

Speeds and Feeds

HPC Cobalt High Performance Wide Land Parabolic Flute Drills

WORKPIECE MATERIAL	BRINELL HARDNESS BHN	SURFACE SPEED SFM	FEED PER REVOLUTION BY DRILL DIAMETER			
			1/8"	1/4"	3/8"	1/2"
Low Carbon Steels 1018, 12L12, 1108, 1213	≤ 120	110	0.0030	0.0040	0.0060	0.0080
Low & Medium Carbon Steels 1018, 1551, 11L44	120 - 250	65	0.0040	0.0060	0.0085	0.0110
Medium Carbon and Alloyed Steels 1040, 1140, 4340, 8640	≤ 250	60	0.0030	0.0040	0.0060	0.0080
Tool and Die Steels P20, A2, D2, H12	≤ 250	50 - 60	0.0030	0.0040	0.0060	0.0080
Tool and Die Steels P20, A2, D2, H12	250 - 350	35 - 45	0.0020	0.0032	0.0049	0.0066
Tool and Die Steels P20, A2, D2, H12	350 - 400	15 - 25	0.0013	0.0022	0.0031	0.0040
Free Machining Stainless Steels 303, 410, 416, 440F	≤ 250	60	0.0020	0.0032	0.0049	0.0066
Moderate Machining Stainless Steels 304, 316	≤ 300	45	0.0032	0.0050	0.0063	0.0075
Difficult Machining Stainless Steels 17-4PH, 316L, AM350	≤ 300	30	0.0020	0.0031	0.0047	0.0062
Cast Iron Grey & Free Machining Malleable	≤ 250	80	0.0030	0.0040	0.0060	0.0080
Cast Iron Hard Grey	≤ 300	55	0.0020	0.0032	0.0049	0.0066
Titanium Alloys Commercially Pure 99.0	≤ 200	90	0.0030	0.0040	0.0060	0.0080
Titanium Alloys Ti-6Al-4V, ASTM B367 Grades C-3, C-4	≤ 350	20 - 30	0.0020	0.0032	0.0049	0.0066
High Temperature Alloys Inconel, Hastelloy, Waspaloy	≤ 150	50	0.0030	0.0040	0.0060	0.0080
High Temperature Alloys Inconel, Hastelloy, Waspaloy	150 - 250	20	0.0010	0.0020	0.0033	0.0045
Aluminum Alloys 2025, 6061, A140, 514.0	≤ 150	325	0.0040	0.0060	0.0085	0.0110
Copper Alloys Brass and Bronze	≤ 200	80	0.0040	0.0060	0.0085	0.0110
Composite & Plastics	≤ 128	175	0.0020	0.0030	0.0045	0.0060
Magnesium Alloys AZ80A, HM12A, AM60A, ZE41A	50 - 90	325	0.0040	0.0060	0.0085	0.0110

NOTE: The speeds and feeds shown are suggested starting points only and may be increased or decreased depending on actual material and machining conditions. Start conservatively and increase speed and feed until drilling cycle is optimized.

For TiN coated drills increase speed by up to 20% depending on actual material and machining conditions.

For TiAlN coated drills increase speed by up to 50% depending on actual material and machining conditions.

SIZE SPECIFICATIONS:	
Screw Machine Length	Din 1897
Jobber Length	Din 338
Taper Length	Din 340