

MATERIAL	Hardness: ≤ 28 Rc (≤ 271 HBn)														Depth of Cut		
	SFM	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	
<b>ALUMINUM ALLOYS</b>																	
Casting (2xx, 5xx, 7xx, 8xx)	750	.00035	.00044	.00053	.00071	.00106	.00142	.00178	.00213	.00249	.00285	.00356	.00427	.00569	.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	.00032	.00040	.00048	.00064	.00096	.00128	.00160	.00192	.00224	.00256	.00320	.00384	.00512	.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																
<b>MAGNESIUM ALLOYS</b>	1500	.00035	.00044	.00053	.00071	.00106	.00142	.00178	.00213	.00249	.00285	.00356	.00427	.00569	.12 x Dia	Full Width	
<b>ZINC ALLOYS</b>	800																
<b>COPPER ALLOYS</b>																	
High Coppers - 90%+ (C1xxx)	225																
Brass (Copper Zinc alloys, C2xxx, C3xxx, C4xxx, C6400-C69800)	500																
Phosphor Bronzes (Copper Tin alloys, Cxxx)	225																
Aluminum Bronzes (Copper Aluminum alloys, C60600-C64200)	500	.00028	.00036	.00042	.00057	.00085	.00114	.00142	.00171	.00199	.00228	.00285	.00342	.00455	.12 x Dia	Full Width	
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																



Speeds & Feeds

**Product Table:** Keyseat Cutters - Retaining Ring Keyseat Cutters  
**Series:** 235xx

**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](mailto: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	Hardness: 29-37 Rc (279-344 HBn)														Depth of Cut		
	SFM	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	
<b>CARBON STEELS</b>																	
Free-Machining/Low Carbon steels, 10xx - 1029 & all 10Lxx, 11xx - 1139 & all 11Lxx, 12xx - 1215 & all 12Lxx	600	.00013	.00016	.00019	.00026	.00039	.00052	.00065	.00078	.00091	.00104	.00130	.00156	.00208	.08 x Dia	Full Width	
1030 - 1095, 1140 - 1151, 13xx, 15xx, 2xx, 3xx, 4xx & 4Lxx, 5xx & 5Lxx, 50xx & 50Lxx, 51xx & 51Lxx, 52xx & 52Lxx, 6xxx, 8xx, 9xx	200	.00012	.00015	.00018	.00024	.00036	.00048	.00059	.00071	.00083	.00095	.00119	.00143	.00190	.08 x Dia	Full Width	
<b>STAINLESS STEELS</b>																	
203 EZ, 303 (all types), 416, 416Se, 416 Plus X, 420F, 420FSe, 430F, 430FSe, 440F, 440FSe	450	.00013	.00016	.00019	.00026	.00039	.00052	.00065	.00078	.00091	.00104	.00130	.00156	.00208	.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	.00012	.00015	.00018	.00024	.00036	.00048	.00059	.00071	.00083	.00095	.00119	.00143	.00190	.08 x Dia	Full Width	
414, 431, 440A, 440B, 440C, 13-8, 15-5, 15-7, 17-4, 17-7	150	.00007	.00009	.00011	.00015	.00022	.00030	.00037	.00045	.00052	.00059	.00074	.00089	.00119	.08 x Dia	Full Width	
<b>TOOL STEELS</b>																	
A, L, O, P, W series	200	.00012	.00015	.00018	.00024	.00036	.00048	.00059	.00071	.00083	.00095	.00119	.00143	.00190	.08 x Dia	Full Width	
D, H, M, T, S series	150	.00007	.00009	.00011	.00015	.00022	.00030	.00037	.00045	.00052	.00059	.00074	.00089	.00119	.08 x Dia	Full Width	
<b>TITANIUM ALLOYS</b>	150	.00007	.00009	.00011	.00015	.00022	.00030	.00037	.00045	.00052	.00059	.00074	.00089	.00119	.08 x Dia	Full Width	
<b>HIGH TEMP ALLOYS</b>	70	.00007	.00009	.00011	.00015	.00022	.00030	.00037	.00045	.00052	.00059	.00074	.00089	.00119	.08 x Dia	Full Width	
Inconel, Hastelloy, Waspalloy, Monel, Nimonic, Haynes, Discoloy, Incoloy																	

MATERIAL	Hardness: 38-45 Rc (353-421 HBn)														Depth of Cut		
	SFM	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	.00016	.00021	.00031	.00042	.00052	.00063	.00073	.00084	.00105	.00126	.00168	.06 x Dia	Full Width	
	90	.00006	.00008	.00010	.00013	.00020	.00026	.00033	.00039	.00046	.00052	.00065	.00079	.00105	.06 x Dia	Full Width	
	100	.00010	.00013	.00016	.00021	.00031	.00042	.00052	.00063	.00073	.00084	.00105	.00126	.00168	.06 x Dia	Full Width	
	90	.00006	.00008	.00010	.00013	.00020	.00026	.00033	.00039	.00046	.00052	.00065	.00079	.00105	.06 x Dia	Full Width	
	75	.00006	.00008	.00010	.00013	.00020	.00026	.00033	.00039	.00046	.00052	.00065	.00079	.00105	.06 x Dia	Full Width	
	50	.00006	.00008	.00010	.00013	.00020	.00026	.00033	.00039	.00046	.00052	.00065	.00079	.00105	.06 x Dia	Full Width	