

MATERIAL	SFM	Hardness: ≤ 28 Rc (≤ 271 HBn)												Depth of Cut			
		Chip Load (IPT) By Cutter Diameter												Radial	Axial		
		0.062	0.078	0.093	0.125	0.187	0.250	0.312	0.375	0.438	0.500	0.625	0.750			1.000	
ALUMINUM ALLOYS																	
Casting (2xx, 5xx, 7xx, 8xx)	750	.00034	.00042	.00051	.00068	.00102	.00136	.00170	.00204	.00238	.00272	.00340	.00408	.00545	.12 x Dia	Full Width	
Wrought (1xxx, 2xxx, 3xxx, 5xxx, 6xxx, 7xxx, 8xxx)	1000																
Casting - 3%-5% Si (3xx, A3xx, C3xx, 4xx, A4xx, B4xx)	750																
Casting - 5%-8% Si (3xx, A3xx, C3xx, 4xx, A4xx, B4xx)	700																
Casting - 8%-12% Si (3xx, A3xx, C3xx, 4xx, A4xx, B4xx)	650	.00030	.00038	.00046	.00061	.00092	.00123	.00153	.00184	.00215	.00245	.00306	.00368	.00490	.12 x Dia	Full Width	
Casting - 12%-16% Si (3xx, A3xx, C3xx, 4xx, A4xx, B4xx)	475																
Wrought - 5%-8% Si (4xxx)	1000																
Wrought - 8%-12% Si (4xxx)	800																
MAGNESIUM ALLOYS	1500	.00034	.00042	.00051	.00068	.00102	.00136	.00170	.00204	.00238	.00272	.00340	.00408	.00545	.12 x Dia	Full Width	
ZINC ALLOYS	800																
COPPER ALLOYS																	
High Coppers - 90%+ (C1xxxx)	225																
Brass (Copper Zinc alloys, C2xxxx, C3xxxx, C4xxxx, C6400-C69800)	500																
Phosphor Bronzes (Copper Tin alloys, C5xxxx)	225																
Aluminum Bronzes (Copper Aluminum alloys, C6060-C64200)	500	.00027	.00034	.00041	.00054	.00081	.00109	.00136	.00163	.00191	.00218	.00272	.00327	.00436	.12 x Dia	Full Width	
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																



Speeds & Feeds

Product Table: Keyseat Cutters - Staggered Tooth - Square
Characteristics: 8 Flutes
Series: 9049xx, 9158xx, 9556xx

Product notes:
 Chip Loads (IPT) within table pertain to applications where the cutter is engaged on one side only and the cutter width is less than .5x diameter.
 If the cutter is engaged on both sides, reduce chiploads to 50-60% of posted values.
 If the cutter width > .5x diameter, reduce radial step over to 80% of posted values.

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 up to 15% 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: 29-37 Rc (279-344 HBn)												Depth of Cut		
		Chip Load (IPT) By Cutter Diameter												Radial	Axial	
		0.062	0.078	0.093	0.125	0.187	0.250	0.312	0.375	0.438	0.500	0.625	0.750			1.000
CARBON STEELS																
Free-Machining/Low Carbon steels, 10xx - 1029 & all 10Lxx, 11xx - 1139 & all 11Lxx, 12xx - 1215 & all 12Lxx	600	.00012	.00016	.00018	.00025	.00037	.00050	.00062	.00075	.00087	.00099	.00124	.00149	.00199	.08 x Dia	Full Width
1030 - 1095, 1140 - 1151, 13xx, 15xx, 2xxx, 3xxx, 4xxx & 4xLxx, 5xxx & 5xLxx, 50xxx & 50Lxx, 51xxx & 51Lxx, 52xxx & 52Lxx, 6xxx, 8xxx, 9xxx	200	.00011	.00014	.00017	.00023	.00034	.00045	.00057	.00068	.00080	.00091	.00114	.00136	.00182	.08 x Dia	Full Width
STAINLESS STEELS																
203 EZ, 303 (all types), 416, 416Se, 416 Plus X, 420F, 420FSe, 430F, 430FSe, 440F, 440FSe	450	.00012	.00016	.00018	.00025	.00037	.00050	.00062	.00075	.00087	.00099	.00124	.00149	.00199	.08 x Dia	Full Width
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	.00011	.00014	.00017	.00023	.00034	.00045	.00057	.00068	.00080	.00091	.00114	.00136	.00182	.08 x Dia	Full Width
414, 431, 440A, 440B, 440C, 13-8, 15-5, 15-7, 17-4, 17-7	150	.00007	.00009	.00011	.00014	.00021	.00028	.00035	.00043	.00050	.00057	.00071	.00085	.00114	.08 x Dia	Full Width
TOOL STEELS																
A, L, O, P, W series	200	.00011	.00014	.00017	.00023	.00034	.00045	.00057	.00068	.00080	.00091	.00114	.00136	.00182	.08 x Dia	Full Width
D, H, M, T, S series	150	.00007	.00009	.00011	.00014	.00021	.00028	.00035	.00043	.00050	.00057	.00071	.00085	.00114	.08 x Dia	Full Width
TITANIUM ALLOYS	150	.00007	.00009	.00011	.00014	.00021	.00028	.00035	.00043	.00050	.00057	.00071	.00085	.00114	.08 x Dia	Full Width
HIGH TEMP ALLOYS																
Inconel, Hastelloy, Waspalloy, Monel, Inimonic, Haynes, Discoloy, Incoloy	70	.00007	.00009	.00011	.00014	.00021	.00028	.00035	.00043	.00050	.00057	.00071	.00085	.00114	.08 x Dia	Full Width

MATERIAL	SFM	Hardness: 38-45 Rc (353-421 HBn)												Depth of Cut		
		Chip Load (IPT) By Cutter Diameter												Radial	Axial	
		0.062	0.078	0.093	0.125	0.187	0.250	0.312	0.375	0.438	0.500	0.625	0.750			1.000
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
100	.00010	.00013	.00015	.00020	.00030	.00040	.00050	.00060	.00070	.00080	.00100	.00120	.00160	.06 x Dia	Full Width	
90	.00006	.00008	.00009	.00013	.00019	.00025	.00031	.00038	.00044	.00050	.00063	.00075	.00100	.06 x Dia	Full Width	
100	.00010	.00013	.00015	.00020	.00030	.00040	.00050	.00060	.00070	.00080	.00100	.00120	.00160	.06 x Dia	Full Width	
90	.00006	.00008	.00009	.00013	.00019	.00025	.00031	.00038	.00044	.00050	.00063	.00075	.00100	.06 x Dia	Full Width	
75	.00006	.00008	.00009	.00013	.00019	.00025	.00031	.00038	.00044	.00050	.00063	.00075	.00100	.06 x Dia	Full Width	
50	.00006	.00008	.00009	.00013	.00019	.00025	.00031	.00038	.00044	.00050	.00063	.00075	.00100	.06 x Dia	Full Width	