

MATERIAL	Hardness: ≤ 28 Rc (≤ 271 HBn)														
	SFM	Chip Load (IPT) by Cutter Diameter										Depth of Cut			
		0.062	0.078	0.093	0.125	0.187	0.250	0.375	0.500	0.625	0.750	1.000	Radial	Axial	
ALUMINIUM ALLOYS	750	Slotting	.00060	.00076	.00090	.00121	.00181	.00242	.00363	.00484	.00605	.00726	.00968	1 x Dia	.50 x Dia
Casting (2xx, 5xx, 7xx, 8xx)		Roughing	.00078	.00099	.00118	.00158	.00237	.00316	.00474	.00633	.00791	.00949	.01265	.60 x Dia	1 x Dia
Wrought (1xxx, 2xxx, 3xxx, 5xxx, 6xxx, 7xxx, 8xxx)	1000	Finishing	.00086	.00108	.00129	.00174	.00260	.00348	.00521	.00695	.00869	.01043	.01390	.25 x Dia	1 x Dia
Casting - 3%-5% Si (3xx, A3xx, C3xx, 4xx, A4xx, B4xx)	750	Slotting	.00054	.00068	.00081	.00109	.00163	.00218	.00327	.00436	.00545	.00653	.00871	1 x Dia	.50 x Dia
Casting - 5%-8% Si (3xx, A3xx, C3xx, 4xx, A4xx, B4xx)	700	Roughing	.00071	.00089	.00106	.00142	.00213	.00285	.00427	.00569	.00712	.00854	.01139	.60 x Dia	1 x Dia
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	Finishing	.00078	.00098	.00116	.00156	.00234	.00313	.00469	.00626	.00782	.00939	.01251	.25 x Dia	1 x Dia
Wrought - 8%-12% Si (4xxx)	800														
MAGNESIUM ALLOYS	1500	Slotting	.00060	.00076	.00090	.00121	.00181	.00242	.00363	.00484	.00605	.00726	.00968	1 x Dia	.50 x Dia
		Roughing	.00078	.00099	.00118	.00158	.00237	.00316	.00474	.00633	.00791	.00949	.01265	.60 x Dia	1 x Dia
ZINC ALLOYS	800	Finishing	.00086	.00108	.00129	.00174	.00260	.00348	.00521	.00695	.00869	.01043	.01390	.25 x Dia	1 x Dia
COPPER ALLOYS	225	Roughing	.00063	.00079	.00094	.00127	.00189	.00253	.00380	.00506	.00633	.00759	.01012	.60 x Dia	1 x Dia
High Coppers - 90%+ (C1xxx)	500														
Brass (Copper Zinc alloys, C2xxx, C3xxx, C4xxx, C6400-C69800)	225														
Phosphor Bronzes (Copper Tin alloys, C5xxx)	500														
Aluminum Bronzes (Copper Aluminum alloys, C60600-C64200)	500														
Silicon Bronzes (Copper Silicon alloys, C64700-C66100)	225														
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 - Corner Radius - Stub & Standard - Metric
Characteristics: 1.5x Length of Cut, 4 Flutes
Series: 7405xx, 7406xx, 7409xx

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 Cutter Diameter										Depth of Cut				
		0.062	0.078	0.093	0.125	0.187	0.250	0.375	0.500	0.625	0.750	1.000	Radial	Axial		
CARBON STEELS	600	Slotting	.00021	.00026	.00031	.00042	.00062	.00083	.00125	.00166	.00208	.00249	.00333	1 x Dia	.50 x Dia	
Free-Machining/Low Carbon steels, 10xx - 1029 & all 10Lxx, 11xx - 1139 & all 11Lxx, 12xx - 1215 & all 12Lxx		Roughing	.00024	.00031	.00036	.00049	.00073	.00098	.00147	.00196	.00245	.00293	.00391	.60 x Dia	1 x Dia	
		Finishing	.00027	.00034	.00040	.00054	.00081	.00109	.00163	.00217	.00272	.00326	.00435	.25 x Dia	1 x Dia	
1030 - 1095, 1140 - 1151, 13xx, 15xx, 20xx, 30xx, 40xx & 4xLxx, 50xx & 5xLxx, 50xx & 50Lxx, 51xx & 51Lxx, 52xx & 52Lxx, 60xx, 80xx, 90xx		Slotting	.00019	.00024	.00028	.00038	.00057	.00076	.00114	.00152	.00190	.00228	.00304	1 x Dia	.50 x Dia	
		Roughing	.00022	.00028	.00033	.00045	.00067	.00089	.00134	.00179	.00224	.00268	.00358	.60 x Dia	1 x Dia	
		Finishing	.00025	.00031	.00037	.00050	.00074	.00099	.00149	.00199	.00248	.00298	.00397	.25 x Dia	1 x Dia	
STAINLESS STEELS	450	Slotting	.00021	.00026	.00031	.00042	.00062	.00083	.00125	.00166	.00208	.00249	.00333	1 x Dia	.50 x Dia	
203 EZ, 303 (all types), 416, 416Se, 416 Plus X, 420F, 420FSe, 430F, 430FSe, 440F, 440FSe		Roughing	.00024	.00031	.00036	.00049	.00073	.00098	.00147	.00196	.00245	.00293	.00391	.60 x Dia	1 x Dia	
		Finishing	.00027	.00034	.00040	.00054	.00081	.00109	.00163	.00217	.00272	.00326	.00435	.25 x Dia	1 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		Slotting	.00019	.00024	.00028	.00038	.00057	.00076	.00114	.00152	.00190	.00228	.00304	1 x Dia	.50 x Dia	
		Roughing	.00022	.00028	.00033	.00045	.00067	.00089	.00134	.00179	.00224	.00268	.00358	.60 x Dia	1 x Dia	
		Finishing	.00025	.00031	.00037	.00050	.00074	.00099	.00149	.00199	.00248	.00298	.00397	.25 x Dia	1 x Dia	
414, 431, 440A, 440B, 440C, 13-8, 15-5, 15-7, 17-4, 17-7	150	Slotting	.00012	.00015	.00018	.00024	.00036	.00048	.00071	.00095	.00119	.00143	.00190	1 x Dia	.50 x Dia	
		Roughing	.00014	.00017	.00021	.00028	.00042	.00056	.00084	.00112	.00140	.00168	.00224	.60 x Dia	1 x Dia	
		Finishing	.00015	.00019	.00023	.00031	.00046	.00062	.00093	.00124	.00155	.00186	.00248	.25 x Dia	1 x Dia	
TOOL STEELS		200	Slotting	.00019	.00024	.00028	.00038	.00057	.00076	.00114	.00152	.00190	.00228	.00304	1 x Dia	.50 x Dia
A, L, O, P, W series			Roughing	.00022	.00028	.00033	.00045	.00067	.00089	.00134	.00179	.00224	.00268	.00358	.60 x Dia	1 x Dia
			Finishing	.00025	.00031	.00037	.00050	.00074	.00099	.00149	.00199	.00248	.00298	.00397	.25 x Dia	1 x Dia
D, H, M, T, S series	150		Slotting	.00012	.00015	.00018	.00024	.00036	.00048	.00071	.00095	.00119	.00143	.00190	1 x Dia	.50 x Dia
			Roughing	.00014	.00017	.00021	.00028	.00042	.00056	.00084	.00112	.00140	.00168	.00224	.60 x Dia	1 x Dia
			Finishing	.00015	.00019	.00023	.00031	.00046	.00062	.00093	.00124	.00155	.00186	.00248	.25 x Dia	1 x Dia
TITANIUM ALLOYS		150	Slotting	.00012	.00015	.00018	.00024	.00036	.00048	.00071	.00095	.00119	.00143	.00190	1 x Dia	.50 x Dia
			Roughing	.00014	.00017	.00021	.00028	.00042	.00056	.00084	.00112	.00140	.00168	.00224	.60 x Dia	1 x Dia
			Finishing	.00015	.00019	.00023	.00031	.00046	.00062	.00093	.00124	.00155	.00186	.00248	.25 x Dia	1 x Dia
HIGH TEMP ALLOYS	70		Slotting	.00012	.00015	.00018	.00024	.00036	.00048	.00071	.00095	.00119	.00143	.00190	1 x Dia	.50 x Dia
Inconel, Hastelloy, Waspalloy, Monel, Nimonic, Haynes, Discoloy, Incoloy			Roughing	.00014	.00017	.00021	.00028	.00042	.00056	.00084	.00112	.00140	.00168	.00224	.60 x Dia	1 x Dia
			Finishing	.00015	.00019	.00023	.00031	.00046	.00062	.00093	.00124	.00155	.00186	.00248	.25 x Dia	1 x Dia

Hardness: 38-45 Rc (353-421 HBn)														
SFM	Chip Load (IPT) by Cutter Diameter											Depth of Cut		
		0.062	0.078	0.093	0.125	0.187	0.250	0.375	0.500	0.625	0.750	1.000	Radial	Axial
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-	-
100	Slotting	.00009	.00012	.00014	.00019	.00028	.00038	.00057	.00076	.00095	.00114	.00152	1 x Dia	.50 x Dia
	Roughing	.00011	.00014	.00017	.00022	.00033	.00045	.00067	.00089	.00112	.00134	.00179	.60 x Dia	1 x Dia
	Finishing	.00012	.00016	.00019	.00025	.00037	.00050	.00075	.00100	.00125	.00150	.00200	.25 x Dia	1 x Dia
90	Slotting	.00006	.00007	.00009	.00012	.00018	.00024	.00036	.00048	.00059	.00071	.00095	1 x Dia	.50 x Dia
	Roughing	.00007	.00009	.00010	.00014	.00021	.00028	.00042	.00056	.00070	.00084	.00112	.60 x Dia	1 x Dia
	Finishing	.00008	.00010	.00012	.00016	.00023	.00031	.00047	.00063	.00078	.00094	.00125	.25 x Dia	1 x Dia
100	Slotting	.00009	.00012	.00014	.00019	.00028	.00038	.00057	.00076	.00095	.00114	.00152	1 x Dia	.50 x Dia
	Roughing	.00011	.00014	.00017	.00022	.00033	.00045	.00067	.00089	.00112	.00134	.00179	.60 x Dia	1 x Dia
	Finishing	.00012	.00016	.00019	.00025	.00037	.00050	.00075	.00100	.00125	.00150	.00200	.25 x Dia	1 x Dia
90	Slotting	.00006	.00007	.00009	.00012	.00018	.00024	.00036	.00048	.00059	.00071	.00095	1 x Dia	.50 x Dia
	Roughing	.00007	.00009	.00010	.00014	.00021	.00028	.00042	.00056	.00070	.00084	.00112	.60 x Dia	1 x Dia
	Finishing	.00008	.00010	.00012	.00016	.00023	.00031	.00047	.00063	.00078	.00094	.00125	.25 x Dia	1 x Dia
75	Slotting	.00006	.00007	.00009	.00012	.00018	.00024	.00036	.00048	.00059	.00071	.00095	1 x Dia	.50 x Dia
	Roughing	.00007	.00009	.00010	.00014	.00021	.00028	.00042	.00056	.00070	.00084	.00112	.60 x Dia	1 x Dia
	Finishing	.00008	.00010	.00012	.00016	.00023	.00031	.00047	.00063	.00078	.00094	.00125	.25 x Dia	1 x Dia
50	Slotting	.00006	.00007	.00009	.00012	.00018	.00024	.00036	.00048	.00059	.00071	.00095	1 x Dia	.50 x Dia
	Roughing	.00007	.00009	.00010	.00014	.00021	.00028	.00042	.00056	.00070	.00084	.00112	.60 x Dia	1 x Dia
	Finishing	.00008	.00010	.00012	.00016	.00023	.00031	.00047	.00063	.00078	.00094	.00125	.25 x Dia	1 x Dia