

YE-DD24

EUROPE



SOLID CARBIDE DREAM DRILLS

- PRO** with/without Coolant Holes
- NEW X** with/without Coolant Holes
- GENERAL** with/without Coolant Holes
- HIGH FEED** with Coolant Holes
- FLAT BOTTOM** with/without Coolant Holes
- INOX** with Coolant Holes
- ALU** with Coolant Holes
- MQL TYPE** with Coolant Holes(10xD - 40xD)
- for **HIGH HARDENED STEELS** HRc50-70



1st-cut

Andreas Stolze e.K.

Prozessoptimierung
Zerspanungslösung
Werkzeugvertrieb



Fragen zum Produkt oder
Individuelles Angebot?

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+49 15174271616
Mail: info@1st-cut.de

Andreas Stolze
Anwendungsspezialist

www.1st-cut.de

SERIES
DRILLING DEPTH
TOOL MATERIAL
LENGTH
SIZE MIN
SIZE MAX
PAGE

	HIGH FEED		FLAT BOTTOM	
	DGR493	DGR495	DPP447	DH450
DRILLING DEPTH	3XD	5XD	2XD	5XD
TOOL MATERIAL	CARBIDE		CARBIDE	
LENGTH	SHORT	LONG	SHORT	LONG
SIZE MIN	D5.0	D5.0	D3.0	D3.0
SIZE MAX	D20.0	D20.0	D20.0	D20.0
PAGE	66	68	74	76
SURFACE TREATMENT	H-Coating		X-Coating	TiAlN

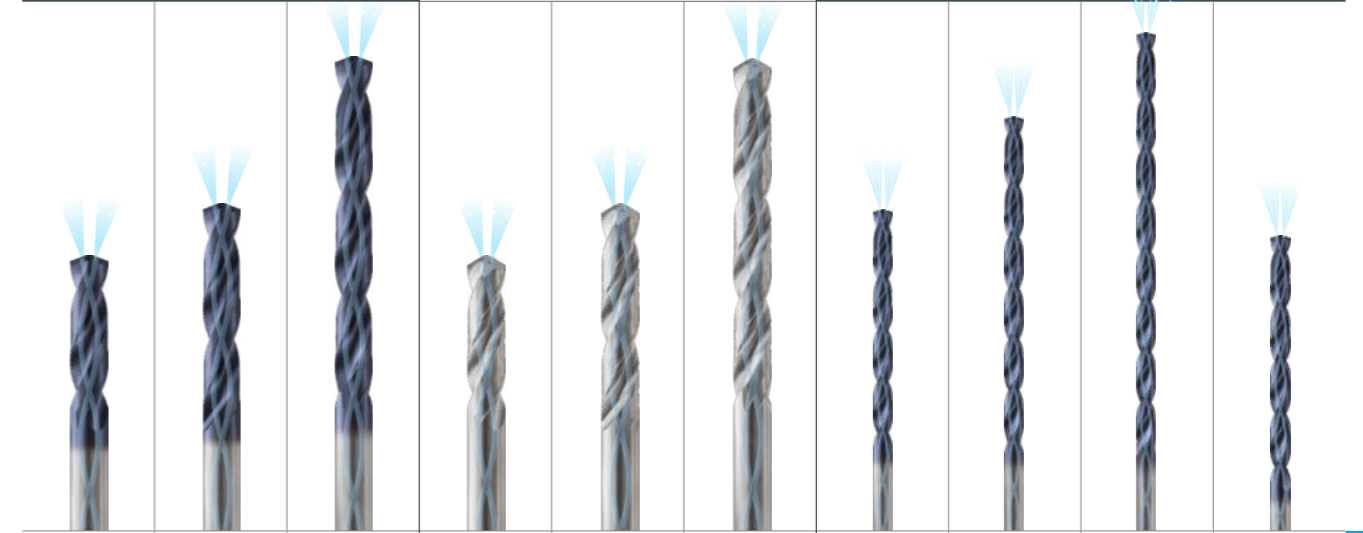
SOLID CARBIDE DREAM DRILLS

Please visit globalyg1.com/mat for material search

◎ : Excellent ○ : Good

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		Ferritic	130		◎	◎			
	20		Malleable cast iron	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		Annealed	250	25					
	34		Ni or Co Based	Cured	350	38				
	35		Cast	320	34					
	36	Titanium Alloys	Pure Titanium	400 Rm						
	37		Alpha + Beta Alloys	Hardened	1050 Rm					
H	38	Hardened steel	Hardened	550	55					
	39		Hardened	630	60					
	40	Hardened Cast Iron	Cast	400	42					
	41		Hardened	550	55					

INOX			ALU			MQL TYPE			
DH451	DH452	DH453	D5432	D5433	D5434	DH510	DH515	DH520	DHM10
3XD	5XD	8XD	3XD	5XD	8XD	10XD	15XD	20XD	10XD
CARBIDE			CARBIDE			CARBIDE			
SHORT	LONG	EXTRA LONG	SHORT	LONG	EXTRA LONG	EXTRA LONG			
D3.0	D1.0	D3.0	D3.0	D3.0	D3.0	D3.0	D3.0	D3.0	D3.0
D20.0	D20.0	D14.0	D20.0	D20.0	D14.0	D14.0	D12.0	D12.0	D14.0
84	86	89	96	98	100	106	107	107	108
TiAlN			Bright			TiAlN			



◎	◎	◎				◎	◎	◎	◎	1
◎	◎	◎				◎	◎	◎	◎	2
○	○	○				○	○	○	○	3
										4
										5
◎	◎	◎				◎	◎	◎	◎	6
○	○	○				○	○	○	○	7
						○	○	○	○	8
						○	○	○	○	9
						○	○	○	○	10
						○	○	○	○	11
◎	◎	◎								12
◎	◎	◎								13
◎	◎	◎								14
						◎	◎	◎	◎	15
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						○	○	○	○	20
◎	◎	◎	◎	◎	◎					21
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○	○	○								37
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										40
										41

GUIDE LINE TO ICONS

Standard of Tools

DIN 6539

Number of DIN Standard

Coolant Supply Pressure

45 bar

20 bar

Tool Material

CARBIDE

Point Angle

140°

Surface Treatment

TiAIN

Titanium Aluminum Nitride Coating

RCH-Coating

YG-1 RCH-Coating

X-Coating

YG-1 X-Coating

H-Coating

YG-1 H-Coating

Diamond

Diamond Coating

Bright

Bright Finish

Tolerance of Dimension

m7

Tolerance of Outside Diameter

h6

Tolerance of Shank Diameter

Cutting Condition

Green

YG
SELECTION GUIDE
METRIC

SERIES
DRILLING DEPTH
TOOL MATERIAL
LENGTH
SIZE MIN
SIZE MAX
PAGE

SERIES	MQL TYPE				HARDENED STEEL
	DHM15	DHM20	DHM25	DHM30	DH500
DRILLING DEPTH	15XD	20XD	25XD	30XD	3XD
TOOL MATERIAL	CARBIDE				CARBIDE
LENGTH	EXTRA LONG				SHORT
SIZE MIN	D3.0	D3.0	D3.0	D3.0	D2.6
SIZE MAX	D12.0	D12.0	D10.0	D8.0	D14.0
PAGE	108	108	109	109	114

SURFACE TREATMENT

TiAIN

TiAIN

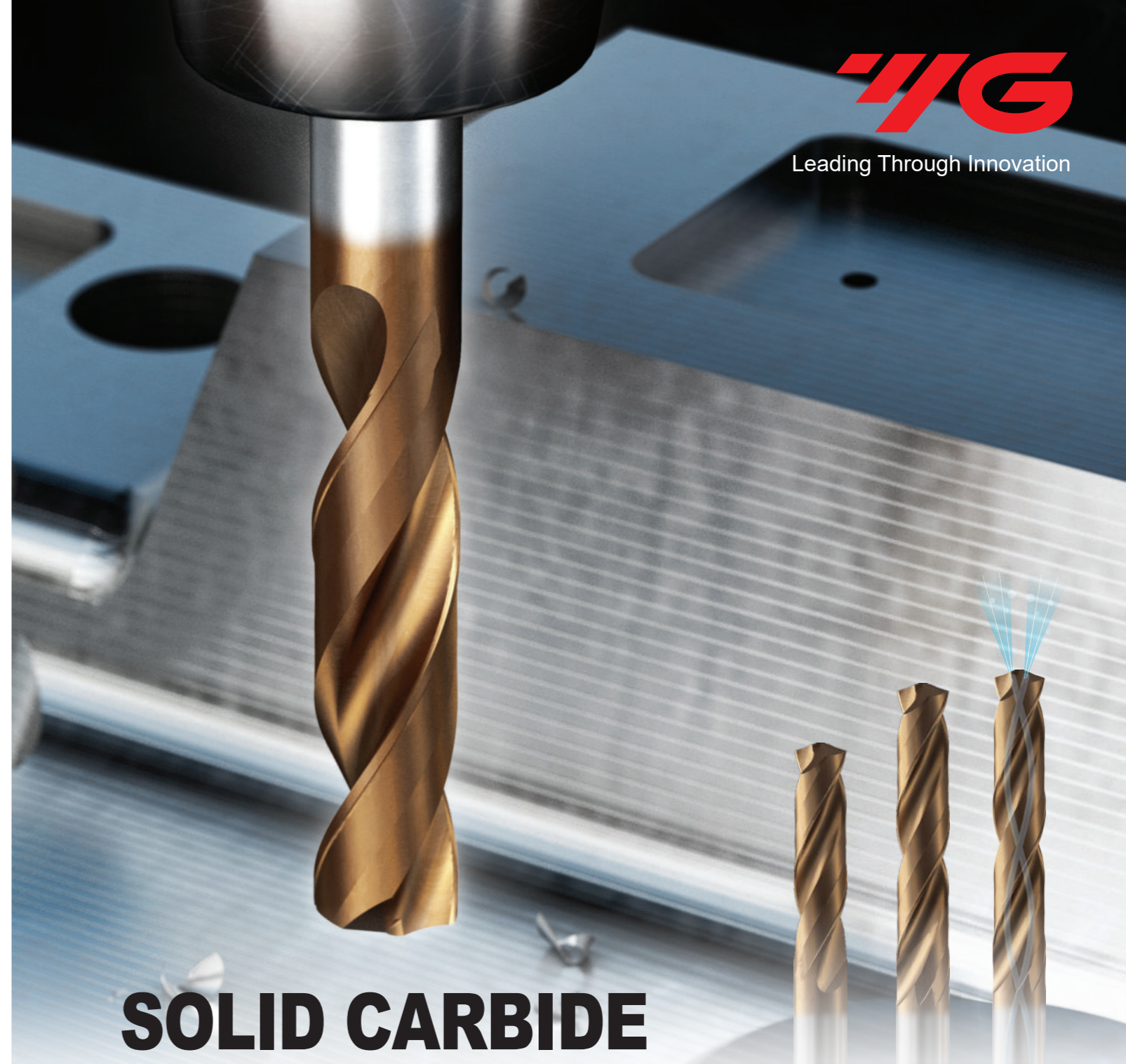
**SOLID CARBIDE
DREAM
DRILLS**

© : Excellent ○ : Good



Please visit globalyg1.com/mat for material search

ISO 3323	Material Description	Composition / Structure / Heat Treatment	HB	HRc						
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	○	○	○	○	
12	Stainless steel	Ferritic / Martensitic	Annealed	200	15					
13		Martensitic	Quenched & Tempered	240	23					
14		Austenitic		180	10					
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	○	○	○	○	
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	Cutting Alloys, PB>1%		110						
27		CuZn, CuSnZn (Brass)		90						
28	(Bronze / Brass)	CuSn, lead-free copper and electrolytic copper		100						
29	Non Metallic Materials	Duroplastic, Fiber Reinforced Plastic								
30		Rubber, Wood, etc.								
31	Heat Resistant Super Alloys	Fe Based	Annealed	200	15					
32			Cured	280	30					
33			Annealed	250	25					
34		Ni or Co Based	Cured	350	38					
35			Cast		320	34				
36	Titanium Alloys	Pure Titanium		400 Rm						
37		Alpha + Beta Alloys	Hardened	1050 Rm						
38	Hardened steel		Hardened	550	55				○	
39			Hardened	630	60				○	
40	Hardened Cast Iron		Cast	400	42					
41			Hardened	550	55					

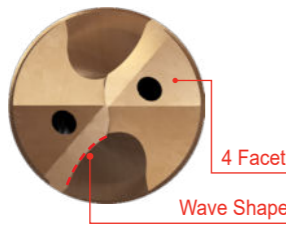


SOLID CARBIDE

**DREAM DRILLS
-PRO**

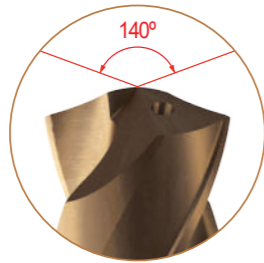
- For General Purpose (up to HRc50)
- Extremely High hardness and Heat resistance due to YG-1 special Z-Coating technology

DREAM DRILLS PRO



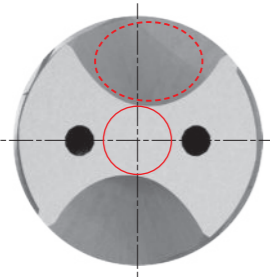
Wave Shape Cutting Edge

- Improve Chip Formation
- Low Cutting Force



140 Degree Point Angle

- Provides Edge Strength and Exceptional Tool Life
- Good Self Centering
- Low Torque

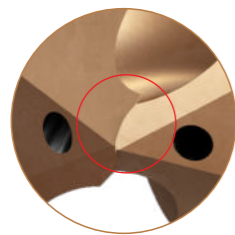


Optimized Wide Flute Design

The Unique Flute Structure provides Good Surface Finish, Longer Tool Life and requires Less Cutting Force



Radius Shape



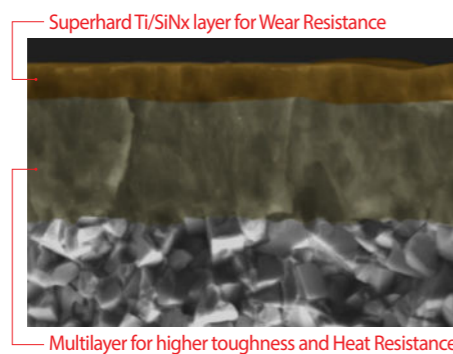
Helical Thinning

- Low Thrust
- Stable Torque
- Good Chip Breakage

Higher & Improved Cutting Conditions due to YG-1 Special Z-Coating Technology

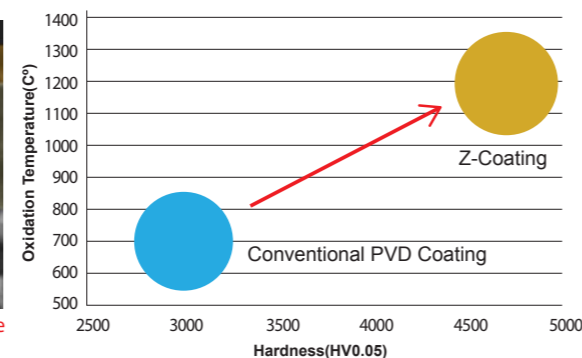
(YG-1's Unique Silicon Based Coating: Nano-Layer Coating)

- Extremely High Hardness and Heat Resistance



Superhard Ti/SiNx layer for Wear Resistance

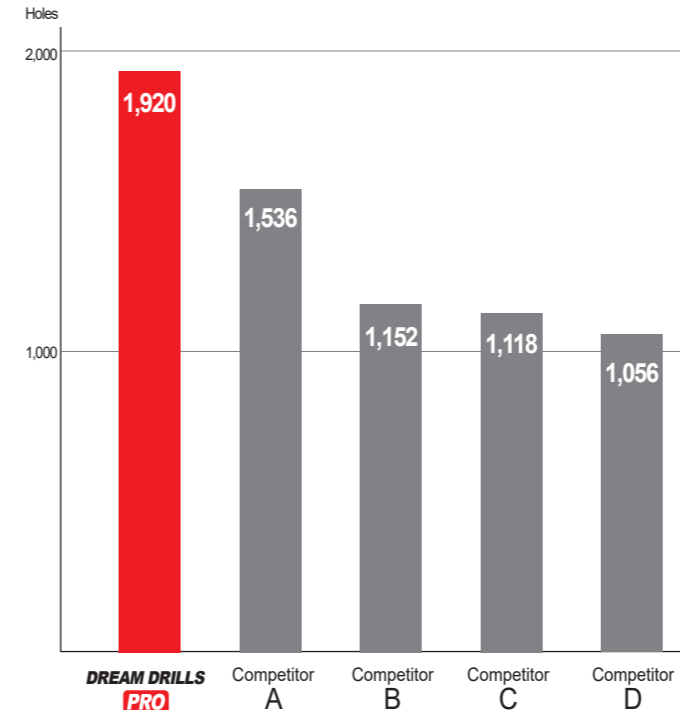
Multilayer for higher toughness and Heat Resistance



Performance Upgrade with Faster Cutting Speed

CASE STUDY

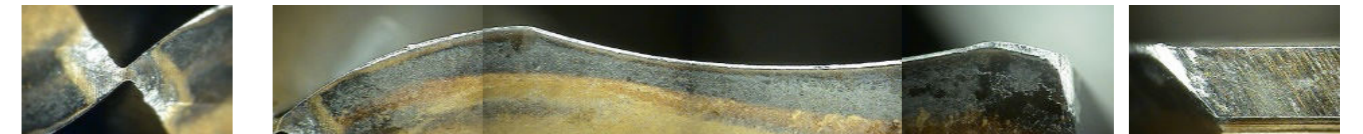
► SOLID CARBIDE DREAM DRILLS - PRO with Coolant Holes



CUTTING CONDITION	
Work Material	• DIN: 42CrMo4 • ANSI: 4140 • JIS: SCM440 (HRc30)
Drill Diameter(mm)	Ø10.0
RPM	4,458 rev./min.
Cutting Speed	140 m/min
Feed	0.30 mm/rev
Drilling Depth	45.0 mm
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



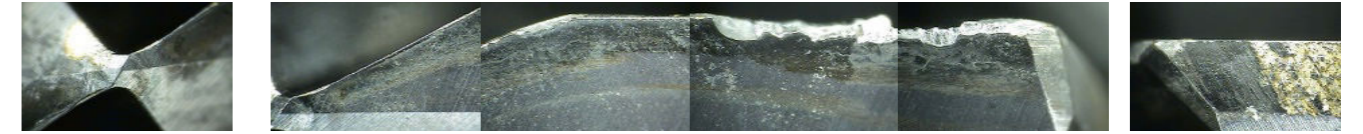
Competitor B

Total Drilling 1,152 Holes



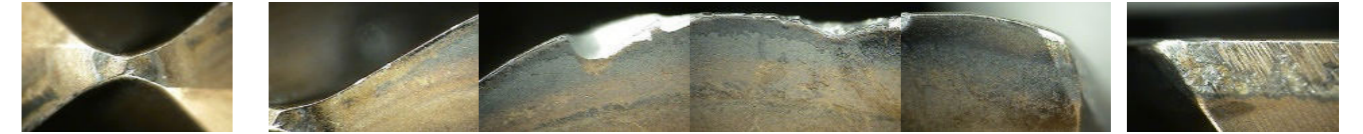
Competitor C

Total Drilling 1,118 Holes



Competitor D

Total Drilling 1,056 Holes

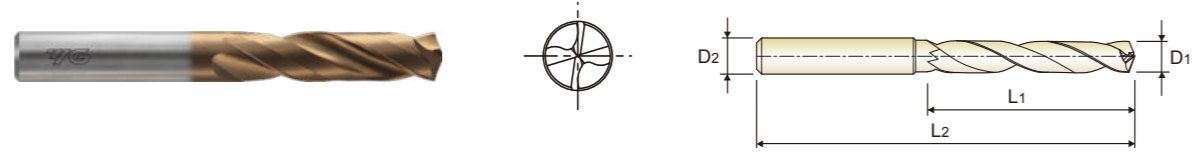


Z-COATED SOLID CARBIDE
DREAM DRILLS PRO without COOLANT HOLES (3XD)

SERIES

DGN523

- ▶ Drilling for Carbon Steels, Alloy Steels (HB225-325), Pre-hardened Steels (HRC30-50), 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° Z Coating p.20

SHORT
3 × D

EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length	EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
DGN523030	3.0	6	20	62	DGN523060	6.0	6	28	66
DGN523031	3.1	6	20	62	DGN523061	6.1	8	34	79
DGN523032	3.2	6	20	62	DGN523062	6.2	8	34	79
DGN523033	3.3	6	20	62	DGN523063	6.3	8	34	79
DGN523034	3.4	6	20	62	DGN523064	6.4	8	34	79
DGN523035	3.5	6	20	62	DGN523065	6.5	8	34	79
DGN523036	3.6	6	20	62	DGN523066	6.6	8	34	79
DGN523037	3.7	6	20	62	DGN523067	6.7	8	34	79
DGN523038	3.8	6	24	66	DGN523068	6.8	8	34	79
DGN523039	3.9	6	24	66	DGN523069	6.9	8	34	79
DGN523040	4.0	6	24	66	DGN523070	7.0	8	34	79
DGN523041	4.1	6	24	66	DGN523071	7.1	8	41	79
DGN523042	4.2	6	24	66	DGN523072	7.2	8	41	79
DGN523043	4.3	6	24	66	DGN523073	7.3	8	41	79
DGN523044	4.4	6	24	66	DGN523074	7.4	8	41	79
DGN523045	4.5	6	24	66	DGN523075	7.5	8	41	79
DGN523046	4.6	6	24	66	DGN523076	7.6	8	41	79
DGN523047	4.7	6	24	66	DGN523077	7.7	8	41	79
DGN523048	4.8	6	28	66	DGN523078	7.8	8	41	79
DGN523049	4.9	6	28	66	DGN523079	7.9	8	41	79
DGN523050	5.0	6	28	66	DGN523080	8.0	8	41	79
DGN523051	5.1	6	28	66	DGN523081	8.1	10	47	89
DGN523052	5.2	6	28	66	DGN523082	8.2	10	47	89
DGN523053	5.3	6	28	66	DGN523083	8.3	10	47	89
DGN523054	5.4	6	28	66	DGN523084	8.4	10	47	89
DGN523055	5.5	6	28	66	DGN523085	8.5	10	47	89
DGN523056	5.6	6	28	66	DGN523086	8.6	10	47	89
DGN523057	5.7	6	28	66	DGN523087	8.7	10	47	89
DGN523058	5.8	6	28	66	DGN523088	8.8	10	47	89
DGN523059	5.9	6	28	66	DGN523089	8.9	10	47	89

▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

ISO	P										M				K						
	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	30	10	29	32	38	15	35	15	23	10	10	26	3	25	21	21	
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230	
Recommended	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	

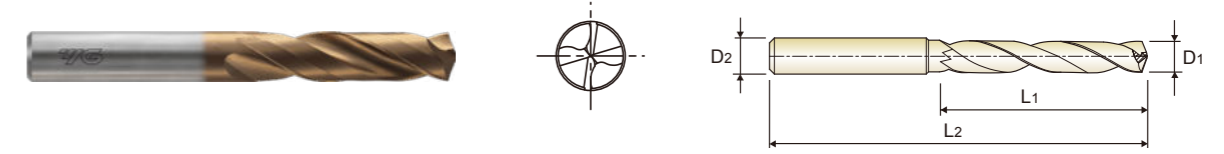
ISO	N										S						H				
	Aluminum-wrought alloy		Aluminum-cast alloyed			Copper and Copper Alloys (Bronze / Brass)					Non Metallic Materials		Heat Resistant Super Alloys				Titanium Alloys		Hardened steel	Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRC	13	25	28	32	30	10	29	32	38	15	35	15	23	10	10	26	3	25	21	21	
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400Rm	1050Rm	550	630	400	550
Recommended	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎

Z-COATED SOLID CARBIDE
DREAM DRILLS PRO without COOLANT HOLES (3XD)

SERIES

DGN523

- ▶ Drilling for Carbon Steels, Alloy Steels (HB225-325), Pre-hardened Steels (HRC30-50), 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° Z Coating p.20

SHORT
3 × D

EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length	EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
DGN523090	9.0	10	47	89	DGN523120	12.0	12	55	102
DGN523091	9.1	10	47	89	DGN523123	12.3	14	60	107
DGN523092	9.2	10	47	89	DGN523125	12.5	14	60	107
DGN523093	9.3	10	47	89	DGN523128	12.8	14	60	107
DGN523094	9.4	10	47	89	DGN523130	13.0	14	60	107
DGN523095	9.5	10	47	89	DGN523135	13.5	14	60	107
DGN523096	9.6	10	47	89	DGN523138	13.8	14	60	107
DGN523097	9.7	10	47	89	DGN523140	14.0	14	60	107
DGN523098	9.8	10	47	89	DGN523145	14.5	16	65	115
DGN523099	9.9	10	47	89	DGN523148	14.8	16	65	115
DGN523100	10.0	10	47	89	DGN523150	15.0	16	65	115
DGN523101	10.1	12	55	102	DGN523155	15.5	16	65	115
DGN523102	10.2	12	55	102	DGN523158	15.8	16	65	115
DGN523103	10.3	12	55	102	DGN523160	16.0	16	65	115
DGN523104	10.4	12	55	102	DGN523165	16.5	18	73	123
DGN523105	10.5	12	55	102	DGN523168	16.8	18	73	123
DGN523106	10.6	12	55	102	DGN523170	17.0	18	73	123
DGN523107	10.7	12	55	102	DGN523175	17.5	18	73	123
DGN523108	10.8	12	55	102	DGN523178	17.8	18	73	123
DGN523109	10.9	12	55	102	DGN523180	18.0	18	73	123
DGN523110	11.0	12	55	102	DGN523185	18.5	20	79	131
DGN523111	11.1	12	55	102	DGN523190	19.0	20	79	131
DGN523112	11.2	12	55	102	DGN523195	19.5	20	79	131
DGN523113	11.3	12	55	102	DGN523198	19.8	20	79	131
DGN523114	11.4	12	55	102	DGN523200	20.0	20	79	131
DGN523115	11.5	12	55	102					
DGN523116	11.6	12	55	102					
DGN523117	11.7	12	55	102					
DGN523118	11.8	12	55	102					
DGN523119	11.9	12	55	102					

▶ Other shank types are available on your request.

◎ : Excellent ○ : Good

ISO	P										M				K						
	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	30	10	29	32	38	15	35	15	23	10	10	26	3	25	21	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				
	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	13	25	28	32	30	10	29	32	38	15	35	15	23	10	10	26	3	25	21	21	
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400Rm	1050Rm	550	630	400	550
Recommended	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎

Z-COATED SOLID CARBIDE DREAM DRILLS PRO without COOLANT HOLES (5XD)

SERIES

DGN526

- ▶ Drilling for Carbon Steels, Alloy Steels (HB225-325), Pre-hardened Steels (HRC30-50), 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° Z Coating p.20

LONG
5 × D

EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length	
				L1	L2
DGN526010	1.0	3	8	55	
DGN526011	1.1	3	12	55	
DGN526012	1.2	3	12	55	
DGN526013	1.3	3	12	55	
DGN526014	1.4	3	12	55	
DGN526015	1.5	3	16	55	
DGN526016	1.6	3	16	55	
DGN526017	1.7	3	16	55	
DGN526018	1.8	3	16	55	
DGN526019	1.9	3	16	55	
DGN526020	2.0	4	21	57	
DGN526021	2.1	4	21	57	
DGN526022	2.2	4	21	57	
DGN526023	2.3	4	21	57	
DGN526024	2.4	4	21	57	
DGN526025	2.5	4	21	57	
DGN526026	2.6	4	21	57	
DGN526027	2.7	4	21	57	
DGN526028	2.8	4	21	57	
DGN526029	2.9	4	21	57	
DGN526030	3.0	6	28	66	
DGN526031	3.1	6	28	66	
DGN526032	3.2	6	28	66	
DGN526033	3.3	6	28	66	
DGN526034	3.4	6	28	66	
DGN526035	3.5	6	28	66	
DGN526036	3.6	6	28	66	
DGN526037	3.7	6	28	66	

▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

ISO	P										M				K						
	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	30	10	29	32	38	10	15	15	23	10	10	26	3	25	21	21	
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230	
Recommended	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	

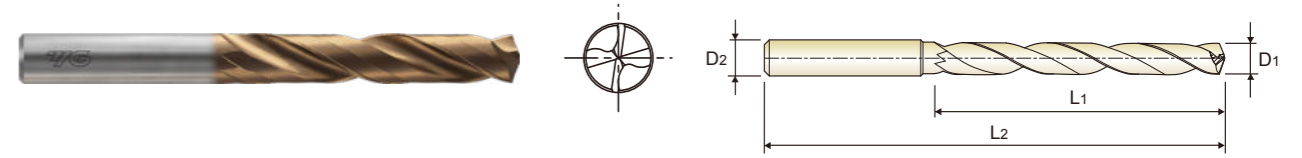
ISO	N										S						H				
	Aluminum-wrought alloy		Aluminum-cast alloyed			Copper and Copper Alloys (Bronze / Brass)		Non Metallic Materials			Heat Resistant Super Alloys			Titanium Alloys			Hardened steel	Chilled Cast Iron	Hardened Cast Iron		
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	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	400Rm	1050Rm	550	630	400	550
Recommended											◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎

Z-COATED SOLID CARBIDE DREAM DRILLS PRO without COOLANT HOLES (5XD)

SERIES

DGN526

- ▶ Drilling for Carbon Steels, Alloy Steels (HB225-325), Pre-hardened Steels (HRC30-50), 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° Z Coating p.20

LONG
5 × D

EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length	
				L1	L2
DGN526066	6.6	8	53	91	
DGN526067	6.7	8	53	91	
DGN526068	6.8	8	53	91	
DGN526069	6.9	8	53	91	
DGN526070	7.0	8	53	91	
DGN526071	7.1	8	53	91	
DGN526072	7.2	8	53	91	
DGN526073	7.3	8	53	91	
DGN526074	7.4	8	53	91	
DGN526075	7.5	8	53	91	
DGN526076	7.6	8	53	91	
DGN526077	7.7	8	53	91	
DGN526078	7.8	8	53	91	
DGN526079	7.9	8	53	91	
DGN526080	8.0	8	53	91	
DGN526081	8.1	10	61	103	
DGN526082	8.2	10	61	103	
DGN526083	8.3	10	61	103	
DGN526084	8.4	10	61	103	
DGN526085	8.5	10	61	103	
DGN526086	8.6	10	61	103	
DGN526087	8.7	10	61	103	
DGN526088	8.8	10	61	103	
DGN526089	8.9	10	61	103	
DGN526090	9.0	10	61	103	
DGN526091	9.1	10	61	103	
DGN526092	9.2	10	61	103	
DGN526093	9.3	10	61	103	

▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

ISO	P										M				K						
	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	30	10	29	32	38	10	15	15	23	10	10	26	3	25	21	21	
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230	
Recommended	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	

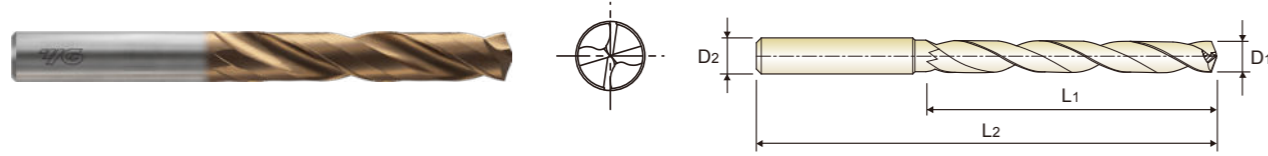
ISO	N										S						H				
	Aluminum-wrought alloy		Aluminum-cast alloyed			Copper and Copper Alloys (Bronze / Brass)		Non Metallic Materials			Heat Resistant Super Alloys			Titanium Alloys			Hardened steel	Chilled Cast Iron	Hardened Cast Iron		
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	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	400Rm	1050Rm	550	630	400	550
Recommended											◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎

Z-COATED SOLID CARBIDE DREAM DRILLS PRO without COOLANT HOLES (5XD)

SERIES

DGN526

- ▶ Drilling for Carbon Steels, Alloy Steels (HB225-325), Pre-hardened Steels (HRC30-50), 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



LONG
5 × D

EDP No.	Drill Diameter D1	Shank Diameter D2	Flute Length		Overall Length L2
			L1	L2	
DGN526125	12.5	14	77	124	124
DGN526128	12.8	14	77	124	124
DGN526130	13.0	14	77	124	124
DGN526135	13.5	14	77	124	124
DGN526138	13.8	14	77	124	124
DGN526140	14.0	14	77	124	124
DGN526142	14.2	16	83	133	133
DGN526145	14.5	16	83	133	133
DGN526148	14.8	16	83	133	133
DGN526150	15.0	16	83	133	133
DGN526151	15.1	16	83	133	133
DGN526152	15.2	16	83	133	133
DGN526155	15.5	16	83	133	133
DGN526158	15.8	16	83	133	133

Unit : mm

EDP No.	Drill Diameter D1	Shank Diameter D2	Flute Length		Overall Length L2
			L1	L2	
DGN526160	16.0	16	83	133	133
DGN526165	16.5	18	93	143	143
DGN526170	17.0	18	93	143	143
DGN526173	17.3	18	93	143	143
DGN526175	17.5	18	93	143	143
DGN526177	17.7	18	93	143	143
DGN526180	18.0	18	93	143	143
DGN526185	18.5	20	101	153	153
DGN526190	19.0	20	101	153	153
DGN526193	19.3	20	101	153	153
DGN526195	19.5	20	101	153	153
DGN526200	20.0	20	101	153	153

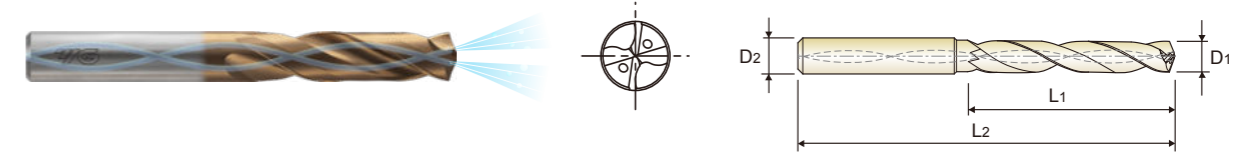
▶ Other shank types are available on your request.

Z-COATED SOLID CARBIDE DREAM DRILLS PRO with COOLANT HOLES (3XD)

SERIES

DGN506

- ▶ Drilling for Carbon Steels, Alloy Steels (HB225-325), Pre-hardened Steels (HRC30-50), 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



SHORT
3 × D

EDP No.	Drill Diameter D1	Shank Diameter D2	Flute Length		Overall Length L2
			L1	L2	
DGN506030	3.0	6	20	62	62
DGN506031	3.1	6	20	62	62
DGN506032	3.2	6	20	62	62
DGN506033	3.3	6	20	62	62
DGN506034	3.4	6	20	62	62
DGN506035	3.5	6	20	62	62
DGN506036	3.6	6	20	62	62
DGN506037	3.7	6	20	62	62
DGN506038	3.8	6	24	66	66
DGN506039	3.9	6	24	66	66
DGN506040	4.0	6	24	66	66
DGN506041	4.1	6	24	66	66
DGN506042	4.2	6	24	66	66
DGN506043	4.3	6	24	66	66
DGN506044	4.4	6	24	66	66
DGN506045	4.5	6	24	66	66
DGN506046	4.6	6	24	66	66
DGN506047	4.7	6	24	66	66
DGN506048	4.8	6	28	66	66
DGN506049	4.9	6	28	66	66
DGN506050	5.0	6	28	66	66
DGN506051	5.1	6	28	66	66
DGN506052	5.2	6	28	66	66
DGN506053	5.3	6	28	66	66
DGN506054	5.4	6	28	66	66
DGN506055	5.5	6	28	66	66
DGN506056	5.6	6	28	66	66
DGN506057	5.7	6	28	66	66

Unit : mm

EDP No.	Drill Diameter D1	Shank Diameter D2	Flute Length		Overall Length L2
			L1	L2	
DGN506058	5.8	6	28	66	66
DGN506059	5.9	6	28	66	66
DGN506060	6.0	6	28	66	66
DGN506061	6.1	8	34	79	79
DGN506062	6.2	8	34	79	79
DGN506063	6.3	8	34	79	79
DGN506064	6.4	8	34	79	79
DGN506065	6.5	8	34	79	79
DGN506066	6.6	8	34	79	79
DGN506067	6.7	8	34	79	79
DGN506068	6.8	8	34	79	79
DGN506069	6.9	8	34	79	79
DGN506070	7.0	8	34	79	79
DGN506071	7.1	8	41	79	79
DGN506072	7.2	8	41	79	79
DGN506073	7.3	8	41	79	79
DGN506074	7.4	8	41	79	79
DGN506075	7.5	8	41	79	79
DGN506076	7.6	8	41	79	79
DGN506077	7.7	8	41	79	79
DGN506078	7.8	8	41	79	79
DGN506079	7.9	8	41	79	79
DGN506080	8.0	8	41	79	79
DGN506081	8.1	10	47	89	89
DGN506082	8.2	10	47	89	89
DGN506083	8.3	10	47	89	89
DGN506084	8.4	10	47	89	89
DGN506085	8.5	10	47	89	89

▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

ISO	P										M				K						
	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	38	10	29	32	38	15	35	15	23	10	10	26	3	25	19	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				
	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	400Rm	1050Rm	550	630	400	550
Recommended											◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎

◎ : Excellent ○ : Good

ISO	P										M				K						
	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	38	10	29	32	38	15	35	15	23	10	10	26	3	25	19	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				
	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	400Rm	1050Rm	550	630	400	550
Recommended											◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎

Z-COATED SOLID CARBIDE DREAM DRILLS PRO with COOLANT HOLES (3XD)

SERIES

DGN506

- ▶ Drilling for Carbon Steels, Alloy Steels (HB225-325), Pre-hardened Steels (HRC30-50), 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.21

SHORT
3 × D

EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length	EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
DGN506086	8.6	10	47	89	DGN506114	11.4	12	55	102
DGN506087	8.7	10	47	89	DGN506115	11.5	12	55	102
DGN506088	8.8	10	47	89	DGN506116	11.6	12	55	102
DGN506089	8.9	10	47	89	DGN506117	11.7	12	55	102
DGN506090	9.0	10	47	89	DGN506118	11.8	12	55	102
DGN506091	9.1	10	47	89	DGN506119	11.9	12	55	102
DGN506092	9.2	10	47	89	DGN506120	12.0	12	55	102
DGN506093	9.3	10	47	89	DGN506125	12.5	14	60	107
DGN506094	9.4	10	47	89	DGN506130	13.0	14	60	107
DGN506095	9.5	10	47	89	DGN506135	13.5	14	60	107
DGN506096	9.6	10	47	89	DGN506140	14.0	14	60	107
DGN506097	9.7	10	47	89	DGN506145	14.5	16	65	115
DGN506098	9.8	10	47	89	DGN506150	15.0	16	65	115
DGN506099	9.9	10	47	89	DGN506155	15.5	16	65	115
DGN506100	10.0	10	47	89	DGN506160	16.0	16	65	115
DGN506101	10.1	12	55	102	DGN506165	16.5	18	73	123
DGN506102	10.2	12	55	102	DGN506170	17.0	18	73	123
DGN506103	10.3	12	55	102	DGN506175	17.5	18	73	123
DGN506104	10.4	12	55	102	DGN506180	18.0	18	73	123
DGN506105	10.5	12	55	102	DGN506185	18.5	20	79	131
DGN506106	10.6	12	55	102	DGN506190	19.0	20	79	131
DGN506107	10.7	12	55	102	DGN506195	19.5	20	79	131
DGN506108	10.8	12	55	102	DGN506200	20.0	20	79	131
DGN506109	10.9	12	55	102					
DGN506110	11.0	12	55	102					
DGN506111	11.1	12	55	102					
DGN506112	11.2	12	55	102					
DGN506113	11.3	12	55	102					

▶ Other shank types are available on your request.

◎ : Excellent ○ : Good

ISO	P										M				K						
	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	30	10	29	32	38	15	35	15	23	10	10	26	3	18	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				
	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	400Rm	1050Rm	550	630	400	550
Recommended											◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎

Z-COATED SOLID CARBIDE DREAM DRILLS PRO with COOLANT HOLES (5XD)

SERIES

DGN508

- ▶ Drilling for Carbon Steels, Alloy Steels (HB225-325), Pre-hardened Steels (HRC30-50), 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.21

LONG
5 × D

EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length	EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
DGN508010	1.0	3	8	55	DGN508038	3.8	6	36	74
DGN508011	1.1	3	12	55	DGN508039	3.9	6	36	74
DGN508012	1.2	3	12	55	DGN508040	4.0	6	36	74
DGN508013	1.3	3	12	55	DGN508041	4.1	6	36	74
DGN508014	1.4	3	12	55	DGN508042	4.2	6	36	74
DGN508015	1.5	3	16	55	DGN508043	4.3	6	36	74
DGN508016	1.6	3	16	55	DGN508044	4.4	6	36	74
DGN508017	1.7	3	16	55	DGN508045	4.5	6	36	74
DGN508018	1.8	3	16	55	DGN508046	4.6	6	36	74
DGN508019	1.9	3	16	55	DGN508047	4.7	6	36	74
DGN508020	2.0	4	21	57	DGN508048	4.8	6	44	82
DGN508021	2.1	4	21	57	DGN508049	4.9	6	44	82
DGN508022	2.2	4	21	57	DGN508050	5.0	6	44	82
DGN508023	2.3	4	21	57	DGN508051	5.1	6	44	82
DGN508024	2.4	4	21	57	DGN508052	5.2	6	44	82
DGN508025	2.5	4	21	57	DGN508053	5.3	6	44	82
DGN508026	2.6	4	21	57	DGN508054	5.4	6	44	82
DGN508027	2.7	4	21	57	DGN508055	5.5	6	44	82
DGN508028	2.8	4	21	57	DGN508056	5.6	6	44	82
DGN508029	2.9	4	21	57	DGN508057	5.7	6	44	82
DGN508030	3.0	6	28	66	DGN508058	5.8	6	44	82
DGN508031	3.1	6	28	66	DGN508059	5.9	6	44	82
DGN508032	3.2	6	28	66	DGN508060	6.0	6	44	82
DGN508033	3.3	6	28	66	DGN508061	6.1	8	53	91
DGN508034	3.4	6	28	66	DGN508062	6.2	8	53	91
DGN508035	3.5	6	28	66	DGN508063	6.3	8	53	91
DGN508036	3.6	6	28	66	DGN508064	6.4	8	53	91
DGN508037	3.7	6	28	66	DGN508065	6.5	8	53	91

▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

ISO	P										M				K						
	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	30	10	29	32	38	15	35	15	23	10	10	26	3	18	25	21	
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230	
Recommended	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	

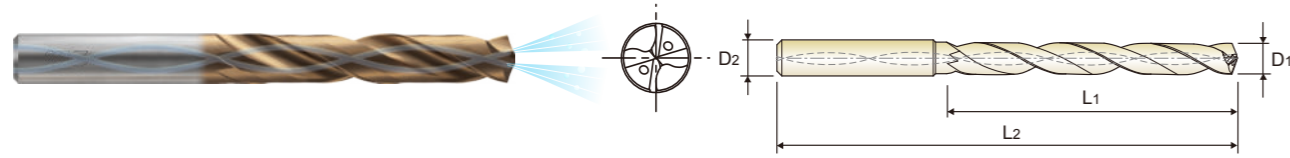
ISO	N										S						H				
	Aluminum-wrought alloy		Aluminum-cast alloyed			Copper and Copper Alloys (Bronze / Brass)					Non Metallic Materials		Heat Resistant Super Alloys				Titanium Alloys		Hardened steel	Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	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	400Rm	1050Rm	550	630	400	550
Recommended											◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎

Z-COATED SOLID CARBIDE DREAM DRILLS PRO with COOLANT HOLES (5XD)

SERIES

DGN508

- ▶ Drilling for Carbon Steels, Alloy Steels (HB225-325), Pre-hardened Steels (HRC30-50), 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.21

LONG
5 x D

Unit : mm				
EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
Z-Coating	D1	D2	L1	L2
DGN508066	6.6	8	53	91
DGN508067	6.7	8	53	91
DGN508068	6.8	8	53	91
DGN508069	6.9	8	53	91
DGN508070	7.0	8	53	91
DGN508071	7.1	8	53	91
DGN508072	7.2	8	53	91
DGN508073	7.3	8	53	91
DGN508074	7.4	8	53	91
DGN508075	7.5	8	53	91
DGN508076	7.6	8	53	91
DGN508077	7.7	8	53	91
DGN508078	7.8	8	53	91
DGN508079	7.9	8	53	91
DGN508080	8.0	8	53	91
DGN508081	8.1	10	61	103
DGN508082	8.2	10	61	103
DGN508083	8.3	10	61	103
DGN508084	8.4	10	61	103
DGN508085	8.5	10	61	103
DGN508086	8.6	10	61	103
DGN508087	8.7	10	61	103
DGN508088	8.8	10	61	103
DGN508089	8.9	10	61	103
DGN508090	9.0	10	61	103
DGN508091	9.1	10	61	103
DGN508092	9.2	10	61	103
DGN508093	9.3	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	21	22	23	24	25	
HRC	13	25	28	32	30	10	29	32	38	15	35	15	23	10	10	26	3	18	25	21	180	260	160	250	130	230
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230	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	42	43	44	
HRC	15	30	25	38	34	15	30	25	38	34	15	30	25	38	34	400Rm	1050Rm	550	630	400	550	550	630	400	550
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400Rm	1050Rm	550	630	400	550	550	630	400	550
Recommended	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎

Z-COATED SOLID CARBIDE DREAM DRILLS PRO with COOLANT HOLES (5XD)

SERIES

DGN508

- ▶ Drilling for Carbon Steels, Alloy Steels (HB225-325), Pre-hardened Steels (HRC30-50), Cast Iron
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DIN 6537 CARBIDE 30° h6 m7 140° 20 bar Z Coating p.21

LONG
5 x D

Unit : mm				
EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
Z-Coating	D1	D2	L1	L2
DGN508130	13.0	14	77	124
DGN508135	13.5	14	77	124
DGN508140	14.0	14	77	124
DGN508145	14.5	16	83	133
DGN508150	15.0	16	83	133
DGN508155	15.5	16	83	133
DGN508160	16.0	16	83	133
DGN508165	16.5	18	93	143

▶ 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	21	22	23	24	25	
HRC	13	25	28	32	30	10	29	32	38	15	35	15	23	10	10	26	3	18	25	21	180	260	160	250	130	230
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230	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	42	43	44	
HRC	15	30	25	38	34	15	30	25	38	34	15	30	25	38	34	400Rm	1050Rm	550	630	400	550	550	630	400	550
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400Rm	1050Rm	550	630	400	550	550	630	400	550
Recommended	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎

DGN523, DGN526 SERIES

without COOLANT HOLES

Vc = m/min.
RPM = rev./min.
FEED = mm/rev.

ISO	VDI 3323	Material Description	Vc	Parameter	Drill Diameter (mm)								
					1.0	2.0	3.0	4.0	5.0	6.0			
P	2	Non-alloy steel	85	RPM	27,060	13,530	120	RPM	12,730	9,550	7,640	6,370	
	3			FEED	0.03-0.05	0.05-0.07		FEED	0.06-0.12	0.08-0.14	0.14-0.20	0.16-0.22	
	4		RPM	27,060	13,530	120	RPM	12,730	9,550	7,640	6,370		
	5		FEED	0.03-0.05	0.05-0.07	FEED	0.06-0.12	0.08-0.14	0.14-0.20	0.16-0.22			
	6		RPM	27,060	13,530	120	RPM	12,730	9,550	7,640	6,370		
	7	FEED	0.03-0.05	0.05-0.07	FEED	0.06-0.12	0.08-0.14	0.14-0.20	0.16-0.22				
	8	RPM	23,870	11,940	95	RPM	10,080	7,560	6,050	5,040			
	9	FEED	0.03-0.05	0.05-0.07	FEED	0.04-0.10	0.07-0.13	0.10-0.16	0.12-0.18				
	10	RPM	23,870	11,940	95	RPM	10,080	7,560	6,050	5,040			
	11	FEED	0.03-0.05	0.05-0.07	FEED	0.04-0.10	0.07-0.13	0.10-0.16	0.12-0.18				
	M	12	Stainless steel	60	RPM	19,100	9,550	85	RPM	8,490	6,370	5,090	4,240
13		FEED			0.03-0.05	0.05-0.07	FEED		0.04-0.10	0.07-0.13	0.10-0.16	0.12-0.18	
K	15	Grey cast iron	85	RPM	27,060	13,530	120	RPM	12,730	9,550	7,640	6,370	
	16			FEED	0.04-0.06	0.04-0.06		FEED	0.08-0.14	0.12-0.18	0.15-0.22	0.20-0.26	
	17	Nodular cast iron	85	RPM	27,060	13,530	120	RPM	12,730	9,550	7,640	6,370	
	18			FEED	0.04-0.06	0.04-0.06		FEED	0.08-0.14	0.12-0.18	0.15-0.22	0.20-0.26	
	19	Malleable cast iron	75	RPM	23,870	11,940	95	RPM	10,080	7,560	6,050	5,040	
	20			FEED	0.04-0.06	0.04-0.06		FEED	0.08-0.14	0.12-0.18	0.15-0.22	0.20-0.26	
	H	38	Hardened steel	25	RPM	7,960	3,980	30	RPM	3,180	2,390	1,910	1,590
					FEED	0.01-0.02	0.01-0.03		FEED	0.01-0.03	0.01-0.04	0.02-0.05	0.03-0.06

ISO	VDI 3323	Material Description	Vc	Parameter	Drill Diameter (mm)							
					8.0	10.0	12.0	14.0	16.0	18.0	20.0	
P	2	Non-alloy steel	120	RPM	4,770	3,820	3,180	2,730	2,390	2,120	1,910	
	3			FEED	0.18-0.24	0.19-0.27	0.21-0.29	0.23-0.31	0.25-0.33	0.28-0.38	0.30-0.40	
	4		RPM	4,770	3,820	3,180	2,730	2,390	2,120	1,910		
	5		FEED	0.18-0.24	0.19-0.27	0.21-0.29	0.23-0.31	0.25-0.33	0.28-0.38	0.30-0.40		
	6		RPM	4,770	3,820	3,180	2,730	2,390	2,120	1,910		
	7	FEED	0.18-0.24	0.19-0.27	0.21-0.29	0.23-0.31	0.25-0.33	0.28-0.38	0.30-0.40			
	8	RPM	3,780	3,020	2,520	2,160	1,890	1,680	1,510			
	9	FEED	0.14-0.20	0.15-0.23	0.17-0.25	0.18-0.26	0.19-0.27	0.20-0.30	0.22-0.32			
	10	RPM	4,770	3,820	3,180	2,730	2,390	2,120	1,910			
	11	FEED	0.18-0.24	0.19-0.27	0.21-0.29	0.23-0.31	0.25-0.33	0.28-0.38	0.30-0.40			
	M	12	Stainless steel	85	RPM	3,380	2,710	2,250	1,930	1,690	1,500	1,350
13		FEED			0.18-0.24	0.19-0.27	0.21-0.29	0.23-0.31	0.25-0.33	0.28-0.38	0.30-0.40	
K	15	Grey cast iron	120	RPM	4,770	3,820	3,180	2,730	2,390	2,120	1,910	
	16			FEED	0.22-0.28	0.25-0.33	0.27-0.35	0.29-0.37	0.31-0.39	0.32-0.42	0.34-0.44	
	17	Nodular cast iron	120	RPM	4,770	3,820	3,180	2,730	2,390	2,120	1,910	
	18			FEED	0.22-0.28	0.25-0.33	0.27-0.35	0.29-0.37	0.31-0.39	0.32-0.42	0.34-0.44	
	19	Malleable cast iron	95	RPM	3,380	2,710	2,250	1,930	1,690	1,500	1,350	
	20			FEED	0.18-0.24	0.19-0.27	0.21-0.29	0.23-0.31	0.25-0.33	0.28-0.38	0.30-0.40	
	H	38	Hardened steel	30	RPM	1,190	950	800	680	600	530	480
					FEED	0.03-0.06	0.04-0.07	0.04-0.08	0.05-0.09	0.05-0.09	0.05-0.10	0.05-0.10

► Recommend to reduce the feed rate as following **Feed 100%** : DGN523(3×D), DGN526(5×D)**DGN506, DGN508** SERIES

with COOLANT HOLES

Vc = m/min.
RPM = rev./min.
FEED = mm/rev.

ISO	VDI 3323	Material Description	Vc	Parameter	Drill Diameter (mm)								
					1.0	2.0	3.0	4.0	5.0	6.0			
P	2	Non-alloy steel	95	RPM	30,240	15,120	130	RPM	13,790	10,350	8,280	6,900	
	3			FEED	0.03-0.05	0.05-0.07		FEED	0.06-0.12	0.08-0.14	0.14-0.20	0.16-0.22	
	4		RPM	30,240	15,120	130	RPM	13,790	10,350	8,280	6,900		
	5		FEED	0.03-0.05	0.05-0.07	FEED	0.06-0.12	0.08-0.14	0.14-0.20	0.16-0.22			
	6		RPM	30,240	15,120	130	RPM	13,790	10,350	8,280	6,900		
	7	FEED	0.03-0.05	0.05-0.07	FEED	0.06-0.12	0.08-0.14	0.14-0.20	0.16-0.22				
	8	RPM	27,060	13,530	110	RPM	11,670	8,750	7,000	5,840			
	9	FEED	0.03-0.05	0.05-0.07	FEED	0.04-0.10	0.07-0.13	0.10-0.16	0.12-0.18				
	10	RPM	27,060	13,530	110	RPM	11,670	8,750	7,000	5,840			
	11	FEED	0.03-0.05	0.05-0.07	FEED	0.04-0.10	0.07-0.13	0.10-0.16	0.12-0.18				
	M	12	Stainless steel	75	RPM	19,100	9,550	95	RPM	10,080	7,560	6,050	5,040
13		FEED			0.03-0.05	0.05-0.07	FEED		0.04-0.10	0.07-0.13	0.10-0.16	0.12-0.18	
K	15	Grey cast iron	95	RPM	30,240	15,120	130	RPM	13,790	10,350	8,280	6,900	
	16			FEED	0.04-0.06	0.04-0.06		FEED	0.08-0.14	0.12-0.18	0.15-0.22	0.20-0.26	
	17	Nodular cast iron	110	RPM	35,010	17,510	145	RPM	15,380	11,540	9,230	7,690	
	18			FEED	0.04-0.06	0.04-0.06		FEED	0.08-0.14	0.12-0.18	0.15-0.22	0.20-0.26	
	19	Malleable cast iron	75	RPM	23,870	11,940	95	RPM	10,080	7,560	6,050	5,040	
	20			FEED	0.04-0.06	0.04-0.06		FEED	0.08-0.14	0.12-0.18	0.15-0.22	0.20-0.26	
	H	38	Hardened steel	30	RPM	9,550	4,770	35	RPM	3,710	2,790	2,230	1,860
					FEED	0.01-0.02	0.01-0.03		FEED	0.01-0.03	0.01-0.04	0.02-0.05	0.03-0.06

ISO	VDI 3323	Material Description	Vc	Parameter	Drill Diameter (mm)							
					8.0	10.0	12.0	14.0	16.0	18.0	20.0	
P	2	Non-alloy steel	130	RPM	5,170	4,140	3,450	2,960	2,590	2,300	2,070	
	3			FEED	0.18-0.24	0.19-0.27	0.21-0.29	0.23-0.31	0.25-0.33	0.28-0.38	0.30-0.40	
	4		RPM	5,170	4,140	3,450	2,960	2,590	2,300	2,070		
	5		FEED	0.18-0.24	0.19-0.27	0.21-0.29	0.23-0.31	0.25-0.33	0.28-0.38	0.30-0.40		
	6		RPM	5,170	4,140	3,450	2,960	2,590	2,300	2,070		
	7	FEED	0.18-0.24	0.19-0.27	0.21-0.29	0.23-0.31	0.25-0.33	0.28-0.38	0.30-0.40			
	8	RPM	4,380	3,500	2,920	2,500	2,190	1,950	1,750			
	9	FEED	0.14-0.20	0.15-0.23	0.17-0.25	0.18-0.26	0.19-0.27	0.20-0.30	0.22-0.32			
	10	RPM	5,170	4,140	3,450	2,960	2,590	2,300	2,070			
	11	FEED	0.18-0.24	0.19-0.27	0.21-0.29	0.23-0.31	0.25-0.33	0.28-0.38	0.30-0.40			
	M	12	Stainless steel	95	RPM	3,780	3,020	2,520	2,160	1,890	1,680	1,510
13		FEED			0.18-0.24	0.19-0.27	0.21-0.29	0.23-0.31	0.25-0.33	0.28-0.38	0.30-0.40	
K	15	Grey cast iron	130	RPM	5,170	4,140	3,450	2,960	2,590	2,300	2,070	
	16			FEED	0.22-0.28	0.25-0.33	0.27-0.35	0.29-0.37	0.31-0.39	0.32-0.42	0.34-0.44	
	17	Nodular cast iron	145	RPM	5,770	4,620	3,850	3,300	2,880	2,560	2,310	
	18			FEED	0.22-0.28	0.25-0.33	0.27-0.35	0.29-0.37	0.31-0.39	0.32-0.42	0.34-0.44	
	19	Malleable cast iron	95	RPM	3,380	2,710	2,250	1,930	1,690	1,500	1,350	
	20			FEED	0.18-0.24	0.19-0.27	0.21-0.29	0.23-0.31	0.25-0.33	0.28-0.38	0.30-0.40	
	H	38	Hardened steel	35	RPM	4,380	3,500	2,920	2,500	2,190	1,950	1,750
					FEED	0.18-0.24	0.19-0.27	0.21-0.29	0.23-0.31	0.25-0.33	0.28-0.38	0.30-0.40

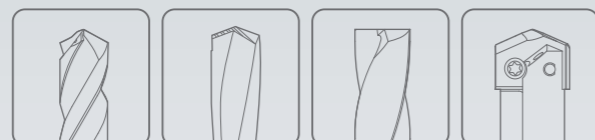
► Recommend to reduce the feed rate as following **Feed 100%** : DGN506(3×D), DGN508(5×D)



Leading Through Innovation



Global Cutting Tool Leader **YG-1**



DREAM DRILLS



NEW

SOLID CARBIDE

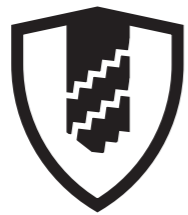
DREAM DRILL X

- 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

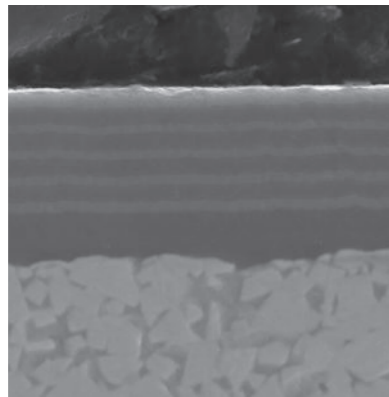


High Heat Endurance



Chipping Protection

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

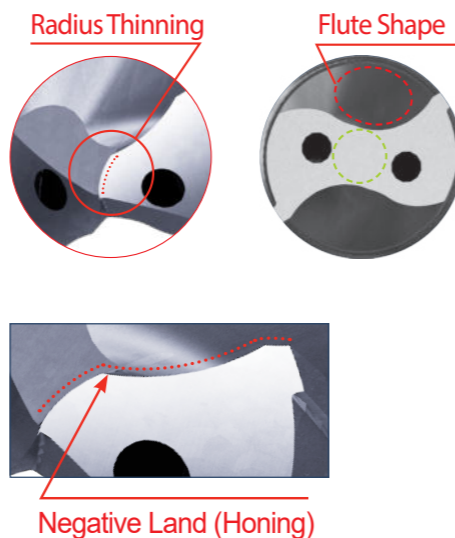


Nano Layered Multilayer
Carbide

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

FEATURES & BENEFITS

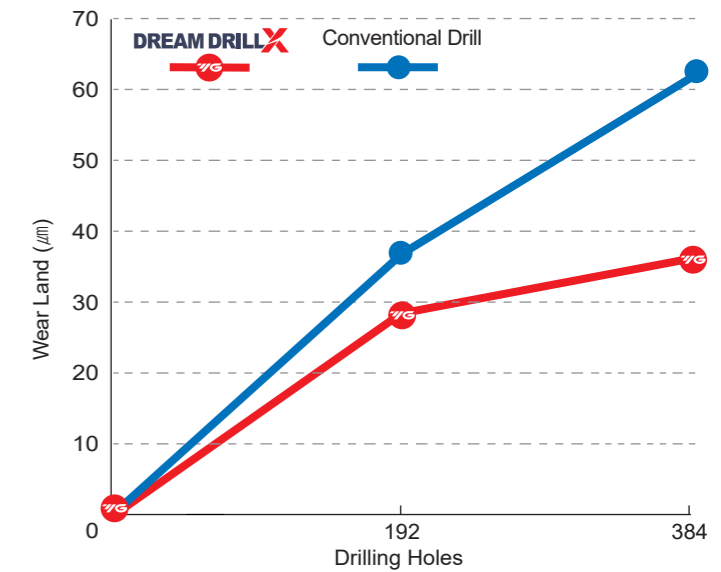
- **Universal Point Grinding**
Soft cutting action and reduced axial forces; Easy to Recondition
- **Radius Thinning**
Provides very good self centering even at low feed rates and unstable situations
- **Tailored Flute Design**
Excellent chip breaking and evacuation
- **Edge Preparation**
Maximizing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



CASE STUDY

► **SOLID CARBIDE DREAM DRILL X with Coolant Holes**

CUTTING CONDITION	
Work Material	• DIN : C45 • AISI : 1045 • JIS : S45C (HRc20)
Drill Diameter(mm)	Ø10.0
Cutting Speed	109.99 m/min.
Feed	0.23 mm/rev
Drilling Depth	40mm
Coolant	Internal Cooling Wet Cut (9% Emulsion)
Machine	Vertical Machine

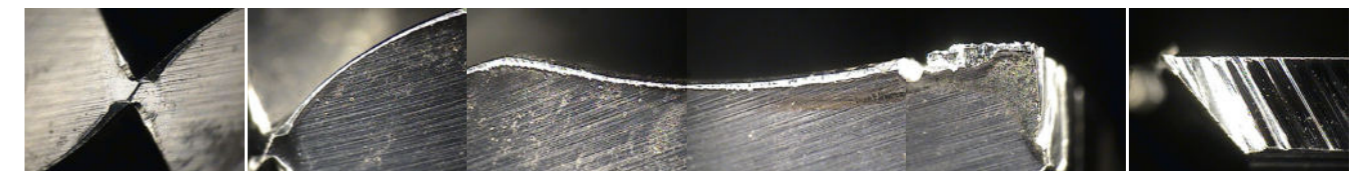


DREAM DRILL X



Total Drilling 384 Holes

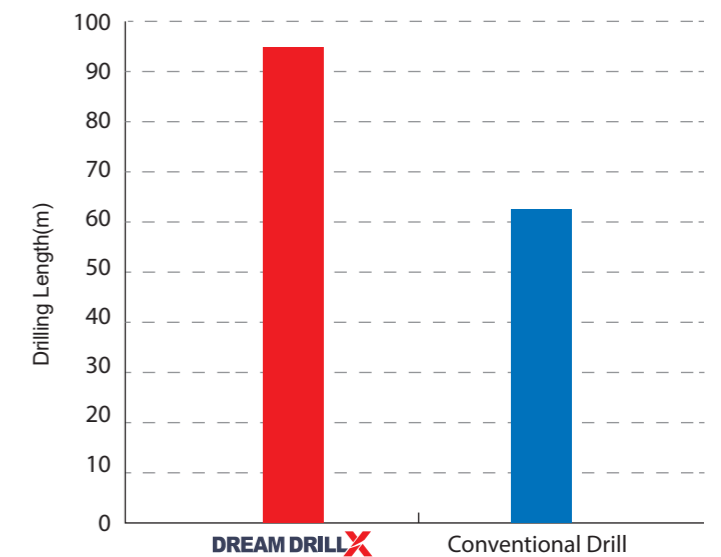
Conventional Drill



Total Drilling 384 Holes

► **SOLID CARBIDE DREAM DRILL X with Coolant Holes**

CUTTING CONDITION	
Work Material	• DIN : GGG40 • AISI : 60-40-18 • JIS : FCD400
Drilling Diameter(mm)	Ø8.5
Cutting Speed	112m/min
Feed	0.33mm/rev.
Drilling Depth	18mm
Coolant	Internal Cooling
Machine	Machining Center (Horizontal)



RCH-COATED SOLID CARBIDE
DREAM DRILL X without COOLANT HOLES (3XD)

SERIES
NEW 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 30° h6 h7 140° RCH Coating p.40

STUB
3 × D

Unit : mm				Unit : mm			
EDP No.	Drill Diameter	Flute Length	Overall Length	EDP No.	Drill Diameter	Flute Length	Overall Length
RCH-Coating	D1=D2	L1	L2	RCH-Coating	D1=D2	L1	L2
DTX404030	3.0	16	46	DTX404058	5.8	28	66
DTX404031	3.1	18	49	DTX404059	5.9	28	66
DTX404032	3.2	18	49	DTX404060	6.0	28	66
DTX404033	3.3	18	49	DTX404061	6.1	31	70
DTX404034	3.4	20	52	DTX404062	6.2	31	70
DTX404035	3.5	20	52	DTX404063	6.3	31	70
DTX404036	3.6	20	52	DTX404064	6.4	31	70
DTX404037	3.7	20	52	DTX404065	6.5	31	70
DTX404038	3.8	22	55	DTX404066	6.6	31	70
DTX404039	3.9	22	55	DTX404067	6.7	31	70
DTX404040	4.0	22	55	DTX404068	6.8	34	74
DTX404041	4.1	22	55	DTX404069	6.9	34	74
DTX404042	4.2	22	55	DTX404070	7.0	34	74
DTX404043	4.3	24	58	DTX404071	7.1	34	74
DTX404044	4.4	24	58	DTX404072	7.2	34	74
DTX404045	4.5	24	58	DTX404073	7.3	34	74
DTX404046	4.6	24	58	DTX404074	7.4	34	74
DTX404047	4.7	24	58	DTX404075	7.5	34	74
DTX404048	4.8	26	62	DTX404076	7.6	37	79
DTX404049	4.9	26	62	DTX404077	7.7	37	79
DTX404050	5.0	26	62	DTX404078	7.8	37	79
DTX404051	5.1	26	62	DTX404079	7.9	37	79
DTX404052	5.2	26	62	DTX404080	8.0	37	79
DTX404053	5.3	26	62	DTX404081	8.1	37	79
DTX404054	5.4	28	66	DTX404082	8.2	37	79
DTX404055	5.5	28	66	DTX404083	8.3	37	79
DTX404056	5.6	28	66	DTX404084	8.4	37	79
DTX404057	5.7	28	66	DTX404085	8.5	37	79

▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

ISO	P										M				K					
	Non-alloy steel					Low alloy steel					High alloyed steel, and tool steel				Stainless steel		Grey cast iron	Nodular cast iron	Malleable cast iron	
Material Description	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
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	30	29	32	38	35	35	35	35	23	10	10	26	3	25	21	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				
	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
Material Description	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc	60	100	75	90	130	110	90	100			15	30	25	38	34	400 Rm	1050 Rm	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 (3XD)

SERIES
NEW 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 30° h6 h7 140° RCH Coating p.40

STUB
3 × D

Unit : mm				Unit : mm			
EDP No.	Drill Diameter	Flute Length	Overall Length	EDP No.	Drill Diameter	Flute Length	Overall Length
RCH-Coating	D1=D2	L1	L2	RCH-Coating	D1=D2	L1	L2
DTX404086	8.6	40	84	DTX404170	17.0	60	119
DTX404087	8.7	40	84	DTX404175	17.5	62	123
DTX404088	8.8	40	84	DTX404180	18.0	62	123
DTX404089	8.9	40	84	DTX404185	18.5	64	127
DTX404090	9.0	40	84	DTX404190	19.0	64	127
DTX404091	9.1	40	84	DTX404195	19.5	66	131
DTX404092	9.2	40	84	DTX404200	20.0	66	131
DTX404093	9.3	40	84				
DTX404094	9.4	40	84				
DTX404095	9.5	40	84				
DTX404096	9.6	43	89				
DTX404097	9.7	43	89				
DTX404098	9.8	43	89				
DTX404099	9.9	43	89				
DTX404100	10.0	43	89				
DTX404102	10.2	43	89				
DTX404105	10.5	43	89				
DTX404110	11.0	47	95				
DTX404115	11.5	47	95				
DTX404120	12.0	51	102				
DTX404130	13.0	51	102				
DTX404135	13.5	54	107				
DTX404140	14.0	54	107				
DTX404145	14.5	56	111				
DTX404150	15.0	56	111				
DTX404155	15.5	58	115				
DTX404160	16.0	58	115				
DTX404165	16.5	60	119				

▶ Other shank types are available on your request.

◎ : Excellent ○ : Good

ISO	P										M				K					
	Non-alloy steel					Low alloy steel					High alloyed steel, and tool steel				Stainless steel		Grey cast iron	Nodular cast iron	Malleable cast iron	
Material Description	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
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	30	29	32	38	35	35	35	35	23	10	10	26	3	25	21	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				
	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
Material Description	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc	60	100	75	90	130	110	90	100			15	30	25	38	34	400 Rm	1050 Rm	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 (3XD)

SERIES

NEW 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 30° h6 m7 140° RCH Coating p.40

SHORT
3 × D

Unit : mm				
EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
RCH-Coating	D1	D2	L1	L2
DTX423030	3.0	6	20	62
DTX423031	3.1	6	20	62
DTX423032	3.2	6	20	62
DTX423033	3.3	6	20	62
DTX423034	3.4	6	20	62
DTX423035	3.5	6	20	62
DTX423036	3.6	6	20	62
DTX423037	3.7	6	20	62
DTX423038	3.8	6	24	66
DTX423039	3.9	6	24	66
DTX423040	4.0	6	24	66
DTX423041	4.1	6	24	66
DTX423042	4.2	6	24	66
DTX423043	4.3	6	24	66
DTX423044	4.4	6	24	66
DTX423045	4.5	6	24	66
DTX423046	4.6	6	24	66
DTX423047	4.7	6	24	66
DTX423048	4.8	6	28	66
DTX423049	4.9	6	28	66
DTX423050	5.0	6	28	66
DTX423051	5.1	6	28	66
DTX423052	5.2	6	28	66
DTX423053	5.3	6	28	66
DTX423054	5.4	6	28	66
DTX423055	5.5	6	28	66
DTX423056	5.6	6	28	66
DTX423057	5.7	6	28	66
DTX423058	5.8	6	28	66
DTX423059	5.9	6	28	66

▶ 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	21	22	23	24
HRc	13	25	28	32	38	40	45	50	55	60	65	70	75	80	85	90	95	100	105	110	115	120	125	130
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230				
Recommended	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎

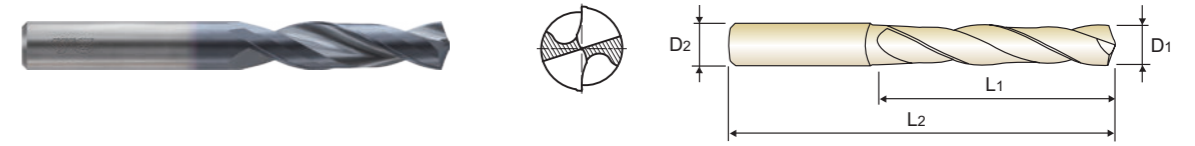
ISO	N										S						H							
Material Description	Aluminum-wrought alloy		Aluminum-cast alloyed			Copper and Copper Alloys (Bronze / Brass)					Non Metallic Materials		Heat Resistant Super Alloys				Titanium Alloys		Hardened steel	Chilled Cast Iron	Hardened Cast Iron			
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44
HRc	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44
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 (3XD)

SERIES

NEW 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 30° h6 m7 140° RCH Coating p.40

SHORT
3 × D

Unit : mm				
EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
RCH-Coating	D1	D2	L1	L2
DTX423090	9.0	10	47	89
DTX423091	9.1	10	47	89
DTX423092	9.2	10	47	89
DTX423093	9.3	10	47	89
DTX423094	9.4	10	47	89
DTX423095	9.5	10	47	89
DTX423096	9.6	10	47	89
DTX423097	9.7	10	47	89
DTX423098	9.8	10	47	89
DTX423099	9.9	10	47	89
DTX423100	10.0	10	47	89
DTX423101	10.1	12	55	102
DTX423102	10.2	12	55	102
DTX423103	10.3	12	55	102
DTX423104	10.4	12	55	102
DTX423105	10.5	12	55	102
DTX423106	10.6	12	55	102
DTX423107	10.7	12	55	102
DTX423108	10.8	12	55	102
DTX423109	10.9	12	55	102
DTX423110	11.0	12	55	102
DTX423111	11.1	12	55	102
DTX423112	11.2	12	55	102
DTX423113	11.3	12	55	102
DTX423114	11.4	12	55	102
DTX423115	11.5	12	55	102
DTX423116	11.6	12	55	102
DTX423117	11.7	12	55	102
DTX423118	11.8	12	55	102
DTX423119	11.9	12	55	102

▶ 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	21	22	23	24
HRc	13	25	28	32	38	40	45	50	55	60	65	70	75	80	85	90	95	100	105	110	115	120	125	130
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230				
Recommended	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎

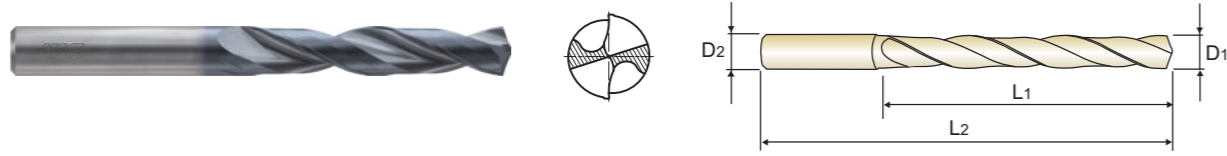
ISO	N										S						H							
Material Description	Aluminum-wrought alloy		Aluminum-cast alloyed			Copper and Copper Alloys (Bronze / Brass)					Non Metallic Materials		Heat Resistant Super Alloys				Titanium Alloys		Hardened steel	Chilled Cast Iron	Hardened Cast Iron			
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44
HRc	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44
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 (5XD)

SERIES

NEW 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 30° h6 m7 140° RCH Coating p.40

LONG
5 x D

Unit : mm					Unit : mm				
EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length	EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
RCH-Coating	D1	D2	L1	L2	RCH-Coating	D1	D2	L1	L2
DTX424010	1.0	3	8	55	DTX424038	3.8	6	36	74
DTX424011	1.1	3	12	55	DTX424039	3.9	6	36	74
DTX424012	1.2	3	12	55	DTX424040	4.0	6	36	74
DTX424013	1.3	3	12	55	DTX424041	4.1	6	36	74
DTX424014	1.4	3	12	55	DTX424042	4.2	6	36	74
DTX424015	1.5	3	16	55	DTX424043	4.3	6	36	74
DTX424016	1.6	3	16	55	DTX424044	4.4	6	36	74
DTX424017	1.7	3	16	55	DTX424045	4.5	6	36	74
DTX424018	1.8	3	16	55	DTX424046	4.6	6	36	74
DTX424019	1.9	3	16	55	DTX424047	4.7	6	36	74
DTX424020	2.0	4	21	57	DTX424048	4.8	6	44	82
DTX424021	2.1	4	21	57	DTX424049	4.9	6	44	82
DTX424022	2.2	4	21	57	DTX424050	5.0	6	44	82
DTX424023	2.3	4	21	57	DTX424051	5.1	6	44	82
DTX424024	2.4	4	21	57	DTX424052	5.2	6	44	82
DTX424025	2.5	4	21	57	DTX424053	5.3	6	44	82
DTX424026	2.6	4	21	57	DTX424054	5.4	6	44	82
DTX424027	2.7	4	21	57	DTX424055	5.5	6	44	82
DTX424028	2.8	4	21	57	DTX424056	5.6	6	44	82
DTX424029	2.9	4	21	57	DTX424057	5.7	6	44	82
DTX424030	3.0	6	28	66	DTX424058	5.8	6	44	82
DTX424031	3.1	6	28	66	DTX424059	5.9	6	44	82
DTX424032	3.2	6	28	66	DTX424060	6.0	6	44	82
DTX424033	3.3	6	28	66	DTX424061	6.1	8	53	91
DTX424034	3.4	6	28	66	DTX424062	6.2	8	53	91
DTX424035	3.5	6	28	66	DTX424063	6.3	8	53	91
DTX424036	3.6	6	28	66	DTX424064	6.4	8	53	91
DTX424037	3.7	6	28	66	DTX424065	6.5	8	53	91

▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

ISO	P										M				K						
	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	30	10	29	32	38	15	35	15	23	10	10	26	3	25	21	21	
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230	
Recommended	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	

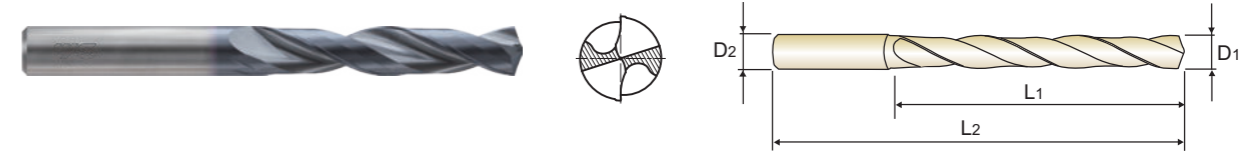
ISO	N										S						H				
	Aluminum-wrought alloy		Aluminum-cast alloyed			Copper and Copper Alloys (Bronze / Brass)		Non Metallic Materials			Heat Resistant Super Alloys			Titanium Alloys			Hardened steel	Chilled Cast Iron	Hardened Cast Iron		
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34						
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 (5XD)

SERIES

NEW 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 30° h6 m7 140° RCH Coating p.40

LONG
5 x D

Unit : mm					Unit : mm				
EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length	EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
RCH-Coating	D1	D2	L1	L2	RCH-Coating	D1	D2	L1	L2
DTX424066	6.6	8	53	91	DTX424094	9.4	10	61	103
DTX424067	6.7	8	53	91	DTX424095	9.5	10	61	103
DTX424068	6.8	8	53	91	DTX424096	9.6	10	61	103
DTX424069	6.9	8	53	91	DTX424097	9.7	10	61	103
DTX424070	7.0	8	53	91	DTX424098	9.8	10	61	103
DTX424071	7.1	8	53	91	DTX424099	9.9	10	61	103
DTX424072	7.2	8	53	91	DTX424100	10.0	10	61	103
DTX424073	7.3	8	53	91	DTX424101	10.1	12	71	118
DTX424074	7.4	8	53	91	DTX424102	10.2	12	71	118
DTX424075	7.5	8	53	91	DTX424103	10.3	12	71	118
DTX424076	7.6	8	53	91	DTX424104	10.4	12	71	118
DTX424077	7.7	8	53	91	DTX424105	10.5	12	71	118
DTX424078	7.8	8	53	91	DTX424106	10.6	12	71	118
DTX424079	7.9	8	53	91	DTX424107	10.7	12	71	118
DTX424080	8.0	8	53	91	DTX424108	10.8	12	71	118
DTX424081	8.1	10	61	103	DTX424109	10.9	12	71	118
DTX424082	8.2	10	61	103	DTX424110	11.0	12	71	118
DTX424083	8.3	10	61	103	DTX424111	11.1	12	71	118
DTX424084	8.4	10	61	103	DTX424112	11.2	12	71	118
DTX424085	8.5	10	61	103	DTX424113	11.3	12	71	118
DTX424086	8.6	10	61	103	DTX424114	11.4	12	71	118
DTX424087	8.7	10	61	103	DTX424115	11.5	12	71	118
DTX424088	8.8	10	61	103	DTX424116	11.6	12	71	118
DTX424089	8.9	10	61	103	DTX424117	11.7	12	71	118
DTX424090	9.0	10	61	103	DTX424118	11.8	12	71	118
DTX424091	9.1	10	61	103	DTX424119	11.9	12	71	118
DTX424092	9.2	10	61	103	DTX424120	12.0	12	71	118
DTX424093	9.3	10	61	103	DTX424125	12.5	14	77	124

▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

ISO	P										M				K						
	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	30	10	29	32	38	15	35	15	23	10	10	26	3	25	21	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				
	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						
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 (5XD)

SERIES
NEW 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 30° h6 m7 140° RCH Coating p.40

LONG
5 × D

EDP No.	Drill Diameter D1	Shank Diameter D2	Flute Length L1	Overall Length L2
DTX424130	13.0	14	77	124
DTX424135	13.5	14	77	124
DTX424140	14.0	14	77	124
DTX424145	14.5	16	83	133
DTX424150	15.0	16	83	133
DTX424155	15.5	16	83	133
DTX424160	16.0	16	83	133
DTX424165	16.5	18	93	143

Unit : mm

EDP No.	Drill Diameter D1	Shank Diameter D2	Flute Length L1	Overall Length L2
DTX424170	17.0	18	93	143
DTX424175	17.5	18	93	143
DTX424180	18.0	18	93	143
DTX424185	18.5	20	101	153
DTX424190	19.0	20	101	153
DTX424195	19.5	20	101	153
DTX424200	20.0	20	101	153

▶ Other shank types are available on your request.

RCH-COATED SOLID CARBIDE
DREAM DRILL X with COOLANT HOLES (3XD)

SERIES
NEW 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 30° h6 m7 140° 20 bar RCH Coating p.41

SHORT
3 × D

EDP No.	Drill Diameter D1	Shank Diameter D2	Flute Length L1	Overall Length L2
DTX406030	3.0	6	20	62
DTX406031	3.1	6	20	62
DTX406032	3.2	6	20	62
DTX406033	3.3	6	20	62
DTX406034	3.4	6	20	62
DTX406035	3.5	6	20	62
DTX406036	3.6	6	20	62
DTX406037	3.7	6	20	62
DTX406038	3.8	6	24	66
DTX406039	3.9	6	24	66
DTX406040	4.0	6	24	66
DTX406041	4.1	6	24	66
DTX406042	4.2	6	24	66
DTX406043	4.3	6	24	66
DTX406044	4.4	6	24	66
DTX406045	4.5	6	24	66
DTX406046	4.6	6	24	66
DTX406047	4.7	6	24	66
DTX406048	4.8	6	28	66
DTX406049	4.9	6	28	66
DTX406050	5.0	6	28	66
DTX406051	5.1	6	28	66
DTX406052	5.2	6	28	66
DTX406053	5.3	6	28	66
DTX406054	5.4	6	28	66
DTX406055	5.5	6	28	66
DTX406056	5.6	6	28	66
DTX406057	5.7	6	28	66

Unit : mm

EDP No.	Drill Diameter D1	Shank Diameter D2	Flute Length L1	Overall Length L2
DTX406058	5.8	6	28	66
DTX406059	5.9	6	28	66
DTX406060	6.0	6	28	66
DTX406061	6.1	8	34	79
DTX406062	6.2	8	34	79
DTX406063	6.3	8	34	79
DTX406064	6.4	8	34	79
DTX406065	6.5	8	34	79
DTX406066	6.6	8	34	79
DTX406067	6.7	8	34	79
DTX406068	6.8	8	34	79
DTX406069	6.9	8	34	79
DTX406070	7.0	8	34	79
DTX406071	7.1	8	41	79
DTX406072	7.2	8	41	79
DTX406073	7.3	8	41	79
DTX406074	7.4	8	41	79
DTX406075	7.5	8	41	79
DTX406076	7.6	8	41	79
DTX406077	7.7	8	41	79
DTX406078	7.8	8	41	79
DTX406079	7.9	8	41	79
DTX406080	8.0	8	41	79
DTX406081	8.1	10	47	89
DTX406082	8.2	10	47	89
DTX406083	8.3	10	47	89
DTX406084	8.4	10	47	89
DTX406085	8.5	10	47	89

▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

ISO	P										M				K						
	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	38	10	29	32	38	45	15	35	40	48	10	26	3	25	3	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									
	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	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41					
HB	60	100	75	90	130	110	90	100			15	30	25	38	34	200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎					

◎ : Excellent ○ : Good

ISO	P										M				K						
	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	38	10	29	32	38	45	15	35	40	48	10	26	3	25	3	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									
	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	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41					
HB	60	100	75	90	130	110	90	100			15	30	25	38	34	200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎					

RCH-COATED SOLID CARBIDE
DREAM DRILL X with COOLANT HOLES (3XD)

SERIES
NEW 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 30° h6 m7 140° 20 bar RCH Coating p.41 **SHORT 3x D**

EDP No.	Drill Diameter D1	Shank Diameter D2	Flute Length L1	Overall Length L2	EDP No.	Drill Diameter D1	Shank Diameter D2	Flute Length L1	Overall Length L2
DTX406086	8.6	10	47	89	DTX406114	11.4	12	55	102
DTX406087	8.7	10	47	89	DTX406115	11.5	12	55	102
DTX406088	8.8	10	47	89	DTX406116	11.6	12	55	102
DTX406089	8.9	10	47	89	DTX406117	11.7	12	55	102
DTX406090	9.0	10	47	89	DTX406118	11.8	12	55	102
DTX406091	9.1	10	47	89	DTX406119	11.9	12	55	102
DTX406092	9.2	10	47	89	DTX406120	12.0	12	55	102
DTX406093	9.3	10	47	89	DTX406125	12.5	14	60	107
DTX406094	9.4	10	47	89	DTX406130	13.0	14	60	107
DTX406095	9.5	10	47	89	DTX406135	13.5	14	60	107
DTX406096	9.6	10	47	89	DTX406140	14.0	14	60	107
DTX406097	9.7	10	47	89	DTX406145	14.5	16	65	115
DTX406098	9.8	10	47	89	DTX406150	15.0	16	65	115
DTX406099	9.9	10	47	89	DTX406155	15.5	16	65	115
DTX406100	10.0	10	47	89	DTX406160	16.0	16	65	115
DTX406101	10.1	12	55	102	DTX406165	16.5	18	73	123
DTX406102	10.2	12	55	102	DTX406170	17.0	18	73	123
DTX406103	10.3	12	55	102	DTX406175	17.5	18	73	123
DTX406104	10.4	12	55	102	DTX406180	18.0	18	73	123
DTX406105	10.5	12	55	102	DTX406185	18.5	20	79	131
DTX406106	10.6	12	55	102	DTX406190	19.0	20	79	131
DTX406107	10.7	12	55	102	DTX406195	19.5	20	79	131
DTX406108	10.8	12	55	102	DTX406200	20.0	20	79	131
DTX406109	10.9	12	55	102					
DTX406110	11.0	12	55	102					
DTX406111	11.1	12	55	102					
DTX406112	11.2	12	55	102					
DTX406113	11.3	12	55	102					

▶ Other shank types are available on your request.

◎ : Excellent ○ : Good

ISO	P										M				K							
	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	21	22
HRc	13	25	28	32	38	40	45	50	55	60	65	70	75	80	85	90	95	100	105	110	115	120
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				
	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	13	25	28	32	38	40	45	50	55	60	65	70	75	80	85	90	95	100	105	110	
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 (5XD)

SERIES
NEW 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 30° h6 m7 140° 20 bar RCH Coating p.41 **LONG 5x D**

EDP No.	Drill Diameter D1	Shank Diameter D2	Flute Length L1	Overall Length L2	EDP No.	Drill Diameter D1	Shank Diameter D2	Flute Length L1	Overall Length L2
DTX408010	1.0	3	8	55	DTX408038	3.8	6	36	74
DTX408011	1.1	3	12	55	DTX408039	3.9	6	36	74
DTX408012	1.2	3	12	55	DTX408040	4.0	6	36	74
DTX408013	1.3	3	12	55	DTX408041	4.1	6	36	74
DTX408014	1.4	3	12	55	DTX408042	4.2	6	36	74
DTX408015	1.5	3	16	55	DTX408043	4.3	6	36	74
DTX408016	1.6	3	16	55	DTX408044	4.4	6	36	74
DTX408017	1.7	3	16	55	DTX408045	4.5	6	36	74
DTX408018	1.8	3	16	55	DTX408046	4.6	6	36	74
DTX408019	1.9	3	16	55	DTX408047	4.7	6	36	74
DTX408020	2.0	4	21	57	DTX408048	4.8	6	44	82
DTX408021	2.1	4	21	57	DTX408049	4.9	6	44	82
DTX408022	2.2	4	21	57	DTX408050	5.0	6	44	82
DTX408023	2.3	4	21	57	DTX408051	5.1	6	44	82
DTX408024	2.4	4	21	57	DTX408052	5.2	6	44	82
DTX408025	2.5	4	21	57	DTX408053	5.3	6	44	82
DTX408026	2.6	4	21	57	DTX408054	5.4	6	44	82
DTX408027	2.7	4	21	57	DTX408055	5.5	6	44	82
DTX408028	2.8	4	21	57	DTX408056	5.6	6	44	82
DTX408029	2.9	4	21	57	DTX408057	5.7	6	44	82
DTX408030	3.0	6	28	66	DTX408058	5.8	6	44	82
DTX408031	3.1	6	28	66	DTX408059	5.9	6	44	82
DTX408032	3.2	6	28	66	DTX408060	6.0	6	44	82
DTX408033	3.3	6	28	66	DTX408061	6.1	8	53	91
DTX408034	3.4	6	28	66	DTX408062	6.2	8	53	91
DTX408035	3.5	6	28	66	DTX408063	6.3	8	53	91
DTX408036	3.6	6	28	66	DTX408064	6.4	8	53	91
DTX408037	3.7	6	28	66	DTX408065	6.5	8	53	91

▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

ISO	P										M				K							
	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	21	22
HRc	13	25	28	32	38	40	45	50	55	60	65	70	75	80	85	90	95	100	105	110	115	120
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				
	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	13	25	28	32	38	40	45	50	55	60	65	70	75	80	85	90	95	100	105	110	
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 (5XD)

SERIES

NEW 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 30° h6 m7 140° 20 bar RCH Coating p.41

LONG
5x D

Unit : mm

EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
RCH-Coating	D1	D2	L1	L2
DTX408066	6.6	8	53	91
DTX408067	6.7	8	53	91
DTX408068	6.8	8	53	91
DTX408069	6.9	8	53	91
DTX408070	7.0	8	53	91
DTX408071	7.1	8	53	91
DTX408072	7.2	8	53	91
DTX408073	7.3	8	53	91
DTX408074	7.4	8	53	91
DTX408075	7.5	8	53	91
DTX408076	7.6	8	53	91
DTX408077	7.7	8	53	91
DTX408078	7.8	8	53	91
DTX408079	7.9	8	53	91
DTX408080	8.0	8	53	91
DTX408081	8.1	10	61	103
DTX408082	8.2	10	61	103
DTX408083	8.3	10	61	103
DTX408084	8.4	10	61	103
DTX408085	8.5	10	61	103
DTX408086	8.6	10	61	103
DTX408087	8.7	10	61	103
DTX408088	8.8	10	61	103
DTX408089	8.9	10	61	103
DTX408090	9.0	10	61	103
DTX408091	9.1	10	61	103
DTX408092	9.2	10	61	103
DTX408093	9.3	10	61	103

EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
RCH-Coating	D1	D2	L1	L2
DTX408094	9.4	10	61	103
DTX408095	9.5	10	61	103
DTX408096	9.6	10	61	103
DTX408097	9.7	10	61	103
DTX408098	9.8	10	61	103
DTX408099	9.9	10	61	103
DTX408100	10.0	10	61	103
DTX408101	10.1	12	71	118
DTX408102	10.2	12	71	118
DTX408103	10.3	12	71	118
DTX408104	10.4	12	71	118
DTX408105	10.5	12	71	118
DTX408106	10.6	12	71	118
DTX408107	10.7	12	71	118
DTX408108	10.8	12	71	118
DTX408109	10.9	12	71	118
DTX408110	11.0	12	71	118
DTX408111	11.1	12	71	118
DTX408112	11.2	12	71	118
DTX408113	11.3	12	71	118
DTX408114	11.4	12	71	118
DTX408115	11.5	12	71	118
DTX408116	11.6	12	71	118
DTX408117	11.7	12	71	118
DTX408118	11.8	12	71	118
DTX408119	11.9	12	71	118
DTX408120	12.0	12	71	118
DTX408125	12.5	14	77	124

▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

ISO	P										M				K						
	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	32	10	29	32	38	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						
	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 (5XD)

SERIES

NEW 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 30° h6 m7 140° 20 bar RCH Coating p.41

LONG
5x D

Unit : mm

EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
RCH-Coating	D1	D2	L1	L2
DTX408130	13.0	14	77	124
DTX408135	13.5	14	77	124
DTX408140	14.0	14	77	124
DTX408145	14.5	16	83	133
DTX408150	15.0	16	83	133
DTX408155	15.5	16	83	133
DTX408160	16.0	16	83	133
DTX408165	16.5	18	93	143

EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
RCH-Coating	D1	D2	L1	L2
DTX408170	17.0	18	93	143
DTX408175	17.5	18	93	143
DTX408180	18.0	18	93	143
DTX408185	18.5	20	101	153
DTX408190	19.0	20	101	153
DTX408195	19.5	20	101	153
DTX408200	20.0	20	101	153

▶ Other shank types are available on your request.

◎ : Excellent ○ : Good

ISO	P										M				K						
	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	32	10	29	32	38	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						
	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 (8XD)

SERIES
NEW 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 30° h6 m7 140° 20 bar RCH Coating p.41 **EXTRA LONG** 8× D

Unit : mm

EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length	EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
RCH-Coating	D1	D2	L1	L2	RCH-Coating	D1	D2	L1	L2
DTX421030	3.0	6	34	72	DTX421058	5.8	6	57	95
DTX421031	3.1	6	34	72	DTX421059	5.9	6	57	95
DTX421032	3.2	6	34	72	DTX421060	6.0	6	57	95
DTX421033	3.3	6	34	72	DTX421061	6.1	8	76	114
DTX421034	3.4	6	34	72	DTX421062	6.2	8	76	114
DTX421035	3.5	6	34	72	DTX421063	6.3	8	76	114
DTX421036	3.6	6	34	72	DTX421064	6.4	8	76	114
DTX421037	3.7	6	34	72	DTX421065	6.5	8	76	114
DTX421038	3.8	6	43	81	DTX421066	6.6	8	76	114
DTX421039	3.9	6	43	81	DTX421067	6.7	8	76	114
DTX421040	4.0	6	43	81	DTX421068	6.8	8	76	114
DTX421041	4.1	6	43	81	DTX421069	6.9	8	76	114
DTX421042	4.2	6	43	81	DTX421070	7.0	8	76	114
DTX421043	4.3	6	43	81	DTX421071	7.1	8	76	114
DTX421044	4.4	6	43	81	DTX421072	7.2	8	76	114
DTX421045	4.5	6	43	81	DTX421073	7.3	8	76	114
DTX421046	4.6	6	43	81	DTX421074	7.4	8	76	114
DTX421047	4.7	6	43	81	DTX421075	7.5	8	76	114
DTX421048	4.8	6	57	95	DTX421076	7.6	8	76	114
DTX421049	4.9	6	57	95	DTX421077	7.7	8	76	114
DTX421050	5.0	6	57	95	DTX421078	7.8	8	76	114
DTX421051	5.1	6	57	95	DTX421079	7.9	8	76	114
DTX421052	5.2	6	57	95	DTX421080	8.0	8	76	114
DTX421053	5.3	6	57	95	DTX421081	8.1	10	95	142
DTX421054	5.4	6	57	95	DTX421082	8.2	10	95	142
DTX421055	5.5	6	57	95	DTX421083	8.3	10	95	142
DTX421056	5.6	6	57	95	DTX421084	8.4	10	95	142
DTX421057	5.7	6	57	95	DTX421085	8.5	10	95	142

▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

ISO	P										M				K						
	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	35	38	42	45	48	52	55	58	62	65	68	72	75	78	82	85	
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				
	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	13	25	28	32	35	38	42	45	48	52	55	58	62	65	68	72	75	78	82	85	
HB	60	100	75	90	130	110	90	100			15	30	25	38	34	400 Rm	1050 Rm	550	630	400	550
Recommended	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎

RCH-COATED SOLID CARBIDE
DREAM DRILL X with COOLANT HOLES (8XD)

SERIES
NEW 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 30° h6 m7 140° 20 bar RCH Coating p.41 **EXTRA LONG** 8× D

Unit : mm

EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length	EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
RCH-Coating	D1	D2	L1	L2	RCH-Coating	D1	D2	L1	L2
DTX421086	8.6	10	95	142	DTX421114	11.4	12	114	162
DTX421087	8.7	10	95	142	DTX421115	11.5	12	114	162
DTX421088	8.8	10	95	142	DTX421116	11.6	12	114	162
DTX421089	8.9	10	95	142	DTX421117	11.7	12	114	162
DTX421090	9.0	10	95	142	DTX421118	11.8	12	114	162
DTX421091	9.1	10	95	142	DTX421119	11.9	12	114	162
DTX421092	9.2	10	95	142	DTX421120	12.0	12	114	162
DTX421093	9.3	10	95	142	DTX421125	12.5	14	133	178
DTX421094	9.4	10	95	142	DTX421130	13.0	14	133	178
DTX421095	9.5	10	95	142	DTX421135	13.5	14	133	178
DTX421096	9.6	10	95	142	DTX421140	14.0	14	133	178
DTX421097	9.7	10	95	142					
DTX421098	9.8	10	95	142					
DTX421099	9.9	10	95	142					
DTX421100	10.0	10	95	142					
DTX421101	10.1	12	114	162					
DTX421102	10.2	12	114	162					
DTX421103	10.3	12	114	162					
DTX421104	10.4	12	114	162					
DTX421105	10.5	12	114	162					
DTX421106	10.6	12	114	162					
DTX421107	10.7	12	114	162					
DTX421108	10.8	12	114	162					
DTX421109	10.9	12	114	162					
DTX421110	11.0	12	114	162					
DTX421111	11.1	12	114	162					
DTX421112	11.2	12	114	162					
DTX421113	11.3	12	114	162					

▶ Other shank types are available on your request.

◎ : Excellent ○ : Good

ISO	P										M				K						
	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	35	38	42	45	48	52	55	58	62	65	68	72	75	78	82	85	
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				
	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	13	25	28	32	35	38	42	45	48	52	55	58	62	65	68	72	75	78	82	85	
HB	60	100	75	90	130	110	90	100			15	30	25	38	34	400 Rm	1050 Rm	550	630	400	550
Recommended	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎

DTX404, DTX423, DTX424 SERIES

without COOLANT HOLES

Vc = m/min.
RPM = rev./min.
FEED = mm/rev.

ISO	VDI 3323	Material Description	Vc	Parameter	Drill Diameter (mm)					
					1.0	2.0	3.0	4.0	5.0	6.0
P	2	Non-alloy steel	70	RPM	22280	11140	10610	7960	6370	5310
				FEED	0.03-0.05	0.05-0.07	0.06-0.12	0.08-0.14	0.14-0.20	0.16-0.22
				RPM	22280	11140	10610	7960	6370	5310
	3	Non-alloy steel	70	RPM	22280	11140	10610	7960	6370	5310
				FEED	0.03-0.05	0.05-0.07	0.06-0.12	0.08-0.14	0.14-0.20	0.16-0.22
				RPM	22280	11140	10610	7960	6370	5310
	4	Non-alloy steel	70	RPM	22280	11140	10610	7960	6370	5310
				FEED	0.03-0.05	0.05-0.07	0.06-0.12	0.08-0.14	0.14-0.20	0.16-0.22
				RPM	22280	11140	10610	7960	6370	5310
	5	Non-alloy steel	70	RPM	22280	11140	10610	7960	6370	5310
				FEED	0.03-0.05	0.05-0.07	0.06-0.12	0.08-0.14	0.14-0.20	0.16-0.22
RPM				22280	11140	10610	7960	6370	5310	
6	Low alloy steel	70	RPM	22280	11140	10610	7960	6370	5310	
			FEED	0.03-0.05	0.05-0.07	0.06-0.12	0.08-0.14	0.14-0.20	0.16-0.22	
			RPM	22280	11140	10610	7960	6370	5310	
7	Low alloy steel	60	RPM	19100	9550	8490	6370	5090	4240	
			FEED	0.03-0.05	0.05-0.07	0.06-0.12	0.08-0.14	0.14-0.20	0.16-0.22	
			RPM	19100	9550	8490	6370	5090	4240	
8	Low alloy steel	60	RPM	19100	9550	8490	6370	5090	4240	
			FEED	0.02-0.04	0.03-0.05	0.04-0.10	0.07-0.13	0.10-0.16	0.12-0.18	
			RPM	19100	9550	8490	6370	5090	4240	
9	Low alloy steel	30	RPM	9550	4770	4240	3180	2550	2120	
			FEED	0.02-0.04	0.03-0.05	0.03-0.08	0.05-0.11	0.08-0.14	0.10-0.16	
			RPM	9550	4770	4240	3180	2550	2120	
10	High alloyed steel, and tool steel	50	RPM	15920	7960	7430	5570	4460	3710	
			FEED	0.03-0.05	0.05-0.07	0.04-0.10	0.07-0.13	0.10-0.16	0.12-0.18	
			RPM	15920	7960	7430	5570	4460	3710	
11	High alloyed steel, and tool steel	30	RPM	9550	4770	4240	3180	2550	2120	
			FEED	0.02-0.04	0.03-0.05	0.03-0.08	0.05-0.11	0.08-0.14	0.10-0.16	
			RPM	9550	4770	4240	3180	2550	2120	
M	12	Stainless steel	50	RPM	15920	7960	7430	5570	4460	3710
				FEED	0.03-0.05	0.05-0.07	0.06-0.12	0.08-0.14	0.14-0.20	0.16-0.22
M	13	Stainless steel	35	RPM	11140	5570	4770	3580	2860	2390
				FEED	0.02-0.04	0.03-0.05	0.04-0.10	0.07-0.13	0.10-0.16	0.12-0.18
K	15	Grey cast iron	70	RPM	22280	11140	10610	7960	6370	5310
				FEED	0.04-0.06	0.04-0.06	0.08-0.14	0.12-0.18	0.15-0.22	0.20-0.26
	16	Grey cast iron	65	RPM	20690	10350	8490	6370	5090	4240
				FEED	0.04-0.06	0.04-0.06	0.06-0.12	0.08-0.14	0.14-0.20	0.16-0.22
	17	Nodular cast iron	70	RPM	22280	11140	10610	7960	6370	5310
				FEED	0.04-0.06	0.04-0.06	0.08-0.14	0.12-0.18	0.15-0.22	0.20-0.26
	18	Nodular cast iron	50	RPM	15920	7960	7430	5570	4460	3710
				FEED	0.04-0.06	0.04-0.06	0.06-0.12	0.08-0.14	0.14-0.20	0.16-0.22
19	Malleable cast iron	60	RPM	19100	9550	8490	6370	5090	4240	
			FEED	0.04-0.06	0.04-0.06	0.08-0.14	0.12-0.18	0.15-0.22	0.20-0.26	
20	Malleable cast iron	50	RPM	15920	7960	7430	5570	4460	3710	
			FEED	0.03-0.05	0.05-0.07	0.06-0.12	0.08-0.14	0.14-0.20	0.16-0.22	
H	38	Hardened steel	20	RPM	6370	3180	2650	1990	1590	1330
FEED	0.01-0.02	0.01-0.03	0.01-0.03	0.01-0.04	0.02-0.05	0.03-0.06				

ISO	VDI 3323	Material Description	Vc	Parameter	Drill Diameter (mm)							
					8.0	10.0	12.0	14.0	16.0	18.0	20.0	
P	2	Non-alloy steel	100	RPM	3980	3180	2650	2270	1990	1770	1590	
				FEED	0.18-0.24	0.19-0.27	0.21-0.29	0.23-0.31	0.25-0.33	0.28-0.38	0.30-0.40	
				RPM	3980	3180	2650	2270	1990	1770	1590	
	3	Non-alloy steel	100	RPM	3980	3180	2650	2270	1990	1770	1590	
				FEED	0.18-0.24	0.19-0.27	0.21-0.29	0.23-0.31	0.25-0.33	0.28-0.38	0.30-0.40	
				RPM	3980	3180	2650	2270	1990	1770	1590	
	4	Non-alloy steel	100	RPM	3980	3180	2650	2270	1990	1770	1590	
				FEED	0.14-0.20	0.15-0.23	0.17-0.25	0.18-0.26	0.19-0.27	0.20-0.30	0.22-0.32	
				RPM	3180	2550	2120	1820	1590	1410	1270	
	5	Non-alloy steel	80	RPM	3180	2550	2120	1820	1590	1410	1270	
				FEED	0.14-0.20	0.15-0.23	0.17-0.25	0.18-0.26	0.19-0.27	0.20-0.30	0.22-0.32	
RPM				3980	3180	2650	2270	1990	1770	1590		
6	Low alloy steel	100	RPM	3980	3180	2650	2270	1990	1770	1590		
			FEED	0.18-0.24	0.19-0.27	0.21-0.29	0.23-0.31	0.25-0.33	0.28-0.38	0.30-0.40		
			RPM	3180	2550	2120	1820	1590	1410	1270		
7	Low alloy steel	80	RPM	3180	2550	2120	1820	1590	1410	1270		
			FEED	0.18-0.24	0.19-0.27	0.21-0.29	0.23-0.31	0.25-0.33	0.28-0.38	0.30-0.40		
			RPM	3180	2550	2120	1820	1590	1410	1270		
8	Low alloy steel	80	RPM	3180	2550	2120	1820	1590	1410	1270		
			FEED	0.14-0.20	0.15-0.23	0.17-0.25	0.18-0.26	0.19-0.27	0.20-0.30	0.22-0.32		
			RPM	1590	1270	1060	910	800	710	640		
9	Low alloy steel	40	RPM	1590	1270	1060	910	800	710	640		
			FEED	0.12-0.18	0.13-0.19	0.14-0.20	0.15-0.21	0.16-0.22	0.17-0.25	0.18-0.28		
			RPM	2790	2230	1860	1590	1390	1240	1110		
10	High alloyed steel, and tool steel	70	RPM	2790	2230	1860	1590	1390	1240	1110		
			FEED	0.14-0.20	0.15-0.23	0.17-0.25	0.18-0.26	0.19-0.27	0.20-0.30	0.22-0.32		
			RPM	1590	1270	1060	910	800	710	640		
11	High alloyed steel, and tool steel	40	RPM	1590	1270	1060	910	800	710	640		
			FEED	0.12-0.18	0.13-0.19	0.14-0.20	0.15-0.21	0.16-0.22	0.17-0.25	0.18-0.28		
			RPM	2790	2230	1860	1590	1390	1240	1110		
M	12	Stainless steel	70	RPM	2790	2230	1860	1590	1390	1240	1110	
				FEED	0.18-0.24	0.19-0.27	0.21-0.29	0.23-0.31	0.25-0.33	0.28-0.38	0.30-0.40	
M	13	Stainless steel	45	RPM	1790	1430	1190	1020	900	800	720	
				FEED	0.14-0.20	0.15-0.23	0.17-0.25	0.18-0.26	0.19-0.27	0.20-0.30	0.22-0.32	
K	15	Grey cast iron	100	RPM	3980	3180	2650	2270	1990	1770	1590	
				FEED	0.22-0.28	0.25-0.33	0.27-0.35	0.29-0.37	0.31-0.39	0.32-0.42	0.34-0.44	
	16	Grey cast iron	80	RPM	3180	2550	2120	1820	1590	1410	1270	
				FEED	0.18-0.24	0.19-0.27	0.21-0.29	0.23-0.31	0.25-0.33	0.28-0.38	0.30-0.40	
	17	Nodular cast iron	100	RPM	3980	3180	2650	2270	1990	1770	1590	
				FEED	0.22-0.28	0.25-0.33	0.27-0.35	0.29-0.37	0.31-0.39	0.32-0.42	0.34-0.44	
	18	Nodular cast iron	70	RPM	2790	2230	1860	1590	1390	1240	1110	
				FEED	0.18-0.24	0.19-0.27	0.21-0.29	0.23-0.31	0.25-0.33	0.28-0.38	0.30-0.40	
19	Malleable cast iron	80	RPM	3180	2550	2120	1820	1590	1410	1270		
			FEED	0.22-0.28	0.25-0.33	0.27-0.35	0.29-0.37	0.31-0.39	0.32-0.42	0.34-0.44		
20	Malleable cast iron	70	RPM	2790	2230	1860	1590	1390	1240	1110		
			FEED	0.18-0.24	0.19-0.27	0.21-0.29	0.23-0.31	0.25-0.33	0.28-0.38	0.30-0.40		
H	38	Hardened steel	25	RPM	990	800	660	570	500	440	400	
FEED	0.03-0.06	0.04-0.07	0.04-0.08	0.05-0.09	0.05-0.09	0.05-0.10						

► Recommend to reduce the feed rate as following **Feed 100%** : DTX404(3×D), DTX423(3×D), DTX424(5×D)

DTX406, DTX408, DTX421 SERIES

with COOLANT HOLES

Vc = m/min.
RPM = rev./min.
FEED = mm/rev.

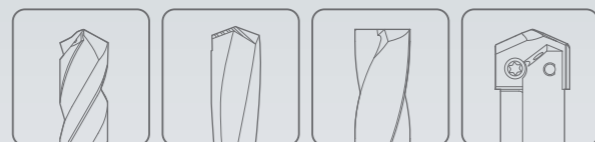
ISO	VDI 3323	Material Description	Vc	Parameter	Drill Diameter (mm)					
					1.0	2.0	3.0	4.0	5.0	6.0
P	2	Non-alloy steel	80	RPM	25460	12730	11670	8750	7000	5840
				FEED	0.03-0.05	0.05-0.07	0.06-0.12	0.08-0.14	0.14-0.20	0.16-0.22
				RPM	25460	12730	11670	8750	7000	5840
	3	Non-alloy steel	80	RPM	25460	12730	11670	8750	7000	5840
				FEED	0.03-0.05	0.05-0.07	0.06-0.12	0.08-0.14	0.14-0.20	0.16-0.22
				RPM	25460	12730	11670	8750	7000	5840
	4	Non-alloy steel	80	RPM	25460	12730	11670	8750	7000	5840
				FEED	0.03-0.05	0.05-0.07	0.06-0.12	0.08-0.14	0.14-0.20	0.16-0.22
				RPM	25460	12730	11670	8750	7000	5840
	5	Non-alloy steel	70	RPM	22280	11140				



Leading Through Innovation



Global Cutting Tool Leader **YG-1**



SOLID CARBIDE

DREAM DRILLS

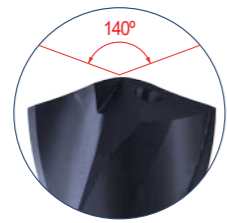
**DREAM DRILLS
-GENERAL**

- For General Purpose (HRc30 to HRc50)

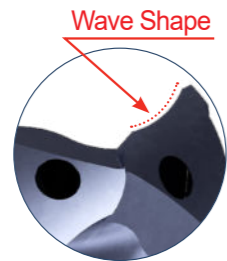
DREAM DRILLS GENERAL



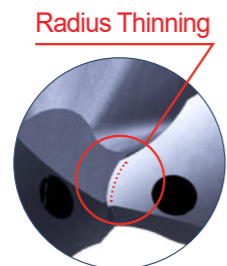
Micro-grained carbide for wear resistance and longer tool life



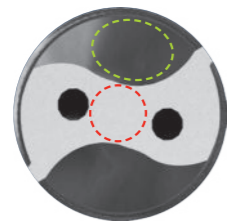
140 Degree Point Angle
for good centering and low thrust



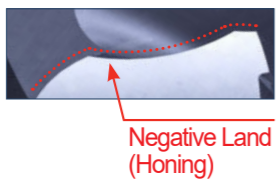
Wave Shape Cutting Edge
will allow low thrust, stable torque and long tool life



Radius Thinning
for Self Centering and Chip Breaking



Optimized Flute Shape
for strength of drill and smooth chip evacuation



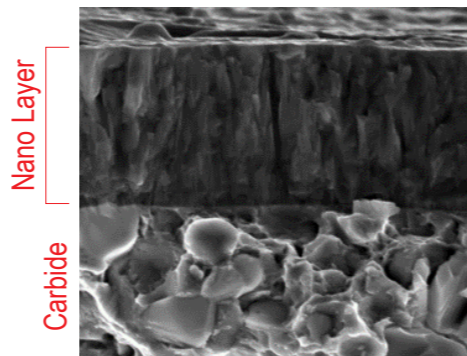
Negative Land on the cutting edge
for Reliable Tool Life

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.

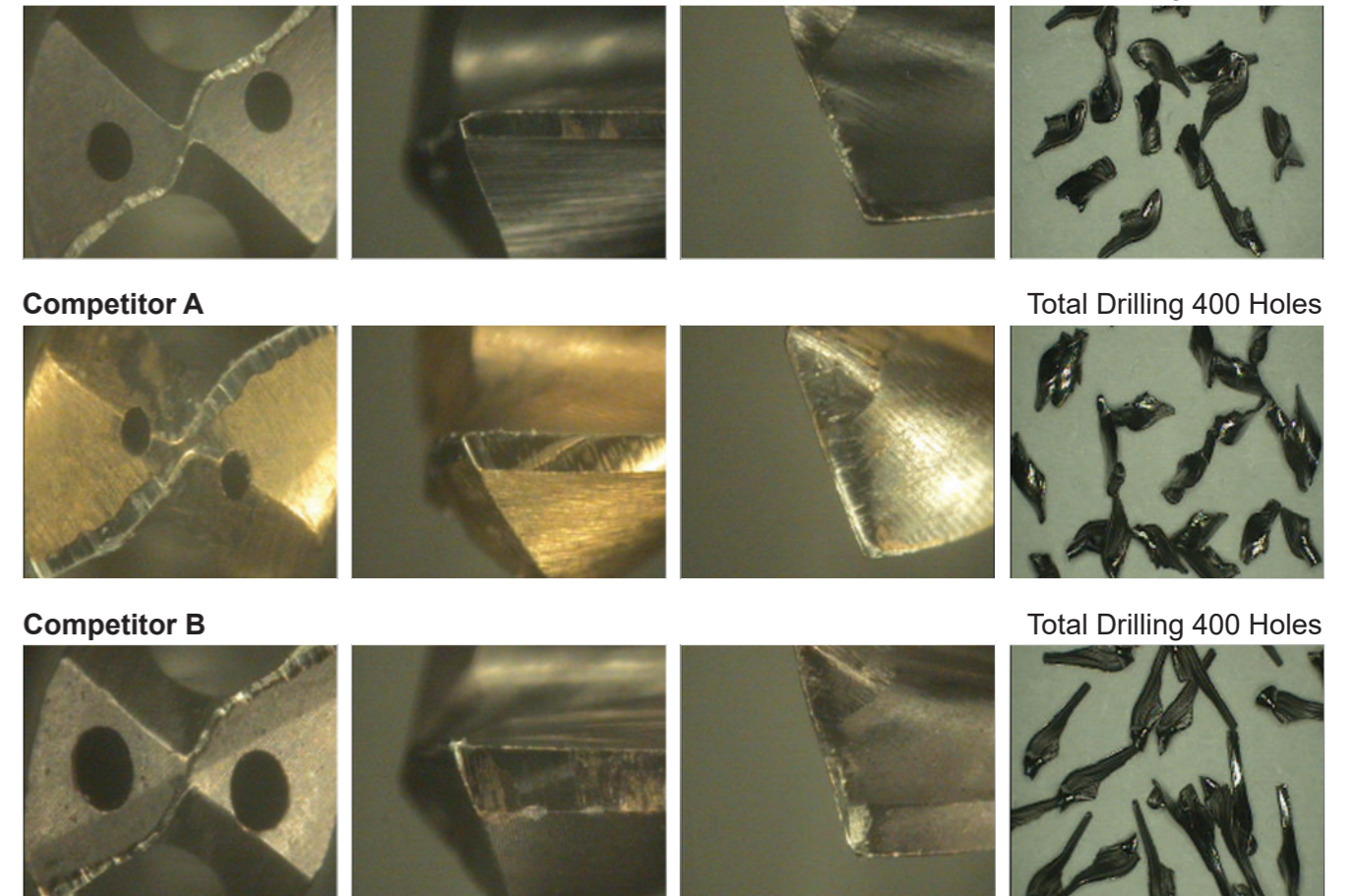
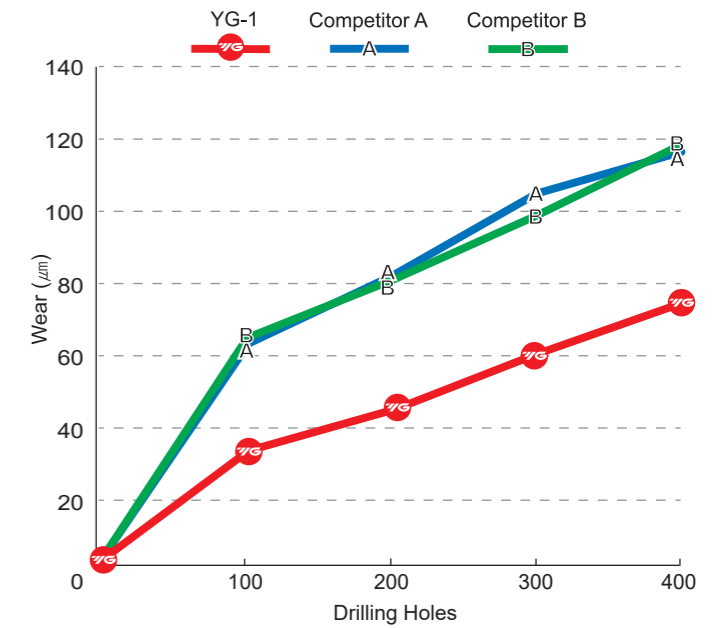


Nano Layer
Carbide

CASE STUDY

► SOLID CARBIDE DREAM DRILLS - General with Coolant Holes

CUTTING CONDITION	
Tool	DH408015 (Dream Drill with Coolant Holes)
Size(mm)	Ø1.5 x Ø3 x 15 x 55
Work Material	• DIN: X40GrMoV51 • WR: 1.2344 • JIS: SKD61 (HRc30)
RPM	14,856 rev./min.
Feed	0.05 mm/rev.
Drilling Depth	7.5 mm
Coolant	Wet Cut



TiAIN-COATED SOLID CARBIDE
DREAM DRILLS GENERAL without COOLANT HOLES (3XD)

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 30° h6 h7 140° TiAIN p.60

STUB
3 × D

Unit : mm			
EDP No.	Drill Diameter	Flute Length	Overall Length
TiAIN	D1=D2	L1	L2
DH404030	3.0	16	46
DH404031	3.1	18	49
DH404032	3.2	18	49
DH404033	3.3	18	49
DH404034	3.4	20	52
DH404035	3.5	20	52
DH404036	3.6	20	52
DH404037	3.7	20	52
DH404038	3.8	22	55
DH404039	3.9	22	55
DH404040	4.0	22	55
DH404041	4.1	22	55
DH404042	4.2	22	55
DH404043	4.3	24	58
DH404044	4.4	24	58
DH404045	4.5	24	58
DH404046	4.6	24	58
DH404047	4.7	24	58
DH404048	4.8	26	62
DH404049	4.9	26	62
DH404050	5.0	26	62
DH404051	5.1	26	62
DH404052	5.2	26	62
DH404053	5.3	26	62
DH404054	5.4	28	66
DH404055	5.5	28	66
DH404056	5.6	28	66
DH404057	5.7	28	66

Unit : mm			
EDP No.	Drill Diameter	Flute Length	Overall Length
TiAIN	D1=D2	L1	L2
DH404058	5.8	28	66
DH404059	5.9	28	66
DH404060	6.0	28	66
DH404061	6.1	31	70
DH404062	6.2	31	70
DH404063	6.3	31	70
DH404064	6.4	31	70
DH404065	6.5	31	70
DH404066	6.6	31	70
DH404067	6.7	31	70
DH404068	6.8	34	74
DH404069	6.9	34	74
DH404070	7.0	34	74
DH404071	7.1	34	74
DH404072	7.2	34	74
DH404073	7.3	34	74
DH404074	7.4	34	74
DH404075	7.5	34	74
DH404076	7.6	37	79
DH404077	7.7	37	79
DH404078	7.8	37	79
DH404079	7.9	37	79
DH404080	8.0	37	79
DH404081	8.1	37	79
DH404082	8.2	37	79
DH404083	8.3	37	79
DH404084	8.4	37	79
DH404085	8.5	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	32	10	29	32	38	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	60	42	55	21
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎

TiAIN-COATED SOLID CARBIDE
DREAM DRILLS GENERAL without COOLANT HOLES (3XD)

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 30° h6 h7 140° TiAIN p.60

STUB
3 × D

Unit : mm			
EDP No.	Drill Diameter	Flute Length	Overall Length
TiAIN	D1=D2	L1	L2
DH404086	8.6	40	84
DH404087	8.7	40	84
DH404088	8.8	40	84
DH404089	8.9	40	84
DH404090	9.0	40	84
DH404091	9.1	40	84
DH404092	9.2	40	84
DH404093	9.3	40	84
DH404094	9.4	40	84
DH404095	9.5	40	84
DH404096	9.6	43	89
DH404097	9.7	43	89
DH404098	9.8	43	89
DH404099	9.9	43	89
DH404100	10.0	43	89
DH404102	10.2	43	89
DH404105	10.5	43	89
DH404110	11.0	47	95
DH404115	11.5	47	95
DH404120	12.0	51	102
DH404130	13.0	51	102
DH404135	13.5	54	107
DH404140	14.0	54	107
DH404145	14.5	56	111
DH404150	15.0	56	111
DH404155	15.5	58	115
DH404160	16.0	58	115
DH404165	16.5	60	119

Unit : mm			
EDP No.	Drill Diameter	Flute Length	Overall Length
TiAIN	D1=D2	L1	L2
DH404170	17.0	60	119
DH404175	17.5	62	123
DH404180	18.0	62	123
DH404185	18.5	64	127
DH404190	19.0	64	127
DH404195	19.5	66	131
DH404200	20.0	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	32	10	29	32	38	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	60	42	55	21
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommended	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎

TiAIN-COATED SOLID CARBIDE
DREAM DRILLS GENERAL without COOLANT HOLES (3XD)

SERIES
PLAIN SHANK **DH423**
FLAT SHANK **DH443**

- ▶ 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** 30° h6 m7 140° **TiAIN** **SHORT 3 x D** p.60

EDP No.		Drill Diameter	Shank Diameter	Flute Length	Overall Length	EDP No.		Drill Diameter	Shank Diameter	Flute Length	Overall Length
Plain	Flat	D1	D2	L1	L2	Plain	Flat	D1	D2	L1	L2
DH423030	DH443030	3.0	6	20	62	DH423060	DH443060	6.0	6	28	66
DH423031	DH443031	3.1	6	20	62	DH423061	DH443061	6.1	8	34	79
DH423032	DH443032	3.2	6	20	62	DH423062	DH443062	6.2	8	34	79
DH423033	DH443033	3.3	6	20	62	DH423063	DH443063	6.3	8	34	79
DH423034	DH443034	3.4	6	20	62	DH423064	DH443064	6.4	8	34	79
DH423035	DH443035	3.5	6	20	62	DH423065	DH443065	6.5	8	34	79
DH423036	DH443036	3.6	6	20	62	DH423066	DH443066	6.6	8	34	79
DH423037	DH443037	3.7	6	20	62	DH423067	DH443067	6.7	8	34	79
DH423038	DH443038	3.8	6	24	66	DH423068	DH443068	6.8	8	34	79
DH423039	DH443039	3.9	6	24	66	DH423069	DH443069	6.9	8	34	79
DH423040	DH443040	4.0	6	24	66	DH423070	DH443070	7.0	8	34	79
DH423041	DH443041	4.1	6	24	66	DH423071	DH443071	7.1	8	41	79
DH423042	DH443042	4.2	6	24	66	DH423072	DH443072	7.2	8	41	79
DH423043	DH443043	4.3	6	24	66	DH423073	DH443073	7.3	8	41	79
DH423044	DH443044	4.4	6	24	66	DH423074	DH443074	7.4	8	41	79
DH423045	DH443045	4.5	6	24	66	DH423075	DH443075	7.5	8	41	79
DH423046	DH443046	4.6	6	24	66	DH423076	DH443076	7.6	8	41	79
DH423047	DH443047	4.7	6	24	66	DH423077	DH443077	7.7	8	41	79
DH423048	DH443048	4.8	6	28	66	DH423078	DH443078	7.8	8	41	79
DH423049	DH443049	4.9	6	28	66	DH423079	DH443079	7.9	8	41	79
DH423050	DH443050	5.0	6	28	66	DH423080	DH443080	8.0	8	41	79
DH423051	DH443051	5.1	6	28	66	DH423081	DH443081	8.1	10	47	89
DH423052	DH443052	5.2	6	28	66	DH423082	DH443082	8.2	10	47	89
DH423053	DH443053	5.3	6	28	66	DH423083	DH443083	8.3	10	47	89
DH423054	DH443054	5.4	6	28	66	DH423084	DH443084	8.4	10	47	89
DH423055	DH443055	5.5	6	28	66	DH423085	DH443085	8.5	10	47	89
DH423056	DH443056	5.6	6	28	66	DH423086	DH443086	8.6	10	47	89
DH423057	DH443057	5.7	6	28	66	DH423087	DH443087	8.7	10	47	89
DH423058	DH443058	5.8	6	28	66	DH423088	DH443088	8.8	10	47	89
DH423059	DH443059	5.9	6	28	66	DH423089	DH443089	8.9	10	47	89

▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

ISO	P											M				K									
	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	21	22	23	24	25
HRc	13	25	28	32	38	10	29	32	38	42	48	15	35	40	45	50	10	26	32	38	3	25	31	37	43
HB	125	190	250	270	300	180	275	300	350	400	450	200	325	350	400	450	180	260	300	350	160	250	300	350	400
Recommended	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎

ISO	N										S						H							
	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	42	43	44
HRc	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550			
Recommended	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎

TiAIN-COATED SOLID CARBIDE
DREAM DRILLS GENERAL without COOLANT HOLES (3XD)

SERIES
PLAIN SHANK **DH423**
FLAT SHANK **DH443**

- ▶ 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** 30° h6 m7 140° **TiAIN** **SHORT 3 x D** p.60

EDP No.		Drill Diameter	Shank Diameter	Flute Length	Overall Length	EDP No.		Drill Diameter	Shank Diameter	Flute Length	Overall Length
Plain	Flat	D1	D2	L1	L2	Plain	Flat	D1	D2	L1	L2
DH423090	DH443090	9.0	10	47	89	DH423120	DH443120	12.0	12	55	102
DH423091	DH443091	9.1	10	47	89	DH423123	DH443123	12.3	14	60	107
DH423092	DH443092	9.2	10	47	89	DH423125	DH443125	12.5	14	60	107
DH423093	DH443093	9.3	10	47	89	DH423128	DH443128	12.8	14	60	107
DH423094	DH443094	9.4	10	47	89	DH423130	DH443130	13.0	14	60	107
DH423095	DH443095	9.5	10	47	89	DH423135	DH443135	13.5	14	60	107
DH423096	DH443096	9.6	10	47	89	DH423138	DH443138	13.8	14	60	107
DH423097	DH443097	9.7	10	47	89	DH423140	DH443140	14.0	14	60	107
DH423098	DH443098	9.8	10	47	89	DH423145	DH443145	14.5	16	65	115
DH423099	DH443099	9.9	10	47	89	DH423148	DH443148	14.8	16	65	115
DH423100	DH443100	10.0	10	47	89	DH423150	DH443150	15.0	16	65	115
DH423101	DH443101	10.1	12	55	102	DH423155	DH443155	15.5	16	65	115
DH423102	DH443102	10.2	12	55	102	DH423158	DH443158	15.8	16	65	115
DH423103	DH443103	10.3	12	55	102	DH423160	DH443160	16.0	16	65	115
DH423104	DH443104	10.4	12	55	102	DH423165	DH443165	16.5	18	73	123
DH423105	DH443105	10.5	12	55	102	DH423168	DH443168	16.8	18	73	123
DH423106	DH443106	10.6	12	55	102	DH423170	DH443170	17.0	18	73	123
DH423107	DH443107	10.7	12	55	102	DH423175	DH443175	17.5	18	73	123
DH423108	DH443108	10.8	12	55	102	DH423178	DH443178	17.8	18	73	123
DH423109	DH443109	10.9	12	55	102	DH423180	DH443180	18.0	18	73	123
DH423110	DH443110	11.0	12	55	102	DH423185	DH443185	18.5	20	79	131
DH423111	DH443111	11.1	12	55	102	DH423190	DH443190	19.0	20	79	131
DH423112	DH443112	11.2	12	55	102	DH423195	DH443195	19.5	20	79	131
DH423113	DH443113	11.3	12	55	102	DH423198	DH443198	19.8	20	79	131
DH423114	DH443114	11.4	12	55	102	DH423200	DH443200	20.0	20	79	131
DH423115	DH443115	11.5	12	55	102						
DH423116	DH443116	11.6	12	55	102						
DH423117	DH443117	11.7	12	55	102						
DH423118	DH443118	11.8	12	55	102						
DH423119	DH443119	11.9	12	55	102						

▶ Other shank types are available on your request.

◎ : Excellent ○ : Good

ISO	P											M				K									
	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	21	22	23	24	25
HRc	13	25	28	32	38	10	29	32	38	42	48	15	35	40	45	50	10	26	32	38	3	25	31	37	43
HB	125	190	250	270	300	180	275	300	350	400	450	200	325	350	400	450	180	260	300	350	160	250	300	350	400
Recommended	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎

ISO	N										S						H							
	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	42	43	44
HRc	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550			
Recommended	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎

TiAIN-COATED SOLID CARBIDE
DREAM DRILLS GENERAL without COOLANT HOLES (5XD)

SERIES
PLAIN SHANK **DH424**
FLAT SHANK **DH444**

- ▶ 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 30° h6 m7 140° TiAIN p.60 **LONG 5x D**

EDP No.		Drill Diameter	Shank Diameter	Flute Length	Overall Length	Unit : mm					
Plain	Flat	D1	D2	L1	L2	EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length	
		D1	D2	L1	L2	Plain	Flat	D1	D2	L1	L2
DH424010	-	1.0	3	8	55	DH424038	DH444038	3.8	6	36	74
DH424011	-	1.1	3	12	55	DH424039	DH444039	3.9	6	36	74
DH424012	-	1.2	3	12	55	DH424040	DH444040	4.0	6	36	74
DH424013	-	1.3	3	12	55	DH424041	DH444041	4.1	6	36	74
DH424014	-	1.4	3	12	55	DH424042	DH444042	4.2	6	36	74
DH424015	-	1.5	3	16	55	DH424043	DH444043	4.3	6	36	74
DH424016	-	1.6	3	16	55	DH424044	DH444044	4.4	6	36	74
DH424017	-	1.7	3	16	55	DH424045	DH444045	4.5	6	36	74
DH424018	-	1.8	3	16	55	DH424046	DH444046	4.6	6	36	74
DH424019	-	1.9	3	16	55	DH424047	DH444047	4.7	6	36	74
DH424020	-	2.0	4	21	57	DH424048	DH444048	4.8	6	44	82
DH424021	-	2.1	4	21	57	DH424049	DH444049	4.9	6	44	82
DH424022	-	2.2	4	21	57	DH424050	DH444050	5.0	6	44	82
DH424023	-	2.3	4	21	57	DH424051	DH444051	5.1	6	44	82
DH424024	-	2.4	4	21	57	DH424052	DH444052	5.2	6	44	82
DH424025	-	2.5	4	21	57	DH424053	DH444053	5.3	6	44	82
DH424026	-	2.6	4	21	57	DH424054	DH444054	5.4	6	44	82
DH424027	-	2.7	4	21	57	DH424055	DH444055	5.5	6	44	82
DH424028	-	2.8	4	21	57	DH424056	DH444056	5.6	6	44	82
DH424029	-	2.9	4	21	57	DH424057	DH444057	5.7	6	44	82
DH424030	DH444030	3.0	6	28	66	DH424058	DH444058	5.8	6	44	82
DH424031	DH444031	3.1	6	28	66	DH424059	DH444059	5.9	6	44	82
DH424032	DH444032	3.2	6	28	66	DH424060	DH444060	6.0	6	44	82
DH424033	DH444033	3.3	6	28	66	DH424061	DH444061	6.1	8	53	91
DH424034	DH444034	3.4	6	28	66	DH424062	DH444062	6.2	8	53	91
DH424035	DH444035	3.5	6	28	66	DH424063	DH444063	6.3	8	53	91
DH424036	DH444036	3.6	6	28	66	DH424064	DH444064	6.4	8	53	91
DH424037	DH444037	3.7	6	28	66	DH424065	DH444065	6.5	8	53	91

▶ Other shank types are available on your request.

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◎ : Excellent ○ : Good

ISO	P											M				K									
	Non-alloy steel					Low alloy steel						High alloyed steel, and tool steel				Stainless steel				Grey cast iron	Nodular cast iron	Malleable cast iron			
Material Description	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
HRc	13	25	28	32	32	10	29	32	38	38	35	15	23	10	10	26	3	25	18	21	3	25	18	21	21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230	160	250	130	230	230
Recommended	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎

ISO	N										S						H								
	Aluminum-wrought alloy		Aluminum-cast alloyed			Copper and Copper Alloys (Bronze / Brass)					Non Metallic Materials			Heat Resistant Super Alloys			Titanium Alloys			Hardened steel	Chilled CastIron	Hardened CastIron			
Material Description	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	
HRc	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550	550	630	400	550
Recommended	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	

TiAIN-COATED SOLID CARBIDE
DREAM DRILLS GENERAL without COOLANT HOLES (5XD)

SERIES
PLAIN SHANK **DH424**
FLAT SHANK **DH444**

- ▶ 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 30° h6 m7 140° TiAIN p.60 **LONG 5x D**

EDP No.		Drill Diameter	Shank Diameter	Flute Length	Overall Length	Unit : mm					
Plain	Flat	D1	D2	L1	L2	EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length	
		D1	D2	L1	L2	Plain	Flat	D1	D2	L1	L2
DH424066	DH444066	6.6	8	53	91	DH424094	DH444094	9.4	10	61	103
DH424067	DH444067	6.7	8	53	91	DH424095	DH444095	9.5	10	61	103
DH424068	DH444068	6.8	8	53	91	DH424096	DH444096	9.6	10	61	103
DH424069	DH444069	6.9	8	53	91	DH424097	DH444097	9.7	10	61	103
DH424070	DH444070	7.0	8	53	91	DH424098	DH444098	9.8	10	61	103
DH424071	DH444071	7.1	8	53	91	DH424099	DH444099	9.9	10	61	103
DH424072	DH444072	7.2	8	53	91	DH424100	DH444100	10.0	10	61	103
DH424073	DH444073	7.3	8	53	91	DH424101	DH444101	10.1	12	71	118
DH424074	DH444074	7.4	8	53	91	DH424102	DH444102	10.2	12	71	118
DH424075	DH444075	7.5	8	53	91	DH424103	DH444103	10.3	12	71	118
DH424076	DH444076	7.6	8	53	91	DH424104	DH444104	10.4	12	71	118
DH424077	DH444077	7.7	8	53	91	DH424105	DH444105	10.5	12	71	118
DH424078	DH444078	7.8	8	53	91	DH424106	DH444106	10.6	12	71	118
DH424079	DH444079	7.9	8	53	91	DH424107	DH444107	10.7	12	71	118
DH424080	DH444080	8.0	8	53	91	DH424108	DH444108	10.8	12	71	118
DH424081	DH444081	8.1	10	61	103	DH424109	DH444109	10.9	12	71	118
DH424082	DH444082	8.2	10	61	103	DH424110	DH444110	11.0	12	71	118
DH424083	DH444083	8.3	10	61	103	DH424111	DH444111	11.1	12	71	118
DH424084	DH444084	8.4	10	61	103	DH424112	DH444112	11.2	12	71	118
DH424085	DH444085	8.5	10	61	103	DH424113	DH444113	11.3	12	71	118
DH424086	DH444086	8.6	10	61	103	DH424114	DH444114	11.4	12	71	118
DH424087	DH444087	8.7	10	61	103	DH424115	DH444115	11.5	12	71	118
DH424088	DH444088	8.8	10	61	103	DH424116	DH444116	11.6	12	71	118
DH424089	DH444089	8.9	10	61	103	DH424117	DH444117	11.7	12	71	118
DH424090	DH444090	9.0	10	61	103	DH424118	DH444118	11.8	12	71	118
DH424091	DH444091	9.1	10	61	103	DH424119	DH444119	11.9	12	71	118
DH424092	DH444092	9.2	10	61	103	DH424120	DH444120	12.0	12	71	118
DH424093	DH444093	9.3	10	61	103	DH424125	DH444125	12.5	14	77	124

▶ Other shank types are available on your request.

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◎ : Excellent ○ : Good

ISO	P											M				K									
	Non-alloy steel					Low alloy steel						High alloyed steel, and tool steel				Stainless steel				Grey cast iron	Nodular cast iron	Malleable cast iron			
Material Description	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
HRc	13	25	28	32	32	10	29	32	38	38	35	15	23	10	10	26	3	25	18	21	3	25	18	21	21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230	160	250	130	230	230
Recommended	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎

ISO	N										S						H								
	Aluminum-wrought alloy		Aluminum-cast alloyed			Copper and Copper Alloys (Bronze / Brass)					Non Metallic Materials			Heat Resistant Super Alloys			Titanium Alloys			Hardened steel	Chilled CastIron	Hardened CastIron			
Material Description	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	
HRc	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550	550	630	400	550
Recommended	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎											

TiAIN-COATED SOLID CARBIDE
DREAM DRILLS GENERAL without COOLANT HOLES (5XD)

SERIES
PLAIN SHANK **DH424**
FLAT SHANK **DH444**

- ▶ 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 30° h6 m7 140° TiAIN p.60 **LONG** 5x D

EDP No.		Drill Diameter	Shank Diameter	Flute Length	Overall Length
Plain	Flat	D1	D2	L1	L2
DH424130	DH444130	13.0	14	77	124
DH424135	DH444135	13.5	14	77	124
DH424140	DH444140	14.0	14	77	124
DH424145	DH444145	14.5	16	83	133
DH424150	DH444150	15.0	16	83	133
DH424155	DH444155	15.5	16	83	133
DH424160	DH444160	16.0	16	83	133
DH424165	DH444165	16.5	18	93	143

Unit : mm

EDP No.		Drill Diameter	Shank Diameter	Flute Length	Overall Length
Plain	Flat	D1	D2	L1	L2
DH424170	DH444170	17.0	18	93	143
DH424175	DH444175	17.5	18	93	143
DH424180	DH444180	18.0	18	93	143
DH424185	DH444185	18.5	20	101	153
DH424190	DH444190	19.0	20	101	153
DH424195	DH444195	19.5	20	101	153
DH424200	DH444200	20.0	20	101	153

▶ Other shank types are available on your request.

TiAIN-COATED SOLID CARBIDE
DREAM DRILLS GENERAL with COOLANT HOLES (3XD)

SERIES
PLAIN SHANK **DH406**
FLAT SHANK **DH446**

- ▶ 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 30° h6 m7 140° 20 bar TiAIN p.61 **SHORT** 3x D

Unit : mm

EDP No.		Drill Diameter	Shank Diameter	Flute Length	Overall Length
Plain	Flat	D1	D2	L1	L2
DH406030	DH446030	3.0	6	20	62
DH406031	DH446031	3.1	6	20	62
DH406032	DH446032	3.2	6	20	62
DH406033	DH446033	3.3	6	20	62
DH406034	DH446034	3.4	6	20	62
DH406035	DH446035	3.5	6	20	62
DH406036	DH446036	3.6	6	20	62
DH406037	DH446037	3.7	6	20	62
DH406038	DH446038	3.8	6	24	66
DH406039	DH446039	3.9	6	24	66
DH406040	DH446040	4.0	6	24	66
DH406041	DH446041	4.1	6	24	66
DH406042	DH446042	4.2	6	24	66
DH406043	DH446043	4.3	6	24	66
DH406044	DH446044	4.4	6	24	66
DH406045	DH446045	4.5	6	24	66
DH406046	DH446046	4.6	6	24	66
DH406047	DH446047	4.7	6	24	66
DH406048	DH446048	4.8	6	28	66
DH406049	DH446049	4.9	6	28	66
DH406050	DH446050	5.0	6	28	66
DH406051	DH446051	5.1	6	28	66
DH406052	DH446052	5.2	6	28	66
DH406053	DH446053	5.3	6	28	66
DH406054	DH446054	5.4	6	28	66
DH406055	DH446055	5.5	6	28	66
DH406056	DH446056	5.6	6	28	66
DH406057	DH446057	5.7	6	28	66

Unit : mm

EDP No.		Drill Diameter	Shank Diameter	Flute Length	Overall Length
Plain	Flat	D1	D2	L1	L2
DH406058	DH446058	5.8	6	28	66
DH406059	DH446059	5.9	6	28	66
DH406060	DH446060	6.0	6	28	66
DH406061	DH446061	6.1	8	34	79
DH406062	DH446062	6.2	8	34	79
DH406063	DH446063	6.3	8	34	79
DH406064	DH446064	6.4	8	34	79
DH406065	DH446065	6.5	8	34	79
DH406066	DH446066	6.6	8	34	79
DH406067	DH446067	6.7	8	34	79
DH406068	DH446068	6.8	8	34	79
DH406069	DH446069	6.9	8	34	79
DH406070	DH446070	7.0	8	34	79
DH406071	DH446071	7.1	8	41	79
DH406072	DH446072	7.2	8	41	79
DH406073	DH446073	7.3	8	41	79
DH406074	DH446074	7.4	8	41	79
DH406075	DH446075	7.5	8	41	79
DH406076	DH446076	7.6	8	41	79
DH406077	DH446077	7.7	8	41	79
DH406078	DH446078	7.8	8	41	79
DH406079	DH446079	7.9	8	41	79
DH406080	DH446080	8.0	8	41	79
DH406081	DH446081	8.1	10	47	89
DH406082	DH446082	8.2	10	47	89
DH406083	DH446083	8.3	10	47	89
DH406084	DH446084	8.4	10	47	89
DH406085	DH446085	8.5	10	47	89

▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

ISO	P										M			K							
	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	38	10	29	32	38	15	35	15	23	10	10	26	3	25	31	21	
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	260	160	250	130	230		
Recommended	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	

ISO	N										S						H				
	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	15	30	25	38	34	200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
HB	60	100	75	90	130	110	90	100													
Recommended	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎

◎ : Excellent ○ : Good

ISO	P										M			K							
	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	38	10	29	32	38	15	35	15	23	10	10	26	3	25	31	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				
	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	15	30	25	38	34	200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
HB	60	100	75	90	130	110	90	100													
Recommended	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎

TiAIN-COATED SOLID CARBIDE
DREAM DRILLS GENERAL with COOLANT HOLES (3XD)

SERIES
 PLAIN SHANK **DH406**
 FLAT SHANK **DH446**

- ▶ 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 30° h6 m7 140° 20 bar TiAIN p.61 **SHORT 3×D**

EDP No.		Drill Diameter	Shank Diameter	Flute Length	Overall Length
Plain	Flat	D1	D2	L1	L2
DH406086	DH446086	8.6	10	47	89
DH406087	DH446087	8.7	10	47	89
DH406088	DH446088	8.8	10	47	89
DH406089	DH446089	8.9	10	47	89
DH406090	DH446090	9.0	10	47	89
DH406091	DH446091	9.1	10	47	89
DH406092	DH446092	9.2	10	47	89
DH406093	DH446093	9.3	10	47	89
DH406094	DH446094	9.4	10	47	89
DH406095	DH446095	9.5	10	47	89
DH406096	DH446096	9.6	10	47	89
DH406097	DH446097	9.7	10	47	89
DH406098	DH446098	9.8	10	47	89
DH406099	DH446099	9.9	10	47	89
DH406100	DH446100	10.0	10	47	89
DH406101	DH446101	10.1	12	55	102
DH406102	DH446102	10.2	12	55	102
DH406103	DH446103	10.3	12	55	102
DH406104	DH446104	10.4	12	55	102
DH406105	DH446105	10.5	12	55	102
DH406106	DH446106	10.6	12	55	102
DH406107	DH446107	10.7	12	55	102
DH406108	DH446108	10.8	12	55	102
DH406109	DH446109	10.9	12	55	102
DH406110	DH446110	11.0	12	55	102
DH406111	DH446111	11.1	12	55	102
DH406112	DH446112	11.2	12	55	102
DH406113	DH446113	11.3	12	55	102

EDP No.		Drill Diameter	Shank Diameter	Flute Length	Overall Length
Plain	Flat	D1	D2	L1	L2
DH406114	DH446114	11.4	12	55	102
DH406115	DH446115	11.5	12	55	102
DH406116	DH446116	11.6	12	55	102
DH406117	DH446117	11.7	12	55	102
DH406118	DH446118	11.8	12	55	102
DH406119	DH446119	11.9	12	55	102
DH406120	DH446120	12.0	12	55	102
DH406125	DH446125	12.5	14	60	107
DH406130	DH446130	13.0	14	60	107
DH406135	DH446135	13.5	14	60	107
DH406140	DH446140	14.0	14	60	107
DH406145	DH446145	14.5	16	65	115
DH406150	DH446150	15.0	16	65	115
DH406155	DH446155	15.5	16	65	115
DH406160	DH446160	16.0	16	65	115
DH406165	DH446165	16.5	18	73	123
DH406170	DH446170	17.0	18	73	123
DH406175	DH446175	17.5	18	73	123
DH406180	DH446180	18.0	18	73	123
DH406185	DH446185	18.5	20	79	131
DH406190	DH446190	19.0	20	79	131
DH406195	DH446195	19.5	20	79	131
DH406200	DH446200	20.0	20	79	131

▶ Other shank types are available on your request.

◎ : Excellent ○ : Good

ISO	P										M					K																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
	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	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
HRc	13	25	28	32	35	38	41	44	47	50	53	56	59	62	65	68	71	74	77	80	83	86	89	92	95	98	101	104	107	110	113	116	119	122	125	128	131	134	137	140	143	146	149	152	155	158	161	164	167	170	173	176	179	182	185	188	191	194	197	200	203	206	209	212	215	218	221	224	227	230	233	236	239	242	245	248	251	254	257	260	263	266	269	272	275	278	281	284	287	290	293	296	299	302	305	308	311	314	317	320	323	326	329	332	335	338	341	344	347	350	353	356	359	362	365	368	371	374	377	380	383	386	389	392	395	398	401	404	407	410	413	416	419	422	425	428	431	434	437	440	443	446	449	452	455	458	461	464	467	470	473	476	479	482	485	488	491	494	497	500	503	506	509	512	515	518	521	524	527	530	533	536	539	542	545	548	551	554	557	560	563	566	569	572	575	578	581	584	587	590	593	596	599	602	605	608	611	614	617	620	623	626	629	632	635	638	641	644	647	650	653	656	659	662	665	668	671	674	677	680	683	686	689	692	695	698	701	704	707	710	713	716	719	722	725	728	731	734	737	740	743	746	749	752	755	758	761	764	767	770	773	776	779	782	785	788	791	794	797	800	803	806	809	812	815	818	821	824	827	830	833	836	839	842	845	848	851	854	857	860	863	866	869	872	875	878	881	884	887	890	893	896	899	902	905	908	911	914	917	920	923	926	929	932	935	938	941	944	947	950	953	956	959	962	965	968	971	974	977	980	983	986	989	992	995	998	1001	1004	1007	1010	1013	1016	1019	1022	1025	1028	1031	1034	1037	1040	1043	1046	1049	1052	1055	1058	1061	1064	1067	1070	1073	1076	1079	1082	1085	1088	1091	1094	1097	1100	1103	1106	1109	1112	1115	1118	1121	1124	1127	1130	1133	1136	1139	1142	1145	1148	1151	1154	1157	1160	1163	1166	1169	1172	1175	1178	1181	1184	1187	1190	1193	1196	1199	1202	1205	1208	1211	1214	1217	1220	1223	1226	1229	1232	1235	1238	1241	1244	1247	1250	1253	1256	1259	1262	1265	1268	1271	1274	1277	1280	1283	1286	1289	1292	1295	1298	1301	1304	1307	1310	1313	1316	1319	1322	1325	1328	1331	1334	1337	1340	1343	1346	1349	1352	1355	1358	1361	1364	1367	1370	1373	1376	1379	1382	1385	1388	1391	1394	1397	1400	1403	1406	1409	1412	1415	1418	1421	1424	1427	1430	1433	1436	1439	1442	1445	1448	1451	1454	1457	1460	1463	1466	1469	1472	1475	1478	1481	1484	1487	1490	1493	1496	1499	1502	1505	1508	1511	1514	1517	1520	1523	1526	1529	1532	1535	1538	1541	1544	1547	1550	1553	1556	1559	1562	1565	1568	1571	1574	1577	1580	1583	1586	1589	1592	1595	1598	1601	1604	1607	1610	1613	1616	1619	1622	1625	1628	1631	1634	1637	1640	1643	1646	1649	1652	1655	1658	1661	1664	1667	1670	1673	1676	1679	1682	1685	1688	1691	1694	1697	1700	1703	1706	1709	1712	1715	1718	1721	1724	1727	1730	1733	1736	1739	1742	1745	1748	1751	1754	1757	1760	1763	1766	1769	1772	1775	1778	1781	1784	1787	1790	1793	1796	1799	1802	1805	1808	1811	1814	1817	1820	1823	1826	1829	1832	1835	1838	1841	1844	1847	1850	1853	1856	1859	1862	1865	1868	1871	1874	1877	1880	1883	1886	1889	1892	1895	1898	1901	1904	1907	1910	1913	1916	1919	1922	1925	1928	1931	1934	1937	1940	1943	1946	1949	1952	1955	1958	1961	1964	1967	1970	1973	1976	1979	1982	1985	1988	1991	1994	1997	2000	2003	2006	2009	2012	2015	2018	2021	2024	2027	2030	2033	2036	2039	2042	2045	2048	2051	2054	2057	2060	2063	2066	2069	2072	2075	2078	2081	2084	2087	2090	2093	2096	2099	2102	2105	2108	2111	2114	2117	2120	2123	2126	2129	2132	2135	2138	2141	2144	2147	2150	2153	2156	2159	2162	2165	2168	2171	2174	2177	2180	2183	2186	2189	2192	2195	2198	2201	2204	2207	2210	2213	2216	2219	2222	2225	2228	2231	2234	2237	2240	2243	2246	2249	2252	2255	2258	2261	2264	2267	2270	2273	2276	2279	2282	2285	2288	2291	2294	2297	2300	2303	2306	2309	2312	2315	2318	2321	2324	2327	2330	2333	2336	2339	2342	2345	2348	2351	2354	2357	2360	2363	2366	2369	2372	2375	2378	2381	2384	2387	2390	2393	2396	2399	2402	2405	2408	2411	2414	2417	2420	2423	2426	2429	2432	2435	2438	2441	2444	2447	2450	2453	2456	2459	2462	2465	2468	2471	2474	2477	2480	2483	2486	2489	2492	2495	2498	2501	2504	2507	2510	2513	2516	2519	2522	2525	2528	2531	2534	2537	2540	2543	2546	2549	2552	2555	2558	2561	2564	2567	2570	2573	2576	2579	2582	2585	2588	2591	2594	2597	2600	2603	2606	2609	2612	2615	2618	2621	2624	2627	2630	2633	2636	2639	2642	2645	2648	2651	2654	2657	2660	2663	2666	2669	2672	2675	2678	2681	2684	2687	2690	2693	2696	2699	2702	2705	2708	2711	2714	2717	2720	2723	2726	2729	2732	2735	2738	2741	2744	2747	2750	2753	2756	2759	2762	2765	2768	2771	2774	2777	2780	2783	2786

TiAIN-COATED SOLID CARBIDE
DREAM DRILLS GENERAL with COOLANT HOLES (5XD)

SERIES
PLAIN SHANK **DH408**
FLAT SHANK **DH448**

- ▶ 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 30° h6 m7 140° 20 bar TiAIN p.61 **LONG 5 x D**

EDP No.		Drill Diameter	Shank Diameter	Flute Length	Overall Length
Plain	Flat	D1	D2	L1	L2
DH408066	DH448066	6.6	8	53	91
DH408067	DH448067	6.7	8	53	91
DH408068	DH448068	6.8	8	53	91
DH408069	DH448069	6.9	8	53	91
DH408070	DH448070	7.0	8	53	91
DH408071	DH448071	7.1	8	53	91
DH408072	DH448072	7.2	8	53	91
DH408073	DH448073	7.3	8	53	91
DH408074	DH448074	7.4	8	53	91
DH408075	DH448075	7.5	8	53	91
DH408076	DH448076	7.6	8	53	91
DH408077	DH448077	7.7	8	53	91
DH408078	DH448078	7.8	8	53	91
DH408079	DH448079	7.9	8	53	91
DH408080	DH448080	8.0	8	53	91
DH408081	DH448081	8.1	10	61	103
DH408082	DH448082	8.2	10	61	103
DH408083	DH448083	8.3	10	61	103
DH408084	DH448084	8.4	10	61	103
DH408085	DH448085	8.5	10	61	103
DH408086	DH448086	8.6	10	61	103
DH408087	DH448087	8.7	10	61	103
DH408088	DH448088	8.8	10	61	103
DH408089	DH448089	8.9	10	61	103
DH408090	DH448090	9.0	10	61	103
DH408091	DH448091	9.1	10	61	103
DH408092	DH448092	9.2	10	61	103
DH408093	DH448093	9.3	10	61	103
DH408094	DH448094	9.4	10	61	103
DH408095	DH448095	9.5	10	61	103
DH408096	DH448096	9.6	10	61	103
DH408097	DH448097	9.7	10	61	103
DH408098	DH448098	9.8	10	61	103
DH408099	DH448099	9.9	10	61	103
DH408100	DH448100	10.0	10	61	103
DH408101	DH448101	10.1	12	71	118
DH408102	DH448102	10.2	12	71	118
DH408103	DH448103	10.3	12	71	118
DH408104	DH448104	10.4	12	71	118
DH408105	DH448105	10.5	12	71	118
DH408106	DH448106	10.6	12	71	118
DH408107	DH448107	10.7	12	71	118
DH408108	DH448108	10.8	12	71	118
DH408109	DH448109	10.9	12	71	118
DH408110	DH448110	11.0	12	71	118
DH408111	DH448111	11.1	12	71	118
DH408112	DH448112	11.2	12	71	118
DH408113	DH448113	11.3	12	71	118
DH408114	DH448114	11.4	12	71	118
DH408115	DH448115	11.5	12	71	118
DH408116	DH448116	11.6	12	71	118
DH408117	DH448117	11.7	12	71	118
DH408118	DH448118	11.8	12	71	118
DH408119	DH448119	11.9	12	71	118
DH408120	DH448120	12.0	12	71	118
DH408125	DH448125	12.5	14	77	124

▶ Other shank types are available on your request. ▶ NEXT PAGE

◎ : Excellent ○ : Good

ISO	P										M				K						
	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	32	10	29	32	38	15	35	15	23	10	10	26	3	25	19	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				
	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											◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎

TiAIN-COATED SOLID CARBIDE
DREAM DRILLS GENERAL with COOLANT HOLES (5XD)

SERIES
PLAIN SHANK **DH408**
FLAT SHANK **DH448**

- ▶ 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 30° h6 m7 140° 20 bar TiAIN p.61 **LONG 5 x D**

EDP No.		Drill Diameter	Shank Diameter	Flute Length	Overall Length
Plain	Flat	D1	D2	L1	L2
DH408130	DH448130	13.0	14	77	124
DH408135	DH448135	13.5	14	77	124
DH408140	DH448140	14.0	14	77	124
DH408145	DH448145	14.5	16	83	133
DH408150	DH448150	15.0	16	83	133
DH408155	DH448155	15.5	16	83	133
DH408160	DH448160	16.0	16	83	133
DH408165	DH448165	16.5	18	93	143
DH408170	DH448170	17.0	18	93	143
DH408175	DH448175	17.5	18	93	143
DH408180	DH448180	18.0	18	93	143
DH408185	DH448185	18.5	20	101	153
DH408190	DH448190	19.0	20	101	153
DH408195	DH448195	19.5	20	101	153
DH408200	DH448200	20.0	20	101	153

▶ Other shank types are available on your request.

◎ : Excellent ○ : Good

ISO	P										M				K						
	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	32	10	29	32	38	15	35	15	23	10	10	26	3	25	19	21	
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230	
Recommended	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	

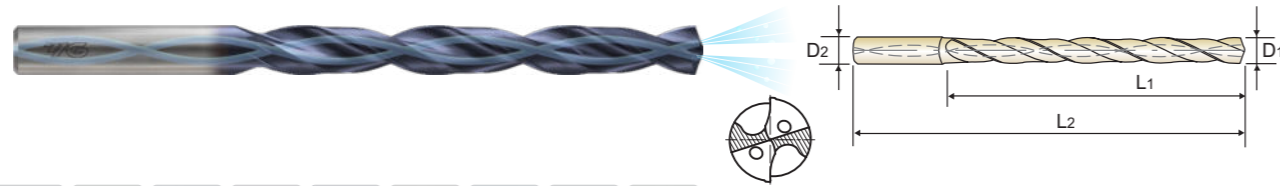
ISO	N										S						H				
	Aluminum-wrought alloy		Aluminum-cast alloyed			Copper and Copper Alloys (Bronze / Brass)					Non Metallic Materials		Heat Resistant Super Alloys				Titanium Alloys		Hardened steel	Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	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											◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎

TiAIN-COATED SOLID CARBIDE
DREAM DRILLS GENERAL with COOLANT HOLES (8XD)

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



EXTRA LONG
8 × D

Unit : mm

EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length	EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
TiAIN	D1	D2	L1	L2	TiAIN	D1	D2	L1	L2
DH421030	3.0	6	34	72	DH421058	5.8	6	57	95
DH421031	3.1	6	34	72	DH421059	5.9	6	57	95
DH421032	3.2	6	34	72	DH421060	6.0	6	57	95
DH421033	3.3	6	34	72	DH421061	6.1	8	76	114
DH421034	3.4	6	34	72	DH421062	6.2	8	76	114
DH421035	3.5	6	34	72	DH421063	6.3	8	76	114
DH421036	3.6	6	34	72	DH421064	6.4	8	76	114
DH421037	3.7	6	34	72	DH421065	6.5	8	76	114
DH421038	3.8	6	43	81	DH421066	6.6	8	76	114
DH421039	3.9	6	43	81	DH421067	6.7	8	76	114
DH421040	4.0	6	43	81	DH421068	6.8	8	76	114
DH421041	4.1	6	43	81	DH421069	6.9	8	76	114
DH421042	4.2	6	43	81	DH421070	7.0	8	76	114
DH421043	4.3	6	43	81	DH421071	7.1	8	76	114
DH421044	4.4	6	43	81	DH421072	7.2	8	76	114
DH421045	4.5	6	43	81	DH421073	7.3	8	76	114
DH421046	4.6	6	43	81	DH421074	7.4	8	76	114
DH421047	4.7	6	43	81	DH421075	7.5	8	76	114
DH421048	4.8	6	57	95	DH421076	7.6	8	76	114
DH421049	4.9	6	57	95	DH421077	7.7	8	76	114
DH421050	5.0	6	57	95	DH421078	7.8	8	76	114
DH421051	5.1	6	57	95	DH421079	7.9	8	76	114
DH421052	5.2	6	57	95	DH421080	8.0	8	76	114
DH421053	5.3	6	57	95	DH421081	8.1	10	95	142
DH421054	5.4	6	57	95	DH421082	8.2	10	95	142
DH421055	5.5	6	57	95	DH421083	8.3	10	95	142
DH421056	5.6	6	57	95	DH421084	8.4	10	95	142
DH421057	5.7	6	57	95	DH421085	8.5	10	95	142

▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

ISO	P											M				K																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
	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	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
HRc	13	25	28	32	35	38	40	42	45	48	50	52	55	58	60	62	65	68	70	72	75	78	80	82	85	88	90	92	95	98	100	105	110	115	120	125	130	135	140	145	150																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230	120	150	180	210	240	270	300	330	360	390	420	450	480	510	540	570	600	630	660	690	720	750	780	810	840	870	900	930	960	990	1020	1050	1080	1110	1140	1170	1200	1230	1260	1290	1320	1350	1380	1410	1440	1470	1500	1530	1560	1590	1620	1650	1680	1710	1740	1770	1800	1830	1860	1890	1920	1950	1980	2010	2040	2070	2100	2130	2160	2190	2220	2250	2280	2310	2340	2370	2400	2430	2460	2490	2520	2550	2580	2610	2640	2670	2700	2730	2760	2790	2820	2850	2880	2910	2940	2970	3000	3030	3060	3090	3120	3150	3180	3210	3240	3270	3300	3330	3360	3390	3420	3450	3480	3510	3540	3570	3600	3630	3660	3690	3720	3750	3780	3810	3840	3870	3900	3930	3960	3990	4020	4050	4080	4110	4140	4170	4200	4230	4260	4290	4320	4350	4380	4410	4440	4470	4500	4530	4560	4590	4620	4650	4680	4710	4740	4770	4800	4830	4860	4890	4920	4950	4980	5010	5040	5070	5100	5130	5160	5190	5220	5250	5280	5310	5340	5370	5400	5430	5460	5490	5520	5550	5580	5610	5640	5670	5700	5730	5760	5790	5820	5850	5880	5910	5940	5970	6000	6030	6060	6090	6120	6150	6180	6210	6240	6270	6300	6330	6360	6390	6420	6450	6480	6510	6540	6570	6600	6630	6660	6690	6720	6750	6780	6810	6840	6870	6900	6930	6960	6990	7020	7050	7080	7110	7140	7170	7200	7230	7260	7290	7320	7350	7380	7410	7440	7470	7500	7530	7560	7590	7620	7650	7680	7710	7740	7770	7800	7830	7860	7890	7920	7950	7980	8010	8040	8070	8100	8130	8160	8190	8220	8250	8280	8310	8340	8370	8400	8430	8460	8490	8520	8550	8580	8610	8640	8670	8700	8730	8760	8790	8820	8850	8880	8910	8940	8970	9000	9030	9060	9090	9120	9150	9180	9210	9240	9270	9300	9330	9360	9390	9420	9450	9480	9510	9540	9570	9600	9630	9660	9690	9720	9750	9780	9810	9840	9870	9900	9930	9960	9990	10020	10050	10080	10110	10140	10170	10200	10230	10260	10290	10320	10350	10380	10410	10440	10470	10500	10530	10560	10590	10620	10650	10680	10710	10740	10770	10800	10830	10860	10890	10920	10950	10980	11010	11040	11070	11100	11130	11160	11190	11220	11250	11280	11310	11340	11370	11400	11430	11460	11490	11520	11550	11580	11610	11640	11670	11700	11730	11760	11790	11820	11850	11880	11910	11940	11970	12000	12030	12060	12090	12120	12150	12180	12210	12240	12270	12300	12330	12360	12390	12420	12450	12480	12510	12540	12570	12600	12630	12660	12690	12720	12750	12780	12810	12840	12870	12900	12930	12960	12990	13020	13050	13080	13110	13140	13170	13200	13230	13260	13290	13320	13350	13380	13410	13440	13470	13500	13530	13560	13590	13620	13650	13680	13710	13740	13770	13800	13830	13860	13890	13920	13950	13980	14010	14040	14070	14100	14130	14160	14190	14220	14250	14280	14310	14340	14370	14400	14430	14460	14490	14520	14550	14580	14610	14640	14670	14700	14730	14760	14790	14820	14850	14880	14910	14940	14970	15000	15030	15060	15090	15120	15150	15180	15210	15240	15270	15300	15330	15360	15390	15420	15450	15480	15510	15540	15570	15600	15630	15660	15690	15720	15750	15780	15810	15840	15870	15900	15930	15960	15990	16020	16050	16080	16110	16140	16170	16200	16230	16260	16290	16320	16350	16380	16410	16440	16470	16500	16530	16560	16590	16620	16650	16680	16710	16740	16770	16800	16830	16860	16890	16920	16950	16980	17010	17040	17070	17100	17130	17160	17190	17220	17250	17280	17310	17340	17370	17400	17430	17460	17490	17520	17550	17580	17610	17640	17670	17700	17730	17760	17790	17820	17850	17880	17910	17940	17970	18000	18030	18060	18090	18120	18150	18180	18210	18240	18270	18300	18330	18360	18390	18420	18450	18480	18510	18540	18570	18600	18630	18660	18690	18720	18750	18780	18810	18840	18870	18900	18930	18960	18990	19020	19050	19080	19110	19140	19170	19200	19230	19260	19290	19320	19350	19380	19410	19440	19470	19500	19530	19560	19590	19620	19650	19680	19710	19740	19770	19800	19830	19860	19890	19920	19950	19980	20010	20040	20070	20100	20130	20160	20190	20220	20250	20280	20310	20340	20370	20400	20430	20460	20490	20520	20550	20580	20610	20640	20670	20700	20730	20760	20790	20820	20850	20880	20910	20940	20970	21000	21030	21060	21090	21120	21150	21180	21210	21240	21270	21300	21330	21360	21390	21420	21450	21480	21510	21540	21570	21600	21630	21660	21690	21720	21750	21780	21810	21840	21870	21900	21930	21960	21990	22020	22050	22080	22110	22140	22170	22200	22230	22260	22290	22320	22350	22380	22410	22440	22470	22500	22530	22560	22590	22620	22650	22680	22710	22740	22770	22800	22830	22860	22890	22920	22950	22980	23010	23040	23070	23100	23130	23160	23190	23220	23250	23280	23310	23340	23370	23400	23430	23460	23490	23520	23550	23580	23610	23640	23670	23700	23730	23760	23790	23820	23850	23880	23910	23940	23970	24000	24030	24060	24090	24120	24150	24180	24210	24240	24270	24300	24330	24360	24390	24420	24450	24480	24510	24540	24570	24600	24630	24660	24690	24720	24750	24780	24810	24840	24870	24900	24930	24960	24990	25020	25050	25080	25110	25140	25170	25200	25230	25260	25290	25320	25350	25380	25410

DH404, DH423, DH443, DH424, DH444 SERIES without COOLANT HOLES

Vc = m/min.
RPM = rev./min.
FEED = mm/rev.

ISO	VDI 3323	Material Description	Vc	Parameter	Drill Diameter (mm)					
					1.0	2.0	3.0	4.0	5.0	6.0
P	2	Non-alloy steel	70	RPM	22280	11140	10610	7960	6370	5310
				FEED	0.03-0.05	0.05-0.07	0.06-0.12	0.08-0.14	0.14-0.20	0.16-0.22
				RPM	22280	11140	10610	7960	6370	5310
	3	Non-alloy steel	70	RPM	22280	11140	10610	7960	6370	5310
				FEED	0.03-0.05	0.05-0.07	0.06-0.12	0.08-0.14	0.14-0.20	0.16-0.22
				RPM	22280	11140	10610	7960	6370	5310
	4	Non-alloy steel	70	RPM	22280	11140	10610	7960	6370	5310
				FEED	0.03-0.05	0.05-0.07	0.04-0.10	0.07-0.13	0.10-0.16	0.12-0.18
				RPM	22280	11140	10610	7960	6370	5310
	5	Non-alloy steel	60	RPM	19100	9550	8490	6370	5090	4240
				FEED	0.03-0.05	0.05-0.07	0.04-0.10	0.07-0.13	0.10-0.16	0.12-0.18
RPM				19100	9550	8490	6370	5090	4240	
6	Low alloy steel	70	RPM	22280	11140	10610	7960	6370	5310	
			FEED	0.03-0.05	0.05-0.07	0.06-0.12	0.08-0.14	0.14-0.20	0.16-0.22	
			RPM	19100	9550	8490	6370	5090	4240	
7	Low alloy steel	60	RPM	19100	9550	8490	6370	5090	4240	
			FEED	0.03-0.05	0.05-0.07	0.06-0.12	0.08-0.14	0.14-0.20	0.16-0.22	
			RPM	19100	9550	8490	6370	5090	4240	
8	Low alloy steel	60	RPM	19100	9550	8490	6370	5090	4240	
			FEED	0.02-0.04	0.03-0.05	0.04-0.10	0.07-0.13	0.10-0.16	0.12-0.18	
			RPM	9550	4770	4240	3180	2550	2120	
9	High alloyed steel, and tool steel	30	RPM	9550	4770	4240	3180	2550	2120	
			FEED	0.02-0.04	0.03-0.05	0.03-0.08	0.05-0.11	0.08-0.14	0.10-0.16	
			RPM	15920	7960	7430	5570	4460	3710	
10	High alloyed steel, and tool steel	50	RPM	15920	7960	7430	5570	4460	3710	
			FEED	0.03-0.05	0.05-0.07	0.04-0.10	0.07-0.13	0.10-0.16	0.12-0.18	
			RPM	9550	4770	4240	3180	2550	2120	
11	High alloyed steel, and tool steel	30	RPM	9550	4770	4240	3180	2550	2120	
			FEED	0.02-0.04	0.03-0.05	0.03-0.08	0.05-0.11	0.08-0.14	0.10-0.16	
			RPM	15920	7960	7430	5570	4460	3710	
12	Stainless steel	50	RPM	15920	7960	7430	5570	4460	3710	
			FEED	0.03-0.05	0.05-0.07	0.06-0.12	0.08-0.14	0.14-0.20	0.16-0.22	
			RPM	11140	5570	4770	3580	2860	2390	
13	Stainless steel	35	RPM	11140	5570	4770	3580	2860	2390	
			FEED	0.02-0.04	0.03-0.05	0.04-0.10	0.07-0.13	0.10-0.16	0.12-0.18	
			RPM	22280	11140	10610	7960	6370	5310	
15	Grey cast iron	70	RPM	22280	11140	10610	7960	6370	5310	
			FEED	0.04-0.06	0.04-0.06	0.08-0.14	0.12-0.18	0.15-0.22	0.20-0.26	
			RPM	20690	10350	8490	6370	5090	4240	
16	Grey cast iron	65	RPM	20690	10350	8490	6370	5090	4240	
			FEED	0.04-0.06	0.04-0.06	0.06-0.12	0.08-0.14	0.14-0.20	0.16-0.22	
			RPM	22280	11140	10610	7960	6370	5310	
17	Nodular cast iron	70	RPM	22280	11140	10610	7960	6370	5310	
			FEED	0.04-0.06	0.04-0.06	0.08-0.14	0.12-0.18	0.15-0.22	0.20-0.26	
			RPM	15920	7960	7430	5570	4460	3710	
18	Nodular cast iron	50	RPM	15920	7960	7430	5570	4460	3710	
			FEED	0.04-0.06	0.04-0.06	0.06-0.12	0.08-0.14	0.14-0.20	0.16-0.22	
			RPM	19100	9550	8490	6370	5090	4240	
19	Malleable cast iron	60	RPM	19100	9550	8490	6370	5090	4240	
			FEED	0.04-0.06	0.04-0.06	0.08-0.14	0.12-0.18	0.15-0.22	0.20-0.26	
			RPM	15920	7960	7430	5570	4460	3710	
20	Malleable cast iron	50	RPM	15920	7960	7430	5570	4460	3710	
			FEED	0.03-0.05	0.05-0.07	0.06-0.12	0.08-0.14	0.14-0.20	0.16-0.22	
			RPM	6370	3180	2650	1990	1590	1330	
38	Hardened steel	20	RPM	6370	3180	2650	1990	1590	1330	
			FEED	0.01-0.02	0.01-0.03	0.01-0.03	0.01-0.04	0.02-0.05	0.03-0.06	

ISO	VDI 3323	Material Description	Vc	Parameter	Drill Diameter (mm)							
					8.0	10.0	12.0	14.0	16.0	18.0	20.0	
P	2	Non-alloy steel	100	RPM	3980	3180	2650	2270	1990	1770	1590	
				FEED	0.18-0.24	0.19-0.27	0.21-0.29	0.23-0.31	0.25-0.33	0.28-0.38	0.30-0.40	
				RPM	3980	3180	2650	2270	1990	1770	1590	
	3	Non-alloy steel	100	RPM	3980	3180	2650	2270	1990	1770	1590	
				FEED	0.18-0.24	0.19-0.27	0.21-0.29	0.23-0.31	0.25-0.33	0.28-0.38	0.30-0.40	
				RPM	3980	3180	2650	2270	1990	1770	1590	
	4	Non-alloy steel	100	RPM	3980	3180	2650	2270	1990	1770	1590	
				FEED	0.14-0.20	0.15-0.23	0.17-0.25	0.18-0.26	0.19-0.27	0.20-0.30	0.22-0.32	
				RPM	3180	2550	2120	1820	1590	1410	1270	
	5	Non-alloy steel	80	RPM	3180	2550	2120	1820	1590	1410	1270	
				FEED	0.14-0.20	0.15-0.23	0.17-0.25	0.18-0.26	0.19-0.27	0.20-0.30	0.22-0.32	
RPM				3980	3180	2650	2270	1990	1770	1590		
6	Low alloy steel	100	RPM	3980	3180	2650	2270	1990	1770	1590		
			FEED	0.18-0.24	0.19-0.27	0.21-0.29	0.23-0.31	0.25-0.33	0.28-0.38	0.30-0.40		
			RPM	3180	2550	2120	1820	1590	1410	1270		
7	Low alloy steel	80	RPM	3180	2550	2120	1820	1590	1410	1270		
			FEED	0.18-0.24	0.19-0.27	0.21-0.29	0.23-0.31	0.25-0.33	0.28-0.38	0.30-0.40		
			RPM	3180	2550	2120	1820	1590	1410	1270		
8	Low alloy steel	80	RPM	3180	2550	2120	1820	1590	1410	1270		
			FEED	0.14-0.20	0.15-0.23	0.17-0.25	0.18-0.26	0.19-0.27	0.20-0.30	0.22-0.32		
			RPM	1590	1270	1060	910	800	710	640		
9	Low alloy steel	40	RPM	1590	1270	1060	910	800	710	640		
			FEED	0.12-0.18	0.13-0.19	0.14-0.20	0.15-0.21	0.16-0.22	0.17-0.25	0.18-0.28		
			RPM	2790	2230	1860	1590	1390	1240	1110		
10	High alloyed steel, and tool steel	70	RPM	2790	2230	1860	1590	1390	1240	1110		
			FEED	0.14-0.20	0.15-0.23	0.17-0.25	0.18-0.26	0.19-0.27	0.20-0.30	0.22-0.32		
			RPM	1590	1270	1060	910	800	710	640		
11	High alloyed steel, and tool steel	40	RPM	1590	1270	1060	910	800	710	640		
			FEED	0.12-0.18	0.13-0.19	0.14-0.20	0.15-0.21	0.16-0.22	0.17-0.25	0.18-0.28		
			RPM	2790	2230	1860	1590	1390	1240	1110		
12	Stainless steel	70	RPM	2790	2230	1860	1590	1390	1240	1110		
			FEED	0.18-0.24	0.19-0.27	0.21-0.29	0.23-0.31	0.25-0.33	0.28-0.38	0.30-0.40		
			RPM	1790	1430	1190	1020	900	800	720		
13	Stainless steel	45	RPM	1790	1430	1190	1020	900	800	720		
			FEED	0.14-0.20	0.15-0.23	0.17-0.25	0.18-0.26	0.19-0.27	0.20-0.30	0.22-0.32		
			RPM	3980	3180	2650	2270	1990	1770	1590		
15	Grey cast iron	100	RPM	3980	3180	2650	2270	1990	1770	1590		
			FEED	0.22-0.28	0.25-0.33	0.27-0.35	0.29-0.37	0.31-0.39	0.32-0.42	0.34-0.44		
			RPM	3180	2550	2120	1820	1590	1410	1270		
16	Grey cast iron	80	RPM	3180	2550	2120	1820	1590	1410	1270		
			FEED	0.18-0.24	0.19-0.27	0.21-0.29	0.23-0.31	0.25-0.33	0.28-0.38	0.30-0.40		
			RPM	3980	3180	2650	2270	1990	1770	1590		
17	Nodular cast iron	100	RPM	3980	3180	2650	2270	1990	1770	1590		
			FEED	0.22-0.28	0.25-0.33	0.27-0.35	0.29-0.37	0.31-0.39	0.32-0.42	0.34-0.44		
			RPM	2790	2230	1860	1590	1390	1240	1110		
18	Nodular cast iron	70	RPM	2790	2230	1860	1590	1390	1240	1110		
			FEED	0.18-0.24	0.19-0.27	0.21-0.29	0.23-0.31	0.25-0.33	0.28-0.38	0.30-0.40		
			RPM	3180	2550	2120	1820	1590	1410	1270		
19	Malleable cast iron	80	RPM	3180	2550	2120	1820	1590	1410	1270		
			FEED	0.22-0.28	0.25-0.33	0.27-0.35	0.29-0.37	0.31-0.39	0.32-0.42	0.34-0.44		
			RPM	2790	2230	1860	1590	1390	1240	1110		
20	Malleable cast iron	70	RPM	2790	2230	1860	1590	1390	1240	1110		
			FEED	0.18-0.24	0.19-0.27	0.21-0.29	0.23-0.31	0.25-0.33	0.28-0.38	0.30-0.40		
			RPM	990	800	660	570	500	440	400		
38	Hardened steel	25	RPM	990	800	660	570	500	440	400		
			FEED	0.03-0.06	0.04-0.07	0.04-0.08	0.05-0.09	0.05-0.09	0.05-0.10	0.05-0.10		

► Recommend to reduce the feed rate as following **Feed 100%** : DH404(3×D), DH423(3×D), DH424(5×D)

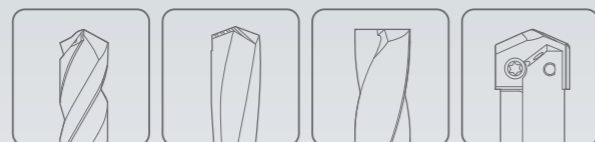
DH406, DH446, DH408, DH448, DH421 SERIES with COOLANT HOLES



Leading Through Innovation



Global Cutting Tool Leader **YG-1**



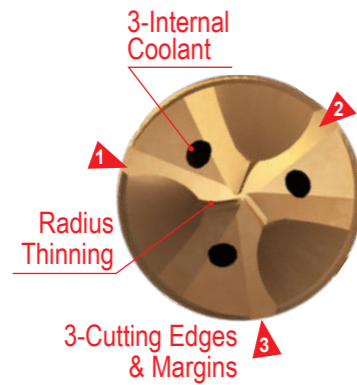
DREAM DRILLS

SOLID CARBIDE

DREAM DRILLS -HIGH FEED

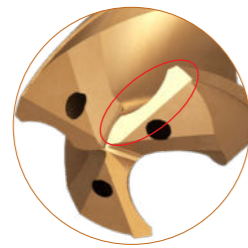
- 1.5 to 2 Times Faster Feeding Speed than 2-Flute Drill
For Carbon Steels, Alloy Steels(up to HRc35) and Cast Iron

DREAM DRILLS HIGH FEED



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

Radius Thinning for **Self Centering and Chip Breaking**



Ground Negative Land on cutting edge for Reliable Tool Life

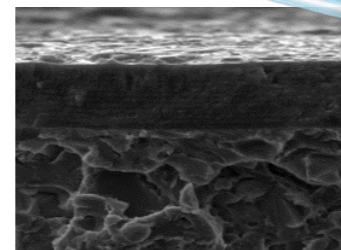
3-Slots on end of shank for smooth and consistent coolant supply



H - Coating

(Upgraded AlCrN-Based : **Multi-Layer coating**)

- Higher worn-out resistance and Lower friction
- Higher cutting speed and feed
- Improved drill hole quality



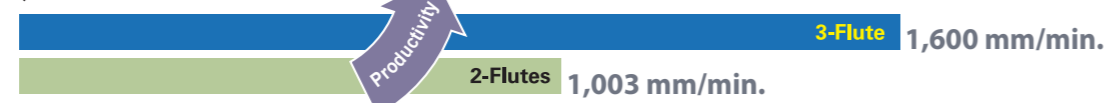
Multi Layers
Carbide

Productivity (Carbon Steel)

Ø6.0 5XD



Ø10.0 5XD

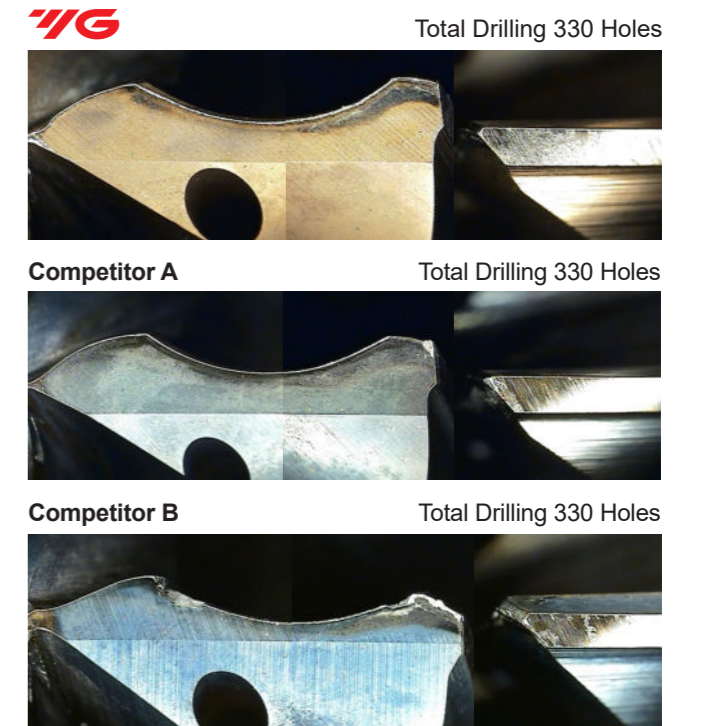


1.5 ~ 2 times faster in drilling compared to two flute carbide drills

CASE STUDY

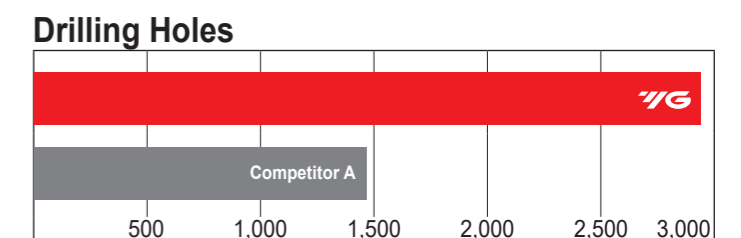
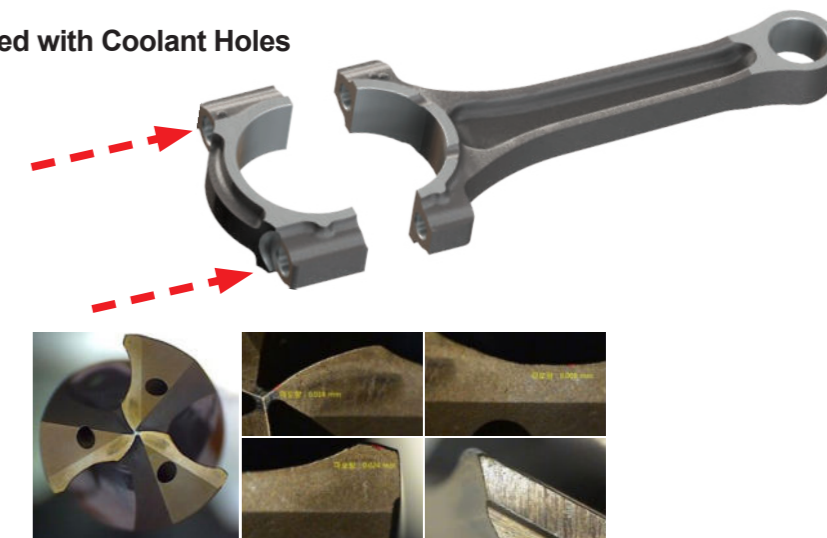
► SOLID CARBIDE DREAM DRILLS - High Feed with Coolant Holes

CUTTING CONDITION	
Tool	DGR495100
Size(mm)	Ø10 x Ø10 x 61 x 103
Work Material	• DIN: C45 • AISI: 1045 • JIS: S45C (HRc20)
RPM	3,200 rev./min.
Feed	0.5 mm/rev.
Drilling Depth	50 mm
Drilling Method	Blind Hole
Coolant	Wet Cut
Machine	Machining Center



► SOLID CARBIDE DREAM DRILLS - High Feed with Coolant Holes

CUTTING CONDITION	
Tool	DGR495080
Size(mm)	Ø8 x Ø8 x 53 x 91
Work Material	Connecting rod
RPM	2,000 rev./min.
Feed	0.23 mm/rev.
Drilling Depth	40.0 mm
Drilling Method	Internal Cooling, Water Soluble
Coolant	Wet Cut
Machine	Machining Center



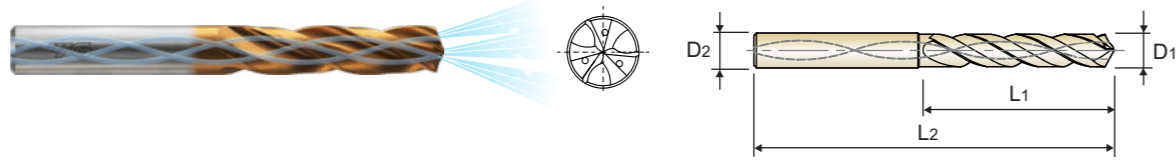
H-COATED SOLID CARBIDE

DREAM DRILLS HIGH FEED with COOLANT HOLES (3XD)

SERIES

DGR493

- ▶ 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 30° h6 m7 140° 20 bar H Coating p.70

SHORT 3 × D

ED P No.	Drill Diameter D1	Shank Diameter D2	Flute Length L1	Overall Length L2	ED P No.	Drill Diameter D1	Shank Diameter D2	Flute Length L1	Overall Length L2
DGR493050	5.0	6	28	66	DGR493078	7.8	8	41	79
DGR493051	5.1	6	28	66	DGR493079	7.9	8	41	79
DGR493052	5.2	6	28	66	DGR493080	8.0	8	41	79
DGR493053	5.3	6	28	66	DGR493081	8.1	10	47	89
DGR493054	5.4	6	28	66	DGR493082	8.2	10	47	89
DGR493055	5.5	6	28	66	DGR493083	8.3	10	47	89
DGR493056	5.6	6	28	66	DGR493084	8.4	10	47	89
DGR493057	5.7	6	28	66	DGR493085	8.5	10	47	89
DGR493058	5.8	6	28	66	DGR493086	8.6	10	47	89
DGR493059	5.9	6	28	66	DGR493087	8.7	10	47	89
DGR493060	6.0	6	28	66	DGR493088	8.8	10	47	89
DGR493061	6.1	8	34	79	DGR493089	8.9	10	47	89
DGR493062	6.2	8	34	79	DGR493090	9.0	10	47	89
DGR493063	6.3	8	34	79	DGR493091	9.1	10	47	89
DGR493064	6.4	8	34	79	DGR493092	9.2	10	47	89
DGR493065	6.5	8	34	79	DGR493093	9.3	10	47	89
DGR493066	6.6	8	34	79	DGR493094	9.4	10	47	89
DGR493067	6.7	8	34	79	DGR493095	9.5	10	47	89
DGR493068	6.8	8	34	79	DGR493096	9.6	10	47	89
DGR493069	6.9	8	34	79	DGR493097	9.7	10	47	89
DGR493070	7.0	8	34	79	DGR493098	9.8	10	47	89
DGR493071	7.1	8	41	79	DGR493099	9.9	10	47	89
DGR493072	7.2	8	41	79	DGR493100	10.0	10	47	89
DGR493073	7.3	8	41	79	DGR493101	10.1	12	55	102
DGR493074	7.4	8	41	79	DGR493102	10.2	12	55	102
DGR493075	7.5	8	41	79	DGR493103	10.3	12	55	102
DGR493076	7.6	8	41	79	DGR493104	10.4	12	55	102
DGR493077	7.7	8	41	79	DGR493105	10.5	12	55	102

▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

ISO	P										M				K						
	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	30	10	29	32	38	15	35	15	23	10	10	26	3	25	19	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				
	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	400Rm	1050Rm	550	630	400	550
Recommended																					

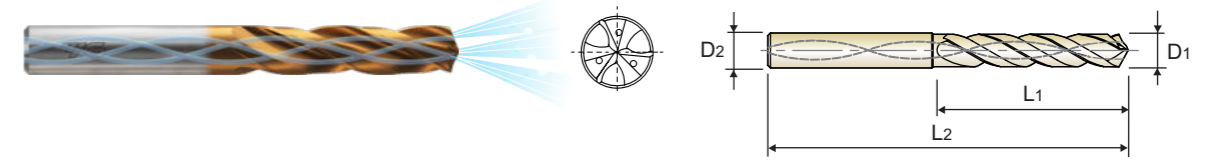
H-COATED SOLID CARBIDE

DREAM DRILLS HIGH FEED with COOLANT HOLES (3XD)

SERIES

DGR493

- ▶ 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 30° h6 m7 140° 20 bar H Coating p.70

SHORT 3 × D

ED P No.	Drill Diameter D1	Shank Diameter D2	Flute Length L1	Overall Length L2	ED P No.	Drill Diameter D1	Shank Diameter D2	Flute Length L1	Overall Length L2
DGR493106	10.6	12	55	102	DGR493190	19.0	20	79	131
DGR493107	10.7	12	55	102	DGR493195	19.5	20	79	131
DGR493108	10.8	12	55	102	DGR493200	20.0	20	79	131
DGR493109	10.9	12	55	102					
DGR493110	11.0	12	55	102					
DGR493111	11.1	12	55	102					
DGR493112	11.2	12	55	102					
DGR493113	11.3	12	55	102					
DGR493114	11.4	12	55	102					
DGR493115	11.5	12	55	102					
DGR493116	11.6	12	55	102					
DGR493117	11.7	12	55	102					
DGR493118	11.8	12	55	102					
DGR493119	11.9	12	55	102					
DGR493120	12.0	12	55	102					
DGR493125	12.5	14	60	107					
DGR493130	13.0	14	60	107					
DGR493135	13.5	14	60	107					
DGR493140	14.0	14	60	107					
DGR493145	14.5	16	65	115					
DGR493150	15.0	16	65	115					
DGR493155	15.5	16	65	115					
DGR493160	16.0	16	65	115					
DGR493165	16.5	18	73	123					
DGR493170	17.0	18	73	123					
DGR493175	17.5	18	73	123					
DGR493180	18.0	18	73	123					
DGR493185	18.5	20	79	131					

▶ Other shank types are available on your request.

◎ : Excellent ○ : Good

ISO	P										M				K						
	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	30	10	29	32	38	15	35	15	23	10	10	26	3	25	19	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				
	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	400Rm	1050Rm	550	630	400	550
Recommended																					

H-COATED SOLID CARBIDE

DREAM DRILLS HIGH FEED with COOLANT HOLES (5XD)

SERIES

DGR495

- ▶ 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 30° h6 m7 140° 20 bar H Coating p.70

LONG 5 x D

ED P No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length	ED P No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
DGR495050	5.0	6	44	82	DGR495078	7.8	8	53	91
DGR495051	5.1	6	44	82	DGR495079	7.9	8	53	91
DGR495052	5.2	6	44	82	DGR495080	8.0	8	53	91
DGR495053	5.3	6	44	82	DGR495081	8.1	10	61	103
DGR495054	5.4	6	44	82	DGR495082	8.2	10	61	103
DGR495055	5.5	6	44	82	DGR495083	8.3	10	61	103
DGR495056	5.6	6	44	82	DGR495084	8.4	10	61	103
DGR495057	5.7	6	44	82	DGR495085	8.5	10	61	103
DGR495058	5.8	6	44	82	DGR495086	8.6	10	61	103
DGR495059	5.9	6	44	82	DGR495087	8.7	10	61	103
DGR495060	6.0	6	44	82	DGR495088	8.8	10	61	103
DGR495061	6.1	8	53	91	DGR495089	8.9	10	61	103
DGR495062	6.2	8	53	91	DGR495090	9.0	10	61	103
DGR495063	6.3	8	53	91	DGR495091	9.1	10	61	103
DGR495064	6.4	8	53	91	DGR495092	9.2	10	61	103
DGR495065	6.5	8	53	91	DGR495093	9.3	10	61	103
DGR495066	6.6	8	53	91	DGR495094	9.4	10	61	103
DGR495067	6.7	8	53	91	DGR495095	9.5	10	61	103
DGR495068	6.8	8	53	91	DGR495096	9.6	10	61	103
DGR495069	6.9	8	53	91	DGR495097	9.7	10	61	103
DGR495070	7.0	8	53	91	DGR495098	9.8	10	61	103
DGR495071	7.1	8	53	91	DGR495099	9.9	10	61	103
DGR495072	7.2	8	53	91	DGR495100	10.0	10	61	103
DGR495073	7.3	8	53	91	DGR495101	10.1	12	71	118
DGR495074	7.4	8	53	91	DGR495102	10.2	12	71	118
DGR495075	7.5	8	53	91	DGR495103	10.3	12	71	118
DGR495076	7.6	8	53	91	DGR495104	10.4	12	71	118
DGR495077	7.7	8	53	91	DGR495105	10.5	12	71	118

▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

ISO	P										M				K						
	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	32	10	29	32	38	15	35	15	23	10	10	26	3	25	21	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				
	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	21	22	23	24	25	26	27	28	29	30	15	30	25	38	34	55	60	42	55	55	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400Rm	1050Rm	550	630	400	550
Recommended	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎

H-COATED SOLID CARBIDE

DREAM DRILLS HIGH FEED with COOLANT HOLES (5XD)

SERIES

DGR495

- ▶ 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 30° h6 m7 140° 20 bar H Coating p.70

LONG 5 x D

ED P No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length	ED P No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
DGR495106	10.6	12	71	118	DGR495190	19.0	20	101	153
DGR495107	10.7	12	71	118	DGR495195	19.5	20	101	153
DGR495108	10.8	12	71	118	DGR495200	20.0	20	101	153
DGR495109	10.9	12	71	118					
DGR495110	11.0	12	71	118					
DGR495111	11.1	12	71	118					
DGR495112	11.2	12	71	118					
DGR495113	11.3	12	71	118					
DGR495114	11.4	12	71	118					
DGR495115	11.5	12	71	118					
DGR495116	11.6	12	71	118					
DGR495117	11.7	12	71	118					
DGR495118	11.8	12	71	118					
DGR495119	11.9	12	71	118					
DGR495120	12.0	12	71	118					
DGR495125	12.5	14	77	124					
DGR495130	13.0	14	77	124					
DGR495135	13.5	14	77	124					
DGR495140	14.0	14	77	124					
DGR495145	14.5	16	83	133					
DGR495150	15.0	16	83	133					
DGR495155	15.5	16	83	133					
DGR495160	16.0	16	83	133					
DGR495165	16.5	18	93	143					
DGR495170	17.0	18	93	143					
DGR495175	17.5	18	93	143					
DGR495180	18.0	18	93	143					
DGR495185	18.5	20	101	153					

▶ Other shank types are available on your request.

◎ : Excellent ○ : Good

ISO	P										M				K						
	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	32	10	29	32	38	15	35	15	23	10	10	26	3	25	21	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				
	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	21	22	23	24	25	26	27	28	29	30	15	30	25	38	34	55	60	42	55	55	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400Rm	1050Rm	550	630	400	550
Recommended	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎

DGR493, DGR495 SERIES with COOLANT HOLES

Vc = m/min.
RPM = rev./min.
FEED = mm/rev.

ISO	VDI 3323	Material Description	Vc	Parameter	Drill Diameter (mm)								
					5.0	6.0	8.0	10.0	12.0	14.0	16.0	18.0	20.0
P	2	Non-alloy steel	100	RPM	6370	5310	3980	3180	2650	2270	1990	1770	1590
				FEED	0.2-0.25	0.24-0.3	0.32-0.4	0.4-0.5	0.48-0.6	0.56-0.7	0.56-0.72	0.63-0.81	0.7-0.88
	3		100	RPM	6370	5310	3980	3180	2650	2270	1990	1770	1590
				FEED	0.2-0.25	0.24-0.3	0.32-0.4	0.4-0.5	0.48-0.6	0.56-0.7	0.56-0.72	0.63-0.81	0.7-0.88
	4		100	RPM	6370	5310	3980	3180	2650	2270	1990	1770	1590
				FEED	0.16-0.21	0.2-0.26	0.26-0.34	0.34-0.42	0.41-0.47	0.47-0.54	0.47-0.55	0.5-0.59	0.54-0.67
	5		80	RPM	5090	4240	3180	2550	2120	1820	1590	1410	1270
				FEED	0.16-0.21	0.2-0.26	0.26-0.34	0.34-0.42	0.41-0.47	0.47-0.54	0.47-0.55	0.5-0.59	0.54-0.67
	6		100	RPM	6370	5310	3980	3180	2650	2270	1990	1770	1590
				FEED	0.2-0.25	0.24-0.3	0.32-0.4	0.4-0.5	0.48-0.54	0.56-0.63	0.56-0.64	0.63-0.72	0.68-0.81
	7		80	RPM	5090	4240	3180	2550	2120	1820	1590	1410	1270
FEED		0.2-0.25		0.24-0.3	0.32-0.4	0.4-0.5	0.48-0.54	0.56-0.63	0.56-0.64	0.63-0.72	0.68-0.81		
8	80	RPM	5090	4240	3180	2550	2120	1820	1590	1410	1270		
		FEED	0.16-0.21	0.2-0.26	0.26-0.34	0.34-0.42	0.41-0.47	0.47-0.54	0.47-0.55	0.5-0.59	0.54-0.67		
9	40	RPM	2550	2120	1590	1270	1060	910	800	710	640		
		FEED	0.13-0.18	0.16-0.22	0.21-0.29	0.26-0.36	0.32-0.38	0.36-0.43	0.36-0.45	0.38-0.47	0.41-0.54		
10	70	RPM	4460	3710	2790	2230	1860	1590	1390	1240	1110		
		FEED	0.16-0.21	0.2-0.26	0.26-0.34	0.34-0.42	0.41-0.47	0.47-0.54	0.47-0.55	0.5-0.59	0.54-0.67		
11	40	RPM	2550	2120	1590	1270	1060	910	800	710	640		
		FEED	0.13-0.18	0.16-0.22	0.21-0.29	0.26-0.36	0.32-0.38	0.36-0.43	0.36-0.45	0.38-0.47	0.41-0.54		
K	15	Grey cast iron	100	RPM	6370	5310	3980	3180	2650	2270	1990	1770	1590
				FEED	0.23-0.30	0.27-0.36	0.36-0.48	0.45-0.60	0.54-0.72	0.63-0.84	0.64-0.80	0.72-0.90	0.80-0.98
	16		80	RPM	5090	4240	3180	2550	2120	1820	1590	1410	1270
				FEED	0.20-0.25	0.24-0.30	0.32-0.40	0.40-0.50	0.48-0.60	0.56-0.70	0.56-0.72	0.63-0.81	0.70-0.90
	17		100	RPM	6370	5310	3980	3180	2650	2270	1990	1770	1590
				FEED	0.23-0.30	0.27-0.36	0.36-0.48	0.45-0.60	0.54-0.72	0.63-0.84	0.64-0.80	0.72-0.90	0.80-0.98
18	70	RPM	4460	3710	2790	2230	1860	1590	1390	1240	1110		
		FEED	0.20-0.25	0.24-0.30	0.32-0.40	0.40-0.50	0.48-0.60	0.56-0.70	0.56-0.72	0.63-0.81	0.70-0.90		
19	80	RPM	5090	4240	3180	2550	2120	1820	1590	1410	1270		
		FEED	0.23-0.30	0.27-0.36	0.36-0.48	0.45-0.60	0.54-0.72	0.63-0.84	0.64-0.80	0.72-0.90	0.80-0.98		
20	70	RPM	4460	3710	2790	2230	1860	1590	1390	1240	1110		
		FEED	0.20-0.25	0.24-0.30	0.32-0.40	0.40-0.50	0.48-0.60	0.56-0.70	0.56-0.72	0.63-0.81	0.70-0.90		

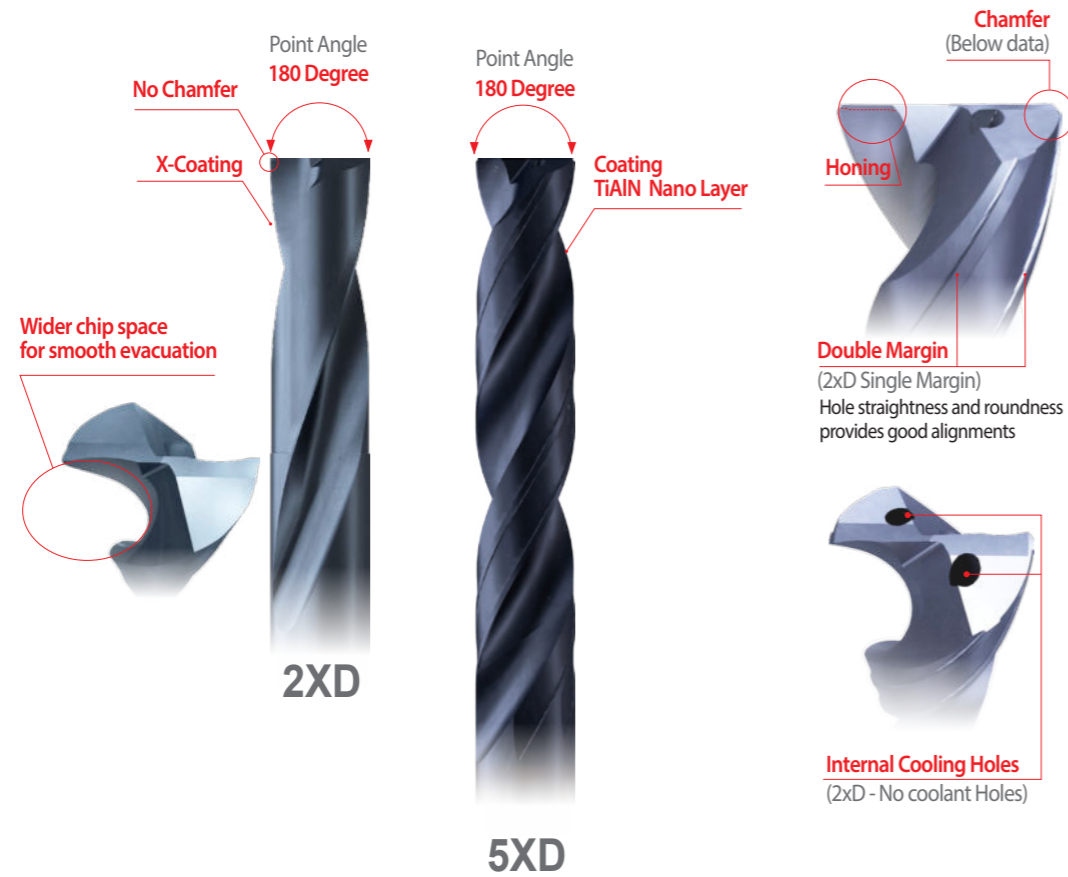


SOLID CARBIDE

**DREAM DRILLS
-FLAT BOTTOM**

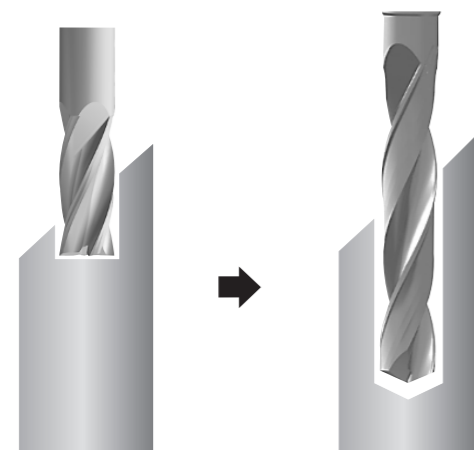
- For Holes on Various Angled Surfaces

DREAM DRILLS FLAT BOTTOM



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

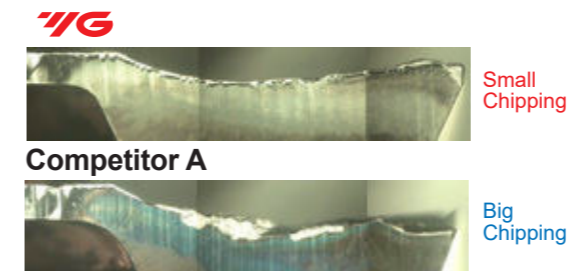
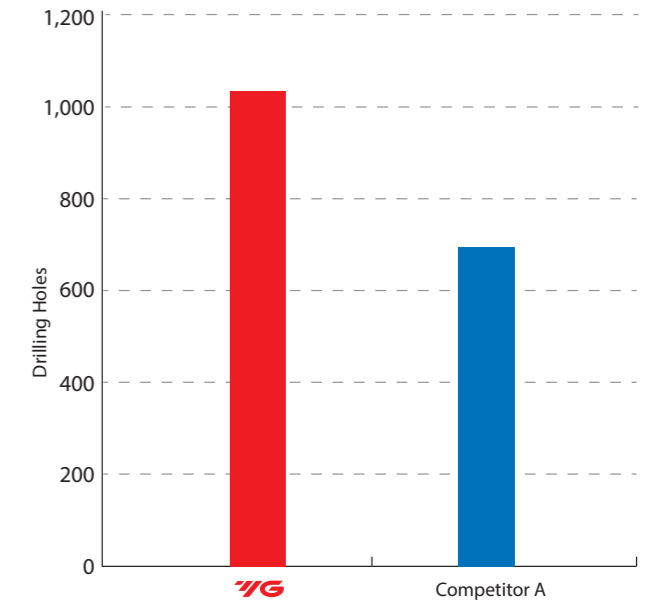
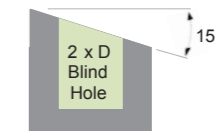


One operation(Dream Drill Flat Bottom)
One Drill does it all
without using both an end mill and a drill

CASE STUDY

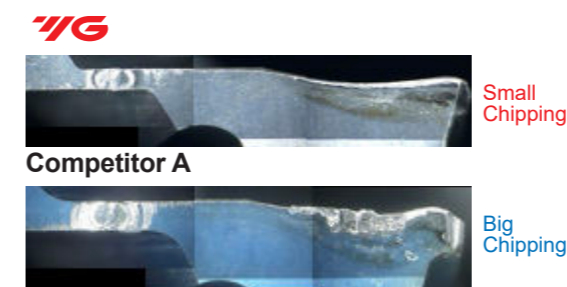
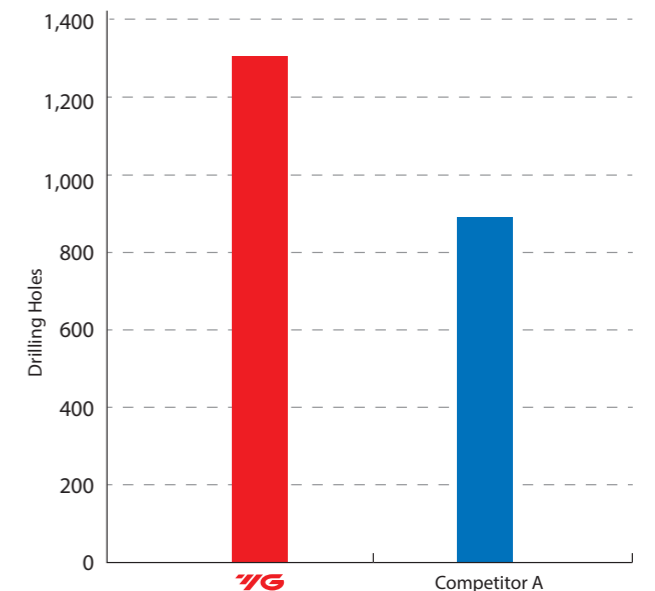
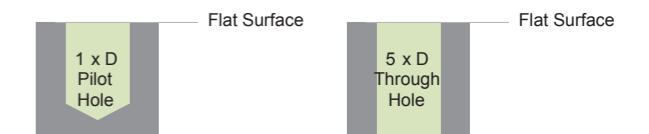
► SOLID CARBIDE DREAM DRILLS - Flat Bottom without Coolant Holes

CUTTING CONDITION	
Drill Diameter (mm)	Ø6.0
Work Material	• DIN: C45 • AISI: 1045 • JIS: S45C (HRC20)
Cutting Speed	75.4 m/min
RPM	4,000 rev/min
Feed	0.1 mm/rev
Drilling Depth	12.0 mm (2XD) Blind Hole / without Pecking
Coolant	External Cooling Water Soluble (9% Emulsion)
Machine	Machining Center



► SOLID CARBIDE DREAM DRILLS - Flat Bottom with Coolant Holes

CUTTING CONDITION	
Drill Diameter (mm)	Ø6.0
Work Material	• DIN: 42CrMo4 • AISI: 4140 • JIS: SCM440 (HRC30)
Cutting Speed	100.0 m/min
RPM	5,300 rev/min
Feed	0.12 mm/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

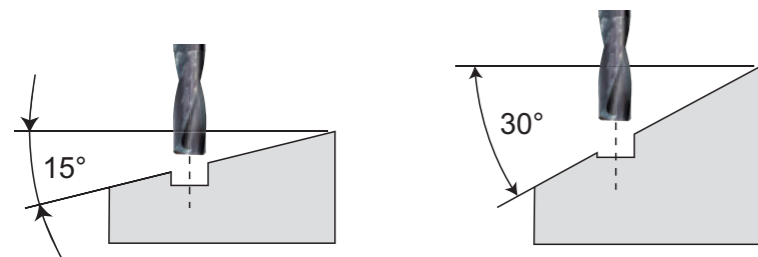


DPP447 SERIES

without COOLANT HOLES (2XD)

Vc = m/min.
RPM = rev./min.
FEED = mm/rev.

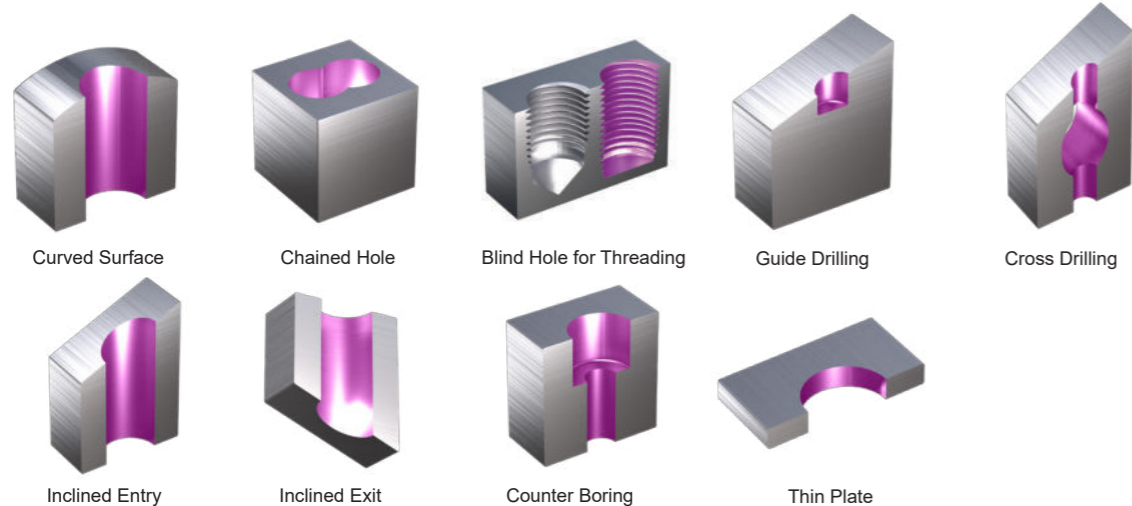
ISO	VDI 3323	Material Description	Vc	Parameter	Drill Diameter (mm)								
					3.0	4.0	5.0	6.0	8.0	10.0	12.0	16.0	20.0
P	1	Non-alloy steel	80	RPM	8490	6370	5090	4240	3180	2550	2120	1590	1270
				FEED	0.02-0.05	0.03-0.07	0.03-0.08	0.04-0.10	0.08-0.14	0.11-0.17	0.11-0.21	0.18-0.28	0.28-0.38
				RPM	8490	6370	5090	4240	3180	2550	2120	1590	1270
	2		80	FEED	0.02-0.05	0.03-0.07	0.03-0.08	0.04-0.10	0.08-0.14	0.11-0.17	0.11-0.21	0.18-0.28	0.28-0.38
				RPM	7430	5570	4460	3710	2790	2230	1860	1390	1110
				FEED	0.02-0.05	0.03-0.07	0.03-0.08	0.04-0.10	0.07-0.13	0.11-0.17	0.11-0.21	0.18-0.28	0.24-0.34
	3		70	RPM	4240	3180	2550	2120	1590	1270	1060	800	640
				FEED	0.02-0.05	0.03-0.07	0.03-0.08	0.04-0.10	0.07-0.13	0.11-0.17	0.11-0.21	0.18-0.28	0.24-0.34
				RPM	4030	3020	2420	2020	1510	1210	1010	760	600
4	38	FEED	0.02-0.05	0.02-0.06	0.03-0.08	0.03-0.09	0.06-0.12	0.09-0.15	0.08-0.18	0.14-0.24	0.21-0.31		
		RPM	4770	3580	2860	2390	1790	1430	1190	900	720		
		FEED	0.02-0.05	0.03-0.07	0.03-0.08	0.04-0.10	0.07-0.13	0.11-0.17	0.11-0.21	0.18-0.28	0.24-0.34		
5	40	RPM	4240	3180	2550	2120	1590	1270	1060	800	640		
		FEED	0.02-0.05	0.03-0.07	0.03-0.08	0.04-0.10	0.07-0.13	0.11-0.17	0.11-0.21	0.18-0.28	0.24-0.34		
		RPM	4030	3020	2420	2020	1510	1210	1010	760	600		
6	38	FEED	0.02-0.05	0.02-0.06	0.03-0.08	0.03-0.09	0.06-0.12	0.09-0.15	0.08-0.18	0.14-0.24	0.21-0.31		
		RPM	2650	1990	1590	1330	990	800	660	500	400		
		FEED	0.01-0.03	0.02-0.04	0.02-0.05	0.03-0.06	0.03-0.08	0.05-0.10	0.06-0.12	0.06-0.16	0.10-0.20		
7	30	RPM	3180	2390	1910	1590	1190	950	800	600	480		
		FEED	0.01-0.03	0.01-0.03	0.02-0.04	0.02-0.05	0.03-0.06	0.03-0.08	0.05-0.10	0.06-0.12	0.09-0.15		
		RPM	7430	5570	4460	3710	2790	2230	1860	1390	1110		
8	70	FEED	0.02-0.05	0.02-0.06	0.03-0.08	0.03-0.09	0.06-0.12	0.09-0.15	0.08-0.18	0.14-0.24	0.20-0.30		
		RPM	6370	4770	3820	3180	2390	1910	1590	1190	950		
		FEED	0.02-0.05	0.02-0.05	0.03-0.06	0.03-0.07	0.04-0.10	0.07-0.13	0.06-0.16	0.11-0.21	0.15-0.25		
9	60	RPM	17510	13130	10500	8750	6570	5250	4380	3280	2630		
		FEED	0.02-0.05	0.04-0.08	0.04-0.10	0.06-0.12	0.10-0.16	0.14-0.20	0.14-0.24	0.22-0.32	0.30-0.40		
		RPM	17510	13130	10500	8750	6570	5250	4380	3280	2630		
N	22	FEED	0.02-0.05	0.04-0.08	0.04-0.10	0.06-0.12	0.10-0.16	0.14-0.20	0.14-0.24	0.22-0.32	0.30-0.40		



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

- ▶ 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.

VARIETY OF DRILLING



DH450 SERIES

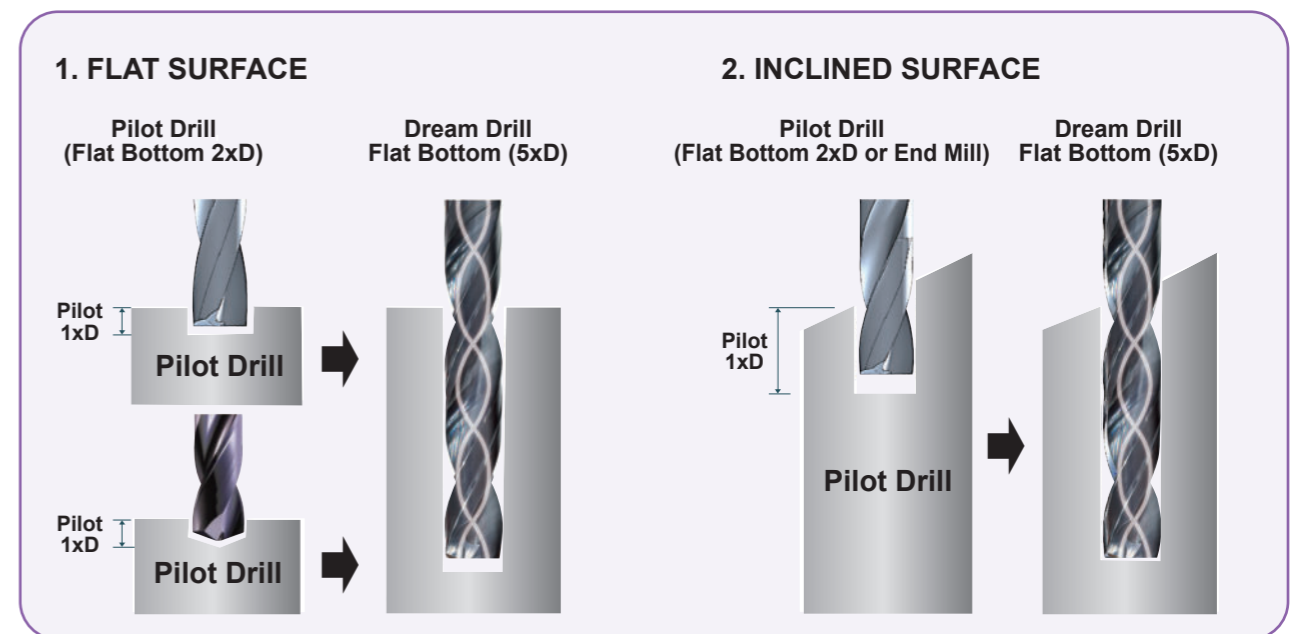
with COOLANT HOLES (5XD)

Vc = m/min.
RPM = rev./min.
FEED = mm/rev.

ISO	VDI 3323	Material Description	Vc	Parameter	Drill Diameter (mm)								
					3.0	4.0	5.0	6.0	8.0	10.0	12.0	16.0	20.0
P	1	Non-alloy steel	100	RPM	10610	7960	6370	5310	3980	3180	2650	1990	1590
				FEED	0.05-0.09	0.08-0.12	0.09-0.15	0.12-0.18	0.18-0.24	0.24-0.30	0.26-0.36	0.38-0.48	0.50-0.60
				RPM	9550	7160	5730	4770	3580	2860	2390	1790	1430
	2		90	FEED	0.02-0.05	0.04-0.08	0.04-0.10	0.06-0.12	0.10-0.16	0.14-0.20	0.14-0.24	0.22-0.32	0.30-0.40
				RPM	9550	7160	5730	4770	3580	2860	2390	1790	1430
				FEED	0.02-0.05	0.04-0.08	0.04-0.10	0.06-0.12	0.10-0.16	0.14-0.20	0.14-0.24	0.22-0.32	0.30-0.40
	3		90	RPM	9550	7160	5730	4770	3580	2860	2390	1790	1430
				FEED	0.02-0.05	0.04-0.08	0.04-0.10	0.06-0.12	0.10-0.16	0.14-0.20	0.14-0.24	0.22-0.32	0.30-0.40
				RPM	7960	5970	4770	3980	2980	2390	1990	1490	1190
4	75	FEED	0.02-0.04	0.03-0.06	0.05-0.08	0.05-0.09	0.06-0.12	0.09-0.15	0.08-0.18	0.14-0.24	0.20-0.30		
		RPM	7960	5970	4770	3980	2980	2390	1990	1490	1190		
		FEED	0.02-0.04	0.03-0.06	0.05-0.08	0.05-0.09	0.06-0.12	0.09-0.15	0.08-0.18	0.14-0.24	0.20-0.30		
5	75	RPM	9020	6760	5410	4510	3380	2710	2250	1690	1350		
		FEED	0.02-0.05	0.04-0.08	0.04-0.10	0.06-0.12	0.10-0.16	0.14-0.20	0.14-0.24	0.22-0.32	0.30-0.40		
		RPM	7960	5970	4770	3980	2980	2390	1990	1490	1190		
6	85	FEED	0.02-0.05	0.04-0.08	0.04-0.10	0.06-0.12	0.10-0.16	0.14-0.20	0.14-0.24	0.22-0.32	0.30-0.40		
		RPM	7960	5970	4770	3980	2980	2390	1990	1490	1190		
		FEED	0.02-0.05	0.04-0.08	0.04-0.10	0.06-0.12	0.10-0.16	0.14-0.20	0.14-0.24	0.22-0.32	0.30-0.40		
7	75	RPM	7960	5970	4770	3980	2980	2390	1990	1490	1190		
		FEED	0.02-0.05	0.04-0.08	0.04-0.10	0.06-0.12	0.10-0.16	0.14-0.20	0.14-0.24	0.22-0.32	0.30-0.40		
		RPM	7960	5970	4770	3980	2980	2390	1990	1490	1190		
8	75	FEED	0.02-0.04	0.03-0.06	0.05-0.08	0.05-0.09	0.06-0.12	0.09-0.15	0.08-0.18	0.14-0.24	0.20-0.30		
		RPM	5310	3980	3180	2650	1990	1590	1330	990	800		
		FEED	0.02-0.04	0.03-0.06	0.05-0.08	0.05-0.09	0.06-0.12	0.09-0.15	0.08-0.18	0.14-0.24	0.20-0.30		
9	50	RPM	6370	4770	3820	3180	2390	1910	1590	1190	950		
		FEED	0.02-0.05	0.04-0.08	0.04-0.10	0.06-0.12	0.10-0.16	0.14-0.20	0.14-0.24	0.22-0.32	0.30-0.40		
		RPM	9550	7160	5730	4770	3580	2860	2390	1790	1430		
M	12	Stainless steel	60	FEED	0.02-0.05	0.04-0.08	0.04-0.10	0.06-0.12	0.10-0.16	0.14-0.20	0.14-0.24	0.22-0.32	0.30-0.40
				RPM	9550	7160	5730	4770	3580	2860	2390	1790	1430
				FEED	0.02-0.05	0.03-0.06	0.05-0.08	0.05-0.09	0.06-0.12	0.09-0.15	0.08-0.18	0.14-0.24	0.20-0.30
K	15	Grey cast iron	90	RPM	7960	5970	4770	3980	2980	2390	1990	1490	1190
				FEED	0.02-0.05	0.02-0.05	0.03-0.06	0.03-0.07	0.04-0.10	0.07-0.13	0.06-0.16	0.11-0.21	0.15-0.25
				RPM	16980	12730	10190	8490	6370	5090	4240	3180	2550
N	21	Aluminum-wrought alloy	160	FEED	0.05-0.09	0.08-0.12	0.09-0.15	0.12-0.18	0.18-0.24	0.24-0.30	0.26-0.36	0.38-0.48	0.50-0.60
				RPM	16980	12730	10190	8490	6370	5090	4240	3180	2550
				FEED	0.05-0.09	0.08-0.12	0.09-0.15	0.12-0.18	0.18-0.24	0.24-0.30	0.26-0.36	0.38-0.48	0.50-0.60

- ▶ 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.

DREAM DRILLS FLAT BOTTOM - Pilot Drilling for 5 X D



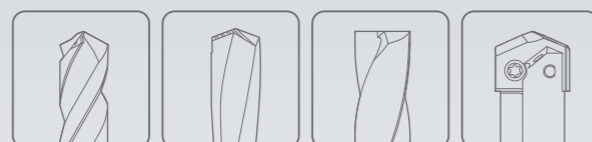
- ▶ For Flat bottom 5xD drilling depth, Slope surface needs Pilot Drilling with YG-1 Flat Bottom Drill (2XD) and Flat surface needs Pilot Drilling with YG-1 Dream Drill General.
- ▶ Pilot Drilling Depth : around 1XD
- ▶ Pilot Drilling Diameter : same size diameter



Leading Through Innovation



Global Cutting Tool Leader **YG-1**



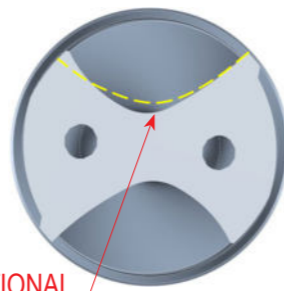
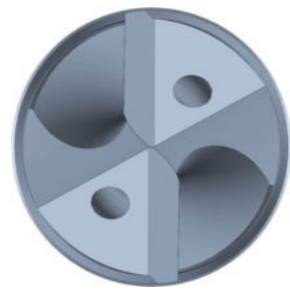
SOLID CARBIDE

DREAM DRILLS

**DREAM DRILLS
-INOX**

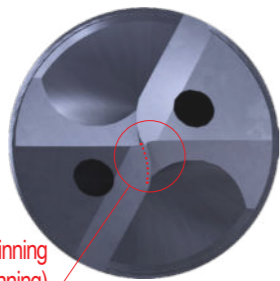
- For Tough Materials like Stainless Steels

DREAM DRILLS INOX



CONVENTIONAL

- 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



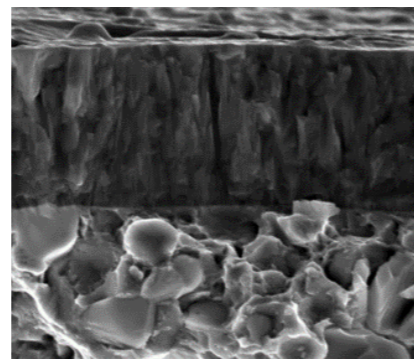
R-Thinning (Radius Thinning)

- 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.



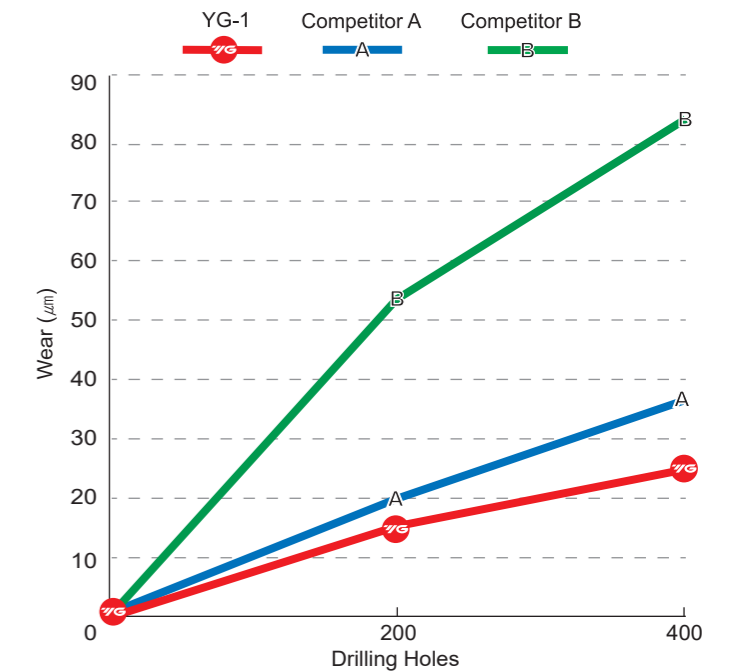
Nano Layer

Carbide

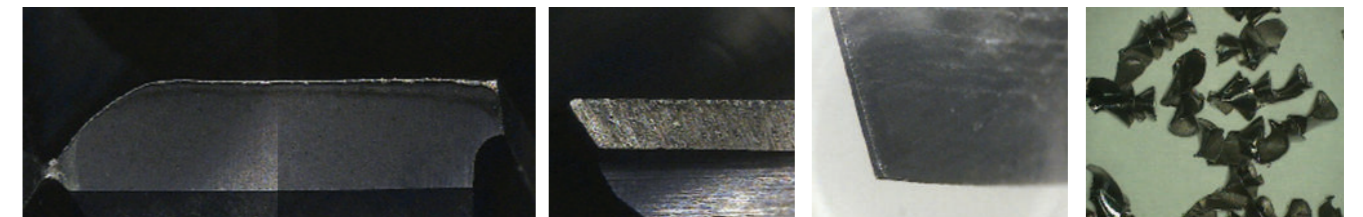
CASE STUDY

► SOLID CARBIDE DREAM DRILLS - INOX with Coolant Holes

CUTTING CONDITION	
Tool	DH452060 (DREAM DRILL-INOX)
Size(mm)	Ø6 x Ø6 x 44 x 82
Work Material	• DIN: X5CrNi1810 (X4CrNi18-10) • WR: 1.4301 • JIS: SUS304
RPM	3,700 rev./min.
Feed	0.07 mm/rev.
Drilling Depth	24 mm
Coolant	Wet Cut

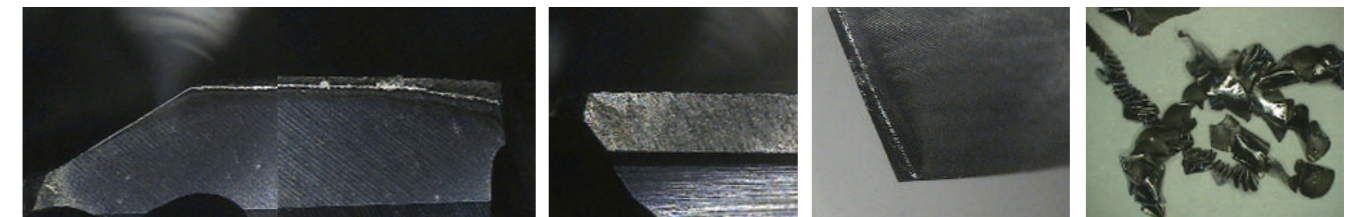


Total Drilling 400 Holes



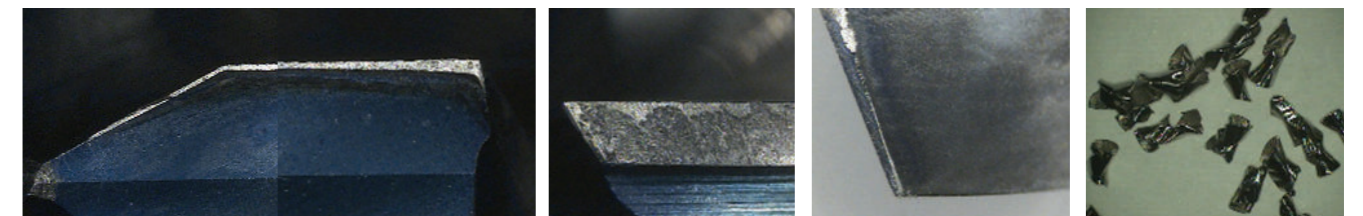
Competitor A

Total Drilling 400 Holes



Competitor B

Total Drilling 400 Holes



TiAlN-COATED SOLID CARBIDE
DREAM DRILLS INOX with COOLANT HOLES (3XD) SERIES **DH451**

- ▶ 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 30° h6 m7 140° 20 bar TiAlN p.91 **SHORT 3 × D**

Unit : mm					Unit : mm				
EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length	EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
TiAlN	D1	D2	L1	L2	TiAlN	D1	D2	L1	L2
DH451030	3.0	6	20	62	DH451058	5.8	6	28	66
DH451031	3.1	6	20	62	DH451059	5.9	6	28	66
DH451032	3.2	6	20	62	DH451060	6.0	6	28	66
DH451033	3.3	6	20	62	DH451061	6.1	8	34	79
DH451034	3.4	6	20	62	DH451062	6.2	8	34	79
DH451035	3.5	6	20	62	DH451063	6.3	8	34	79
DH451036	3.6	6	20	62	DH451064	6.4	8	34	79
DH451037	3.7	6	20	62	DH451065	6.5	8	34	79
DH451038	3.8	6	24	66	DH451066	6.6	8	34	79
DH451039	3.9	6	24	66	DH451067	6.7	8	34	79
DH451040	4.0	6	24	66	DH451068	6.8	8	34	79
DH451041	4.1	6	24	66	DH451069	6.9	8	34	79
DH451042	4.2	6	24	66	DH451070	7.0	8	34	79
DH451043	4.3	6	24	66	DH451071	7.1	8	41	79
DH451044	4.4	6	24	66	DH451072	7.2	8	41	79
DH451045	4.5	6	24	66	DH451073	7.3	8	41	79
DH451046	4.6	6	24	66	DH451074	7.4	8	41	79
DH451047	4.7	6	24	66	DH451075	7.5	8	41	79
DH451048	4.8	6	28	66	DH451076	7.6	8	41	79
DH451049	4.9	6	28	66	DH451077	7.7	8	41	79
DH451050	5.0	6	28	66	DH451078	7.8	8	41	79
DH451051	5.1	6	28	66	DH451079	7.9	8	41	79
DH451052	5.2	6	28	66	DH451080	8.0	8	41	79
DH451053	5.3	6	28	66	DH451081	8.1	10	47	89
DH451054	5.4	6	28	66	DH451082	8.2	10	47	89
DH451055	5.5	6	28	66	DH451083	8.3	10	47	89
DH451056	5.6	6	28	66	DH451084	8.4	10	47	89
DH451057	5.7	6	28	66	DH451085	8.5	10	47	89

▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

ISO Material Description	P										M				K						
	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	35	38	42	45	48	52	55	58	60	62	64	66	68	70	72	74	
HB	125	190	250	270	300	180	215	270	300	350	200	240	280	320	180	260	160	250	130	230	
Recommended	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	

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

TiAlN-COATED SOLID CARBIDE
DREAM DRILLS INOX with COOLANT HOLES (3XD) SERIES **DH451**

- ▶ 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 30° h6 m7 140° 20 bar TiAlN p.91 **SHORT 3 × D**

Unit : mm					Unit : mm				
EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length	EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
TiAlN	D1	D2	L1	L2	TiAlN	D1	D2	L1	L2
DH451086	8.6	10	47	89	DH451114	11.4	12	55	102
DH451087	8.7	10	47	89	DH451115	11.5	12	55	102
DH451088	8.8	10	47	89	DH451116	11.6	12	55	102
DH451089	8.9	10	47	89	DH451117	11.7	12	55	102
DH451090	9.0	10	47	89	DH451118	11.8	12	55	102
DH451091	9.1	10	47	89	DH451119	11.9	12	55	102
DH451092	9.2	10	47	89	DH451120	12.0	12	55	102
DH451093	9.3	10	47	89	DH451125	12.5	14	60	107
DH451094	9.4	10	47	89	DH451130	13.0	14	60	107
DH451095	9.5	10	47	89	DH451135	13.5	14	60	107
DH451096	9.6	10	47	89	DH451140	14.0	14	60	107
DH451097	9.7	10	47	89	DH451145	14.5	16	65	115
DH451098	9.8	10	47	89	DH451150	15.0	16	65	115
DH451099	9.9	10	47	89	DH451155	15.5	16	65	115
DH451100	10.0	10	47	89	DH451160	16.0	16	65	115
DH451101	10.1	12	55	102	DH451165	16.5	18	73	123
DH451102	10.2	12	55	102	DH451170	17.0	18	73	123
DH451103	10.3	12	55	102	DH451175	17.5	18	73	123
DH451104	10.4	12	55	102	DH451180	18.0	18	73	123
DH451105	10.5	12	55	102	DH451185	18.5	20	79	131
DH451106	10.6	12	55	102	DH451190	19.0	20	79	131
DH451107	10.7	12	55	102	DH451195	19.5	20	79	131
DH451108	10.8	12	55	102	DH451200	20.0	20	79	131
DH451109	10.9	12	55	102					
DH451110	11.0	12	55	102					
DH451111	11.1	12	55	102					
DH451112	11.2	12	55	102					
DH451113	11.3	12	55	102					

▶ Other shank types are available on your request.

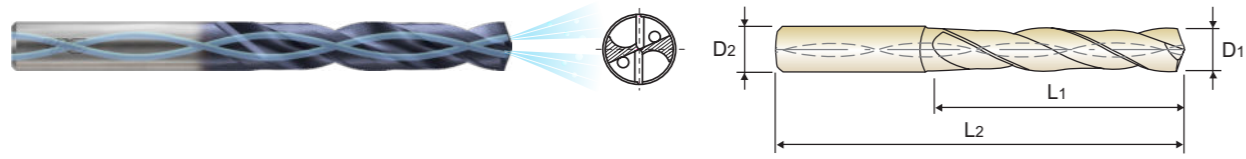
◎ : Excellent ○ : Good

ISO Material Description	P										M				K						
	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	35	38	42	45	48	52	55	58	60	62	64	66	68	70	72	74	
HB	125	190	250	270	300	180	215	270	300	350	200	240	280	320	180	260	160	250	130	230	
Recommended	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	

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

TiAIN-COATED SOLID CARBIDE
DREAM DRILLS INOX with COOLANT HOLES (5XD) 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
- ▶ TiAIN coating for better surface finishes and longer tool life



DIN 6537
CARBIDE
30°
h6
m7
140°
20 bar
TiAIN
LONG
5 x D

EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
TiAIN	D1	D2	L1	L2
DH452010	1.0	3	8	55
DH452011	1.1	3	12	55
DH452012	1.2	3	12	55
DH452013	1.3	3	12	55
DH452014	1.4	3	12	55
DH452015	1.5	3	16	55
DH452016	1.6	3	16	55
DH452017	1.7	3	16	55
DH452018	1.8	3	16	55
DH452019	1.9	3	16	55
DH452020	2.0	4	21	57
DH452021	2.1	4	21	57
DH452022	2.2	4	21	57
DH452023	2.3	4	21	57
DH452024	2.4	4	21	57
DH452025	2.5	4	21	57
DH452026	2.6	4	21	57
DH452027	2.7	4	21	57
DH452028	2.8	4	21	57
DH452029	2.9	4	21	57
DH452030	3.0	6	28	66
DH452031	3.1	6	28	66
DH452032	3.2	6	28	66
DH452033	3.3	6	28	66
DH452034	3.4	6	28	66
DH452035	3.5	6	28	66
DH452036	3.6	6	28	66
DH452037	3.7	6	28	66

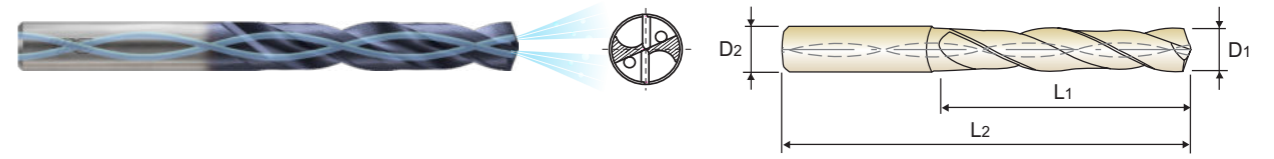
▶ Other shank types are available on your request. ▶ NEXT PAGE

◎ : 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	21	22	23	24
HRc	13	25	28	32	35	38	40	42	45	48	50	52	55	58	60	62	64	66	68	70	72	74	76	78
HB	125	190	250	270	300	180	215	270	300	350	400	200	240	180	180	260	160	250	130	230				
Recommended	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎

TiAIN-COATED SOLID CARBIDE
DREAM DRILLS INOX with COOLANT HOLES (5XD) 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
- ▶ TiAIN coating for better surface finishes and longer tool life



DIN 6537
CARBIDE
30°
h6
m7
140°
20 bar
TiAIN
LONG
5 x D

EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
TiAIN	D1	D2	L1	L2
DH452066	6.6	8	53	91
DH452067	6.7	8	53	91
DH452068	6.8	8	53	91
DH452069	6.9	8	53	91
DH452070	7.0	8	53	91
DH452071	7.1	8	53	91
DH452072	7.2	8	53	91
DH452073	7.3	8	53	91
DH452074	7.4	8	53	91
DH452075	7.5	8	53	91
DH452076	7.6	8	53	91
DH452077	7.7	8	53	91
DH452078	7.8	8	53	91
DH452079	7.9	8	53	91
DH452080	8.0	8	53	91
DH452081	8.1	10	61	103
DH452082	8.2	10	61	103
DH452083	8.3	10	61	103
DH452084	8.4	10	61	103
DH452085	8.5	10	61	103
DH452086	8.6	10	61	103
DH452087	8.7	10	61	103
DH452088	8.8	10	61	103
DH452089	8.9	10	61	103
DH452090	9.0	10	61	103
DH452091	9.1	10	61	103
DH452092	9.2	10	61	103
DH452093	9.3	10	61	103

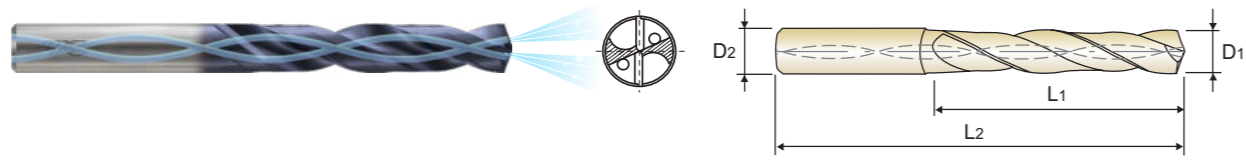
▶ Other shank types are available on your request. ▶ NEXT PAGE

◎ : 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	21	22	23	24
HRc	13	25	28	32	35	38	40	42	45	48	50	52	55	58	60	62	64	66	68	70	72	74	76	78
HB	125	190	250	270	300	180	215	270	300	350	400	200	240	180	180	260	160	250	130	230				
Recommended	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎

TiAlN-COATED SOLID CARBIDE
DREAM DRILLS INOX with COOLANT HOLES (5XD) 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** 30° h6 m7 140° 20 bar TiAlN p.91 **LONG** 5 × D

EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
TiAlN	D1	D2	L1	L2
DH452130	13.0	14	77	124
DH452135	13.5	14	77	124
DH452140	14.0	14	77	124
DH452145	14.5	16	83	133
DH452150	15.0	16	83	133
DH452155	15.5	16	83	133
DH452160	16.0	16	83	133
DH452165	16.5	18	93	143

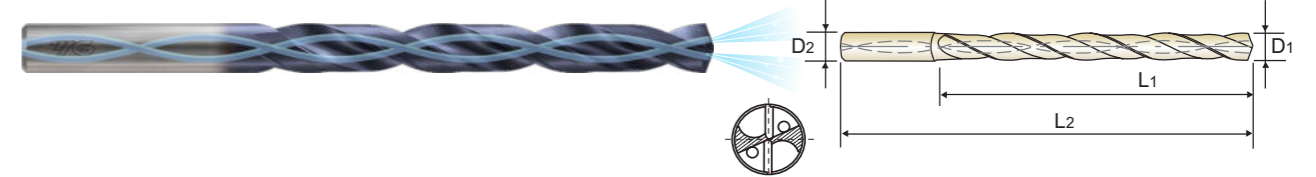
EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
TiAlN	D1	D2	L1	L2
DH452170	17.0	18	93	143
DH452175	17.5	18	93	143
DH452180	18.0	18	93	143
DH452185	18.5	20	101	153
DH452190	19.0	20	101	153
DH452195	19.5	20	101	153
DH452200	20.0	20	101	153

Unit : mm

▶ Other shank types are available on your request.

TiAlN-COATED SOLID CARBIDE
DREAM DRILLS INOX with COOLANT HOLES (8XD) 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** 30° h6 m7 140° 20 bar TiAlN p.91 **EXTRA LONG** 8 × D

EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
TiAlN	D1	D2	L1	L2
DH453030	3.0	6	34	72
DH453031	3.1	6	34	72
DH453032	3.2	6	34	72
DH453033	3.3	6	34	72
DH453034	3.4	6	34	72
DH453035	3.5	6	34	72
DH453036	3.6	6	34	72
DH453037	3.7	6	34	72
DH453038	3.8	6	43	81
DH453039	3.9	6	43	81
DH453040	4.0	6	43	81
DH453041	4.1	6	43	81
DH453042	4.2	6	43	81
DH453043	4.3	6	43	81
DH453044	4.4	6	43	81
DH453045	4.5	6	43	81
DH453046	4.6	6	43	81
DH453047	4.7	6	43	81
DH453048	4.8	6	57	95
DH453049	4.9	6	57	95
DH453050	5.0	6	57	95
DH453051	5.1	6	57	95
DH453052	5.2	6	57	95
DH453053	5.3	6	57	95
DH453054	5.4	6	57	95
DH453055	5.5	6	57	95
DH453056	5.6	6	57	95
DH453057	5.7	6	57	95

EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
TiAlN	D1	D2	L1	L2
DH453058	5.8	6	57	95
DH453059	5.9	6	57	95
DH453060	6.0	6	57	95
DH453061	6.1	8	76	114
DH453062	6.2	8	76	114
DH453063	6.3	8	76	114
DH453064	6.4	8	76	114
DH453065	6.5	8	76	114
DH453066	6.6	8	76	114
DH453067	6.7	8	76	114
DH453068	6.8	8	76	114
DH453069	6.9	8	76	114
DH453070	7.0	8	76	114
DH453071	7.1	8	76	114
DH453072	7.2	8	76	114
DH453073	7.3	8	76	114
DH453074	7.4	8	76	114
DH453075	7.5	8	76	114
DH453076	7.6	8	76	114
DH453077	7.7	8	76	114
DH453078	7.8	8	76	114
DH453079	7.9	8	76	114
DH453080	8.0	8	76	114
DH453081	8.1	10	95	142
DH453082	8.2	10	95	142
DH453083	8.3	10	95	142
DH453084	8.4	10	95	142
DH453085	8.5	10	95	142

Unit : mm

▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

ISO	P											M			K						
	Non-alloy steel					Low alloy steel						High alloyed steel, and tool steel			Stainless steel			Grey cast iron		Nodular 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	38	10	29	32	38	45	52	15	23	10	10	26	3	25	21	21	
HB	125	190	250	270	300	180	215	270	300	350	400	200	240	180	180	260	160	250	130	230	
Recommended	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	

ISO	N										S						H				
	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	60	100	75	90	130	110	90	100			15	30	25	38	34	55	60	55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400Rm	1050Rm	550	630	400	550
Recommended	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎

◎ : Excellent ○ : Good

ISO	P											M			K						
	Non-alloy steel					Low alloy steel						High alloyed steel, and tool steel			Stainless steel			Grey cast iron		Nodular 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	38	10	29	32	38	45	52	15	23	10	10	26	3	25	21	21	
HB	125	190	250	270	300	180	215	270	300	350	400	200	240	180	180	260	160	250	130	230	
Recommended	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	

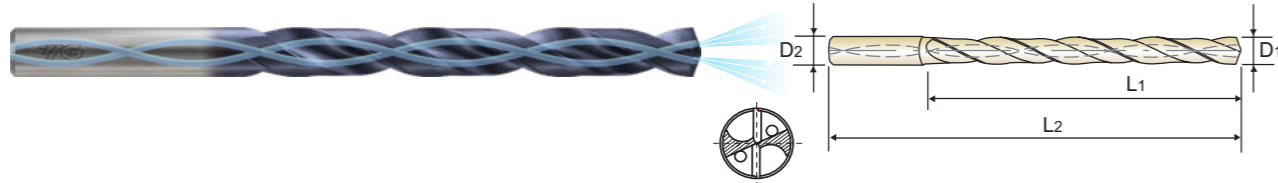
ISO	N										S						H				
	Aluminum-wrought alloy		Aluminum-cast alloyed			Copper and Copper Alloys (Bronze / Brass)		Non Metallic Materials			Heat Resistant Super Alloys			Titanium Alloys			Hardened steel		Chilled Cast Iron	Hardened Cast Iron	
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35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

TiAIN-COATED SOLID CARBIDE
DREAM DRILLS INOX with COOLANT HOLES (8XD)

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
- ▶ TiAIN coating for better surface finishes and longer tool life



EXTRA LONG
8 x D

EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
TiAIN	D1	D2	L1	L2
DH453086	8.6	10	95	142
DH453087	8.7	10	95	142
DH453088	8.8	10	95	142
DH453089	8.9	10	95	142
DH453090	9.0	10	95	142
DH453091	9.1	10	95	142
DH453092	9.2	10	95	142
DH453093	9.3	10	95	142
DH453094	9.4	10	95	142
DH453095	9.5	10	95	142
DH453096	9.6	10	95	142
DH453097	9.7	10	95	142
DH453098	9.8	10	95	142
DH453099	9.9	10	95	142
DH453100	10.0	10	95	142
DH453101	10.1	12	114	162
DH453102	10.2	12	114	162
DH453103	10.3	12	114	162
DH453104	10.4	12	114	162
DH453105	10.5	12	114	162
DH453106	10.6	12	114	162
DH453107	10.7	12	114	162
DH453108	10.8	12	114	162
DH453109	10.9	12	114	162
DH453110	11.0	12	114	162
DH453111	11.1	12	114	162
DH453112	11.2	12	114	162
DH453113	11.3	12	114	162

EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
TiAIN	D1	D2	L1	L2
DH453114	11.4	12	114	162
DH453115	11.5	12	114	162
DH453116	11.6	12	114	162
DH453117	11.7	12	114	162
DH453118	11.8	12	114	162
DH453119	11.9	12	114	162
DH453120	12.0	12	114	162
DH453125	12.5	14	133	178
DH453130	13.0	14	133	178
DH453135	13.5	14	133	178
DH453140	14.0	14	133	178

Unit : mm

▶ Other shank types are available on your request.

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	32	10	29	32	38	38	15	15	23	10	10	26	3	25	19	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	13	25	28	32	32	10	29	32	38	38	15	15	23	10	10	26	3	25	19	21	
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230	
Recommended	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎

◎ : Excellent ○ : Good

RECOMMENDED CUTTING CONDITIONS

DH451, DH452, DH453 SERIES with COOLANT HOLES

Vc = m/min.
RPM = rev/min.
FEED = mm/rev.

ISO	VDI 3323	Material Description	Vc	Parameter	Drill Diameter (mm)		Vc	Parameter	Drill Diameter (mm)			
					1.0	2.0			3.0	4.0	5.0	6.0
P	2	Non-alloy steel	70	RPM	22280	11140	100	RPM	10610	7960	6370	5310
				FEED	0.02-0.04	0.04-0.06		FEED	0.04-0.10	0.06-0.12	0.12-0.18	0.14-0.20
	3		70	RPM	22280	11140	100	RPM	10610	7960	6370	5310
				FEED	0.02-0.04	0.04-0.06	FEED	0.04-0.10	0.06-0.12	0.12-0.18	0.14-0.20	
	6	Low alloy steel	70	RPM	22280	11140	100	RPM	10610	7960	6370	5310
				FEED	0.02-0.04	0.04-0.06		FEED	0.04-0.10	0.06-0.12	0.12-0.18	0.14-0.20
7	50		RPM	15920	7960	70	RPM	7430	5570	4460	3710	
			FEED	0.02-0.04	0.04-0.06	FEED	0.04-0.10	0.06-0.12	0.12-0.18	0.14-0.20		
M	12	Stainless steel	40	RPM	12730	6370	50	RPM	5310	3980	3180	2650
				FEED	0.02-0.04	0.02-0.04		FEED	0.03-0.05	0.05-0.09	0.07-0.11	0.08-0.12
	13		25	RPM	7960	3980	40	RPM	4240	3180	2550	2120
				FEED	0.02-0.04	0.02-0.04	FEED	0.03-0.05	0.05-0.09	0.07-0.11	0.08-0.12	
	14	45	RPM	14320	7160	60	RPM	6370	4770	3820	3180	
			FEED	0.02-0.04	0.02-0.04	FEED	0.04-0.06	0.06-0.10	0.08-0.12	0.09-0.13		
N	21	Aluminum-wrought alloy	130	RPM	41380	20690	200	RPM	21220	15920	12730	10610
				FEED	0.04-0.10	0.08-0.14		FEED	0.14-0.20	0.19-0.25	0.20-0.26	0.22-0.28
	22		130	RPM	41380	20690	200	RPM	21220	15920	12730	10610
				FEED	0.04-0.10	0.08-0.14	FEED	0.14-0.20	0.19-0.25	0.20-0.26	0.22-0.28	
	23	Aluminum-cast, alloyed	110	RPM	35010	17510	180	RPM	19100	14320	11460	9550
				FEED	0.04-0.10	0.08-0.14		FEED	0.14-0.20	0.19-0.25	0.20-0.26	0.22-0.28
24	110		RPM	35010	17510	180	RPM	19100	14320	11460	9550	
			FEED	0.04-0.10	0.08-0.14	FEED	0.14-0.20	0.19-0.25	0.20-0.26	0.22-0.28		
25	90	RPM	28650	14320	150	RPM	15920	11940	9550	7960		
		FEED	0.04-0.08	0.06-0.10	FEED	0.12-0.18	0.16-0.22	0.17-0.23	0.19-0.25			
S	37	Titanium Alloys	25	RPM	7960	3980	40	RPM	4240	3180	2550	2120
				FEED	0.01-0.03	0.01-0.03		FEED	0.02-0.04	0.04-0.08	0.06-0.10	0.07-0.11

ISO	VDI 3323	Material Description	Vc	Parameter	Drill Diameter (mm)						
					8.0	10.0	12.0	14.0	16.0	18.0	20.0
P	2	Non-alloy steel	100	RPM	3980	3180	2650	2270	1990	1770	1590
				FEED	0.16-0.22	0.18-0.24	0.19-0.27	0.21-0.39	0.23-0.31	0.26-0.36	0.28-0.38
	3		100	RPM	3980	3180	2650	2270	1990	1770	1590
				FEED	0.16-0.22	0.18-0.24	0.19-0.27	0.21-0.39	0.23-0.31	0.26-0.36	0.28-0.38
	6	Low alloy steel	100	RPM	3980	3180	2650	2270	1990	1770	1590
				FEED	0.16-0.22	0.18-0.24	0.19-0.27	0.21-0.39	0.23-0.31	0.26-0.36	0.28-0.38
7	70		RPM	2790	2230	1860	1590	1390	1240	1110	
			FEED	0.16-0.22	0.18-0.24	0.19-0.27	0.21-0.39	0.23-0.31	0.26-0.36	0.28-0.38	
M	12	Stainless steel	50	RPM	1990	1590	1330	1140	990	880	800
				FEED	0.09-0.13	0.10-0.15	0.11-0.16	0.12-0.17	0.13-0.18	0.14-0.19	0.15-0.20
	13		40	RPM	1590	1270	1060	910	800	710	640
				FEED	0.09-0.13	0.10-0.15	0.11-0.16	0.12-0.17	0.13-0.18	0.14-0.19	0.15-0.20
	14	60	RPM	2390	1910	1590	1360	1190	1060	950	
			FEED	0.10-0.14	0.11-0.16	0.12-0.17	0.13-0.18	0.14-0.19	0.15-0.20	0.16-0.21	
N	21	Aluminum-wrought alloy	200	RPM	7960	6370	5310	4550	3980	3540	3180
				FEED	0.24-0.30	0.26-0.32	0.28-0.34	0.30-0.36	0.32-0.38	0.33-0.43	0.35-0.45
	22		200	RPM	7960	6370	5310	4550	3980	3540	3180
				FEED	0.24-0.30	0.26-0.32	0.28-0.34	0.30-0.36	0.32-0.38	0.33-0.43	0.35-0.45
	23	Aluminum-cast, alloyed	180	RPM	7160	5730	4770	4090	3580	3180	2860
				FEED	0.24-0.30	0.26-0.32	0.28-0.34	0.30-0.36	0.32-0.38	0.33-0.43	0.35-0.45
24	180		RPM	7160	5730	4770	4090	3580	3180	2860	
			FEED	0.24-0.30	0.26-0.32	0.28-0.34	0.30-0.36	0.32-0.38	0.33-0.43	0.35-0.45	
25	150	RPM	5970	4770	3980	3410	2980	2650	2390		
		FEED	0.21-0.27	0.23-0.29	0.25-0.31	0.27-0.33	0.28-0.34	0.28-0.38	0.30-0.40		
S	37	Titanium Alloys	40	RPM	1590	1270	1060	910	800	710	640
				FEED	0.08-0.12	0.09-0.14	0.10-0.15	0.11-0.16	0.12-0.17	0.13-0.18	0.14-0.19

▶ Recommend to reduce the feed rate as following

Feed 100% : DH451(3xD), DH452(5xD) **Feed 85%** : DH453(8xD)



Leading Through Innovation



Global Cutting Tool Leader **YG-1**



DREAM DRILLS

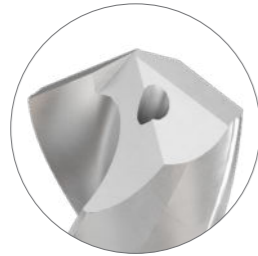


SOLID CARBIDE

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.

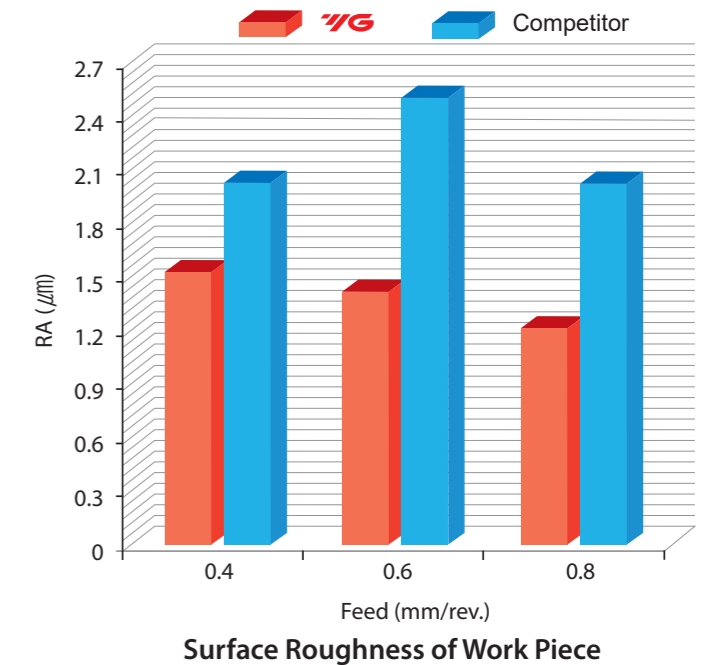
Ø6.0 & Ø10.0 TEST, Aluminum(6061)

CUTTING CONDITION	YG DREAM DRILL-ALU		COMPETITOR A	
	Roundness	Straightness	Roundness	Straightness
SIZE Ø 6.0				
Drilling Holes 1200 Holes				
SIZE Ø10.0				
Drilling Holes 820 Holes				

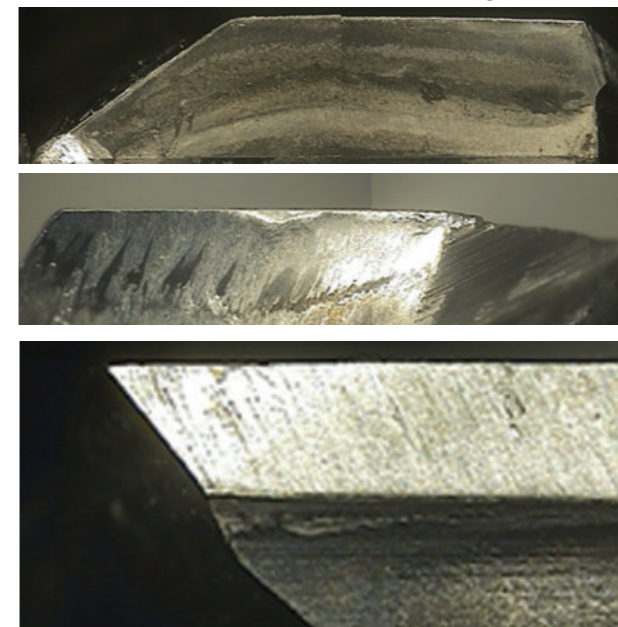
CASE STUDY

►SOLID CARBIDE DREAM DRILLS - ALU with Coolant Holes

CUTTING CONDITION	
Tool	D5433100
Size(mm)	Ø10 × Ø10 × 61 × 103
Work Material	• DIN: AlMgSiCu • AISI: 6061 • JIS: A6061
RPM	6,367 rev./min.
Feed	0.4-0.8 mm/rev.
Drilling Depth	45 mm
Coolant	Wet cut

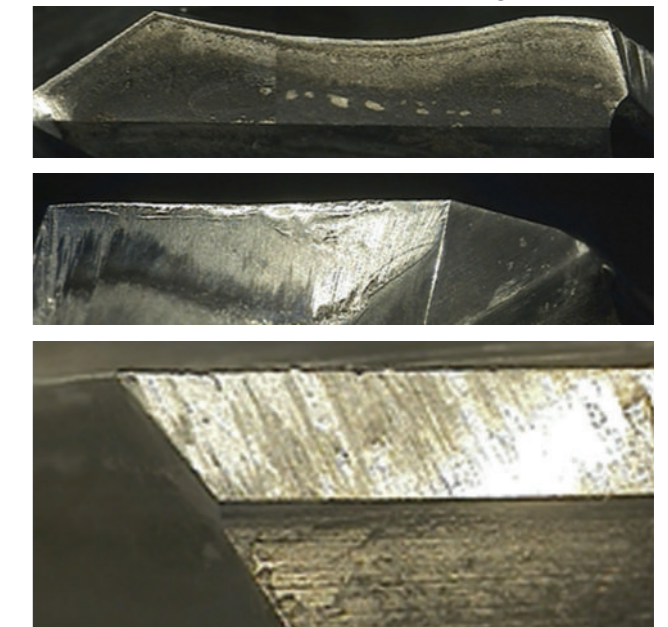


Total Drilling 820 Holes



Competitor A

Total Drilling 820 Holes



SOLID CARBIDE
DREAM DRILLS ALU with COOLANT HOLES (3XD) SERIES
D5432

- ▶ Optimized thinning 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 30° h6 m7 118° 20 bar Bright p.102 **SHORT** 3 × D

EDP No.	Drill Diameter		Flute Length	Overall Length	EDP No.	Drill Diameter		Flute Length	Overall Length
	D1	D2				D1	D2		
D5432030	3.0	6	20	62	D5432058	5.8	6	28	66
D5432031	3.1	6	20	62	D5432059	5.9	6	28	66
D5432032	3.2	6	20	62	D5432060	6.0	6	28	66
D5432033	3.3	6	20	62	D5432061	6.1	8	34	79
D5432034	3.4	6	20	62	D5432062	6.2	8	34	79
D5432035	3.5	6	20	62	D5432063	6.3	8	34	79
D5432036	3.6	6	20	62	D5432064	6.4	8	34	79
D5432037	3.7	6	20	62	D5432065	6.5	8	34	79
D5432038	3.8	6	24	66	D5432066	6.6	8	34	79
D5432039	3.9	6	24	66	D5432067	6.7	8	34	79
D5432040	4.0	6	24	66	D5432068	6.8	8	34	79
D5432041	4.1	6	24	66	D5432069	6.9	8	34	79
D5432042	4.2	6	24	66	D5432070	7.0	8	34	79
D5432043	4.3	6	24	66	D5432071	7.1	8	41	79
D5432044	4.4	6	24	66	D5432072	7.2	8	41	79
D5432045	4.5	6	24	66	D5432073	7.3	8	41	79
D5432046	4.6	6	24	66	D5432074	7.4	8	41	79
D5432047	4.7	6	24	66	D5432075	7.5	8	41	79
D5432048	4.8	6	28	66	D5432076	7.6	8	41	79
D5432049	4.9	6	28	66	D5432077	7.7	8	41	79
D5432050	5.0	6	28	66	D5432078	7.8	8	41	79
D5432051	5.1	6	28	66	D5432079	7.9	8	41	79
D5432052	5.2	6	28	66	D5432080	8.0	8	41	79
D5432053	5.3	6	28	66	D5432081	8.1	10	47	89
D5432054	5.4	6	28	66	D5432082	8.2	10	47	89
D5432055	5.5	6	28	66	D5432083	8.3	10	47	89
D5432056	5.6	6	28	66	D5432084	8.4	10	47	89
D5432057	5.7	6	28	66	D5432085	8.5	10	47	89

▶ DLC coating is available on your request. ▶ NEXT PAGE
▶ Other shank types are available on your request.

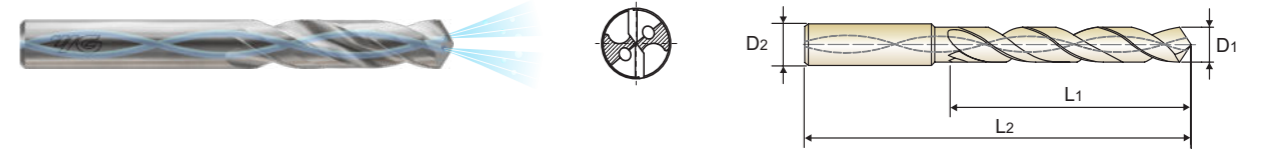
◎ : Excellent ○ : Good

ISO	P											M				K						
	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	35	38	40	42	45	48	50	52	55	58	60	62	65	68	70	72		
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				
	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	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400Rm	1050Rm	550	630	400	550
Recommended	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎

SOLID CARBIDE
DREAM DRILLS ALU with COOLANT HOLES (3XD) SERIES
D5432

- ▶ Optimized thinning 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 30° h6 m7 118° 20 bar Bright p.102 **SHORT** 3 × D

EDP No.	Drill Diameter		Flute Length	Overall Length	EDP No.	Drill Diameter		Flute Length	Overall Length
	D1	D2				D1	D2		
D5432086	8.6	10	47	89	D5432114	11.4	12	55	102
D5432087	8.7	10	47	89	D5432115	11.5	12	55	102
D5432088	8.8	10	47	89	D5432116	11.6	12	55	102
D5432089	8.9	10	47	89	D5432117	11.7	12	55	102
D5432090	9.0	10	47	89	D5432118	11.8	12	55	102
D5432091	9.1	10	47	89	D5432119	11.9	12	55	102
D5432092	9.2	10	47	89	D5432120	12.0	12	55	102
D5432093	9.3	10	47	89	D5432125	12.5	14	60	107
D5432094	9.4	10	47	89	D5432130	13.0	14	60	107
D5432095	9.5	10	47	89	D5432135	13.5	14	60	107
D5432096	9.6	10	47	89	D5432140	14.0	14	60	107
D5432097	9.7	10	47	89	D5432145	14.5	16	65	115
D5432098	9.8	10	47	89	D5432150	15.0	16	65	115
D5432099	9.9	10	47	89	D5432155	15.5	16	65	115
D5432100	10.0	10	47	89	D5432160	16.0	16	65	115
D5432101	10.1	12	55	102	D5432165	16.5	18	73	123
D5432102	10.2	12	55	102	D5432170	17.0	18	73	123
D5432103	10.3	12	55	102	D5432175	17.5	18	73	123
D5432104	10.4	12	55	102	D5432180	18.0	18	73	123
D5432105	10.5	12	55	102	D5432185	18.5	20	79	131
D5432106	10.6	12	55	102	D5432190	19.0	20	79	131
D5432107	10.7	12	55	102	D5432195	19.5	20	79	131
D5432108	10.8	12	55	102	D5432200	20.0	20	79	131
D5432109	10.9	12	55	102					
D5432110	11.0	12	55	102					
D5432111	11.1	12	55	102					
D5432112	11.2	12	55	102					
D5432113	11.3	12	55	102					

▶ DLC coating is available on your request.
▶ Other shank types are available on your request.

◎ : Excellent ○ : Good

ISO	P											M				K						
	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	35	38	40	42	45	48	50	52	55	58	60	62	65	68	70	72		
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				
	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	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400Rm	1050Rm	550	630	400	550
Recommended	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎

SOLID CARBIDE
DREAM DRILLS ALU with COOLANT HOLES (5XD)

SERIES

D5433

- ▶ Optimized thinning 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 30° h6 m7 118° 20 bar Bright p.102 **LONG** 5 x D

EDP No.	Drill Diameter		Flute Length L1	Overall Length L2
	D1	D2		
D5433030	3.0	6	28	66
D5433031	3.1	6	28	66
D5433032	3.2	6	28	66
D5433033	3.3	6	28	66
D5433034	3.4	6	28	66
D5433035	3.5	6	28	66
D5433036	3.6	6	28	66
D5433037	3.7	6	28	66
D5433038	3.8	6	36	74
D5433039	3.9	6	36	74
D5433040	4.0	6	36	74
D5433041	4.1	6	36	74
D5433042	4.2	6	36	74
D5433043	4.3	6	36	74
D5433044	4.4	6	36	74
D5433045	4.5	6	36	74
D5433046	4.6	6	36	74
D5433047	4.7	6	36	74
D5433048	4.8	6	44	82
D5433049	4.9	6	44	82
D5433050	5.0	6	44	82
D5433051	5.1	6	44	82
D5433052	5.2	6	44	82
D5433053	5.3	6	44	82
D5433054	5.4	6	44	82
D5433055	5.5	6	44	82
D5433056	5.6	6	44	82
D5433057	5.7	6	44	82

Unit : mm

EDP No.	Drill Diameter		Flute Length L1	Overall Length L2
	D1	D2		
D5433058	5.8	6	44	82
D5433059	5.9	6	44	82
D5433060	6.0	6	44	82
D5433061	6.1	8	53	91
D5433062	6.2	8	53	91
D5433063	6.3	8	53	91
D5433064	6.4	8	53	91
D5433065	6.5	8	53	91
D5433066	6.6	8	53	91
D5433067	6.7	8	53	91
D5433068	6.8	8	53	91
D5433069	6.9	8	53	91
D5433070	7.0	8	53	91
D5433071	7.1	8	53	91
D5433072	7.2	8	53	91
D5433073	7.3	8	53	91
D5433074	7.4	8	53	91
D5433075	7.5	8	53	91
D5433076	7.6	8	53	91
D5433077	7.7	8	53	91
D5433078	7.8	8	53	91
D5433079	7.9	8	53	91
D5433080	8.0	8	53	91
D5433081	8.1	10	61	103
D5433082	8.2	10	61	103
D5433083	8.3	10	61	103
D5433084	8.4	10	61	103
D5433085	8.5	10	61	103

- ▶ DLC coating is available on your request.
- ▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

ISO	P											M				K				
	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	32	10	29	32	38	15	35	15	23	10	10	26	3	25	19	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				
	Aluminum-wrought alloy		Aluminum-cast alloyed			Copper and Copper Alloys (Bronze / Brass)		Non Metallic Materials			Heat Resistant Super Alloys			Titanium Alloys			Hardened steel		Chilled CastIron	Hardened CastIron	
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc	60	100	75	90	130	110	90	100			15	30	25	38	34	55	60	42	55	21	
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400Rm	1050Rm	550	630	400	550
Recommended	◎	◎	◎	◎																	

SOLID CARBIDE
DREAM DRILLS ALU with COOLANT HOLES (5XD)

SERIES

D5433

- ▶ Optimized thinning 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 30° h6 m7 118° 20 bar Bright p.102 **LONG** 5 x D

Unit : mm

EDP No.	Drill Diameter		Flute Length L1	Overall Length L2
	D1	D2		
D5433086	8.6	10	61	103
D5433087	8.7	10	61	103
D5433088	8.8	10	61	103
D5433089	8.9	10	61	103
D5433090	9.0	10	61	103
D5433091	9.1	10	61	103
D5433092	9.2	10	61	103
D5433093	9.3	10	61	103
D5433094	9.4	10	61	103
D5433095	9.5	10	61	103
D5433096	9.6	10	61	103
D5433097	9.7	10	61	103
D5433098	9.8	10	61	103
D5433099	9.9	10	61	103
D5433100	10.0	10	61	103
D5433101	10.1	12	71	118
D5433102	10.2	12	71	118
D5433103	10.3	12	71	118
D5433104	10.4	12	71	118
D5433105	10.5	12	71	118
D5433106	10.6	12	71	118
D5433107	10.7	12	71	118
D5433108	10.8	12	71	118
D5433109	10.9	12	71	118
D5433110	11.0	12	71	118
D5433111	11.1	12	71	118
D5433112	11.2	12	71	118
D5433113	11.3	12	71	118

Unit : mm

EDP No.	Drill Diameter		Flute Length L1	Overall Length L2
	D1	D2		
D5433114	11.4	12	71	118
D5433115	11.5	12	71	118
D5433116	11.6	12	71	118
D5433117	11.7	12	71	118
D5433118	11.8	12	71	118
D5433119	11.9	12	71	118
D5433120	12.0	12	71	118
D5433125	12.5	14	77	124
D5433130	13.0	14	77	124
D5433135	13.5	14	77	124
D5433140	14.0	14	77	124
D5433145	14.5	16	83	133
D5433150	15.0	16	83	133
D5433155	15.5	16	83	133
D5433160	16.0	16	83	133
D5433165	16.5	18	93	143
D5433170	17.0	18	93	143
D5433175	17.5	18	93	143
D5433180	18.0	18	93	143
D5433185	18.5	20	101	153
D5433190	19.0	20	101	153
D5433195	19.5	20	101	153
D5433200	20.0	20	101	153

- ▶ DLC coating is available on your request.
- ▶ Other shank types are available on your request.

◎ : Excellent ○ : Good

ISO	P											M				K				
	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	32	10	29	32	38	15	35	15	23	10	10	26	3	25	19	21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended																				

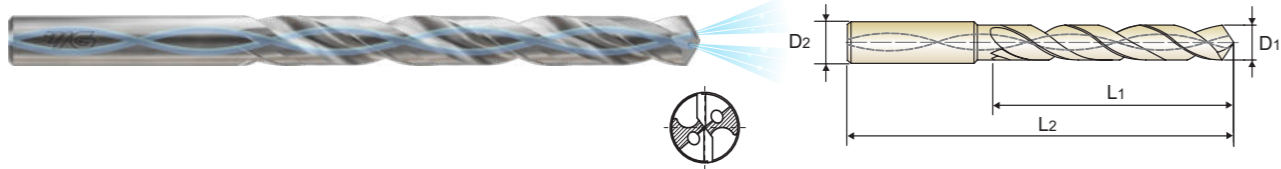
ISO	N										S						H				
	Aluminum-wrought alloy		Aluminum-cast alloyed			Copper and Copper Alloys (Bronze / Brass)		Non Metallic Materials			Heat Resistant Super Alloys			Titanium Alloys			Hardened steel		Chilled CastIron	Hardened CastIron	
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36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

SOLID CARBIDE
DREAM DRILLS ALU with COOLANT HOLES (8XD)

SERIES

D5434

- ▶ Optimized thinning 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 30° h6 m7 118° 20 bar Bright p.102

EXTRA LONG
8 × D

Unit : mm

EDP No.	Drill Diameter		Flute Length	Overall Length	EDP No.	Drill Diameter		Flute Length	Overall Length
	D1	D2				D1	D2		
D5434030	3.0	6	34	72	D5434058	5.8	6	57	95
D5434031	3.1	6	34	72	D5434059	5.9	6	57	95
D5434032	3.2	6	34	72	D5434060	6.0	6	57	95
D5434033	3.3	6	34	72	D5434061	6.1	8	76	114
D5434034	3.4	6	34	72	D5434062	6.2	8	76	114
D5434035	3.5	6	34	72	D5434063	6.3	8	76	114
D5434036	3.6	6	34	72	D5434064	6.4	8	76	114
D5434037	3.7	6	34	72	D5434065	6.5	8	76	114
D5434038	3.8	6	43	81	D5434066	6.6	8	76	114
D5434039	3.9	6	43	81	D5434067	6.7	8	76	114
D5434040	4.0	6	43	81	D5434068	6.8	8	76	114
D5434041	4.1	6	43	81	D5434069	6.9	8	76	114
D5434042	4.2	6	43	81	D5434070	7.0	8	76	114
D5434043	4.3	6	43	81	D5434071	7.1	8	76	114
D5434044	4.4	6	43	81	D5434072	7.2	8	76	114
D5434045	4.5	6	43	81	D5434073	7.3	8	76	114
D5434046	4.6	6	43	81	D5434074	7.4	8	76	114
D5434047	4.7	6	43	81	D5434075	7.5	8	76	114
D5434048	4.8	6	57	95	D5434076	7.6	8	76	114
D5434049	4.9	6	57	95	D5434077	7.7	8	76	114
D5434050	5.0	6	57	95	D5434078	7.8	8	76	114
D5434051	5.1	6	57	95	D5434079	7.9	8	76	114
D5434052	5.2	6	57	95	D5434080	8.0	8	76	114
D5434053	5.3	6	57	95	D5434081	8.1	10	95	142
D5434054	5.4	6	57	95	D5434082	8.2	10	95	142
D5434055	5.5	6	57	95	D5434083	8.3	10	95	142
D5434056	5.6	6	57	95	D5434084	8.4	10	95	142
D5434057	5.7	6	57	95	D5434085	8.5	10	95	142

- ▶ DLC coating is available on your request.
- ▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

ISO Material Description	P											M				K																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
	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	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	525	526	527	528	529	530	531	532	533	534	535	536	537	538	539	540	541	542	543	544	545	546	547	548	549	550	551	552	553	554	555	556	557	558	559	560	561	562	563	564	565	566	567	568	569	570	571	572	573	574	575	576	577	578	579	580	581	582	583	584	585	586	587	588	589	590	591	592	593	594	595	596	597	598	599	600	601	602	603	604	605	606	607	608	609	610	611	612	613	614	615	616	617	618	619	620	621	622	623	624	625	626	627	628	629	630	631	632	633	634	635	636	637	638	639	640	641	642	643	644	645	646	647	648	649	650	651	652	653	654	655	656	657	658	659	660	661	662	663	664	665	666	667	668	669	670	671	672	673	674	675	676	677	678	679	680	681	682	683	684	685	686	687	688	689	690	691	692	693	694	695	696	697	698	699	700	701	702	703	704	705	706	707	708	709	710	711	712	713	714	715	716	717	718	719	720	721	722	723	724	725	726	727	728	729	730	731	732	733	734	735	736	737	738	739	740	741	742	743	744	745	746	747	748	749	750	751	752	753	754	755	756	757	758	759	760	761	762	763	764	765	766	767	768	769	770	771	772	773	774	775	776	777	778	779	780	781	782	783	784	785	786	787	788	789	790	791	792	793	794	795	796	797	798	799	800	801	802	803	804	805	806	807	808	809	810	811	812	813	814	815	816	817	818	819	820	821	822	823	824	825	826	827	828	829	830	831	832	833	834	835	836	837	838	839	840	841	842	843	844	845	846	847	848	849	850	851	852	853	854	855	856	857	858	859	860	861	862	863	864	865	866	867	868	869	870	871	872	873	874	875	876	877	878	879	880	881	882	883	884	885	886	887	888	889	890	891	892	893	894	895	896	897	898	899	900	901	902	903	904	905	906	907	908	909	910	911	912	913	914	915	916	917	918	919	920	921	922	923	924	925	926	927	928	929	930	931	932	933	934	935	936	937	938	939	940	941	942	943	944	945	946	947	948	949	950	951	952	953	954	955	956	957	958	959	960	961	962	963	964	965	966	967	968	969	970	971	972	973	974	975	976	977	978	979	980	981	982	983	984	985	986	987	988	989	990	991	992	993	994	995	996	997	998	999	1000	1001	1002	1003	1004	1005	1006	1007	1008	1009	1010	1011	1012	1013	1014	1015	1016	1017	1018	1019	1020	1021	1022	1023	1024	1025	1026	1027	1028	1029	1030	1031	1032	1033	1034	1035	1036	1037	1038	1039	1040	1041	1042	1043	1044	1045	1046	1047	1048	1049	1050	1051	1052	1053	1054	1055	1056	1057	1058	1059	1060	1061	1062	1063	1064	1065	1066	1067	1068	1069	1070	1071	1072	1073	1074	1075	1076	1077	1078	1079	1080	1081	1082	1083	1084	1085	1086	1087	1088	1089	1090	1091	1092	1093	1094	1095	1096	1097	1098	1099	1100	1101	1102	1103	1104	1105	1106	1107	1

D5432, D5433, D5434 SERIES with COOLANT HOLES

Vc = m/min.
RPM = rev./min.
FEED = mm/rev.

ISO	VDI 3323	Material Description	Vc	Parameter	Drill Diameter (mm)										
					3.0	4.0	5.0	6.0	8.0	10.0	12.0	14.0	16.0	18.0	20.0
N	21	Aluminum-wrought alloy	200	RPM	21220	15920	12730	10610	7960	6370	5310	4550	3980	3540	3180
				FEED	0.12-0.18	0.14-0.22	0.15-0.23	0.17-0.25	0.21-0.28	0.24-0.30	0.24-0.30	0.25-0.35	0.25-0.35	0.28-0.38	0.30-0.40
	160		RPM	16980	12730	10190	8490	6370	5090	4240	3640	3180	2830	2550	
			FEED	0.12-0.18	0.14-0.22	0.15-0.23	0.17-0.25	0.21-0.28	0.24-0.30	0.24-0.30	0.25-0.35	0.25-0.35	0.28-0.38	0.30-0.40	
	23	Aluminum-cast, alloyed	150	RPM	15920	11940	9550	7960	5970	4770	3980	3410	2980	2650	2390
				FEED	0.15-0.21	0.17-0.25	0.19-0.27	0.21-0.28	0.24-0.31	0.29-0.45	0.33-0.55	0.35-0.60	0.35-0.60	0.39-0.73	0.39-0.85
	140		RPM	14850	11140	8910	7430	5570	4460	3710	3180	2790	2480	2230	
			FEED	0.15-0.21	0.17-0.25	0.19-0.27	0.21-0.28	0.24-0.31	0.29-0.45	0.33-0.55	0.35-0.60	0.35-0.60	0.39-0.73	0.39-0.85	



SOLID CARBIDE

**DREAM DRILLS
-MQL TYPE**

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

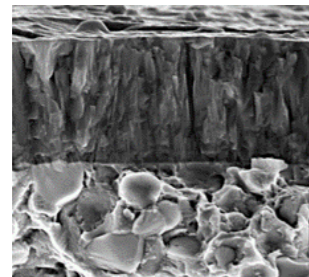
DREAM DRILLS MQL TYPE

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 cleaning
- 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

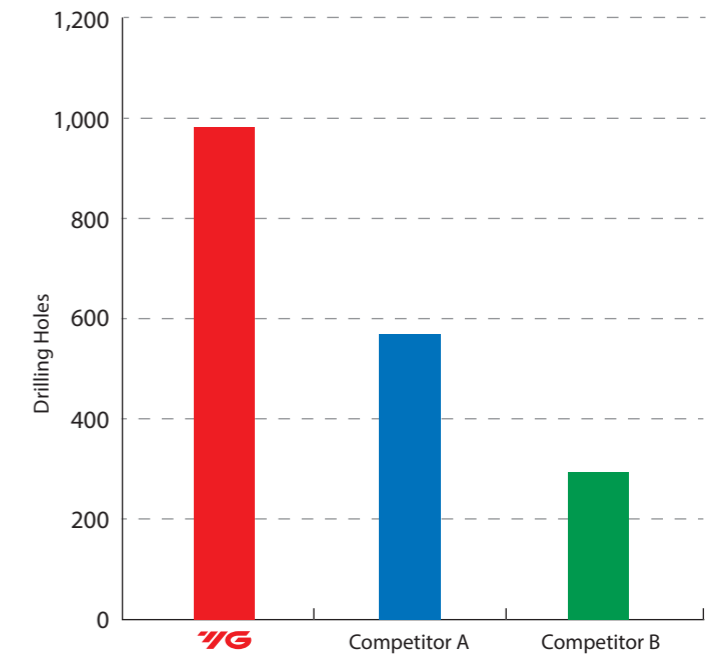
<p>Gun drill</p> <p>Gun drilling Machine</p>	<p>Productivity</p> <p>Up to 10 times Drilling Feedrate</p>	<p>MQL Drill</p> <p>Vertical & Horizontal Machining Center</p>
<p>- Size Range : Ø2~Ø25</p> <p>- Drilling Depth : 25xD ~ over 100xD</p> <p><i>* Need Gun drilling machine</i></p>		<p>- Size Range : Ø3~Ø14</p> <p>- Drilling Depth : 10xD ~ 40xD</p> <p><i>* Need enough machine stroke on machining center</i></p>

CASE STUDY

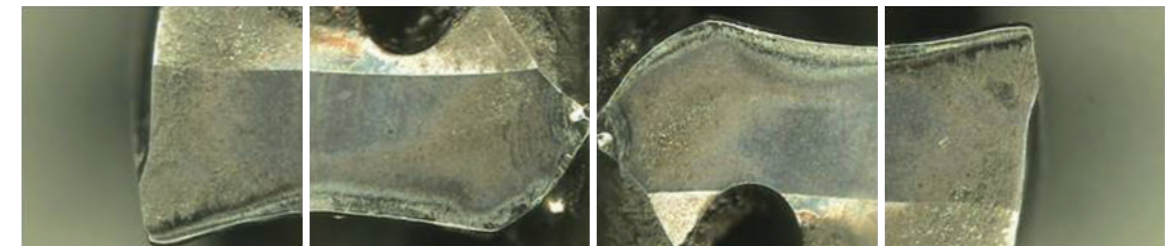
- Flute Shape and Point Shape allowing better chip evacuation in deep hole drilling
- Excellent Coating and Surface Treatment for better performance and chip evacuation

► SOLID CARBIDE DREAM DRILLS - MQL Type with Coolant Holes

CUTTING CONDITION	
Tool	DH520060 (20xD)
Size(mm)	Ø6 × Ø6 × 138 × 193
Work Material	• DIN: C45 • WR: 1.0503 • JIS: S45C(HRc25)
RPM	3,528 rev./min.
Feed	0.19 mm/rev.
Drilling Depth	80 mm
Coolant	Oil Mist (MQL Techniques)

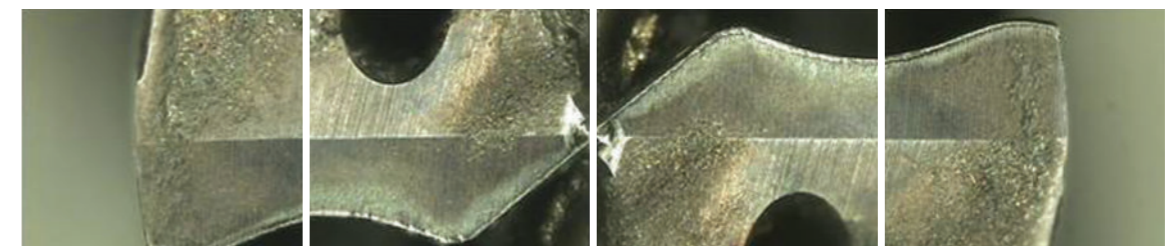


After Drilling 1,000 Holes



Competitor A

After Drilling 546 Holes



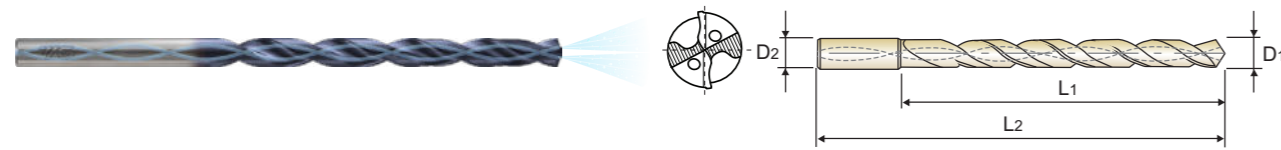
TiAlN-COATED SOLID CARBIDE

DREAM DRILLS MQL TYPE with COOLANT HOLES (10XD)

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)



EXTRA LONG

10 × D

Unit : mm					Unit : mm				
EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length	EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
TiAlN	D1	D2	L1	L2	TiAlN	D1	D2	L1	L2
DH510030	3.0	3	39	90	DH510080	8.0	8	104	161
DH510033	3.3	4	46	97	DH510085	8.5	9	111	169
DH510035	3.5	4	46	97	DH510090	9.0	9	117	175
DH510040	4.0	4	52	103	DH510095	9.5	10	124	182
DH510042	4.2	5	59	112	DH510100	10.0	10	130	188
DH510045	4.5	5	59	112	DH510105	10.5	11	137	201
DH510050	5.0	5	65	118	DH510110	11.0	11	143	207
DH510055	5.5	6	72	127	DH510115	11.5	12	150	215
DH510060	6.0	6	78	133	DH510120	12.0	12	156	221
DH510065	6.5	7	85	141	DH510125	12.5	13	163	229
DH510068	6.8	7	91	147	DH510130	13.0	13	169	235
DH510070	7.0	7	91	147	DH510135	13.5	14	176	243
DH510075	7.5	8	98	155	DH510140	14.0	14	182	249

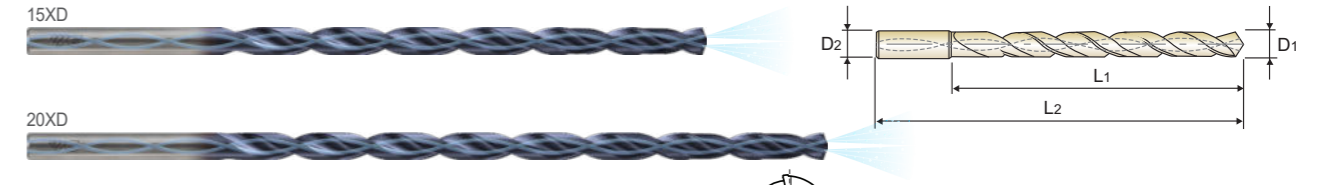
TiAlN-COATED SOLID CARBIDE

DREAM DRILLS MQL TYPE with COOLANT HOLES (15XD)(20XD)

DH515

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)



EXTRA LONG

15 × D (DH515) | 20 × D (DH520)

Unit : mm					Unit : mm				
EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length	EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
TiAlN	D1	D2	L1	L2	TiAlN	D1	D2	L1	L2
DH515030	3.0	3	54	105	DH520030	3.0	3	69	120
DH515035	3.5	4	63	114	DH520035	3.5	4	81	132
DH515040	4.0	4	72	123	DH520040	4.0	4	92	143
DH515045	4.5	5	81	134	DH520045	4.5	5	104	157
DH515050	5.0	5	90	143	DH520050	5.0	5	115	168
DH515055	5.5	6	99	154	DH520055	5.5	6	127	182
DH515060	6.0	6	108	163	DH520060	6.0	6	138	193
DH515070	7.0	7	126	182	DH520070	7.0	7	161	217
DH515080	8.0	8	144	201	DH520080	8.0	8	184	241
DH515090	9.0	9	162	220	DH520090	9.0	9	207	265
DH515100	10.0	10	180	238	DH520100	10.0	10	230	288
DH515110	11.0	11	198	262	DH520120	12.0	12	276	341
DH515120	12.0	12	216	281					

◎ : Excellent ○ : Good

ISO	P										M			K							
	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	38	10	29	32	38	15	35	15	23	10	10	26	3	25	21	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				
	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	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400Rm	1050Rm	550	630	400	550
Recommended																					

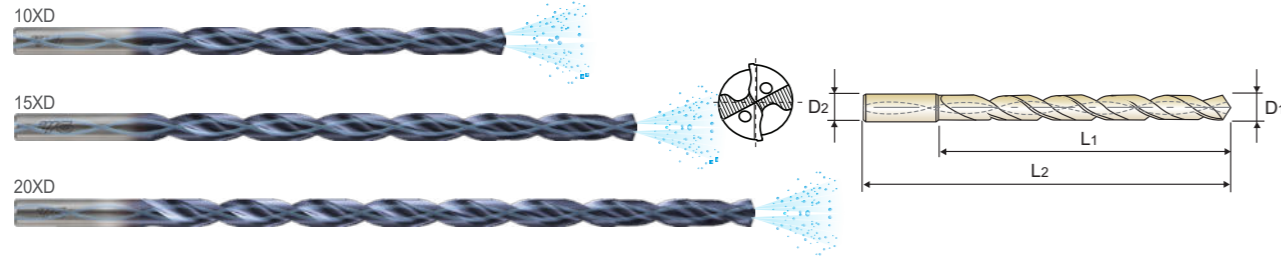
◎ : Excellent ○ : Good

ISO	P										M			K							
	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	38	10	29	32	38	15	35	15	23	10	10	26	3	25	21	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				
	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	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400Rm	1050Rm	550	630	400	550
Recommended																					

TiAlN-COATED SOLID CARBIDE (END MILL SHANK)
DREAM DRILLS MQL TYPE with COOLANT HOLES (10XD)(15XD)(20XD)

- ▶ 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)



EXTRA LONG

CARBIDE 30° h6 h7 140° 20 bar 45 bar TiAlN p.110

10 × D (DHM10) 15 × D (DHM15) 20 × D (DHM20)

DHM10				
EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
TiAlN	D1	D2	L1	L2
DHM10030	3.0	6	40	80
DHM10033	3.3	6	47	87
DHM10035	3.5	6	47	87
DHM10040	4.0	6	53	93
DHM10042	4.2	6	60	100
DHM10045	4.5	6	60	100
DHM10050	5.0	6	66	106
DHM10055	5.5	6	73	113
DHM10060	6.0	6	79	119
DHM10065	6.5	8	86	126
DHM10068	6.8	8	92	132
DHM10070	7.0	8	92	132
DHM10075	7.5	8	99	139
DHM10080	8.0	8	105	145
DHM10085	8.5	10	112	156
DHM10090	9.0	10	118	162
DHM10095	9.5	10	126	170
DHM10100	10.0	10	132	176
DHM10105	10.5	12	139	188
DHM10110	11.0	12	145	194
DHM10115	11.5	12	152	201
DHM10120	12.0	12	158	207
DHM10125	12.5	14	165	214
DHM10130	13.0	14	171	220
DHM10135	13.5	14	178	227
DHM10140	14.0	14	184	233

DHM15				
EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
TiAlN	D1	D2	L1	L2
DHM15030	3.0	6	55	95
DHM15035	3.5	6	64	104
DHM15040	4.0	6	73	113
DHM15045	4.5	6	82	122
DHM15050	5.0	6	91	131
DHM15055	5.5	6	100	140
DHM15060	6.0	6	109	149
DHM15070	7.0	8	127	167
DHM15080	8.0	8	145	185
DHM15090	9.0	10	163	207
DHM15100	10.0	10	182	226
DHM15110	11.0	12	200	249
DHM15120	12.0	12	218	267

DHM20				
EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
TiAlN	D1	D2	L1	L2
DHM20030	3.0	6	70	110
DHM20035	3.5	6	82	122
DHM20040	4.0	6	93	133
DHM20045	4.5	6	105	145
DHM20050	5.0	6	116	156
DHM20055	5.5	6	128	168
DHM20060	6.0	6	139	179
DHM20070	7.0	8	162	202
DHM20080	8.0	8	185	225
DHM20090	9.0	10	208	252
DHM20100	10.0	10	232	276
DHM20110	11.0	12	255	304
DHM20120	12.0	12	278	327

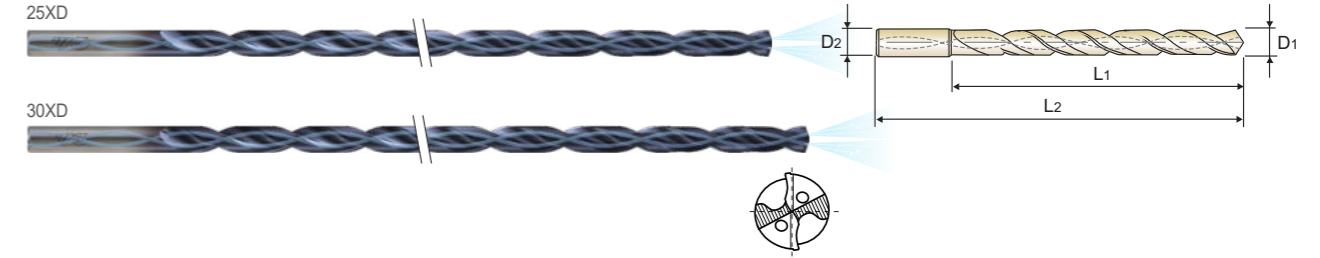
◎ : Excellent ○ : Good

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	21	22	23	24
HRc	13	25	28	32	38	10	29	32	38	42	48	10	26	33	38	42	3	3	3	3	3	3	3	3
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230	130	230	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	42	43	44
HRc	15	30	25	38	34	15	30	25	38	34	15	30	25	38	34	40	55	60	42	55	42	55	55	
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400Rm	1050Rm	550	630	400	550	400	550	550
Recommended	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	

TiAlN-COATED SOLID CARBIDE (END MILL SHANK)
DREAM DRILLS MQL TYPE with COOLANT HOLES (25XD)(30XD)

- ▶ 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)



EXTRA LONG

CARBIDE 30° h6 h7 140° 45 bar TiAlN p.110

25 × D (DHM25) 30 × D (DHM30)

DHM25				
EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
TiAlN	D1	D2	L1	L2
DHM25030	3.0	6.0	85	125
DHM25035	3.5	6.0	99	139
DHM25040	4.0	6.0	113	153
DHM25045	4.5	6.0	127	167
DHM25050	5.0	6.0	141	181
DHM25055	5.5	6.0	155	195
DHM25060	6.0	6.0	169	209
DHM25070	7.0	8.0	197	237
DHM25080	8.0	8.0	225	265
DHM25090	9.0	10.0	253	297
DHM25100	10.0	10.0	282	326

▶ Made to order in depth 35 & 40D(3~6mm)

DHM30				
EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
TiAlN	D1	D2	L1	L2
DHM30030	3.0	6.0	100	140
DHM30035	3.5	6.0	117	157
DHM30040	4.0	6.0	133	173
DHM30045	4.5	6.0	150	190
DHM30050	5.0	6.0	166	206
DHM30055	5.5	6.0	183	223
DHM30060	6.0	6.0	199	239
DHM30070	7.0	8.0	232	272
DHM30080	8.0	8.0	265	305

◎ : 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	21	22	23	24
HRc	13	25	28	32	38	10	29	32	38	42	48	10	26	33	38	42	3	3	3	3	3	3	3	3
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230	130	230	130	230
Recommended	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎

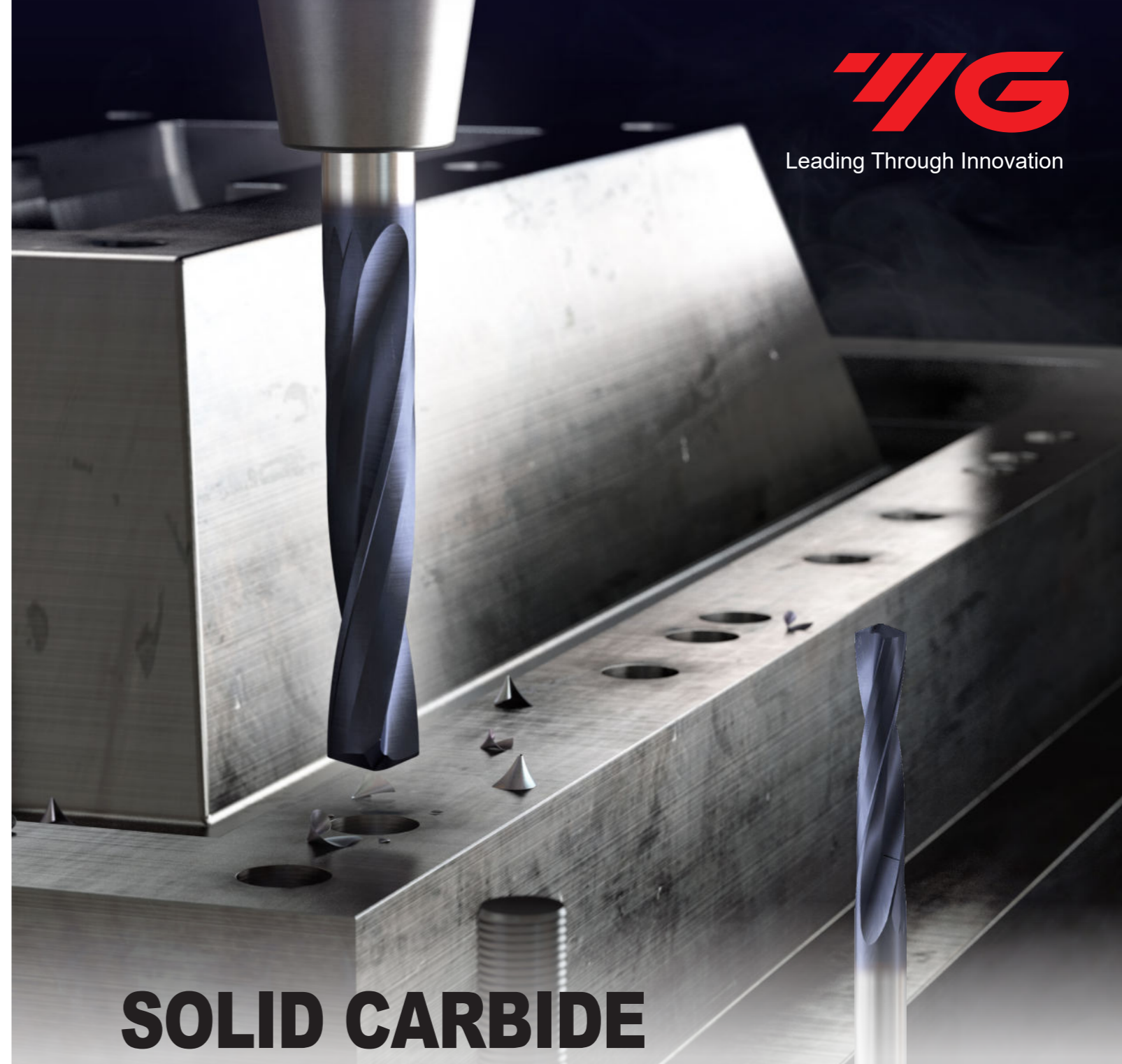
ISO	N										S						H							
Material Description	Aluminum-wrought alloy		Aluminum-cast alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys						Titanium Alloys		Hardened steel	Chilled Cast Iron	Hardened Cast Iron			
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44
HRc	15	30	25	38	34	15	30	25	38	34	15	30	25	38	34	40	55	60	42	55	42	55	55	
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400Rm	1050Rm	550	630	400	550	400	550	550
Recommended	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	

DH510, DH515, DH520, DHM10, DHM15, DHM20, DHM25, DHM30 SERIES

with COOLANT HOLES

Vc = m/min.
RPM = rev./min.
FEED = mm/rev.

ISO	VDI 3323	Material Description	Vc		Parameter	Drill Diameter (mm)							
			10xD 20xD	25xD 30xD		3.0	4.0	5.0	6.0	8.0	10.0	12.0	14.0
P	1	Non-alloy steel	120	100	RPM(10xD-20xD)	12730	9550	7640	6370	4770	3820	3180	2730
					RPM(25xD-30xD)	10610	7960	6370	5310	3980	3180	2650	2270
					FEED	0.08-0.12	0.10-0.14	0.12-0.18	0.14-0.20	0.18-0.24	0.20-0.26	0.22-0.26	0.25-0.31
	2		100	80	RPM(10xD-20xD)	10610	7960	6370	5310	3980	3180	2650	2270
					RPM(25xD-30xD)	8490	6370	5090	4240	3180	2550	2120	1820
					FEED	0.08-0.12	0.10-0.14	0.12-0.18	0.14-0.20	0.18-0.24	0.20-0.26	0.22-0.26	0.25-0.31
	3		80	65	RPM(10xD-20xD)	8490	6370	5090	4240	3180	2550	2120	1820
					RPM(25xD-30xD)	6900	5170	4140	3450	2590	2070	1720	1480
					FEED	0.06-0.10	0.08-0.12	0.10-0.16	0.12-0.18	0.14-0.20	0.16-0.22	0.18-0.24	0.20-0.26
	6		100	100	RPM(10xD-20xD)	10610	7960	6370	5310	3980	3180	2650	2270
RPM(25xD-30xD)		10610			7960	6370	5310	3980	3180	2650	2270		
FEED		0.08-0.12			0.10-0.14	0.12-0.18	0.14-0.20	0.18-0.24	0.20-0.26	0.22-0.26	0.25-0.31		
7	70	60	RPM(10xD-20xD)	7430	5570	4460	3710	2790	2230	1860	1590		
			RPM(25xD-30xD)	6370	4770	3820	3180	2390	1910	1590	1360		
			FEED	0.06-0.10	0.08-0.12	0.10-0.16	0.12-0.18	0.14-0.20	0.16-0.22	0.18-0.24	0.20-0.26		
8	55	50	RPM(10xD-20xD)	5840	4380	3500	2920	2190	1750	1460	1250		
			RPM(25xD-30xD)	5310	3980	3180	2650	1990	1590	1330	1140		
			FEED	0.06-0.10	0.08-0.12	0.10-0.16	0.12-0.18	0.14-0.20	0.16-0.22	0.18-0.24	0.20-0.26		
10	60	50	RPM(10xD-20xD)	6370	4770	3820	3180	2390	1910	1590	1360		
			RPM(25xD-30xD)	5310	3980	3180	2650	1990	1590	1330	1140		
			FEED	0.05-0.09	0.07-0.11	0.08-0.14	0.10-0.16	0.12-0.18	0.14-0.20	0.16-0.22	0.18-0.24		
11	50	45	RPM(10xD-20xD)	5310	3980	3180	2650	1990	1590	1330	1140		
			RPM(25xD-30xD)	4770	3580	2860	2390	1790	1430	1190	1020		
			FEED	0.04-0.08	0.06-0.10	0.07-0.13	0.08-0.14	0.10-0.16	0.12-0.18	0.13-0.19	0.15-0.21		
15	90	75	RPM(10xD-20xD)	9550	7160	5730	4770	3580	2860	2390	2050		
			RPM(25xD-30xD)	7960	5970	4770	3980	2980	2390	1990	1710		
			FEED	0.10-0.14	0.12-0.16	0.17-0.23	0.19-0.25	0.22-0.28	0.24-0.30	0.28-0.34	0.30-0.36		
16	70	60	RPM(10xD-20xD)	7430	5570	4460	3710	2790	2230	1860	1590		
			RPM(25xD-30xD)	6370	4770	3820	3180	2390	1910	1590	1360		
			FEED	0.10-0.14	0.12-0.16	0.17-0.23	0.19-0.25	0.22-0.28	0.24-0.30	0.28-0.34	0.30-0.36		
17	100	80	RPM(10xD-20xD)	10610	7960	6370	5310	3980	3180	2650	2270		
			RPM(25xD-30xD)	8490	6370	5090	4240	3180	2550	2120	1820		
			FEED	0.10-0.14	0.12-0.16	0.17-0.23	0.19-0.25	0.22-0.28	0.24-0.30	0.28-0.34	0.30-0.36		
18	70	60	RPM(10xD-20xD)	7430	5570	4460	3710	2790	2230	1860	1590		
			RPM(25xD-30xD)	6370	4770	3820	3180	2390	1910	1590	1360		
			FEED	0.08-0.12	0.10-0.14	0.12-0.18	0.14-0.20	0.18-0.24	0.20-0.26	0.22-0.26	0.25-0.31		
19	80	65	RPM(10xD-20xD)	8490	6370	5090	4240	3180	2550	2120	1820		
			RPM(25xD-30xD)	6900	5170	4140	3450	2590	2070	1720	1480		
			FEED	0.10-0.14	0.12-0.16	0.17-0.23	0.19-0.25	0.22-0.28	0.24-0.30	0.28-0.34	0.30-0.36		
20	70	55	RPM(10xD-20xD)	7430	5570	4460	3710	2790	2230	1860	1590		
			RPM(25xD-30xD)	5840	4380	3500	2920	2190	1750	1460	1250		
			FEED	0.08-0.12	0.10-0.14	0.12-0.18	0.14-0.20	0.18-0.24	0.20-0.26	0.22-0.26	0.25-0.31		



SOLID CARBIDE

DREAM DRILLS for HIGH HARDENED STEELS

- For High Hardened Steels (HRc50 to HRc70)

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%.

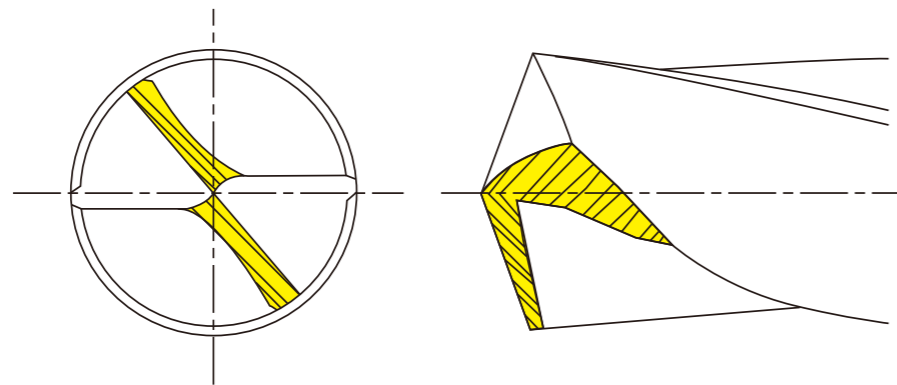
DREAM DRILLS for HIGH HARDENED STEELS

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.



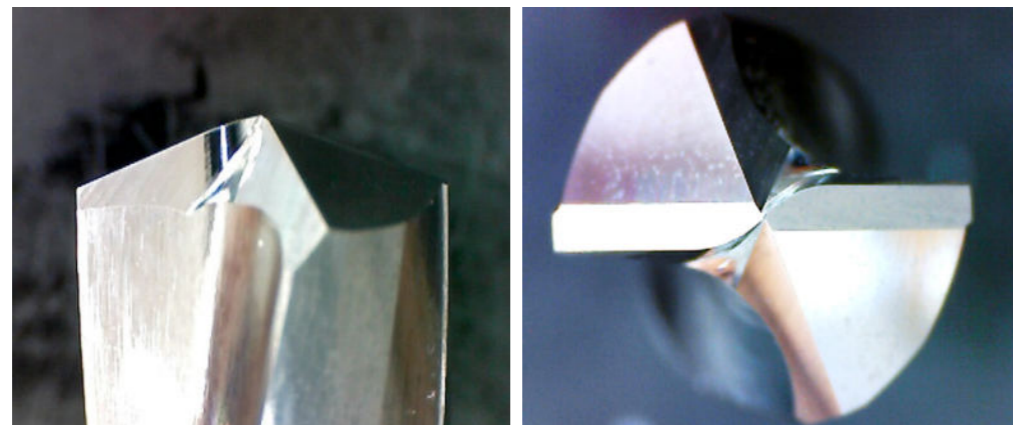
Coating

TiAlN nano coating combines high hardness with high thermal stability against oxidation, allows machining the upper level of hardened steels HRc 50-70.

Polished Flutes

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

Point Shape

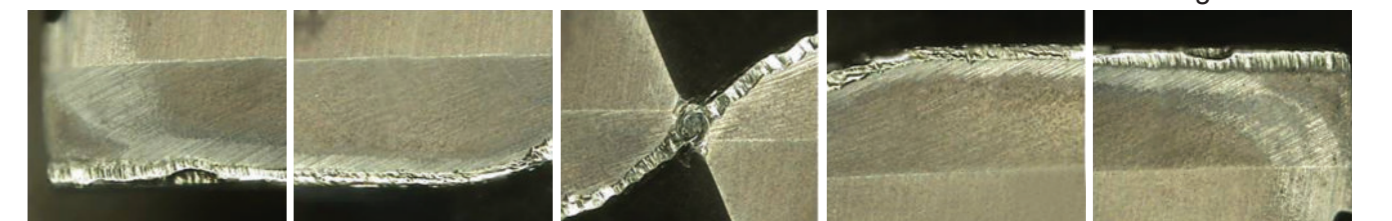
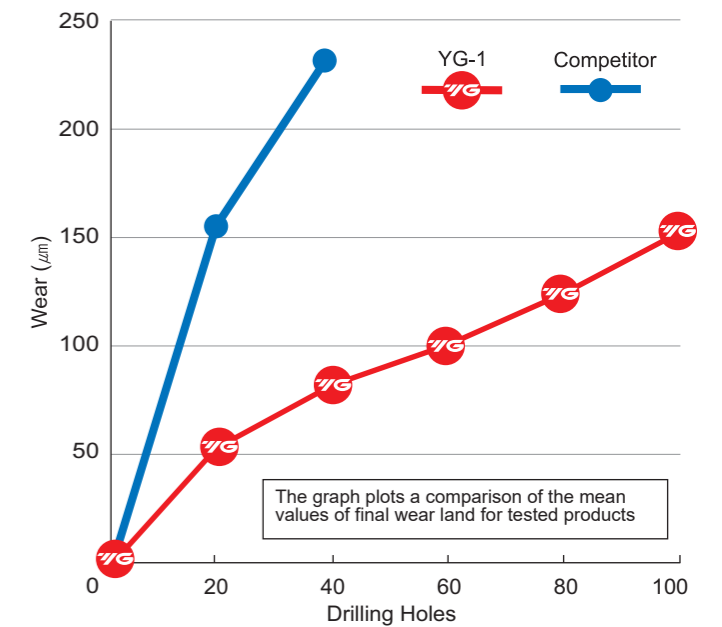


CASE STUDY

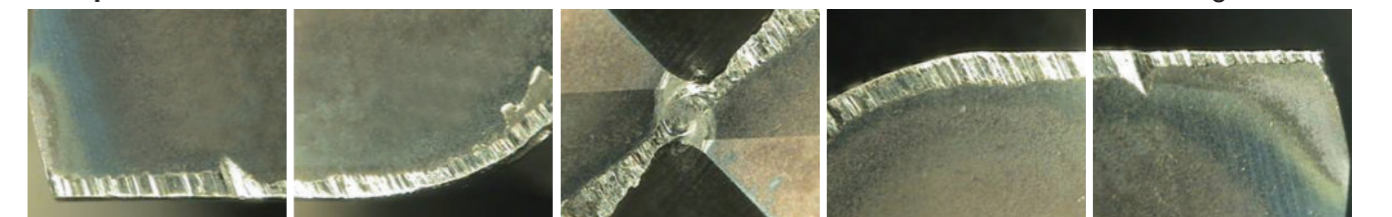
- Low Helix Angle to maximize tools' rigidity.
- Special Point Thinning to improve chip evacuation.
- Excellent Coating and Surface Treatment for improved surface and better chip evacuation.

► SOLID CARBIDE DREAM DRILLS for HIGH HARDENED STEELS (HRc50-70)

CUTTING CONDITION	
Tool	DH500100
Size(mm)	Ø10 × Ø10 × 63 × 111
Work Material	• DIN: X155CrV-Mo12-1 • WR: 1.2379 • JIS: SKD11(HRc60)
RPM	380 rev./min.
Feed	0.04 mm/rev.
Drilling Depth	25 mm
Coolant	Wet Cut



Competitor A



DREAM DRILLS for HIGH HARDENED STEELS

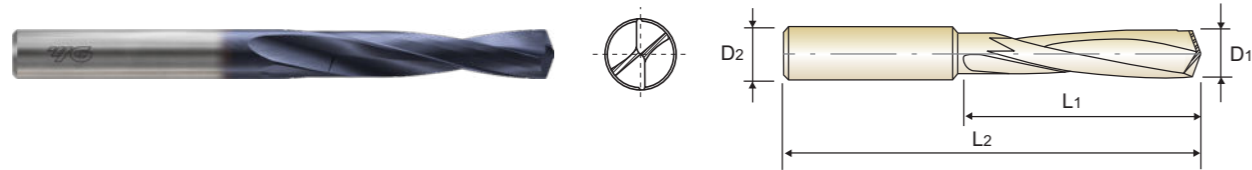
TIAlN-COATED SOLID CARBIDE

DREAM DRILLS HIGH HARDENED STEELS without COOLANT HOLES (3XD)

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



SHORT
3 x D

EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length	EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
TiAlN	D1	D2	L1	L2	TiAlN	D1	D2	L1	L2
DH500026	2.6	3	14	44	DH500070	7.0	8	45	85
DH500030	3.0	3	16	46	DH500075	7.5	8	45	85
DH500033	3.3	4	18	48	DH500080	8.0	8	50	98
DH500034	3.4	4	20	50	DH500085	8.5	10	50	98
DH500035	3.5	4	20	50	DH500086	8.6	10	57	105
DH500040	4.0	4	22	52	DH500088	8.8	10	57	105
DH500042	4.2	6	25	65	DH500090	9.0	10	57	105
DH500043	4.3	6	28	68	DH500095	9.5	10	57	105
DH500044	4.4	6	28	68	DH500100	10.0	10	63	111
DH500045	4.5	6	28	68	DH500102	10.2	12	63	111
DH500050	5.0	6	32	72	DH500103	10.3	12	63	111
DH500051	5.1	6	32	72	DH500105	10.5	12	63	111
DH500052	5.2	6	32	72	DH500108	10.8	12	71	119
DH500055	5.5	6	35	75	DH500110	11.0	12	71	119
DH500060	6.0	6	35	75	DH500115	11.5	12	71	119
DH500065	6.5	8	40	80	DH500120	12.0	12	71	119
DH500068	6.8	8	45	85	DH500140	14.0	14	77	125
DH500069	6.9	8	45	85					

Unit : mm

Recommended cutting conditions

ISO	VDI 3323	Material Description	Vc	Parameter	Drill Diameter (mm)											
					2.5	3.0	4.0	5.0	6.0	8.0	10.0	12.0	14.0			
H	38	Hardened steel	20	RPM	2550	2120	1590	1270	1060	800	640	530	450			
				FEED	0.01-0.03	0.01-0.03	0.01-0.04	0.01-0.04	0.01-0.05	0.01-0.05	0.01-0.05	0.01-0.06	0.01-0.06			
				39.1	RPM	1910	1590	1190	950	800	600	480	400	340		
	39.3			FEED	0.01-0.03	0.01-0.03	0.01-0.04	0.01-0.04	0.01-0.05	0.01-0.05	0.01-0.05	0.01-0.06	0.01-0.06			
				RPM	1530	1270	950	760	640	480	380	320	270			
				FEED	0.01-0.03	0.01-0.03	0.01-0.04	0.01-0.04	0.01-0.05	0.01-0.05	0.01-0.05	0.01-0.06	0.01-0.06			

Vc = m/min.
RPM = rev./min.
FEED = mm/rev.

ISO	P										M				K					
	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	38	10	29	32	38	15	35	15	23	10	10	26	3	25	21	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					
	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	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																		⊙	⊙	⊙		

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