



Speeds & Feeds

Product Table: Miniature End Mills - Square - Router Style
Characteristics: 3x Length of Cut, 4 Flutes
Series: 7617xx, 7618xx

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		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	0.375	0.500	Radial	Axial				
ALUMINUM ALLOYS		750	Slotting	.00015	.00031	.00048	1 x Dia	.14 x Dia	.00055	.00069	.00082	.00110	.00165	.00220	.00330	.00440	1 x Dia	.35 x Dia			
Casting (2xx, 5xx, 7xx, 8xx)			Roughing	.00015	.00031	.00048	.13 x Dia	3 x Dia	.00055	.00069	.00082	.00110	.00165	.00220	.00330	.00440	.25 x Dia	3 x Dia			
Wrought (1xxx, 2xxx, 3xxx, 5xxx, 6xxx, 7xxx, 8xxx)		1000	Finishing	.00019	.00040	.00060	.08 x Dia	3 x Dia	.00069	.00087	.00103	.00139	.00208	.00278	.00417	.00556	.15 x Dia	3 x Dia			
Casting - 3%-5% Si (3xx, A3xx, C3xx, 4xx, A4xx, B4xx)		750	Slotting	.00014	.00028	.00043	1 x Dia	.14 x Dia	.00049	.00062	.00074	.00099	.00148	.00198	.00297	.00396	1 x Dia	.35 x Dia			
Casting - 5%-8% Si (3xx, A3xx, C3xx, 4xx, A4xx, B4xx)		700	Roughing	.00014	.00028	.00043	.13 x Dia	3 x Dia	.00049	.00062	.00074	.00099	.00148	.00198	.00297	.00396	.25 x Dia	3 x Dia			
Casting - 8%-12% Si (3xx, A3xx, C3xx, 4xx, A4xx, B4xx)		650		Casting - 12%-16% Si (3xx, A3xx, C3xx, 4xx, A4xx, B4xx)	475	Finishing	.00017	.00036	.00054	.08 x Dia	3 x Dia	.00062	.00078	.00093	.00125	.00187	.00250	.00375	.00501	.15 x Dia	3 x Dia
Wrought - 5%-8% Si (4xxx)		1000	Finishing	.00017	.00036	.00054	.08 x Dia	3 x Dia	.00062	.00078	.00093	.00125	.00187	.00250	.00375	.00501	.15 x Dia	3 x Dia			
Wrought - 8%-12% Si (4xxx)		800		MAGNESIUM ALLOYS		1500	Slotting	.00015	.00031	.00048	1 x Dia	.14 x Dia	.00055	.00069	.00082	.00110	.00165	.00220	.00330	.00440	1 x Dia
			Roughing	.00015	.00031	.00048	.13 x Dia	3 x Dia	.00055	.00069	.00082	.00110	.00165	.00220	.00330	.00440	.25 x Dia	3 x Dia			
ZINC ALLOYS		800	Finishing	.00019	.00040	.00060	.08 x Dia	3 x Dia	.00069	.00087	.00103	.00139	.00208	.00278	.00417	.00556	.15 x Dia	3 x Dia			
COPPER ALLOYS																					
High Coppers - 90%+ (C1xxx)		225	Slotting	.00012	.00025	.00038	1 x Dia	.14 x Dia	.00044	.00055	.00065	.00088	.00132	.00176	.00264	.00352	1 x Dia	.35 x Dia			
Brass (Copper Zinc alloys, C2xxx, C3xxx, C4xxx, C6400-C69800)		500		Roughing	.00012	.00025	.00038	.13 x Dia	3 x Dia	.00044	.00055	.00065	.00088	.00132	.00176	.00264	.00352	.25 x Dia	3 x Dia		
Phosphor Bronzes (Copper Tin alloys, C5xxx)		225	Aluminum Bronzes (Copper Aluminum alloys, C60600-C64200)		500	Roughing	.00012	.00025	.00038	.13 x Dia	3 x Dia	.00044	.00055	.00065	.00088	.00132	.00176	.00264	.00352	.25 x Dia	3 x Dia
Silicon Bronzes (Copper Silicon alloys, C64700-C66100)		500		Copper Nickels, Nickel Silvers (Copper Nickel alloys, C7xxx)	225		Finishing	.00015	.00032	.00048	.08 x Dia	3 x Dia	.00055	.00069	.00083	.00111	.00166	.00222	.00334	.00445	.15 x Dia
Cast Copper Alloys (C83300-C86200, C86400-C87900, C92200-C95800, C97300-C97800, C99400-C99700)		550																			

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	0.375	0.500	Radial	Axial	
CARBON STEELS		600	Slotting	.00005	.00011	.00016	1 x Dia	.14 x Dia	.00019	.00024	.00028	.00038	.00057	.00076	.00113	.00151	1 x Dia	.35 x Dia
Free-Machining/Low Carbon steels, 10xx - 1029 & all 10Lxx, 11xx - 1139 & all 11Lxx, 12xx - 1215 & all 12Lxx			Roughing	.00005	.00010	.00015	.13 x Dia	3 x Dia	.00017	.00021	.00025	.00034	.00051	.00068	.00102	.00136	.25 x Dia	3 x Dia
			Finishing	.00006	.00012	.00019	.08 x Dia	3 x Dia	.00022	.00027	.00032	.00043	.00065	.00087	.00130	.00174	.15 x Dia	3 x Dia
1030 - 1095, 1140 - 1151, 13xx, 15xx, 2xxx, 3xxx, 4xxx & 4Lxx, 5xxx & 5Lxx, 50xxx & 50Lxx, 51xxx & 51Lxx, 52xxx & 52Lxx, 6xxx, 8xxx, 9xxx		200	Slotting	.00005	.00010	.00015	1 x Dia	.14 x Dia	.00017	.00022	.00026	.00035	.00052	.00069	.00104	.00138	1 x Dia	.35 x Dia
		450	Roughing	.00004	.00009	.00013	.13 x Dia	3 x Dia	.00015	.00019	.00023	.00031	.00047	.00062	.00093	.00124	.25 x Dia	3 x Dia
			Finishing	.00005	.00011	.00017	.08 x Dia	3 x Dia	.00020	.00025	.00030	.00040	.00059	.00079	.00119	.00159	.15 x Dia	3 x Dia
STAINLESS STEELS		450	Slotting	.00005	.00011	.00016	1 x Dia	.14 x Dia	.00019	.00024	.00028	.00038	.00057	.00076	.00113	.00151	1 x Dia	.35 x Dia
203 EZ, 303 (all types), 416, 416Se, 416 Plus X, 420F, 420FSe, 430F, 430FSe, 440F, 440FSe			Roughing	.00005	.00010	.00015	.13 x Dia	3 x Dia	.00017	.00021	.00025	.00034	.00051	.00068	.00102	.00136	.25 x Dia	3 x Dia
			Finishing	.00006	.00012	.00019	.08 x Dia	3 x Dia	.00022	.00027	.00032	.00043	.00065	.00087	.00130	.00174	.15 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	Slotting	.00005	.00010	.00015	1 x Dia	.14 x Dia	.00017	.00022	.00026	.00035	.00052	.00069	.00104	.00138	1 x Dia	.35 x Dia
		150	Roughing	.00004	.00009	.00013	.13 x Dia	3 x Dia	.00015	.00019	.00023	.00031	.00047	.00062	.00093	.00124	.25 x Dia	3 x Dia
			Finishing	.00005	.00011	.00017	.08 x Dia	3 x Dia	.00020	.00025	.00030	.00040	.00059	.00079	.00119	.00159	.15 x Dia	3 x Dia
414, 431, 440A, 440B, 440C, 13-8, 15-5, 15-7, 17-4, 17-7		200	Slotting	.00003	.00006	.00009	1 x Dia	.14 x Dia	.00011	.00013	.00016	.00022	.00032	.00043	.00065	.00086	1 x Dia	.35 x Dia
		150	Roughing	.00003	.00006	.00008	.13 x Dia	3 x Dia	.00010	.00012	.00014	.00019	.00029	.00039	.00058	.00078	.25 x Dia	3 x Dia
			Finishing	.00003	.00007	.00011	.08 x Dia	3 x Dia	.00012	.00016	.00018	.00025	.00037	.00050	.00075	.00099	.15 x Dia	3 x Dia
TOOL STEELS		200	Slotting	.00005	.00010	.00015	1 x Dia	.14 x Dia	.00017	.00022	.00026	.00035	.00052	.00069	.00104	.00138	1 x Dia	.35 x Dia
A, L, O, P, W series			Roughing	.00004	.00009	.00013	.13 x Dia	3 x Dia	.00015	.00019	.00023	.00031	.00047	.00062	.00093	.00124	.25 x Dia	3 x Dia
			Finishing	.00005	.00011	.00017	.08 x Dia	3 x Dia	.00020	.00025	.00030	.00040	.00059	.00079	.00119	.00159	.15 x Dia	3 x Dia
D, H, M, T, S series		150	Slotting	.00003	.00006	.00009	1 x Dia	.14 x Dia	.00011	.00013	.00016	.00022	.00032	.00043	.00065	.00086	1 x Dia	.35 x Dia
		90	Roughing	.00003	.00006	.00008	.13 x Dia	3 x Dia	.00010	.00012	.00014	.00019	.00029	.00039	.00058	.00078	.25 x Dia	3 x Dia
			Finishing	.00003	.00007	.00011	.08 x Dia	3 x Dia	.00012	.00016	.00018	.00025	.00037	.00050	.00075	.00099	.15 x Dia	3 x Dia
TITANIUM ALLOYS		150	Slotting	.00003	.00006	.00009	1 x Dia	.14 x Dia	.00011	.00013	.00016	.00022	.00032	.00043	.00065	.00086	1 x Dia	.35 x Dia
			Roughing	.00003	.00006	.00008	.13 x Dia	3 x Dia	.00010	.00012	.00014	.00019	.00029	.00039	.00058	.00078	.25 x Dia	3 x Dia
			Finishing	.00003	.00007	.00011	.08 x Dia	3 x Dia	.00012	.00016	.00018	.00025	.00037	.00050	.00075	.00099	.15 x Dia	3 x Dia
HIGH TEMP ALLOYS		70	Slotting	.00003	.00006	.00009	1 x Dia	.14 x Dia	.00011	.00013	.00016	.00022	.00032	.00043	.00065	.00086	1 x Dia	.35 x Dia
Inconel, Hastelloy, Waspalloy, Monel, Nimonic, Haynes, Discoloy, Incoloy			Roughing	.00003	.00006	.00008	.13 x Dia	3 x Dia	.00010	.00012	.00014	.00019	.00029	.00039	.00058	.00078	.25 x Dia	3 x Dia
			Finishing	.00003	.00007	.00011	.08 x Dia	3 x Dia	.00012	.00016	.00018	.00025	.00037	.00050	.00075	.00099	.15 x Dia	3 x Dia

MATERIAL		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	0.375	0.500	Radial	Axial	
		-	Slotting	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			Roughing	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			Finishing	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		-	Slotting	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			Roughing	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			Finishing	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		-	Slotting	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			Roughing	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			Finishing	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		-	Slotting	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			Roughing	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			Finishing	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		100	Slotting	.00002	.00005	.00007	1 x Dia	.14 x Dia	.00009	.00011	.00013	.00017	.00026	.00035	.00052	.00069	1 x Dia	.35 x Dia
			Roughing	.00002	.00004	.00007	.13 x Dia	3 x Dia	.00008	.00010	.00012	.00016	.00023	.00031	.00047	.00062	.25 x Dia	3 x Dia
			Finishing	.00003	.00006	.00009	.08 x Dia	3 x Dia	.00010	.00013	.00015	.00020	.00030					