



**Speeds & Feeds**

**Product Table:** Runner Cutters  
**Characteristics:** 22° & 22.5°, 2 Flutes  
**Series:** 8678xx, 9799xx

**Product Notes:**

After calculating speed and feed, use the table below to determine number of axial passes needed (and their descending breakdown) to achieve the required depth of cut.

Axial DOC	Passes	Percentage breakdown of Descending Axial Passes									
2x DOC	2	70%	30%								
3x DOC	3	50%	30%	20%							
5x DOC	4	46%	25%	18%	11%						
8x DOC	5	46%	25%	16%	8%	5%					
10x DOC	6	43%	22%	16%	10%	6%	3%				
12x DOC	7	39%	22%	16%	10%	7%	4%	2%			
15x DOC	8	32%	21%	16%	12%	9%	6%	3%	1%		
20x DOC	10	27%	19%	15%	12%	9%	7%	5%	3%	2%	1%

**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. 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 Ball Diameter (2 x Radius)													
		.015	.031	.047	.062	.078	.093	.125	.187	.250	.312	.375	.500		
<b>ALUMINUM ALLOYS</b>															
Casting (2xx, 5xx, 7xx, 8xx)	750	Slotting	.00016	.00032	.00049	.00065	.00082	.00097	.00131	.00195	.00261	.00326	.00392	.00523	
Wrought (1xxx, 2xxx, 3xxx, 5xxx, 6xxx, 7xxx, 8xxx)	1000														
Casting - 3%-5% Si (3xx, A3xx, C3xx, 4xx, A4xx, B4xx)	750	Slotting													
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														
<b>MAGNESIUM ALLOYS</b>	1500		Slotting	.00016	.00032	.00049	.00065	.00082	.00097	.00131	.00195	.00261	.00326	.00392	.00523
<b>ZINC ALLOYS</b>	800														
<b>COPPER ALLOYS</b>															
High Coppers - 90%+ (C1xxxx)	225	Slotting													
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														
Silicon Bronzes (Copper Silicon alloys, C64700-C66100)	500														
Copper Nickels, Nickel Silvers (Copper Nickel alloys, C7xxxx)	225														
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 Ball Diameter (2 x Radius)												
		.015	.031	.047	.062	.078	.093	.125	.187	.250	.312	.375	.500	
<b>CARBON STEELS</b>														
Free-Machining/Low Carbon steels, 10xx - 1029 & all 10Lxx, 11xx - 1139 & all 11Lxx, 12xx - 1215 & all 12Lxx	600	Slotting	.00005	.00011	.00017	.00022	.00028	.00033	.00045	.00067	.00090	.00112	.00135	.00180
1030 - 1095, 1140 - 1151, 13xx, 15xx, 2xxx, 3xxx, 4xxx & 4xLxx, 5xxx & 5xLxx, 50xxx & 50Lxxx, 51xxx & 51Lxxx, 52xxx & 52Lxxx, 6xxx, 8xxx, 9xxx	200	Slotting	.00005	.00010	.00015	.00020	.00026	.00031	.00041	.00061	.00082	.00102	.00123	.00164
<b>STAINLESS STEELS</b>														
203 EZ, 303 (all types), 416, 416Se, 416 Plus X, 420F, 420FSe, 430F, 430FSe, 440F, 440FSe	450	Slotting	.00005	.00011	.00017	.00022	.00028	.00033	.00045	.00067	.00090	.00112	.00135	.00180
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	.00020	.00026	.00031	.00041	.00061	.00082	.00102	.00123	.00164
414, 431, 440A, 440B, 440C, 13-8, 15-5, 15-7, 17-4, 17-7	150	Slotting	.00003	.00006	.00010	.00013	.00016	.00019	.00026	.00038	.00051	.00064	.00077	.00103
<b>TOOL STEELS</b>														
A, L, O, P, W series	200	Slotting	.00005	.00010	.00015	.00020	.00026	.00031	.00041	.00061	.00082	.00102	.00123	.00164
D, H, M, T, S series	150	Slotting	.00003	.00006	.00010	.00013	.00016	.00019	.00026	.00038	.00051	.00064	.00077	.00103
<b>TITANIUM ALLOYS</b>	150	Slotting	.00003	.00006	.00010	.00013	.00016	.00019	.00026	.00038	.00051	.00064	.00077	.00103
<b>HIGH TEMP ALLOYS</b>														
Inconel, Hastelloy, Waspalloy, Monel, Nimonic, Haynes, Discoloy, Incoloy	70	Slotting	.00003	.00006	.00010	.00013	.00016	.00019	.00026	.00038	.00051	.00064	.00077	.00103

MATERIAL	Hardness: 38-45 Rc (353-421 HBn)													
	SFM	Chip Load (IPT) by Ball Diameter (2 x Radius)												
		.015	.031	.047	.062	.078	.093	.125	.187	.250	.312	.375	.500	
	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	100	Slotting	.00002	.00005	.00008	.00010	.00013	.00015	.00021	.00031	.00041	.00051	.00062	.00082
	90	Slotting	.00002	.00003	.00005	.00006	.00008	.00010	.00013	.00019	.00026	.00032	.00038	.00051
	100	Slotting	.00002	.00005	.00008	.00010	.00013	.00015	.00021	.00031	.00041	.00051	.00062	.00082
	90	Slotting	.00002	.00003	.00005	.00006	.00008	.00010	.00013	.00019	.00026	.00032	.00038	.00051
	75	Slotting	.00002	.00003	.00005	.00006	.00008	.00010	.00013	.00019	.00026	.00032	.00038	.00051
	50	Slotting	.00002	.00003	.00005	.00006	.00008	.00010	.00013	.00019	.00026	.00032	.00038	.00051