Product Table: Backdraft Cutters - Square
Characteristics: 1.5x LOC, 5x Reach, 0.5°, 4 Flutes
Series: 7813xx, 7814xx

Product Notes:
Use the end diameter of the tool to select the correct Chip Load (IPT)

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.

Hardness: ≤ 28 Rc (≤ 271 HBn)

MATERIAL	SFM	Chip Load (IPT) By Cutter Dia	.015	.031	.047	Depth of Cut Radial	Depth of Cut Axial	.062	.078	.093	.125	.187	.250	Depth of Cut Radial	Depth of Cut Axial
ALUMINUM ALLOYS															
Casting (2xx, 5xx, 7xx, 8xx)	750	Roughing	.00013	.00026	.00040	.30 x Dia	.35 x Dia	.00046	.00057	.00068	.00092	.00138	.00184	.60 x Dia	.35 x Dia
Wrought (1xxx, 2xxx, 3xxx, 5xxx, 6xxx, 7xxx, 8xxx)	1000	Finishing	.00019	.00040	.00061	.08 x Dia	1.5 x Dia	.00070	.00088	.00105	.00141	.00211	.00282	.15 x Dia	1.5 x Dia
Casting - 3%-5% Si (3xx, A3xx, C3xx, 4xx, A4xx, B4xx)	750														
Casting - 5%-8% Si (3xx, A3xx, C3xx, 4xx, A4xx, B4xx)	700	Roughing	.00011	.00024	.00036	.30 x Dia	.35 x Dia	.00041	.00052	.00062	.00083	.00124	.00166	.60 x Dia	.35 x Dia
Casting - 8%-12% Si (3xx, A3xx, C3xx, 4xx, A4xx, B4xx)	650														
Casting - 12%-16% Si (3xx, A3xx, C3xx, 4xx, A4xx, B4xx)	475														
Wrought - 5%-8% Si (4xxx)	1000	Finishing	.00018	.00036	.00055	.08 x Dia	1.5 x Dia	.00063	.00079	.00094	.00127	.00190	.00254	.15 x Dia	1.5 x Dia
Wrought - 8%-12% Si (4xxx)	800														
MAGNESIUM ALLOYS	1500	Roughing	.00013	.00026	.00040	.30 x Dia	.35 x Dia	.00046	.00057	.00068	.00092	.00138	.00184	.60 x Dia	.35 x Dia
ZINC ALLOYS	800	Finishing	.00019	.00040	.00061	.08 x Dia	1.5 x Dia	.00070	.00088	.00105	.00141	.00211	.00282	.15 x Dia	1.5 x Dia
COPPER ALLOYS															
High Coppers - 90%+ (C1xxxx)	225														
Brass (Copper Zinc alloys, C2xxxx, C3xxxx, C4xxxx, C66400-C69800)	500	Roughing	.00010	.00021	.00032	.30 x Dia	.35 x Dia	.00036	.00046	.00055	.00074	.00110	.00147	.60 x Dia	.35 x Dia
Phosphor Bronzes (Copper Tin alloys, C5xxxx)	225														
Aluminum Bronzes (Copper Aluminum alloys, C60600-C64200)	500														
Silicon Bronzes (Copper Silicon alloys, C64700-C66100)	500														
Copper Nickels, Nickel Silvers (Copper Nickel alloys, C7xxxx)	225	Finishing	.00016	.00032	.00049	.08 x Dia	1.5 x Dia	.00056	.00070	.00084	.00113	.00169	.00226	.15 x Dia	1.5 x Dia
Cast Copper Alloys (C83300-C86200, C86400-C87900, C92200-C95800, C97300-C97800, C99400-C99700)	550														

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

MATERIAL	SFM	Chip Load (IPT) By Cutter Dia	.015	.031	.047	Depth of Cut Radial	Depth of Cut Axial	.062	.078	.093	.125	.187	.250	Depth of Cut Radial	Depth of Cut Axial
CARBON STEELS	600	Roughing	.00005	.00011	.00017	.30 x Dia	.35 x Dia	.00020	.00025	.00029	.00040	.00059	.00079	.60 x Dia	.35 x Dia
Free-Machining/Low Carbon steels, 10xx - 1029 & all 10Lxx, 11xx - 1139 & all 11Lxx, 12xx - 1215 & all 12Lxx		Finishing	.00008	.00017	.00026	.08 x Dia	1.5 x Dia	.00030	.00038	.00045	.00061	.00091	.00121	.15 x Dia	1.5 x Dia
1030 - 1095, 1140 - 1151, 13xx, 15xx, 2xxx, 3xxx, 4xxx & 4xLxx, 5xxx & 5xLxx, 50xxx & 50Lxxx, 51xxx & 51Lxxx, 52xxx & 52Lxxx, 6xxx, 8xxx, 9xxx	200	Roughing	.00005	.00010	.00016	.30 x Dia	.35 x Dia	.00018	.00023	.00027	.00036	.00054	.00072	.60 x Dia	.35 x Dia
		Finishing	.00008	.00016	.00024	.08 x Dia	1.5 x Dia	.00027	.00035	.00041	.00055	.00083	.00111	.15 x Dia	1.5 x Dia
STAINLESS STEELS	450	Roughing	.00005	.00011	.00017	.30 x Dia	.35 x Dia	.00020	.00025	.00029	.00040	.00059	.00079	.60 x Dia	.35 x Dia
203 EZ, 303 (all types), 416, 416Se, 416 Plus X, 420F, 420FSe, 430F, 430FSe, 440F, 440FSe		Finishing	.00008	.00017	.00026	.08 x Dia	1.5 x Dia	.00030	.00038	.00045	.00061	.00091	.00121	.15 x Dia	1.5 x Dia
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	Roughing	.00005	.00010	.00016	.30 x Dia	.35 x Dia	.00018	.00023	.00027	.00036	.00054	.00072	.60 x Dia	.35 x Dia
		Finishing	.00008	.00016	.00024	.08 x Dia	1.5 x Dia	.00027	.00035	.00041	.00055	.00083	.00111	.15 x Dia	1.5 x Dia
414, 431, 440A, 440B, 440C, 13-8, 15-5, 15-7, 17-4, 17-7	150	Roughing	.00003	.00006	.00010	.30 x Dia	.35 x Dia	.00011	.00014	.00017	.00023	.00034	.00045	.60 x Dia	.35 x Dia
		Finishing	.00005	.00010	.00015	.08 x Dia	1.5 x Dia	.00017	.00022	.00026	.00035	.00052	.00069	.15 x Dia	1.5 x Dia
TOOL STEELS	200	Roughing	.00005	.00010	.00016	.30 x Dia	.35 x Dia	.00018	.00023	.00027	.00036	.00054	.00072	.60 x Dia	.35 x Dia
A, L, O, P, W series		Finishing	.00008	.00016	.00024	.08 x Dia	1.5 x Dia	.00027	.00035	.00041	.00055	.00083	.00111	.15 x Dia	1.5 x Dia
D, H, M, T, S series	150	Roughing	.00003	.00006	.00010	.30 x Dia	.35 x Dia	.00011	.00014	.00017	.00023	.00034	.00045	.60 x Dia	.35 x Dia
		Finishing	.00005	.00010	.00015	.08 x Dia	1.5 x Dia	.00017	.00022	.00026	.00035	.00052	.00069	.15 x Dia	1.5 x Dia
TITANIUM ALLOYS	150	Roughing	.00003	.00006	.00010	.30 x Dia	.35 x Dia	.00011	.00014	.00017	.00023	.00034	.00045	.60 x Dia	.35 x Dia
		Finishing	.00005	.00010	.00015	.08 x Dia	1.5 x Dia	.00017	.00022	.00026	.00035	.00052	.00069	.15 x Dia	1.5 x Dia
HIGH TEMP ALLOYS	70	Roughing	.00003	.00006	.00010	.30 x Dia	.35 x Dia	.00011	.00014	.00017	.00023	.00034	.00045	.60 x Dia	.35 x Dia
Inconel, Hastelloy, Waspalloy, Monel, Nimonic, Haynes, Discoloy, Incoloy		Finishing	.00005	.00010	.00015	.08 x Dia	1.5 x Dia	.00017	.00022	.00026	.00035	.00052	.00069	.15 x Dia	1.5 x Dia

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

SFM	Chip Load (IPT) By Cutter Dia	.015	.031	.047	Depth of Cut Radial	Depth of Cut Axial	.062	.078	.093	.125	.187	.250	Depth of Cut Radial	Depth of Cut Axial
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
100	Roughing	.00002	.00005	.00008	.30 x Dia	.35 x Dia	.00009	.00011	.00013	.00018	.00027	.00036	.60 x Dia	.35 x Dia
	Finishing	.00004	.00008	.00012	.08 x Dia	1.5 x Dia	.00014	.00017	.00021	.00028	.00042	.00056	.15 x Dia	1.5 x Dia
90	Roughing	.00002	.00003	.00005	.30 x Dia	.35 x Dia	.00006	.00007	.00008	.00011	.00017	.00023	.60 x Dia	.35 x Dia
	Finishing	.00002	.00005	.00008	.08 x Dia	1.5 x Dia	.00009	.00011	.00013	.00017	.00026	.00035	.15 x Dia	1.5 x Dia
100	Roughing	.00002	.00005	.00008	.30 x Dia	.35 x Dia	.00009	.00011	.00013	.00018	.00027	.00036	.60 x Dia	.35 x Dia
	Finishing	.00004	.00008	.00012	.08 x Dia	1.5 x Dia	.00042	.00053	.00063	.00085	.00128	.00171	.15 x Dia	1.5 x Dia
90	Roughing	.00002	.00003	.00005	.30 x Dia	.35 x Dia	.00006	.00007	.00008	.00011	.00017	.00023	.60 x Dia	.35 x Dia
	Finishing	.00002	.00005	.00008	.08 x Dia	1.5 x Dia	.00009	.00011	.00013	.00017	.00026	.00035	.15 x Dia	1.5 x Dia
75	Roughing	.00002	.00003	.00005	.30 x Dia	.35 x Dia	.00006	.00007	.00008	.00011	.00017	.00023	.60 x Dia	.35 x Dia
	Finishing	.00002	.00005	.00008	.08 x Dia	1.5 x Dia	.00009	.00011	.00013	.00017	.00026	.00035	.15 x Dia	1.5 x Dia
50	Roughing	.00002	.00003	.00005	.30 x Dia	.35 x Dia	.00006	.00007	.00008	.00011	.00017	.00023	.60 x Dia	.35 x Dia
	Finishing	.00002	.00005	.00008	.08 x Dia	1.5 x Dia	.00009	.00011	.00013	.00017	.00026	.00035	.15 x Dia	1.5 x Dia