

MATERIAL	SFM	Hardness: ≤ 28 Rc (≤ 271 HBn)													
		Chip Load (IPT) by Dia			Depth of Cut		Chip Load (IPT) by Cutter Dia					Depth of Cut			
		0.015	0.031	0.047	Radial	Axial	0.062	0.078	0.093	0.125	0.187	0.250	Radial	Axial	
<b>ALUMINUM ALLOYS</b>															
Casting (2xx, 5xx, 7xx, 8xx)	750	Finishing	.00012	.00025	.00038	.05 x Dia	6 x Dia	.00043	.00054	.00065	.00087	.00130	.00174	.10 x Dia	6 x Dia
Wrought (1xxx, 2xxx, 3xxx, 5xxx, 6xxx, 7xxx, 8xxx)	1000														
Casting - 3%-5% Si (3xx, A3xx, C3xx, 4xx, A4xx, B4xx)	750	Finishing	.00011	.00022	.00034	.05 x Dia	6 x Dia	.00039	.00049	.00058	.00078	.00117	.00156	.10 x Dia	6 x Dia
Casting - 5%-8% Si (3xx, A3xx, C3xx, 4xx, A4xx, B4xx)	700														
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														
Wrought - 8%-12% Si (4xxx)	800														
<b>MAGNESIUM ALLOYS</b>	1500	Finishing	.00012	.00025	.00038	.05 x Dia	6 x Dia	.00043	.00054	.00065	.00087	.00130	.00174	.10 x Dia	6 x Dia
<b>ZINC ALLOYS</b>	800														
<b>COPPER ALLOYS</b>															
High Coppers - 90%+ (C1xxx)	225	Finishing	.00010	.00020	.00030	.05 x Dia	6 x Dia	.00034	.00043	.00052	.00070	.00104	.00139	.10 x Dia	6 x Dia
Brass (Copper Zinc alloys, C2xxx, C3xxx, C4xxx, C6400-C69800)	500														
Phosphor Bronzes (Copper Tin alloys, C5xxx)	225														
Aluminum Bronzes (Copper Aluminum alloys, C60600-C64200)	500														
Silicon Bronzes (Copper Silicon alloys, C64700-C66100)	500														
Copper Nickels, Nickel Silvers (Copper Nickel alloys, C7xxx)	225														
Cast Copper Alloys (C8300-C86200, C86400-C87900, C92200-C95800, C97300-C97800, C99400-C99700)	550														



**Product Table:** Miniature End Mills - Corner Radius - Long Flute  
**Characteristics:** 6x Length of Cut, 4 Flutes  
**Series:** 7337xx, 7338xx, 7398xx, 8011xx

**Please note:**  
 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: 29-37 Rc (279-344 HBn)												SFM	Hardness: 38-45 Rc (353-421 HBn)															
		Chip Load (IPT) by Dia			Depth of Cut		Chip Load (IPT) by Cutter Dia					Depth of Cut			Chip Load (IPT) by Dia			Depth of Cut		Chip Load (IPT) by Cutter Dia					Depth of Cut					
		0.015	0.031	0.047	Radial	Axial	0.062	0.078	0.093	0.125	0.187	0.250	Radial		Axial	0.015	0.031	0.047	Radial	Axial	0.062	0.078	0.093	0.125	0.187	0.250	Radial	Axial		
<b>CARBON STEELS</b>																														
Free-Machining/Low Carbon steels, 10xx - 1029 & all 10Lxx, 11xx - 1139 & all 11Lxx, 12xx - 1215 & all 12Lxx	600	Finishing	.00004	.00008	.00012	.05 x Dia	6 x Dia	.00013	.00017	.00020	.00027	.00041	.00054	.10 x Dia	6 x Dia	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
1030 - 1095, 1140 - 1151, 13xx, 15xx, 2xx, 3xx, 4xx & 4xLxx, 5xxx & 5xLxx, 50xxx & 50Lxx, 51xxx & 51Lxx, 52xxx & 52Lxx, 6xxx, 8xxx, 9xxx	200															-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>STAINLESS STEELS</b>																														
203 EZ, 303 (all types), 416, 416Se, 416 Plus X, 420F, 420FSe, 430F, 430FSe, 440F, 440FSe	450	Finishing	.00004	.00008	.00012	.05 x Dia	6 x Dia	.00013	.00017	.00020	.00027	.00041	.00054	.10 x Dia	6 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															100	Finishing	.00002	.00004	.00005	.05 x Dia	6 x Dia	.00006	.00008	.00009	.00013	.00019	.00025	.10 x Dia	6 x Dia
414, 431, 440A, 440B, 440C, 13-8, 15-5, 15-7, 17-4, 17-7	150	Finishing	.00002	.00004	.00007	.05 x Dia	6 x Dia	.00008	.00010	.00012	.00016	.00023	.00031	.10 x Dia	6 x Dia	90	Finishing	.00001	.00002	.00003	.05 x Dia	6 x Dia	.00004	.00005	.00006	.00008	.00012	.00016	.10 x Dia	6 x Dia
<b>TOOL STEELS</b>																														
A, L, O, P, W series	200	Finishing	.00003	.00007	.00011	.05 x Dia	6 x Dia	.00012	.00016	.00018	.00025	.00037	.00050	.10 x Dia	6 x Dia	100	Finishing	.00002	.00004	.00005	.05 x Dia	6 x Dia	.00006	.00008	.00009	.00013	.00019	.00025	.10 x Dia	6 x Dia
D, H, M, T, S series	150	Finishing	.00002	.00004	.00007	.05 x Dia	6 x Dia	.00008	.00010	.00012	.00016	.00023	.00031	.10 x Dia	6 x Dia	90	Finishing	.00001	.00002	.00003	.05 x Dia	6 x Dia	.00004	.00005	.00006	.00008	.00012	.00016	.10 x Dia	6 x Dia
<b>TITANIUM ALLOYS</b>																														
Inconel, Hastelloy, Waspalloy, Monel, Nimonic, Haynes, Discoloy, Incoloy	70	Finishing	.00002	.00004	.00007	.05 x Dia	6 x Dia	.00008	.00010	.00012	.00016	.00023	.00031	.10 x Dia	6 x Dia	75	Finishing	.00001	.00002	.00003	.05 x Dia	6 x Dia	.00004	.00005	.00006	.00008	.00012	.00016	.10 x Dia	6 x Dia
<b>HIGH TEMP ALLOYS</b>																														
Inconel, Hastelloy, Waspalloy, Monel, Nimonic, Haynes, Discoloy, Incoloy	70	Finishing	.00001	.00002	.00003	.05 x Dia	6 x Dia	.00004	.00005	.00006	.00008	.00012	.00016	.10 x Dia	6 x Dia	50	Finishing	.00001	.00002	.00003	.05 x Dia	6 x Dia	.00004	.00005	.00006	.00008	.00012	.00016	.10 x Dia	6 x Dia