

Technical Information for TiAlN-Carbide Dream Drills Inox

CARBIDE DREAM DRILLS - INOX WITH COOLANT HOLES, TiAlN COATED

DH463. DH464. DH451. DH452. DH453 Series

WORK MATERIAL			STAINLESS STEELS 400Series		STAINLESS STEELS 300Series		ALUMINUM		ALUMINUM	
STRENGTH			< 200 BHN		< 200 BHN		< 10% Si		> 10% Si	
DIAMETER			N	S	N	S	N	S	N	S
Metric(mm)	Fractional	Decimal								
3.0	1/8	.1181	7400	0.002	4700	0.001	23000	0.005	18500	0.004
4.0	5/32	.1575	5600	0.002	3600	0.001	17500	0.007	13900	0.006
5.0	13/64	.1969	4400	0.002	2800	0.001	14000	0.008	11000	0.007
6.0	15/64	.2362	3700	0.002	2400	0.002	11700	0.010	9300	0.010
8.0	5/16	.3150	2800	0.003	1800	0.002	8800	0.012	7000	0.012
10.0	25/64	.3937	2200	0.004	1400	0.003	7000	0.016	5600	0.014
12.0	15/32	.4724	1900	0.005	1200	0.004	5800	0.020	4600	0.016
14.0	35/64	.5511	1600	0.006	1000	0.005	5000	0.024	4000	0.020
16.0	5/8	.6299	1400	0.008	900	0.006	4380	0.031	3500	0.024
18.0	45/64	.7086	1250	0.009	800	0.007	3900	0.039	3100	0.028
20.0	25/32	.7873	1120	0.009	720	0.007	3500	0.047	2800	0.031

WORK MATERIAL			TITANIUM Ti Alloy		CARBON STEEL ALLOY STEEL		NON FERROUS	
STRENGTH			N	S	N	S	N	S
DIAMETER								
Metric(mm)	Fractional	Decimal						
3.0	1/8	.1181	5300	0.001	13000	0.002	16000	0.003
4.0	5/32	.1575	4000	0.002	10000	0.002	11900	0.004
5.0	13/64	.1969	3200	0.002	8000	0.002	9500	0.005
6.0	15/64	.2362	2650	0.002	6600	0.002	8000	0.006
8.0	5/16	.3150	2000	0.003	5000	0.003	6000	0.007
10.0	25/64	.3937	1600	0.003	4000	0.004	4800	0.009
12.0	15/32	.4724	1300	0.004	3300	0.005	4000	0.010
14.0	35/64	.5511	1100	0.005	2800	0.006	3400	0.012
16.0	5/8	.6299	1000	0.006	2500	0.008	3000	0.016
18.0	45/64	.7086	900	0.006	2200	0.009	2650	0.018
20.0	25/32	.7873	800	0.007	2000	0.009	2400	0.020

- Recommend to reduce the feed rate as following.
Feed 100% : DH463, DH451(3xD), DH464, DH452 (5xD)
Feed 85% : DH453 (8xD)

N = R.P.M
 S = Inch per Revolution(inch/rev.)

TECHNICAL INFORMATION FOR CARBIDE DREAM DRILLS

MICRO | 5XD Long Series without coolant holes—DH424 Series, TiAlN Coated

Work Material		Non-Alloy Steels		Alloy Steels		Soft Grey Cast Iron		Hard Grey Cast Iron	
Strength		< HRc 20		> HRc 20		< HB240, GG25		< HB300, GG40	
Diameter		N	S	N	S	N	S	N	S
Metric	Inch								
1.0	.0394	13000	0.002	11250	0.002	21300	0.002	14200	0.002
2.0	.0787	13000	0.002	11250	0.002	21300	0.002	14200	0.002
3.0	.1181	13000	0.005	11000	0.005	21000	0.005	14000	0.005

MICRO | 5XD Long Series with coolant holes—DH408 Series, TiAlN Coated

Work Material		Non-Alloy Steels		Alloy Steels		Soft Grey Cast Iron		Hard Grey Cast Iron	
Strength		< HRc 20		> HRc 20		< HB240, GG25		< HB300, GG40	
Diameter		N	S	N	S	N	S	N	S
Metric	Inch								
1.0	.0394	16250	0.002	14800	0.002	26600	0.002	17300	0.002
2.0	.0787	16250	0.003	14800	0.003	26600	0.003	17300	0.003
3.0	.1181	16000	0.006	14500	0.006	26000	0.006	17000	0.006

3XD Coated Dream Drills without coolant holes

30° Helix - 140° Point

N = R.P.M.
S = Feed per Revolution (inch/rev.)
Kf 3xD 5xD
1.0 0.85

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	
	N	S	N	S	N	S	N	S	N	S	N	S
	R.P.M.	Inch/Rev.	R.P.M.	Inch/Rev.	R.P.M.	Inch/Rev.	R.P.M.	Inch/Rev.	R.P.M.	Inch/Rev.	R.P.M.	Inch/Rev.
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 Coated Dream Drills with coolant holes

30° Helix - 140° Point

N = R.P.M.
S = Feed per Revolution (inch/rev.)
Kf 3xD 5xD
1.0 0.85

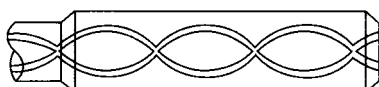
Material	Coolant Fed Drills / Inch Diameter											
	1/8-3/16		3/16-5/16		5/16-3/8		3/8-1/2		1/2-9/16		9/16-13/16	
	N	S	N	S	N	S	N	S	N	S	N	S
	R.P.M.	Inch/Rev.	R.P.M.	Inch/Rev.	R.P.M.	Inch/Rev.	R.P.M.	Inch/Rev.	R.P.M.	Inch/Rev.	R.P.M.	Inch/Rev.
Cast Iron <240 BHN	14870	0.006	8200	0.008	6760	0.011	5310	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

► Recommended speed and feed rates for Coated Dream Drills: **3xD 100%, 5xD 85%, 8xD 70%**

DRILL DIAMETER TOLERANCE INCH (σd.)			
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

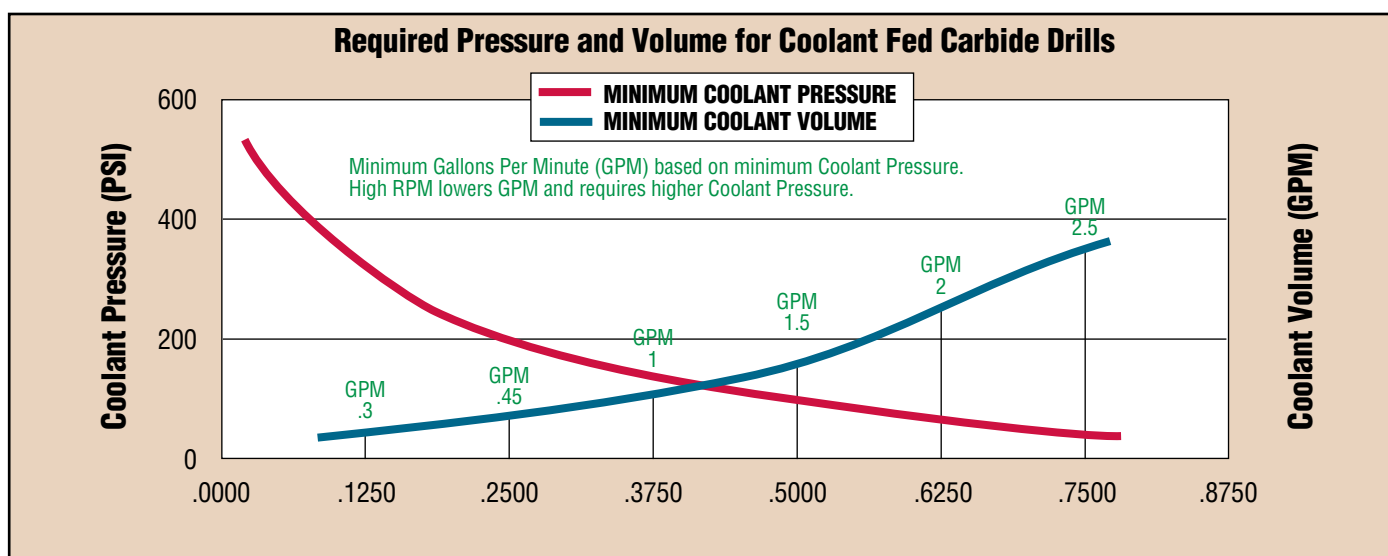
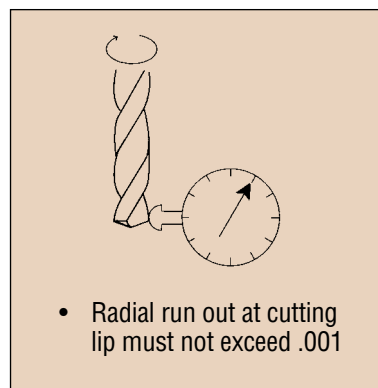
DRILL DIAMETER TOLERANCE METRIC (σd.)					
Diameter Tolerance	1-3 mm	3-6 mm	6-10 mm	10-18 mm	18-30 mm
h6	0 -.00024	0 -.00032	0 -.00036	0 -.00044	0 -.00052
h7	0 -.0004	0 -.00048	0 -.00059	0 -.00071	0 -.00083
h8	0 -.00056	0 -.00071	0 -.00087	0 -.00107	0 -.00130
m7	+0.00048 +0.00007	+0.00063 +0.00015	+0.00083 +0.00023	+0.00099 +0.00027	+0.00114 +0.00031

SHANK TYPE – Form HA



COOLANT RECOMMENDATIONS FOR CARBIDE DREAM DRILLS

Drilling Parameters



HSS-EX, HPD-SUS TWIST DRILLS SPEED and FEED DATA

TiN Coated Cobalt Metric

Application:

Designed for drilling in stainless steels, mild steels, aluminum, aluminum alloy, aluminum die cast, copper, copper alloy, etc.

Approx. 60 SFM Stainless
300 SFM Aluminum
130 SFM Mild Steel

30° Helix
130° Point – up to 4mm
120° Point – over 4mm

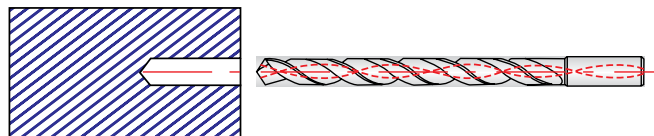
Material	Stainless Steels (SUS304, 200)		Stainless Steels (SUS420, 440)		Aluminum & Aluminum Alloy		Plastics, Copper, Copper Alloys		Mild Steels, Low Carbon Steels	
	N	S	N	S	N	S	N	S	N	S
Diameter (mm)	R.P.M.	Inch/Rev.	R.P.M.	Inch/Rev.	R.P.M.	Inch/Rev.	R.P.M.	Inch/Rev.	R.P.M.	Inch/Rev.
2	2600	0.003	3100	0.003	11000	0.004	5600	0.002	6300	0.003
3	1800	0.003	2100	0.003	7350	0.005	3750	0.003	4200	0.005
4	1300	0.004	1600	0.004	7050	0.007	2800	0.004	3200	0.006
5	1050	0.006	1250	0.006	5500	0.009	2250	0.005	2500	0.006
6	900	0.007	1050	0.007	4600	0.010	1850	0.006	2100	0.007
8	650	0.009	800	0.009	3500	0.013	1350	0.008	1550	0.009
10	550	0.010	630	0.012	2800	0.016	1100	0.010	1250	0.010
12	450	0.013	530	0.014	2300	0.020	950	0.012	1050	0.013
14	400	0.014	450	0.017	2050	0.022	800	0.013	900	0.014
16	350	0.016	390	0.019	1750	0.024	700	0.014	790	0.016
18	300	0.017	350	0.020	1600	0.028	620	0.016	700	0.018
20	260	0.018	320	0.021	1450	0.030	560	0.016	620	0.019

Please decrease the feed rate 15% in JOBBERS SERIES.
Please decrease the feed and speed 20% for cast surface.

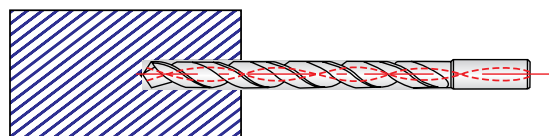
Technical Information for TiAlN-Carbide Dream Drills MQL Type

CARBIDE DREAM DRILLS - MQL TYPE WITH COOLANT HOLES, TiAlN COATED

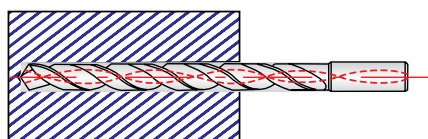
CUTTING CONDITION



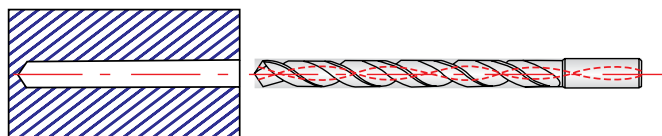
1. Use a YG 3xD Drill to produce a guide hole no larger than .004 over the required drill size. Drill the pilot hole 2xD deep hole.



2. Enter the guide hole at 50 SFM surface and .010 feed rate / per rev.



3. Before hitting the bottom of the guide hole, Increase SFM and feed rate for normal drilling.



4. After drilling, to withdraw drill, reduce SFM to 50 @ 10 inches per minute.

DH510, DH515, DH520 Series

WORK MATERIAL		CARBON STEELS ALLOY STEELS ~ 1060 N/mm ²		CAST IRON 250 ~ 350 N/mm ²		DUCTILE CAST IRON 400 ~ 500 N/mm ²		DUCTILE CAST IRON	
DRILLING SPEED		< HRc 25		< HRc 10		> HRc 10			
DIAMETER		N	S	N	S	N	S	N	S
Metric	Inch								
3.0	.1181	7500	.0023~.0047	7500	.0023~.0047	7500	.0023~.0047	5300	.0023~.0047
4.0	.1575	6400	.0031~.0063	6400	.0031~.0063	5600	.0031~.0063	5000	.0031~.0063
5.0	.1969	5800	.0039~.0078	5800	.0039~.0078	4500	.0039~.0078	4500	.0039~.0078
6.0	.2362	4800	.0047~.0094	4800	.0047~.0094	3800	.0047~.0094	3800	.0047~.0094
8.0	.3150	3600	.0063~.0110	3600	.0063~.0110	2800	.0063~.0110	2800	.0063~.0110
10.0	.3937	2900	.0078~.0137	2900	.0078~.0137	2300	.0078~.0137	2300	.0078~.0137
12.0	.4724	2400	.0094~.0165	2400	.0094~.0165	1900	.0094~.0165	1900	.0094~.0165

➤ Coolant Pressure : Minimum 900 PSI

N = R.P.M
S = Inch per Revolution(inch/rev)