



Speeds & Feeds

**Product Table:** Runner Cutters  
**Characteristics:** 7°, 10° & 15°, 2 Flutes  
**Series:** 750xx, 751xx, 7646xx

**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](mailto: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	.00014	.00029	.00044	.00058	.00073	.00087	.00118	.00176	.00235	.00293	.00353	.00470
Wrought (1xxx, 2xxx, 3xxx, 5xxx, 6xxx, 7xxx, 8xxx)	1000													
Casting - 3%-5% Si (3xx, A3xx, C3xx, 4xx, A4xx, B4xx)	750	Slotting	.00013	.00026	.00040	.00052	.00066	.00079	.00106	.00158	.00212	.00264	.00317	.00423
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	.00014	.00029	.00044	.00058	.00073	.00087	.00118	.00176	.00235	.00293	.00353	.00470
<b>ZINC ALLOYS</b>	800													
<b>COPPER ALLOYS</b>														
High Coppers - 90%+ (C1xxxx)	225	Slotting	.00011	.00023	.00035	.00047	.00059	.00070	.00094	.00141	.00188	.00235	.00282	.00376
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	.00010	.00015	.00020	.00025	.00030	.00040	.00060	.00081	.00101	.00121	.00162
1030 - 1095, 1140 - 1151, 13xx, 15xx, 2xxx, 3xxx, 4xxx & 4XLxx, 5xxx & 5xLxx, 50xxx & 50Lxxx, 51xxx & 51Lxxx, 52xxx & 52Lxxx, 6xxx, 8xxx, 9xxx	200	Slotting	.00004	.00009	.00014	.00018	.00023	.00027	.00037	.00055	.00074	.00092	.00111	.00148
<b>STAINLESS STEELS</b>														
203 EZ, 303 (all types), 416, 416Se, 416 Plus X, 420F, 420FSe, 430F, 430FSe, 440F, 440FSe	450	Slotting	.00005	.00010	.00015	.00020	.00025	.00030	.00040	.00060	.00081	.00101	.00121	.00162
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	.00004	.00009	.00014	.00018	.00023	.00027	.00037	.00055	.00074	.00092	.00111	.00148
414, 431, 440A, 440B, 440C, 13-8, 15-5, 15-7, 17-4, 17-7	150	Slotting	.00003	.00006	.00009	.00011	.00014	.00017	.00023	.00035	.00046	.00058	.00069	.00092
<b>TOOL STEELS</b>														
A, L, O, P, W series	200	Slotting	.00004	.00009	.00014	.00018	.00023	.00027	.00037	.00055	.00074	.00092	.00111	.00148
D, H, M, T, S series	150	Slotting	.00003	.00006	.00009	.00011	.00014	.00017	.00023	.00035	.00046	.00058	.00069	.00092
<b>TITANIUM ALLOYS</b>	150	Slotting	.00003	.00006	.00009	.00011	.00014	.00017	.00023	.00035	.00046	.00058	.00069	.00092
<b>HIGH TEMP ALLOYS</b>														
Inconel, Hastelloy, Waspalloy, Monel, Nimonic, Haynes, Discoloy, Incoloy	70	Slotting	.00003	.00006	.00009	.00011	.00014	.00017	.00023	.00035	.00046	.00058	.00069	.00092

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	
<b>CARBON STEELS</b>														
Free-Machining/Low Carbon steels, 10xx - 1029 & all 10Lxx, 11xx - 1139 & all 11Lxx, 12xx - 1215 & all 12Lxx	-	-	-	-	-	-	-	-	-	-	-	-	-	
1030 - 1095, 1140 - 1151, 13xx, 15xx, 2xxx, 3xxx, 4xxx & 4XLxx, 5xxx & 5xLxx, 50xxx & 50Lxxx, 51xxx & 51Lxxx, 52xxx & 52Lxxx, 6xxx, 8xxx, 9xxx	-	-	-	-	-	-	-	-	-	-	-	-	-	
<b>STAINLESS STEELS</b>														
203 EZ, 303 (all types), 416, 416Se, 416 Plus X, 420F, 420FSe, 430F, 430FSe, 440F, 440FSe	-	-	-	-	-	-	-	-	-	-	-	-	-	
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	100	Slotting	.00002	.00005	.00007	.00009	.00012	.00014	.00018	.00028	.00037	.00046	.00055	.00074
414, 431, 440A, 440B, 440C, 13-8, 15-5, 15-7, 17-4, 17-7	90	Slotting	.00001	.00003	.00004	.00006	.00007	.00009	.00012	.00017	.00023	.00029	.00035	.00046
<b>TOOL STEELS</b>														
A, L, O, P, W series	100	Slotting	.00002	.00005	.00007	.00009	.00012	.00014	.00018	.00028	.00037	.00046	.00055	.00074
D, H, M, T, S series	90	Slotting	.00001	.00003	.00004	.00006	.00007	.00009	.00012	.00017	.00023	.00029	.00035	.00046
<b>TITANIUM ALLOYS</b>	75	Slotting	.00001	.00003	.00004	.00006	.00007	.00009	.00012	.00017	.00023	.00029	.00035	.00046
<b>HIGH TEMP ALLOYS</b>														
Inconel, Hastelloy, Waspalloy, Monel, Nimonic, Haynes, Discoloy, Incoloy	50	Slotting	.00001	.00003	.00004	.00006	.00007	.00009	.00012	.00017	.00023	.00029	.00035	.00046