

MATERIAL		Hardness: ≤ 28 Rc (≤ 271 HBn)														
		SFM	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	
ALUMINUM ALLOYS																
Casting (2xx, 5xx, 7xx, 8xx)		750	Finishing	.00019	.00039	.00059	.05 x Dia	3 x Dia	.00068	.00085	.00102	.00137	.00205	.00274	.10 x Dia	3 x Dia
Wrought (1xxx, 2xxx, 3xxx, 5xxx, 6xxx, 7xxx, 8xxx)		1000														
Casting - 3%-5% Si (3xx, A3xx, C3xx, 4xx, A4xx, B4xx)		750	Finishing	.00017	.00035	.00053	.05 x Dia	3 x Dia	.00061	.00077	.00092	.00123	.00184	.00246	.10 x Dia	3 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														
MAGNESIUM ALLOYS		1500	Finishing	.00019	.00039	.00059	.05 x Dia	3 x Dia	.00068	.00085	.00102	.00137	.00205	.00274	.10 x Dia	3 x Dia
ZINC ALLOYS		800														
COPPER ALLOYS			Finishing	.00015	.00031	.00047	.05 x Dia	3 x Dia	.00054	.00068	.00081	.00109	.00164	.00219	.10 x Dia	3 x Dia
High Coppers - 90%+ (C1xxx)		225														
Brass (Copper Zinc alloys, C2xxx, C3xxx, C4xxx, C66400-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 (C83300-C86200, C86400-C87900, C92200-C95800, C97300-C97800, C99400-C99700)		550														



Speeds & Feeds

Product Table: Miniature End Mills - Square - Long Reach, Standard Flute - 5 Flute
Characteristics: 8x Reach Multiple, 5 Flutes
Series: 7022xx, 7023xx

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

MATERIAL	Hardness: 29-37 Rc (279-344 HBn)														
	SFM	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
CARBON STEELS															
Free-Machining/Low Carbon steels, 10xx - 1029 & all 10Lxx, 11xx - 1139 & all 11Lxx, 12xx - 1215 & all 12Lxx	600	Finishing	.00006	.00012	.00019	.05 x Dia	3 x Dia	.00021	.00027	.00032	.00043	.00064	.00086	.10 x Dia	3 x Dia
1030 - 1095, 1140 - 1151, 13xx, 15xx, 20xx, 30xx, 40xx & 4xLxx, 50xx & 5xLxx, 50xxx & 50Lxxx, 51xxx & 51Lxxx, 52xxx & 52Lxxx, 60xx, 80xx, 90xx	200	Finishing	.00005	.00011	.00017	.05 x Dia	3 x Dia	.00019	.00024	.00029	.00039	.00059	.00078	.10 x Dia	3 x Dia
STAINLESS STEELS															
203 EZ, 303 (all types), 416, 416Se, 416 Plus X, 420F, 420FSe, 430F, 430FSe, 440F, 440FSe	450	Finishing	.00006	.00012	.00019	.05 x Dia	3 x Dia	.00021	.00027	.00032	.00043	.00064	.00086	.10 x Dia	3 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	Finishing	.00005	.00011	.00017	.05 x Dia	3 x Dia	.00019	.00024	.00029	.00039	.00059	.00078	.10 x Dia	3 x Dia
414, 431, 440A, 440B, 440C, 13-8, 15-5, 15-7, 17-4, 17-7	150	Finishing	.00003	.00007	.00011	.05 x Dia	3 x Dia	.00012	.00015	.00018	.00024	.00037	.00049	.10 x Dia	3 x Dia
TOOL STEELS															
A, L, O, P, W series	200	Finishing	.00005	.00011	.00017	.05 x Dia	3 x Dia	.00019	.00024	.00029	.00039	.00059	.00078	.10 x Dia	3 x Dia
D, H, M, T, S series	150	Finishing	.00003	.00007	.00011	.05 x Dia	3 x Dia	.00012	.00015	.00018	.00024	.00037	.00049	.10 x Dia	3 x Dia
TITANIUM ALLOYS	150	Finishing	.00003	.00007	.00011	.05 x Dia	3 x Dia	.00012	.00015	.00018	.00024	.00037	.00049	.10 x Dia	3 x Dia
HIGH TEMP ALLOYS															
Inconel, Hastelloy, Waspalloy, Monel, Nimonic, Haynes, Discoloy, Incoloy	70	Finishing	.00003	.00007	.00011	.05 x Dia	3 x Dia	.00012	.00015	.00018	.00024	.00037	.00049	.10 x Dia	3 x Dia

Hardness: 38-45 Rc (353-421 HBn)														
SFM	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
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
100	Finishing	.00003	.00006	.00009	.05 x Dia	3 x Dia	.00010	.00012	.00015	.00020	.00030	.00039	.10 x Dia	3 x Dia
90	Finishing	.00002	.00004	.00005	.05 x Dia	3 x Dia	.00006	.00008	.00009	.00012	.00018	.00025	.10 x Dia	3 x Dia
100	Finishing	.00003	.00006	.00009	.05 x Dia	3 x Dia	.00010	.00012	.00015	.00020	.00030	.00039	.10 x Dia	3 x Dia
90	Finishing	.00002	.00004	.00005	.05 x Dia	3 x Dia	.00006	.00008	.00009	.00012	.00018	.00025	.10 x Dia	3 x Dia
75	Finishing	.00002	.00004	.00005	.05 x Dia	3 x Dia	.00006	.00008	.00009	.00012	.00018	.00025	.10 x Dia	3 x Dia
50	Finishing	.00002	.00004	.00005	.05 x Dia	3 x Dia	.00006	.00008	.00009	.00012	.00018	.00025	.10 x Dia	3 x Dia