

Machining values for Solid Carbide Drills, straight flutes



M2603, M2605,
M2608, M2612



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	Material	Hardness Rockwell (HRC) Hardness Brinell (BHN) Tensile strength (N/mm ²)			Cutting speed (v _c)		
		HRC	BHN	N/mm ²	M2603 M2608	M2605 M2612	
					SFM	m/min	
P	Non-alloyed steels, cast steels 1018, 1108-1161, 12L14, 1522-1572	up to 8 up to 15 over 15	up to 178 up to 205 over 205	up to 600 up to 700 over 700			
	Alloyed steels 5132, 4130, 8620, 4140, 4340, 5140, 6150	up to 27 up to 31 over 31	up to 266 up to 297 over 297	up to 900 up to 1000 over 1000			
M	Stainless steels inox 17-4PH, 15-5PH						
	Stainless and acid resistant steels (Cr-Ni-Alloys) 304, 316, 17CrNi16-2						
K ₁	Grey cast iron, grey cast iron alloys GG10-GG40, A48	up to 14 up to 24 over 24	up to 200 up to 250 over 250	up to 680 up to 850 over 850	230-361 197-312 164-262	70-110 60-95 50-80	
K ₂	Spheroidal graphite cast iron, cast iron with vermicular graphite, malleable iron GGG40-GGG80	up to 8	up to 178	up to 600	246-295	75-90	
		over 8	over 178	over 600			
N	Alluminium (Si content > 10%) 6061, 2025, 208, 360				394-984	120-300	
	Aluminium (Si content < 10%) 413, 385, A390				656-1312	200-400	
	Copper, brass, bronze Beryllium copper, naval brass, AMPCO				197-984	60-300	
S	Titanium alloys TiAl4V						
	Nickel alloys Inconel 718, Rene 41, Waspolloy						
H	Chilled cast iron	38-48	350-450	1173-1527			
	Hardened steel	50-55		1614-1870			
		56-60					
		61-65					

The guideline values for cutting speed v_c should be multiplied by the following correction factors K_{Fv} according to the drilling depth:

Depth / Diameter ratio	K _{Fv}
1 x D	1.3
2 x D	1.2
3 x D	1.0
4 x D	1.0
5 x D	0.8
8 x D	0.7
12 x D	0.6

Recommended feed (f) for diameter ranges									
0.118 to 0.197 in. 3 to 5 mm		0.197 to 0.316 in. 5 to 8 mm		0.316 to 0.472 in. 8 to 12 mm		0.472 to 0.630 in. 12 to 16 mm		0.630 to 0.787 in. 16 to 20 mm	
IPR	mm/rev	IPR	mm/rev	IPR	mm/rev	IPR	mm/rev	IPR	mm/rev
0.004-0.010	0.10-0.25	0.006-0.012	0.15-0.30	0.008-0.016	0.20-0.40	0.010-0.018	0.25-0.45	0.012-0.020	0.30-0.50
0.004-0.008	0.10-0.20	0.005-0.010	0.12-0.25	0.006-0.014	0.15-0.35	0.008-0.016	0.20-0.40	0.010-0.018	0.25-0.45
0.004-0.008	0.10-0.20	0.005-0.010	0.12-0.25	0.006-0.014	0.15-0.35	0.008-0.016	0.20-0.40	0.010-0.018	0.25-0.45
0.004-0.008	0.10-0.20	0.005-0.010	0.12-0.25	0.008-0.014	0.20-0.35	0.012-0.016	0.30-0.40	0.014-0.020	0.35-0.50
0.004-0.010	0.10-0.25	0.006-0.014	0.15-0.35	0.010-0.018	0.25-0.45	0.012-0.020	0.30-0.50	0.014-0.022	0.35-0.55
0.004-0.010	0.10-0.25	0.006-0.014	0.15-0.35	0.010-0.018	0.25-0.45	0.012-0.020	0.30-0.50	0.014-0.022	0.35-0.55
0.003-0.007	0.07-0.18	0.005-0.010	0.12-0.25	0.008-0.014	0.20-0.35	0.010-0.018	0.25-0.45	0.012-0.020	0.30-0.50