

**Z-COATED SOLID CARBIDE DREAM DRILLS  
PRO with Coolant Holes (5XD)**

**DGN508** SERIES

- ▶ 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
h6
m7
140°
20 bar
P. 20

**LONG**

**5 × D**

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

Unit : mm

EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
Z-Coating	D1	D2	L1	L2
DGN508034	3.4	6	28	66
DGN508035	3.5	6	28	66
DGN508036	3.6	6	28	66
DGN508037	3.7	6	28	66
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

▶ 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	30	10	29	32	38	15	35	15	23	10	10	26	3	25	10	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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EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
Z-Coating	D1	D2	L1	L2
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
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

Unit : mm

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

▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

ISO	P										M				K						
	Non-alloy steel					Low alloy steel					High alloyed steel, and tool steel				Stainless steel		Grey cast iron		Nodular cast iron		Malleable cast iron
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
HRc	13	25	28	32	10	29	32	38	15	15	15	23	10	10	26	3	25	21	21		
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230	
Recommended	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎
ISO	N										S					H					
	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel		Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34	40	55	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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**LONG**  
5 × D

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

Unit : mm

EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
Z-Coating	D1	D2	L1	L2
DGN508130	13.0	14	77	124
DGN508135	13.5	14	77	124
DGN508140	14.0	14	77	124
DGN508145	14.5	16	83	133
DGN508150	15.0	16	83	133
DGN508155	15.5	16	83	133
DGN508160	16.0	16	83	133
DGN508165	16.5	18	93	143
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					
	Non-alloy steel					Low alloy steel					High alloyed steel, and tool steel		Stainless steel		Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc	13	25	28	32	30	10	29	32	38	15	35	15	23	10	10	26	3	25	130	21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended	◎	◎	◎	○	◎	◎	◎	○	○	◎	○	○	○	○	◎	○	◎	○	◎	○

ISO	N								S							H					
	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials	Heat Resistant Super Alloys					Titanium Alloys		Hardened steel	Chilled Cast Iron	Hardened Cast Iron		
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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																					



# SELECTION GUIDE



HOLEMAKING TOOLS

SERIES  
 DRILLING DEPTH / STANDARD  
 LENGTH  
 SIZE MIN  
 SIZE MAX  
 PAGE

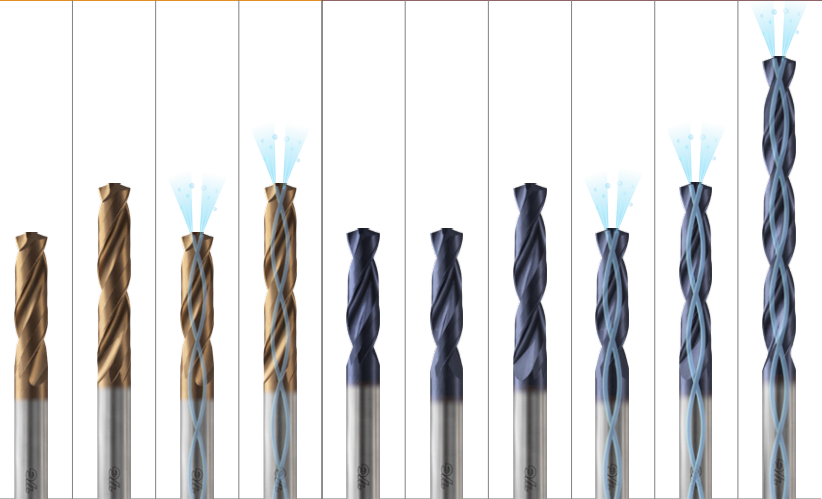
PRO <sup>NEW</sup>				GENERAL					
DGN523	DGN526	DGN506	DGN508	DH404	DH423 DH443	DH424 DH444	DH406 DH446	DH408 DH448	DH421
3XD	5XD	3XD	5XD	3XD	3XD	5XD	3XD	5XD	8XD
SHORT	LONG	SHORT	LONG	STUB	SHORT	LONG	SHORT	LONG	EXTRALONG
D3.0	D1.0	D3.0	D1.0	D3.0	D32.0	D1.0	D3.0	D1.0	D3.0
D20.0	D20.0	D20.0	D20.0	D20.0	D20.0	D20.0	D20.0	D20.0	D14.0
8	11	14	16	24	26	29	32	34	37

SURFACE TREATMENT

Z-Coating

TiAIN

## SOLID CARBIDE **DREAM DRILLS**



Please visit  
[globalyg1.com/mat](http://globalyg1.com/mat)  
 for material search

◎ : Excellent ○ : Good

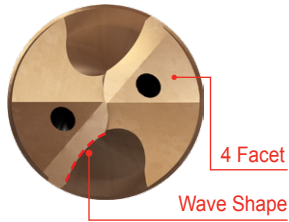
TECHNICAL DATA : P 97

ISO	VDI 3323	Material Description	Composition / Structure / Heat Treatment	HB	HRC	DGN523	DGN526	DGN506	DGN508	DH404	DH423 DH443	DH424 DH444	DH406 DH446	DH408 DH448	DH421	
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	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		Cutting Alloys, PB>1%	110												
	27	Copper and Copper Alloys (Bronze / Brass)	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		Fe Based Cured	280 30												
	33		Annealed	250 25												
	34		Ni or Co Based Cured	350 38												
	35	Cast	320 34													
	36	Titanium Alloys	Pure Titanium	400 <sub>m</sub>												
	37		Alpha + Beta Alloys Hardened	1050 <sub>m</sub>												
H	38	Hardened steel	Hardened	550 55												
	39		Hardened	630 60												
	40	Chilled Cast Iron	Cast	400 42												
	41	Hardened Cast Iron	Hardened	550 55												

# DREAM DRILLS PRO

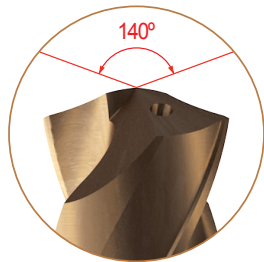


Performance Upgrade with Faster Cutting Speed



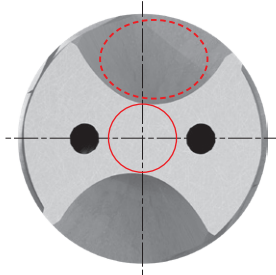
### Wave Shape Cutting Edge

- Improve chip formation
- Low Cutting Force



### 140 Degree Point Angle

- Provides edge strength and Exceptional tool life
- Good Self Centering
- Low Torque



### Micro-grained Carbide

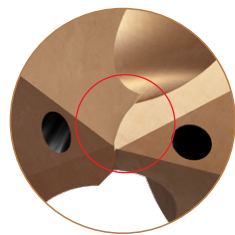
- Achieving Excellent Wear Resistance
- Maximum Tool Life and High Performance

### Optimized wide flute design

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



Radius Shape



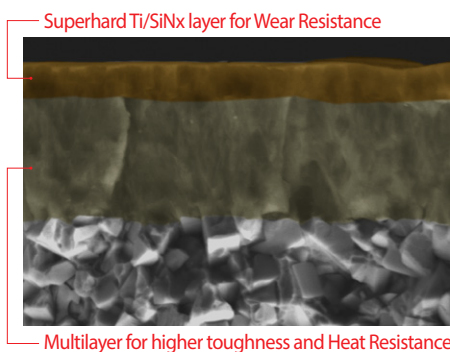
### Helical Thinning

- Low Thrust
- Stable Torque
- Good Chip Breakage

### Higher & Improved cutting conditions due to YG-1 Special Z-Coating Technology

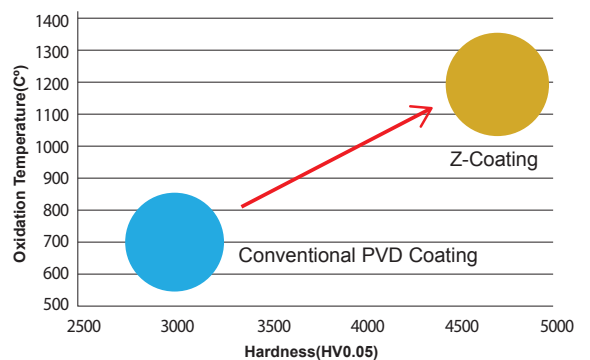
(YG-1's Unique Silicon Based Coating: Nano-Layer Coating)

- Extremely High Hardness and Heat Resistance



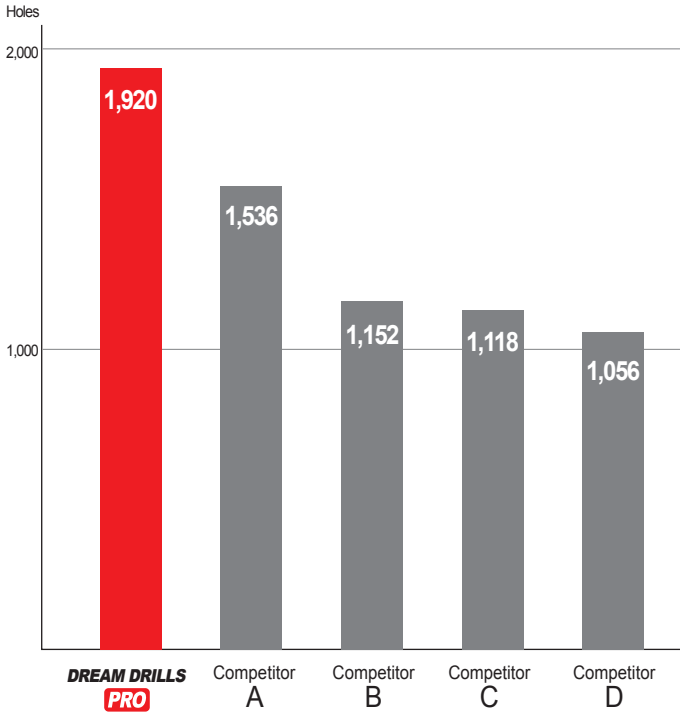
Superhard Ti/SiNx layer for Wear Resistance

Multilayer for higher toughness and Heat Resistance



## CASE STUDY

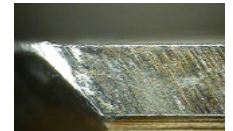
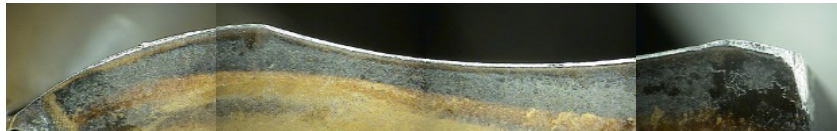
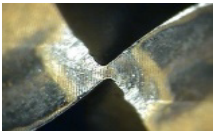
### ► SOLID CARBIDE DREAM DRILLS - PRO with Coolant Holes



CUTTING CONDITION	
Work Material	DIN: 42CrMo4    ANSI: 4140 JIS: SCM440 Hardness: HRC30 (HB286)
O.D SIZE(mm)	Ø10.0 (.3937 inch)
RPM	14,856 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

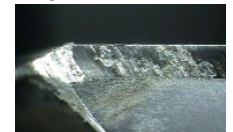
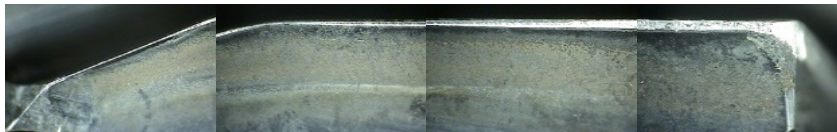
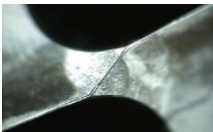
### **DREAM DRILLS PRO**

Total Drilling 1,920 Holes



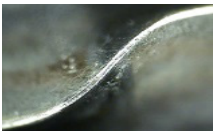
### Competitor A

Total Drilling 1,536 Holes



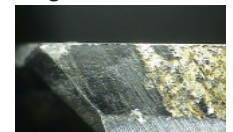
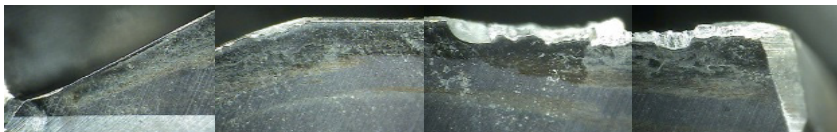
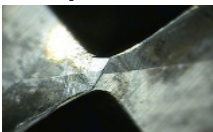
### Competitor B

Total Drilling 1,152 Holes



### Competitor C

Total Drilling 1,118 Holes



### Competitor D

Total Drilling 1,056 Holes

