YU-DD25 **AMERICAS**

BEST VALUE IN THE WORLD OF CUTTING TOOLS

SOLID CARBIDE
DREAM DRILLS

PRO for Higher Cutting Speeds

NEW **X** the Highest Tool Life with Upgraded Coating

GENERAL for Universial Purpose

HIGH FEED for Increased Productivity

NEW **FLAT BOTTOM** with 180° Point Drill

INOX the Best Choice for Difficult-to-cut

ALU for Accurate Drilling in Aluminum & Non-ferrous

MQL for Deep Hole Drilling (10xD - 40xD)

HIGH HARDENED STEELS within HRc50 - 70

SELECTION GUIDE

SOLID CARBIDE
DREAM DRILLS

Please visit globalyg1.com/mat for material search

◎ : Excellent ○ : Good

						PRO		X					X					GENERAL							
					SERIES	DGN506	DGN508	DTX416 DTX711	DTX418 DTX712	DTX406	DTX408	DTX421	DTX414	DTX722	DTX404	DTX423	DTX424	DH416 DH711	DH418 DH712	DH406	DH408	DH421	DH414	DH722	DH404
					DRILLING DEPTH	3XD	5XD	3xD	5xD	3xD	5XD	8×D	3XD	5XD	3XD	3XD	5XD	3xD	5xD	3xD	5XD	8×D	3xD	5XD	3xD
					TOOL MATERIAL	CARBIDE		CARBIDE					CARBIDE					CARBIDE							
					LENGTH	SHORT	LONG	SHORT	LONG	SHORT	LONG	EXTRA LONG	STUB	LONG	STUB	SHORT	LONG	SHORT	LONG	SHORT	LONG	EXTRA LONG	STUB	LONG	STUB
					SIZE MIN	D3.0	D1.0	D1/8	D13/64	D3.0	D1.0	D3.0	D1/8	D13/64	D3.0	D3.0	D1.0	D1/8	D13/64	D3.0	D1.0	D3.0	D1/8	D13/64	D3.0
					SIZE MAX	D20.0	D20.0	D5/8	D1/2	D20.0	D20.0	D20.0	D5/8	D1/2	D20.0	D20.0	D20.0	D5/8	D1/2	D20.0	D20.0	D20.0	D5/8	D1/2	D20.0
					PAGE	10	14	24	26	27	31	35	39	40	41	43	47	60	62	63	67	71	75	76	77
					SURFACE TREATMENT	Z-Coating		RCH-Coating					RCH-Coating					TiAlN							
ISO	VDI 3323	Material Description	Composition / Structure / Heat Treatment		HB	HRc																			
P	1	Non-alloy steel	About 0.15% C	Annealed	125																				
	2		About 0.45% C	Annealed	190	13	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎
	3		About 0.45% C	Quenched & Tempered	250	25	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎
	4		About 0.75% C	Annealed	270	28	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎
	5		About 0.75% C	Quenched & Tempered	300	32	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	6	Low alloy steel		Annealed	180	10	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎
	7			Quenched & Tempered	275	29	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎
	8			Quenched & Tempered	300	32	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	9			Quenched & Tempered	350	38	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	10	High alloyed steel, and tool steel		Annealed	200	15	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎
	11			Quenched & Tempered	325	35	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
M	12	Stainless steel	Ferritic / Martensitic	Annealed	200	15	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	13		Martensitic	Quenched & Tempered	240	23	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	14		Austenitic		180	10																			
K	15	Grey cast iron	Pearlitic / ferritic		180	10	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎
	16		Pearlitic (Martensitic)		260	26	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	17	Nodular cast iron	Ferritic		160	3	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎
	18		Pearlitic		250	25	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	19	Malleable cast iron	Ferritic		130		◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎
	20		Pearlitic		230	21	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
N	21	Aluminum-wrought alloy	Not Curable		60																				
	22		Curable	Hardened	100																				
	23	Aluminum-cast, alloyed	≤ 12% Si, Not Curable		75																				
	24		≤ 12% Si, Curable	Hardened	90																				
	25		> 12% Si, Not Curable		130																				
	26	Copper and Copper Alloys (Bronze / Brass)	Cutting Alloys, PB>1%		110																				
	27		CuZn, CuSnZn (Brass)		90																				
	28		CuSn, lead-free copper and electrolytic copper		100																				
	29	Non Metallic Materials	Duroplastic, Fiber Reinforced Plastic																						
	30		Rubber, Wood, etc.																						
S	31	Heat Resistant Super Alloys	Fe Based	Annealed	200	15																			
	32			Cured	280	30																			
	33		Ni or Co Based	Annealed	250	25																			
	34			Cured	350	38																			
	35			Cast	320	34																			
	36	Titanium Alloys	Pure Titanium		400Rm																				
	37		Alpha + Beta Alloys	Hardened	1050Rm																				
H	38	Hardened steel		Hardened	550	55	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	39			Hardened	630	60																			
	40	Chilled Cast Iron		Cast	400	42																			
	41	Hardened Cast Iron		Hardened	550	55																			

YG

SELECTION GUIDE

SOLID CARBIDE DREAM DRILLS

Please visit globalyg1.com/mat for material search

◎ : Excellent ○ : Good

						GENERAL		HIGH FEED		FLAT BOTTOM		
					SERIES	DH423	DH424	DGR493 DGR496	DGR495 DGR497	DPP447	DH449	DH450
					DRILLING DEPTH	3XD	5XD	3XD	5XD	2XD	3XD	5XD
					TOOL MATERIAL	CARBIDE		CARBIDE		CARBIDE		
					LENGTH	SHORT	LONG	SHORT	LONG	SHORT	SHORT	LONG
					SIZE MIN	D3.0	D1.0	D4.0	D4.0	D3.0	D3.0	D3.0
					SIZE MAX	D20.0	D20.0	D20.0	D20.0	D20.0	D20.0	D20.0
					PAGE	79	83	96	100	110	113	115
					SURFACE TREATMENT	TiAlN		H-Coating		X-Coating	TiAlN	
ISO	VDI 3323	Material Description	Composition / Structure / Heat Treatment		HB	HRc						
P	1	Non-alloy steel	About 0.15% C	Annealed	125					◎	◎	◎
	2		About 0.45% C	Annealed	190	13	◎	◎	◎	◎	◎	◎	◎
	3		About 0.45% C	Quenched & Tempered	250	25	◎	◎	◎	◎	◎	◎	◎
	4		About 0.75% C	Annealed	270	28	◎	◎	◎	◎	○	○	○
	5		About 0.75% C	Quenched & Tempered	300	32	○	○	○	○	○	○	○
	6	Low alloy steel		Annealed	180	10	◎	◎	◎	◎	◎	◎	◎
	7			Quenched & Tempered	275	29	◎	◎	◎	◎	○	○	○
	8			Quenched & Tempered	300	32	○	○	○	○	○	○	○
	9			Quenched & Tempered	350	38	○	○	○	○	○	○	○
	10	High alloyed steel, and tool steel		Annealed	200	15	◎	◎	◎	◎			
	11			Quenched & Tempered	325	35	○	○	○	○			
M	12	Stainless steel	Ferritic / Martensitic	Annealed	200	15	○	○			○	○	○
	13		Martensitic	Quenched & Tempered	240	23	○	○					
	14		Austenitic		180	10							
K	15	Grey cast iron	Pearlitic / ferritic		180	10	◎	◎	◎	◎	◎	◎	◎
	16		Pearlitic (Martensitic)		260	26	○	○	○	○	○	○	○
	17	Nodular cast iron	Ferritic		160	3	◎	◎	◎	◎			
	18		Pearlitic		250	25	○	○	○	○			
	19	Malleable cast iron	Ferritic		130		◎	◎	◎	◎			
	20		Pearlitic		230	21	○	○	○	○			
N	21	Aluminum-wrought alloy	Not Curable		60						○	○	○
	22		Curable	Hardened	100						○	○	○
	23	Aluminum-cast, alloyed	≤ 12% Si, Not Curable		75								
	24		≤ 12% Si, Curable	Hardened	90								
	25		> 12% Si, Not Curable		130								
	26	Copper and Copper Alloys (Bronze / Brass)	Cutting Alloys, PB>1%		110								
	27		CuZn, CuSnZn (Brass)		90								
	28		CuSn, lead-free copper and electrolytic copper		100								
	29	Non Metallic Materials	Duroplastic, Fiber Reinforced Plastic										
	30		Rubber, Wood, etc.										
S	31	Heat Resistant Super Alloys	Fe Based	Annealed	200	15							
	32			Cured	280	30							
	33		Ni or Co Based	Annealed	250	25							
	34			Cured	350	38							
	35			Cast	320	34							
	36	Titanium Alloys	Pure Titanium		400Rm								
	37		Alpha + Beta Alloys	Hardened	1050Rm								
H	38	Hardened steel		Hardened	550	55	○	○					
	39			Hardened	630	60							
	40	Chilled Cast Iron		Cast	400	42							
	41	Hardened Cast Iron		Hardened	550	55							

Phone: 800-765-8665 | Technical Support : 888-868-5988 | yg1usa.com

	INOX					ALU		MQL TYPE					
SERIES	DH463 DH714	DH464 DH715	DH451	DH452	DH453	DGE466 DGE718	DGE433	DH510	DH515	DH520	DHM10	DHM15	DHM20
DRILLING DEPTH	3XD	5XD	3XD	5XD	8XD	5XD	5XD	10XD	15XD	20XD	10XD	15XD	20XD
TOOL MATERIAL	CARBIDE					CARBIDE		CARBIDE					
LENGTH	STUB	LONG	SHORT	LONG	EXTRA LONG	LONG	LONG	EXTRA LONG					
SIZE MIN	D1/8	D13/64	D2.1	D1.0	D2.0	D13/64	D3.0	D3.0	D3.0	D3.0	D3.0	D3.0	D3.0
SIZE MAX	D5/8	D1/2	D20.0	D20.0	D20.0	D1/2	D20.0	D14.0	D14.0	D12.0	D14.0	D12.0	D12.0
PAGE	128	130	131	135	140	150	151	160	163	166	168	168	169
SURFACE TREATMENT	TiAlN					DLC		TiAlN					
P	◎	◎	◎	◎	◎			◎	◎	◎	◎	◎	◎
	◎	◎	◎	◎	◎			◎	◎	◎	◎	◎	◎
	○	○	○	○	○			○	○	○	○	○	○
	◎	◎	◎	◎	◎			◎	◎	◎	◎	◎	◎
	○	○	○	○	○			○	○	○	○	○	○
								○	○	○	○	○	○
								○	○	○	○	○	○
								○	○	○	○	○	○
M	◎	◎	◎	◎	◎								
	◎	◎	◎	◎	◎								
	◎	◎	◎	◎	◎								
K								◎	◎	◎	◎	◎	◎
								○	○	○	○	○	○
								◎	◎	◎	◎	◎	◎
								○	○	○	○	○	○
								◎	◎	◎	◎	◎	◎
								○	○	○	○	○	○
N	◎	◎	◎	◎	◎	◎	◎						
	◎	◎	◎	◎	◎	◎	◎						
	○	○	○	○	○	◎	◎						
	○	○	○	○	○	◎	◎						
	○	○	○	○	○								
S													
	○	○	○	○	○								
H													

GUIDE LINE TO ICONS

Standard of Tools

DIN 6537 | DIN 6539

Number of DIN Standard

Coolant Supply Pressure

45 bar | 20 bar

Tool Material

CARBIDE

Point Angle

140° | 118° | 180°

Surface Treatment

TiAlN — Titanium Aluminum Nitride Coating

RCH-Coating — YG-1 RCH-Coating

X-Coating — YG-1 X-Coating

H-Coating — YG-1 H-Coating

Z-Coating — YG-1 Z-Coating

DLC — Diamond-Like Carbon Coating

Tolerance of Dimension

m7 — Tolerance of Outside Diameter

h6 — Tolerance of Shank Diameter

Cutting Condition

YG-1 SELECTION GUIDE

SOLID CARBIDE DREAM DRILLS

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◎ : Excellent ○ : Good

			MQL TYPE		HIGH HARDENED STEELS	
		SERIES	DHM25	DHM30	DH501	DH500
		DRILLING DEPTH	25XD	30XD	3XD	3XD
		TOOL MATERIAL	CARBIDE		CARBIDE	
		LENGTH	EXTRA LONG		SHORT	SHORT
		SIZE MIN	D3.0	D3.0	D1/8	D1.0
		SIZE MAX	D10.0	D8.0	D3/4	D14.0
		PAGE	170	172	179	181
		SURFACE TREATMENT	TiAlN		TiAlN	

ISO	VDI 3323	Material Description	Composition / Structure / Heat Treatment		HB	HRc				
P	1	Non-alloy steel	About 0.15% C	Annealed	125		◎	◎		
	2		About 0.45% C	Annealed	190	13	◎	◎		
	3		About 0.45% C	Quenched & Tempered	250	25	○	○		
	4		About 0.75% C	Annealed	270	28				
	5		About 0.75% C	Quenched & Tempered	300	32				
	6	Low alloy steel		Annealed	180	10	◎	◎		
	7			Quenched & Tempered	275	29	○	○		
	8			Quenched & Tempered	300	32	○	○		
	9			Quenched & Tempered	350	38				
	10	High alloyed steel, and tool steel		Annealed	200	15	○	○		
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K	15	Grey cast iron	Pearlitic / ferritic		180	10	◎	◎		
	16		Pearlitic (Martensitic)		260	26	○	○		
	17	Nodular cast iron	Ferritic		160	3	◎	◎		
	18		Pearlitic		250	25	○	○		
	19	Malleable cast iron	Ferritic		130		◎	◎		
	20		Pearlitic		230	21	○	○		
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	24		≤ 12% Si, Curable	Hardened	90					
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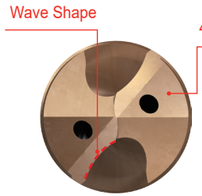
	27		CuZn, CuSnZn (Brass)		90					
	28		CuSn, lead-free copper and electrolytic copper		100					
	29	Non Metallic Materials	Duroplastic, Fiber Reinforced Plastic							
	30		Rubber, Wood, etc.							
S	31	Heat Resistant Super Alloys	Fe Based	Annealed	200	15				
	32			Cured	280	30				
	33		Ni or Co Based	Annealed	250	25				
	34			Cured	350	38				
	35			Cast	320	34				
	36	Titanium Alloys	Pure Titanium		400Rm					
	37		Alpha + Beta Alloys	Hardened	1050Rm					
H	38	Hardened steel		Hardened	550	55			◎	◎
	39			Hardened	630	60			◎	◎
	40	Chilled Cast Iron		Cast	400	42				
	41	Hardened Cast Iron		Hardened	550	55				

DREAM DRILLS - PRO

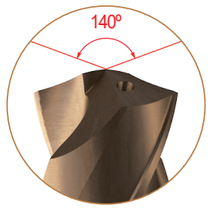
- For General Purpose (up to HRc50)
- Extremely High Hardness and Heat Resistance due to YG-1 Special Z-Coating Technology

DREAM DRILLS PRO

Performance Upgrade with Faster Cutting Speed

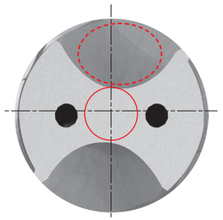


Wave Shape Cutting Edge
- Improve chip formation
- Low Cutting Force

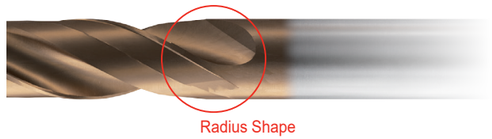


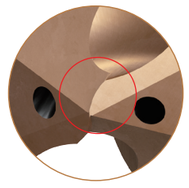
140 Degree Point Angle
- Provides edge strength and Exceptional tool life
- Good Self Centering
- Low Torque

Micro-grained Carbide
- Achieving Excellent Wear Resistance
- Maximum Tool Life and High Performance



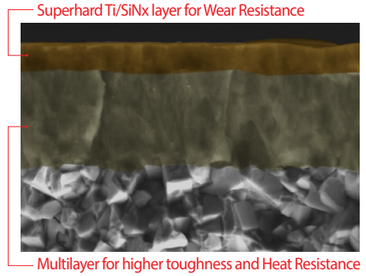
Optimized wide flute design
- The unique flute structure provides good surface finish, longer tool life and requires less cutting force

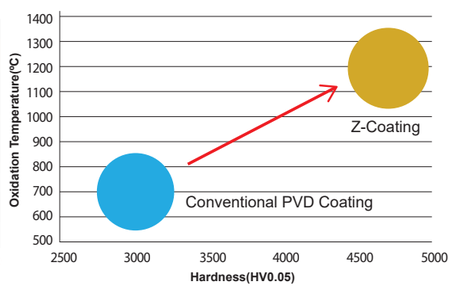




Helical Thinning
- Low Thrust
- Stable Torque
- Good Chip Breakage

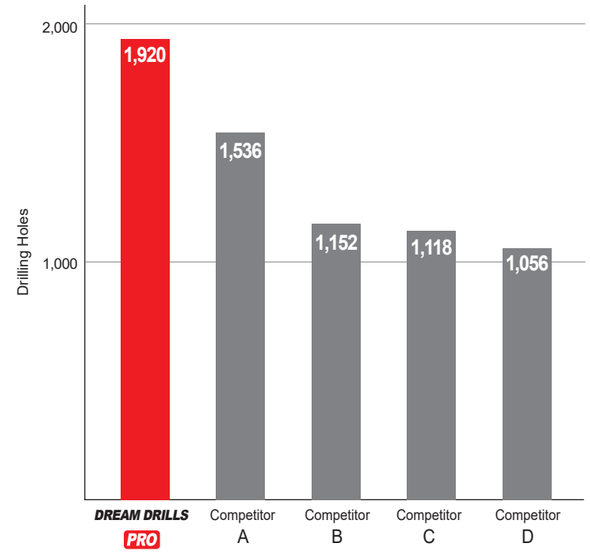
Higher & Improved cutting conditions due to YG-1 Special Z-Coating Technology
(YG-1's Unique Silicon Based Coating: Nano-Layer Coating)
- Extremely High Hardness and Heat Resistance





CASE STUDY

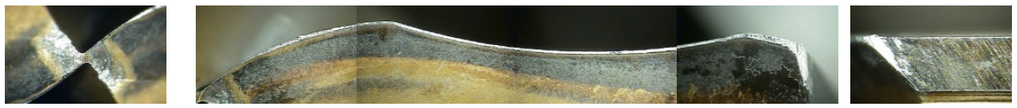
▶ SOLID CARBIDE DREAM DRILLS - PRO with Coolant Holes



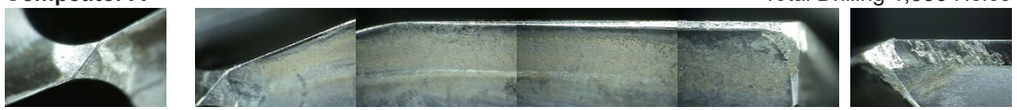
Cutting Condition

Work Material	- ANSI : 4140 - DIN : 42CrMo4 - JIS : SCM440 - Hardness : HRc30 (HB286)
O.D Size	Ø10.0 (.3937 inch)
RPM	4,458 rev./min.
Cutting Speed	140 ft/min.
Feed	.012 inch/rev.
Drilling Depth	1.77" (4.5xD)
Coolant	Internal Cooling (20 bar) Water Soluble (9% Emulsion)
Machine	Machining Center

DREAM DRILLS PRO — Total Drilling 1,920 Holes

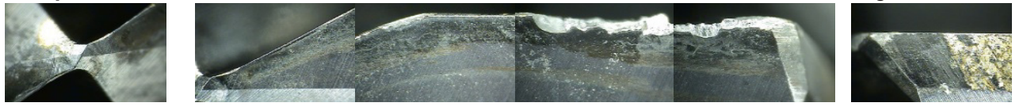


Competitor A — Total Drilling 1,536 Holes

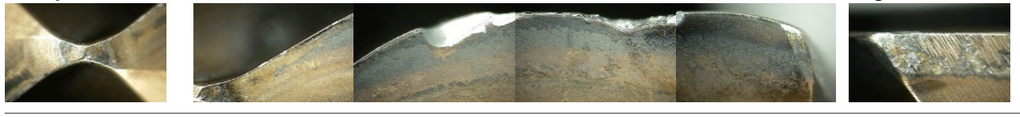


Competitor B — Total Drilling 1,152 Holes

Competitor C — Total Drilling 1,118 Holes



Competitor D — Total Drilling 1,056 Holes



Z-COATED SOLID CARBIDE

DREAM DRILLS - PRO with COOLANT HOLES

SERIES **DGN506**

- ▶ Drilling for Carbon Steels, Alloy Steels (HB225 ~ HB325), Pre-hardened Steels (HRc30 ~ HRc50), Cast Iron
- ▶ Wave shape cutting edge to improve chip formation for low cutting force
- ▶ Helical thinning for low thrust, stable torque and good chip breakage
- ▶ Extremely high hardness and heat resistance due to YG-1 special Z-Coating technology

DIN 6537 | CARBIDE | 30° | h6 | m7 | 140° | 20 bar | Z Coating

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SHORT 3×D

Unit : mm

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Fractional	Decimal			
Z-Coating	D1			D2	L1	L2
DGN506030	3.0		.1181	6	20	62
DGN506031	3.1		.1220	6	20	62
DGN506008F		1/8	.1250	6	20	62
DGN506032	3.2		.1260	6	20	62
DGN506033	3.3		.1299	6	20	62
DGN5060336	3.36		.1323	6	20	62
DGN506034	3.4		.1339	6	20	62
DGN5060344	3.44		.1356	6	20	62
DGN506035	3.5		.1378	6	20	62
DGN5060352	3.52		.1387	6	20	62
DGN5060357	3.57		.1405	6	20	62
DGN506036	3.6		.1417	6	20	62
DGN506037	3.7		.1457	6	20	62
DGN5060377	3.77		.1484	6	24	66
DGN506038	3.8		.1496	6	24	66
DGN5060386	3.86		.1521	6	24	66
DGN506039	3.9		.1535	6	24	66
DGN506010F		5/32	.1563	6	24	66
DGN506040	4.0		.1575	6	24	66
DGN5060405	4.05		.1596	6	24	66
DGN506020G		#20	.1610	6	24	66
DGN506041	4.1		.1614	6	24	66
DGN5060416	4.16		.1636	6	24	66
DGN506042	4.2		.1654	6	24	66
DGN5060427	4.27		.1681	6	24	66
DGN506043	4.3		.1693	6	24	66
DGN506011F		11/64	.1719	6	24	66
DGN506044	4.4		.1732	6	24	66
DGN5060446	4.46		.1754	6	24	66
DGN506045	4.5		.1772	6	24	66
DGN506046	4.6		.1811	6	24	66
DGN5060466	4.66		.1835	6	24	66
DGN506047	4.7		.1850	6	24	66
DGN506012F		3/16	.1875	6	28	66
DGN506048	4.8		.1890	6	28	66
DGN506049	4.9		.1929	6	28	66
DGN506050	5.0		.1969	6	28	66
DGN506051	5.1		.2008	6	28	66
DGN5060515	5.15		.2029	6	28	66
DGN506013F		13/64	.2031	6	28	66
DGN506052	5.2		.2047	6	28	66
DGN5060526	5.26		.2070	6	28	66
DGN506053	5.3		.2087	6	28	66
DGN506054	5.4		.2126	6	28	66
DGN506003G		#3	.2130	6	28	66
DGN5060547	5.47		.2152	6	28	66
DGN506055	5.5		.2165	6	28	66
DGN506014F		7/32	.2188	6	28	66
DGN506056	5.6		.2205	6	28	66
DGN506057	5.7		.2244	6	28	66
DGN506058	5.8		.2283	6	28	66
DGN506059	5.9		.2323	6	28	66

▶ NEXT PAGE

◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended		◎	◎	◎	○	◎	◎	○	○	◎	○	○	○		◎	○	◎	○	◎	○

ISO	N										S							H			
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel		Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended																		○			

PERFORMANCE UPGRADE with FASTER CUTTING SPEED DREAM DRILLS PRO

Z-COATED SOLID CARBIDE

DREAM DRILLS - PRO with COOLANT HOLES

SERIES DGN506

- ▶ Drilling for Carbon Steels, Alloy Steels (HB225 ~ HB325), Pre-hardened Steels (HRc30 ~ HRc50), Cast Iron
- ▶ Wave shape cutting edge to improve chip formation for low cutting force
- ▶ Helical thinning for low thrust, stable torque and good chip breakage
- ▶ Extremely high hardness and heat resistance due to YG-1 special Z-Coating technology

DIN 6537 | CARBIDE | 30° | h6 | m7 | 140° | 20 bar | Z Coating

p.18

SHORT 3×D

Unit : mm

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Fractional	Decimal			
Z-Coating	D1			D2	L1	L2
DGN506015F		15/64	.2344	6	28	66
DGN506060	6.0		.2362	6	28	66
DGN506061	6.1		.2402	8	34	79
DGN506003L		C	.2420	8	34	79
DGN506062	6.2		.2441	8	34	79
DGN506063	6.3		.2480	8	34	79
DGN506016F		1/4	.2500	8	34	79
DGN506064	6.4		.2520	8	34	79
DGN506065	6.5		.2559	8	34	79
DGN506006L		F	.2570	8	34	79
DGN506066	6.6		.2598	8	34	79
DGN5060665	6.65		.2620	8	34	79
DGN506067	6.7		.2638	8	34	79
DGN506017F		17/64	.2656	8	34	79
DGN506068	6.8		.2677	8	34	79
DGN5060686	6.86		.2701	8	34	79
DGN506069	6.9		.2717	8	34	79
DGN506070	7.0		.2756	8	34	79
DGN506010L		J	.2770	8	41	79
DGN506071	7.1		.2795	8	41	79
DGN506018F		9/32	.2812	8	41	79
DGN506072	7.2		.2835	8	41	79
DGN506073	7.3		.2874	8	41	79
DGN506074	7.4		.2913	8	41	79
DGN506075	7.5		.2953	8	41	79
DGN506019F		19/64	.2969	8	41	79
DGN506076	7.6		.2992	8	41	79
DGN506077	7.7		.3031	8	41	79
DGN506078	7.8		.3071	8	41	79
DGN506079	7.9		.3110	8	41	79
DGN506020F		5/16	.3125	8	41	79
DGN506080	8.0		.3150	8	41	79
DGN506081	8.1		.3189	10	47	89
DGN5060815	8.15		.3210	10	47	89
DGN506082	8.2		.3228	10	47	89
DGN506083	8.3		.3268	10	47	89
DGN506021F		21/64	.3281	10	47	89
DGN506084	8.4		.3307	10	47	89
DGN506017L		Q	.3320	10	47	89
DGN506085	8.5		.3346	10	47	89
DGN5060856	8.56		.3371	10	47	89
DGN506086	8.6		.3386	10	47	89
DGN5060864	8.64		.3402	10	47	89
DGN506087	8.7		.3425	10	47	89
DGN506022F		11/32	.3438	10	47	89
DGN506088	8.8		.3465	10	47	89
DGN5060886	8.86		.3488	10	47	89
DGN506089	8.9		.3504	10	47	89
DGN506090	9.0		.3543	10	47	89
DGN506091	9.1		.3583	10	47	89
DGN506023F		23/64	.3594	10	47	89
DGN506092	9.2		.3622	10	47	89

▶ NEXT PAGE

◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended		◎	◎	◎	○	◎	◎	○	○	◎	○	○	○		◎	○	◎	○	◎	○

ISO	N										S							H			
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel		Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended																		○			

Z-COATED SOLID CARBIDE

DREAM DRILLS - PRO with COOLANT HOLES

SERIES **DGN506**

- ▶ Drilling for Carbon Steels, Alloy Steels (HB225 ~ HB325), Pre-hardened Steels (HRc30 ~ HRc50), Cast Iron
- ▶ Wave shape cutting edge to improve chip formation for low cutting force
- ▶ Helical thinning for low thrust, stable torque and good chip breakage
- ▶ Extremely high hardness and heat resistance due to YG-1 special Z-Coating technology

DIN 6537 | CARBIDE | 30° | h6 | m7 | 140° | 20 bar | Z Coating

p.18

SHORT 3×D

Unit : mm

EDP No.	Drill Diameter Metric	Drill Diameter Fractional	Drill Diameter Decimal	Shank Diameter	Flute Length	Overall Length
Z-Coating	D1			D2	L1	L2
DGN506093	9.3		.3661	10	47	89
DGN506094	9.4		.3701	10	47	89
DGN506095	9.5		.3740	10	47	89
DGN506024F		3/8	.3750	10	47	89
DGN506096	9.6		.3780	10	47	89
DGN506097	9.7		.3819	10	47	89
DGN506098	9.8		.3858	10	47	89
DGN506099	9.9		.3898	10	47	89
DGN506025F		25/64	.3906	10	47	89
DGN506100	10.0		.3937	10	47	89
DGN506101	10.1		.3976	12	55	102
DGN506102	10.2		.4016	12	55	102
DGN506103	10.3		.4055	12	55	102
DGN506026F		13/32	.4062	12	55	102
DGN506104	10.4		.4094	12	55	102
DGN506105	10.5		.4134	12	55	102
DGN506106	10.6		.4173	12	55	102
DGN506107	10.7		.4212	12	55	102
DGN506027F		27/64	.4219	12	55	102
DGN506108	10.8		.4252	12	55	102
DGN5061086	10.86		.4276	12	55	102
DGN506109	10.9		.4291	12	55	102
DGN506110	11.0		.4330	12	55	102
DGN506111	11.1		.4370	12	55	102
DGN506028F		7/16	.4375	12	55	102
DGN506112	11.2		.4409	12	55	102
DGN506113	11.3		.4448	12	55	102
DGN506114	11.4		.4488	12	55	102
DGN506115	11.5		.4527	12	55	102
DGN506029F		29/64	.4531	12	55	102
DGN506116	11.6		.4566	12	55	102
DGN506117	11.7		.4606	12	55	102
DGN506118	11.8		.4645	12	55	102
DGN506119	11.9		.4685	12	55	102
DGN506030F		15/32	.4688	12	55	102
DGN506120	12.0		.4724	12	55	102
DGN506121	12.1		.4764	14	60	107
DGN506122	12.2		.4803	14	60	107
DGN506123	12.3		.4843	14	60	107
DGN506031F		31/64	.4844	14	60	107
DGN506124	12.4		.4882	14	60	107
DGN506125	12.5		.4921	14	60	107
DGN506126	12.6		.4961	14	60	107
DGN506032F		1/2	.5000	14	60	107
DGN506129	12.9		.5079	14	60	107
DGN506130	13.0		.5118	14	60	107
DGN506131	13.1		.5157	14	60	107
DGN506132	13.2		.5197	14	60	107
DGN506133	13.3		.5236	14	60	107
DGN506134	13.4		.5276	14	60	107
DGN506034F		17/32	.5312	14	60	107
DGN506135	13.5		.5314	14	60	107

▶ NEXT PAGE

◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended		◎	◎	◎	○	◎	◎	○	○	◎	○	○	○		◎	○	◎	○	◎	○

ISO	N										S							H			
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel		Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended																		○			

PERFORMANCE UPGRADE with FASTER CUTTING SPEED DREAM DRILLS PRO

Z-COATED SOLID CARBIDE

DREAM DRILLS - PRO with COOLANT HOLES

SERIES DGN506

- ▶ Drilling for Carbon Steels, Alloy Steels (HB225 ~ HB325), Pre-hardened Steels (HRc30 ~ HRc50), Cast Iron
- ▶ Wave shape cutting edge to improve chip formation for low cutting force
- ▶ Helical thinning for low thrust, stable torque and good chip breakage
- ▶ Extremely high hardness and heat resistance due to YG-1 special Z-Coating technology

DIN 6537 | CARBIDE | 30° | h6 | m7 | 140° | 20 bar | Z Coating

p.18

SHORT 3×D

Unit : mm

EDP No.	Drill Diameter Metric	Drill Diameter Fractional	Drill Diameter Decimal	Shank Diameter	Flute Length	Overall Length
Z-Coating	D1			D2	L1	L2
DGN506136	13.6		.5354	14	60	107
DGN506137	13.7		.5394	14	60	107
DGN506138	13.8		.5433	14	60	107
DGN506139	13.9		.5472	14	60	107
DGN506140	14.0		.5512	14	60	107
DGN506141	14.1		.5551	16	65	115
DGN506142	14.2		.5591	16	65	115
DGN506036F		9/16	.5625	16	65	115
DGN506143	14.3		.5630	16	65	115
DGN506144	14.4		.5669	16	65	115
DGN506145	14.5		.5708	16	65	115
DGN506146	14.6		.5748	16	65	115
DGN506037F		37/64	.5781	16	65	115
DGN506147	14.7		.5787	16	65	115
DGN506148	14.8		.5827	16	65	115
DGN506149	14.9		.5866	16	65	115
DGN506150	15.0		.5905	16	65	115
DGN506151	15.1		.5945	16	65	115
DGN506152	15.2		.5984	16	65	115
DGN506153	15.3		.6024	16	65	115
DGN506154	15.4		.6063	16	65	115
DGN506155	15.5		.6102	16	65	115
DGN506156	15.6		.6142	16	65	115
DGN506157	15.7		.6181	16	65	115
DGN506158	15.8		.6220	16	65	115
DGN506040F		5/8	.6250	16	65	115
DGN506159	15.9		.6260	16	65	115
DGN506160	16		.6299	16	65	115
DGN506165	16.5		.6495	18	73	123
DGN506042F		21/32	.6563	18	73	123
DGN506170	17.0		.6692	18	73	123
DGN506175	17.5		.6889	18	73	123
DGN5061761	17.61		.6932	18	73	123
DGN5061773	17.73		.6980	18	73	123
DGN506180	18.0		.7087	18	73	123
DGN506185	18.5		.7283	20	79	131
DGN5061864	18.64		.7339	20	79	131
DGN506190	19.0		.7480	20	79	131
DGN506048F		3/4	.7500	20	79	131
DGN506195	19.5		.7676	20	79	131
DGN5061966	19.66		.7740	20	79	131
DGN5061973	19.73		.7766	20	79	131
DGN506200	20.0		.7874	20	79	131

◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended		◎	◎	◎	○	◎	◎	○	○	◎	○	○	○		◎	○	◎	○	◎	○

ISO	N										S							H			
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel		Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended																		○			

Z-COATED SOLID CARBIDE
DREAM DRILLS - PRO with COOLANT HOLES

SERIES **DGN508**

- ▶ Drilling for Carbon Steels, Alloy Steels (HB225 ~ HB325), Pre-hardened Steels (HRc30 ~ HRc50), Cast Iron
- ▶ Wave shape cutting edge to improve chip formation for low cutting force
- ▶ Helical thinning for low thrust, stable torque and good chip breakage
- ▶ Extremely high hardness and heat resistance due to YG-1 special Z-Coating technology

DIN 6537 | CARBIDE | 30° | h6 | m7 | 140° | 20 bar | Z Coating

p.18

LONG 5×D

Unit : mm

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Fractional	Decimal			
Z-Coating	D1			D2	L1	L2
DGN508010	1.0		.0394	3	8	55
DGN508011	1.1		.0433	3	12	55
DGN508012	1.2		.0472	3	12	55
DGN508013	1.3		.0512	3	12	55
DGN508014	1.4		.0551	3	12	55
DGN508015	1.5		.0591	3	16	55
DGN508004F		1/16	.0625	3	16	55
DGN508016	1.6		.0630	3	16	55
DGN508017	1.7		.0669	3	16	55
DGN508018	1.8		.0709	3	16	55
DGN508019	1.9		.0748	3	16	55
DGN508005F		5/64	.0781	3	16	55
DGN508020	2.0		.0787	4	21	57
DGN508021	2.1		.0827	4	21	57
DGN508022	2.2		.0866	4	21	57
DGN508023	2.3		.0906	4	21	57
DGN508006F		3/32	.0938	4	21	57
DGN508024	2.4		.0945	4	21	57
DGN508025	2.5		.0984	4	21	57
DGN508026	2.6		.1024	4	21	57
DGN508027	2.7		.1063	4	21	57
DGN508007F		7/64	.1094	4	21	57
DGN508028	2.8		.1102	4	21	57
DGN508029	2.9		.1142	4	21	57

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Fractional	Decimal			
Z-Coating	D1			D2	L1	L2
DGN508030	3.0		.1181	6	28	66
DGN508031	3.1		.1220	6	28	66
DGN508008F		1/8	.1250	6	28	66
DGN508032	3.2		.1260	6	28	66
DGN508033	3.3		.1299	6	28	66
DGN508034	3.4		.1339	6	28	66
DGN508035	3.5		.1378	6	28	66
DGN508009F		9/64	.1406	6	28	66
DGN508036	3.6		.1417	6	28	66
DGN508037	3.7		.1457	6	28	66
DGN508038	3.8		.1496	6	36	74
DGN508039	3.9		.1535	6	36	74
DGN508010F		5/32	.1563	6	36	74
DGN508040	4.0		.1575	6	36	74
DGN508020G		#20	.1610	6	36	74
DGN508041	4.1		.1614	6	36	74
DGN508042	4.2		.1654	6	36	74
DGN508043	4.3		.1693	6	36	74
DGN508011F		11/64	.1719	6	36	74
DGN508044	4.4		.1732	6	36	74
DGN508045	4.5		.1772	6	36	74
DGN508046	4.6		.1811	6	36	74
DGN508047	4.7		.1850	6	44	82
DGN508012F		3/16	.1875	6	44	82

▶ NEXT PAGE

◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended		◎	◎	◎	○	◎	◎	○	○	◎	○	○	○		◎	○	◎	○	◎	○

ISO	N										S							H			
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel		Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended																		○			

Z-COATED SOLID CARBIDE
DREAM DRILLS - PRO with COOLANT HOLES

SERIES **DGN508**

- ▶ Drilling for Carbon Steels, Alloy Steels (HB225 ~ HB325), Pre-hardened Steels (HRc30 ~ HRc50), Cast Iron
- ▶ Wave shape cutting edge to improve chip formation for low cutting force
- ▶ Helical thinning for low thrust, stable torque and good chip breakage
- ▶ Extremely high hardness and heat resistance due to YG-1 special Z-Coating technology

DIN 6537 | CARBIDE | 30° | h6 | m7 | 140° | 20 bar | Z Coating

p.18

LONG 5×D

Unit : mm

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Fractional	Decimal			
Z-Coating	D1			D2	L1	L2
DGN508048	4.8		.1890	6	44	82
DGN508049	4.9		.1929	6	44	82
DGN508050	5.0		.1969	6	44	82
DGN508051	5.1		.2008	6	44	82
DGN508013F		13/64	.2031	6	44	82
DGN508052	5.2		.2047	6	44	82
DGN508053	5.3		.2087	6	44	82
DGN508054	5.4		.2126	6	44	82
DGN508003G		#3	.2130	6	44	82
DGN508055	5.5		.2165	6	44	82
DGN508014F		7/32	.2188	6	44	82
DGN508056	5.6		.2205	6	44	82
DGN508057	5.7		.2244	6	44	82
DGN508058	5.8		.2283	6	44	82
DGN508059	5.9		.2323	6	44	82
DGN508015F		15/64	.2344	6	44	82
DGN508060	6.0		.2362	6	44	82
DGN508061	6.1		.2402	8	53	91
DGN508062	6.2		.2441	8	53	91
DGN508063	6.3		.2480	8	53	91
DGN508016F		1/4	.2500	8	53	91
DGN508064	6.4		.2520	8	53	91
DGN508065	6.5		.2559	8	53	91
DGN508006L		F	.2570	8	53	91

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Fractional	Decimal			
Z-Coating	D1			D2	L1	L2
DGN508066	6.6		.2598	8	53	91
DGN508067	6.7		.2638	8	53	91
DGN508017F		17/64	.2656	8	53	91
DGN508068	6.8		.2677	8	53	91
DGN508069	6.9		.2717	8	53	91
DGN508070	7.0		.2756	8	53	91
DGN508071	7.1		.2795	8	53	91
DGN508018F		9/32	.2812	8	53	91
DGN508072	7.2		.2835	8	53	91
DGN508073	7.3		.2874	8	53	91
DGN508074	7.4		.2913	8	53	91
DGN508075	7.5		.2953	8	53	91
DGN508019F		19/64	.2969	8	53	91
DGN508076	7.6		.2992	8	53	91
DGN508077	7.7		.3031	8	53	91
DGN508078	7.8		.3071	8	53	91
DGN508079	7.9		.3110	8	53	91
DGN508020F		5/16	.3125	8	53	91
DGN508080	8.0		.3150	8	53	91
DGN508081	8.1		.3189	10	61	103
DGN508082	8.2		.3228	10	61	103
DGN508083	8.3		.3268	10	61	103
DGN508021F		21/64	.3281	10	61	103
DGN508084	8.4		.3307	10	61	103

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◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended		◎	◎	◎	○	◎	◎	○	○	◎	○	○	○		◎	○	◎	○	◎	○

ISO	N										S							H			
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel		Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended																		○			

Z-COATED SOLID CARBIDE

DREAM DRILLS - PRO with COOLANT HOLES

SERIES **DGN508**

- ▶ Drilling for Carbon Steels, Alloy Steels (HB225 ~ HB325), Pre-hardened Steels (HRc30 ~ HRc50), Cast Iron
- ▶ Wave shape cutting edge to improve chip formation for low cutting force
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DIN 6537 | CARBIDE | 30° | h6 | m7 | 140° | 20 bar | Z Coating

p.18

LONG 5×D

Unit : mm

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Fractional	Decimal			
Z-Coating	D1			D2	L1	L2
DGN508017L		Q	.3320	10	61	103
DGN508085	8.5		.3346	10	61	103
DGN508086	8.6		.3386	10	61	103
DGN508087	8.7		.3425	10	61	103
DGN508022F		11/32	.3438	10	61	103
DGN508088	8.8		.3465	10	61	103
DGN508089	8.9		.3504	10	61	103
DGN508090	9.0		.3543	10	61	103
DGN508091	9.1		.3583	10	61	103
DGN508023F		23/64	.3594	10	61	103
DGN508092	9.2		.3622	10	61	103
DGN508093	9.3		.3661	10	61	103
DGN508094	9.4		.3701	10	61	103
DGN508095	9.5		.3740	10	61	103
DGN508024F		3/8	.3750	10	61	103
DGN508096	9.6		.3780	10	61	103
DGN508097	9.7		.3819	10	61	103
DGN508098	9.8		.3858	10	61	103
DGN508099	9.9		.3898	10	61	103
DGN508025F		25/64	.3906	10	61	103
DGN508100	10.0		.3937	10	61	103
DGN508101	10.1		.3976	12	71	118
DGN508102	10.2		.4016	12	71	118
DGN508103	10.3		.4055	12	71	118

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Fractional	Decimal			
Z-Coating	D1			D2	L1	L2
DGN508026F		13/32	.4062	12	71	118
DGN508104	10.4		.4094	12	71	118
DGN508105	10.5		.4134	12	71	118
DGN508106	10.6		.4173	12	71	118
DGN508107	10.7		.4212	12	71	118
DGN508027F		27/64	.4219	12	71	118
DGN508108	10.8		.4252	12	71	118
DGN508109	10.9		.4291	12	71	118
DGN508110	11.0		.4330	12	71	118
DGN508111	11.1		.4370	12	71	118
DGN508028F		7/16	.4375	12	71	118
DGN508112	11.2		.4409	12	71	118
DGN508113	11.3		.4448	12	71	118
DGN508114	11.4		.4488	12	71	118
DGN508115	11.5		.4527	12	71	118
DGN508029F		29/64	.4531	12	71	118
DGN508116	11.6		.4566	12	71	118
DGN508117	11.7		.4606	12	71	118
DGN508118	11.8		.4645	12	71	118
DGN508119	11.9		.4685	12	71	118
DGN508030F		15/32	.4688	12	71	118
DGN508120	12.0		.4724	12	71	118
DGN508121	12.1		.4764	14	77	124
DGN508123	12.3		.4843	14	77	124

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◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended		◎	◎	◎	○	◎	◎	○	○	◎	○	○	○		◎	○	◎	○	◎	○

ISO	N										S							H		
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel	Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended																		○			

PERFORMANCE UPGRADE with FASTER CUTTING SPEED DREAM DRILLS PRO

Z-COATED SOLID CARBIDE

DREAM DRILLS - PRO with COOLANT HOLES

SERIES DGN508

- ▶ Drilling for Carbon Steels, Alloy Steels (HB225 ~ HB325), Pre-hardened Steels (HRc30 ~ HRc50), Cast Iron
- ▶ Wave shape cutting edge to improve chip formation for low cutting force
- ▶ Helical thinning for low thrust, stable torque and good chip breakage
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DIN 6537 | CARBIDE | 30° | h6 | m7 | 140° | 20 bar | Z Coating

p.18

LONG 5×D

Unit : mm

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Fractional	Decimal			
Z-Coating	D1			D2	L1	L2
DGN508031F		31/64	.4844	14	77	124
DGN508124	12.4		.4882	14	77	124
DGN508125	12.5		.4921	14	77	124
DGN508126	12.6		.4961	14	77	124
DGN508032F		1/2	.5000	14	77	124
DGN508129	12.9		.5079	14	77	124
DGN508130	13.0		.5118	14	77	124
DGN508132	13.2		.5197	14	77	124
DGN508133	13.3		.5236	14	77	124
DGN508134	13.4		.5276	14	77	124
DGN508034F		17/32	.5312	14	77	124
DGN508135	13.5		.5314	14	77	124
DGN508140	14.0		.5512	14	77	124
DGN508141	14.1		.5551	16	83	133
DGN508036F		9/16	.5625	16	83	133
DGN508143	14.3		.5630	16	83	133
DGN508144	14.4		.5669	16	83	133
DGN508145	14.5		.5708	16	83	133
DGN508146	14.6		.5748	16	83	133
DGN508149	14.9		.5866	16	83	133
DGN508150	15.0		.5905	16	83	133
DGN508153	15.3		.6024	16	83	133
DGN508154	15.4		.6063	16	83	133
DGN508155	15.5		.6102	16	83	133

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Fractional	Decimal			
Z-Coating	D1			D2	L1	L2
DGN508156	15.6		.6142	16	83	133
DGN508157	15.7		.6181	16	83	133
DGN508040F		5/8	.6250	16	83	133
DGN508159	15.9		.6260	16	83	133
DGN508160	16.0		.6299	16	83	133
DGN508165	16.5		.6495	18	93	143
DGN508042F		21/32	.6563	18	93	143
DGN508170	17.0		.6692	18	93	143
DGN508175	17.5		.6889	18	93	143
DGN508180	18.0		.7087	18	93	143
DGN508185	18.5		.7283	20	101	153
DGN508190	19.0		.7480	20	101	153
DGN508048F		3/4	.7500	20	101	153
DGN508195	19.5		.7676	20	101	153
DGN508200	20.0		.7874	20	101	153

◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended		◎	◎	◎	○	◎	◎	○	○	◎	○	○	○		◎	○	◎	○	◎	○

ISO	N										S							H		
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel	Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended																		○			

DGN506, DGN508 SERIES with COOLANT HOLES

SFM = ft/min.
RPM = rev./min.
FEED = inch/rev.

ISO	VDI 3323	Material Description	SFM	Drill Diameter			SFM	Drill Diameter								
				METRIC	1.0	2.0		METRIC	3.0	-	4.0	-	5.0	6.0	-	-	8.0
				FRACTIONAL	-	-		FRACTIONAL	-	1/8	-	3/16	-	-	1/4	5/16	-
				DECIMAL	.0394	.0787		DECIMAL	.1181	.1250	.1575	.1875	.1969	.2362	.2500	.3125	.3150
P	2	Non-alloy steel	312	RPM	30240	15120	427	RPM	13790		10350	8280		6900		5170	
				FEED	.0012 - .0020	.0020 - .0028		FEED	.0024 - .0047		.0031 - .0055	.0055 - .0079		.0063 - .0087		.0071 - .0094	
	3		312	RPM	30240	15120	427	RPM	13790		10350	8280		6900		5170	
				FEED	.0012 - .0020	.0020 - .0028		FEED	.0024 - .0047		.0031 - .0055	.0055 - .0079		.0063 - .0087		.0071 - .0094	
	4		312	RPM	30240	15120	427	RPM	13790		10350	8280		6900		5170	
				FEED	.0012 - .0020	.0020 - .0028		FEED	.0016 - .0039		.0028 - .0051	.0039 - .0063		.0047 - .0071		.0055 - .0079	
	5		279	RPM	27060	13530	361	RPM	11670		8750	7000		5840		4380	
				FEED	.0012 - .0020	.0020 - .0028		FEED	.0016 - .0039		.0028 - .0051	.0039 - .0063		.0047 - .0071		.0055 - .0079	
	6	Low alloy steel	312	RPM	30240	15120	427	RPM	13790		10350	8280		6900		5170	
				FEED	.0012 - .0020	.0020 - .0028		FEED	.0024 - .0047		.0031 - .0055	.0055 - .0079		.0063 - .0087		.0071 - .0094	
	7		279	RPM	27060	13530	361	RPM	11670		8750	7000		5840		4380	
				FEED	.0012 - .0020	.0020 - .0028		FEED	.0024 - .0047		.0031 - .0055	.0039 - .0079		.0047 - .0094		.0063 - .0110	
	8		312	RPM	30240	15120	361	RPM	11670		8750	7000		5840		4380	
				FEED	.0008 - .0016	.0012 - .0020		FEED	.0016 - .0039		.0028 - .0051	.0039 - .0063		.0047 - .0071		.0055 - .0079	
	9		164	RPM	15920	7960	197	RPM	6370		4770	3820		3180		2390	
				FEED	.0008 - .0016	.0012 - .0020		FEED	.0012 - .0031		.0020 - .0043	.0031 - .0055		.0039 - .0063		.0047 - .0071	
	10	High alloyed steel, and tool steel	230	RPM	22280	11140	295	RPM	9550		7160	5730		4770		3580	
				FEED	.0012 - .0020	.0020 - .0028		FEED	.0016 - .0039		.0028 - .0051	.0039 - .0063		.0047 - .0071		.0055 - .0079	
	11		148	RPM	14320	7160	164	RPM	5310		3980	3180		2650		1990	
				FEED	.0008 - .0016	.0012 - .0020		FEED	.0012 - .0031		.0020 - .0043	.0031 - .0055		.0039 - .0063		.0047 - .0071	
M	12	Stainless steel	246	RPM	23870	11940	311	RPM	10080		7560	6050		5040		3780	
				FEED	.0012 - .0020	.0020 - .0028		FEED	.0024 - .0047		.0031 - .0055	.0055 - .0079		.0063 - .0087		.0071 - .0094	
	13		180	RPM	17510	8750	213	RPM	6900		5170	4140		3450		2590	
				FEED	.0008 - .0016	.0012 - .0020		FEED	.0016 - .0039		.0028 - .0051	.0039 - .0063		.0047 - .0071		.0055 - .0079	
K	15	Grey cast iron	312	RPM	30240	15120	427	RPM	13790		10350	8280		6900		5170	
				FEED	.0016 - .0024	.0016 - .0024		FEED	.0031 - .0055		.0047 - .0071	.0059 - .0087		.0079 - .0102		.0087 - .0110	
	16		295	RPM	28650	14320	377	RPM	12200		9150	7320		6100		4580	
				FEED	.0016 - .0024	.0016 - .0024		FEED	.0024 - .0047		.0031 - .0055	.0055 - .0079		.0063 - .0087		.0071 - .0094	
	17	Nodular cast iron	361	RPM	35010	17510	475	RPM	15380		11540	9230		7690		5770	
				FEED	.0016 - .0024	.0016 - .0024		FEED	.0031 - .0055		.0047 - .0071	.0059 - .0087		.0079 - .0102		.0087 - .0110	
	18		246	RPM	23870	11940	312	RPM	10080		7560	6050		5040		3780	
				FEED	.0016 - .0024	.0016 - .0024		FEED	.0024 - .0047		.0031 - .0055	.0055 - .0079		.0063 - .0087		.0071 - .0094	
	19	Malleable cast iron	279	RPM	27060	13530	361	RPM	11670		8750	7000		5840		4380	
				FEED	.0016 - .0024	.0016 - .0024		FEED	.0031 - .0055		.0047 - .0071	.0059 - .0087		.0079 - .0102		.0087 - .0110	
	20		246	RPM	23870	11940	312	RPM	10080		7560	6050		5040		3780	
				FEED	.0012 - .0020	.0020 - .0028		FEED	.0024 - .0047		.0031 - .0055	.0055 - .0079		.0063 - .0087		.0071 - .0094	
H	38	Hardened steel	98	RPM	9550	4770	115	RPM	3710		2790	2230		1860		1390	
				FEED	.0004 - .0008	.0004 - .0012		FEED	.0004- .0012		.0004- .0016	.0008- .0020		.0012- .0024		.0012- .0024	

▶ Recommend to reduce the feed rate as following
Feed 100% : DGN506(3×D), DGN508(5×D)

▶ NEXT PAGE

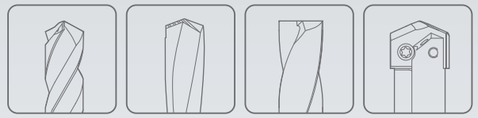
DGN506, DGN508 SERIES with COOLANT HOLES

SFM = ft/min.
RPM = rev./min.
FEED = inch/rev.

ISO	VDI 3323	Material Description	SFM	Drill Diameter									
				METRIC	-	10.0	12.0	-	14.0	-	-	16.0	18.0	-	20.0
				FRACTIONAL	3/8	-	-	1/2	-	9/16	5/8	-	-	3/4	-
				DECIMAL	.3750	.3937	.4724	.5000	.5512	.5625	.6250	.6299	.7087	.7500	.7874
P	2	Non-alloy steel	427	RPM	4140		3450	3270		2960		2590	2300	2180	2070
				FEED	.0075 - .0106		.0083 - .0114	.0083 - .0114		.0091 - .0122		.0098 - .0130	.0110 - .0150	.0110 - .0150	.0118 - .0157
	3		427	RPM	4140		3450	3270		2960		2590	2300	2180	2070
				FEED	.0075 - .0106		.0083 - .0114	.0083 - .0114		.0091 - .0122		.0098 - .0130	.0110 - .0150	.0110 - .0150	.0118 - .0157
	4		427	RPM	4140		3450	3270		2960		2590	2300	2180	2070
				FEED	.0059 - .0091		.0067 - .0098	.0067 - .0098		.0071 - .0102		.0075 - .0106	.0079 - .0118	.0079 - .0118	.0087 - .0126
	5		361	RPM	3500		2920	2760		2500		2190	1950	1840	1750
				FEED	.0059 - .0091		.0067 - .0098	.0067 - .0098		.0071 - .0102		.0075 - .0106	.0079 - .0118	.0079 - .0118	.0087 - .0126
	6	Low alloy steel	427	RPM	4140		3450	3270		2960		2590	2300	2180	2070
				FEED	.0075 - .0106		.0083 - .0114	.0083 - .0114		.0091 - .0122		.0098 - .0130	.0110 - .0150	.0110 - .0150	.0118 - .0157
	7		361	RPM	3500		2920	2760		2500		2190	1950	1840	1750
				FEED	.0075 - .0106		.0083 - .0114	.0083 - .0114		.0091 - .0122		.0098 - .0130	.0110 - .0150	.0110 - .0150	.0118 - .0157
	8		361	RPM	3500		2920	2760		2500		2190	1950	1840	1750
				FEED	.0059 - .0091		.0067 - .0098	.0067 - .0098		.0071 - .0102		.0075 - .0106	.0079 - .0118	.0079 - .0118	.0087 - .0126
	9		197	RPM	1910		1590	1510		1360		1190	1060	1010	950
				FEED	.0051 - .0075		.0055 - .0079	.0055 - .0079		.0059 - .0083		.0063 - .0087	.0067 - .0098	.0063 - .0102	.0071 - .0110
	10	High alloyed steel, and tool steel	295	RPM	2860		2390	2260		2050		1790	1590	1510	1430
				FEED	.0059 - .0091		.0067 - .0098	.0067 - .0098		.0071 - .0102		.0075 - .0106	.0079 - .0118	.0079 - .0118	.0087 - .0126
	11		164	RPM	1590		1330	1260		1140		990	880	840	800
				FEED	.0051 - .0075		.0055 - .0079	.0055 - .0079		.0059 - .0083		.0063 - .0087	.0067 - .0098	.0063 - .0102	.0071 - .0110
M	12	Stainless steel	311	RPM	3020		2520	2380		2160		1890	1680	1590	1510
				FEED	.0075 - .0106		.0083 - .0114	.0083 - .0114		.0091 - .0122		.0098 - .0130	.0110 - .0150	.0110 - .0150	.0118 - .0157
	13		213	RPM	2070		1720	1630		1480		1290	1150	1090	1030
				FEED	.0059 - .0091		.0067 - .0098	.0067 - .0098		.0071 - .0102		.0075 - .0106	.0079 - .0118	.0079 - .0118	.0087 - .0126
K	15	Grey cast iron	427	RPM	4140		3450	3270		2960		2590	2300	2180	2070
				FEED	.0098 - .0130		.0106 - .0138	.0106 - .0138		.0114 - .0146		.0122 - .0154	.0126 - .0165	.0126 - .0165	.0134 - .0173
	16		377	RPM	3660		3050	2890		2610		2290	2030	1930	1830
				FEED	.0075 - .0106		.0083 - .0114	.0083 - .0114		.0091 - .0122		.0098 - .0130	.0110 - .0150	.0110 - .0150	.0118 - .0157
	17	Nodular cast iron	475	RPM	4620		3850	3630		3300		2880	2560	2420	2310
				FEED	.0098 - .0130		.0106 - .0138	.0106 - .0138		.0114 - .0146		.0122 - .0154	.0126 - .0165	.0126 - .0165	.0134 - .0173
	18		312	RPM	3020		2520	2390		2160		1890	1680	1590	1510
				FEED	.0075 - .0106		.0083 - .0114	.0083 - .0114		.0091 - .0122		.0098 - .0130	.0110 - .0150	.0110 - .0150	.0118 - .0157
	19	Malleable cast iron	361	RPM	3500		2920	2760		2500		2190	1950	1840	1750
				FEED	.0098 - .0130		.0106 - .0138	.0106 - .0138		.0114 - .0146		.0122 - .0154	.0126 - .0165	.0126 - .0165	.0134 - .0173
	20		312	RPM	3020		2520	2390		2160		1890	1680	1590	1510
				FEED	.0075 - .0106		.0083 - .0114	.0083 - .0114		.0091 - .0122		.0098 - .0130	.0110 - .0150	.0110 - .0150	.0118 - .0157
H	38	Hardened steel	115	RPM	1100		930	880		800		700	620	590	560
				FEED	.0016 - .0028		.0016 - .0031	.0016 - .0031		.0020 - .0035		.0020 - .0035	.0020 - .0039	.0020 - .0039	.0020 - .0039

▶ Recommend to reduce the feed rate as following
Feed 100% : DGN506(3×D), DGN508(5×D)

Global Cutting Tool Leader **YG-1**



DREAM DRILLS

Leading Through Innovation

NEW

SOLID CARBIDE

DREAM DRILL X

- Multi-Purpose Solid Carbide Drilling up to HRc50
- Proprietary coating upgrade boosting performance in Steel and Cast-Iron applications

NEW

DREAM DRILL X

New Coating Technology *"RCH-Coating"*

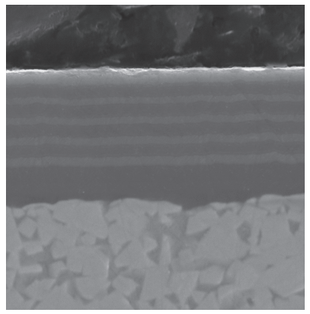
Combining the major benefits of TiAlN and AlCrN into a new '**Nano-Layered Multilayer**' coating generation provides unique advantages such as:

Extreme Wear Resistance

High Heat Endurance

Chipping Protection

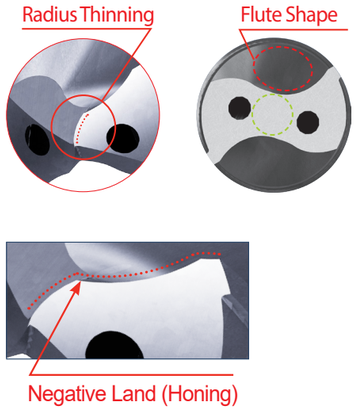
Tool Life compared to Normal TiAlN coated drills **20 to 50%**



At insufficient coolant conditions where higher temperatures occur, **RCH-Coating** allows with its very high temperature stability for great tool life results.

FEATURES & BENEFITS

- **Universal Point Grinding**
  Soft cutting action and reduced axial forces; Easy to Recondition
- **Radius Thinning**
  Provides very good self centering even at low feed rates and unstable situations
- **Tailored Flute Design**
  Excellent chip breaking and evacuation
- **Edge Preparation**
  Maximizing tool life in various materials

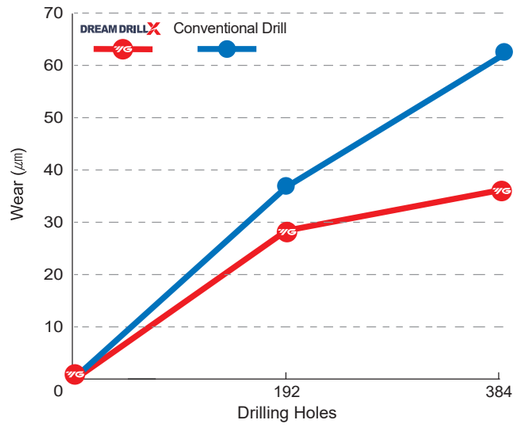


CASE STUDY

▶ SOLID CARBIDE DREAM DRILL X with Coolant Holes

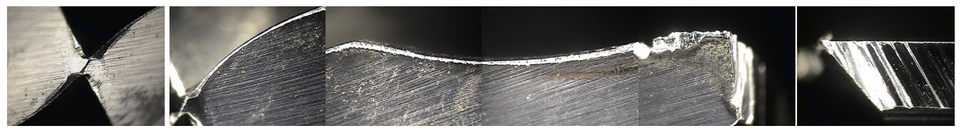
Cutting Condition

Work Material	- AISI : 1045 - DIN : C45 (HRc20) - JIS : S45C
Drill Diameter(mm)	Ø10.0 (.3937 inch)
Cutting Speed	360 ft/min.
Feed	.009 inch/rev.
Drilling Depth	1.574"
Coolant	Internal Cooling Wet Cut (9% Emulsion)
Machine	Vertical Machine



DREAM DRILL X Total Drilling 384 Holes

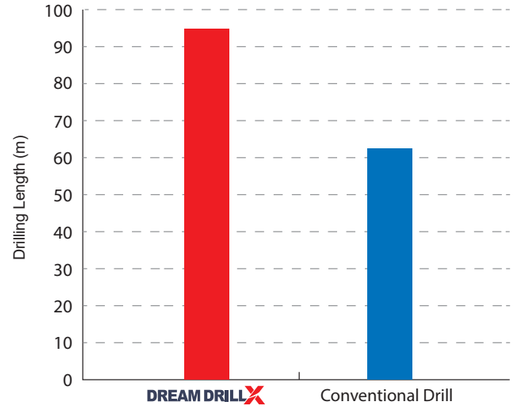
Conventional Drill Total Drilling 384 Holes



▶ SOLID CARBIDE DREAM DRILL X with Coolant Holes

Cutting Condition

Work Material	- AISI : 60-40-18 - DIN : GGG40 - JIS : FCD400
Drill Diameter(mm)	Ø8.5 (.3346 inch)
Cutting Speed	367 ft/min.
Feed	.0129 inch/rev.
Drilling Depth	.708"
Coolant	Internal Cooling
Machine	Machining Center (Horizontal)



SERIES

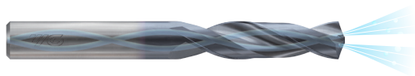
RCH-COATED SOLID CARBIDE

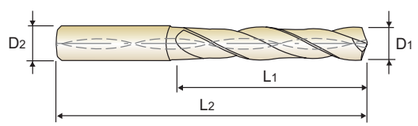
DREAM DRILL X with COOLANT HOLES

NEW

DTX416
DTX711

- Upgraded Coating for Higher Tool Life in Various Materials
- Soft Cutting Action and Reduced Axial Forces; Easy to Recondition
- Good Self-Centering even at Low Feed Rates and Unstable Situations
- Excellent Chip Breaking and Chip Evacuation





CARBIDE | h6 | 140° | 20 bar | RCH Coating

p.52

SHORT

3×D

Unit : inch

EDP No.	Drill Diameter		Shank Diameter	Flute Length	Overall Length
	Fractional	Decimal			
RCH-Coating	D1		D2	L1	L2
DTX711008	1/8	.1250	3/16	1.102	2.992
DTX416008	1/8	.1250	15/64	1.102	2.992
DTX711011	11/64	.1719	3/16	1.417	3.386
DTX416011	11/64	.1719	15/64	1.417	3.386
DTX711012	3/16	.1875	3/16	1.575	3.543
DTX416012	3/16	.1875	15/64	1.575	3.543
DTX711013	13/64	.2031	1/4	1.082	3.228
DTX416013	13/64	.2031	15/64	1.082	3.228
DTX711014	7/32	.2188	1/4	1.181	3.228
DTX416014	7/32	.2188	15/64	1.181	3.228
DTX711015	15/64	.2344	1/4	1.181	3.228
DTX416015	15/64	.2344	15/64	1.181	3.228
DTX711016	1/4	.2500	1/4	1.279	3.465
DTX416016	1/4	.2500	17/64	1.279	3.465
DTX711206	F	.2570	5/16	1.279	3.465
DTX416206	F	.2570	17/64	1.279	3.465
DTX711017	17/64	.2656	5/16	1.378	3.465
DTX416017	17/64	.2656	17/64	1.378	3.465
DTX711209	I	.2720	5/16	1.378	3.465
DTX416209	I	.2720	.2720	1.378	3.465
DTX416018	9/32	.2813	5/16	1.476	3.701
DTX416019	19/64	.2969	5/16	1.476	3.701
DTX416020	5/16	.3125	5/16	1.575	3.701
DTX711021	21/64	.3281	3/8	1.673	3.937
DTX416021	21/64	.3281	11/32	1.673	3.937
DTX711217	Q	.3320	3/8	1.673	3.937
DTX416217	Q	.3320	11/32	1.673	3.937
DTX711022	11/32	.3438	3/8	1.772	3.937
DTX416022	11/32	.3438	11/32	1.772	3.937
DTX711023	23/64	.3594	3/8	1.870	4.174
DTX416023	23/64	.3594	25/64	1.870	4.174
DTX711221	U	.3680	3/8	1.870	4.174
DTX416221	U	.3680	25/64	1.870	4.174
DTX711024	3/8	.3750	3/8	1.969	4.174
DTX416024	3/8	.3750	25/64	1.969	4.174
DTX711025	25/64	.3906	7/16	1.969	4.174
DTX416025	25/64	.3906	25/64	1.969	4.174
DTX711026	13/32	.4063	7/16	2.067	4.567
DTX416026	13/32	.4063	27/64	2.067	4.567
DTX711027	27/64	.4219	7/16	2.165	4.567
DTX416027	27/64	.4219	27/64	2.165	4.567
DTX711028	7/16	.4375	7/16	2.264	4.803
DTX416028	7/16	.4375	15/32	2.264	4.803
DTX711029	29/64	.4531	1/2	2.264	4.803
DTX416029	29/64	.4531	15/32	2.264	4.803
DTX711030	15/32	.4688	1/2	2.362	4.803
DTX416030	15/32	.4688	15/32	2.362	4.803
DTX416031	31/64	.4844	1/2	2.461	5.039
DTX416032	1/2	.5000	1/2	2.559	5.039
DTX711033	33/64	.5156	9/16	2.657	5.276
DTX416033	33/64	.5156	35/64	2.657	5.276
DTX711034	17/32	.5313	9/16	2.756	5.276

▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended		◎	◎	◎	○	◎	◎	○	○	◎	○	○	○		◎	○	◎	○	◎	○

ISO	N										S							H			
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel		Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended																		○			

SERIES

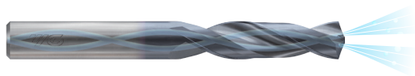
RCH-COATED SOLID CARBIDE

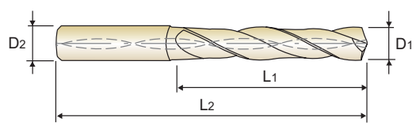
DREAM DRILL X with COOLANT HOLES

NEW

DTX416
DTX711

- Upgraded Coating for Higher Tool Life in Various Materials
- Soft Cutting Action and Reduced Axial Forces; Easy to Recondition
- Good Self-Centering even at Low Feed Rates and Unstable Situations
- Excellent Chip Breaking and Chip Evacuation





CARBIDE | h6 | 140° | 20 bar | RCH Coating

p.52

SHORT

3×D

Unit : inch

EDP No.	Drill Diameter		Shank Diameter	Flute Length	Overall Length
	Fractional	Decimal			
RCH-Coating	D1		D2	L1	L2
DTX416034	17/32	.5313	35/64	2.756	5.276
DTX711035	35/64	.5469	9/16	2.756	5.276
DTX416035	35/64	.5469	35/64	2.756	5.276
DTX711036	9/16	.5625	9/16	2.854	5.512
DTX416036	9/16	.5625	37/64	2.854	5.512
DTX711037	37/64	.5781	5/8	2.953	5.512
DTX416037	37/64	.5781	37/64	2.953	5.512
DTX416038	19/32	.5938	5/8	3.051	5.709
DTX416039	39/64	.6094	5/8	3.051	5.709
DTX416040	5/8	.6250	5/8	3.150	5.709

▶ Other shank types are available on your request.

◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended		◎	◎	◎	○	◎	◎	○	○	◎	○	○	○		◎	○	○	○	◎	○

ISO	N										S							H			
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel		Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended																		○			

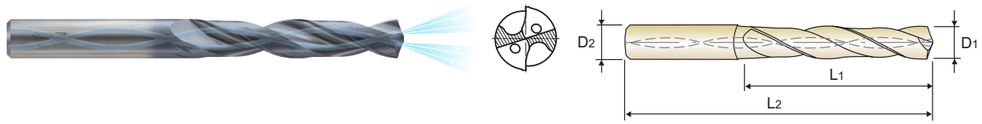
RCH-COATED SOLID CARBIDE

DREAM DRILL X with COOLANT HOLES

NEW

SERIES
DTX418
DTX712

- Upgraded Coating for Higher Tool Life in Various Materials
- Soft Cutting Action and Reduced Axial Forces; Easy to Recondition
- Good Self-Centering even at Low Feed Rates and Unstable Situations
- Excellent Chip Breaking and Chip Evacuation



CARBIDE | h6 | 140° | 20 bar | RCH Coating | p.52

LONG

5 × D

Unit : inch

EDP No.	Drill Diameter		Shank Diameter	Flute Length	Overall Length
	Fractional	Decimal			
RCH-Coating	D1		D2	L1	L2
DTX712013	13/64	.2031	1/4	1-3/4	3-15/16
DTX418013	13/64	.2031	15/64	1-3/4	3-15/16
DTX712014	7/32	.2188	1/4	1-57/64	3-15/16
DTX418014	7/32	.2188	15/64	1-57/64	3-15/16
DTX712015	15/64	.2344	1/4	1-57/64	3-15/16
DTX418015	15/64	.2344	15/64	1-57/64	3-15/16
DTX712016	1/4	.2500	1/4	2-3/64	4-19/64
DTX418016	1/4	.2500	17/64	2-3/64	4-19/64
DTX418206	F	.2570	17/64	2-13/64	4-19/64
DTX712206	F	.2570	5/16	2-13/64	4-19/64
DTX418017	17/64	.2656	17/64	2-13/64	4-19/64
DTX712017	17/64	.2656	5/16	2-13/64	4-19/64
DTX418209	I	.2720	.2720	2-13/64	4-19/64
DTX712209	I	.2720	5/16	2-13/64	4-19/64
DTX418018	9/32	.2813	5/16	2-23/64	4-41/64
DTX418019	19/64	.2969	5/16	2-33/64	4-41/64
DTX418020	5/16	.3125	5/16	2-33/64	4-41/64
DTX418021	21/64	.3281	11/32	2-43/64	5
DTX712021	21/64	.3281	3/8	2-43/64	5
DTX418217	Q	.3320	11/32	2-43/64	5
DTX712217	Q	.3320	3/8	2-43/64	5
DTX418022	11/32	.3438	11/32	2-27/64	5

EDP No.	Drill Diameter		Shank Diameter	Flute Length	Overall Length
	Fractional	Decimal			
RCH-Coating	D1		D2	L1	L2
DTX712022	11/32	.3438	3/8	2-27/32	5
DTX418023	23/64	.3594	25/64	3	5-23/64
DTX712023	23/64	.3594	3/8	3	5-23/64
DTX418221	U	.3680	25/64	3	5-23/64
DTX712221	U	.3680	3/8	3	5-23/64
DTX418024	3/8	.3750	25/64	3-5/32	5-23/64
DTX712024	3/8	.3750	3/8	3-5/32	5-23/64
DTX418025	25/64	.3906	25/64	3-5/32	5-23/64
DTX712025	25/64	.3906	7/16	3-5/32	5-23/64
DTX418026	13/32	.4063	27/64	3-5/16	5-7/8
DTX712026	13/32	.4063	7/16	3-5/16	5-7/8
DTX418027	27/64	.4219	27/64	3-15/32	5-7/8
DTX712027	27/64	.4219	7/16	3-15/32	5-7/8
DTX418028	7/16	.4375	15/32	3-5/8	6-7/32
DTX712028	7/16	.4375	7/16	3-5/8	6-7/32
DTX712029	29/64	.4531	1/2	3-25/32	6-7/32
DTX418029	29/64	.4531	15/32	3-25/32	6-7/32
DTX712030	15/32	.4688	1/2	3-25/32	6-7/32
DTX418030	15/32	.4688	15/32	3-25/32	6-7/32
DTX418031	31/64	.4844	1/2	3-15/16	6-37/64
DTX418032	1/2	.5000	1/2	4-3/32	6-37/64

▶ Other shank types are available on your request.

◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended		◎	◎	◎	○	◎	◎	○	○	◎	○	○	○		◎	○	◎	○	◎	○

ISO	N										S							H			
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel		Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended																		○			

RCH-COATED SOLID CARBIDE

DREAM DRILL X with COOLANT HOLES

NEW

SERIES
DTX406

- Upgraded Coating for Higher Tool Life in Various Materials
- Soft Cutting Action and Reduced Axial Forces; Easy to Recondition
- Good Self-Centering even at Low Feed Rates and Unstable Situations
- Excellent Chip Breaking and Chip Evacuation

DIN 6537 | CARBIDE | h6 | m7 | 140° | 20 bar | RCH Coating | p.52

SHORT

3 × D

Unit : mm

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Fractional	Decimal			
RCH-Coating	D1			D2	L1	L2
DTX406030	3.0		.1181	6	20	62
DTX406031	3.1		.1220	6	20	62
DTX406008F	3.175	1/8	.1250	6	20	62
DTX406032	3.2		.1260	6	20	62
DTX406033	3.3		.1299	6	20	62
DTX406034	3.4		.1339	6	20	62
DTX406035	3.5		.1378	6	20	62
DTX406009F	3.572	9/64	.1406	6	20	62
DTX406036	3.6		.1417	6	20	62
DTX406037	3.7		.1457	6	20	62
DTX406038	3.8		.1496	6	24	66
DTX406039	3.9		.1535	6	24	66
DTX406010F	3.969	5/32	.1563	6	24	66
DTX406040	4.0		.1575	6	24	66
DTX406041	4.1		.1614	6	24	66
DTX406042	4.2		.1654	6	24	66
DTX406043	4.3		.1693	6	24	66
DTX406011F	4.366	11/64	.1719	6	24	66
DTX406044	4.4		.1732	6	24	66
DTX406045	4.5		.1772	6	24	66
DTX406046	4.6		.1811	6	24	66
DTX406047	4.7		.1850	6	24	66
DTX406012F	4.763	3/16	.1875	6	24	66
DTX406048	4.8		.1890	6	28	66
DTX406049	4.9		.1929	6	28	66
DTX406050	5.0		.1969	6	28	66

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Fractional	Decimal			
RCH-Coating	D1			D2	L1	L2
DTX406051	5.1		.2008	6	28	66
DTX406013F	5.159	13/64	.2031	6	28	66
DTX406052	5.2		.2047	6	28	66
DTX406053	5.3		.2087	6	28	66
DTX406054	5.4		.2126	6	28	66
DTX406055	5.5		.2165	6	28	66
DTX406014F	5.556	7/32	.2188	6	28	66
DTX406056	5.6		.2205	6	28	66
DTX406057	5.7		.2244	6	28	66
DTX406058	5.8		.2283	6	28	66
DTX406059	5.9		.2323	6	28	66
DTX406015F	5.953	15/64	.2344	6	28	66
DTX406060	6.0		.2362	6	28	66
DTX406061	6.1		.2402	8	34	79
DTX406062	6.2		.2441	8	34	79
DTX406063	6.3		.2480	8	34	79
DTX406016F	6.350	1/4	.2500	8	34	79
DTX406064	6.4		.2520	8	34	79
DTX406065	6.5		.2559	8	34	79
DTX406006L	6.528	F	.2570	8	34	79
DTX406066	6.6		.2598	8	34	79
DTX406067	6.7		.2638	8	34	79
DTX406017F	6.747	17/64	.2656	8	34	79
DTX406068	6.8		.2677	8	34	79
DTX406069	6.9		.2717	8	34	79
DTX406009L	6.909	I	.2720	8	34	79

▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended		◎	◎	◎	○	◎	◎	○	○	◎	○	○	○		◎	○	◎	○	◎	○

ISO	N										S							H			
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel		Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended																		○			

RCH-COATED SOLID CARBIDE

DREAM DRILL X with COOLANT HOLES

NEW SERIES **DTX406**

- Upgraded Coating for Higher Tool Life in Various Materials
- Soft Cutting Action and Reduced Axial Forces; Easy to Recondition
- Good Self-Centering even at Low Feed Rates and Unstable Situations
- Excellent Chip Breaking and Chip Evacuation

DIN 6537 | CARBIDE | h6 | m7 | 140° | 20 bar | RCH Coating

p.52

SHORT 3×D

Unit : mm

EDP No.	Drill Diameter Metric	Fractional	Decimal	Shank Diameter	Flute Length	Overall Length
RCH-Coating	D1			D2	L1	L2
DTX406070	7.0		.2756	8	34	79
DTX406071	7.1		.2795	8	41	79
DTX406018F	7.144	9/32	.2812	8	41	79
DTX406072	7.2		.2835	8	41	79
DTX406073	7.3		.2874	8	41	79
DTX406074	7.4		.2913	8	41	79
DTX406075	7.5		.2953	8	41	79
DTX406019F	7.541	19/64	.2969	8	41	79
DTX406076	7.6		.2992	8	41	79
DTX406077	7.7		.3031	8	41	79
DTX406078	7.8		.3071	8	41	79
DTX406079	7.9		.3110	8	41	79
DTX406020F	7.938	5/16	.3125	8	41	79
DTX406080	8.0		.3150	8	41	79
DTX406081	8.1		.3189	10	47	89
DTX406082	8.2		.3228	10	47	89
DTX406083	8.3		.3268	10	47	89
DTX406021F	8.334	21/64	.3281	10	47	89
DTX406084	8.4		.3307	10	47	89
DTX406017L	8.433	Q	.3320	10	47	89
DTX406085	8.5		.3346	10	47	89
DTX406086	8.6		.3386	10	47	89
DTX406087	8.7		.3425	10	47	89
DTX406022F	8.731	11/32	.3438	10	47	89
DTX406088	8.8		.3465	10	47	89
DTX406089	8.9		.3504	10	47	89

EDP No.	Drill Diameter Metric	Fractional	Decimal	Shank Diameter	Flute Length	Overall Length
RCH-Coating	D1			D2	L1	L2
DTX406090	9.0		.3543	10	47	89
DTX406091	9.1		.3583	10	47	89
DTX406023F	9.128	23/64	.3594	10	47	89
DTX406092	9.2		.3622	10	47	89
DTX406093	9.3		.3661	10	47	89
DTX406021L	9.347	U	.3680	10	47	89
DTX406094	9.4		.3701	10	47	89
DTX406095	9.5		.3740	10	47	89
DTX406024F	9.525	3/8	.3750	10	47	89
DTX406096	9.6		.3780	10	47	89
DTX406097	9.7		.3819	10	47	89
DTX406098	9.8		.3858	10	47	89
DTX406099	9.9		.3898	10	47	89
DTX406025F	9.922	25/64	.3906	10	47	89
DTX406100	10.0		.3937	10	47	89
DTX406101	10.1		.3976	12	55	102
DTX406102	10.2		.4016	12	55	102
DTX406103	10.3		.4055	12	55	102
DTX406026F	10.319	13/32	.4062	12	55	102
DTX406104	10.4		.4094	12	55	102
DTX406105	10.5		.4134	12	55	102
DTX406106	10.6		.4173	12	55	102
DTX406107	10.7		.4212	12	55	102
DTX406027F	10.716	27/64	.4219	12	55	102
DTX406108	10.8		.4252	12	55	102
DTX406109	10.9		.4291	12	55	102

▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended		◎	◎	◎	○	◎	◎	○	○	◎	○	○	○		◎	○	◎	○	◎	○

ISO	N										S							H		
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel	Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended																		○			

RCH-COATED SOLID CARBIDE

DREAM DRILL X with COOLANT HOLES

NEW SERIES DTX406

- Upgraded Coating for Higher Tool Life in Various Materials
- Soft Cutting Action and Reduced Axial Forces; Easy to Recondition
- Good Self-Centering even at Low Feed Rates and Unstable Situations
- Excellent Chip Breaking and Chip Evacuation

DIN 6537 | CARBIDE | h6 | m7 | 140° | 20 bar | RCH Coating

p.52

SHORT 3×D

Unit : mm

EDP No.	Drill Diameter Metric	Fractional	Decimal	Shank Diameter	Flute Length	Overall Length
RCH-Coating	D1			D2	L1	L2
DTX406110	11.0		.4330	12	55	102
DTX406111	11.1		.4370	12	55	102
DTX406028F	11.113	7/16	.4375	12	55	102
DTX406112	11.2		.4409	12	55	102
DTX406113	11.3		.4448	12	55	102
DTX406114	11.4		.4488	12	55	102
DTX406115	11.5		.4527	12	55	102
DTX406029F	11.509	29/64	.4531	12	55	102
DTX406116	11.6		.4566	12	55	102
DTX406117	11.7		.4606	12	55	102
DTX406118	11.8		.4645	12	55	102
DTX406119	11.9		.4685	12	55	102
DTX406030F	11.906	15/32	.4688	12	55	102
DTX406120	12.0		.4724	12	55	102
DTX406121	12.1		.4764	14	60	107
DTX406122	12.2		.4803	14	60	107
DTX406123	12.3		.4843	14	60	107
DTX406031F	12.303	31/64	.4844	14	60	107
DTX406124	12.4		.4882	14	60	107
DTX406125	12.5		.4921	14	60	107
DTX406126	12.6		.4961	14	60	107
DTX406032F	12.7	1/2	.5000	14	60	107
DTX406128	12.8		.5039	14	60	107
DTX406129	12.9		.5079	14	60	107
DTX406130	13.0		.5118	14	60	107
DTX406131	13.1		.5157	14	60	107

EDP No.	Drill Diameter Metric	Fractional	Decimal	Shank Diameter	Flute Length	Overall Length
RCH-Coating	D1			D2	L1	L2
DTX406132	13.2		.5197	14	60	107
DTX406133	13.3		.5236	14	60	107
DTX406134	13.4		.5276	14	60	107
DTX406135	13.5		.5314	14	60	107
DTX406136	13.6		.5354	14	60	107
DTX406137	13.7		.5394	14	60	107
DTX406138	13.8		.5433	14	60	107
DTX406139	13.9		.5472	14	60	107
DTX406140	14.0		.5512	14	60	107
DTX406141	14.1		.5551	16	65	115
DTX406142	14.2		.5591	16	65	115
DTX406036F	14.288	9/16	.5625	16	65	115
DTX406143	14.3		.5630	16	65	115
DTX406144	14.4		.5669	16	65	115
DTX406145	14.5		.5708	16	65	115
DTX406146	14.6		.5748	16	65	115
DTX406147	14.7		.5787	16	65	115
DTX406148	14.8		.5827	16	65	115
DTX406149	14.9		.5866	16	65	115
DTX406150	15.0		.5905	16	65	115
DTX406151	15.1		.5945	16	65	115
DTX406152	15.2		.5984	16	65	115
DTX406153	15.3		.6024	16	65	115
DTX406154	15.4		.6063	16	65	115
DTX406155	15.5		.6102	16	65	115
DTX406156	15.6		.6142	16	65	115

▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended		◎	◎	◎	○	◎	◎	○	○	◎	○	○	○		◎	○	◎	○	◎	○

ISO	N										S							H		
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel	Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended																		○			

RCH-COATED SOLID CARBIDE

DREAM DRILL X with COOLANT HOLES

NEW SERIES **DTX406**

- ▶ Upgraded Coating for Higher Tool Life in Various Materials
- ▶ Soft Cutting Action and Reduced Axial Forces; Easy to Recondition
- ▶ Good Self-Centering even at Low Feed Rates and Unstable Situations
- ▶ Excellent Chip Breaking and Chip Evacuation

DIN 6537 | CARBIDE | h6 | m7 | 140° | 20 bar | RCH Coating

p.52

SHORT

3×D

Unit : mm

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Fractional	Decimal			
RCH-Coating	D1			D2	L1	L2
DTX406157	15.7		.6181	16	65	115
DTX406158	15.8		.6220	16	65	115
DTX406040F	15.875	5/8	.6250	16	65	115
DTX406159	15.9		.6260	16	65	115
DTX406160	16.0		.6299	16	65	115
DTX406161	16.1		.6339	18	73	123
DTX406162	16.2		.6378	18	73	123
DTX406163	16.3		.6417	18	73	123
DTX406164	16.4		.6457	18	73	123
DTX406165	16.5		.6495	18	73	123
DTX406166	16.6		.6535	18	73	123
DTX406167	16.7		.6575	18	73	123
DTX406168	16.8		.6614	18	73	123
DTX406169	16.9		.6654	18	73	123
DTX406170	17.0		.6692	18	73	123
DTX406171	17.1		.6732	18	73	123
DTX406172	17.2		.6772	18	73	123
DTX406173	17.3		.6811	18	73	123
DTX406174	17.4		.6850	18	73	123
DTX406044F	17.463	11/16	.6875	18	73	123
DTX406175	17.5		.6889	18	73	123
DTX406176	17.6		.6929	18	73	123
DTX406177	17.7		.6968	18	73	123
DTX406178	17.8		.7008	18	73	123
DTX406179	17.9		.7047	18	73	123
DTX406180	18.0		.7087	18	73	123
DTX406181	18.1		.7126	20	79	131
DTX406182	18.2		.7165	20	79	131
DTX406183	18.3		.7205	20	79	131
DTX406184	18.4		.7244	20	79	131
DTX406185	18.5		.7283	20	79	131
DTX406186	18.6		.7323	20	79	131
DTX406187	18.7		.7362	20	79	131
DTX406188	18.8		.7402	20	79	131
DTX406189	18.9		.7441	20	79	131
DTX406190	19.0		.7480	20	79	131
DTX406048F	19.050	3/4	.7500	20	79	131
DTX406191	19.1		.7520	20	79	131
DTX406192	19.2		.7559	20	79	131
DTX406193	19.3		.7598	20	79	131
DTX406194	19.4		.7638	20	79	131
DTX406195	19.5		.7676	20	79	131
DTX406196	19.6		.7717	20	79	131
DTX406197	19.7		.7756	20	79	131
DTX406198	19.8		.7795	20	79	131
DTX406199	19.9		.7835	20	79	131
DTX406200	20.0		.7874	20	79	131

▶ Other shank types are available on your request.

◎ : Excellent ○ : Good

ISO	P																				M			K							
Material Description	Non-alloy steel					Low alloy steel					High alloyed steel, and tool steel			Stainless steel			Grey cast iron		Nodular cast iron			Malleable cast iron									
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20												
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21												
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230												
Recommended		◎	◎	◎	○	◎	◎	○	○	◎	○	○	○		◎	○	◎	○	◎	○												

ISO	N										S							H			
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel		Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended																		○			

RCH-COATED SOLID CARBIDE

DREAM DRILL X with COOLANT HOLES

NEW SERIES **DTX408**

- ▶ Upgraded Coating for Higher Tool Life in Various Materials
- ▶ Soft Cutting Action and Reduced Axial Forces; Easy to Recondition
- ▶ Good Self-Centering even at Low Feed Rates and Unstable Situations
- ▶ Excellent Chip Breaking and Chip Evacuation

DIN 6537 | CARBIDE | h6 | m7 | 140° | 20 bar | RCH Coating

p.52

LONG

5×D

Unit : mm

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Fractional	Decimal			
RCH-Coating	D1			D2	L1	L2
DTX408010	1.0		.0394	3	8	55
DTX408011	1.1		.0433	3	12	55
DTX408012	1.2		.0472	3	12	55
DTX408013	1.3		.0512	3	12	55
DTX408014	1.4		.0551	3	12	55
DTX408015	1.5		.0591	3	16	55
DTX408004F	1.588	1/16	.0625	3	16	55
DTX408016	1.6		.0630	3	16	55
DTX408017	1.7		.0669	3	16	55
DTX408018	1.8		.0709	3	16	55
DTX408019	1.9		.0748	3	16	55
DTX408005F	1.984	5/64	.0781	3	16	55
DTX408020	2.0		.0787	4	21	57
DTX408021	2.1		.0827	4	21	57
DTX408022	2.2		.0866	4	21	57
DTX408023	2.3		.0906	4	21	57
DTX408006F	2.381	3/32	.0938	4	21	57
DTX408024	2.4		.0945	4	21	57
DTX408025	2.5		.0984	4	21	57
DTX408026	2.6		.1024	4	21	57
DTX408027	2.7		.1063	4	21	57
DTX408007F	2.778	7/64	.1094	4	21	57
DTX408028	2.8		.1102	4	21	57
DTX408029	2.9		.1142	4	21	57
DTX408030	3.0		.1181	6	28	66
DTX408031	3.1		.1220	6	28	66
DTX408008F	3.175	1/8	.1250	6	28	66
DTX408032	3.2		.1260	6	28	66
DTX408033	3.3		.1299	6	28	66
DTX408034	3.4		.1339	6	28	66
DTX408035	3.5		.1378	6	28	66
DTX408009F	3.572	9/64	.1406	6	28	66
DTX408036	3.6		.1417	6	28	66
DTX408037	3.7		.1457	6	28	66
DTX408038	3.8		.1496	6	36	74
DTX408039	3.9		.1535	6	36	74
DTX408010F	3.969	5/32	.1563	6	36	74
DTX408040	4.0		.1575	6	36	74
DTX408041	4.1		.1614	6	36	74
DTX408042	4.2		.1654	6	36	74
DTX408043	4.3		.1693	6	36	74
DTX408011F	4.366	11/64	.1719	6	36	74
DTX408044	4.4		.1732	6	36	74
DTX408045	4.5		.1772	6	36	74
DTX408046	4.6		.1811	6	36	74
DTX408047	4.7		.1850	6	36	74
DTX408012F	4.763	3/16	.1875	6	36	74
DTX408048	4.8		.1890	6	44	82
DTX408049	4.9		.1929	6	44	82
DTX408050	5.0		.1969	6	44	82
DTX408051	5.1		.2008	6	44	82
DTX408013F	5.159	13/64	.2031	6	44	82
DTX408052	5.2		.2047	6	44	82
DTX408053	5.3		.2087	6	44	82
DTX408054	5.4		.2126	6	44	82
DTX408055	5.5		.2165	6	44	82

▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

ISO	P																				M			K							
Material Description	Non-alloy steel					Low alloy steel					High alloyed steel, and tool steel			Stainless steel			Grey cast iron		Nodular cast iron			Malleable cast iron									
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20												
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21												
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230												
Recommended		◎	◎	◎	○	◎	◎	○	○	◎	○	○	○		◎	○	◎	○	◎	○												

ISO	N										S							H			
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel		Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended																		○			

RCH-COATED SOLID CARBIDE

DREAM DRILL X with COOLANT HOLES

NEW SERIES **DTX408**

- Upgraded Coating for Higher Tool Life in Various Materials
- Soft Cutting Action and Reduced Axial Forces; Easy to Recondition
- Good Self-Centering even at Low Feed Rates and Unstable Situations
- Excellent Chip Breaking and Chip Evacuation

DIN 6537 | CARBIDE | h6 | m7 | 140° | 20 bar | RCH Coating

p.52

LONG 5×D

Unit : mm

EDP No.	Drill Diameter Metric	Fractional	Decimal	Shank Diameter	Flute Length	Overall Length
RCH-Coating	D1			D2	L1	L2
DTX408014F	5.556	7/32	.2188	6	44	82
DTX408056	5.6		.2205	6	44	82
DTX408057	5.7		.2244	6	44	82
DTX408058	5.8		.2283	6	44	82
DTX408059	5.9		.2323	6	44	82
DTX408015F	5.953	15/64	.2344	6	44	82
DTX408060	6.0		.2362	6	44	82
DTX408061	6.1		.2402	8	53	91
DTX408062	6.2		.2441	8	53	91
DTX408063	6.3		.2480	8	53	91
DTX408016F	6.350	1/4	.2500	8	53	91
DTX408064	6.4		.2520	8	53	91
DTX408065	6.5		.2559	8	53	91
DTX408006L	6.528	F	.2570	8	53	91
DTX408066	6.6		.2598	8	53	91
DTX408067	6.7		.2638	8	53	91
DTX408017F	6.747	17/64	.2656	8	53	91
DTX408068	6.8		.2677	8	53	91
DTX408069	6.9		.2717	8	53	91
DTX408009L	6.909	I	.2720	8	53	91
DTX408070	7.0		.2756	8	53	91
DTX408071	7.1		.2795	8	53	91
DTX408018F	7.144	9/32	.2812	8	53	91
DTX408072	7.2		.2835	8	53	91
DTX408073	7.3		.2874	8	53	91
DTX408074	7.4		.2913	8	53	91
DTX408075	7.5		.2953	8	53	91
DTX408019F	7.541	19/64	.2969	8	53	91
DTX408076	7.6		.2992	8	53	91
DTX408077	7.7		.3031	8	53	91
DTX408078	7.8		.3071	8	53	91
DTX408079	7.9		.3110	8	53	91
DTX408020F	7.938	5/16	.3125	8	53	91
DTX408080	8.0		.3150	8	53	91
DTX408081	8.1		.3189	10	61	103
DTX408082	8.2		.3228	10	61	103
DTX408083	8.3		.3268	10	61	103
DTX408021F	8.334	21/64	.3281	10	61	103
DTX408084	8.4		.3307	10	61	103
DTX408017L	8.433	Q	.3320	10	61	103
DTX408085	8.5		.3346	10	61	103
DTX408086	8.6		.3386	10	61	103
DTX408087	8.7		.3425	10	61	103
DTX408022F	8.731	11/32	.3438	10	61	103
DTX408088	8.8		.3465	10	61	103
DTX408089	8.9		.3504	10	61	103
DTX408090	9.0		.3543	10	61	103
DTX408091	9.1		.3583	10	61	103
DTX408023F	9.128	23/64	.3594	10	61	103
DTX408092	9.2		.3622	10	61	103
DTX408093	9.3		.3661	10	61	103
DTX408021L	9.347	U	.3680	10	61	103
DTX408094	9.4		.3701	10	61	103
DTX408095	9.5		.3740	10	61	103
DTX408024F	9.525	3/8	.3750	10	61	103
DTX408096	9.6		.3780	10	61	103

▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

ISO	P													M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended		◎	◎	◎	○	◎	◎	○	○	◎	○	○	○		◎	○	◎	○	◎	○

ISO	N										S							H			
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel		Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended																		○			

RCH-COATED SOLID CARBIDE

DREAM DRILL X with COOLANT HOLES

NEW SERIES DTX408

- Upgraded Coating for Higher Tool Life in Various Materials
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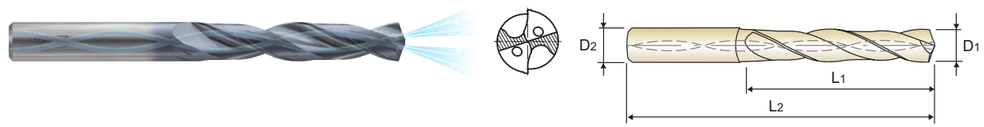

DIN 6537 | CARBIDE | h6 | m7 | 140° | 20 bar | RCH Coating

p.52

LONG 5×D

Unit : mm

EDP No.	Drill Diameter Metric	Fractional	Decimal	Shank Diameter	Flute Length	Overall Length
RCH-Coating	D1			D2	L1	L2
DTX408097	9.7		.3819	10	61	103
DTX408098	9.8		.3858	10	61	103
DTX408099	9.9		.3898	10	61	103
DTX408025F	9.922	25/64	.3906	10	61	103
DTX408100	10.0		.3937	10	61	103
DTX408101	10.1		.3976	12	71	118
DTX408102	10.2		.4016	12	71	118
DTX408103	10.3		.4055	12	71	118
DTX408026F	10.319	13/32	.4062	12	71	118
DTX408104	10.4		.4094	12	71	118
DTX408105	10.5		.4134	12	71	118
DTX408106	10.6		.4173	12	71	118
DTX408107	10.7		.4212	12	71	118
DTX408027F	10.716	27/64	.4219	12	71	118
DTX408108	10.8		.4252	12	71	118
DTX408109	10.9		.4291	12	71	118
DTX408110	11.0		.4330	12	71	118
DTX408111	11.1		.4370	12	71	118
DTX408028F	11.113	7/16	.4375	12	71	118
DTX408112	11.2		.4409	12	71	118
DTX408113	11.3		.4448	12	71	118
DTX408114	11.4		.4488	12	71	118
DTX408115	11.5		.4527	12	71	118
DTX408029F	11.509	29/64	.4531	12	71	118
DTX408116	11.6		.4566	12	71	118
DTX408117	11.7		.4606	12	71	118
DTX408118	11.8		.4645	12	71	118
DTX408119	11.9		.4685	12	71	118
DTX408030F	11.906	15/32	.4688	12	71	118
DTX408120	12.0		.4724	12	71	118
DTX408121	12.1		.4764	14	77	124
DTX408122	12.2		.4803	14	77	124
DTX408123	12.3		.4843	14	77	124
DTX408031F	12.303	31/64	.4844	14	77	124
DTX408124	12.4		.4882	14	77	124
DTX408125	12.5		.4921	14	77	124
DTX408126	12.6		.4961	14	77	124
DTX408032F	12.7	1/2	.5000	14	77	124
DTX408128	12.8		.5039	14	77	124
DTX408129	12.9		.5079	14	77	124
DTX408130	13.0		.5118	14	77	124
DTX408131	13.1		.5157	14	77	124
DTX408132	13.2		.5197	14	77	124
DTX408133	13.3		.5236	14	77	124
DTX408134	13.4		.5276	14	77	124
DTX408135	13.5		.5314	14	77	124
DTX408136	13.6		.5354	14	77	124
DTX408137	13.7		.5394	14	77	124
DTX408138	13.8		.5433	14	77	124
DTX408139	13.9		.5472	14	77	124
DTX408140	14.0		.5512	14	77	124
DTX408141	14.1		.5551	16	83	133
DTX408142	14.2		.5591	16	83	133
DTX408036F	14.288	9/16	.5625	16	83	133
DTX408143	14.3		.5630	16	83	133
DTX408144	14.4		.5669	16	83	133

▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

ISO	P													M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended		◎	◎	◎	○	◎	◎	○	○	◎	○	○	○		◎	○	◎	○	◎	○

ISO	N										S							H			
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel		Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended																		○			

RCH-COATED SOLID CARBIDE

DREAM DRILL X with COOLANT HOLES

NEW SERIES **DTX408**

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- ▶ Soft Cutting Action and Reduced Axial Forces; Easy to Recondition
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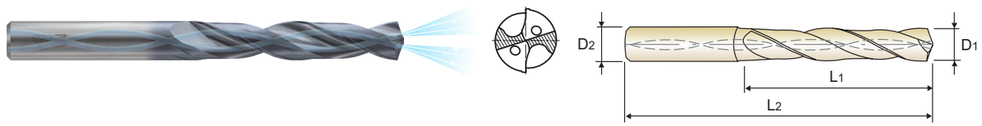


DIN 6537 | CARBIDE | h6 | m7 | 140° | 20 bar | RCH Coating

p.52

LONG

5 × D

Unit : mm

EDP No.	Drill Diameter Metric	Fractional	Decimal	Shank Diameter	Flute Length	Overall Length
RCH-Coating	D1			D2	L1	L2
DTX408145	14.5		.5708	16	83	133
DTX408146	14.6		.5748	16	83	133
DTX408147	14.7		.5787	16	83	133
DTX408148	14.8		.5827	16	83	133
DTX408149	14.9		.5866	16	83	133
DTX408150	15.0		.5905	16	83	133
DTX408151	15.1		.5945	16	83	133
DTX408152	15.2		.5984	16	83	133
DTX408153	15.3		.6024	16	83	133
DTX408154	15.4		.6063	16	83	133
DTX408155	15.5		.6102	16	83	133
DTX408156	15.6		.6142	16	83	133
DTX408157	15.7		.6181	16	83	133
DTX408158	15.8		.6220	16	83	133
DTX408040F	15.875	5/8	.6250	16	83	133
DTX408159	15.9		.6260	16	83	133
DTX408160	16.0		.6299	16	83	133
DTX408161	16.1		.6339	18	93	143
DTX408162	16.2		.6378	18	93	143
DTX408163	16.3		.6417	18	93	143
DTX408164	16.4		.6457	18	93	143
DTX408165	16.5		.6495	18	93	143
DTX408166	16.6		.6535	18	93	143
DTX408167	16.7		.6575	18	93	143
DTX408168	16.8		.6614	18	93	143
DTX408169	16.9		.6654	18	93	143
DTX408170	17.0		.6692	18	93	143
DTX408171	17.1		.6732	18	93	143
DTX408172	17.2		.6772	18	93	143
DTX408173	17.3		.6811	18	93	143
DTX408174	17.4		.6850	18	93	143
DTX408175	17.5		.6889	18	93	143
DTX408176	17.6		.6929	18	93	143
DTX408177	17.7		.6968	18	93	143
DTX408178	17.8		.7008	18	93	143
DTX408179	17.9		.7047	18	93	143
DTX408180	18.0		.7087	18	93	143
DTX408181	18.1		.7126	20	101	153
DTX408182	18.2		.7165	20	101	153
DTX408183	18.3		.7205	20	101	153
DTX408184	18.4		.7244	20	101	153
DTX408185	18.5		.7283	20	101	153
DTX408186	18.6		.7323	20	101	153
DTX408187	18.7		.7362	20	101	153
DTX408188	18.8		.7402	20	101	153
DTX408189	18.9		.7441	20	101	153
DTX408190	19.0		.7480	20	101	153
DTX408048F	19.050	3/4	.7500	20	101	153
DTX408191	19.1		.7520	20	101	153
DTX408192	19.2		.7559	20	101	153
DTX408193	19.3		.7598	20	101	153
DTX408194	19.4		.7638	20	101	153
DTX408195	19.5		.7676	20	101	153
DTX408196	19.6		.7717	20	101	153
DTX408197	19.7		.7756	20	101	153
DTX408198	19.8		.7795	20	101	153
DTX408199	19.9		.7835	20	101	153
DTX408200	20.0		.7874	20	101	153

▶ Other shank types are available on your request.

◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended		◎	◎	◎	○	◎	◎	○	○	◎	○	○	○		◎	○	◎	○	◎	○

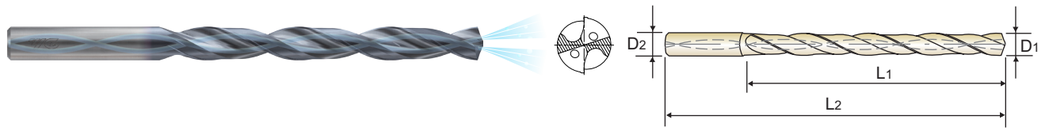
ISO	N										S							H			
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel		Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended																		○			

RCH-COATED SOLID CARBIDE

DREAM DRILL X with COOLANT HOLES

NEW SERIES **DTX421**

- ▶ Upgraded Coating for Higher Tool Life in Various Materials
- ▶ Soft Cutting Action and Reduced Axial Forces; Easy to Recondition
- ▶ Good Self-Centering even at Low Feed Rates and Unstable Situations
- ▶ Excellent Chip Breaking and Chip Evacuation



DIN 6537 | CARBIDE | h6 | m7 | 140° | 20 bar | RCH Coating

p.52

EXTRA LONG

8 × D

Unit : mm

EDP No.	Drill Diameter Metric	Fractional	Decimal	Shank Diameter	Flute Length	Overall Length
RCH-Coating	D1			D2	L1	L2
DTX421030	3.0		.1181	6	34	72
DTX421031	3.1		.1220	6	34	72
DTX421008F	3.175	1/8	.1250	6	34	72
DTX421032	3.2		.1260	6	34	72
DTX421033	3.3		.1299	6	34	72
DTX421034	3.4		.1339	6	34	72
DTX421029G	3.450	#29	.1360	6	34	72
DTX421035	3.5		.1378	6	34	72
DTX421009F	3.572	9/64	.1406	6	34	72
DTX421036	3.6		.1417	6	34	72
DTX421037	3.7		.1457	6	34	72
DTX421038	3.8		.1496	6	43	81
DTX421039	3.9		.1535	6	43	81
DTX421010F	3.969	5/32	.1563	6	43	81
DTX421040	4.0		.1575	6	43	81
DTX421021G	4.040	#21	.1590	6	43	81
DTX421041	4.1		.1614	6	43	81
DTX421042	4.2		.1654	6	43	81
DTX421043	4.3		.1693	6	43	81
DTX421011F	4.366	11/64	.1719	6	43	81
DTX421044	4.4		.1732	6	43	81
DTX421045	4.5		.1772	6	43	81
DTX421046	4.6		.1811	6	43	81
DTX421047	4.7		.1850	6	43	81
DTX421012F	4.763	3/16	.1875	6	57	95
DTX421048	4.8		.1890	6	57	95
DTX421049	4.9		.1929	6	57	95
DTX421050	5.0		.1969	6	57	95
DTX421051	5.1		.2008	6	57	95
DTX421013F	5.159	13/64	.2031	6	57	95
DTX421052	5.2		.2047	6	57	95
DTX421053	5.3		.2087	6	57	95
DTX421054	5.4		.2126	6	57	95
DTX421055	5.5		.2165	6	57	95
DTX421014F	5.556	7/32	.2188	6	57	95
DTX421056	5.6		.2205	6	57	95
DTX421057	5.7		.2244	6	57	95
DTX421058	5.8		.2283	6	57	95
DTX421059	5.9		.2323	6	57	95
DTX421015F	5.953	15/64	.2344	6	57	95
DTX421060	6.0		.2362	6	57	95
DTX421061	6.1		.2402	8	76	114
DTX421062	6.2		.2441	8	76	114
DTX421063	6.3		.2480	8	76	114
DTX421016F	6.350	1/4	.2500	8	76	114
DTX421064	6.4		.2520	8	76	114
DTX421065	6.5		.2559	8	76	114
DTX421006L	6.528	F	.2570	8	76	114
DTX421066	6.6		.2598	8	76	114
DTX421067	6.7		.2638	8	76	114
DTX421017F	6.747	17/64	.2656	8	76	114
DTX421068	6.8		.2677	8	76	114

▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended		◎	◎	◎	○	◎	◎	○	○	◎	○	○	○		◎	○	◎	○	◎	○

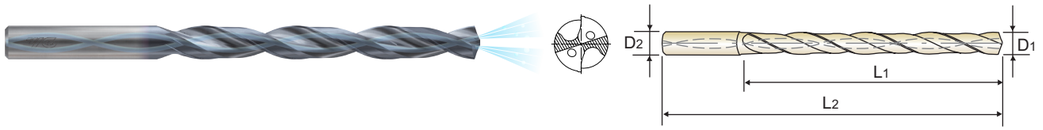
ISO	N										S							H			
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel		Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended																		○			

RCH-COATED SOLID CARBIDE

DREAM DRILL X with COOLANT HOLES

NEW SERIES **DTX421**

- ▶ Upgraded Coating for Higher Tool Life in Various Materials
- ▶ Soft Cutting Action and Reduced Axial Forces; Easy to Recondition
- ▶ Good Self-Centering even at Low Feed Rates and Unstable Situations
- ▶ Excellent Chip Breaking and Chip Evacuation



DIN 6537 | CARBIDE | h6 | m7 | 140° | 20 bar | RCH Coating

p.52

EXTRA LONG 8×D

Unit : mm

EDP No.	Drill Diameter Metric	Fractional	Decimal	Shank Diameter	Flute Length	Overall Length
RCH-Coating	D1			D2	L1	L2
DTX421069	6.9		.2717	8	76	114
DTX421009L	6.909	I	.2720	8	76	114
DTX421070	7.0		.2756	8	76	114
DTX421071	7.1		.2795	8	76	114
DTX421018F	7.144	9/32	.2813	8	76	114
DTX421072	7.2		.2835	8	76	114
DTX421073	7.3		.2874	8	76	114
DTX421074	7.4		.2913	8	76	114
DTX421075	7.5		.2953	8	76	114
DTX421019F	7.541	19/64	.2969	8	76	114
DTX421076	7.6		.2992	8	76	114
DTX421077	7.7		.3031	8	76	114
DTX421078	7.8		.3071	8	76	114
DTX421079	7.9		.3110	8	76	114
DTX421020F	7.938	5/16	.3125	8	76	114
DTX421080	8.0		.3150	8	76	114
DTX421081	8.1		.3189	10	95	142
DTX421082	8.2		.3228	10	95	142
DTX421083	8.3		.3268	10	95	142
DTX421021F	8.334	21/64	.3281	10	95	142
DTX421084	8.4		.3307	10	95	142
DTX421017L	8.430	Q	.3320	10	95	142
DTX421085	8.5		.3346	10	95	142
DTX421086	8.6		.3386	10	95	142
DTX421087	8.7		.3425	10	95	142
DTX421022F	8.731	11/32	.3438	10	95	142

EDP No.	Drill Diameter Metric	Fractional	Decimal	Shank Diameter	Flute Length	Overall Length
RCH-Coating	D1			D2	L1	L2
DTX421088	8.8		.3465	10	95	142
DTX421089	8.9		.3504	10	95	142
DTX421090	9.0		.3543	10	95	142
DTX421091	9.1		.3583	10	95	142
DTX421023F	9.128	23/64	.3594	10	95	142
DTX421092	9.2		.3622	10	95	142
DTX421093	9.3		.3661	10	95	142
DTX421021L	9.350	U	.3680	10	95	142
DTX421094	9.4		.3701	10	95	142
DTX421095	9.5		.3740	10	95	142
DTX421024F	9.525	3/8	.3750	10	95	142
DTX421096	9.6		.3780	10	95	142
DTX421097	9.7		.3819	10	95	142
DTX421098	9.8		.3858	10	95	142
DTX421099	9.9		.3898	10	95	142
DTX421025F	9.922	25/64	.3906	10	95	142
DTX421100	10.0		.3937	10	95	142
DTX421101	10.1		.3976	12	114	162
DTX421102	10.2		.4016	12	114	162
DTX421103	10.3		.4055	12	114	162
DTX421026F	10.319	13/32	.4063	12	114	162
DTX421104	10.4		.4094	12	114	162
DTX421105	10.5		.4134	12	114	162
DTX421106	10.6		.4173	12	114	162
DTX421107	10.7		.4212	12	114	162
DTX421027F	10.716	27/64	.4219	12	114	162

▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended		◎	◎	◎	○	◎	◎	○	○	◎	○	○	○		◎	○	◎	○	◎	○

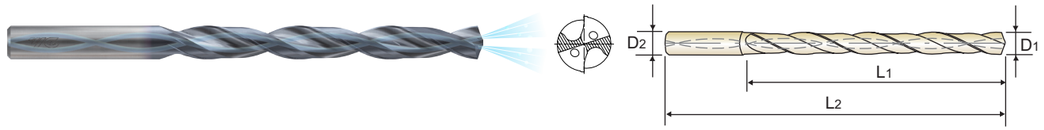
ISO	N										S							H		
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel	Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended																		○			

RCH-COATED SOLID CARBIDE

DREAM DRILL X with COOLANT HOLES

NEW SERIES DTX421

▶ Upgraded Coating for Higher Tool Life in Various Materials
▶ Soft Cutting Action and Reduced Axial Forces; Easy to Recondition
▶ Good Self-Centering even at Low Feed Rates and Unstable Situations
▶ Excellent Chip Breaking and Chip Evacuation



DIN 6537 | CARBIDE | h6 | m7 | 140° | 20 bar | RCH Coating

p.52

EXTRA LONG 8×D

Unit : mm

EDP No.	Drill Diameter Metric	Fractional	Decimal	Shank Diameter	Flute Length	Overall Length
RCH-Coating	D1			D2	L1	L2
DTX421108	10.8		.4252	12	114	162
DTX421109	10.9		.4291	12	114	162
DTX421110	11.0		.4330	12	114	162
DTX421111	11.1		.4370	12	114	162
DTX421028F	11.113	7/16	.4375	12	114	162
DTX421112	11.2		.4409	12	114	162
DTX421113	11.3		.4448	12	114	162
DTX421114	11.4		.4488	12	114	162
DTX421115	11.5		.4527	12	114	162
DTX421029F	11.509	29/64	.4531	12	114	162
DTX421116	11.6		.4566	12	114	162
DTX421117	11.7		.4606	12	114	162
DTX421118	11.8		.4645	12	114	162
DTX421119	11.9		.4685	12	114	162
DTX421030F	11.906	15/32	.4688	12	114	162
DTX421120	12.0		.4724	12	114	162
DTX421121	12.1		.4764	14	133	178
DTX421122	12.2		.4803	14	133	178
DTX421123	12.3		.4843	14	133	178
DTX421031F	12.303	31/64	.4844	14	133	178
DTX421124	12.4		.4882	14	133	178
DTX421125	12.5		.4921	14	133	178
DTX421126	12.6		.4961	14	133	178
DTX421032F	12.7	1/2	.5000	14	133	178
DTX421128	12.8		.5039	14	133	178
DTX421129	12.9		.5079	14	133	178

EDP No.	Drill Diameter Metric	Fractional	Decimal	Shank Diameter	Flute Length	Overall Length
RCH-Coating	D1			D2	L1	L2
DTX421130	13.0		.5118	14	133	178
DTX421033F	13.097	33/64	.5156	14	133	178
DTX421131	13.1		.5157	14	133	178
DTX421132	13.2		.5197	14	133	178
DTX421133	13.3		.5236	14	133	178
DTX421134	13.4		.5276	14	133	178
DTX421135	13.5		.5314	14	133	178
DTX421136	13.6		.5354	14	133	178
DTX421137	13.7		.5394	14	133	178
DTX421138	13.8		.5433	14	133	178
DTX421139	13.9		.5472	14	133	178
DTX421140	14.0		.5512	14	133	178
DTX421141	14.1		.5551	16	152	203
DTX421142	14.2		.5591	16	152	203
DTX421036F	14.288	9/16	.5625	16	152	203
DTX421143	14.3		.5630	16	152	203
DTX421144	14.4		.5669	16	152	203
DTX421145	14.5		.5709	16	152	203
DTX421146	14.6		.5748	16	152	203
DTX421147	14.7		.5787	16	152	203
DTX421148	14.8		.5827	16	152	203
DTX421149	14.9		.5866	16	152	203
DTX421150	15.0		.5905	16	152	203
DTX421151	15.1		.5945	16	152	203
DTX421152	15.2		.5984	16	152	203
DTX421153	15.3		.6024	16	152	203

▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended		◎	◎	◎	○	◎	◎	○	○	◎	○	○	○		◎	○	◎	○	◎	○

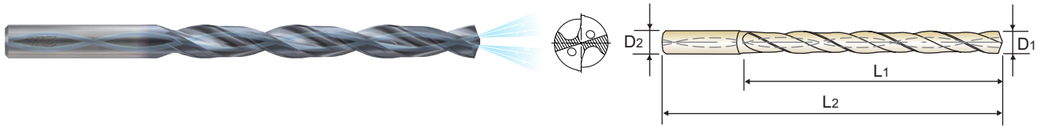
ISO	N										S							H		
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel	Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended																		○			

RCH-COATED SOLID CARBIDE

DREAM DRILL X with COOLANT HOLES

NEW SERIES **DTX421**

- Upgraded Coating for Higher Tool Life in Various Materials
- Soft Cutting Action and Reduced Axial Forces; Easy to Recondition
- Good Self-Centering even at Low Feed Rates and Unstable Situations
- Excellent Chip Breaking and Chip Evacuation



DIN 6537 | CARBIDE | h6 | m7 | 140° | 20 bar | RCH Coating

p.52

EXTRA LONG

8×D

Unit : mm

EDP No.	Drill Diameter Metric	Fractional	Decimal	Shank Diameter	Flute Length	Overall Length
RCH-Coating	D1			D2	L1	L2
DTX421154	15.4		.6063	16	152	203
DTX421155	15.5		.6102	16	152	203
DTX421156	15.6		.6142	16	152	203
DTX421157	15.7		.6181	16	152	203
DTX421158	15.8		.6220	16	152	203
DTX421040F	15.875	5/8	.6250	16	152	203
DTX421159	15.9		.6260	16	152	203
DTX421160	16.0		.6299	16	152	203
DTX421161	16.1		.6339	18	171	222
DTX421162	16.2		.6378	18	171	222
DTX421163	16.3		.6417	18	171	222
DTX421164	16.4		.6457	18	171	222
DTX421165	16.5		.6496	18	171	222
DTX421166	16.6		.6535	18	171	222
DTX421167	16.7		.6575	18	171	222
DTX421168	16.8		.6614	18	171	222
DTX421169	16.9		.6654	18	171	222
DTX421170	17.0		.6693	18	171	222
DTX421171	17.1		.6732	18	171	222
DTX421172	17.2		.6772	18	171	222
DTX421173	17.3		.6811	18	171	222
DTX421174	17.4		.6850	18	171	222
DTX421175	17.5		.6890	18	171	222
DTX421176	17.6		.6929	18	171	222
DTX421177	17.7		.6968	18	171	222

EDP No.	Drill Diameter Metric	Fractional	Decimal	Shank Diameter	Flute Length	Overall Length
TiAlN	D1			D2	L1	L2
DTX421178	17.8		.7008	18	171	222
DTX421179	17.9		.7047	18	171	222
DTX421180	18.0		.7087	18	171	222
DTX421181	18.1		.7126	20	190	243
DTX421182	18.2		.7165	20	190	243
DTX421183	18.3		.7205	20	190	243
DTX421184	18.4		.7244	20	190	243
DTX421185	18.5		.7283	20	190	243
DTX421186	18.6		.7323	20	190	243
DTX421187	18.7		.7362	20	190	243
DTX421188	18.8		.7402	20	190	243
DTX421189	18.9		.7441	20	190	243
DTX421190	19.0		.7480	20	190	243
DTX421048F	19.050	3/4	.7500	20	190	243
DTX421191	19.1		.7520	20	190	243
DTX421192	19.2		.7559	20	190	243
DTX421193	19.3		.7598	20	190	243
DTX421194	19.4		.7638	20	190	243
DTX421195	19.5		.7677	20	190	243
DTX421196	19.6		.7717	20	190	243
DTX421197	19.7		.7756	20	190	243
DTX421198	19.8		.7795	20	190	243
DTX421199	19.9		.7835	20	190	243
DTX421200	20.0		.7874	20	190	243

▶ Other shank types are available on your request.

◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended		◎	◎	◎	○	◎	◎	○	○	◎	○	○	○		◎	○	◎	○	◎	○

ISO	N										S							H		
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel	Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended																		○			

RCH-COATED SOLID CARBIDE

DREAM DRILL X without COOLANT HOLES

NEW SERIES **DTX414**

- Upgraded Coating for Higher Tool Life in Various Materials
- Soft Cutting Action and Reduced Axial Forces; Easy to Recondition
- Good Self-Centering even at Low Feed Rates and Unstable Situations
- Excellent Chip Breaking and Chip Evacuation

CARBIDE | h6 | 140° | RCH Coating

p.54

STUB

3×D

Unit : inch

EDP No.	Drill Diameter Fractional	Decimal	Flute Length	Overall Length
RCH-Coating	D1 = D2		L1	L2
DTX414008	1/8	.1250	45/64	1-59/64
DTX414009	9/64	.1406	25/32	2-3/64
DTX414010	5/32	.1563	7/8	2-3/16
DTX414011	11/64	.1719	15/16	2-9/32
DTX414012	3/16	.1875	1	2-7/16
DTX414013	13/64	.2031	1	2-7/16
DTX414014	7/32	.2188	1-1/8	2-5/8
DTX414015	15/64	.2344	1-1/8	2-5/8
DTX414016	1/4	.2500	1-5/8	3-3/16
DTX414206	F	.2570	1-11/16	3-17/64
DTX414017	17/64	.2656	1-11/16	3-17/64
DTX414209	I	.2720	1-11/16	3-17/64
DTX414018	9/32	.2813	1-3/4	3-7/16
DTX414019	19/64	.2969	1-7/8	3-9/16
DTX414020	5/16	.3125	1-7/8	3-9/16
DTX414021	21/64	.3281	2-1/16	3-3/4
DTX414217	Q	.3320	2-1/16	3-3/4

EDP No.	Drill Diameter Fractional	Decimal	Flute Length	Overall Length
RCH-Coating	D1 = D2		L1	L2
DTX414022	11/32	.3438	2-3/16	3-7/8
DTX414023	23/64	.3594	2-9/32	4
DTX414221	U	.3680	2-9/32	4
DTX414024	3/8	.3750	2-3/8	4-1/8
DTX414025	25/64	.3906	2-3/8	4-1/8
DTX414026	13/32	.4063	2-5/8	4-13/32
DTX414027	27/64	.4219	2-11/16	4-1/2
DTX414028	7/16	.4375	2-13/16	4-5/8
DTX414029	29/64	.4531	2-7/8	4-3/4
DTX414230	15/32	.4688	2-7/8	4-3/4
DTX414031	31/64	.4844	3	5-5/16
DTX414232	1/2	.5000	3-1/16	5-3/8
DTX414033	33/64	.5156	3-11/32	5-11/16
DTX414034	17/32	.5313	3-11/32	5-11/16
DTX414036	9/16	.5625	3-1/2	5-15/16
DTX414237	37/64	.5781	3-37/64	6
DTX414040	5/8	.6250	3-25/32	6-19/64

▶ Other shank types are available on your request.

◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended		◎	◎	◎	○	◎	◎	○	○	◎	○	○	○		◎	○	◎	○	◎	○

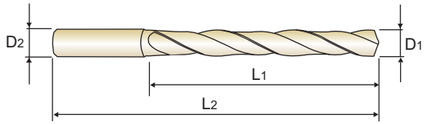
ISO	N										S							H		
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel	Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended																		○			

RCH-COATED SOLID CARBIDE

DREAM DRILL X without COOLANT HOLES

NEW SERIES **DTX722**

- ▶ Upgraded Coating for Higher Tool Life in Various Materials
- ▶ Soft Cutting Action and Reduced Axial Forces; Easy to Recondition
- ▶ Good Self-Centering even at Low Feed Rates and Unstable Situations
- ▶ Excellent Chip Breaking and Chip Evacuation



CARBIDE | h6 | 140° | RCH Coating | p.54

LONG

5 × D

Unit : inch

EDP No.	Drill Diameter		Shank Diameter	Flute Length	Overall Length
	Fractional	Decimal			
RCH-Coating	D1		D2	L1	L2
DTX722013	13/64	.2031	1/4	1-3/4	3-15/16
DTX722014	7/32	.2188	1/4	1-57/64	3-15/16
DTX722015	15/64	.2344	1/4	1-57/64	3-15/16
DTX722016	1/4	.2500	1/4	2-3/64	4-19/64
DTX722206	F	.2570	5/16	2-13/64	4-19/64
DTX722017	17/64	.2656	5/16	2-13/64	4-19/64
DTX722209	I	.2720	5/16	2-13/64	4-19/64
DTX722018	9/32	.2812	5/16	2-23/64	4-41/64
DTX722019	19/64	.2969	5/16	2-33/64	4-41/64
DTX722020	5/16	.3125	5/16	2-33/64	4-41/64
DTX722021	21/64	.3281	3/8	2-43/64	5
DTX722217	Q	.3320	3/8	2-43/64	5

EDP No.	Drill Diameter		Shank Diameter	Flute Length	Overall Length
	Fractional	Decimal			
RCH-Coating	D1		D2	L1	L2
DTX722022	11/32	.3438	3/8	2-27/32	5
DTX722023	23/64	.3594	3/8	3	5-23/64
DTX722221	U	.3680	3/8	3	5-23/64
DTX722024	3/8	.3750	3/8	3-5/32	5-23/64
DTX722025	25/64	.3906	7/16	3-5/32	5-23/64
DTX722026	13/32	.4062	7/16	3-5/16	5-7/8
DTX722027	27/64	.4219	7/16	3-15/32	5-7/8
DTX722028	7/16	.4375	7/16	3-5/8	6-7/32
DTX722029	29/64	.4531	1/2	3-25/32	6-7/32
DTX722030	15/32	.4688	1/2	3-25/32	6-7/32
DTX722031	31/64	.4844	1/2	3-15/16	6-37/64
DTX722032	1/2	.5000	1/2	4-3/32	6-37/64

▶ Other shank types are available on your request.

◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended		◎	◎	◎	○	◎	◎	○	○	◎	○	○	○		◎	○	◎	○	◎	○

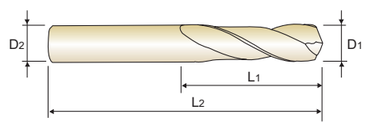
ISO	N										S							H			
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel		Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended																		○			

RCH-COATED SOLID CARBIDE

DREAM DRILL X without COOLANT HOLES

NEW SERIES **DTX404**

- ▶ Upgraded Coating for Higher Tool Life in Various Materials
- ▶ Soft Cutting Action and Reduced Axial Forces; Easy to Recondition
- ▶ Good Self-Centering even at Low Feed Rates and Unstable Situations
- ▶ Excellent Chip Breaking and Chip Evacuation



DIN 6539 | CARBIDE | h6 | m7 | 140° | RCH Coating | p.54

STUB

3 × D

Unit : mm

EDP No.	Drill Diameter		Flute Length	Overall Length
	Metric	Inch		
RCH-Coating	D1 = D2		L1	L2
DTX404030	3.0	.1181	16	46
DTX404031	3.1	.1220	18	49
DTX404032	3.2	.1260	18	49
DTX404033	3.3	.1299	18	49
DTX404034	3.4	.1339	20	52
DTX404035	3.5	.1378	20	52
DTX404036	3.6	.1417	20	52
DTX404037	3.7	.1457	20	52
DTX404038	3.8	.1496	22	55
DTX404039	3.9	.1535	22	55
DTX404040	4.0	.1575	22	55
DTX404041	4.1	.1614	22	55
DTX404042	4.2	.1654	22	55
DTX404043	4.3	.1693	24	58
DTX404044	4.4	.1732	24	58
DTX404045	4.5	.1772	24	58
DTX404046	4.6	.1811	24	58
DTX404047	4.7	.1850	24	58
DTX404048	4.8	.1890	26	62
DTX404049	4.9	.1929	26	62
DTX404050	5.0	.1969	26	62
DTX404051	5.1	.2008	26	62
DTX404052	5.2	.2047	26	62
DTX404053	5.3	.2087	26	62
DTX404054	5.4	.2126	28	66
DTX404055	5.5	.2165	28	66

EDP No.	Drill Diameter		Flute Length	Overall Length
	Metric	Inch		
RCH-Coating	D1 = D2		L1	L2
DTX404056	5.6	.2205	28	66
DTX404057	5.7	.2244	28	66
DTX404058	5.8	.2283	28	66
DTX404059	5.9	.2323	28	66
DTX404060	6.0	.2362	28	66
DTX404061	6.1	.2402	31	70
DTX404062	6.2	.2441	31	70
DTX404063	6.3	.2480	31	70
DTX404064	6.4	.2520	31	70
DTX404065	6.5	.2559	31	70
DTX404066	6.6	.2598	31	70
DTX404067	6.7	.2638	31	70
DTX404068	6.8	.2677	34	74
DTX404069	6.9	.2717	34	74
DTX404070	7.0	.2756	34	74
DTX404071	7.1	.2795	34	74
DTX404072	7.2	.2835	34	74
DTX404073	7.3	.2874	34	74
DTX404074	7.4	.2913	34	74
DTX404075	7.5	.2953	34	74
DTX404076	7.6	.2992	37	79
DTX404077	7.7	.3031	37	79
DTX404078	7.8	.3071	37	79
DTX404079	7.9	.3110	37	79
DTX404080	8.0	.3150	37	79
DTX404081	8.1	.3189	37	79

▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended		◎	◎	◎	○	◎	◎	○	○	◎	○	○	○		◎	○	◎	○	◎	○

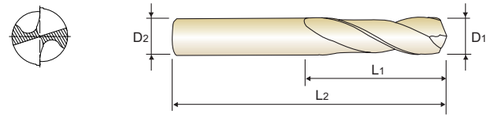
ISO	N										S							H			
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel		Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended																		○			

RCH-COATED SOLID CARBIDE

DREAM DRILL X without COOLANT HOLES

NEW SERIES **DTX404**

- Upgraded Coating for Higher Tool Life in Various Materials
- Soft Cutting Action and Reduced Axial Forces; Easy to Recondition
- Good Self-Centering even at Low Feed Rates and Unstable Situations
- Excellent Chip Breaking and Chip Evacuation



DIN 6539 | CARBIDE | h6 | m7 | 140° | RCH Coating

p.54

STUB

3×D

Unit : mm

EDP No.	Drill Diameter		Flute Length	Overall Length
	Metric	Inch		
RCH-Coating	D1 = D2		L1	L2
DTX404082	8.2	.3228	37	79
DTX404083	8.3	.3268	37	79
DTX404084	8.4	.3307	37	79
DTX404085	8.5	.3346	37	79
DTX404086	8.6	.3386	40	84
DTX404087	8.7	.3425	40	84
DTX404088	8.8	.3465	40	84
DTX404089	8.9	.3504	40	84
DTX404090	9.0	.3543	40	84
DTX404091	9.1	.3583	40	84
DTX404092	9.2	.3622	40	84
DTX404093	9.3	.3661	40	84
DTX404094	9.4	.3701	40	84
DTX404095	9.5	.3740	40	84
DTX404096	9.6	.3780	43	89
DTX404097	9.7	.3819	43	89
DTX404098	9.8	.3858	43	89
DTX404099	9.9	.3898	43	89
DTX404100	10.0	.3937	43	89
DTX404102	10.2	.4016	43	89

EDP No.	Drill Diameter		Flute Length	Overall Length
	Metric	Inch		
RCH-Coating	D1 = D2		L1	L2
DTX404105	10.5	.4134	43	89
DTX404110	11.0	.4331	47	95
DTX404115	11.5	.4528	47	95
DTX404120	12.0	.4724	51	102
DTX404130	13.0	.5118	51	102
DTX404135	13.5	.5314	54	107
DTX404140	14.0	.5512	54	107
DTX404145	14.5	.5708	56	111
DTX404150	15.0	.5905	56	111
DTX404155	15.5	.6102	58	115
DTX404160	16.0	.6299	58	115
DTX404165	16.5	.6495	60	119
DTX404170	17.0	.6692	60	119
DTX404175	17.5	.6889	62	123
DTX404180	18.0	.7087	62	123
DTX404185	18.5	.7283	64	127
DTX404190	19.0	.7480	64	127
DTX404195	19.5	.7676	66	131
DTX404200	20.0	.7874	66	131

▶ Other shank types are available on your request.

◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended		◎	◎	◎	○	◎	◎	○	○	◎	○	○	○		◎	○	◎	○	◎	○

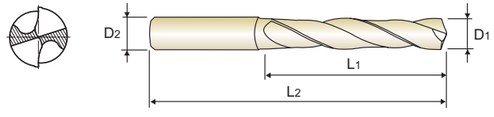
ISO	N										S							H		
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel	Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended																		○			

RCH-COATED SOLID CARBIDE

DREAM DRILL X without COOLANT HOLES

NEW SERIES **DTX423**

- Upgraded Coating for Higher Tool Life in Various Materials
- Soft Cutting Action and Reduced Axial Forces; Easy to Recondition
- Good Self-Centering even at Low Feed Rates and Unstable Situations
- Excellent Chip Breaking and Chip Evacuation



DIN 6537 | CARBIDE | h6 | m7 | 140° | RCH Coating

p.54

SHORT

3×D

Unit : mm

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Fractional	Decimal			
RCH-Coating	D1			D2	L1	L2
DTX423030	3.0		.1181	6	20	62
DTX423031	3.1		.1220	6	20	62
DTX423008F	3.175	1/8	.1250	6	20	62
DTX423032	3.2		.1260	6	20	62
DTX423033	3.3		.1299	6	20	62
DTX423034	3.4		.1339	6	20	62
DTX423035	3.5		.1378	6	20	62
DTX423009F	3.572	9/64	.1406	6	20	62
DTX423036	3.6		.1417	6	20	62
DTX423037	3.7		.1457	6	20	62
DTX423038	3.8		.1496	6	24	66
DTX423039	3.9		.1535	6	24	66
DTX423010F	3.969	5/32	.1563	6	24	66
DTX423040	4.0		.1575	6	24	66
DTX423041	4.1		.1614	6	24	66
DTX423042	4.2		.1654	6	24	66
DTX423043	4.3		.1693	6	24	66
DTX423011F	4.366	11/64	.1719	6	24	66
DTX423044	4.4		.1732	6	24	66
DTX423045	4.5		.1772	6	24	66
DTX423046	4.6		.1811	6	24	66
DTX423047	4.7		.1850	6	24	66
DTX423012F	4.763	3/16	.1875	6	24	66
DTX423048	4.8		.1890	6	28	66
DTX423049	4.9		.1929	6	28	66
DTX423050	5.0		.1969	6	28	66

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Fractional	Decimal			
RCH-Coating	D1			D2	L1	L2
DTX423051	5.1		.2008	6	28	66
DTX423013F	5.159	13/64	.2031	6	28	66
DTX423052	5.2		.2047	6	28	66
DTX423053	5.3		.2087	6	28	66
DTX423054	5.4		.2126	6	28	66
DTX423055	5.5		.2165	6	28	66
DTX423014F	5.556	7/32	.2188	6	28	66
DTX423056	5.6		.2205	6	28	66
DTX423057	5.7		.2244	6	28	66
DTX423058	5.8		.2283	6	28	66
DTX423059	5.9		.2323	6	28	66
DTX423015F	5.953	15/64	.2344	6	28	66
DTX423060	6.0		.2362	6	28	66
DTX423061	6.1		.2402	8	34	79
DTX423062	6.2		.2441	8	34	79
DTX423063	6.3		.2480	8	34	79
DTX423016F	6.350	1/4	.2500	8	34	79
DTX423064	6.4		.2520	8	34	79
DTX423065	6.5		.2559	8	34	79
DTX423006L	6.528	F	.2570	8	34	79
DTX423066	6.6		.2598	8	34	79
DTX423067	6.7		.2638	8	34	79
DTX423017F	6.747	17/64	.2656	8	34	79
DTX423068	6.8		.2677	8	34	79
DTX423069	6.9		.2717	8	34	79
DTX423009L	6.909	I	.2720	8	34	79

▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended		◎	◎	◎	○	◎	◎	○	○	◎	○	○	○		◎	○	◎	○	◎	○

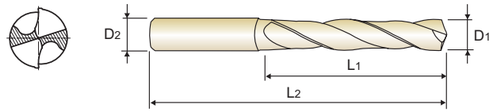
ISO	N										S							H		
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel	Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended																		○			

RCH-COATED SOLID CARBIDE

DREAM DRILL X without COOLANT HOLES

NEW SERIES **DTX423**

- ▶ Upgraded Coating for Higher Tool Life in Various Materials
- ▶ Soft Cutting Action and Reduced Axial Forces; Easy to Recondition
- ▶ Good Self-Centering even at Low Feed Rates and Unstable Situations
- ▶ Excellent Chip Breaking and Chip Evacuation



DIN 6537 | CARBIDE | h6 | m7 | 140° | RCH Coating

p.54

SHORT 3×D

Unit : mm

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Fractional	Decimal			
RCH-Coating	D1			D2	L1	L2
DTX423070	7.0		.2756	8	34	79
DTX423071	7.1		.2795	8	41	79
DTX423018F	7.144	9/32	.2812	8	41	79
DTX423072	7.2		.2835	8	41	79
DTX423073	7.3		.2874	8	41	79
DTX423074	7.4		.2913	8	41	79
DTX423075	7.5		.2953	8	41	79
DTX423019F	7.541	19/64	.2969	8	41	79
DTX423076	7.6		.2992	8	41	79
DTX423077	7.7		.3031	8	41	79
DTX423078	7.8		.3071	8	41	79
DTX423079	7.9		.3110	8	41	79
DTX423020F	7.938	5/16	.3125	8	41	79
DTX423080	8.0		.3150	8	41	79
DTX423081	8.1		.3189	10	47	89
DTX423082	8.2		.3228	10	47	89
DTX423083	8.3		.3268	10	47	89
DTX423021F	8.334	21/64	.3281	10	47	89
DTX423084	8.4		.3307	10	47	89
DTX423017L	8.433	Q	.3320	10	47	89
DTX423085	8.5		.3346	10	47	89
DTX423086	8.6		.3386	10	47	89
DTX423087	8.7		.3425	10	47	89
DTX423022F	8.731	11/32	.3438	10	47	89
DTX423088	8.8		.3465	10	47	89
DTX423089	8.9		.3504	10	47	89

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Fractional	Decimal			
RCH-Coating	D1			D2	L1	L2
DTX423090	9.0		.3543	10	47	89
DTX423091	9.1		.3583	10	47	89
DTX423023F	9.128	23/64	.3594	10	47	89
DTX423092	9.2		.3622	10	47	89
DTX423093	9.3		.3661	10	47	89
DTX423021L	9.347	U	.3680	10	47	89
DTX423094	9.4		.3701	10	47	89
DTX423095	9.5		.3740	10	47	89
DTX423024F	9.525	3/8	.3750	10	47	89
DTX423096	9.6		.3780	10	47	89
DTX423097	9.7		.3819	10	47	89
DTX423098	9.8		.3858	10	47	89
DTX423099	9.9		.3898	10	47	89
DTX423025F	9.922	25/64	.3906	10	47	89
DTX423100	10.0		.3937	10	47	89
DTX423101	10.1		.3976	12	55	102
DTX423102	10.2		.4016	12	55	102
DTX423103	10.3		.4055	12	55	102
DTX423026F	10.319	13/32	.4062	12	55	102
DTX423104	10.4		.4094	12	55	102
DTX423105	10.5		.4134	12	55	102
DTX423106	10.6		.4173	12	55	102
DTX423107	10.7		.4213	12	55	102
DTX423027F	10.716	27/64	.4219	12	55	102
DTX423108	10.8		.4252	12	55	102
DTX423109	10.9		.4291	12	55	102

▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended		◎	◎	◎	○	◎	◎	○	○	◎	○	○	○		◎	○	◎	○	◎	○

ISO	N										S							H		
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel	Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended																		○			

RCH-COATED SOLID CARBIDE

DREAM DRILL X without COOLANT HOLES

NEW SERIES DTX423

- ▶ Upgraded Coating for Higher Tool Life in Various Materials
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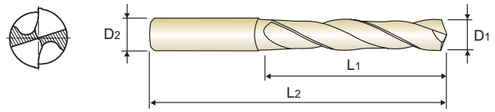

DIN 6537 | CARBIDE | h6 | m7 | 140° | RCH Coating

p.54

SHORT 3×D

Unit : mm

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Fractional	Decimal			
RCH-Coating	D1			D2	L1	L2
DTX423110	11.0		.4331	12	55	102
DTX423111	11.1		.4370	12	55	102
DTX423028F	11.113	7/16	.4375	12	55	102
DTX423112	11.2		.4409	12	55	102
DTX423113	11.3		.4449	12	55	102
DTX423114	11.4		.4488	12	55	102
DTX423115	11.5		.4528	12	55	102
DTX423029F	11.509	29/64	.4531	12	55	102
DTX423116	11.6		.4567	12	55	102
DTX423117	11.7		.4606	12	55	102
DTX423118	11.8		.4646	12	55	102
DTX423119	11.9		.4685	12	55	102
DTX423030F	11.906	15/32	.4688	12	55	102
DTX423120	12.0		.4724	12	55	102
DTX423121	12.1		.4764	14	60	107
DTX423122	12.2		.4803	14	60	107
DTX423123	12.3		.4843	14	60	107
DTX423031F	12.303	31/64	.4844	14	60	107
DTX423124	12.4		.4882	14	60	107
DTX423125	12.5		.4921	14	60	107
DTX423126	12.6		.4961	14	60	107
DTX423032F	12.7	1/2	.5000	14	60	107
DTX423128	12.8		.5039	14	60	107
DTX423129	12.9		.5079	14	60	107
DTX423130	13.0		.5118	14	60	107
DTX423131	13.1		.5157	14	60	107

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Fractional	Decimal			
RCH-Coating	D1			D2	L1	L2
DTX423132	13.2		.5197	14	60	107
DTX423133	13.3		.5236	14	60	107
DTX423134	13.4		.5276	14	60	107
DTX423135	13.5		.5315	14	60	107
DTX423136	13.6		.5354	14	60	107
DTX423137	13.7		.5394	14	60	107
DTX423138	13.8		.5433	14	60	107
DTX423139	13.9		.5472	14	60	107
DTX423140	14.0		.5512	14	60	107
DTX423141	14.1		.5551	16	65	115
DTX423142	14.2		.5591	16	65	115
DTX423036F	14.288	9/16	.5625	16	65	115
DTX423143	14.3		.5630	16	65	115
DTX423144	14.4		.5669	16	65	115
DTX423145	14.5		.5708	16	65	115
DTX423146	14.6		.5748	16	65	115
DTX423147	14.7		.5787	16	65	115
DTX423148	14.8		.5827	16	65	115
DTX423149	14.9		.5866	16	65	115
DTX423150	15.0		.5905	16	65	115
DTX423151	15.1		.5945	16	65	115
DTX423152	15.2		.5984	16	65	115
DTX423153	15.3		.6024	16	65	115
DTX423154	15.4		.6063	16	65	115
DTX423155	15.5		.6102	16	65	115
DTX423156	15.6		.6142	16	65	115

▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended		◎	◎	◎	○	◎	◎	○	○	◎	○	○	○		◎	○	◎	○	◎	○

ISO	N										S							H		
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel	Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended																		○			

RCH-COATED SOLID CARBIDE

DREAM DRILL X without COOLANT HOLES

NEW SERIES **DTX423**

- Upgraded Coating for Higher Tool Life in Various Materials
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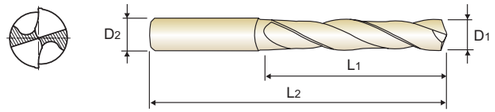
- Good Self-Centering even at Low Feed Rates and Unstable Situations
- Excellent Chip Breaking and Chip Evacuation



DIN 6537 | CARBIDE | h6 | m7 | 140° | RCH Coating | p.54

SHORT

3 × D

Unit : mm

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Fractional	Decimal			
RCH-Coating	D1			D2	L1	L2
DTX423157	15.7		.6181	16	65	115
DTX423158	15.8		.6220	16	65	115
DTX423040F	15.875	5/8	.6250	16	65	115
DTX423159	15.9		.6260	16	65	115
DTX423160	16.0		.6299	16	65	115
DTX423161	16.1		.6339	18	73	123
DTX423162	16.2		.6378	18	73	123
DTX423163	16.3		.6417	18	73	123
DTX423164	16.4		.6457	18	73	123
DTX423165	16.5		.6495	18	73	123
DTX423166	16.6		.6535	18	73	123
DTX423167	16.7		.6575	18	73	123
DTX423168	16.8		.6614	18	73	123
DTX423169	16.9		.6654	18	73	123
DTX423170	17.0		.6692	18	73	123
DTX423171	17.1		.6732	18	73	123
DTX423172	17.2		.6772	18	73	123
DTX423173	17.3		.6811	18	73	123
DTX423174	17.4		.6850	18	73	123
DTX423044F	17.463	11/16	.6875	18	73	123
DTX423175	17.5		.6889	18	73	123
DTX423176	17.6		.6929	18	73	123
DTX423177	17.7		.6968	18	73	123
DTX423178	17.8		.7008	18	73	123
DTX423179	17.9		.7047	18	73	123
DTX423180	18.0		.7087	18	73	123
DTX423181	18.1		.7126	20	79	131
DTX423182	18.2		.7165	20	79	131
DTX423183	18.3		.7205	20	79	131
DTX423184	18.4		.7244	20	79	131
DTX423185	18.5		.7283	20	79	131
DTX423186	18.6		.7323	20	79	131
DTX423187	18.7		.7362	20	79	131
DTX423188	18.8		.7402	20	79	131
DTX423189	18.9		.7441	20	79	131
DTX423190	19.0		.7480	20	79	131
DTX423048F	19.050	3/4	.7500	20	79	131
DTX423191	19.1		.7520	20	79	131
DTX423192	19.2		.7559	20	79	131
DTX423193	19.3		.7598	20	79	131
DTX423194	19.4		.7638	20	79	131
DTX423195	19.5		.7676	20	79	131
DTX423196	19.6		.7717	20	79	131
DTX423197	19.7		.7756	20	79	131
DTX423198	19.8		.7795	20	79	131
DTX423199	19.9		.7835	20	79	131
DTX423200	20.0		.7874	20	79	131

▶ Other shank types are available on your request.

◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended		◎	◎	◎	○	◎	◎	○	○	◎	○	○	○		◎	○	◎	○	◎	○

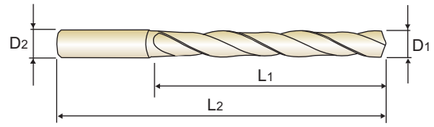
ISO	N										S							H		
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel		Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended																		○			

RCH-COATED SOLID CARBIDE

DREAM DRILL X without COOLANT HOLES

NEW SERIES **DTX424**

- Upgraded Coating for Higher Tool Life in Various Materials
- Soft Cutting Action and Reduced Axial Forces; Easy to Recondition
- Good Self-Centering even at Low Feed Rates and Unstable Situations
- Excellent Chip Breaking and Chip Evacuation



DIN 6537 | CARBIDE | h6 | m7 | 140° | RCH Coating | p.54

LONG

5 × D

Unit : mm

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Fractional	Decimal			
RCH-Coating	D1			D2	L1	L2
DTX424010	1.0		.0394	3	8	55
DTX424011	1.1		.0433	3	12	55
DTX424012	1.2		.0472	3	12	55
DTX424013	1.3		.0512	3	12	55
DTX424014	1.4		.0551	3	12	55
DTX424015	1.5		.0591	3	16	55
DTX424004F	1.588	1/16	.0625	3	16	55
DTX424016	1.6		.0630	3	16	55
DTX424017	1.7		.0669	3	16	55
DTX424018	1.8		.0709	3	16	55
DTX424019	1.9		.0748	3	16	55
DTX424005F	1.984	5/64	.0781	3	16	55
DTX424020	2.0		.0787	4	21	57
DTX424021	2.1		.0827	4	21	57
DTX424022	2.2		.0866	4	21	57
DTX424023	2.3		.0906	4	21	57
DTX424006F	2.381	3/32	.0938	4	21	57
DTX424024	2.4		.0945	4	21	57
DTX424025	2.5		.0984	4	21	57
DTX424026	2.6		.1024	4	21	57
DTX424027	2.7		.1063	4	21	57
DTX424007F	2.778	7/64	.1094	4	21	57
DTX424028	2.8		.1102	4	21	57
DTX424029	2.9		.1142	4	21	57
DTX424030	3.0		.1181	6	28	66
DTX424031	3.1		.1220	6	28	66
DTX424008F	3.175	1/8	.1250	6	28	66
DTX424032	3.2		.1260	6	28	66
DTX424033	3.3		.1299	6	28	66
DTX424034	3.4		.1339	6	28	66
DTX424035	3.5		.1378	6	28	66
DTX424009F	3.572	9/64	.1406	6	28	66
DTX424036	3.6		.1417	6	28	66
DTX424037	3.7		.1457	6	28	66
DTX424038	3.8		.1496	6	36	74
DTX424039	3.9		.1535	6	36	74
DTX424010F	3.969	5/32	.1563	6	36	74
DTX424040	4.0		.1575	6	36	74
DTX424041	4.1		.1614	6	36	74
DTX424042	4.2		.1654	6	36	74
DTX424043	4.3		.1693	6	36	74
DTX424011F	4.366	11/64	.1719	6	36	74
DTX424044	4.4		.1732	6	36	74
DTX424045	4.5		.1772	6	36	74
DTX424046	4.6		.1811	6	36	74
DTX424047	4.7		.1850	6	36	74
DTX424012F	4.763	3/16	.1875	6	36	74
DTX424048	4.8		.1890	6	44	82
DTX424049	4.9		.1929	6	44	82
DTX424050	5.0		.1969	6	44	82
DTX424051	5.1		.2008	6	44	82
DTX424013F	5.159	13/64	.2031	6	44	82

▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended		◎	◎	◎	○	◎	◎	○	○	◎	○	○	○		◎	○	◎	○	◎	○

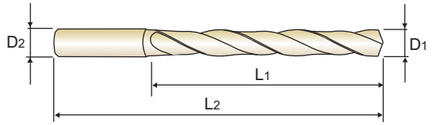
ISO	N										S							H		
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel		Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended																		○			

RCH-COATED SOLID CARBIDE

DREAM DRILL X without COOLANT HOLES

NEW SERIES **DTX424**

- ▶ Upgraded Coating for Higher Tool Life in Various Materials
- ▶ Soft Cutting Action and Reduced Axial Forces; Easy to Recondition
- ▶ Good Self-Centering even at Low Feed Rates and Unstable Situations
- ▶ Excellent Chip Breaking and Chip Evacuation



DIN 6537 | CARBIDE | h6 | m7 | 140° | RCH Coating

p.54

LONG 5×D

Unit : mm

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Fractional	Decimal			
RCH-Coating	D1			D2	L1	L2
DTX424052	5.2		.2047	6	44	82
DTX424053	5.3		.2087	6	44	82
DTX424054	5.4		.2126	6	44	82
DTX424055	5.5		.2165	6	44	82
DTX424014F	5.556	7/32	.2188	6	44	82
DTX424056	5.6		.2205	6	44	82
DTX424057	5.7		.2244	6	44	82
DTX424058	5.8		.2283	6	44	82
DTX424059	5.9		.2323	6	44	82
DTX424015F	5.953	15/64	.2344	6	44	82
DTX424060	6.0		.2362	6	44	82
DTX424061	6.1		.2402	8	53	91
DTX424062	6.2		.2441	8	53	91
DTX424063	6.3		.2480	8	53	91
DTX424016F	6.350	1/4	.2500	8	53	91
DTX424064	6.4		.2520	8	53	91
DTX424065	6.5		.2559	8	53	91
DTX424006L	6.528	F	.2570	8	53	91
DTX424066	6.6		.2598	8	53	91
DTX424067	6.7		.2638	8	53	91
DTX424017F	6.747	17/64	.2656	8	53	91
DTX424068	6.8		.2677	8	53	91
DTX424069	6.9		.2717	8	53	91
DTX424009L	6.909	I	.2720	8	53	91
DTX424070	7.0		.2756	8	53	91
DTX424071	7.1		.2795	8	53	91

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Fractional	Decimal			
RCH-Coating	D1			D2	L1	L2
DTX424018F	7.144	9/32	.2812	8	53	91
DTX424072	7.2		.2835	8	53	91
DTX424073	7.3		.2874	8	53	91
DTX424074	7.4		.2913	8	53	91
DTX424075	7.5		.2953	8	53	91
DTX424019F	7.541	19/64	.2969	8	53	91
DTX424076	7.6		.2992	8	53	91
DTX424077	7.7		.3031	8	53	91
DTX424078	7.8		.3071	8	53	91
DTX424079	7.9		.3110	8	53	91
DTX424020F	7.938	5/16	.3125	8	53	91
DTX424080	8.0		.3150	8	53	91
DTX424081	8.1		.3189	10	61	103
DTX424082	8.2		.3228	10	61	103
DTX424083	8.3		.3268	10	61	103
DTX424021F	8.334	21/64	.3281	10	61	103
DTX424084	8.4		.3307	10	61	103
DTX424017L	8.433	Q	.3320	10	61	103
DTX424085	8.5		.3346	10	61	103
DTX424086	8.6		.3386	10	61	103
DTX424087	8.7		.3425	10	61	103
DTX424022F	8.731	11/32	.3438	10	61	103
DTX424088	8.8		.3465	10	61	103
DTX424089	8.9		.3504	10	61	103
DTX424090	9.0		.3543	10	61	103
DTX424091	9.1		.3583	10	61	103

▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended		◎	◎	◎	○	◎	◎	○	○	◎	○	○	○		◎	○	◎	○	◎	○

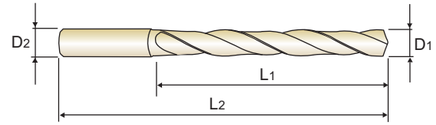
ISO	N										S							H		
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel	Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended																		○			

RCH-COATED SOLID CARBIDE

DREAM DRILL X without COOLANT HOLES

NEW SERIES DTX424

- ▶ Upgraded Coating for Higher Tool Life in Various Materials
- ▶ Soft Cutting Action and Reduced Axial Forces; Easy to Recondition
- ▶ Good Self-Centering even at Low Feed Rates and Unstable Situations
- ▶ Excellent Chip Breaking and Chip Evacuation



DIN 6537 | CARBIDE | h6 | m7 | 140° | RCH Coating

p.54

LONG 5×D

Unit : mm

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Fractional	Decimal			
RCH-Coating	D1			D2	L1	L2
DTX424023F	9.128	23/64	.3594	10	61	103
DTX424092	9.2		.3622	10	61	103
DTX424093	9.3		.3661	10	61	103
DTX424021L	9.347	U	.3680	10	61	103
DTX424094	9.4		.3701	10	61	103
DTX424095	9.5		.3740	10	61	103
DTX424024F	9.525	3/8	.3750	10	61	103
DTX424096	9.6		.3780	10	61	103
DTX424097	9.7		.3819	10	61	103
DTX424098	9.8		.3858	10	61	103
DTX424099	9.9		.3898	10	61	103
DTX424025F	9.922	25/64	.3906	10	61	103
DTX424100	10.0		.3937	10	61	103
DTX424101	10.1		.3976	12	71	118
DTX424102	10.2		.4016	12	71	118
DTX424103	10.3		.4055	12	71	118
DTX424026F	10.319	13/32	.4062	12	71	118
DTX424104	10.4		.4094	12	71	118
DTX424105	10.5		.4134	12	71	118
DTX424106	10.6		.4173	12	71	118
DTX424107	10.7		.4213	12	71	118
DTX424027F	10.716	27/64	.4219	12	71	118
DTX424108	10.8		.4252	12	71	118
DTX424109	10.9		.4291	12	71	118
DTX424110	11.0		.4331	12	71	118
DTX424111	11.1		.4370	12	71	118

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Fractional	Decimal			
RCH-Coating	D1			D2	L1	L2
DTX424028F	11.113	7/16	.4375	12	71	118
DTX424112	11.2		.4409	12	71	118
DTX424113	11.3		.4449	12	71	118
DTX424114	11.4		.4488	12	71	118
DTX424115	11.5		.4528	12	71	118
DTX424029F	11.509	29/64	.4531	12	71	118
DTX424116	11.6		.4567	12	71	118
DTX424117	11.7		.4606	12	71	118
DTX424118	11.8		.4646	12	71	118
DTX424119	11.9		.4685	12	71	118
DTX424030F	11.906	15/32	.4688	12	71	118
DTX424120	12.0		.4724	12	71	118
DTX424121	12.1		.4764	14	77	124
DTX424122	12.2		.4803	14	77	124
DTX424123	12.3		.4843	14	77	124
DTX424031F	12.303	31/64	.4844	14	77	124
DTX424124	12.4		.4882	14	77	124
DTX424125	12.5		.4921	14	77	124
DTX424126	12.6		.4961	14	77	124
DTX424032F	12.7	1/2	.5000	14	77	124
DTX424128	12.8		.5039	14	77	124
DTX424129	12.9		.5079	14	77	124
DTX424130	13.0		.5118	14	77	124
DTX424131	13.1		.5157	14	77	124
DTX424132	13.2		.5197	14	77	124
DTX424133	13.3		.5236	14	77	124

▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended		◎	◎	◎	○	◎	◎	○	○	◎	○	○	○		◎	○	◎	○	◎	○

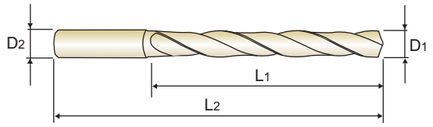
ISO	N										S							H		
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel	Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended																		○			

RCH-COATED SOLID CARBIDE

DREAM DRILL X without COOLANT HOLES

NEW SERIES **DTX424**

- ▶ Upgraded Coating for Higher Tool Life in Various Materials
- ▶ Soft Cutting Action and Reduced Axial Forces; Easy to Recondition
- ▶ Good Self-Centering even at Low Feed Rates and Unstable Situations
- ▶ Excellent Chip Breaking and Chip Evacuation



DIN 6537 | CARBIDE | h6 | m7 | 140° | RCH Coating | p.54

LONG 5×D

Unit : mm

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Fractional	Decimal			
RCH-Coating	D1			D2	L1	L2
DTX424134	13.4		.5276	14	77	124
DTX424135	13.5		.5315	14	77	124
DTX424136	13.6		.5354	14	77	124
DTX424137	13.7		.5394	14	77	124
DTX424138	13.8		.5433	14	77	124
DTX424139	13.9		.5472	14	77	124
DTX424140	14.0		.5512	14	77	124
DTX424141	14.1		.5551	16	83	133
DTX424142	14.2		.5591	16	83	133
DTX424036F	14.288	9/16	.5625	16	83	133
DTX424143	14.3		.5630	16	83	133
DTX424144	14.4		.5669	16	83	133
DTX424145	14.5		.5708	16	83	133
DTX424146	14.6		.5748	16	83	133
DTX424147	14.7		.5787	16	83	133
DTX424148	14.8		.5827	16	83	133
DTX424149	14.9		.5866	16	83	133
DTX424150	15.0		.5905	16	83	133
DTX424151	15.1		.5945	16	83	133
DTX424152	15.2		.5984	16	83	133
DTX424153	15.3		.6024	16	83	133
DTX424154	15.4		.6063	16	83	133
DTX424155	15.5		.6102	16	83	133
DTX424156	15.6		.6142	16	83	133
DTX424157	15.7		.6181	16	83	133
DTX424158	15.8		.6220	16	83	133

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Fractional	Decimal			
RCH-Coating	D1			D2	L1	L2
DTX424040F	15.875	5/8	.6250	16	83	133
DTX424159	15.9		.6260	16	83	133
DTX424160	16.0		.6299	16	83	133
DTX424161	16.1		.6339	18	93	143
DTX424162	16.2		.6378	18	93	143
DTX424163	16.3		.6417	18	93	143
DTX424164	16.4		.6457	18	93	143
DTX424165	16.5		.6495	18	93	143
DTX424166	16.6		.6535	18	93	143
DTX424167	16.7		.6575	18	93	143
DTX424168	16.8		.6614	18	93	143
DTX424169	16.9		.6654	18	93	143
DTX424170	17.0		.6692	18	93	143
DTX424171	17.1		.6732	18	93	143
DTX424172	17.2		.6772	18	93	143
DTX424173	17.3		.6811	18	93	143
DTX424174	17.4		.6850	18	93	143
DTX424175	17.5		.6889	18	93	143
DTX424176	17.6		.6929	18	93	143
DTX424177	17.7		.6968	18	93	143
DTX424178	17.8		.7008	18	93	143
DTX424179	17.9		.7047	18	93	143
DTX424180	18.0		.7087	18	93	143
DTX424181	18.1		.7126	20	101	153
DTX424182	18.2		.7165	20	101	153
DTX424183	18.3		.7205	20	101	153

▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended		◎	◎	◎	○	◎	◎	○	○	◎	○	○	○		◎	○	◎	○	◎	○

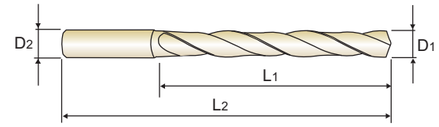
ISO	N										S							H			
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel		Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended																		○			

RCH-COATED SOLID CARBIDE

DREAM DRILL X without COOLANT HOLES

NEW SERIES DTX424

- ▶ Upgraded Coating for Higher Tool Life in Various Materials
- ▶ Soft Cutting Action and Reduced Axial Forces; Easy to Recondition
- ▶ Good Self-Centering even at Low Feed Rates and Unstable Situations
- ▶ Excellent Chip Breaking and Chip Evacuation



DIN 6537 | CARBIDE | h6 | m7 | 140° | RCH Coating | p.54

LONG 5×D

Unit : mm

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Fractional	Decimal			
RCH-Coating	D1			D2	L1	L2
DTX424184	18.4		.7244	20	101	153
DTX424185	18.5		.7283	20	101	153
DTX424186	18.6		.7323	20	101	153
DTX424187	18.7		.7362	20	101	153
DTX424188	18.8		.7402	20	101	153
DTX424189	18.9		.7441	20	101	153
DTX424190	19.0		.7480	20	101	153
DTX424048F	19.005	3/4	.7500	20	101	153
DTX424191	19.1		.7520	20	101	153

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Fractional	Decimal			
RCH-Coating	D1			D2	L1	L2
DTX424192	19.2		.7559	20	101	153
DTX424193	19.3		.7598	20	101	153
DTX424194	19.4		.7638	20	101	153
DTX424195	19.5		.7676	20	101	153
DTX424196	19.6		.7717	20	101	153
DTX424197	19.7		.7756	20	101	153
DTX424198	19.8		.7795	20	101	153
DTX424199	19.9		.7835	20	101	153
DTX424200	20.0		.7874	20	101	153

▶ Other shank types are available on your request.

◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended		◎	◎	◎	○	◎	◎	○	○	◎	○	○	○		◎	○	◎	○	◎	○

ISO	N										S							H			
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel		Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended																		○			

DTX416, DTX418, DTX711
DTX712, DTX406, DTX408, DTX421 SERIES with COOLANT HOLES

SFM = ft/min.
RPM = rev./min.
FEED = inch/rev.

ISO	VDI 3323	Material Description	SFM	Drill Diameter			SFM	Drill Diameter							
			1.0 ~ 2.9	METRIC	1.0	2.0	3.0 ~ 20.0	METRIC	3.0	-	4.0	-	5.0	6.0	-
			-	FRACTIONAL	-	-	1/8 ~ 3/4	FRACTIONAL	-	1/8	-	3/16	-	-	1/4
			.0394 ~ .0787	DECIMAL	.0394	.0787	.1181 ~ .7874	DECIMAL	.1181	.1250	.1575	.1875	.1969	.2362	.2500
P	2	Non-alloy steel	263	RPM	25460	12730	362	RPM	11670		8750	7000			5840
				FEED	.0012 - .0020	.0020 - .0028		FEED	.0024 - .0047		.0031 - .0055	.0055 - .0079			.0063 - .0087
	3		263	RPM	25460	12730	362	RPM	11670		8750	7000			5840
				FEED	.0012 - .0020	.0020 - .0028		FEED	.0024 - .0047		.0031 - .0055	.0055 - .0079			.0063 - .0087
	4		263	RPM	25460	12730	362	RPM	11670		8750	7000			5840
				FEED	.0012 - .0020	.0020 - .0028		FEED	.0016 - .0039		.0028 - .0051	.0039 - .0063			.0047 - .0071
	5		230	RPM	22280	11140	296	RPM	9550		7160	5730			4770
				FEED	.0012 - .0020	.0020 - .0028		FEED	.0016 - .0039		.0028 - .0051	.0039 - .0063			.0047 - .0071
	6	Low alloy steel	263	RPM	25460	12730	362	RPM	11670		8750	7000			5840
				FEED	.0012 - .0020	.0020 - .0028		FEED	.0024 - .0047		.0031 - .0055	.0055 - .0079			.0063 - .0087
	7		230	RPM	22280	11140	296	RPM	9550		7160	5730			4770
				FEED	.0012 - .0020	.0020 - .0028		FEED	.0024 - .0047		.0031 - .0055	.0039 - .0079			.0047 - .0094
	8		230	RPM	22280	11140	296	RPM	9550		7160	5730			4770
				FEED	.0008 - .0016	.0012 - .0020		FEED	.0016 - .0039		.0028 - .0051	.0039 - .0063			.0047 - .0071
	9		132	RPM	12730	6370	165	RPM	5310		3980	3180			2650
				FEED	.0008 - .0016	.0012 - .0020		FEED	.0012 - .0031		.0020 - .0043	.0031 - .0055			.0039 - .0063
	10	High alloyed steel, and tool steel	198	RPM	19100	9550	263	RPM	8490		6370	5090			4240
				FEED	.0012 - .0020	.0020 - .0028		FEED	.0016 - .0039		.0028 - .0051	.0039 - .0063			.0047 - .0071
	11		132	RPM	12730	6370	148	RPM	4770		3580	2860			2390
				FEED	.0008 - .0016	.0012 - .0020		FEED	.0012 - .0031		.0020 - .0043	.0031 - .0055			.0039 - .0063
M	12	Stainless steel	198	RPM	19100	9550	263	RPM	8490		6370	5090			4240
				FEED	.0012 - .0020	.0020 - .0028		FEED	.0024 - .0047		.0031 - .0055	.0055 - .0079			.0063 - .0087
	13		148	RPM	14320	7160	181	RPM	5840		4380	3500			2920
				FEED	.0008 - .0016	.0012 - .0020		FEED	.0016 - .0039		.0028 - .0051	.0039 - .0063			.0047 - .0071
K	15	Grey cast iron	263	RPM	25460	12730	362	RPM	11670		8750	7000			5840
				FEED	.0016 - .0024	.0016 - .0024		FEED	.0031 - .0055		.0047 - .0071	.0059 - .0087			.0079 - .0102
	16		247	RPM	23870	11940	313	RPM	10080		7560	6050			5040
				FEED	.0016 - .0024	.0016 - .0024		FEED	.0024 - .0047		.0031 - .0055	.0055 - .0079			.0063 - .0087
	17	Nodular cast iron	296	RPM	28650	14320	395	RPM	12730		9550	7640			6370
				FEED	.0016 - .0024	.0016 - .0024		FEED	.0031 - .0055		.0047 - .0071	.0059 - .0087			.0079 - .0102
	18		198	RPM	19100	9550	263	RPM	8490		6370	5090			4240
				FEED	.0016 - .0024	.0016 - .0024		FEED	.0024 - .0047		.0031 - .0055	.0055 - .0079			.0063 - .0087
	19	Malleable cast iron	230	RPM	22280	11140	296	RPM	9550		7160	5730			4770
				FEED	.0016 - .0024	.0016 - .0024		FEED	.0031 - .0055		.0047 - .0071	.0059 - .0087			.0079 - .0102
	20		198	RPM	19100	9550	263	RPM	8490		6370	5090			4240
				FEED	.0012 - .0020	.0020 - .0028		FEED	.0024 - .0047		.0031 - .0055	.0055 - .0079			.0063 - .0087
H	38	Hardened steel	82	RPM	7960	3980	98	RPM	3180		2390	1910			1590
				FEED	.0004- .0008	.0004- .0012		FEED	.0004- .0012		.0004- .0016	.0008- .0020			.0012 - .0024

▶ NEXT PAGE

▶ Recommend to reduce the feed rate as following
Feed 100% : DTX416/DTX711(3xD), DTX406(3xD), DTX418/DTX712(5xD), DTX408(5xD)
Feed 75% : DTX421(8xD)

DTX416, DTX418, DTX711
DTX712, DTX406, DTX408, DTX421 SERIES with COOLANT HOLES

SFM = ft/min.
RPM = rev./min.
FEED = inch/rev.

ISO	VDI 3323	SFM	Drill Diameter												
		3.0 ~ 20.0	METRIC	-	8.0	-	10.0	12.0	-	14.0	-	-	16.0	18.0	-	20.0
		1/8 ~ 3/4	FRACTIONAL	5/16	-	3/8	-	-	1/2	-	9/16	5/8	-	-	3/4	-
		.1181 ~ .7874	DECIMAL	.3125	.3150	.3750	.3937	.4724	.5000	.5512	.5625	.6250	.6299	.7087	.7500	.7874
P	2	362	RPM	4380		3500		2920	2770		2500		2190	1950	1840	1750
			FEED	.0071 - .0094		.0075 - .0106		.0083 - .0114	.0083 - .0114		.0091 - .0122		.0098 - .0130	.0110 - .0150	.0110 - .0150	.0118 - .0157
	3	362	RPM	4380		3500		2920	2770		2500		2190	1950	1840	1750
			FEED	.0071 - .0094		.0075 - .0106		.0083 - .0114	.0083 - .0114		.0091 - .0122		.0098 - .0130	.0110 - .0150	.0110 - .0150	.0118 - .0157
	4	362	RPM	4380		3500		2920	2770		2500		2190	1950	1840	1750
			FEED	.0055 - .0079		.0059 - .0091		.0067 - .0098	.0067 - .0098		.0071 - .0102		.0075 - .0106	.0079 - .0118	.0079 - .0118	.0087 - .0126
	5	296	RPM	3580		2860		2390	2260		2050		1790	1590	1510	1430
			FEED	.0055 - .0079		.0059 - .0091		.0067 - .0098	.0067 - .0098		.0071 - .0102		.0075 - .0106	.0079 - .0118	.0079 - .0118	.0087 - .0126
	6	362	RPM	4380		3500		2920	2770		2500		2190	1950	1840	1750
			FEED	.0071 - .0094		.0075 - .0106		.0083 - .0114	.0083 - .0114		.0091 - .0122		.0098 - .0130	.0110 - .0150	.0110 - .0150	.0118 - .0157
	7	296	RPM	3580		2860		2390	2260		2050		1790	1590	1510	1430
			FEED	.0063 - .0110		.0075 - .0106		.0083 - .0114	.0083 - .0114		.0091 - .0122		.0098 - .0130	.0110 - .0150	.0110 - .0150	.0118 - .0157
	8	296	RPM	3580		2860		2390	2260		2050		1790	1590	1510	1430
			FEED	.0055 - .0079		.0059 - .0091		.0067 - .0098	.0067 - .0098		.0071 - .0102		.0075 - .0106	.0079 - .0118	.0079 - .0118	.0087 - .0126
	9	165	RPM	1990		1590		1330	1260		1140		990	880	840	800
			FEED	.0047 - .0071		.0051 - .0075		.0055 - .0079	.0055 - .0079		.0059 - .0083		.0063 - .0087	.0067 - .0098	.0063 - .0102	.0071 - .0110
	10	263	RPM	3180		2550		2120	2010		1820		1590	1410	1340	1270
			FEED	.0055 - .0079		.0059 - .0091		.0067 - .0098	.0067 - .0098		.0071 - .0102		.0075 - .0106	.0079 - .0118	.0079 - .0118	.0087 - .0126
	11	148	RPM	1790		1430		1190	1130		1020		900	800	750	720
			FEED	.0047 - .0071		.0051 - .0075		.0055 - .0079	.0055 - .0079		.0059 - .0083		.0063 - .0087	.0067 - .0098	.0063 - .0102	.0071 - .0110
M	12	263	RPM	3180		2550		2120	2010		1820		1590	1410	1340	1270
			FEED	.0071 - .0094		.0075 - .0106		.0083 - .0114	.0083 - .0114		.0091 - .0122		.0098 - .0130	.0110 - .0150	.0110 - .0150	.0118 - .0157
	13	181	RPM	2190		1750		1460	1380		1250		1090	970	920	880
			FEED	.0055 - .0079		.0059 - .0091		.0067 - .0098	.0067 - .0098		.0071 - .0102		.0075 - .0106	.0079 - .0118	.0079 - .0118	.0087 - .0126
K	15	362	RPM	4380		3500		2920	2770		2500		2190	1950	1840	1750
			FEED	.0087 - .0110		.0098 - .0130		.0106 - .0138	.0106 - .0138		.0114 - .0146		.0122 - .0154	.0126 - .0165	.0126 - .0165	.0134 - .0173
	16	313	RPM	3780		3020		2520	2390		2160		1890	1680	1590	1510
			FEED	.0071 - .0094		.0075 - .0106		.0083 - .0114	.0083 - .0114		.0091 - .0122		.0098 - .0130	.0110 - .0150	.0110 - .0150	.0118 - .0157
	17	395	RPM	4770		3820		3180	3020		2730		2390	2120	2010	1910
			FEED	.0087 - .0110		.0098 - .0130		.0106 - .0138	.0106 - .0138		.0114 - .0146		.0122 - .0154	.0126 - .0165	.0126 - .0165	.0134 - .0173
	18	263	RPM	3180		2550		2120	2010		1820		1590	1410	1340	1270
			FEED	.0071 - .0094		.0075 - .0106		.0083 - .0114	.0083 - .0114		.0091 - .0122		.0098 - .0130	.0110 - .0150	.0110 - .0150	.0118 - .0157
	19	296	RPM	3580		2860		2390	2260		2050		1790	1590	1510	1430
			FEED	.0087 - .0110		.0098 - .0130		.0106 - .0138	.0106 - .0138		.0114 - .0146		.0122 - .0154	.0126 - .0165	.0126 - .0165	.0134 - .0173
	20	263	RPM	3180		2550		2120	2010		1820		1590	1410	1340	1270
			FEED	.0071 - .0094		.0075 - .0106		.0083 - .0114	.0083 - .0114		.0091 - .0122		.0098 - .0130	.0110 - .0150	.0110 - .0150	.0118 - .0157
H	38	98	RPM	1190		950		800	750		680		600	530	500	480
			FEED	.0012 - .0024		.0016 - .0028		.0016 - .0031	.0016 - .0031		.0020 - .0035		.0020 - .0035	.0020 - .0039	.0020 - .0039	.0020 - .0039

▶ Recommend to reduce the feed rate as following
Feed 100% : DTX416/DTX711(3xD), DTX406(3xD), DTX418/DTX712(5xD), DTX408(5xD)
Feed 75% : DTX421(8xD)

DTX414, DTX722, DTX404, DTX423, DTX424 SERIES

without COOLANT HOLES

SFM = ft/min.
RPM = rev./min.
FEED = inch/rev.

ISO	VDI 3323	Material Description	SFM	Drill Diameter			SFM	Drill Diameter							
			1.0 ~ 2.9	METRIC	1.0	2.0	3.0 ~ 20.0	METRIC	3.0	-	4.0	-	5.0	6.0	-
			-	FRACTIONAL	-	-	1/8 ~ 3/4	FRACTIONAL	-	1/8	-	3/16	-	-	1/4
			.0394 ~ .0787	DECIMAL	.0394	.0787	.1181 ~ .7874	DECIMAL	.1181	.1250	.1575	.1875	.1969	.2362	.2500
P	2	Non-alloy steel	230	RPM	22280	11140	329	RPM	10610		7960	6370		5310	
				FEED	.0012 - .0020	.0020 - .0028		FEED	.0024 - .0047		.0031 - .0055	.0055 - .0079		.0063 - .0087	
	3		230	RPM	22280	11140	329	RPM	10610		7960	6370		5310	
				FEED	.0012 - .0020	.0020 - .0028		FEED	.0024 - .0047		.0031 - .0055	.0055 - .0079		.0063 - .0087	
	4		230	RPM	22280	11140	329	RPM	10610		7960	6370		5310	
				FEED	.0012 - .0020	.0020 - .0028		FEED	.0016 - .0039		.0028 - .0051	.0039 - .0063		.0047 - .0071	
	5		197	RPM	19100	9550	263	RPM	8490		6370	5090		4240	
				FEED	.0012 - .0020	.0020 - .0028		FEED	.0016 - .0039		.0028 - .0051	.0039 - .0063		.0047 - .0071	
	6	Low alloy steel	230	RPM	22280	11140	329	RPM	10610		7960	6370		5310	
				FEED	.0012 - .0020	.0020 - .0028		FEED	.0024 - .0047		.0031 - .0055	.0055 - .0079		.0063 - .0087	
	7		197	RPM	19100	9550	263	RPM	8490		6370	5090		4240	
				FEED	.0012 - .0020	.0020 - .0028		FEED	.0024 - .0047		.0031 - .0055	.0039 - .0079		.0047 - .0094	
	8		197	RPM	19100	9550	263	RPM	8490		6370	5090		4240	
				FEED	.0008 - .0016	.0012 - .0020		FEED	.0016 - .0039		.0028 - .0051	.0039 - .0063		.0047 - .0071	
	9		99	RPM	9550	4770	132	RPM	4240		3180	2550		2120	
				FEED	.0008 - .0016	.0012 - .0020		FEED	.0012 - .0031		.0020 - .0043	.0031 - .0055		.0039 - .0063	
	10	High alloyed steel, and tool steel	165	RPM	15920	7960	230	RPM	7430		5570	4460		3710	
				FEED	.0012 - .0020	.0020 - .0028		FEED	.0016 - .0039		.0028 - .0051	.0039 - .0063		.0047 - .0071	
	11		99	RPM	9550	4770	132	RPM	4240		3180	2550		2120	
				FEED	.0008 - .0016	.0012 - .0020		FEED	.0012 - .0031		.002 - .0043	.0031 - .0055		.0039 - .0063	
M	12	Stainless steel	165	RPM	15920	7960	230	RPM	7430		5570	4460		3710	
				FEED	.0012 - .0020	.0020 - .0028		FEED	.0024 - .0047		.0031 - .0055	.0055 - .0079		.0063 - .0087	
	13		115	RPM	11140	5570	148	RPM	4770		3580	2860		2390	
				FEED	.0008 - .0016	.0012 - .0020		FEED	.0016 - .0039		.0028 - .0051	.0039 - .0063		.0047 - .0071	
K	15	Grey cast iron	230	RPM	22280	11140	329	RPM	10610		7960	6370		5310	
				FEED	.0016 - .0024	.0016 - .0024		FEED	.0031 - .0055		.0047 - .0071	.0059 -.0087		.0079 -.0102	
	16		214	RPM	20690	10350	263	RPM	8490		6370	5090		4240	
				FEED	.0016 - .0024	.0016 - .0024		FEED	.0024 - .0047		.0031 - .0055	.0055 - .0079		.0063 - .0087	
	17	Nodular cast iron	230	RPM	22280	11140	329	RPM	10610		7960	6370		5310	
				FEED	.0016 - .0024	.0016 - .0024		FEED	.0031 - .0055		.0047 - .0071	.0059 -.0087		.0079 -.0102	
	18		165	RPM	15920	7960	230	RPM	7430		5570	4460		3710	
				FEED	.0016 - .0024	.0016 - .0024		FEED	.0024 - .0047		.0031 - .0055	.0055 - .0079		.0063 - .0087	
	19	Malleable cast iron	197	RPM	19100	9550	263	RPM	8490		6370	5090		4240	
				FEED	.0016 - .0024	.0016 - .0024		FEED	.0031 - .0055		.0047 - .0071	.0059 -.0087		.0079 -.0102	
	20		165	RPM	15920	7960	230	RPM	7430		5570	4460		3710	
				FEED	.0012 - .0020	.0020 - .0028		FEED	.0024 - .0047		.0031 - .0055	.0055 - .0079		.0063 - .0087	
H	38	Hardened steel	65	RPM	6370	3180	82	RPM	2650		1990	1590		1330	
				FEED	.0004 - .0008	.0004 - .0012		FEED	.0004 - .0012		.0004 - .0016	.0008 - .0020		.0012 - .0024	

▶ Recommend to reduce the feed rate as following

▶ NEXT PAGE

DTX414, DTX722, DTX404, DTX423, DTX424 SERIES

without COOLANT HOLES

SFM = ft/min.
RPM = rev./min.
FEED = inch/rev.

ISO	VDI 3323	SFM	Drill Diameter												
		3.0 ~ 20.0	METRIC	-	8.0	-	10.0	12.0	-	14.0	-	-	16.0	18.0	-	20.0
		1/8 ~ 3/4	FRACTIONAL	5/16	-	3/8	-	-	1/2	-	9/16	5/8	-	-	3/4	-
		.1181 ~ .7874	DECIMAL	.3125	.3150	.3750	.3937	.4724	.5000	.5512	.5625	.6250	.6299	.7087	.7500	.7874
P	2	329	RPM	3980		3180		2650	2510		2270		1990	1770	1680	1590
			FEED	.0071 - .0094		.0075 - .0106		.0083 - .0114	.0083 - .0114		.0091 - .0122		.0098 - .0130	.0110 - .0150	.0110 - .0150	.0118 - .0157
	3	329	RPM	3980		3180		2650	2510		2270		1990	1770	1680	1590
			FEED	.0071 - .0094		.0075 - .0106		.0083 - .0114	.0083 - .0114		.0091 - .0122		.0098 - .0130	.0110 - .0150	.0110 - .0150	.0118 - .0157
	4	329	RPM	3980		3180		2650	2510		2270		1990	1770	1680	1590
			FEED	.0055 - .0079		.0059 - .0091		.0067 - .0098	.0067 - .0098		.0071 - .0102		.0075 - .0106	.0079 - .0118	.0079 - .0118	.0087 - .0126
	5	263	RPM	3180		2550		2120	2010		1820		1590	1410	1340	1270
			FEED	.0055 - .0079		.0059 - .0091		.0067 - .0098	.0067 - .0098		.0071 - .0102		.0075 - .0106	.0079 - .0118	.0079 - .0118	.0087 - .0126
	6	329	RPM	3980		3180		2650	2510		2270		1990	1770	1680	1590
			FEED	.0071 - .0094		.0075 - .0106		.0083 - .0114	.0083 - .0114		.0091 - .0122		.0098 - .0130	.0110 - .0150	.0110 - .0150	.0118 - .0157
	7	263	RPM	3180		2550		2120	2010		1820		1590	1410	1340	1270
			FEED	.0063 - .011		.0075 - .0106		.0083 - .0114	.0083 - .0114		.0091 - .0122		.0098 - .0130	.0110 - .0150	.0110 - .0150	.0118 - .0157
	8	263	RPM	3180		2550		2120	2010		1820		1590	1410	1340	1270
			FEED	.0055 - .0079		.0059 - .0091		.0067 - .0098	.0067 - .0098		.0071 - .0102		.0075 - .0106	.0079 - .0118	.0079 - .0118	.0087 - .0126
	9	132	RPM	1590		1270		1060	1010		910		800	710	670	640
			FEED	.0047 - .0071		.0051 - .0075		.0055 - .0079	.0055 - .0079		.0059 - .0083		.0063 - .0087	.0067 - .0098	.0067 - .0098	.0071 - .0110
	10	230	RPM	2790		2230		1860	1760		1590		1390	1240	1170	1110
			FEED	.0055 - .0079		.0059 - .0091		.0067 - .0098	.0067 - .0098		.0071 - .0102		.0075 - .0106	.0079 - .0118	.0079 - .0118	.0087 - .0126
	11	132	RPM	1590		1270		1060	1010		910		800	710	670	640
			FEED	.0047 - .0071		.0051 - .0075		.0055 - .0079	.0055 - .0079		.0059 - .0083		.0063 - .0087	.0067 - .0098	.0067 - .0098	.0071 - .0110
M	12	230	RPM	2790		2230		1860	1760		1590		1390	1240	1170	1110
			FEED	.0071 - .0094		.0075 - .0106		.0083 - .0114	.0083 - .0114		.0091 - .0122		.0098 - .0130	.0110 - .0150	.0110 - .0150	.0118 - .0157
	13	148	RPM	1790		1430		1190	1130		1020		900	800	750	720
			FEED	.0055 - .0079		.0059 - .0091		.0067 - .0098	.0067 - .0098		.0071 - .0102		.0075 - .0106	.0079 - .0118	.0079 - .0118	.0087 - .0126
K	15	329	RPM	3980		3180		2650	2510		2270		1990	1770	1680	1590
			FEED	.0087 - .0110		.0098 - .0130		.0106 - .0138	.0106 - .0138		.0114 - .0146		.0122 - .0154	.0126 - .0165	.0126 - .0165	.0134 - .0173
	16	263	RPM	3180		2550		2120	2010		1820		1590	1410	1340	1270
			FEED	.0071 - .0094		.0075 - .0106		.0083 - .0114	.0083 - .0114		.0091 - .0122		.0098 - .0130	.0110 - .0150	.0110 - .0150	.0118 - .0157
	17	329	RPM	3980		3180		2650	2510		2270		1990	1770	1680	1590
			FEED	.0087 - .0110		.0098 - .0130		.0106 - .0138	.0106 - .0138		.0114 - .0146		.0122 -.0154	.0126 - .0165	.0126 - .0165	.0134 - .0173
	18	230	RPM	2790		2230		1860	1760		1590		1390	1240	1170	1110
			FEED	.0071 - .0094		.0075 - .0106		.0083 - .0114	.0083 - .0114		.0091 - .0122		.0098 - .0130	.0110 - .0150	.0110 - .0150	.0118 - .0157
	19	263	RPM	3180		2550		2120	2010		1820		1590	1410	1340	1270
			FEED	.0087 - .0110		.0098 - .0130		.0106 -.0138	.0106 - .0138		.0114 - .0146		.0122 - .0154	.0126 - .0165	.0126 - .0165	.0134 - .0173
	20	230	RPM	2790		2230		1860	1760		1590		1390	1240	1170	1110
			FEED	.0071 - .0094		.0075 - .0106		.0083 - .0114	.0083 - .0114		.0091 - .0122		.0098 - .0130	.0110 - .0150	.0110 - .0150	.0118 - .0157
H	38	82	RPM	990		800		660	620		570		500	440	420	400
			FEED	.0012 - .0024		.0016 - .0028		.0016 - .0031	.0016 - .0031		.0020 - .0035		.0020 - .0035	.0020 - .0039	.0020 - .0039	.0020 - .0039

▶ Recommend to reduce the feed rate as following

Global Cutting Tool Leader **YG-1**

DREAM DRILLS

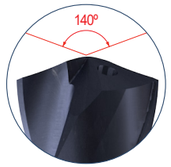
Leading Through Innovation

SOLID CARBIDE

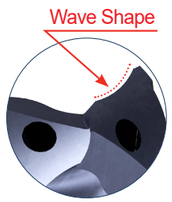
DREAM DRILLS - GENERAL

- For General Purpose (up to HRc50)

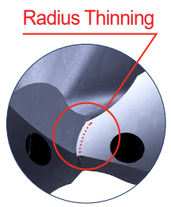
DREAM DRILLS GENERAL



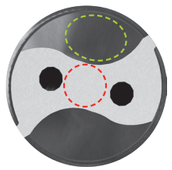
140 Degree Point Angle
for good centering and low thrust



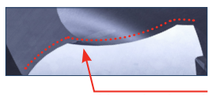
Wave Shape Cutting Edge
will allow low thrust, stable torque and long tool life



Radius Thinning (R-Thinning)
for Self Centering and Chip Breaking



Optimized flute shape
for strength of drill and smooth chip evacuation



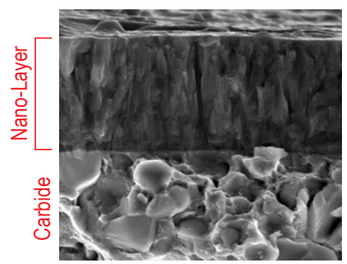
Negative land on the cutting edge
for Reliable Tool Life

Micro-grained carbide for wear resistance and longer tool life

TiAlN Coating (Upgraded **Ti**tanium **Al**uminum **N**itride : **Nano-Layer Coating**)

- Higher wear resistance and Lower friction
- Higher Cutting Speed and Feed
- Improved drill Hole Quality

Special surface treatment after coating
to reduce friction and better chip flow.



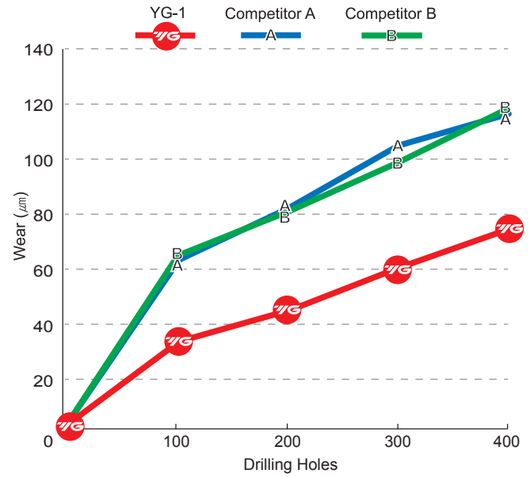
Phone: 800-765-8665 | Technical Support : 888-868-5988 | yg1usa.com

CASE STUDY

▶ SOLID CARBIDE DREAM DRILLS - GENERAL with Coolant Holes

Cutting Condition

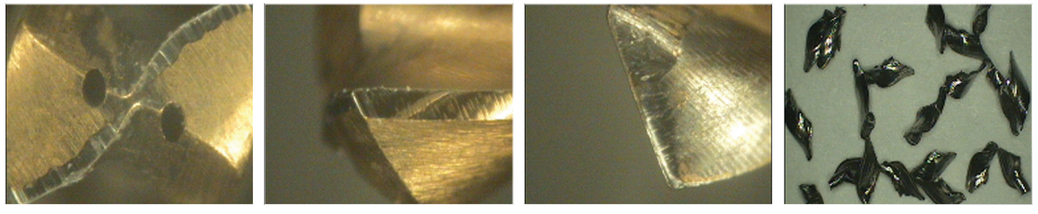
Tool	DH408015
Size	Ø1.5 × Ø3 × 15 × 55
Work Material	- AISI : H13 - DIN : X40GrMoV51 - JIS : SKD61 - WR : 1.2344 (HRc30)
RPM	14,856 rev./min.
Feed	.0019 inch/rev.
Drilling Depth	.29" (5xD)
Coolant	Wet Cut



Total Drilling 400 Holes

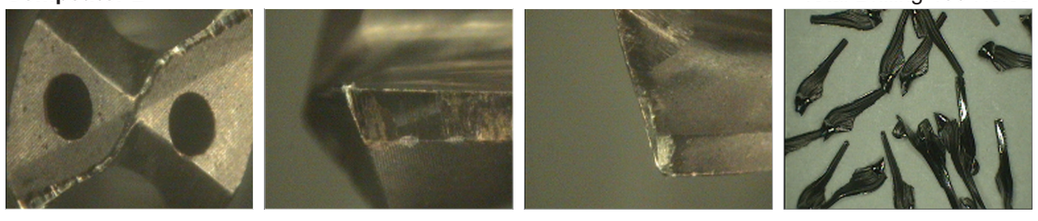
Competitor A

Total Drilling 400 Holes



Competitor B

Total Drilling 400 Holes



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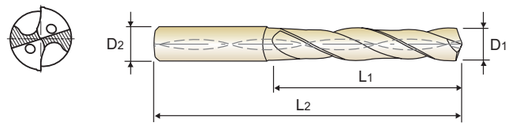
SERIES
DH416
DH711

TiAlN-COATED SOLID CARBIDE
DREAM DRILLS - GENERAL with COOLANT HOLES

- Drilling for Steel, Cast Steel, Cast Iron, Malleable Cast Iron
- Self centering and chip breaking by R-thinning
- Wave shape and negative land on the cutting edge for low thrust, stable torque and long tool life
- Optimized flute shape for strength of drilling and smooth chip evacuation



CARBIDE | h6 | 140° | 20 bar | TiAlN

p.88

SHORT
3×D

DH416 *1BTF

Unit : inch

EDP No.	Drill Diameter		Shank Diameter	Flute Length	Overall Length
	Fractional	Decimal			
TiAlN	D1		D2	L1	L2
DH711008	1/8	.1250	3/16	1.102	2.992
0081BTF	1/8	.1250	15/64	1.102	2.992
DH711011	11/64	.1719	3/16	1.417	3.386
0111BTF	11/64	.1719	15/64	1.417	3.386
DH711012	3/16	.1875	3/16	1.575	3.543
0121BTF	3/16	.1875	15/64	1.575	3.543
0131BTF	13/64	.2031	15/64	1.082	3.228
DH711013	13/64	.2031	1/4	1.082	3.228
0141BTF	7/32	.2188	15/64	1.181	3.228
DH711014	7/32	.2188	1/4	1.181	3.228
0151BTF	15/64	.2344	15/64	1.181	3.228
DH711015	15/64	.2344	1/4	1.181	3.228
DH711016	1/4	.2500	1/4	1.279	3.465
0161BTF	1/4	.2500	17/64	1.279	3.465
2061BTF	F	.2570	17/64	1.279	3.465
DH711206	F	.2570	5/16	1.279	3.465
0171BTF	17/64	.2656	17/64	1.378	3.465
DH711017	17/64	.2656	5/16	1.378	3.465
2091BTF	I	.2720	.2720	1.378	3.465
DH711209	I	.2720	5/16	1.378	3.465
0181BTF	9/32	.2812	5/16	1.476	3.701
0191BTF	19/64	.2969	5/16	1.476	3.701
0201BTF	5/16	.3125	5/16	1.575	3.701
0211BTF	21/64	.3281	11/32	1.673	3.937
DH711021	21/64	.3281	3/8	1.673	3.937
2171BTF	Q	.3320	11/32	1.673	3.937

EDP No.	Drill Diameter		Shank Diameter	Flute Length	Overall Length
	Fractional	Decimal			
TiAlN	D1		D2	L1	L2
DH711217	Q	.3320	3/8	1.673	3.937
0221BTF	11/32	.3438	11/32	1.772	3.937
DH711022	11/32	.3438	3/8	1.772	3.937
DH711023	23/64	.3594	3/8	1.870	4.174
0231BTF	23/64	.3594	25/64	1.870	4.174
DH711221	U	.3680	3/8	1.870	4.174
2211BTF	U	.3680	25/64	1.870	4.174
DH711024	3/8	.3750	3/8	1.969	4.174
0241BTF	3/8	.3750	25/64	1.969	4.174
0251BTF	25/64	.3906	25/64	1.969	4.174
DH711025	25/64	.3906	7/16	1.969	4.174
0261BTF	13/32	.4062	27/64	2.067	4.567
DH711026	13/32	.4062	7/16	2.067	4.567
0271BTF	27/64	.4219	27/64	2.165	4.567
DH711027	27/64	.4219	7/16	2.165	4.567
DH711028	7/16	.4375	7/16	2.264	4.803
0281BTF	7/16	.4375	15/32	2.264	4.803
0291BTF	29/64	.4531	15/32	2.264	4.803
DH711029	29/64	.4531	1/2	2.264	4.803
0301BTF	15/32	.4688	15/32	2.362	4.803
DH711030	15/32	.4688	1/2	2.362	4.803
0311BTF	31/64	.4844	1/2	2.461	5.039
0321BTF	1/2	.5000	1/2	2.559	5.039
0331BTF	33/64	.5156	35/64	2.657	5.276
DH711033	33/64	.5156	9/16	2.657	5.276
0341BTF	17/32	.5312	35/64	2.756	5.276

▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended		◎	◎	◎	○	◎	◎	○	○	◎	○	○	○		◎	○	◎	○	◎	○

ISO	N										S							H		
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel	Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended																		○			

SERIES
DH416
DH711

TiAlN-COATED SOLID CARBIDE
DREAM DRILLS - GENERAL with COOLANT HOLES

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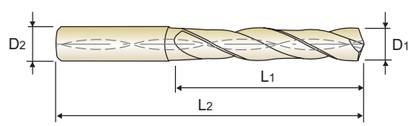

CARBIDE | h6 | 140° | 20 bar | TiAlN

p.88

SHORT
3×D

DH416 *1BTF

Unit : inch

EDP No.	Drill Diameter		Shank Diameter	Flute Length	Overall Length
	Fractional	Decimal			
TiAlN	D1		D2	L1	L2
DH711034	17/32	.5312	9/16	2.756	5.276
0351BTF	35/64	.5469	35/64	2.756	5.276
DH711035	35/64	.5469	9/16	2.756	5.276
DH711036	9/16	.5625	9/16	2.854	5.512
0361BTF	9/16	.5625	37/64	2.854	5.512

EDP No.	Drill Diameter		Shank Diameter	Flute Length	Overall Length
	Fractional	Decimal			
TiAlN	D1		D2	L1	L2
0371BTF	37/64	.5781	37/64	2.953	5.512
DH711037	37/64	.5781	5/8	2.953	5.512
0381BTF	19/32	.5937	5/8	3.051	5.709
0391BTF	39/64	.6094	5/8	3.051	5.709
0401BTF	5/8	.6250	5/8	3.150	5.709

▶ Other shank types are available on your request.

◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended		◎	◎	◎	○	◎	◎	○	○	◎	○	○	○		◎	○	○	○	◎	○

ISO	N										S							H		
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel	Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended																		○			

SERIES
DH418
DH712

TiAlN-COATED SOLID CARBIDE

DREAM DRILLS - GENERAL with COOLANT HOLES

- Drilling for Steel, Cast Steel, Cast Iron, Malleable Cast Iron
- Self centering and chip breaking by R-thinning
- Wave shape and negative land on the cutting edge for low thrust, stable torque and long tool life
- Optimized flute shape for strength of drilling and smooth chip evacuation

CARBIDE | h6 | 140° | 20 bar | TiAlN

p.88

LONG
5×D

DH418 *1CTF

Unit : inch

EDP No.	Drill Diameter		Shank Diameter	Flute Length	Overall Length
	Fractional	Decimal			
TiAlN	D1		D2	L1	L2
0131CTF	13/64	.2031	15/64	1-3/4	3-15/16
DH712013	13/64	.2031	1/4	1-3/4	3-15/16
0141CTF	7/32	.2188	15/64	1-57/64	3-15/16
DH712014	7/32	.2188	1/4	1-57/64	3-15/16
0151CTF	15/64	.2344	15/64	1-57/64	3-15/16
DH712015	15/64	.2344	1/4	1-57/64	3-15/16
DH712016	1/4	.2500	1/4	2-3/64	4-19/64
0161CTF	1/4	.2500	17/64	2-3/64	4-19/64
2061CTF	F	.2570	17/64	2-13/64	4-19/64
DH712206	F	.2570	5/16	2-13/64	4-19/64
0171CTF	17/64	.2656	17/64	2-13/64	4-19/64
DH712017	17/64	.2656	5/16	2-13/64	4-19/64
2091CTF	I	.2720	.2720	2-13/64	4-19/64
DH712209	I	.2720	5/16	2-13/64	4-19/64
0181CTF	9/32	.2812	5/16	2-23/64	4-41/64
0191CTF	19/64	.2969	5/16	2-33/64	4-41/64
0201CTF	5/16	.3125	5/16	2-33/64	4-41/64
0211CTF	21/64	.3281	11/32	2-43/64	5
DH712021	21/64	.3281	3/8	2-43/64	5
2171CTF	Q	.3320	11/32	2-43/64	5
DH712217	Q	.3320	3/8	2-43/64	5
0221CTF	11/32	.3438	11/32	2-27/64	5

EDP No.	Drill Diameter		Shank Diameter	Flute Length	Overall Length
	Fractional	Decimal			
TiAlN	D1		D2	L1	L2
DH712022	11/32	.3438	3/8	2-27/32	5
DH712023	23/64	.3594	3/8	3	5-23/64
0231CTF	23/64	.3594	25/64	3	5-23/64
DH712221	U	.3680	3/8	3	5-23/64
2211CTF	U	.3680	25/64	3	5-23/64
DH712024	3/8	.3750	3/8	3-5/32	5-23/64
0241CTF	3/8	.3750	25/64	3-5/32	5-23/64
0251CTF	25/64	.3906	25/64	3-5/32	5-23/64
DH712025	25/64	.3906	7/16	3-5/32	5-23/64
0261CTF	13/32	.4062	27/64	3-5/16	5-7/8
DH712026	13/32	.4062	7/16	3-5/16	5-7/8
0271CTF	27/64	.4219	27/64	3-15/32	5-7/8
DH712027	27/64	.4219	7/16	3-15/32	5-7/8
DH712028	7/16	.4375	7/16	3-5/8	6-7/32
0281CTF	7/16	.4375	15/32	3-5/8	6-7/32
0291CTF	29/64	.4531	15/32	3-25/32	6-7/32
DH712029	29/64	.4531	1/2	3-25/32	6-7/32
0301CTF	15/32	.4688	15/32	3-25/32	6-7/32
DH712030	15/32	.4688	1/2	3-25/32	6-7/32
0311CTF	31/64	.4844	1/2	3-15/16	6-37/64
0321CTF	1/2	.5000	1/2	4-3/32	6-37/64

▶ Other shank types are available on your request.

◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended		◎	◎	◎	○	◎	◎	○	○	◎	○	○	○		◎	○	◎	○	◎	○

ISO	N										S							H			
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel		Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended																		○			

SERIES
DH406

TiAlN-COATED SOLID CARBIDE

DREAM DRILLS - GENERAL with COOLANT HOLES

- Drilling for Steel, Cast Steel, Cast Iron, Malleable Cast Iron
- Self centering and chip breaking by R-thinning
- Wave shape and negative land on the cutting edge for low thrust, stable torque and long tool life
- Optimized flute shape for strength of drilling and smooth chip evacuation

DIN 6537 | CARBIDE | h6 | m7 | 140° | 20 bar | TiAlN

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SHORT
3×D

Unit : mm

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Fractional	Decimal			
TiAlN	D1			D2	L1	L2
DH406030	3.0		.1181	6	20	62
DH406031	3.1		.1220	6	20	62
DH406008F	3.175	1/8	.1250	6	20	62
DH406032	3.2		.1260	6	20	62
DH406033	3.3		.1299	6	20	62
DH406034	3.4		.1339	6	20	62
DH406035	3.5		.1378	6	20	62
DH406009F	3.572	9/64	.1406	6	20	62
DH406036	3.6		.1417	6	20	62
DH406037	3.7		.1457	6	20	62
DH406038	3.8		.1496	6	24	66
DH406039	3.9		.1535	6	24	66
DH406010F	3.969	5/32	.1563	6	24	66
DH406040	4.0		.1575	6	24	66
DH406041	4.1		.1614	6	24	66
DH406042	4.2		.1654	6	24	66
DH406043	4.3		.1693	6	24	66
DH406011F	4.366	11/64	.1719	6	24	66
DH406044	4.4		.1732	6	24	66
DH406045	4.5		.1772	6	24	66
DH406046	4.6		.1811	6	24	66
DH406047	4.7		.1850	6	24	66
DH406012F	4.763	3/16	.1875	6	24	66
DH406048	4.8		.1890	6	28	66
DH406049	4.9		.1929	6	28	66
DH406050	5.0		.1969	6	28	66

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Fractional	Decimal			
TiAlN	D1			D2	L1	L2
DH406051	5.1		.2008	6	28	66
DH406013F	5.159	13/64	.2031	6	28	66
DH406052	5.2		.2047	6	28	66
DH406053	5.3		.2087	6	28	66
DH406054	5.4		.2126	6	28	66
DH406055	5.5		.2165	6	28	66
DH406014F	5.556	7/32	.2188	6	28	66
DH406056	5.6		.2205	6	28	66
DH406057	5.7		.2244	6	28	66
DH406058	5.8		.2283	6	28	66
DH406059	5.9		.2323	6	28	66
DH406015F	5.953	15/64	.2344	6	28	66
DH406060	6.0		.2362	6	28	66
DH406061	6.1		.2402	8	34	79
DH406062	6.2		.2441	8	34	79
DH406063	6.3		.2480	8	34	79
DH406016F	6.350	1/4	.2500	8	34	79
DH406064	6.4		.2520	8	34	79
DH406065	6.5		.2559	8	34	79
DH406006L	6.528	F	.2570	8	34	79
DH406066	6.6		.2598	8	34	79
DH406067	6.7		.2638	8	34	79
DH406017F	6.747	17/64	.2656	8	34	79
DH406068	6.8		.2677	8	34	79
DH406069	6.9		.2717	8	34	79
DH406009L	6.909	I	.2720	8	34	79

▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended		◎	◎	◎	○	◎	◎	○	○	◎	○	○	○		◎	○	◎	○	◎	○

ISO	N										S							H			
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel		Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended																		○			

TiAlN-COATED SOLID CARBIDE

DREAM DRILLS - GENERAL with COOLANT HOLES

SERIES **DH406**

- ▶ Drilling for Steel, Cast Steel, Cast Iron, Malleable Cast Iron
- ▶ Self centering and chip breaking by R-thinning
- ▶ Wave shape and negative land on the cutting edge for low thrust, stable torque and long tool life
- ▶ Optimized flute shape for strength of drilling and smooth chip evacuation

DIN 6537 | CARBIDE | h6 | m7 | 140° | 20 bar | TiAlN

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SHORT 3×D

Unit : mm

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Fractional	Decimal			
TiAlN	D1			D2	L1	L2
DH406070	7.0		.2756	8	34	79
DH406071	7.1		.2795	8	41	79
DH406018F	7.144	9/32	.2812	8	41	79
DH406072	7.2		.2835	8	41	79
DH406073	7.3		.2874	8	41	79
DH406074	7.4		.2913	8	41	79
DH406075	7.5		.2953	8	41	79
DH406019F	7.541	19/64	.2969	8	41	79
DH406076	7.6		.2992	8	41	79
DH406077	7.7		.3031	8	41	79
DH406078	7.8		.3071	8	41	79
DH406079	7.9		.3110	8	41	79
DH406020F	7.938	5/16	.3125	8	41	79
DH406080	8.0		.3150	8	41	79
DH406081	8.1		.3189	10	47	89
DH406082	8.2		.3228	10	47	89
DH406083	8.3		.3268	10	47	89
DH406021F	8.334	21/64	.3281	10	47	89
DH406084	8.4		.3307	10	47	89
DH406017L	8.433	Q	.3320	10	47	89
DH406085	8.5		.3346	10	47	89
DH406086	8.6		.3386	10	47	89
DH406087	8.7		.3425	10	47	89
DH406022F	8.731	11/32	.3438	10	47	89
DH406088	8.8		.3465	10	47	89
DH406089	8.9		.3504	10	47	89
DH406090	9.0		.3543	10	47	89
DH406091	9.1		.3583	10	47	89
DH406023F	9.128	23/64	.3594	10	47	89
DH406092	9.2		.3622	10	47	89
DH406093	9.3		.3661	10	47	89
DH406021L	9.347	U	.3680	10	47	89
DH406094	9.4		.3701	10	47	89
DH406095	9.5		.3740	10	47	89
DH406024F	9.525	3/8	.3750	10	47	89
DH406096	9.6		.3780	10	47	89
DH406097	9.7		.3819	10	47	89
DH406098	9.8		.3858	10	47	89
DH406099	9.9		.3898	10	47	89
DH406025F	9.922	25/64	.3906	10	47	89
DH406100	10.0		.3937	10	47	89
DH406101	10.1		.3976	12	55	102
DH406102	10.2		.4016	12	55	102
DH406103	10.3		.4055	12	55	102
DH406026F	10.319	13/32	.4062	12	55	102
DH406104	10.4		.4094	12	55	102
DH406105	10.5		.4134	12	55	102
DH406106	10.6		.4173	12	55	102
DH406107	10.7		.4212	12	55	102
DH406027F	10.716	27/64	.4219	12	55	102
DH406108	10.8		.4252	12	55	102
DH406109	10.9		.4291	12	55	102

▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended		◎	◎	◎	○	◎	◎	○	○	◎	○	○	○		◎	○	◎	○	◎	○

ISO	N										S							H		
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel	Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended																		○			

TiAlN-COATED SOLID CARBIDE

DREAM DRILLS - GENERAL with COOLANT HOLES

SERIES DH406

▶ Drilling for Steel, Cast Steel, Cast Iron, Malleable Cast Iron
▶ Self centering and chip breaking by R-thinning
▶ Wave shape and negative land on the cutting edge for low thrust, stable torque and long tool life
▶ Optimized flute shape for strength of drilling and smooth chip evacuation

DIN 6537 | CARBIDE | h6 | m7 | 140° | 20 bar | TiAlN

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SHORT 3×D

Unit : mm

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Fractional	Decimal			
TiAlN	D1			D2	L1	L2
DH406110	11.0		.4330	12	55	102
DH406111	11.1		.4370	12	55	102
DH406028F	11.113	7/16	.4375	12	55	102
DH406112	11.2		.4409	12	55	102
DH406113	11.3		.4448	12	55	102
DH406114	11.4		.4488	12	55	102
DH406115	11.5		.4527	12	55	102
DH406029F	11.509	29/64	.4531	12	55	102
DH406116	11.6		.4566	12	55	102
DH406117	11.7		.4606	12	55	102
DH406118	11.8		.4645	12	55	102
DH406119	11.9		.4685	12	55	102
DH406030F	11.906	15/32	.4688	12	55	102
DH406120	12.0		.4724	12	55	102
DH406121	12.1		.4764	14	60	107
DH406122	12.2		.4803	14	60	107
DH406123	12.3		.4843	14	60	107
DH406031F	12.303	31/64	.4844	14	60	107
DH406124	12.4		.4882	14	60	107
DH406125	12.5		.4921	14	60	107
DH406126	12.6		.4961	14	60	107
DH406032F	12.7	1/2	.5000	14	60	107
DH406128	12.8		.5039	14	60	107
DH406129	12.9		.5079	14	60	107
DH406130	13.0		.5118	14	60	107
DH406131	13.1		.5157	14	60	107
DH406132	13.2		.5197	14	60	107
DH406133	13.3		.5236	14	60	107
DH406134	13.4		.5276	14	60	107
DH406135	13.5		.5314	14	60	107
DH406136	13.6		.5354	14	60	107
DH406137	13.7		.5394	14	60	107
DH406138	13.8		.5433	14	60	107
DH406139	13.9		.5472	14	60	107
DH406140	14.0		.5512	14	60	107
DH406141	14.1		.5551	16	65	115
DH406142	14.2		.5591	16	65	115
DH406036F	14.288	9/16	.5625	16	65	115
DH406143	14.3		.5630	16	65	115
DH406144	14.4		.5669	16	65	115
DH406145	14.5		.5708	16	65	115
DH406146	14.6		.5748	16	65	115
DH406147	14.7		.5787	16	65	115
DH406148	14.8		.5827	16	65	115
DH406149	14.9		.5866	16	65	115
DH406150	15.0		.5905	16	65	115
DH406151	15.1		.5945	16	65	115
DH406152	15.2		.5984	16	65	115
DH406153	15.3		.6024	16	65	115
DH406154	15.4		.6063	16	65	115
DH406155	15.5		.6102	16	65	115
DH406156	15.6		.6142	16	65	115

▶ Other shank types are available on your request.

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◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended		◎	◎	◎	○	◎	◎	○	○	◎	○	○	○		◎	○	◎	○	◎	○

ISO	N										S							H		
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel	Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended																		○			

TiAlN-COATED SOLID CARBIDE

DREAM DRILLS - GENERAL with COOLANT HOLES

SERIES **DH406**

- ▶ Drilling for Steel, Cast Steel, Cast Iron, Malleable Cast Iron
- ▶ Self centering and chip breaking by R-thinning
- ▶ Wave shape and negative land on the cutting edge for low thrust, stable torque and long tool life
- ▶ Optimized flute shape for strength of drilling and smooth chip evacuation

DIN 6537 | CARBIDE | h6 | m7 | 140° | 20 bar | TiAlN

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SHORT 3×D

Unit : mm

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Fractional	Decimal			
TiAlN	D1			D2	L1	L2
DH406157	15.7		.6181	16	65	115
DH406158	15.8		.6220	16	65	115
DH406040F	15.875	5/8	.6250	16	65	115
DH406159	15.9		.6260	16	65	115
DH406160	16.0		.6299	16	65	115
DH406161	16.1		.6339	18	73	123
DH406162	16.2		.6378	18	73	123
DH406163	16.3		.6417	18	73	123
DH406164	16.4		.6457	18	73	123
DH406165	16.5		.6495	18	73	123
DH406166	16.6		.6535	18	73	123
DH406167	16.7		.6575	18	73	123
DH406168	16.8		.6614	18	73	123
DH406169	16.9		.6654	18	73	123
DH406170	17.0		.6692	18	73	123
DH406171	17.1		.6732	18	73	123
DH406172	17.2		.6772	18	73	123
DH406173	17.3		.6811	18	73	123
DH406174	17.4		.6850	18	73	123
DH406044F	17.463	11/16	.6875	18	73	123
DH406175	17.5		.6889	18	73	123
DH406176	17.6		.6929	18	73	123
DH406177	17.7		.6968	18	73	123
DH406178	17.8		.7008	18	73	123
DH406179	17.9		.7047	18	73	123
DH406180	18.0		.7087	18	73	123
DH406181	18.1		.7126	20	79	131
DH406182	18.2		.7165	20	79	131
DH406183	18.3		.7205	20	79	131
DH406184	18.4		.7244	20	79	131
DH406185	18.5		.7283	20	79	131
DH406186	18.6		.7323	20	79	131
DH406187	18.7		.7362	20	79	131
DH406188	18.8		.7402	20	79	131
DH406189	18.9		.7441	20	79	131
DH406190	19.0		.7480	20	79	131
DH406048F	19.050	3/4	.7500	20	79	131
DH406191	19.1		.7520	20	79	131
DH406192	19.2		.7559	20	79	131
DH406193	19.3		.7598	20	79	131
DH406194	19.4		.7638	20	79	131
DH406195	19.5		.7676	20	79	131
DH406196	19.6		.7717	20	79	131
DH406197	19.7		.7756	20	79	131
DH406198	19.8		.7795	20	79	131
DH406199	19.9		.7835	20	79	131
DH406200	20.0		.7874	20	79	131

▶ Other shank types are available on your request.

◎ : Excellent ○ : Good

ISO	P																			M			K						
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron										
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20									
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21									
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230									
Recommended		◎	◎	◎	○	◎	◎	○	○	◎	○	○	○		◎	○	◎	○	◎	○									

ISO	N										S							H			
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel		Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended																		○			

TiAlN-COATED SOLID CARBIDE

DREAM DRILLS - GENERAL with COOLANT HOLES

SERIES **DH408**

- ▶ Drilling for Steel, Cast Steel, Cast Iron, Malleable Cast Iron
- ▶ Self centering and chip breaking by R-thinning
- ▶ Wave shape and negative land on the cutting edge for low thrust, stable torque and long tool life
- ▶ Optimized flute shape for strength of drilling and smooth chip evacuation

DIN 6537 | CARBIDE | h6 | m7 | 140° | 20 bar | TiAlN

p.88

LONG 5×D

Unit : mm

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Fractional	Decimal			
TiAlN	D1			D2	L1	L2
DH408010	1.0		.0394	3	8	55
DH408011	1.1		.0433	3	12	55
DH408012	1.2		.0472	3	12	55
DH408013	1.3		.0512	3	12	55
DH408014	1.4		.0551	3	12	55
DH408015	1.5		.0591	3	16	55
DH408004F	1.588	1/16	.0625	3	16	55
DH408016	1.6		.0630	3	16	55
DH408017	1.7		.0669	3	16	55
DH408018	1.8		.0709	3	16	55
DH408019	1.9		.0748	3	16	55
DH408005F	1.984	5/64	.0781	3	16	55
DH408020	2.0		.0787	4	21	57
DH408021	2.1		.0827	4	21	57
DH408022	2.2		.0866	4	21	57
DH408023	2.3		.0906	4	21	57
DH408006F	2.381	3/32	.0938	4	21	57
DH408024	2.4		.0945	4	21	57
DH408025	2.5		.0984	4	21	57
DH408026	2.6		.1024	4	21	57
DH408027	2.7		.1063	4	21	57
DH408007F	2.778	7/64	.1094	4	21	57
DH408028	2.8		.1102	4	21	57
DH408029	2.9		.1142	4	21	57
DH408030	3.0		.1181	6	28	66
DH408031	3.1		.1220	6	28	66
DH408008F	3.175	1/8	.1250	6	28	66
DH408032	3.2		.1260	6	28	66
DH408033	3.3		.1299	6	28	66
DH408034	3.4		.1339	6	28	66
DH408035	3.5		.1378	6	28	66
DH408009F	3.572	9/64	.1406	6	28	66
DH408036	3.6		.1417	6	28	66
DH408037	3.7		.1457	6	28	66
DH408038	3.8		.1496	6	36	74
DH408039	3.9		.1535	6	36	74
DH408010F	3.969	5/32	.1563	6	36	74
DH408040	4.0		.1575	6	36	74
DH408041	4.1		.1614	6	36	74
DH408042	4.2		.1654	6	36	74
DH408043	4.3		.1693	6	36	74
DH408011F	4.366	11/64	.1719	6	36	74
DH408044	4.4		.1732	6	36	74
DH408045	4.5		.1772	6	36	74
DH408046	4.6		.1811	6	36	74
DH408047	4.7		.1850	6	36	74
DH408012F	4.763	3/16	.1875	6	36	74
DH408048	4.8		.1890	6	44	82
DH408049	4.9		.1929	6	44	82
DH408050	5.0		.1969	6	44	82
DH408051	5.1		.2008	6	44	82
DH408013F	5.159	13/64	.2031	6	44	82
DH408052	5.2		.2047	6	44	82
DH408053	5.3		.2087	6	44	82
DH408054	5.4		.2126	6	44	82
DH408055	5.5		.2165	6	44	82

▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

ISO	P																			M			K						
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron										
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20									
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21									
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230									
Recommended		◎	◎	◎	○	◎	◎	○	○	◎	○	○	○		◎	○	◎	○	◎	○									

ISO	N										S							H			
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel		Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended																		○			

TiAlN-COATED SOLID CARBIDE

DREAM DRILLS - GENERAL with COOLANT HOLES

SERIES **DH408**

- ▶ Drilling for Steel, Cast Steel, Cast Iron, Malleable Cast Iron
- ▶ Self centering and chip breaking by R-thinning
- ▶ Wave shape and negative land on the cutting edge for low thrust, stable torque and long tool life
- ▶ Optimized flute shape for strength of drilling and smooth chip evacuation

DIN 6537 | CARBIDE | h6 | m7 | 140° | 20 bar | TiAlN

p.88

LONG 5×D

Unit : mm

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Fractional	Decimal			
TiAlN	D1			D2	L1	L2
DH408014F	5.556	7/32	.2188	6	44	82
DH408056	5.6		.2205	6	44	82
DH408057	5.7		.2244	6	44	82
DH408058	5.8		.2283	6	44	82
DH408059	5.9		.2323	6	44	82
DH408015F	5.953	15/64	.2344	6	44	82
DH408060	6.0		.2362	6	44	82
DH408061	6.1		.2402	8	53	91
DH408062	6.2		.2441	8	53	91
DH408063	6.3		.2480	8	53	91
DH408016F	6.350	1/4	.2500	8	53	91
DH408064	6.4		.2520	8	53	91
DH408065	6.5		.2559	8	53	91
DH408006L	6.528	F	.2570	8	53	91
DH408066	6.6		.2598	8	53	91
DH408067	6.7		.2638	8	53	91
DH408017F	6.747	17/64	.2656	8	53	91
DH408068	6.8		.2677	8	53	91
DH408069	6.9		.2717	8	53	91
DH408009L	6.909	I	.2720	8	53	91
DH408070	7.0		.2756	8	53	91
DH408071	7.1		.2795	8	53	91
DH408018F	7.144	9/32	.2812	8	53	91
DH408072	7.2		.2835	8	53	91
DH408073	7.3		.2874	8	53	91
DH408074	7.4		.2913	8	53	91
DH408075	7.5		.2953	8	53	91
DH408019F	7.541	19/64	.2969	8	53	91
DH408076	7.6		.2992	8	53	91
DH408077	7.7		.3031	8	53	91
DH408078	7.8		.3071	8	53	91
DH408079	7.9		.3110	8	53	91
DH408020F	7.938	5/16	.3125	8	53	91
DH408080	8.0		.3150	8	53	91
DH408081	8.1		.3189	10	61	103
DH408082	8.2		.3228	10	61	103
DH408083	8.3		.3268	10	61	103
DH408021F	8.334	21/64	.3281	10	61	103
DH408084	8.4		.3307	10	61	103
DH408017L	8.433	Q	.3320	10	61	103
DH408085	8.5		.3346	10	61	103
DH408086	8.6		.3386	10	61	103
DH408087	8.7		.3425	10	61	103
DH408022F	8.731	11/32	.3438	10	61	103
DH408088	8.8		.3465	10	61	103
DH408089	8.9		.3504	10	61	103
DH408090	9.0		.3543	10	61	103
DH408091	9.1		.3583	10	61	103
DH408023F	9.128	23/64	.3594	10	61	103
DH408092	9.2		.3622	10	61	103
DH408093	9.3		.3661	10	61	103
DH408021L	9.347	U	.3680	10	61	103
DH408094	9.4		.3701	10	61	103
DH408095	9.5		.3740	10	61	103
DH408024F	9.525	3/8	.3750	10	61	103
DH408096	9.6		.3780	10	61	103

▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

ISO	P													M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended		◎	◎	◎	○	◎	◎	○	○	◎	○	○	○		◎	○	◎	○	◎	○

ISO	N										S							H			
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel		Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended																		○			

TiAlN-COATED SOLID CARBIDE

DREAM DRILLS - GENERAL with COOLANT HOLES

SERIES DH408

▶ Drilling for Steel, Cast Steel, Cast Iron, Malleable Cast Iron
▶ Self centering and chip breaking by R-thinning
▶ Wave shape and negative land on the cutting edge for low thrust, stable torque and long tool life
▶ Optimized flute shape for strength of drilling and smooth chip evacuation

DIN 6537 | CARBIDE | h6 | m7 | 140° | 20 bar | TiAlN

p.88

LONG 5×D

Unit : mm

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Fractional	Decimal			
TiAlN	D1			D2	L1	L2
DH408097	9.7		.3819	10	61	103
DH408098	9.8		.3858	10	61	103
DH408099	9.9		.3898	10	61	103
DH408025F	9.922	25/64	.3906	10	61	103
DH408100	10.0		.3937	10	61	103
DH408101	10.1		.3976	12	71	118
DH408102	10.2		.4016	12	71	118
DH408103	10.3		.4055	12	71	118
DH408026F	10.319	13/32	.4062	12	71	118
DH408104	10.4		.4094	12	71	118
DH408105	10.5		.4134	12	71	118
DH408106	10.6		.4173	12	71	118
DH408107	10.7		.4212	12	71	118
DH408027F	10.716	27/64	.4219	12	71	118
DH408108	10.8		.4252	12	71	118
DH408109	10.9		.4291	12	71	118
DH408110	11.0		.4330	12	71	118
DH408111	11.1		.4370	12	71	118
DH408028F	11.113	7/16	.4375	12	71	118
DH408112	11.2		.4409	12	71	118
DH408113	11.3		.4448	12	71	118
DH408114	11.4		.4488	12	71	118
DH408115	11.5		.4527	12	71	118
DH408029F	11.509	29/64	.4531	12	71	118
DH408116	11.6		.4566	12	71	118
DH408117	11.7		.4606	12	71	118
DH408118	11.8		.4645	12	71	118
DH408119	11.9		.4685	12	71	118
DH408030F	11.906	15/32	.4688	12	71	118
DH408120	12.0		.4724	12	71	118
DH408121	12.1		.4764	14	77	124
DH408122	12.2		.4803	14	77	124
DH408123	12.3		.4843	14	77	124
DH408031F	12.303	31/64	.4844	14	77	124
DH408124	12.4		.4882	14	77	124
DH408125	12.5		.4921	14	77	124
DH408126	12.6		.4961	14	77	124
DH408032F	12.7	1/2	.5000	14	77	124
DH408128	12.8		.5039	14	77	124
DH408129	12.9		.5079	14	77	124
DH408130	13.0		.5118	14	77	124
DH408131	13.1		.5157	14	77	124
DH408132	13.2		.5197	14	77	124
DH408133	13.3		.5236	14	77	124
DH408134	13.4		.5276	14	77	124
DH408135	13.5		.5314	14	77	124
DH408136	13.6		.5354	14	77	124
DH408137	13.7		.5394	14	77	124
DH408138	13.8		.5433	14	77	124
DH408139	13.9		.5472	14	77	124
DH408140	14.0		.5512	14	77	124
DH408141	14.1		.5551	16	83	133
DH408142	14.2		.5591	16	83	133
DH408036F	14.288	9/16	.5625	16	83	133
DH408143	14.3		.5630	16	83	133
DH408144	14.4		.5669	16	83	133

▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

ISO	P													M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended		◎	◎	◎	○	◎	◎	○	○	◎	○	○	○		◎	○	◎	○	◎	○

ISO	N										S							H			
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel		Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended																		○			

TiAlN-COATED SOLID CARBIDE

DREAM DRILLS - GENERAL with COOLANT HOLES

SERIES **DH408**

- ▶ Drilling for Steel, Cast Steel, Cast Iron, Malleable Cast Iron
- ▶ Self centering and chip breaking by R-thinning
- ▶ Wave shape and negative land on the cutting edge for low thrust, stable torque and long tool life
- ▶ Optimized flute shape for strength of drilling and smooth chip evacuation

DIN 6537 | CARBIDE | h6 | m7 | 140° | 20 bar | TiAlN

p.88

LONG

5×D

Unit : mm

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Fractional	Decimal			
TiAlN	D1			D2	L1	L2
DH408145	14.5		.5708	16	83	133
DH408146	14.6		.5748	16	83	133
DH408147	14.7		.5787	16	83	133
DH408148	14.8		.5827	16	83	133
DH408149	14.9		.5866	16	83	133
DH408150	15.0		.5905	16	83	133
DH408151	15.1		.5945	16	83	133
DH408152	15.2		.5984	16	83	133
DH408153	15.3		.6024	16	83	133
DH408154	15.4		.6063	16	83	133
DH408155	15.5		.6102	16	83	133
DH408156	15.6		.6142	16	83	133
DH408157	15.7		.6181	16	83	133
DH408158	15.8		.6220	16	83	133
DH408040F	15.875	5/8	.6250	16	83	133
DH408159	15.9		.6260	16	83	133
DH408160	16.0		.6299	16	83	133
DH408161	16.1		.6339	18	93	143
DH408162	16.2		.6378	18	93	143
DH408163	16.3		.6417	18	93	143
DH408164	16.4		.6457	18	93	143
DH408165	16.5		.6495	18	93	143
DH408166	16.6		.6535	18	93	143
DH408167	16.7		.6575	18	93	143
DH408168	16.8		.6614	18	93	143
DH408169	16.9		.6654	18	93	143
DH408170	17.0		.6692	18	93	143
DH408171	17.1		.6732	18	93	143
DH408172	17.2		.6772	18	93	143

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Fractional	Decimal			
TiAlN	D1			D2	L1	L2
DH408173	17.3		.6811	18	93	143
DH408174	17.4		.6850	18	93	143
DH408175	17.5		.6889	18	93	143
DH408176	17.6		.6929	18	93	143
DH408177	17.7		.6968	18	93	143
DH408178	17.8		.7008	18	93	143
DH408179	17.9		.7047	18	93	143
DH408180	18.0		.7087	18	93	143
DH408181	18.1		.7126	20	101	153
DH408182	18.2		.7165	20	101	153
DH408183	18.3		.7205	20	101	153
DH408184	18.4		.7244	20	101	153
DH408185	18.5		.7283	20	101	153
DH408186	18.6		.7323	20	101	153
DH408187	18.7		.7362	20	101	153
DH408188	18.8		.7402	20	101	153
DH408189	18.9		.7441	20	101	153
DH408190	19.0		.7480	20	101	153
DH408048F	19.050	3/4	.7500	20	101	153
DH408191	19.1		.7520	20	101	153
DH408192	19.2		.7559	20	101	153
DH408193	19.3		.7598	20	101	153
DH408194	19.4		.7638	20	101	153
DH408195	19.5		.7676	20	101	153
DH408196	19.6		.7717	20	101	153
DH408197	19.7		.7756	20	101	153
DH408198	19.8		.7795	20	101	153
DH408199	19.9		.7835	20	101	153
DH408200	20.0		.7874	20	101	153

▶ Other shank types are available on your request.

◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended		◎	◎	◎	○	◎	◎	○	○	◎	○	○	○		◎	○	◎	○	◎	○

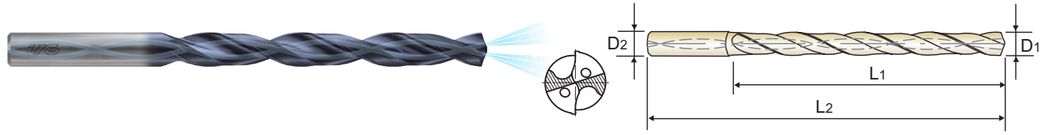
ISO	N										S							H			
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel		Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended																		○			

TiAlN-COATED SOLID CARBIDE

DREAM DRILLS - GENERAL with COOLANT HOLES

SERIES **DH421**

- ▶ Drilling for Steel, Cast Steel, Cast Iron, Malleable Cast Iron
- ▶ Self centering and chip breaking by R-thinning
- ▶ Wave shape and negative land on the cutting edge for low thrust, stable torque and long tool life
- ▶ Optimized flute shape for strength of drilling and smooth chip evacuation



DIN 6537 | CARBIDE | h6 | m7 | 140° | 20 bar | TiAlN

p.88

EXTRA LONG

8×D

Unit : mm

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Fractional	Decimal			
TiAlN	D1			D2	L1	L2
DH421030	3.0		.1181	6	34	72
DH421031	3.1		.1220	6	34	72
DH421008F	3.175	1/8	.1250	6	34	72
DH421032	3.2		.1260	6	34	72
DH421033	3.3		.1299	6	34	72
DH421034	3.4		.1339	6	34	72
DH421029G	3.450	#29	.1360	6	34	72
DH421035	3.5		.1378	6	34	72
DH421009F	3.572	9/64	.1406	6	34	72
DH421036	3.6		.1417	6	34	72
DH421037	3.7		.1457	6	34	72
DH421038	3.8		.1496	6	43	81
DH421039	3.9		.1535	6	43	81
DH421010F	3.969	5/32	.1563	6	43	81
DH421040	4.0		.1575	6	43	81
DH421021G	4.040	#21	.1590	6	43	81
DH421041	4.1		.1614	6	43	81
DH421042	4.2		.1654	6	43	81
DH421043	4.3		.1693	6	43	81
DH421011F	4.366	11/64	.1719	6	43	81
DH421044	4.4		.1732	6	43	81
DH421045	4.5		.1772	6	43	81
DH421046	4.6		.1811	6	43	81
DH421047	4.7		.1850	6	43	81
DH421012F	4.763	3/16	.1875	6	57	95
DH421048	4.8		.1890	6	57	95

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Fractional	Decimal			
TiAlN	D1			D2	L1	L2
DH421049	4.9		.1929	6	57	95
DH421050	5.0		.1969	6	57	95
DH421051	5.1		.2008	6	57	95
DH421013F	5.159	13/64	.2031	6	57	95
DH421052	5.2		.2047	6	57	95
DH421053	5.3		.2087	6	57	95
DH421054	5.4		.2126	6	57	95
DH421055	5.5		.2165	6	57	95
DH421014F	5.556	7/32	.2188	6	57	95
DH421056	5.6		.2205	6	57	95
DH421057	5.7		.2244	6	57	95
DH421058	5.8		.2283	6	57	95
DH421059	5.9		.2323	6	57	95
DH421015F	5.953	15/64	.2344	6	57	95
DH421060	6.0		.2362	6	57	95
DH421061	6.1		.2402	8	76	114
DH421062	6.2		.2441	8	76	114
DH421063	6.3		.2480	8	76	114
DH421016F	6.350	1/4	.2500	8	76	114
DH421064	6.4		.2520	8	76	114
DH421065	6.5		.2559	8	76	114
DH421006L	6.528	F	.2570	8	76	114
DH421066	6.6		.2598	8	76	114
DH421067	6.7		.2638	8	76	114
DH421017F	6.747	17/64	.2656	8	76	114
DH421068	6.8		.2677	8	76	114

▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended		◎	◎	◎	○	◎	◎	○	○	◎	○	○	○		◎	○	◎	○	◎	○

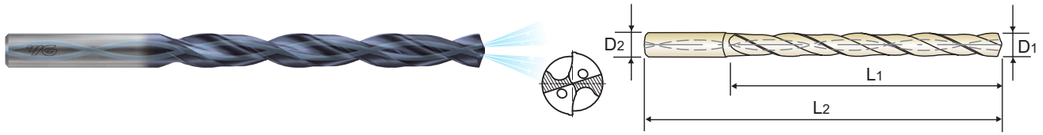
ISO	N										S							H			
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel		Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended																		○			

TiAlN-COATED SOLID CARBIDE

DREAM DRILLS - GENERAL with COOLANT HOLES

SERIES **DH421**

- ▶ Drilling for Steel, Cast Steel, Cast Iron, Malleable Cast Iron
- ▶ Self centering and chip breaking by R-thinning
- ▶ Wave shape and negative land on the cutting edge for low thrust, stable torque and long tool life
- ▶ Optimized flute shape for strength of drilling and smooth chip evacuation



DIN 6537 | CARBIDE | h6 | m7 | 140° | 20 bar | TiAlN

p.88

EXTRA LONG

8×D

Unit : mm

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Fractional	Decimal			
TiAlN	D1			D2	L1	L2
DH421069	6.9		.2717	8	76	114
DH421009L	6.909	I	.2720	8	76	114
DH421070	7.0		.2756	8	76	114
DH421071	7.1		.2795	8	76	114
DH421018F	7.144	9/32	.2813	8	76	114
DH421072	7.2		.2835	8	76	114
DH421073	7.3		.2874	8	76	114
DH421074	7.4		.2913	8	76	114
DH421075	7.5		.2953	8	76	114
DH421019F	7.541	19/64	.2969	8	76	114
DH421076	7.6		.2992	8	76	114
DH421077	7.7		.3031	8	76	114
DH421078	7.8		.3071	8	76	114
DH421079	7.9		.3110	8	76	114
DH421020F	7.938	5/16	.3125	8	76	114
DH421080	8.0		.3150	8	76	114
DH421081	8.1		.3189	10	95	142
DH421082	8.2		.3228	10	95	142
DH421083	8.3		.3268	10	95	142
DH421021F	8.334	21/64	.3281	10	95	142
DH421084	8.4		.3307	10	95	142
DH421017L	8.430	Q	.3320	10	95	142
DH421085	8.5		.3346	10	95	142
DH421086	8.6		.3386	10	95	142
DH421087	8.7		.3425	10	95	142
DH421022F	8.731	11/32	.3438	10	95	142
DH421088	8.8		.3465	10	95	142
DH421089	8.9		.3504	10	95	142
DH421090	9.0		.3543	10	95	142
DH421091	9.1		.3583	10	95	142
DH421023F	9.128	23/64	.3594	10	95	142
DH421092	9.2		.3622	10	95	142
DH421093	9.3		.3661	10	95	142
DH421021L	9.350	U	.3680	10	95	142
DH421094	9.4		.3701	10	95	142
DH421095	9.5		.3740	10	95	142
DH421024F	9.525	3/8	.3750	10	95	142
DH421096	9.6		.3780	10	95	142
DH421097	9.7		.3819	10	95	142
DH421098	9.8		.3858	10	95	142
DH421099	9.9		.3898	10	95	142
DH421025F	9.922	25/64	.3906	10	95	142
DH421100	10.0		.3937	10	95	142
DH421101	10.1		.3976	12	114	162
DH421102	10.2		.4016	12	114	162
DH421103	10.3		.4055	12	114	162
DH421026F	10.319	13/32	.4063	12	114	162
DH421104	10.4		.4094	12	114	162
DH421105	10.5		.4134	12	114	162
DH421106	10.6		.4173	12	114	162
DH421107	10.7		.4212	12	114	162
DH421027F	10.716	27/64	.4219	12	114	162

▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended		◎	◎	◎	○	◎	◎	○	○	◎	○	○	○		◎	○	◎	○	◎	○

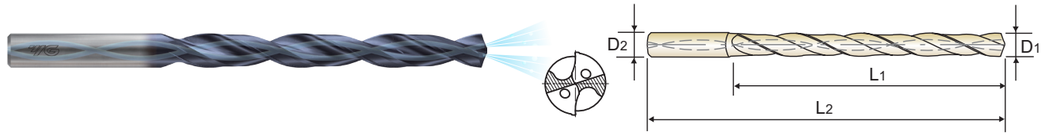
ISO	N										S							H		
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel	Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended																		○			

TiAlN-COATED SOLID CARBIDE

DREAM DRILLS - GENERAL with COOLANT HOLES

SERIES DH421

▶ Drilling for Steel, Cast Steel, Cast Iron, Malleable Cast Iron
▶ Self centering and chip breaking by R-thinning
▶ Wave shape and negative land on the cutting edge for low thrust, stable torque and long tool life
▶ Optimized flute shape for strength of drilling and smooth chip evacuation



DIN 6537 | CARBIDE | h6 | m7 | 140° | 20 bar | TiAlN

p.88

EXTRA LONG

8×D

Unit : mm

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Fractional	Decimal			
TiAlN	D1			D2	L1	L2
DH421108	10.8		.4252	12	114	162
DH421109	10.9		.4291	12	114	162
DH421110	11.0		.4330	12	114	162
DH421111	11.1		.4370	12	114	162
DH421028F	11.113	7/16	.4375	12	114	162
DH421112	11.2		.4409	12	114	162
DH421113	11.3		.4448	12	114	162
DH421114	11.4		.4488	12	114	162
DH421115	11.5		.4527	12	114	162
DH421029F	11.509	29/64	.4531	12	114	162
DH421116	11.6		.4566	12	114	162
DH421117	11.7		.4606	12	114	162
DH421118	11.8		.4645	12	114	162
DH421119	11.9		.4685	12	114	162
DH421030F	11.906	15/32	.4688	12	114	162
DH421120	12.0		.4724	12	114	162
DH421121	12.1		.4764	14	133	178
DH421122	12.2		.4803	14	133	178
DH421123	12.3		.4843	14	133	178
DH421031F	12.303	31/64	.4844	14	133	178
DH421124	12.4		.4882	14	133	178
DH421125	12.5		.4921	14	133	178
DH421126	12.6		.4961	14	133	178
DH421032F	12.7	1/2	.5000	14	133	178
DH421128	12.8		.5039	14	133	178
DH421129	12.9		.5079	14	133	178
DH421130	13.0		.5118	14	133	178
DH421033F	13.097	33/64	.5156	14	133	178
DH421131	13.1		.5157	14	133	178
DH421132	13.2		.5197	14	133	178
DH421133	13.3		.5236	14	133	178
DH421134	13.4		.5276	14	133	178
DH421135	13.5		.5314	14	133	178
DH421136	13.6		.5354	14	133	178
DH421137	13.7		.5394	14	133	178
DH421138	13.8		.5433	14	133	178
DH421139	13.9		.5472	14	133	178
DH421140	14.0		.5512	14	133	178
DH421141	14.1		.5551	16	152	203
DH421142	14.2		.5591	16	152	203
DH421036F	14.288	9/16	.5625	16	152	203
DH421143	14.3		.5630	16	152	203
DH421144	14.4		.5669	16	152	203
DH421145	14.5		.5709	16	152	203
DH421146	14.6		.5748	16	152	203
DH421147	14.7		.5787	16	152	203
DH421148	14.8		.5827	16	152	203
DH421149	14.9		.5866	16	152	203
DH421150	15.0		.5905	16	152	203
DH421151	15.1		.5945	16	152	203
DH421152	15.2		.5984	16	152	203
DH421153	15.3		.6024	16	152	203

▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended		◎	◎	◎	○	◎	◎	○	○	◎	○	○	○		◎	○	◎	○	◎	○

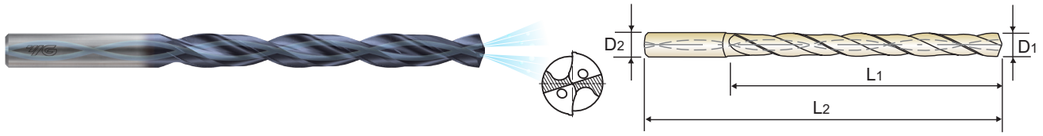
ISO	N										S							H		
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel	Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended																		○			

TiAlN-COATED SOLID CARBIDE

DREAM DRILLS - GENERAL with COOLANT HOLES

SERIES **DH421**

- ▶ Drilling for Steel, Cast Steel, Cast Iron, Malleable Cast Iron
- ▶ Self centering and chip breaking by R-thinning
- ▶ Wave shape and negative land on the cutting edge for low thrust, stable torque and long tool life
- ▶ Optimized flute shape for strength of drilling and smooth chip evacuation



DIN 6537 | CARBIDE | h6 | m7 | 140° | 20 bar | TiAlN

p.88

EXTRA LONG

8×D

Unit : mm

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Fractional	Decimal			
TiAlN	D1			D2	L1	L2
DH421154	15.4		.6063	16	152	203
DH421155	15.5		.6102	16	152	203
DH421156	15.6		.6142	16	152	203
DH421157	15.7		.6181	16	152	203
DH421158	15.8		.6220	16	152	203
DH421040F	15.875	5/8	.6250	16	152	203
DH421159	15.9		.6260	16	152	203
DH421160	16.0		.6299	16	152	203
DH421161	16.1		.6339	18	171	222
DH421162	16.2		.6378	18	171	222
DH421163	16.3		.6417	18	171	222
DH421164	16.4		.6457	18	171	222
DH421165	16.5		.6496	18	171	222
DH421166	16.6		.6535	18	171	222
DH421167	16.7		.6575	18	171	222
DH421168	16.8		.6614	18	171	222
DH421169	16.9		.6654	18	171	222
DH421170	17.0		.6693	18	171	222
DH421171	17.1		.6732	18	171	222
DH421172	17.2		.6772	18	171	222
DH421173	17.3		.6811	18	171	222
DH421174	17.4		.6850	18	171	222
DH421175	17.5		.6890	18	171	222
DH421176	17.6		.6929	18	171	222
DH421177	17.7		.6968	18	171	222
DH421178	17.8		.7008	18	171	222
DH421179	17.9		.7047	18	171	222
DH421180	18.0		.7087	18	171	222
DH421181	18.1		.7126	20	190	243
DH421182	18.2		.7165	20	190	243
DH421183	18.3		.7205	20	190	243
DH421184	18.4		.7244	20	190	243
DH421185	18.5		.7283	20	190	243
DH421186	18.6		.7323	20	190	243
DH421187	18.7		.7362	20	190	243
DH421188	18.8		.7402	20	190	243
DH421189	18.9		.7441	20	190	243
DH421190	19.0		.7480	20	190	243
DH421048F	19.050	3/4	.7500	20	190	243
DH421191	19.1		.7520	20	190	243
DH421192	19.2		.7559	20	190	243
DH421193	19.3		.7598	20	190	243
DH421194	19.4		.7638	20	190	243
DH421195	19.5		.7677	20	190	243
DH421196	19.6		.7717	20	190	243
DH421197	19.7		.7756	20	190	243
DH421198	19.8		.7795	20	190	243
DH421199	19.9		.7835	20	190	243
DH421200	20.0		.7874	20	190	243

▶ Other shank types are available on your request.

◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended		◎	◎	◎	○	◎	◎	○	○	◎	○	○	○		◎	○	◎	○	◎	○

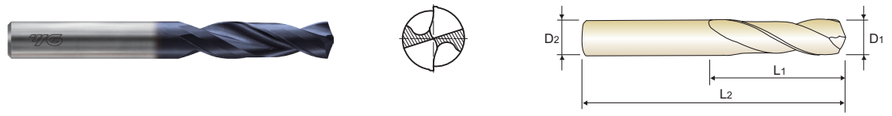
ISO	N										S							H		
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel	Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended																		○			

TiAlN-COATED SOLID CARBIDE

DREAM DRILLS - GENERAL without COOLANT HOLES

SERIES **DH414**

- ▶ Drilling for Steel, Cast Steel, Cast Iron, Malleable Cast Iron
- ▶ Self centering and chip breaking by R-thinning
- ▶ Wave shape and negative land on the cutting edge for low thrust, stable torque and long tool life
- ▶ Optimized flute shape for strength of drilling and smooth chip evacuation



CARBIDE | h6 | 140° | TiAlN

p.90

STUB

3×D

Unit : inch

EDP No.	Drill Diameter		Flute Length	Overall Length
	Fractional	Decimal		
TiAlN	D1 = D2		L1	L2
0081ATF	1/8	.1250	45/64	1-59/64
0091ATF	9/64	.1406	25/32	2-3/64
0101ATF	5/32	.1562	7/8	2-3/16
0111ATF	11/64	.1719	15/16	2-9/32
0121ATF	3/16	.1875	1	2-7/16
0131ATF	13/64	.2031	1	2-7/16
0141ATF	7/32	.2188	1-1/8	2-5/8
0151ATF	15/64	.2344	1-1/8	2-5/8
0161ATF	1/4	.2500	1-5/8	3-3/16
2061ATF	F	.2570	1-11/16	3-17/64
0171ATF	17/64	.2656	1-11/16	3-17/64
2091ATF	I	.2720	1-11/16	3-17/64
0181ATF	9/32	.2812	1-3/4	3-7/16
0191ATF	19/64	.2969	1-7/8	3-9/16
0201ATF	5/16	.3125	1-7/8	3-9/16
0211ATF	21/64	.3281	2-1/16	3-3/4
2171ATF	Q	.3320	2-1/16	3-3/4
0221ATF	11/32	.3438	2-3/16	3-7/8
0231ATF	23/64	.3594	2-9/32	4
2211ATF	U	.3680	2-9/32	4
0241ATF	3/8	.3750	2-3/8	4-1/8
0251ATF	25/64	.3906	2-3/8	4-1/8
0261ATF	13/32	.4062	2-5/8	4-13/32
0271ATF	27/64	.4219	2-11/16	4-1/2
0281ATF	7/16	.4375	2-13/16	4-5/8
0291ATF	29/64	.4531	2-7/8	4-3/4
0301ATF	15/32	.4688	2-7/8	4-3/4
0311ATF	31/64	.4844	3	5-5/16
0321ATF	1/2	.5000	3-1/16	5-3/8
0331ATF	33/64	.5156	3-11/32	5-11/16
0341ATF	17/32	.5312	3-11/32	5-11/16
0361ATF	9/16	.5625	3-1/2	5-15/16
0371ATF	37/64	.5781	3-37/64	6
0401ATF	5/8	.6250	3-25/3	6-19/64

▶ Other shank types are available on your request.

◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended		◎	◎	◎	○	◎	◎	○	○	◎	○	○	○		◎	○	◎	○	◎	○

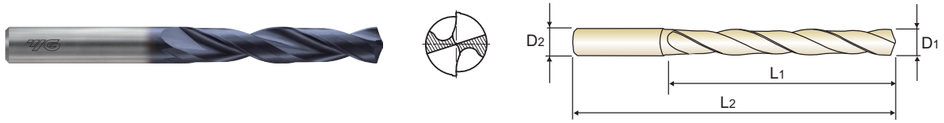
ISO	N										S							H		
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel	Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended																		○			

TiAlN-COATED SOLID CARBIDE

DREAM DRILLS - GENERAL without COOLANT HOLES

SERIES **DH722**

- ▶ Drilling for Steel, Cast Steel, Cast Iron, Malleable Cast Iron
- ▶ Self centering and chip breaking by R-thinning
- ▶ Wave shape and negative land on the cutting edge for low thrust, stable torque and long tool life
- ▶ Optimized flute shape for strength of drilling and smooth chip evacuation



CARBIDE | h6 | 140° | TiAlN

p.90

LONG

5 × D

Unit : inch

EDP No.	Drill Diameter		Shank Diameter	Flute Length	Overall Length
	Fractional	Decimal			
TiAlN	D1		D2	L1	L2
DH722013	13/64	.2031	1/4	1-3/4	3-15/16
DH722014	7/32	.2188	1/4	1-57/64	3-15/16
DH722015	15/64	.2344	1/4	1-57/64	3-15/16
DH722016	1/4	.2500	1/4	2-3/64	4-19/64
DH722206	F	.2570	5/16	2-13/64	4-19/64
DH722017	17/64	.2656	5/16	2-13/64	4-19/64
DH722209	I	.2720	5/16	2-13/64	4-19/64
DH722018	9/32	.2812	5/16	2-23/64	4-41/64
DH722019	19/64	.2969	5/16	2-33/64	4-41/64
DH722020	5/16	.3125	5/16	2-33/64	4-41/64
DH722021	21/64	.3281	3/8	2-43/64	5
DH722217	Q	.3320	3/8	2-43/64	5

EDP No.	Drill Diameter		Shank Diameter	Flute Length	Overall Length
	Fractional	Decimal			
TiAlN	D1		D2	L1	L2
DH722022	11/32	.3438	3/8	2-27/32	5
DH722023	23/64	.3594	3/8	3	5-23/64
DH722221	U	.3680	3/8	3	5-23/64
DH722024	3/8	.3750	3/8	3-5/32	5-23/64
DH722025	25/64	.3906	7/16	3-5/32	5-23/64
DH722026	13/32	.4062	7/16	3-5/16	5-7/8
DH722027	27/64	.4219	7/16	3-15/32	5-7/8
DH722028	7/16	.4375	7/16	3-5/8	6-7/32
DH722029	29/64	.4531	1/2	3-25/32	6-7/32
DH722030	15/32	.4688	1/2	3-25/32	6-7/32
DH722031	31/64	.4844	1/2	3-15/16	6-37/64
DH722032	1/2	.5000	1/2	4-3/32	6-37/64

▶ Other shank types are available on your request.

◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended		◎	◎	◎	○	◎	◎	○	○	◎	○	○	○		◎	○	◎	○	◎	○

ISO	N										S							H			
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel		Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended																		○			

TiAlN-COATED SOLID CARBIDE

DREAM DRILLS - GENERAL without COOLANT HOLES

SERIES **DH404**

- ▶ Drilling for Steel, Cast Steel, Cast Iron, Malleable Cast Iron
- ▶ Self centering and chip breaking by R-thinning
- ▶ Wave shape and negative land on the cutting edge for low thrust, stable torque and long tool life
- ▶ Optimized flute shape for strength of drilling and smooth chip evacuation

DIN 6539 | CARBIDE | h6 | m7 | 140° | TiAlN

p.90

STUB

3 × D

Unit : mm

EDP No.	Drill Diameter		Flute Length	Overall Length
	Metric	Inch		
TiAlN	D1 = D2		L1	L2
DH404030	3.0	.1181	16	46
DH404031	3.1	.1220	18	49
DH404032	3.2	.1260	18	49
DH404033	3.3	.1299	18	49
DH404034	3.4	.1339	20	52
DH404035	3.5	.1378	20	52
DH404036	3.6	.1417	20	52
DH404037	3.7	.1457	20	52
DH404038	3.8	.1496	22	55
DH404039	3.9	.1535	22	55
DH404040	4.0	.1575	22	55
DH404041	4.1	.1614	22	55
DH404042	4.2	.1654	22	55
DH404043	4.3	.1693	24	58
DH404044	4.4	.1732	24	58
DH404045	4.5	.1772	24	58
DH404046	4.6	.1811	24	58
DH404047	4.7	.1850	24	58
DH404048	4.8	.1890	26	62
DH404049	4.9	.1929	26	62
DH404050	5.0	.1969	26	62
DH404051	5.1	.2008	26	62
DH404052	5.2	.2047	26	62
DH404053	5.3	.2087	26	62
DH404054	5.4	.2126	28	66
DH404055	5.5	.2165	28	66

EDP No.	Drill Diameter		Flute Length	Overall Length
	Metric	Inch		
TiAlN	D1 = D2		L1	L2
DH404056	5.6	.2205	28	66
DH404057	5.7	.2244	28	66
DH404058	5.8	.2283	28	66
DH404059	5.9	.2323	28	66
DH404060	6.0	.2362	28	66
DH404061	6.1	.2402	31	70
DH404062	6.2	.2441	31	70
DH404063	6.3	.2480	31	70
DH404064	6.4	.2520	31	70
DH404065	6.5	.2559	31	70
DH404066	6.6	.2598	31	70
DH404067	6.7	.2638	31	70
DH404068	6.8	.2677	34	74
DH404069	6.9	.2717	34	74
DH404070	7.0	.2756	34	74
DH404071	7.1	.2795	34	74
DH404072	7.2	.2835	34	74
DH404073	7.3	.2874	34	74
DH404074	7.4	.2913	34	74
DH404075	7.5	.2953	34	74
DH404076	7.6	.2992	37	79
DH404077	7.7	.3031	37	79
DH404078	7.8	.3071	37	79
DH404079	7.9	.3110	37	79
DH404080	8.0	.3150	37	79
DH404081	8.1	.3189	37	79

▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended		◎	◎	◎	○	◎	◎	○	○	◎	○	○	○		◎	○	◎	○	◎	○

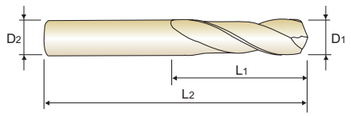
ISO	N										S							H			
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel		Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended																		○			

TiAlN-COATED SOLID CARBIDE

DREAM DRILLS - GENERAL without COOLANT HOLES

SERIES **DH404**

- Drilling for Steel, Cast Steel, Cast Iron, Malleable Cast Iron
- Self centering and chip breaking by R-thinning
- Wave shape and negative land on the cutting edge for low thrust, stable torque and long tool life
- Optimized flute shape for strength of drilling and smooth chip evacuation



DIN 6539 | CARBIDE | h6 | m7 | 140° | TiAlN

p.90

STUB

3×D

Unit : mm

EDP No.	Drill Diameter		Flute Length	Overall Length
	Metric	Inch		
TiAlN	D1 = D2		L1	L2
DH404082	8.2	.3228	37	79
DH404083	8.3	.3268	37	79
DH404084	8.4	.3307	37	79
DH404085	8.5	.3346	37	79
DH404086	8.6	.3386	40	84
DH404087	8.7	.3425	40	84
DH404088	8.8	.3465	40	84
DH404089	8.9	.3504	40	84
DH404090	9.0	.3543	40	84
DH404091	9.1	.3583	40	84
DH404092	9.2	.3622	40	84
DH404093	9.3	.3661	40	84
DH404094	9.4	.3701	40	84
DH404095	9.5	.3740	40	84
DH404096	9.6	.3780	43	89
DH404097	9.7	.3819	43	89
DH404098	9.8	.3858	43	89
DH404099	9.9	.3898	43	89
DH404100	10.0	.3937	43	89
DH404102	10.2	.4016	43	89

EDP No.	Drill Diameter		Flute Length	Overall Length
	Metric	Inch		
TiAlN	D1 = D2		L1	L2
DH404105	10.5	.4134	43	89
DH404110	11.0	.4331	47	95
DH404115	11.5	.4528	47	95
DH404120	12.0	.4724	51	102
DH404130	13.0	.5118	51	102
DH404135	13.5	.5314	54	107
DH404140	14.0	.5512	54	107
DH404145	14.5	.5708	56	111
DH404150	15.0	.5905	56	111
DH404155	15.5	.6102	58	115
DH404160	16.0	.6299	58	115
DH404165	16.5	.6495	60	119
DH404170	17.0	.6692	60	119
DH404175	17.5	.6889	62	123
DH404180	18.0	.7087	62	123
DH404185	18.5	.7283	64	127
DH404190	19.0	.7480	64	127
DH404195	19.5	.7676	66	131
DH404200	20.0	.7874	66	131

▶ Other shank types are available on your request.

◎ : Excellent ○ : Good

ISO	P											M				K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel				Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14		15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10		10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180		180	260	160	250	130	230
Recommended		◎	◎	◎	○	◎	◎	○	○	◎	○	○	○			◎	○	◎	○	◎	○

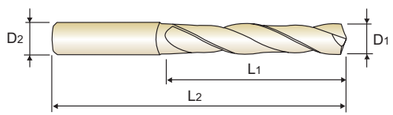
ISO	N										S							H			
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel		Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended																		○			

TiAlN-COATED SOLID CARBIDE

DREAM DRILLS - GENERAL without COOLANT HOLES

SERIES **DH423**

- Drilling for Steel, Cast Steel, Cast Iron, Malleable Cast Iron
- Self centering and chip breaking by R-thinning
- Wave shape and negative land on the cutting edge for low thrust, stable torque and long tool life
- Optimized flute shape for strength of drilling and smooth chip evacuation



DIN 6537 | CARBIDE | h6 | m7 | 140° | TiAlN

p.90

SHORT

3×D

Unit : mm

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Fractional	Decimal			
TiAlN	D1			D2	L1	L2
DH423030	3.0		.1181	6	20	62
DH423031	3.1		.1220	6	20	62
DH423008F	3.175	1/8	.1250	6	20	62
DH423032	3.2		.1260	6	20	62
DH423033	3.3		.1299	6	20	62
DH423034	3.4		.1339	6	20	62
DH423035	3.5		.1378	6	20	62
DH423009F	3.572	9/64	.1406	6	20	62
DH423036	3.6		.1417	6	20	62
DH423037	3.7		.1457	6	20	62
DH423038	3.8		.1496	6	24	66
DH423039	3.9		.1535	6	24	66
DH423010F	3.969	5/32	.1563	6	24	66
DH423040	4.0		.1575	6	24	66
DH423041	4.1		.1614	6	24	66
DH423042	4.2		.1654	6	24	66
DH423043	4.3		.1693	6	24	66
DH423011F	4.366	11/64	.1719	6	24	66
DH423044	4.4		.1732	6	24	66
DH423045	4.5		.1772	6	24	66
DH423046	4.6		.1811	6	24	66
DH423047	4.7		.1850	6	24	66
DH423012F	4.763	3/16	.1875	6	24	66
DH423048	4.8		.1890	6	28	66
DH423049	4.9		.1929	6	28	66
DH423050	5.0		.1969	6	28	66

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Fractional	Decimal			
TiAlN	D1			D2	L1	L2
DH423051	5.1		.2008	6	28	66
DH423013F	5.159	13/64	.2031	6	28	66
DH423052	5.2		.2047	6	28	66
DH423053	5.3		.2087	6	28	66
DH423054	5.4		.2126	6	28	66
DH423055	5.5		.2165	6	28	66
DH423014F	5.556	7/32	.2188	6	28	66
DH423056	5.6		.2205	6	28	66
DH423057	5.7		.2244	6	28	66
DH423058	5.8		.2283	6	28	66
DH423059	5.9		.2323	6	28	66
DH423015F	5.953	15/64	.2344	6	28	66
DH423060	6.0		.2362	6	28	66
DH423061	6.1		.2402	8	34	79
DH423062	6.2		.2441	8	34	79
DH423063	6.3		.2480	8	34	79
DH423016F	6.350	1/4	.2500	8	34	79
DH423064	6.4		.2520	8	34	79
DH423065	6.5		.2559	8	34	79
DH423006L	6.528	F	.2570	8	34	79
DH423066	6.6		.2598	8	34	79
DH423067	6.7		.2638	8	34	79
DH423017F	6.747	17/64	.2656	8	34	79
DH423068	6.8		.2677	8	34	79
DH423069	6.9		.2717	8	34	79
DH423009L	6.909	I	.2720	8	34	79

▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

ISO	P											M				K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel				Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14		15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10		10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180		180	260	160	250	130	230
Recommended		◎	◎	◎	○	◎	◎	○	○	◎	○	○	○			◎	○	◎	○	◎	○

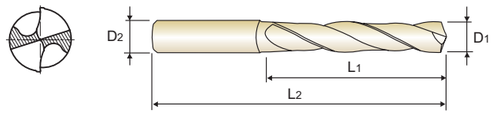
ISO	N										S							H			
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel		Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended																		○			

TiAlN-COATED SOLID CARBIDE

DREAM DRILLS - GENERAL without COOLANT HOLES

SERIES **DH423**

- ▶ Drilling for Steel, Cast Steel, Cast Iron, Malleable Cast Iron
- ▶ Self centering and chip breaking by R-thinning
- ▶ Wave shape and negative land on the cutting edge for low thrust, stable torque and long tool life
- ▶ Optimized flute shape for strength of drilling and smooth chip evacuation



DIN 6537 | CARBIDE | h6 | m7 | 140° | TiAlN

p.90

SHORT 3×D

Unit : mm

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Fractional	Decimal			
TiAlN	D1			D2	L1	L2
DH423070	7.0		.2756	8	34	79
DH423071	7.1		.2795	8	41	79
DH423018F	7.144	9/32	.2812	8	41	79
DH423072	7.2		.2835	8	41	79
DH423073	7.3		.2874	8	41	79
DH423074	7.4		.2913	8	41	79
DH423075	7.5		.2953	8	41	79
DH423019F	7.541	19/64	.2969	8	41	79
DH423076	7.6		.2992	8	41	79
DH423077	7.7		.3031	8	41	79
DH423078	7.8		.3071	8	41	79
DH423079	7.9		.3110	8	41	79
DH423020F	7.938	5/16	.3125	8	41	79
DH423080	8.0		.3150	8	41	79
DH423081	8.1		.3189	10	47	89
DH423082	8.2		.3228	10	47	89
DH423083	8.3		.3268	10	47	89
DH423021F	8.334	21/64	.3281	10	47	89
DH423084	8.4		.3307	10	47	89
DH423017L	8.433	Q	.3320	10	47	89
DH423085	8.5		.3346	10	47	89
DH423086	8.6		.3386	10	47	89
DH423087	8.7		.3425	10	47	89
DH423022F	8.731	11/32	.3438	10	47	89
DH423088	8.8		.3465	10	47	89
DH423089	8.9		.3504	10	47	89

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Fractional	Decimal			
TiAlN	D1			D2	L1	L2
DH423090	9.0		.3543	10	47	89
DH423091	9.1		.3583	10	47	89
DH423023F	9.128	23/64	.3594	10	47	89
DH423092	9.2		.3622	10	47	89
DH423093	9.3		.3661	10	47	89
DH423021L	9.347	U	.3680	10	47	89
DH423094	9.4		.3701	10	47	89
DH423095	9.5		.3740	10	47	89
DH423024F	9.525	3/8	.3750	10	47	89
DH423096	9.6		.3780	10	47	89
DH423097	9.7		.3819	10	47	89
DH423098	9.8		.3858	10	47	89
DH423099	9.9		.3898	10	47	89
DH423025F	9.922	25/64	.3906	10	47	89
DH423100	10.0		.3937	10	47	89
DH423101	10.1		.3976	12	55	102
DH423102	10.2		.4016	12	55	102
DH423103	10.3		.4055	12	55	102
DH423026F	10.319	13/32	.4062	12	55	102
DH423104	10.4		.4094	12	55	102
DH423105	10.5		.4134	12	55	102
DH423106	10.6		.4173	12	55	102
DH423107	10.7		.4213	12	55	102
DH423027F	10.716	27/64	.4219	12	55	102
DH423108	10.8		.4252	12	55	102
DH423109	10.9		.4291	12	55	102

▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended		◎	◎	◎	○	◎	◎	○	○	◎	○	○	○		◎	○	◎	○	◎	○

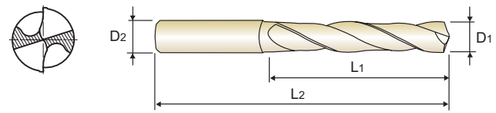
ISO	N										S							H		
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel	Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended																		○			

TiAlN-COATED SOLID CARBIDE

DREAM DRILLS - GENERAL without COOLANT HOLES

SERIES DH423

- ▶ Drilling for Steel, Cast Steel, Cast Iron, Malleable Cast Iron
- ▶ Self centering and chip breaking by R-thinning
- ▶ Wave shape and negative land on the cutting edge for low thrust, stable torque and long tool life
- ▶ Optimized flute shape for strength of drilling and smooth chip evacuation



DIN 6537 | CARBIDE | h6 | m7 | 140° | TiAlN

p.90

SHORT 3×D

Unit : mm

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Fractional	Decimal			
TiAlN	D1			D2	L1	L2
DH423110	11.0		.4331	12	55	102
DH423111	11.1		.4370	12	55	102
DH423028F	11.113	7/16	.4375	12	55	102
DH423112	11.2		.4409	12	55	102
DH423113	11.3		.4449	12	55	102
DH423114	11.4		.4488	12	55	102
DH423115	11.5		.4528	12	55	102
DH423029F	11.509	29/64	.4531	12	55	102
DH423116	11.6		.4567	12	55	102
DH423117	11.7		.4606	12	55	102
DH423118	11.8		.4646	12	55	102
DH423119	11.9		.4685	12	55	102
DH423030F	11.906	15/32	.4688	12	55	102
DH423120	12.0		.4724	12	55	102
DH423121	12.1		.4764	14	60	107
DH423122	12.2		.4803	14	60	107
DH423123	12.3		.4843	14	60	107
DH423031F	12.303	31/64	.4844	14	60	107
DH423124	12.4		.4882	14	60	107
DH423125	12.5		.4921	14	60	107
DH423126	12.6		.4961	14	60	107
DH423032F	12.7	1/2	.5000	14	60	107
DH423128	12.8		.5039	14	60	107
DH423129	12.9		.5079	14	60	107
DH423130	13.0		.5118	14	60	107
DH423131	13.1		.5157	14	60	107

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Fractional	Decimal			
TiAlN	D1			D2	L1	L2
DH423132	13.2		.5197	14	60	107
DH423133	13.3		.5236	14	60	107
DH423134	13.4		.5276	14	60	107
DH423135	13.5		.5315	14	60	107
DH423136	13.6		.5354	14	60	107
DH423137	13.7		.5394	14	60	107
DH423138	13.8		.5433	14	60	107
DH423139	13.9		.5472	14	60	107
DH423140	14.0		.5512	14	60	107
DH423141	14.1		.5551	16	65	115
DH423142	14.2		.5591	16	65	115
DH423036F	14.288	9/16	.5625	16	65	115
DH423143	14.3		.5630	16	65	115
DH423144	14.4		.5669	16	65	115
DH423145	14.5		.5708	16	65	115
DH423146	14.6		.5748	16	65	115
DH423147	14.7		.5787	16	65	115
DH423148	14.8		.5827	16	65	115
DH423149	14.9		.5866	16	65	115
DH423150	15.0		.5905	16	65	115
DH423151	15.1		.5945	16	65	115
DH423152	15.2		.5984	16	65	115
DH423153	15.3		.6024	16	65	115
DH423154	15.4		.6063	16	65	115
DH423155	15.5		.6102	16	65	115
DH423156	15.6		.6142	16	65	115

▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended		◎	◎	◎	○	◎	◎	○	○	◎	○	○	○		◎	○	◎	○	◎	○

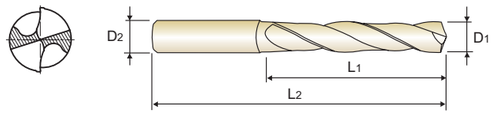
ISO	N										S							H		
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel	Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended																		○			

TiAlN-COATED SOLID CARBIDE

DREAM DRILLS - GENERAL without COOLANT HOLES

SERIES **DH423**

- ▶ Drilling for Steel, Cast Steel, Cast Iron, Malleable Cast Iron
- ▶ Self centering and chip breaking by R-thinning
- ▶ Wave shape and negative land on the cutting edge for low thrust, stable torque and long tool life
- ▶ Optimized flute shape for strength of drilling and smooth chip evacuation



DIN 6537 | CARBIDE | h6 | m7 | 140° | TiAlN | p.90

SHORT 3×D

Unit : mm

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Fractional	Decimal			
TiAlN	D1			D2	L1	L2
DH423157	15.7		.6181	16	65	115
DH423158	15.8		.6220	16	65	115
DH423040F	15.875	5/8	.6250	16	65	115
DH423159	15.9		.6260	16	65	115
DH423160	16.0		.6299	16	65	115
DH423161	16.1		.6339	18	73	123
DH423162	16.2		.6378	18	73	123
DH423163	16.3		.6417	18	73	123
DH423164	16.4		.6457	18	73	123
DH423165	16.5		.6495	18	73	123
DH423166	16.6		.6535	18	73	123
DH423167	16.7		.6575	18	73	123
DH423168	16.8		.6614	18	73	123
DH423169	16.9		.6654	18	73	123
DH423170	17.0		.6692	18	73	123
DH423171	17.1		.6732	18	73	123
DH423172	17.2		.6772	18	73	123
DH423173	17.3		.6811	18	73	123
DH423174	17.4		.6850	18	73	123
DH423044F	17.463	11/16	.6875	18	73	123
DH423175	17.5		.6889	18	73	123
DH423176	17.6		.6929	18	73	123
DH423177	17.7		.6968	18	73	123
DH423178	17.8		.7008	18	73	123

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Fractional	Decimal			
TiAlN	D1			D2	L1	L2
DH423179	17.9		.7047	18	73	123
DH423180	18.0		.7087	18	73	123
DH423181	18.1		.7126	20	79	131
DH423182	18.2		.7165	20	79	131
DH423183	18.3		.7205	20	79	131
DH423184	18.4		.7244	20	79	131
DH423185	18.5		.7283	20	79	131
DH423186	18.6		.7323	20	79	131
DH423187	18.7		.7362	20	79	131
DH423188	18.8		.7402	20	79	131
DH423189	18.9		.7441	20	79	131
DH423190	19.0		.7480	20	79	131
DH423048F	19.050	3/4	.7500	20	79	131
DH423191	19.1		.7520	20	79	131
DH423192	19.2		.7559	20	79	131
DH423193	19.3		.7598	20	79	131
DH423194	19.4		.7638	20	79	131
DH423195	19.5		.7676	20	79	131
DH423196	19.6		.7717	20	79	131
DH423197	19.7		.7756	20	79	131
DH423198	19.8		.7795	20	79	131
DH423199	19.9		.7835	20	79	131
DH423200	20.0		.7874	20	79	131

▶ Other shank types are available on your request.

◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended		◎	◎	◎	○	◎	◎	○	○	◎	○	○	○		◎	○	◎	○	◎	○

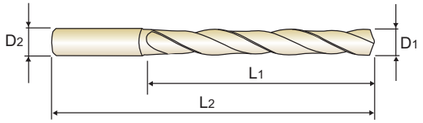
ISO	N										S							H		
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel	Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended																		○			

TiAlN-COATED SOLID CARBIDE

DREAM DRILLS - GENERAL without COOLANT HOLES

SERIES **DH424**

- ▶ Drilling for Steel, Cast Steel, Cast Iron, Malleable Cast Iron
- ▶ Self centering and chip breaking by R-thinning
- ▶ Wave shape and negative land on the cutting edge for low thrust, stable torque and long tool life
- ▶ Optimized flute shape for strength of drilling and smooth chip evacuation



DIN 6537 | CARBIDE | h6 | m7 | 140° | TiAlN | p.90

LONG 5×D

Unit : mm

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Fractional	Decimal			
TiAlN	D1			D2	L1	L2
DH424010	1.0		.0394	3	8	55
DH424011	1.1		.0433	3	12	55
DH424012	1.2		.0472	3	12	55
DH424013	1.3		.0512	3	12	55
DH424014	1.4		.0551	3	12	55
DH424015	1.5		.0591	3	16	55
DH424004F	1.588	1/16	.0625	3	16	55
DH424016	1.6		.0630	3	16	55
DH424017	1.7		.0669	3	16	55
DH424018	1.8		.0709	3	16	55
DH424019	1.9		.0748	3	16	55
DH424005F	1.984	5/64	.0781	3	16	55
DH424020	2.0		.0787	4	21	57
DH424021	2.1		.0827	4	21	57
DH424022	2.2		.0866	4	21	57
DH424023	2.3		.0906	4	21	57
DH424006F	2.381	3/32	.0938	4	21	57
DH424024	2.4		.0945	4	21	57
DH424025	2.5		.0984	4	21	57
DH424026	2.6		.1024	4	21	57
DH424027	2.7		.1063	4	21	57
DH424007F	2.778	7/64	.1094	4	21	57
DH424028	2.8		.1102	4	21	57
DH424029	2.9		.1142	4	21	57
DH424030	3.0		.1181	6	28	66
DH424031	3.1		.1220	6	28	66

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Fractional	Decimal			
TiAlN	D1			D2	L1	L2
DH424008F	3.175	1/8	.1250	6	28	66
DH424032	3.2		.1260	6	28	66
DH424033	3.3		.1299	6	28	66
DH424034	3.4		.1339	6	28	66
DH424035	3.5		.1378	6	28	66
DH424009F	3.572	9/64	.1406	6	28	66
DH424036	3.6		.1417	6	28	66
DH424037	3.7		.1457	6	28	66
DH424038	3.8		.1496	6	36	74
DH424039	3.9		.1535	6	36	74
DH424010F	3.969	5/32	.1563	6	36	74
DH424040	4.0		.1575	6	36	74
DH424041	4.1		.1614	6	36	74
DH424042	4.2		.1654	6	36	74
DH424043	4.3		.1693	6	36	74
DH424011F	4.366	11/64	.1719	6	36	74
DH424044	4.4		.1732	6	36	74
DH424045	4.5		.1772	6	36	74
DH424046	4.6		.1811	6	36	74
DH424047	4.7		.1850	6	36	74
DH424012F	4.763	3/16	.1875	6	36	74
DH424048	4.8		.1890	6	44	82
DH424049	4.9		.1929	6	44	82
DH424050	5.0		.1969	6	44	82
DH424051	5.1		.2008	6	44	82
DH424013F	5.159	13/64	.2031	6	44	82

▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended		◎	◎	◎	○	◎	◎	○	○	◎	○	○	○		◎	○	◎	○	◎	○

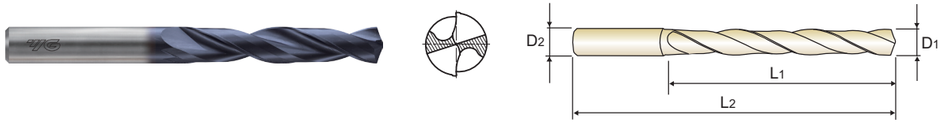
ISO	N										S							H		
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel	Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended																		○			

TiAlN-COATED SOLID CARBIDE

DREAM DRILLS - GENERAL without COOLANT HOLES

SERIES **DH424**

- ▶ Drilling for Steel, Cast Steel, Cast Iron, Malleable Cast Iron
- ▶ Self centering and chip breaking by R-thinning
- ▶ Wave shape and negative land on the cutting edge for low thrust, stable torque and long tool life
- ▶ Optimized flute shape for strength of drilling and smooth chip evacuation



DIN 6537 | CARBIDE | h6 | m7 | 140° | TiAlN

p.90

LONG 5×D

Unit : mm

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Fractional	Decimal			
TiAlN	D1			D2	L1	L2
DH424052	5.2		.2047	6	44	82
DH424053	5.3		.2087	6	44	82
DH424054	5.4		.2126	6	44	82
DH424055	5.5		.2165	6	44	82
DH424014F	5.556	7/32	.2188	6	44	82
DH424056	5.6		.2205	6	44	82
DH424057	5.7		.2244	6	44	82
DH424058	5.8		.2283	6	44	82
DH424059	5.9		.2323	6	44	82
DH424015F	5.953	15/64	.2344	6	44	82
DH424060	6.0		.2362	6	44	82
DH424061	6.1		.2402	8	53	91
DH424062	6.2		.2441	8	53	91
DH424063	6.3		.2480	8	53	91
DH424016F	6.350	1/4	.2500	8	53	91
DH424064	6.4		.2520	8	53	91
DH424065	6.5		.2559	8	53	91
DH424006L	6.528	F	.2570	8	53	91
DH424066	6.6		.2598	8	53	91
DH424067	6.7		.2638	8	53	91
DH424017F	6.747	17/64	.2656	8	53	91
DH424068	6.8		.2677	8	53	91
DH424069	6.9		.2717	8	53	91
DH424009L	6.909	I	.2720	8	53	91
DH424070	7.0		.2756	8	53	91
DH424071	7.1		.2795	8	53	91
DH424018F	7.144	9/32	.2812	8	53	91
DH424072	7.2		.2835	8	53	91
DH424073	7.3		.2874	8	53	91
DH424074	7.4		.2913	8	53	91
DH424075	7.5		.2953	8	53	91
DH424019F	7.541	19/64	.2969	8	53	91
DH424076	7.6		.2992	8	53	91
DH424077	7.7		.3031	8	53	91
DH424078	7.8		.3071	8	53	91
DH424079	7.9		.3110	8	53	91
DH424020F	7.938	5/16	.3125	8	53	91
DH424080	8.0		.3150	8	53	91
DH424081	8.1		.3189	10	61	103
DH424082	8.2		.3228	10	61	103
DH424083	8.3		.3268	10	61	103
DH424021F	8.334	21/64	.3281	10	61	103
DH424084	8.4		.3307	10	61	103
DH424017L	8.433	Q	.3320	10	61	103
DH424085	8.5		.3346	10	61	103
DH424086	8.6		.3386	10	61	103
DH424087	8.7		.3425	10	61	103
DH424022F	8.731	11/32	.3438	10	61	103
DH424088	8.8		.3465	10	61	103
DH424089	8.9		.3504	10	61	103
DH424090	9.0		.3543	10	61	103
DH424091	9.1		.3583	10	61	103

▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended		◎	◎	◎	○	◎	◎	○	○	◎	○	○	○		◎	○	◎	○	◎	○

ISO	N										S							H		
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel	Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended																		○			

TiAlN-COATED SOLID CARBIDE

DREAM DRILLS - GENERAL without COOLANT HOLES

SERIES DH424

- ▶ Drilling for Steel, Cast Steel, Cast Iron, Malleable Cast Iron
- ▶ Self centering and chip breaking by R-thinning
- ▶ Wave shape and negative land on the cutting edge for low thrust, stable torque and long tool life
- ▶ Optimized flute shape for strength of drilling and smooth chip evacuation

DIN 6537 | CARBIDE | h6 | m7 | 140° | TiAlN

p.90

LONG 5×D

Unit : mm

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Fractional	Decimal			
TiAlN	D1			D2	L1	L2
DH424023F	9.128	23/64	.3594	10	61	103
DH424092	9.2		.3622	10	61	103
DH424093	9.3		.3661	10	61	103
DH424021L	9.347	U	.3680	10	61	103
DH424094	9.4		.3701	10	61	103
DH424095	9.5		.3740	10	61	103
DH424024F	9.525	3/8	.3750	10	61	103
DH424096	9.6		.3780	10	61	103
DH424097	9.7		.3819	10	61	103
DH424098	9.8		.3858	10	61	103
DH424099	9.9		.3898	10	61	103
DH424025F	9.922	25/64	.3906	10	61	103
DH424100	10.0		.3937	10	61	103
DH424101	10.1		.3976	12	71	118
DH424102	10.2		.4016	12	71	118
DH424103	10.3		.4055	12	71	118
DH424026F	10.319	13/32	.4062	12	71	118
DH424104	10.4		.4094	12	71	118
DH424105	10.5		.4134	12	71	118
DH424106	10.6		.4173	12	71	118
DH424107	10.7		.4213	12	71	118
DH424027F	10.716	27/64	.4219	12	71	118
DH424108	10.8		.4252	12	71	118
DH424109	10.9		.4291	12	71	118
DH424110	11.0		.4331	12	71	118
DH424111	11.1		.4370	12	71	118
DH424028F	11.113	7/16	.4375	12	71	118
DH424112	11.2		.4409	12	71	118
DH424113	11.3		.4449	12	71	118
DH424114	11.4		.4488	12	71	118
DH424115	11.5		.4528	12	71	118
DH424029F	11.509	29/64	.4531	12	71	118
DH424116	11.6		.4567	12	71	118
DH424117	11.7		.4606	12	71	118
DH424118	11.8		.4646	12	71	118
DH424119	11.9		.4685	12	71	118
DH424030F	11.906	15/32	.4688	12	71	118
DH424120	12.0		.4724	12	71	118
DH424121	12.1		.4764	14	77	124
DH424122	12.2		.4803	14	77	124
DH424123	12.3		.4843	14	77	124
DH424031F	12.303	31/64	.4844	14	77	124
DH424124	12.4		.4882	14	77	124
DH424125	12.5		.4921	14	77	124
DH424126	12.6		.4961	14	77	124
DH424032F	12.7	1/2	.5000	14	77	124
DH424128	12.8		.5039	14	77	124
DH424129	12.9		.5079	14	77	124
DH424130	13.0		.5118	14	77	124
DH424131	13.1		.5157	14	77	124
DH424132	13.2		.5197	14	77	124
DH424133	13.3		.5236	14	77	124

▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended		◎	◎	◎	○	◎	◎	○	○	◎	○	○	○		◎	○	◎	○	◎	○

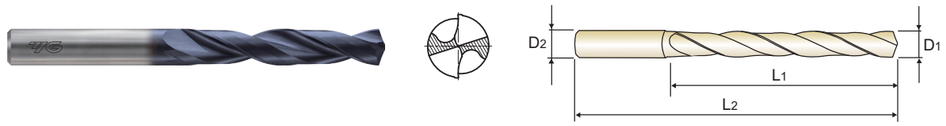
ISO	N										S							H		
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel	Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended																		○			

TiAlN-COATED SOLID CARBIDE

DREAM DRILLS - GENERAL without COOLANT HOLES

SERIES **DH424**

- ▶ Drilling for Steel, Cast Steel, Cast Iron, Malleable Cast Iron
- ▶ Self centering and chip breaking by R-thinning
- ▶ Wave shape and negative land on the cutting edge for low thrust, stable torque and long tool life
- ▶ Optimized flute shape for strength of drilling and smooth chip evacuation



DIN 6537 | CARBIDE | h6 | m7 | 140° | TiAlN

p.90

LONG

5×D

Unit : mm

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Fractional	Decimal			
TiAlN	D1			D2	L1	L2
DH424134	13.4		.5276	14	77	124
DH424135	13.5		.5315	14	77	124
DH424136	13.6		.5354	14	77	124
DH424137	13.7		.5394	14	77	124
DH424138	13.8		.5433	14	77	124
DH424139	13.9		.5472	14	77	124
DH424140	14.0		.5512	14	77	124
DH424141	14.1		.5551	16	83	133
DH424142	14.2		.5591	16	83	133
DH424036F	14.288	9/16	.5625	16	83	133
DH424143	14.3		.5630	16	83	133
DH424144	14.4		.5669	16	83	133
DH424145	14.5		.5708	16	83	133
DH424146	14.6		.5748	16	83	133
DH424147	14.7		.5787	16	83	133
DH424148	14.8		.5827	16	83	133
DH424149	14.9		.5866	16	83	133
DH424150	15.0		.5905	16	83	133
DH424151	15.1		.5945	16	83	133
DH424152	15.2		.5984	16	83	133
DH424153	15.3		.6024	16	83	133
DH424154	15.4		.6063	16	83	133
DH424155	15.5		.6102	16	83	133
DH424156	15.6		.6142	16	83	133
DH424157	15.7		.6181	16	83	133
DH424158	15.8		.6220	16	83	133

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Fractional	Decimal			
TiAlN	D1			D2	L1	L2
DH424040F	15.875	5/8	.6250	16	83	133
DH424159	15.9		.6260	16	83	133
DH424160	16.0		.6299	16	83	133
DH424161	16.1		.6339	18	93	143
DH424162	16.2		.6378	18	93	143
DH424163	16.3		.6417	18	93	143
DH424164	16.4		.6457	18	93	143
DH424165	16.5		.6495	18	93	143
DH424166	16.6		.6535	18	93	143
DH424167	16.7		.6575	18	93	143
DH424168	16.8		.6614	18	93	143
DH424169	16.9		.6654	18	93	143
DH424170	17.0		.6692	18	93	143
DH424171	17.1		.6732	18	93	143
DH424172	17.2		.6772	18	93	143
DH424173	17.3		.6811	18	93	143
DH424174	17.4		.6850	18	93	143
DH424175	17.5		.6889	18	93	143
DH424176	17.6		.6929	18	93	143
DH424177	17.7		.6968	18	93	143
DH424178	17.8		.7008	18	93	143
DH424179	17.9		.7047	18	93	143
DH424180	18.0		.7087	18	93	143
DH424181	18.1		.7126	20	101	153
DH424182	18.2		.7165	20	101	153
DH424183	18.3		.7205	20	101	153

▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended		◎	◎	◎	○	◎	◎	○	○	◎	○	○	○		◎	○	◎	○	◎	○

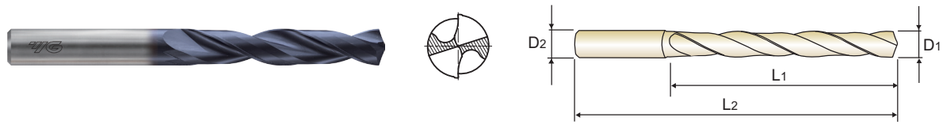
ISO	N										S							H			
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel		Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended																		○			

TiAlN-COATED SOLID CARBIDE

DREAM DRILLS - GENERAL without COOLANT HOLES

SERIES DH424

▶ Drilling for Steel, Cast Steel, Cast Iron, Malleable Cast Iron
▶ Self centering and chip breaking by R-thinning
▶ Wave shape and negative land on the cutting edge for low thrust, stable torque and long tool life
▶ Optimized flute shape for strength of drilling and smooth chip evacuation



DIN 6537 | CARBIDE | h6 | m7 | 140° | TiAlN

p.90

LONG

5×D

Unit : mm

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Fractional	Decimal			
TiAlN	D1			D2	L1	L2
DH424184	18.4		.7244	20	101	153
DH424185	18.5		.7283	20	101	153
DH424186	18.6		.7323	20	101	153
DH424187	18.7		.7362	20	101	153
DH424188	18.8		.7402	20	101	153
DH424189	18.9		.7441	20	101	153
DH424190	19.0		.7480	20	101	153
DH424048F	19.005	3/4	.7500	20	101	153
DH424191	19.1		.7520	20	101	153

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Fractional	Decimal			
TiAlN	D1			D2	L1	L2
DH424192	19.2		.7559	20	101	153
DH424193	19.3		.7598	20	101	153
DH424194	19.4		.7638	20	101	153
DH424195	19.5		.7676	20	101	153
DH424196	19.6		.7717	20	101	153
DH424197	19.7		.7756	20	101	153
DH424198	19.8		.7795	20	101	153
DH424199	19.9		.7835	20	101	153
DH424200	20.0		.7874	20	101	153

▶ Other shank types are available on your request.

◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended		◎	◎	◎	○	◎	◎	○	○	◎	○	○	○		◎	○	◎	○	◎	○

ISO	N										S							H			
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel		Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended																		○			

DH416, DH418, DH711, DH712
DH406, DH408, DH421 SERIES with COOLANT HOLES

SFM = ft/min.
RPM = rev./min.
FEED = inch/rev.

ISO	VDI 3323	Material Description	SFM	Drill Diameter			SFM	Drill Diameter							
			1.0 ~ 2.9	METRIC	1.0	2.0	3.0 ~ 20.0	METRIC	3.0	-	4.0	-	5.0	6.0	-
			-	FRACTIONAL	-	-	1/8 ~ 3/4	FRACTIONAL	-	1/8	-	3/16	-	-	1/4
			.0394 ~ .0787	DECIMAL	.0394	.0787	.1181 ~ .7874	DECIMAL	.1181	.1250	.1575	.1875	.1969	.2362	.2500
P	2	Non-alloy steel	263	RPM	25460	12730	362	RPM	11670		8750		7000		5840
				FEED	.0012 - .0020	.0020 - .0028		FEED	.0024 - .0047		.0031 - .0055		.0055 - .0079		.0063 - .0087
	3		263	RPM	25460	12730	362	RPM	11670		8750		7000		5840
				FEED	.0012 - .0020	.0020 - .0028		FEED	.0024 - .0047		.0031 - .0055		.0055 - .0079		.0063 - .0087
	4		263	RPM	25460	12730	362	RPM	11670		8750		7000		5840
				FEED	.0012 - .0020	.0020 - .0028		FEED	.0016 - .0039		.0028 - .0051		.0039 - .0063		.0047 - .0071
	5		230	RPM	22280	11140	296	RPM	9550		7160		5730		4770
				FEED	.0012 - .0020	.0020 - .0028		FEED	.0016 - .0039		.0028 - .0051		.0039 - .0063		.0047 - .0071
	6	Low alloy steel	263	RPM	25460	12730	362	RPM	11670		8750		7000		5840
				FEED	.0012 - .0020	.0020 - .0028		FEED	.0024 - .0047		.0031 - .0055		.0055 - .0079		.0063 - .0087
	7		230	RPM	22280	11140	296	RPM	9550		7160		5730		4770
				FEED	.0012 - .0020	.0020 - .0028		FEED	.0024 - .0047		.0031 - .0055		.0039 - .0079		.0047 - .0094
	8		230	RPM	22280	11140	296	RPM	9550		7160		5730		4770
				FEED	.0008 - .0016	.0012 - .0020		FEED	.0016 - .0039		.0028 - .0051		.0039 - .0063		.0047 - .0071
	9		132	RPM	12730	6370	165	RPM	5310		3980		3180		2650
				FEED	.0008 - .0016	.0012 - .0020		FEED	.0012 - .0031		.0020 - .0043		.0031 - .0055		.0039 - .0063
	10	High alloyed steel, and tool steel	198	RPM	19100	9550	263	RPM	8490		6370		5090		4240
				FEED	.0012 - .0020	.0020 - .0028		FEED	.0016 - .0039		.0028 - .0051		.0039 - .0063		.0047 - .0071
	11		132	RPM	12730	6370	148	RPM	4770		3580		2860		2390
				FEED	.0008 - .0016	.0012 - .0020		FEED	.0012 - .0031		.0020 - .0043		.0031 - .0055		.0039 - .0063
M	12	Stainless steel	198	RPM	19100	9550	263	RPM	8490		6370		5090		4240
				FEED	.0012 - .0020	.0020 - .0028		FEED	.0024 - .0047		.0031 - .0055		.0055 - .0079		.0063 - .0087
	13		148	RPM	14320	7160	181	RPM	5840		4380		3500		2920
				FEED	.0008 - .0016	.0012 - .0020		FEED	.0016 - .0039		.0028 - .0051		.0039 - .0063		.0047 - .0071
K	15	Grey cast iron	263	RPM	25460	12730	362	RPM	11670		8750		7000		5840
				FEED	.0016 - .0024	.0016 - .0024		FEED	.0031 - .0055		.0047 - .0071		.0059 - .0087		.0079 - .0102
	16		247	RPM	23870	11940	313	RPM	10080		7560		6050		5040
				FEED	.0016 - .0024	.0016 - .0024		FEED	.0024 - .0047		.0031 - .0055		.0055 - .0079		.0063 - .0087
	17	Nodular cast iron	296	RPM	28650	14320	395	RPM	12730		9550		7640		6370
				FEED	.0016 - .0024	.0016 - .0024		FEED	.0031 - .0055		.0047 - .0071		.0059 - .0087		.0079 - .0102
	18		198	RPM	19100	9550	263	RPM	8490		6370		5090		4240
				FEED	.0016 - .0024	.0016 - .0024		FEED	.0024 - .0047		.0031 - .0055		.0055 - .0079		.0063 - .0087
	19	Malleable cast iron	230	RPM	22280	11140	296	RPM	9550		7160		5730		4770
				FEED	.0016 - .0024	.0016 - .0024		FEED	.0031 - .0055		.0047 - .0071		.0059 - .0087		.0079 - .0102
	20		198	RPM	19100	9550	263	RPM	8490		6370		5090		4240
				FEED	.0012 - .0020	.0020 - .0028		FEED	.0024 - .0047		.0031 - .0055		.0055 - .0079		.0063 - .0087
H	38	Hardened steel	82	RPM	7960	3980	98	RPM	3180		2390		1910		1590
				FEED	.0004 - .0008	.0004 - .0012		FEED	.0004 - .0012		.0004 - .0016		.0008 - .0020		.0012 - .0024

▶ NEXT PAGE

▶ Recommend to reduce the feed rate as following
Feed 100% : DH416/DH711(3xD), DH406(3xD), DH418/DH712(5xD), DH408(5xD)
Feed 75% : DH421(8xD)

DH416, DH418, DH711, DH712
DH406, DH408, DH421 SERIES with COOLANT HOLES

SFM = ft/min.
RPM = rev./min.
FEED = inch/rev.

ISO	VDI 3323	SFM	Drill Diameter												
		3.0 ~ 20.0	METRIC	-	8.0	-	10.0	12.0	-	14.0	-	-	16.0	18.0	-	20.0
		1/8 ~ 3/4	FRACTIONAL	5/16	-	3/8	-	-	1/2	-	9/16	5/8	-	-	3/4	-
		.1181 ~ .7874	DECIMAL	.3125	.3150	.3750	.3937	.4724	.5000	.5512	.5625	.6250	.6299	.7087	.7500	.7874
P	2	362	RPM	4380		3500		2920	2770		2500		2190	1950	1840	1750
			FEED	.0071 - .0094		.0075 - .0106		.0083 - .0114	.0083 - .0114		.0091 - .0122		.0098 - .0130	.0110 - .0150	.0110 - .0150	.0118 - .0157
	3	362	RPM	4380		3500		2920	2770		2500		2190	1950	1840	1750
			FEED	.0071 - .0094		.0075 - .0106		.0083 - .0114	.0083 - .0114		.0091 - .0122		.0098 - .0130	.0110 - .0150	.0110 - .0150	.0118 - .0157
	4	362	RPM	4380		3500		2920	2770		2500		2190	1950	1840	1750
			FEED	.0055 - .0079		.0059 - .0091		.0067 - .0098	.0067 - .0098		.0071 - .0102		.0075 - .0106	.0079 - .0118	.0079 - .0118	.0087 - .0126
	5	296	RPM	3580		2860		2390	2260		2050		1790	1590	1510	1430
			FEED	.0055 - .0079		.0059 - .0091		.0067 - .0098	.0067 - .0098		.0071 - .0102		.0075 - .0106	.0079 - .0118	.0079 - .0118	.0087 - .0126
	6	362	RPM	4380		3500		2920	2770		2500		2190	1950	1840	1750
			FEED	.0071 - .0094		.0075 - .0106		.0083 - .0114	.0083 - .0114		.0091 - .0122		.0098 - .0130	.0110 - .0150	.0110 - .0150	.0118 - .0157
	7	296	RPM	3580		2860		2390	2260		2050		1790	1590	1510	1430
			FEED	.0063 - .0110		.0075 - .0106		.0083 - .0114	.0083 - .0114		.0091 - .0122		.0098 - .0130	.0110 - .0150	.0110 - .0150	.0118 - .0157
	8	296	RPM	3580		2860		2390	2260		2050		1790	1590	1510	1430
			FEED	.0055 - .0079		.0059 - .0091		.0067 - .0098	.0067 - .0098		.0071 - .0102		.0075 - .0106	.0079 - .0118	.0079 - .0118	.0087 - .0126
	9	165	RPM	1990		1590		1330	1260		1140		990	880	840	800
			FEED	.0047 - .0071		.0051 - .0075		.0055 - .0079	.0055 - .0079		.0059 - .0083		.0063 - .0087	.0067 - .0098	.0063 - .0102	.0071 - .0110
	10	263	RPM	3180		2550		2120	2010		1820		1590	1410	1340	1270
			FEED	.0055 - .0079		.0059 - .0091		.0067 - .0098	.0067 - .0098		.0071 - .0102		.0075 - .0106	.0079 - .0118	.0079 - .0118	.0087 - .0126
	11	148	RPM	1790		1430		1190	1130		1020		900	800	750	720
			FEED	.0047 - .0071		.0051 - .0075		.0055 - .0079	.0055 - .0079		.0059 - .0083		.0063 - .0087	.0067 - .0098	.0063 - .0102	.0071 - .0110
M	12	263	RPM	3180		2550		2120	2010		1820		1590	1410	1340	1270
			FEED	.0071 - .0094		.0075 - .0106		.0083 - .0114	.0083 - .0114		.0091 - .0122		.0098 - .0130	.0110 - .0150	.0110 - .0150	.0118 - .0157
	13	181	RPM	2190		1750		1460	1380		1250		1090	970	920	880
			FEED	.0055 - .0079		.0059 - .0091		.0067 - .0098	.0067 - .0098		.0071 - .0102		.0075 - .0106	.0079 - .0118	.0079 - .0118	.0087 - .0126
K	15	362	RPM	4380		3500		2920	2770		2500		2190	1950	1840	1750
			FEED	.0087 - .0110		.0098 - .0130		.0106 - .0138	.0106 - .0138		.0114 - .0146		.0122 - .0154	.0126 - .0165	.0126 - .0165	.0134 - .0173
	16	313	RPM	3780		3020		2520	2390		2160		1890	1680	1590	1510
			FEED	.0071 - .0094		.0075 - .0106		.0083 - .0114	.0083 - .0114		.0091 - .0122		.0098 - .0130	.0110 - .0150	.0110 - .0150	.0118 - .0157
	17	395	RPM	4770		3820		3180	3020		2730		2390	2120	2010	1910
			FEED	.0087 - .0110		.0098 - .0130		.0106 - .0138	.0106 - .0138		.0114 - .0146		.0122 - .0154	.0126 - .0165	.0126 - .0165	.0134 - .0173
	18	263	RPM	3180		2550		2120	2010		1820		1590	1410	1340	1270
			FEED	.0071 - .0094		.0075 - .0106		.0083 - .0114	.0083 - .0114		.0091 - .0122		.0098 - .0130	.0110 - .0150	.0110 - .0150	.0118 - .0157
	19	296	RPM	3580		2860		2390	2260		2050		1790	1590	1510	1430
			FEED	.0087 - .0110		.0098 - .0130		.0106 - .0138	.0106 - .0138		.0114 - .0146		.0122 - .0154	.0126 - .0165	.0126 - .0165	.0134 - .0173
	20	263	RPM	3180		2550		2120	2010		1820		1590	1410	1340	1270
			FEED	.0071 - .0094		.0075 - .0106		.0083 - .0114	.0083 - .0114		.0091 - .0122		.0098 - .0130	.0110 - .0150	.0110 - .0150	.0118 - .0157
H	38	98	RPM	1190		950		800	750		680		600	530	500	480
			FEED	.0012 - .0024		.0016 - .0028		.0016 - .0031	.0016 - .0031		.0020 - .0035		.0020 - .0035	.0020 - .0039	.0020 - .0039	.0020 - .0039

▶ Recommend to reduce the feed rate as following
Feed 100% : DH416/DH711(3xD), DH406(3xD), DH418/DH712(5xD), DH408(5xD)
Feed 75% : DH421(8xD)

DH414, DH722, DH404, DH423, DH424 SERIES

without COOLANT HOLES

SFM = ft/min.
RPM = rev./min.
FEED = inch/rev.

ISO	VDI 3323	Material Description	SFM	Drill Diameter			SFM	Drill Diameter							
			1.0 ~ 2.9	METRIC	1.0	2.0	3.0 ~ 20.0	METRIC	3.0	-	4.0	-	5.0	6.0	-
			-	FRACTIONAL	-	-	1/8 ~ 3/4	FRACTIONAL	-	1/8	-	3/16	-	-	1/4
			.0394 ~ .0787	DECIMAL	.0394	.0787	.1181 ~ .7874	DECIMAL	.1181	.1250	.1575	.1875	.1969	.2362	.2500
P	2	Non-alloy steel	230	RPM	22280	11140	329	RPM	10610		7960	6370			5310
				FEED	.0012 - .0020	.0020 - .0028		FEED	.0024 - .0047		.0031 - .0055	.0055 - .0079			.0063 - .0087
	3		230	RPM	22280	11140	329	RPM	10610		7960	6370			5310
				FEED	.0012 - .0020	.0020 - .0028		FEED	.0024 - .0047		.0031 - .0055	.0055 - .0079			.0063 - .0087
	4		230	RPM	22280	11140	329	RPM	10610		7960	6370			5310
				FEED	.0012 - .0020	.0020 - .0028		FEED	.0016 - .0039		.0028 - .0051	.0039 - .0063			.0047 - .0071
	5		197	RPM	19100	9550	263	RPM	8490		6370	5090			4240
				FEED	.0012 - .0020	.0020 - .0028		FEED	.0016 - .0039		.0028 - .0051	.0039 - .0063			.0047 - .0071
	6	Low alloy steel	230	RPM	22280	11140	329	RPM	10610		7960	6370			5310
				FEED	.0012 - .0020	.0020 - .0028		FEED	.0024 - .0047		.0031 - .0055	.0055 - .0079			.0063 - .0087
	7		197	RPM	19100	9550	263	RPM	8490		6370	5090			4240
				FEED	.0012 - .0020	.0020 - .0028		FEED	.0024 - .0047		.0031 - .0055	.0039 - .0079			.0047 - .0094
	8		197	RPM	19100	9550	263	RPM	8490		6370	5090			4240
				FEED	.0008 - .0016	.0012 - .0020		FEED	.0016 - .0039		.0028 - .0051	.0039 - .0063			.0047 - .0071
	9		99	RPM	9550	4770	132	RPM	4240		3180	2550			2120
				FEED	.0008 - .0016	.0012 - .0020		FEED	.0012 - .0031		.0020 - .0043	.0031 - .0055			.0039 - .0063
	10	High alloyed steel, and tool steel	165	RPM	15920	7960	230	RPM	7430		5570	4460			3710
				FEED	.0012 - .0020	.0020 - .0028		FEED	.0016 - .0039		.0028 - .0051	.0039 - .0063			.0047 - .0071
	11		99	RPM	9550	4770	132	RPM	4240		3180	2550			2120
				FEED	.0008 - .0016	.0012 - .0020		FEED	.0012 - .0031		.002 - .0043	.0031 - .0055			.0039 - .0063
M	12	Stainless steel	165	RPM	15920	7960	230	RPM	7430		5570	4460			3710
				FEED	.0012 - .0020	.0020 - .0028		FEED	.0024 - .0047		.0031 - .0055	.0055 - .0079			.0063 - .0087
	13		115	RPM	11140	5570	148	RPM	4770		3580	2860			2390
				FEED	.0008 - .0016	.0012 - .0020		FEED	.0016 - .0039		.0028 - .0051	.0039 - .0063			.0047 - .0071
K	15	Grey cast iron	230	RPM	22280	11140	329	RPM	10610		7960	6370			5310
				FEED	.0016 - .0024	.0016 - .0024		FEED	.0031 - .0055		.0047 - .0071	.0059 -.0087			.0079 -.0102
	16		214	RPM	20690	10350	263	RPM	8490		6370	5090			4240
				FEED	.0016 - .0024	.0016 - .0024		FEED	.0024 - .0047		.0031 - .0055	.0055 - .0079			.0063 - .0087
	17	Nodular cast iron	230	RPM	22280	11140	329	RPM	10610		7960	6370			5310
				FEED	.0016 - .0024	.0016 - .0024		FEED	.0031 - .0055		.0047 - .0071	.0059 -.0087			.0079 -.0102
	18		165	RPM	15920	7960	230	RPM	7430		5570	4460			3710
				FEED	.0016 - .0024	.0016 - .0024		FEED	.0024 - .0047		.0031 - .0055	.0055 - .0079			.0063 - .0087
	19	Malleable cast iron	197	RPM	19100	9550	263	RPM	8490		6370	5090			4240
				FEED	.0016 - .0024	.0016 - .0024		FEED	.0031 - .0055		.0047 - .0071	.0059 -.0087			.0079 -.0102
	20		165	RPM	15920	7960	230	RPM	7430		5570	4460			3710
				FEED	.0012 - .0020	.0020 - .0028		FEED	.0024 - .0047		.0031 - .0055	.0055 - .0079			.0063 - .0087
H	38	Hardened steel	65	RPM	6370	3180	82	RPM	2650		1990	1590			1330
				FEED	.0004 - .0008	.0004 - .0012		FEED	.0004 - .0012		.0004 - .0016	.0008 - .0020			.0012 - .0024

▶ Recommend to reduce the feed rate as following

▶ NEXT PAGE

DH414, DH722, DH404, DH423, DH424 SERIES

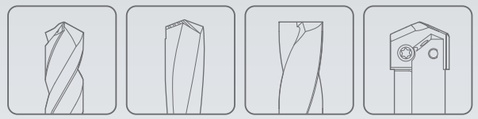
without COOLANT HOLES

SFM = ft/min.
RPM = rev./min.
FEED = inch/rev.

ISO	VDI 3323	SFM	Drill Diameter												
		3.0 ~ 20.0	METRIC	-	8.0	-	10.0	12.0	-	14.0	-	-	16.0	18.0	-	20.0
		1/8 ~ 3/4	FRACTIONAL	5/16	-	3/8	-	-	1/2	-	9/16	5/8	-	-	3/4	-
		.1181 ~ .7874	DECIMAL	.3125	.3150	.3750	.3937	.4724	.5000	.5512	.5625	.6250	.6299	.7087	.7500	.7874
P	2	329	RPM	3980		3180		2650	2510		2270		1990	1770	1680	1590
			FEED	.0071 - .0094		.0075 - .0106		.0083 - .0114	.0083 - .0114		.0091 - .0122		.0098 - .0130	.0110 - .0150	.0110 - .0150	.0118 - .0157
	3	329	RPM	3980		3180		2650	2510		2270		1990	1770	1680	1590
			FEED	.0071 - .0094		.0075 - .0106		.0083 - .0114	.0083 - .0114		.0091 - .0122		.0098 - .0130	.0110 - .0150	.0110 - .0150	.0118 - .0157
	4	329	RPM	3980		3180		2650	2510		2270		1990	1770	1680	1590
			FEED	.0055 - .0079		.0059 - .0091		.0067 - .0098	.0067 - .0098		.0071 - .0102		.0075 - .0106	.0079 - .0118	.0079 - .0118	.0087 - .0126
	5	263	RPM	3180		2550		2120	2010		1820		1590	1410	1340	1270
			FEED	.0055 - .0079		.0059 - .0091		.0067 - .0098	.0067 - .0098		.0071 - .0102		.0075 - .0106	.0079 - .0118	.0079 - .0118	.0087 - .0126
	6	329	RPM	3980		3180		2650	2510		2270		1990	1770	1680	1590
			FEED	.0071 - .0094		.0075 - .0106		.0083 - .0114	.0083 - .0114		.0091 - .0122		.0098 - .0130	.0110 - .0150	.0110 - .0150	.0118 - .0157
	7	263	RPM	3180		2550		2120	2010		1820		1590	1410	1340	1270
			FEED	.0063 - .011		.0075 - .0106		.0083 - .0114	.0083 - .0114		.0091 - .0122		.0098 - .0130	.0110 - .0150	.0110 - .0150	.0118 - .0157
	8	263	RPM	3180		2550		2120	2010		1820		1590	1410	1340	1270
			FEED	.0055 - .0079		.0059 - .0091		.0067 - .0098	.0067 - .0098		.0071 - .0102		.0075 - .0106	.0079 - .0118	.0079 - .0118	.0087 - .0126
	9	132	RPM	1590		1270		1060	1010		910		800	710	670	640
			FEED	.0047 - .0071		.0051 - .0075		.0055 - .0079	.0055 - .0079		.0059 - .0083		.0063 - .0087	.0067 - .0098	.0067 - .0098	.0071 - .0110
	10	230	RPM	2790		2230		1860	1760		1590		1390	1240	1170	1110
			FEED	.0055 - .0079		.0059 - .0091		.0067 - .0098	.0067 - .0098		.0071 - .0102		.0075 -. 0106	.0079 - .0118	.0079 - .0118	.0087 - .0126
	11	132	RPM	1590		1270		1060	1010		910		800	710	670	640
			FEED	.0047 - .0071		.0051 - .0075		.0055 - .0079	.0055 - .0079		.0059 - .0083		.0063 - .0087	.0067 - .0098	.0067 - .0098	.0071 - .0110
M	12	230	RPM	2790		2230		1860	1760		1590		1390	1240	1170	1110
			FEED	.0071 - .0094		.0075 - .0106		.0083 - .0114	.0083 - .0114		.0091 - .0122		.0098 - .0130	.0110 - .0150	.0110 - .0150	.0118 - .0157
	13	148	RPM	1790		1430		1190	1130		1020		900	800	750	720
			FEED	.0055 - .0079		.0059 - .0091		.0067 - .0098	.0067 - .0098		.0071 - .0102		.0075 - .0106	.0079 - .0118	.0079 - .0118	.0087 - .0126
K	15	329	RPM	3980		3180		2650	2510		2270		1990	1770	1680	1590
			FEED	.0087 - .0110		.0098 - .0130		.0106 - .0138	.0106 - .0138		.0114 - .0146		.0122 - .0154	.0126 - .0165	.0126 - .0165	.0134 - .0173
	16	263	RPM	3180		2550		2120	2010		1820		1590	1410	1340	1270
			FEED	.0071 - .0094		.0075 - .0106		.0083 - .0114	.0083 - .0114		.0091 - .0122		.0098 - .0130	.0110 - .0150	.0110 - .0150	.0118 - .0157
	17	329	RPM	3980		3180		2650	2510		2270		1990	1770	1680	1590
			FEED	.0087 - .0110		.0098 - .0130		.0106 - .0138	.0106 - .0138		.0114 - .0146		.0122 -.0154	.0126 - .0165	.0126 - .0165	.0134 - .0173
	18	230	RPM	2790		2230		1860	1760		1590		1390	1240	1170	1110
			FEED	.0071 - .0094		.0075 - .0106		.0083 - .0114	.0083 - .0114		.0091 - .0122		.0098 - .0130	.0110 - .0150	.0110 - .0150	.0118 - .0157
	19	263	RPM	3180		2550		2120	2010		1820		1590	1410	1340	1270
			FEED	.0087 - .0110		.0098 - .0130		.0106 -.0138	.0106 - .0138		.0114 - .0146		.0122 - .0154	.0126 - .0165	.0126 - .0165	.0134 - .0173
	20	230	RPM	2790		2230		1860	1760		1590		1390	1240	1170	1110
			FEED	.0071 - .0094		.0075 - .0106		.0083 - .0114	.0083 - .0114		.0091 - .0122		.0098 - .0130	.0110 - .0150	.0110 - .0150	.0118 - .0157
H	38	82	RPM	990		800		660	620		570		500	440	420	400
			FEED	.0012 - .0024		.0016 - .0028		.0016 - .0031	.0016 - .0031		.0020 - .0035		.0020 - .0035	.0020 - .0039	.0020 - .0039	.0020 - .0039

▶ Recommend to reduce the feed rate as following

Global Cutting Tool Leader **YG-1**



DREAM DRILLS

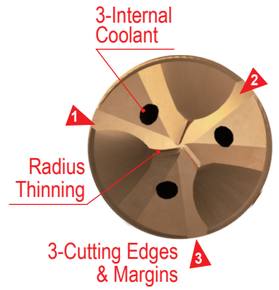
Leading Through Innovation

SOLID CARBIDE

DREAM DRILLS - HIGH FEED

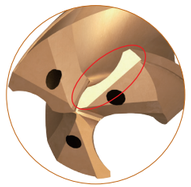
- 1.5 to 2 Times Faster Feeding Speed than 2-Flute Drill for Carbon Steels, Alloy Steels(up to HRc35) and Cast Iron

DREAM DRILLS HIGH FEED



3-Cutting Edges & Margins
will allow high penetration rate,
accurate holelocation and good surface finish

Radius Thinning (R-Thinning) for
Self Centering and Chip Breaking

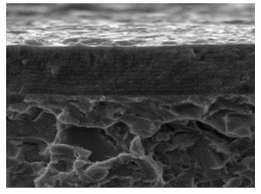


Ground Negative land
on cutting edge for Reliable Tool Life

3-Slots
on end of shank for smooth and consistent coolant supply

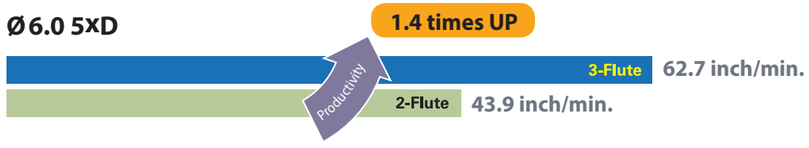
1.5 ~ 2 times Faster in drilling compared to two flute carbide drills

H-Coating
(Upgraded AlCrN-Based : **Multi-Layer Coating**)
- Higher worn-out resistance and Lower friction
- Higher Cutting Speed and Feed
- Improved drill Hole Quality

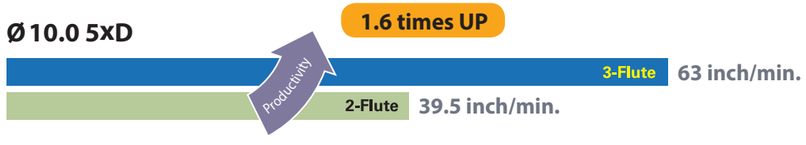


Productivity (Carbon Steel)

Ø 6.0 5xD



Ø 10.0 5xD



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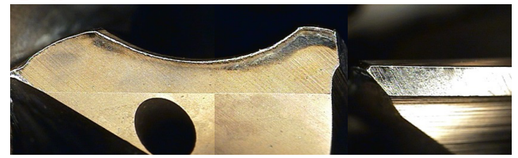
CASE STUDY

▶ SOLID CARBIDE DREAM DRILLS - HIGH FEED with Coolant Holes

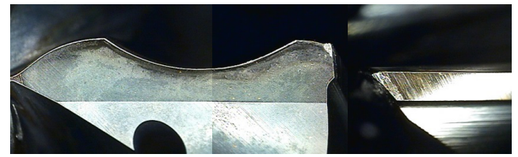
Cutting Condition

Tool	DGR495100
Size	Ø10 x Ø10 x 61 x 103
Work Material	• AISI : 1045 • JIS : S45C • DIN : C45 (HRc20)
RPM	3,200 rev./min.
Feed	.0197 inch/rev.
Drilling Depth	1.97" (5xD)
Drilling Method	Blind Hole
Coolant	Wet Cut
Machine	Machining Center

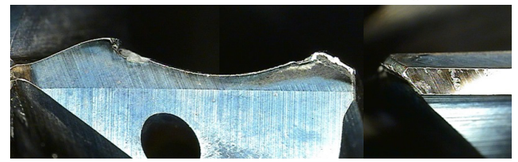
YG — Total Drilling 330 Holes



Competitor A — Total Drilling 330 Holes



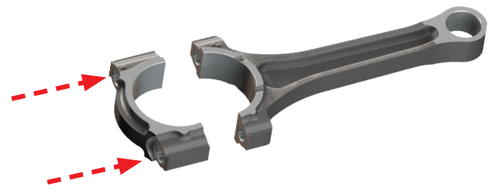
Competitor B — Total Drilling 330 Holes

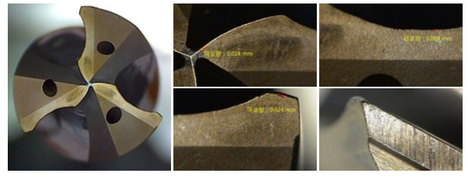


▶ SOLID CARBIDE DREAM DRILLS - High Feed with Coolant Holes

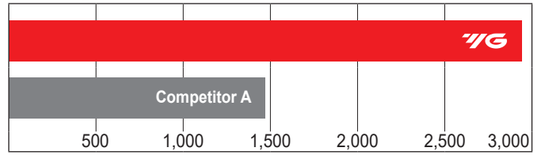
Cutting Condition

Tool	DGR495080
Size	Ø8 x Ø8 x 53 x 91
Work Material	Connecting rod
RPM	2,000 rev./min.
Feed	.009 inch/rev.
Drilling Depth	1.58" (5xD)
Drilling Method	Internal Cooling, Water Soluble
Coolant	Wet Cut
Machine	Machining Center





Drilling Holes



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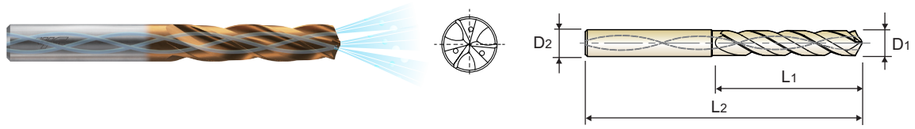
SERIES
DGR493
DGR496

H-COATED SOLID CARBIDE
DREAM DRILLS - HIGH FEED with COOLANT HOLES

- Drilling for Carbon Steels, Alloy Steels(~ HRc35) and Cast Iron
- Higher productivity due to 1.5 to 2 times faster feeding speed than 2-flute drill
- Multi-Layer coating delivers much better productivity and reliability
- Self centering and chip breaking by R-thinning and coolant holes



DIN 6537 | CARBIDE | h6 | m7 | 140° | 20 bar | H Coating

p.104

SHORT
3×D

Unit : mm

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Inch	Decimal			
H-Coating	D1			D2	L1	L2
DGR493040	4.00		.1575	6	24	66
DGR493945	4.05		.1594	6	24	66
DGR493020G	4.09	#20	.1610	6	24	66
DGR493041	4.10		.1614	6	24	66
DGR4930416	4.16		.1638	6	24	66
DGR493042	4.20		.1654	6	24	66
DGR4930427	4.27		.1681	6	24	66
DGR493043	4.30		.1693	6	24	66
DGR493011F	4.366	11/64	.1719	6	24	66
DGR493044	4.40		.1732	6	24	66
DGR4930446	4.46		.1756	6	24	66
DGR493045	4.50		.1772	6	24	66
DGR493046	4.60		.1811	6	24	66
DGR4930466	4.66		.1835	6	24	66
DGR493047	4.70		.1850	6	24	66
DGR493012F	4.763	3/16	.1875	6	28	66
DGR493048	4.80		.1890	6	28	66
DGR493049	4.90		.1929	6	28	66
DGR493050	5.00		.1969	6	28	66
DGR493051	5.10		.2008	6	28	66
DGR496013	5.16	13/64	.2031	1/4	28	66
DGR493052	5.20		.2047	6	28	66
DGR493053	5.30		.2087	6	28	66
DGR493054	5.40		.2126	6	28	66
DGR496103	5.41	#3	.2130	1/4	28	66
DGR493055	5.50		.2165	6	28	66
DGR496014	5.56	7/32	.2188	1/4	28	66
DGR493056	5.60		.2205	6	28	66
DGR496102	5.61	#2	.2210	1/4	28	66
DGR493057	5.70		.2244	6	28	66
DGR496101	5.79	#1	.2280	1/4	28	66
DGR493058	5.80		.2283	6	28	66
DGR493059	5.90		.2323	6	28	66
DGR496015	5.95	15/64	.2344	1/4	28	66
DGR493060	6.00		.2362	6	28	66
DGR493061	6.10		.2402	8	34	79
DGR493062	6.20		.2441	8	34	79
DGR493063	6.30		.2480	8	34	79
DGR496016	6.35	1/4	.2500	1/4	34	79
DGR493064	6.40		.2520	8	34	79
DGR493065	6.50		.2559	8	34	79
DGR496206	6.53	F	.2570	5/16	34	79
DGR493066	6.60		.2598	8	34	79
DGR493067	6.70		.2638	8	34	79
DGR496017	6.75	17/64	.2656	5/16	34	79
DGR493068	6.80		.2677	8	34	79
DGR493069	6.90		.2717	8	34	79
DGR496209	6.91	I	.2720	5/16	34	79
DGR493070	7.00		.2756	8	34	79
DGR493071	7.10		.2795	8	41	79
DGR496018	7.14	9/32	.2813	5/16	41	79
DGR493072	7.20		.2835	8	41	79

▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended		◎	◎	◎	○	◎	◎	○	○	◎	○				◎	○	◎	○	◎	○

ISO	N										S							H		
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel		Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended																					

SERIES
DGR493
DGR496

H-COATED SOLID CARBIDE
DREAM DRILLS - HIGH FEED with COOLANT HOLES

- Drilling for Carbon Steels, Alloy Steels(~ HRc35) and Cast Iron
- Higher productivity due to 1.5 to 2 times faster feeding speed than 2-flute drill
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- Self centering and chip breaking by R-thinning and coolant holes

DIN 6537 | CARBIDE | h6 | m7 | 140° | 20 bar | H Coating

p.104

SHORT
3×D

Unit : mm

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Inch	Decimal			
H-Coating	D1			D2	L1	L2
DGR493073	7.30		.2874	8	41	79
DGR493074	7.40		.2913	8	41	79
DGR493075	7.50		.2953	8	41	79
DGR496019	7.54	19/64	.2969	5/16	41	79
DGR493076	7.60		.2992	8	41	79
DGR493077	7.70		.3031	8	41	79
DGR493078	7.80		.3071	8	41	79
DGR493079	7.90		.3110	8	41	79
DGR496020	7.94	5/16	.3125	5/16	41	79
DGR493080	8.00		.3150	8	41	79
DGR493081	8.10		.3189	10	47	89
DGR493082	8.20	P	.3228	10	47	89
DGR493083	8.30		.3268	10	47	89
DGR496021	8.33	21/64	.3281	3/8	47	89
DGR493084	8.40		.3307	10	47	89
DGR496217	8.43	Q	.3320	3/8	47	89
DGR493085	8.50		.3346	10	47	89
DGR493086	8.60		.3386	10	47	89
DGR493087	8.70		.3425	10	47	89
DGR496022	8.73	11/32	.3437	3/8	47	89
DGR493088	8.80		.3465	10	47	89
DGR493089	8.90		.3504	10	47	89
DGR493090	9.00		.3543	10	47	89
DGR493091	9.10		.3583	10	47	89
DGR496023	9.13	23/64	.3594	3/8	47	89
DGR493092	9.20		.3622	10	47	89
DGR493093	9.30		.3661	10	47	89
DGR496221	9.35	U	.3680	3/8	47	89
DGR493094	9.40		.3701	10	47	89
DGR493095	9.50		.3740	10	47	89
DGR496024	9.53	3/8	.3750	3/8	47	89
DGR493096	9.60		.3780	10	47	89
DGR493097	9.70		.3819	10	47	89
DGR493098	9.80	W	.3858	10	47	89
DGR493099	9.90		.3898	10	47	89
DGR496025	9.92	25/64	.3906	7/16	47	89
DGR493100	10.00		.3937	10	47	89
DGR493101	10.10		.3976	12	55	102
DGR493102	10.20		.4016	12	55	102
DGR493103	10.30		.4055	12	55	102
DGR496026	10.32	13/32	.4063	7/16	55	102
DGR493104	10.40		.4094	12	55	102
DGR493105	10.50		.4134	12	55	102
DGR493106	10.60		.4173	12	55	102
DGR493107	10.70		.4213	12	55	102
DGR496027	10.72	27/64	.4219	7/16	55	102
DGR493108	10.80		.4252	12	55	102
DGR493109	10.90		.4291	12	55	102
DGR493110	11.00		.4331	12	55	102
DGR493111	11.10		.4370	12	55	102
DGR496028	11.11	7/16	.4375	7/16	55	102
DGR493112	11.20		.4409	12	55	102

▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended		◎	◎	◎	○	◎	◎	○	○	◎	○				◎	○	◎	○	◎	○

ISO	N										S							H		
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel		Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended																					

SERIES
DGR493
DGR496

H-COATED SOLID CARBIDE
DREAM DRILLS - HIGH FEED with COOLANT HOLES

- Drilling for Carbon Steels, Alloy Steels(~ HRc35) and Cast Iron
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DIN 6537 | CARBIDE | h6 | m7 | 140° | 20 bar | H Coating

p.104

SHORT 3×D

Unit : mm

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Inch	Decimal			
H-Coating	D1			D2	L1	L2
DGR493113	11.30		.4449	12	55	102
DGR493114	11.40		.4488	12	55	102
DGR493115	11.50		.4528	12	55	102
DGR496029	11.51	29/64	.4531	1/2	55	102
DGR493116	11.60		.4567	12	55	102
DGR493117	11.70		.4606	12	55	102
DGR493118	11.80		.4646	12	55	102
DGR493119	11.90		.4685	12	55	102
DGR496030	11.91	15/32	.4688	1/2	55	102
DGR493120	12.00		.4724	12	55	102
DGR493121	12.10		.4764	14	60	107
DGR493122	12.20		.4803	14	60	107
DGR493123	12.30		.4843	14	60	107
DGR496031	12.30	31/64	.4844	1/2	60	107
DGR493124	12.40		.4882	14	60	107
DGR493125	12.50		.4921	14	60	107
DGR493126	12.60		.4961	14	60	107
DGR496032	12.70	1/2	.5000	1/2	60	107
DGR493127	12.70		.5000	14	60	107
DGR493128	12.80		.5039	14	60	107
DGR493129	12.90		.5079	14	60	107
DGR493130	13.00		.5118	14	60	107
DGR493131	13.10	33/64	.5156	14	60	107
DGR493132	13.20		.5197	14	60	107
DGR493133	13.30		.5236	14	60	107
DGR493134	13.40		.5276	14	60	107

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Inch	Decimal			
H-Coating	D1			D2	L1	L2
DGR496034	13.49	17/32	.5312	9/16	60	107
DGR493135	13.50		.5315	14	60	107
DGR493136	13.60		.5354	14	60	107
DGR493137	13.70		.5394	14	60	107
DGR493138	13.80		.5433	14	60	107
DGR496035	13.89	35/64	.5469	9/16	60	107
DGR493139	13.90		.5472	14	60	107
DGR493140	14.00		.5512	14	60	107
DGR493141	14.10		.5551	16	65	115
DGR493142	14.20		.5591	16	65	115
DGR496036	14.29	9/16	.5625	9/16	65	115
DGR493143	14.30		.5630	16	65	115
DGR493144	14.40		.5669	16	65	115
DGR493145	14.50		.5709	16	65	115
DGR493146	14.60		.5748	16	65	115
DGR496037	14.68	37/64	.5781	5/8	65	115
DGR493147	14.70		.5787	16	65	115
DGR493148	14.80		.5827	16	65	115
DGR493149	14.90		.5866	16	65	115
DGR493150	15.00		.5906	16	65	115
DGR496038	15.08	19/32	.5938	5/8	65	115
DGR493151	15.10		.5945	16	65	115
DGR493152	15.20		.5984	16	65	115
DGR493153	15.30		.6024	16	65	115
DGR493154	15.40		.6063	16	65	115
DGR496039	15.48	39/64	.6094	5/8	65	115

▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended		◎	◎	◎	○	◎	◎	○	○	◎	○				◎	○	◎	○	◎	○

ISO	N										S							H		
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel	Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended																					

SERIES
DGR493
DGR496

H-COATED SOLID CARBIDE
DREAM DRILLS - HIGH FEED with COOLANT HOLES

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DIN 6537 | CARBIDE | h6 | m7 | 140° | 20 bar | H Coating

p.104

SHORT 3×D

Unit : mm

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Inch	Decimal			
H-Coating	D1			D2	L1	L2
DGR493155	15.50		.6102	16	65	115
DGR493156	15.60		.6142	16	65	115
DGR493157	15.70		.6181	16	65	115
DGR493158	15.80		.6220	16	65	115
DGR496040	15.88	5/8	.6250	5/8	65	115
DGR493159	15.90		.6260	16	65	115
DGR493160	16.00		.6299	16	65	115
DGR493161	16.10		.6339	18	73	123
DGR496041	16.27	41/64	.6406	11/16	73	123
DGR493165	16.50		.6496	18	73	123
DGR496042	16.67	21/32	.6563	11/16	73	123
DGR493170	17.00		.6693	18	73	123

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Inch	Decimal			
H-Coating	D1			D2	L1	L2
DGR496043	17.07	43/64	.6719	11/16	73	123
DGR496044	17.46	11/16	.6875	11/16	73	123
DGR493175	17.50		.6890	18	73	123
DGR496045	17.86	45/64	.7031	3/4	73	123
DGR493180	18.00		.7087	18	73	123
DGR496046	18.26	23/32	.7188	3/4	79	131
DGR493185	18.50		.7283	20	79	131
DGR496047	18.65	47/64	.7344	3/4	79	131
DGR493190	19.00		.7480	20	79	131
DGR496048	19.05	3/4	.7500	3/4	79	131
DGR493195	19.50		.7677	20	79	131
DGR493200	20.00		.7874	20	79	131

▶ Other shank types are available on your request.

◎ : Excellent ○ : Good

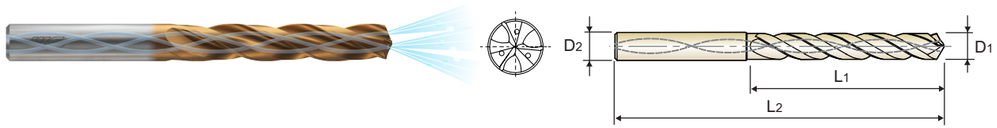
ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended		◎	◎	◎	○	◎	◎	○	○	◎	○				◎	○	◎	○	◎	○

ISO	N										S							H		
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel	Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended																					

SERIES
DGR495
DGR497

H-COATED SOLID CARBIDE
DREAM DRILLS - HIGH FEED with COOLANT HOLES

- Drilling for Carbon Steels, Alloy Steels(~ HRc35) and Cast Iron
- Higher productivity due to 1.5 to 2 times faster feeding speed than 2-flute drill
- Multi-Layer coating delivers much better productivity and reliability
- Self centering and chip breaking by R-thinning and coolant holes



DIN 6537 | CARBIDE | h6 | m7 | 140° | 20 bar | H Coating

p.104

LONG
5×D

Unit : mm

EDP No.	Drill Diameter Metric	Inch	Decimal	Shank Diameter	Flute Length	Overall Length
H-Coating	D1			D2	L1	L2
DGR495040	4.00		.1575	6	36	74
DGR495020G	4.09	#20	.1610	6	36	74
DGR495041	4.10		.1614	6	36	74
DGR495042	4.20		.1654	6	36	74
DGR495043	4.30		.1693	6	36	74
DGR495011F	4.366	11/64	.1719	6	36	74
DGR495044	4.40		.1732	6	36	74
DGR495045	4.50		.1772	6	36	74
DGR495046	4.60		.1811	6	36	74
DGR495047	4.70		.1850	6	36	74
DGR495012F	4.763	3/16	.1875	6	44	82
DGR495048	4.80		.1890	6	44	82
DGR495049	4.90		.1929	6	44	82
DGR495050	5.00		.1969	6	44	82
DGR495051	5.10		.2008	6	44	82
DGR497013	5.16	13/64	.2031	1/4	44	82
DGR495052	5.20		.2047	6	44	82
DGR495053	5.30		.2087	6	44	82
DGR495054	5.40		.2126	6	44	82
DGR497103	5.41	#3	.2130	1/4	44	82
DGR495055	5.50		.2165	6	44	82
DGR497014	5.56	7/32	.2188	1/4	44	82
DGR495056	5.60		.2205	6	44	82
DGR497102	5.61	#2	.2210	1/4	44	82
DGR495057	5.70		.2244	6	44	82
DGR497101	5.79	#1	.2280	1/4	44	82

EDP No.	Drill Diameter Metric	Inch	Decimal	Shank Diameter	Flute Length	Overall Length
H-Coating	D1			D2	L1	L2
DGR495058	5.80		.2283	6	44	82
DGR495059	5.90		.2323	6	44	82
DGR497015	5.95	15/64	.2344	1/4	44	82
DGR495060	6.00		.2362	6	44	82
DGR495061	6.10		.2402	8	53	91
DGR495062	6.20		.2441	8	53	91
DGR495063	6.30		.2480	8	53	91
DGR497016	6.35	1/4	.2500	1/4	53	91
DGR495064	6.40		.2520	8	53	91
DGR495065	6.50		.2559	8	53	91
DGR497206	6.53	F	.2570	5/16	53	91
DGR495066	6.60		.2598	8	53	91
DGR495067	6.70		.2638	8	53	91
DGR497017	6.75	17/64	.2656	5/16	53	91
DGR495068	6.80		.2677	8	53	91
DGR495069	6.90		.2717	8	53	91
DGR497209	6.91	I	.2720	5/16	53	91
DGR495070	7.00		.2756	8	53	91
DGR495071	7.10		.2795	8	53	91
DGR497018	7.14	9/32	.2813	5/16	53	91
DGR495072	7.20		.2835	8	53	91
DGR495073	7.30		.2874	8	53	91
DGR495074	7.40		.2913	8	53	91
DGR495075	7.50		.2953	8	53	91
DGR497019	7.54	19/64	.2969	5/16	53	91
DGR495076	7.60		.2992	8	53	91

▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended		◎	◎	◎	○	◎	◎	○	○	◎	○				◎	○	◎	○	◎	○

ISO	N										S							H		
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel		Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended																					

SERIES
DGR495
DGR497

H-COATED SOLID CARBIDE
DREAM DRILLS - HIGH FEED with COOLANT HOLES

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DIN 6537 | CARBIDE | h6 | m7 | 140° | 20 bar | H Coating

p.104

LONG
5×D

Unit : mm

EDP No.	Drill Diameter Metric	Inch	Decimal	Shank Diameter	Flute Length	Overall Length
H-Coating	D1			D2	L1	L2
DGR495077	7.70		.3031	8	53	91
DGR495078	7.80		.3071	8	53	91
DGR495079	7.90		.3110	8	53	91
DGR497020	7.94	5/16	.3125	5/16	53	91
DGR495080	8.00		.3150	8	53	91
DGR495081	8.10		.3189	10	61	103
DGR495082	8.20	P	.3228	10	61	103
DGR495083	8.30		.3268	10	61	103
DGR497021	8.33	21/64	.3281	3/8	61	103
DGR495084	8.40		.3307	10	61	103
DGR497217	8.43	Q	.3320	3/8	61	103
DGR495085	8.50		.3346	10	61	103
DGR495086	8.60		.3386	10	61	103
DGR495087	8.70		.3425	10	61	103
DGR497022	8.73	11/32	.3437	3/8	61	103
DGR495088	8.80		.3465	10	61	103
DGR495089	8.90		.3504	10	61	103
DGR495090	9.00		.3543	10	61	103
DGR495091	9.10		.3583	10	61	103
DGR497023	9.13	23/64	.3594	3/8	61	103
DGR495092	9.20		.3622	10	61	103
DGR495093	9.30		.3661	10	61	103
DGR497221	9.35	U	.3680	3/8	61	103
DGR495094	9.40		.3701	10	61	103
DGR495095	9.50		.3740	10	61	103
DGR497024	9.53	3/8	.3750	3/8	61	103

EDP No.	Drill Diameter Metric	Inch	Decimal	Shank Diameter	Flute Length	Overall Length
H-Coating	D1			D2	L1	L2
DGR495096	9.60		.3780	10	61	103
DGR495097	9.70		.3819	10	61	103
DGR495098	9.80	W	.3858	10	61	103
DGR495099	9.90		.3898	10	61	103
DGR497025	9.92	25/64	.3906	7/16	61	103
DGR495100	10.00		.3937	10	61	103
DGR495101	10.10		.3976	12	71	118
DGR495102	10.20		.4016	12	71	118
DGR495103	10.30		.4055	12	71	118
DGR497026	10.32	13/32	.4063	7/16	71	118
DGR495104	10.40		.4094	12	71	118
DGR495105	10.50		.4134	12	71	118
DGR495106	10.60		.4173	12	71	118
DGR495107	10.70		.4213	12	71	118
DGR497027	10.72	27/64	.4219	7/16	71	118
DGR495108	10.80		.4252	12	71	118
DGR495109	10.90		.4291	12	71	118
DGR495110	11.00		.4331	12	71	118
DGR495111	11.10		.4370	12	71	118
DGR497028	11.11	7/16	.4375	7/16	71	118
DGR495112	11.20		.4409	12	71	118
DGR495113	11.30		.4449	12	71	118
DGR495114	11.40		.4488	12	71	118
DGR495115	11.50		.4528	12	71	118
DGR497029	11.51	29/64	.4531	1/2	71	118
DGR495116	11.60		.4567	12	71	118

▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended		◎	◎	◎	○	◎	◎	○	○	◎	○				◎	○	◎	○	◎	○

ISO	N										S							H		
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel		Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended																					

SERIES
DGR495
DGR497

H-COATED SOLID CARBIDE
DREAM DRILLS - HIGH FEED with COOLANT HOLES

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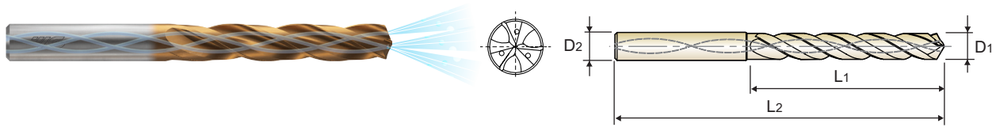

DIN 6537 | CARBIDE | h6 | m7 | 140° | 20 bar | H Coating

p.104

LONG
5×D

Unit : mm

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Inch	Decimal			
H-Coating	D1			D2	L1	L2
DGR495117	11.70		.4606	12	71	118
DGR495118	11.80		.4646	12	71	118
DGR495119	11.90		.4685	12	71	118
DGR497030	11.91	15/32	.4688	1/2	71	118
DGR495120	12.00		.4724	12	71	118
DGR495121	12.10		.4764	14	77	124
DGR495122	12.20		.4803	14	77	124
DGR495123	12.30		.4843	14	77	124
DGR497031	12.30	31/64	.4844	1/2	77	124
DGR495124	12.40		.4882	14	77	124
DGR495125	12.50		.4921	14	77	124
DGR495126	12.60		.4961	14	77	124
DGR497032	12.70	1/2	.5000	1/2	77	124
DGR495127	12.70		.5000	14	77	124
DGR495128	12.80		.5039	14	77	124
DGR495129	12.90		.5079	14	77	124
DGR495130	13.00		.5118	14	77	124
DGR495131	13.10	33/64	.5156	14	77	124
DGR495132	13.20		.5197	14	77	124
DGR495133	13.30		.5236	14	77	124
DGR495134	13.40		.5276	14	77	124
DGR497034	13.49	17/32	.5312	9/16	77	124
DGR495135	13.50		.5315	14	77	124
DGR495136	13.60		.5354	14	77	124
DGR495137	13.70		.5394	14	77	124
DGR495138	13.80		.5433	14	77	124

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Inch	Decimal			
H-Coating	D1			D2	L1	L2
DGR497035	13.89	35/64	.5469	9/16	77	124
DGR495139	13.90		.5472	14	77	124
DGR495140	14.00		.5512	14	77	124
DGR495141	14.10		.5551	16	83	133
DGR495142	14.20		.5591	16	83	133
DGR497036	14.29	9/16	.5625	9/16	83	133
DGR495143	14.30		.5630	16	83	133
DGR495144	14.40		.5669	16	83	133
DGR495145	14.50		.5709	16	83	133
DGR495146	14.60		.5748	16	83	133
DGR497037	14.68	37/64	.5781	5/8	83	133
DGR495147	14.70		.5787	16	83	133
DGR495148	14.80		.5827	16	83	133
DGR495149	14.90		.5866	16	83	133
DGR495150	15.00		.5906	16	83	133
DGR497038	15.08	19/32	.5938	5/8	83	133
DGR495151	15.10		.5945	16	83	133
DGR495152	15.20		.5984	16	83	133
DGR495153	15.30		.6024	16	83	133
DGR495154	15.40		.6063	16	83	133
DGR497039	15.48	39/64	.6094	5/8	83	133
DGR495155	15.50		.6102	16	83	133
DGR495156	15.60		.6142	16	83	133
DGR495157	15.70		.6181	16	83	133
DGR495158	15.80		.6220	16	83	133
DGR497040	15.88	5/8	.6250	5/8	83	133

▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended		◎	◎	◎	○	◎	◎	○	○	◎	○				◎	○	◎	○	◎	○

ISO	N										S							H		
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel	Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended																					

SERIES
DGR495
DGR497

H-COATED SOLID CARBIDE
DREAM DRILLS - HIGH FEED with COOLANT HOLES

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DIN 6537 | CARBIDE | h6 | m7 | 140° | 20 bar | H Coating

p.104

LONG
5×D

Unit : mm

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Inch	Decimal			
H-Coating	D1			D2	L1	L2
DGR495159	15.90		.6260	16	83	133
DGR495160	16.00		.6299	16	83	133
DGR495161	16.10		.6339	18	93	143
DGR497041	16.27	41/64	.6406	11/16	93	143
DGR495165	16.50		.6496	18	93	143
DGR497042	16.67	21/32	.6563	11/16	93	143
DGR495170	17.00		.6693	18	93	143
DGR497043	17.07	43/64	.6719	11/16	93	143
DGR497044	17.46	11/16	.6875	11/16	93	143
DGR495175	17.50		.6890	18	93	143

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Inch	Decimal			
H-Coating	D1			D2	L1	L2
DGR497045	17.86	45/64	.7031	3/4	93	143
DGR495180	18.00		.7087	18	93	143
DGR497046	18.26	23/32	.7188	3/4	101	153
DGR495185	18.50		.7283	20	101	153
DGR497047	18.65	47/64	.7344	3/4	101	153
DGR495190	19.00		.7480	20	101	153
DGR497048	19.05	3/4	.7500	3/4	101	153
DGR495195	19.50		.7677	20	101	153
DGR495200	20.00		.7874	20	101	153

▶ Other shank types are available on your request.

◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended		◎	◎	◎	○	◎	◎	○	○	◎	○				◎	○	◎	○	◎	○

ISO	N										S							H		
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel	Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended																					

DGR493, DGR496, DGR495, DGR497 SERIES

with COOLANT HOLES

SFM = ft/min.
RPM = rev./min.
FEED = inch/rev.

ISO	VDI 3323	Material Description	SFM	Drill Diameter									
				METRIC	-	5.0	6.0	-	-	8.0	-	10.0	12.0
				FRACTIONAL	3/16	-	-	1/4	5/16	-	3/8	-	-
				DECIMAL	.1875	.1969	.2362	.2500	.3125	.3150	.3750	.3937	.4724
P	2	Non-alloy steel	329	RPM	6370		5310		3980		3180		2650
				FEED	.0079 - .0098		.0094 - .0118		.0126 - .0157		.0157 - .0197		.0189 - .0236
	3		329	RPM	6370		5310		3980		3180		2650
				FEED	.0079 - .0098		.0094 - .0118		.0126 - .0157		.0157 - .0197		.0189 - .0236
	4		329	RPM	6370		5310		3980		3180		2650
				FEED	.0063 - .0083		.0079 - .0102		.0102 - .0134		.0134 - .0165		.0161 - .0185
	5		263	RPM	5090		4240		3180		2550		2120
				FEED	.0063 - .0083		.0079 - .0102		.0102 - .0134		.0134 - .0165		.0161 - .0185
	6	Low alloy steel	329	RPM	6370		5310		3980		3180		2650
				FEED	.0079 - .0098		.0094 - .0118		.0126 - .0157		.0157 - .0197		.0189 - .0213
	7		263	RPM	5090		4240		3180		2550		2120
				FEED	.0079 - .0098		.0094 - .0118		.0126 - .0157		.0157 - .0197		.0189 - .0213
	8		263	RPM	5090		4240		3180		2550		2120
				FEED	.0063 - .0083		.0079 - .0102		.0102 - .0134		.0134 - .0165		.0161 - .0185
	9		132	RPM	2550		2120		1590		1270		1060
				FEED	.0051 - .0071		.0063 - .0087		.0083 - .0114		.0102 - .0142		.0126 - .0150
	10	High alloyed steel, and tool steel	230	RPM	4460		3710		2790		2230		1860
				FEED	.0063 - .0083		.0079 - .0102		.0102 - .0134		.0134 - .0165		.0161 - .0185
	11		132	RPM	2550		2120		1590		1270		1060
				FEED	.0051 - .0071		.0063 - .0087		.0083 - .0114		.0102 - .0142		.0126 - .0150
K	15	Grey cast iron	329	RPM	6370		5310		3980		3180		2650
				FEED	.0091 - .0118		.0106 - .0142		.0142 - .0189		.0177 - .0236		.0213 - .0283
	16		263	RPM	5090		4240		3180		2550		2120
				FEED	.0079 - .0098		.0094 - .0118		.0126 - .0157		.0157 - .0197		.0189 - .0236
	17	Nodular cast iron	329	RPM	6370		5310		3980		3180		2650
				FEED	.0091 - .0118		.0106 - .0142		.0142 - .0189		.0177 - .0236		.0213 - .0283
	18		230	RPM	4460		3710		2790		2230		1860
				FEED	.0079 - .0098		.0094 - .0118		.0126 - .0157		.0157 - .0197		.0189 - .0236
	19	Malleable cast iron	263	RPM	5090		4240		3180		2550		2120
				FEED	.0091 - .0118		.0106 - .0142		.0142 - .0189		.0177 - .0236		.0213 - .0283
	20		230	RPM	4460		3710		2790		2230		1860
				FEED	.0079 - .0098		.0094 - .0118		.0126 - .0157		.0157 - .0197		.0189 - .0236

▶ NEXT PAGE

DGR493, DGR496, DGR495, DGR497 SERIES

with COOLANT HOLES

SFM = ft/min.
RPM = rev./min.
FEED = inch/rev.

ISO	VDI 3323	Material Description	SFM	Drill Diameter									
				METRIC	-	14.0	-	-	16.0	18.0	-	20.0	
				FRACTIONAL	1/2	-	9/16	5/8	-	-	3/4	-	
				DECIMAL	.5000	.5512	.5625	.6250	.6299	.7087	.7500	.7874	
P	2	Non-alloy steel	329	RPM	2510	2270		1990		1770	1680	1590	
				FEED	.0189 - .0236	.0220 - .0276		.0220 - .0283		.0248 - .0319	.0248 - .0319	.0276 - .0346	
	3		329	RPM	2510	2270		1990		1770	1680	1590	
				FEED	.0189 - .0236	.0220 - .0276		.022 - .0283		.0248 - .0319	.0248 - .0319	.0276 - .0346	
	4		329	RPM	2510	2270		1990		1770	1680	1590	
				FEED	.0161 - .0185	.0185 - .0213		.0185 - .0217		.0197 - .0232	.0197 - .0232	.0213 - .0264	
	5		263	RPM	2010	1820		1590		1410	1340	1270	
				FEED	.0161 - .0185	.0185 - .0213		.0185 - .0217		.0197 - .0232	.0197 - .0232	.0213 - .0264	
	6	Low alloy steel	329	RPM	2510	2270		1990		1770	1680	1590	
				FEED	.0189 - .0213	.0220 - .0248		.0220 - .0252		.0248 - .0283	.0248 - .0283	.0268 - .0319	
	7		263	RPM	2010	1820		1590		1410	1340	1270	
				FEED	.0189 - .0213	.0220 - .0248		.0220 - .0252		.0248 - .0283	.0248 - .0283	.0268 - .0319	
	8		263	RPM	2010	1820		1590		1410	1340	1270	
				FEED	.0161 - .0185	.0185 - .0213		.0185 - .0217		.0197 - .0232	.0197 - .0232	.0213 - .0264	
	9		132	RPM	1010	910		800		710	670	640	
				FEED	.0126 - .0150	.0142 - .0169		.0142 - .0177		.0150 - .0185	.0150 - .0185	.0161 - .0213	
	10	High alloyed steel, and tool steel	230	RPM	1760	1590		1390		1240	1170	1110	
				FEED	.0161 - .0185	.0185 - .0213		.0185 - .0217		.0197 - .0232	.0197 - .0232	.0213 - .0264	
	11		132	RPM	1010	910		800		710	670	640	
				FEED	.0126 - .0150	.0142 - .0169		.0142 - .0177		.0150 - .0185	.0150 - .0185	.0161 - .0213	
K	15	Grey cast iron	329	RPM	2510	2270		1990		1770	1680	1590	
				FEED	.0213 - .0283	.0248 - .0331		.0252 - .0315		.0283 - .0354	.0283 - .0354	.0315 - .0386	
	16		263	RPM	2010	1820		1590		1410	1340	1270	
				FEED	.0189 - .0236	.0220 - .0276		.0220 - .0283		.0248 - .0319	.0248 - .0319	.0276 - .0354	
	17	Nodular cast iron	329	RPM	2510	2270		1990		1770	1680	1590	
				FEED	.0213 - .0283	.0248 - .0331		.0252 - .0315		.0283 - .0354	.0283 - .0354	.0315 - .0386	
	18		230	RPM	1760	1590		1390		1240	1170	1110	
				FEED	.0189 - .0236	.0220 - .0276		.0220 - .0283		.0248 - .0319	.0248 - .0319	.0276 - .0354	
	19	Malleable cast iron	263	RPM	2010	1820		1590		1410	1340	1270	
				FEED	.0213 - .0283	.0248 - .0331		.0252 - .0315		.0283 - .0354	.0283 - .0354	.0315 - .0386	
	20		230	RPM	1760	1590		1390		1240	1170	1110	
				FEED	.0189 - .0236	.0220 - .0276		.0220 - .0283		.0248 - .0319	.0248 - .0319	.0276 - .0354	

Global Cutting Tool Leader **YG-1**

DREAM DRILLS

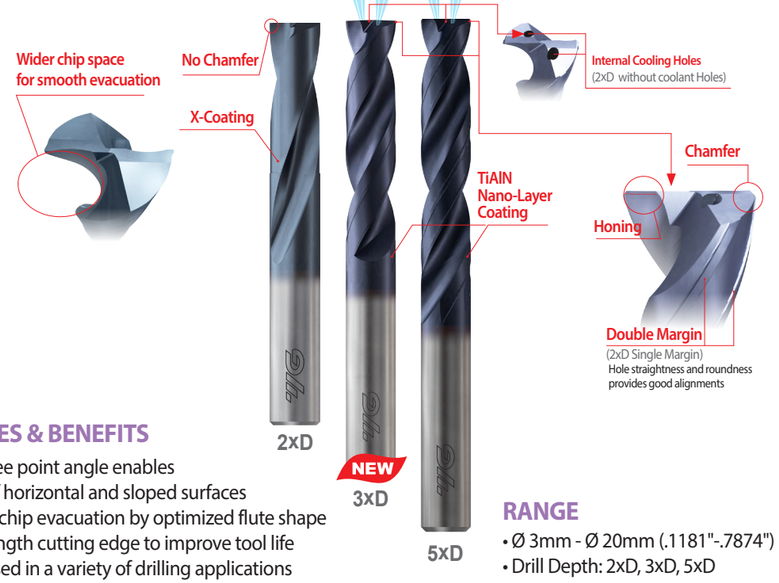
Leading Through Innovation

SOLID CARBIDE

DREAM DRILLS - FLAT BOTTOM

- For Holes on Various Angled Surfaces

DREAM DRILLS FLAT BOTTOM



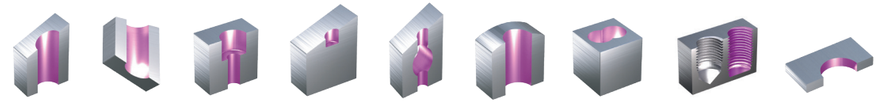
FEATURES & BENEFITS

- 180 degree point angle enables drilling of horizontal and sloped surfaces
- Excellent chip evacuation by optimized flute shape
- High strength cutting edge to improve tool life
- Can be used in a variety of drilling applications

RANGE

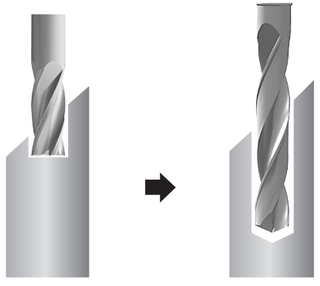
- Ø 3mm - Ø 20mm (.1181"-.7874")
- Drill Depth: 2xD, 3xD, 5xD

APPLICATION



Only One Operation for Angled Surface

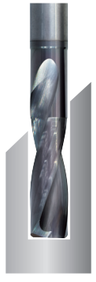
For angled surfaces, two operations are required to drill in a conventional Process



1st operation(End mill)
Counter boring to make flat surface and guide hole

2nd operation(Drill)
Drilling to required depth of hole

For angled surfaces, only one operation can complete the drilling with Dream Drill Flat Bottom



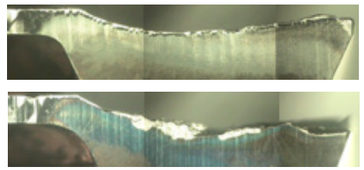
One operation(Dream Drill Flat Bottom)
One Drill does it all
without using both an end mill and a drill

CASE STUDY

▶ SOLID CARBIDE DREAM DRILLS - FLAT BOTTOM without Coolant Holes

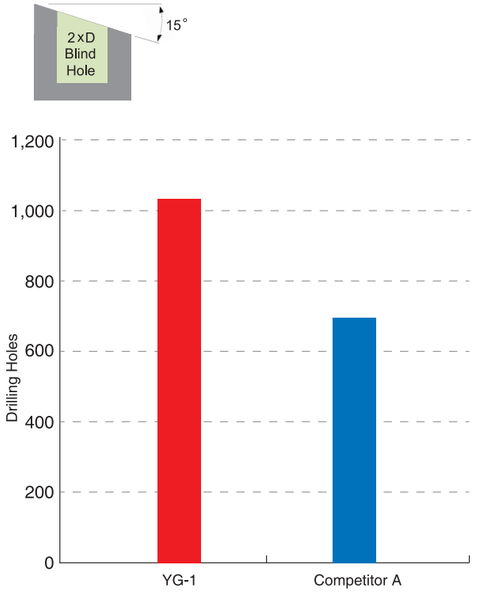
Cutting Condition

Drill Diameter (mm)	Ø6.0 (.2362 inch)
Work Material	- AISI : 1045 - JIS : S45C - DIN : C45 (HRc20)
Cutting Speed	244.4 ft/min.
RPM	4,000 rev./min.
Feed	.0039 inch/rev.
Drilling Depth	12.0 mm (2xD) Blind Hole / without Pecking
Coolant	External Cooling Water Soluble (9% Emulsion)
Machine	Machining Center



YG Small Chipping

Competitor A Big Chipping

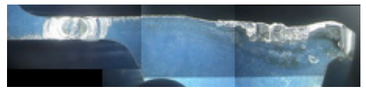


▶ SOLID CARBIDE DREAM DRILLS - Flat Bottom with Coolant Holes

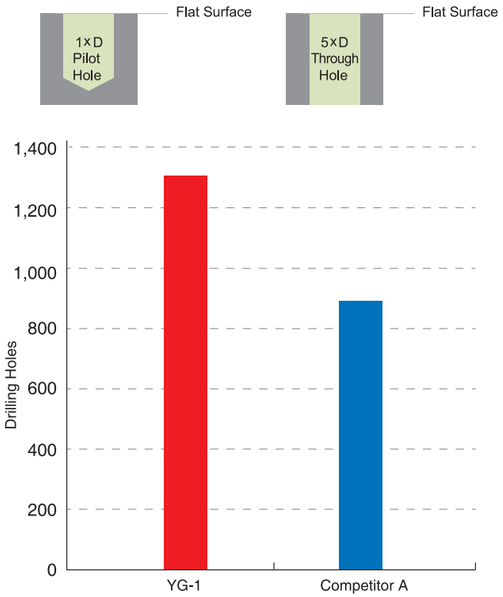
Cutting Condition

Drill Diameter (mm)	Ø6.0 (.2362 inch)
Work Material	- AISI : 4140 - JIS : SCM440 - DIN : 42CrMo4 (HRc30)
Cutting Speed	328.1 ft/min.
RPM	5,300 rev./min.
Feed	.0047 inch/rev.
Drilling Depth	Pilot Drill- 6.0mm (1xD) Total depth- 30.0 mm (5xD) Through Hole / without Pecking
Coolant	Internal Cooling Water Soluble (9% Emulsion)
Machine	Machining Center

YG Small Chipping



Competitor A Big Chipping

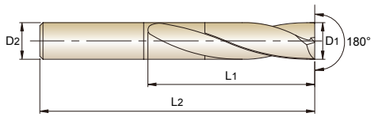


X-COATED SOLID CARBIDE

SERIES

DREAM DRILLS - FLAT BOTTOM without COOLANT HOLES — DPP447

- ▶ Just ONE Drill 180 degree point angle enables drilling of horizontal surface and sloped surface
- ▶ Excellent chip evacuation by optimized flute shape
- ▶ High strength cutting edge to improve tool life and versatility drilling
- ▶ Variety of drilling can be used in a variety of drilling applications



CARBIDE | 20° | h6 | h7 | 180° | X Coating

p.118

SHORT
2×D

Unit : mm

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Inch	Decimal			
X-Coating	D1			D2	L1	L2
DPP447030	3.0		.1181	6	16	50
DPP447031	3.1		.1220	6	16	50
DPP447008F	3.175	1/8	.1250	6	16	50
DPP447032	3.2		.1260	6	16	50
DPP447033	3.3		.1299	6	16	50
DPP447034	3.4		.1339	6	18	50
DPP447035	3.5		.1378	6	18	50
DPP447036	3.6		.1417	6	18	50
DPP447037	3.7		.1457	6	18	50
DPP447038	3.8		.1496	6	18	50
DPP447039	3.9		.1535	6	18	50
DPP447010F	3.969	5/32	.1563	6	18	50
DPP447040	4.0		.1575	6	18	50
DPP447041	4.1		.1614	6	20	60
DPP447042	4.2		.1654	6	20	60
DPP447043	4.3		.1693	6	20	60
DPP447044	4.4		.1732	6	20	60
DPP447045	4.5		.1772	6	22	60
DPP447046	4.6		.1811	6	22	60
DPP447047	4.7		.1850	6	22	60
DPP447012F	4.763	3/16	.1875	6	22	60
DPP447048	4.8		.1890	6	22	60
DPP447049	4.9		.1929	6	22	60
DPP447050	5.0		.1969	6	22	60
DPP447051	5.1		.2008	6	24	60
DPP447052	5.2		.2047	6	24	60
DPP447053	5.3		.2087	6	24	60
DPP447054	5.4		.2126	6	24	60
DPP447055	5.5		.2165	6	24	60
DPP447014F	5.556	7/32	.2188	6	24	60
DPP447056	5.6		.2205	6	24	60
DPP447057	5.7		.2244	6	26	60
DPP447058	5.8		.2283	6	26	60
DPP447059	5.9		.2323	6	26	60
DPP447060	6.0		.2362	6	26	60
DPP447061	6.1		.2402	8	28	70
DPP447062	6.2		.2441	8	28	70
DPP447063	6.3		.2480	8	28	70
DPP447016F	6.35	1/4	.2500	8	30	70
DPP447064	6.4		.2520	8	30	70
DPP447065	6.5		.2559	8	30	70
DPP447066	6.6		.2598	8	30	70
DPP447067	6.7		.2638	8	30	70
DPP447068	6.8		.2677	8	30	70
DPP447069	6.9		.2717	8	30	70
DPP447070	7.0		.2756	8	30	70
DPP447071	7.1		.2795	8	34	70
DPP447018F	7.144	9/32	.2812	8	34	70
DPP447072	7.2		.2835	8	34	70
DPP447073	7.3		.2874	8	34	70
DPP447074	7.4		.2913	8	34	70
DPP447075	7.5		.2953	8	34	70

▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended	◎	◎	◎	○	○	◎	○	○	○			○			◎	○				

ISO	N										S							H		
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel	Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended	○	○																			

X-COATED SOLID CARBIDE

SERIES

DREAM DRILLS - FLAT BOTTOM without COOLANT HOLES — DPP447

- ▶ Just ONE Drill 180 degree point angle enables drilling of horizontal surface and sloped surface
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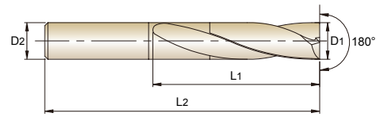


CARBIDE | 20° | h6 | h7 | 180° | X Coating

p.118

SHORT
2×D

Unit : mm

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Inch	Decimal			
X-Coating	D1			D2	L1	L2
DPP447076	7.6		.2992	8	34	70
DPP447077	7.7		.3031	8	34	70
DPP447078	7.8		.3071	8	34	70
DPP447079	7.9		.3110	8	34	70
DPP447020F	7.938	5/16	.3125	8	34	70
DPP447080	8.0		.3150	8	34	70
DPP447081	8.1		.3189	10	38	80
DPP447082	8.2		.3228	10	38	80
DPP447083	8.3		.3268	10	38	80
DPP447021F	8.334	21/64	.3281	10	38	80
DPP447084	8.4		.3307	10	38	80
DPP447085	8.5		.3346	10	38	80
DPP447086	8.6		.3386	10	38	80
DPP447087	8.7		.3425	10	40	80
DPP447088	8.8		.3465	10	40	80
DPP447089	8.9		.3504	10	40	80
DPP447090	9.0		.3543	10	40	80
DPP447091	9.1		.3583	10	42	80
DPP447023F	9.128	23/64	.3594	10	42	80
DPP447092	9.2		.3622	10	42	80
DPP447093	9.3		.3661	10	42	80
DPP447094	9.4		.3701	10	42	80
DPP447095	9.5		.3740	10	42	80
DPP447024F	9.525	3/8	.3750	10	42	80
DPP447096	9.6		.3780	10	42	80
DPP447097	9.7		.3819	10	45	80
DPP447098	9.8		.3858	10	45	80
DPP447099	9.9		.3898	10	45	80
DPP447100	10.0		.3937	10	45	80
DPP447101	10.1		.3976	12	46	90
DPP447102	10.2		.4016	12	46	90
DPP447103	10.3		.4055	12	46	90
DPP447026F	10.319	13/32	.4062	12	46	90
DPP447104	10.4		.4094	12	48	90
DPP447105	10.5		.4134	12	48	90
DPP447106	10.6		.4173	12	48	90
DPP447107	10.7		.4212	12	48	90
DPP447108	10.8		.4252	12	48	90
DPP447109	10.9		.4291	12	48	90
DPP447110	11.0		.4330	12	48	90
DPP447111	11.1		.4370	12	50	90
DPP447028F	11.113	7/16	.4375	12	50	90
DPP447112	11.2		.4409	12	50	90
DPP447113	11.3		.4448	12	50	90
DPP447114	11.4		.4488	12	50	90
DPP447115	11.5		.4527	12	50	90
DPP447029F	11.509	29/64	.4531	12	50	90
DPP447116	11.6		.4566	12	50	90
DPP447117	11.7		.4606	12	52	90
DPP447118	11.8		.4645	12	52	90
DPP447119	11.9		.4685	12	52	90
DPP447030F	11.906	15/32	.4688	12	52	90

▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended	◎	◎	◎	○	○	◎	○	○	○			○			◎	○				

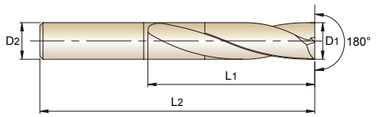
ISO	N										S							H		
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel	Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended	○	○																			

X-COATED SOLID CARBIDE

DREAM DRILLS - FLAT BOTTOM without COOLANT HOLES

SERIES **DPP447**

- ▶ Just ONE Drill 180 degree point angle enables drilling of horizontal surface and sloped surface
- ▶ Excellent chip evacuation by optimized flute shape
- ▶ High strength cutting edge to improve tool life and versatility drilling
- ▶ Variety of drilling can be used in a variety of drilling applications



CARBIDE | 20° | h6 | h7 | 180° | X Coating | p.118

SHORT 2×D

Unit : mm

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Inch	Decimal			
X-Coating	D1			D2	L1	L2
DPP447120	12.0		.4724	12	52	90
DPP447121	12.1		.4764	14	54	100
DPP447122	12.2		.4803	14	54	100
DPP447123	12.3		.4843	14	54	100
DPP447124	12.4		.4882	14	54	100
DPP447125	12.5		.4921	14	54	100
DPP447126	12.6		.4961	14	54	100
DPP447127	12.7		.5000	14	56	100
DPP447128	12.8		.5039	14	56	100
DPP447129	12.9		.5079	14	56	100
DPP447130	13.0		.5118	14	56	100
DPP447131	13.1		.5157	14	58	100
DPP447132	13.2		.5197	14	58	100
DPP447133	13.3		.5236	14	58	100
DPP447134	13.4		.5276	14	58	100
DPP447135	13.5		.5314	14	58	100
DPP447136	13.6		.5354	14	58	100
DPP447137	13.7		.5394	14	58	100
DPP447138	13.8		.5433	14	58	100
DPP447139	13.9		.5472	14	58	100
DPP447140	14.0		.5512	14	58	100
DPP447141	14.1		.5551	16	62	105
DPP447142	14.2		.5591	16	62	105
DPP447036F	14.288	9/16	.5625	16	62	105
DPP447143	14.3		.5630	16	62	105
DPP447144	14.4		.5669	16	62	105
DPP447145	14.5		.5708	16	62	105
DPP447146	14.6		.5748	16	62	105
DPP447147	14.7		.5787	16	62	105
DPP447148	14.8		.5827	16	62	105
DPP447149	14.9		.5866	16	62	105
DPP447150	15.0		.5905	16	62	105
DPP447151	15.1		.5945	16	64	115
DPP447152	15.2		.5984	16	64	115
DPP447153	15.3		.6024	16	64	115
DPP447154	15.4		.6063	16	64	115
DPP447155	15.5		.6102	16	64	115
DPP447156	15.6		.6142	16	64	115
DPP447157	15.7		.6181	16	64	115
DPP447158	15.8		.6220	16	64	115
DPP447040F	15.875	5/8	.6250	16	64	115
DPP447159	15.9		.6260	16	64	115
DPP447160	16.0		.6299	16	64	115
DPP447165	16.5		.6495	18	70	125
DPP447170	17.0		.6692	18	70	125
DPP447044F	17.463	11/16	.6875	18	70	125
DPP447175	17.5		.6889	18	70	125
DPP447180	18.0		.7087	18	70	125
DPP447185	18.5		.7283	20	75	135
DPP447190	19.0		.7480	20	75	135
DPP447048F	19.05	3/4	.7500	20	75	135
DPP447195	19.5		.7676	20	75	145
DPP447200	20.0		.7874	20	75	145

▶ Other shank types are available on your request.

◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended	◎	◎	◎	○	○	◎	○	○	○			○			◎	○				

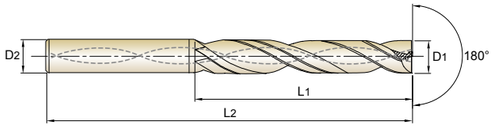
ISO	N										S							H		
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel	Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended	○	○																			

TiAlN-COATED SOLID CARBIDE

DREAM DRILLS - FLAT BOTTOM with COOLANT HOLES

NEW SERIES **DH449**

- ▶ Just ONE Drill 180 degree point angle enables drilling of horizontal surface and sloped surface
- ▶ Excellent chip evacuation by optimized flute shape
- ▶ High strength cutting edge to improve tool life and versatility drilling
- ▶ Variety of drilling can be used in a variety of drilling applications



DIN 6537 | CARBIDE | 30° | h6 | m7 | 180° | 20 bar | TiAlN | p.120

SHORT 3×D

Unit : mm

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Inch	Decimal			
TiAlN	D1			D2	L1	L2
DH4490300	3.0		.1181	6	20	62
DH449008F	3.175	1/8	.1250	6	20	62
DH4490350	3.5		.1378	6	20	62
DH449009F	3.572	9/64	.1406	6	20	62
DH449010F	3.969	5/32	.1563	6	24	66
DH4490400	4.0		.1575	6	24	66
DH449011F	4.366	11/64	.1719	6	24	66
DH4490450	4.5		.1772	6	24	66
DH449012F	4.763	3/16	.1875	6	28	66
DH4490500	5.0		.1969	6	28	66
DH449013F	5.159	13/64	.2031	6	28	66
DH449014F	5.556	7/32	.2188	6	28	66
DH449015F	5.953	15/64	.2344	6	28	66
DH4490600	6.0		.2362	6	28	66
DH449016F	6.35	1/4	.2500	8	34	79
DH4490650	6.5		.2559	8	34	79
DH449006L	6.528	F	.2570	8	34	79
DH449017F	6.747	17/64	.2656	8	34	79
DH449009L	6.909	I	.2720	8	34	79
DH4490700	7.0		.2756	8	34	79
DH449018F	7.144	9/32	.2812	8	41	79
DH4490750	7.5		.2953	8	41	79
DH449019F	7.541	19/64	.2969	8	41	79
DH449020F	7.938	5/16	.3125	8	41	79
DH4490800	8.0		.3150	8	41	79
DH449021F	8.334	21/64	.3281	10	47	89
DH449017L	8.433	Q	.3320	10	47	89
DH4490850	8.5		.3346	10	47	89
DH449022F	8.731	11/32	.3438	10	47	89
DH4490900	9.0		.3543	10	47	89
DH449023F	9.128	23/64	.3594	10	47	89
DH449021L	9.347	U	.3680	10	47	89
DH4490950	9.5		.3740	10	47	89
DH449024F	9.525	3/8	.3750	10	47	89
DH449025F	9.922	25/64	.3906	10	47	89
DH4491000	10.0		.3937	10	47	89
DH449026F	10.319	13/32	.4062	12	55	102
DH4491050	10.5		.4134	12	55	102
DH449027F	10.716	27/64	.4219	12	55	102
DH4491100	11.0		.4331	12	55	102
DH449028F	11.113	7/16	.4375	12	55	102
DH4491150	11.2		.4409	12	55	102
DH449029F	11.5	29/64	.4528	12	55	102
DH449030F	11.509	15/32	.4531	12	55	102
DH4491200	11.906		.4688	12	55	102
DH449031F	12.0	31/64	.4724	14	60	107
DH4491250	12.303		.4844	14	60	107
DH449032F	12.5	1/2	.4921	14	60	107
DH4491300	13.0		.5118	14	60	107
DH4491350	13.5		.5315	14	60	107
DH4491400	14.0		.5512	14	60	107
DH449036F	14.288	9/16	.5625	16	65	115

▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended	◎	◎	◎	○	○	◎	○	○	○			○			◎	○				

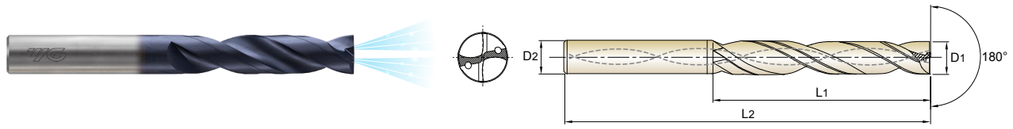
ISO	N										S							H		
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel	Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended	○	○																			

TiAlN-COATED SOLID CARBIDE

DREAM DRILLS - FLAT BOTTOM with COOLANT HOLES

NEW SERIES **DH449**

- Just ONE Drill 180 degree point angle enables drilling of horizontal surface and sloped surface
- Excellent chip evacuation by optimized flute shape
- High strength cutting edge to improve tool life and versatility drilling
- Variety of drilling can be used in a variety of drilling applications



DIN 6537 | CARBIDE | 30° | h6 | m7 | 180° | 20 bar | TiAlN | p.120

SHORT 3×D

Unit : mm

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Inch	Decimal			
TiAlN	D1			D2	L1	L2
DH4491450	14.5		.5708	16	65	115
DH4491500	15.0		.5905	16	65	115
DH4491550	15.5		.6102	16	65	115
DH449040F	15.875	5/8	.6250	16	65	115
DH4491600	16.0		.6299	16	65	115
DH4491650	16.5		.6495	18	73	123
DH4491700	17.0		.6692	18	73	123

▶ Other shank types are available on your request.

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Inch	Decimal			
TiAlN	D1			D2	L1	L2
DH449044F	17.463	11/16	.6875	18	73	123
DH4491750	17.5		.6889	18	73	123
DH4491800	18.0		.7087	18	73	123
DH4491850	18.5		.7283	20	79	131
DH4491900	19.0		.7480	20	79	131
DH449048F	19.05	3/4	.7500	20	79	131
DH4491950	19.5		.7676	20	79	131
DH4492000	20.0		.7874	20	79	131

Chamfer
(See the data below for details.)

Double Margin 3xD
Hole straightness and roundness provides good alignments

Drill Diameter (Inch)	Corner Chamfer (Inch)
Ø.1181" ~ Ø.2362"	.0024"
Ø.2363" ~ Ø.3937"	.0047"
Ø.3938" ~ Ø.5512"	.0071"
Ø.5513" ~ Ø.7874"	.0102"

◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended	◎	◎	◎	○	○	◎	○	○	○			○			◎	○				

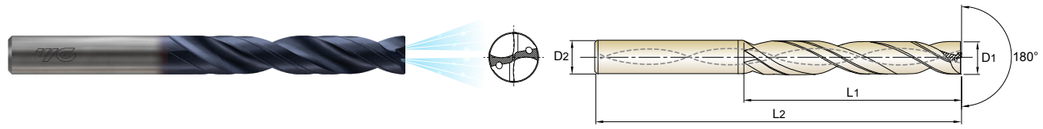
ISO	N										S							H			
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel		Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended	○	○																			

TiAlN-COATED SOLID CARBIDE

DREAM DRILLS - FLAT BOTTOM with COOLANT HOLES

NEW SERIES **DH450**

- For holes on various angled surfaces.
- Optimized flute shape for excellent chip evacuation.
- High strength cutting edge to improve tool life and versatility drilling.
- For through holes, minimized burrs at entrance and exit when drilling thin plate.
- Pilot Drilling for 5×D



DIN 6537 | CARBIDE | 30° | h6 | m7 | 180° | 20 bar | TiAlN | p.122

LONG 5×D

Unit : mm

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Inch	Decimal			
TiAlN	D1			D2	L1	L2
DH450030	3.0		.1181	6	28	66
DH450031	3.1		.1220	6	28	66
DH450008F	3.175	1/8	.1250	6	28	66
DH450032	3.2		.1260	6	28	66
DH450033	3.3		.1299	6	28	66
DH450034	3.4		.1339	6	28	66
DH450035	3.5		.1378	6	28	66
DH450036	3.6		.1417	6	28	66
DH450037	3.7		.1457	6	28	66
DH450038	3.8		.1496	6	36	74
DH450039	3.9		.1535	6	36	74
DH450010F	3.969	5/32	.1563	6	36	74
DH450040	4.0		.1575	6	36	74
DH450041	4.1		.1614	6	36	74
DH450042	4.2		.1654	6	36	74
DH450043	4.3		.1693	6	36	74
DH450044	4.4		.1732	6	36	74
DH450045	4.5		.1772	6	36	74
DH450046	4.6		.1811	6	36	74
DH450047	4.7		.1850	6	36	74
DH450012F	4.763	3/16	.1875	6	44	82
DH450048	4.8		.1890	6	44	82
DH450049	4.9		.1929	6	44	82
DH450050	5.0		.1969	6	44	82
DH450051	5.1		.2008	6	44	82
DH450052	5.2		.2047	6	44	82

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Inch	Decimal			
TiAlN	D1			D2	L1	L2
DH450053	5.3		.2087	6	44	82
DH450054	5.4		.2126	6	44	82
DH450055	5.5		.2165	6	44	82
DH450014F	5.556	7/32	.2188	6	44	82
DH450056	5.6		.2205	6	44	82
DH450057	5.7		.2244	6	44	82
DH450058	5.8		.2283	6	44	82
DH450059	5.9		.2323	6	44	82
DH450060	6.0		.2362	6	44	82
DH450061	6.1		.2402	8	53	91
DH450062	6.2		.2441	8	53	91
DH450063	6.3		.2480	8	53	91
DH450016F	6.35	1/4	.2500	8	53	91
DH450064	6.4		.2520	8	53	91
DH450065	6.5		.2559	8	53	91
DH450066	6.6		.2598	8	53	91
DH450067	6.7		.2638	8	53	91
DH450068	6.8		.2677	8	53	91
DH450069	6.9		.2717	8	53	91
DH450070	7.0		.2756	8	53	91
DH450071	7.1		.2795	8	53	91
DH450018F	7.144	9/32	.2812	8	53	91
DH450072	7.2		.2835	8	53	91
DH450073	7.3		.2874	8	53	91
DH450074	7.4		.2913	8	53	91
DH450075	7.5		.2953	8	53	91

▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended	◎	◎	◎	○	○	◎	○	○	○			○			◎	○				

ISO	N										S							H			
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel		Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended	○	○																			

TiAlN-COATED SOLID CARBIDE

DREAM DRILLS - FLAT BOTTOM with COOLANT HOLES

NEW SERIES **DH450**

- For holes on various angled surfaces.
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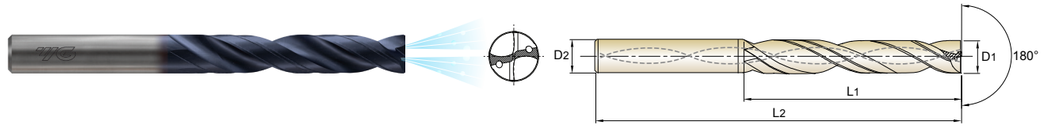


DIN 6537 | CARBIDE | 30° | h6 | m7 | 180° | 20 bar | TiAlN | p.122

LONG 5×D

Unit : mm

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Inch	Decimal			
TiAlN	D1			D2	L1	L2
DH450076	7.6		.2992	8	53	91
DH450077	7.7		.3031	8	53	91
DH450078	7.8		.3071	8	53	91
DH450079	7.9		.3110	8	53	91
DH450020F	7.938	5/16	.3125	8	53	91
DH450080	8.0		.3150	8	53	91
DH450081	8.1		.3189	10	61	103
DH450082	8.2		.3228	10	61	103
DH450083	8.3		.3268	10	61	103
DH450021F	8.334	21/64	.3281	10	61	103
DH450084	8.4		.3307	10	61	103
DH450085	8.5		.3346	10	61	103
DH450086	8.6		.3386	10	61	103
DH450087	8.7		.3425	10	61	103
DH450088	8.8		.3465	10	61	103
DH450089	8.9		.3504	10	61	103
DH450090	9.0		.3543	10	61	103
DH450091	9.1		.3583	10	61	103
DH450023F	9.128	23/64	.3594	10	61	103
DH450092	9.2		.3622	10	61	103
DH450093	9.3		.3661	10	61	103
DH450094	9.4		.3701	10	61	103
DH450095	9.5		.3740	10	61	103
DH450024F	9.525	3/8	.3750	10	61	103
DH450096	9.6		.3780	10	61	103
DH450097	9.7		.3819	10	61	103
DH450098	9.8		.3858	10	61	103
DH450099	9.9		.3898	10	61	103
DH450100	10.0		.3937	10	61	103
DH450101	10.1		.3976	12	71	118
DH450102	10.2		.4016	12	71	118
DH450026F	10.319	13/32	.4062	12	71	118
DH450105	10.5		.4134	12	71	118
DH450107	10.7		.4212	12	71	118
DH450108	10.8		.4252	12	71	118
DH450110	11.0		.4330	12	71	118
DH450111	11.1		.4370	12	71	118
DH450028F	11.113	7/16	.4375	12	71	118
DH450112	11.2		.4409	12	71	118
DH450115	11.5		.4527	12	71	118
DH450029F	11.509	29/64	.4531	12	71	118
DH450118	11.8		.4645	12	71	118
DH450119	11.9		.4685	12	71	118
DH450030F	11.906	15/32	.4688	12	71	118
DH450120	12.0		.4724	12	71	118
DH450123	12.3		.4843	14	77	124
DH450124	12.4		.4882	14	77	124
DH450125	12.5		.4921	14	77	124
DH450127	12.7		.5000	14	77	124
DH450128	12.8		.5039	14	77	124
DH450130	13.0		.5118	14	77	124
DH450131	13.1		.5157	14	77	124

▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended	◎	◎	◎	○	○	◎	○	○	○			○			◎	○				

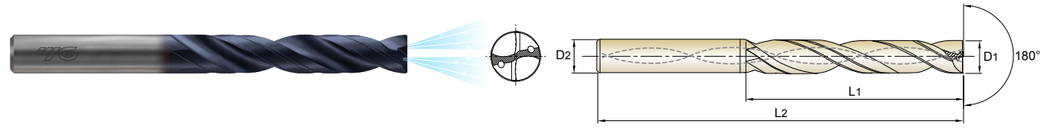
ISO	N										S							H		
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel		Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended	○	○																			

TiAlN-COATED SOLID CARBIDE

DREAM DRILLS - FLAT BOTTOM with COOLANT HOLES

NEW SERIES DH450

- For holes on various angled surfaces.
- Optimized flute shape for excellent chip evacuation.
- High strength cutting edge to improve tool life and versatility drilling.
- For through holes, minimized burrs at entrance and exit when drilling thin plate.
- Pilot Drilling for 5×D



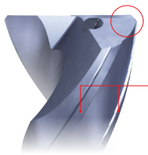
DIN 6537 | CARBIDE | 30° | h6 | m7 | 180° | 20 bar | TiAlN | p.122

LONG 5×D

Unit : mm

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Inch	Decimal			
TiAlN	D1			D2	L1	L2
DH450135	13.5		.5314	14	77	124
DH450138	13.8		.5433	14	77	124
DH450140	14.0		.5512	14	77	124
DH450036F	14.288	9/16	.5625	16	83	133
DH450145	14.5		.5708	16	83	133
DH450147	14.7		.5787	16	83	133
DH450150	15.0		.5905	16	83	133
DH450155	15.5		.6102	16	83	133
DH450040F	15.875	5/8	.6250	16	83	133
DH450160	16.0		.6299	16	83	133
DH450165	16.5		.6495	18	93	143
DH450170	17.0		.6692	18	93	143
DH450044F	17.463	11/16	.6875	18	93	143
DH450175	17.5		.6889	18	93	143
DH450180	18.0		.7087	18	93	143
DH450185	18.5		.7283	20	101	153
DH450190	19.0		.7480	20	101	153
DH450048F	19.05	3/4	.7500	20	101	153
DH450195	19.5		.7676	20	101	153
DH450200	20.0		.7874	20	101	153

▶ Other shank types are available on your request.



Chamfer
(See the data below for details.)

Double Margin 5xD
Hole straightness and roundness provides good alignments

Drill Diameter (Inch)	Corner Chamfer (Inch)
Ø.1181" ~ Ø.2362"	.0024"
Ø.2363" ~ Ø.3937"	.0047"
Ø.3938" ~ Ø.5512"	.0071"
Ø.5513" ~ Ø.7874"	.0102"

◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended	◎	◎	◎	○	○	◎	○	○	○			○			◎	○				

ISO	N										S							H		
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel		Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended	○	○																			

DPP447 SERIES without COOLANT HOLES

SFM = ft/min.
RPM = rev./min.
FEED = inch/rev.

ISO	VDI 3323	Material Description	SFM	Drill Diameter								
				METRIC	3.0	-	4.0	-	5.0	6.0	-	8.0
				FRACTIONAL	-	1/8	-	3/16	-	-	5/16	-
				DECIMAL	.1181	.1250	.1575	.1875	.1969	.2362	.3125	.3150
P	1	Non-alloy steel	263	RPM	8490		6370		5090	4240		3180
				FEED	.0008 - .0020		.0012 - .0028		.0012 - .0031	.0016 - .0039		.0031 - .0055
	2		263	RPM	8490		6370		5090	4240		3180
				FEED	.0008 - .0020		.0012 - .0028		.0012 - .0031	.0016 - .0039		.0031 - .0055
	3		230	RPM	7430		5570		4460	3710		2790
				FEED	.0008 - .0020		.0012 - .0028		.0012 - .0031	.0016 - .0039		.0028 - .0051
	4		132	RPM	4240		3180		2550	2120		1590
				FEED	.0008 - .0020		.0012 - .0028		.0012 - .0031	.0016 - .0039		.0028 - .0051
	5		125	RPM	4030		3020		2420	2020		1510
				FEED	.0008 - .0020		.0008 - .0024		.0012 - .0031	.0012 - .0035		.0024 - .0047
	6	Low alloy steel	148	RPM	4770		3580		2860	2390		1790
				FEED	.0008 - .0020		.0012 - .0028		.0012 - .0031	.0016 - .0039		.0028 - .0051
	7		132	RPM	4240		3180		2550	2120		1590
				FEED	.0008 - .0020		.0012 - .0028		.0012 - .0031	.0016 - .0039		.0028 - .0051
	8		125	RPM	4030		3020		2420	2020		1510
				FEED	.0008 - .0020		.0008 - .0024		.0012 - .0031	.0012 - .0035		.0024 - .0047
	9		82	RPM	2650		1990		1590	1330		990
				FEED	.0004 - .0012		.0008 - .0016		.0008 - .0020	.0012 - .0024		.0012 - .0031
M	12	Stainless steel	99	RPM	3180		2390		1910	1590		1190
				FEED	.0004 - .0012		.0004 - .0012		.0008 - .0016	.0008 - .002		.0012 - .0024
K	15	Grey cast iron	230	RPM	7430		5570		4460	3710		2790
				FEED	.0008 - .0020		.0008 - .0024		.0012 - .0031	.0012 - .0035		.0024 - .0047
	16		197	RPM	6370		4770		3820	3180		2390
				FEED	.0008 - .0020		.0008 - .0020		.0012 - .0024	.0012 - .0028		.0016 - .0039
N	21	Aluminum-wrought alloy	543	RPM	17510		13130		10500	8750		6570
				FEED	.0008 - .0020		.0016 - .0031		.0016 - .0039	.0024 - .0047		.0039 - .0063
	22		543	RPM	17510		13130		10500	8750		6570
				FEED	.0008 - .0020		.0016 - .0031		.0016 - .0039	.0024 - .0047		.0039 - .0063

▶ NEXT PAGE

- ▶ The cutting conditions are for 2xD.
- ▶ The rigid and precise machine and holder are required.
- ▶ The recommended depth of hole is measured from the highest point of the hole on drilling in inclined and angled surfaces.
- ▶ The recommended cutting conditions are those for drilling on flat and horizontal surfaces.
- ▶ Please adjust feed rate according to the above surface angle when drilling on an inclined surface.
  - The recommended feed rate 50% or lower, in case of 15°~30° of the incline angle.
  - The recommended feed rate 30% or lower and RPM 70%, in case of 30° ~ of the incline angle.
- ▶ Please decrease cutting speed as material hardness increases.
- ▶ Only use drilling tool. Side milling, traversing, helical milling are not usable.

DPP447 SERIES without COOLANT HOLES

SFM = ft/min.
RPM = rev./min.
FEED = inch/rev.

ISO	VDI 3323	Material Description	SFM	Drill Diameter								
				METRIC	-	10.0	12.0	-	-	16.0	-	20.0
				FRACTIONAL	3/8	-	-	1/2	5/8	-	3/4	-
				DECIMAL	.3750	.3937	.4724	.5000	.6250	.6299	.7500	.7874
P	1	Non-alloy steel	263	RPM	2550		2120	2010		1590	1340	1270
				FEED	.0043 - .0067		.0043 - .0083	.0043 - .0083		.0071 - .0110	.0104 - .0144	.0110 - .0150
	2		263	RPM	2550		2120	2010		1590	1340	1270
				FEED	.0043 - .0067		.0043 - .0083	.0043 - .0083		.0071 - .0110	.0104 - .0144	.0110 - .0150
	3		230	RPM	2230		1860	1760		1390	1170	1110
				FEED	.0043 - .0067		.0043 - .0083	.0043 - .0083		.0071 - .0110	.0088 - .0128	.0094 - .0134
	4		132	RPM	1270		1060	1010		800	670	640
				FEED	.0043 - .0067		.0043 - .0083	.0043 - .0083		.0071 - .0110	.0088 - .0128	.0094 - .0134
	5		125	RPM	1210		1010	960		760	640	600
				FEED	.0035 - .0059		.0031 - .0071	.0031 - .0071		.0055 - .0094	.0077 - .0117	.0083 - .0122
	6	Low alloy steel	148	RPM	1430		1190	1130		900	750	720
				FEED	.0043 - .0067		.0043 - .0083	.0043 - .0083		.0071 - .0110	.0088 - .0128	.0094 - .0134
	7		132	RPM	1270		1060	1010		800	670	640
				FEED	.0043 - .0067		.0043 - .0083	.0043 - .0083		.0071 - .0110	.0088 - .0128	.0094 - .0134
	8		125	RPM	1210		1010	960		760	640	600
				FEED	.0035 - .0059		.0031 - .0071	.0031 - .0071		.0055 - .0094	.0077 - .0117	.0083 - .0122
	9		82	RPM	800		660	630		500	420	400
				FEED	.0020 - .0039		.0024 - .0047	.0024 - .0047		.0024 - .0063	.0025 - .0065	.0039 - .0079
M	12	Stainless steel	99	RPM	950		800	760		600	500	480
				FEED	.0012 - .0031		.0020 - .0039	.0020 - .0039		.0024 - .0047	.0025 - .0065	.0035 - .0059
K	15	Grey cast iron	230	RPM	2010		1820	1590		1410	1340	1270
				FEED	.0189 - .0236		.0220 - .0276	.0220 - .0283		.0248 - .0319	.0248 - .0319	.0276 - .0354
	16		197	RPM	2510		2270	1990		1770	1680	1590
				FEED	.0213 - .0283		.0248 - .0331	.0252 - .0315		.0283 - .0354	.0283 - .0354	.0315 - .0386
N	21	Aluminum-wrought alloy	543	RPM	5250		4380	4150		3280	2770	2630
				FEED	.0055 - .0079		.0055 - .0094	.0055 - .0094		.0087 - .0126	.0111 - .0151	.0118 - .0157
	22		543	RPM	5250		4380	4150		3280	2770	2630
				FEED	.0055 - .0079		.0055 - .0094	.0055 - .0094		.0087 - .0126	.0111 - .0151	.0118 - .0157

- ▶ The cutting conditions are for 2xD.
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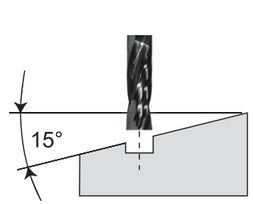
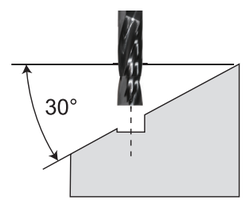
- ▶ The recommended cutting conditions are those for drilling on flat and horizontal surfaces.
- ▶ Please adjust feed rate according to the above surface angle when drilling on an inclined surface.
  - The recommended feed rate 50% or lower, in case of 15°~30° of the incline angle.
  - The recommended feed rate 30% or lower and RPM 70%, in case of 30° ~ of the incline angle.
- ▶ Please decrease cutting speed as material hardness increases.
- ▶ Only use drilling tool. Side milling, traversing, helical milling are not usable.





Surface Angle	Cutting Conditions	
	RPM	FEED
0° ~ 15°	100%	100%
15° ~ 30°	100%	50%
30° ~	70%	30%

DH449 SERIES with COOLANT HOLES

SFM = ft/min.
RPM = rev./min.
FEED = inch/rev.

ISO	VDI 3323	Material Description	SFM	Drill Diameter									
				METRIC	3.0	-	4.0	-	5.0	6.0	-	-	8.0
				FRACTIONAL	-	1/8	-	3/16	-	-	1/4	5/16	-
				DECIMAL	.1181	.1250	.1575	.1875	.1969	.2362	.2500	.3125	.3150
P	1	Non-alloy steel	329	RPM	10610		7960		6370		5310		3980
				FEED	.0012 - .0028		.0024 - .0039		.0028 - .0051		.0035 - .0059		.0055 - .0079
	2		296	RPM	9550		7160		5730		4770		3580
				FEED	.0008 - .0020		.0016 - .0031		.0016 - .0039		.0024 - .0047		.0039 - .0063
	3		296	RPM	9550		7160		5730		4770		3580
				FEED	.0008 - .0020		.0016 - .0031		.0016 - .0039		.0024 - .0047		.0039 - .0063
	4		247	RPM	7960		5970		4770		3980		2980
				FEED	.0008 - .0016		.0012 - .0024		.0020 - .0031		.0020 - .0035		.0024 - .0047
	5		247	RPM	7960		5970		4770		3980		2980
				FEED	.0008 - .0016		.0012 - .0024		.0020 - .0031		.0020 - .0035		.0024 - .0047
	6	Low alloy steel	280	RPM	9020		6760		5410		4510		3380
				FEED	.0008 - .0020		.0016 - .0031		.0016 - .0039		.0024 - .0047		.0039 - .0063
	7		247	RPM	7960		5970		4770		3980		2980
				FEED	.0008 - .0020		.0016 - .0031		.0016 - .0039		.0024 - .0047		.0039 - .0063
	8		247	RPM	7960		5970		4770		3980		2980
				FEED	.0008 - .0016		.0012 - .0024		.0020 - .0031		.0020 - .0035		.0024 - .0047
	9		165	RPM	5310		3980		3180		2650		1990
				FEED	.0008 - .0016		.0012 - .0024		.0020 - .0031		.0020 - .0035		.0024 - .0047
M	12	Stainless steel	197	RPM	6370		4770		3820		3180		2390
				FEED	.0008 - .0020		.0016 - .0031		.0016 - .0039		.0024 - .0047		.0039 - .0063
K	15	Grey cast iron	296	RPM	9550		7160		5730		4770		3580
				FEED	.0008 - .0020		.0012 - .0024		.0020 - .0031		.0020 - .0035		.0024 - .0047
	16		247	RPM	7960		5970		4770		3980		2980
				FEED	.0008 - .0020		.0008 - .0020		.0012 - .0024		.0012 - .0028		.0016 - .0039
N	21	Aluminum-wrought alloy	460	RPM	14850		11140		8910		7430		5570
				FEED	.0020 - .0035		.0031 - .0047		.0035 - .0059		.0047 - .0071		.0071 - .0094
	22		460	RPM	14850		11140		8910		7430		5570
				FEED	.0020 - .0035		.0031 - .0047		.0035 - .0059		.0047 - .0071		.0071 - .0094

▶ NEXT PAGE

- ▶ The cutting conditions are for 3xD.
- ▶ The rigid and precise machine and holder are required.
- ▶ The recommended depth of hole is measured from the highest point of the hole on drilling in inclined and angled surfaces.
- ▶ The recommended cutting conditions are those for drilling on flat and horizontal surfaces.
- ▶ Please adjust feed rate according to the above surface angle when drilling on an inclined surface.
  - The recommended feed rate 40% or lower and RPM 50%, in case of 5°-15° of the incline angle.
  - Required pilot hole, in case of over 15° of the incline angle.
- ▶ Please decrease cutting speed as material hardness increases.
- ▶ Only use drilling tool. Side milling, traversing, helical milling are not usable.

DH449 SERIES with COOLANT HOLES

SFM = ft/min.
RPM = rev./min.
FEED = inch/rev.

ISO	VDI 3323	Material Description	SFM	Drill Diameter									
				METRIC	-	10.0	12.0	-	-	16.0	-	20.0	
				FRACTIONAL	3/8	-	-	1/2	5/8	-	3/4	-	
				DECIMAL	.3750	.3937	.4724	.5000	.6250	.6299	.7500	.7874	
P	1	Non-alloy steel	329	RPM	3180	2650	2510	1990	1680	1590			
				FEED	.0075 - .0098	.0079 - .0118	.0087 - .0126	.0118 - .0157	.0146 - .0185	.0157 - .0197			
	2		296	RPM	2860	2390	2260	1790	1510	1430			
				FEED	.0055 - .0079	.0055 - .0094	.0055 - .0094	.0087 - .0126	.0111 - .0151	.0118 - .0157			
	3		296	RPM	2860	2390	2260	1790	1510	1430			
				FEED	.0055 - .0079	.0055 - .0094	.0055 - .0094	.0087 - .0126	.0111 - .0151	.0118 - .0157			
	4		247	RPM	2390	1990	1890	1490	1260	1190			
				FEED	.0035 - .0059	.0031 - .0071	.0031 - .0071	.0055 - .0094	.0074 - .0114	.0079 - .0118			
	5		247	RPM	2390	1990	1890	1490	1260	1190			
				FEED	.0035 - .0059	.0031 - .0071	.0031 - .0071	.0055 - .0094	.0074 - .0114	.0079 - .0118			
	6	Low alloy steel	280	RPM	2710	2250	2140	1690	1430	1350			
				FEED	.0055 - .0079	.0055 - .0094	.0055 - .0094	.0087 - .0126	.0111 - .0151	.0118 - .0157			
	7		247	RPM	2390	1990	1890	1490	1260	1190			
				FEED	.0055 - .0079	.0055 - .0094	.0055 - .0094	.0087 - .0126	.0111 - .0151	.0118 - .0157			
	8		247	RPM	2390	1990	1890	1490	1260	1190			
				FEED	.0035 - .0059	.0031 - .0071	.0031 - .0071	.0055 - .0094	.0074 - .0114	.0079 - .0118			
	9		165	RPM	1590	1330	1260	990	840	800			
				FEED	.0035 - .0059	.0031 - .0071	.0031 - .0071	.0055 - .0094	.0074 - .0114	.0079 - .0118			
M	12	Stainless steel	197	RPM	1910	1590	1510	1190	1000	950			
				FEED	.0055 - .0079	.0055 - .0094	.0055 - .0094	.0087 - .0126	.0055 - .0094	.0118 - .0157			
K	15	Grey cast iron	296	RPM	2860	2390	2260	1790	1510	1430			
				FEED	.0035 - .0059	.0031 - .0071	.0031 - .0071	.0055 - .0094	.0074 - .0114	.0079 - .0118			
	16		247	RPM	2390	1990	1890	1490	1260	1190			
				FEED	.0028 - .0051	.0024 - .0063	.0024 - .0063	.0043 - .0083	.0055 - .0095	.0059 - .0098			
N	21	Aluminum-wrought alloy	460	RPM	4460	4240	3510	2790	2340	2230			
				FEED	.0094 - .0118	.0102 - .0142	.0102 - .0142	.0150 - .0189	.0186 - .0226	.0197 - .0236			
	22		460	RPM	4460	4240	3510	2790	2340	2230			
				FEED	.0094 - .0118	.0102 - .0142	.0102 - .0142	.0150 - .0189	.0186 - .0226	.0197 - .0236			

- ▶ The cutting conditions are for 3xD.
- ▶ The rigid and precise machine and holder are required.
- ▶ The recommended depth of hole is measured from the highest point of the hole on drilling in inclined and angled surfaces.
- ▶ The recommended cutting conditions are those for drilling on flat and horizontal surfaces.
- ▶ Please adjust feed rate according to the above surface angle when drilling on an inclined surface.
  - The recommended feed rate 40% or lower and RPM 50%, in case of 5°-15° of the incline angle.
  - Required pilot hole, in case of over 15° of the incline angle.
- ▶ Please decrease cutting speed as material hardness increases.
- ▶ Only use drilling tool. Side milling, traversing, helical milling are not usable.

DH450 SERIES with COOLANT HOLES

SFM = ft/min.
RPM = rev./min.
FEED = inch/rev.

ISO	VDI 3323	Material Description	SFM	Drill Diameter								
				METRIC	3.0	-	4.0	-	5.0	6.0	-	-	8.0
				FRACTIONAL	-	1/8	-	3/16	-	-	1/4	5/16	-
				DECIMAL	.1181	.1250	.1575	.1875	.1969	.2362	.2500	.3125	.3150
P	1	Non-alloy steel	329	RPM	10610		7960		6370		5310		3980
				FEED	.0020 - .0035		.0031 - .0047		.0035 - .0059		.0047 - .0071		.0071 - .0094
	2		296	RPM	9550		7160		5730		4770		3580
				FEED	.0008 - .0020		.0016 - .0031		.0016 - .0039		.0024 - .0047		.0039 - .0063
	3		296	RPM	9550		7160		5730		4770		3580
				FEED	.0008 - .0020		.0016 - .0031		.0016 - .0039		.0024 - .0047		.0039 - .0063
	4		247	RPM	7960		5970		4770		3980		2980
				FEED	.0008 - .0016		.0012 - .0024		.0020 - .0031		.0020 - .0035		.0024 - .0047
	5		247	RPM	7960		5970		4770		3980		2980
				FEED	.0008 - .0016		.0012 - .0024		.0020 - .0031		.0020 - .0035		.0024 - .0047
	6	Low alloy steel	280	RPM	9020		6760		5410		4510		3380
				FEED	.0008 - .0020		.0016 - .0031		.0016 - .0039		.0024 - .0047		.0039 - .0063
	7		247	RPM	7960		5970		4770		3980		2980
				FEED	.0008 - .0020		.0016 - .0031		.0016 - .0039		.0024 - .0047		.0039 - .0063
	8		247	RPM	7960		5970		4770		3980		2980
				FEED	.0008 - .0016		.0012 - .0024		.0020 - .0031		.0020 - .0035		.0024 - .0047
	9		165	RPM	5310		3980		3180		2650		1990
				FEED	.0008 - .0016		.0012 - .0024		.0020 - .0031		.0020 - .0035		.0024 - .0047
M	12	Stainless steel	197	RPM	6370		4770		3820		3180		2390
				FEED	.0008 - .0020		.0016 - .0031		.0016 - .0039		.0024 - .0047		.0039 - .0063
K	15	Grey cast iron	296	RPM	9550		7160		5730		4770		3580
				FEED	.0008 - .0020		.0012 - .0024		.0020 - .0031		.0020 - .0035		.0024 - .0047
	16		247	RPM	7960		5970		4770		3980		2980
				FEED	.0008 - .0020		.0008 - .0020		.0012 - .0024		.0012 - .0028		.0016 - .0039
N	21	Aluminum-wrought alloy	527	RPM	16980		12730		10190		8490		6370
				FEED	.0020 - .0035		.0031 - .0047		.0035 - .0059		.0047 - .0071		.0071 - .0094
	22		527	RPM	16980		12730		10190		8490		6370
				FEED	.0020 - .0035		.0031 - .0047		.0035 - .0059		.0047 - .0071		.0071 - .0094

▶ Required pilot hole of the same diameter before using the 5xD Flat bottom Drills.
▶ The above table values is for under 5xD depth with pilot drilling operation.

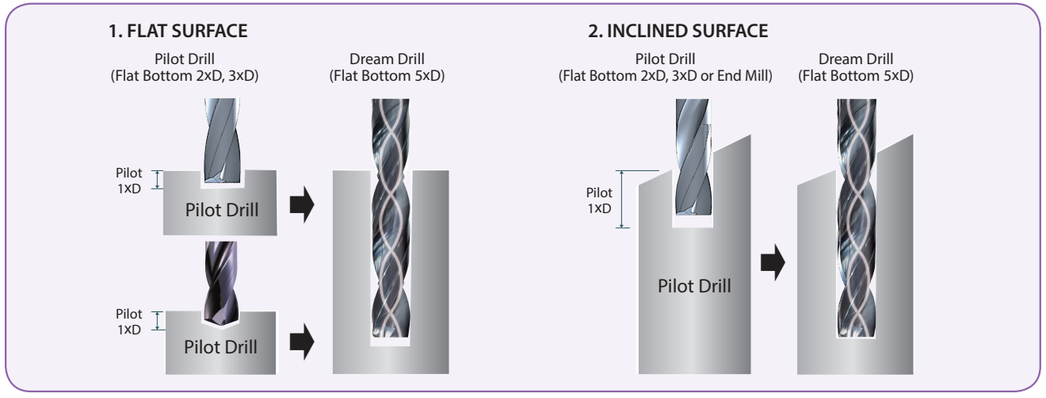
▶ NEXT PAGE

DH450 SERIES with COOLANT HOLES

SFM = ft/min.
RPM = rev./min.
FEED = inch/rev.

ISO	VDI 3323	Material Description	SFM	Drill Diameter								
				METRIC	-	10.0	12.0	-	-	16.0	-	20.0
				FRACTIONAL	3/8	-	-	1/2	5/8	-	3/4	-
				DECIMAL	.3750	.3937	.4724	.5000	.6250	.6299	.7500	.7874
P	1	Non-alloy steel	329	RPM	3180		2650	2510	1990		1680	1590
				FEED	.0094 - .0118		.0102 - .0142	.0102 - .0142	.015 - .0189		.0186 - .0226	.0197 - .0236
	2		296	RPM	2860		2390	2260	1790		1510	1430
				FEED	.0055 - .0079		.0055 - .0094	.0055 - .0094	.0087 - .0126		.0111 - .0151	.0118 - .0157
	3		296	RPM	2860		2390	2260	1790		1510	1430
				FEED	.0055 - .0079		.0055 - .0094	.0055 - .0094	.0087 - .0126		.0111 - .0151	.0118 - .0157
	4		247	RPM	2390		1990	1890	1490		1260	1190
				FEED	.0035 - .0059		.0031 - .0071	.0031 - .0071	.0055 - .0094		.0074 - .0114	.0079 - .0118
	5		247	RPM	2390		1990	1890	1490		1260	1190
				FEED	.0035 - .0059		.0031 - .0071	.0031 - .0071	.0055 - .0094		.0074 - .0114	.0079 - .0118
	6	Low alloy steel	280	RPM	2710		2250	2140	1690		1430	1350
				FEED	.0055 - .0079		.0055 - .0094	.0055 - .0094	.0087 - .0126		.0111 - .0151	.0118 - .0157
	7		247	RPM	2390		1990	1890	1490		1260	1190
				FEED	.0055 - .0079		.0055 - .0094	.0055 - .0094	.0087 - .0126		.0111 - .0151	.0118 - .0157
	8		247	RPM	2390		1990	1890	1490		1260	1190
				FEED	.0035 - .0059		.0031 - .0071	.0031 - .0071	.0055 - .0094		.0074 - .0114	.0079 - .0118
	9		165	RPM	1590		1330	1260	990		840	800
				FEED	.0035 - .0059		.0031 - .0071	.0031 - .0071	.0055 - .0094		.0074 - .0114	.0079 - .0118
M	12	Stainless steel	197	RPM	1910		1590	1510	1190		1000	950
				FEED	.0055 - .0079		.0055 - .0094	.0055 - .0094	.0087 - .0126		.0055 - .0094	.0118 - .0157
K	15	Grey cast iron	296	RPM	2860		2390	2260	1790		1510	1430
				FEED	.0035 - .0059		.0031 - .0071	.0031 - .0071	.0055 - .0094		.0074 - .0114	.0079 - .0118
	16		247	RPM	2390		1990	1890	1490		1260	1190
				FEED	.0028 - .0051		.0024 - .0063	.0024 - .0063	.0043 - .0083		.0055 - .0095	.0059 - .0098
N	21	Aluminum-wrought alloy	527	RPM	5090		4240	4030	3180		2680	2550
				FEED	.0094 - .0118		.0102 - .0142	.0102 - .0142	.015 - .0189		.0186 - .0226	.0197 - .0236
	22		527	RPM	5090		4240	4030	3180		2680	2550
				FEED	.0094 - .0118		.0102 - .0142	.0102 - .0142	.015 - .0189		.0186 - .0226	.0197 - .0236

DREAM DRILLS FLAT BOTTOM - Pilot Drilling for 5xD



▶ For Flat bottom 5xD drilling depth, Slope surface needs Pilot Drilling with YG-1 Flat Bottom Drill (2×D, 3×D) and Flat surface needs Pilot Drilling with YG-1 Dream Drill General.
▶ Pilot Drilling Depth : around 1×D
▶ Pilot Drilling Diameter : same size diameter

Global Cutting Tool Leader **YG-1**

DREAM DRILLS

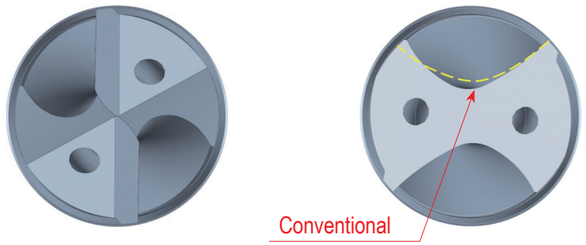
Leading Through Innovation

SOLID CARBIDE

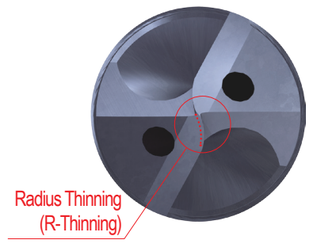
DREAM DRILLS -INOX

- For Tough Materials like Stainless Steels, Nickel Alloys and Titanium

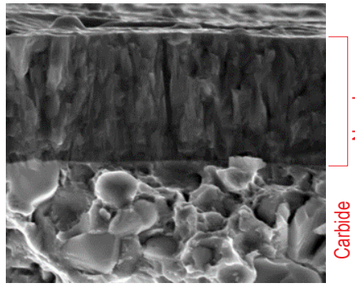
DREAM DRILLS INOX



- Special Flute geometry and Chip pocket to help Chip evacuation and proper Chip Curl.
- Strong rigidity from **Cutting Edge**
- High Performance on Stainless Steel and pre hardend Steel



- Positive Axial **Rake Angle** and cutting force, with **R-Thinning** enhance centering and Chip Breaking.



TiAlN Coating
(Upgraded Titanium Aluminum Nitride : Nano-Layer Coating)
- Higher wear resistance and Lower friction
- Higher Cutting Speed and Feed
- Improved drill Hole Quality

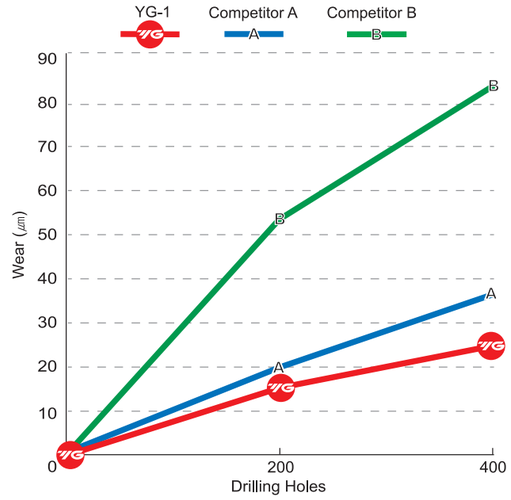
Special surface treatment after coating
to reduce friction and better chip flow.

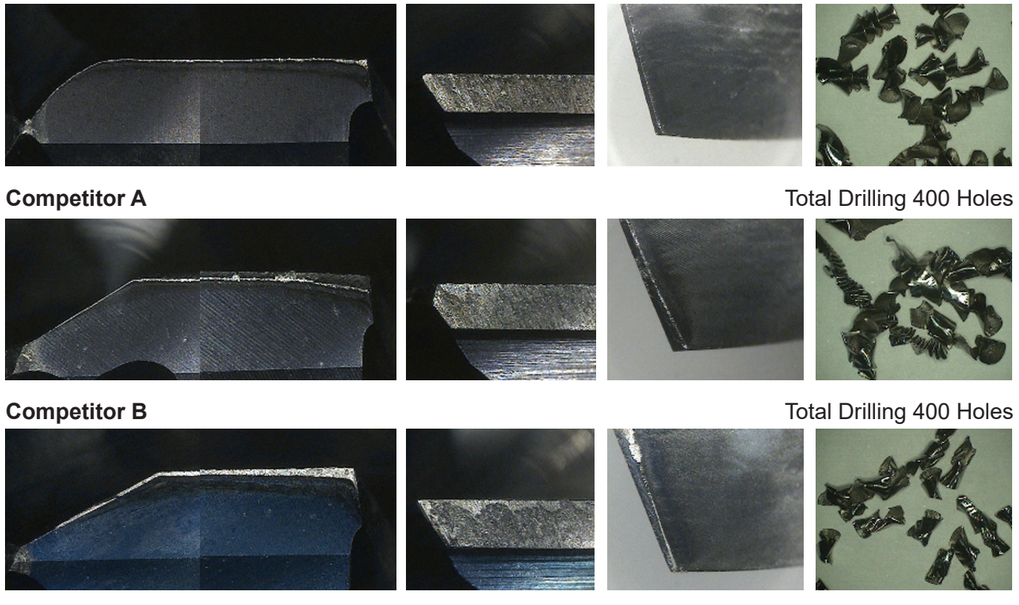
CASE STUDY

▶ SOLID CARBIDE DREAM DRILLS - INOX with Coolant Holes

Cutting Condition

Tool	DH452060
Size	Ø6 × Ø6 × 44 × 82
Work Material	- AISI : 304 - DIN : X5CrNi1810 (X4CrNi18-10)(HRc10) - JIS : SUS304
RPM	14,856 rev./min.
SFM	.229 ft/min.
Feed	.0028 inch/rev.
Drilling Depth	.94˝ (4xD)
Coolant	Wet Cut

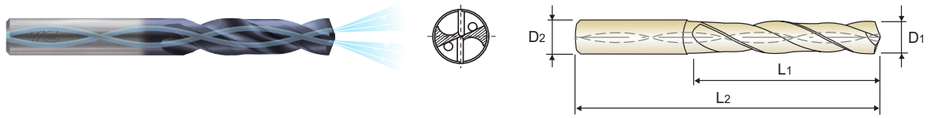




SERIES
DH463
DH714

TiAlN-COATED SOLID CARBIDE
DREAM DRILLS - INOX with COOLANT HOLES

- ▶ Special flute shape and geometry suitable for machining stainless steel
- ▶ Excellent chip evacuation from better surface treatment
- ▶ Point R-thinning achieves superior centering and chip curling
- ▶ TiAlN Coating for better surface finishes and longer tool life



CARBIDE | 140° | 20 bar | TiAlN | p.144

STUB
3×D

Unit : inch

EDP No.	Drill Diameter		Shank Diameter	Flute Length	Overall Length
	Fractional	Decimal			
TiAlN	D1		D2	L1	L2
DH714008	1/8	.1250	3/16	1.102	2.992
DH463008	1/8	.1250	15/64	1.102	2.992
DH714011	11/64	.1719	3/16	1.417	3.386
DH463011	11/64	.1719	15/64	1.417	3.386
DH714012	3/16	.1875	3/16	1.575	3.543
DH463012	3/16	.1875	15/64	1.575	3.543
DH463013	13/64	.2031	15/64	1.082	3.228
DH714013	13/64	.2031	1/4	1.082	3.228
DH463014	7/32	.2188	15/64	1.181	3.228
DH714014	7/32	.2188	1/4	1.181	3.228
DH463015	15/64	.2344	15/64	1.181	3.228
DH714015	15/64	.2344	1/4	1.181	3.228
DH714016	1/4	.2500	1/4	1.279	3.465
DH463016	1/4	.2500	17/64	1.279	3.465
DH463206	F	.2570	17/64	1.279	3.465
DH714206	F	.2570	5/16	1.279	3.465
DH463017	17/64	.2656	17/64	1.378	3.465
DH714017	17/64	.2656	5/16	1.378	3.465
DH463209	I	.2720	.2720	1.378	3.465
DH714209	I	.2720	5/16	1.378	3.465
DH463018	9/32	.2812	5/16	1.476	3.701
DH463019	19/64	.2969	5/16	1.476	3.701
DH463020	5/16	.3125	5/16	1.575	3.701
DH463021	21/64	.3281	11/32	1.673	3.937

EDP No.	Drill Diameter		Shank Diameter	Flute Length	Overall Length
	Fractional	Decimal			
TiAlN	D1		D2	L1	L2
DH714021	21/64	.3281	3/8	1.673	3.937
DH463217	Q	.3320	11/32	1.673	3.937
DH714217	Q	.3320	3/8	1.673	3.937
DH463022	11/32	.3438	11/32	1.772	3.937
DH714022	11/32	.3438	3/8	1.772	3.937
DH714023	23/64	.3594	3/8	1.870	4.174
DH463023	23/64	.3594	25/64	1.870	4.174
DH714221	U	.3680	3/8	1.870	4.174
DH463221	U	.3680	25/64	1.870	4.174
DH714024	3/8	.3750	3/8	1.969	4.174
DH463024	3/8	.3750	25/64	1.969	4.174
DH463025	25/64	.3906	25/64	1.969	4.174
DH714025	25/64	.3906	7/16	1.969	4.174
DH463026	13/32	.4062	27/64	2.067	4.567
DH714026	13/32	.4062	7/16	2.067	4.567
DH463027	27/64	.4219	27/64	2.165	4.567
DH714027	27/64	.4219	7/16	2.165	4.567
DH714028	7/16	.4375	7/16	2.264	4.803
DH463028	7/16	.4375	15/32	2.264	4.803
DH463029	29/64	.4531	15/32	2.264	4.803
DH714029	29/64	.4531	1/2	2.264	4.803
DH463030	15/32	.4688	15/32	2.362	4.803
DH714030	15/32	.4688	1/2	2.362	4.803
DH463031	31/64	.4844	1/2	2.461	5.039

▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended		◎	○			◎	○					◎	◎	◎						

ISO	N										S							H		
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel	Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended	◎	◎	○	○	○												○				

SERIES
DH463
DH714

TiAlN-COATED SOLID CARBIDE
DREAM DRILLS - INOX with COOLANT HOLES

▶ Special flute shape and geometry suitable for machining stainless steel
▶ Excellent chip evacuation from better surface treatment
▶ Point R-thinning achieves superior centering and chip curling
▶ TiAlN Coating for better surface finishes and longer tool life

CARBIDE | 140° | 20 bar | TiAlN | p.144

STUB
3×D

Unit : inch

EDP No.	Drill Diameter		Shank Diameter	Flute Length	Overall Length
	Fractional	Decimal			
TiAlN	D1		D2	L1	L2
DH463032	1/2	.5000	1/2	2.559	5.039
DH463033	33/64	.5156	35/64	2.657	5.276
DH714033	33/64	.5156	9/16	2.657	5.276
DH463034	17/32	.5312	35/64	2.756	5.276
DH714034	17/32	.5312	9/16	2.756	5.276
DH463035	35/64	.5469	35/64	2.756	5.276
DH714035	35/64	.5469	9/16	2.756	5.276

EDP No.	Drill Diameter		Shank Diameter	Flute Length	Overall Length
	Fractional	Decimal			
TiAlN	D1		D2	L1	L2
DH714036	9/16	.5625	9/16	2.854	5.512
DH463036	9/16	.5625	37/64	2.854	5.512
DH463037	37/64	.5781	37/64	2.953	5.512
DH714037	37/64	.5781	5/8	2.953	5.512
DH463038	19/32	.5937	5/8	3.051	5.709
DH463039	39/64	.6094	5/8	3.051	5.709
DH463040	5/8	.6250	5/8	3.150	5.709

▶ Other shank types are available on your request.

◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended		◎	○			◎	○					◎	◎	◎						

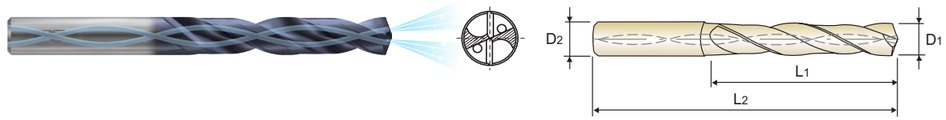
ISO	N										S							H		
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel	Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended	◎	◎	○	○	○												○				

SERIES
DH464
DH715

TiAlN-COATED SOLID CARBIDE

DREAM DRILLS - INOX with COOLANT HOLES

- Special flute shape and geometry suitable for machining stainless steel
- Excellent chip evacuation from better surface treatment
- Point R-thinning achieves superior centering and chip curling
- TiAlN Coating for better surface finishes and longer tool life



CARBIDE | 140° | 20 bar | TiAlN | p.144

LONG
5 × D

Unit : inch

EDP No.	Drill Diameter		Shank Diameter	Flute Length	Overall Length
	Fractional	Decimal			
TiAlN	D1		D2	L1	L2
DH464013	13/64	.2031	15/64	1-3/4	3-15/16
DH715013	13/64	.2031	1/4	1-3/4	3-15/16
DH464014	7/32	.2188	15/64	1-57/64	3-15/16
DH715014	7/32	.2188	1/4	1-57/64	3-15/16
DH464015	15/64	.2344	15/64	1-57/64	3-15/16
DH715015	15/64	.2344	1/4	1-57/64	3-15/16
DH715016	1/4	.2500	1/4	2-3/64	4-19/64
DH464016	1/4	.2500	17/64	2-3/64	4-19/64
DH464206	F	.2570	17/64	2-13/64	4-19/64
DH715206	F	.2570	5/16	2-13/64	4-19/64
DH464017	17/64	.2656	17/64	2-13/64	4-19/64
DH715017	17/64	.2656	5/16	2-13/64	4-19/64
DH464209	I	.2720	.2720	2-13/64	4-19/64
DH715209	I	.2720	5/16	2-13/64	4-19/64
DH464018	9/32	.2812	5/16	2-23/64	4-41/64
DH464019	19/64	.2969	5/16	2-33/64	4-41/64
DH464020	5/16	.3125	5/16	2-33/64	4-41/64
DH464021	21/64	.3281	11/32	2-43/64	5
DH715021	21/64	.3281	3/8	2-43/64	5
DH464217	Q	.3320	11/32	2-43/64	5
DH715217	Q	.3320	3/8	2-43/64	5
DH464022	11/32	.3438	11/32	2-27/64	5

EDP No.	Drill Diameter		Shank Diameter	Flute Length	Overall Length
	Fractional	Decimal			
TiAlN	D1		D2	L1	L2
DH715022	11/32	.3438	3/8	2-27/32	5
DH715023	23/64	.3594	3/8	3	5-23/64
DH464023	23/64	.3594	25/64	3	5-23/64
DH715221	U	.3680	3/8	3	5-23/64
DH464221	U	.3680	25/64	3	5-23/64
DH715024	3/8	.3750	3/8	3-5/32	5-23/64
DH464024	3/8	.3750	25/64	3-5/32	5-23/64
DH464025	25/64	.3906	25/64	3-5/32	5-23/64
DH715025	25/64	.3906	7/16	3-5/32	5-23/64
DH464026	13/32	.4062	27/64	3-5/16	5-7/8
DH715026	13/32	.4062	7/16	3-5/16	5-7/8
DH464027	27/64	.4219	27/64	3-15/32	5-7/8
DH715027	27/64	.4219	7/16	3-15/32	5-7/8
DH715028	7/16	.4375	7/16	3-5/8	6-7/32
DH464028	7/16	.4375	15/32	3-5/8	6-7/32
DH464029	29/64	.4531	15/32	3-25/32	6-7/32
DH715029	29/64	.4531	1/2	3-25/32	6-7/32
DH464030	15/32	.4688	15/32	3-25/32	6-7/32
DH715030	15/32	.4688	1/2	3-25/32	6-7/32
DH464031	31/64	.4844	1/2	3-15/16	6-37/64
DH464032	1/2	.5000	1/2	4-3/32	6-37/64

▶ Other shank types are available on your request.

◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended		◎	○			◎	○					◎	◎	◎						

ISO	N										S							H		
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel	Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended	◎	◎	○	○	○												○				

SERIES
DH451

TiAlN-COATED SOLID CARBIDE

DREAM DRILLS - INOX with COOLANT HOLES

- Special flute shape and geometry suitable for machining stainless steel
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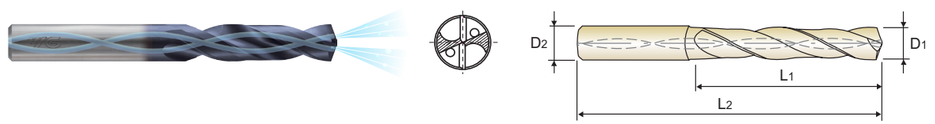

DIN 6537 | CARBIDE | h6 | m7 | 140° | 20 bar | TiAlN | p.144

SHORT
3 × D

Unit : mm

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Fractional	Decimal			
TiAlN	D1			D2	L1	L2
DH451021	2.1		.0827	4	20	55
DH451006F	2.381	3/32	.0937	4	20	55
DH451027	2.7		.1063	4	20	55
DH451007F	2.778	7/64	.1094	4	20	55
DH451929	2.95		.1161	6	20	62
DH451030	3.0		.1181	6	20	62
DH451031	3.1		.1220	6	20	62
DH451008F	3.175	1/8	.1250	6	20	62
DH451032	3.2		.1260	6	20	62
DH451033	3.3		.1299	6	20	62
DH451034	3.4		.1339	6	20	62
DH451035	3.5		.1378	6	20	62
DH451009F	3.572	9/64	.1406	6	20	62
DH451036	3.6		.1417	6	20	62
DH451037	3.7		.1457	6	20	62
DH451038	3.8		.1496	6	24	66
DH451039	3.9		.1535	6	24	66
DH451010F	3.969	5/32	.1563	6	24	66
DH451040	4.0		.1575	6	24	66
DH451041	4.1		.1614	6	24	66
DH451042	4.2		.1654	6	24	66
DH451043	4.3		.1693	6	24	66
DH451011F	4.366	11/64	.1719	6	24	66
DH451044	4.4		.1732	6	24	66
DH451045	4.5		.1772	6	24	66
DH451046	4.6		.1811	6	24	66

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Fractional	Decimal			
TiAlN	D1			D2	L1	L2
DH451047	4.7		.1850	6	24	66
DH451012F	4.763	3/16	.1875	6	24	66
DH451048	4.8		.1890	6	28	66
DH451049	4.9		.1929	6	28	66
DH451050	5.0		.1969	6	28	66
DH451051	5.1		.2008	6	28	66
DH451013F	5.159	13/64	.2031	6	28	66
DH451052	5.2		.2047	6	28	66
DH451053	5.3		.2087	6	28	66
DH451054	5.4		.2126	6	28	66
DH451055	5.5		.2165	6	28	66
DH451014F	5.556	7/32	.2188	6	28	66
DH451056	5.6		.2205	6	28	66
DH451057	5.7		.2244	6	28	66
DH451058	5.8		.2283	6	28	66
DH451059	5.9		.2323	6	28	66
DH451015F	5.953	15/64	.2344	6	28	66
DH451060	6.0		.2362	6	28	66
DH451061	6.1		.2402	8	34	79
DH451062	6.2		.2441	8	34	79
DH451063	6.3		.2480	8	34	79
DH451016F	6.350	1/4	.2500	8	34	79
DH451064	6.4		.2520	8	34	79
DH451065	6.5		.2559	8	34	79
DH451006L	6.528	F	.2570	8	34	79
DH451066	6.6		.2598	8	34	79

▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended		◎	○			◎	○					◎	◎	◎						

ISO	N										S							H		
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel	Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended	◎	◎	○	○	○												○				

TiAlN-COATED SOLID CARBIDE

DREAM DRILLS - INOX with COOLANT HOLES

SERIES **DH451**

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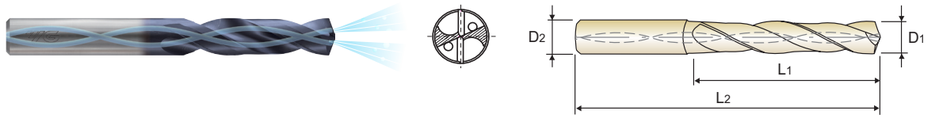

DIN 6537 | CARBIDE | h6 | m7 | 140° | 20 bar | TiAlN

p.144

SHORT 3×D

Unit : mm

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Fractional	Decimal			
TiAlN	D1			D2	L1	L2
DH451067	6.7		.2638	8	34	79
DH451017F	6.747	17/64	.2656	8	34	79
DH451068	6.8		.2677	8	34	79
DH451069	6.9		.2717	8	34	79
DH451009L	6.909	I	.2720	8	34	79
DH451070	7.0		.2756	8	34	79
DH451071	7.1		.2795	8	41	79
DH451018F	7.144	9/32	.2812	8	41	79
DH451072	7.2		.2835	8	41	79
DH451073	7.3		.2874	8	41	79
DH451074	7.4		.2913	8	41	79
DH451075	7.5		.2953	8	41	79
DH451019F	7.541	19/64	.2969	8	41	79
DH451076	7.6		.2992	8	41	79
DH451077	7.7		.3031	8	41	79
DH451078	7.8		.3071	8	41	79
DH451079	7.9		.3110	8	41	79
DH451020F	7.938	5/16	.3125	8	41	79
DH451080	8.0		.3150	8	41	79
DH451081	8.1		.3189	10	47	89
DH451082	8.2		.3228	10	47	89
DH451083	8.3		.3268	10	47	89
DH451021F	8.334	21/64	.3281	10	47	89
DH451084	8.4		.3307	10	47	89
DH451017L	8.433	Q	.3320	10	47	89
DH451085	8.5		.3346	10	47	89
DH451086	8.6		.3386	10	47	89
DH451087	8.7		.3425	10	47	89
DH451022F	8.731	11/32	.3438	10	47	89
DH451088	8.8		.3465	10	47	89
DH451089	8.9		.3504	10	47	89
DH451090	9.0		.3543	10	47	89
DH451091	9.1		.3583	10	47	89
DH451023F	9.128	23/64	.3594	10	47	89
DH451092	9.2		.3622	10	47	89
DH451093	9.3		.3661	10	47	89
DH451021L	9.347	U	.3680	10	47	89
DH451094	9.4		.3701	10	47	89
DH451095	9.5		.3740	10	47	89
DH451024F	9.525	3/8	.3750	10	47	89
DH451096	9.6		.3780	10	47	89
DH451097	9.7		.3819	10	47	89
DH451098	9.8		.3858	10	47	89
DH451099	9.9		.3898	10	47	89
DH451025F	9.922	25/64	.3906	10	47	89
DH451100	10.0		.3937	10	47	89
DH451101	10.1		.3976	12	55	102
DH451102	10.2		.4016	12	55	102
DH451103	10.3		.4055	12	55	102
DH451026F	10.319	13/32	.4062	12	55	102
DH451104	10.4		.4094	12	55	102
DH451105	10.5		.4134	12	55	102

▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended		◎	○			◎	○					◎	◎	◎						

ISO	N										S							H		
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel	Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended	◎	◎	○	○	○												○				

TiAlN-COATED SOLID CARBIDE

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SERIES DH451

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DIN 6537 | CARBIDE | h6 | m7 | 140° | 20 bar | TiAlN

p.144

SHORT 3×D

Unit : mm

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Fractional	Decimal			
TiAlN	D1			D2	L1	L2
DH451106	10.6		.4173	12	55	102
DH451107	10.7		.4212	12	55	102
DH451027F	10.716	27/64	.4219	12	55	102
DH451108	10.8		.4252	12	55	102
DH451109	10.9		.4291	12	55	102
DH451110	11.0		.4330	12	55	102
DH451111	11.1		.4370	12	55	102
DH451028F	11.113	7/16	.4375	12	55	102
DH451112	11.2		.4409	12	55	102
DH451113	11.3		.4448	12	55	102
DH451114	11.4		.4488	12	55	102
DH451115	11.5		.4527	12	55	102
DH451029F	11.509	29/64	.4531	12	55	102
DH451116	11.6		.4566	12	55	102
DH451117	11.7		.4606	12	55	102
DH451118	11.8		.4645	12	55	102
DH451119	11.9		.4685	12	55	102
DH451030F	11.906	15/32	.4688	12	55	102
DH451120	12.0		.4724	12	55	102
DH451121	12.1		.4764	14	60	107
DH451122	12.2		.4803	14	60	107
DH451123	12.3		.4843	14	60	107
DH451031F	12.303	31/64	.4844	14	60	107
DH451124	12.4		.4882	14	60	107
DH451125	12.5		.4921	14	60	107
DH451126	12.6		.4961	14	60	107
DH451032F	12.7	1/2	.5000	14	60	107
DH451128	12.8		.5039	14	60	107
DH451129	12.9		.5079	14	60	107
DH451130	13.0		.5118	14	60	107
DH451131	13.1		.5157	14	60	107
DH451132	13.2		.5197	14	60	107
DH451133	13.3		.5236	14	60	107
DH451134	13.4		.5276	14	60	107
DH451135	13.5		.5314	14	60	107
DH451136	13.6		.5354	14	60	107
DH451137	13.7		.5394	14	60	107
DH451138	13.8		.5433	14	60	107
DH451139	13.9		.5472	14	60	107
DH451140	14.0		.5512	14	60	107
DH451141	14.1		.5551	16	65	115
DH451142	14.2		.5591	16	65	115
DH451036F	14.288	9/16	.5625	16	65	115
DH451143	14.3		.5630	16	65	115
DH451144	14.4		.5669	16	65	115
DH451145	14.5		.5708	16	65	115
DH451146	14.6		.5748	16	65	115
DH451147	14.7		.5787	16	65	115
DH451148	14.8		.5827	16	65	115
DH451149	14.9		.5866	16	65	115
DH451150	15.0		.5905	16	65	115
DH451151	15.1		.5945	16	65	115

▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended		◎	○			◎	○					◎	◎	◎						

ISO	N										S							H		
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel	Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended	◎	◎	○	○	○												○				

TiAlN-COATED SOLID CARBIDE

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SERIES **DH451**

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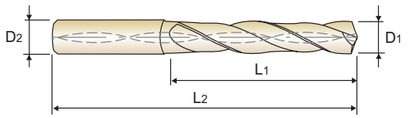

DIN 6537 | CARBIDE | h6 | m7 | 140° | 20 bar | TiAlN

p.144

SHORT

3×D

Unit : mm

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Fractional	Decimal			
TiAlN	D1			D2	L1	L2
DH451152	15.2		.5984	16	65	115
DH451153	15.3		.6024	16	65	115
DH451154	15.4		.6063	16	65	115
DH451155	15.5		.6102	16	65	115
DH451156	15.6		.6142	16	65	115
DH451157	15.7		.6181	16	65	115
DH451158	15.8		.6220	16	65	115
DH451040F	15.875	5/8	.6250	16	65	115
DH451159	15.9		.6260	16	65	115
DH451160	16.0		.6299	16	65	115
DH451161	16.1		.6339	18	73	123
DH451162	16.2		.6378	18	73	123
DH451163	16.3		.6417	18	73	123
DH451164	16.4		.6457	18	73	123
DH451165	16.5		.6495	18	73	123
DH451166	16.6		.6535	18	73	123
DH451167	16.7		.6575	18	73	123
DH451168	16.8		.6614	18	73	123
DH451169	16.9		.6654	18	73	123
DH451170	17.0		.6692	18	73	123
DH451171	17.1		.6732	18	73	123
DH451172	17.2		.6772	18	73	123
DH451173	17.3		.6811	18	73	123
DH451174	17.4		.6850	18	73	123
DH451044F	17.463	11/16	.6875	18	73	123
DH451175	17.5		.6889	18	73	123

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Fractional	Decimal			
TiAlN	D1			D2	L1	L2
DH451176	17.6		.6929	18	73	123
DH451177	17.7		.6968	18	73	123
DH451178	17.8		.7008	18	73	123
DH451179	17.9		.7047	18	73	123
DH451180	18.0		.7087	18	73	123
DH451181	18.1		.7126	20	79	131
DH451182	18.2		.7165	20	79	131
DH451183	18.3		.7205	20	79	131
DH451184	18.4		.7244	20	79	131
DH451185	18.5		.7283	20	79	131
DH451186	18.6		.7323	20	79	131
DH451187	18.7		.7362	20	79	131
DH451188	18.8		.7402	20	79	131
DH451189	18.9		.7441	20	79	131
DH451190	19.0		.7480	20	79	131
DH451048F	19.050	3/4	.7500	20	79	131
DH451191	19.1		.7520	20	79	131
DH451192	19.2		.7559	20	79	131
DH451193	19.3		.7598	20	79	131
DH451194	19.4		.7638	20	79	131
DH451195	19.5		.7676	20	79	131
DH451196	19.6		.7717	20	79	131
DH451197	19.7		.7756	20	79	131
DH451198	19.8		.7795	20	79	131
DH451199	19.9		.7835	20	79	131
DH451200	20.0		.7874	20	79	131

▶ Other shank types are available on your request.

◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended		◎	○			◎	○					◎	◎	◎						

ISO	N										S							H			
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel		Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended	◎	◎	○	○	○												○				

TiAlN-COATED SOLID CARBIDE

DREAM DRILLS - INOX with COOLANT HOLES

SERIES **DH452**

- ▶ Special flute shape and geometry suitable for machining stainless steel
- ▶ Excellent chip evacuation from better surface treatment
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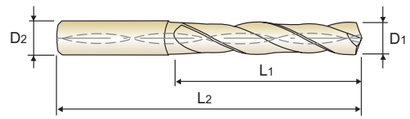
- ▶ TiAlN Coating for better surface finishes and longer tool life



DIN 6537 | CARBIDE | h6 | m7 | 140° | 20 bar | TiAlN

p.144

LONG

5×D

Unit : mm

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Fractional	Decimal			
TiAlN	D1			D2	L1	L2
DH452010	1.0		.0394	3	8	55
DH452011	1.1		.0433	3	12	55
DH452012	1.2		.0472	3	12	55
DH452013	1.3		.0512	3	12	55
DH452014	1.4		.0551	3	12	55
DH452015	1.5		.0591	3	16	55
DH452004F	1.588	1/16	.0625	3	16	55
DH452016	1.6		.0630	3	16	55
DH452017	1.7		.0669	3	16	55
DH452018	1.8		.0709	3	16	55
DH452019	1.9		.0748	3	16	55
DH452005F	1.984	5/64	.0781	3	16	55
DH452020	2.0		.0787	4	21	57
DH452021	2.1		.0827	4	21	57
DH452022	2.2		.0866	4	21	57
DH452023	2.3		.0906	4	21	57
DH452006F	2.381	3/32	.0938	4	21	57
DH452024	2.4		.0945	4	21	57
DH452025	2.5		.0984	4	21	57
DH452026	2.6		.1024	4	21	57
DH452027	2.7		.1063	4	21	57
DH452007F	2.778	7/64	.1094	4	21	57
DH452028	2.8		.1102	4	21	57
DH452029	2.9		.1142	4	21	57
DH452030	3.0		.1181	6	28	66
DH452031	3.1		.1220	6	28	66

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Fractional	Decimal			
TiAlN	D1			D2	L1	L2
DH452008F	3.175	1/8	.1250	6	28	66
DH452032	3.2		.1260	6	28	66
DH452033	3.3		.1299	6	28	66
DH452034	3.4		.1339	6	28	66
DH452035	3.5		.1378	6	28	66
DH452009F	3.572	9/64	.1406	6	28	66
DH452036	3.6		.1417	6	28	66
DH452037	3.7		.1457	6	28	66
DH452038	3.8		.1496	6	36	74
DH452039	3.9		.1535	6	36	74
DH452010F	3.969	5/32	.1563	6	36	74
DH452040	4.0		.1575	6	36	74
DH452041	4.1		.1614	6	36	74
DH452042	4.2		.1654	6	36	74
DH452043	4.3		.1693	6	36	74
DH452011F	4.366	11/64	.1719	6	36	74
DH452044	4.4		.1732	6	36	74
DH452045	4.5		.1772	6	36	74
DH452046	4.6		.1811	6	36	74
DH452047	4.7		.1850	6	36	74
DH452012F	4.763	3/16	.1875	6	36	74
DH452048	4.8		.1890	6	44	82
DH452049	4.9		.1929	6	44	82
DH452050	5.0		.1969	6	44	82
DH452051	5.1		.2008	6	44	82
DH452013F	5.159	13/64	.2031	6	44	82

▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended		◎	○			◎	○					◎	◎	◎						

ISO	N										S							H			
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel		Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended	◎	◎	○	○	○												○				

TiAlN-COATED SOLID CARBIDE

DREAM DRILLS - INOX with COOLANT HOLES

SERIES **DH452**

- ▶ Special flute shape and geometry suitable for machining stainless steel
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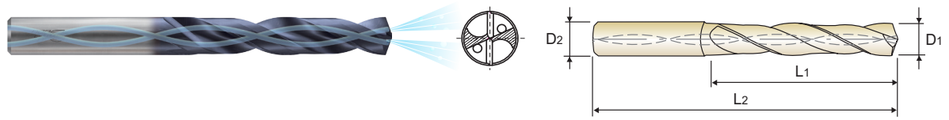

DIN 6537 | CARBIDE | h6 | m7 | 140° | 20 bar | TiAlN

p.144

LONG 5×D

Unit : mm

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Fractional	Decimal			
TiAlN	D1			D2	L1	L2
DH452052	5.2		.2047	6	44	82
DH452053	5.3		.2087	6	44	82
DH452054	5.4		.2126	6	44	82
DH452055	5.5		.2165	6	44	82
DH452014F	5.556	7/32	.2188	6	44	82
DH452056	5.6		.2205	6	44	82
DH452057	5.7		.2244	6	44	82
DH452058	5.8		.2283	6	44	82
DH452059	5.9		.2323	6	44	82
DH452015F	5.953	15/64	.2344	6	44	82
DH452060	6.0		.2362	6	44	82
DH452061	6.1		.2402	8	53	91
DH452062	6.2		.2441	8	53	91
DH452063	6.3		.2480	8	53	91
DH452016F	6.350	1/4	.2500	8	53	91
DH452064	6.4		.2520	8	53	91
DH452065	6.5		.2559	8	53	91
DH452006L	6.528	F	.2570	8	53	91
DH452066	6.6		.2598	8	53	91
DH452067	6.7		.2638	8	53	91
DH452017F	6.747	17/64	.2656	8	53	91
DH452068	6.8		.2677	8	53	91
DH452069	6.9		.2717	8	53	91
DH452009L	6.909	I	.2720	8	53	91
DH452070	7.0		.2756	8	53	91
DH452071	7.1		.2795	8	53	91
DH452018F	7.144	9/32	.2812	8	53	91
DH452072	7.2		.2835	8	53	91
DH452073	7.3		.2874	8	53	91
DH452074	7.4		.2913	8	53	91
DH452075	7.5		.2953	8	53	91
DH452019F	7.541	19/64	.2969	8	53	91
DH452076	7.6		.2992	8	53	91
DH452077	7.7		.3031	8	53	91
DH452078	7.8		.3071	8	53	91
DH452079	7.9		.3110	8	53	91
DH452020F	7.938	5/16	.3125	8	53	91
DH452080	8.0		.3150	8	53	91
DH452081	8.1		.3189	10	61	103
DH452082	8.2		.3228	10	61	103
DH452083	8.3		.3268	10	61	103
DH452021F	8.334	21/64	.3281	10	61	103
DH452084	8.4		.3307	10	61	103
DH452017L	8.433	Q	.3320	10	61	103
DH452085	8.5		.3346	10	61	103
DH452086	8.6		.3386	10	61	103
DH452087	8.7		.3425	10	61	103
DH452022F	8.731	11/32	.3438	10	61	103
DH452088	8.8		.3465	10	61	103
DH452089	8.9		.3504	10	61	103
DH452090	9.0		.3543	10	61	103
DH452091	9.1		.3583	10	61	103

▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended		◎	○			◎	○					◎	◎	◎						

ISO	N										S							H		
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel	Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended	◎	◎	○	○	○												○				

TiAlN-COATED SOLID CARBIDE

DREAM DRILLS - INOX with COOLANT HOLES

SERIES DH452

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- ▶ Excellent chip evacuation from better surface treatment
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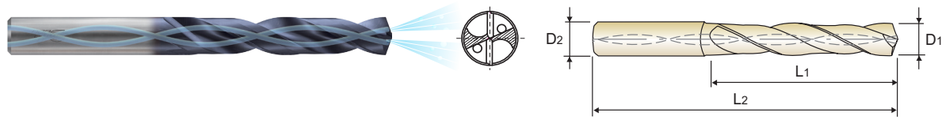

DIN 6537 | CARBIDE | h6 | m7 | 140° | 20 bar | TiAlN

p.144

LONG 5×D

Unit : mm

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Fractional	Decimal			
TiAlN	D1			D2	L1	L2
DH452023F	9.128	23/64	.3594	10	61	103
DH452092	9.2		.3622	10	61	103
DH452093	9.3		.3661	10	61	103
DH452021L	9.347	U	.3680	10	61	103
DH452094	9.4		.3701	10	61	103
DH452095	9.5		.3740	10	61	103
DH452024F	9.525	3/8	.3750	10	61	103
DH452096	9.6		.3780	10	61	103
DH452097	9.7		.3819	10	61	103
DH452098	9.8		.3858	10	61	103
DH452099	9.9		.3898	10	61	103
DH452025F	9.922	25/64	.3906	10	61	103
DH452100	10.0		.3937	10	61	103
DH452101	10.1		.3976	12	71	118
DH452102	10.2		.4016	12	71	118
DH452103	10.3		.4055	12	71	118
DH452026F	10.319	13/32	.4062	12	71	118
DH452104	10.4		.4094	12	71	118
DH452105	10.5		.4134	12	71	118
DH452106	10.6		.4173	12	71	118
DH452107	10.7		.4212	12	71	118
DH452027F	10.716	27/64	.4219	12	71	118
DH452108	10.8		.4252	12	71	118
DH452109	10.9		.4291	12	71	118
DH452110	11.0		.4330	12	71	118
DH452111	11.1		.4370	12	71	118
DH452028F	11.113	7/16	.4375	12	71	118
DH452112	11.2		.4409	12	71	118
DH452113	11.3		.4448	12	71	118
DH452114	11.4		.4488	12	71	118
DH452115	11.5		.4527	12	71	118
DH452029F	11.509	29/64	.4531	12	71	118
DH452116	11.6		.4566	12	71	118
DH452117	11.7		.4606	12	71	118
DH452118	11.8		.4645	12	71	118
DH452119	11.9		.4685	12	71	118
DH452030F	11.906	15/32	.4688	12	71	118
DH452120	12.0		.4724	12	71	118
DH452121	12.1		.4764	14	77	124
DH452122	12.2		.4803	14	77	124
DH452123	12.3		.4843	14	77	124
DH452031F	12.303	31/64	.4844	14	77	124
DH452124	12.4		.4882	14	77	124
DH452125	12.5		.4921	14	77	124
DH452126	12.6		.4961	14	77	124
DH452032F	12.7	1/2	.5000	14	77	124
DH452128	12.8		.5039	14	77	124
DH452129	12.9		.5079	14	77	124
DH452130	13.0		.5118	14	77	124
DH452131	13.1		.5157	14	77	124
DH452132	13.2		.5197	14	77	124
DH452133	13.3		.5236	14	77	124

▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended		◎	○			◎	○					◎	◎	◎						

ISO	N										S							H		
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel	Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended	◎	◎	○	○	○												○				

TiAlN-COATED SOLID CARBIDE

DREAM DRILLS - INOX with COOLANT HOLES

SERIES **DH452**

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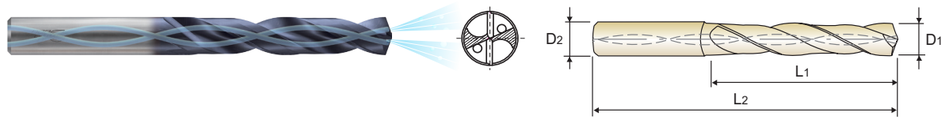


DIN 6537 | CARBIDE | h6 | m7 | 140° | 20 bar | TiAlN

p.144

LONG 5×D

Unit : mm

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Fractional	Decimal			
TiAlN	D1			D2	L1	L2
DH452134	13.4		.5276	14	77	124
DH452135	13.5		.5314	14	77	124
DH452136	13.6		.5354	14	77	124
DH452137	13.7		.5394	14	77	124
DH452138	13.8		.5433	14	77	124
DH452139	13.9		.5472	14	77	124
DH452140	14.0		.5512	14	77	124
DH452141	14.1		.5551	16	83	133
DH452142	14.2		.5591	16	83	133
DH452036F	14.288	9/16	.5625	16	83	133
DH452143	14.3		.5630	16	83	133
DH452144	14.4		.5669	16	83	133
DH452145	14.5		.5708	16	83	133
DH452146	14.6		.5748	16	83	133
DH452147	14.7		.5787	16	83	133
DH452148	14.8		.5827	16	83	133
DH452149	14.9		.5866	16	83	133
DH452150	15.0		.5905	16	83	133
DH452151	15.1		.5945	16	83	133
DH452152	15.2		.5984	16	83	133
DH452153	15.3		.6024	16	83	133
DH452154	15.4		.6063	16	83	133
DH452155	15.5		.6102	16	83	133
DH452156	15.6		.6142	16	83	133
DH452157	15.7		.6181	16	83	133
DH452158	15.8		.6220	16	83	133

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Fractional	Decimal			
TiAlN	D1			D2	L1	L2
DH452040F	15.875	5/8	.6250	16	83	133
DH452159	15.9		.6260	16	83	133
DH452160	16.0		.6299	16	83	133
DH452161	16.1		.6339	18	93	143
DH452162	16.2		.6378	18	93	143
DH452163	16.3		.6417	18	93	143
DH452164	16.4		.6457	18	93	143
DH452165	16.5		.6495	18	93	143
DH452166	16.6		.6535	18	93	143
DH452167	16.7		.6575	18	93	143
DH452168	16.8		.6614	18	93	143
DH452169	16.9		.6654	18	93	143
DH452170	17.0		.6692	18	93	143
DH452171	17.1		.6732	18	93	143
DH452172	17.2		.6772	18	93	143
DH452173	17.3		.6811	18	93	143
DH452174	17.4		.6850	18	93	143
DH452175	17.5		.6889	18	93	143
DH452176	17.6		.6929	18	93	143
DH452177	17.7		.6968	18	93	143
DH452178	17.8		.7008	18	93	143
DH452179	17.9		.7047	18	93	143
DH452180	18.0		.7087	18	93	143
DH452181	18.1		.7126	20	101	153
DH452182	18.2		.7165	20	101	151
DH452183	18.3		.7205	20	101	151

▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended		◎	○			◎	○					◎	◎	◎						

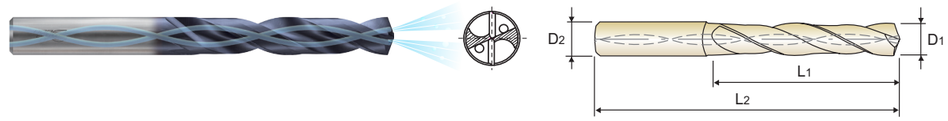
ISO	N										S							H		
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel	Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended	◎	◎	○	○	○												○				

TiAlN-COATED SOLID CARBIDE

DREAM DRILLS - INOX with COOLANT HOLES

SERIES DH452

▶ Special flute shape and geometry suitable for machining stainless steel
▶ Excellent chip evacuation from better surface treatment
▶ Point R-thinning achieves superior centering and chip curling
▶ TiAlN Coating for better surface finishes and longer tool life



DIN 6537 | CARBIDE | h6 | m7 | 140° | 20 bar | TiAlN

p.144

LONG 5×D

Unit : mm

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Fractional	Decimal			
TiAlN	D1			D2	L1	L2
DH452184	18.4		.7244	20	101	153
DH452185	18.5		.7283	20	101	153
DH452186	18.6		.7323	20	101	151
DH452187	18.7		.7362	20	101	153
DH452188	18.8		.7402	20	101	153
DH452189	18.9		.7441	20	101	153
DH452190	19.0		.7480	20	101	153
DH452048F	19.050	3/4	.7500	20	101	153
DH452191	19.1		.7520	20	101	151

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Fractional	Decimal			
TiAlN	D1			D2	L1	L2
DH452192	19.2		.7559	20	101	151
DH452193	19.3		.7598	20	101	151
DH452194	19.4		.7638	20	101	151
DH452195	19.5		.7676	20	101	153
DH452196	19.6		.7717	20	101	151
DH452197	19.7		.7756	20	101	151
DH452198	19.8		.7795	20	101	153
DH452199	19.9		.7835	20	101	151
DH452200	20.0		.7874	20	101	153

▶ Other shank types are available on your request.

◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended		◎	○			◎	○					◎	◎	◎						

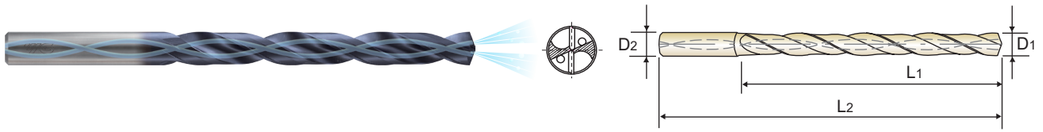
ISO	N										S							H		
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel	Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended	◎	◎	○	○	○												○				

TiAlN-COATED SOLID CARBIDE

DREAM DRILLS - INOX with COOLANT HOLES

SERIES **DH453**

- ▶ Special flute shape and geometry suitable for machining stainless steel
- ▶ Excellent chip evacuation from better surface treatment
- ▶ Point R-thinning achieves superior centering and chip curling
- ▶ TiAlN Coating for better surface finishes and longer tool life



DIN 6537 | CARBIDE | h6 | m7 | 140° | 20 bar | TiAlN

p.144

EXTRA LONG 8×D

Unit : mm

EDP No.	Drill Diameter Metric	Fractional	Decimal	Shank Diameter	Flute Length	Overall Length
TiAlN	D1			D2	L1	L2
DH453020	2.0		.0787	4	25	66
DH453021	2.1		.0827	4	25	66
DH453022	2.2		.0866	4	25	66
DH453023	2.3		.0906	4	25	66
DH453006F	2.381	3/32	.0938	4	30	66
DH453024	2.4		.0945	4	30	66
DH453025	2.5		.0984	4	30	66
DH453026	2.6		.1024	4	30	66
DH453027	2.7		.1063	4	30	66
DH453007F	2.778	7/64	.1094	4	30	66
DH453028	2.8		.1102	4	30	66
DH453029	2.9		.1142	4	30	66
DH453030	3.0		.1181	6	34	72
DH453031	3.1		.1220	6	34	72
DH453008F	3.175	1/8	.1250	6	34	72
DH453032	3.2		.1260	6	34	72
DH453033	3.3		.1299	6	34	72
DH453034	3.4		.1339	6	34	72
DH453029G	3.454	#29	.1360	6	34	72
DH453035	3.5		.1378	6	34	72
DH453009F	3.572	9/64	.1406	6	34	72
DH453036	3.6		.1417	6	34	72
DH453037	3.7		.1457	6	34	72
DH453038	3.8		.1496	6	43	81
DH453039	3.9		.1535	6	43	81
DH453010F	3.969	5/32	.1563	6	43	81
DH453040	4.0		.1575	6	43	81
DH453021G	4.038	#21	.1590	6	43	81
DH453041	4.1		.1614	6	43	81
DH453042	4.2		.1654	6	43	81
DH453043	4.3		.1693	6	43	81
DH453011F	4.366	11/64	.1719	6	43	81
DH453044	4.4		.1732	6	43	81
DH453045	4.5		.1772	6	43	81
DH453046	4.6		.1811	6	43	81
DH453047	4.7		.1850	6	43	81
DH453012F	4.763	3/16	.1875	6	57	95
DH453048	4.8		.1890	6	57	95
DH453049	4.9		.1929	6	57	95
DH453050	5.0		.1969	6	57	95
DH453051	5.1		.2008	6	57	95
DH453013F	5.159	13/64	.2031	6	57	95
DH453052	5.2		.2047	6	57	95
DH453053	5.3		.2087	6	57	95
DH453054	5.4		.2126	6	57	95
DH453055	5.5		.2165	6	57	95
DH453014F	5.556	7/32	.2188	6	57	95
DH453056	5.6		.2205	6	57	95
DH453057	5.7		.2244	6	57	95
DH453058	5.8		.2283	6	57	95
DH453059	5.9		.2323	6	57	95
DH453015F	5.953	15/64	.2344	6	57	95
DH453060	6.0		.2362	6	57	95
DH453061	6.1		.2402	8	76	114
DH453062	6.2		.2441	8	76	114
DH453063	6.3		.2480	8	76	114

▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended		◎	○			◎	○					◎	◎	◎						

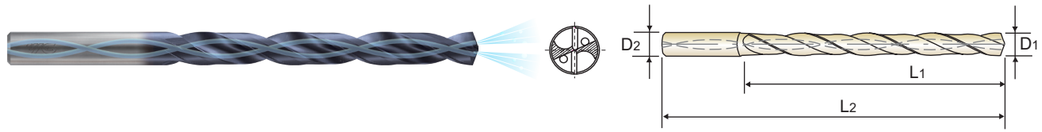
ISO	N										S							H		
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel	Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended	◎	◎	○	○	○												○				

TiAlN-COATED SOLID CARBIDE

DREAM DRILLS - INOX with COOLANT HOLES

SERIES DH453

- ▶ Special flute shape and geometry suitable for machining stainless steel
- ▶ Excellent chip evacuation from better surface treatment
- ▶ Point R-thinning achieves superior centering and chip curling
- ▶ TiAlN Coating for better surface finishes and longer tool life



DIN 6537 | CARBIDE | h6 | m7 | 140° | 20 bar | TiAlN

p.144

EXTRA LONG 8×D

Unit : mm

EDP No.	Drill Diameter Metric	Fractional	Decimal	Shank Diameter	Flute Length	Overall Length
TiAlN	D1			D2	L1	L2
DH453016F	6.350	1/4	.2500	8	76	114
DH453064	6.4		.2520	8	76	114
DH453065	6.5		.2559	8	76	114
DH453006L	6.527	F	.2570	8	76	114
DH453066	6.6		.2598	8	76	114
DH453067	6.7		.2638	8	76	114
DH453017F	6.747	17/64	.2656	8	76	114
DH453068	6.8		.2677	8	76	114
DH453069	6.9		.2717	8	76	114
DH453009L	6.909	I	.2720	8	76	114
DH453070	7.0		.2756	8	76	114
DH453071	7.1		.2795	8	76	114
DH453018F	7.144	9/32	.2813	8	76	114
DH453072	7.2		.2835	8	76	114
DH453073	7.3		.2874	8	76	114
DH453074	7.4		.2913	8	76	114
DH453075	7.5		.2953	8	76	114
DH453019F	7.541	19/64	.2969	8	76	114
DH453076	7.6		.2992	8	76	114
DH453077	7.7		.3031	8	76	114
DH453078	7.8		.3071	8	76	114
DH453079	7.9		.3110	8	76	114
DH453020F	7.938	5/16	.3125	8	76	114
DH453080	8.0		.3150	8	76	114
DH453081	8.1		.3189	10	95	142
DH453082	8.2		.3228	10	95	142
DH453083	8.3		.3268	10	95	142
DH453021F	8.334	21/64	.3281	10	95	142
DH453084	8.4		.3307	10	95	142
DH453017L	8.432	Q	.3320	10	95	142
DH453085	8.5		.3346	10	95	142
DH453086	8.6		.3386	10	95	142
DH453087	8.7		.3425	10	95	142
DH453022F	8.731	11/32	.3438	10	95	142
DH453088	8.8		.3465	10	95	142
DH453089	8.9		.3504	10	95	142
DH453090	9.0		.3543	10	95	142
DH453091	9.1		.3583	10	95	142
DH453023F	9.128	23/64	.3594	10	95	142
DH453092	9.2		.3622	10	95	142
DH453093	9.3		.3661	10	95	142
DH453021L	9.347	U	.3680	10	95	142
DH453094	9.4		.3701	10	95	142
DH453095	9.5		.3740	10	95	142
DH453024F	9.525	3/8	.3750	10	95	142
DH453096	9.6		.3780	10	95	142
DH453097	9.7		.3819	10	95	142
DH453098	9.8		.3858	10	95	142
DH453099	9.9		.3898	10	95	142
DH453025F	9.922	25/64	.3906	10	95	142
DH453100	10.0		.3937	10	95	142
DH453101	10.1		.3976	12	114	162
DH453102	10.2		.4016	12	114	162
DH453103	10.3		.4055	12	114	162
DH453026F	10.319	13/32	.4063	12	114	162
DH453104	10.4		.4094	12	114	162

▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended		◎	○			◎	○					◎	◎	◎						

ISO	N										S							H		
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel	Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended	◎	◎	○	○	○												○				

TiAlN-COATED SOLID CARBIDE

DREAM DRILLS - INOX with COOLANT HOLES

SERIES **DH453**

- ▶ Special flute shape and geometry suitable for machining stainless steel
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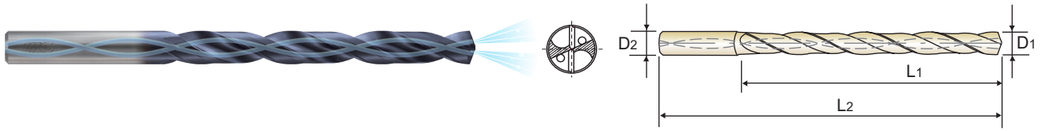


DIN 6537 | CARBIDE | h6 | m7 | 140° | 20 bar | TiAlN

p.144

EXTRA LONG 8×D

Unit : mm

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Fractional	Decimal			
TiAlN	D1			D2	L1	L2
DH453105	10.5		.4134	12	114	162
DH453106	10.6		.4173	12	114	162
DH453107	10.7		.4212	12	114	162
DH453027F	10.716	27/64	.4219	12	114	162
DH453108	10.8		.4252	12	114	162
DH453109	10.9		.4291	12	114	162
DH453110	11.0		.4330	12	114	162
DH453111	11.1		.4370	12	114	162
DH453028F	11.113	7/16	.4375	12	114	162
DH453112	11.2		.4409	12	114	162
DH453113	11.3		.4448	12	114	162
DH453114	11.4		.4488	12	114	162
DH453115	11.5		.4527	12	114	162
DH453029F	11.509	29/64	.4531	12	114	162
DH453116	11.6		.4566	12	114	162
DH453117	11.7		.4606	12	114	162
DH453118	11.8		.4645	12	114	162
DH453119	11.9		.4685	12	114	162
DH453030F	11.906	15/32	.4688	12	114	162
DH453120	12.0		.4724	12	114	162
DH453121	12.1		.4764	14	133	178
DH453122	12.2		.4803	14	133	178
DH453123	12.3		.4843	14	133	178
DH453031F	12.303	31/64	.4844	14	133	178
DH453124	12.4		.4882	14	133	178
DH453125	12.5		.4921	14	133	178
DH453126	12.6		.4961	14	133	178
DH453032F	12.7	1/2	.5000	14	133	178
DH453128	12.8		.5039	14	133	178
DH453129	12.9		.5079	14	133	178
DH453130	13.0		.5118	14	133	178
DH453033F	13.097	33/64	.5156	14	133	178
DH453131	13.1		.5157	14	133	178
DH453132	13.2		.5197	14	133	178
DH453133	13.3		.5236	14	133	178
DH453134	13.4		.5276	14	133	178
DH453135	13.5		.5314	14	133	178
DH453136	13.6		.5354	14	133	178
DH453137	13.7		.5394	14	133	178
DH453138	13.8		.5433	14	133	178
DH453139	13.9		.5472	14	133	178
DH453140	14.0		.5512	14	133	178
DH453141	14.1		.5551	16	152	203
DH453142	14.2		.5591	16	152	203
DH453036F	14.288	9/16	.5625	16	152	203
DH453143	14.3		.5630	16	152	203
DH453144	14.4		.5669	16	152	203
DH453145	14.5		.5709	16	152	203
DH453146	14.6		.5748	16	152	203
DH453147	14.7		.5787	16	152	203
DH453148	14.8		.5827	16	152	203
DH453149	14.9		.5866	16	152	203
DH453150	15.0		.5905	16	152	203
DH453151	15.1		.5945	16	152	203
DH453152	15.2		.5984	16	152	203
DH453153	15.3		.6024	16	152	203

▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended		◎	○			◎	○					◎	◎	◎						

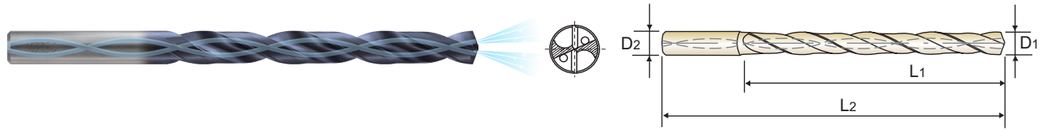
ISO	N										S							H		
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel	Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended	◎	◎	○	○	○												○				

TiAlN-COATED SOLID CARBIDE

DREAM DRILLS - INOX with COOLANT HOLES

SERIES DH453

- ▶ Special flute shape and geometry suitable for machining stainless steel
- ▶ Excellent chip evacuation from better surface treatment
- ▶ Point R-thinning achieves superior centering and chip curling
- ▶ TiAlN Coating for better surface finishes and longer tool life



DIN 6537 | CARBIDE | h6 | m7 | 140° | 20 bar | TiAlN

p.144

EXTRA LONG 8×D

Unit : mm

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Fractional	Decimal			
TiAlN	D1			D2	L1	L2
DH453154	15.4		.6063	16	152	203
DH453155	15.5		.6102	16	152	203
DH453156	15.6		.6142	16	152	203
DH453157	15.7		.6181	16	152	203
DH453158	15.8		.6220	16	152	203
DH453040F	15.875	5/8	.6250	16	152	203
DH453159	15.9		.6260	16	152	203
DH453160	16.0		.6299	16	152	203
DH453161	16.1		.6339	18	171	222
DH453162	16.2		.6378	18	171	222
DH453163	16.3		.6417	18	171	222
DH453164	16.4		.6457	18	171	222
DH453165	16.5		.6496	18	171	222
DH453166	16.6		.6535	18	171	222
DH453167	16.7		.6575	18	171	222
DH453168	16.8		.6614	18	171	222
DH453169	16.9		.6654	18	171	222
DH453170	17.0		.6693	18	171	222
DH453171	17.1		.6732	18	171	222
DH453172	17.2		.6772	18	171	222
DH453173	17.3		.6811	18	171	222
DH453174	17.4		.6850	18	171	222
DH453175	17.5		.6890	18	171	222
DH453176	17.6		.6929	18	171	222
DH453177	17.7		.6968	18	171	222
DH453178	17.8		.7008	18	171	222
DH453179	17.9		.7047	18	171	222
DH453180	18.0		.7087	18	171	222
DH453181	18.1		.7126	20	190	243
DH453182	18.2		.7165	20	190	243
DH453183	18.3		.7205	20	190	243
DH453184	18.4		.7244	20	190	243
DH453185	18.5		.7283	20	190	243
DH453186	18.6		.7323	20	190	243
DH453187	18.7		.7362	20	190	243
DH453188	18.8		.7402	20	190	243
DH453189	18.9		.7441	20	190	243
DH453190	19.0		.7480	20	190	243
DH453048F	19.050	3/4	.7500	20	190	243
DH453191	19.1		.7520	20	190	243
DH453192	19.2		.7559	20	190	243
DH453193	19.3		.7598	20	190	243
DH453194	19.4		.7638	20	190	243
DH453195	19.5		.7677	20	190	243
DH453196	19.6		.7717	20	190	243
DH453197	19.7		.7756	20	190	243
DH453198	19.8		.7795	20	190	243
DH453199	19.9		.7835	20	190	243
DH453200	20.0		.7874	20	190	243

▶ Other shank types are available on your request.

◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended		◎	○			◎	○					◎	◎	◎						

ISO	N										S							H		
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel	Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended	◎	◎	○	○	○												○				

DH463, DH714, DH464, DH715, DH451, DH452, DH453 SERIES

with COOLANT HOLES

SFM = ft/min.
RPM = rev./min.
FEED = inch/rev.

ISO	VDI 3323	Material Description	SFM	Drill Diameter			SFM	Drill Diameter								
				METRIC	1.0	2.0		METRIC	3.0	-	4.0	-	5.0	6.0	-	-	8.0
				FRACTIONAL	-	-		FRACTIONAL	-	1/8	-	3/16	-	-	1/4	5/16	-
				DECIMAL	.0394	.0787		DECIMAL	.1181	.1250	.1575	.1875	.1969	.2362	.2500	.3125	.3150
P	2	Non-alloy steel	230	RPM	22280	11140	329	RPM	10610		7960	6370		5310			3980
				FEED	.0008 - .0016	.0016 - .0024		FEED	.0016 - .0039		.0024 - .0047	.0047 - .0071		.0055 - .0079			.0063 - .0087
	3		230	RPM	22280	11140	329	RPM	10610		7960	6370		5310			3980
				FEED	.0008 - .0016	.0016 - .0024		FEED	.0016 - .0039		.0024 - .0047	.0047 - .0071		.0055 - .0079			.0063 - .0087
	6	Low alloy steel	230	RPM	22280	11140	329	RPM	10610		7960	6370		5310			3980
				FEED	.0008 - .0016	.0016 - .0024		FEED	.0016 - .0039		.0024 - .0047	.0047 - .0071		.0055 - .0079			.0063 - .0087
	7		160	RPM	15920	7960	230	RPM	7430		5570	4460		3710			2790
				FEED	.0008 - .0016	.0016 - .0024		FEED	.0016 - .0039		.0024 - .0047	.0047 - .0071		.0055 - .0079			.0063 - .0087
M	12	Stainless steel	130	RPM	12730	6370	165	RPM	5310		3980	3180		2650			1990
				FEED	.0008 - .0016	.0008 - .0016		FEED	.0012 - .0020		.0020 - .0035	.0028 - .0043		.0035 - .0051			.0035 - .0051
	13		80	RPM	7960	3980	132	RPM	4240		3180	2550		2120			1590
				FEED	.0008 - .0016	.0008 - .0016		FEED	.0012 - .0020		.0020 - .0035	.0028 - .0043		.0035 - .0051			.0035 - .0051
	14		150	RPM	14320	7160	198	RPM	6370		4770	3820		3180			2390
				FEED	.0008 - .0016	.0008 - .0016		FEED	.0016 - .0024		.0024 - .0039	.0031 - .0047		.0039 - .0055			.0039 - .0055
N	21	Aluminum-wrought alloy	430	RPM	41380	20690	659	RPM	21220		15920	12730		10610			7960
				FEED	.0016 - .0039	.0031 - .0055		FEED	.0055 - .0079		.0075 - .0098	.0079 - .0102		.0087 - .0110			.0094 - .0118
	22		430	RPM	41380	20690	659	RPM	21220		15920	12730		10610			7960
				FEED	.0016 - .0039	.0031 - .0055		FEED	.0055 - .0079		.0075 - .0098	.0079 - .0102		.0087 - .0110			.0094 - .0118
	23	Aluminum-wrought alloy	360	RPM	35010	17510	593	RPM	19100		14320	11460		9550			7160
				FEED	.0016 - .0039	.0031 - .0055		FEED	.0055 - .0079		.0075 - .0098	.0079 - .0102		.0087 - .0110			.0094 - .0118
	24	Aluminum-wrought alloy	360	RPM	35010	17510	593	RPM	19100		14320	11460		9550			7160
				FEED	.0016 - .0039	.0031 - .0055		FEED	.0055 - .0079		.0075 - .0098	.0079 - .0102		.0087 - .0110			.0094 - .0118
	25	Aluminum-wrought alloy	300	RPM	28650	14320	494	RPM	15920		11940	9550		7960			5970
				FEED	.0016 - .0031	.0024 - .0039		FEED	.0047 - .0071		.0063 - .0087	.0067 - .0091		.0075 - .0098			.0087 - .0110
S	37	Titanium Alloys	80	RPM	7960	3980	132	RPM	4240		3180	2550		2120			1590
				FEED	.0004 - .0012	.0004 - .0012		FEED	.0008 - .0016		.0016 - .0031	.0024 - .0039		.0031 - .0047			.0031 - .0047

▶ NEXT PAGE

▶ Recommend to reduce the feed rate as following
Feed 100% : DH463/DH714/DH451(3xD), DH464/DH714/DH452(5xD)
Feed 85% : DH453(8xD)

DH463, DH714, DH464, DH715, DH451, DH452, DH453 SERIES

with COOLANT HOLES

SFM = ft/min.
RPM = rev./min.
FEED = inch/rev.

ISO	VDI 3323	Material Description	SFM	Drill Diameter										
				METRIC	-	10.0	12.0	-	14.0	-	-	16.0	18.0	-	20.0
				FRACTIONAL	3/8	-	-	1/2	-	9/16	5/8	-	-	3/4	-
				DECIMAL	.3750	.3937	.4724	.5000	.5512	.5625	.6250	.6299	.7087	.7500	.7874
P	2	Non-alloy steel	329	RPM	3180	2650	2510	2270	1990	1770	1680	1590			
				FEED	.0079 - .0102	.0071 - .0110	.0071 - .0110	.0079 - .0118	.0087 - .0126	.0102 - .0142	.0102 - .0142	.0110 - .0150			
	3		329	RPM	3180	2650	2510	2270	1990	1770	1680	1590			
				FEED	.0079 - .0102	.0071 - .0110	.0071 - .0110	.0079 - .0118	.0087 - .0126	.0102 - .0142	.0102 - .0142	.0110 - .0150			
	6	Low alloy steel	329	RPM	3180	2650	2510	2270	1990	1770	1680	1590			
				FEED	.0079 - .0102	.0071 - .0110	.0071 - .0110	.0079 - .0118	.0087 - .0126	.0102 - .0142	.0102 - .0142	.0110 - .0150			
	7		230	RPM	2230	1860	1760	1590	1390	1240	1170	1110			
				FEED	.0079 - .0102	.0071 - .0110	.0071 - .0110	.0079 - .0118	.0087 - .0126	.0102 - .0142	.0102 - .0142	.0110 - .0150			
M	12	Stainless steel	165	RPM	1590	1330	1260	1140	990	880	840	800			
				FEED	.0039 - .0059	.0043 - .0063	.0043 - .0063	.0047 - .0067	.0051 - .0071	.0055 - .0075	.0055 - .0075	.0059 - .0079			
	13		132	RPM	1270	1060	1010	910	800	710	670	640			
				FEED	.0039 - .0059	.0043 - .0063	.0043 - .0063	.0047 - .0067	.0051 - .0071	.0055 - .0075	.0055 - .0075	.0059 - .0079			
	14		198	RPM	1910	1590	1510	1360	1190	1060	1010	950			
				FEED	.0043 - .0063	.0047 - .0067	.0047 - .0067	.0051 - .0071	.0055 - .0075	.0059 - .0079	.0059 - .0079	.0063 - .0083			
N	21	Aluminum-wrought alloy	659	RPM	6370	5310	5030	4550	3980	3540	3360	3180			
				FEED	.0114 - .0138	.0114 - .0138	.0114 - .0138	.0118 - .0157	.0118 - .0157	.0130 - .0169	.0130 - .0169	.0138 - .0177			
	22		659	RPM	6370	5310	5030	4550	3980	3540	3360	3180			
				FEED	.0114 - .0138	.0114 - .0138	.0114 - .0138	.0118 - .0157	.0118 - .0157	.0130 - .0169	.0130 - .0169	.0138 - .0177			
	23	Aluminum-wrought alloy	593	RPM	5730	4770	4530	4090	3580	3180	3020	2860			
				FEED	.0114 - .0138	.0114 - .0138	.0114 - .0138	.0118 - .0157	.0118 - .0157	.0130 - .0169	.0130 - .0169	.0138 - .0177			
	24	Aluminum-wrought alloy	593	RPM	5730	4770	4530	4090	3580	3180	3020	2860			
				FEED	.0114 - .0138	.0114 - .0138	.0114 - .0138	.0118 - .0157	.0118 - .0157	.0130 - .0169	.0130 - .0169	.0138 - .0177			
	25	Aluminum-wrought alloy	494	RPM	4770	3980	3770	3410	2980	2650	2520	2390			
				FEED	.0094 - .0118	.0094 - .0118	.0094 - .0118	.0098 - .0138	.0098 - .0138	.0110 - .0150	.0110 - .0150	.0118 - .0157			
S	37	Titanium Alloys	132	RPM	1270	1060	1010	910	800	710	670	640			
				FEED	.0035 - .0055	.0039 - .0059	.0039 - .0059	.0043 - .0063	.0047 - .0067	.0051 - .0071	.0051 - .0071	.0055 - .0075			

▶ Recommend to reduce the feed rate as following
Feed 100% : DH463/DH714/DH451(3xD), DH464/DH714/DH452(5xD)
Feed 85% : DH453(8xD)

Global Cutting Tool Leader **YG-1**

DREAM DRILLS

Leading Through Innovation

SOLID CARBIDE

DREAM DRILLS - ALU

- For Aluminum and Aluminum Alloys

DREAM DRILLS ALU

Design that optimized flute shape and geometry suitable **for Aluminum, Aluminum alloy.**

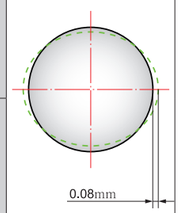
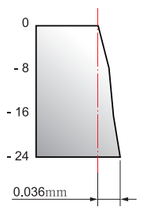
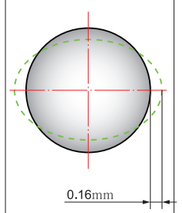
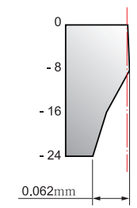
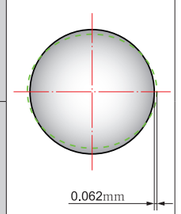
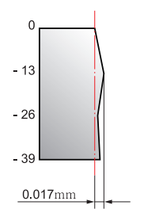
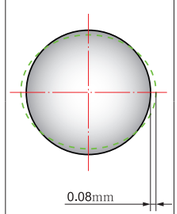
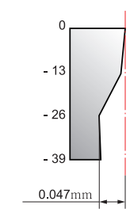
Optimized point thinning to prevent any **chip-clogging from chip welding.**

Polished flutes improve **chip control and evacuation.**

The Drilling of High Speed is possible while maintaining **the excellent surface roughness of workpiece.**

▶ SOLID CARBIDE DREAM DRILLS - ALU with Coolant Holes

Ø6.0 & Ø10.0 TEST, Aluminum(6061)

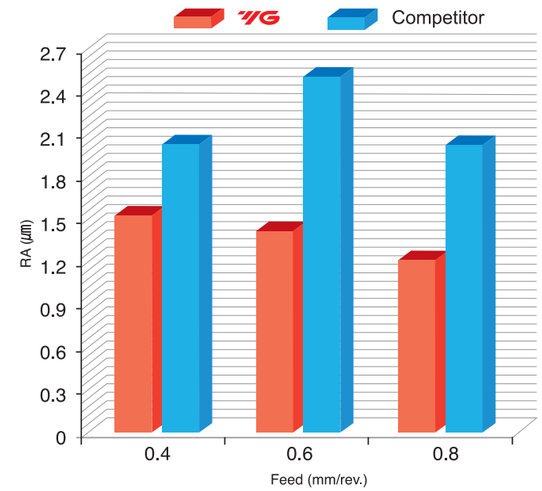
CUTTING CONDITION	DREAM DRILLS-ALU YG		COMPETITOR	
	Roundness	Straightness	Roundness	Straightness
SIZE Ø 6.0				
Drilling Holes 1,200				
SIZE Ø10.0				
Drilling Holes 820				

CASE STUDY

▶ SOLID CARBIDE DREAM DRILLS - ALU with Coolant Holes

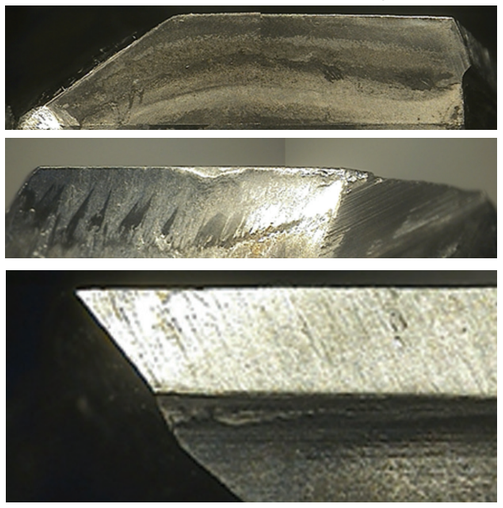
Cutting Condition

Size	Ø10 × Ø10 × 61 × 103
Work Material	- AISI : 6061 - DIN : AlMgSiCu (HB75) - JIS : A6061
RPM	6,367 rev./min.
SFM	656 ft/min.
Feed	.0157 ~ .0315 inch/rev.
Drilling Depth	1.77″ (4.5xD)
Coolant	Wet Cut
Machine	Machining Center

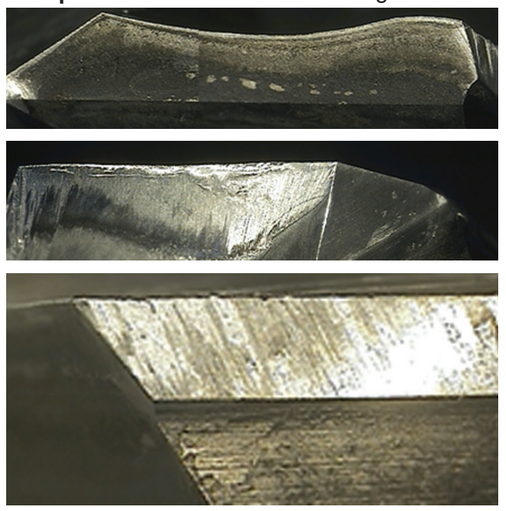


Surface Roughness of Work Piece

YG Total Drilling 820 Holes



Competitor Total Drilling 820 Holes



SERIES
DGE466
DGE718

DLC-COATED SOLID CARBIDE

DREAM DRILLS - ALU with COOLANT HOLES

- Optimized thining for Aluminum & Aluminum Alloys to prevent any clogging from chip welding
- Wider and deeper flute gullets for maximum chip removal
- Special geometry and smooth coating reduces built up edge and improves finishes

CARBIDE | h6 | 118° | 20 bar | DLC

p.155

LONG
5×D

Unit : inch

EDP No.	Drill Diameter		Shank Diameter	Flute Length	Overall Length
	Fractional	Decimal			
DLC	D1		D2	L1	L2
DGE466013	13/64	.2031	15/64	1-3/4	3-15/16
DGE718013	13/64	.2031	1/4	1-3/4	3-15/16
DGE466014	7/32	.2188	15/64	1-57/64	3-15/16
DGE718014	7/32	.2188	1/4	1-57/64	3-15/16
DGE466015	15/64	.2344	15/64	1-57/64	3-15/16
DGE718015	15/64	.2344	1/4	1-57/64	3-15/16
DGE718016	1/4	.2500	1/4	2-3/64	4-19/64
DGE466016	1/4	.2500	17/64	2-3/64	4-19/64
DGE466206	F	.2570	17/64	2-13/64	4-19/64
DGE718206	F	.2570	5/16	2-13/64	4-19/64
DGE466017	17/64	.2656	17/64	2-13/64	4-19/64
DGE718017	17/64	.2656	5/16	2-13/64	4-19/64
DGE466209	I	.2720	.272	2-13/64	4-19/64
DGE718209	I	.2720	5/16	2-13/64	4-19/64
DGE466018	9/32	.2812	5/16	2-23/64	4-41/64
DGE466019	19/64	.2969	5/16	2-33/64	4-41/64
DGE466020	5/16	.3125	5/16	2-33/64	4-41/64
DGE466021	21/64	.3281	11/32	2-43/64	5
DGE718021	21/64	.3281	3/8	2-43/64	5
DGE466217	Q	.3320	11/32	2-43/64	5
DGE718217	Q	.3320	3/8	2-43/64	5
DGE466022	11/32	.3438	11/32	2-27/64	5

EDP No.	Drill Diameter		Shank Diameter	Flute Length	Overall Length
	Fractional	Decimal			
DLC	D1		D2	L1	L2
DGE718022	11/32	.3438	3/8	2-27/32	5
DGE718023	23/64	.3594	3/8	3	5-23/64
DGE466023	23/64	.3594	25/64	3	5-23/64
DGE718221	U	.3680	3/8	3	5-23/64
DGE466221	U	.3680	25/64	3	5-23/64
DGE718024	3/8	.3750	3/8	3-5/32	5-23/64
DGE466024	3/8	.3750	25/64	3-5/32	5-23/64
DGE466025	25/64	.3906	25/64	3-5/32	5-23/64
DGE718025	25/64	.3906	7/16	3-5/32	5-23/64
DGE466026	13/32	.4062	27/64	3-5/16	5-7/8
DGE718026	13/32	.4062	7/16	3-5/16	5-7/8
DGE466027	27/64	.4219	27/64	3-15/32	5-7/8
DGE718027	27/64	.4219	7/16	3-15/32	5-7/8
DGE718028	7/16	.4375	7/16	3-5/8	6-7/32
DGE466028	7/16	.4375	15/32	3-5/8	6-7/32
DGE466029	29/64	.4531	15/32	3-25/32	6-7/32
DGE718029	29/64	.4531	1/2	3-25/32	6-7/32
DGE466030	15/32	.4688	15/32	3-25/32	6-7/32
DGE718030	15/32	.4688	1/2	3-25/32	6-7/32
DGE466031	31/64	.4844	1/2	3-15/16	6-37/64
DGE466032	1/2	.5000	1/2	4-3/32	6-37/64

▶ Other shank types are available on your request.

◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended																				

ISO	N										S							H			
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel		Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended	◎	◎	◎	◎																	

SERIES
DGE433

DLC-COATED SOLID CARBIDE

DREAM DRILLS - ALU with COOLANT HOLES

- Optimized thining for Aluminum & Aluminum Alloys to prevent any clogging from chip welding
- Wider and deeper flute gullets for maximum chip removal
- Special geometry and smooth coating reduces built up edge and improves finishes

DIN 6537 | CARBIDE | h6 | m7 | 118° | 20 bar | DLC

p.155

LONG
5×D

Unit : mm

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Fractional	Decimal			
DLC	D1			D2	L1	L2
DGE433030	3.0		.1181	6	28	66
DGE433031	3.1		.1220	6	28	66
DGE433008F	3.175	1/8	.1250	6	28	66
DGE433032	3.2		.1260	6	28	66
DGE433033	3.3		.1299	6	28	66
DGE433034	3.4		.1339	6	28	66
DGE433035	3.5		.1378	6	28	66
DGE433009F	3.572	9/64	.1406	6	28	66
DGE433036	3.6		.1417	6	28	66
DGE433037	3.7		.1457	6	28	66
DGE433038	3.8		.1496	6	36	74
DGE433039	3.9		.1535	6	36	74
DGE433010F	3.969	5/32	.1563	6	36	74
DGE433040	4.0		.1575	6	36	74
DGE433041	4.1		.1614	6	36	74
DGE433042	4.2		.1654	6	36	74
DGE433043	4.3		.1693	6	36	74
DGE433011F	4.366	11/64	.1719	6	36	74
DGE433044	4.4		.1732	6	36	74
DGE433045	4.5		.1772	6	36	74
DGE433046	4.6		.1811	6	36	74
DGE433047	4.7		.1850	6	36	74
DGE433012F	4.763	3/16	.1875	6	36	74
DGE433048	4.8		.1890	6	44	82
DGE433049	4.9		.1929	6	44	82
DGE433050	5.0		.1969	6	44	82

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Fractional	Decimal			
DLC	D1			D2	L1	L2
DGE433051	5.1		.2008	6	44	82
DGE433013F	5.159	13/64	.2031	6	44	82
DGE433052	5.2		.2047	6	44	82
DGE433053	5.3		.2087	6	44	82
DGE433054	5.4		.2126	6	44	82
DGE433055	5.5		.2165	6	44	82
DGE433014F	5.556	7/32	.2188	6	44	82
DGE433056	5.6		.2205	6	44	82
DGE433057	5.7		.2244	6	44	82
DGE433058	5.8		.2283	6	44	82
DGE433059	5.9		.2323	6	44	82
DGE433015F	5.953	15/64	.2344	6	44	82
DGE433060	6.0		.2362	6	44	82
DGE433061	6.1		.2402	8	53	91
DGE433062	6.2		.2441	8	53	91
DGE433063	6.3		.2480	8	53	91
DGE433016F	6.350	1/4	.2500	8	53	91
DGE433064	6.4		.2520	8	53	91
DGE433065	6.5		.2559	8	53	91
DGE433006L	6.528	F	.2570	8	53	9
DGE433066	6.6		.2598	8	53	91
DGE433067	6.7		.2638	8	53	91
DGE433017F	6.747	17/64	.2656	8	53	91
DGE433068	6.8		.2677	8	53	91
DGE433069	6.9		.2717	8	53	91
DGE433009L	6.909	I	.2720	8	53	91

▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended																				

ISO	N										S							H			
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel		Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended	◎	◎	◎	◎																	

DLC-COATED SOLID CARBIDE

DREAM DRILLS - ALU with COOLANT HOLES

SERIES **DGE433**

- ▶ Optimized thining for Aluminum & Aluminum Alloys to prevent any clogging from chip welding
- ▶ Wider and deeper flute gullets for maximum chip removal
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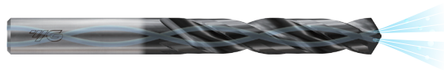
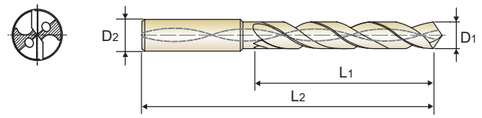




DIN 6537 | CARBIDE | h6 | m7 | 118° | 20 bar | DLC

p.155

LONG 5×D

Unit : mm

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Fractional	Decimal			
DLC	D1			D2	L1	L2
DGE433070	7.0		.2756	8	53	91
DGE433071	7.1		.2795	8	53	91
DGE433018F	7.144	9/32	.2812	8	53	91
DGE433072	7.2		.2835	8	53	91
DGE433073	7.3		.2874	8	53	91
DGE433074	7.4		.2913	8	53	91
DGE433075	7.5		.2953	8	53	91
DGE433019F	7.541	19/64	.2969	8	53	91
DGE433076	7.6		.2992	8	53	91
DGE433077	7.7		.3031	8	53	91
DGE433078	7.8		.3071	8	53	91
DGE433079	7.9		.3110	8	53	91
DGE433020F	7.938	5/16	.3125	8	53	91
DGE433080	8.0		.3150	8	53	91
DGE433081	8.1		.3189	10	61	103
DGE433082	8.2		.3228	10	61	103
DGE433083	8.3		.3268	10	61	103
DGE433021F	8.334	21/64	.3281	10	61	103
DGE433084	8.4		.3307	10	61	103
DGE433017L	8.433	Q	.3320	10	61	103
DGE433085	8.5		.3346	10	61	103
DGE433086	8.6		.3386	10	61	103
DGE433087	8.7		.3425	10	61	103
DGE433022F	8.731	11/32	.3438	10	61	103
DGE433088	8.8		.3465	10	61	103
DGE433089	8.9		.3504	10	61	103
DGE433090	9.0		.3543	10	61	103
DGE433091	9.1		.3583	10	61	103
DGE433023F	9.128	23/64	.3594	10	61	103
DGE433092	9.2		.3622	10	61	103
DGE433093	9.3		.3661	10	61	103
DGE433021L	9.347	U	.3680	10	61	103
DGE433094	9.4		.3701	10	61	103
DGE433095	9.5		.3740	10	61	103
DGE433024F	9.525	3/8	.3750	10	61	103
DGE433096	9.6		.3780	10	61	103
DGE433097	9.7		.3819	10	61	103
DGE433098	9.8		.3858	10	61	103
DGE433099	9.9		.3898	10	61	103
DGE433025F	9.922	25/64	.3906	10	61	103
DGE433100	10.0		.3937	10	61	103
DGE433101	10.1		.3976	12	71	118
DGE433102	10.2		.4016	12	71	118
DGE433103	10.3		.4055	12	71	118
DGE433026F	10.319	13/32	.4062	12	71	118
DGE433104	10.4		.4094	12	71	118
DGE433105	10.5		.4134	12	71	118
DGE433106	10.6		.4173	12	71	118
DGE433107	10.7		.4212	12	71	118
DGE433027F	10.716	27/64	.4219	12	71	118
DGE433108	10.8		.4252	12	71	118
DGE433109	10.9		.4291	12	71	118

▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended																				

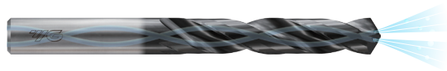
ISO	N										S							H		
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel	Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended	◎	◎	◎	◎																	

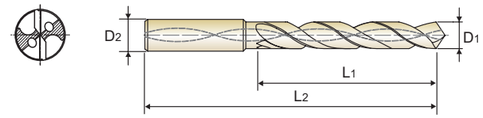
DLC-COATED SOLID CARBIDE

DREAM DRILLS - ALU with COOLANT HOLES

SERIES DGE433

- ▶ Optimized thining for Aluminum & Aluminum Alloys to prevent any clogging from chip welding
- ▶ Wider and deeper flute gullets for maximum chip removal
- ▶ Special geometry and smooth coating reduces built up edge and improves finishes





DIN 6537 | CARBIDE | h6 | m7 | 118° | 20 bar | DLC

p.155

LONG 5×D

Unit : mm

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Fractional	Decimal			
DLC	D1			D2	L1	L2
DGE433110	11.0		.4330	12	71	118
DGE433111	11.1		.4370	12	71	118
DGE433028F	11.113	7/16	.4375	12	71	118
DGE433112	11.2		.4409	12	71	118
DGE433113	11.3		.4448	12	71	118
DGE433114	11.4		.4488	12	71	118
DGE433115	11.5		.4527	12	71	118
DGE433029F	11.509	29/64	.4531	12	71	118
DGE433116	11.6		.4566	12	71	118
DGE433117	11.7		.4606	12	71	118
DGE433118	11.8		.4645	12	71	118
DGE433119	11.9		.4685	12	71	118
DGE433030F	11.906	15/32	.4688	12	71	118
DGE433120	12.0		.4724	12	71	118
DGE433121	12.1		.4764	14	77	124
DGE433122	12.2		.4803	14	77	124
DGE433123	12.3		.4843	14	77	124
DGE433031F	12.303	31/64	.4844	14	77	124
DGE433124	12.4		.4882	14	77	124
DGE433125	12.5		.4921	14	77	124
DGE433126	12.6		.4961	14	77	124
DGE433032F	12.7	1/2	.5000	14	77	124
DGE433128	12.8		.5039	14	77	124
DGE433129	12.9		.5079	14	77	124
DGE433130	13.0		.5118	14	77	124
DGE433131	13.1		.5157	14	77	124
DGE433132	13.2		.5197	14	77	124
DGE433133	13.3		.5236	14	77	124
DGE433134	13.4		.5276	14	77	124
DGE433135	13.5		.5314	14	77	124
DGE433136	13.6		.5354	14	77	124
DGE433137	13.7		.5394	14	77	124
DGE433138	13.8		.5433	14	77	124
DGE433139	13.9		.5472	14	77	124
DGE433140	14.0		.5512	14	77	124
DGE433141	14.1		.5551	16	83	133
DGE433142	14.2		.5591	16	83	133
DGE433036F	14.288	9/16	.5625	16	83	133
DGE433143	14.3		.5630	16	83	133
DGE433144	14.4		.5669	16	83	133
DGE433145	14.5		.5708	16	83	133
DGE433146	14.6		.5748	16	83	133
DGE433147	14.7		.5787	16	83	133
DGE433148	14.8		.5827	16	83	133
DGE433149	14.9		.5866	16	83	133
DGE433150	15.0		.5905	16	83	133
DGE433151	15.1		.5945	16	83	133
DGE433152	15.2		.5984	16	83	133
DGE433153	15.3		.6024	16	83	133
DGE433154	15.4		.6063	16	83	133
DGE433155	15.5		.6102	16	83	133
DGE433156	15.6		.6142	16	83	133

▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended																				

ISO	N										S							H		
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel	Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended	◎	◎	◎	◎																	

DLC-COATED SOLID CARBIDE

DREAM DRILLS - ALU with COOLANT HOLES

SERIES **DGE433**

- ▶ Optimized thining for Aluminum & Aluminum Alloys to prevent any clogging from chip welding
- ▶ Wider and deeper flute gullets for maximum chip removal
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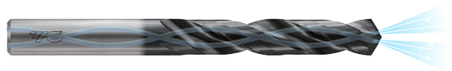
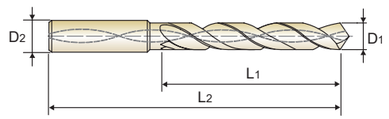




DIN 6537 | CARBIDE | h6 | m7 | 118° | 20 bar | DLC

p.155

LONG 5×D

Unit : mm

EDP No.	Drill Diameter Metric	Fractional	Decimal	Shank Diameter	Flute Length	Overall Length
DLC	D1			D2	L1	L2
DGE433157	15.7		.6181	16	83	133
DGE433158	15.8		.6220	16	83	133
DGE433040F	15.875	5/8	.6250	16	83	133
DGE433159	15.9		.6260	16	83	133
DGE433160	16.0		.6299	16	83	133
DGE433161	16.1		.6339	18	93	143
DGE433162	16.2		.6378	18	93	143
DGE433163	16.3		.6417	18	93	143
DGE433164	16.4		.6457	18	93	143
DGE433165	16.5		.6495	18	93	143
DGE433166	16.6		.6535	18	93	143
DGE433167	16.7		.6575	18	93	143
DGE433168	16.8		.6614	18	93	143
DGE433169	16.9		.6654	18	93	143
DGE433170	17.0		.6692	18	93	143
DGE433171	17.1		.6732	18	93	143
DGE433172	17.2		.6772	18	93	143
DGE433173	17.3		.6811	18	93	143
DGE433174	17.4		.6850	18	93	143
DGE433175	17.5		.6889	18	93	143
DGE433176	17.6		.6929	18	93	143
DGE433177	17.7		.6968	18	93	143
DGE433178	17.8		.7008	18	93	143
DGE433179	17.9		.7047	18	93	143
DGE433180	18.0		.7087	18	93	143
DGE433181	18.1		.7126	20	101	153
DGE433182	18.2		.7165	20	101	153
DGE433183	18.3		.7205	20	101	153
DGE433184	18.4		.7244	20	101	153
DGE433185	18.5		.7283	20	101	153
DGE433186	18.6		.7323	20	101	153
DGE433187	18.7		.7362	20	101	153
DGE433188	18.8		.7402	20	101	153
DGE433189	18.9		.7441	20	101	153
DGE433190	19.0		.7480	20	101	153
DGE433048F	19.050	3/4	.7500	20	101	153
DGE433191	19.1		.7520	20	101	153
DGE433192	19.2		.7559	20	101	153
DGE433193	19.3		.7598	20	101	153
DGE433194	19.4		.7638	20	101	153
DGE433195	19.5		.7676	20	101	153
DGE433196	19.6		.7717	20	101	153
DGE433197	19.7		.7756	20	101	153
DGE433198	19.8		.7795	20	101	153
DGE433199	19.9		.7835	20	101	153
DGE433200	20.0		.7874	20	101	153

▶ Other shank types are available on your request.

◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended																				

ISO	N										S							H		
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel		Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended	◎	◎	◎	◎																	

DGE466, DGE718, DGE433 SERIES

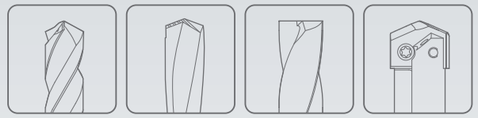
with COOLANT HOLES

SFM = ft/min.
RPM = rev./min.
FEED = inch/rev.

ISO	VDI 3323	Material Description	SFM	Drill Diameter										
				METRIC	3.0	-	4.0	-	5.0	6.0	-	-	8.0	-	10.0
				FRACTIONAL	-	1/8	-	3/16	-	-	1/4	5/16	-	3/8	-
				DECIMAL	.1181	.1250	.1575	.1875	.1969	.2362	.2500	.3125	.3150	.3750	.3937
N	21	Aluminum-wrought alloy	658	RPM	21220		15920		12730		10610		7960		6370
				FEED	.0047 - .0071		.0055 - .0087		.0059 - .0091		.0067 - .0098		.0083 - .0110		.0094 - .0118
	22		527	RPM	16980		12730		10190		8490		6370		5090
				FEED	.0047 - .0071		.0055 - .0087		.0059 - .0091		.0067 - .0098		.0083 - .0110		.0094 - .0118
	23	Aluminum-cast, alloyed	494	RPM	15920		11940		9550		7960		5970		4770
				FEED	.0059 - .0083		.0067 - .0098		.0075 - .0106		.0083 - .0110		.0094 - .0122		.0114 - .0177
	24		461	RPM	14850		11140		8910		7430		5570		4460
				FEED	.0059 - .0083		.0067 - .0098		.0075 - .0106		.0083 - .0110		.0094 - .0122		.0114 - .0177

ISO	VDI 3323	Material Description	SFM	Drill Diameter								
				METRIC	12.0	-	14.0	-	-	16.0	18.0	-	20.0
				FRACTIONAL	-	1/2	-	9/16	5/8	-	-	3/4	-
				DECIMAL	.4724	.5000	.5512	.5625	.6250	.6299	.7087	.7500	.7874
N	21	Aluminum-wrought alloy	658	RPM	5310	5030	4550		3980		3540	3350	3180
				FEED	.0094 - .0118	.0094 - .0118	.0098 - .0138		.0098 - .0138		.0110 - .0150	.0110 - .0150	.0118 - .0157
	22		527	RPM	4240	4030	3640		3180		2830	2680	2550
				FEED	.0094 - .0118	.0094 - .0118	.0098 - .0138		.0098 - .0138		.0110 - .0150	.0110 - .0150	.0118 - .0157
	23	Aluminum-cast, alloyed	494	RPM	3980	3770	3410		2980		2650	2520	2390
				FEED	.0130 - .0217	.0130 - .0217	.0138 - .0236		.0138 - .0236		.0154 - .0287	.0154 - .0287	.0154 - .0335
	24		461	RPM	3710	3520	3180		2790		2480	2350	2230
				FEED	.0130 - .0217	.0130 - .0217	.0138 - .0236		.0138 - .0236		.0154 - .0287	.0154 - .0287	.0154 - .0335

Global Cutting Tool Leader **YG-1**



DREAM DRILLS

Leading Through Innovation

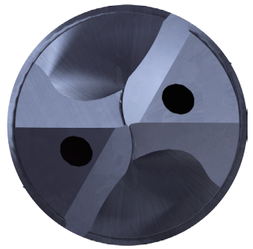
SOLID CARBIDE

DREAM DRILLS - MQL TYPE

- Minimum Quantity Lubrication Drilling Deep Holes (10×D ~ 40×D)

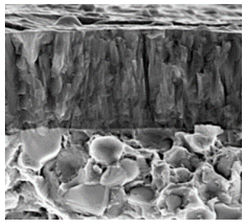
DREAM DRILLS MQL TYPE

4-Facet point for good **centering capability**



Polished flute for enhanced **chip evacuation**

Optimized special **flutes** are ideal for removing chips and for productive drilling



Upgraded TiAlN Nano-Layer Full Coating

Compatible with the MQL (Minimum Quantity Lubrication) system

- Reduction of Coolant related costs such as preparing, maintaining, disposal of emulsion
- Avoids additional efforts associated with part cleaining
- Allows for secure machining process ensuring predictable lubrication

Compare with Gun drills

- Used on conventional machining center **(MQL Drills)**
- **Higher productivity** than conventional HSS deep hole drills and Gun drills

Gun Drill

Gun drilling Machine

Productivity

Up to 10 times Drilling Feedrate

MQL Drill

Vertical & Horizontal Machining Center

- Size Range : Ø2~Ø25
- Drilling Depth : 25xD ~ over 100xD

* Need Gun drilling machine

- Size Range : Ø3~Ø14
- Drilling Depth : 10xD ~ 40xD

* Need enough machine stroke on machining center

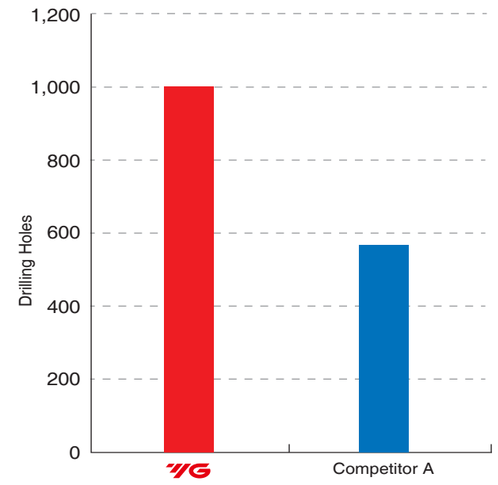
CASE STUDY

- Flute Shape and Point Shape allowing better chip evacuation in deep hole drilling
- Excellent Coating and Surface Treatment for better performance and chip evacuation

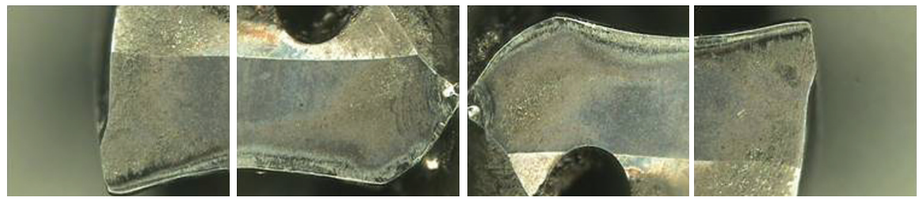
▶ SOLID CARBIDE DREAM DRILLS - MQL TYPE with Coolant Holes

Cutting Condition

Tool	DH520060
Size	Ø6 × Ø6 × 138 × 193
Work Material	- AISI : 1045 - DIN : C45 (HRc25) - JIS : S45C
RPM	3,528 rev./min.
SFM	218 ft/min.
Feed	.0075 inch/rev.
Drilling Depth	3.15″ (20×D)
Coolant	Wet Cut
Machine	Machining Center



YG — After Drilling 1,000 Holes



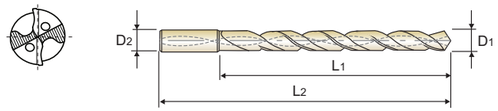
Competitor A — After Drilling 546 Holes

TiAlN-COATED SOLID CARBIDE

DREAM DRILLS - MQL TYPE with COOLANT HOLES

SERIES **DH510**

- ▶ 4-Facet Point for good centering capability
- ▶ Optimized special flutes are ideal for removing chips and for productive drilling
- ▶ Enhanced chip evacuation by polished flute upgraded TiAlN Nano-Layer full coating
- ▶ MQL system compatible (Minimum Quantity Lubrication)



CARBIDE | 30° | h6 | h7 | 140° | 20 bar | TiAlN

p.174

EXTRA LONG

10 × D

Unit : mm

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Inch	Decimal			
TiAlN	D1			D2	L1	L2
DH510030	3.0		.1181	3	39	90
DH510031	3.1		.1220	4	46	97
DH510008F	3.175	1/8	.1250	4	46	97
DH510032	3.2		.1260	4	46	97
DH510033	3.3		.1299	4	46	97
DH510034	3.4		.1339	4	46	97
DH510035	3.5		.1378	4	46	97
DH510036	3.6		.1417	4	52	103
DH510037	3.7		.1457	4	52	103
DH510038	3.8		.1496	4	52	103
DH510039	3.9		.1535	4	52	103
DH510040	4.0		.1575	4	52	103
DH510041	4.1		.1614	5	59	112
DH510042	4.2		.1654	5	59	112
DH510043	4.3		.1693	5	59	112
DH510044	4.4		.1732	5	59	112
DH510045	4.5		.1772	5	59	112
DH510046	4.6		.1811	5	65	118
DH510047	4.7		.1850	5	65	118
DH510048	4.8		.1890	5	65	118
DH510049	4.9		.1929	5	65	118
DH510050	5.0		.1969	5	65	118
DH510051	5.1		.2008	6	72	127
DH510052	5.2		.2047	6	72	127
DH510053	5.3		.2087	6	72	127
DH510054	5.4		.2126	6	72	127

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Inch	Decimal			
TiAlN	D1			D2	L1	L2
DH510055	5.5		.2165	6	72	127
DH510056	5.6		.2205	6	78	133
DH510057	5.7		.2244	6	78	133
DH510058	5.8		.2283	6	78	133
DH510059	5.9		.2323	6	78	133
DH510060	6.0		.2362	6	78	133
DH510061	6.1		.2402	7	85	141
DH510062	6.2		.2441	7	85	141
DH510063	6.3		.2480	7	85	141
DH510016F	6.350	1/4	.2500	7	85	141
DH510064	6.4		.2520	7	85	141
DH510065	6.5		.2559	7	85	141
DH510206L	6.528	F	.2570	7	91	147
DH510066	6.6		.2598	7	91	147
DH510067	6.7		.2638	7	91	147
DH510017F	6.746	17/64	.2656	7	91	147
DH510068	6.8		.2677	7	91	147
DH510069	6.9		.2717	7	91	147
DH510209L	6.909	I	.2720	7	91	147
DH510070	7.0		.2756	7	91	147
DH510071	7.1		.2795	8	98	155
DH510018F	7.142	9/32	.2812	8	98	155
DH510072	7.2		.2835	8	98	155
DH510073	7.3		.2874	8	98	155
DH510074	7.4		.2913	8	98	155
DH510075	7.5		.2953	8	98	155

▶ NEXT PAGE

◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended	◎	◎	○			◎	○	○		○	○				◎	○	◎	○	◎	○

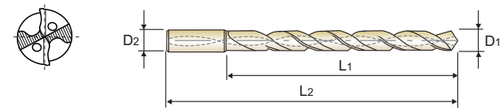
ISO	N										S							H		
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel	Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended																					

TiAlN-COATED SOLID CARBIDE

DREAM DRILLS - MQL TYPE with COOLANT HOLES

SERIES DH510

▶ 4-Facet Point for good centering capability
▶ Optimized special flutes are ideal for removing chips and for productive drilling
▶ Enhanced chip evacuation by polished flute upgraded TiAlN Nano-Layer full coating
▶ MQL system compatible (Minimum Quantity Lubrication)



CARBIDE | 30° | h6 | h7 | 140° | 20 bar | TiAlN

p.174

EXTRA LONG

10 × D

Unit : mm

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Inch	Decimal			
TiAlN	D1			D2	L1	L2
DH510019F	7.541	19/64	.2969	8	104	161
DH510076	7.6		.2992	8	104	161
DH510077	7.7		.3031	8	104	161
DH510078	7.8		.3071	8	104	161
DH510079	7.9		.3110	8	104	161
DH510020F	7.938	5/16	.3125	8	104	161
DH510080	8.0		.3150	8	104	161
DH510081	8.1		.3189	9	111	169
DH510082	8.2		.3228	9	111	169
DH510083	8.3		.3268	9	111	169
DH510021F	8.334	21/64	.3281	9	111	169
DH510084	8.4		.3307	9	111	169
DH510217L	8.433	Q	.3320	9	111	169
DH510085	8.5		.3346	9	111	169
DH510086	8.6		.3386	9	117	175
DH510087	8.7		.3425	9	117	175
DH510022F	8.733	11/32	.3438	9	117	175
DH510088	8.8		.3465	9	117	175
DH510089	8.9		.3504	9	117	175
DH510090	9.0		.3543	9	117	175
DH510091	9.1		.3583	10	124	182
DH510023F	9.129	23/64	.3594	10	124	182
DH510092	9.2		.3622	10	124	182
DH510093	9.3		.3661	10	124	182
DH510221L	9.347	U	.3680	10	124	182
DH510094	9.4		.3701	10	124	182

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Inch	Decimal			
TiAlN	D1			D2	L1	L2
DH510095	9.5		.3740	10	124	182
DH510024F	9.525	3/8	.3750	10	130	188
DH510096	9.6		.3780	10	130	188
DH510097	9.7		.3819	10	130	188
DH510098	9.8		.3858	10	130	188
DH510099	9.9		.3898	10	130	188
DH510025F	9.921	25/64	.3906	10	130	188
DH510100	10.0		.3937	10	130	188
DH510101	10.1		.3976	11	137	201
DH510102	10.2		.4016	11	137	201
DH510103	10.3		.4055	11	137	201
DH510026F	10.318	13/32	.4062	11	137	201
DH510104	10.4		.4094	11	137	201
DH510105	10.5		.4134	11	137	201
DH510106	10.6		.4173	11	143	207
DH510107	10.7		.4213	11	143	207
DH510027F	10.716	27/64	.4219	11	143	207
DH510108	10.8		.4252	11	143	207
DH510109	10.9		.4291	11	143	207
DH510110	11.0		.4331	11	143	207
DH510111	11.1		.4370	12	150	215
DH510028F	11.113	7/16	.4375	12	150	215
DH510112	11.2		.4409	12	150	215
DH510113	11.3		.4449	12	150	215
DH510114	11.4		.4488	12	150	215
DH510115	11.5		.4528	12	150	215

▶ NEXT PAGE

◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended	◎	◎	○			◎	○	○		○	○				◎	○	◎	○	◎	○

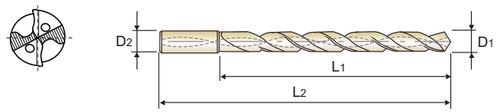
ISO	N										S							H		
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel	Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended																					

TiAlN-COATED SOLID CARBIDE

DREAM DRILLS - MQL TYPE with COOLANT HOLES

SERIES **DH510**

- ▶ 4-Facet Point for good centering capability
- ▶ Optimized special flutes are ideal for removing chips and for productive drilling
- ▶ Enhanced chip evacuation by polished flute upgraded TiAlN Nano-Layer full coating
- ▶ MQL system compatible (Minimum Quantity Lubrication)



CARBIDE | 30° | h6 | h7 | 140° | 20 bar | TiAlN

p.174

EXTRA LONG

10 × D

Unit : mm

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Inch	Decimal			
TiAlN	D1			D2	L1	L2
DH510029F	11.509	29/64	.4531	12	156	221
DH510116	11.6		.4567	12	156	221
DH510117	11.7		.4606	12	156	221
DH510118	11.8		.4646	12	156	221
DH510119	11.9		.4685	12	156	221
DH510030F	11.908	15/32	.4688	12	156	221
DH510120	12.0		.4724	12	156	221
DH510121	12.1		.4764	13	163	229
DH510122	12.2		.4803	13	163	229
DH510123	12.3		.4843	13	163	229
DH510031F	12.304	31/64	.4844	13	163	229
DH510124	12.4		.4882	13	163	229
DH510125	12.5		.4921	13	163	229
DH510126	12.6		.4961	13	169	235

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Inch	Decimal			
TiAlN	D1			D2	L1	L2
DH510127	12.7	1/2	.5000	13	169	235
DH510128	12.8		.5039	13	169	235
DH510129	12.9		.5079	13	169	235
DH510130	13.0		.5118	13	169	235
DH510131	13.1		.5157	14	176	243
DH510132	13.2		.5197	14	176	243
DH510133	13.3		.5236	14	176	243
DH510134	13.4		.5276	14	176	243
DH510135	13.5		.5315	14	176	243
DH510136	13.6		.5354	14	182	249
DH510137	13.7		.5394	14	182	249
DH510138	13.8		.5433	14	182	249
DH510139	13.9		.5472	14	182	249
DH510140	14.0		.5512	14	182	249

◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended	◎	◎	○			◎	○	○		○	○				◎	○	◎	○	◎	○

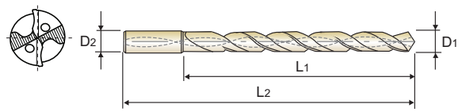
ISO	N										S							H			
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel		Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended																					

TiAlN-COATED SOLID CARBIDE

DREAM DRILLS - MQL TYPE with COOLANT HOLES

SERIES **DH515**

- ▶ 4-Facet Point for good centering capability
- ▶ Optimized special flutes are ideal for removing chips and for productive drilling
- ▶ Enhanced chip evacuation by polished flute upgraded TiAlN Nano-Layer full coating
- ▶ MQL system compatible (Minimum Quantity Lubrication)



CARBIDE | 30° | h6 | h7 | 140° | 20 bar | TiAlN

p.174

EXTRA LONG

15 x D

Unit : mm

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Inch	Decimal			
TiAlN	D1			D2	L1	L2
DH515030	3.0		.1181	3	54	105
DH515031	3.1		.1220	4	63	114
DH515008F	3.175	1/8	.1250	4	63	114
DH515032	3.2		.1260	4	63	114
DH515033	3.3		.1299	4	63	114
DH515034	3.4		.1339	4	63	114
DH515035	3.5		.1378	4	63	114
DH515036	3.6		.1417	4	72	123
DH515037	3.7		.1457	4	72	123
DH515038	3.8		.1496	4	72	123
DH515039	3.9		.1535	4	72	123
DH515040	4.0		.1575	4	72	123
DH515041	4.1		.1614	5	81	134
DH515042	4.2		.1654	5	81	134
DH515043	4.3		.1693	5	81	134
DH515044	4.4		.1732	5	81	134
DH515045	4.5		.1772	5	81	134
DH515046	4.6		.1811	5	90	143
DH515047	4.7		.1850	5	90	143
DH515048	4.8		.1890	5	90	143
DH515049	4.9		.1929	5	90	143
DH515050	5.0		.1969	5	90	143
DH515051	5.1		.2008	6	99	154
DH515052	5.2		.2047	6	99	154
DH515053	5.3		.2087	6	99	154
DH515054	5.4		.2126	6	99	154

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Inch	Decimal			
TiAlN	D1			D2	L1	L2
DH515055	5.5		.2165	6	99	154
DH515056	5.6		.2205	6	108	163
DH515057	5.7		.2244	6	108	163
DH515058	5.8		.2283	6	108	163
DH515059	5.9		.2323	6	108	163
DH515060	6.0		.2362	6	108	163
DH515061	6.1		.2402	7	117	173
DH515062	6.2		.2441	7	117	173
DH515063	6.3		.2480	7	117	173
DH515016F	6.350	1/4	.2500	7	117	173
DH515064	6.4		.2520	7	117	173
DH515065	6.5		.2559	7	117	173
DH515206L	6.528	F	.2570	7	126	182
DH515066	6.6		.2598	7	126	182
DH515067	6.7		.2638	7	126	182
DH515017F	6.746	17/64	.2656	7	126	182
DH515068	6.8		.2677	7	126	182
DH515069	6.9		.2717	7	126	182
DH515209L	6.909	I	.2720	7	126	182
DH515070	7.0		.2756	7	126	182
DH515071	7.1		.2795	8	135	192
DH515018F	7.142	9/32	.2812	8	135	192
DH515072	7.2		.2835	8	135	192
DH515073	7.3		.2874	8	135	192
DH515074	7.4		.2913	8	135	192
DH515075	7.5		.2953	8	135	192

▶ NEXT PAGE

◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended	◎	◎	○			◎	○	○		○	○				◎	○	◎	○	◎	○

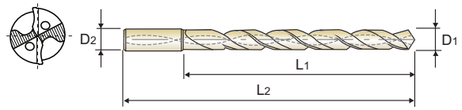
ISO	N										S							H			
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel		Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended																					

TiAlN-COATED SOLID CARBIDE

DREAM DRILLS - MQL TYPE with COOLANT HOLES

SERIES **DH515**

- ▶ 4-Facet Point for good centering capability
- ▶ Optimized special flutes are ideal for removing chips and for productive drilling
- ▶ Enhanced chip evacuation by polished flute upgraded TiAlN Nano-Layer full coating
- ▶ MQL system compatible (Minimum Quantity Lubrication)



CARBIDE | 30° | h6 | h7 | 140° | 20 bar | TiAlN

p.174

EXTRA LONG

15 x D

Unit : mm

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Inch	Decimal			
TiAlN	D1			D2	L1	L2
DH515019F	7.541	19/64	.2969	8	144	201
DH515076	7.6		.2992	8	144	201
DH515077	7.7		.3031	8	144	201
DH515078	7.8		.3071	8	144	201
DH515079	7.9		.3110	8	144	201
DH515020F	7.938	5/16	.3125	8	144	201
DH515080	8.0		.3150	8	144	201
DH515081	8.1		.3189	9	153	211
DH515082	8.2		.3228	9	153	211
DH515083	8.3		.3268	9	153	211
DH515021F	8.334	21/64	.3281	9	153	211
DH515084	8.4		.3307	9	153	211
DH515217L	8.433	Q	.3320	9	153	211
DH515085	8.5		.3346	9	153	211
DH515086	8.6		.3386	9	162	220
DH515087	8.7		.3425	9	162	220
DH515022F	8.733	11/32	.3438	9	162	220
DH515088	8.8		.3465	9	162	220
DH515089	8.9		.3504	9	162	220
DH515090	9.0		.3543	9	162	220
DH515091	9.1		.3583	10	171	229
DH515023F	9.129	23/64	.3594	10	171	229
DH515092	9.2		.3622	10	171	229
DH515093	9.3		.3661	10	171	229
DH515221L	9.347	U	.3680	10	171	229
DH515094	9.4		.3701	10	171	229

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Inch	Decimal			
TiAlN	D1			D2	L1	L2
DH515095	9.5		.3740	10	171	229
DH515024F	9.525	3/8	.3750	10	180	238
DH515096	9.6		.3780	10	180	238
DH515097	9.7		.3819	10	180	238
DH515098	9.8		.3858	10	180	238
DH515099	9.9		.3898	10	180	238
DH515025F	9.921	25/64	.3906	10	180	238
DH515100	10.0		.3937	10	180	238
DH515101	10.1		.3976	11	189	253
DH515102	10.2		.4016	11	189	253
DH515103	10.3		.4055	11	189	253
DH515026F	10.318	13/32	.4062	11	189	253
DH515104	10.4		.4094	11	189	253
DH515105	10.5		.4134	11	189	253
DH515106	10.6		.4173	11	198	262
DH515107	10.7		.4213	11	198	262
DH515027F	10.716	27/64	.4219	11	198	262
DH515108	10.8		.4252	11	198	262
DH515109	10.9		.4291	11	198	262
DH515110	11.0		.4331	11	198	262
DH515111	11.1		.4370	12	207	272
DH515028F	11.113	7/16	.4375	12	207	272
DH515112	11.2		.4409	12	207	272
DH515113	11.3		.4449	12	207	272
DH515114	11.4		.4488	12	207	272
DH515115	11.5		.4527	12	207	272

▶ NEXT PAGE

◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended	◎	◎	○			◎	○	○		○	○				◎	○	◎	○	◎	○

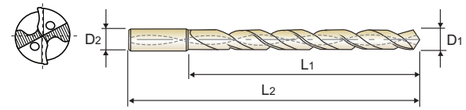
ISO	N										S							H		
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel	Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended																					

TiAlN-COATED SOLID CARBIDE

DREAM DRILLS - MQL TYPE with COOLANT HOLES

SERIES DH515

▶ 4-Facet Point for good centering capability
▶ Optimized special flutes are ideal for removing chips and for productive drilling
▶ Enhanced chip evacuation by polished flute upgraded TiAlN Nano-Layer full coating
▶ MQL system compatible (Minimum Quantity Lubrication)



CARBIDE | 30° | h6 | h7 | 140° | 20 bar | TiAlN

p.174

EXTRA LONG

15 x D

Unit : mm

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Inch	Decimal			
TiAlN	D1			D2	L1	L2
DH515029F	11.509	29/64	.4531	12	216	281
DH515116	11.6		.4567	12	216	281
DH515117	11.7		.4606	12	216	281
DH515118	11.8		.4646	12	216	281
DH515119	11.9		.4685	12	216	281
DH515030F	11.908	15/32	.4688	12	216	281
DH515120	12.0		.4724	12	216	281
DH515121	12.1		.4764	13	225	291
DH515122	12.2		.4803	13	225	291
DH515123	12.3		.4843	13	225	291
DH515031F	12.304	31/64	.4844	13	225	291
DH515124	12.4		.4882	13	225	291
DH515125	12.5		.4921	13	225	291
DH515126	12.6		.4961	13	234	300

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Inch	Decimal			
TiAlN	D1			D2	L1	L2
DH515127	12.7	1/2	.5000	13	234	300
DH515128	12.8		.5039	13	234	300
DH515129	12.9		.5079	13	234	300
DH515130	13.0		.5118	13	234	300
DH515131	13.1		.5157	14	243	310
DH515132	13.2		.5197	14	243	310
DH515133	13.3		.5236	14	243	310
DH515134	13.4		.5276	14	243	310
DH515135	13.5		.5314	14	243	310
DH515136	13.6		.5354	14	252	319
DH515137	13.7		.5394	14	252	319
DH515138	13.8		.5433	14	252	319
DH515139	13.9		.5472	14	252	319
DH515140	14.0		.5512	14	252	319

◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended	◎	◎	○			◎	○	○		○	○				◎	○	◎	○	◎	○

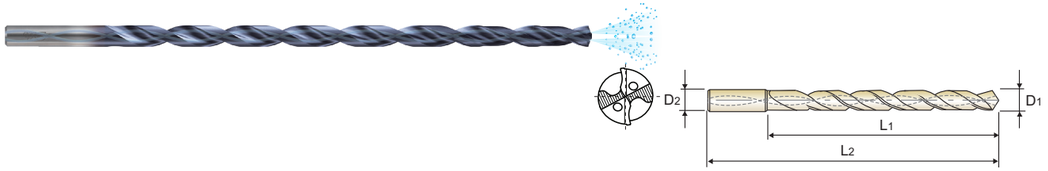
ISO	N										S							H		
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel	Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended																					

TiAlN-COATED SOLID CARBIDE

DREAM DRILLS - MQL TYPE with COOLANT HOLES

SERIES **DH520**

- ▶ 4-Facet Point for good centering capability
- ▶ Optimized special flutes are ideal for removing chips and for productive drilling
- ▶ Enhanced chip evacuation by polished flute upgraded TiAlN Nano-Layer full coating
- ▶ MQL system compatible (Minimum Quantity Lubrication)



CARBIDE | 30° | h6 | h7 | 140° | 45 bar | TiAlN

p.174

EXTRA LONG

20 × D

Unit : mm

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Inch	Decimal			
TiAlN	D1			D2	L1	L2
DH520030	3.0		.1181	3	69	120
DH520031	3.1		.1220	4	81	132
DH520008F	3.175	1/8	.1250	4	81	132
DH520032	3.2		.1260	4	81	132
DH520033	3.3		.1299	4	81	132
DH520034	3.4		.1339	4	81	132
DH520035	3.5		.1378	4	81	132
DH520036	3.6		.1417	4	92	143
DH520037	3.7		.1457	4	92	143
DH520038	3.8		.1496	4	92	143
DH520039	3.9		.1535	4	92	143
DH520040	4.0		.1575	4	92	143
DH520041	4.1		.1614	5	104	157
DH520042	4.2		.1654	5	104	157
DH520043	4.3		.1693	5	104	157
DH520044	4.4		.1732	5	104	157
DH520045	4.5		.1772	5	104	157
DH520046	4.6		.1811	5	115	168
DH520047	4.7		.1850	5	115	168
DH520048	4.8		.1890	5	115	168
DH520049	4.9		.1929	5	115	168
DH520050	5.0		.1969	5	115	168
DH520051	5.1		.2008	6	127	182
DH520052	5.2		.2047	6	127	182
DH520053	5.3		.2087	6	127	182
DH520054	5.4		.2126	6	127	182
DH520055	5.5		.2165	6	127	182
DH520056	5.6		.2205	6	138	193

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Inch	Decimal			
TiAlN	D1			D2	L1	L2
DH520057	5.7		.2244	6	138	193
DH520058	5.8		.2283	6	138	193
DH520059	5.9		.2323	6	138	193
DH520060	6.0		.2362	6	138	193
DH520061	6.1		.2402	7	150	206
DH520062	6.2		.2441	7	150	206
DH520063	6.3		.2480	7	150	206
DH520016F	6.350	1/4	.2500	7	150	206
DH520064	6.4		.2520	7	150	206
DH520065	6.5		.2559	7	150	206
DH520206L	6.528	F	.2570	7	161	217
DH520066	6.6		.2598	7	161	217
DH520067	6.7		.2638	7	161	217
DH520017F	6.746	17/64	.2656	7	161	217
DH520068	6.8		.2677	7	161	217
DH520069	6.9		.2717	7	161	217
DH520209L	6.909	I	.2720	7	161	217
DH520070	7.0		.2756	7	161	217
DH520071	7.1		.2795	8	173	230
DH520018F	7.142	9/32	.2812	8	173	230
DH520072	7.2		.2835	8	173	230
DH520073	7.3		.2874	8	173	230
DH520074	7.4		.2913	8	173	230
DH520075	7.5		.2953	8	173	230
DH520019F	7.541	19/64	.2969	8	184	241
DH520076	7.6		.2992	8	184	241
DH520077	7.7		.3031	8	184	241
DH520078	7.8		.3071	8	184	241

▶ NEXT PAGE

◎ : Excellent ○ : Good

ISO	P										M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel	Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended	◎	◎	○			◎	○	○		○	○				◎	○	◎	○	◎	○

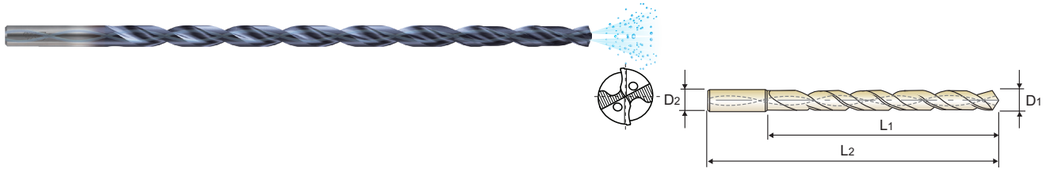
ISO	N										S							H		
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel	Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended																					

TiAlN-COATED SOLID CARBIDE

DREAM DRILLS - MQL TYPE with COOLANT HOLES

SERIES DH520

▶ 4-Facet Point for good centering capability
▶ Optimized special flutes are ideal for removing chips and for productive drilling
▶ Enhanced chip evacuation by polished flute upgraded TiAlN Nano-Layer full coating
▶ MQL system compatible (Minimum Quantity Lubrication)



CARBIDE | 30° | h6 | h7 | 140° | 45 bar | TiAlN

p.174

EXTRA LONG

20 × D

Unit : mm

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Inch	Decimal			
TiAlN	D1			D2	L1	L2
DH520079	7.9		.3110	8	184	241
DH520020F	7.938	5/16	.3125	8	184	241
DH520080	8.0		.3150	8	184	241
DH520081	8.1		.3189	9	196	254
DH520082	8.2		.3228	9	196	254
DH520083	8.3		.3268	9	196	254
DH520021F	8.334	21/64	.3281	9	196	254
DH520084	8.4		.3307	9	196	254
DH520217L	8.433	Q	.3320	9	196	254
DH520085	8.5		.3346	9	196	254
DH520086	8.6		.3386	9	207	265
DH520087	8.7		.3425	9	207	265
DH520022F	8.733	11/32	.3438	9	207	265
DH520088	8.8		.3465	9	207	265
DH520089	8.9		.3504	9	207	265
DH520090	9.0		.3543	9	207	265
DH520091	9.1		.3583	10	219	277
DH520023F	9.129	23/64	.3594	10	219	277
DH520092	9.2		.3622	10	219	277
DH520093	9.3		.3661	10	219	277
DH520221L	9.347	U	.3680	10	219	277
DH520094	9.4		.3701	10	219	277
DH520095	9.5		.3740	10	230	288
DH520024F	9.525	3/8	.3750	10	230	288
DH520096	9.6		.3780	10	230	288
DH520097	9.7		.3819	10	230	288
DH520098	9.8		.3858	10	230	288
DH520099	9.9		.3898	10	230	288

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Inch	Decimal			
TiAlN	D1			D2	L1	L2
DH520025F	9.921	25/64	.3906	10	230	288
DH520100	10.0		.3937	10	230	288
DH520101	10.1		.3976	11	242	306
DH520102	10.2		.4016	11	242	306
DH520103	10.3		.4055	11	242	306
DH520026F	10.318	13/32	.4062	11	242	306
DH520104	10.4		.4094	11	242	306
DH520105	10.5		.4134	11	242	306
DH520106	10.6		.4173	11	253	317
DH520107	10.7		.4213	11	253	317
DH520027F	10.716	27/64	.4219	11	253	317
DH520108	10.8		.4252	11	253	317
DH520109	10.9		.4291	11	253	317
DH520110	11.0		.4331	11	253	317
DH520111	11.1		.4370	12	265	330
DH520028F	11.113	7/16	.4375	12	265	330
DH520112	11.2		.4409	12	265	330
DH520113	11.3		.4449	12	265	330
DH520114	11.4		.4488	12	265	330
DH520115	11.5		.4527	12	265	330
DH520029F	11.509	29/64	.4531	12	276	341
DH520116	11.6		.4567	12	276	341
DH520117	11.7		.4606	12	276	341
DH520118	11.8		.4646	12	276	341
DH520119	11.9		.4685	12	276	341
DH520030F	11.908	15/32	.4688	12	276	341
DH520120	12.0		.4724	12	276	341

◎ : Excellent ○ : Good

ISO	P										M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel	Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended	◎	◎	○			◎	○	○		○	○				◎	○	◎	○	◎	○

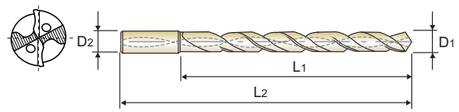
ISO	N										S							H		
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel	Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended																					

TiAlN-COATED SOLID CARBIDE

DREAM DRILLS - MQL TYPE with COOLANT HOLES

SERIES **DHM10** **DHM15**

- ▶ 4-Facet Point for good centering capability
- ▶ Optimized special flutes are ideal for removing chips and for productive drilling
- ▶ Enhanced chip evacuation by polished flute upgraded TiAlN Nano-Layer full coating
- ▶ MQL system compatible (Minimum Quantity Lubrication)



DHM10 DHM15

CARBIDE | 30° | h6 | h7 | 140° | 20 bar | 45 bar | TiAlN

p.174

EXTRA LONG

10×D (DHM10) | 15×D (DHM15)

10xD

Unit : mm

EDP No.	Drill Diameter		Shank Diameter	Flute Length	Overall Length
	Metric	Decimal			
TiAlN	D1		D2	L1	L2
DHM10030	3.0	.1181	6	40	80
DHM10033	3.3	.1299	6	47	87
DHM10035	3.5	.1378	6	47	87
DHM10040	4.0	.1575	6	53	93
DHM10042	4.2	.1654	6	60	100
DHM10045	4.5	.1772	6	60	100
DHM10050	5.0	.1969	6	66	106
DHM10055	5.5	.2165	6	73	113
DHM10060	6.0	.2362	6	79	119
DHM10065	6.5	.2559	8	86	126
DHM10068	6.8	.2677	8	92	132
DHM10070	7.0	.2756	8	92	132
DHM10075	7.5	.2953	8	99	139
DHM10080	8.0	.3150	8	105	145
DHM10085	8.5	.3346	10	112	156
DHM10090	9.0	.3543	10	118	162
DHM10095	9.5	.3740	10	126	170
DHM10100	10.0	.3937	10	132	176
DHM10105	10.5	.4134	12	139	188
DHM10110	11.0	.4330	12	145	194
DHM10115	11.5	.4527	12	152	201
DHM10120	12.0	.4724	12	158	207
DHM10125	12.5	.4921	14	165	214
DHM10130	13.0	.5118	14	171	220
DHM10135	13.5	.5314	14	178	227
DHM10140	14.0	.5512	14	184	233

15xD

Unit : mm

EDP No.	Drill Diameter		Shank Diameter	Flute Length	Overall Length
	Metric	Decimal			
TiAlN	D1		D2	L1	L2
DHM15030	3.0	.1181	6	55	95
DHM15035	3.5	.1378	6	64	104
DHM15040	4.0	.1575	6	73	113
DHM15045	4.5	.1772	6	82	122
DHM15050	5.0	.1969	6	91	131
DHM15055	5.5	.2165	6	100	140
DHM15060	6.0	.2362	6	109	149
DHM15070	7.0	.2756	8	127	167
DHM15080	8.0	.3150	8	145	185
DHM15090	9.0	.3543	10	163	207
DHM15100	10.0	.3937	10	182	226
DHM15110	11.0	.4330	12	200	249
DHM15120	12.0	.4724	12	218	267

◎ : Excellent ○ : Good

ISO	P																			
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended	◎	◎	○			◎	○	○		○	○				◎	○	◎	○	◎	○

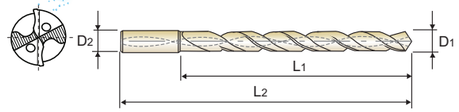
ISO	N										S							H		
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel	Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended																					

TiAlN-COATED SOLID CARBIDE

DREAM DRILLS - MQL TYPE with COOLANT HOLES

SERIES **DHM20**

- ▶ 4-Facet Point for good centering capability
- ▶ Optimized special flutes are ideal for removing chips and for productive drilling
- ▶ Enhanced chip evacuation by polished flute upgraded TiAlN Nano-Layer full coating
- ▶ MQL system compatible (Minimum Quantity Lubrication)



CARBIDE | 30° | h6 | h7 | 140° | 45 bar | TiAlN

p.174

EXTRA LONG

20×D (DHM20)

20xD

Unit : mm

EDP No.	Drill Diameter		Shank Diameter	Flute Length	Overall Length
	Metric	Decimal			
TiAlN	D1		D2	L1	L2
DHM20030	3.0	.1181	6	70	110
DHM20035	3.5	.1378	6	82	122
DHM20040	4.0	.1575	6	93	133
DHM20045	4.5	.1772	6	105	145
DHM20050	5.0	.1969	6	116	156
DHM20055	5.5	.2165	6	128	168
DHM20060	6.0	.2362	6	139	179
DHM20070	7.0	.2756	8	162	202
DHM20080	8.0	.3150	8	185	225
DHM20090	9.0	.3543	10	208	252
DHM20100	10.0	.3937	10	232	276
DHM20110	11.0	.4330	12	255	304
DHM20120	12.0	.4724	12	278	327

◎ : Excellent ○ : Good

ISO	P																			
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended	◎	◎	○			◎	○	○		○	○				◎	○	◎	○	◎	○

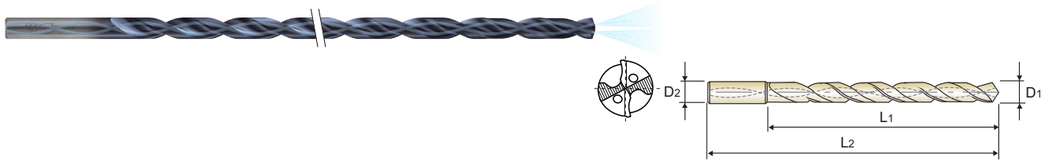
ISO	N										S							H		
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel	Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended																					

TiAlN-COATED SOLID CARBIDE

DREAM DRILLS - MQL TYPE with COOLANT HOLES

SERIES **DHM25**

- ▶ 4-Facet Point for good centering capability
- ▶ Optimized special flutes are ideal for removing chips and for productive drilling
- ▶ Enhanced chip evacuation by polished flute upgraded TiAlN Nano-Layer full coating
- ▶ MQL system compatible (Minimum Quantity Lubrication)



CARBIDE | 30° | h6 | h7 | 140° | 45 bar | TiAlN

p.174

EXTRA LONG

25 × D

Unit : mm

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Inch	Decimal			
TiAlN	D1			D2	L1	L2
DHM25030	3.0		.1181	6	85	125
DHM25031	3.1		.1220	6	99	139
DHM25008F	3.175	1/8	.1250	6	99	139
DHM25032	3.2		.1260	6	99	139
DHM25033	3.3		.1299	6	99	139
DHM25034	3.4		.1339	6	99	139
DHM25035	3.5		.1378	6	99	139
DHM25036	3.6		.1417	6	113	153
DHM25037	3.7		.1457	6	113	153
DHM25038	3.8		.1496	6	113	153
DHM25039	3.9		.1535	6	113	153
DHM25040	4.0		.1575	6	113	153
DHM25041	4.1		.1614	6	127	167
DHM25042	4.2		.1654	6	127	167
DHM25043	4.3		.1693	6	127	167
DHM25044	4.4		.1732	6	127	167
DHM25045	4.5		.1772	6	127	167
DHM25046	4.6		.1811	6	141	181
DHM25047	4.7		.1850	6	141	181
DHM25048	4.8		.1890	6	141	181
DHM25049	4.9		.1929	6	141	181
DHM25050	5.0		.1969	6	141	181
DHM25051	5.1		.2008	6	155	195
DHM25052	5.2		.2047	6	155	195
DHM25053	5.3		.2087	6	155	195
DHM25054	5.4		.2126	6	155	195

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Inch	Decimal			
TiAlN	D1			D2	L1	L2
DHM25055	5.5		.2165	6	155	195
DHM25056	5.6		.2205	6	169	209
DHM25057	5.7		.2244	6	169	209
DHM25058	5.8		.2283	6	169	209
DHM25059	5.9		.2323	6	169	209
DHM25060	6.0		.2362	6	169	209
DHM25061	6.1		.2402	8	183	223
DHM25062	6.2		.2441	8	183	223
DHM25063	6.3		.2480	8	183	223
DHM25016F	6.350	1/4	.2500	8	183	223
DHM25064	6.4		.2520	8	183	223
DHM25065	6.5		.2559	8	183	223
DHM25206L	6.528	F	.2570	8	197	237
DHM25066	6.6		.2598	8	197	237
DHM25067	6.7		.2638	8	197	237
DHM25017F	6.746	17/64	.2656	8	197	237
DHM25068	6.8		.2677	8	197	237
DHM25069	6.9		.2717	8	197	237
DHM25209L	6.909	I	.2720	8	197	237
DHM25070	7.0		.2756	8	197	237
DHM25071	7.1		.2795	8	211	251
DHM25018F	7.142	9/32	.2812	8	211	251
DHM25072	7.2		.2835	8	211	251
DHM25073	7.3		.2874	8	211	251
DHM25074	7.4		.2913	8	211	251
DHM25075	7.5		.2953	8	211	251

▶ NEXT PAGE

◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended	◎	◎	○			◎	○	○		○	○				◎	○	◎	○	◎	○

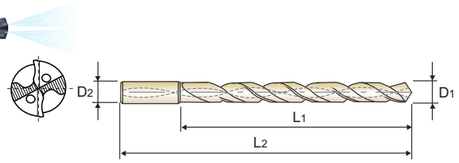
ISO	N										S							H		
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel		Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended																					

TiAlN-COATED SOLID CARBIDE

DREAM DRILLS - MQL TYPE with COOLANT HOLES

SERIES DHM25

- ▶ 4-Facet Point for good centering capability
- ▶ Optimized special flutes are ideal for removing chips and for productive drilling
- ▶ Enhanced chip evacuation by polished flute upgraded TiAlN Nano-Layer full coating
- ▶ MQL system compatible (Minimum Quantity Lubrication)



CARBIDE | 30° | h6 | h7 | 140° | 45 bar | TiAlN

p.174

EXTRA LONG

25 × D

Unit : mm

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Inch	Decimal			
TiAlN	D1			D2	L1	L2
DHM25019F	7.541	19/64	.2969	8	225	265
DHM25076	7.6		.2992	8	225	265
DHM25077	7.7		.3031	8	225	265
DHM25078	7.8		.3071	8	225	265
DHM25079	7.9		.3110	8	225	265
DHM25020F	7.938	5/16	.3125	8	225	265
DHM25080	8.0		.3150	8	225	265
DHM25081	8.1		.3189	10	239	283
DHM25082	8.2		.3228	10	239	283
DHM25083	8.3		.3268	10	239	283
DHM25021F	8.334	21/64	.3281	10	239	283
DHM25084	8.4		.3307	10	239	283
DHM25217L	8.433	Q	.3320	10	239	283
DHM25085	8.5		.3346	10	239	283
DHM25086	8.6		.3386	10	253	297
DHM25087	8.7		.3425	10	253	297
DHM25022F	8.733	11/32	.3438	10	253	297

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Inch	Decimal			
TiAlN	D1			D2	L1	L2
DHM25088	8.8		.3465	10	253	297
DHM25089	8.9		.3504	10	253	297
DHM25090	9.0		.3543	10	253	297
DHM25091	9.1		.3583	10	268	312
DHM25023F	9.129	23/64	.3594	10	268	312
DHM25092	9.2		.3622	10	268	312
DHM25093	9.3		.3661	10	268	312
DHM25221L	9.347	U	.3680	10	268	312
DHM25094	9.4		.3701	10	268	312
DHM25095	9.5		.3740	10	268	312
DHM25024F	9.525	3/8	.3750	10	282	326
DHM25096	9.6		.3780	10	282	326
DHM25097	9.7		.3819	10	282	326
DHM25098	9.8		.3858	10	282	326
DHM25099	9.9		.3898	10	282	326
DHM25025F	9.921	25/64	.3906	10	282	326
DHM25100	10.0		.3937	10	282	326

◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended	◎	◎	○			◎	○	○		○	○				◎	○	◎	○	◎	○

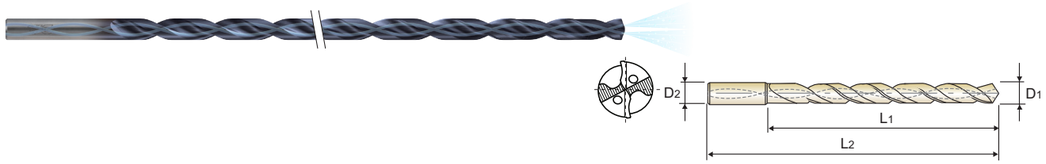
ISO	N										S							H		
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel		Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended																					

TiAlN-COATED SOLID CARBIDE

DREAM DRILLS - MQL TYPE with COOLANT HOLES

SERIES **DHM30**

- ▶ 4-Facet Point for good centering capability
- ▶ Optimized special flutes are ideal for removing chips and for productive drilling
- ▶ Enhanced chip evacuation by polished flute upgraded TiAlN Nano-Layer full coating
- ▶ MQL system compatible (Minimum Quantity Lubrication)



CARBIDE | 30° | h6 | h7 | 140° | 45 bar | TiAlN

p.174

EXTRA LONG

30 × D

Unit : mm

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Inch	Decimal			
TiAlN	D1			D2	L1	L2
DHM30030	3.0		.1181	6	100	140
DHM30031	3.1		.1220	6	117	157
DHM30008F	3.175	1/8	.1250	6	117	157
DHM30032	3.2		.1260	6	117	157
DHM30033	3.3		.1299	6	117	157
DHM30034	3.4		.1339	6	117	157
DHM30035	3.5		.1378	6	117	157
DHM30036	3.6		.1417	6	133	173
DHM30037	3.7		.1457	6	133	173
DHM30038	3.8		.1496	6	133	173
DHM30039	3.9		.1535	6	133	173
DHM30040	4.0		.1575	6	133	173
DHM30041	4.1		.1614	6	150	190
DHM30042	4.2		.1654	6	150	190
DHM30043	4.3		.1693	6	150	190
DHM30044	4.4		.1732	6	150	190
DHM30045	4.5		.1772	6	150	190
DHM30046	4.6		.1811	6	166	206
DHM30047	4.7		.1850	6	166	206
DHM30048	4.8		.1890	6	166	206
DHM30049	4.9		.1929	6	166	206
DHM30050	5.0		.1969	6	166	206
DHM30051	5.1		.2008	6	183	223
DHM30052	5.2		.2047	6	183	223
DHM30053	5.3		.2087	6	183	223
DHM30054	5.4		.2126	6	183	223

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Inch	Decimal			
TiAlN	D1			D2	L1	L2
DHM30055	5.5		.2165	6	183	223
DHM30056	5.6		.2205	6	199	239
DHM30057	5.7		.2244	6	199	239
DHM30058	5.8		.2283	6	199	239
DHM30059	5.9		.2323	6	199	239
DHM30060	6.0		.2362	6	199	239
DHM30061	6.1		.2402	8	216	256
DHM30062	6.2		.2441	8	216	256
DHM30063	6.3		.2480	8	216	256
DHM30016F	6.350	1/4	.2500	8	216	256
DHM30064	6.4		.2520	8	216	256
DHM30065	6.5		.2559	8	216	256
DHM30206L	6.528	F	.2570	8	232	272
DHM30066	6.6		.2598	8	232	272
DHM30067	6.7		.2638	8	232	272
DHM30017F	6.746	17/64	.2656	8	232	272
DHM30068	6.8		.2677	8	232	272
DHM30069	6.9		.2717	8	232	272
DHM30209L	6.909	I	.2720	8	232	272
DHM30070	7.0		.2756	8	232	272
DHM30071	7.1		.2795	8	249	289
DHM30018F	7.142	9/32	.2812	8	249	289
DHM30072	7.2		.2835	8	249	289
DHM30073	7.3		.2874	8	249	289
DHM30074	7.4		.2913	8	249	289
DHM30075	7.5		.2953	8	249	289

▶ NEXT PAGE

◎ : Excellent ○ : Good

ISO	P													M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel				Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20		
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25				
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230		
Recommended	◎	◎	○			◎	○	○		○	○				◎	○	◎	○	◎	○		

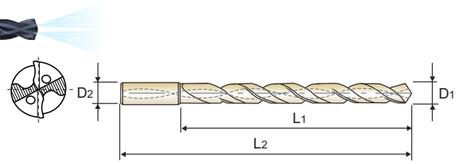
ISO	N										S							H		
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel	Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended																					

TiAlN-COATED SOLID CARBIDE

DREAM DRILLS - MQL TYPE with COOLANT HOLES

SERIES DHM30

- ▶ 4-Facet Point for good centering capability
- ▶ Optimized special flutes are ideal for removing chips and for productive drilling
- ▶ Enhanced chip evacuation by polished flute upgraded TiAlN Nano-Layer full coating
- ▶ MQL system compatible (Minimum Quantity Lubrication)



CARBIDE | 30° | h6 | h7 | 140° | 45 bar | TiAlN

p.174

EXTRA LONG

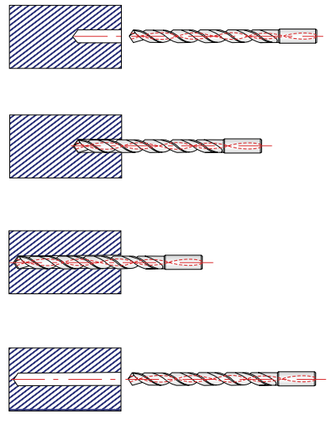
30 × D

Unit : mm

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Inch	Decimal			
TiAlN	D1			D2	L1	L2
DHM30019F	7.541	19/64	.2969	8	265	305
DHM30076	7.6		.2992	8	265	305
DHM30077	7.7		.3031	8	265	305
DHM30078	7.8		.3071	8	265	305

EDP No.	Drill Diameter			Shank Diameter	Flute Length	Overall Length
	Metric	Inch	Decimal			
TiAlN	D1			D2	L1	L2
DHM30079	7.9		.3110	8	265	305
DHM30020F	7.938	5/16	.3125	8	265	305
DHM30080	8.0		.3150	8	265	305

▶ Made to order in depth 35xD(Ø3-Ø6) & 40xD(Ø3-Ø6)



1. Guide Drilling should be done as Diameter +0.01 ~ +0.1mm between 3xD and 5xD depth.
2. For Main Drilling, proceed with low RPM at Guide Drilling segment. (RPM 300, FEED 400mm/min.)
3. Just before the end of Guide Drilling segment, reduce feed to zero and increase the RPM according to Recommended Cutting Condition chart. (See above)
4. After then, proceed main drilling by increasing feed without step drilling.
5. When coming out from Guide Drilling start point after drilling, RPM should be reduced as 300 and feed should be 1000 mm/min.
6. When coming out from Guide Drilling segment to the outside, the feed should be decreased as 50%.

◎ : Excellent ○ : Good

ISO	P													M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel				Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20		
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25				
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230		
Recommended	◎	◎	○			◎	○	○		○	○				◎	○	◎	○	◎	○		

ISO	N										S							H		
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel	Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended																					

DH510, DH515, DH520, DHM10, DHM15
DHM20, DHM25, DHM30 SERIES with COOLANT HOLES

SFM = ft/min.
RPM = rev./min.
FEED = inch/rev.

ISO	VDI 3323	Material Description	SFM 10xD ~20xD	SFM 25xD ~30xD	Drill Diameter							
					METRIC	3.0	-	4.0	-	5.0	6.0	-
					FRACTIONAL	-	1/8	-	3/16	-	-	1/4
					DECIMAL	.1181	.1250	.1575	.1875	.1969	.2362	.2500
P	1	Non-alloy steel	395	329	RPM(10xD~20xD)	12730		9550	7640		6370	
					RPM(25xD~30xD)	10610		7960	6370		5310	
					FEED	.0031 - .0047		.0039 - .0055	.0047 - .0071		.0055 - .0079	
	2		329	263	RPM(10xD~20xD)	10610		7960	6370		5310	
					RPM(25xD~30xD)	8490		6370	5090		4240	
					FEED	.0031 - .0047		.0039 - .0055	.0047 - .0071		.0055 - .0079	
	3		263	214	RPM(10xD~20xD)	8490		6370	5090		4240	
					RPM(25xD~30xD)	6900		5170	4140		3450	
					FEED	.0024 - .0039		.0031 - .0047	.0039 - .0063		.0047 - .0071	
	6	Low alloy steel	329	329	RPM(10xD~20xD)	10610		7960	6370		5310	
					RPM(25xD~30xD)	10610		7960	6370		5310	
					FEED	.0031 - .0047		.0039 - .0055	.0047 - .0071		.0055 - .0079	
	7		230	197	RPM(10xD~20xD)	7430		5570	4460		3710	
					RPM(25xD~30xD)	6370		4770	3820		3180	
					FEED	.0024 - .0039		.0031 - .0047	.0039 - .0063		.0047 - .0071	
	8		181	165	RPM(10xD~20xD)	5840		4380	3500		2920	
					RPM(25xD~30xD)	5310		3980	3180		2650	
					FEED	.0024 - .0039		.0031 - .0047	.0039 - .0063		.0047 - .0071	
	10	High alloyed steel, and tool steel	197	165	RPM(10xD~20xD)	6370		4770	3820		3180	
					RPM(25xD~30xD)	5310		3980	3180		2650	
					FEED	.0020 - .0035		.0028 - .0043	.0031 - .0055		.0039 - .0063	
	11		165	148	RPM(10xD~20xD)	5310		3980	3180		2650	
					RPM(25xD~30xD)	4770		3580	2860		2390	
					FEED	.0016 - .0031		.0024 - .0039	.0028 - .0051		.0031 - .0055	
K	15	Grey cast iron	296	247	RPM(10xD~20xD)	9550		7160	5730		4770	
					RPM(25xD~30xD)	7960		5970	4770		3980	
					FEED	.0039 - .0055		.0047 - .0063	.0067 - .0091		.0075 - .0098	
	16		230	197	RPM(10xD~20xD)	7430		5570	4460		3710	
					RPM(25xD~30xD)	6370		4770	3820		3180	
					FEED	.0039 - .0055		.0047 - .0063	.0067 - .0091		.0075 - .0098	
	17	Nodular cast iron	329	263	RPM(10xD~20xD)	10610		7960	6370		5310	
					RPM(25xD~30xD)	8490		6370	5090		4240	
					FEED	.0039 - .0055		.0047 - .0063	.0067 - .0091		.0075 - .0098	
	18		230	197	RPM(10xD~20xD)	7430		5570	4460		3710	
					RPM(25xD~30xD)	6370		4770	3820		3180	
					FEED	.0031 - .0047		.0039 - .0055	.0047 - .0071		.0055 - .0079	
	19	Malleable cast iron	263	214	RPM(10xD~20xD)	8490		6370	5090		4240	
					RPM(25xD~30xD)	6900		5170	4140		3450	
					FEED	.0039 - .0055		.0047 - .0063	.0067 - .0091		.0075 - .0098	
	20		230	181	RPM(10xD~20xD)	7430		5570	4460		3710	
					RPM(25xD~30xD)	5840		4380	3500		2920	
					FEED	.0031 - .0047		.0039 - .0055	.0047 - .0071		.0055 - .0079	

▶ NEXT PAGE

DH510, DH515, DH520, DHM10, DHM15
DHM20, DHM25, DHM30 SERIES with COOLANT HOLES

SFM = ft/min.
RPM = rev./min.
FEED = inch/rev.

ISO	VDI 3323	SFM 10xD ~20xD	SFM 25xD ~30xD	Drill Diameter							
				METRIC	-	8.0	-	10.0	12.0	-	14.0
				FRACTIONAL	5/16	-	3/8	-	-	1/2	-
				DECIMAL	.3125	.3150	.3750	.3937	.4724	.5000	.5512
P	1	395	329	RPM(10xD~20xD)	4770		3820		3180	3020	2730
				RPM(25xD~30xD)	3980		3180		2650	2510	2270
				FEED	.0071 - .0094		.0079 - .0102		.0087 - .0102	.0087 - .0102	.0098 - .0122
	2	329	263	RPM(10xD~20xD)	3980		3180		2650	2510	2270
				RPM(25xD~30xD)	3180		2550		2120	2010	1820
				FEED	.0071 - .0094		.0079 - .0102		.0087 - .0102	.0087 - .0102	.0098 - .0122
	3	263	214	RPM(10xD~20xD)	3180		2550		2120	2010	1820
				RPM(25xD~30xD)	2590		2070		1720	1630	1480
				FEED	.0055 - .0079		.0063 - .0087		.0071 - .0094	.0071 - .0094	.0079 - .0102
	6	329	329	RPM(10xD~20xD)	3980		3180		2650	2510	2270
				RPM(25xD~30xD)	3980		3180		2650	2510	2270
				FEED	.0071 - .0094		.0079 - .0102		.0087 - .0102	.0087 - .0102	.0098 - .0122
	7	230	197	RPM(10xD~20xD)	2790		2230		1860	1760	1590
				RPM(25xD~30xD)	2390		1910		1590	1510	1360
				FEED	.0055 - .0079		.0063 - .0087		.0071 - .0094	.0071 - .0094	.0079 - .0102
	8	181	165	RPM(10xD~20xD)	2190		1750		1460	1380	1250
				RPM(25xD~30xD)	1990		1590		1330	1260	1140
				FEED	.0055 - .0079		.0063 - .0087		.0071 - .0094	.0071 - .0094	.0079 - .0102
	10	197	165	RPM(10xD~20xD)	2390		1910		1590	1510	1360
				RPM(25xD~30xD)	1990		1590		1330	1260	1140
				FEED	.0047 - .0071		.0055 - .0079		.0063 - .0087	.0063 - .0087	.0071 - .0094
	11	165	148	RPM(10xD~20xD)	1990		1590		1330	1260	1140
				RPM(25xD~30xD)	1790		1430		1190	1130	1020
				FEED	.0039 - .0063		.0047 - .0071		.0051 - .0075	.0051 - .0075	.0059 - .0083
K	15	296	247	RPM(10xD~20xD)	3580		2860		2390	2260	2050
				RPM(25xD~30xD)	2980		2390		1990	1890	1710
				FEED	.0087 - .0110		.0094 - .0118		.0110 - .0134	.0110 - .0134	.0118 - .0142
	16	230	197	RPM(10xD~20xD)	2790		2230		1860	1760	1590
				RPM(25xD~30xD)	2390		1910		1590	1510	1360
				FEED	.0087 - .0110		.0094 - .0118		.0110 - .0134	.0110 - .0134	.0118 - .0142
	17	329	263	RPM(10xD~20xD)	3980		3180		2650	2510	2270
				RPM(25xD~30xD)	3180		2550		2120	2010	1820
				FEED	.0087 - .0110		.0094 - .0118		.0110 - .0134	.0110 - .0134	.0118 - .0142
	18	230	197	RPM(10xD~20xD)	2790		2230		1860	1760	1590
				RPM(25xD~30xD)	2390		1910		1590	1510	1360
				FEED	.0071 - .0094		.0079 - .0102		.0087 - .0102	.0087 - .0102	.0098 - .0122
	19	263	214	RPM(10xD~20xD)	3180		2550		2120	2010	1820
				RPM(25xD~30xD)	2590		2070		1720	1630	1480
				FEED	.0087 - .0110		.0094 - .0118		.0110 - .0134	.0110 - .0134	.0118 - .0142
	20	230	181	RPM(10xD~20xD)	2790		2230		1860	1760	1590
				RPM(25xD~30xD)	2190		1750		1460	1380	1250
				FEED	.0071 - .0094		.0079 - .0102		.0087 - .0102	.0087 - .0102	.0098 - .0122

Global Cutting Tool Leader **YG-1**

DREAM DRILLS

Leading Through Innovation

SOLID CARBIDE

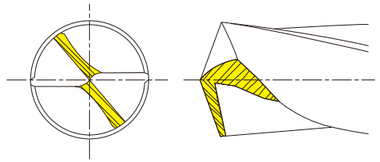
DREAM DRILLS
for HIGH HARDENED STEELS

- For High Hardened Steels (HRc50 to HRc70)

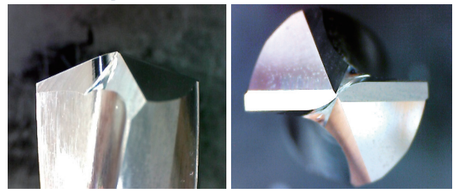
DREAM DRILLS for HIGH HARDENED STEELS

Low Helix
The low Helix angle maximizes tools' rigidity and stability with less deflection

Special Thinning (R+U Thinning)
Unique drill point geometry with special thinning to minimize cutting workload, axial thrust loading and heat generation.



Coating
TiAlN Nano-Layer Coating combines high hardness with high thermal stability against oxidation, allows machining the upper level of hardened steels HRc50-HRc70.

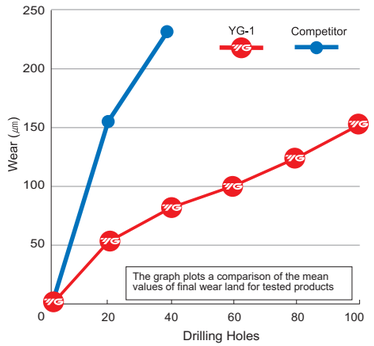
Point Shape


Polished Flutes
Polished flutes improve coating addition, with better chip control and evacuation.

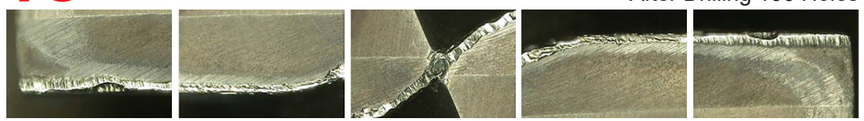
CASE STUDY

Cutting Condition

Size	Ø10 × Ø10 × 63 × 111
Work Material	- AISI : H13 - DIN : X155CrV-Mo12-1(HRc60) - JIS : SKD11
RPM	380 rev./min.
SFM	39 ft/min.
Feed	.0016 inch/rev.
Drilling Depth	.98˝ (2.5xD)
Coolant	Wet Cut

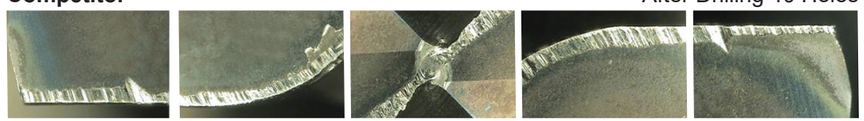


After Drilling 100 Holes



Competitor

After Drilling 40 Holes



TiAlN-COATED SOLID CARBIDE

DREAM DRILLS for HIGH HARDENED STEELS (HRc50 ~ HRc70)

SERIES **DH501**

- ▶ Drilling for High Hardened Steels; Quenched Steels, Tempered Steels (under HRc70)
- ▶ Special geometry design for Hardened Steels
- ▶ Minimum of cutting load through special thinning
- ▶ Performing good chip removal and powerful drilling

CARBIDE | 15° | h6 | h7 | 140° | TiAlN p.182

SHORT 3×D

Unit : inch

EDP No.	Drill Diameter Fractional	Drill Diameter Decimal	Shank Diameter	Flute Length	Overall Length
TiAlN	D1		D2	L1	L2
DH501001	1/8	.1250	1/8	21/32	2
DH501002	#30	.1285	3/16	23/32	2
DH501003	#29	.1360	3/16	13/16	2
DH501004	#28	.1405	3/16	13/16	2
DH501005	9/64	.1406	3/16	13/16	2
DH501006	#27	.1440	3/16	13/16	2
DH501007	#26	.1470	3/16	13/16	2
DH501008	#25	.1495	3/16	7/8	2-1/16
DH501009	#24	.1520	3/16	7/8	2-1/16
DH501010	#23	.1540	3/16	7/8	2-1/16
DH501011	5/32	.1562	3/16	7/8	2-1/16
DH501012	#22	.1570	3/16	7/8	2-1/16
DH501013	#21	.1590	3/16	7/8	2-1/16
DH501014	#20	.1610	3/16	1	2-1/2
DH501015	#19	.1660	3/16	1	2-1/2
DH501016	11/64	.1719	3/16	1-1/8	2-3/4
DH501017	#15	.1800	3/16	1-1/8	2-3/4
DH501018	#14	.1820	3/16	1-1/8	2-3/4
DH501019	3/16	.1875	3/16	1-1/8	2-3/4
DH501020	#10	.1935	1/4	1-9/32	2-7/8
DH501021	#9	.1960	1/4	1-9/32	2-7/8
DH501022	#8	.1990	1/4	1-9/32	2-7/8
DH501023	#7	.2010	1/4	1-9/32	2-7/8
DH501024	13/64	.2031	1/4	1-9/32	2-7/8
DH501025	#6	.2040	1/4	1-9/32	2-7/8
DH501026	#5	.2055	1/4	1-9/32	2-7/8

EDP No.	Drill Diameter Fractional	Drill Diameter Decimal	Shank Diameter	Flute Length	Overall Length
TiAlN	D1		D2	L1	L2
DH501027	#4	.2090	1/4	1-9/32	2-7/8
DH501028	#3	.2130	1/4	1-13/32	3
DH501029	7/32	.2188	1/4	1-13/32	3
DH501030	#2	.2210	1/4	1-13/32	3
DH501031	#1	.2280	1/4	1-13/32	3
DH501032	15/64	.2344	1/4	1-13/32	3
DH501033	B	.2380	1/4	1-19/32	3-1/8
DH501034	C	.2420	1/4	1-19/32	3-1/8
DH501035	D	.2460	1/4	1-19/32	3-1/8
DH501036	1/4	.2500	1/4	1-19/32	3-1/8
DH501037	F	.2570	3/8	1-19/32	3-1/8
DH501038	G	.2610	3/8	1-19/32	3-1/8
DH501039	17/64	.2656	3/8	1-19/32	3-1/8
DH501040	I	.2720	3/8	1-25/32	3-3/8
DH501041	J	.2770	3/8	1-25/32	3-3/8
DH501042	9/32	.2812	3/8	1-25/32	3-3/8
DH501043	L	.2900	3/8	1-25/32	3-3/8
DH501044	M	.2950	3/8	1-25/32	3-3/8
DH501045	19/64	.2969	3/8	1-25/32	3-3/8
DH501046	N	.3020	3/8	1-31/32	3-7/8
DH501047	5/16	.3125	3/8	1-31/32	3-7/8
DH501048	O	.3160	3/8	1-31/32	3-7/8
DH501049	21/64	.3281	3/8	1-31/32	3-7/8
DH501050	Q	.3320	3/8	1-31/32	3-7/8
DH501051	R	.3390	3/8	2-1/4	4-1/8
DH501052	11/32	.3438	3/8	2-1/4	4-1/8

▶ NEXT PAGE

◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended																				

ISO	N										S							H				
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel			Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39.1	39.3	40	41
HRc											15	30	25	38	34			55	60	70	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630		400	550
Recommended																		◎	◎	◎		

DREAM DRILLS for HIGH HARDENED STEELS

TiAlN-COATED SOLID CARBIDE

DREAM DRILLS for HIGH HARDENED STEELS (HRc50 ~ HRc70)

SERIES **DH501**

- ▶ Drilling for High Hardened Steels; Quenched Steels, Tempered Steels (under HRc70)
- ▶ Special geometry design for Hardened Steels
- ▶ Minimum of cutting load through special thinning
- ▶ Performing good chip removal and powerful drilling

CARBIDE | 15° | h6 | h7 | 140° | TiAlN | p.182

SHORT 3 × D

Unit : inch

EDP No.	Drill Diameter		Shank Diameter	Flute Length	Overall Length
	Fractional	Decimal			
TiAlN	D1		D2	L1	L2
DH501053	23/64	.3594	3/8	2-1/4	4-1/8
DH501054	U	.3680	3/8	2-1/4	4-1/8
DH501055	3/8	.3750	3/8	2-1/4	4-1/8
DH501056	V	.3770	1/2	2-1/2	4-3/8
DH501057	25/64	.3906	1/2	2-1/2	4-3/8
DH501058	X	.3970	1/2	2-1/2	4-3/8
DH501059	Y	.4040	1/2	2-1/2	4-3/8
DH501060	13/32	.4062	1/2	2-1/2	4-3/8
DH501061	Z	.4130	1/2	2-1/2	4-3/8
DH501062	27/64	.4219	1/2	2-13/16	4-5/8
DH501063	7/16	.4375	1/2	2-13/16	4-5/8
DH501064	29/64	.4531	1/2	2-13/16	4-5/8
DH501065	15/32	.4688	1/2	2-13/16	4-5/8
DH501066	31/64	.4844	1/2	2-13/16	4-5/8
DH501067	1/2	.5000	1/2	3-1/16	5
DH501068	33/64	.5156	5/8	3-1/16	5

EDP No.	Drill Diameter		Shank Diameter	Flute Length	Overall Length
	Fractional	Decimal			
TiAlN	D1		D2	L1	L2
DH501069	17/32	.5312	5/8	3-1/16	5
DH501070	35/64	.5469	5/8	3-1/16	5
DH501071	9/16	.5625	5/8	3-1/16	5
DH501072	37/64	.5781	5/8	3-9/32	5-1/4
DH501073	19/32	.5937	5/8	3-9/32	5-1/4
DH501074	39/64	.6094	5/8	3-9/32	5-1/4
DH501075	5/8	.6250	5/8	3-9/32	5-1/4
DH501076	41/64	.6406	3/4	3-9/32	5-1/4
DH501077	21/32	.6563	3/4	3-11/16	5-5/8
DH501078	43/64	.6719	3/4	3-11/16	5-5/8
DH501079	11/16	.6875	3/4	3-11/16	5-5/8
DH501080	45/64	.7031	3/4	3-11/16	5-5/8
DH501081	23/32	.7188	3/4	3-3/4	6
DH501082	47/64	.7344	3/4	3-3/4	6
DH501083	3/4	.7500	3/4	3-3/4	6

◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended																				

ISO	N										S							H				
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel			Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39.1	39.3	40	41
HRc											15	30	25	38	34			55	60	70	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630		400	550
Recommended																		◎	◎	◎		

TiAlN-COATED SOLID CARBIDE

DREAM DRILLS for HIGH HARDENED STEELS (HRc50 ~ HRc70)

SERIES **DH500**

- ▶ Drilling for High Hardened Steels; Quenched Steels, Tempered Steels (under HRc70)
- ▶ Special geometry design for Hardened Steels
- ▶ Minimum of cutting load through special thinning
- ▶ Performing good chip removal and powerful drilling

CARBIDE | 15° | h6 | h7 | 140° | TiAlN | p.182

SHORT 3 × D

Unit : mm

EDP No.	Drill Diameter		Shank Diameter	Flute Length	Overall Length
	Metric	Decimal			
TiAlN	D1		D2	L1	L2
DH500010	1.0	.0394	3	6	40
DH500011	1.1	.0433	3	6	40
DH500012	1.2	.0472	3	6	40
DH500013	1.3	.0512	3	8	40
DH500014	1.4	.0551	3	8	40
DH500015	1.5	.0591	3	8	40
DH500016	1.6	.0630	3	10	40
DH500017	1.7	.0669	3	10	40
DH500018	1.8	.0709	3	10	40
DH500019	1.9	.0748	3	10	40
DH500020	2.0	.0787	3	12	42
DH500025	2.5	.0984	3	14	44
DH500026	2.6	.1024	3	16	44
DH500028	2.8	.1102	3	16	46
DH500030	3.0	.1181	3	18	46
DH500033	3.3	.1299	4	18	48
DH500034	3.4	.1339	4	20	50
DH500035	3.5	.1378	4	20	50
DH500038	3.8	.1496	4	22	52
DH500040	4.0	.1575	4	22	52
DH500041	4.1	.1614	6	25	65
DH500042	4.2	.1654	6	25	65
DH500043	4.3	.1693	6	28	68
DH500044	4.4	.1732	6	28	68
DH500045	4.5	.1772	6	28	68
DH500046	4.6	.1811	6	28	68
DH500048	4.8	.1890	6	32	72
DH500049	4.9	.1929	6	32	72
DH500050	5.0	.1969	6	32	72

EDP No.	Drill Diameter		Shank Diameter	Flute Length	Overall Length
	Metric	Decimal			
TiAlN	D1		D2	L1	L2
DH500051	5.1	.2008	6	32	72
DH500052	5.2	.2047	6	32	72
DH500053	5.3	.2087	6	32	72
DH500055	5.5	.2165	6	35	75
DH500060	6.0	.2362	6	35	75
DH500062	6.2	.2441	8	40	80
DH500065	6.5	.2559	8	40	80
DH500068	6.8	.2677	8	45	85
DH500069	6.9	.2717	8	45	85
DH500070	7.0	.2756	8	45	85
DH500075	7.5	.2953	8	45	85
DH500080	8.0	.3150	8	50	98
DH500085	8.5	.3346	10	50	98
DH500086	8.6	.3386	10	57	105
DH500088	8.8	.3465	10	57	105
DH500090	9.0	.3543	10	57	105
DH500093	9.3	.3661	10	57	105
DH500095	9.5	.3740	10	57	105
DH500100	10.0	.3937	10	63	111
DH500102	10.2	.4016	12	63	111
DH500103	10.3	.4055	12	63	111
DH500105	10.5	.4134	12	71	111
DH500108	10.8	.4252	12	71	119
DH500110	11.0	.4331	12	71	119
DH500115	11.5	.4528	12	71	119
DH500120	12.0	.4724	12	71	119
DH500121	12.1	.4764	14	77	125
DH500140	14.0	.5512	14	77	125

◎ : Exclient ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended																				

ISO	N										S							H				
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel			Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39.1	39.3	40	41
HRc											15	30	25	38	34			55	60	70	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630		400	550
Recommended																		◎	◎	◎		

DH501, DH500 SERIES without COOLANT HOLES

SFM = ft/min.
RPM = rev./min.
FEED = inch/rev.

ISO	VDI 3323	Material Description	SFM	Drill Diameter										
				METRIC	3.0	-	4.0	-	5.0	6.0	-	-	8.0	-	10.0
				FRACTIONAL	-	1/8	-	3/16	-	-	1/4	5/16	-	3/8	-
				DECIMAL	.1181	.1250	.1575	.1875	.1969	.2362	.2500	.3125	.3150	.3750	.3937
H	38	Hardened steel	66	RPM	2120		1590	1270		1060		800		640	
				FEED	.0004 - .0012		.0004 - .0016	.0004 - .0016		.0004 - .0020		.0004 - .0020		.0004 - .0020	
	39.1		49	RPM	1590		1190	950		800		600		480	
				FEED	.0004 - .0012		.0004 - .0016	.0004 - .0016		.0004 - .0020		.0004 - .0020		.0004 - .0020	
	39.3		39	RPM	1270		950	760		640		480		380	
				FEED	.0004 - .0012		.0004 - .0016	.0004 - .0016		.0004 - .0020		.0004 - .0020		.0004 - .0020	

ISO	VDI 3323	Material Description	SFM	Drill Diameter								
				METRIC	12.0	-	14.0	-	-	16.0	18.0	-
				FRACTIONAL	-	1/2	-	9/16	5/8	-	-	3/4
				DECIMAL	.4724	.5000	.5512	.5625	.6250	.6299	.7087	.7500
H	38	Hardened steel	66	RPM	530	504	450		403		356	336
				FEED	.0004 - .0024	.0004 - .0024	.0004 - .0024		.0004 - .0024		.0004 - .0024	.0004 - .0024
	39.1		49	RPM	400	374	340		299		299	250
				FEED	.0004 - .0024	.0004 - .0024	.0004 - .0024		.0004 - .0024		.0004 - .0024	.0004 - .0024
	39.3		39	RPM	320	298	270		238		238	199
				FEED	.0004 - .0024	.0004 - .0024	.0004 - .0024		.0004 - .0024		.0004 - .0024	.0004 - .0024

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