Speeds & Feeds

Product Table: Miniature Drills
Series: 200xx, 201xx, 202xx, 203xx, 204xx, 7036xx, 8100xx, 8101xx, 8102xx

Product Notes:

Pecking cycles are recommended to avoid chip packing and breakage.
- For Non-Ferrous materials, the initial peck depth should be 3-5x Diameter with each subsequent peck at 2-3x Diameter.
- For steels at 29-37 Rc, the initial peck depth should be 2-3x Diameter with each subsequent peck should be 1-2x Diameter.
- For steels at 38-45 Rc, the initial peck depth should be 1-2x Diameter with each subsequent peck should be .5-1x Diameter.

Tools with a diameter < .010" are extremely fragile and require special precautions to avoid immediate failure. To help determine a customized setup for your unique application, please contact our Technical Specialists.

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 10%-20% if coated.

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 **tech@harveytool.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 (IPR - Inches Per Revolution) By Drill Diameter								
		0.015	0.031	0.047	0.062	0.078	0.093	0.125	0.187	0.250
ALUMINUM ALLOYS										
Casting (2xx, 5xx, 7xx, 8xx)	450	.00045	.00093	.00141	.00186	.00234	.00279	.00375	.00561	.00750
Wrought (1xxx, 2xxx, 3xxx, 5xxx, 6xxx, 7xxx, 8xxx)	600									
Casting - 3%-5% Si (3xx, A3xx, C3xx, 4xx, A4xx, B4xx)	450	.00041	.00084	.00127	.00167	.00211	.00251	.00338	.00505	.00675
Casting - 5%-8% Si (3xx, A3xx, C3xx, 4xx, A4xx, B4xx)	420									
Casting - 8%-12% Si (3xx, A3xx, C3xx, 4xx, A4xx, B4xx)	390									
Casting - 12%-16% Si (3xx, A3xx, C3xx, 4xx, A4xx, B4xx)	350									
Wrought - 5%-8% Si (4xxx)	600									
Wrought - 8%-12% Si (4xxx)	480									
MAGNESIUM ALLOYS	900	.00045	.00093	.00141	.00186	.00234	.00279	.00375	.00561	.00750
ZINC ALLOYS	480									
COPPER ALLOYS										
High Coppers - 90%+ (C1xxxx)	170	.00036	.00074	.00113	.00149	.00187	.00223	.00300	.00449	.00600
Brass (Copper Zinc alloys, C2xxxx, C3xxxx, C4xxxx, C66400-C69800)	375									
Phosphor Bronzes (Copper Tin alloys, C5xxxx)	170									
Aluminum Bronzes (Copper Aluminum alloys, C60600-C64200)	375									
Silicon Bronzes (Copper Silicon alloys, C64700-C66100)	375									
Copper Nickels, Nickel Silvers (Copper Nickel alloys, C7xxxx)	170									
Cast Copper Alloys (C83300-C86200, C86400-C87900, C92200-C95800, C97300-C97800, C99400-C99700)	400									

MATERIAL	Hardness: 29-37 Rc (279-344 HBn)									
	SFM	Chip Load (IPR - Inches Per Revolution) By Drill Diameter								
		0.015	0.031	0.047	0.062	0.078	0.093	0.125	0.187	0.250
CARBON STEELS										
Free-Machining/Low Carbon steels, 10xx - 1029 & all 10Lxx, 11xx - 1139 & all 11Lxx, 12xx - 1215 & all 12Lxx	240	.00039	.00081	.00123	.00163	.00205	.00244	.00328	.00491	.00656
1030 - 1095, 1140 - 1151, 13xx, 15xx, 2xxx, 3xxx, 4xxx & 4xLxx, 5xxx & 5xLxx, 50xxx & 50Lxxx, 51xxx & 51Lxxx, 52xxx & 52Lxxx, 6xxx, 8xxx, 9xxx	150	.00036	.00074	.00113	.00149	.00187	.00223	.00300	.00449	.00600
STAINLESS STEELS										
203 EZ, 303 (all types), 416, 416Se, 416 Plus X, 420F, 420FSe, 430F, 430FSe, 440F, 440FSe	180	.00039	.00081	.00123	.00163	.00205	.00244	.00328	.00491	.00656
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	150	.00036	.00074	.00113	.00149	.00187	.00223	.00300	.00449	.00600
414, 431, 440A, 440B, 440C, 13-8, 15-5, 15-7, 17-4, 17-7	125	.00023	.00047	.00071	.00093	.00117	.00140	.00188	.00281	.00375
TOOL STEELS										
A, L, O, P, W series	125	.00036	.00074	.00113	.00149	.00187	.00223	.00300	.00449	.00600
D, H, M, T, S series	90	.00023	.00047	.00071	.00093	.00117	.00140	.00188	.00281	.00375
TITANIUM ALLOYS	100	.00023	.00047	.00071	.00093	.00117	.00140	.00188	.00281	.00375
HIGH TEMP ALLOYS										
Inconel, Hastelloy, Waspalloy, Monel, Nimonic, Haynes, Discoloy, Incoloy	70	.00023	.00047	.00071	.00093	.00117	.00140	.00188	.00281	.00375

Hardness: 38-45 Rc (353-421 HBn)									
SFM	Chip Load (IPR - Inches Per Revolution) By Drill Diameter								
	0.015	0.031	0.047	0.062	0.078	0.093	0.125	0.187	0.250
-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-
100	.00025	.00052	.00079	.00104	.00131	.00156	.00210	.00314	.00420
90	.00016	.00033	.00049	.00065	.00082	.00098	.00131	.00196	.00263
100	.00025	.00052	.00079	.00104	.00131	.00156	.00210	.00314	.00420
75	.00016	.00033	.00049	.00065	.00082	.00098	.00131	.00196	.00263
75	.00016	.00033	.00049	.00065	.00082	.00098	.00131	.00196	.00263
50	.00016	.00033	.00049	.00065	.00082	.00098	.00131	.00196	.00263