ALLOYS	60	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
	30	Full Chamfer (< 25°)	.00002	.00005	.00008	.00010	.00013	.00015	.00020	.00030	.00041	.00051	.00061	.00081	4
		Edge Break	.00004	.00008	.00012	.00016	.00020	.00024	.00032	.00048	.00065	.00081	.00097	.00130	1
HIGH TEMP ALLOYS	30	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	
CARBON STEELS	240	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
	80	Full Chamfer (< 25°)	.00004	.00008	.00012	.00016	.00020	.00024	.00032	.00048	.00065	.00081	.00097	.00130	4
		Edge Break	.00004	.00008	.00012	.00016	.00020	.00024	.00032	.00048	.00065	.00081	.00097	.00130	1
STAINLESS STEELS	180	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
	80	Edge Break	.00004	.00008	.00012	.00016	.00020	.00024	.00032	.00048	.00065	.00081	.00097	.00130	1
		Full Chamfer (≥ 25°)	.00005	.00011	.00016	.00021	.00027	.00032	.00043	.00065	.00086	.00108	.00130	.00173	3
TOOL STEELS	60	Full Chamfer (< 25°)	.00004	.00008	.00012	.00016	.00020	.00024	.00032	.00048	.00065	.00081	.00097	.00130	4
		Edge Break	.00004	.00008	.00012	.00016	.00020	.00024	.00032	.00048	.00065	.00081	.00097	.00130	1
	30	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
TITANIUM ALLOYS	60	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
	30	Full Chamfer (< 25°)	.00002	.00005	.00008	.00010	.00013	.00015	.00020	.00030	.00041	.00051	.00061	.00081	4
		Edge Break	.00004	.00008	.00012	.00016	.00020	.00024	.00032	.00048	.00065	.00081	.00097	.00130	1
HIGH TEMP ALLOYS	30	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