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

SELECTION GUIDE METRIC

SOLID CARBIDE DREAM DRILLS

Please visit globalyg1.com/mat for material search

◎ : Excellent ○ : Good

							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
ISO	VDI 3323	Material Description	Composition / Structure / Heat Treatment		HB	HRc					
P	1	Non-alloy steel	About 0.15% C	Annealed	125						
P	2	Non-alloy steel	About 0.45% C	Annealed	190	13	◎	◎	◎	◎	◎
P	3	Non-alloy steel	About 0.45% C	Quenched & Tempered	250	25	◎	◎	◎	◎	◎
P	4	Non-alloy steel	About 0.75% C	Annealed	270	28	◎	◎	◎	◎	◎
P	5	Non-alloy steel	About 0.75% C	Quenched & Tempered	300	32	○	○	○	○	○
P	6	Low alloy steel		Annealed	180	10	◎	◎	◎	◎	◎
P	7	Low alloy steel		Quenched & Tempered	275	29	◎	◎	◎	◎	◎
P	8	Low alloy steel		Quenched & Tempered	300	32	○	○	○	○	○
P	9	Low alloy steel		Quenched & Tempered	350	38	○	○	○	○	○
P	10	High alloyed steel, and tool steel		Annealed	200	15	◎	◎	◎	◎	◎
P	11	High alloyed steel, and tool steel		Quenched & Tempered	325	35	○	○	○	○	○
M	12	Stainless steel	Ferritic / Martensitic	Annealed	200	15	○	○	○	○	○
M	13	Stainless steel	Martensitic	Quenched & Tempered	240	23	○	○	○	○	○
M	14	Stainless steel	Austenitic		180	10					
K	15	Grey cast iron	Pearlitic / ferritic		180	10	◎	◎	◎	◎	◎
K	16	Grey cast iron	Pearlitic (Martensitic)		260	26	○	○	○	○	○
K	17	Nodular cast iron	Ferritic		160	3	◎	◎	◎	◎	◎
K	18	Nodular cast iron	Pearlitic		250	25	○	○	○	○	○
K	19	Malleable cast iron	Ferritic		130		◎	◎	◎	◎	◎
K	20	Malleable cast iron	Pearlitic		230	21	○	○	○	○	○
N	21	Aluminum-wrought alloy	Not Curable		60						
N	22	Aluminum-wrought alloy	Curable	Hardened	100						
N	23	Aluminum-cast, alloyed	≤ 12% Si, Not Curable		75						
N	24	Aluminum-cast, alloyed	≤ 12% Si, Curable	Hardened	90						
N	25	Aluminum-cast, alloyed	> 12% Si, Not Curable		130						
N	26	Copper and Copper Alloys (Bronze / Brass)	Cutting Alloys, PB>1%		110						
N	27	Copper and Copper Alloys (Bronze / Brass)	CuZn, CuSnZn (Brass)		90						
N	28	Copper and Copper Alloys (Bronze / Brass)	CuSn, lead-free copper and electrolytic copper		100						
N	29	Non Metallic Materials	Duroplastic, Fiber Reinforced Plastic								
N	30	Non Metallic Materials	Rubber, Wood, etc.								
S	31	Heat Resistant Super Alloys	Fe Based	Annealed	200	15					
S	32	Heat Resistant Super Alloys	Fe Based	Cured	280	30					
S	33	Heat Resistant Super Alloys	Ni or Co Based	Annealed	250	25					
S	34	Heat Resistant Super Alloys	Ni or Co Based	Cured	350	38					
S	35	Heat Resistant Super Alloys	Ni or Co Based	Cast	320	34					
S	36	Titanium Alloys	Pure Titanium		400 Rm						
S	37	Titanium Alloys	Alpha + Beta Alloys	Hardened	1050 Rm						
H	38	Hardened steel		Hardened	550	55	○	○	○	○	○
H	39	Hardened steel		Hardened	630	60					
H	40	Chilled Cast Iron		Cast	400	42					
H	41	Hardened Cast Iron		Hardened	550	55					

	X					GENERAL					
SERIES	DTX423	DTX424	DTX406	DTX408	DTX421	DH404	DH423 DH443	DH424 DH444	DH406 DH446	DH408 DH448	DH421
DRILLING DEPTH	3XD	5XD	3XD	5XD	8XD	3XD	3XD	5XD	3XD	5XD	8XD
TOOL MATERIAL	CARBIDE					CARBIDE					
LENGTH	SHORT	LONG	SHORT	LONG	EXTRA LONG	STUB	SHORT	LONG	SHORT	LONG	EXTRA LONG
SIZE MIN	D3.0	D1.0	D3.0	D1.0	D3.0	D3.0	D3.0	D1.0	D3.0	D1.0	D3.0
SIZE MAX	D20.0	D20.0	D20.0	D20.0	D14.0	D20.0	D20.0	D20.0	D20.0	D20.0	D14.0
PAGE	28	30	33	35	38	46	48	50	53	55	58
SURFACE TREATMENT	RCH-Coating					TiAlN					
1											
2	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎
3	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎
4	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎
5	○	○	○	○	○	○	○	○	○	○	○
6	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎
7	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎
8	○	○	○	○	○	○	○	○	○	○	○
9	○	○	○	○	○	○	○	○	○	○	○
10	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎
11	○	○	○	○	○	○	○	○	○	○	○
12	○	○	○	○	○	○	○	○	○	○	○
13	○	○	○	○	○	○	○	○	○	○	○
14											
15	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎
16	○	○	○	○	○	○	○	○	○	○	○
17	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎
18	○	○	○	○	○	○	○	○	○	○	○
19	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎
20	○	○	○	○	○	○	○	○	○	○	○
21											
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27											
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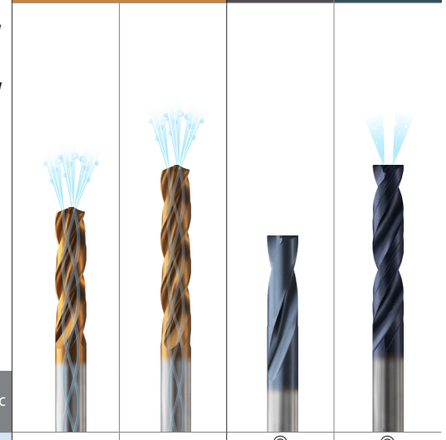
31											
32											
33											
34											
35											
36											
37											
38	○	○	○	○	○	○	○	○	○	○	○
39											
40											
41											

SELECTION GUIDE METRIC

SOLID CARBIDE DREAM DRILLS

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

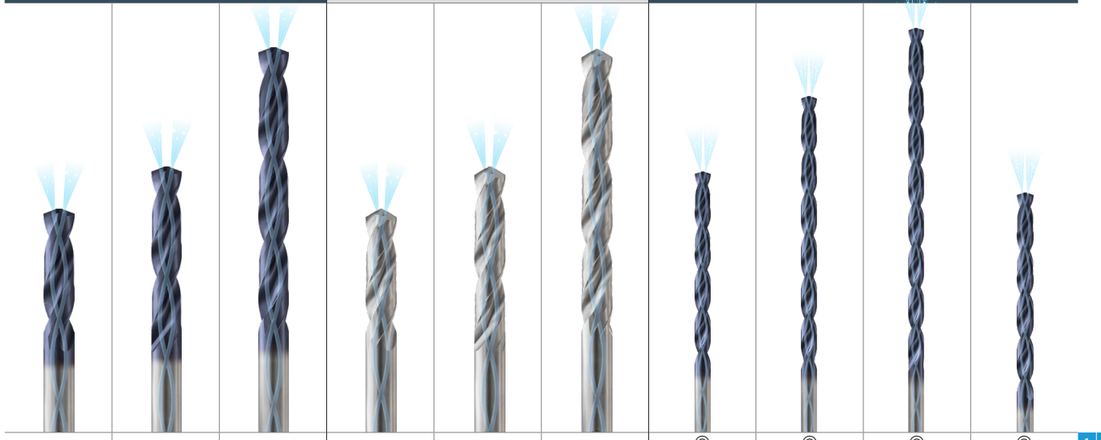


Please visit globalyg1.com/mat for material search

◎ : Excellent ○ : Good

	ISO	VDI 3323	Material Description	Composition / Structure / Heat Treatment		HB	HRc	DGR493	DGR495	DPP447	DH450
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				

SERIES	INOX			ALU			MQL TYPE			
	DH451	DH452	DH453	D5432	D5433	D5434	DH510	DH515	DH520	DHM10
DRILLING DEPTH	3XD	5XD	8XD	3XD	5XD	8XD	10XD	15XD	20XD	10XD
TOOL MATERIAL	CARBIDE			CARBIDE			CARBIDE			
LENGTH	SHORT	LONG	EXTRA LONG	SHORT	LONG	EXTRA LONG	EXTRA LONG			
SIZE MIN	D3.0	D1.0	D3.0	D3.0	D3.0	D3.0	D3.0	D3.0	D3.0	D3.0
SIZE MAX	D20.0	D20.0	D14.0	D20.0	D20.0	D14.0	D14.0	D12.0	D12.0	D14.0
PAGE	84	86	89	96	98	100	106	107	107	108
SURFACE TREATMENT	TiAlN			Bright			TiAlN			



	DH451	DH452	DH453	D5432	D5433	D5434	DH510	DH515	DH520	DHM10		
1							◎	◎	◎	◎	1	P
2	◎	◎	◎				◎	◎	◎	◎	2	
3	○	○	○				○	○	○	○	3	
4											4	
5											5	
6	◎	◎	◎				◎	◎	◎	◎	6	
7	○	○	○				○	○	○	○	7	
8							○	○	○	○	8	
9											9	
10							○	○	○	○	10	
11							○	○	○	○	11	
12	◎	◎	◎								12	M
13	◎	◎	◎								13	
14	◎	◎	◎								14	
15							◎	◎	◎	◎	15	K
16							○	○	○	○	16	
17							◎	◎	◎	◎	17	
18							○	○	○	○	18	
19							◎	◎	◎	◎	19	
20							○	○	○	○	20	
21	◎	◎	◎	◎	◎	◎					21	N
22	◎	◎	◎	◎	◎	◎					22	
23	○	○	○	◎	◎	◎					23	
24	○	○	○	◎	◎	◎					24	
25	○	○	○								25	
26											26	
27											27	
28											28	
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35											35	
36											36	
37	○	○	○								37	
38											38	H
39											39	
40											40	
41											41	

GUIDE LINE TO ICONS

Standard of Tools
DIN 6539
Number of DIN Standard

Coolant Supply Pressure
45 bar
20 bar

Tool Material
CARBIDE

Point Angle
140°

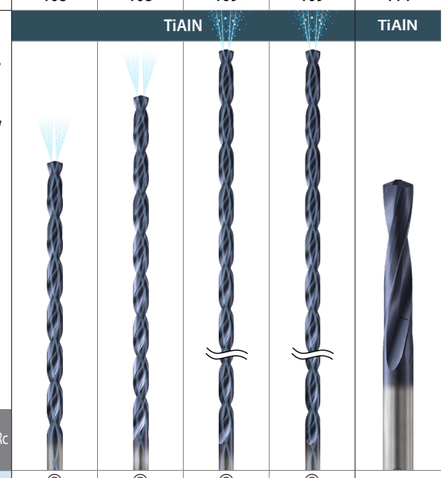
Surface Treatment
TiAIN
Titanium Aluminum Nitride Coating
RCH-Coating
YG-1 RCH-Coating
X-Coating
YG-1 X-Coating
H-Coating
YG-1 H-Coating
Diamond
Diamond Coating
Bright
Bright Finish

Tolerance of Dimension
m7
Tolerance of Outside Diameter
h6
Tolerance of Shank Diameter

Cutting Condition

SELECTION GUIDE METRIC

	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



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	DHM15	DHM20	DHM25	DHM30	DH500
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						
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	27			CuZn, CuSnZn (Brass)		90						
	28			CuSn, lead-free copper and electrolytic copper		100						
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	30			Rubber, Wood, etc.								
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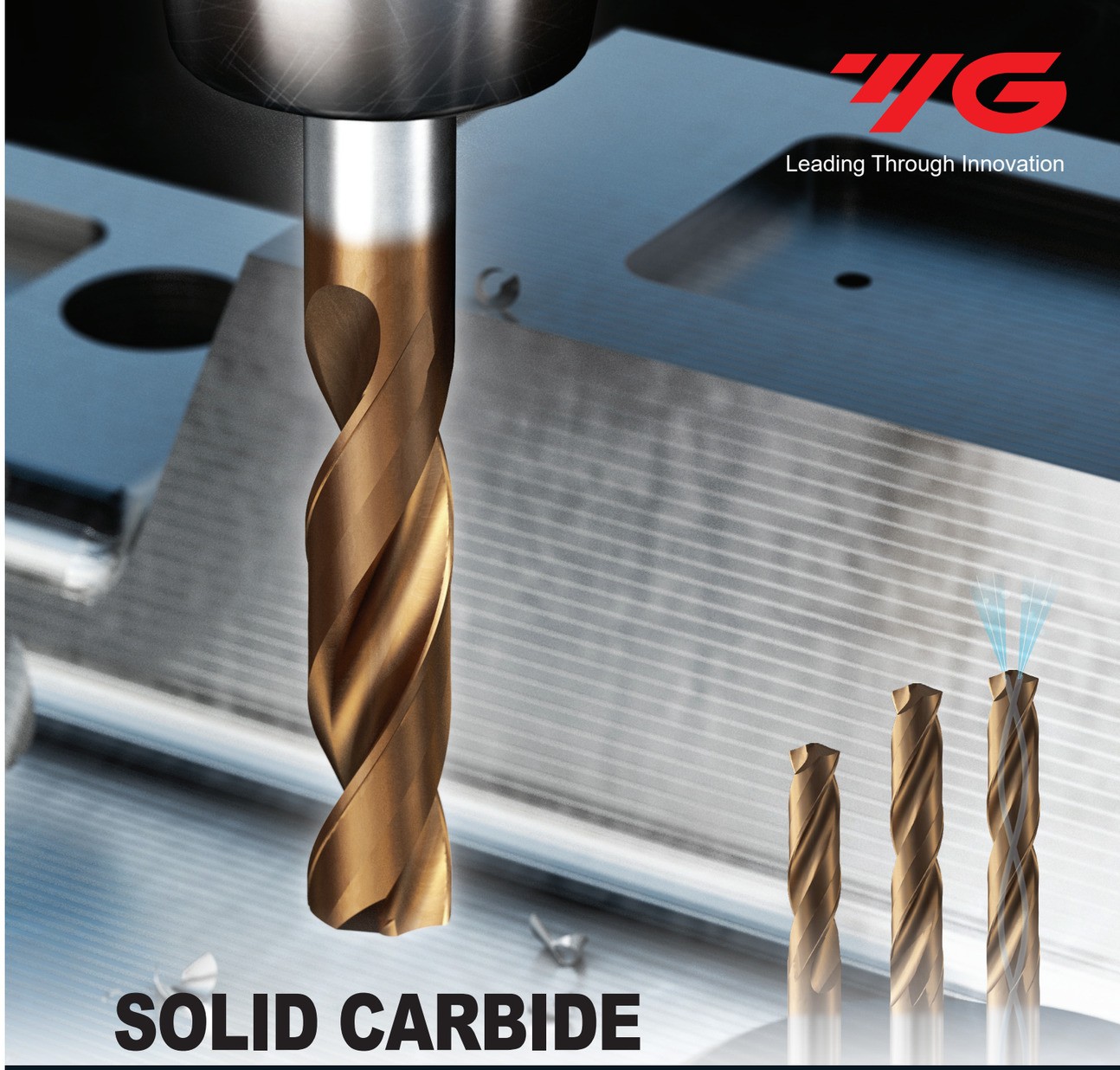
	32				Cured	280	30					
	33			Ni or Co Based	Annealed	250	25					
	34				Cured	350	38					
	35				Cast	320	34					
	36		Titanium Alloys	Pure Titanium		400 Rm						
	37			Alpha + Beta Alloys	Hardened	1050 Rm						
H	38		Hardened steel		Hardened	550	55					◎
	39				Hardened	630	60					◎
	40		Chilled Cast Iron		Cast	400	42					
	41		Hardened Cast Iron		Hardened	550	55					

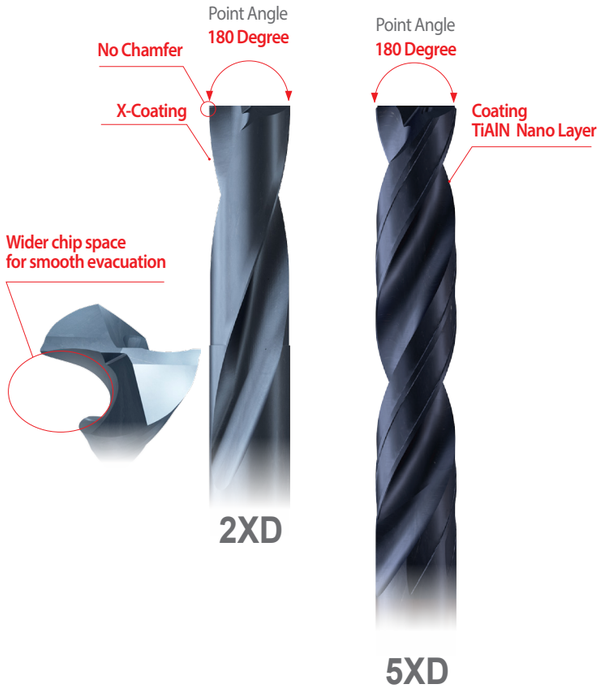
· Phone: +82-32-526-0909, www.yg1.solutions, E-mail: yg1@yg1.solutions

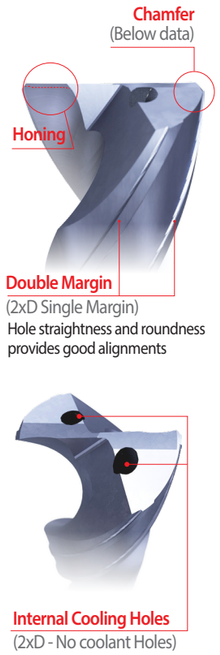


DREAM DRILLS -PRO

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

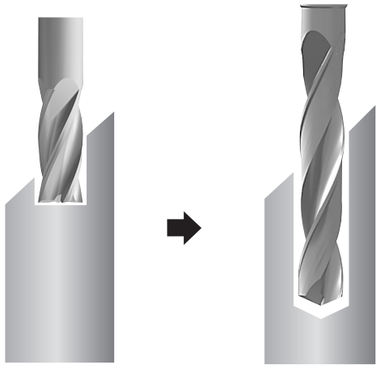
DREAM DRILLS FLAT BOTTOM





Only One Operation for Angled Surface

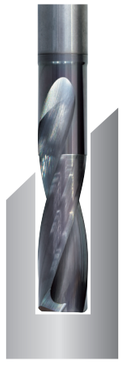
For angled surfaces, two operations are required to drill in a conventional Process



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

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

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

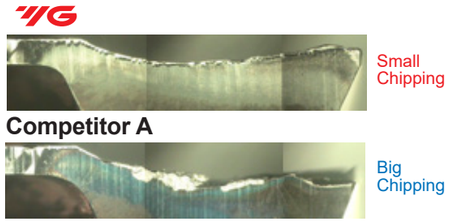


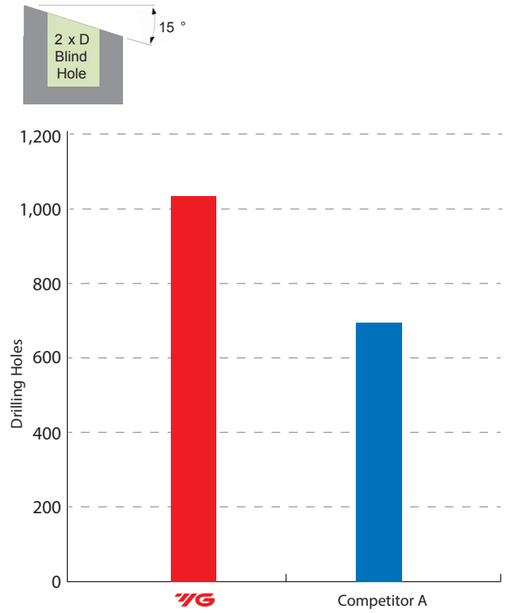
One operation(Dream Drill Flat Bottom)
One Drill does it all
without using both an end mill and a drill

CASE STUDY

▶ SOLID CARBIDE DREAM DRILLS - Flat Bottom without Coolant Holes

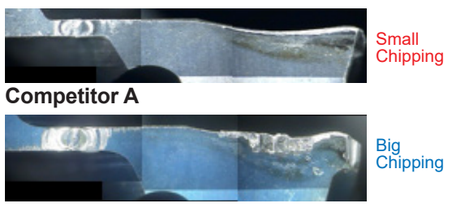
CUTTING CONDITION	
Drill Diameter (mm)	Ø6.0
Work Material	• DIN: C45 • AISI: 1045 • JIS: S45C (HRc20)
Cutting Speed	75.4 m/min
RPM	4,000 rev/min
Feed	0.1 mm/rev
Drilling Depth	12.0 mm (2XD) Blind Hole / without Pecking
Coolant	External Cooling Water Soluble (9% Emulsion)
Machine	Machining Center

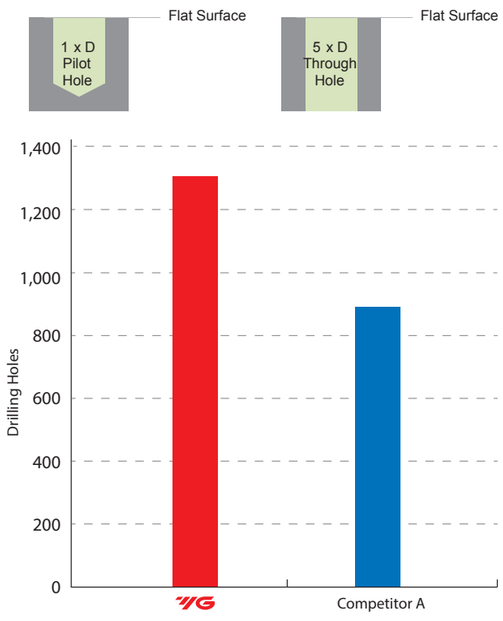




▶ SOLID CARBIDE DREAM DRILLS - Flat Bottom with Coolant Holes

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



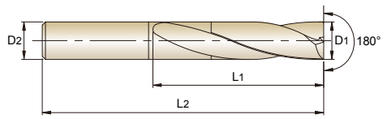


X-COATED SOLID CARBIDE

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	◎	◎	◎	○	○	◎	○	○	○			○			◎	○				

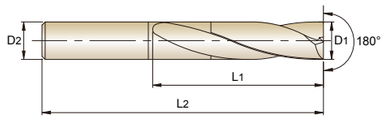
ISO	N										S							H			
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze /Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel		Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	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	○	○																			

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	◎	◎	◎	○	○	◎	○	○	○			○			◎	○				

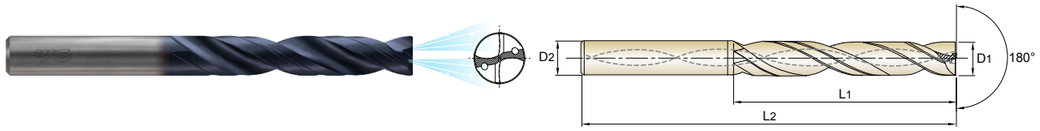
ISO	N										S							H			
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze /Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel		Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	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 | p.79

LONG 5× D

Unit : mm

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

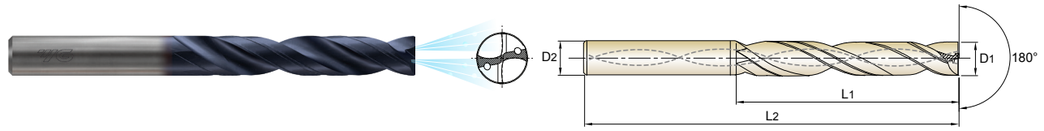
ISO	N										S							H			
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze /Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel		Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	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	○	○																			

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



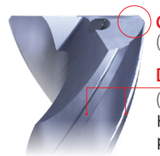
DIN 6537 | CARBIDE | 30° | h6 | h7 | 180° | 20 bar | TiAlN | p.79

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



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

▶ Other diameters and shank types are available upon request.

◎ : Excellent ○ : Good

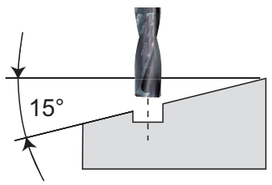
ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	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	◎	◎	◎	○	○	◎	○	○	○			○			◎	○				

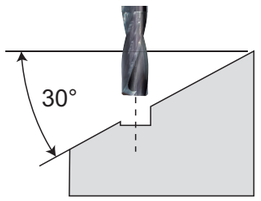
ISO	N										S							H			
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze /Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel		Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	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	○	○																			

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

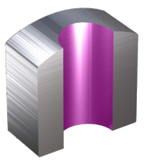


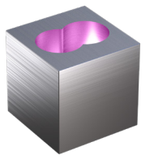


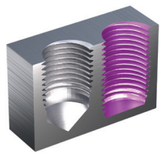
Surface Angle	Cutting Conditions RPM	FEED
0° - 15°	100%	100%
15° - 30°	100%	50%
30° -	70%	30%

- 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

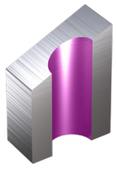

Curved Surface

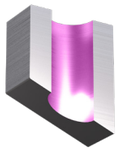

Chained Hole

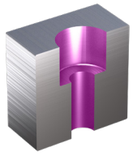

Blind Hole for Threading

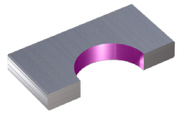
Guide Drilling

Cross Drilling


Inclined Entry


Inclined Exit


Counter Boring


Thin Plate

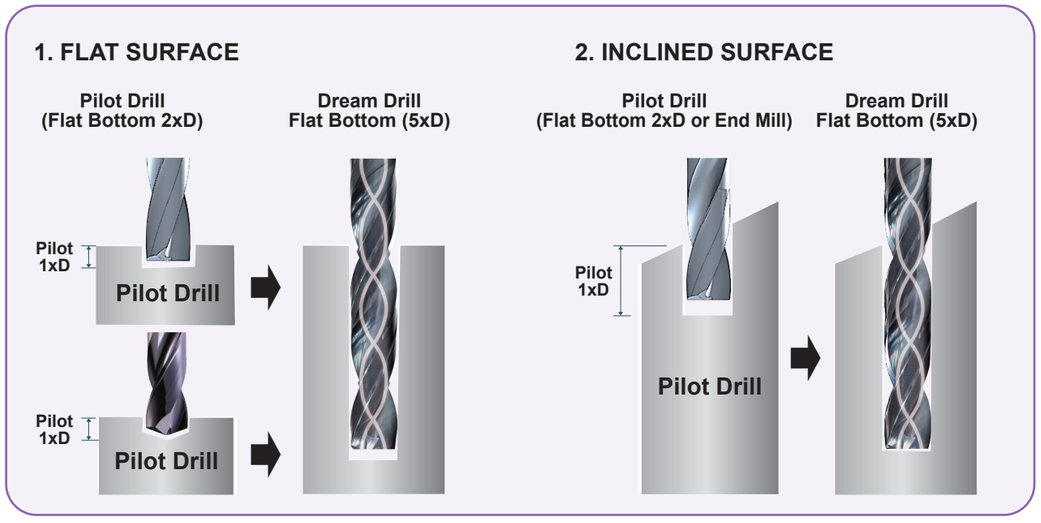
DH450 SERIES with COOLANT HOLES (5XD)

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