

**AQUA Drills STUB List No. 9550, 9551**

Hi-Speed Wet Drilling

Workpiece Material			Carbon Steels Cast Irons		Alloy Steels		Die Steels Hardened Steels (30-40HRc)		Hardened Steels (40-50HRc)		Ductile Cast Irons	
Speed (SFM)			330 - 495 SFM		260 - 330 SFM		165 - 230 SFM		100 - 165 SFM		260 - 330 SFM	
Drill Diameter			330 - 495 SFM		260 - 330 SFM		165 - 230 SFM		100 - 165 SFM		260 - 330 SFM	
Fractional	Metric mm	Decimal	RPM	Feed (IPR)	RPM	Feed (IPR)	RPM	Feed (IPR)	RPM	Feed (IPR)	RPM	Feed (IPR)
—	3	0.1181	16,000	0.004	11,000	0.004	7,400	0.004	5,300	0.004	11,000	0.002
5/32	3.969	0.1563	12,000	0.006	8,100	0.005	5,600	0.005	4,000	0.005	8,100	0.003
3/16	4.763	0.1875	10,000	0.007	6,800	0.006	4,700	0.007	3,400	0.006	6,800	0.004
—	5	0.1969	9,600	0.007	6,400	0.007	4,500	0.007	3,200	0.006	6,400	0.004
1/4	6.35	0.2500	7,500	0.009	5,100	0.008	3,500	0.009	2,500	0.007	5,100	0.005
—	8	0.3150	6,000	0.010	4,000	0.011	2,800	0.011	2,000	0.009	4,000	0.006
3/8	9.525	0.3750	5,000	0.012	3,400	0.013	2,400	0.012	1,700	0.010	3,400	0.007
—	10	0.3937	4,800	0.012	3,200	0.012	2,200	0.013	1,600	0.011	3,200	0.008
—	12	0.4724	4,000	0.015	2,700	0.015	1,900	0.015	1,300	0.012	2,700	0.009
1/2	12.7	0.5000	3,800	0.015	2,500	0.015	1,800	0.015	1,300	0.013	2,500	0.010
—	16	0.6299	3,000	0.017	2,000	0.018	1,400	0.018	1,000	0.015	2,000	0.012

Drilling in Dry Condition

Workpiece Material			Carbon Steels Cast Irons		Alloy Steels		Die Steels Hardened Steels (30-40HRc)		Hardened Steels (40-50HRc)		Ductile Cast Irons	
Speed (SFM)			215 - 260 SFM		165 - 215 SFM		82 - 112 SFM		49 - 83 SFM		165 - 215 SFM	
Drill Diameter			215 - 260 SFM		165 - 215 SFM		82 - 112 SFM		49 - 83 SFM		165 - 215 SFM	
Fractional	Metric mm	Decimal	RPM	Feed (IPR)	RPM	Feed (IPR)	RPM	Feed (IPR)	RPM	Feed (IPR)	RPM	Feed (IPR)
—	3	0.1181	8,500	0.003	6,900	0.003	3,700	0.003	2,700	0.002	6,900	0.002
5/32	3.969	0.1563	6,400	0.004	5,200	0.004	2,700	0.004	2,000	0.003	5,200	0.003
3/16	4.763	0.1875	5,300	0.005	4,300	0.005	2,300	0.005	1,700	0.004	4,300	0.004
—	5	0.1969	5,100	0.005	4,100	0.005	2,200	0.005	1,600	0.004	4,100	0.004
1/4	6.35	0.2500	4,000	0.006	3,200	0.006	1,700	0.006	1,300	0.005	3,200	0.005
—	8	0.3150	3,200	0.008	2,600	0.008	1,400	0.008	1,000	0.006	2,600	0.006
3/8	9.525	0.3750	2,700	0.009	2,200	0.009	1,100	0.009	850	0.007	2,200	0.007
—	10	0.3937	2,500	0.009	2,100	0.009	1,100	0.009	800	0.007	2,100	0.007
—	12	0.4724	2,100	0.010	1,700	0.011	900	0.011	700	0.008	1,700	0.009
1/2	12.7	0.5000	2,000	0.011	1,600	0.011	850	0.011	630	0.008	1,600	0.010
—	16	0.6299	1,600	0.013	1,300	0.013	700	0.012	500	0.010	1,300	0.012

- 1) Drilling Aluminum Alloys, Light Metals, Stainless Steels are not recommended.
- 2) Use blow air for cooling and chip removal in dry processes.
- 3) Due to sparks during cutting, heat by breakage, or hot chips, there is danger of fire. Take fire prevention measures.
- 4) Adjust drilling condition when unusual vibration or different sound occurs.