



Speeds & Feeds

Product Table: Engraving Cutters - Tip Radius

Characteristics: 1 Flute, Radiused Tip

Series or Item	RPM	Chip Load (IPT) by Material												Axial DOC	
		Plastics	Non-Ferrous	Iron			Carbon Steels			Stainless Steels		Titanium			High Temp Alloys
		Non-Filled, Glass Filled, Carbon Fiber, G10	Aluminum, Magnesium, Copper Alloys	Cast Iron (< 30 Rc)	Cast Iron (30+ Rc)	Ductile, Malleable	< 29 Rc	30 < 39 Rc	40 < 45 Rc	< 30 Rc	32 < 45 Rc	< 30 Rc	32 < 45 Rc		Inconel, Waspaloy, Monel
475xx	6000+	.00168	.00112	.00112	.00045	.00056	.00067	.00050	.00028	.00056	.00028	.00056	.00028	.00045	< .010
481xx	6000+	.00240	.00160	.00160	.00064	.00080	.00096	.00072	.00040	.00080	.00040	.00080	.00040	.00064	< .010
484xx	6000+	.00264	.00176	.00176	.00070	.00088	.00106	.00079	.00044	.00088	.00044	.00088	.00044	.00070	< .010
488xx	6000+	.00189	.00126	.00126	.00050	.00063	.00076	.00057	.00032	.00063	.00032	.00063	.00032	.00050	< .010
491xx	6000+	.00297	.00198	.00198	.00079	.00099	.00119	.00089	.00050	.00099	.00050	.00099	.00050	.00079	< .010
494xx	6000+	.00270	.00180	.00180	.00072	.00090	.00108	.00081	.00045	.00090	.00045	.00090	.00045	.00072	< .010
497xx	6000+	.00189	.00126	.00126	.00050	.00063	.00076	.00057	.00032	.00063	.00032	.00063	.00032	.00050	< .010
508xx	6000+	.00297	.00198	.00198	.00079	.00099	.00119	.00089	.00050	.00099	.00050	.00099	.00050	.00079	< .010
517xx	6000+	.00270	.00180	.00180	.00072	.00090	.00108	.00081	.00045	.00090	.00045	.00090	.00045	.00072	< .010
576xx	6000+	.00192	.00128	.00128	.00051	.00064	.00077	.00058	.00032	.00064	.00032	.00064	.00032	.00051	< .010
582xx	6000+	.00216	.00144	.00144	.00058	.00072	.00086	.00065	.00036	.00072	.00036	.00072	.00036	.00058	< .010
586xx	6000+	.00189	.00126	.00126	.00050	.00063	.00076	.00057	.00032	.00063	.00032	.00063	.00032	.00050	< .010
589xx	6000+	.00270	.00180	.00180	.00072	.00090	.00108	.00081	.00045	.00090	.00045	.00090	.00045	.00072	< .010
593xx	6000+	.00216	.00144	.00144	.00058	.00072	.00086	.00065	.00036	.00072	.00036	.00072	.00036	.00058	< .010
599xx	6000+	.00297	.00198	.00198	.00079	.00099	.00119	.00089	.00050	.00099	.00050	.00099	.00050	.00079	< .010
605xx	6000+	.00216	.00144	.00144	.00058	.00072	.00086	.00065	.00036	.00072	.00036	.00072	.00036	.00058	< .010
72715	6000+	.00147	.00098	.00098	.00039	.00049	.00059	.00044	.00025	.00049	.00025	.00049	.00025	.00039	< .010
72720	6000+	.00147	.00098	.00098	.00039	.00049	.00059	.00044	.00025	.00049	.00025	.00049	.00025	.00039	< .010
72730	6000+	.00210	.00140	.00140	.00056	.00070	.00084	.00063	.00035	.00070	.00035	.00070	.00035	.00056	< .010
72745	6000+	.00231	.00154	.00154	.00062	.00077	.00092	.00069	.00039	.00077	.00039	.00077	.00039	.00062	< .010
8289xx	6000+	.00231	.00154	.00154	.00062	.00077	.00092	.00069	.00039	.00077	.00039	.00077	.00039	.00062	< .010
8347xx	6000+	.00210	.00140	.00140	.00056	.00070	.00084	.00063	.00035	.00070	.00035	.00070	.00035	.00056	< .010
8420xx	6000+	.00147	.00098	.00098	.00039	.00049	.00059	.00044	.00025	.00049	.00025	.00049	.00025	.00039	< .010
8438xx	6000+	.00240	.00160	.00160	.00064	.00080	.00096	.00072	.00040	.00080	.00040	.00080	.00040	.00064	< .010
8447xx	6000+	.00270	.00180	.00180	.00072	.00090	.00108	.00081	.00045	.00090	.00045	.00090	.00045	.00072	< .010
8450xx	6000+	.00216	.00144	.00144	.00058	.00072	.00086	.00065	.00036	.00072	.00036	.00072	.00036	.00058	< .010
8472xx	6000+	.00243	.00162	.00162	.00065	.00081	.00097	.00073	.00041	.00081	.00041	.00081	.00041	.00065	< .010
8689xx	6000+	.00243	.00162	.00162	.00065	.00081	.00097	.00073	.00041	.00081	.00041	.00081	.00041	.00065	< .010
8770xx	6000+	.00189	.00126	.00126	.00050	.00063	.00076	.00057	.00032	.00063	.00032	.00063	.00032	.00050	< .010
8914xx	6000+	.00270	.00180	.00180	.00072	.00090	.00108	.00081	.00045	.00090	.00045	.00090	.00045	.00072	< .010
9391xx	6000+	.00297	.00198	.00198	.00079	.00099	.00119	.00089	.00050	.00099	.00050	.00099	.00050	.00079	< .010
9404xx	6000+	.00120	.00080	.00080	.00032	.00040	.00048	.00036	.00020	.00040	.00020	.00040	.00020	.00032	< .010
943730	6000+	.00210	.00140	.00140	.00056	.00070	.00084	.00063	.00035	.00070	.00035	.00070	.00035	.00056	< .010
943745	6000+	.00231	.00154	.00154	.00062	.00077	.00092	.00069	.00039	.00077	.00039	.00077	.00039	.00062	< .010
9473xx	6000+	.00288	.00192	.00192	.00077	.00096	.00115	.00086	.00048	.00096	.00048	.00096	.00048	.00077	< .010
9465xx	6000+	.00204	.00136	.00136	.00054	.00068	.00082	.00061	.00034	.00068	.00034	.00068	.00034	.00054	< .010
9480xx	6000+	.00135	.00090	.00090	.00036	.00045	.00054	.00041	.00023	.00045	.00023	.00045	.00023	.00036	< .010
9529xx	6000+	.00132	.00088	.00088	.00035	.00044	.00053	.00040	.00022	.00044	.00022	.00044	.00022	.00035	< .010
9560xx	6000+	.00162	.00108	.00108	.00043	.00054	.00065	.00049	.00027	.00054	.00027	.00054	.00027	.00043	< .010
9579xx	6000+	.00230	.00153	.00153	.00061	.00077	.00092	.00069	.00038	.00077	.00038	.00077	.00038	.00061	< .010
9598xx	6000+	.00255	.00170	.00170	.00068	.00085	.00102	.00077	.00043	.00085	.00043	.00085	.00043	.00068	< .010
9635xx	6000+	.00149	.00099	.00099	.00040	.00050	.00059	.00045	.00025	.00050	.00025	.00050	.00025	.00040	< .010
964830	6000+	.00210	.00140	.00140	.00056	.00070	.00084	.00063	.00035	.00070	.00035	.00070	.00035	.00056	< .010
964845	6000+	.00231	.00154	.00154	.00062	.00077	.00092	.00069	.00039	.00077	.00039	.00077	.00039	.00062	< .010
9673xx	6000+	.00281	.00187	.00187	.00075	.00094	.00112	.00084	.00047	.00094	.00047	.00094	.00047	.00075	< .010

Please note:

All posted speed and feed parameters are suggested starting values that may be increased given optimal setup conditions (minimal runout is required for best results).  
 Suggested speed is 6000 rpm or more. Choose an rpm value that creates the least amount of internal machine vibration. In many cases, a speed increaser is helpful.  
 Posted chip loads reflect axial depths of cut up to .009. For depths of cut = .010" -.015", reduce posted chip loads by 20%. For depths of cut = .016" -.020", reduce posted chip loads by 30%.  
 Posted chip loads reflect uncoated cutters. Coating is better suited to prolong tool life rather than decrease cycle times.  
 Posted chip loads reflect HORIZONTAL milling conditions. For VERTICAL plunge milling to depth, reduce posted chip loads by 50% (ramping is preferred to maintain tip integrity).

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).