VORTEX TOOLS

HOLE MAKING

CUTTING DATA

NC Spot Drills • Carbide & HSS 8% Cobalt

CARBIDE NC SPOT DRILLS CARBIDE

DRILLING

ISO **P** **M** **K** **N** **S** H

MATERIAL	NON-ALLOY STEELS		ALLOY STEELS		STAINLESS STEEL		Ti, Ni ALLOY STEELS		SOFT GREY CAST IRON		HARD GREY CAST IRON		Al-Si ALLOYS Si<10%		Al-Si ALLOYS Si>10%	
STRENGTH	< 700 N/mm²		< 1000 N/mm²		-		-		< HB240, GG25		< HB300, GG40		-		-	
DRILLING SPEED	65 – 75 mm/min		45 – 55 mm/min		35 – 40 mm/min		35 – 40 mm/min		90 – 100 mm/min		65 – 75 mm/min		145 – 165 mm/min		115 – 135 mm/min	
DIAMETER	RPM	Feed	RPM	Feed	RPM	Feed	RPM	Feed	RPM	Feed	RPM	Feed	RPM	Feed	RPM	Feed
ø 6	3900	0.08	2850	0.08	2000	0.07	1950	0.07	5200	0.09	3800	0.09	8800	0.11	7100	0.11
ø 8	2900	0.1	2150	0.1	1500	0.09	1450	0.09	3900	0.12	2850	0.12	6600	0.15	5350	0.15
ø 10	2350	0.12	1700	0.12	1200	0.11	1200	0.11	3100	0.16	2300	0.16	5300	0.19	4250	0.19
ø 12	1950	0.14	1450	0.14	1000	0.13	980	0.13	2600	0.2	1900	0.2	4450	0.23	3550	0.23
ø 16	1450	0.17	1100	0.17	755	0.17	735	0.17	1950	0.24	1450	0.24	3300	0.27	2650	0.27
ø 20	1150	0.19	850	0.19	590	0.2	590	0.2	1550	0.28	1150	0.28	2650	0.31	2150	0.31

HSS-Co 8% NC SPOT DRILLS HSS 8% COBALT

DRILLING

ISO **P** **M** K **N** S H

MATERIAL	CARBON STEEL		ALLOY STEELS		ALLOY STEELS, TOOL STEEL & HARDENED STEEL		STAINLESS STEEL		ALUMINIUM & ALUMINIUM ALLOYS	
DRILLING SPEED	18 – 23 mm/min		15 – 20 mm/min		8 – 12 mm/min		8 – 12 mm/min		55 – 65 mm/min	
DIAMETER	RPM	Feed	RPM	Feed	RPM	Feed	RPM	Feed	RPM	Feed
ø 3	2460	0.06	2110	0.06	1080	0.06	940	0.06	7040	0.14
ø 4	1850	0.07	1580	0.07	800	0.07	700	0.07	5280	0.15
ø 5	1510	0.08	1300	0.08	670	0.08	580	0.08	4400	0.17
ø 6	1170	0.09	1030	0.09	540	0.09	460	0.09	3520	0.19
ø 8	880	0.11	790	0.11	400	0.11	350	0.11	2640	0.22
ø 10	700	0.12	630	0.12	320	0.12	290	0.12	2110	0.25
ø 12	590	0.14	530	0.14	260	0.14	240	0.14	1760	0.28
ø 16	460	0.2	400	0.2	200	0.2	180	0.2	1320	0.33
ø 20	350	0.24	320	0.24	150	0.24	140	0.24	1060	0.45

RPM	Feed	Speed
Revolutions per minute	mm per minute	mm per minute

T 01732 887334 E sales@protool-ltd.co.uk W protool-ltd.co.uk

Recommended starting values. Adjust to suit machine rigidity, workholding, tool overhang and coolant.