YE-DD24 EUROPE



YG

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

YG

SELECTION GUIDE

METRIC

	PRO				X
SERIES	DGN523	DGN526	DGN506	DGN508	DTX404
DRILLING DEPTH	3XD	5XD	3XD	5XD	3XD
TOOL MATERIAL	CARBIDE				CARBIDE
LENGTH	SHORT	LONG	SHORT	LONG	STUB
SIZE MIN	D3.0	D1.0	D3.0	D1.0	D3.0
SIZE MAX	D20.0	D20.0	D20.0	D20.0	D20.0
PAGE	10	12	15	17	26
SURFACE TREATMENT	Z-Coating				RCH-Coating

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	Malleable cast iron	Ferritic		130		◎	◎	◎	◎	◎
	20		Pearlitic		230	21	○	○	○	○	○
N	21	Aluminum-wrought alloy	Not Curable		60						
	22		Curable	Hardened	100						
	23	Aluminum-cast, alloyed	≤ 12% Si, Not Curable		75						
	24		≤ 12% Si, Curable	Hardened	90						
	25		> 12% Si, Not Curable		130						
	26	Copper and Copper Alloys (Bronze / Brass)	Cutting Alloys, PB>1%		110						
	27		CuZn, CuSnZn (Brass)		90						
	28		CuSn, lead-free copper and electrolytic copper		100						
	29	Non Metallic Materials	Duroplastic, Fiber Reinforced Plastic								
	30		Rubber, Wood, etc.								
S	31	Heat Resistant Super Alloys	Fe Based	Annealed	200	15					
	32			Cured	280	30					
	33		Ni or Co Based	Annealed	250	25					
	34			Cured	350	38					
	35			Cast	320	34					
	36	Titanium Alloys	Pure Titanium		400 Rm						
	37		Alpha + Beta Alloys	Hardened	1050 Rm						
H	38	Hardened steel		Hardened	550	55	○	○	○	○	○
	39			Hardened	630	60					
	40	Chilled Cast Iron		Cast	400	42					
	41	Hardened Cast Iron		Hardened	550	55					

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X					GENERAL					
DTX423	DTX424	DTX406	DTX408	DTX421	DH404	DH423 DH443	DH424 DH444	DH406 DH446	DH408 DH448	DH421
3XD	5XD	3XD	5XD	8XD	3XD	3XD	5XD	3XD	5XD	8XD
CARBIDE					CARBIDE					
SHORT	LONG	SHORT	LONG	EXTRA LONG	STUB	SHORT	LONG	SHORT	LONG	EXTRA LONG
D3.0	D1.0	D3.0	D1.0	D3.0	D3.0	D3.0	D1.0	D3.0	D1.0	D3.0
D20.0	D20.0	D20.0	D20.0	D14.0	D20.0	D20.0	D20.0	D20.0	D20.0	D14.0
28	30	33	35	38	46	48	50	53	55	58
RCH-Coating					TiAlN					
												
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											40	
											41	

YG

SELECTION GUIDE

METRIC

SOLID CARBIDE DREAM DRILLS

	HIGH FEED		FLAT BOTTOM	
SERIES	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

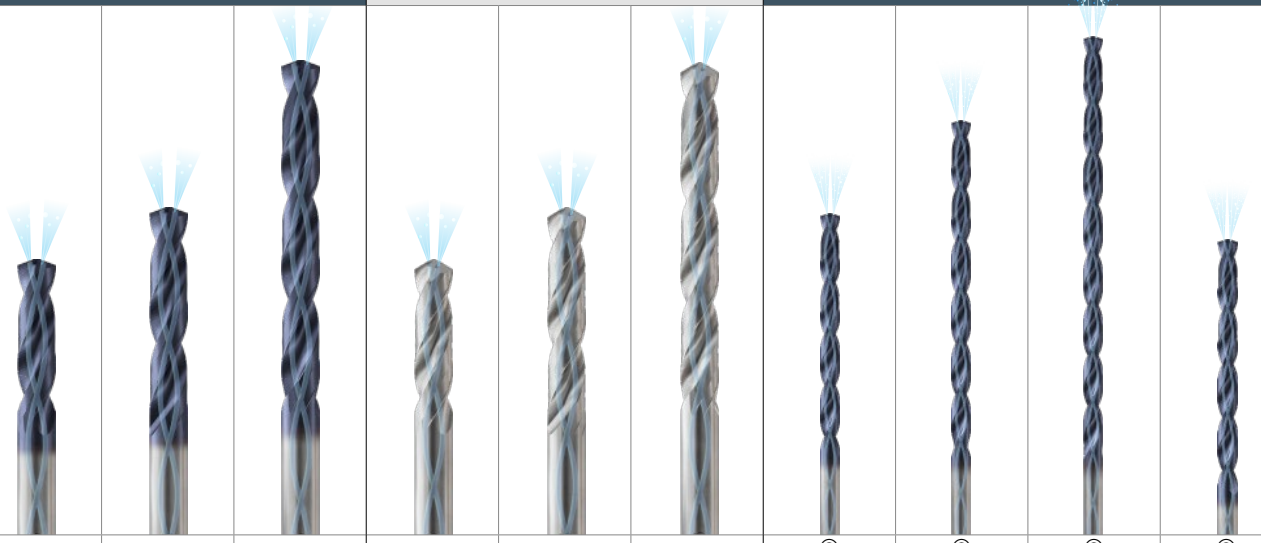


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◎ : Excellent ○ : Good

ISO	VDI 3323	Material Description	Composition / Structure / Heat Treatment		HB	HRc				
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	2		About 0.45% C	Annealed	190	13	◎	◎	◎	◎
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	4		About 0.75% C	Annealed	270	28	◎	◎	○	○
	5		About 0.75% C	Quenched & Tempered	300	32	○	○	○	○
	6	Low alloy steel		Annealed	180	10	◎	◎	◎	◎
	7			Quenched & Tempered	275	29	◎	◎	○	○
	8			Quenched & Tempered	300	32	○	○	○	○
	9			Quenched & Tempered	350	38	○	○	○	○
	10	High alloyed steel, and tool steel		Annealed	200	15	◎	◎		
	11			Quenched & Tempered	325	35	○	○		
M	12	Stainless steel	Ferritic / Martensitic	Annealed	200	15			○	○
	13		Martensitic	Quenched & Tempered	240	23				
	14		Austenitic		180	10				
K	15	Grey cast iron	Pearlitic / ferritic		180	10	◎	◎	◎	◎
	16		Pearlitic (Martensitic)		260	26	○	○	○	○
	17	Nodular cast iron	Ferritic		160	3	◎	◎		
	18		Pearlitic		250	25	○	○		
	19	Malleable cast iron	Ferritic		130		◎	◎		
	20		Pearlitic		230	21	○	○		
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	22		Curable	Hardened	100				○	○
	23	Aluminum-cast, alloyed	≤ 12% Si, Not Curable		75					
	24		≤ 12% Si, Curable	Hardened	90					
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	26	Copper and Copper Alloys (Bronze / Brass)	Cutting Alloys, PB>1%		110					
	27		CuZn, CuSnZn (Brass)		90					
	28		CuSn, lead-free copper and electrolytic copper		100					
	29	Non Metallic Materials	Duroplastic, Fiber Reinforced Plastic							
	30		Rubber, Wood, etc.							
S	31	Heat Resistant Super Alloys	Fe Based	Annealed	200	15				
	32			Cured	280	30				
	33		Ni or Co Based	Annealed	250	25				
	34			Cured	350	38				
	35			Cast	320	34				
	36	Titanium Alloys	Pure Titanium		400 Rm					
	37		Alpha + Beta Alloys	Hardened	1050 Rm					
H	38	Hardened steel		Hardened	550	55				
	39			Hardened	630	60				
	40	Chilled Cast Iron		Cast	400	42				
	41	Hardened Cast Iron		Hardened	550	55				

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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			
									
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12		M
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14		M
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22		N
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24		N
25		N
26		N
27		N
28		N
29		N
30		N
31		S
32		S
33		S
34		S
35		S
36		S
37		S
38		H
39		H
40		H
41		H

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

TiAlN — 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

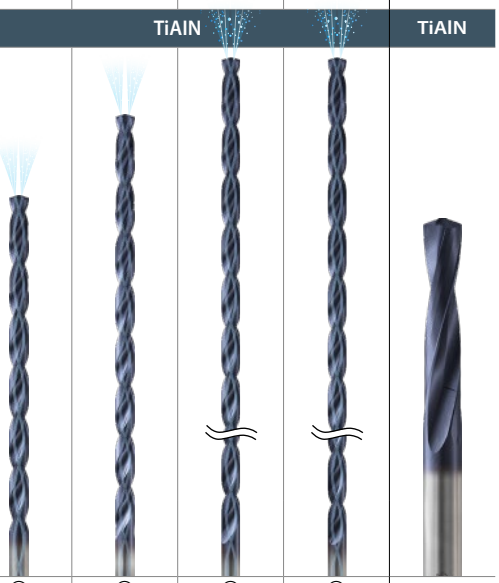
h6 — Tolerance of Shank Diameter

Cutting Condition

YG SELECTION GUIDE METRIC

SOLID CARBIDE DREAM DRILLS

	MQL TYPE				HARDENED STEEL
SERIES	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	TiAlN				TiAlN



Please visit globalyg1.com/mat for material search

◎ : Excellent ○ : Good

ISO	VDI 3323	Material Description	Composition / Structure / Heat Treatment		HB	HRc					
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	35			Cast	320	34					
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	37		Alpha + Beta Alloys	Hardened	1050 Rm						
H	38	Hardened steel		Hardened	550	55					◎
	39			Hardened	630	60					◎
	40	Chilled Cast Iron		Cast	400	42					
	41	Hardened Cast Iron		Hardened	550	55					

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Leading Through Innovation



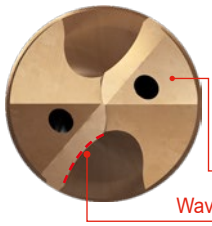
SOLID CARBIDE

DREAM DRILLS -PRO

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

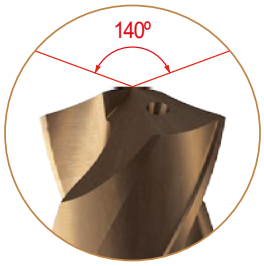
DREAM DRILLS PRO





Wave Shape Cutting Edge

- Improve Chip Formation
- Low Cutting Force

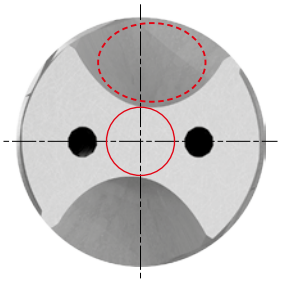


140 Degree Point Angle

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

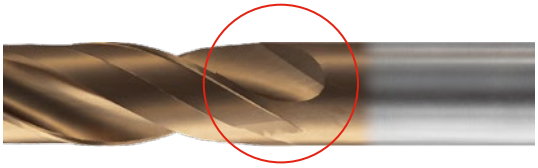
Micro-grained Carbide

- Achieving Excellent Wear Resistance
- Maximum Tool Life and High Performance



Optimized Wide Flute Design

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





Helical Thinning

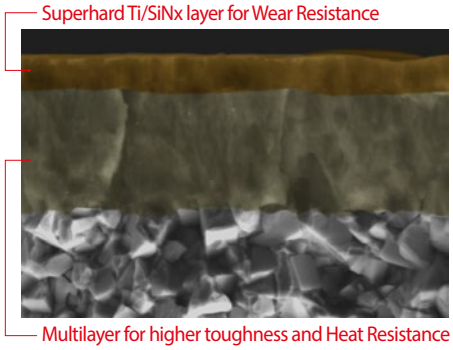
- Low Thrust
- Stable Torque
- Good Chip Breakage

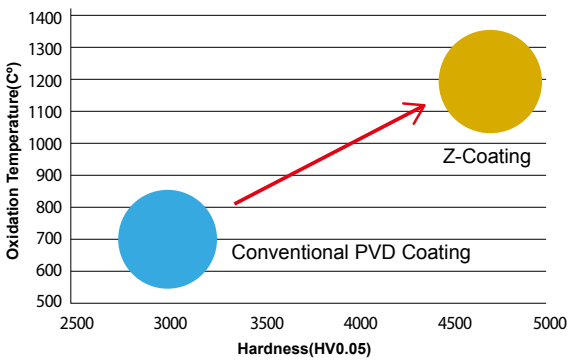
Performance Upgrade with Faster Cutting Speed

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

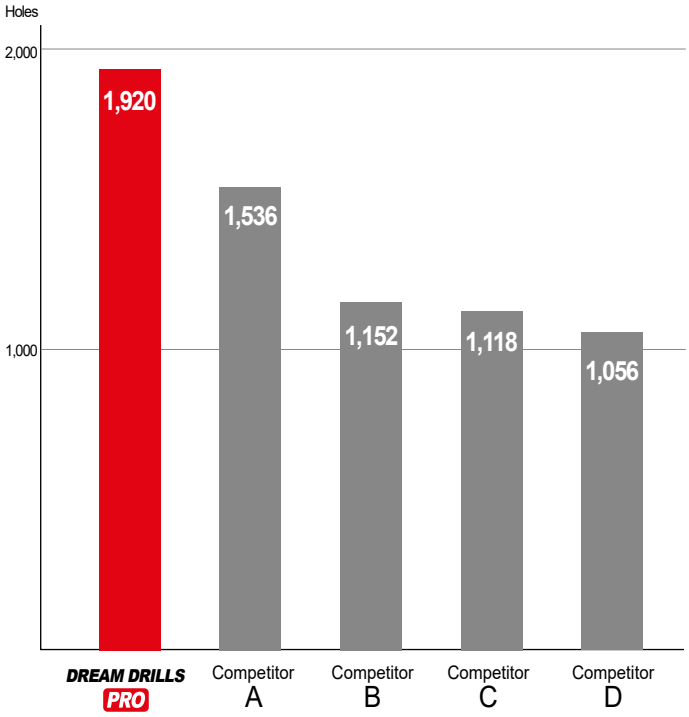




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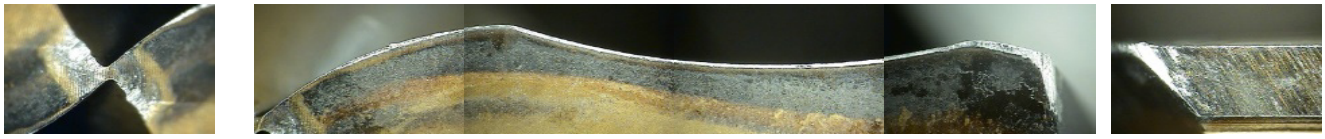
CASE STUDY

▶SOLID CARBIDE DREAM DRILLS - PRO with Coolant Holes

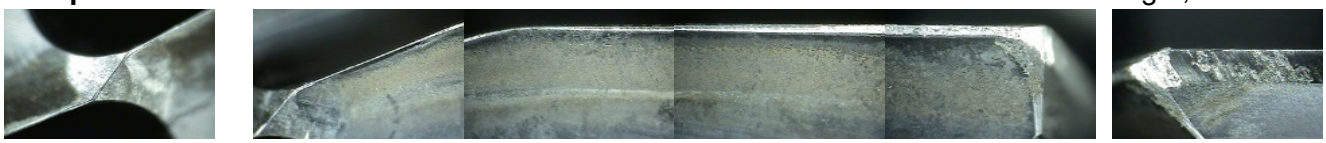


CUTTING CONDITION	
Work Material	• DIN: 42CrMo4 • ANSI: 4140 • JIS: SCM440 (HRc30)
Drill Diameter(mm)	Ø10.0
RPM	4,458 rev./min.
Cutting Speed	140 m/min
Feed	0.30 mm/rev
Drilling Depth	45.0 mm
Coolant	Internal Cooling (20 bar) Water Soluble (9% Emulsion)
Machine	Machining Center

DREAM DRILLS PRO — Total Drilling 1,920 Holes



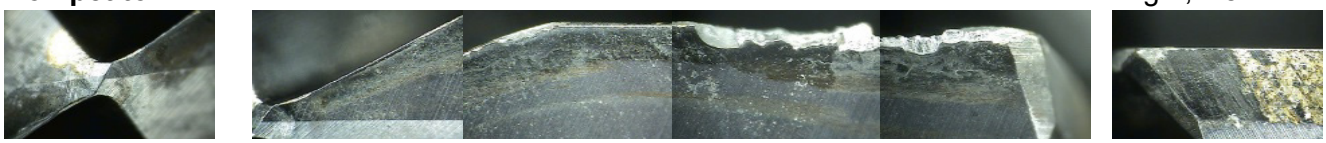
Competitor A — Total Drilling 1,536 Holes



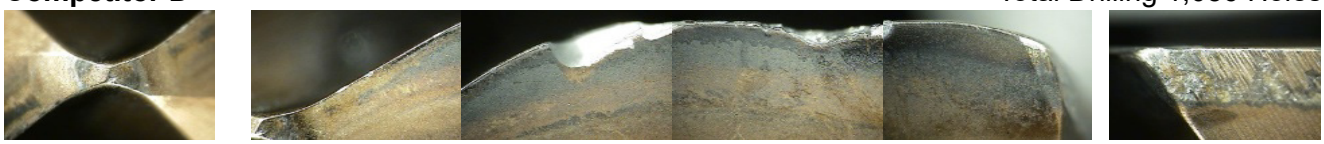
Competitor B — Total Drilling 1,152 Holes



Competitor C — Total Drilling 1,118 Holes



Competitor D — Total Drilling 1,056 Holes



Z-COATED SOLID CARBIDE

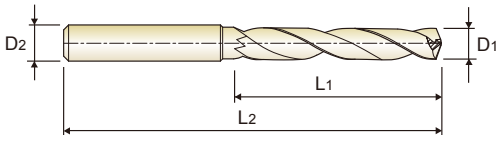
DREAM DRILLS PRO without COOLANT HOLES (3XD)

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

Unit : mm

EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
Z-Coating	D1	D2	L1	L2
DGN523030	3.0	6	20	62
DGN523031	3.1	6	20	62
DGN523032	3.2	6	20	62
DGN523033	3.3	6	20	62
DGN523034	3.4	6	20	62
DGN523035	3.5	6	20	62
DGN523036	3.6	6	20	62
DGN523037	3.7	6	20	62
DGN523038	3.8	6	24	66
DGN523039	3.9	6	24	66
DGN523040	4.0	6	24	66
DGN523041	4.1	6	24	66
DGN523042	4.2	6	24	66
DGN523043	4.3	6	24	66
DGN523044	4.4	6	24	66
DGN523045	4.5	6	24	66
DGN523046	4.6	6	24	66
DGN523047	4.7	6	24	66
DGN523048	4.8	6	28	66
DGN523049	4.9	6	28	66
DGN523050	5.0	6	28	66
DGN523051	5.1	6	28	66
DGN523052	5.2	6	28	66
DGN523053	5.3	6	28	66
DGN523054	5.4	6	28	66
DGN523055	5.5	6	28	66
DGN523056	5.6	6	28	66
DGN523057	5.7	6	28	66
DGN523058	5.8	6	28	66
DGN523059	5.9	6	28	66

EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
Z-Coating	D1	D2	L1	L2
DGN523060	6.0	6	28	66
DGN523061	6.1	8	34	79
DGN523062	6.2	8	34	79
DGN523063	6.3	8	34	79
DGN523064	6.4	8	34	79
DGN523065	6.5	8	34	79
DGN523066	6.6	8	34	79
DGN523067	6.7	8	34	79
DGN523068	6.8	8	34	79
DGN523069	6.9	8	34	79
DGN523070	7.0	8	34	79
DGN523071	7.1	8	41	79
DGN523072	7.2	8	41	79
DGN523073	7.3	8	41	79
DGN523074	7.4	8	41	79
DGN523075	7.5	8	41	79
DGN523076	7.6	8	41	79
DGN523077	7.7	8	41	79
DGN523078	7.8	8	41	79
DGN523079	7.9	8	41	79
DGN523080	8.0	8	41	79
DGN523081	8.1	10	47	89
DGN523082	8.2	10	47	89
DGN523083	8.3	10	47	89
DGN523084	8.4	10	47	89
DGN523085	8.5	10	47	89
DGN523086	8.6	10	47	89
DGN523087	8.7	10	47	89
DGN523088	8.8	10	47	89
DGN523089	8.9	10	47	89

▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

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

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

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Z-COATED SOLID CARBIDE

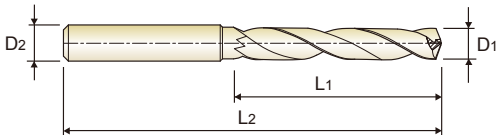
DREAM DRILLS PRO without COOLANT HOLES (3XD)

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

Unit : mm

EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
Z-Coating	D1	D2	L1	L2
DGN523090	9.0	10	47	89
DGN523091	9.1	10	47	89
DGN523092	9.2	10	47	89
DGN523093	9.3	10	47	89
DGN523094	9.4	10	47	89
DGN523095	9.5	10	47	89
DGN523096	9.6	10	47	89
DGN523097	9.7	10	47	89
DGN523098	9.8	10	47	89
DGN523099	9.9	10	47	89
DGN523100	10.0	10	47	89
DGN523101	10.1	12	55	102
DGN523102	10.2	12	55	102
DGN523103	10.3	12	55	102
DGN523104	10.4	12	55	102
DGN523105	10.5	12	55	102
DGN523106	10.6	12	55	102
DGN523107	10.7	12	55	102
DGN523108	10.8	12	55	102
DGN523109	10.9	12	55	102
DGN523110	11.0	12	55	102
DGN523111	11.1	12	55	102
DGN523112	11.2	12	55	102
DGN523113	11.3	12	55	102
DGN523114	11.4	12	55	102
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

EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
Z-Coating	D1	D2	L1	L2
DGN523120	12.0	12	55	102
DGN523123	12.3	14	60	107
DGN523125	12.5	14	60	107
DGN523128	12.8	14	60	107
DGN523130	13.0	14	60	107
DGN523135	13.5	14	60	107
DGN523138	13.8	14	60	107
DGN523140	14.0	14	60	107
DGN523145	14.5	16	65	115
DGN523148	14.8	16	65	115
DGN523150	15.0	16	65	115
DGN523155	15.5	16	65	115
DGN523158	15.8	16	65	115
DGN523160	16.0	16	65	115
DGN523165	16.5	18	73	123
DGN523168	16.8	18	73	123
DGN523170	17.0	18	73	123
DGN523175	17.5	18	73	123
DGN523178	17.8	18	73	123
DGN523180	18.0	18	73	123
DGN523185	18.5	20	79	131
DGN523190	19.0	20	79	131
DGN523195	19.5	20	79	131
DGN523198	19.8	20	79	131
DGN523200	20.0	20	79	131

▶ Other shank types are available on your request.

◎ : Excellent ○ : Good

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

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

Z-COATED SOLID CARBIDE

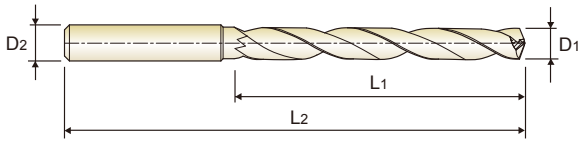
DREAM DRILLS PRO without COOLANT HOLES (5XD)

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

Unit : mm

EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
Z-Coating	D_1	D_2	L_1	L_2
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

EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
Z-Coating	D_1	D_2	L_1	L_2
DGN526038	3.8	6	36	74
DGN526039	3.9	6	36	74
DGN526040	4.0	6	36	74
DGN526041	4.1	6	36	74
DGN526042	4.2	6	36	74
DGN526043	4.3	6	36	74
DGN526044	4.4	6	36	74
DGN526045	4.5	6	36	74
DGN526046	4.6	6	36	74
DGN526047	4.7	6	36	74
DGN526048	4.8	6	44	82
DGN526049	4.9	6	44	82
DGN526050	5.0	6	44	82
DGN526051	5.1	6	44	82
DGN526052	5.2	6	44	82
DGN526053	5.3	6	44	82
DGN526054	5.4	6	44	82
DGN526055	5.5	6	44	82
DGN526056	5.6	6	44	82
DGN526057	5.7	6	44	82
DGN526058	5.8	6	44	82
DGN526059	5.9	6	44	82
DGN526060	6.0	6	44	82
DGN526061	6.1	8	53	91
DGN526062	6.2	8	53	91
DGN526063	6.3	8	53	91
DGN526064	6.4	8	53	91
DGN526065	6.5	8	53	91

▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

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

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

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Z-COATED SOLID CARBIDE

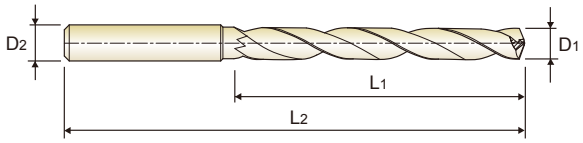
DREAM DRILLS PRO without COOLANT HOLES (5XD)

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

Unit : mm

EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
Z-Coating	D1	D2	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

EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
Z-Coating	D1	D2	L1	L2
DGN526094	9.4	10	61	103
DGN526095	9.5	10	61	103
DGN526096	9.6	10	61	103
DGN526097	9.7	10	61	103
DGN526098	9.8	10	61	103
DGN526099	9.9	10	61	103
DGN526100	10.0	10	61	103
DGN526101	10.1	12	71	118
DGN526102	10.2	12	71	118
DGN526103	10.3	12	71	118
DGN526104	10.4	12	71	118
DGN526105	10.5	12	71	118
DGN526106	10.6	12	71	118
DGN526107	10.7	12	71	118
DGN526108	10.8	12	71	118
DGN526109	10.9	12	71	118
DGN526110	11.0	12	71	118
DGN526111	11.1	12	71	118
DGN526112	11.2	12	71	118
DGN526113	11.3	12	71	118
DGN526114	11.4	12	71	118
DGN526115	11.5	12	71	118
DGN526116	11.6	12	71	118
DGN526117	11.7	12	71	118
DGN526118	11.8	12	71	118
DGN526119	11.9	12	71	118
DGN526120	12.0	12	71	118
DGN526122	12.2	14	77	124

▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

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

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

Z-COATED SOLID CARBIDE

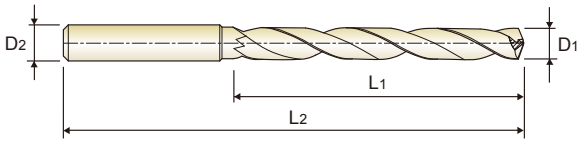
DREAM DRILLS PRO without COOLANT HOLES (5XD)

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

Unit : mm

EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
Z-Coating	D_1	D_2	L_1	L_2
DGN526125	12.5	14	77	124
DGN526128	12.8	14	77	124
DGN526130	13.0	14	77	124
DGN526135	13.5	14	77	124
DGN526138	13.8	14	77	124
DGN526140	14.0	14	77	124
DGN526142	14.2	16	83	133
DGN526145	14.5	16	83	133
DGN526148	14.8	16	83	133
DGN526150	15.0	16	83	133
DGN526151	15.1	16	83	133
DGN526152	15.2	16	83	133
DGN526155	15.5	16	83	133
DGN526158	15.8	16	83	133

EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
Z-Coating	D_1	D_2	L_1	L_2
DGN526160	16.0	16	83	133
DGN526165	16.5	18	93	143
DGN526170	17.0	18	93	143
DGN526173	17.3	18	93	143
DGN526175	17.5	18	93	143
DGN526177	17.7	18	93	143
DGN526180	18.0	18	93	143
DGN526185	18.5	20	101	153
DGN526190	19.0	20	101	153
DGN526193	19.3	20	101	153
DGN526195	19.5	20	101	153
DGN526200	20.0	20	101	153

▶ Other shank types are available on your request.

◎ : Excellent ○ : Good

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

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

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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

Unit : mm

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

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

▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

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

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

Z-COATED SOLID CARBIDE

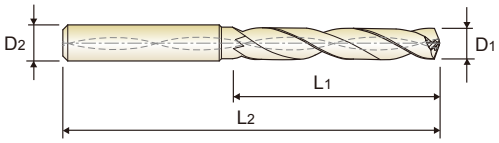
DREAM DRILLS PRO with COOLANT HOLES (3XD)

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

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SHORT 3 × D

Unit : mm

EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
Z-Coating	D1	D2	L1	L2
DGN506086	8.6	10	47	89
DGN506087	8.7	10	47	89
DGN506088	8.8	10	47	89
DGN506089	8.9	10	47	89
DGN506090	9.0	10	47	89
DGN506091	9.1	10	47	89
DGN506092	9.2	10	47	89
DGN506093	9.3	10	47	89
DGN506094	9.4	10	47	89
DGN506095	9.5	10	47	89
DGN506096	9.6	10	47	89
DGN506097	9.7	10	47	89
DGN506098	9.8	10	47	89
DGN506099	9.9	10	47	89
DGN506100	10.0	10	47	89
DGN506101	10.1	12	55	102
DGN506102	10.2	12	55	102
DGN506103	10.3	12	55	102
DGN506104	10.4	12	55	102
DGN506105	10.5	12	55	102
DGN506106	10.6	12	55	102
DGN506107	10.7	12	55	102
DGN506108	10.8	12	55	102
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

EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
Z-Coating	D1	D2	L1	L2
DGN506114	11.4	12	55	102
DGN506115	11.5	12	55	102
DGN506116	11.6	12	55	102
DGN506117	11.7	12	55	102
DGN506118	11.8	12	55	102
DGN506119	11.9	12	55	102
DGN506120	12.0	12	55	102
DGN506125	12.5	14	60	107
DGN506130	13.0	14	60	107
DGN506135	13.5	14	60	107
DGN506140	14.0	14	60	107
DGN506145	14.5	16	65	115
DGN506150	15.0	16	65	115
DGN506155	15.5	16	65	115
DGN506160	16.0	16	65	115
DGN506165	16.5	18	73	123
DGN506170	17.0	18	73	123
DGN506175	17.5	18	73	123
DGN506180	18.0	18	73	123
DGN506185	18.5	20	79	131
DGN506190	19.0	20	79	131
DGN506195	19.5	20	79	131
DGN506200	20.0	20	79	131

▶ Other shank types are available on your request.

◎ : Excellent ○ : Good

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

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

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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

Unit : mm

EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
Z-Coating	D1	D2	L1	L2
DGN508010	1.0	3	8	55
DGN508011	1.1	3	12	55
DGN508012	1.2	3	12	55
DGN508013	1.3	3	12	55
DGN508014	1.4	3	12	55
DGN508015	1.5	3	16	55
DGN508016	1.6	3	16	55
DGN508017	1.7	3	16	55
DGN508018	1.8	3	16	55
DGN508019	1.9	3	16	55
DGN508020	2.0	4	21	57
DGN508021	2.1	4	21	57
DGN508022	2.2	4	21	57
DGN508023	2.3	4	21	57
DGN508024	2.4	4	21	57
DGN508025	2.5	4	21	57
DGN508026	2.6	4	21	57
DGN508027	2.7	4	21	57
DGN508028	2.8	4	21	57
DGN508029	2.9	4	21	57
DGN508030	3.0	6	28	66
DGN508031	3.1	6	28	66
DGN508032	3.2	6	28	66
DGN508033	3.3	6	28	66
DGN508034	3.4	6	28	66
DGN508035	3.5	6	28	66
DGN508036	3.6	6	28	66
DGN508037	3.7	6	28	66

EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
Z-Coating	D1	D2	L1	L2
DGN508038	3.8	6	36	74
DGN508039	3.9	6	36	74
DGN508040	4.0	6	36	74
DGN508041	4.1	6	36	74
DGN508042	4.2	6	36	74
DGN508043	4.3	6	36	74
DGN508044	4.4	6	36	74
DGN508045	4.5	6	36	74
DGN508046	4.6	6	36	74
DGN508047	4.7	6	36	74
DGN508048	4.8	6	44	82
DGN508049	4.9	6	44	82
DGN508050	5.0	6	44	82
DGN508051	5.1	6	44	82
DGN508052	5.2	6	44	82
DGN508053	5.3	6	44	82
DGN508054	5.4	6	44	82
DGN508055	5.5	6	44	82
DGN508056	5.6	6	44	82
DGN508057	5.7	6	44	82
DGN508058	5.8	6	44	82
DGN508059	5.9	6	44	82
DGN508060	6.0	6	44	82
DGN508061	6.1	8	53	91
DGN508062	6.2	8	53	91
DGN508063	6.3	8	53	91
DGN508064	6.4	8	53	91
DGN508065	6.5	8	53	91

▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

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

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

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

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

EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
Z-Coating	D1	D2	L1	L2
DGN508094	9.4	10	61	103
DGN508095	9.5	10	61	103
DGN508096	9.6	10	61	103
DGN508097	9.7	10	61	103
DGN508098	9.8	10	61	103
DGN508099	9.9	10	61	103
DGN508100	10.0	10	61	103
DGN508101	10.1	12	71	118
DGN508102	10.2	12	71	118
DGN508103	10.3	12	71	118
DGN508104	10.4	12	71	118
DGN508105	10.5	12	71	118
DGN508106	10.6	12	71	118
DGN508107	10.7	12	71	118
DGN508108	10.8	12	71	118
DGN508109	10.9	12	71	118
DGN508110	11.0	12	71	118
DGN508111	11.1	12	71	118
DGN508112	11.2	12	71	118
DGN508113	11.3	12	71	118
DGN508114	11.4	12	71	118
DGN508115	11.5	12	71	118
DGN508116	11.6	12	71	118
DGN508117	11.7	12	71	118
DGN508118	11.8	12	71	118
DGN508119	11.9	12	71	118
DGN508120	12.0	12	71	118
DGN508125	12.5	14	77	124

▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

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

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

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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

Unit : mm

EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
Z-Coating	D_1	D_2	L_1	L_2
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

EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
Z-Coating	D_1	D_2	L_1	L_2
DGN508170	**17.0**	18	93	143
DGN508175	**17.5**	18	93	143
DGN508180	**18.0**	18	93	143
DGN508185	**18.5**	20	101	153
DGN508190	**19.0**	20	101	153
DGN508195	**19.5**	20	101	153
DGN508200	**20.0**	20	101	153

▶ Other shank types are available on your request.

◎ : Excellent ○ : Good

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

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

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	Vc	Parameter	Drill Diameter (mm) 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
				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
	3		85	RPM	27,060	13,530	120	RPM	12,730	9,550	7,640	6,370
				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		85	RPM	27,060	13,530	120	RPM	12,730	9,550	7,640	6,370
				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
	5		75	RPM	23,870	11,940	95	RPM	10,080	7,560	6,050	5,040
				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
	6	Low alloy steel	85	RPM	27,060	13,530	120	RPM	12,730	9,550	7,640	6,370
				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
	7		75	RPM	23,870	11,940	95	RPM	10,080	7,560	6,050	5,040
				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		75	RPM	23,870	11,940	95	RPM	10,080	7,560	6,050	5,040
				FEED	0.02-0.04	0.03-0.05		FEED	0.04-0.10	0.07-0.13	0.10-0.16	0.12-0.18
	9		36	RPM	11,460	5,730	50	RPM	5,310	3,980	3,180	2,650
				FEED	0.02-0.04	0.03-0.05		FEED	0.03-0.08	0.05-0.11	0.08-0.14	0.10-0.16
	10	High alloyed steel, and tool steel	60	RPM	19,100	9,550	80	RPM	8,490	6,370	5,090	4,240
				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
	11		35	RPM	11,140	5,570	45	RPM	4,770	3,580	2,860	2,390
				FEED	0.02-0.04	0.03-0.05		FEED	0.03-0.08	0.05-0.11	0.08-0.14	0.10-0.16
M	12	Stainless steel	60	RPM	19,100	9,550	85	RPM	9,020	6,760	5,410	4,510
				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
	13		45	RPM	14,320	7,160	55	RPM	5,840	4,380	3,500	2,920
				FEED	0.02-0.04	0.03-0.05		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
				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
	16		80	RPM	25,460	12,730	95	RPM	10,080	7,560	6,050	5,040
				FEED	0.04-0.06	0.04-0.06		FEED	0.06-0.12	0.08-0.14	0.14-0.20	0.16-0.22
	17	Nodular cast iron	85	RPM	27,060	13,530	120	RPM	12,730	9,550	7,640	6,370
				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
	18		60	RPM	19,100	9,550	85	RPM	9,020	6,760	5,410	4,510
				FEED	0.04-0.06	0.04-0.06		FEED	0.06-0.12	0.08-0.14	0.14-0.20	0.16-0.22
	19	Malleable cast iron	75	RPM	23,870	11,940	95	RPM	10,080	7,560	6,050	5,040
				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
	20		60	RPM	19,100	9,550	85	RPM	9,020	6,760	5,410	4,510
				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
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
				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
	3		120	RPM	4,770	3,820	3,180	2,730	2,390	2,120	1,910
				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		120	RPM	4,770	3,820	3,180	2,730	2,390	2,120	1,910
				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
	5		95	RPM	3,780	3,020	2,520	2,160	1,890	1,680	1,510
				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
	6	Low alloy steel	120	RPM	4,770	3,820	3,180	2,730	2,390	2,120	1,910
				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
	7		95	RPM	3,780	3,020	2,520	2,160	1,890	1,680	1,510
				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		95	RPM	3,780	3,020	2,520	2,160	1,890	1,680	1,510
				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
	9		50	RPM	1,990	1,590	1,330	1,140	990	880	800
				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
	10	High alloyed steel, and tool steel	80	RPM	3,180	2,550	2,120	1,820	1,590	1,410	1,270
				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
	11		45	RPM	1,790	1,430	1,190	1,020	900	800	720
				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
M	12	Stainless steel	85	RPM	3,380	2,710	2,250	1,930	1,690	1,500	1,350
				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
	13		55	RPM	2,190	1,750	1,460	1,250	1,090	970	880
				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	120	RPM	4,770	3,820	3,180	2,730	2,390	2,120	1,910
				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		95	RPM	3,780	3,020	2,520	2,160	1,890	1,680	1,510
				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	120	RPM	4,770	3,820	3,180	2,730	2,390	2,120	1,910
				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		85	RPM	3,380	2,710	2,250	1,930	1,690	1,500	1,350
				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	95	RPM	3,780	3,020	2,520	2,160	1,890	1,680	1,510
				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		85	RPM	3,380	2,710	2,250	1,930	1,690	1,500	1,350
				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)

VAMATEC www.vamatec.be I info@vamatec.be

DGN506, DGN508 SERIES with COOLANT HOLES

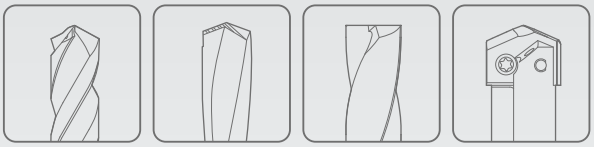
Vc = m/min.
RPM = rev./min.
FEED = mm/rev.

ISO	VDI 3323	Material Description	Vc	Parameter	Drill Diameter (mm) 1.0	2.0	Vc	Parameter	Drill Diameter (mm) 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
				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
	3		95	RPM	30,240	15,120	130	RPM	13,790	10,350	8,280	6,900
				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		95	RPM	30,240	15,120	130	RPM	13,790	10,350	8,280	6,900
				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
	5		85	RPM	27,060	13,530	110	RPM	11,670	8,750	7,000	5,840
				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
	6	Low alloy steel	95	RPM	30,240	15,120	130	RPM	13,790	10,350	8,280	6,900
				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
	7		85	RPM	27,060	13,530	110	RPM	11,670	8,750	7,000	5,840
				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		95	RPM	30,240	15,120	110	RPM	11,670	8,750	7,000	5,840
				FEED	0.02-0.04	0.03-0.05		FEED	0.04-0.10	0.07-0.13	0.10-0.16	0.12-0.18
	9		50	RPM	15,920	7,960	60	RPM	6,370	4,770	3,820	3,180
				FEED	0.02-0.04	0.03-0.05		FEED	0.03-0.08	0.05-0.11	0.08-0.14	0.10-0.16
	10	High alloyed steel, and tool steel	70	RPM	22,280	11,140	90	RPM	9,550	7,160	5,730	4,770
				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
	11		45	RPM	14,320	7,160	50	RPM	5,310	3,980	3,180	2,650
				FEED	0.02-0.04	0.03-0.05		FEED	0.03-0.08	0.05-0.11	0.08-0.14	0.10-0.16
M	12	Stainless steel	75	RPM	23,870	11,940	95	RPM	10,080	7,560	6,050	5,040
				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
	13		55	RPM	17,510	8,750	65	RPM	6,900	5,170	4,140	3,450
				FEED	0.02-0.04	0.03-0.05		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
				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
	16		90	RPM	28,650	14,320	115	RPM	12,200	9,150	7,320	6,100
				FEED	0.04-0.06	0.04-0.06		FEED	0.06-0.12	0.08-0.14	0.14-0.20	0.16-0.22
	17	Nodular cast iron	110	RPM	35,010	17,510	145	RPM	15,380	11,540	9,230	7,690
				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
	18		75	RPM	23,870	11,940	95	RPM	10,080	7,560	6,050	5,040
				FEED	0.04-0.06	0.04-0.06		FEED	0.06-0.12	0.08-0.14	0.14-0.20	0.16-0.22
	19	Malleable cast iron	85	RPM	27,060	13,530	110	RPM	11,670	8,750	7,000	5,840
				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
	20		75	RPM	23,870	11,940	95	RPM	10,080	7,560	6,050	5,040
				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
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
				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
	3		130	RPM	5,170	4,140	3,450	2,960	2,590	2,300	2,070
				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		130	RPM	5,170	4,140	3,450	2,960	2,590	2,300	2,070
				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
	5		110	RPM	4,380	3,500	2,920	2,500	2,190	1,950	1,750
				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
	6	Low alloy steel	130	RPM	5,170	4,140	3,450	2,960	2,590	2,300	2,070
				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
	7		110	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
	8		110	RPM	4,380	3,500	2,920	2,500	2,190	1,950	1,750
				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
	9		60	RPM	2,390	1,910	1,590	1,360	1,190	1,060	950
				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
	10	High alloyed steel, and tool steel	90	RPM	3,580	2,860	2,390	2,050	1,790	1,590	1,430
				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
	11		50	RPM	1,990	1,590	1,330	1,140	990	880	800
				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
M	12	Stainless steel	95	RPM	3,780	3,020	2,520	2,160	1,890	1,680	1,510
				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
	13		65	RPM	2,590	2,070	1,720	1,480	1,290	1,150	1,030
				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	130	RPM	5,170	4,140	3,450	2,960	2,590	2,300	2,070
				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		115	RPM	4,580	3,660	3,050	2,610	2,290	2,030	1,830
				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	145	RPM	5,770	4,620	3,850	3,300	2,880	2,560	2,310
				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		95	RPM	3,780	3,020	2,520	2,160	1,890	1,680	1,510
				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	110	RPM	4,380	3,500	2,920	2,500	2,190	1,950	1,750
				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		95	RPM	3,780	3,020	2,520	2,160	1,890	1,680	1,510
				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	1,390	1,110	930	800	700	620	560
				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%** : DGN506(3×D), DGN508(5×D)

Global Cutting Tool Leader **YG-1**



DREAM DRILLS

YG

Leading Through Innovation



NEW

SOLID CARBIDE

DREAM DRILL X

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

NEW

DREAM DRILL X



New Coating Technology "RCH-Coating"

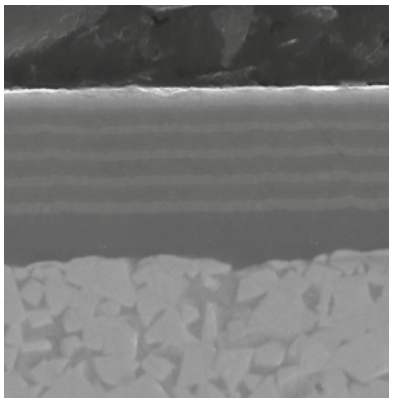
Combining the major benefits of TiAlN and AlCrN into a new '**Nano Layered Multilayer**' coating generation provides unique advantages such as:

Extreme Wear Resistance

High Heat Endurance

Chipping Protection

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

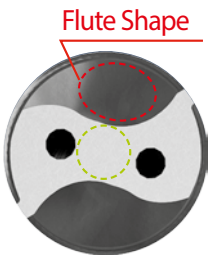


At insufficient coolant conditions where higher temperatures occur, **RCH-Coating** allows with its very high temperature stability for great tool life results.

FEATURES & BENEFITS

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





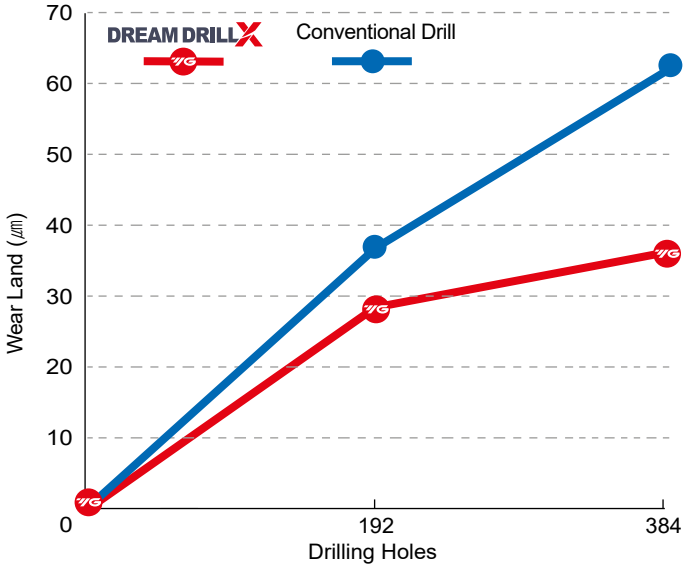


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CASE STUDY

▶ 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



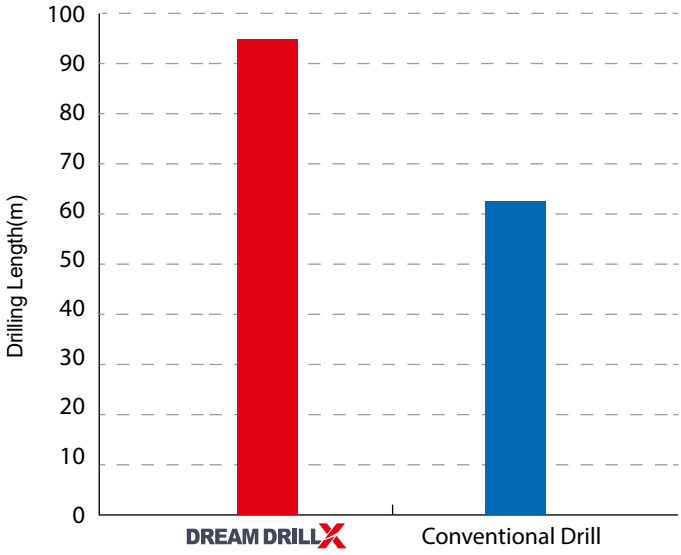
Conventional Drill

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)

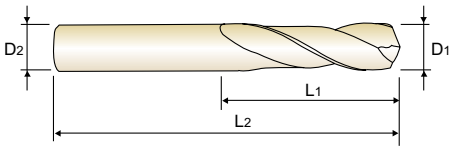
SERIES

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

EDP No.	Drill Diameter	Flute Length	Overall Length
RCH-Coating	D1=D2	L1	L2
DTX404030	3.0	16	46
DTX404031	3.1	18	49
DTX404032	3.2	18	49
DTX404033	3.3	18	49
DTX404034	3.4	20	52
DTX404035	3.5	20	52
DTX404036	3.6	20	52
DTX404037	3.7	20	52
DTX404038	3.8	22	55
DTX404039	3.9	22	55
DTX404040	4.0	22	55
DTX404041	4.1	22	55
DTX404042	4.2	22	55
DTX404043	4.3	24	58
DTX404044	4.4	24	58
DTX404045	4.5	24	58
DTX404046	4.6	24	58
DTX404047	4.7	24	58
DTX404048	4.8	26	62
DTX404049	4.9	26	62
DTX404050	5.0	26	62
DTX404051	5.1	26	62
DTX404052	5.2	26	62
DTX404053	5.3	26	62
DTX404054	5.4	28	66
DTX404055	5.5	28	66
DTX404056	5.6	28	66
DTX404057	5.7	28	66

EDP No.	Drill Diameter	Flute Length	Overall Length
RCH-Coating	D1=D2	L1	L2
DTX404058	5.8	28	66
DTX404059	5.9	28	66
DTX404060	6.0	28	66
DTX404061	6.1	31	70
DTX404062	6.2	31	70
DTX404063	6.3	31	70
DTX404064	6.4	31	70
DTX404065	6.5	31	70
DTX404066	6.6	31	70
DTX404067	6.7	31	70
DTX404068	6.8	34	74
DTX404069	6.9	34	74
DTX404070	7.0	34	74
DTX404071	7.1	34	74
DTX404072	7.2	34	74
DTX404073	7.3	34	74
DTX404074	7.4	34	74
DTX404075	7.5	34	74
DTX404076	7.6	37	79
DTX404077	7.7	37	79
DTX404078	7.8	37	79
DTX404079	7.9	37	79
DTX404080	8.0	37	79
DTX404081	8.1	37	79
DTX404082	8.2	37	79
DTX404083	8.3	37	79
DTX404084	8.4	37	79
DTX404085	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	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended		◎	◎	◎	○	◎	◎	○	○	◎	○	○	○		◎	○	◎	○	◎	○

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

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RCH-COATED SOLID CARBIDE

DREAM DRILL X without COOLANT HOLES (3XD)

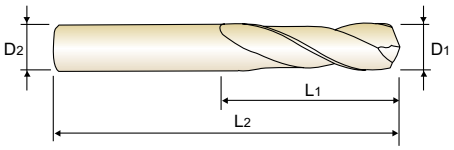
SERIES

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

EDP No.	Drill Diameter	Flute Length	Overall Length
RCH-Coating	D1=D2	L1	L2
DTX404086	8.6	40	84
DTX404087	8.7	40	84
DTX404088	8.8	40	84
DTX404089	8.9	40	84
DTX404090	9.0	40	84
DTX404091	9.1	40	84
DTX404092	9.2	40	84
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

EDP No.	Drill Diameter	Flute Length	Overall Length
RCH-Coating	D1=D2	L1	L2
DTX404170	17.0	60	119
DTX404175	17.5	62	123
DTX404180	18.0	62	123
DTX404185	18.5	64	127
DTX404190	19.0	64	127
DTX404195	19.5	66	131
DTX404200	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	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended		◎	◎	◎	○	◎	◎	○	○	◎	○	○	○		◎	○	◎	○	◎	○

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

RCH-COATED SOLID CARBIDE

DREAM DRILL X without COOLANT HOLES (3XD)

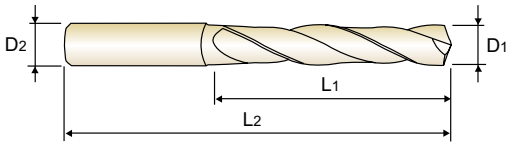
SERIES

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

EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
RCH-Coating	D1	D2	L1	L2
DTX423060	6.0	6	28	66
DTX423061	6.1	8	34	79
DTX423062	6.2	8	34	79
DTX423063	6.3	8	34	79
DTX423064	6.4	8	34	79
DTX423065	6.5	8	34	79
DTX423066	6.6	8	34	79
DTX423067	6.7	8	34	79
DTX423068	6.8	8	34	79
DTX423069	6.9	8	34	79
DTX423070	7.0	8	34	79
DTX423071	7.1	8	41	79
DTX423072	7.2	8	41	79
DTX423073	7.3	8	41	79
DTX423074	7.4	8	41	79
DTX423075	7.5	8	41	79
DTX423076	7.6	8	41	79
DTX423077	7.7	8	41	79
DTX423078	7.8	8	41	79
DTX423079	7.9	8	41	79
DTX423080	8.0	8	41	79
DTX423081	8.1	10	47	89
DTX423082	8.2	10	47	89
DTX423083	8.3	10	47	89
DTX423084	8.4	10	47	89
DTX423085	8.5	10	47	89
DTX423086	8.6	10	47	89
DTX423087	8.7	10	47	89
DTX423088	8.8	10	47	89
DTX423089	8.9	10	47	89

▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

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

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

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RCH-COATED SOLID CARBIDE

DREAM DRILL X without COOLANT HOLES (3XD)

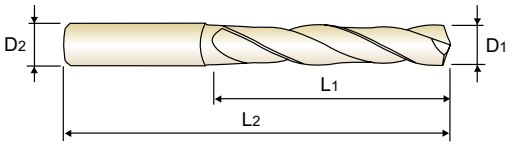
SERIES

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

EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
RCH-Coating	D1	D2	L1	L2
DTX423120	12.0	12	55	102
DTX423123	12.3	14	60	107
DTX423125	12.5	14	60	107
DTX423128	12.8	14	60	107
DTX423130	13.0	14	60	107
DTX423135	13.5	14	60	107
DTX423138	13.8	14	60	107
DTX423140	14.0	14	60	107
DTX423145	14.5	16	65	115
DTX423148	14.8	16	65	115
DTX423150	15.0	16	65	115
DTX423155	15.5	16	65	115
DTX423158	15.8	16	65	115
DTX423160	16.0	16	65	115
DTX423165	16.5	18	73	123
DTX423168	16.8	18	73	123
DTX423170	17.0	18	73	123
DTX423175	17.5	18	73	123
DTX423178	17.8	18	73	123
DTX423180	18.0	18	73	123
DTX423185	18.5	20	79	131
DTX423190	19.0	20	79	131
DTX423195	19.5	20	79	131
DTX423198	19.8	20	79	131
DTX423200	20.0	20	79	131

▶ Other shank types are available on your request.

◎ : Excellent ○ : Good

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

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

RCH-COATED SOLID CARBIDE

DREAM DRILL X without COOLANT HOLES (5XD)

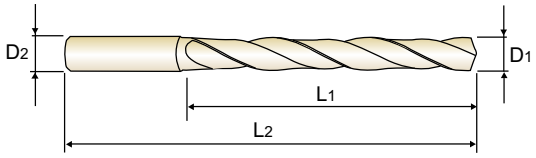
SERIES

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

Unit : mm

EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
RCH-Coating	D1	D2	L1	L2
DTX424010	1.0	3	8	55
DTX424011	1.1	3	12	55
DTX424012	1.2	3	12	55
DTX424013	1.3	3	12	55
DTX424014	1.4	3	12	55
DTX424015	1.5	3	16	55
DTX424016	1.6	3	16	55
DTX424017	1.7	3	16	55
DTX424018	1.8	3	16	55
DTX424019	1.9	3	16	55
DTX424020	2.0	4	21	57
DTX424021	2.1	4	21	57
DTX424022	2.2	4	21	57
DTX424023	2.3	4	21	57
DTX424024	2.4	4	21	57
DTX424025	2.5	4	21	57
DTX424026	2.6	4	21	57
DTX424027	2.7	4	21	57
DTX424028	2.8	4	21	57
DTX424029	2.9	4	21	57
DTX424030	3.0	6	28	66
DTX424031	3.1	6	28	66
DTX424032	3.2	6	28	66
DTX424033	3.3	6	28	66
DTX424034	3.4	6	28	66
DTX424035	3.5	6	28	66
DTX424036	3.6	6	28	66
DTX424037	3.7	6	28	66

EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
RCH-Coating	D1	D2	L1	L2
DTX424038	3.8	6	36	74
DTX424039	3.9	6	36	74
DTX424040	4.0	6	36	74
DTX424041	4.1	6	36	74
DTX424042	4.2	6	36	74
DTX424043	4.3	6	36	74
DTX424044	4.4	6	36	74
DTX424045	4.5	6	36	74
DTX424046	4.6	6	36	74
DTX424047	4.7	6	36	74
DTX424048	4.8	6	44	82
DTX424049	4.9	6	44	82
DTX424050	5.0	6	44	82
DTX424051	5.1	6	44	82
DTX424052	5.2	6	44	82
DTX424053	5.3	6	44	82
DTX424054	5.4	6	44	82
DTX424055	5.5	6	44	82
DTX424056	5.6	6	44	82
DTX424057	5.7	6	44	82
DTX424058	5.8	6	44	82
DTX424059	5.9	6	44	82
DTX424060	6.0	6	44	82
DTX424061	6.1	8	53	91
DTX424062	6.2	8	53	91
DTX424063	6.3	8	53	91
DTX424064	6.4	8	53	91
DTX424065	6.5	8	53	91

▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

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

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

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RCH-COATED SOLID CARBIDE

DREAM DRILL X without COOLANT HOLES (5XD)

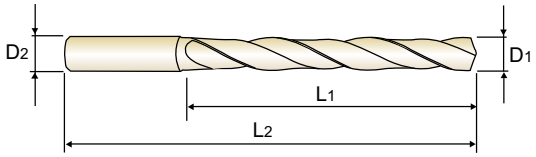
SERIES

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

Unit : mm

EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
RCH-Coating	D1	D2	L1	L2
DTX424066	6.6	8	53	91
DTX424067	6.7	8	53	91
DTX424068	6.8	8	53	91
DTX424069	6.9	8	53	91
DTX424070	7.0	8	53	91
DTX424071	7.1	8	53	91
DTX424072	7.2	8	53	91
DTX424073	7.3	8	53	91
DTX424074	7.4	8	53	91
DTX424075	7.5	8	53	91
DTX424076	7.6	8	53	91
DTX424077	7.7	8	53	91
DTX424078	7.8	8	53	91
DTX424079	7.9	8	53	91
DTX424080	8.0	8	53	91
DTX424081	8.1	10	61	103
DTX424082	8.2	10	61	103
DTX424083	8.3	10	61	103
DTX424084	8.4	10	61	103
DTX424085	8.5	10	61	103
DTX424086	8.6	10	61	103
DTX424087	8.7	10	61	103
DTX424088	8.8	10	61	103
DTX424089	8.9	10	61	103
DTX424090	9.0	10	61	103
DTX424091	9.1	10	61	103
DTX424092	9.2	10	61	103
DTX424093	9.3	10	61	103

EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
RCH-Coating	D1	D2	L1	L2
DTX424094	9.4	10	61	103
DTX424095	9.5	10	61	103
DTX424096	9.6	10	61	103
DTX424097	9.7	10	61	103
DTX424098	9.8	10	61	103
DTX424099	9.9	10	61	103
DTX424100	10.0	10	61	103
DTX424101	10.1	12	71	118
DTX424102	10.2	12	71	118
DTX424103	10.3	12	71	118
DTX424104	10.4	12	71	118
DTX424105	10.5	12	71	118
DTX424106	10.6	12	71	118
DTX424107	10.7	12	71	118
DTX424108	10.8	12	71	118
DTX424109	10.9	12	71	118
DTX424110	11.0	12	71	118
DTX424111	11.1	12	71	118
DTX424112	11.2	12	71	118
DTX424113	11.3	12	71	118
DTX424114	11.4	12	71	118
DTX424115	11.5	12	71	118
DTX424116	11.6	12	71	118
DTX424117	11.7	12	71	118
DTX424118	11.8	12	71	118
DTX424119	11.9	12	71	118
DTX424120	12.0	12	71	118
DTX424125	12.5	14	77	124

▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

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

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

RCH-COATED SOLID CARBIDE

DREAM DRILL X without COOLANT HOLES (5XD)

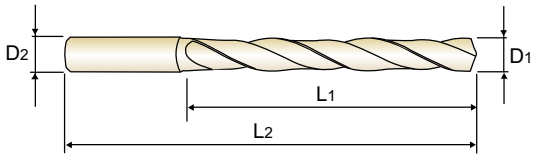
SERIES

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

Unit : mm

EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
RCH-Coating	D_1	D_2	L_1	L_2
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

EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
RCH-Coating	D_1	D_2	L_1	L_2
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.

◎ : Excellent ○ : Good

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

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

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RCH-COATED SOLID CARBIDE

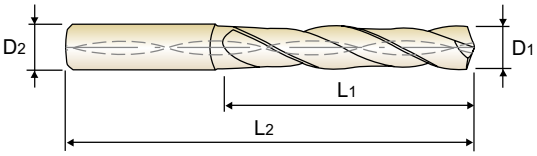
DREAM DRILL X with COOLANT HOLES (3XD)

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

Unit : mm

EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
RCH-Coating	D1	D2	L1	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

EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
RCH-Coating	D1	D2	L1	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					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended		◎	◎	◎	○	◎	◎	○	○	◎	○	○	○		◎	○	◎	○	◎	○

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

RCH-COATED SOLID CARBIDE

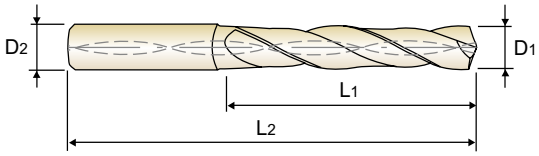
DREAM DRILL X with COOLANT HOLES (3XD)

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

Unit : mm

EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
RCH-Coating	D1	D2	L1	L2
DTX406086	8.6	10	47	89
DTX406087	8.7	10	47	89
DTX406088	8.8	10	47	89
DTX406089	8.9	10	47	89
DTX406090	9.0	10	47	89
DTX406091	9.1	10	47	89
DTX406092	9.2	10	47	89
DTX406093	9.3	10	47	89
DTX406094	9.4	10	47	89
DTX406095	9.5	10	47	89
DTX406096	9.6	10	47	89
DTX406097	9.7	10	47	89
DTX406098	9.8	10	47	89
DTX406099	9.9	10	47	89
DTX406100	10.0	10	47	89
DTX406101	10.1	12	55	102
DTX406102	10.2	12	55	102
DTX406103	10.3	12	55	102
DTX406104	10.4	12	55	102
DTX406105	10.5	12	55	102
DTX406106	10.6	12	55	102
DTX406107	10.7	12	55	102
DTX406108	10.8	12	55	102
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

EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
RCH-Coating	D1	D2	L1	L2
DTX406114	11.4	12	55	102
DTX406115	11.5	12	55	102
DTX406116	11.6	12	55	102
DTX406117	11.7	12	55	102
DTX406118	11.8	12	55	102
DTX406119	11.9	12	55	102
DTX406120	12.0	12	55	102
DTX406125	12.5	14	60	107
DTX406130	13.0	14	60	107
DTX406135	13.5	14	60	107
DTX406140	14.0	14	60	107
DTX406145	14.5	16	65	115
DTX406150	15.0	16	65	115
DTX406155	15.5	16	65	115
DTX406160	16.0	16	65	115
DTX406165	16.5	18	73	123
DTX406170	17.0	18	73	123
DTX406175	17.5	18	73	123
DTX406180	18.0	18	73	123
DTX406185	18.5	20	79	131
DTX406190	19.0	20	79	131
DTX406195	19.5	20	79	131
DTX406200	20.0	20	79	131

▶ Other shank types are available on your request.

◎ : Excellent ○ : Good

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

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

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RCH-COATED SOLID CARBIDE

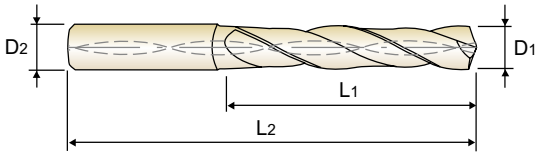
DREAM DRILL X with COOLANT HOLES (5XD)

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

5× D

Unit : mm

EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
RCH-Coating	D1	D2	L1	L2
DTX408010	1.0	3	8	55
DTX408011	1.1	3	12	55
DTX408012	1.2	3	12	55
DTX408013	1.3	3	12	55
DTX408014	1.4	3	12	55
DTX408015	1.5	3	16	55
DTX408016	1.6	3	16	55
DTX408017	1.7	3	16	55
DTX408018	1.8	3	16	55
DTX408019	1.9	3	16	55
DTX408020	2.0	4	21	57
DTX408021	2.1	4	21	57
DTX408022	2.2	4	21	57
DTX408023	2.3	4	21	57
DTX408024	2.4	4	21	57
DTX408025	2.5	4	21	57
DTX408026	2.6	4	21	57
DTX408027	2.7	4	21	57
DTX408028	2.8	4	21	57
DTX408029	2.9	4	21	57
DTX408030	3.0	6	28	66
DTX408031	3.1	6	28	66
DTX408032	3.2	6	28	66
DTX408033	3.3	6	28	66
DTX408034	3.4	6	28	66
DTX408035	3.5	6	28	66
DTX408036	3.6	6	28	66
DTX408037	3.7	6	28	66

EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
RCH-Coating	D1	D2	L1	L2
DTX408038	3.8	6	36	74
DTX408039	3.9	6	36	74
DTX408040	4.0	6	36	74
DTX408041	4.1	6	36	74
DTX408042	4.2	6	36	74
DTX408043	4.3	6	36	74
DTX408044	4.4	6	36	74
DTX408045	4.5	6	36	74
DTX408046	4.6	6	36	74
DTX408047	4.7	6	36	74
DTX408048	4.8	6	44	82
DTX408049	4.9	6	44	82
DTX408050	5.0	6	44	82
DTX408051	5.1	6	44	82
DTX408052	5.2	6	44	82
DTX408053	5.3	6	44	82
DTX408054	5.4	6	44	82
DTX408055	5.5	6	44	82
DTX408056	5.6	6	44	82
DTX408057	5.7	6	44	82
DTX408058	5.8	6	44	82
DTX408059	5.9	6	44	82
DTX408060	6.0	6	44	82
DTX408061	6.1	8	53	91
DTX408062	6.2	8	53	91
DTX408063	6.3	8	53	91
DTX408064	6.4	8	53	91
DTX408065	6.5	8	53	91

▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

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

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

RCH-COATED SOLID CARBIDE

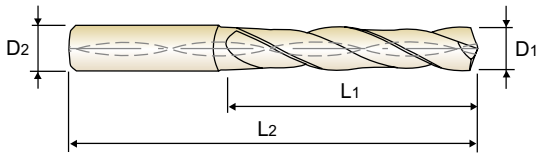
DREAM DRILL X with COOLANT HOLES (5XD)

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

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

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

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RCH-COATED SOLID CARBIDE

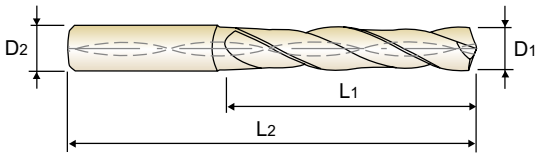
DREAM DRILL X with COOLANT HOLES (5XD)

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

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

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

RCH-COATED SOLID CARBIDE

DREAM DRILL X with COOLANT HOLES (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
RCH-Coating	D1	D2	L1	L2
DTX421030	3.0	6	34	72
DTX421031	3.1	6	34	72
DTX421032	3.2	6	34	72
DTX421033	3.3	6	34	72
DTX421034	3.4	6	34	72
DTX421035	3.5	6	34	72
DTX421036	3.6	6	34	72
DTX421037	3.7	6	34	72
DTX421038	3.8	6	43	81
DTX421039	3.9	6	43	81
DTX421040	4.0	6	43	81
DTX421041	4.1	6	43	81
DTX421042	4.2	6	43	81
DTX421043	4.3	6	43	81
DTX421044	4.4	6	43	81
DTX421045	4.5	6	43	81
DTX421046	4.6	6	43	81
DTX421047	4.7	6	43	81
DTX421048	4.8	6	57	95
DTX421049	4.9	6	57	95
DTX421050	5.0	6	57	95
DTX421051	5.1	6	57	95
DTX421052	5.2	6	57	95
DTX421053	5.3	6	57	95
DTX421054	5.4	6	57	95
DTX421055	5.5	6	57	95
DTX421056	5.6	6	57	95
DTX421057	5.7	6	57	95

EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
RCH-Coating	D1	D2	L1	L2
DTX421058	5.8	6	57	95
DTX421059	5.9	6	57	95
DTX421060	6.0	6	57	95
DTX421061	6.1	8	76	114
DTX421062	6.2	8	76	114
DTX421063	6.3	8	76	114
DTX421064	6.4	8	76	114
DTX421065	6.5	8	76	114
DTX421066	6.6	8	76	114
DTX421067	6.7	8	76	114
DTX421068	6.8	8	76	114
DTX421069	6.9	8	76	114
DTX421070	7.0	8	76	114
DTX421071	7.1	8	76	114
DTX421072	7.2	8	76	114
DTX421073	7.3	8	76	114
DTX421074	7.4	8	76	114
DTX421075	7.5	8	76	114
DTX421076	7.6	8	76	114
DTX421077	7.7	8	76	114
DTX421078	7.8	8	76	114
DTX421079	7.9	8	76	114
DTX421080	8.0	8	76	114
DTX421081	8.1	10	95	142
DTX421082	8.2	10	95	142
DTX421083	8.3	10	95	142
DTX421084	8.4	10	95	142
DTX421085	8.5	10	95	142

▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

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

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

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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
RCH-Coating	D1	D2	L1	L2
DTX421086	8.6	10	95	142
DTX421087	8.7	10	95	142
DTX421088	8.8	10	95	142
DTX421089	8.9	10	95	142
DTX421090	9.0	10	95	142
DTX421091	9.1	10	95	142
DTX421092	9.2	10	95	142
DTX421093	9.3	10	95	142
DTX421094	9.4	10	95	142
DTX421095	9.5	10	95	142
DTX421096	9.6	10	95	142
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

EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
RCH-Coating	D1	D2	L1	L2
DTX421114	11.4	12	114	162
DTX421115	11.5	12	114	162
DTX421116	11.6	12	114	162
DTX421117	11.7	12	114	162
DTX421118	11.8	12	114	162
DTX421119	11.9	12	114	162
DTX421120	12.0	12	114	162
DTX421125	12.5	14	133	178
DTX421130	13.0	14	133	178
DTX421135	13.5	14	133	178
DTX421140	14.0	14	133	178

▶ Other shank types are available on your request.

◎ : Excellent ○ : Good

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

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

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
P	2	Non-alloy steel	70	RPM	22280	11140
				FEED	0.03-0.05	0.05-0.07
	3		70	RPM	22280	11140
				FEED	0.03-0.05	0.05-0.07
	4		70	RPM	22280	11140
				FEED	0.03-0.05	0.05-0.07
	5		60	RPM	19100	9550
				FEED	0.03-0.05	0.05-0.07
	6	Low alloy steel	70	RPM	22280	11140
				FEED	0.03-0.05	0.05-0.07
	7		60	RPM	19100	9550
				FEED	0.03-0.05	0.05-0.07
	8		60	RPM	19100	9550
				FEED	0.02-0.04	0.03-0.05
	9		30	RPM	9550	4770
				FEED	0.02-0.04	0.03-0.05
	10	High alloyed steel, and tool steel	50	RPM	15920	7960
				FEED	0.03-0.05	0.05-0.07
	11		30	RPM	9550	4770
				FEED	0.02-0.04	0.03-0.05
M	12	Stainless steel	50	RPM	15920	7960
				FEED	0.03-0.05	0.05-0.07
	13		35	RPM	11140	5570
				FEED	0.02-0.04	0.03-0.05
K	15	Grey cast iron	70	RPM	22280	11140
				FEED	0.04-0.06	0.04-0.06
	16		65	RPM	20690	10350
				FEED	0.04-0.06	0.04-0.06
	17	Nodular cast iron	70	RPM	22280	11140
				FEED	0.04-0.06	0.04-0.06
	18		50	RPM	15920	7960
				FEED	0.04-0.06	0.04-0.06
	19	Malleable cast iron	60	RPM	19100	9550
				FEED	0.04-0.06	0.04-0.06
	20		50	RPM	15920	7960
				FEED	0.03-0.05	0.05-0.07
H	38	Hardened steel	20	RPM	6370	3180
				FEED	0.01-0.02	0.01-0.03

Vc	Parameter	Drill Diameter (mm) 3.0	4.0	5.0	6.0
100	RPM	10610	7960	6370	5310
	FEED	0.06-0.12	0.08-0.14	0.14-0.20	0.16-0.22
100	RPM	10610	7960	6370	5310
	FEED	0.06-0.12	0.08-0.14	0.14-0.20	0.16-0.22
100	RPM	10610	7960	6370	5310
	FEED	0.04-0.10	0.07-0.13	0.10-0.16	0.12-0.18
80	RPM	8490	6370	5090	4240
	FEED	0.04-0.10	0.07-0.13	0.10-0.16	0.12-0.18
100	RPM	10610	7960	6370	5310
	FEED	0.06-0.12	0.08-0.14	0.14-0.20	0.16-0.22
80	RPM	8490	6370	5090	4240
	FEED	0.06-0.12	0.08-0.14	0.14-0.20	0.16-0.22
80	RPM	8490	6370	5090	4240
	FEED	0.04-0.10	0.07-0.13	0.10-0.16	0.12-0.18
40	RPM	4240	3180	2550	2120
	FEED	0.03-0.08	0.05-0.11	0.08-0.14	0.10-0.16
70	RPM	7430	5570	4460	3710
	FEED	0.04-0.10	0.07-0.13	0.10-0.16	0.12-0.18
40	RPM	4240	3180	2550	2120
	FEED	0.03-0.08	0.05-0.11	0.08-0.14	0.10-0.16
70	RPM	7430	5570	4460	3710
	FEED	0.06-0.12	0.08-0.14	0.14-0.20	0.16-0.22
45	RPM	4770	3580	2860	2390
	FEED	0.04-0.10	0.07-0.13	0.10-0.16	0.12-0.18
100	RPM	10610	7960	6370	5310
	FEED	0.08-0.14	0.12-0.18	0.15-0.22	0.20-0.26
80	RPM	8490	6370	5090	4240
	FEED	0.06-0.12	0.08-0.14	0.14-0.20	0.16-0.22
100	RPM	10610	7960	6370	5310
	FEED	0.08-0.14	0.12-0.18	0.15-0.22	0.20-0.26
70	RPM	7430	5570	4460	3710
	FEED	0.06-0.12	0.08-0.14	0.14-0.20	0.16-0.22
80	RPM	8490	6370	5090	4240
	FEED	0.08-0.14	0.12-0.18	0.15-0.22	0.20-0.26
70	RPM	7430	5570	4460	3710
	FEED	0.06-0.12	0.08-0.14	0.14-0.20	0.16-0.22
25	RPM	2650	1990	1590	1330
	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	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
	3		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
	4		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
	5		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
	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
	7		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
	8		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
	9		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
	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
	11		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
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
	13		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		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		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		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	0.05-0.10

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

VAMATEC www.vamatec.be I info@vamatec.be

DTX406, DTX408, DTX421 SERIES with COOLANT HOLES

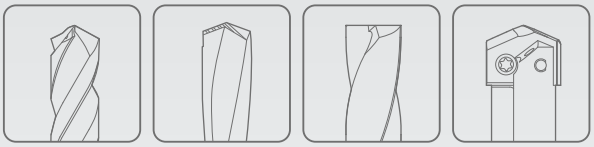
Vc = m/min.
RPM = rev./min.
FEED = mm/rev.

ISO	VDI 3323	Material Description	Vc	Parameter	Drill Diameter (mm) 1.0	2.0	Vc	Parameter	Drill Diameter (mm) 3.0	4.0	5.0	6.0
P	2	Non-alloy steel	80	RPM FEED	25460 0.03-0.05	12730 0.05-0.07	110	RPM FEED	11670 0.06-0.12	8750 0.08-0.14	7000 0.14-0.20	5840 0.16-0.22
	3		80	RPM FEED	25460 0.03-0.05	12730 0.05-0.07	110	RPM FEED	11670 0.06-0.12	8750 0.08-0.14	7000 0.14-0.20	5840 0.16-0.22
	4		80	RPM FEED	25460 0.03-0.05	12730 0.05-0.07	110	RPM FEED	11670 0.04-0.10	8750 0.07-0.13	7000 0.10-0.16	5840 0.12-0.18
	5		70	RPM FEED	22280 0.03-0.05	11140 0.05-0.07	90	RPM FEED	9550 0.04-0.10	7160 0.07-0.13	5730 0.10-0.16	4770 0.12-0.18
	6	Low alloy steel	80	RPM FEED	25460 0.03-0.05	12730 0.05-0.07	110	RPM FEED	11670 0.06-0.12	8750 0.08-0.14	7000 0.14-0.20	5840 0.16-0.22
	7		70	RPM FEED	22280 0.03-0.05	11140 0.05-0.07	90	RPM FEED	9550 0.06-0.12	7160 0.08-0.14	5730 0.14-0.20	4770 0.16-0.22
	8		70	RPM FEED	22280 0.02-0.04	11140 0.03-0.05	90	RPM FEED	9550 0.04-0.10	7160 0.07-0.13	5730 0.10-0.16	4770 0.12-0.18
	9		40	RPM FEED	12730 0.02-0.04	6370 0.03-0.05	50	RPM FEED	5310 0.03-0.08	3980 0.05-0.11	3180 0.08-0.14	2650 0.10-0.16
	10	High alloyed steel, and tool steel	60	RPM FEED	19100 0.03-0.05	9550 0.05-0.07	80	RPM FEED	8490 0.04-0.10	6370 0.07-0.13	5090 0.10-0.16	4240 0.12-0.18
	11		40	RPM FEED	12730 0.02-0.04	6370 0.03-0.05	45	RPM FEED	4770 0.03-0.08	3580 0.05-0.11	2860 0.08-0.14	2390 0.10-0.16
M	12	Stainless steel	60	RPM FEED	19100 0.03-0.05	9550 0.05-0.07	80	RPM FEED	8490 0.06-0.12	6370 0.08-0.14	5090 0.14-0.20	4240 0.16-0.22
	13		45	RPM FEED	14320 0.02-0.04	7160 0.03-0.05	55	RPM FEED	5840 0.04-0.10	4380 0.07-0.13	3500 0.10-0.16	2920 0.12-0.18
K	15	Grey cast iron	80	RPM FEED	25460 0.04-0.06	12730 0.04-0.06	110	RPM FEED	11670 0.08-0.14	8750 0.12-0.18	7000 0.15-0.22	5840 0.20-0.26
	16		75	RPM FEED	23870 0.04-0.06	11940 0.04-0.06	95	RPM FEED	10080 0.06-0.12	7560 0.08-0.14	6050 0.14-0.20	5040 0.16-0.22
	17	Nodular cast iron	90	RPM FEED	28650 0.04-0.06	14320 0.04-0.06	120	RPM FEED	12730 0.08-0.14	9550 0.12-0.18	7640 0.15-0.22	6370 0.20-0.26
	18		60	RPM FEED	19100 0.04-0.06	9550 0.04-0.06	80	RPM FEED	8490 0.06-0.12	6370 0.08-0.14	5090 0.14-0.20	4240 0.16-0.22
	19	Malleable cast iron	70	RPM FEED	22280 0.04-0.06	11140 0.04-0.06	90	RPM FEED	9550 0.08-0.14	7160 0.12-0.18	5730 0.15-0.22	4770 0.20-0.26
	20		60	RPM FEED	19100 0.03-0.05	9550 0.05-0.07	80	RPM FEED	8490 0.06-0.12	6370 0.08-0.14	5090 0.14-0.20	4240 0.16-0.22
H	38	Hardened steel	25	RPM FEED	7960 0.01-0.02	3980 0.01-0.03	30	RPM FEED	3180 0.01-0.03	2390 0.01-0.04	1910 0.02-0.05	1590 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	110	RPM FEED	4380 0.18-0.24	3500 0.19-0.27	2920 0.21-0.29	2500 0.23-0.31	2190 0.25-0.33	1950 0.28-0.38	1750 0.30-0.40
	3		110	RPM FEED	4380 0.18-0.24	3500 0.19-0.27	2920 0.21-0.29	2500 0.23-0.31	2190 0.25-0.33	1950 0.28-0.38	1750 0.30-0.40
	4		110	RPM FEED	4380 0.14-0.20	3500 0.15-0.23	2920 0.17-0.25	2500 0.18-0.26	2190 0.19-0.27	1950 0.20-0.30	1750 0.22-0.32
	5		90	RPM FEED	3580 0.14-0.20	2860 0.15-0.23	2390 0.17-0.25	2050 0.18-0.26	1790 0.19-0.27	1590 0.20-0.30	1430 0.22-0.32
	6	Low alloy steel	110	RPM FEED	4380 0.18-0.24	3500 0.19-0.27	2920 0.21-0.29	2500 0.23-0.31	2190 0.25-0.33	1950 0.28-0.38	1750 0.30-0.40
	7		90	RPM FEED	3580 0.18-0.24	2860 0.19-0.27	2390 0.21-0.29	2050 0.23-0.31	1790 0.25-0.33	1590 0.28-0.38	1430 0.30-0.40
	8		90	RPM FEED	3580 0.14-0.20	2860 0.15-0.23	2390 0.17-0.25	2050 0.18-0.26	1790 0.19-0.27	1590 0.20-0.30	1430 0.22-0.32
	9		50	RPM FEED	1990 0.12-0.18	1590 0.13-0.19	1330 0.14-0.20	1140 0.15-0.21	990 0.16-0.22	880 0.17-0.25	800 0.18-0.28
	10	High alloyed steel, and tool steel	80	RPM FEED	3180 0.14-0.20	2550 0.15-0.23	2120 0.17-0.25	1820 0.18-0.26	1590 0.19-0.27	1410 0.20-0.30	1270 0.22-0.32
	11		45	RPM FEED	1790 0.12-0.18	1430 0.13-0.19	1190 0.14-0.20	1020 0.15-0.21	900 0.16-0.22	800 0.17-0.25	720 0.18-0.28
M	12	Stainless steel	80	RPM FEED	3180 0.18-0.24	2550 0.19-0.27	2120 0.21-0.29	1820 0.23-0.31	1590 0.25-0.33	1410 0.28-0.38	1270 0.30-0.40
	13		55	RPM FEED	2190 0.14-0.20	1750 0.15-0.23	1460 0.17-0.25	1250 0.18-0.26	1090 0.19-0.27	970 0.20-0.30	880 0.22-0.32
K	15	Grey cast iron	110	RPM FEED	4380 0.22-0.28	3500 0.25-0.33	2920 0.27-0.35	2500 0.29-0.37	2190 0.31-0.39	1950 0.32-0.42	1750 0.34-0.44
	16		95	RPM FEED	3780 0.18-0.24	3020 0.19-0.27	2520 0.21-0.29	2160 0.23-0.31	1890 0.25-0.33	1680 0.28-0.38	1510 0.30-0.40
	17	Nodular cast iron	120	RPM FEED	4770 0.22-0.28	3820 0.25-0.33	3180 0.27-0.35	2730 0.29-0.37	2390 0.31-0.39	2120 0.32-0.42	1910 0.34-0.44
	18		80	RPM FEED	3180 0.18-0.24	2550 0.19-0.27	2120 0.21-0.29	1820 0.23-0.31	1590 0.25-0.33	1410 0.28-0.38	1270 0.30-0.40
	19	Malleable cast iron	90	RPM FEED	3580 0.22-0.28	2860 0.25-0.33	2390 0.27-0.35	2050 0.29-0.37	1790 0.31-0.39	1590 0.32-0.42	1430 0.34-0.44
	20		80	RPM FEED	3180 0.18-0.24	2550 0.19-0.27	2120 0.21-0.29	1820 0.23-0.31	1590 0.25-0.33	1410 0.28-0.38	1270 0.30-0.40
H	38	Hardened steel	30	RPM FEED	1190 0.03-0.06	950 0.04-0.07	800 0.04-0.08	680 0.05-0.09	600 0.05-0.09	530 0.05-0.10	480 0.05-0.10

▶ Recommend to reduce the feed rate as following **Feed 100%** : DTX406(3×D), DTX408(5×D) **Feed 75%** : DTX421(8×D)

Global Cutting Tool Leader **YG-1**



DREAM DRILLS

Leading Through Innovation



SOLID CARBIDE

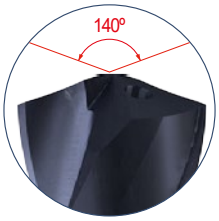
DREAM DRILLS -GENERAL

- For General Purpose (HRc30 to HRc50)

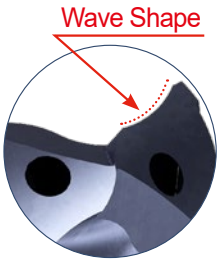
DREAM DRILLS GENERAL



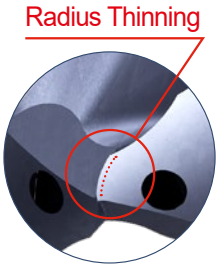
Micro-grained carbide for wear resistance and longer tool life



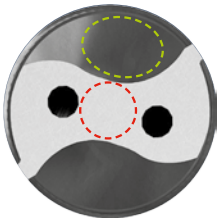
140 Degree Point Angle
for good centering and low thrust



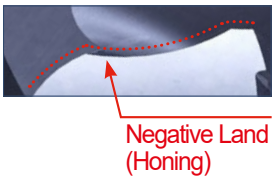
Wave Shape Cutting Edge
will allow low thrust , stable torque and long tool life



Radius Thinning
for Self Centering and Chip Breaking



Optimized Flute Shape
for strength of drill and smooth chip evacuation

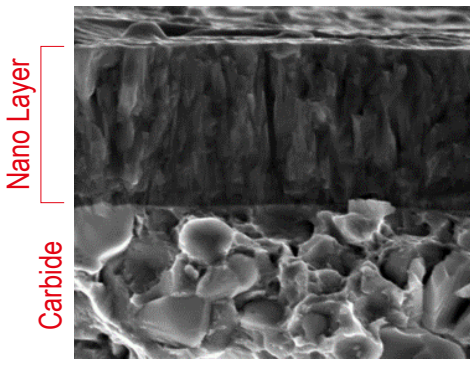


Negative Land on the cutting edge
for Reliable Tool Life

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

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

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

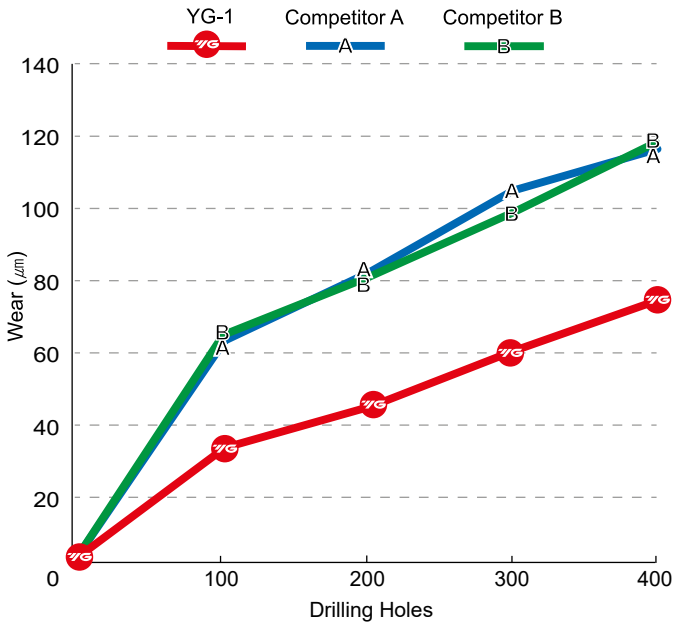


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CASE STUDY

▶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



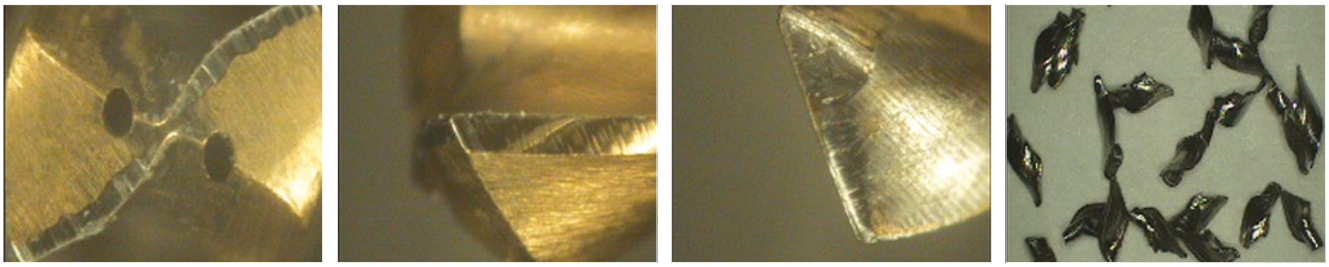
YG

Total Drilling 400 Holes



Competitor A

Total Drilling 400 Holes



Competitor B

Total Drilling 400 Holes



TiAlN-COATED SOLID CARBIDE

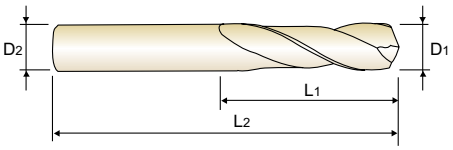
DREAM DRILLS GENERAL without COOLANT HOLES (3XD)

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° | TiAlN

p.60

STUB
3 × D

Unit : mm

EDP No.	Drill Diameter	Flute Length	Overall Length
TiAlN	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

EDP No.	Drill Diameter	Flute Length	Overall Length
TiAlN	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	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended		◎	◎	◎	○	◎	◎	○	○	◎	○	○	○		◎	○	◎	○	◎	○

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

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TiAlN-COATED SOLID CARBIDE

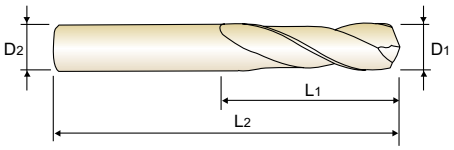
DREAM DRILLS GENERAL without COOLANT HOLES (3XD)

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° | TiAlN p.60

STUB

3 × D

Unit : mm

EDP No.	Drill Diameter	Flute Length	Overall Length
TiAlN	D1=D2	L_1	L_2
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

EDP No.	Drill Diameter	Flute Length	Overall Length
TiAlN	D1=D2	L_1	L_2
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	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended		◎	◎	◎	○	◎	◎	○	○	◎	○	○	○		◎	○	◎	○	◎	○

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

SERIES

PLAIN SHANK **DH423**

FLAT SHANK **DH443**

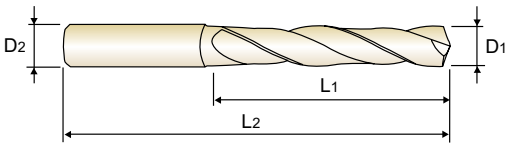
TiAlN-COATED SOLID CARBIDE

DREAM DRILLS GENERAL without COOLANT HOLES (3XD)

- Drilling for Steel, Cast Steel, Cast Iron, Malleable Cast Iron
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DIN 6537 | CARBIDE | 30° | h6 | m7 | 140° | TiAlN

p.60

SHORT

3 × D

Unit : mm

EDP No.		Drill Diameter	Shank Diameter	Flute Length	Overall Length
Plain	Flat	D_1	D_2	L_1	L_2
DH423030	DH443030	3.0	6	20	62
DH423031	DH443031	3.1	6	20	62
DH423032	DH443032	3.2	6	20	62
DH423033	DH443033	3.3	6	20	62
DH423034	DH443034	3.4	6	20	62
DH423035	DH443035	3.5	6	20	62
DH423036	DH443036	3.6	6	20	62
DH423037	DH443037	3.7	6	20	62
DH423038	DH443038	3.8	6	24	66
DH423039	DH443039	3.9	6	24	66
DH423040	DH443040	4.0	6	24	66
DH423041	DH443041	4.1	6	24	66
DH423042	DH443042	4.2	6	24	66
DH423043	DH443043	4.3	6	24	66
DH423044	DH443044	4.4	6	24	66
DH423045	DH443045	4.5	6	24	66
DH423046	DH443046	4.6	6	24	66
DH423047	DH443047	4.7	6	24	66
DH423048	DH443048	4.8	6	28	66
DH423049	DH443049	4.9	6	28	66
DH423050	DH443050	5.0	6	28	66
DH423051	DH443051	5.1	6	28	66
DH423052	DH443052	5.2	6	28	66
DH423053	DH443053	5.3	6	28	66
DH423054	DH443054	5.4	6	28	66
DH423055	DH443055	5.5	6	28	66
DH423056	DH443056	5.6	6	28	66
DH423057	DH443057	5.7	6	28	66
DH423058	DH443058	5.8	6	28	66
DH423059	DH443059	5.9	6	28	66

EDP No.		Drill Diameter	Shank Diameter	Flute Length	Overall Length
Plain	Flat	D_1	D_2	L_1	L_2
DH423060	DH443060	6.0	6	28	66
DH423061	DH443061	6.1	8	34	79
DH423062	DH443062	6.2	8	34	79
DH423063	DH443063	6.3	8	34	79
DH423064	DH443064	6.4	8	34	79
DH423065	DH443065	6.5	8	34	79
DH423066	DH443066	6.6	8	34	79
DH423067	DH443067	6.7	8	34	79
DH423068	DH443068	6.8	8	34	79
DH423069	DH443069	6.9	8	34	79
DH423070	DH443070	7.0	8	34	79
DH423071	DH443071	7.1	8	41	79
DH423072	DH443072	7.2	8	41	79
DH423073	DH443073	7.3	8	41	79
DH423074	DH443074	7.4	8	41	79
DH423075	DH443075	7.5	8	41	79
DH423076	DH443076	7.6	8	41	79
DH423077	DH443077	7.7	8	41	79
DH423078	DH443078	7.8	8	41	79
DH423079	DH443079	7.9	8	41	79
DH423080	DH443080	8.0	8	41	79
DH423081	DH443081	8.1	10	47	89
DH423082	DH443082	8.2	10	47	89
DH423083	DH443083	8.3	10	47	89
DH423084	DH443084	8.4	10	47	89
DH423085	DH443085	8.5	10	47	89
DH423086	DH443086	8.6	10	47	89
DH423087	DH443087	8.7	10	47	89
DH423088	DH443088	8.8	10	47	89
DH423089	DH443089	8.9	10	47	89

▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

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

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

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SERIES

PLAIN SHANK **DH423**

FLAT SHANK **DH443**

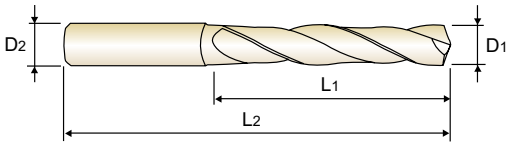
TiAlN-COATED SOLID CARBIDE

DREAM DRILLS GENERAL without COOLANT HOLES (3XD)

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- Optimized flute shape for strength of drilling and smooth chip evacuation







DIN 6537 | CARBIDE | 30° | h6 | m7 | 140° | TiAlN

p.60

SHORT

3 × D

Unit : mm

EDP No.		Drill Diameter	Shank Diameter	Flute Length	Overall Length
Plain	Flat	D_1	D_2	L_1	L_2
DH423090	DH443090	9.0	10	47	89
DH423091	DH443091	9.1	10	47	89
DH423092	DH443092	9.2	10	47	89
DH423093	DH443093	9.3	10	47	89
DH423094	DH443094	9.4	10	47	89
DH423095	DH443095	9.5	10	47	89
DH423096	DH443096	9.6	10	47	89
DH423097	DH443097	9.7	10	47	89
DH423098	DH443098	9.8	10	47	89
DH423099	DH443099	9.9	10	47	89
DH423100	DH443100	10.0	10	47	89
DH423101	DH443101	10.1	12	55	102
DH423102	DH443102	10.2	12	55	102
DH423103	DH443103	10.3	12	55	102
DH423104	DH443104	10.4	12	55	102
DH423105	DH443105	10.5	12	55	102
DH423106	DH443106	10.6	12	55	102
DH423107	DH443107	10.7	12	55	102
DH423108	DH443108	10.8	12	55	102
DH423109	DH443109	10.9	12	55	102
DH423110	DH443110	11.0	12	55	102
DH423111	DH443111	11.1	12	55	102
DH423112	DH443112	11.2	12	55	102
DH423113	DH443113	11.3	12	55	102
DH423114	DH443114	11.4	12	55	102
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

EDP No.		Drill Diameter	Shank Diameter	Flute Length	Overall Length
Plain	Flat	D_1	D_2	L_1	L_2
DH423120	DH443120	12.0	12	55	102
DH423123	DH443123	12.3	14	60	107
DH423125	DH443125	12.5	14	60	107
DH423128	DH443128	12.8	14	60	107
DH423130	DH443130	13.0	14	60	107
DH423135	DH443135	13.5	14	60	107
DH423138	DH443138	13.8	14	60	107
DH423140	DH443140	14.0	14	60	107
DH423145	DH443145	14.5	16	65	115
DH423148	DH443148	14.8	16	65	115
DH423150	DH443150	15.0	16	65	115
DH423155	DH443155	15.5	16	65	115
DH423158	DH443158	15.8	16	65	115
DH423160	DH443160	16.0	16	65	115
DH423165	DH443165	16.5	18	73	123
DH423168	DH443168	16.8	18	73	123
DH423170	DH443170	17.0	18	73	123
DH423175	DH443175	17.5	18	73	123
DH423178	DH443178	17.8	18	73	123
DH423180	DH443180	18.0	18	73	123
DH423185	DH443185	18.5	20	79	131
DH423190	DH443190	19.0	20	79	131
DH423195	DH443195	19.5	20	79	131
DH423198	DH443198	19.8	20	79	131
DH423200	DH443200	20.0	20	79	131

▶ Other shank types are available on your request.

◎ : Excellent ○ : Good

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

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

SERIES

PLAIN SHANK **DH424**

FLAT SHANK **DH444**

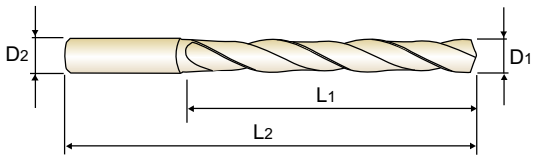
TiAlN-COATED SOLID CARBIDE

DREAM DRILLS GENERAL without COOLANT HOLES (5XD)

- 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° | TiAlN

p.60

LONG

5× D

Unit : mm

EDP No.		Drill Diameter	Shank Diameter	Flute Length	Overall Length
Plain	Flat	D_1	D_2	L_1	L_2
DH424010	-	1.0	3	8	55
DH424011	-	1.1	3	12	55
DH424012	-	1.2	3	12	55
DH424013	-	1.3	3	12	55
DH424014	-	1.4	3	12	55
DH424015	-	1.5	3	16	55
DH424016	-	1.6	3	16	55
DH424017	-	1.7	3	16	55
DH424018	-	1.8	3	16	55
DH424019	-	1.9	3	16	55
DH424020	-	2.0	4	21	57
DH424021	-	2.1	4	21	57
DH424022	-	2.2	4	21	57
DH424023	-	2.3	4	21	57
DH424024	-	2.4	4	21	57
DH424025	-	2.5	4	21	57
DH424026	-	2.6	4	21	57
DH424027	-	2.7	4	21	57
DH424028	-	2.8	4	21	57
DH424029	-	2.9	4	21	57
DH424030	DH444030	3.0	6	28	66
DH424031	DH444031	3.1	6	28	66
DH424032	DH444032	3.2	6	28	66
DH424033	DH444033	3.3	6	28	66
DH424034	DH444034	3.4	6	28	66
DH424035	DH444035	3.5	6	28	66
DH424036	DH444036	3.6	6	28	66
DH424037	DH444037	3.7	6	28	66

EDP No.		Drill Diameter	Shank Diameter	Flute Length	Overall Length
Plain	Flat	D_1	D_2	L_1	L_2
DH424038	DH444038	3.8	6	36	74
DH424039	DH444039	3.9	6	36	74
DH424040	DH444040	4.0	6	36	74
DH424041	DH444041	4.1	6	36	74
DH424042	DH444042	4.2	6	36	74
DH424043	DH444043	4.3	6	36	74
DH424044	DH444044	4.4	6	36	74
DH424045	DH444045	4.5	6	36	74
DH424046	DH444046	4.6	6	36	74
DH424047	DH444047	4.7	6	36	74
DH424048	DH444048	4.8	6	44	82
DH424049	DH444049	4.9	6	44	82
DH424050	DH444050	5.0	6	44	82
DH424051	DH444051	5.1	6	44	82
DH424052	DH444052	5.2	6	44	82
DH424053	DH444053	5.3	6	44	82
DH424054	DH444054	5.4	6	44	82
DH424055	DH444055	5.5	6	44	82
DH424056	DH444056	5.6	6	44	82
DH424057	DH444057	5.7	6	44	82
DH424058	DH444058	5.8	6	44	82
DH424059	DH444059	5.9	6	44	82
DH424060	DH444060	6.0	6	44	82
DH424061	DH444061	6.1	8	53	91
DH424062	DH444062	6.2	8	53	91
DH424063	DH444063	6.3	8	53	91
DH424064	DH444064	6.4	8	53	91
DH424065	DH444065	6.5	8	53	91

▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

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

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

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SERIES

PLAIN SHANK **DH424**

FLAT SHANK **DH444**

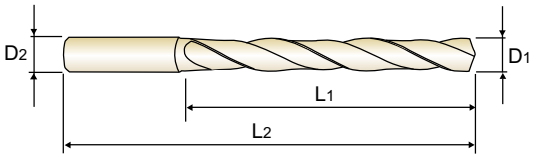
TiAlN-COATED SOLID CARBIDE

DREAM DRILLS GENERAL without COOLANT HOLES (5XD)

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DIN 6537 | CARBIDE | 30° | h6 | m7 | 140° | TiAlN

p.60

LONG

5× D

Unit : mm

EDP No.		Drill Diameter	Shank Diameter	Flute Length	Overall Length
Plain	Flat	D_1	D_2	L_1	L_2
DH424066	DH444066	6.6	8	53	91
DH424067	DH444067	6.7	8	53	91
DH424068	DH444068	6.8	8	53	91
DH424069	DH444069	6.9	8	53	91
DH424070	DH444070	7.0	8	53	91
DH424071	DH444071	7.1	8	53	91
DH424072	DH444072	7.2	8	53	91
DH424073	DH444073	7.3	8	53	91
DH424074	DH444074	7.4	8	53	91
DH424075	DH444075	7.5	8	53	91
DH424076	DH444076	7.6	8	53	91
DH424077	DH444077	7.7	8	53	91
DH424078	DH444078	7.8	8	53	91
DH424079	DH444079	7.9	8	53	91
DH424080	DH444080	8.0	8	53	91
DH424081	DH444081	8.1	10	61	103
DH424082	DH444082	8.2	10	61	103
DH424083	DH444083	8.3	10	61	103
DH424084	DH444084	8.4	10	61	103
DH424085	DH444085	8.5	10	61	103
DH424086	DH444086	8.6	10	61	103
DH424087	DH444087	8.7	10	61	103
DH424088	DH444088	8.8	10	61	103
DH424089	DH444089	8.9	10	61	103
DH424090	DH444090	9.0	10	61	103
DH424091	DH444091	9.1	10	61	103
DH424092	DH444092	9.2	10	61	103
DH424093	DH444093	9.3	10	61	103

EDP No.		Drill Diameter	Shank Diameter	Flute Length	Overall Length
Plain	Flat	D_1	D_2	L_1	L_2
DH424094	DH444094	9.4	10	61	103
DH424095	DH444095	9.5	10	61	103
DH424096	DH444096	9.6	10	61	103
DH424097	DH444097	9.7	10	61	103
DH424098	DH444098	9.8	10	61	103
DH424099	DH444099	9.9	10	61	103
DH424100	DH444100	10.0	10	61	103
DH424101	DH444101	10.1	12	71	118
DH424102	DH444102	10.2	12	71	118
DH424103	DH444103	10.3	12	71	118
DH424104	DH444104	10.4	12	71	118
DH424105	DH444105	10.5	12	71	118
DH424106	DH444106	10.6	12	71	118
DH424107	DH444107	10.7	12	71	118
DH424108	DH444108	10.8	12	71	118
DH424109	DH444109	10.9	12	71	118
DH424110	DH444110	11.0	12	71	118
DH424111	DH444111	11.1	12	71	118
DH424112	DH444112	11.2	12	71	118
DH424113	DH444113	11.3	12	71	118
DH424114	DH444114	11.4	12	71	118
DH424115	DH444115	11.5	12	71	118
DH424116	DH444116	11.6	12	71	118
DH424117	DH444117	11.7	12	71	118
DH424118	DH444118	11.8	12	71	118
DH424119	DH444119	11.9	12	71	118
DH424120	DH444120	12.0	12	71	118
DH424125	DH444125	12.5	14	77	124

▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

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

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

SERIES

PLAIN SHANK **DH424**

FLAT SHANK **DH444**

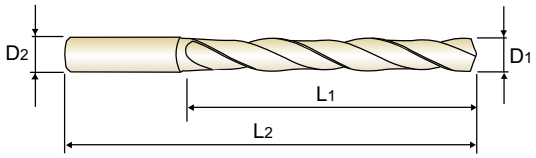
TiAlN-COATED SOLID CARBIDE

DREAM DRILLS GENERAL without COOLANT HOLES (5XD)

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- Optimized flute shape for strength of drilling and smooth chip evacuation







DIN 6537 | CARBIDE | 30° | h6 | m7 | 140° | TiAlN

p.60

LONG

5× D

Unit : mm

EDP No.		Drill Diameter	Shank Diameter	Flute Length	Overall Length
Plain	Flat	D_1	D_2	L_1	L_2
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

EDP No.		Drill Diameter	Shank Diameter	Flute Length	Overall Length
Plain	Flat	D_1	D_2	L_1	L_2
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.

◎ : Excellent ○ : Good

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

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

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SERIES

PLAIN SHANK **DH406**

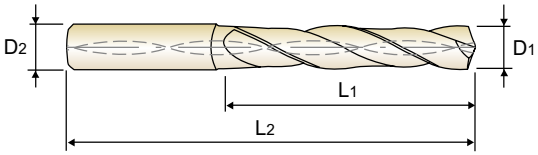
FLAT SHANK **DH446**

TiAlN-COATED SOLID CARBIDE

DREAM DRILLS GENERAL with COOLANT HOLES (3XD)

- 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 | TiAlN

p.61

SHORT

3× D

Unit : mm

EDP No.		Drill Diameter	Shank Diameter	Flute Length	Overall Length
Plain	Flat	D_1	D_2	L_1	L_2
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

EDP No.		Drill Diameter	Shank Diameter	Flute Length	Overall Length
Plain	Flat	D_1	D_2	L_1	L_2
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					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended		◎	◎	◎	○	◎	◎	○	○	◎	○	○	○		◎	○	◎	○	◎	○

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

SERIES

PLAIN SHANK **DH406**

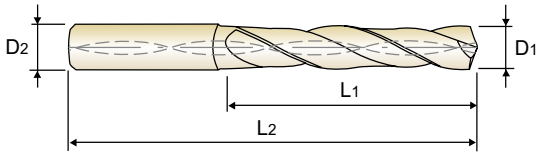
FLAT SHANK **DH446**

TiAlN-COATED SOLID CARBIDE

DREAM DRILLS GENERAL with COOLANT HOLES (3XD)

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- Optimized flute shape for strength of drilling and smooth chip evacuation





DIN 6537 | CARBIDE | 30° | h6 | m7 | 140° | 20 bar | TiAlN

p.61

SHORT 3× D

Unit : mm

EDP No.		Drill Diameter	Shank Diameter	Flute Length	Overall Length
Plain	Flat	D_1	D_2	L_1	L_2
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	D_1	D_2	L_1	L_2
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					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended		◎	◎	◎	○	◎	◎	○	○	◎	○	○	○		◎	○	◎	○	◎	○

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

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SERIES

PLAIN SHANK **DH408**

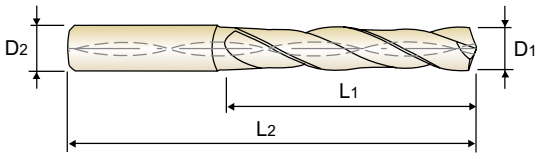
FLAT SHANK **DH448**

TiAlN-COATED SOLID CARBIDE

DREAM DRILLS GENERAL with COOLANT HOLES (5XD)

- 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 | TiAlN

p.61

LONG

5× D

Unit : mm

EDP No.		Drill Diameter	Shank Diameter	Flute Length	Overall Length
Plain	Flat	D_1	D_2	L_1	L_2
DH408010	-	1.0	3	8	55
DH408011	-	1.1	3	12	55
DH408012	-	1.2	3	12	55
DH408013	-	1.3	3	12	55
DH408014	-	1.4	3	12	55
DH408015	-	1.5	3	16	55
DH408016	-	1.6	3	16	55
DH408017	-	1.7	3	16	55
DH408018	-	1.8	3	16	55
DH408019	-	1.9	3	16	55
DH408020	-	2.0	4	21	57
DH408021	-	2.1	4	21	57
DH408022	-	2.2	4	21	57
DH408023	-	2.3	4	21	57
DH408024	-	2.4	4	21	57
DH408025	-	2.5	4	21	57
DH408026	-	2.6	4	21	57
DH408027	-	2.7	4	21	57
DH408028	-	2.8	4	21	57
DH408029	-	2.9	4	21	57
DH408030	DH448030	3.0	6	28	66
DH408031	DH448031	3.1	6	28	66
DH408032	DH448032	3.2	6	28	66
DH408033	DH448033	3.3	6	28	66
DH408034	DH448034	3.4	6	28	66
DH408035	DH448035	3.5	6	28	66
DH408036	DH448036	3.6	6	28	66
DH408037	DH448037	3.7	6	28	66

EDP No.		Drill Diameter	Shank Diameter	Flute Length	Overall Length
Plain	Flat	D_1	D_2	L_1	L_2
DH408038	DH448038	3.8	6	36	74
DH408039	DH448039	3.9	6	36	74
DH408040	DH448040	4.0	6	36	74
DH408041	DH448041	4.1	6	36	74
DH408042	DH448042	4.2	6	36	74
DH408043	DH448043	4.3	6	36	74
DH408044	DH448044	4.4	6	36	74
DH408045	DH448045	4.5	6	36	74
DH408046	DH448046	4.6	6	36	74
DH408047	DH448047	4.7	6	36	74
DH408048	DH448048	4.8	6	44	82
DH408049	DH448049	4.9	6	44	82
DH408050	DH448050	5.0	6	44	82
DH408051	DH448051	5.1	6	44	82
DH408052	DH448052	5.2	6	44	82
DH408053	DH448053	5.3	6	44	82
DH408054	DH448054	5.4	6	44	82
DH408055	DH448055	5.5	6	44	82
DH408056	DH448056	5.6	6	44	82
DH408057	DH448057	5.7	6	44	82
DH408058	DH448058	5.8	6	44	82
DH408059	DH448059	5.9	6	44	82
DH408060	DH448060	6.0	6	44	82
DH408061	DH448061	6.1	8	53	91
DH408062	DH448062	6.2	8	53	91
DH408063	DH448063	6.3	8	53	91
DH408064	DH448064	6.4	8	53	91
DH408065	DH448065	6.5	8	53	91

▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

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

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

SERIES

PLAIN SHANK **DH408**

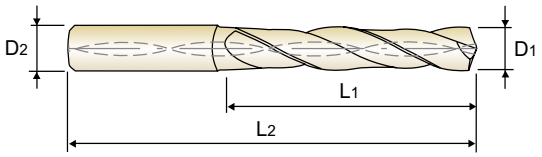
FLAT SHANK **DH448**

TiAlN-COATED SOLID CARBIDE

DREAM DRILLS GENERAL with COOLANT HOLES (5XD)

- 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 | TiAlN

p.61

LONG

5× D

Unit : mm

EDP No.		Drill Diameter	Shank Diameter	Flute Length	Overall Length
Plain	Flat	D_1	D_2	L_1	L_2
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

EDP No.		Drill Diameter	Shank Diameter	Flute Length	Overall Length
Plain	Flat	D_1	D_2	L_1	L_2
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					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended		◎	◎	◎	○	◎	◎	○	○	◎	○	○	○		◎	○	◎	○	◎	○

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

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SERIES

PLAIN SHANK **DH408**

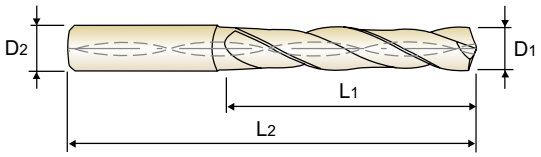
FLAT SHANK **DH448**

TiAlN-COATED SOLID CARBIDE

DREAM DRILLS GENERAL with COOLANT HOLES (5XD)

- 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 | TiAlN

p.61

LONG

5× D

Unit : mm

EDP No.		Drill Diameter	Shank Diameter	Flute Length	Overall Length
Plain	Flat	D_1	D_2	L_1	L_2
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

EDP No.		Drill Diameter	Shank Diameter	Flute Length	Overall Length
Plain	Flat	D_1	D_2	L_1	L_2
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					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended		◎	◎	◎	○	◎	◎	○	○	◎	○	○	○		◎	○	◎	○	◎	○

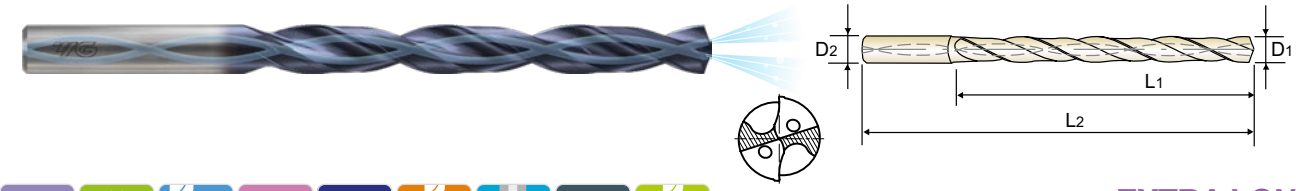
ISO	N										S							H			
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel		Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28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

TiAlN-COATED SOLID CARBIDE

DREAM DRILLS GENERAL with COOLANT HOLES (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



DIN 6537 | CARBIDE | 30° | h6 | m7 | 140° | 20 bar | TiAlN

p.61

EXTRA LONG

8× D

Unit : mm

EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
TiAlN	D_1	D_2	L_1	L_2
DH421030	3.0	6	34	72
DH421031	3.1	6	34	72
DH421032	3.2	6	34	72
DH421033	3.3	6	34	72
DH421034	3.4	6	34	72
DH421035	3.5	6	34	72
DH421036	3.6	6	34	72
DH421037	3.7	6	34	72
DH421038	3.8	6	43	81
DH421039	3.9	6	43	81
DH421040	4.0	6	43	81
DH421041	4.1	6	43	81
DH421042	4.2	6	43	81
DH421043	4.3	6	43	81
DH421044	4.4	6	43	81
DH421045	4.5	6	43	81
DH421046	4.6	6	43	81
DH421047	4.7	6	43	81
DH421048	4.8	6	57	95
DH421049	4.9	6	57	95
DH421050	5.0	6	57	95
DH421051	5.1	6	57	95
DH421052	5.2	6	57	95
DH421053	5.3	6	57	95
DH421054	5.4	6	57	95
DH421055	5.5	6	57	95
DH421056	5.6	6	57	95
DH421057	5.7	6	57	95

EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
TiAlN	D_1	D_2	L_1	L_2
DH421058	5.8	6	57	95
DH421059	5.9	6	57	95
DH421060	6.0	6	57	95
DH421061	6.1	8	76	114
DH421062	6.2	8	76	114
DH421063	6.3	8	76	114
DH421064	6.4	8	76	114
DH421065	6.5	8	76	114
DH421066	6.6	8	76	114
DH421067	6.7	8	76	114
DH421068	6.8	8	76	114
DH421069	6.9	8	76	114
DH421070	7.0	8	76	114
DH421071	7.1	8	76	114
DH421072	7.2	8	76	114
DH421073	7.3	8	76	114
DH421074	7.4	8	76	114
DH421075	7.5	8	76	114
DH421076	7.6	8	76	114
DH421077	7.7	8	76	114
DH421078	7.8	8	76	114
DH421079	7.9	8	76	114
DH421080	8.0	8	76	114
DH421081	8.1	10	95	142
DH421082	8.2	10	95	142
DH421083	8.3	10	95	142
DH421084	8.4	10	95	142
DH421085	8.5	10	95	142

▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

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

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

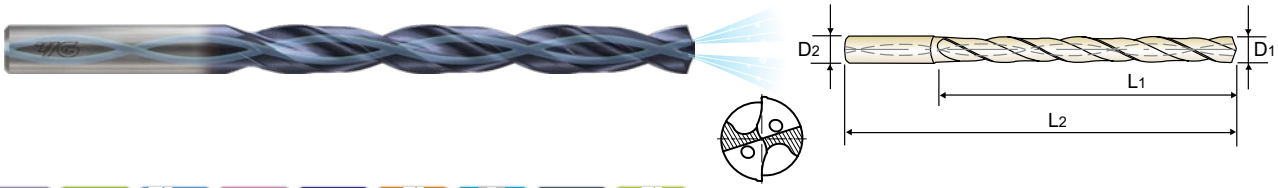
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TiAlN-COATED SOLID CARBIDE

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



DIN 6537 | CARBIDE | 30° | h6 | m7 | 140° | 20 bar | TiAlN

p.61

EXTRA LONG
8× D

Unit : mm

EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
TiAlN	D_1	D_2	L_1	L_2
DH421086	8.6	10	95	142
DH421087	8.7	10	95	142
DH421088	8.8	10	95	142
DH421089	8.9	10	95	142
DH421090	9.0	10	95	142
DH421091	9.1	10	95	142
DH421092	9.2	10	95	142
DH421093	9.3	10	95	142
DH421094	9.4	10	95	142
DH421095	9.5	10	95	142
DH421096	9.6	10	95	142
DH421097	9.7	10	95	142
DH421098	9.8	10	95	142
DH421099	9.9	10	95	142
DH421100	10.0	10	95	142
DH421101	10.1	12	114	162
DH421102	10.2	12	114	162
DH421103	10.3	12	114	162
DH421104	10.4	12	114	162
DH421105	10.5	12	114	162
DH421106	10.6	12	114	162
DH421107	10.7	12	114	162
DH421108	10.8	12	114	162
DH421109	10.9	12	114	162
DH421110	11.0	12	114	162
DH421111	11.1	12	114	162
DH421112	11.2	12	114	162
DH421113	11.3	12	114	162

EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
TiAlN	D_1	D_2	L_1	L_2
DH421114	11.4	12	114	162
DH421115	11.5	12	114	162
DH421116	11.6	12	114	162
DH421117	11.7	12	114	162
DH421118	11.8	12	114	162
DH421119	11.9	12	114	162
DH421120	12.0	12	114	162
DH421125	12.5	14	133	178
DH421130	13.0	14	133	178
DH421135	13.5	14	133	178
DH421140	14.0	14	133	178

▶ Other shank types are available on your request.

◎ : Excellent ○ : Good

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

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

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
P	2	Non-alloy steel	70	RPM	22280	11140
				FEED	0.03-0.05	0.05-0.07
	3		70	RPM	22280	11140
				FEED	0.03-0.05	0.05-0.07
	4		70	RPM	22280	11140
				FEED	0.03-0.05	0.05-0.07
	5		60	RPM	19100	9550
				FEED	0.03-0.05	0.05-0.07
	6	Low alloy steel	70	RPM	22280	11140
				FEED	0.03-0.05	0.05-0.07
	7		60	RPM	19100	9550
				FEED	0.03-0.05	0.05-0.07
	8		60	RPM	19100	9550
				FEED	0.02-0.04	0.03-0.05
	9		30	RPM	9550	4770
				FEED	0.02-0.04	0.03-0.05
	10	High alloyed steel, and tool steel	50	RPM	15920	7960
				FEED	0.03-0.05	0.05-0.07
	11		30	RPM	9550	4770
				FEED	0.02-0.04	0.03-0.05
M	12	Stainless steel	50	RPM	15920	7960
				FEED	0.03-0.05	0.05-0.07
	13		35	RPM	11140	5570
				FEED	0.02-0.04	0.03-0.05
K	15	Grey cast iron	70	RPM	22280	11140
				FEED	0.04-0.06	0.04-0.06
	16		65	RPM	20690	10350
				FEED	0.04-0.06	0.04-0.06
	17	Nodular cast iron	70	RPM	22280	11140
				FEED	0.04-0.06	0.04-0.06
	18		50	RPM	15920	7960
				FEED	0.04-0.06	0.04-0.06
	19	Malleable cast iron	60	RPM	19100	9550
				FEED	0.04-0.06	0.04-0.06
	20		50	RPM	15920	7960
				FEED	0.03-0.05	0.05-0.07
H	38	Hardened steel	20	RPM	6370	3180
				FEED	0.01-0.02	0.01-0.03

Vc	Parameter	Drill Diameter (mm) 3.0	4.0	5.0	6.0
100	RPM	10610	7960	6370	5310
	FEED	0.06-0.12	0.08-0.14	0.14-0.20	0.16-0.22
100	RPM	10610	7960	6370	5310
	FEED	0.06-0.12	0.08-0.14	0.14-0.20	0.16-0.22
100	RPM	10610	7960	6370	5310
	FEED	0.04-0.10	0.07-0.13	0.10-0.16	0.12-0.18
80	RPM	8490	6370	5090	4240
	FEED	0.04-0.10	0.07-0.13	0.10-0.16	0.12-0.18
100	RPM	10610	7960	6370	5310
	FEED	0.06-0.12	0.08-0.14	0.14-0.20	0.16-0.22
80	RPM	8490	6370	5090	4240
	FEED	0.06-0.12	0.08-0.14	0.14-0.20	0.16-0.22
80	RPM	8490	6370	5090	4240
	FEED	0.04-0.10	0.07-0.13	0.10-0.16	0.12-0.18
40	RPM	4240	3180	2550	2120
	FEED	0.03-0.08	0.05-0.11	0.08-0.14	0.10-0.16
70	RPM	7430	5570	4460	3710
	FEED	0.04-0.10	0.07-0.13	0.10-0.16	0.12-0.18
40	RPM	4240	3180	2550	2120
	FEED	0.03-0.08	0.05-0.11	0.08-0.14	0.10-0.16
70	RPM	7430	5570	4460	3710
	FEED	0.06-0.12	0.08-0.14	0.14-0.20	0.16-0.22
45	RPM	4770	3580	2860	2390
	FEED	0.04-0.10	0.07-0.13	0.10-0.16	0.12-0.18
100	RPM	10610	7960	6370	5310
	FEED	0.08-0.14	0.12-0.18	0.15-0.22	0.20-0.26
80	RPM	8490	6370	5090	4240
	FEED	0.06-0.12	0.08-0.14	0.14-0.20	0.16-0.22
100	RPM	10610	7960	6370	5310
	FEED	0.08-0.14	0.12-0.18	0.15-0.22	0.20-0.26
70	RPM	7430	5570	4460	3710
	FEED	0.06-0.12	0.08-0.14	0.14-0.20	0.16-0.22
80	RPM	8490	6370	5090	4240
	FEED	0.08-0.14	0.12-0.18	0.15-0.22	0.20-0.26
70	RPM	7430	5570	4460	3710
	FEED	0.06-0.12	0.08-0.14	0.14-0.20	0.16-0.22
25	RPM	2650	1990	1590	1330
	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	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
	3		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
	4		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
	5		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
	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
	7		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
	8		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
	9		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
	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
	11		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
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
	13		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		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		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		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	0.05-0.10

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

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

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

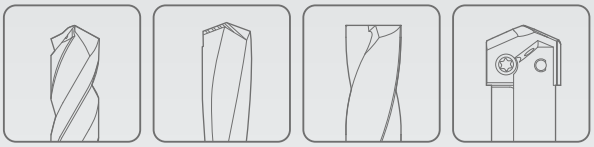
ISO	VDI 3323	Material Description	Vc	Parameter	Drill Diameter (mm) 1.0	2.0
P	2	Non-alloy steel	80	RPM	25460	12730
				FEED	0.03-0.05	0.05-0.07
	3		80	RPM	25460	12730
				FEED	0.03-0.05	0.05-0.07
	4		80	RPM	25460	12730
				FEED	0.03-0.05	0.05-0.07
	5		70	RPM	22280	11140
				FEED	0.03-0.05	0.05-0.07
	6	Low alloy steel	80	RPM	25460	12730
				FEED	0.03-0.05	0.05-0.07
	7		70	RPM	22280	11140
				FEED	0.03-0.05	0.05-0.07
	8		70	RPM	22280	11140
				FEED	0.02-0.04	0.03-0.05
	9		40	RPM	12730	6370
				FEED	0.02-0.04	0.03-0.05
	10	High alloyed steel, and tool steel	60	RPM	19100	9550
				FEED	0.03-0.05	0.05-0.07
	11		40	RPM	12730	6370
				FEED	0.02-0.04	0.03-0.05
M	12	Stainless steel	60	RPM	19100	9550
				FEED	0.03-0.05	0.05-0.07
	13		45	RPM	14320	7160
				FEED	0.02-0.04	0.03-0.05
K	15	Grey cast iron	80	RPM	25460	12730
				FEED	0.04-0.06	0.04-0.06
	16		75	RPM	23870	11940
				FEED	0.04-0.06	0.04-0.06
	17	Nodular cast iron	90	RPM	28650	14320
				FEED	0.04-0.06	0.04-0.06
	18		60	RPM	19100	9550
				FEED	0.04-0.06	0.04-0.06
	19	Malleable cast iron	70	RPM	22280	11140
				FEED	0.04-0.06	0.04-0.06
	20		60	RPM	19100	9550
				FEED	0.03-0.05	0.05-0.07
H	38	Hardened steel	25	RPM	7960	3980
				FEED	0.01-0.02	0.01-0.03

Vc	Parameter	Drill Diameter (mm) 3.0	4.0	5.0	6.0
110	RPM	11670	8750	7000	5840
	FEED	0.06-0.12	0.08-0.14	0.14-0.20	0.16-0.22
110	RPM	11670	8750	7000	5840
	FEED	0.06-0.12	0.08-0.14	0.14-0.20	0.16-0.22
110	RPM	11670	8750	7000	5840
	FEED	0.04-0.10	0.07-0.13	0.10-0.16	0.12-0.18
90	RPM	9550	7160	5730	4770
	FEED	0.04-0.10	0.07-0.13	0.10-0.16	0.12-0.18
110	RPM	11670	8750	7000	5840
	FEED	0.06-0.12	0.08-0.14	0.14-0.20	0.16-0.22
90	RPM	9550	7160	5730	4770
	FEED	0.06-0.12	0.08-0.14	0.14-0.20	0.16-0.22
90	RPM	9550	7160	5730	4770
	FEED	0.04-0.10	0.07-0.13	0.10-0.16	0.12-0.18
50	RPM	5310	3980	3180	2650
	FEED	0.03-0.08	0.05-0.11	0.08-0.14	0.10-0.16
80	RPM	8490	6370	5090	4240
	FEED	0.04-0.10	0.07-0.13	0.10-0.16	0.12-0.18
45	RPM	4770	3580	2860	2390
	FEED	0.03-0.08	0.05-0.11	0.08-0.14	0.10-0.16
80	RPM	8490	6370	5090	4240
	FEED	0.06-0.12	0.08-0.14	0.14-0.20	0.16-0.22
55	RPM	5840	4380	3500	2920
	FEED	0.04-0.10	0.07-0.13	0.10-0.16	0.12-0.18
110	RPM	11670	8750	7000	5840
	FEED	0.08-0.14	0.12-0.18	0.15-0.22	0.20-0.26
95	RPM	10080	7560	6050	5040
	FEED	0.06-0.12	0.08-0.14	0.14-0.20	0.16-0.22
120	RPM	12730	9550	7640	6370
	FEED	0.08-0.14	0.12-0.18	0.15-0.22	0.20-0.26
80	RPM	8490	6370	5090	4240
	FEED	0.06-0.12	0.08-0.14	0.14-0.20	0.16-0.22
90	RPM	9550	7160	5730	4770
	FEED	0.08-0.14	0.12-0.18	0.15-0.22	0.20-0.26
80	RPM	8490	6370	5090	4240
	FEED	0.06-0.12	0.08-0.14	0.14-0.20	0.16-0.22
30	RPM	3180	2390	1910	1590
	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	110	RPM	4380	3500	2920	2500	2190	1950	1750
				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
	3		110	RPM	4380	3500	2920	2500	2190	1950	1750
				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		110	RPM	4380	3500	2920	2500	2190	1950	1750
				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
	5		90	RPM	3580	2860	2390	2050	1790	1590	1430
				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
	6	Low alloy steel	110	RPM	4380	3500	2920	2500	2190	1950	1750
				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
	7		90	RPM	3580	2860	2390	2050	1790	1590	1430
				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		90	RPM	3580	2860	2390	2050	1790	1590	1430
				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
	9		50	RPM	1990	1590	1330	1140	990	880	800
				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
	10	High alloyed steel, and tool 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
	11		45	RPM	1790	1430	1190	1020	900	800	720
				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
M	12	Stainless 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
	13		55	RPM	2190	1750	1460	1250	1090	970	880
				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	110	RPM	4380	3500	2920	2500	2190	1950	1750
				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		95	RPM	3780	3020	2520	2160	1890	1680	1510
				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	120	RPM	4770	3820	3180	2730	2390	2120	1910
				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		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
	19	Malleable cast iron	90	RPM	3580	2860	2390	2050	1790	1590	1430
				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		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
H	38	Hardened steel	30	RPM	1190	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%** : DH406(3×D), DH408(5×D) **Feed 75%** : DH421(8×D)

Global Cutting Tool Leader **YG-1**



DREAM DRILLS

Leading Through Innovation



SOLID CARBIDE

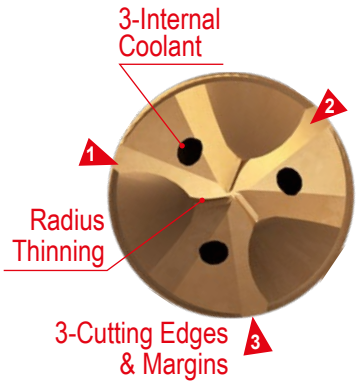
DREAM DRILLS -HIGH FEED

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

DREAM DRILLS HIGH FEED

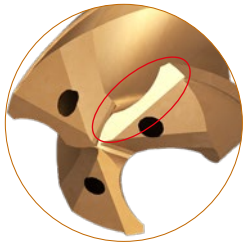


1.5 ~ 2 times faster in drilling compared to two flute carbide drills



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

Radius Thinning for
Self Centering and Chip Breaking

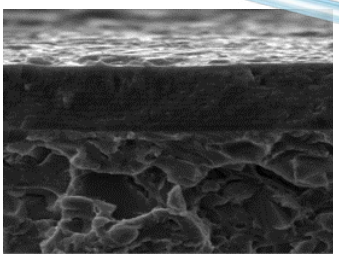


Ground Negative Land
on cutting edge for Reliable Tool Life

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

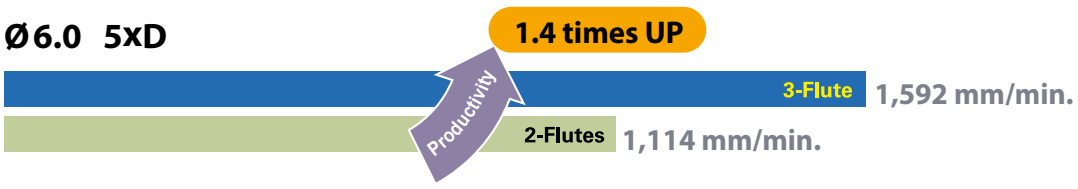


H - Coating
(Upgraded AlCrN-Based : **Multi-Layer coating**)
- Higher worn-out resistance and Lower friction
- Higher cutting speed and feed
- Improved drill hole quality

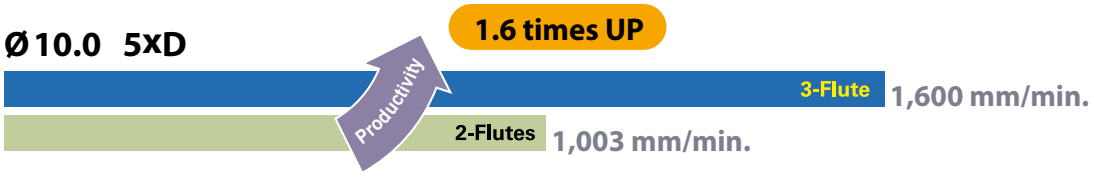


Productivity (Carbon Steel)

Ø6.0 5xD



Ø10.0 5xD



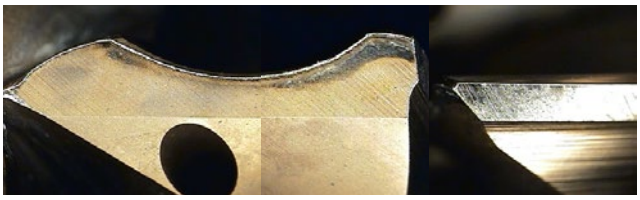
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CASE STUDY

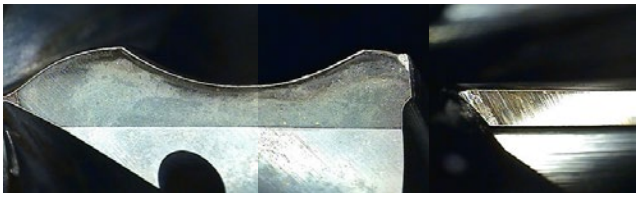
▶ SOLID CARBIDE DREAM DRILLS - High Feed with Coolant Holes

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

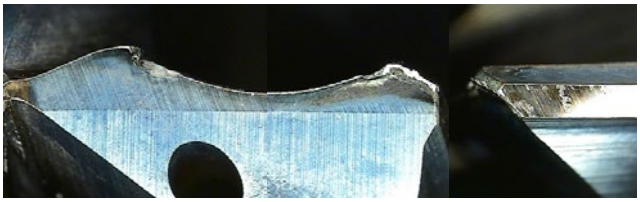
YG — Total Drilling 330 Holes



Competitor A — Total Drilling 330 Holes

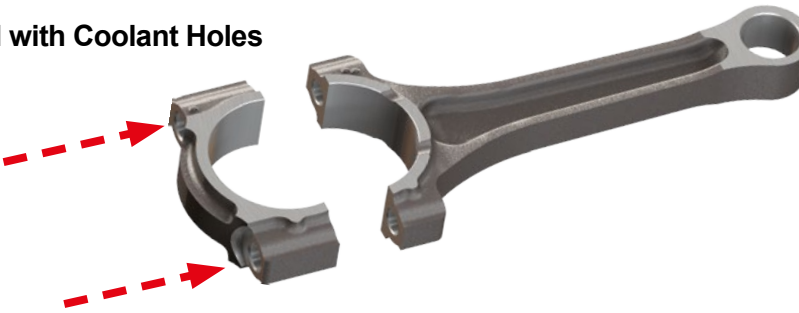


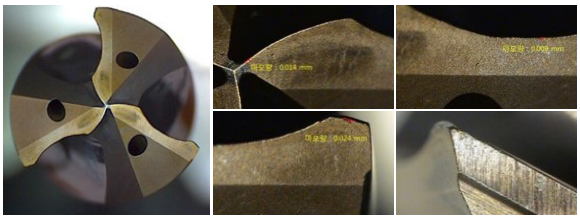
Competitor B — Total Drilling 330 Holes



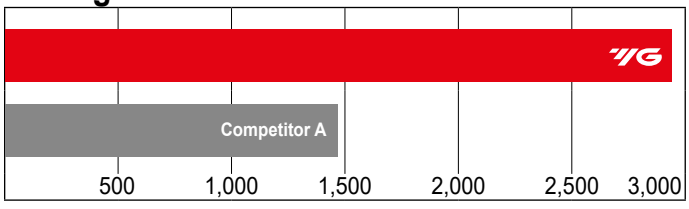
▶ SOLID CARBIDE DREAM DRILLS - High Feed with Coolant Holes

CUTTING CONDITION	
Tool	DGR495080
Size(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





Drilling Holes



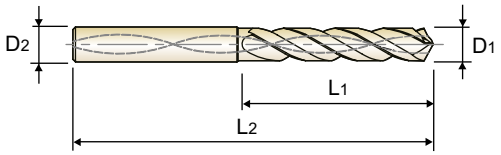
H-COATED SOLID CARBIDE

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

Unit : mm

ED P No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
H-Coating	D_1	D_2	L_1	L_2
DGR493050	5.0	6	28	66
DGR493051	5.1	6	28	66
DGR493052	5.2	6	28	66
DGR493053	5.3	6	28	66
DGR493054	5.4	6	28	66
DGR493055	5.5	6	28	66
DGR493056	5.6	6	28	66
DGR493057	5.7	6	28	66
DGR493058	5.8	6	28	66
DGR493059	5.9	6	28	66
DGR493060	6.0	6	28	66
DGR493061	6.1	8	34	79
DGR493062	6.2	8	34	79
DGR493063	6.3	8	34	79
DGR493064	6.4	8	34	79
DGR493065	6.5	8	34	79
DGR493066	6.6	8	34	79
DGR493067	6.7	8	34	79
DGR493068	6.8	8	34	79
DGR493069	6.9	8	34	79
DGR493070	7.0	8	34	79
DGR493071	7.1	8	41	79
DGR493072	7.2	8	41	79
DGR493073	7.3	8	41	79
DGR493074	7.4	8	41	79
DGR493075	7.5	8	41	79
DGR493076	7.6	8	41	79
DGR493077	7.7	8	41	79

ED P No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
H-Coating	D_1	D_2	L_1	L_2
DGR493078	7.8	8	41	79
DGR493079	7.9	8	41	79
DGR493080	8.0	8	41	79
DGR493081	8.1	10	47	89
DGR493082	8.2	10	47	89
DGR493083	8.3	10	47	89
DGR493084	8.4	10	47	89
DGR493085	8.5	10	47	89
DGR493086	8.6	10	47	89
DGR493087	8.7	10	47	89
DGR493088	8.8	10	47	89
DGR493089	8.9	10	47	89
DGR493090	9.0	10	47	89
DGR493091	9.1	10	47	89
DGR493092	9.2	10	47	89
DGR493093	9.3	10	47	89
DGR493094	9.4	10	47	89
DGR493095	9.5	10	47	89
DGR493096	9.6	10	47	89
DGR493097	9.7	10	47	89
DGR493098	9.8	10	47	89
DGR493099	9.9	10	47	89
DGR493100	10.0	10	47	89
DGR493101	10.1	12	55	102
DGR493102	10.2	12	55	102
DGR493103	10.3	12	55	102
DGR493104	10.4	12	55	102
DGR493105	10.5	12	55	102

▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

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

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

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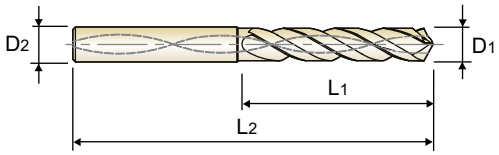
H-COATED SOLID CARBIDE

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

Unit : mm

ED P No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
H-Coating	D_1	D_2	L_1	L_2
DGR493106	10.6	12	55	102
DGR493107	10.7	12	55	102
DGR493108	10.8	12	55	102
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

ED P No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
H-Coating	D_1	D_2	L_1	L_2
DGR493190	19.0	20	79	131
DGR493195	19.5	20	79	131
DGR493200	20.0	20	79	131

▶ Other shank types are available on your request.

◎ : Excellent ○ : Good

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

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

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 × D

Unit : mm

ED P No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
H-Coating	D1	D2	L1	L2
DGR495050	5.0	6	44	82
DGR495051	5.1	6	44	82
DGR495052	5.2	6	44	82
DGR495053	5.3	6	44	82
DGR495054	5.4	6	44	82
DGR495055	5.5	6	44	82
DGR495056	5.6	6	44	82
DGR495057	5.7	6	44	82
DGR495058	5.8	6	44	82
DGR495059	5.9	6	44	82
DGR495060	6.0	6	44	82
DGR495061	6.1	8	53	91
DGR495062	6.2	8	53	91
DGR495063	6.3	8	53	91
DGR495064	6.4	8	53	91
DGR495065	6.5	8	53	91
DGR495066	6.6	8	53	91
DGR495067	6.7	8	53	91
DGR495068	6.8	8	53	91
DGR495069	6.9	8	53	91
DGR495070	7.0	8	53	91
DGR495071	7.1	8	53	91
DGR495072	7.2	8	53	91
DGR495073	7.3	8	53	91
DGR495074	7.4	8	53	91
DGR495075	7.5	8	53	91
DGR495076	7.6	8	53	91
DGR495077	7.7	8	53	91

ED P No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
H-Coating	D1	D2	L1	L2
DGR495078	7.8	8	53	91
DGR495079	7.9	8	53	91
DGR495080	8.0	8	53	91
DGR495081	8.1	10	61	103
DGR495082	8.2	10	61	103
DGR495083	8.3	10	61	103
DGR495084	8.4	10	61	103
DGR495085	8.5	10	61	103
DGR495086	8.6	10	61	103
DGR495087	8.7	10	61	103
DGR495088	8.8	10	61	103
DGR495089	8.9	10	61	103
DGR495090	9.0	10	61	103
DGR495091	9.1	10	61	103
DGR495092	9.2	10	61	103
DGR495093	9.3	10	61	103
DGR495094	9.4	10	61	103
DGR495095	9.5	10	61	103
DGR495096	9.6	10	61	103
DGR495097	9.7	10	61	103
DGR495098	9.8	10	61	103
DGR495099	9.9	10	61	103
DGR495100	10.0	10	61	103
DGR495101	10.1	12	71	118
DGR495102	10.2	12	71	118
DGR495103	10.3	12	71	118
DGR495104	10.4	12	71	118
DGR495105	10.5	12	71	118

▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

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

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

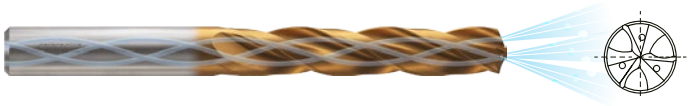
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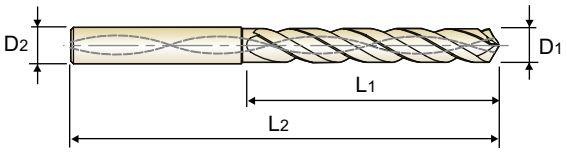
H-COATED SOLID CARBIDE

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 × D

Unit : mm

ED P No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
H-Coating	D1	D2	L1	L2
DGR495106	10.6	12	71	118
DGR495107	10.7	12	71	118
DGR495108	10.8	12	71	118
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

ED P No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
H-Coating	D1	D2	L1	L2
DGR495190	19.0	20	101	153
DGR495195	19.5	20	101	153
DGR495200	20.0	20	101	153

▶ Other shank types are available on your request.

◎ : Excellent ○ : Good

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

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

DGR493, 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	Low 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	0.48-0.54	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	High alloyed steel, and tool steel	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	Nodular 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
	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	Malleable cast iron	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

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Leading Through Innovation



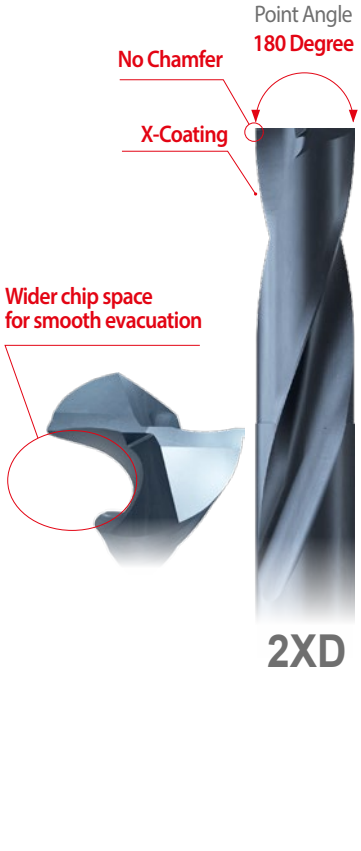
SOLID CARBIDE

DREAM DRILLS -FLAT BOTTOM

- For Holes on Various Angled Surfaces

DREAM DRILLS FLAT BOTTOM





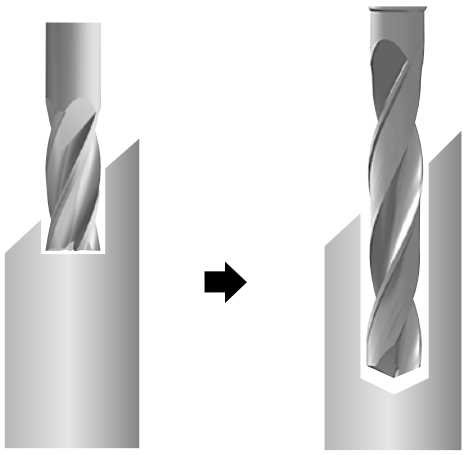






Only One Operation for Angled Surface

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

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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

YG

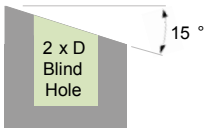


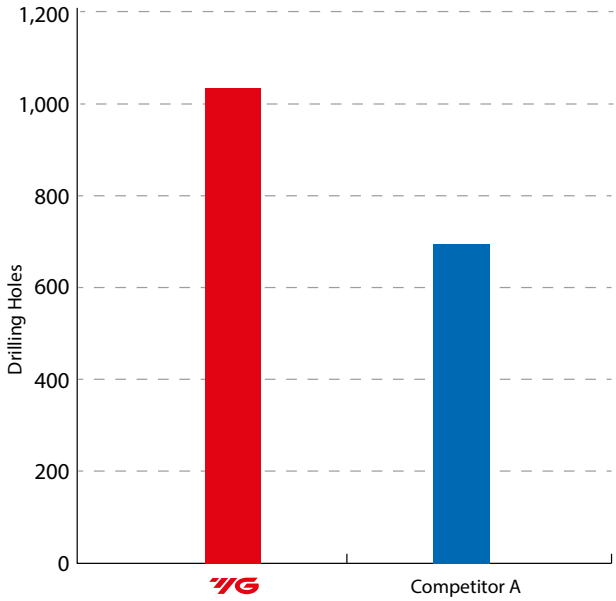
Small Chipping

Competitor A



Big Chipping





▶ SOLID CARBIDE DREAM DRILLS - Flat Bottom with Coolant Holes

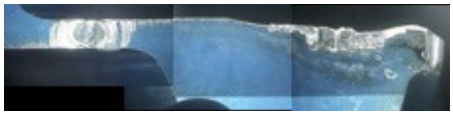
CUTTING CONDITION	
Drill Diameter (mm)	Ø6.0
Work Material	• DIN: 42CrMo4 • AISI: 4140 • JIS: SCM440 (HRc30)
Cutting Speed	100.0 m/min
RPM	5,300 rev/min
Feed	0.12 mm/rev
Drilling Depth	Pilot Drill- 6.0mm (1XD) Total depth- 30.0 mm (5XD) Through Hole / without Pecking
Coolant	Internal Cooling Water Soluble (9% Emulsion)
Machine	Machining Center

YG

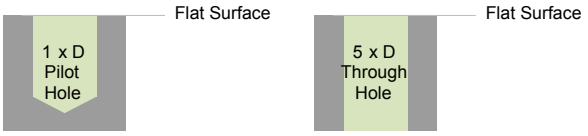


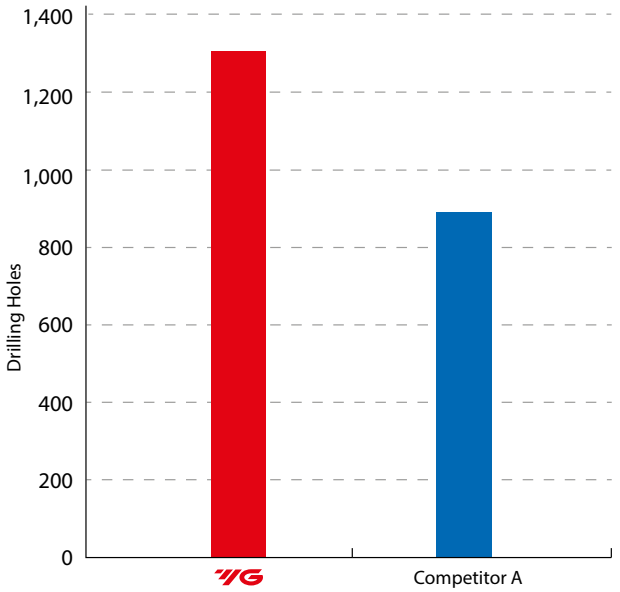
Small Chipping

Competitor A



Big Chipping





X-COATED SOLID CARBIDE

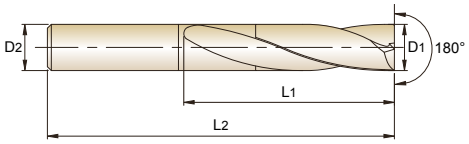
DREAM DRILLS FLAT BOTTOM without COOLANT HOLES (2XD)

SERIES **DPP447**

- For holes on various angled surfaces.
- 180 degree point angle enables drilling of flat, inclined and curved surfaces.
- Optimized flute shape for excellent chip evacuation.
- High strength cutting edge to improve tool life and versatility drilling.
- For through holes, minimized burrs at entrance and exit when drilling thin plate.







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

p.78

SHORT

2× D

Unit : mm

EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
X-Coating	D1	D2	L1	L2
DPP447030	3.0	6	16	50
DPP447031	3.1	6	16	50
DPP447032	3.2	6	16	50
DPP447033	3.3	6	16	50
DPP447034	3.4	6	18	50
DPP447035	3.5	6	18	50
DPP447036	3.6	6	18	50
DPP447037	3.7	6	18	50
DPP447038	3.8	6	18	50
DPP447039	3.9	6	18	50
DPP447040	4.0	6	18	50
DPP447041	4.1	6	20	60
DPP447042	4.2	6	20	60
DPP447043	4.3	6	20	60
DPP447044	4.4	6	20	60
DPP447045	4.5	6	22	60
DPP447046	4.6	6	22	60
DPP447047	4.7	6	22	60
DPP447048	4.8	6	22	60
DPP447049	4.9	6	22	60
DPP447050	5.0	6	22	60
DPP447051	5.1	6	24	60
DPP447052	5.2	6	24	60
DPP447053	5.3	6	24	60
DPP447054	5.4	6	24	60
DPP447055	5.5	6	24	60
DPP447056	5.6	6	24	60
DPP447057	5.7	6	26	60

EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
X-Coating	D1	D2	L1	L2
DPP447058	5.8	6	26	60
DPP447059	5.9	6	26	60
DPP447060	6.0	6	26	60
DPP447061	6.1	8	28	70
DPP447062	6.2	8	28	70
DPP447063	6.3	8	28	70
DPP447064	6.4	8	30	70
DPP447065	6.5	8	30	70
DPP447066	6.6	8	30	70
DPP447067	6.7	8	30	70
DPP447068	6.8	8	30	70
DPP447069	6.9	8	30	70
DPP447070	7.0	8	30	70
DPP447071	7.1	8	34	70
DPP447072	7.2	8	34	70
DPP447073	7.3	8	34	70
DPP447074	7.4	8	34	70
DPP447075	7.5	8	34	70
DPP447076	7.6	8	34	70
DPP447077	7.7	8	34	70
DPP447078	7.8	8	34	70
DPP447079	7.9	8	34	70
DPP447080	8.0	8	34	70
DPP447081	8.1	10	38	80
DPP447082	8.2	10	38	80
DPP447083	8.3	10	38	80
DPP447084	8.4	10	38	80
DPP447085	8.5	10	38	80

▶ Other diameters and shank types are available upon request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

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

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

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X-COATED SOLID CARBIDE

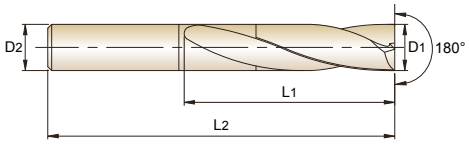
DREAM DRILLS FLAT BOTTOM without COOLANT HOLES (2XD)

SERIES **DPP447**

- For holes on various angled surfaces.
- 180 degree point angle enables drilling of flat, inclined and curved surfaces.
- Optimized flute shape for excellent chip evacuation.
- High strength cutting edge to improve tool life and versatility drilling.
- For through holes, minimized burrs at entrance and exit when drilling thin plate.







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

p.78

SHORT
2× D

Unit : mm

EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
X-Coating	D1	D2	L1	L2
DPP447086	8.6	10	38	80
DPP447087	8.7	10	40	80
DPP447088	8.8	10	40	80
DPP447089	8.9	10	40	80
DPP447090	9.0	10	40	80
DPP447091	9.1	10	42	80
DPP447092	9.2	10	42	80
DPP447093	9.3	10	42	80
DPP447094	9.4	10	42	80
DPP447095	9.5	10	42	80
DPP447096	9.6	10	42	80
DPP447097	9.7	10	45	80
DPP447098	9.8	10	45	80
DPP447099	9.9	10	45	80
DPP447100	10.0	10	45	80
DPP447101	10.1	12	46	90
DPP447102	10.2	12	46	90
DPP447103	10.3	12	46	90
DPP447104	10.4	12	48	90
DPP447105	10.5	12	48	90
DPP447106	10.6	12	48	90
DPP447107	10.7	12	48	90
DPP447108	10.8	12	48	90
DPP447109	10.9	12	48	90
DPP447110	11.0	12	48	90
DPP447111	11.1	12	50	90
DPP447112	11.2	12	50	90
DPP447113	11.3	12	50	90

EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
X-Coating	D1	D2	L1	L2
DPP447114	11.4	12	50	90
DPP447115	11.5	12	50	90
DPP447116	11.6	12	50	90
DPP447117	11.7	12	52	90
DPP447118	11.8	12	52	90
DPP447119	11.9	12	52	90
DPP447120	12.0	12	52	90
DPP447125	12.5	14	54	100
DPP447130	13.0	14	56	100
DPP447135	13.5	14	58	100
DPP447140	14.0	14	58	100
DPP447145	14.5	16	62	105
DPP447150	15.0	16	62	105
DPP447155	15.5	16	64	115
DPP447160	16.0	16	64	115
DPP447165	16.5	18	70	125
DPP447170	17.0	18	70	125
DPP447175	17.5	18	70	125
DPP447180	18.0	18	70	125
DPP447185	18.5	20	75	135
DPP447190	19.0	20	75	135
DPP447195	19.5	20	75	145
DPP447200	20.0	20	75	145

▶ Other diameters and shank types are available upon request.

◎ : Excellent ○ : Good

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

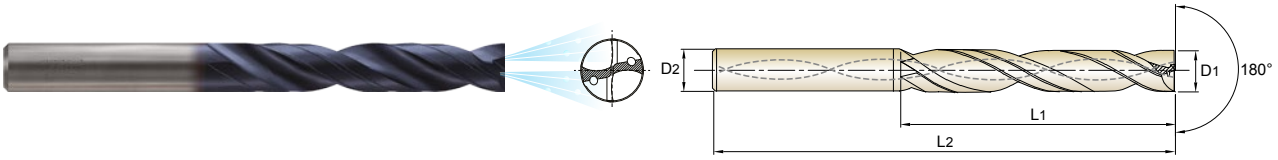
ISO	N										S							H			
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel		Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28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

TiAlN-COATED SOLID CARBIDE

DREAM DRILLS FLAT BOTTOM with COOLANT HOLES (5XD)

SERIES **DH450**

- For holes on various angled surfaces.
- 180 degree point angle enables drilling of flat, inclined and curved surfaces.
- Optimized flute shape for excellent chip evacuation.
- High strength cutting edge to improve tool life and versatility drilling.
- For through holes, minimized burrs at entrance and exit when drilling thin plate.
- Pilot Drilling for 5XD



DIN 6537 | CARBIDE | 30° | h6 | h7 | 180° | 20 bar | TiAlN

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LONG 5× D

Unit : mm

EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
TiAlN	D_1	D_2	L_1	L_2
DH450030	3.0	6	28	66
DH450031	3.1	6	28	66
DH450032	3.2	6	28	66
DH450033	3.3	6	28	66
DH450034	3.4	6	28	66
DH450035	3.5	6	28	66
DH450036	3.6	6	28	66
DH450037	3.7	6	28	66
DH450038	3.8	6	36	74
DH450039	3.9	6	36	74
DH450040	4.0	6	36	74
DH450041	4.1	6	36	74
DH450042	4.2	6	36	74
DH450043	4.3	6	36	74
DH450044	4.4	6	36	74
DH450045	4.5	6	36	74
DH450046	4.6	6	36	74
DH450047	4.7	6	36	74
DH450048	4.8	6	44	82
DH450049	4.9	6	44	82
DH450050	5.0	6	44	82
DH450051	5.1	6	44	82
DH450052	5.2	6	44	82
DH450053	5.3	6	44	82
DH450054	5.4	6	44	82
DH450055	5.5	6	44	82
DH450056	5.6	6	44	82
DH450057	5.7	6	44	82

EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
TiAlN	D_1	D_2	L_1	L_2
DH450058	5.8	6	44	82
DH450059	5.9	6	44	82
DH450060	6.0	6	44	82
DH450061	6.1	8	53	91
DH450062	6.2	8	53	91
DH450063	6.3	8	53	91
DH450064	6.4	8	53	91
DH450065	6.5	8	53	91
DH450066	6.6	8	53	91
DH450067	6.7	8	53	91
DH450068	6.8	8	53	91
DH450069	6.9	8	53	91
DH450070	7.0	8	53	91
DH450071	7.1	8	53	91
DH450072	7.2	8	53	91
DH450073	7.3	8	53	91
DH450074	7.4	8	53	91
DH450075	7.5	8	53	91
DH450076	7.6	8	53	91
DH450077	7.7	8	53	91
DH450078	7.8	8	53	91
DH450079	7.9	8	53	91
DH450080	8.0	8	53	91
DH450081	8.1	10	61	103
DH450082	8.2	10	61	103
DH450083	8.3	10	61	103
DH450084	8.4	10	61	103
DH450085	8.5	10	61	103

▶ Other diameters and shank types are available upon request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

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

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

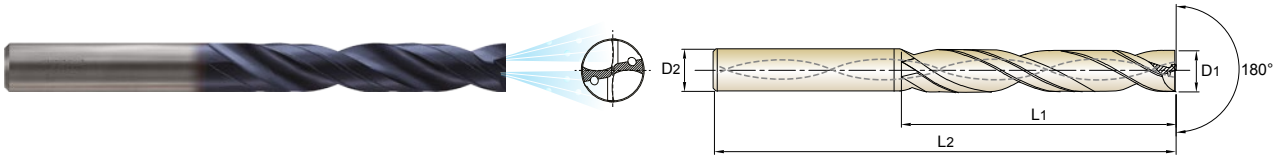
VAMATEC www.vamatec.be I info@vamatec.be

TiAlN-COATED SOLID CARBIDE

DREAM DRILLS FLAT BOTTOM with COOLANT HOLES (5XD)

SERIES **DH450**

- For holes on various angled surfaces.
- 180 degree point angle enables drilling of flat, inclined and curved surfaces.
- Optimized flute shape for excellent chip evacuation.
- High strength cutting edge to improve tool life and versatility drilling.
- For through holes, minimized burrs at entrance and exit when drilling thin plate.
- Pilot Drilling for 5XD



DIN 6537 | CARBIDE | 30° | h6 | h7 | 180° | 20 bar | TiAlN

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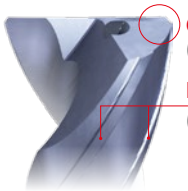
LONG 5× D

Unit : mm

EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
TiAlN	D1	D2	L1	L2
DH450086	8.6	10	61	103
DH450087	8.7	10	61	103
DH450088	8.8	10	61	103
DH450089	8.9	10	61	103
DH450090	9.0	10	61	103
DH450091	9.1	10	61	103
DH450092	9.2	10	61	103
DH450093	9.3	10	61	103
DH450094	9.4	10	61	103
DH450095	9.5	10	61	103
DH450096	9.6	10	61	103
DH450097	9.7	10	61	103
DH450098	9.8	10	61	103
DH450099	9.9	10	61	103
DH450100	10.0	10	61	103
DH450102	10.2	12	71	118
DH450105	10.5	12	71	118
DH450108	10.8	12	71	118
DH450110	11.0	12	71	118
DH450115	11.5	12	71	118
DH450118	11.8	12	71	118
DH450119	11.9	12	71	118
DH450120	12.0	12	71	118
DH450125	12.5	14	77	124
DH450130	13.0	14	77	124
DH450135	13.5	14	77	124
DH450140	14.0	14	77	124
DH450145	14.5	16	83	133

EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
TiAlN	D1	D2	L1	L2
DH450150	15.0	16	83	133
DH450155	15.5	16	83	133
DH450160	16.0	16	83	133
DH450165	16.5	18	93	143
DH450170	17.0	18	93	143
DH450175	17.5	18	93	143
DH450180	18.0	18	93	143
DH450185	18.5	20	101	153
DH450190	19.0	20	101	153
DH450195	19.5	20	101	153
DH450200	20.0	20	101	153

▶ Other diameters and shank types are available upon request.



Chamfer
(Below data)

Double Margin
(2xD Single Margin)
Hole straightness and roundness provides good alignments

Drill Diameter (mm)	Corner Chamfer (mm)
Ø3.0 ~ Ø6.0	0.06
Ø6.1 ~ Ø10.0	0.12
Ø10.1 ~ Ø14.0	0.18
Ø14.1 ~ Ø20.0	0.26

◎ : Excellent ○ : Good

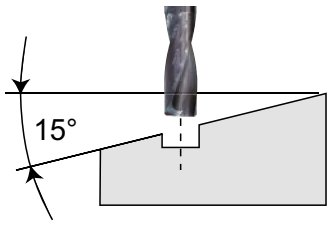
ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10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

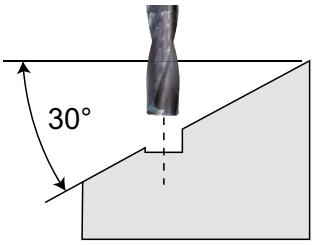
ISO	N										S							H			
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel		Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28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

DPP447 SERIES without COOLANT HOLES (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
	2		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
	3		70	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
	4		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
	5		38	RPM	4030	3020	2420	2020	1510	1210	1010	760	600
				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
	6	Low alloy steel	45	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
	7		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
	8		38	RPM	4030	3020	2420	2020	1510	1210	1010	760	600
				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
	9		25	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
M	12	Stainless steel	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
K	15	Grey cast iron	70	RPM	7430	5570	4460	3710	2790	2230	1860	1390	1110
				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
	16		60	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
N	21	Aluminum-wrought alloy	165	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
	22		165	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

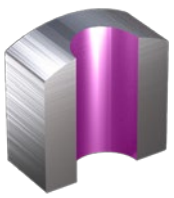


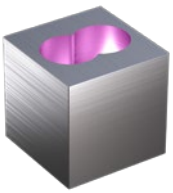


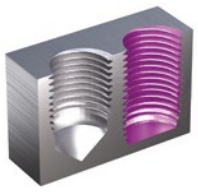
Surface Angle	Cutting Conditions	
	RPM	FEED
0° - 15°	100%	100%
15° - 30°	100%	50%
30° -	70%	30%

- 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

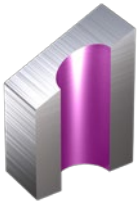

Curved Surface

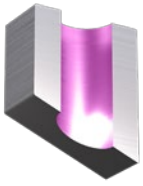

Chained Hole

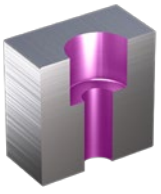

Blind Hole for Threading

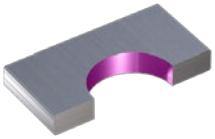

Guide Drilling


Cross Drilling


Inclined Entry


Inclined Exit


Counter Boring


Thin Plate

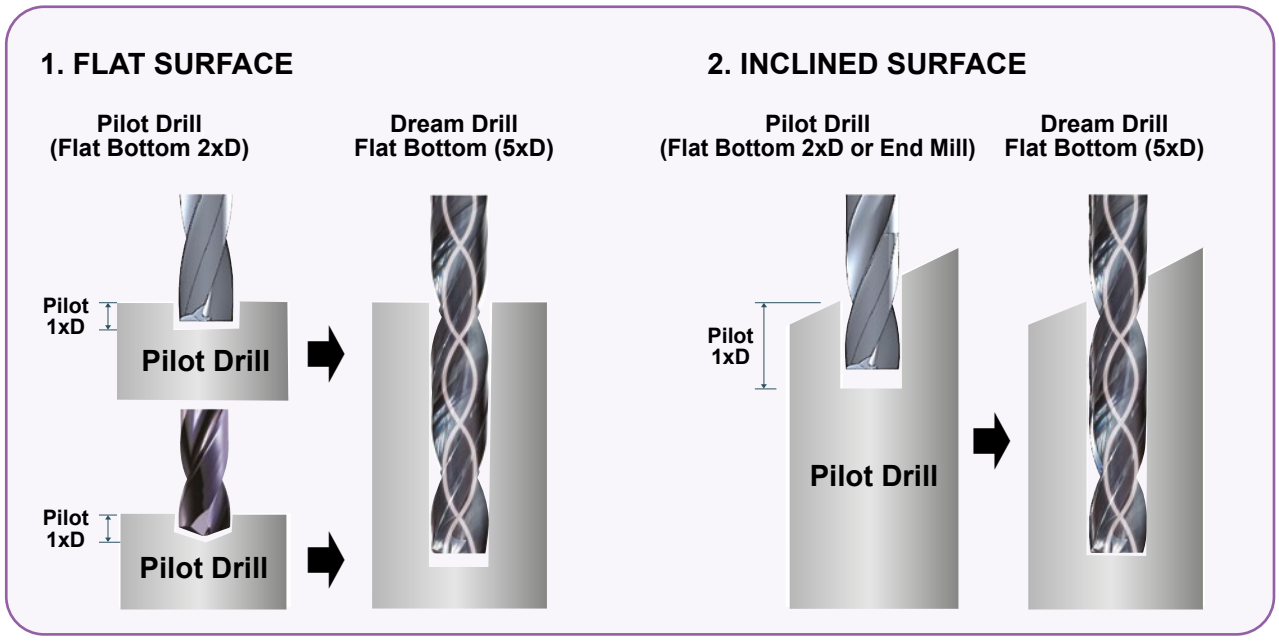
DH450 SERIES with COOLANT HOLES (5XD)

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
	2		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
	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
	4		75	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	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
	6	Low alloy steel	85	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
	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
	8		75	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
	9		50	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
M	12	Stainless steel	60	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
K	15	Grey cast iron	90	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
	16		75	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
N	21	Aluminum-wrought alloy	160	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
	22		160	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

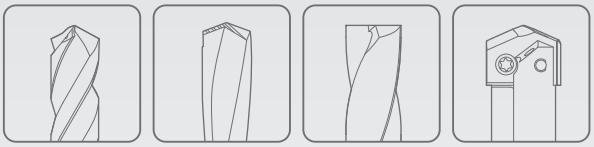
- Required pilot hole of the same diameter before using the 5xD Flat bottom Drills.
- The above table values is for under 5xD depth with pilot drilling operation.

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

Global Cutting Tool Leader **YG-1**



DREAM DRILLS

YG

Leading Through Innovation

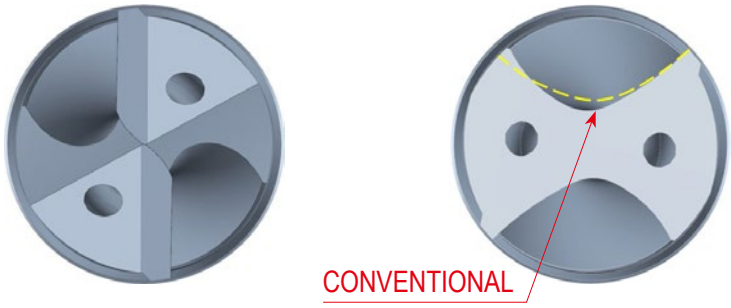


SOLID CARBIDE

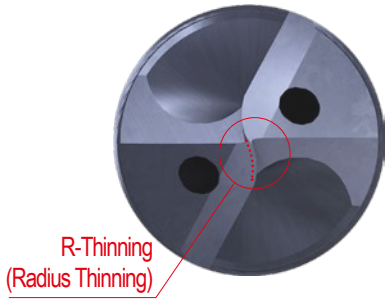
DREAM DRILLS -INOX

- For Tough Materials like Stainless Steels

DREAM DRILLS INOX



- Special flute geometry and chip pocket to help chip evacuation and proper chip curl.
- Strong rigidity from **Cutting Edge**
- High performance on stainless steel and pre hardend steel



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

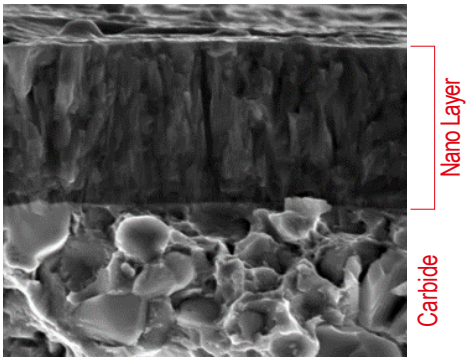
TiAlN Coating

(Upgraded Titanium Aluminum Nitride : nano-Layer coating)

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

Special surface treatment after coating

to reduce friction and better chip flow.

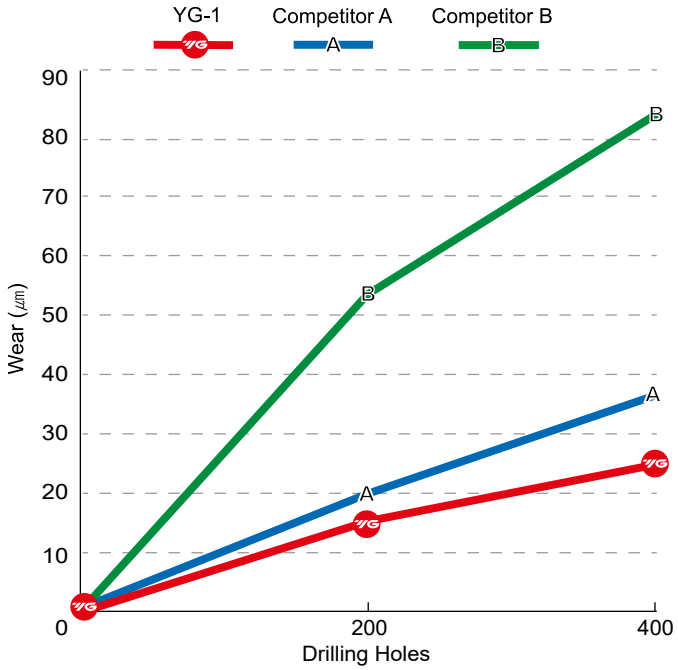


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CASE STUDY

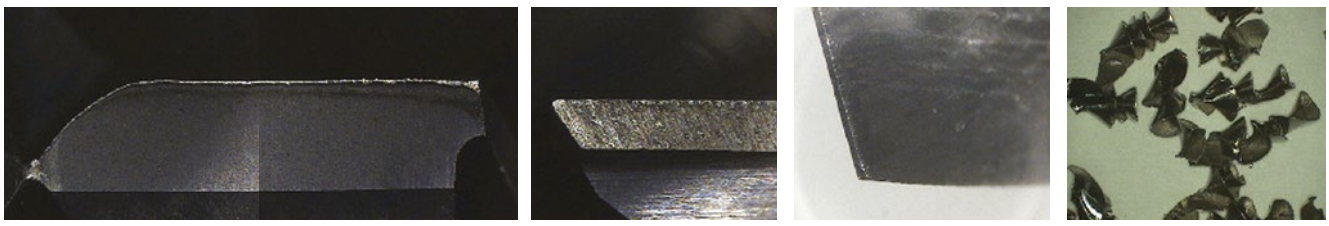
▶ SOLID CARBIDE DREAM DRILLS - INOX with Coolant Holes

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



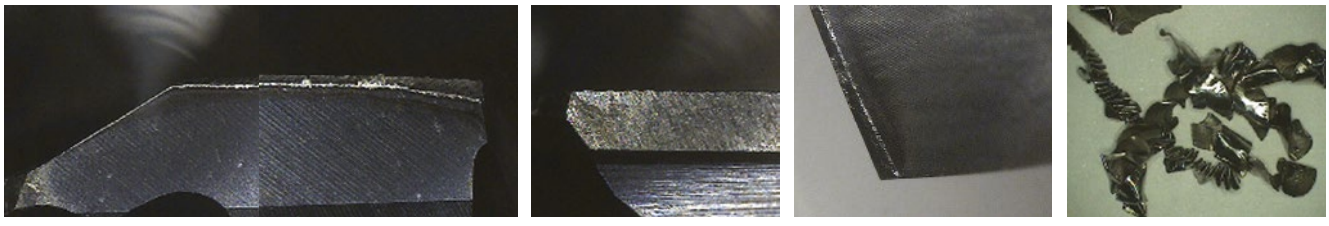
YG

TotaL Dilling 400 Holes



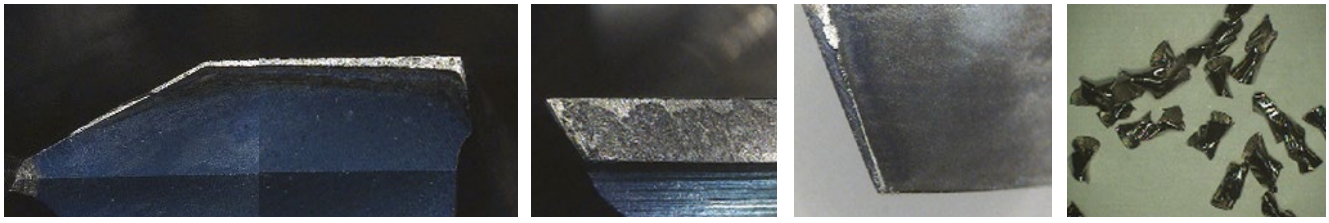
Competitor A

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

EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
TiAlN	D_1	D_2	L_1	L_2
DH451030	3.0	6	20	62
DH451031	3.1	6	20	62
DH451032	3.2	6	20	62
DH451033	3.3	6	20	62
DH451034	3.4	6	20	62
DH451035	3.5	6	20	62
DH451036	3.6	6	20	62
DH451037	3.7	6	20	62
DH451038	3.8	6	24	66
DH451039	3.9	6	24	66
DH451040	4.0	6	24	66
DH451041	4.1	6	24	66
DH451042	4.2	6	24	66
DH451043	4.3	6	24	66
DH451044	4.4	6	24	66
DH451045	4.5	6	24	66
DH451046	4.6	6	24	66
DH451047	4.7	6	24	66
DH451048	4.8	6	28	66
DH451049	4.9	6	28	66
DH451050	5.0	6	28	66
DH451051	5.1	6	28	66
DH451052	5.2	6	28	66
DH451053	5.3	6	28	66
DH451054	5.4	6	28	66
DH451055	5.5	6	28	66
DH451056	5.6	6	28	66
DH451057	5.7	6	28	66

EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
TiAlN	D_1	D_2	L_1	L_2
DH451058	5.8	6	28	66
DH451059	5.9	6	28	66
DH451060	6.0	6	28	66
DH451061	6.1	8	34	79
DH451062	6.2	8	34	79
DH451063	6.3	8	34	79
DH451064	6.4	8	34	79
DH451065	6.5	8	34	79
DH451066	6.6	8	34	79
DH451067	6.7	8	34	79
DH451068	6.8	8	34	79
DH451069	6.9	8	34	79
DH451070	7.0	8	34	79
DH451071	7.1	8	41	79
DH451072	7.2	8	41	79
DH451073	7.3	8	41	79
DH451074	7.4	8	41	79
DH451075	7.5	8	41	79
DH451076	7.6	8	41	79
DH451077	7.7	8	41	79
DH451078	7.8	8	41	79
DH451079	7.9	8	41	79
DH451080	8.0	8	41	79
DH451081	8.1	10	47	89
DH451082	8.2	10	47	89
DH451083	8.3	10	47	89
DH451084	8.4	10	47	89
DH451085	8.5	10	47	89

▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

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

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

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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

EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
TiAlN	D_1	D_2	L_1	L_2
DH451086	8.6	10	47	89
DH451087	8.7	10	47	89
DH451088	8.8	10	47	89
DH451089	8.9	10	47	89
DH451090	9.0	10	47	89
DH451091	9.1	10	47	89
DH451092	9.2	10	47	89
DH451093	9.3	10	47	89
DH451094	9.4	10	47	89
DH451095	9.5	10	47	89
DH451096	9.6	10	47	89
DH451097	9.7	10	47	89
DH451098	9.8	10	47	89
DH451099	9.9	10	47	89
DH451100	10.0	10	47	89
DH451101	10.1	12	55	102
DH451102	10.2	12	55	102
DH451103	10.3	12	55	102
DH451104	10.4	12	55	102
DH451105	10.5	12	55	102
DH451106	10.6	12	55	102
DH451107	10.7	12	55	102
DH451108	10.8	12	55	102
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

EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
TiAlN	D_1	D_2	L_1	L_2
DH451114	11.4	12	55	102
DH451115	11.5	12	55	102
DH451116	11.6	12	55	102
DH451117	11.7	12	55	102
DH451118	11.8	12	55	102
DH451119	11.9	12	55	102
DH451120	12.0	12	55	102
DH451125	12.5	14	60	107
DH451130	13.0	14	60	107
DH451135	13.5	14	60	107
DH451140	14.0	14	60	107
DH451145	14.5	16	65	115
DH451150	15.0	16	65	115
DH451155	15.5	16	65	115
DH451160	16.0	16	65	115
DH451165	16.5	18	73	123
DH451170	17.0	18	73	123
DH451175	17.5	18	73	123
DH451180	18.0	18	73	123
DH451185	18.5	20	79	131
DH451190	19.0	20	79	131
DH451195	19.5	20	79	131
DH451200	20.0	20	79	131

▶ Other shank types are available on your request.

◎ : Excellent ○ : Good

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

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

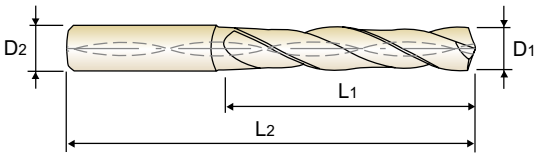
TiAlN-COATED SOLID CARBIDE

DREAM DRILLS INOX with COOLANT HOLES (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

Unit : mm

EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
TiAlN	D_1	D_2	L_1	L_2
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

EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
TiAlN	D_1	D_2	L_1	L_2
DH452038	3.8	6	36	74
DH452039	3.9	6	36	74
DH452040	4.0	6	36	74
DH452041	4.1	6	36	74
DH452042	4.2	6	36	74
DH452043	4.3	6	36	74
DH452044	4.4	6	36	74
DH452045	4.5	6	36	74
DH452046	4.6	6	36	74
DH452047	4.7	6	36	74
DH452048	4.8	6	44	82
DH452049	4.9	6	44	82
DH452050	5.0	6	44	82
DH452051	5.1	6	44	82
DH452052	5.2	6	44	82
DH452053	5.3	6	44	82
DH452054	5.4	6	44	82
DH452055	5.5	6	44	82
DH452056	5.6	6	44	82
DH452057	5.7	6	44	82
DH452058	5.8	6	44	82
DH452059	5.9	6	44	82
DH452060	6.0	6	44	82
DH452061	6.1	8	53	91
DH452062	6.2	8	53	91
DH452063	6.3	8	53	91
DH452064	6.4	8	53	91
DH452065	6.5	8	53	91

▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

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

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

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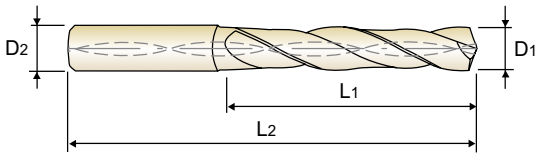
TiAlN-COATED SOLID CARBIDE

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
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DIN 6537 | CARBIDE | 30° | h6 | m7 | 140° | 20 bar | TiAlN

p.91

LONG 5 × D

Unit : mm

EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
TiAlN	D_1	D_2	L_1	L_2
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

EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
TiAlN	D_1	D_2	L_1	L_2
DH452094	9.4	10	61	103
DH452095	9.5	10	61	103
DH452096	9.6	10	61	103
DH452097	9.7	10	61	103
DH452098	9.8	10	61	103
DH452099	9.9	10	61	103
DH452100	10.0	10	61	103
DH452101	10.1	12	71	118
DH452102	10.2	12	71	118
DH452103	10.3	12	71	118
DH452104	10.4	12	71	118
DH452105	10.5	12	71	118
DH452106	10.6	12	71	118
DH452107	10.7	12	71	118
DH452108	10.8	12	71	118
DH452109	10.9	12	71	118
DH452110	11.0	12	71	118
DH452111	11.1	12	71	118
DH452112	11.2	12	71	118
DH452113	11.3	12	71	118
DH452114	11.4	12	71	118
DH452115	11.5	12	71	118
DH452116	11.6	12	71	118
DH452117	11.7	12	71	118
DH452118	11.8	12	71	118
DH452119	11.9	12	71	118
DH452120	12.0	12	71	118
DH452125	12.5	14	77	124

▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

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

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

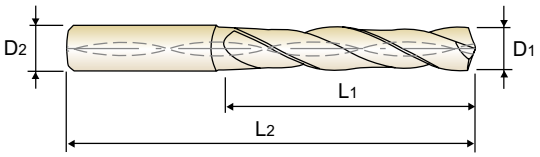
TiAlN-COATED SOLID CARBIDE

DREAM DRILLS INOX with COOLANT HOLES (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

Unit : mm

EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
TiAlN	D_1	D_2	L_1	L_2
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	D_1	D_2	L_1	L_2
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

▶ Other shank types are available on your request.

◎ : Excellent ○ : Good

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

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

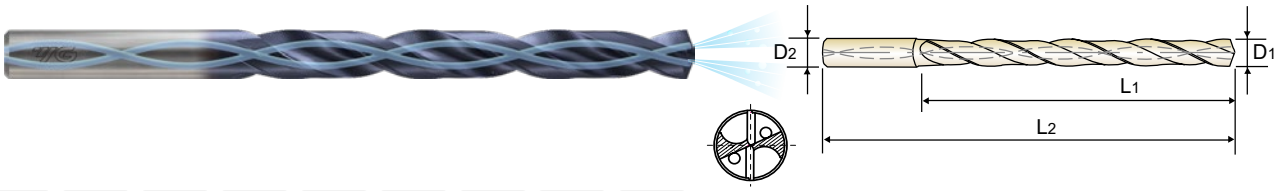
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TiAlN-COATED SOLID CARBIDE

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

Unit : mm

EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
TiAlN	D_1	D_2	L_1	L_2
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	D_1	D_2	L_1	L_2
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

▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

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

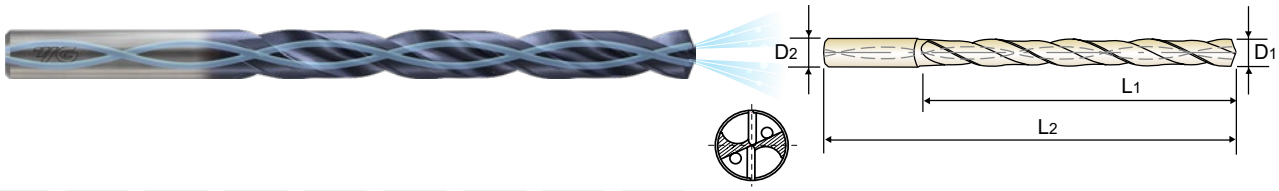
ISO	N										S							H			
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel		Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28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

TiAlN-COATED SOLID CARBIDE

DREAM DRILLS INOX with COOLANT HOLES (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

Unit : mm

EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
TiAlN	D_1	D_2	L_1	L_2
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
TiAlN	D_1	D_2	L_1	L_2
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

▶ Other shank types are available on your request.

◎ : Excellent ○ : Good

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

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

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DH451, DH452, DH453 SERIES with COOLANT HOLES

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

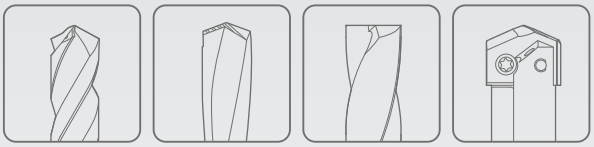
ISO	VDI 3323	Material Description	Vc	Parameter	Drill Diameter (mm) 1.0	2.0
P	2	Non-alloy steel	70	RPM	22280	11140
				FEED	0.02-0.04	0.04-0.06
	3		70	RPM	22280	11140
				FEED	0.02-0.04	0.04-0.06
	6	Low alloy steel	70	RPM	22280	11140
				FEED	0.02-0.04	0.04-0.06
	7		50	RPM	15920	7960
				FEED	0.02-0.04	0.04-0.06
M	12	Stainless steel	40	RPM	12730	6370
				FEED	0.02-0.04	0.02-0.04
	13		25	RPM	7960	3980
				FEED	0.02-0.04	0.02-0.04
	14		45	RPM	14320	7160
				FEED	0.02-0.04	0.02-0.04
N	21	Aluminum-wrought alloy	130	RPM	41380	20690
				FEED	0.04-0.10	0.08-0.14
	22		130	RPM	41380	20690
				FEED	0.04-0.10	0.08-0.14
	23	Aluminum-cast, alloyed	110	RPM	35010	17510
				FEED	0.04-0.10	0.08-0.14
	24		110	RPM	35010	17510
				FEED	0.04-0.10	0.08-0.14
	25		90	RPM	28650	14320
				FEED	0.04-0.08	0.06-0.10
S	37	Titanium Alloys	25	RPM	7960	3980
				FEED	0.01-0.03	0.01-0.03

Vc	Parameter	Drill Diameter (mm) 3.0	4.0	5.0	6.0
100	RPM	10610	7960	6370	5310
	FEED	0.04-0.10	0.06-0.12	0.12-0.18	0.14-0.20
100	RPM	10610	7960	6370	5310
	FEED	0.04-0.10	0.06-0.12	0.12-0.18	0.14-0.20
100	RPM	10610	7960	6370	5310
	FEED	0.04-0.10	0.06-0.12	0.12-0.18	0.14-0.20
70	RPM	7430	5570	4460	3710
	FEED	0.04-0.10	0.06-0.12	0.12-0.18	0.14-0.20
50	RPM	5310	3980	3180	2650
	FEED	0.03-0.05	0.05-0.09	0.07-0.11	0.08-0.12
40	RPM	4240	3180	2550	2120
	FEED	0.03-0.05	0.05-0.09	0.07-0.11	0.08-0.12
60	RPM	6370	4770	3820	3180
	FEED	0.04-0.06	0.06-0.10	0.08-0.12	0.09-0.13
200	RPM	21220	15920	12730	10,610
	FEED	0.14-0.20	0.19-0.25	0.20-0.26	0.22-0.28
200	RPM	21220	15920	12730	10610
	FEED	0.14-0.20	0.19-0.25	0.20-0.26	0.22-0.28
180	RPM	19100	14,320	11460	9550
	FEED	0.14-0.20	0.19-0.25	0.20-0.26	0.22-0.28
180	RPM	19100	14320	11460	9550
	FEED	0.14-0.20	0.19-0.25	0.20-0.26	0.22-0.28
150	RPM	15920	11940	9550	7960
	FEED	0.12-0.18	0.16-0.22	0.17-0.23	0.19-0.25
40	RPM	4240	3180	2550	2120
	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)

Global Cutting Tool Leader **YG-1**



DREAM DRILLS

Leading Through Innovation



SOLID CARBIDE

DREAM DRILLS -ALU

- For Aluminum and Aluminum Alloys



DREAM DRILLS ALU



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

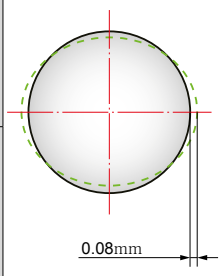
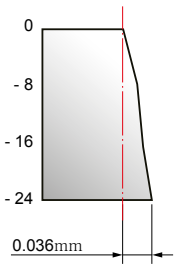
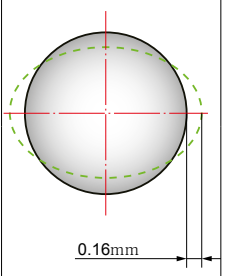
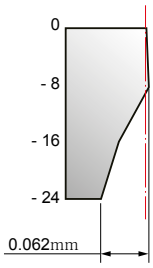
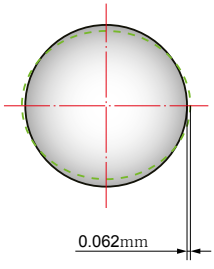
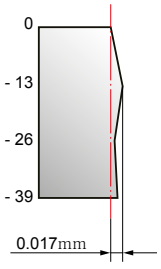
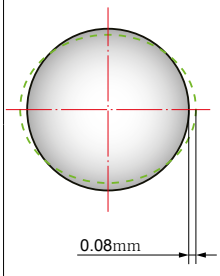
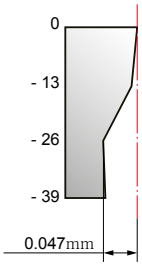
Optimized point thinning to prevent any **chip-clogging from chip welding.**



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

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

Ø6.0 & Ø10.0 TEST, Aluminum(6061)

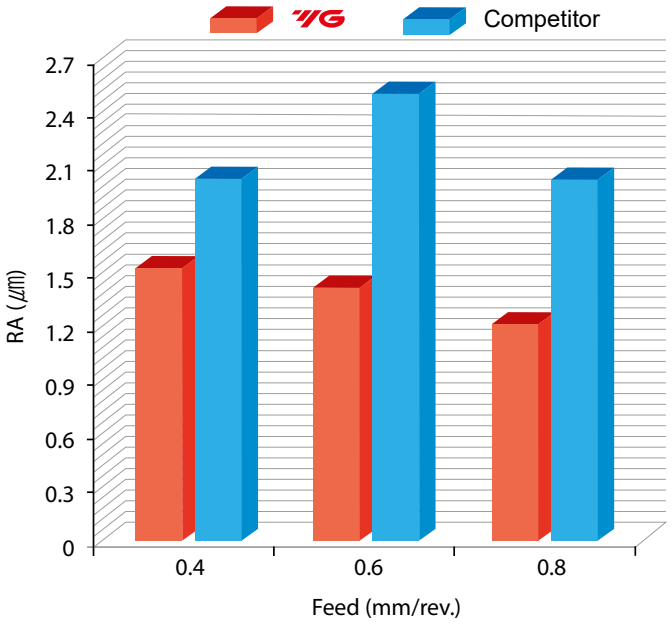
CUTTING CONDITION	YG DREAM DRILL-ALU		COMPETITOR A	
	Roundness	Straightness	Roundness	Straightness
SIZE Ø 6.0 Drilling Holes 1200 Holes				
SIZE Ø10.0 Drilling Holes 820 Holes				

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CASE STUDY

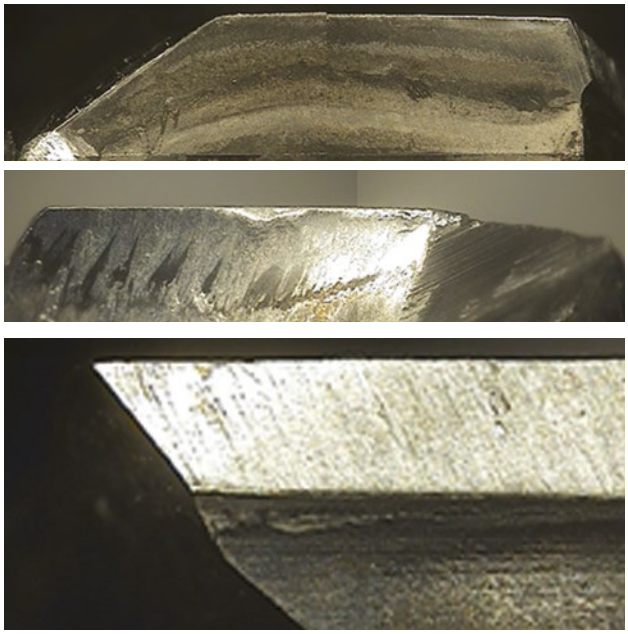
▶SOLID CARBIDE DREAM DRILLS - ALU with Coolant Holes

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

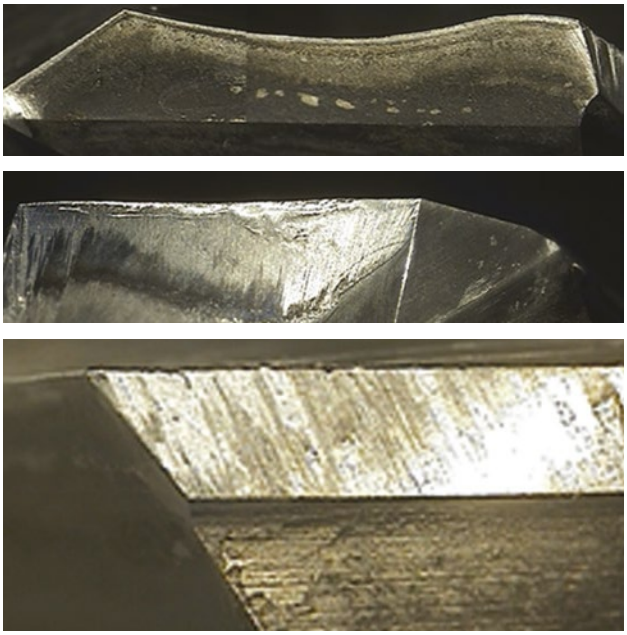


Surface Roughness of Work Piece

YG Total Drilling 820 Holes



Competitor A Total Drilling 820 Holes



SOLID CARBIDE

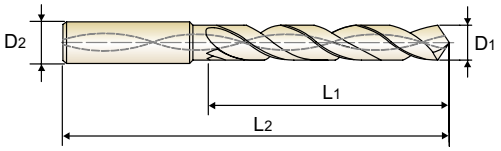
DREAM DRILLS ALU with COOLANT HOLES (3XD)

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

Unit : mm

EDP No.	Drill Diameter D1	Shank Diameter D2	Flute Length L1	Overall Length L2
D5432030	3.0	6	20	62
D5432031	3.1	6	20	62
D5432032	3.2	6	20	62
D5432033	3.3	6	20	62
D5432034	3.4	6	20	62
D5432035	3.5	6	20	62
D5432036	3.6	6	20	62
D5432037	3.7	6	20	62
D5432038	3.8	6	24	66
D5432039	3.9	6	24	66
D5432040	4.0	6	24	66
D5432041	4.1	6	24	66
D5432042	4.2	6	24	66
D5432043	4.3	6	24	66
D5432044	4.4	6	24	66
D5432045	4.5	6	24	66
D5432046	4.6	6	24	66
D5432047	4.7	6	24	66
D5432048	4.8	6	28	66
D5432049	4.9	6	28	66
D5432050	5.0	6	28	66
D5432051	5.1	6	28	66
D5432052	5.2	6	28	66
D5432053	5.3	6	28	66
D5432054	5.4	6	28	66
D5432055	5.5	6	28	66
D5432056	5.6	6	28	66
D5432057	5.7	6	28	66

EDP No.	Drill Diameter D1	Shank Diameter D2	Flute Length L1	Overall Length L2
D5432058	5.8	6	28	66
D5432059	5.9	6	28	66
D5432060	6.0	6	28	66
D5432061	6.1	8	34	79
D5432062	6.2	8	34	79
D5432063	6.3	8	34	79
D5432064	6.4	8	34	79
D5432065	6.5	8	34	79
D5432066	6.6	8	34	79
D5432067	6.7	8	34	79
D5432068	6.8	8	34	79
D5432069	6.9	8	34	79
D5432070	7.0	8	34	79
D5432071	7.1	8	41	79
D5432072	7.2	8	41	79
D5432073	7.3	8	41	79
D5432074	7.4	8	41	79
D5432075	7.5	8	41	79
D5432076	7.6	8	41	79
D5432077	7.7	8	41	79
D5432078	7.8	8	41	79
D5432079	7.9	8	41	79
D5432080	8.0	8	41	79
D5432081	8.1	10	47	89
D5432082	8.2	10	47	89
D5432083	8.3	10	47	89
D5432084	8.4	10	47	89
D5432085	8.5	10	47	89

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

▶ NEXT PAGE

◎ : Excellent ○ : Good

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

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

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SOLID CARBIDE

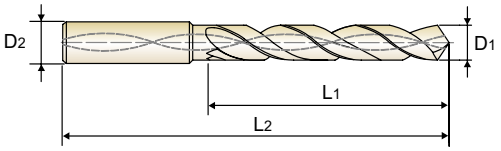
DREAM DRILLS ALU with COOLANT HOLES (3XD)

SERIES **D5432**

- Optimized thinning for Aluminum & Aluminum Alloys to
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- 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

Unit : mm

EDP No.	Drill Diameter D1	Shank Diameter D2	Flute Length L1	Overall Length L2
D5432086	8.6	10	47	89
D5432087	8.7	10	47	89
D5432088	8.8	10	47	89
D5432089	8.9	10	47	89
D5432090	9.0	10	47	89
D5432091	9.1	10	47	89
D5432092	9.2	10	47	89
D5432093	9.3	10	47	89
D5432094	9.4	10	47	89
D5432095	9.5	10	47	89
D5432096	9.6	10	47	89
D5432097	9.7	10	47	89
D5432098	9.8	10	47	89
D5432099	9.9	10	47	89
D5432100	10.0	10	47	89
D5432101	10.1	12	55	102
D5432102	10.2	12	55	102
D5432103	10.3	12	55	102
D5432104	10.4	12	55	102
D5432105	10.5	12	55	102
D5432106	10.6	12	55	102
D5432107	10.7	12	55	102
D5432108	10.8	12	55	102
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

EDP No.	Drill Diameter D1	Shank Diameter D2	Flute Length L1	Overall Length L2
D5432114	11.4	12	55	102
D5432115	11.5	12	55	102
D5432116	11.6	12	55	102
D5432117	11.7	12	55	102
D5432118	11.8	12	55	102
D5432119	11.9	12	55	102
D5432120	12.0	12	55	102
D5432125	12.5	14	60	107
D5432130	13.0	14	60	107
D5432135	13.5	14	60	107
D5432140	14.0	14	60	107
D5432145	14.5	16	65	115
D5432150	15.0	16	65	115
D5432155	15.5	16	65	115
D5432160	16.0	16	65	115
D5432165	16.5	18	73	123
D5432170	17.0	18	73	123
D5432175	17.5	18	73	123
D5432180	18.0	18	73	123
D5432185	18.5	20	79	131
D5432190	19.0	20	79	131
D5432195	19.5	20	79	131
D5432200	20.0	20	79	131

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

◎ : Excellent ○ : Good

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

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

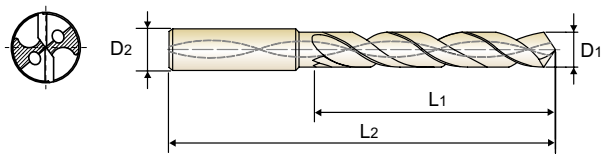
SOLID CARBIDE

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 × D

Unit : mm

EDP No.	Drill Diameter D1	Shank Diameter D2	Flute Length L1	Overall Length L2
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

EDP No.	Drill Diameter D1	Shank Diameter D2	Flute Length L1	Overall Length L2
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					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended																				

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

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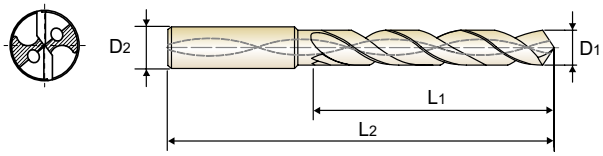
SOLID CARBIDE

DREAM DRILLS ALU with COOLANT HOLES (5XD)

SERIES **D5433**

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- 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 × D

Unit : mm

EDP No.	Drill Diameter D1	Shank Diameter D2	Flute Length L1	Overall Length L2
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

EDP No.	Drill Diameter D1	Shank Diameter D2	Flute Length L1	Overall Length L2
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					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended																				

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

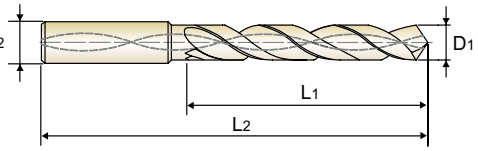
SOLID CARBIDE

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 D1	Shank Diameter D2	Flute Length L1	Overall Length L2
D5434030	3.0	6	34	72
D5434031	3.1	6	34	72
D5434032	3.2	6	34	72
D5434033	3.3	6	34	72
D5434034	3.4	6	34	72
D5434035	3.5	6	34	72
D5434036	3.6	6	34	72
D5434037	3.7	6	34	72
D5434038	3.8	6	43	81
D5434039	3.9	6	43	81
D5434040	4.0	6	43	81
D5434041	4.1	6	43	81
D5434042	4.2	6	43	81
D5434043	4.3	6	43	81
D5434044	4.4	6	43	81
D5434045	4.5	6	43	81
D5434046	4.6	6	43	81
D5434047	4.7	6	43	81
D5434048	4.8	6	57	95
D5434049	4.9	6	57	95
D5434050	5.0	6	57	95
D5434051	5.1	6	57	95
D5434052	5.2	6	57	95
D5434053	5.3	6	57	95
D5434054	5.4	6	57	95
D5434055	5.5	6	57	95
D5434056	5.6	6	57	95
D5434057	5.7	6	57	95

EDP No.	Drill Diameter D1	Shank Diameter D2	Flute Length L1	Overall Length L2
D5434058	5.8	6	57	95
D5434059	5.9	6	57	95
D5434060	6.0	6	57	95
D5434061	6.1	8	76	114
D5434062	6.2	8	76	114
D5434063	6.3	8	76	114
D5434064	6.4	8	76	114
D5434065	6.5	8	76	114
D5434066	6.6	8	76	114
D5434067	6.7	8	76	114
D5434068	6.8	8	76	114
D5434069	6.9	8	76	114
D5434070	7.0	8	76	114
D5434071	7.1	8	76	114
D5434072	7.2	8	76	114
D5434073	7.3	8	76	114
D5434074	7.4	8	76	114
D5434075	7.5	8	76	114
D5434076	7.6	8	76	114
D5434077	7.7	8	76	114
D5434078	7.8	8	76	114
D5434079	7.9	8	76	114
D5434080	8.0	8	76	114
D5434081	8.1	10	95	142
D5434082	8.2	10	95	142
D5434083	8.3	10	95	142
D5434084	8.4	10	95	142
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	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended																				

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

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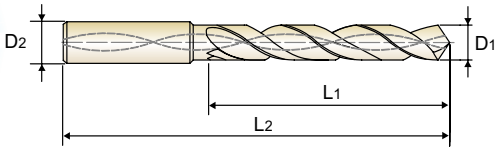
SOLID CARBIDE

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 D1	Shank Diameter D2	Flute Length L1	Overall Length L2
D5434086	8.6	10	95	142
D5434087	8.7	10	95	142
D5434088	8.8	10	95	142
D5434089	8.9	10	95	142
D5434090	9.0	10	95	142
D5434091	9.1	10	95	142
D5434092	9.2	10	95	142
D5434093	9.3	10	95	142
D5434094	9.4	10	95	142
D5434095	9.5	10	95	142
D5434096	9.6	10	95	142
D5434097	9.7	10	95	142
D5434098	9.8	10	95	142
D5434099	9.9	10	95	142
D5434100	10.0	10	95	142
D5434101	10.1	12	114	162
D5434102	10.2	12	114	162
D5434103	10.3	12	114	162
D5434104	10.4	12	114	162
D5434105	10.5	12	114	162
D5434106	10.6	12	114	162
D5434107	10.7	12	114	162
D5434108	10.8	12	114	162
D5434109	10.9	12	114	162
D5434110	11.0	12	114	162
D5434111	11.1	12	114	162
D5434112	11.2	12	114	162
D5434113	11.3	12	114	162

EDP No.	Drill Diameter D1	Shank Diameter D2	Flute Length L1	Overall Length L2
D5434114	11.4	12	114	162
D5434115	11.5	12	114	162
D5434116	11.6	12	114	162
D5434117	11.7	12	114	162
D5434118	11.8	12	114	162
D5434119	11.9	12	114	162
D5434120	12.0	12	114	162
D5434125	12.5	14	133	178
D5434130	13.0	14	133	178
D5434135	13.5	14	133	178
D5434140	14.0	14	133	178

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

◎ : Excellent ○ : Good

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

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

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
	22		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
	24		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

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Leading Through Innovation



SOLID CARBIDE

DREAM DRILLS -MQL TYPE

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

DREAM DRILLS MQL TYPE



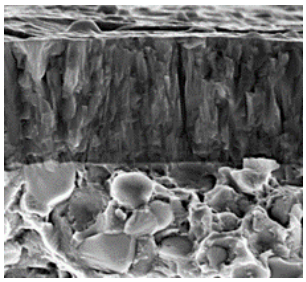
4-Facet point for good **centering capability**

Polished flute for enhanced **chip evacuation**



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





Upgraded TiAlN nano Layer Full Coating

Compatible with the MQL (Minimum Quantity Lubrication) system.

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

Compare with Gun drills

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

Gun drill



Gun drilling Machine

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

* Need Gun drilling machine

Productivity

Up to 10 times Drilling Feedrate

MQL Drill





Vertical & Horizontal Machining Center

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

* Need enough machine stroke on machining center

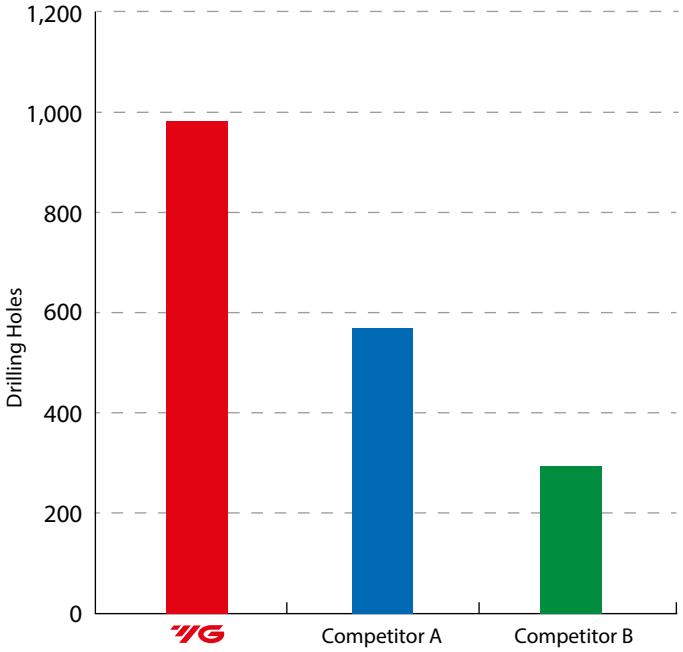
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CASE STUDY

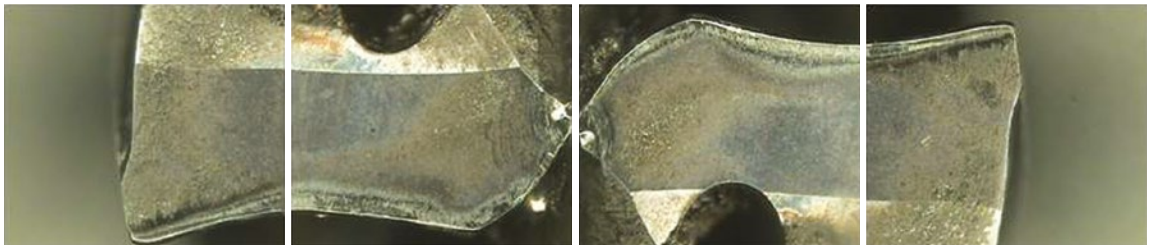
- Flute Shape and Point Shape allowing better chip evacuation in deep hole drilling
- Excellent Coating and Surface Treatment for better performance and chip evacuation

▶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)

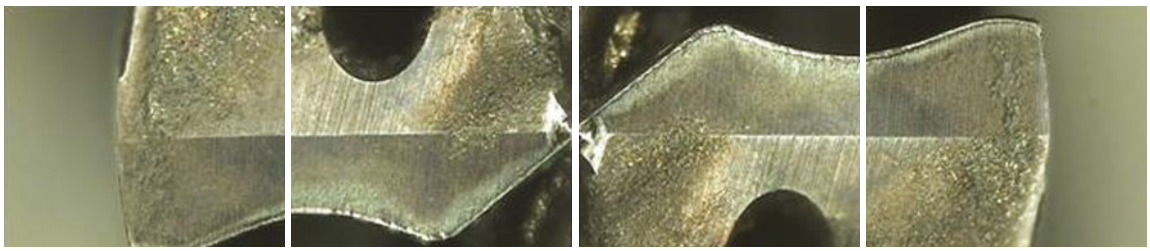


After Drilling 1,000 Holes



Competitor A

After Drilling 546 Holes



TiAlN-COATED SOLID CARBIDE

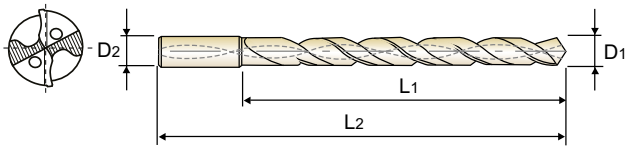
SERIES

DREAM DRILLS MQL TYPE with COOLANT HOLES (10XD)

DH510

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





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

p.110

EXTRA LONG

10 × D

Unit : mm

EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
TiAlN	D_1	D_2	L_1	L_2
DH510030	**3.0**	3	39	90
DH510033	**3.3**	4	46	97
DH510035	**3.5**	4	46	97
DH510040	**4.0**	4	52	103
DH510042	**4.2**	5	59	112
DH510045	**4.5**	5	59	112
DH510050	**5.0**	5	65	118
DH510055	**5.5**	6	72	127
DH510060	**6.0**	6	78	133
DH510065	**6.5**	7	85	141
DH510068	**6.8**	7	91	147
DH510070	**7.0**	7	91	147
DH510075	**7.5**	8	98	155

EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
TiAlN	D_1	D_2	L_1	L_2
DH510080	**8.0**	8	104	161
DH510085	**8.5**	9	111	169
DH510090	**9.0**	9	117	175
DH510095	**9.5**	10	124	182
DH510100	**10.0**	10	130	188
DH510105	**10.5**	11	137	201
DH510110	**11.0**	11	143	207
DH510115	**11.5**	12	150	215
DH510120	**12.0**	12	156	221
DH510125	**12.5**	13	163	229
DH510130	**13.0**	13	169	235
DH510135	**13.5**	14	176	243
DH510140	**14.0**	14	182	249

◎ : Excellent ○ : Good

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

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

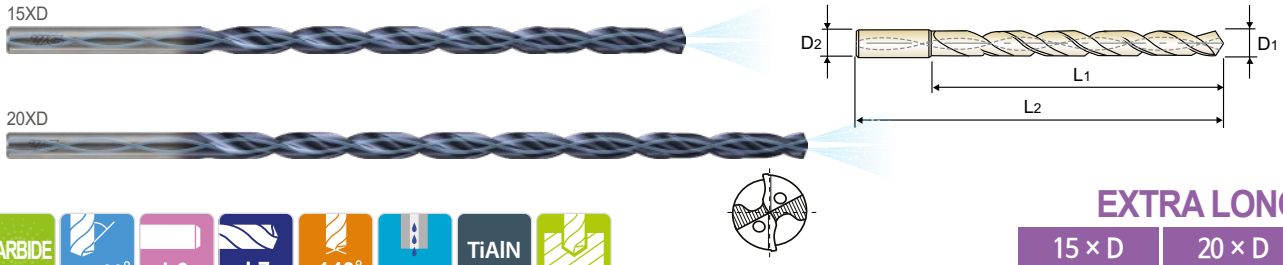
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SERIES

DH515
DH520

TiAlN-COATED SOLID CARBIDE
DREAM DRILLS MQL TYPE with COOLANT HOLES (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)



CARBIDE | 30° | h6 | h7 | 140° | 40 bar | TiAlN

p.110

EXTRA LONG

15 × D (DH515)	20 × D (DH520)

Unit : mm

DH515

EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
TiAlN	D_1	D_2	L_1	L_2
DH515030	3.0	3	54	105
DH515035	3.5	4	63	114
DH515040	4.0	4	72	123
DH515045	4.5	5	81	134
DH515050	5.0	5	90	143
DH515055	5.5	6	99	154
DH515060	6.0	6	108	163
DH515070	7.0	7	126	182
DH515080	8.0	8	144	201
DH515090	9.0	9	162	220
DH515100	10.0	10	180	238
DH515110	11.0	11	198	262
DH515120	12.0	12	216	281

DH520

EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
TiAlN	D_1	D_2	L_1	L_2
DH520030	3.0	3	69	120
DH520035	3.5	4	81	132
DH520040	4.0	4	92	143
DH520045	4.5	5	104	157
DH520050	5.0	5	115	168
DH520055	5.5	6	127	182
DH520060	6.0	6	138	193
DH520070	7.0	7	161	217
DH520080	8.0	8	184	241
DH520090	9.0	9	207	265
DH520100	10.0	10	230	288
DH520120	12.0	12	276	341

◎ : Excellent ○ : Good

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

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

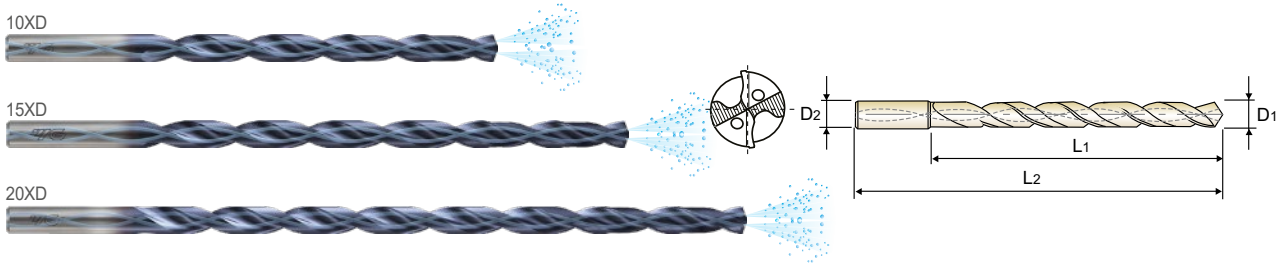
SERIES

TiAlN-COATED SOLID CARBIDE (END MILL SHANK)

DREAM DRILLS MQL TYPE with COOLANT HOLES (10XD)(15XD)(20XD)

DHM15 **DHM10** **DHM20**

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



DHM10 DHM15 DHM20

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

p.110

EXTRA LONG

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

Unit : mm

DHM10

EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
TiAlN	D_1	D_2	L_1	L_2
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	D_1	D_2	L_1	L_2
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	D_1	D_2	L_1	L_2
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
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended	◎	◎	○			◎	○	○		○	○				◎	○	◎	○	◎	○

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

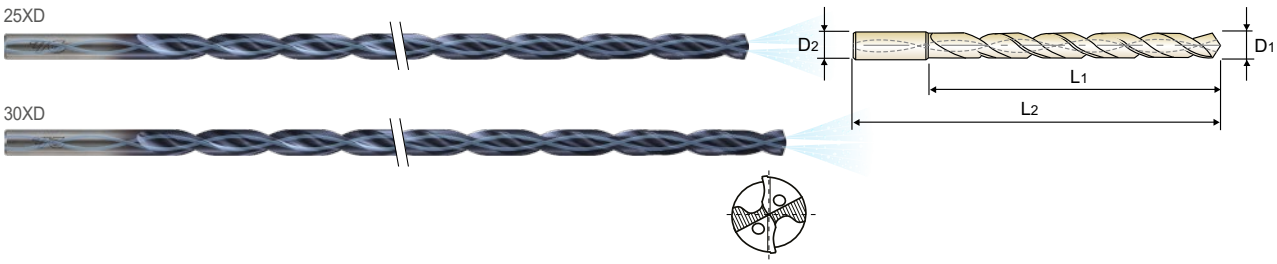
VAMATEC www.vamatec.be I info@vamatec.be

SERIES

DHM25
DHM30

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)



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

p.110

EXTRA LONG

25 × D (DHM25)	30 × D (DHM30)

DHM25

Unit : mm

EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
TiAlN	D_1	D_2	L_1	L_2
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

DHM30

EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
TiAlN	D_1	D_2	L_1	L_2
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

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

◎ : Excellent ○ : Good

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

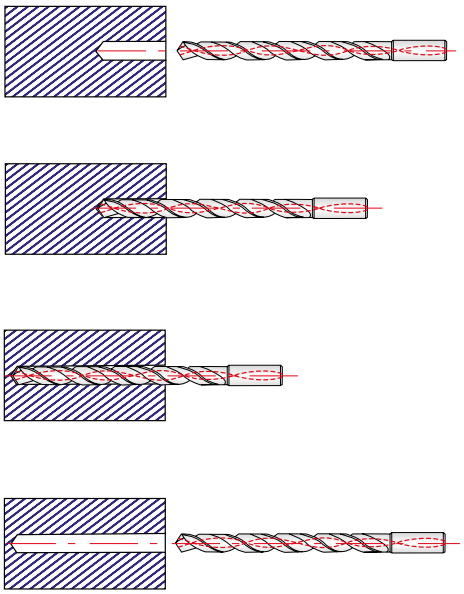
ISO	N										S							H			
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel		Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28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

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

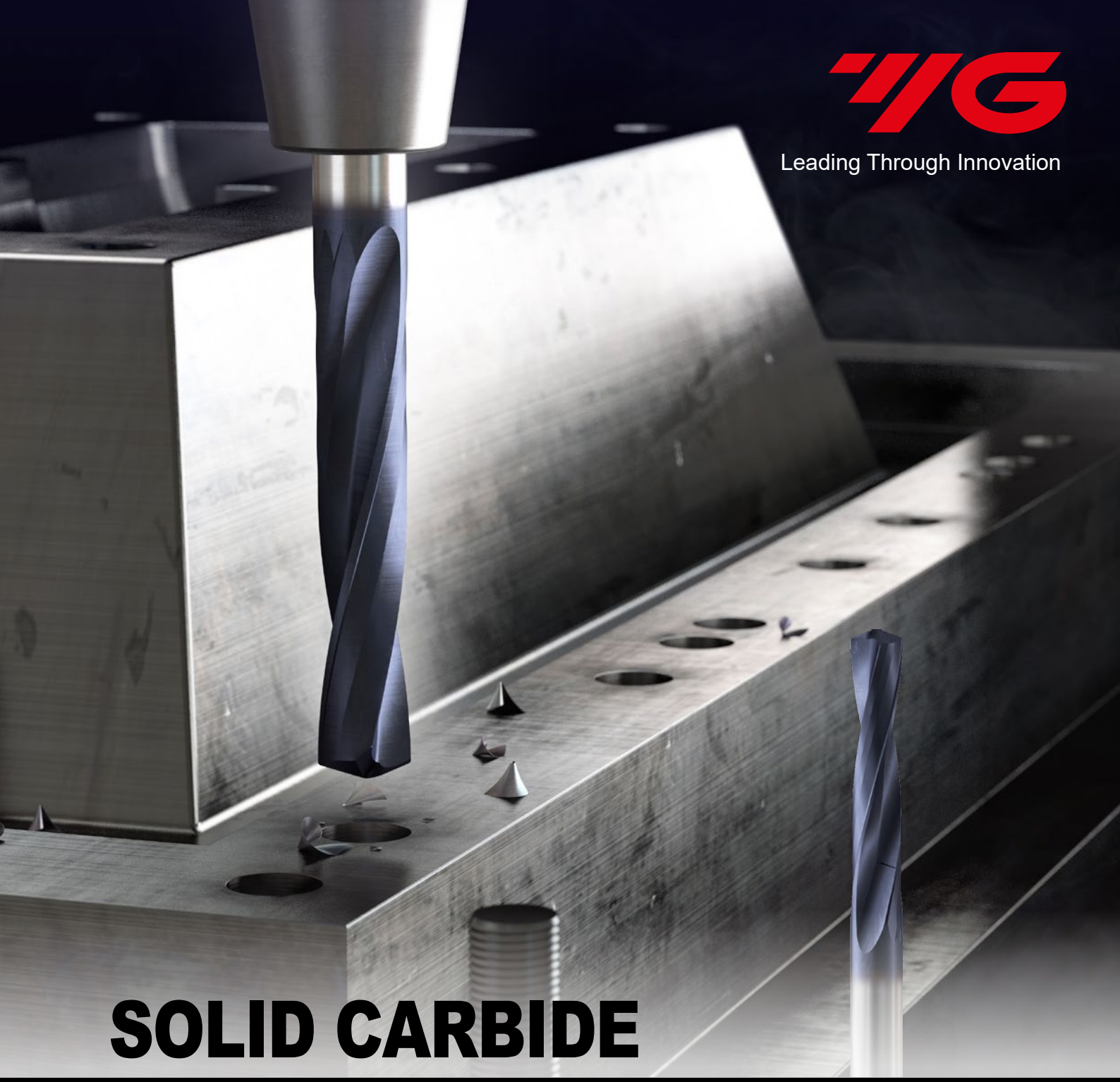
with COOLANT HOLES

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

ISO	VDI 3323	Material Description	Vc 10xD-20xD	Vc 25xD-30xD	Parameter	Drill Diameter (mm) 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	Low alloy steel	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	High alloyed steel, and tool steel	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
K	15	Grey cast iron	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	Nodular cast iron	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	Malleable cast iron	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



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%.



Leading Through Innovation

SOLID CARBIDE

DREAM DRILLS
for HIGH HARDENED STEELS

- For High Hardened Steels (HRc50 to HRc70)

DREAM DRILLS
for HIGH HARDENED STEELS

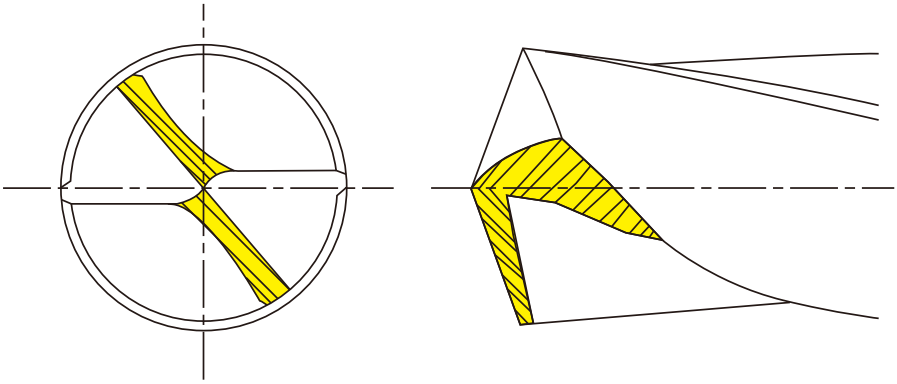


Low Helix

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

Special Thinning (R+U Thinning)

Unique drill point geometry with special thinning to minimize cutting workload, axial thrust loading and heat generation.



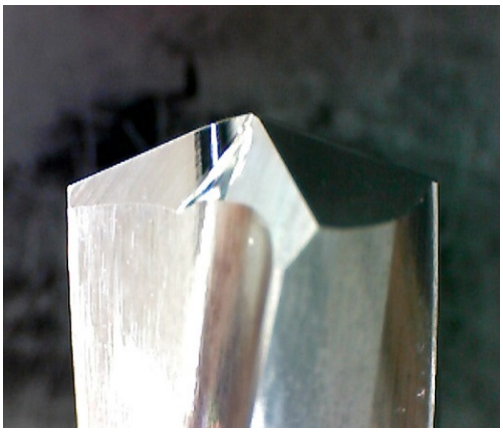
Coating

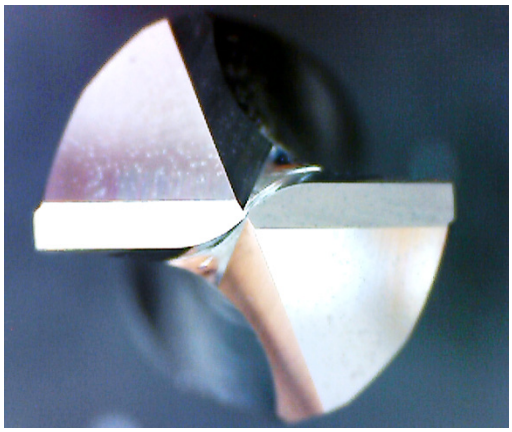
TiAlN nano coating combines high hardness with high thermal stability against oxidation, allows machining the upper level of hardened steels HRc 50-70.

Polished Flutes

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

Point Shape





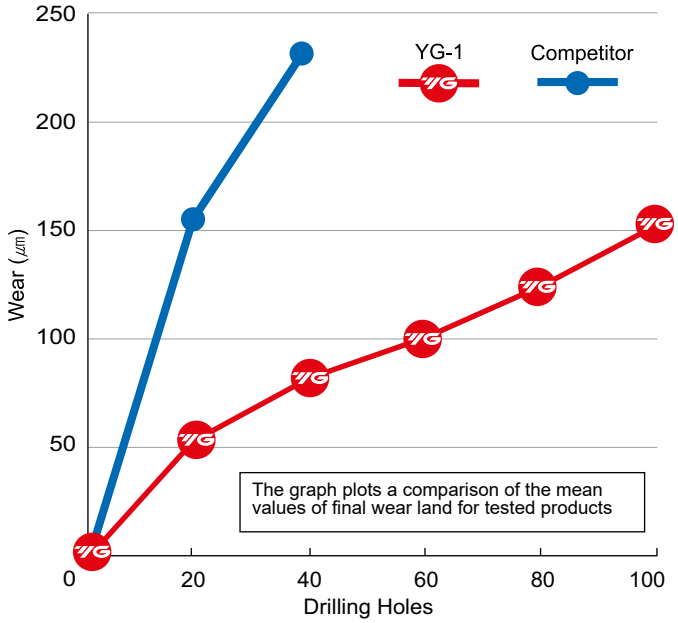
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CASE STUDY

- 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.

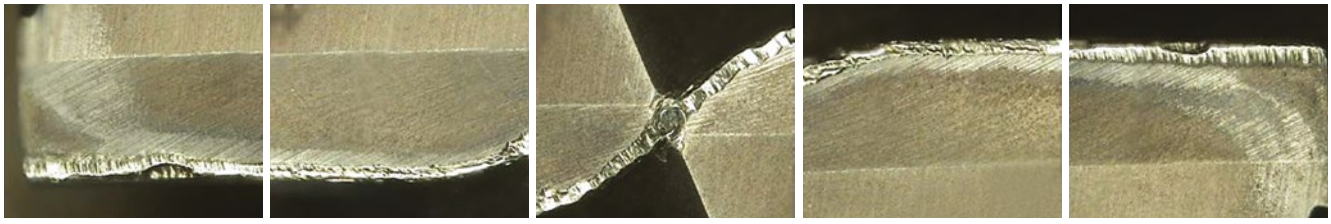
▶ SOLID CARBIDE DREAM DRILLS for HIGH HARDENED STEELS (HRc50-70)

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



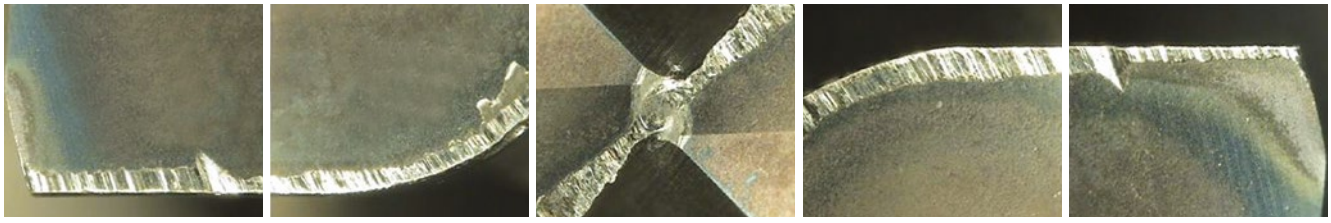
YG

After Drilling 100 Holes



Competitor A

After Drilling 40 Holes



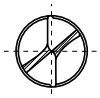
TiAlN-COATED SOLID CARBIDE

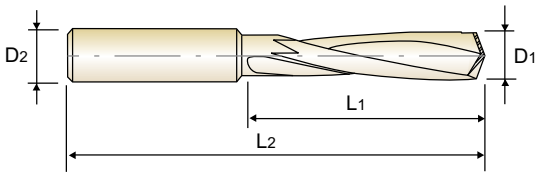
DREAM DRILLS HIGH HARDENED STEELS without COOLANT HOLES (3XD)

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







CARBIDE | 15° | h6 | h7 | 140° | TiAlN

p.114

SHORT

3 × D

Unit : mm

EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
TiAlN	D_1	D_2	L_1	L_2
DH500026	2.6	3	14	44
DH500030	3.0	3	16	46
DH500033	3.3	4	18	48
DH500034	3.4	4	20	50
DH500035	3.5	4	20	50
DH500040	4.0	4	22	52
DH500042	4.2	6	25	65
DH500043	4.3	6	28	68
DH500044	4.4	6	28	68
DH500045	4.5	6	28	68
DH500050	5.0	6	32	72
DH500051	5.1	6	32	72
DH500052	5.2	6	32	72
DH500055	5.5	6	35	75
DH500060	6.0	6	35	75
DH500065	6.5	8	40	80
DH500068	6.8	8	45	85
DH500069	6.9	8	45	85

EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
TiAlN	D_1	D_2	L_1	L_2
DH500070	7.0	8	45	85
DH500075	7.5	8	45	85
DH500080	8.0	8	50	98
DH500085	8.5	10	50	98
DH500086	8.6	10	57	105
DH500088	8.8	10	57	105
DH500090	9.0	10	57	105
DH500095	9.5	10	57	105
DH500100	10.0	10	63	111
DH500102	10.2	12	63	111
DH500103	10.3	12	63	111
DH500105	10.5	12	63	111
DH500108	10.8	12	71	119
DH500110	11.0	12	71	119
DH500115	11.5	12	71	119
DH500120	12.0	12	71	119
DH500140	14.0	14	77	125

Recommended cutting conditions

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

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		15	RPM	1910	1590	1190	950	800	600	480	400	340
				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
	39.3		12	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

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

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

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