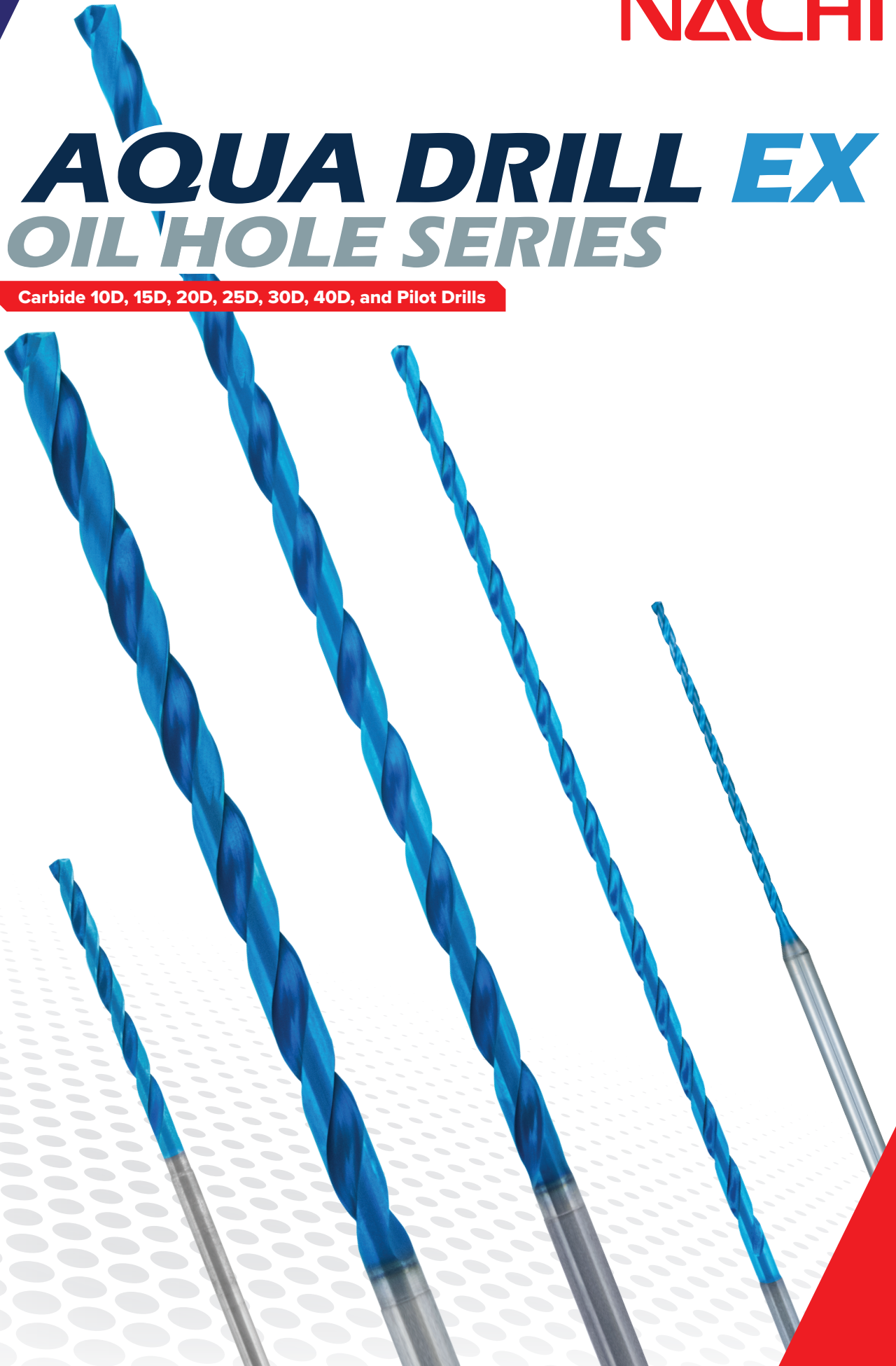


NACHI

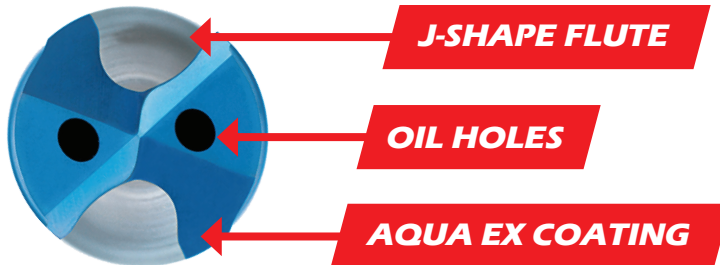
AQUA DRILL EX **OIL HOLE SERIES**

Carbide 10D, 15D, 20D, 25D, 30D, 40D, and Pilot Drills



AQUA DRILL EX OIL HOLE SERIES

FEATURES

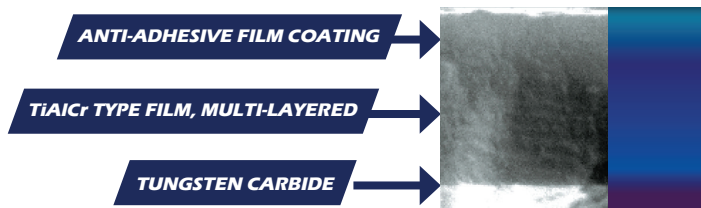


FLUTE DESIGN

- Unique J-shape flute design helps break up chips.
- Smooth flute polishing facilitates fluid chip evacuation.
- Deep pockets ensure minimal chip packing.

AQUA EX COATING

- Aqua EX coating is designed for superior performance in both dry and wet conditions.
- EX = Exotic Materials, and Extreme Conditions.
- Engineered to withstand heavy wear and maintain consistent performance, even in high temperatures.



APPLICABLE WORK MATERIAL

STRUCTURAL STEEL CARBON STEEL	ALLOY STEEL, HEAT TREATED STEEL 20-30 HRC	MOLD STEEL, HARDENED STEEL 30-40 HRC	STAINLESS STEEL	CAST IRON	ALUMINUM ALLOY, COPPER ALLOY	HIGH TEMP ALLOY, TITANIUM ALLOY	HARDENED STEEL 40-50 HRC
●	●	○	●	●	-	○	-

● Excellent ○ Good - Okay

CUSTOMER SUCCESS CASES

AQUA DRILL EX OIL HOLE SERIES

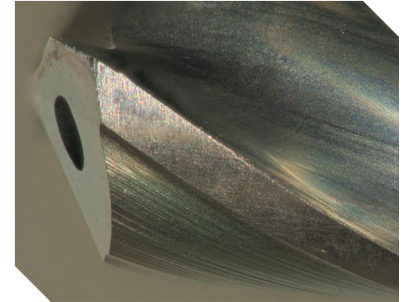
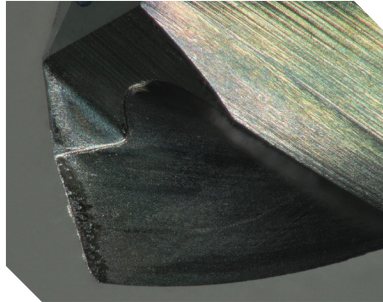
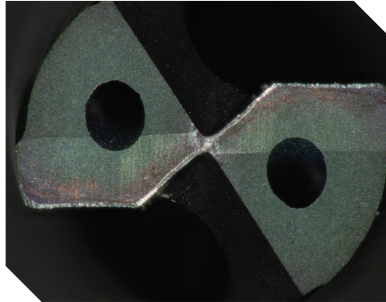


25D

1.5mm Diameter

Material: 316 SS
Machine: HAAS VF 3ss
Speed: 94 SFM
Feed: 0.0012 IPR (2%)

Hole Type: Blind Hole
Hole Depth: 1.476" DOC (25xD)
of Holes: 350
Test Note *"Peck increment of 0.030 (0.5D) and retract plane of Z-0.030 (inside the hole)."*



“

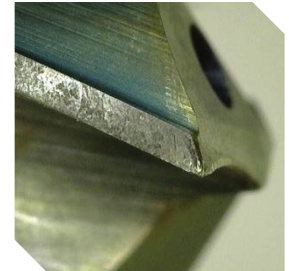
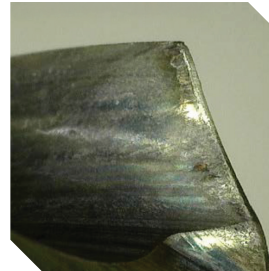
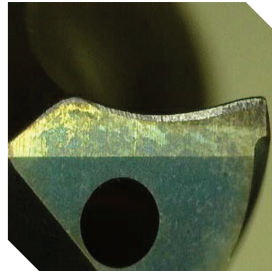
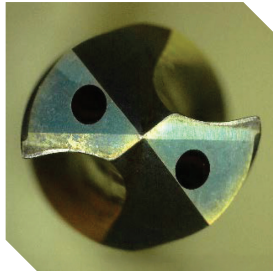
We completed a 300+ hole drill operation without the tool chipping or breaking

20D

.25" Diameter

Material: Uddeholm Mirrax 40
(remelted Stainless Tool Steel at 40 Rc)
Machine: Horizontal Machine (1000 psi)
Speed: 150 SFM
Feed: 0.0005 IPR (2%)

Hole Type: Blind Hole W/ Interruptions
Hole Depth: 122mm
of Holes: 128
Test Note *"The hole feature has interruptions."*

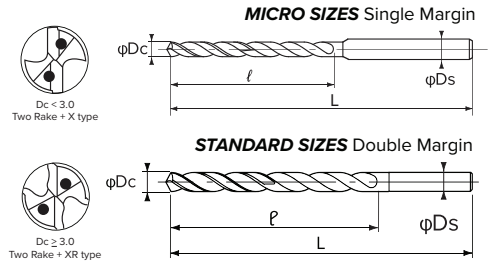


“

Despite the hole having interruptions and being in a challenging material, the Aqua EX drill showed minimal wear after the first few runs

AQUA DRILL EX OIL HOLE SERIES

SERIES SPECIFICATIONS



AQDEXOH10D MICRO AQUA DRILL EX OIL HOLE 10D



LIST 9612 - Metric Micro Series

EDP#	Size (Dc)	Decimal	Flute Length (ℓ)	OAL (L)	Shank Dia. (Ds)
0733673	1.000	0.0394	13	61	3
0733680	1.100	0.0433	14	63	3
0733696	1.200	0.0472	16	63	3
0733701	1.300	0.0512	17	63	3
0733718	1.400	0.0551	18	63	3
0733724	1.500	0.0591	20	63	3
0733730	1.600	0.0630	21	70	3
0733747	1.700	0.0669	22	70	3
0733753	1.800	0.0709	23	70	3
0733760	1.900	0.0748	25	70	3

Unit: mm

Feeds and Speeds on page 18 - 19

EDP#	Size (Dc)	Decimal	Flute Length (ℓ)	OAL (L)	Shank Dia. (Ds)
0733776	2.000	0.0787	26	70	3
0733782	2.100	0.0827	27	80	3
0733799	2.200	0.0866	29	80	3
0733804	2.300	0.0906	30	80	3
0733810	2.400	0.0945	31	80	3
0733827	2.500	0.0984	33	80	3
0733833	2.600	0.1024	34	89	3
0733840	2.700	0.1063	35	89	3
0733856	2.800	0.1102	36	89	3
0733862	2.900	0.1142	38	89	3

AQDEXOH10D AQUA DRILL EX OIL HOLE 10D



LIST 9612 - Metric Series

LIST 9613 - Fractional Series

EDP#	Size (Dc)	Decimal	W/F/L	Flute Length (ℓ)	OAL (L)	Shank Dia. (Ds)
0726519	3.000	0.1181		39	89	3
0729788	3.100	0.1220		46	96	4
1591660	3.175	0.1250	1/8	46	96	4
0729794	3.200	0.1260		46	96	4
0729800	3.300	0.1299		46	96	4
0729816	3.400	0.1339		46	96	4
0726525	3.500	0.1378		46	96	4
1591677	3.572	0.1406	9/64	52	102	4
0729822	3.600	0.1417		52	102	4
0729839	3.700	0.1457		52	102	4
0729845	3.800	0.1496		52	102	4
0729851	3.900	0.1535		52	102	4
1591683	3.969	0.1563	5/32	52	102	4
0726531	4.000	0.1575		52	102	4
0729868	4.100	0.1614		59	109	5
0729874	4.200	0.1654		59	109	5
0729880	4.300	0.1693		59	109	5
1591690	4.366	0.1719	11/64	59	109	5

Unit: mm

Feeds and Speeds on page 18 - 19

EDP#	Size (Dc)	Decimal	W/F/L	Flute Length (ℓ)	OAL (L)	Shank Dia. (Ds)
0729897	4.400	0.1732		59	109	5
0726548	4.500	0.1772		59	109	5
0729902	4.600	0.1811		65	115	5
0729919	4.700	0.1850		65	115	5
1591705	4.763	0.1875	3/16	65	115	5
0729925	4.800	0.1890		65	115	5
0729931	4.900	0.1929		65	115	5
0726554	5.000	0.1969		65	115	5
0729948	5.100	0.2008		72	122	6
1591711	5.159	0.2031	13/64	72	122	6
0729954	5.200	0.2047		72	122	6
0729960	5.300	0.2087		72	122	6
0729977	5.400	0.2126		72	122	6
1591728	5.408	0.2129	#3	72	122	6
0726560	5.500	0.2165		72	122	6
1591734	5.556	0.2187	7/32	78	128	6
0729983	5.600	0.2205		78	128	6
0729990	5.700	0.2244		78	128	6

LIST 9612 - Metric Series Continued
LIST 9613 - Fractional Series Continued

Unit: mm

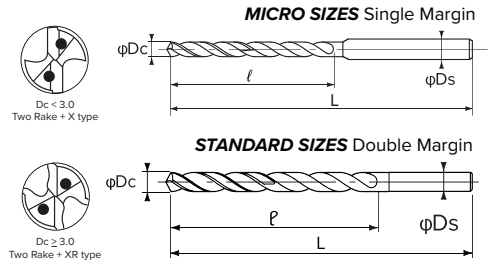
Feeds and Speeds on page 18 - 19

EDP#	Size (Dc)	Decimal	W/F/L	Flute Length (F)	OAL (L)	Shank Dia. (Ds)
0730003	5.800	0.2283		78	128	6
0730010	5.900	0.2323		78	128	6
1591740	5.953	0.2344	15/64	78	128	6
0726577	6.000	0.2362		78	128	6
0730026	6.100	0.2402		85	135	7
0730032	6.200	0.2441		85	135	7
0730049	6.300	0.2480		85	135	7
1591757	6.350	0.2500	1/4	85	135	7
0730055	6.400	0.2520		85	135	7
0726583	6.500	0.2559		85	135	7
0730061	6.600	0.2598		91	141	7
0730078	6.700	0.2638		91	141	7
1591763	6.747	0.2656	17/64	91	141	7
0730084	6.800	0.2677		91	141	7
0730090	6.900	0.2717		91	141	7
0726590	7.000	0.2756		91	141	7
0730106	7.100	0.2795		98	148	8
1591770	7.144	0.2813	9/32	98	148	8
0730112	7.200	0.2835		98	148	8
0730129	7.300	0.2874		98	148	8
0730135	7.400	0.2913		98	148	8
0726605	7.500	0.2953		98	148	8
1591786	7.541	0.2969	19/64	104	154	8
0730141	7.600	0.2992		104	154	8
0730158	7.700	0.3031		104	154	8
0730164	7.800	0.3071		104	154	8
0730170	7.900	0.3110		104	154	8
1591792	7.938	0.3125	5/16	104	154	8
0726611	8.000	0.3150		104	154	8
0730187	8.100	0.3189		111	161	9
0730193	8.200	0.3228		111	161	9
0730209	8.300	0.3268		111	161	9
1591808	8.334	0.3281	21/64	111	161	9
0730215	8.400	0.3307		111	161	9
0726628	8.500	0.3346		111	161	9
0730221	8.600	0.3386		117	167	9
0730238	8.700	0.3425		117	167	9
1591814	8.731	0.3437	11/32	117	167	9

EDP#	Size (Dc)	Decimal	W/F/L	Flute Length (F)	OAL (L)	Shank Dia. (Ds)
0730244	8.800	0.3465		117	167	9
0730250	8.900	0.3504		117	167	9
0726634	9.000	0.3543		117	167	9
0730267	9.100	0.3583		124	174	10
1591820	9.128	0.3594	23/64	124	174	10
0730273	9.200	0.3622		124	174	10
0730280	9.300	0.3661		124	174	10
0730296	9.400	0.3701		124	174	10
0726640	9.500	0.3740		124	174	10
1591837	9.525	0.3750	3/8	130	180	10
0730301	9.600	0.3780		130	180	10
0730318	9.700	0.3819		130	180	10
0730324	9.800	0.3858		130	180	10
0730330	9.900	0.3898		130	180	10
1591843	9.922	0.3906	25/64	130	180	10
0726657	10.000	0.3937		130	180	10
0730347	10.100	0.3976		137	197	11
0730353	10.200	0.4016		137	197	11
0730360	10.300	0.4055		137	197	11
0730376	10.400	0.4094		137	197	11
0726663	10.500	0.4134		137	197	11
0730382	10.600	0.4173		143	203	11
0730399	10.700	0.4213		143	203	11
1591850	10.716	0.4219	27/64	143	203	11
0730404	10.800	0.4252		143	203	11
0730410	10.900	0.4291		143	203	11
0726670	11.000	0.4331		143	203	11
0730427	11.100	0.4370		150	210	12
1591866	11.113	0.4375	7/16	150	210	12
0730433	11.200	0.4409		150	210	12
0730440	11.300	0.4449		150	210	12
0730456	11.400	0.4488		150	210	12
0726686	11.500	0.4528		150	210	12
1591872	11.509	0.4531	29/64	156	216	12
0730462	11.600	0.4567		156	216	12
0730479	11.700	0.4606		156	216	12
0730485	11.800	0.4646		156	216	12
0730491	11.900	0.4685		156	216	12
0726692	12.000	0.4724		156	216	12

AQUA DRILL EX OIL HOLE SERIES

SERIES SPECIFICATIONS



AQDEXOH15D MICRO AQUA DRILL EX OIL HOLE

15D



LIST 9614 - Metric Micro Series

EDP#	Size (Dc)	Decimal	Flute Length (ℓ)	OAL (L)	Shank Dia. (Ds)
0733879	1.000	0.0394	18	66	3
0733885	1.100	0.0433	20	71	3
0733891	1.200	0.0472	22	71	3
0733907	1.300	0.0512	23	71	3
0733913	1.400	0.0551	25	71	3
0733920	1.500	0.0591	27	71	3
0733936	1.600	0.0630	29	80	3
0733942	1.700	0.0669	31	80	3
0733959	1.800	0.0709	32	80	3
0733965	1.900	0.0748	34	80	3

Unit: mm

Feeds and Speeds on page 18 - 19

EDP#	Size (Dc)	Decimal	Flute Length (ℓ)	OAL (L)	Shank Dia. (Ds)
0733971	2.000	0.0787	36	80	3
0733988	2.100	0.0827	38	93	3
0733994	2.200	0.0866	40	93	3
0734009	2.300	0.0906	41	93	3
0734015	2.400	0.0945	43	93	3
0734021	2.500	0.0984	45	93	3
0734038	2.600	0.1024	47	104	3
0734044	2.700	0.1063	49	104	3
0734050	2.800	0.1102	50	104	3
0734067	2.900	0.1142	52	104	3

AQDEXOH15D AQUA DRILL EX OIL HOLE

15D



LIST 9614 - Metric Series

LIST 9615 - Fractional Series

EDP#	Size (Dc)	Decimal	W/F/L	Flute Length (ℓ)	OAL (L)	Shank Dia. (Ds)
0726708	3.000	0.1181		54	104	3
0730507	3.100	0.1220		63	113	4
1519137	3.175	0.1250	1/8	63	113	4
0730513	3.200	0.1260		63	113	4
0730520	3.300	0.1299		63	113	4
0730536	3.400	0.1339		63	113	4
0726714	3.500	0.1378		63	113	4
1519143	3.572	0.1406	9/64	72	122	4
0730542	3.600	0.1417		72	122	4
0730559	3.700	0.1457		72	122	4
0730565	3.800	0.1496		72	122	4
0730571	3.900	0.1535		72	122	4
1519150	3.969	0.1562	5/32	72	122	4
0726720	4.000	0.1575		72	122	4
0730588	4.100	0.1614		81	131	5
0730594	4.200	0.1654		81	131	5
0730600	4.300	0.1693		81	131	5
1519166	4.366	0.1719	11/64	81	131	5

Unit: mm

Feeds and Speeds on page 18 - 19

EDP#	Size (Dc)	Decimal	W/F/L	Flute Length (ℓ)	OAL (L)	Shank Dia. (Ds)
0730616	4.400	0.1732		81	131	5
0726737	4.500	0.1772		81	131	5
0730622	4.600	0.1811		90	140	5
0730639	4.700	0.1850		90	140	5
1519172	4.763	0.1875	3/16	90	140	5
0730645	4.800	0.1890		90	140	5
0730651	4.900	0.1929		90	140	5
0726743	5.000	0.1969		90	140	5
0730668	5.100	0.2008		99	149	6
1519189	5.159	0.2031	13/64	99	149	6
0730674	5.200	0.2047		99	149	6
0730680	5.300	0.2087		99	149	6
0730697	5.400	0.2126		99	149	6
1519195	5.408	0.2129	#3	99	149	6
0726750	5.500	0.2165		99	149	6
1519200	5.556	0.2187	7/32	108	158	6
0730702	5.600	0.2205		108	158	6
0730719	5.700	0.2244		108	158	6

LIST 9614 - Metric Series Continued
LIST 9615 - Fractional Series Continued

Unit: mm

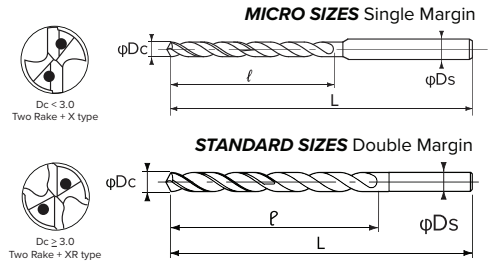
Feeds and Speeds on page 18 - 19

EDP#	Size (Dc)	Decimal	W/F/L	Flute Length (ℓ)	OAL (L)	Shank Dia. (Ds)
0730725	5.800	0.2283		108	158	6
0730731	5.900	0.2323		108	158	6
1519217	5.953	0.2344	15/64	108	158	6
0726766	6.000	0.2362		108	158	6
0730748	6.100	0.2402		117	167	7
0730754	6.200	0.2441		117	167	7
0730760	6.300	0.2480		117	167	7
1519223	6.350	0.2500	1/4	117	167	7
0730777	6.400	0.2520		117	167	7
0726772	6.500	0.2559		117	167	7
0730783	6.600	0.2598		126	176	7
0730790	6.700	0.2638		126	176	7
1591413	6.747	0.2656	17/64	126	176	7
0730805	6.800	0.2677		126	176	7
0730811	6.900	0.2717		126	176	7
0726789	7.000	0.2756		126	176	7
0730828	7.100	0.2795		135	185	8
1519230	7.144	0.2812	9/32	135	185	8
0730834	7.200	0.2835		135	185	8
0730840	7.300	0.2874		135	185	8
0730857	7.400	0.2913		135	185	8
0726795	7.500	0.2953		135	185	8
1591420	7.541	0.2969	19/64	144	194	8
0730863	7.600	0.2992		144	194	8
0730870	7.700	0.3031		144	194	8
0730886	7.800	0.3071		144	194	8
0730892	7.900	0.3110		144	194	8
1519246	7.938	0.3125	5/16	144	194	8
0726800	8.000	0.3150		144	194	8
0730908	8.100	0.3189		153	203	9
0730914	8.200	0.3228		153	203	9
0730920	8.300	0.3268		153	203	9
1591436	8.334	0.3281	21/64	153	203	9
0730937	8.400	0.3307		153	203	9
0726817	8.500	0.3346		153	203	9
0730943	8.600	0.3386		162	212	9
0730950	8.700	0.3425		162	212	9
1519252	8.731	0.3437	11/32	162	212	9
0730966	8.800	0.3465		162	212	9
0730972	8.900	0.3504		162	212	9

EDP#	Size (Dc)	Decimal	W/F/L	Flute Length (ℓ)	OAL (L)	Shank Dia. (Ds)
0726823	9.000	0.3543		162	212	9
0730989	9.100	0.3583		171	221	10
1519269	9.128	0.3594	23/64	171	221	10
0730995	9.200	0.3622		171	221	10
0731000	9.300	0.3661		171	221	10
0731016	9.400	0.3701		171	221	10
0726830	9.500	0.3740		171	221	10
1519275	9.525	0.3750	3/8	180	230	10
0731022	9.600	0.3780		180	230	10
0731039	9.700	0.3819		180	230	10
0731045	9.800	0.3858		180	230	10
0731051	9.900	0.3898		180	230	10
1519281	9.922	0.3906	25/64	180	230	10
0726846	10.000	0.3937		180	230	10
0731068	10.100	0.3976		189	249	11
0731074	10.200	0.4016		189	249	11
0731080	10.300	0.4055		189	249	11
0731097	10.400	0.4094		189	249	11
0726852	10.500	0.4134		189	249	11
0731102	10.600	0.4173		198	258	11
0731119	10.700	0.4213		198	258	11
1591442	10.716	0.4219	27/64	198	258	11
0731125	10.800	0.4252		198	258	11
0731131	10.900	0.4291		198	258	11
0726869	11.000	0.4331		198	258	11
0731148	11.100	0.4370		207	267	12
1591459	11.113	0.4375	7/16	207	267	12
0731154	11.200	0.4409		207	267	12
0731160	11.300	0.4449		207	267	12
0731177	11.400	0.4488		207	267	12
0726875	11.500	0.4528		207	267	12
1591465	11.509	0.4531	29/64	216	276	12
0731183	11.600	0.4567		216	276	12
0731190	11.700	0.4606		216	276	12
0731205	11.800	0.4646		216	276	12
0731211	11.900	0.4685		216	276	12
0726881	12.000	0.4724		216	276	12
1519298	12.700	0.5000	1/2	234	294	13
1519303	13.494	0.5312	17/32	243	303	14

AQUA DRILL EX OIL HOLE SERIES

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AQDEXOH20D MICRO AQUA DRILL EX OIL HOLE

20D



LIST 9616 - Metric Micro Series

EDP#	Size (Dc)	Decimal	Flute Length (ℓ)	OAL (L)	Shank Dia. (Ds)
0734073	1.000	0.0394	23	71	3
0734080	1.100	0.0433	25	78	3
0734096	1.200	0.0472	28	78	3
0734101	1.300	0.0512	30	78	3
0734118	1.400	0.0551	32	78	3
0734124	1.500	0.0591	35	78	3
0734130	1.600	0.0630	37	90	3
0734147	1.700	0.0669	39	90	3
0734153	1.800	0.0709	41	90	3
0734160	1.900	0.0748	44	90	3

Unit: mm

Feeds and Speeds on page 18 - 19

EDP#	Size (Dc)	Decimal	Flute Length (ℓ)	OAL (L)	Shank Dia. (Ds)
0734176	2.000	0.0787	46	90	3
0734182	2.100	0.0827	48	105	3
0734199	2.200	0.0866	51	105	3
0734204	2.300	0.0906	53	105	3
0734210	2.400	0.0945	55	105	3
0734227	2.500	0.0984	58	105	3
0734233	2.600	0.1024	60	119	3
0734240	2.700	0.1063	62	119	3
0734256	2.800	0.1102	64	119	3
0734262	2.900	0.1142	67	119	3

AQDEXOH20D AQUA DRILL EX OIL HOLE

20D



LIST 9616 - Metric Series

LIST 9616 - Fractional Series

EDP#	Size (Dc)	Decimal	W/F/L	Flute Length (ℓ)	OAL (L)	Shank Dia. (Ds)
0726898	3.000	0.1181		69	119	3
0731228	3.100	0.1220		81	131	4
1519310	3.175	0.1250	1/8	81	131	4
0731234	3.200	0.1260		81	131	4
0731240	3.300	0.1299		81	131	4
0731257	3.400	0.1339		81	131	4
0726903	3.500	0.1378		81	131	4
1519326	3.572	0.1406	9/64	92	142	4
0731263	3.600	0.1417		92	142	4
0731270	3.700	0.1457		92	142	4
0731286	3.800	0.1496		92	142	4
0731292	3.900	0.1535		92	142	4
1519332	3.969	0.1562	5/32	92	142	4
0726910	4.000	0.1575		92	142	4
0731308	4.100	0.1614		104	154	5
0731314	4.200	0.1654		104	154	5
0731320	4.300	0.1693		104	154	5
1519349	4.366	0.1719	11/64	104	154	5

Unit: mm

Feeds and Speeds on page 18 - 19

EDP#	Size (Dc)	Decimal	W/F/L	Flute Length (ℓ)	OAL (L)	Shank Dia. (Ds)
0731337	4.400	0.1732		104	154	5
0726926	4.500	0.1772		104	154	5
0731343	4.600	0.1811		115	165	5
0731350	4.700	0.1850		115	165	5
1519355	4.763	0.1875	3/16	115	165	5
0731366	4.800	0.1890		115	165	5
0731372	4.900	0.1929		115	165	5
0726932	5.000	0.1969		115	165	5
0731389	5.100	0.2008		127	177	6
1591889	5.159	0.2031	13/64	127	177	6
0731395	5.200	0.2047		127	177	6
0731400	5.300	0.2087		127	177	6
0731417	5.400	0.2126		127	177	6
1519361	5.408	0.2129	#3	127	177	6
0726949	5.500	0.2165		127	177	6
1519378	5.556	0.2187	7/32	138	188	6
0731423	5.600	0.2205		138	188	6
0731430	5.700	0.2244		138	188	6

LIST 9616 - Metric Series Continued
LIST 9616 - Fractional Series Continued

EDP#	Size (Dc)	Decimal	W/F/L	Flute Length (P)	OAL (L)	Shank Dia. (Ds)
0731446	5.800	0.2283		138	188	6
0731452	5.900	0.2323		138	188	6
1591895	5.953	0.2344	15/64	138	188	6
0726955	6.000	0.2362		138	188	6
0731469	6.100	0.2402		150	200	7
0731475	6.200	0.2441		150	200	7
0731481	6.300	0.2480		150	200	7
1519384	6.350	0.2500	1/4	150	200	7
0731498	6.400	0.2520		150	200	7
0726961	6.500	0.2559		150	200	7
0731503	6.600	0.2598		161	211	7
0731510	6.700	0.2638		161	211	7
1519390	6.747	0.2656	17/64	161	211	7
0731526	6.800	0.2677		161	211	7
0731532	6.900	0.2717		161	211	7
0726978	7.000	0.2756		161	211	7
0731549	7.100	0.2795		173	223	8
1591900	7.144	0.2812	9/32	173	223	8
0731555	7.200	0.2835		173	223	8
0731561	7.300	0.2874		173	223	8
0731578	7.400	0.2913		173	223	8
0726984	7.500	0.2953		173	223	8
1519406	7.541	0.2969	19/64	184	234	8
0731584	7.600	0.2992		184	234	8
0731590	7.700	0.3031		184	234	8
0731606	7.800	0.3071		184	234	8
0731612	7.900	0.3110		184	234	8
1519412	7.938	0.3125	5/16	184	234	8

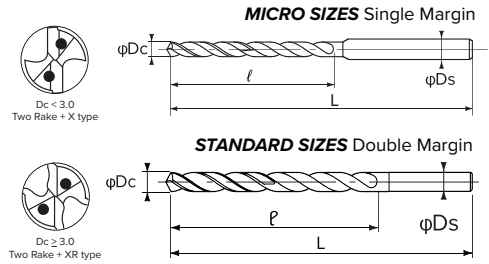
Unit: mm

Feeds and Speeds on page 18 - 19

EDP#	Size (Dc)	Decimal	W/F/L	Flute Length (P)	OAL (L)	Shank Dia. (Ds)
0726990	8.000	0.3150		184	234	8
0731629	8.100	0.3189		196	246	9
0731635	8.200	0.3228		196	246	9
0731641	8.300	0.3268		196	246	9
1519429	8.334	0.3281	21/64	196	246	9
0731658	8.400	0.3307		196	246	9
0727005	8.500	0.3346		196	246	9
0731664	8.600	0.3386		207	257	9
0731670	8.700	0.3425		207	257	9
1519435	8.731	0.3437	11/32	207	257	9
0731687	8.800	0.3465		207	257	9
0731693	8.900	0.3504		207	257	9
0727011	9.000	0.3543		207	257	9
0731709	9.100	0.3583		219	269	10
1591917	9.128	0.3594	23/64	219	269	10
0731715	9.200	0.3622		219	269	10
0731721	9.300	0.3661		219	269	10
0731738	9.400	0.3701		219	269	10
0727028	9.500	0.3740		219	269	10
1519441	9.525	0.3750	3/8	230	280	10
0731744	9.600	0.3780		230	280	10
0731750	9.700	0.3819		230	280	10
0731767	9.800	0.3858		230	280	10
0731773	9.900	0.3898		230	280	10
1519458	9.922	0.3906	25/64	230	280	10
0727034	10.000	0.3937		230	280	10

AQUA DRILL EX OIL HOLE SERIES

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AQDEXOH25D MICRO AQUA DRILL EX OIL HOLE 25D



LIST 9618 - Metric Micro Series

EDP#	Size (Dc)	Decimal	Flute Length (ℓ)	OAL (L)	Shank Dia. (Ds)
1574446	1.000	0.0394	28	76	3
1574452	1.100	0.0433	31	86	3
1574469	1.200	0.0472	34	86	3
1574475	1.300	0.0512	36	86	3
1574481	1.400	0.0551	39	86	3
1574498	1.500	0.0591	42	86	3
1574503	1.600	0.0630	45	100	3
1574510	1.700	0.0669	48	100	3
1574526	1.800	0.0709	50	100	3
1574532	1.900	0.0748	53	100	3

Unit: mm

Feeds and Speeds on page 18 - 19

EDP#	Size (Dc)	Decimal	Flute Length (ℓ)	OAL (L)	Shank Dia. (Ds)
1574549	2.000	0.0787	56	100	3
1574555	2.100	0.0827	59	115	3
1574584	2.200	0.0866	62	115	3
1574590	2.300	0.0906	64	115	3
1574606	2.400	0.0945	67	115	3
1574612	2.500	0.0984	70	115	3
1574629	2.600	0.1024	73	126	3
1574635	2.700	0.1063	76	126	3
1574641	2.800	0.1102	78	126	3
1574561	2.900	0.1142	81	126	3

AQDEXOH25D AQUA DRILL EX OIL HOLE 25D



LIST 9618 - Metric Series

LIST 9619 - Fractional Series

EDP#	Size (Dc)	Decimal	W/F/L	Flute Length (ℓ)	OAL (L)	Shank Dia. (Ds)
0727040	3.000	0.1181		84	134	3
0731780	3.100	0.1220		98	148	4
1519464	3.175	0.1250	1/8	98	148	4
0731796	3.200	0.1260		98	148	4
0731801	3.300	0.1299		98	148	4
0731818	3.400	0.1339		98	148	4
0727057	3.500	0.1378		98	148	4
1591471	3.572	0.1406	9/64	112	162	4
0731824	3.600	0.1417		112	162	4
0731830	3.700	0.1457		112	162	4
0731847	3.800	0.1496		112	162	4
0731853	3.900	0.1535		112	162	4
1519470	3.969	0.1562	5/32	112	162	4
0727063	4.000	0.1575		112	162	4
0731860	4.100	0.1614		126	176	5
0731876	4.200	0.1654		126	176	5
0731882	4.300	0.1693		126	176	5
1591488	4.366	0.1719	11/64	126	176	5

Unit: mm

Feeds and Speeds on page 18 - 19

EDP#	Size (Dc)	Decimal	W/F/L	Flute Length (ℓ)	OAL (L)	Shank Dia. (Ds)
0731899	4.400	0.1732		126	176	5
0727070	4.500	0.1772		126	176	5
0731904	4.600	0.1811		140	190	5
0731910	4.700	0.1850		140	190	5
1519487	4.763	0.1875	3/16	140	190	5
0731927	4.800	0.1890		140	190	5
0731933	4.900	0.1929		140	190	5
0727086	5.000	0.1969		140	190	5
0731940	5.100	0.2008		154	204	6
1591494	5.159	0.2031	13/64	154	204	6
0731956	5.200	0.2047		154	204	6
0731962	5.300	0.2087		154	204	6
0731979	5.400	0.2126		154	204	6
1519493	5.408	0.2129	#3	154	204	6
0727092	5.500	0.2165		154	204	6
1591500	5.556	0.2187	7/32	168	218	6
0731985	5.600	0.2205		168	218	6
0731991	5.700	0.2244		168	218	6

LIST 9618 - Metric Series Continued
LIST 9619 - Fractional Series Continued

Unit: mm

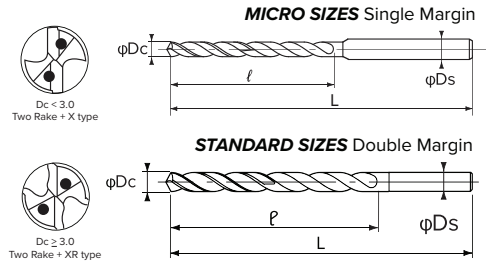
Feeds and Speeds on page 18 - 19

EDP#	Size (Dc)	Decimal	W/F/L	Flute Length (F)	OAL (L)	Shank Dia. (Ds)
0732006	5.800	0.2283		168	218	6
0732012	5.900	0.2323		168	218	6
1591516	5.953	0.2344	15/64	168	218	6
0727108	6.000	0.2362		168	218	6
0732029	6.100	0.2402		182	232	7
0732035	6.200	0.2441		182	232	7
0732041	6.300	0.2480		182	232	7
1519509	6.350	0.2500	1/4	182	232	7
0732058	6.400	0.2520		182	232	7
0727114	6.500	0.2559		182	232	7
0732064	6.600	0.2598		196	246	7
0732070	6.700	0.2638		196	246	7
1591522	6.747	0.2656	17/64	196	246	7
0732087	6.800	0.2677		196	246	7
0732093	6.900	0.2717		196	246	7
0727120	7.000	0.2756		196	246	7
0732109	7.100	0.2795		210	260	8
1591539	7.144	0.2812	9/32	210	260	8
0732115	7.200	0.2835		210	260	8
0732121	7.300	0.2874		210	260	8
0732138	7.400	0.2913		210	260	8
0727137	7.500	0.2953		210	260	8

EDP#	Size (Dc)	Decimal	W/F/L	Flute Length (F)	OAL (L)	Shank Dia. (Ds)
1591545	7.541	0.2969	19/64	224	274	8
0732144	7.600	0.2992		224	274	8
0732150	7.700	0.3031		224	274	8
0732167	7.800	0.3071		224	274	8
0732173	7.900	0.3110		224	274	8
1519515	7.938	0.3125	5/16	224	274	8
0727143	8.000	0.3150		224	274	8
1591551	8.334	0.3281	21/64	238	288	9
0767683	8.500	0.3346		239.5	289.5	9
1591568	8.731	0.3437	11/32	252	302	9
0767734	9.000	0.3543		253.6	303.6	9
1591574	9.128	0.3594	23/64	266	302	10
0767580	9.500	0.3740		267.7	317.7	10
1519521	9.525	0.3750	3/8	280	330	10
0767597	9.600	0.3780		281.7	331.7	10
1591580	9.922	0.3906	25/64	280	330	10
0767631	10.000	0.3937		281.8	331.8	10

AQUA DRILL EX OIL HOLE SERIES

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AQDEXOH30D MICRO AQUA DRILL EX OIL HOLE

30D



LIST 9620 - Metric Micro Series

EDP#	Size (Dc)	Decimal	Flute Length (ℓ)	OAL (L)	Shank Dia. (Ds)
1574578	1.000	0.0394	33	78	3
1574658	1.100	0.0433	36	93	3
1574664	1.200	0.0472	40	93	3
1574670	1.300	0.0512	43	93	3
1574687	1.400	0.0551	46	93	3
1574693	1.500	0.0591	50	93	3
1574709	1.600	0.0630	53	110	3
1574715	1.700	0.0669	56	110	3
1574721	1.800	0.0709	59	110	3
1574738	1.900	0.0748	63	110	3

Unit: mm

Feeds and Speeds on page 18 - 19

EDP#	Size (Dc)	Decimal	Flute Length (ℓ)	OAL (L)	Shank Dia. (Ds)
1574744	2.000	0.0787	66	110	3
1574750	2.100	0.0827	69	127	3
1574767	2.200	0.0866	73	127	3
1574773	2.300	0.0906	76	127	3
1574780	2.400	0.0945	79	127	3
1574796	2.500	0.0984	83	127	3
1574801	2.600	0.1024	86	141	3
1574818	2.700	0.1063	89	141	3
1574824	2.800	0.1102	92	141	3
1574830	2.900	0.1142	96	141	3

AQDEXOH30D AQUA DRILL EX OIL HOLE

30D



LIST 9620 - Metric Series

LIST 9621 - Fractional Series

EDP#	Size (Dc)	Decimal	W/F/L	Flute Length (ℓ)	OAL (L)	Shank Dia. (Ds)
0727150	3.000	0.1181		99	149	3
0732180	3.100	0.1220		116	166	4
1519538	3.175	0.1250	1/8	116	166	4
0732196	3.200	0.1260		116	166	4
0732201	3.300	0.1299		116	166	4
0732218	3.400	0.1339		116	166	4
0727166	3.500	0.1378		116	166	4
1591923	3.572	0.1406	9/64	132	182	4
0732224	3.600	0.1417		132	182	4
0732230	3.700	0.1457		132	182	4
0732247	3.800	0.1496		132	182	4
0732253	3.900	0.1535		132	182	4
1519544	3.969	0.1562	5/32	132	182	4
0727172	4.000	0.1575		132	182	4
0732260	4.100	0.1614		149	199	5
0732276	4.200	0.1654		149	199	5
0732282	4.300	0.1693		149	199	5
1591930	4.366	0.1719	11/64	149	199	5

Unit: mm

Feeds and Speeds on page 18 - 19

EDP#	Size (Dc)	Decimal	W/F/L	Flute Length (ℓ)	OAL (L)	Shank Dia. (Ds)
0732299	4.400	0.1732		149	199	5
0727189	4.500	0.1772		149	199	5
0732304	4.600	0.1811		165	215	5
0732310	4.700	0.1850		165	215	5
1519550	4.763	0.1875	3/16	165	215	5
0732327	4.800	0.1890		165	215	5
0732333	4.900	0.1929		165	215	5
0727195	5.000	0.1969		165	215	5
0732340	5.100	0.2008		182	232	6
1591946	5.159	0.2031	13/64	182	232	6
0732356	5.200	0.2047		182	232	6
0732362	5.300	0.2087		182	232	6
0732379	5.400	0.2126		182	232	6
1591952	5.410	0.2130	#3	182	232	6
0727200	5.500	0.2165		182	232	6
1591969	5.556	0.2187	7/32	198	248	6
0732385	5.600	0.2205		198	248	6
0732391	5.700	0.2244		198	248	6

LIST 9620 - Metric Series Continued
LIST 9621 - Fractional Series Continued

Unit: mm

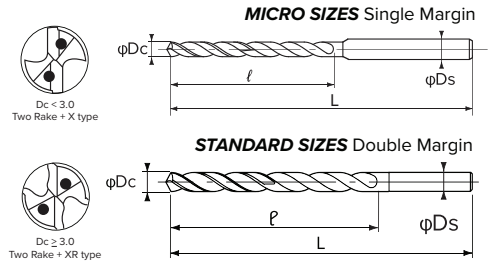
Feeds and Speeds on page 18 - 19

EDP#	Size (Dc)	Decimal	W/F/L	Flute Length (P)	OAL (L)	Shank Dia. (Ds)
0732407	5.800	0.2283		198	248	6
0732413	5.900	0.2323		198	248	6
1591975	5.953	0.2344	15/64	198	248	6
0727217	6.000	0.2362		198	248	6
0732420	6.100	0.2402		215	265	7
0732436	6.200	0.2441		215	265	7
0732442	6.300	0.2480		215	265	7
1519567	6.350	0.2500	1/4	215	265	7
0732459	6.400	0.2520		215	265	7
0727223	6.500	0.2559		215	265	7
0732465	6.600	0.2598		231	281	7
0732471	6.700	0.2638		231	281	7
1591981	6.747	0.2656	17/64	231	281	7
0732488	6.800	0.2677		231	281	7
0732494	6.900	0.2717		231	281	7
0727230	7.000	0.2756		231	281	7
0732500	7.100	0.2795		248	298	8
1591998	7.144	0.2812	9/32	248	298	8
0732516	7.200	0.2835		248	298	8
0732522	7.300	0.2874		248	298	8

EDP#	Size (Dc)	Decimal	W/F/L	Flute Length (P)	OAL (L)	Shank Dia. (Ds)
0732539	7.400	0.2913		248	298	8
0727246	7.500	0.2953		248	298	8
1592002	7.541	0.2969	19/64	264	314	8
0732545	7.600	0.2992		264	314	8
0732551	7.700	0.3031		264	314	8
0732568	7.800	0.3071		264	314	8
0732574	7.900	0.3110		264	314	8
1592019	7.938	0.3125	5/16	264	314	8
0727252	8.000	0.3150		264	314	8
1592025	8.334	0.3281	21/64	281	331	9
0767814	8.500	0.3346		282.5	332.5	9
1592031	8.731	0.3437	11/32	297	347	9
0767866	9.000	0.3543		298.6	348.6	9
1592048	9.128	0.3594	23/64	314	364	10
0767917	9.500	0.3740		315.7	365.7	10
1592054	9.525	0.3750	3/8	330	380	10
0767923	9.600	0.3780		331.7	381.7	10
1592060	9.922	0.3906	25/64	330	380	10
0767969	10.000	0.3937		331.8	381.8	10

AQUA DRILL EX OIL HOLE SERIES

SERIES SPECIFICATIONS



AQDEXOH40D MICRO AQUA DRILL EX OIL HOLE

40D



LIST 9626 - Metric Micro Series

EDP#	Size (Dc)	Decimal	Flute Length (ℓ)	OAL (L)	Shank Dia. (Ds)
1575058	1.000	0.0394	43	88	3
1575064	1.100	0.0433	47	108	3
1575070	1.200	0.0472	52	108	3
1575087	1.300	0.0512	56	108	3
1575093	1.400	0.0551	60	108	3
1575109	1.500	0.0591	65	108	3
1575115	1.600	0.0630	69	130	3
1575121	1.700	0.0669	73	130	3
1575138	1.800	0.0709	77	130	3
1575144	1.900	0.0748	82	130	3

Unit: mm

Feeds and Speeds on page 18 - 19

EDP#	Size (Dc)	Decimal	Flute Length (ℓ)	OAL (L)	Shank Dia. (Ds)
1575150	2.000	0.0787	76	130	3
1575167	2.100	0.0827	90	152	3
1575173	2.200	0.0866	95	152	3
1575180	2.300	0.0906	99	152	3
1575196	2.400	0.0945	103	152	3
1575201	2.500	0.0984	108	152	3
1575218	2.600	0.1024	112	170	3
1575224	2.700	0.1063	116	170	3
1575230	2.800	0.1102	120	170	3
1575247	2.900	0.1142	125	170	3

AQDEXOH40D AQUA DRILL EX OIL HOLE

40D



LIST 9626 - Metric Series

LIST 9627 - Fractional Series

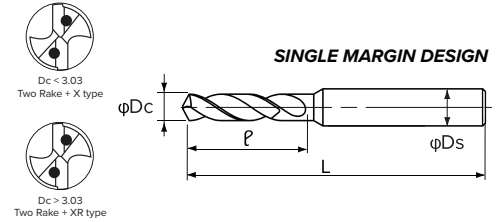
EDP#	Size (Dc)	Decimal	W/F/L	Flute Length (ℓ)	OAL (L)	Shank Dia. (Ds)
1519573	3.000	0.1181		129	179	3
1519618	3.175	0.1250	1/8	151	201	4
1592077	3.500	0.1378		151	201	4
1519580	3.572	0.1406	9/64	172	222	4
1519624	3.969	0.1562	5/32	172	222	4
1519596	4.000	0.1575		172	222	4
1591597	4.366	0.1719	11/64	194	244	5
1592083	4.500	0.1772		194	244	5
1519630	4.763	0.1875	3/16	215	265	5
1592090	5.000	0.1969		215	265	5
1591602	5.159	0.2031	13/64	237	287	6
1591619	5.408	0.2129	#3	237	287	6

Unit: mm

Feeds and Speeds on page 18 - 19

EDP#	Size (Dc)	Decimal	W/F/L	Flute Length (ℓ)	OAL (L)	Shank Dia. (Ds)
1519601	5.500	0.2165		237	287	6
1591625	5.556	0.2187	7/32	258	308	6
1591631	5.953	0.2344	15/64	258	308	6
1592111	6.000	0.2362		258	308	6
1519647	6.350	0.2500	1/4	280	330	7
1592128	6.500	0.2559		280	330	7
1591648	6.747	0.2656	17/64	301	351	7
1592134	7.000	0.2756		301	351	7
1591654	7.144	0.2812	9/32	323	373	8
1592140	7.500	0.2953		323	373	8
1591653	7.938	0.3125	5/16	344	394	8

SERIES SPECIFICATIONS



AQDEXOHPLT MICRO AQUA DRILLS EX OIL HOLE PILOT



LIST 9622 - Metric Micro Series

EDP#	Size (Dc)	Decimal	Flute Length (ρ)	OAL (L)	Shank Dia. (Ds)
0734279	1.015	0.0400	3.3	54	3
0734285	1.115	0.0439	3.6	56	3
0734291	1.215	0.0478	3.9	56	3
0734307	1.315	0.0518	4.2	56	3
0734313	1.415	0.0557	4.6	56	3
0734320	1.515	0.0596	4.9	56	3
0734336	1.615	0.0636	5.2	60	3
0734342	1.715	0.0675	5.5	60	3
0734359	1.815	0.0715	5.8	60	3
0734365	1.915	0.0754	6.2	60	3

Unit: mm Feeds and Speeds on page 18 - 19

EDP#	Size (Dc)	Decimal	Flute Length (ρ)	OAL (L)	Shank Dia. (Ds)
0734371	2.015	0.0793	9	60	3
0734388	2.115	0.0833	11	63	3
0734394	2.215	0.0872	11	63	3
0734400	2.315	0.0911	11	63	3
0734416	2.415	0.0951	12	63	3
0734422	2.515	0.0990	12	63	3
0734439	2.615	0.1030	12	68	3
0734445	2.715	0.1069	14	68	3
0734451	2.815	0.1108	14	68	3
0734468	2.915	0.1148	14	68	3

AQDEXOHPLT AQUA DRILLS EX OIL HOLE PILOT



LIST 9622 - Metric Series

LIST 9623 - Fractional Series

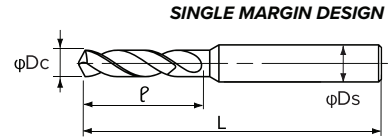
EDP#	Size (Dc)	Decimal	W/F/L	Flute Length (ρ)	OAL (L)	Shank Dia. (Ds)
0727624	3.030	0.1193		14	68	3
0732952	3.130	0.1232		15	72	4
1519660	3.205	0.1262	1/8	15	72	4
0732969	3.230	0.1272		15	72	4
0732975	3.330	0.1311		15	72	4
0732981	3.430	0.1350		16	72	4
0727630	3.530	0.1390		16	72	4
1519676	3.601	0.1418	9/64	16	72	4
0732998	3.630	0.1429		16	72	4
0733002	3.730	0.1469		18	72	4
0733019	3.830	0.1508		18	72	4
0733025	3.930	0.1547		18	72	4
1519682	3.998	0.1574	5/32	18	72	4
0727647	4.030	0.1587		18	72	4
0733031	4.130	0.1626		19	80	5
0733048	4.230	0.1665		19	80	5
0733054	4.330	0.1705		19	80	5
1519699	4.395	0.1730	11/64	19	80	5
0733060	4.430	0.1744		21	80	5
0727653	4.530	0.1783		21	80	5
0733077	4.630	0.1823		21	80	5
0733083	4.730	0.1862		22	80	5
1519704	4.792	0.1887	3/16	22	80	5
0733090	4.830	0.1902		22	80	5
0733105	4.930	0.1941		22	80	5
0727660	5.030	0.1980		23	80	5

Unit: mm Feeds and Speeds on page 18 - 19

EDP#	Size (Dc)	Decimal	W/F/L	Flute Length (ρ)	OAL (L)	Shank Dia. (Ds)
0733111	5.130	0.2020		24	82	6
1519710	5.189	0.2043	13/64	24	82	6
0733128	5.230	0.2059		24	82	6
0733134	5.330	0.2098		24	82	6
0733140	5.430	0.2138		25	82	6
1519727	5.440	0.2142	#3	25	82	6
0727676	5.530	0.2177		25	82	6
1519733	5.586	0.2199	7/32	25	82	6
0733157	5.630	0.2217		25	82	6
0733163	5.730	0.2256		27	82	6
0733170	5.830	0.2295		27	82	6
0733186	5.930	0.2335		27	82	6
1519740	5.983	0.2356	15/64	27	82	6
0727682	6.030	0.2374		27	82	6
0733192	6.130	0.2413		28	88	7
0733208	6.230	0.2453		28	88	7
0733214	6.330	0.2492		28	88	7
1519756	6.380	0.2512	1/4	28	88	7
0733220	6.430	0.2531		30	88	7
0727699	6.530	0.2571		30	88	7
0733237	6.630	0.2610		30	88	7
0733243	6.730	0.2650		31	88	7
1519762	6.777	0.2668	17/64	31	88	7
0733250	6.830	0.2689		31	88	7
0733266	6.930	0.2728		31	88	7
0727704	7.030	0.2768		32	88	7

AQUA DRILL EX OIL HOLE SERIES

SERIES SPECIFICATIONS



AQDEXOHPLT AQUA DRILLS EX OIL HOLE PILOT



LIST 9622 - Metric Series Continued

LIST 9623 - Fractional Series Continued

Unit: mm

Feeds and Speeds on page 18 - 19

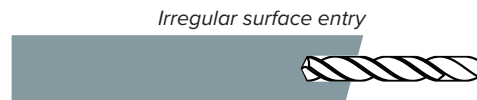
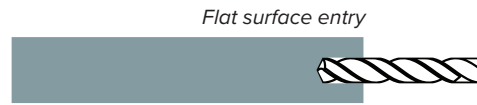
EDP#	Size (Dc)	Decimal	W/F/L	Flute Length (ρ)	OAL (L)	Shank Dia. (Ds)
0733272	7.130	0.2807		33	94	8
1519779	7.173	0.2824	9/32	33	94	8
0733289	7.230	0.2846		33	94	8
0733295	7.330	0.2886		33	94	8
0733300	7.430	0.2925		34	94	8
0727710	7.530	0.2965		34	94	8
1519785	7.571	0.2981	19/64	34	94	8
0733317	7.630	0.3004		34	94	8
0733323	7.730	0.3043		36	94	8
0733330	7.830	0.3083		36	94	8
0733346	7.930	0.3122		36	94	8
1519791	7.967	0.3137	5/16	36	94	8
0727727	8.030	0.3161		36	94	8
0733352	8.130	0.3201		37	100	9
0733369	8.230	0.3240		37	100	9
0733375	8.330	0.3280		37	100	9
1519807	8.364	0.3293	21/64	37	100	9
0733381	8.430	0.3319		39	100	9
0727733	8.530	0.3358		39	100	9
0733398	8.630	0.3398		39	100	9
0733403	8.730	0.3437		40	100	9
1519813	8.761	0.3449	11/32	40	100	9
0733410	8.830	0.3476		40	100	9
0733426	8.930	0.3516		40	100	9
0727740	9.030	0.3555		41	100	9
0733432	9.130	0.3594		42	106	10
1519820	9.158	0.3606	23/64	42	106	10
0733449	9.230	0.3634		42	106	10
0733455	9.330	0.3673		42	106	10
0733461	9.430	0.3713		43	106	10
0727756	9.530	0.3752		43	106	10
1519836	9.555	0.3762	3/8	43	106	10

EDP#	Size (Dc)	Decimal	W/F/L	Flute Length (ρ)	OAL (L)	Shank Dia. (Ds)
0733478	9.630	0.3791		43	106	10
0733484	9.730	0.3831		45	106	10
0733490	9.830	0.3870		45	106	10
0733506	9.930	0.3909		45	106	10
1519842	9.951	0.3918	25/64	45	106	10
0727762	10.030	0.3949		45	106	10
0733512	10.130	0.3988		46	116	11
0733529	10.230	0.4028		46	116	11
0733535	10.330	0.4067		46	116	11
0733541	10.430	0.4106		48	116	11
0727779	10.530	0.4146		48	116	11
0733558	10.630	0.4185		48	116	11
0733564	10.730	0.4224		49	116	11
1545117	10.745	0.4230	27/64	49	116	11
0733570	10.830	0.4264		49	116	11
0733587	10.930	0.4303		49	116	11
0727785	11.030	0.4343		49	116	11
0733593	11.130	0.4382		50	122	12
1545123	11.142	0.4387	7/16	50	122	12
0733609	11.230	0.4421		51	122	12
0733615	11.330	0.4461		51	122	12
0733621	11.430	0.4500		52	122	12
0727791	11.530	0.4539		52	122	12
1545130	11.549	0.4547	29/64	52	122	12
0733638	11.630	0.4579		52	122	12
0733644	11.730	0.4618		54	122	12
0733650	11.830	0.4657		54	122	12
0733667	11.930	0.4697		54	122	12
0727807	12.030	0.4736		54	122	12
1519859	12.730	0.5012	1/2	57	127	13
1519865	13.524	0.5324	7/32	62	132	14
1545146	14.318	0.5637	9/16	65	140	15

DEEP HOLE DRILLING GUIDE

1. Use Pilot Hole Drill

- We recommend pre-drilling with pilot hole drill. Hole depth should be 1.5D - 2D.
- Use **AQDEXOHPLT** Pages 15-16 for flat surface pilot hole drilling. Select a size with a diameter 0.015mm - .05mm larger than deep hole drill.
- When drilling on an angled surface, contact Nachi engineering for the recommended pilot hole process ml-nai.toolsengineer@nachi.com



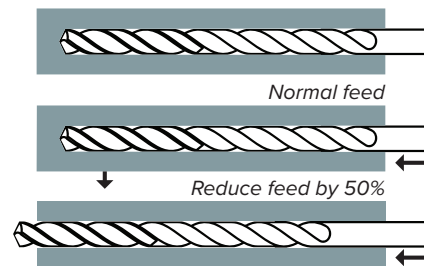
2. Deep Hole Drilling Into Pilot Hole

- Enter into pilot hole at 500 RPM until 0.5 - 1.0mm (0.02" - 0.04") from depth of cut.



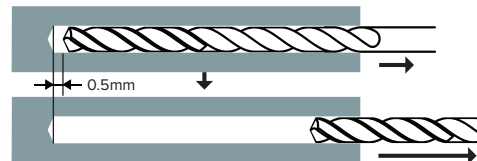
3. Deep Hole Drilling (Breaking Thru or Blind Hole)

- When drilling a thru hole, reduce feed rate by 50% right before exit to prevent the drill from breaking.



4. Retracting Drill From Hole

- When drilling is complete, retract 0.5mm from the final depth, reduce parameters to the following:
- RPM = 500, Feed = 1,000 mm/min (40 IPM).
- Complete the retract process



PRECAUTIONS WHEN DRILLING

Handling of Cutting Fluid

1. To prevent coolant holes from being blocked, use a fine mesh filter (recommended filtration efficiency of 5 µm).
2. Water Soluble cutting fluid is recommended.

Automatic Tool Changer (ATC)

To reduce shock and vibration, reduce ATC feed if required.

Minimum coolant pressure requirement

1. 300 psi or 2.0 MPa.
2. The above pressure (psi) is the minimum requirement and may require pecking. Optimal coolant pressure is 800 - 1,000 psi.
3. If using non-water soluble cutting oils, higher pressure is required or pecking will need to be implemented.

PRECAUTIONS WHEN PECKING



When pecking is required, we recommend retracting to 5mm below the surface of the hole. This ensures that the drill tip stays engaged in the material to prevent drill whip.

FEEDS AND SPEEDS GUIDE

P Steel **M** Stainless **K** Cast Iron **N** Aluminum **S** High Temp Alloys **H** Hardened Steel

Structural Steel, Carbon Steel

Drill Diameter Ranges	Cutting Speed (RPM)	Feed (IPR)			
		Pilot	10D, 15D, 20D	25D, 30D	40D
Size	Wet: 145 - 180 SFM				
1 mm	15,500	0.0011	0.0009	0.0008	0.0006
1.5 mm	10,350	0.0016	0.0013	0.0012	0.0009
2 mm	7,800	0.0025	0.0020	0.0018	0.0015
2.5 mm	6,200	0.0032	0.0030	0.0028	0.0024
Size	Wet: 320 - 350 SFM				
3 mm	10,350	0.0040	0.0034	0.0033	0.0030
1/8"	9,780	0.0042	0.0036	0.0035	0.0032
3/16"	6,520	0.0062	0.0054	0.0053	0.0048
5 mm	6,200	0.0065	0.0057	0.0055	0.0050
1/4"	4,882	0.0082	0.0073	0.0070	0.0064
5/16"	3,931	0.0104	0.0089	0.0086	0.0077
8 mm	3,900	0.0105	0.0090	0.0097	0.0078
3/8"	3,255	0.0119	0.0105	0.0101	-
10 mm	3,100	0.0125	0.0110	0.0106	-
12 mm	2,600	0.0145	0.0132	-	-
Size	MQL: 235 - 265 SFM				
3 mm	7,600	0.0040	0.0034	0.0032	0.0030
1/8"	7,182	0.0042	0.0036	0.0034	0.0032
3/16"	5,355	0.0062	0.0054	0.0053	0.0048
5 mm	5,100	0.0065	0.0057	0.0056	0.0050
1/4"	4,016	0.0083	0.0073	0.0071	0.0064
5/16"	3,225	0.0104	0.0089	0.0092	0.0077
8 mm	3,200	0.0105	0.0090	0.0093	0.0078
3/8"	2,677	0.0119	0.0105	0.0109	-
10 mm	2,550	0.0125	0.0110	0.0114	-
12 mm	2,100	0.0145	0.0132	-	-

Mold Steel, Hardened Steel (30-40 HRC)

Drill Diameter Ranges	Cutting Speed (RPM)	Feed (IPR)			
		Pilot	10D, 15D, 20D	25D, 30D	40D
Size	Wet: 115 - 150 SFM				
1 mm	12,100	0.0008	0.0008	0.0007	0.0006
1.5 mm	8,100	0.0012	0.0012	0.0011	0.0008
2 mm	6,050	0.0016	0.0016	0.0014	0.0011
2.5 mm	4,850	0.0020	0.0020	0.0017	0.0014
Size	Wet: 200 - 230 SFM				
3 mm	6,500	0.0030	0.0030	0.0029	0.0024
1/8"	6,142	0.0031	0.0032	0.0031	0.0025
3/16"	4,095	0.0047	0.0048	0.0046	0.0038
5 mm	3,900	0.0050	0.0050	0.0048	0.0040
1/4"	3,071	0.0063	0.0064	0.0061	0.0051
5/16"	2,419	0.0079	0.0079	0.0073	0.0056
8 mm	2,400	0.0080	0.0080	0.0074	0.0056
3/8"	1,995	0.0085	0.0086	0.0079	-
10 mm	1,900	0.0090	0.0090	0.0083	-
12 mm	1,600	0.0105	0.0100	-	-
Size	MQL: 175 - 200 SFM				
3 mm	5,700	0.0030	0.0030	0.0026	0.0024
1/8"	5,386	0.0032	0.0032	0.0028	0.0025
3/16"	3,990	0.0048	0.0048	0.0039	0.0038
5 mm	3,800	0.0050	0.0050	0.0041	0.0040
1/4"	2,992	0.0064	0.0064	0.0052	0.0051
5/16"	2,419	0.0079	0.0079	0.0070	0.0056
8 mm	2,400	0.0080	0.0080	0.0071	0.0056
3/8"	1,995	0.0086	0.0086	0.0083	-
10 mm	1,900	0.0090	0.0090	0.0087	-
12 mm	1,600	0.0105	0.0100	-	-

Alloy Steel, Heat Treated Steel (20-30 HRC)

Drill Diameter Ranges	Cutting Speed (RPM)	Feed (IPR)			
		Pilot	10D, 15D, 20D	25D, 30D	40D
Size	Wet: 130 - 165 SFM				
1 mm	14,000	0.0010	0.0008	0.0007	0.0006
1.5 mm	9,400	0.0015	0.0012	0.0011	0.0008
2 mm	7,000	0.0020	0.0016	0.0014	0.0011
2.5 mm	5,600	0.0025	0.0020	0.0017	0.0014
Size	Wet: 230 - 250 SFM				
3 mm	7,400	0.0035	0.0030	0.0029	0.0024
1/8"	6,993	0.0037	0.0032	0.0031	0.0025
3/16"	4,725	0.0052	0.0048	0.0046	0.0038
5 mm	4,500	0.0055	0.0050	0.0048	0.0040
1/4"	3,544	0.0069	0.0064	0.0061	0.0051
5/16"	2,822	0.0084	0.0079	0.0073	0.0056
8 mm	2,800	0.0085	0.0080	0.0074	0.0056
3/8"	2,310	0.0095	0.0086	0.0079	-
10 mm	2,200	0.0100	0.0090	0.0083	-
12 mm	1,850	0.0107	0.0100	-	-
Size	MQL: 230 - 235 SFM				
3 mm	7,600	0.0035	0.0030	0.0028	0.0024
1/8"	7,181	0.0037	0.0032	0.0030	0.0025
3/16"	4,672	0.0052	0.0048	0.0044	0.0038
5 mm	4,450	0.0055	0.0050	0.0046	0.0040
1/4"	3,504	0.0070	0.0064	0.0058	0.0051
5/16"	2,822	0.0084	0.0079	0.0066	0.0056
8 mm	2,800	0.0085	0.0080	0.0067	0.0056
3/8"	2,310	0.0095	0.0086	0.0079	-
10 mm	2,200	0.0100	0.0090	0.0083	-
12 mm	1,900	0.0107	0.0100	-	-

Ductile Cast Iron

Drill Diameter Ranges	Cutting Speed (RPM)	Feed (IPR)			
		Pilot	10D, 15D, 20D	25D, 30D	40D
Size	Wet: 115 - 150 SFM				
1 mm	12,100	0.0014	0.0011	0.0010	0.0080
1.5 mm	8,100	0.0018	0.0016	0.0015	0.0012
2 mm	6,050	0.0024	0.0021	0.0020	0.0016
2.5 mm	4,850	0.0030	0.0027	0.0026	0.0022
Size	Wet: 200 - 230 SFM				
3 mm	6,500	0.0038	0.0033	0.0032	0.0026
1/8"	6,142	0.0040	0.0035	0.0034	0.0028
3/16"	4,095	0.0056	0.0052	0.0051	0.0043
5 mm	3,900	0.0059	0.0055	0.0054	0.0045
1/4"	3,071	0.0074	0.0070	0.0069	0.0057
5/16"	2,419	0.0091	0.0087	0.0086	0.0073
8 mm	2,400	0.0092	0.0088	0.0087	0.0074
3/8"	1,995	0.0109	0.0105	0.0101	-
10 mm	1,900	0.0115	0.0110	0.0106	-
12 mm	1,600	0.0135	0.0132	-	-
Size	MQL: 175 - 200 SFM				
3 mm	5,700	0.0038	0.0033	0.0030	0.0026
1/8"	5,386	0.0040	0.0035	0.0032	0.0028
3/16"	3,990	0.0056	0.0052	0.0048	0.0043
5 mm	3,800	0.0059	0.0055	0.0050	0.0045
1/4"	2,992	0.0075	0.0070	0.0064	0.0057
5/16"	2,419	0.0091	0.0087	0.0082	0.0073
8 mm	2,400	0.0092	0.0088	0.0083	0.0074
3/8"	1,995	0.0110	0.0105	0.0098	-
10 mm	1,900	0.0115	0.0110	0.0102	-
12 mm	1,600	0.0135	0.0132	-	-

Stainless Steel (300 series)

Drill Diameter Ranges	Cutting Speed (RPM)	Feed (IPR)			
		Pilot	10D, 15D, 20D	25D, 30D	40D
Size	Wet: 80 - 100 SFM				
1 mm	7,750	0.0005	0.0005	0.0004	0.0004
1.5 mm	5,200	0.0007	0.0007	0.0006	0.0006
2 mm	3,900	0.0010	0.0009	0.0008	0.0008
2.5 mm	3,100	0.0015	0.0015	0.0014	0.0012
Size	Wet: 120 - 150 SFM				
3 mm	3,900	0.0026	0.0021	0.0019	0.0017
1/8"	3,685	0.0027	0.0022	0.0020	0.0018
3/16"	2,415	0.0037	0.0033	0.0032	0.0029
5 mm	2,300	0.0039	0.0035	0.0034	0.0030
1/4"	1,811	0.0049	0.0044	0.0043	0.0038
5/16"	1,462	0.0061	0.0057	0.0055	0.0050
8 mm	1,450	0.0062	0.0057	0.0055	0.0050
3/8"	1,207	0.0071	0.0068	0.0065	-
10 mm	1,150	0.0075	0.0071	0.0068	-
12 mm	970	0.0090	0.0085	-	-

PH Stainless

Drill Diameter Ranges	Cutting Speed (RPM)	Feed (IPR)			
		Pilot	10D, 15D, 20D	25D, 30D	40D
Size	Wet: 70 - 90 SFM				
1 mm	6,800	0.0004	0.0004	0.0004	0.0004
1.5 mm	4,500	0.0006	0.0006	0.0006	0.0006
2 mm	3,400	0.0008	0.0008	0.0008	0.0008
2.5 mm	2,700	0.0013	0.0013	0.0012	0.0011
Size	Wet: 100 - 120 SFM				
3 mm	3,200	0.0020	0.0014	0.0013	0.0012
1/8"	3,024	0.0021	0.0015	0.0014	0.0013
3/16"	2,047	0.0028	0.0023	0.0022	0.0021
5 mm	1,950	0.0030	0.0024	0.0023	0.0022
1/4"	1,536	0.0038	0.0030	0.0029	0.0028
5/16"	1,210	0.0042	0.0038	0.0037	0.0036
8 mm	1,200	0.0042	0.0038	0.0037	0.0036
3/8"	1,018	0.0049	0.0045	0.0043	-
10 mm	970	0.0052	0.0047	0.0045	-
12 mm	810	0.0063	0.0057	-	-

Aluminum Alloy

Drill Diameter Ranges	Cutting Speed (RPM)	Feed (IPR)		Cutting Speed (RPM)	Feed (IPR)	
		Pilot	10D, 15D, 20D		25D, 30D	40D
Size	Wet: 280 - 300 SFM			Contact Nachi Engineering		
1 mm	27,200	0.0010	Contact Nachi Engineering			
1.5 mm	18,100	0.0015	Contact Nachi Engineering			
2 mm	13,600	0.0020	Contact Nachi Engineering			
2.5 mm	10,900	0.0025	Contact Nachi Engineering			
Size	Wet: 340 - 360 SFM			Wet: 150 - 180 SFM		
3 mm	11,300	0.0034	0.0030	5,300	0.0028	0.0026
1/8"	10,678	0.0036	0.0032	5,100	0.0030	0.0028
3/16"	7,140	0.0054	0.0047	3,400	0.0045	0.0043
5 mm	6,800	0.0057	0.0049	3,200	0.0047	0.0045
1/4"	5,355	0.0072	0.0062	2,500	0.0060	0.0057
5/16"	4,284	0.0090	0.0078	2,100	0.0076	0.0073
8 mm	4,250	0.0091	0.0079	2,000	0.0077	0.0074
3/8"	3,570	0.0108	0.0093	1,700	0.009	-
10 mm	3,400	0.0114	0.0098	1,600	0.0095	-
12 mm	2,800	0.0137	0.0118	1,300	-	-

High Temp Alloy

Drill Diameter Ranges	Cutting Speed (RPM)	Feed (IPR)			
		Pilot	10D, 15D, 20D	25D, 30D	40D
Size	Wet: 70 - 90 SFM				
1 mm	6,800	0.0004	0.0004	0.0004	0.0004
1.5 mm	4,500	0.0006	0.0006	0.0006	0.0006
2 mm	3,400	0.0008	0.0008	0.0008	0.0008
2.5 mm	2,700	0.0013	0.0013	0.0012	0.0011
Size	Wet: 100 - 120 SFM				
3 mm	3,200	0.0020	0.0014	0.0013	0.0012
1/8"	3,024	0.0021	0.0015	0.0014	0.0013
3/16"	2,047	0.0028	0.0023	0.0022	0.0021
5 mm	1,950	0.0030	0.0024	0.0023	0.0022
1/4"	1,536	0.0038	0.0030	0.0029	0.0028
5/16"	1,210	0.0042	0.0038	0.0037	0.0036
8 mm	1,200	0.0042	0.0038	0.0037	0.0036
3/8"	1,018	0.0049	0.0045	0.0043	-
10 mm	970	0.0052	0.0047	0.0045	-
12 mm	810	0.0063	0.0057	-	-

Hardened Steel (40-50 HRC)

Contact Nachi Engineering

PRECAUTIONS WHEN DRILLING

AQDEXOH: 10D, 15D, 20D, 25D, 30D, 40D, PILOT

Drilling Conditions - Wet Recommendations

- Adjust cutting condition according to the rigidity of machine or work clamp state.
- The table values are for drilling with water-soluble cutting fluid.
- Reduce RPM and feed rate by 30% for non-water soluble coolant.
- Straight shot drilling is possible. However, when experiencing poor chip evacuation please add a peck or review drilling parameters.
- When using static tools, implement pecking for proper chip evacuation.
- When pecking, set retract slightly below hole entrance.
- Peck increment starting size should be 0.5-1XD.
- Recommended pilot hole depth is 1.5-2XD.
- Recommend **AQDEXOHPLT** for pilot hole drilling.

Drilling Conditions - MQL Recommendations

- Adjust cutting condition according to the rigidity of machine or work clamp state.
- The table values are for drilling with water-soluble cutting fluid.
- Reduce RPM and feed rate by 30% for non-water soluble coolant.
- Straight shot drilling is possible. However, when experiencing poor chip evacuation please add a peck or review drilling parameters.
- When using static tools, implement pecking for proper chip evacuation.
- When pecking, set retract slightly below hole entrance.
- Peck increment starting size should be 0.5-1XD.
- Recommended pilot hole depth is 1.5-2XD.
- Recommend **AQDEXOHPLT** for pilot hole drilling.

NACHI

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Founded in 1962 and based in Greenwood, Indiana, Nachi America Inc. serves as the North American headquarters of Nachi-Fujikoshi Corp.

Fusing the world-class engineering expertise of Nachi-Fujikoshi with American innovation, we proudly manufacture cutting tools for many applications and industries at our facility outside of Indianapolis, Indiana. Starting with patented Nachi-made carbide and steel, utilizing Nachi-built machines and robotics for precision grinding, and finishing with advanced Nachi-developed coatings, every step reflects our dedication and passion for performance and quality, to you, and our mission: *Contributing to the Progress of the World of Product Manufacture.*

We are passionate about enhancing your processes with products and machines designed for every stage of manufacturing, and we are looking forward to working with you and your team.


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