

**Aqua Drill EX Oil Hole 3D List No. 9604, 9605 AQDEX0H3D**

Work Material			Cast Irons / Carbon Steels		Alloy Steels (20-30 HRC)		Mold Steels/ Hardened Steels (30-40 HRC)		Hardened Steels (40-50 HRC)		Ductile Cast Irons		Stainless Steel (300-Series Stainless)		Nickel Alloys, Titanium Alloys, PH Stainless		Aluminum Alloys	
Speed (SFM)			325-330 SFM		330-335 SFM		255-265 SFM		160-165 SFM		320-330 SFM		255-265 SFM		100-110 SFM		280-320 SFM	
Drill Diameter			325-330 SFM		330-335 SFM		255-265 SFM		160-165 SFM		320-330 SFM		255-265 SFM		100-110 SFM		280-320 SFM	
Metric	mm	Decimal	RPM	Feed (IPR)	RPM	Feed (IPR)	RPM	Feed (IPR)	RPM	Feed (IPR)	RPM	Feed (IPR)	RPM	Feed (IPR)	RPM	Feed (IPR)	RPM	Feed (IPR)
3	0.118		10700	0.004	10600	0.004	8500	0.004	5300	0.002	10600	0.004	8500	0.003	3200	0.002	10500	0.004
4	0.157		8000	0.006	8000	0.005	6400	0.005	4000	0.003	8000	0.005	6400	0.004	2400	0.003	7500	0.006
5	0.197		6300	0.007	6400	0.006	5100	0.005	3200	0.004	6400	0.006	5100	0.005	1900	0.004	6000	0.007
6	0.236		5300	0.008	5300	0.007	4200	0.007	2700	0.005	5300	0.007	4200	0.006	1600	0.005	5000	0.007
8	0.315		4000	0.011	4000	0.009	3200	0.009	2000	0.006	4000	0.009	3200	0.008	1200	0.006	3700	0.010
10	0.394		3200	0.014	3200	0.010	2500	0.010	1600	0.007	3200	0.010	2500	0.009	900	0.008	2500	0.013
12	0.472		2650	0.017	2700	0.010	2100	0.010	1300	0.009	2700	0.010	2100	0.009	800	0.009	2100	0.015
14	0.551		2250	0.020	2300	0.011	1800	0.012	1100	0.009	2300	0.011	1800	0.010	700	0.008	1900	0.016
16	0.630		2000	0.022	2000	0.012	1600	0.014	1000	0.010	2000	0.012	1600	0.012	600	0.010	1700	0.017

**Aqua Drill EX Oil Hole 5D List No. 9606, 9607 AQDEX0H5D**

Work Material			Cast Irons / Carbon Steels		Alloy Steels (20-30 HRC)		Mold Steels/ Hardened Steels (30-40 HRC)		Hardened Steels (40-50 HRC)		Ductile Cast Irons		Stainless Steel (300-Series Stainless)		Nickel Alloys, Titanium Alloys, PH Stainless		Aluminum Alloys	
Speed (SFM)			325-330 SFM		330-335 SFM		255-265 SFM		160-165 SFM		320-330 SFM		255-265 SFM		100-110 SFM		280-320 SFM	
Drill Diameter			325-330 SFM		330-335 SFM		255-265 SFM		160-165 SFM		320-330 SFM		255-265 SFM		100-110 SFM		280-320 SFM	
Metric	mm	Decimal	RPM	Feed (IPR)	RPM	Feed (IPR)	RPM	Feed (IPR)	RPM	Feed (IPR)	RPM	Feed (IPR)	RPM	Feed (IPR)	RPM	Feed (IPR)	RPM	Feed (IPR)
3	0.118		10700	0.004	10600	0.004	8500	0.004	5300	0.002	10600	0.004	8500	0.003	3200	0.002	10500	0.004
4	0.157		8000	0.006	8000	0.005	6400	0.005	4000	0.003	8000	0.005	6400	0.004	2400	0.003	7500	0.006
5	0.197		6300	0.007	6400	0.006	5100	0.005	3200	0.004	6400	0.006	5100	0.005	1900	0.004	6000	0.007
6	0.236		5300	0.008	5300	0.007	4200	0.007	2700	0.005	5300	0.007	4200	0.006	1600	0.005	5000	0.007
8	0.315		4000	0.011	4000	0.009	3200	0.009	2000	0.006	4000	0.009	3200	0.008	1200	0.006	3700	0.010
10	0.394		3200	0.014	3200	0.010	2500	0.010	1600	0.007	3200	0.010	2500	0.009	900	0.008	2500	0.013
12	0.472		2650	0.017	2700	0.010	2100	0.010	1300	0.009	2700	0.010	2100	0.009	800	0.009	2100	0.015
14	0.551		2250	0.020	2300	0.011	1800	0.012	1100	0.009	2300	0.011	1800	0.010	700	0.008	1900	0.016
16	0.630		2000	0.022	2000	0.012	1600	0.014	1000	0.010	2000	0.012	1600	0.012	600	0.010	1700	0.017

**Aqua Drill EX Oil Hole 8D List No. 9608, 9609 AQDEX0H8D**

Work Material			Cast Irons / Carbon Steels		Alloy Steels (20-30 HRC)		Mold Steels/ Hardened Steels (30-40 HRC)		Hardened Steels (40-50 HRC)		Ductile Cast Irons		Stainless Steel (300-Series Stainless)		Nickel Alloys, Titanium Alloys, PH Stainless		Aluminum Alloys	
Speed (SFM)			325-330 SFM		330-335 SFM		255-265 SFM		160-165 SFM		320-330 SFM		255-265 SFM		100-110 SFM		280-320 SFM	
Drill Diameter			325-330 SFM		330-335 SFM		255-265 SFM		160-165 SFM		320-330 SFM		255-265 SFM		100-110 SFM		280-320 SFM	
Metric	mm	Decimal	RPM	Feed (IPR)	RPM	Feed (IPR)	RPM	Feed (IPR)	RPM	Feed (IPR)	RPM	Feed (IPR)	RPM	Feed (IPR)	RPM	Feed (IPR)	RPM	Feed (IPR)
3	0.118		10700	0.004	10600	0.004	8500	0.004	5300	0.002	10600	0.004	8500	0.003	3200	0.002	10500	0.004
4	0.157		8000	0.006	8000	0.005	6400	0.005	4000	0.003	8000	0.005	6400	0.004	2400	0.003	7500	0.006
5	0.197		6300	0.007	6400	0.006	5100	0.005	3200	0.004	6400	0.006	5100	0.005	1900	0.004	6000	0.007
6	0.236		5300	0.008	5300	0.007	4200	0.007	2700	0.005	5300	0.007	4200	0.006	1600	0.005	5000	0.007
8	0.315		4000	0.011	4000	0.009	3200	0.009	2000	0.006	4000	0.009	3200	0.008	1200	0.006	3700	0.010
10	0.394		3200	0.014	3200	0.010	2500	0.010	1600	0.007	3200	0.010	2500	0.009	900	0.008	2500	0.013
12	0.472		2650	0.017	2700	0.010	2100	0.010	1300	0.009	2700	0.010	2100	0.009	800	0.009	2100	0.015
14	0.551		2250	0.020	2300	0.011	1800	0.012	1100	0.009	2300	0.011	1800	0.010	700	0.008	1900	0.016
16	0.630		2000	0.022	2000	0.012	1600	0.014	1000	0.010	2000	0.012	1600	0.012	600	0.010	1700	0.017

- Note :
- 1) Utilize the standard drilling conditions shown in the catalogs, just a general guide when starting operation.
  - 2) Adjust drilling conditions if required, if any vibration or unusual sound occurs when cutting.
  - 3) When using low speed machines, use the maximum speed and adjust the feed rate.
  - 4) Use of water soluble cutting fluid is recommended.
  - 5) In case of drying drilling - use Air blow and reduce feeds/speeds by 30%.

**Formulas :**  $RPM = \frac{SFM \times 3.82}{\text{Drill dia.}}$       Feed Rate (in/min) :  $RPM \times IPR$