

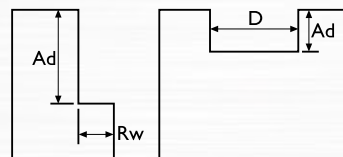


# Fractional

## Z-Carb™ Speed and Feed Recommendations

Material Type	Bhn	Cutting Diameter																					
		1/8		3/16		1/4		5/16		3/8		7/16		1/2		9/16		5/8		3/4		1	
		rpm	in/min	rpm	in/min	rpm	in/min	rpm	in/min	rpm	in/min	rpm	in/min	rpm	in/min	rpm	in/min	rpm	in/min	rpm	in/min	rpm	in/min
Low Carbon Steels	~175	15,585	12	10,360	20	7,795	24	6,235	29	5,195	39	4,455	38	3,895	37	3,465	35	3,115	33	2,600	31	1,950	25
Low Carbon Steels	~275	12,835	10	8,150	17	6,420	20	5,135	24	4,280	32	3,665	31	3,210	30	2,850	29	2,565	27	2,140	25	1,605	21
Med Alloy Steels	~275	10,695	8	6,790	14	5,350	17	4,280	20	3,565	27	3,055	26	2,675	25	2,375	24	2,140	23	1,785	21	1,335	17
Mold And Die Steels	~275	5,500	4	3,490	8	2,750	8	2,200	10	1,835	13	1,570	13	1,375	13	1,220	12	1,100	11	915	11	690	9
Cast Iron - Gray	~200	14,515	11	9,215	19	7,260	23	5,805	27	4,840	36	4,145	35	3,630	34	3,225	32	2,905	31	2,420	29	1,815	24
Cast Iron - Ductile	~300	7,335	5	4,655	9	3,665	11	2,935	14	2,445	18	2,095	18	1,835	17	1,630	16	1,465	15	1,220	14	915	12
Cast Iron - Malleable	~300	4,585	4	2,910	6	2,290	7	1,835	8	1,530	11	1,310	11	1,145	11	1,020	10	915	9	765	9	575	7
Stainless 300 Series	~275	9,170	7	5,820	12	4,585	14	3,665	16	3,055	16	2,620	16	2,290	16	2,035	20	1,835	16	1,530	15	1,145	15
Stainless 400 Series	~185	12,835	10	8,245	17	6,420	22	5,135	25	4,280	25	3,665	25	3,210	25	2,850	29	2,565	25	2,140	22	1,605	22
Stainless PH Series	~325	7,640	5	4,850	10	3,820	12	3,055	14	2,545	14	2,185	14	1,910	14	1,700	17	1,530	14	1,275	12	955	12
Titanium Alloys	~295	9,170	9	5,820	14	4,585	16	3,665	18	3,055	18	2,620	18	2,290	18	2,035	20	1,835	18	1,530	16	1,145	16
High Temp. Alloys	~300	2,445	2	1,550	3	1,220	3	980	4	815	4	700	4	610	4	545	6	490	4	410	4	305	3

Profiling: Radial Width .5 x Diameter (max.) Profiling: Axial Depth 1.5 x Diameter (max.) Slotting: Axial Depth 1 x Diameter (max.)  
 Avoid re-milling chips  
 Tool holders with adequate gripping pressure are required  
 Stub length solid holders are recommended for heavy stock removal  
 Ramping or spiral plunging are the preferred entry methods into pockets (approximately 6 degrees @ 50% normal feed)



Radial Width of Cut (Rw)  
 Axial Depth of Cut (Ad)  
 Tool Diameter (D)



## Z-Carb™ Speed and Feed Recommendations

Material Type	Bhn	Cutting Diameter																			
		3		5		6		8		10		12		14		16		18		20	
		rpm	mm/min	rpm	mm/min	rpm	mm/min	rpm	mm/min	rpm	mm/min	rpm	mm/min	rpm	mm/min	rpm	mm/min	rpm	mm/min	rpm	mm/min
Low Carbon Steels	~175	16,500	335	9,895	502	8,250	586	6,185	754	4,950	955	4,125	963	3,535	890	3,095	817	2,750	809	2,475	804
Low Carbon Steels	~275	13,585	276	8,150	413	6,795	483	5,095	620	4,075	786	3,395	793	2,910	733	2,545	672	2,265	667	2,040	662
Med Alloy Steels	~275	11,320	230	6,790	345	5,660	403	4,245	517	3,395	656	2,830	661	2,425	592	2,125	561	1,885	556	1,700	552
Mold And Die Steels	~275	5,820	118	3,490	177	2,910	207	2,185	266	1,745	337	1,455	340	1,250	314	1,090	288	970	285	875	283
Cast Iron - Gray	~200	15,365	300	9,215	468	7,680	546	5,760	702	4,610	889	3,840	897	3,290	829	2,880	761	2,560	754	2,305	749
Cast Iron - Ductile	~300	7,765	158	4,655	236	3,880	276	2,910	354	2,330	449	1,940	453	1,665	419	1,455	384	1,295	381	1,165	378
Cast Iron - Malleable	~300	4,850	98	2,910	147	2,425	173	1,820	221	1,455	280	1,215	283	1,040	262	910	240	810	238	730	236
Stainless 300 Series	~275	9,705	175	5,820	300	4,850	355	3,640	405	2,910	405	2,425	405	2,080	405	1,820	405	1,615	380	1,455	380
Stainless 400 Series	~185	13,585	250	8,245	430	6,795	560	5,095	635	4,075	635	3,395	635	2,910	635	2,545	635	2,265	560	2,040	560
Stainless PH Series	~325	8,085	125	4,850	250	4,045	300	3,030	355	2,425	355	2,020	355	1,735	355	1,515	355	1,350	300	1,215	300
Titanium Alloys	~295	9,705	225	5,820	355	4,850	405	3,640	455	2,910	455	2,425	455	2,080	455	1,820	455	1,615	405	1,455	405
High Temp Alloys	~300	2,590	50	1,550	75	1,295	75	970	100	775	100	645	100	555	100	485	100	430	100	390	100

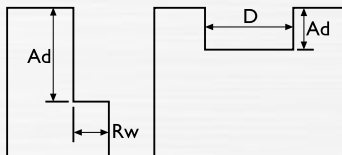
Profiling: Radial Width .5 x Diameter (max.) Profiling: Axial Depth 1.5 x Diameter (max.) Slotting: Axial Depth 1 x Diameter (max.)

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Radial Width of Cut (Rw)

Axial Depth of Cut (Ad)

Tool Diameter (D)