

ROYAL HP DRILL SPEED CHARTS

Application

Drilling into steel in general, cast steel, cast iron, chilled cast iron, malleable cast iron, nonferrous heavy metal, nonferrous light metal and abrasive plastic.

Advantages

- Self centering – center drilling is not required
- Excellent positioning – bush is not necessary
- Special design – reaming is not required
- Good chip removal
- Powerful drilling

3xD AITiN Coated Without Coolant Holes

$$K_f \frac{3xD}{1.0} \frac{5xD}{0.85}$$

30° Helix
140° Point

Material	Non-Coolant Fed Drills/Inch Diameter											
	1/8~3/16		3/16~5/16		5/16~3/8		3/8~1/2		1/2~9/16		9/16~13/16	
	RPM	IPR	RPM	IPR	RPM	IPR	RPM	IPR	RPM	IPR	RPM	IPR
Cast Iron <240 Bhn	13120	0.006	8200	0.008	5970	0.011	4690	0.014	3860	0.016	2980	0.018
Cast Iron >240 Bhn	8750	0.005	5470	0.006	3980	0.009	3120	0.011	2570	0.012	1990	0.014
Carbon Steels <300 Bhn	7880	0.005	4920	0.006	3560	0.009	2810	0.011	2310	0.012	1790	0.014
Alloy Steels 300 – 400 Bhn	7000	0.005	4370	0.006	3190	0.009	2500	0.011	2060	0.012	1590	0.014
Aluminum, Si <10%	13530	0.008	8450	0.010	6140	0.014	4830	0.017	3960	0.020	3080	0.022
Aluminum, Si >10%	11140	0.006	6960	0.008	5060	0.011	3980	0.014	3270	0.016	2530	0.018
Stainless Steels	3070	0.002	1910	0.003	1400	0.004	1090	0.005	910	0.006	700	0.007

3xD & 5xD AITiN Coated With Coolant Holes

$$K_f \frac{3xD}{1.0} \frac{5xD}{0.85}$$

30° Helix
140° Point

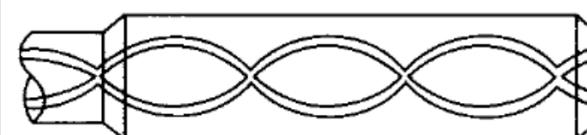
Material	Coolant Fed Drills/Inch Diameter											
	1/8~3/16		3/16~5/16		5/16~3/8		3/8~1/2		1/2~9/16		9/16~13/16	
	RPM	IPR	RPM	IPR	RPM	IPR	RPM	IPR	RPM	IPR	RPM	IPR
Cast Iron <240 Bhn	13120	0.006	8200	0.008	5970	0.011	4690	0.014	3860	0.016	2980	0.018
Cast Iron <240 Bhn	14870	0.006	8200	0.008	6760	0.011	5310	0.014	4370	0.016	3380	0.018
Cast Iron >240 Bhn	9620	0.006	6010	0.008	4370	0.011	3440	0.014	2830	0.016	2190	0.018
Carbon Steels <300 Bhn	8750	0.006	5470	0.008	3980	0.011	3120	0.014	2570	0.016	1990	0.018
Alloy Steels 300-400 Bhn	7880	0.005	4920	0.006	3580	0.009	2810	0.011	2310	0.012	1790	0.014
Aluminum, Si <10%	15910	0.008	9940	0.010	7230	0.014	5680	0.017	4680	0.020	3610	0.022
Aluminum, Si >10%	13530	0.008	8450	0.010	6140	0.014	4830	0.017	3980	0.020	3080	0.022
Stainless Steels	3500	0.002	2190	0.003	1590	0.004	1250	0.005	1030	0.006	800	0.007

Up to .118	Over .118 Up to .236	Over .236 Up to .394	Over .394 Up to .709
+0	+0	+0	+0
-.00055	-.00071	-.00087	-.00106

Drill Diameter Tolerance Metric (ϕd_f)mm = 1/1000mm

Diameter Tolerance	From 1 to 3	Over 3 to 6	Over 6 to 10	Over 10 to 18	Over 18 to 30
h6	0 -6	0 -8	0 -9	0 -11	0 -13
h7	0 -10	0 -12	0 -15	0 -18	0 -21
h8	0 -14	0 -18	0 -22	0 -27	0 -33
m7	+12 +2	+16 +4	+21 +6	+25 +7	+29 +8

Shank Type – Form HA



We recommend reducing the feed rate to Kf when you use 5xD drills.