

MATERIAL	Hardness: ≤ 28 Rc (≤ 271 HBn)														
	SFM	Chip Load by Neck Diameter (IPT)													
		0.015	0.031	0.047	0.062	0.078	0.093	0.125	0.187	0.250	0.312	0.375	0.500	0.625	0.750
ALUMINUM ALLOYS															
Casting (2xx, 5xx, 7xx, 8xx)	750	.00017	.00034	.00052	.00068	.00086	.00102	.00138	.00206	.00275	.00343	.00413	.00550	.00688	.00825
Wrought (1xxx, 2xxx, 3xxx, 5xxx, 6xxx, 7xxx, 8xxx)	1000														
Casting - 3%-5% Si (3xx, A3xx, C3xx, 4xx, A4xx, B4xx)	750														
Casting - 5%-8% Si (3xx, A3xx, C3xx, 4xx, A4xx, B4xx)	700														
Casting - 8%-12% Si (3xx, A3xx, C3xx, 4xx, A4xx, B4xx)	650	.00015	.00031	.00047	.00061	.00077	.00092	.00124	.00185	.00248	.00309	.00371	.00495	.00619	.00743
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	.00017	.00034	.00052	.00068	.00086	.00102	.00138	.00206	.00275	.00343	.00413	.00550	.00688	.00825
ZINC ALLOYS	800														
COPPER ALLOYS															
High Coppers - 90%+ (C1xxx)	225														
Brass (Copper Zinc alloys, C2xxxx, C3xxxx, C4xxxx, C66400-C69800)	500														
Phosphor Bronzes (Copper Tin alloys, C5xxxx)	225														
Aluminum Bronzes (Copper Aluminum alloys, C60600-C64200)	500	.00013	.00027	.00041	.00055	.00069	.00082	.00110	.00165	.00220	.00275	.00330	.00440	.00550	.00660
Silicon Bronzes (Copper Silicon alloys, C64700-C66100)	500														
Copper Nickels, Nickel Silvers (Copper Nickel alloys, C7xxxx)	225														
Cast Copper Alloys (C83300-C86200, C86400-C87900, C9200-C95800, C97300-C97800, C99400-C99700)	550														



Speeds & Feeds

Product Table: Dovetail Cutters

Series: 164xx, 165xx, 166xx, 167xx 168xx, 270xx, 285xx, 615xx, 623xx, 634xx, 646xx, 651xx, 663xx, 7379xx, 7380xx, 8067xx, 8068xx, 8114xx, 8279xx, 8323xx, 8339xx, 8451xx, 8734xx, 8745xx, 8836xx, 8912xx, 8965xx, 9262xx, 9284xx, 9300xx, 9323xx, 9599xx, 9644xx, 9731xx, 9778xx, 9794xx, 9833xx, 9848xx, 9860xx, 9892xx, 9901xx, 9914xx, 9920xx, 9952xx

Product Notes:

True dovetail grooves (with trapezoidal shape) must be roughed out with end mill prior to using dovetail cutter

Posted Radial Passes reflect machining on one side of groove at full axial depth
If machining on both sides of part, reduce Chip Loads (IPT) by 40%

When machining grooves with circular interpolation, reduce the Linear Feed (IPM) using the following formula:

$$\text{Adj Feed} = [(\text{Major Groove Dia} - \text{Cutter Dia}) / \text{Major Groove Dia}] \times \text{Linear Feed}$$

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 5%-10% if coated. For ferrous materials with hardness ≤ 28 Rc, chip loads can be increased 5%-10%.

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: 29-37 Rc (279-344 HBn)														
	SFM	Chip Load by Neck Diameter (IPT)													
		0.015	0.031	0.047	0.062	0.078	0.093	0.125	0.187	0.250	0.312	0.375	0.500	0.625	0.750
CARBON STEELS															
Free-Machining/Low Carbon steels, 10xx - 1029 & all 10Lxx, 11xx - 1139 & all 11Lxx, 12xx - 1215 & all 12Lxx	600	.00006	.00012	.00018	.00023	.00029	.00035	.00047	.00071	.00095	.00118	.00142	.00189	.00236	.00284
1030 - 1095, 1140 - 1151, 13xx, 15xx, 2xxx, 3xxx, 4xxx & 4xLxx, 5xxx & 5xLxx, 51xxx & 50Lxxx, 51xxx & 51Lxxx, 52xxx & 52Lxxx, 6xxx, 8xxx, 9xxx	200	.00005	.00011	.00016	.00021	.00027	.00032	.00043	.00065	.00086	.00108	.00130	.00173	.00216	.00259
STAINLESS STEELS															
203 EZ, 303 (all types), 416, 416Se, 416 Plus X, 420F, 420F Se, 430F, 430F Se, 440F, 440F Se	450	.00006	.00012	.00018	.00023	.00029	.00035	.00047	.00071	.00095	.00118	.00142	.00189	.00236	.00284
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	.00005	.00011	.00016	.00021	.00027	.00032	.00043	.00065	.00086	.00108	.00130	.00173	.00216	.00259
414, 431, 440A, 440B, 440C, 13-8, 15-5, 15-7, 17-4, 17-7	150	.00003	.00007	.00010	.00013	.00017	.00020	.00027	.00040	.00054	.00067	.00081	.00108	.00135	.00162
TOOL STEELS															
A, L, O, P, W series	200	.00005	.00011	.00016	.00021	.00027	.00032	.00043	.00065	.00086	.00108	.00130	.00173	.00216	.00259
D, H, M, T, S series	150	.00003	.00007	.00010	.00013	.00017	.00020	.00027	.00040	.00054	.00067	.00081	.00108	.00135	.00162
TITANIUM ALLOYS	150	.00003	.00007	.00010	.00013	.00017	.00020	.00027	.00040	.00054	.00067	.00081	.00108	.00135	.00162
HIGH TEMP ALLOYS															
Inconel, Hastelloy, Waspalloy, Monel, Nimonic, Haynes, Discology, Incoloy	70	.00003	.00007	.00010	.00013	.00017	.00020	.00027	.00040	.00054	.00067	.00081	.00108	.00135	.00162

MATERIAL	Hardness: 38-45 Rc (353-421 HBn)															
	SFM	Chip Load by Neck Diameter (IPT)														
		0.015	0.031	0.047	0.062	0.078	0.093	0.125	0.187	0.250	0.312	0.375	0.500	0.625	0.750	
CARBON STEELS																
Free-Machining/Low Carbon steels, 10xx - 1029 & all 10Lxx, 11xx - 1139 & all 11Lxx, 12xx - 1215 & all 12Lxx	600	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
1030 - 1095, 1140 - 1151, 13xx, 15xx, 2xxx, 3xxx, 4xxx & 4xLxx, 5xxx & 5xLxx, 51xxx & 50Lxxx, 51xxx & 51Lxxx, 52xxx & 52Lxxx, 6xxx, 8xxx, 9xxx	200	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
STAINLESS STEELS																
203 EZ, 303 (all types), 416, 416Se, 416 Plus X, 420F, 420F Se, 430F, 430F Se, 440F, 440F Se	450	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
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	.00003	.00005	.00008	.00011	.00013	.00016	.00022	.00032	.00043	.00054	.00065	.00086	.00108	.00130
414, 431, 440A, 440B, 440C, 13-8, 15-5, 15-7, 17-4, 17-7	150	90	.00002	.00003	.00005	.00007	.00008	.00010	.00014	.00020	.00027	.00034	.00041	.00054	.00068	.00081
TOOL STEELS																
A, L, O, P, W series	200	100	.00003	.00005	.00008	.00011	.00013	.00016	.00022	.00032	.00043	.00054	.00065	.00086	.00108	.00130
D, H, M, T, S series	150	90	.00002	.00003	.00005	.00007	.00008	.00010	.00014	.00020	.00027	.00034	.00041	.00054	.00068	.00081
TITANIUM ALLOYS	150	75	.00002	.00003	.00005	.00007	.00008	.00010	.00014	.00020	.00027	.00034	.00041	.00054	.00068	.00081
HIGH TEMP ALLOYS																
Inconel, Hastelloy, Waspalloy, Monel, Nimonic, Haynes, Discology, Incoloy	70	50	.00002	.00003	.00005	.00007	.00008	.00010	.00014	.00020	.00027	.00034	.00041	.00054	.00068	.00081