



Speeds & Feeds

**Product Table: Engraving Cutters - Tipped Off**  
**Characteristics: 1 Flute**

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	< 30 Rc		32 < 45 Rc	Inconel, Waspaloy, Monel
182xx	6000+	.00300	.00200	.00200	.00080	.00100	.00120	.00090	.00050	.00100	.00050	.00100	.00050	.00080	< .010		
25202	6000+	.00168	.00112	.00112	.00045	.00056	.00067	.00050	.00028	.00056	.00028	.00056	.00028	.00045	< .010		
25210	6000+	.00210	.00140	.00140	.00056	.00070	.00084	.00063	.00035	.00070	.00035	.00070	.00035	.00056	< .010		
25220	6000+	.00210	.00140	.00140	.00056	.00070	.00084	.00063	.00035	.00070	.00035	.00070	.00035	.00056	< .010		
25224	6000+	.00210	.00140	.00140	.00056	.00070	.00084	.00063	.00035	.00070	.00035	.00070	.00035	.00056	< .011		
25228	6000+	.00168	.00112	.00112	.00045	.00056	.00067	.00050	.00028	.00056	.00028	.00056	.00028	.00045	< .010		
25230	6000+	.00210	.00140	.00140	.00056	.00070	.00084	.00063	.00035	.00070	.00035	.00070	.00035	.00056	< .010		
25236	6000+	.00210	.00140	.00140	.00056	.00070	.00084	.00063	.00035	.00070	.00035	.00070	.00035	.00056	< .010		
25242	6000+	.00210	.00140	.00140	.00056	.00070	.00084	.00063	.00035	.00070	.00035	.00070	.00035	.00056	< .010		
25252	6000+	.00210	.00140	.00140	.00056	.00070	.00084	.00063	.00035	.00070	.00035	.00070	.00035	.00056	< .010		
25256	6000+	.00210	.00140	.00140	.00056	.00070	.00084	.00063	.00035	.00070	.00035	.00070	.00035	.00056	< .010		
25302	6000+	.00192	.00128	.00128	.00051	.00064	.00077	.00058	.00032	.00064	.00032	.00064	.00032	.00051	< .010		
25302	6000+	.00192	.00128	.00128	.00051	.00064	.00077	.00058	.00032	.00064	.00032	.00064	.00032	.00051	< .010		
25310	6000+	.00240	.00160	.00160	.00064	.00080	.00096	.00072	.00040	.00080	.00040	.00080	.00040	.00064	< .010		
25320	6000+	.00240	.00160	.00160	.00064	.00080	.00096	.00072	.00040	.00080	.00040	.00080	.00040	.00064	< .010		
25328	6000+	.00192	.00128	.00128	.00051	.00064	.00077	.00058	.00032	.00064	.00032	.00064	.00032	.00051	< .010		
25330	6000+	.00240	.00160	.00160	.00064	.00080	.00096	.00072	.00040	.00080	.00040	.00080	.00040	.00064	< .010		
25342	6000+	.00240	.00160	.00160	.00064	.00080	.00096	.00072	.00040	.00080	.00040	.00080	.00040	.00064	< .010		
25352	6000+	.00240	.00160	.00160	.00064	.00080	.00096	.00072	.00040	.00080	.00040	.00080	.00040	.00064	< .010		
269xx	6000+	.00300	.00200	.00200	.00080	.00100	.00120	.00090	.00050	.00100	.00050	.00100	.00050	.00080	< .010		
276xx	6000+	.00300	.00200	.00200	.00080	.00100	.00120	.00090	.00050	.00100	.00050	.00100	.00050	.00080	< .010		
302xx	6000+	.00300	.00200	.00200	.00080	.00100	.00120	.00090	.00050	.00100	.00050	.00100	.00050	.00080	< .010		
30302	6000+	.00264	.00176	.00176	.00070	.00088	.00106	.00079	.00044	.00088	.00044	.00088	.00044	.00070	< .010		
30310	6000+	.00330	.00220	.00220	.00088	.00110	.00132	.00099	.00055	.00110	.00055	.00110	.00055	.00088	< .010		
30320	6000+	.00330	.00220	.00220	.00088	.00110	.00132	.00099	.00055	.00110	.00055	.00110	.00055	.00088	< .010		
30324	6000+	.00330	.00220	.00220	.00088	.00110	.00132	.00099	.00055	.00110	.00055	.00110	.00055	.00088	< .010		
30328	6000+	.00264	.00176	.00176	.00070	.00088	.00106	.00079	.00044	.00088	.00044	.00088	.00044	.00070	< .010		
30330	6000+	.00330	.00220	.00220	.00088	.00110	.00132	.00099	.00055	.00110	.00055	.00110	.00055	.00088	< .010		
30336	6000+	.00330	.00220	.00220	.00088	.00110	.00132	.00099	.00055	.00110	.00055	.00110	.00055	.00088	< .010		
30342	6000+	.00330	.00220	.00220	.00088	.00110	.00132	.00099	.00055	.00110	.00055	.00110	.00055	.00088	< .010		
30352	6000+	.00330	.00220	.00220	.00088	.00110	.00132	.00099	.00055	.00110	.00055	.00110	.00055	.00088	< .010		
30356	6000+	.00330	.00220	.00220	.00088	.00110	.00132	.00099	.00055	.00110	.00055	.00110	.00055	.00088	< .010		
507xx	6000+	.00240	.00160	.00160	.00064	.00080	.00096	.00072	.00040	.00080	.00040	.00080	.00040	.00064	< .010		
793055	6000+	.00300	.00200	.00200	.00080	.00100	.00120	.00090	.00050	.00100	.00050	.00100	.00050	.00080	< .010		
8236xx	6000+	.00228	.00152	.00152	.00061	.00076	.00091	.00068	.00038	.00076	.00038	.00076	.00038	.00061	< .011		
954102	6000+	.00288	.00192	.00192	.00077	.00096	.00115	.00086	.00048	.00096	.00048	.00096	.00048	.00077	< .010		
954110	6000+	.00360	.00240	.00240	.00096	.00120	.00144	.00108	.00060	.00120	.00060	.00120	.00060	.00096	< .010		
955002	6000+	.00204	.00136	.00136	.00054	.00068	.00082	.00061	.00034	.00068	.00034	.00068	.00034	.00054	< .010		
955010	6000+	.00255	.00170	.00170	.00068	.00085	.00102	.00077	.00043	.00085	.00043	.00085	.00043	.00068	< .010		
955020	6000+	.00255	.00170	.00170	.00068	.00085	.00102	.00077	.00043	.00085	.00043	.00085	.00043	.00068	< .010		
955030	6000+	.00255	.00170	.00170	.00068	.00085	.00102	.00077	.00043	.00085	.00043	.00085	.00043	.00068	< .010		
987002	6000+	.00144	.00096	.00096	.00038	.00048	.00058	.00043	.00024	.00048	.00024	.00048	.00024	.00038	< .010		
987010	6000+	.00180	.00120	.00120	.00048	.00060	.00072	.00054	.00030	.00060	.00030	.00060	.00030	.00048	< .010		
990002	6000+	.00132	.00088	.00088	.00035	.00044	.00053	.00040	.00022	.00044	.00022	.00044	.00022	.00035	< .010		
990010	6000+	.00165	.00110	.00110	.00044	.00055	.00066	.00050	.00028	.00055	.00028	.00055	.00028	.00044	< .010		
993002	6000+	.00120	.00080	.00080	.00032	.00040	.00048	.00036	.00020	.00040	.00020	.00040	.00020	.00032	< .010		
993010	6000+	.00150	.00100	.00100	.00040	.00050	.00060	.00045	.00025	.00050	.00025	.00050	.00025	.00040	< .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@harveypformance.com](mailto:Harveytech@harveypformance.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.